FINAL REPORT NUMBER 225-MGA-07-004

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

FORD MOTOR COMPANY
2007 FORD FOCUS 4-DOOR
NHTSA No. C70200

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083

Test Date: April 28, 2008
Report Date: May 13, 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: 5/19/08

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: 2008.05.22 14:25:59 -04'00'

Acceptance Date: _____

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 225-MGA-07-004	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Final Report of FMVSS 225 Compliance Testing of a 2007 Ford Focus, NHTSA No. C70200		5. Report Date May 13, 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-07-004	
9. Performing Organization Name and Address MGA Research Corporation 446 Executive Drive Troy, Michigan 48083		10. Work Unit No. 11. Contract or Grant No. DTNH22-06-C-00030/0003	
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 Ford Focus, NHTSA No. C70200, 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 28, 2008. Test failures identified were as follows: NONE The data recorded indicates that the 2007 Ford Focus tested appears to meet the requirements of FMVSS 225.			
17. Key Words Compliance Testing Safety Engineering FMVSS 225 2007 Ford Focus		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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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 Ford Focus, NHTSA No. C70200 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 left and right seating positions were equipped with a child restraint anchorage system (one tether and two lower anchorages). The 2nd row center seating position was equipped with a tether anchorage. The center-to-center spacing between the 2nd row outboard lower anchorages was approximately 720 mm. The 2nd row left and right outboard seating positions were tested with the SFADII fixture and the 2nd row center seating position was tested with the SFADI fixture.

2.0 COMPLIANCE TEST AND DATA SUMMARY

TEST SUMMARY

The testing was conducted at MGA in Troy, Michigan on April 28, 2008.

Based on the test results, the 2007 Ford Focus 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 11,235 N and held the required load for 3 seconds and the total displacement was 80 mm. The SFADII at the 2nd row right seating position sustained a maximum force of 16,127 N and held the required load for 3 seconds. The SFADI at the 2nd row center seating position sustained a maximum force of 15,277 N and held the required load for 3 seconds.

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)
SB8190	SFADII	Forward Lower Only	2nd Row Left	11,235	80
		Forward Lower w/Top Tether	2nd Row Right	16,127	N/A
SB8191	SFADI		2nd Row Center	15,277	N/A

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 Ford Focus
VEH. NHTSA NO.	C70200
VIN	1FAFP34N17W137278
COLOR	Black
VEH. BUILD DATE	07/2006
TEST DATE	April 28, 2008
TEST LABORATORY	MGA Research Corporation
OBSERVERS	Fern Gatilao , Brad Reaume, Kenney Godfrey

GENERAL INFORMATION:

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Ford Motor Company

Date of Manufacture: 07/06; VIN: 1FAFP34N17W137278

GVWR: 3715 lbs; GAWR FRONT: 1975 lbs

GAWR REAR: 1755 lbs

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 32 psi REAR: 32 psi

Recommended Tire Size: P195/60R15

Recommended Cold Tire Pressure:

FRONT: 32 psi REAR: 32 psi

Size of Tire on Test Vehicle: P195/60R15

Size of Spare Tire: T125/80R15

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 607 (12/11/07), 618 (12/11/07)
String Potentiometer	Calibrated at each use (S/N A1600462A)
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 TPM053 (12/3/08)
MGA Data Acquisition System	N/A
Digital Calipers	S/N MGA00572 (9/27/07)
Force Gauge	S/N MGA00700 (1/11/08)
Inclinometer (Digital)	S/N MGA00576 (9/13/07)

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	N/A		N/A
	Ctr		N/A		
	RH		N/A		
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	Yes		N/A
	Ctr		N/A		
	RH		Yes		
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	20		N/A
	Ctr		N/A		
	RH		18		
Measure the distance between the SRP to the front of the anchorage bar (mm)	LH	N/A	126	127	N/A
	Ctr		N/A		
	RH		126	127	

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	25	25	N/A
		Req't<60		29	29	
	Ctr	Req't>25		N/A		
		Req't<60		N/A		
	RH	Req't>25		25	25	
		Req't<60		29	29	
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	13.8	N/A	1.2
2nd Row Center	N/A	N/A	N/A
2nd Row Right	13.7	N/A	0.9

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	No	II	10	22	389	11,000	11,235*	102	80
	Ctr.			No	I	10	N/A	537	15,000	16,127*	N/A	N/A
	RH			No	II	10	N/A	537	15,000	15,277*	N/A	N/A
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.

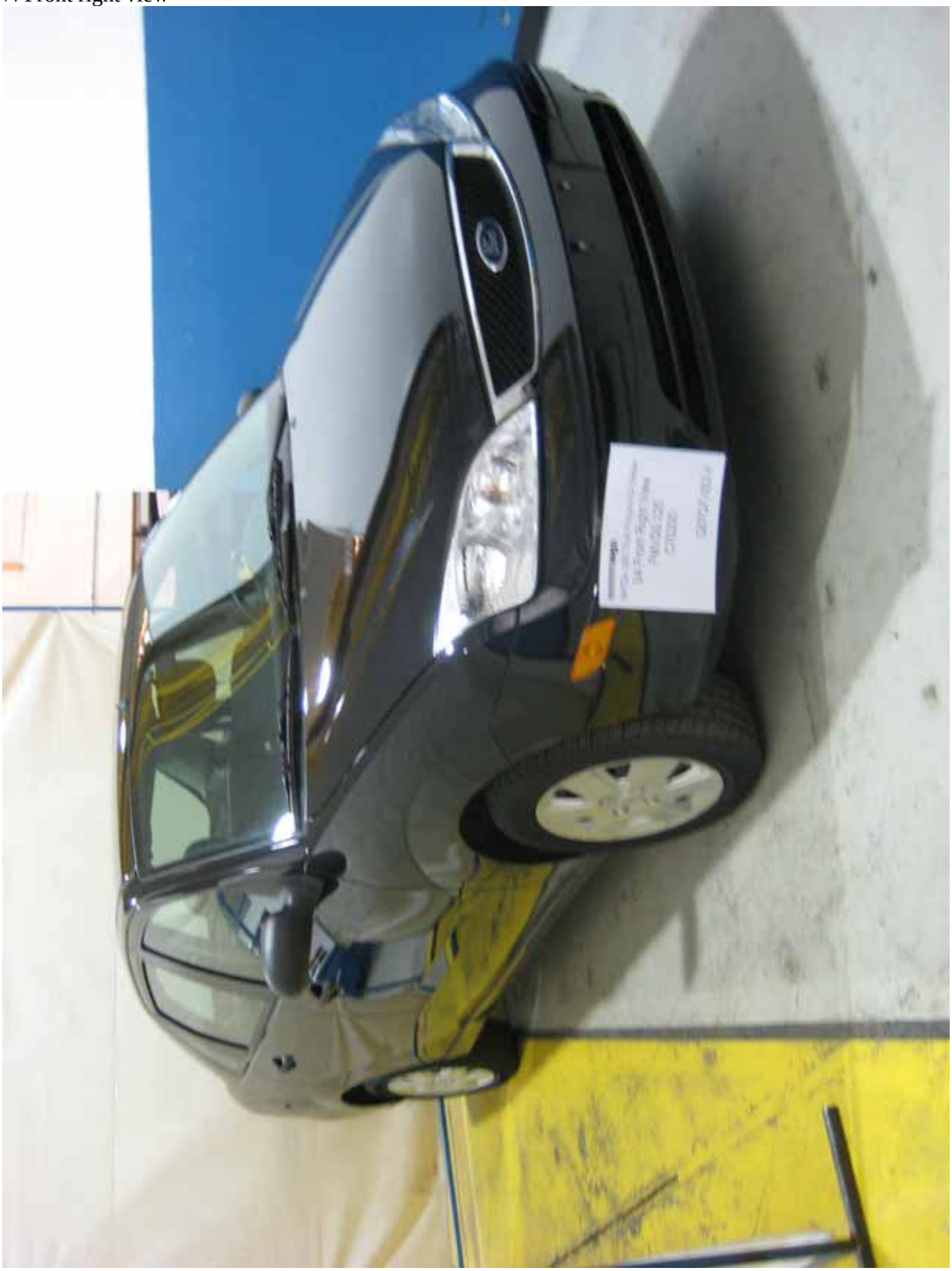
6.0 PHOTOGRAPHS

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

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6.6.3 Left front

6.6.4 Left rear

6.6.5 Right front

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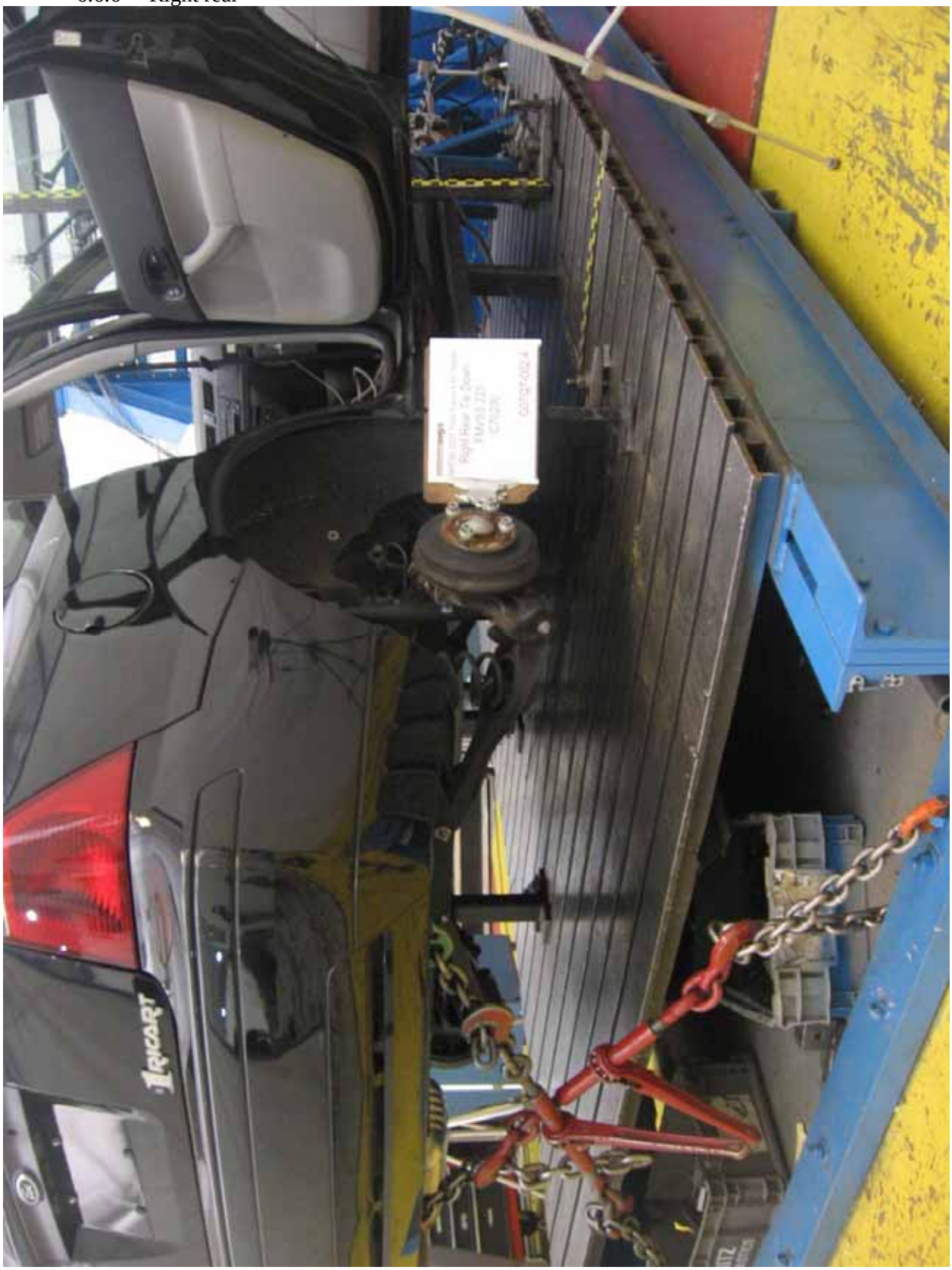

6.7 2-dimensional template

6.7.1 LH position photo #1

6.7.2 LH position photo #2

6.7.3 Center position photo #1

6.7.4 Center position photo #2

6.7.5 RH position photo #1

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6.9.1 SFADII photo

6.9.2 SFADI photo

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

6.10.1 Pre-test photo #1 of SFADII

6.10.2 Pre-test photo #2 of SFADII

6.10.3 Pre-test photo #3 of SFADI

6.10.4 Pre-test photo #4 of SFADI

6.11 Post-test condition of each child restraint anchorage system

6.11.1 Post-test photo #1 of SFADII

6.11.2 Post-test photo #2 of SFADII

6.11.3 Post-test photo #3 of SFADII

6.11.4 Post-test photo #4 of SFADII

6.11.5 Post-test photo #5 of SFADII

6.11.6 Post-test photo #6 of SFADII

6.11.7 Post-test photo #7 of SFADII

6.11.8 Post-test photo #8 of SFADII

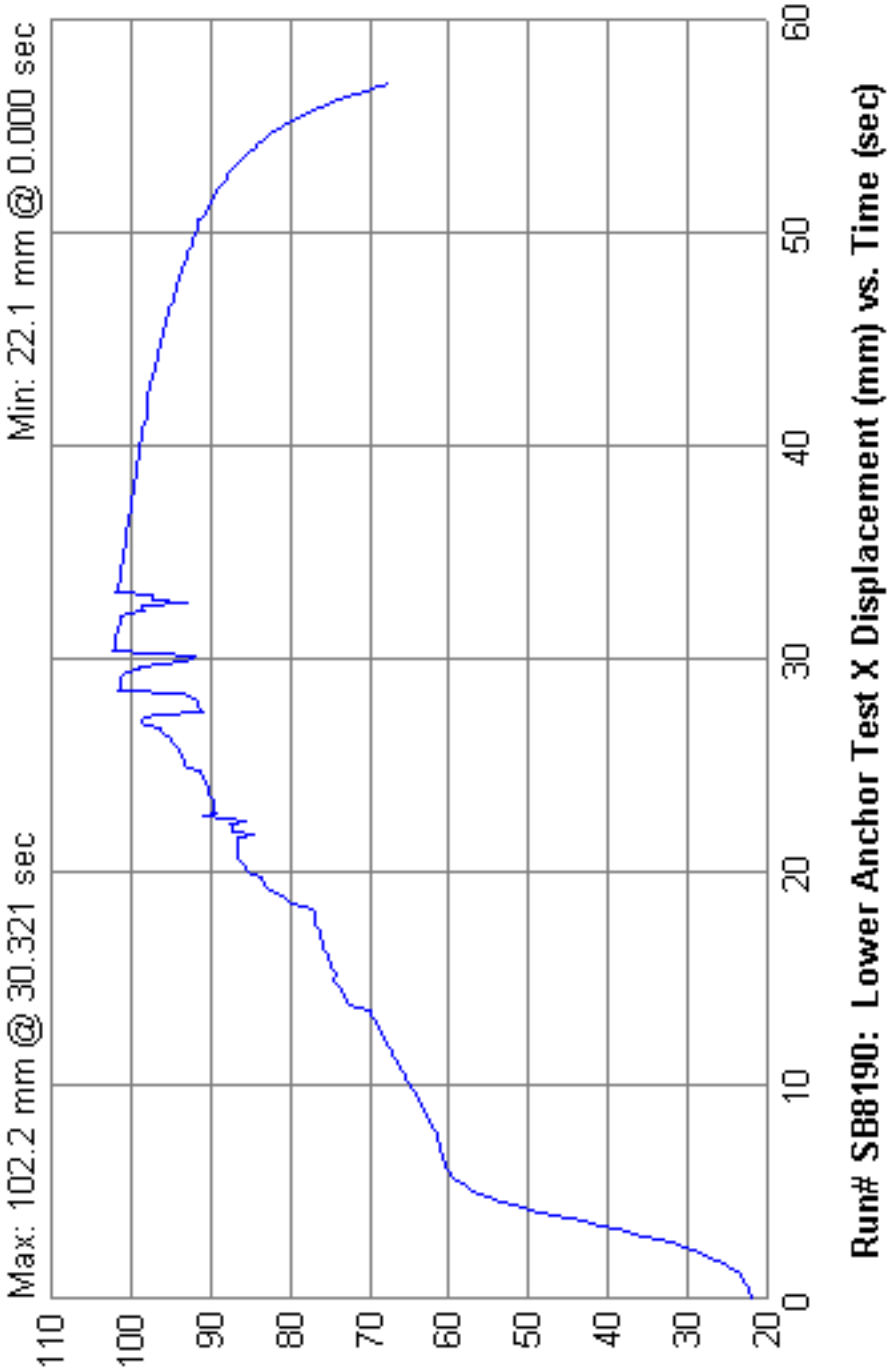
6.11.9 Post-test photo #9 of SFADI

6.11.10 Post-test photo #10 of SFADI

6.11.11 Post-test photo #11 of SFADI

6.11.12 Post-test photo #12 of SFADI

7.0 PLOTS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Min: 22.1 mm @ 0.000 sec
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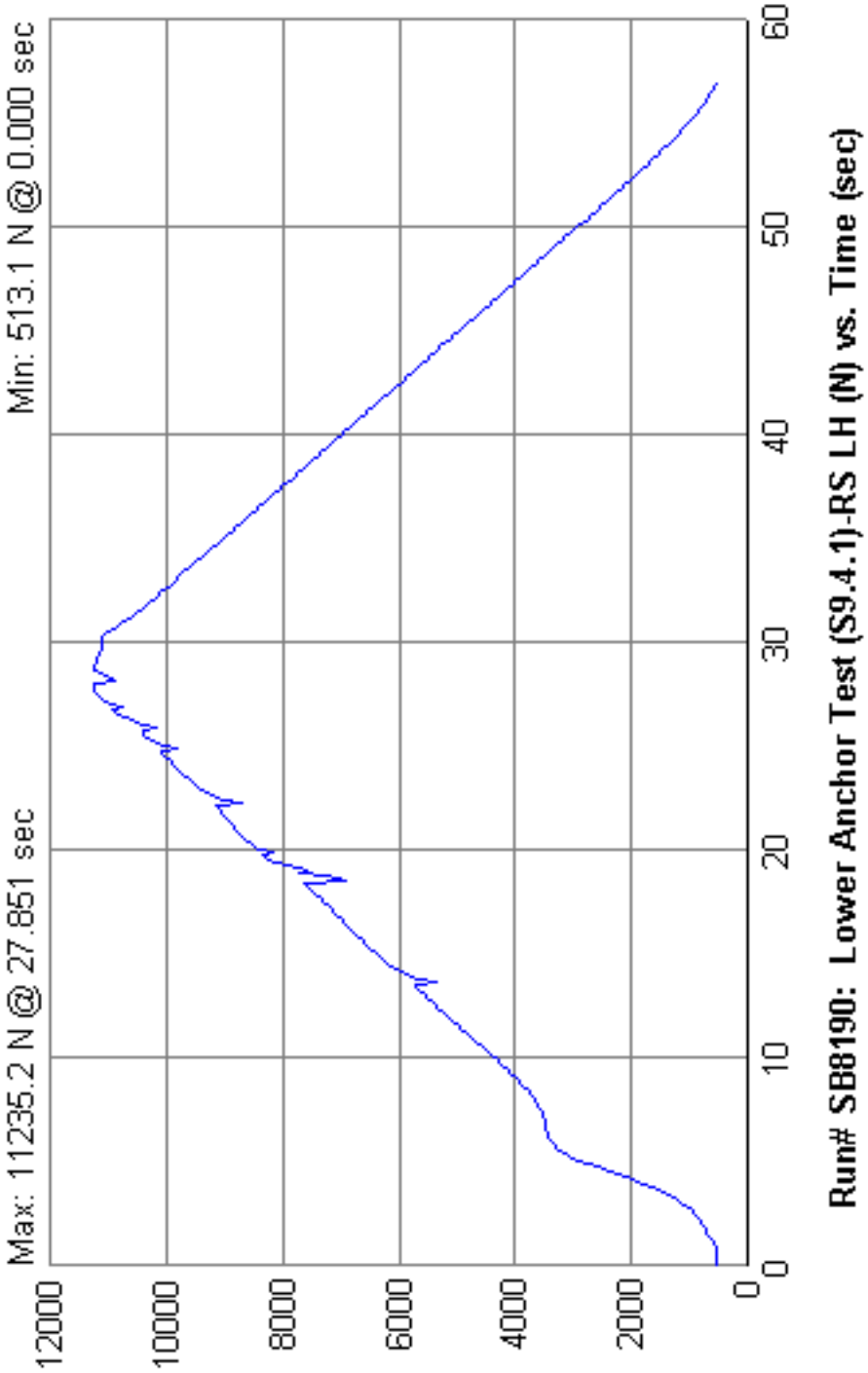
100
90
80
70
60
50
40
30
20
0
10
20
30
40
50
60


Max: 11235.2 N @ 27.851 sec
Min: 513.1 N @ 0.000 sec
12000
10000
8000
6000
4000
2000
0
0
10
20
30
40
50
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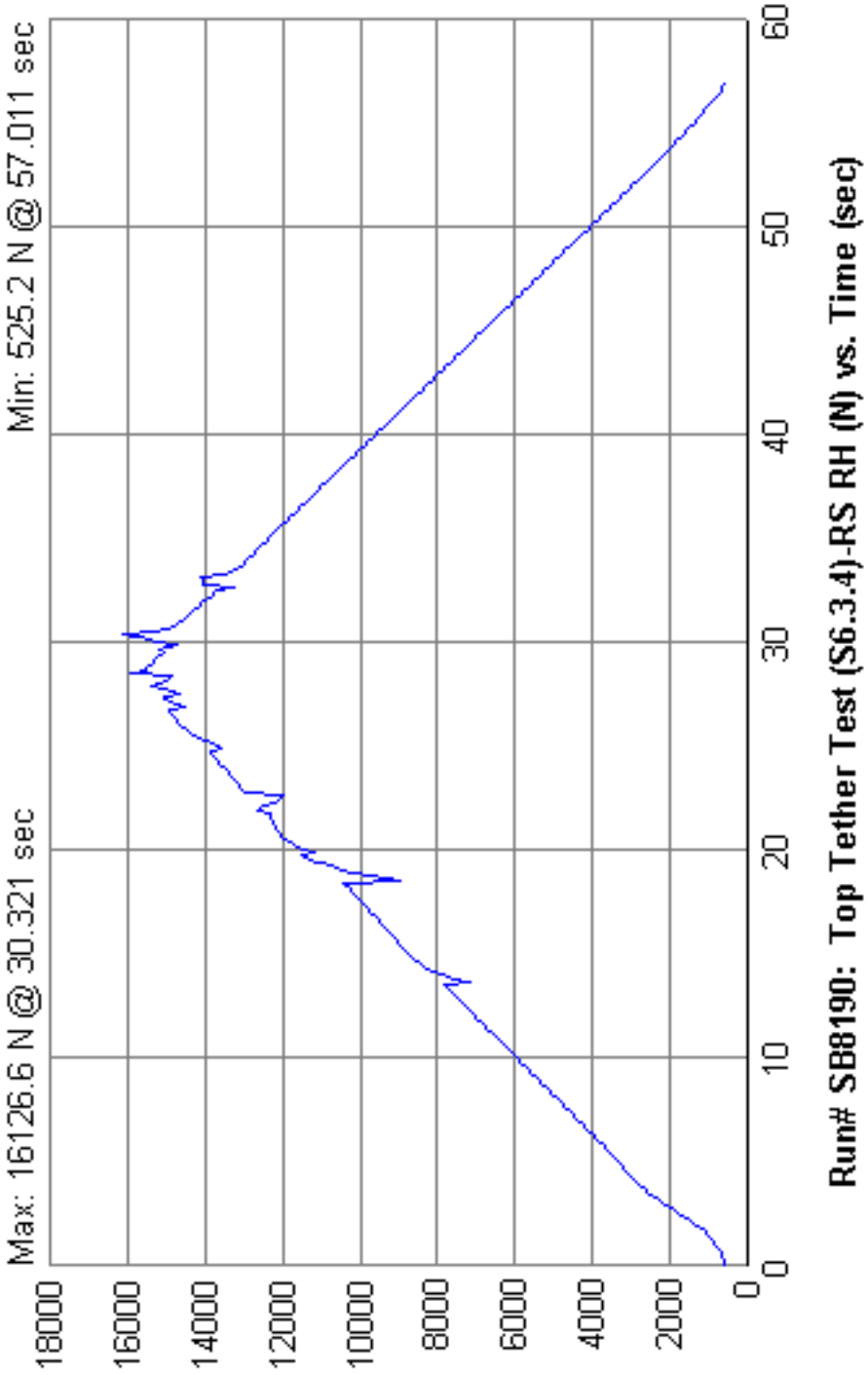
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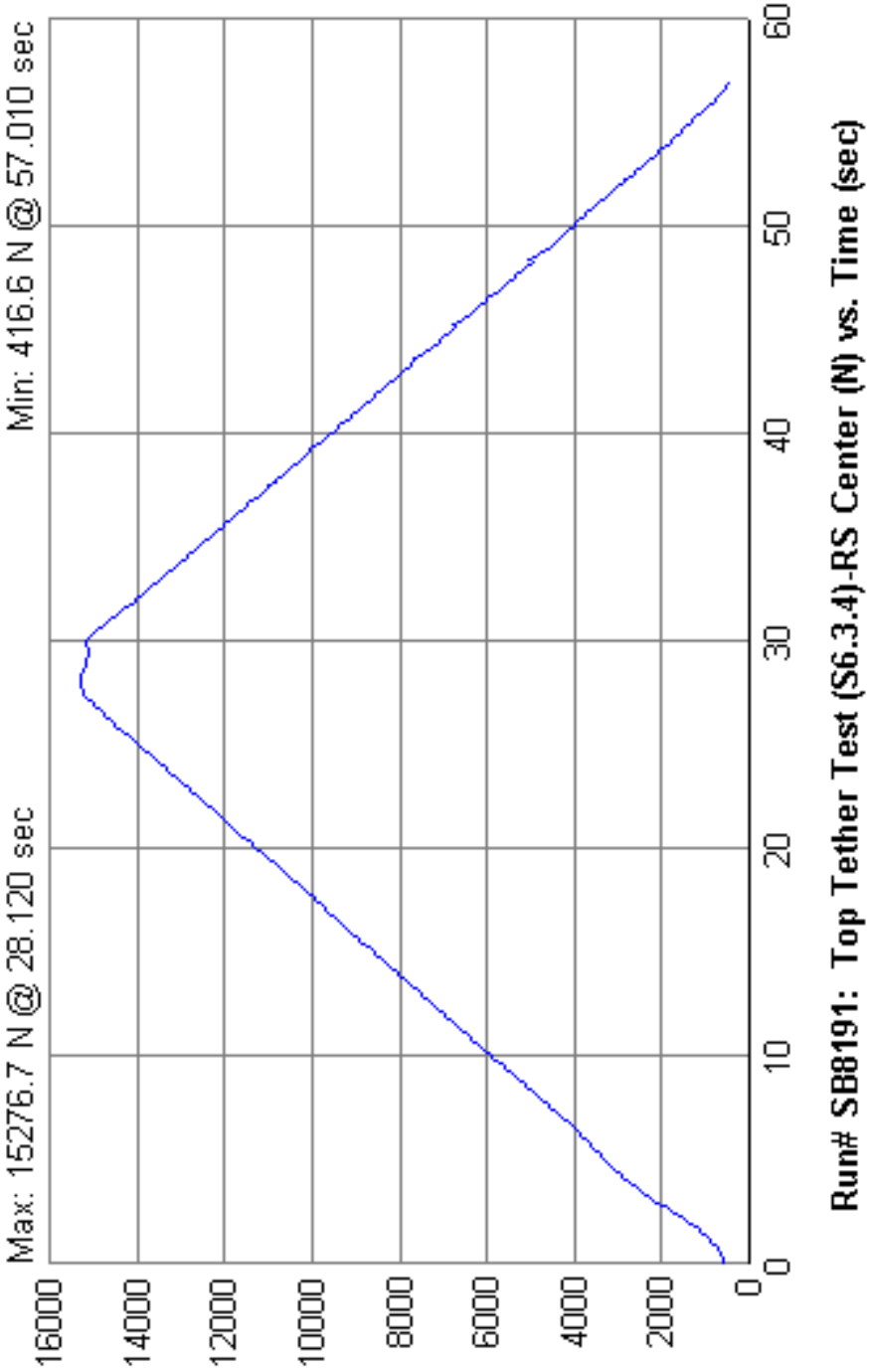
14000
12000
10000
8000
6000
4000
2000
0
0
10
20
30
40
50
60


Max: 15276.7 N @ 28.120 sec
Min: 416.6 N @ 57.010 sec
16000
14000
12000
10000
8000
6000
4000
2000
0
0
10
20
30
40
50
60
Run# SB8191: Top Tether Test (S6.3.4)-RS Center (N) vs. Time (sec)

8.0 REPORT of VEHICLE CONDITION

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

CONTRACT No.: DTNH22-06-C-00030/0003 DATE: April 28, 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 Ford Focus

VEH. NHTSA NO.: C70200 VIN: 1FAFP34N17W137278

COLOR: Black

ODOMETER READINGS: ARRIVAL 585 miles Date: 07/20/07

COMPLETION 585 miles Date: 4/28/08

PURCHASE PRICE: $15,585 DEALER'S NAME: TRC

ENGINE DATA: 4 Cylinders 2.0 Liters ___ 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
X	Power Windows	X	Rear Window Defroster	X	Driver Air Bag
X	Power Door Locks		Sun Roof or T-Top	X	Passenger Air Bag
	Power Seat(s)		Tachometer	X	Front Disc Brakes
	Power Brakes	X	Tilt Steering Wheel	X	Rear Disc Brakes
	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:

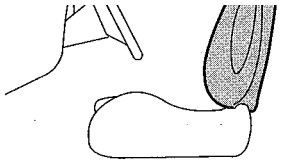
Salvage only.

RECORDED BY: Fern Gatilao, Kenney Godfrey DATE: April 28, 2008

APPROVED BY: Brad Reaume

APPENDIX A
OWNERS MANUAL CHILD RESTRAINT SYSTEMS

airbag system (including the seat) must be inspected and serviced by an authorized dealer. If the airbag is not replaced, the unrepaired area will increase the risk of injury in a collision.



Disposal of airbags and airbag equipped vehicles (including pretensioners)

See your authorized dealer. Airbags MUST BE disposed of by qualified personnel.

SAFETY RESTRAINTS FOR CHILDREN

See the following sections for directions on how to properly use safety restraints for children. Also see *Airbag supplemental restraint system (SRS)* in this chapter for special instructions about using airbags.

Rear-facing child seats or infant carriers should never be placed in front of an active passenger airbag.

Always transport children 12 years old and under in the back seat and always use appropriate child restraints.

Accident statistics indicate that children are safer when properly restrained in the rear seats.

Do not leave children, unreliable adults, or pets unattended in your vehicle.

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and Canada. If small children (generally children who are four years old or younger and who weigh 40 lb. [18 kg] or less) ride in your vehicle, you must put them in safety seats made especially for children. Many states require that children use approved booster seats until they are eight years old. Check your local and state or provincial laws for specific requirements regarding the safety of children in your vehicle. When possible, always place children under age 12 in the rear seat of your vehicle. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in the front seating position.

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

Always follow the instructions and warnings that come with any infant or child restraint you might use.

Children and safety belts

If the child is the proper size, restrain the child in a safety seat. Children who are too large for child safety seats (as specified by your child safety seat manufacturer) should always wear safety belts.

Follow all the important safety restraint and airbag precautions that apply to adult passengers in your vehicle.

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

⚠ Do not leave children, unreliable adults, or pets unattended in your vehicle.

have outgrown child safety seats, Ford Motor Company recommends use of a belt-positioning booster.

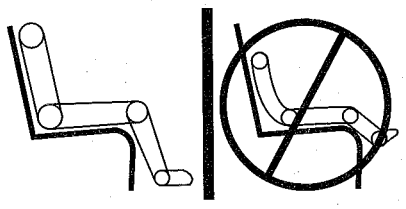
Booster seats position a child so that safety belts fit better. They lift the child up so that the lap belt rests low across the hips and the knees bend comfortably. Booster seats may also make the shoulder belt fit better and more comfortably. Try to keep the belt near the middle of the shoulder.

When children should use booster seats

Children need to use booster seats from the time they outgrow the toddler seat until they are big enough for the vehicle seat and lap/shoulder belt to fit properly. Generally this is when they weigh about 80 lb. (36 kg) (about 8 to 12 years old).

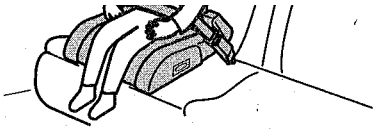
Booster seats should be used until you can answer YES to ALL of these questions:

- Can the child sit all the way back against the vehicle seat back with knees bent comfortably at the edge of the seat without slouching?



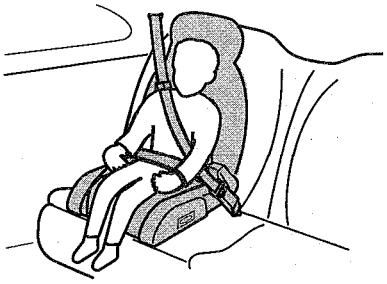
- Does the lap belt rest low across the hips?
- Is the shoulder belt centered on the shoulder and chest?
- Can the child stay seated like this for the whole trip?

low seat back and no head restraint, a backless booster seat may place your child's head (top of ear level) above the top of the seat. In this case, move the backless booster to another seating position with a higher seat back and lap/shoulder belts.



- Those with a high back.

  If, with a backless booster seat, you cannot find a seating position that adequately supports your child's head, a high back booster seat would be a better choice.



Either type can be used at any seating position equipped with lap/shoulder belts if your child is over 40 lb. (18 kg).

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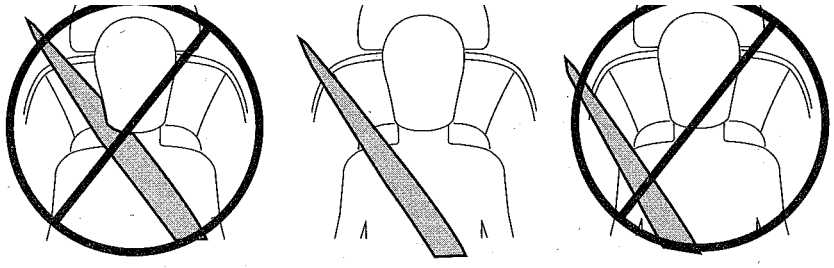

If the booster seat slides on the vehicle seat, placing a rubberized mesh sold as shelf or carpet liner under the booster seat may improve this condition.

The importance of shoulder belts

Using a booster without a shoulder belt increases the risk of a child's head hitting a hard surface in a collision. For this reason, you should never use a booster seat with a lap belt only. It is best to use a booster seat with lap/shoulder belts in the back seat- the safest place for children to ride.

⚠ Move a child to a different seating location if the shoulder belt does not stay positioned on the shoulder during use.

⚠ Follow all instructions provided by the manufacturer of the booster seat.

⚠ Never put the shoulder belt under a child's arm or behind the back because it eliminates the protection for the upper part of the body and may increase the risk of injury or death in a collision.

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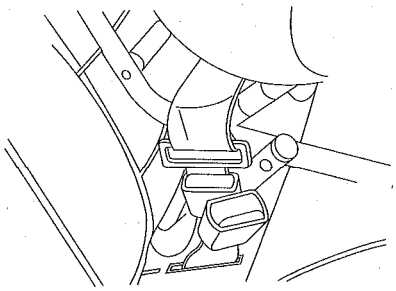
Use a safety seat that is recommended for the size and weight of the child. Carefully follow all of the manufacturer's instructions with the safety seat you put in your vehicle. If you do not install and use the safety seat properly, the child may be injured in a sudden stop or collision.

When installing a child safety seat:



- Review and follow the information presented in the *Airbag supplemental restraint system* (SRS) section in this chapter.
- Use the correct safety belt buckle for that seating position (the buckle closest to the direction the tongue is coming from).
- Insert the belt tongue into the proper buckle until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.
- Keep the buckle release button pointing up and away from the safety seat, with the tongue between the child seat and the release button, to prevent accidental unbuckling.
- Place seat back in upright position.
- Put the safety belt in the automatic locking mode. Refer to *Automatic locking mode* (passenger side front and outboard rear seating positions) (if equipped) section in this chapter.
- LATCH lower anchors are recommended for use by children up to 48 lb. (22 kg) in a child restraint. Top tether anchors can be used for children up to 60 lb. (27 kg) in a child restraint, and to provide upper torso restraint for children up to 80 lb. (36 kg) using an upper torso harness and a belt-positioning booster.

Carefully follow all of the manufacturer's instructions included with the safety seat you put in your vehicle. If you do not install and use the safety seat properly, the child may be injured in a sudden stop or collision.

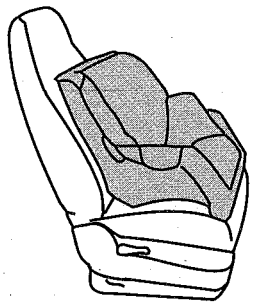
Rear-facing child seats or infant carriers should never be placed in front of an active airbag.

Installing child safety seats with combination lap and shoulder belts

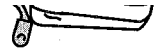
Airbags can kill or injure a child in a child seat. **NEVER** place a rear-facing child seat in front of an active airbag. If you must use a forward-facing child seat in the front seat, move the seat all the way back.

Children 12 and under should be properly restrained in the rear seat whenever possible.

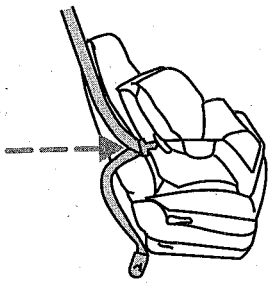
1. Position the child safety seat in a seat with a combination lap and shoulder belt.



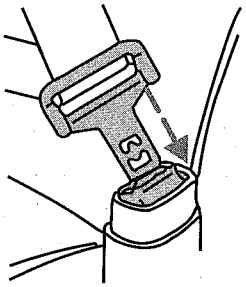
100



3. While holding the shoulder and lap belt portions together, route the tongue through the child seat according to the child seat manufacturer's instructions. Be sure the belt webbing is not twisted.



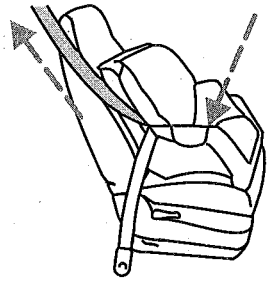
4. Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) for that seating position until you hear a snap and feel the latch engage. Make sure the tongue is latched securely by pulling on it.



101

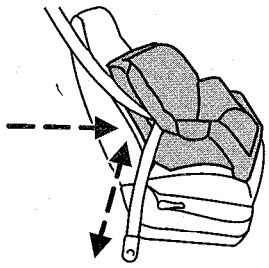
6. Allow the belt to retract. The belt will click as it retracts to indicate it is in the automatic locking mode.

7. Pull the lap belt portion across the child seat toward the buckle and pull up on the shoulder belt while pushing down with your knee on the child seat.



8. Allow the safety belt to retract to remove any slack in the belt.

9. Before placing the child in the seat, forcibly move the seat forward and back to make sure the seat is securely held in place. To check this, grab the seat at the belt path and attempt to move it side to side and forward. There should be no more than one inch of movement for proper installation.



10. Try to pull the belt out of the retractor to make sure the retractor is in the automatic locking mode (you should not be able to pull more belt out). If the retractor is not locked, unbuckle the belt and repeat Steps 2 through 9.

Check to make sure the child seat is properly secured before each use.

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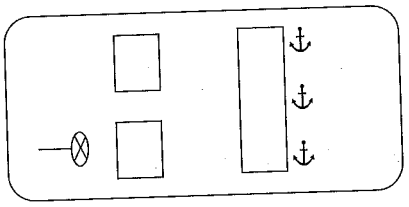
anchors located behind the seats as described below.

The tether anchors in your vehicle are either located under a cover marked with the tether anchor symbol (shown with title) or are recessed bars on the back side of the seatback.

The tether strap anchors in your vehicle are in the following positions (shown from top view, left is front of the vehicle):



⚠ Attach the tether strap only to the appropriate tether anchor as shown. The tether strap may not work properly if attached somewhere other than the correct tether anchor.

1. Position the child safety seat on the seat cushion.
2. Route the child safety seat tether strap over the back of the seat.

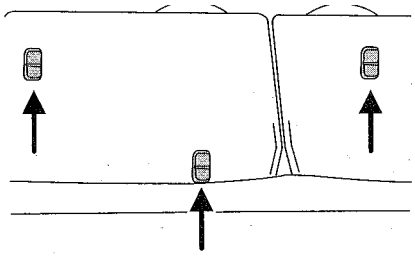
On hatchbacks, the removable luggage area cover must be removed prior to attaching the tether strap to the tether anchor.

On wagons, it may be necessary to remove the cargo cover assembly prior to attaching the tether strap to the tether anchor. The tether must not go around the cargo cover retractor assembly.

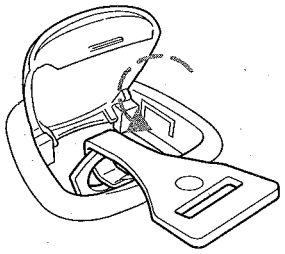
For vehicles with adjustable head restraints, route the tether strap under the head restraint and between the head restraint posts, otherwise route the tether strap over the top of the seatback.

3. Locate the correct anchor for the selected seating position.

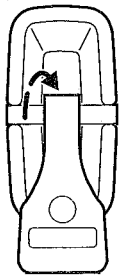
the anchors are located on the back of the rear seat.



4. On a sedan, open the tether anchor cover.



5. Clip the tether strap to the anchor as shown.



⚠ If the tether strap is clipped incorrectly, the child safety seat may not be retained properly in the event of a collision.

6. Install the child safety seat tightly using the LATCH anchors or safety belts. Follow the instructions in this chapter.

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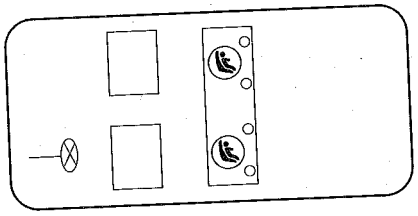
Children (LATCH) attachments for child seat anchors

Some child safety seats have two rigid or webbing mounted attachments that connect to two anchors at specific seating positions in your vehicle. This type of child seat eliminates the need to use safety belts to attach the child seat. For forward-facing child seats, the tether strap must also be attached to the proper tether anchor point. For information on using tether straps with the child safety seats, refer to *Attaching safety seats with tether straps* in this chapter.



LATCH anchors for child seat installation have been provided in your vehicle at the following locations:

The anchors on both sides of the center of the rear seat are provided primarily for child seats at the outboard seats and are further apart than the pairs of lower anchors for child seat installation at other seats. A child seat with rigid LATCH attachments cannot be installed at the center rear seat. A child seat with LATCH attachments on belt webbing can be used at the center rear seat unless a child seat at an outboard rear seat is attached to one of these lower anchors. Install a child seat onto the lower anchors at the center rear seat ONLY IF the child restraint manufacturer recommends that the child seat can be installed to anchors that are spaced up to 450 mm apart.

⚠ Never attach two LATCH child safety seats to the same anchor. In a crash, one anchor may not be strong enough to hold two child seat attachments and may break, causing serious injury or death.

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Attach the LATCH lower attachments of the child seat only to the appropriate locations shown.

Once you have installed the LATCH safety seat, ensure that the seat is properly attached to LATCH and tether anchors. Also, test the safety seat before you place the child in it. Tilt the seat from side to side. Also try to tug the seat forward. Check to see if the anchors hold the seat in place.

If the safety seat in not anchored properly, the risk of a child being injured in a collision greatly increases.

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APPENDIX B
MANUFACTURER'S DATA (OVSC FORM 14)

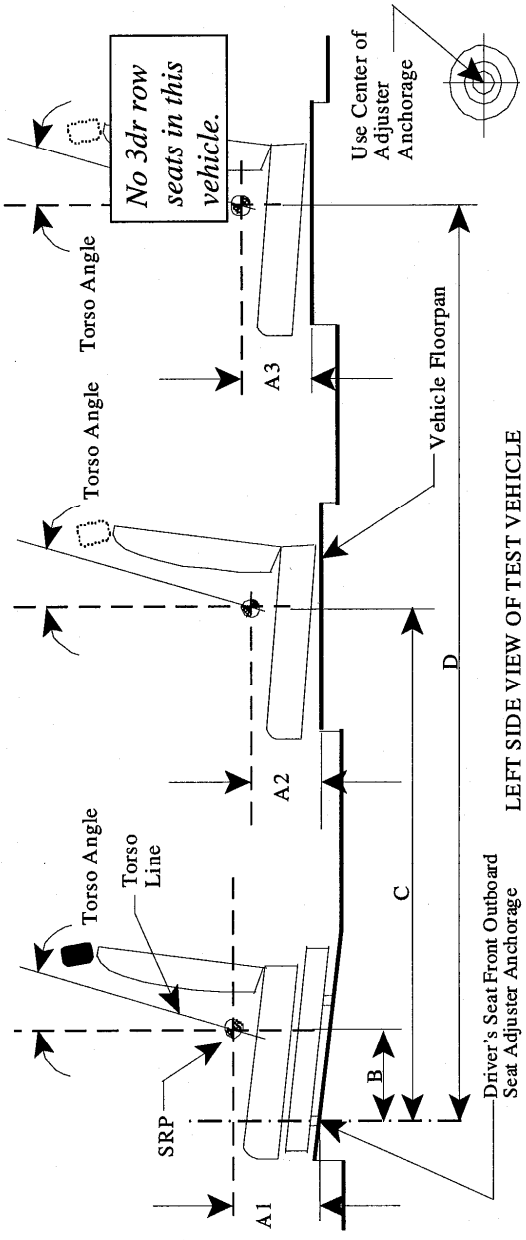
FORM – 225
Rev. 03/20/07

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA

FMVSS No. 225
(All dimensions in mm[1])

MODEL YEAR: **2007** / MAKE: **Ford** / MODEL: **Focus** / BODY STYLE: **ZX4 (Sedan)**

SEAT STYLE: FRONT ROW: **Adjustable Bucket** / SECOND ROW: **Bench (60/40 fold back)** / 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)		(Front Passenger)
A2			**93.70mm** Reference at cushion mounting because rear floor pan varies in "Z"	**103.70mm** Reference at cushion mounting because rear floor pan varies in "Z"	**93.70mm** Reference at cushion mounting because rear floor pan varies in "Z"
A3			n/a	n/a	n/a
B					
C			**1151.0 mm**	**1141.0 mm**	**1151.0 mm**
D			n/a	n/a	n/a
Torso Angle (degree)	Front Row				
	Second Row		**24 deg**	**24 deg**	**24 deg**
	Third Row		n/a	n/a	n/a

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

FORM – 225

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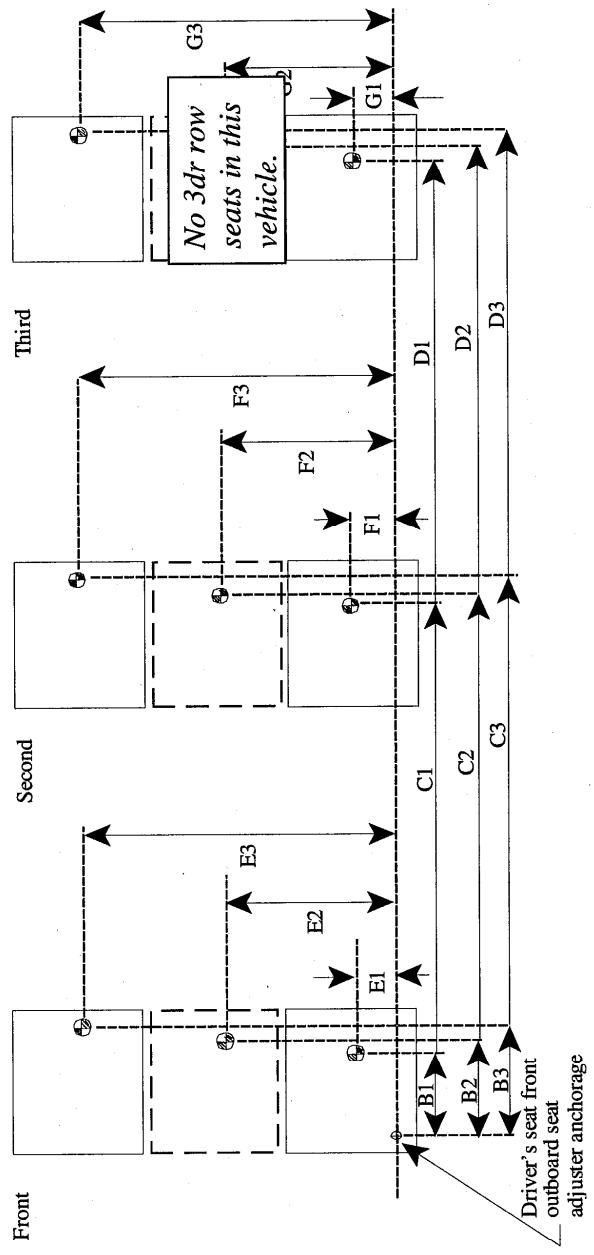
SEATING REFERENCE POINT

FMVSS No. 225
(All dimensions in mm)

MODEL YEAR: **2007** / MAKE: **Ford** / MODEL: **Focus** / BODY STYLE: **ZX4 (Sedan)**

SEAT STYLE: FRONT ROW: **Adjustable Bucket** / SECOND ROW: **Bench (60/40 fold back)** / THIRD ROW: **N/A**



FORM – 225

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Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage[1]
Front Row	B1	
	E1	
	B2	
	E2	
	B3	
	E3	
Second Row	C1	**1151.0 mm**
	F1	**262.6 mm**
	C2	**1141.0 mm**
	F2	**592.6 mm**
	C3	**1151.0 mm**
	F3	**922.6 mm**
Third Row	D1	**Not Applicable**
	G1	**Not Applicable**
	D2	**Not Applicable**
	G2	**Not Applicable**
	D3	**Not Applicable**
	G3	**Not Applicable**

Note: Use the center of anchorage.

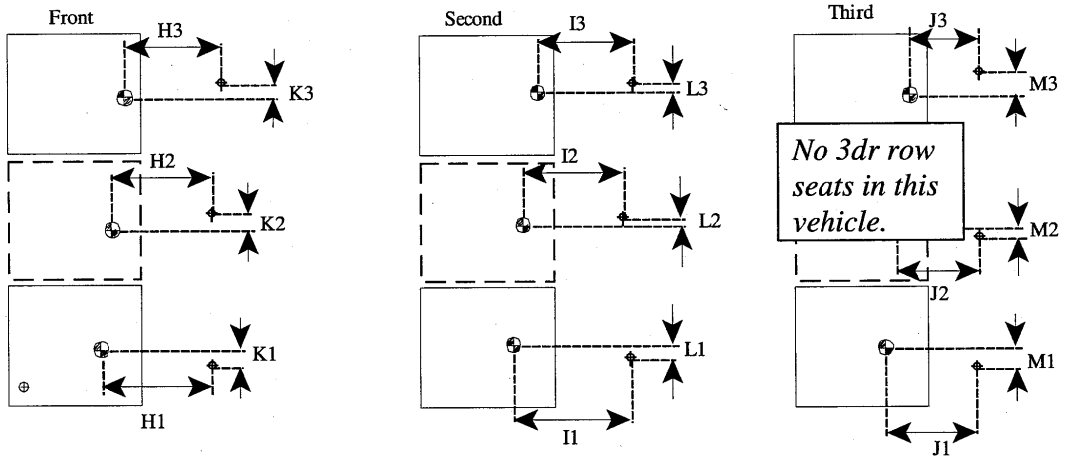
FORM – 225

TETHER ANCHORAGE LOCATIONS

FMVSS No. 225
(All dimensions in mm)

MODEL YEAR: **2007** / MAKE: **Ford** / MODEL: **Focus** / BODY STYLE: **ZX4 (Sedan)**

SEAT STYLE: FRONT ROW: **Adjustable Bucket** / SECOND ROW: **Bench (60/40 fold back)** / THIRD ROW: **N/A**



⊕: SRP
⊕: Tether anchorage

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

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Table 3. Seating Reference Point and Tether Anchorage Locations

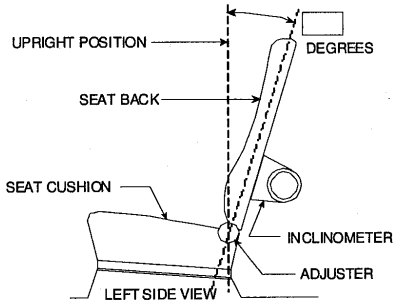
Seating Reference Point (SRP)	Distance from SRP	
Front Row	H1	**Not Applicable**
	K1	**Not Applicable**
	H2	**Not Applicable**
	K2	**Not Applicable**
	H3	**Not Applicable**
	K3	**Not Applicable**
Second Row	I1	**487.75 mm**
	L1	**29.21 mm**
	I2	**514.87 mm**
	L2	**0 mm**
	I3	**487.75 mm**
	L3	**29.21 mm**
Third Row	J1	**Not Applicable**
	M1	**Not Applicable**
	J2	**Not Applicable**
	M2	**Not Applicable**
	J3	**Not Applicable**
	M3	**Not Applicable**

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 = _____ degrees.

Measurement Instructions:

_____

_____

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

Measurement Instructions:

_____

_____

Seat back angle for 2nd row seat = **N/A** degrees.

Measurement Instructions:

Non adjustable seat back

_____

Seat back angle for 3rd row seat = **N/A** degrees.

Measurement Instructions:

Not applicable

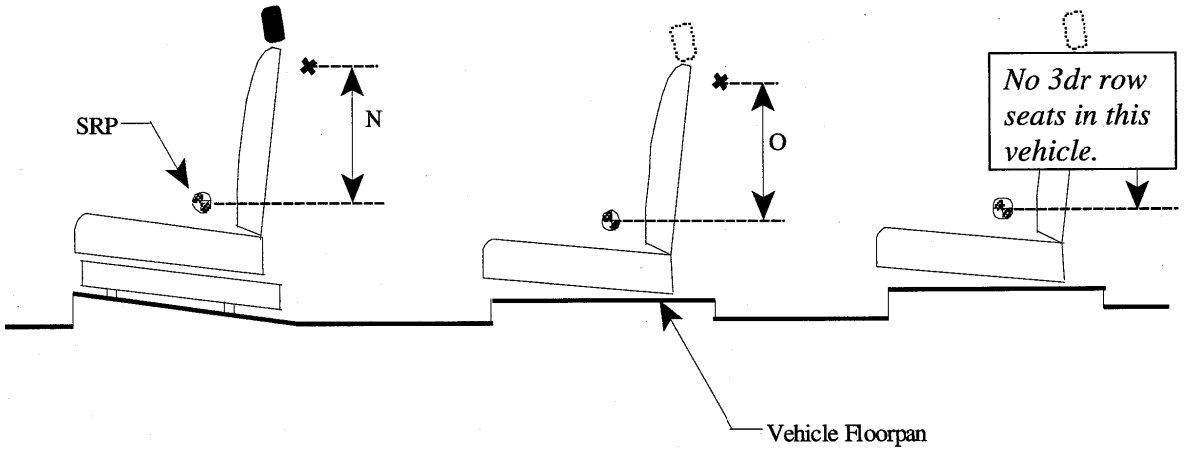
_____

TETHER ANCHORAGE LOCATIONS - VERTICAL

FMVSS No. 225
(All dimensions in mm)

MODEL YEAR: **2007** / MAKE: **Ford** / MODEL: **Focus** / BODY STYLE: **ZX4 (Sedan)**

SEAT STYLE: FRONT ROW: **Adjustable Bucket** / SECOND ROW: **Bench (60/40 fold back)** / THIRD ROW: **N/A**



LEFT SIDE VIEW OF TEST VEHICLE

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)	**494.32 mm**
	O2 (Center)	**493.03 mm**
	O3 (Right)	**494.32 mm**

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

For each vehicle, provide the following information:

1. How many designated seating positions exist in the vehicle? Ans: **5 designated seating positions**

2. How many designated seating positions are equipped with lower anchorages and tether anchorages? Specify which position(s).
   Ans: **The two second row outboard seating positions are equipped with lower and tether anchorages.**

3. How many designated seating positions are equipped with tether anchorages? Specify which positions(s).
   Ans: **The second row center seating position is equipped with only tether anchorage.**

4. Lower Anchorages Marking and Conspicuity: Whether the anchorages are certified to S9.5(a) or S9.5(b) of FMVSS No. 225.
   Ans: **Yes, Lower Anchorages Marking and Conspicuity are certified with S9.5 (b).**
   All lower anchorages are visible without any guidance fixture.