REPORT NUMBER 202a-GTL-10-005

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 202aS HEAD RESTRAINTS – STATIC REQUIREMENTS

MAZDA MOTOR CORPORATION
2010 MAZDA 6, PASSENGER CAR
NHTSA NO. CA5403

GENERAL TESTING LABORATORIES, INC.
1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443

August 30, 2010

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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9. Performing Organization Name and Address General Testing Laboratories, Inc. 1623 Leedstown Road Colonial Beach, Va 22443		10. Work Unit No. (TRAIS) N/A 11. Contract or Grant No. DTNH22-06-C-00032
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Admin. Enforcement Office of Vehicle Safety Compliance (NVS-220) 1200 New Jersey Ave., S.E., Washington, DC 20590		13. Type of Report and Period Covered Final Test Report July 07 - July 27, 2010 14. Sponsoring Agency Code NVS-221
15. Supplementary Notes		
16. Abstract Compliance tests were conducted on the subject, 2010 Mazda 6 4-door Passenger Car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-202aS-00 for the determination of FMVSS 202a compliance. Test failures identified were as follows: NONE		
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SECTION 1

PURPOSE OF COMPLIANCE TEST

1.0 PURPOSE OF COMPLIANCE TEST

A 2010 Mazda 6 Passenger Car was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 202a testing to determine if the vehicle was in compliance with the requirements of the standard. The purpose of this standard is to establish requirements for head restraints to reduce the frequency and severity of neck injury in rear end and other collisions.

1.1 The test vehicle was a 2010 Mazda 6 Passenger Car. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1YVHZ8CH1A5M27369

B. NHTSA No.: CA5403

C. Manufacturer: MAZDA MOTOR CORPORATION

D. Manufacture Date: 12/09

E. Color: Black

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 202a testing during the time period July 07 through July 27, 2010.

SECTION 2

COMPLIANCE TEST RESULTS

2.0 TEST RESULTS

All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedures, TP-202aS-00 dated 22 December 2004.

Based on the test performed, the 2010 Mazda 6 Passenger Car appeared to meet the requirements of FMVSS 202a testing.

SECTION 3

COMPLIANCE TEST DATA

3.0 TEST DATA

The following data sheets document the results of testing on the 2010 Mazda 6 Passenger Car.

DATA SHEET 1 (1 of 2)
SUMMARY OF RESULTS

VEH. MOD YR/MAKE/MODEL/BODY STYLE: 2010 MAZDA 6 PASSENGER CAR

VEH. NHTSA NO.: CA5403 ; VIN: 1YVHZ8CH1A5M27369

VEH. BUILD DATE: 12/09 ; TEST DATE: July 7-27, 2010

TEST LABORATORY: GENERAL TESTING LABORATORIES

OBSERVERS: G. FARRAND, J. LATANE

A. VISUAL INSPECTION OF TEST VEHICLE

Upon receipt for completeness, function, and discrepancies or damage which might influence the testing.

RESULTS: OK for testing. Due to manufacture date of vehicle, rear DSP's are not required to meet 202a requirements.

B. DIMENSIONAL REQUIREMENTS	**PASS**	**FAIL**	**N/A**
Driver's Side	X		
Passenger's Side	X		
Rear Designated Seating Positions	X		

C. OWNER'S MANUAL	**PASS**	**FAIL**
	X	

D. REMOVABILITY	**PASS**	**FAIL**	**N/A**
Driver's Side	X		
Passenger's Side	X		
Rear Designated Seating Positions	X		

E. NON-USE POSITION	**PASS**	**FAIL**	**N/A**
Rear Designated Seating Positions			X

DATA SHEET 1 (2 of 2)
SUMMARY OF RESULTS

F.	**ENERGY ABSORPTION TEST**	**PASS**	**FAIL**	**N/A**
	Driver's Side			
	Passenger's Side			
	Rear Designated Seating Positions	X		
G.	**HEIGHT RETENTION TEST**	**PASS**	**FAIL**	**N/A**
	Driver's Side	X		
	Passenger's Side			
	Rear Designated Seating Positions			
H.	**BACKSET RETENTION TEST**	**PASS**	**FAIL**	**N/A**
	Driver's Side			
	Passenger's Side	X		
	Rear Designated Seating Positions			

RECORDED BY: G. FARRAND DATE: 07/27/10

APPROVED BY: D. MESSICK

DATA SHEET 2a (1 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

VEH. NHTSA NO.: CA5403 TEST DATE: 07/07/10

Seat Location: FRONT DRIVER

Height Measurement

SAE J826 three-dimensional manikin torso angle: 24°

Striker to H-Point (mm): 160 mm Striker to H-Point angle: Down

Position the head restraint in the highest position of vertical adjustment.
Height, Hh (mm): 841 mm X **PASS** **FAIL**

Hh > or = 800 mm for front seats.

If the head restraint is less than the required height, check for passage of the 25 mm diameter sphere. N/A

Position the head restraint in the lowest position of vertical adjustment.
Height, Hl (mm): 795 mm X **PASS** **FAIL**

Hl > or = 750 mm for front seats and rear seats with head restraints.

If the head restraint is less than the required height, check for passage of the 25 mm diameter sphere. N/A

Width Measurement

If the manikin is moved between the Height measurement and the Width measurement, re-record the torso angle, striker to H-Point distance and angle.

Position the head restraint in the highest position of vertical adjustment.

Width is measured 65 mm below the measured Height, Hh.

Height, Hw (= Hh – 65): 776 mm

Width, W (mm): 211 mm X **PASS** **FAIL**

Width must be greater than or equal to 170 mm. If a vehicle has a front center designated seating position the front outboard head restraints must be greater than or equal to 254 mm. N/A

DATA SHEET 2a (2 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

Backset Measurement (Front Head Restraints Only)

Position the HRMD and record the following measurements.

HRMD torso angle: 24°

Striker to H-Point (mm): 159 mm Striker to H-Point angle: Down

Position the head restraint at a height greater than or equal to 750 mm and less than or equal to 800 mm for front head restraints. Exception: head restraint with lowest position higher than 800 mm, adjust to lowest position.

Backset, B (mm): 47 mm X PASS FAIL

Backset must be less than or equal to 55 mm.

Gap Measurement

Position the head restraint in the lowest position of vertical adjustment.

Number of gaps within the gap measurement zone: One

Least dimension of each gap (measured with a steel tape): 25 mm

Size of each gap (as measured with the spherical head form):

Gap Size N/A X PASS FAIL

Gaps must be less than or equal to 60 mm.

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/08/10

APPROVED BY: D. MESSICK

DATA SHEET 2a(1 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

VEH. NHTSA NO.: CA5403 TEST DATE: 07/08/10

Seat Location: FRONT PASSENGER

Height Measurement

SAE J826 three-dimensional manikin torso angle: 24°

Striker to H-Point (mm): 159 mm (Ahead) Striker to H-Point angle: Down

Position the head restraint in the highest position of vertical adjustment.
Height, Hh (mm): 850 mm X **PASS** **FAIL**

Hh > or = 800 mm for front seats.

If the head restraint is less than the required height, check for passage of the 25 mm diameter sphere. N/A

Position the head restraint in the lowest position of vertical adjustment.
Height, Hl (mm): 805 mm X **PASS** **FAIL**

Hl > or = 750 mm for front seats and rear seats with head restraints.

If the head restraint is less than the required height, check for passage of the 25 mm diameter sphere. N/A

Width Measurement

If the manikin is moved between the Height measurement and the Width measurement, re-record the torso angle, striker to H-Point distance and angle.

Position the head restraint in the highest position of vertical adjustment.

Width is measured 65 mm below the measured Height, Hh.

Height, Hw (= Hh – 65): 785 mm

Width, W (mm): 215 mm X **PASS** **FAIL**

Width must be greater than or equal to 170 mm. If a vehicle has a front center designated seating position the front outboard head restraints must be greater than or equal to 254 mm. N/A

DATA SHEET 2a (2 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

Backset Measurement (Front Head Restraints Only)

Position the HRMD and record the following measurements.

HRMD torso angle: 24.4°

Striker to H-Point (mm): 159 mm Striker to H-Point angle: Down

Position the head restraint at a height greater than or equal to 750 mm and less than or equal to 800 mm for front head restraints. Exception: head restraint with lowest position higher than 800 mm, adjust to lowest position.

Backset, B (mm): 53 mm X PASS FAIL

Backset must be less than or equal to 55 mm.

Gap Measurement

Position the head restraint in the lowest position of vertical adjustment.

Number of gaps within the gap measurement zone: One

Least dimension of each gap (measured with a steel tape): 25 mm

Size of each gap (as measured with the spherical head form):

Gap Size N/A X PASS FAIL

Gaps must be less than or equal to 60 mm.

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/08/10

APPROVED BY: D. MESSICK

DATA SHEET 2a (1 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

VEH. NHTSA NO.: CA5403 TEST DATE: 07/07/10

Seat Location: REAR DRIVER

Height Measurement

SAE J826 three-dimensional manikin torso angle: 26.8°

Striker to H-Point (mm): 283 mm Striker to H-Point angle: Down

Position the head restraint in the highest position of vertical adjustment.
Height, Hh (mm): 798 mm X **PASS** **FAIL**

Hh > or = 800 mm for front seats.

If the head restraint is less than the required height, check for passage of the 25 mm diameter sphere. N/A

Position the head restraint in the lowest position of vertical adjustment.
Height, Hl (mm): 750 mm X **PASS** **FAIL**

Hl > or = 750 mm for front seats and rear seats with head restraints.

If the head restraint is less than the required height, check for passage of the 25 mm diameter sphere. N/A

Width Measurement

If the manikin is moved between the Height measurement and the Width measurement, re-record the torso angle, striker to H-Point distance and angle.

Position the head restraint in the highest position of vertical adjustment.

Width is measured 65 mm below the measured Height, Hh.

Height, Hw (= Hh – 65): 733 mm

Width, W (mm): 194 mm X **PASS** **FAIL**

Width must be greater than or equal to 170 mm. If a vehicle has a front center designated seating position the front outboard head restraints must be greater than or equal to 254 mm. N/A

DATA SHEET 2a (2 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

Backset Measurement (Front Head Restraints Only)

Position the HRMD and record the following measurements.

HRMD torso angle:_____

Striker to H-Point (mm):_____ Striker to H-Point angle:_____

Position the head restraint at a height greater than or equal to 750 mm and less than or equal to 800 mm for front head restraints. Exception: head restraint with lowest position higher than 800 mm, adjust to lowest position.

Backset, B (mm):_____ _____PASS _____FAIL

Backset must be less than or equal to 55 mm.

Gap Measurement

Position the head restraint in the lowest position of vertical adjustment.

Number of gaps within the gap measurement zone: None

Least dimension of each gap (measured with a steel tape): N/A

Size of each gap (as measured with the spherical head form):

Gap Size_____N/A_____ _____X____PASS _____FAIL

Gaps must be less than or equal to 60 mm.

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/07/10

APPROVED BY: D. MESSICK

DATA SHEET 2a(1 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

VEH. NHTSA NO.: CA5403 TEST DATE: 07/08/10

Seat Location: REAR PASSENGER

Height Measurement

SAE J826 three-dimensional manikin torso angle: 26°

Striker to H-Point (mm): 282 mm (Ahead) Striker to H-Point angle: Down

Position the head restraint in the highest position of vertical adjustment.
Height, Hh (mm): 805 mm X **PASS** **FAIL**

Hh > or = 800 mm for front seats.

If the head restraint is less than the required height, check for passage of the 25 mm diameter sphere. N/A

Position the head restraint in the lowest position of vertical adjustment.
Height, Hl (mm): 754 mm X **PASS** **FAIL**

Hl > or = 750 mm for front seats and rear seats with head restraints.

If the head restraint is less than the required height, check for passage of the 25 mm diameter sphere. N/A

Width Measurement

If the manikin is moved between the Height measurement and the Width measurement, re-record the torso angle, striker to H-Point distance and angle.

Position the head restraint in the highest position of vertical adjustment.

Width is measured 65 mm below the measured Height, Hh.

Height, Hw (= Hh – 65): 740 mm

Width, W (mm): 196 mm X **PASS** **FAIL**

Width must be greater than or equal to 170 mm. If a vehicle has a front center designated seating position the front outboard head restraints must be greater than or equal to 254 mm. N/A

DATA SHEET 2a (2 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

Backset Measurement (Front Head Restraints Only)

Position the HRMD and record the following measurements.

HRMD torso angle:_____

Striker to H-Point (mm):_____ Striker to H-Point angle:_____

Position the head restraint at a height greater than or equal to 750 mm and less than or equal to 800 mm for front head restraints. Exception: head restraint with lowest position higher than 800 mm, adjust to lowest position.

Backset, B (mm):_____ _____PASS _____FAIL

Backset must be less than or equal to 55 mm.

Gap Measurement

Position the head restraint in the lowest position of vertical adjustment.

Number of gaps within the gap measurement zone: None

Least dimension of each gap (measured with a steel tape): N/A

Size of each gap (as measured with the spherical head form):

Gap Size_____N/A_____ _____X____PASS _____FAIL

Gaps must be less than or equal to 60 mm.

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/08/10

APPROVED BY: D. MESSICK

DATA SHEET 3
OWNER'S MANUAL

VEH. NHTSA NO.: CA5403 TEST DATE: 07/08/10

Emphasize that all occupants should place their head restraint in a proper position prior to operating the vehicle in order to prevent the risk of serious injury.

PASS X FAIL

Description of the head restraint system and identification of which seats are equipped.

PASS X FAIL

If the head restraint is removable, instructions on how to properly remove and reinstall using a deliberate action distinct from any act necessary for adjustment.

PASS FAIL N/A X

Warning that all head restraints must be reinstalled properly to protect occupants.

PASS X FAIL

Describe the adjustment of the head restraints and/or seat back to achieve proper head restraint position relative the head. The description must include the following:

1) a presentation and explanation of the main components of the vehicle's head restraints

2) the basic requirements for proper head restraint operation, including an explanation of the actions that may affect the proper functioning of the head restraints.

3) the basic requirements for proper positioning of a head restraint in relation to an occupant's head position, including information regarding the proper positioning of the center of gravity of an occupant's head in relation to the head restraint.

PASS X FAIL

Include copies of relevant pages from the owner's manual in the final report.

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/08/10

APPROVED BY: D. MESSICK

DATA SHEET 4
REMOVABILITY

VEH. NHTSA NO.: CA5403 TEST DATE: 07/08/10

Are the head restraints removable? **YES** X **NO**

If removable, does removal REQUIRE an action distinct from actions to adjust the head restraint?
YES (PASS) **NO (FAIL)**

Description of action(s) for head restraint adjustment:

To raise head restraint, pull up on head restraint to desired position.

To lower head restraint, push in on the stop-catch release button and push down on the head restraint.

Description of distinct action for removal:

Head Restraints are not consumer removable.

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/08/10

APPROVED BY: D. MESSICK

DATA SHEET 5
ENERGY ABSORPTION TEST

VEH. NHTSA NO.: CA5403 TEST DATE: 07/27/10

Seat Location: REAR DRIVER Type of head restraint: ADJUSTABLE

Test Number: 6789

635 mm Height Measurement for lower boundary of the impact zone

SAE J826 three-dimensional manikin torso angle: 26°

Striker to H-Point (mm): 283 mm Striker to H-Point angle: Down

Accelerometer identification: FZ03 Accelerometer type/brand: ENDEVCO

Last calibration date: 07/10

Head form vertical angle (-2° - +2°): 0.0

Distance between head form and target location (> or = 25 mm): 50 mm

Impact velocity (23.6 kph ± 0.5 kph): 23.9 KpH

Impact location: Centerline of head restraint, 695 mm above “H” point.

Maximum deceleration (< or = 785 m/s² (80 g)): 37.8 **PASS** X **FAIL**

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/27/10

APPROVED BY: D. MESSICK

DATA SHEET 6
HEIGHT RETENTION TEST
(ADJUSTABLE HEAD RESTRAINTS ONLY)

VEH. NHTSA NO.: CA5403 TEST DATE: 07/26/10

Seat Location: DRIVER Test Number: 6783, 6784

Pre-test measurements

SAE J826 Manikin torso angle: 24° Top of Head Restraint Height (mm): 841 mm

Striker to H-Point (mm): 160 mm Striker to H-Point angle: Down

Description of height retention lock: Push button release on left side head restraint post.

Test measurements

Initial load (50 N ± 1 N): 50 N Initial Displacement, D1 (mm): 9.3 mm

Initial Displacement (D1) < 25 mm 9.3mm **PASS** X **FAIL**

Maximum load (495 N ± 5 N): 495N Maximum Displacement, D2 (mm): 30.4 mm

Return load (50 N ± 1 N): 50 N Return Displacement, D3 (mm): 12.9 mm

Total displacement (D3-D1) < 13 mm: 3.6 mm **PASS** X **FAIL**

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/26/10

APPROVED BY: D. MESSICK

DATA SHEET 7
BACKSET RETENTION TEST

VEH. NHTSA NO.: CA5403 TEST DATE: 07/26/10

Seat Location: PASSENGER Type of head restraint: ADJUSTABLE

Test Number: 6776, 6777, 6778, 6779

Pre-test measurements

SAE J826 Manikin torso angle: 24° Top of Head Restraint Height (mm): 805 mm

Striker to H-Point (mm): 159 mm Striker to H-Point angle: Down

Displacement torso reference line

Test device back pan angle: 24°

Distance from the H-point to the initial location of the load (0.290 ± 0.013 m): .29 m

Initial load (N): 1286 N Initial moment (373 ± 7.5 Nm): 373 Nm

Backset retention and strength

Distance from the H-point to the head form tangency point (m): .74 m

Initial load (N): 50 N Initial moment (37 ± 0.7 Nm): 37 Nm

Initial head form displacement, D1 (< or = 25 mm): 8.5 mm **PASS** X **FAIL**

Load range to generate a 373 ± 7.5 Nm rearward moment (N): 504 N

Actual load applied (N): 504N Resultant moment (Nm): 373 Nm

Maximum Head form displacement, D2 (< or = 102 mm): 55.0 mm **PASS** X **FAIL**

Final head form displacement, D3 (mm): 19.4 mm
measured at (37 ± 0.7 Nm)

Total displacement (D3-D1) < 13 mm : 10.9 mm **PASS** X **FAIL**

Maximum applied load (> or equal to 885 N): 885 N **PASS** X **FAIL**

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/27/10
APPROVED BY: D. MESSICK

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 – INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
HRMD	RONA KINETICS & ASSOCIATES LTD.	HRMD 0-62	N/A	N/A
J826 MANIKIN	ALDERSON RESEARCH LABS	3 DM/92	N/A	N/A
INCLINOMETER	MITUTOYO	PRO 360	BEFORE USE	BEFORE USE
STEEL TAPE	STANLEY	33-890	04/10	04/11
TORPEDO LEVEL	SANDS	500	BEFORE USE	BEFORE USE
FORCE GAUGE	CHATILLON	DPPN-50 870	BEFORE USE	BEFORE USE
LEVEL, LASER	BLACK & DECKER	360	BEFORE USE	BEFORE USE
LEVEL, LASER	SEAN & STEPHEN CORP	90º, 45º	BEFORE USE	BEFORE USE
LEVEL, LASER	GAERTNER	2789-A	BEFORE USE	BEFORE USE
ACCELEROMETER	ENDEVCO	FZ03	07/10	07/11
LOAD CELL	SENSOTEC	257818	07/10	07/11
LOAD CELL	INTERFACE	27246	02/10	02/11
LOAD CELL	INTERFACE	38068	02/10	02/11
STRING POT	WALDALE	102	BEFORE USE	BEFORE USE
STRING POT	CELESCO	69	BEFORE USE	BEFORE USE

SECTION 5
PHOTOGRAPHS

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.1
LEFT SIDE VIEW OF VEHICLE

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

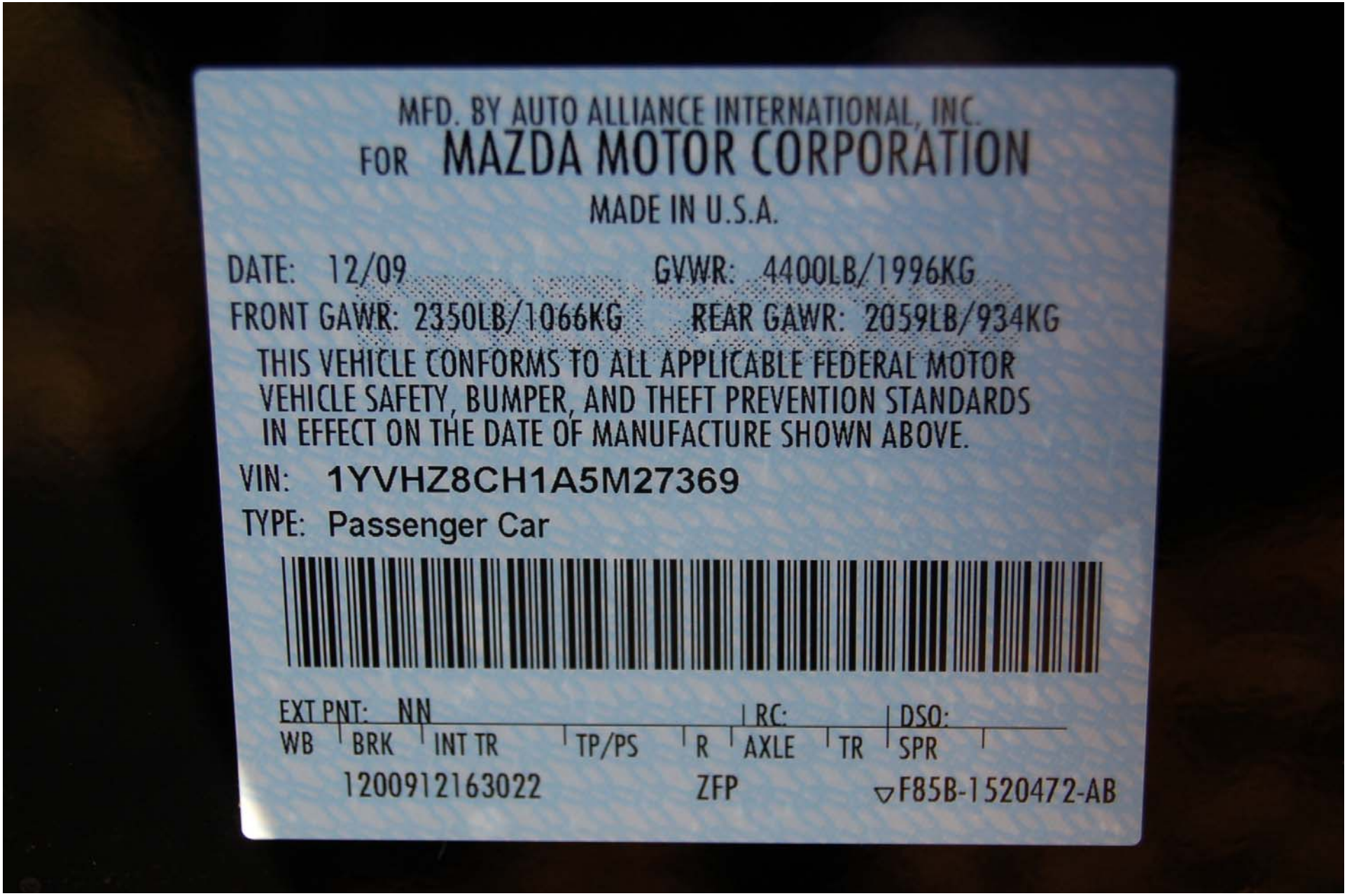
FIGURE 5.2
RIGHT SIDE VIEW OF VEHICLE

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.3
¾ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.4
¾ REAR VIEW FROM RIGHT SIDE OF VEHICLE



2010 MAZDA 6
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FMVSS NO. 202a

FIGURE 5.5
VEHICLE CERTIFICATION LABEL

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.6
VEHICLE TIRE INFORMATION LABEL

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.7
PRE-TEST VIEW OF DRIVER SEAT HEAD RESTRAINT IN HIGHEST POSITION

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.8
PRE-TEST VIEW OF DRIVER SEAT HEAD RESTRAINT IN LOWEST POSITION

2010 MAZDA 6
NHTSA NO. CA5403
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FIGURE 5.9
PRE-TEST VIEW OF PASSENGER SEAT HEAD RESTRAINT IN HIGHEST POSITION

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.10
PRE-TEST VIEW OF PASSENGER SEAT HEAD RESTRAINT IN LOWEST POSITION

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.11
HEAD RESTRAINT ADJUSTMENT BUTTON

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.12
PRE-TEST REAR DRIVER HEAD RESTRAINT IN HIGHEST POSITION

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.13
PRE-TEST REAR DRIVER HEAD RESTRAINT IN LOWEST POSITION

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

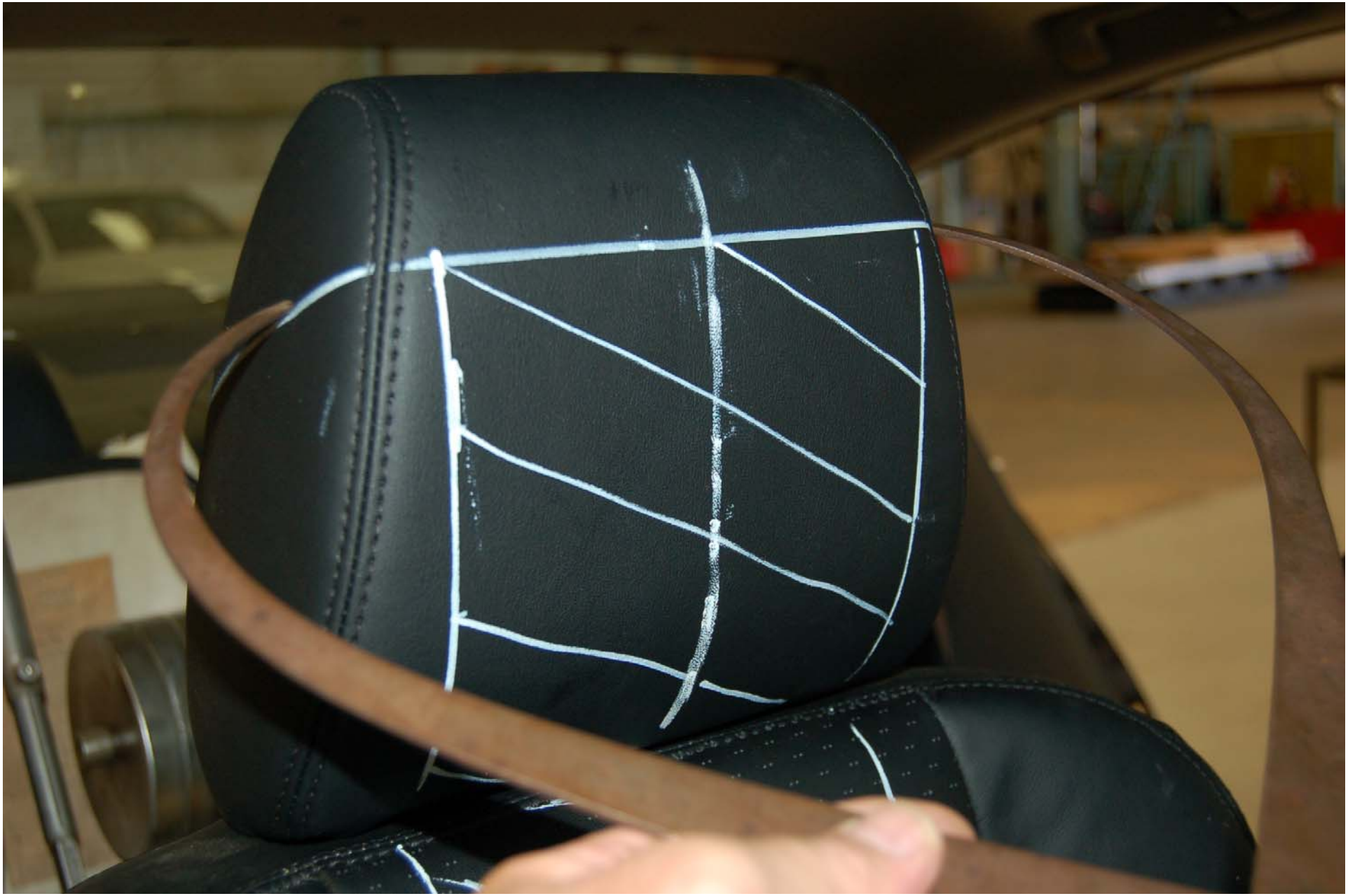
FIGURE 5.14
PRE-TEST REAR PASSENGER HEAD RESTRAINT IN HIGHEST POSITION

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.15
PRE-TEST REAR PASSENGER HEAD RESTRAINT IN LOWEST POSITION

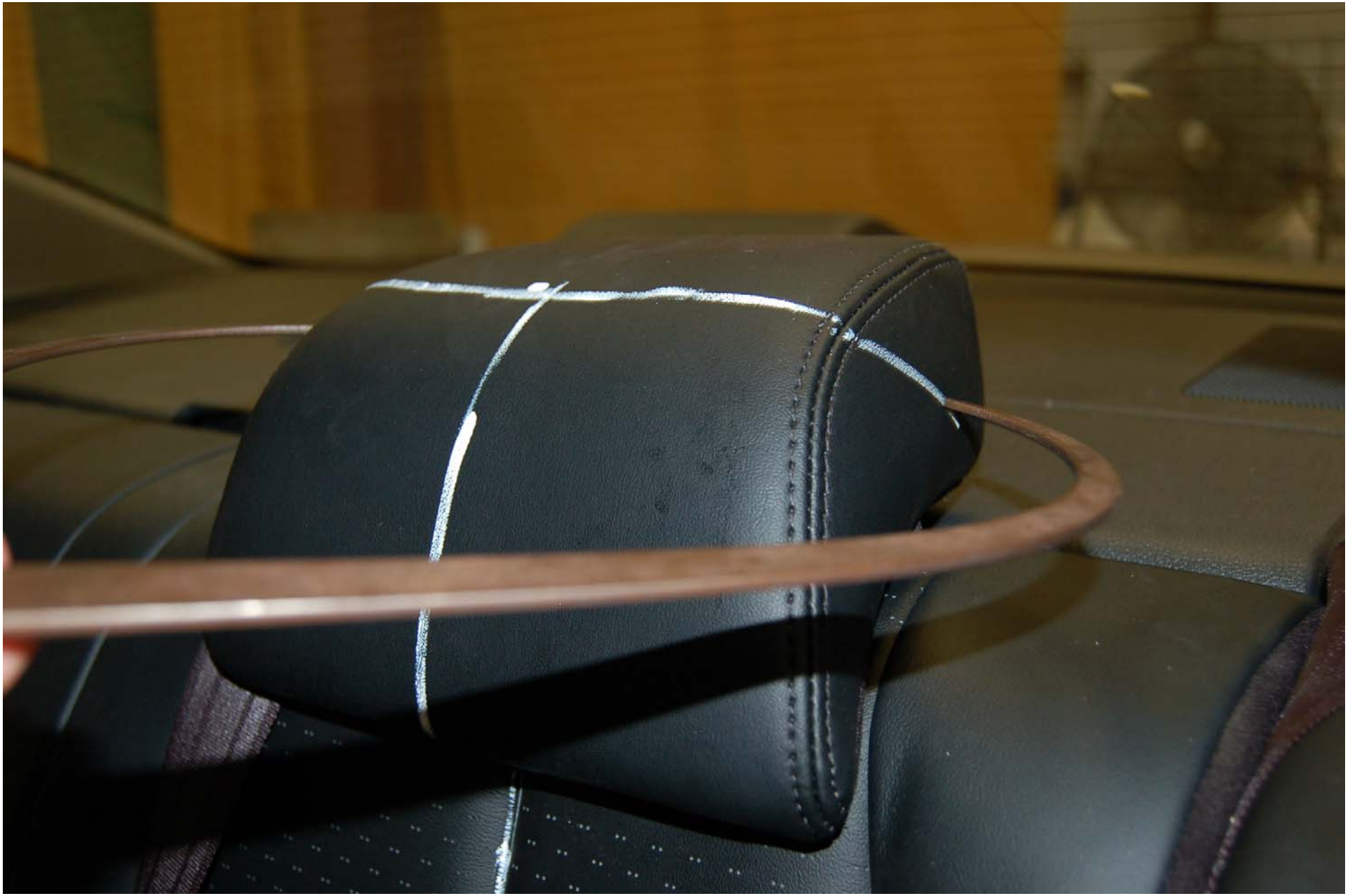
2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.16
WIDTH MEASUREMENT ON FRONT DRIVER SEAT HEAD RESTRAINT



2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.17
WIDTH MEASUREMENT ON FRONT PASSENGER SEAT HEAD RESTRAINT



2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.18
WIDTH MEASUREMENT OF REAR DRIVER SEAT HEAD RESTRAINT

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.19
WIDTH MEASUREMENT OF REAR PASSENGER SEAT HEAD RESTRAINT

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.20
SAE J826 MANIKIN IN FRONT DRIVER SEAT

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.21
HRMD IN FRONT DRIVER SEAT

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.22
MEASUREMENT OF FRONT DRIVER SEAT BACKSET

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.23
SAE J826 MANIKIN IN FRONT PASSENGER SEAT

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.24
HRMD IN FRONT PASSENGER SEAT

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.25
MEASUREMENT OF FRONT PASSENGER SEAT BACKSET

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.26
SAE J826 MANIKIN IN REAR DRIVER SEAT

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.27
SAE J826 MANIKIN IN REAR PASSENGER SEAT

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.28
PRE-TEST SET-UP FOR HEIGHT RETENTION

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.29
HEAD RESTRAINT AT INITIAL 50 N LOAD

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.30
HEAD RESTRAINT AT FULL LOAD

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.31
HEAD RESTRAINT AT POST 50 N LOAD

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.32
HEAD RESTRAINT POST TEST HEIGHT RETENTION

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.33
PRE-TEST SET-UP FOR BACKSET RETENTION

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.34
BACK PAN LOADED TO 373 Nm

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NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.35
HEAD FORM AT INITIAL 37 Nm LOAD

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.36
HEAD FORM AT 373 Nm LOAD

2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.37
HEAD FORM AT POST 37 Nm LOAD

2010 MAZDA 6
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FMVSS NO. 202a

FIGURE 5.38
HEAD FORM AT 895 N LOAD

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FIGURE 5.39
HEAD RESTRAINT POST TEST

2010 MAZDA 6
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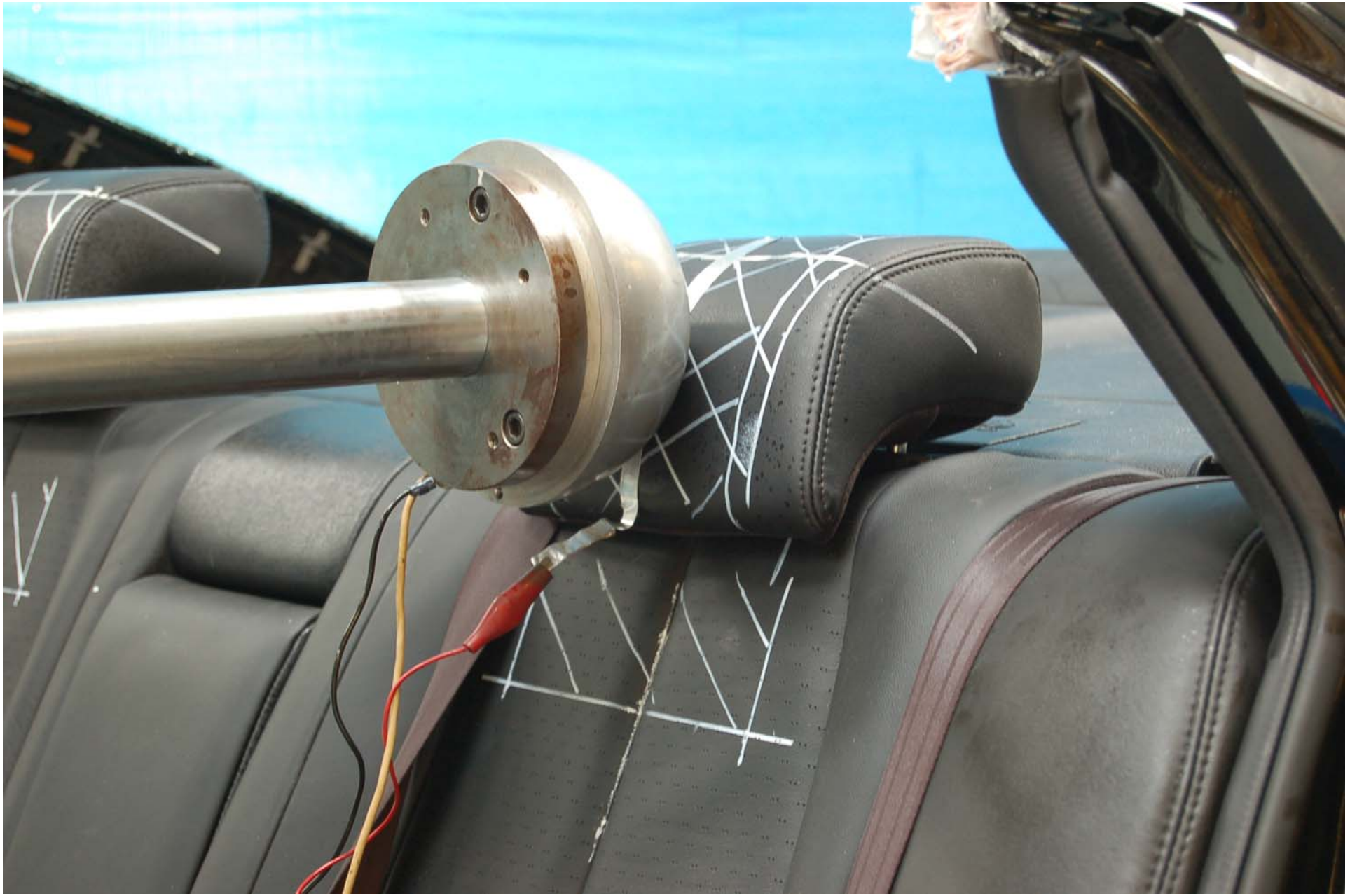
FMVSS NO. 202a

FIGURE 5.40
PRE-TEST SET-UP FOR ENERGY ABSORPTION



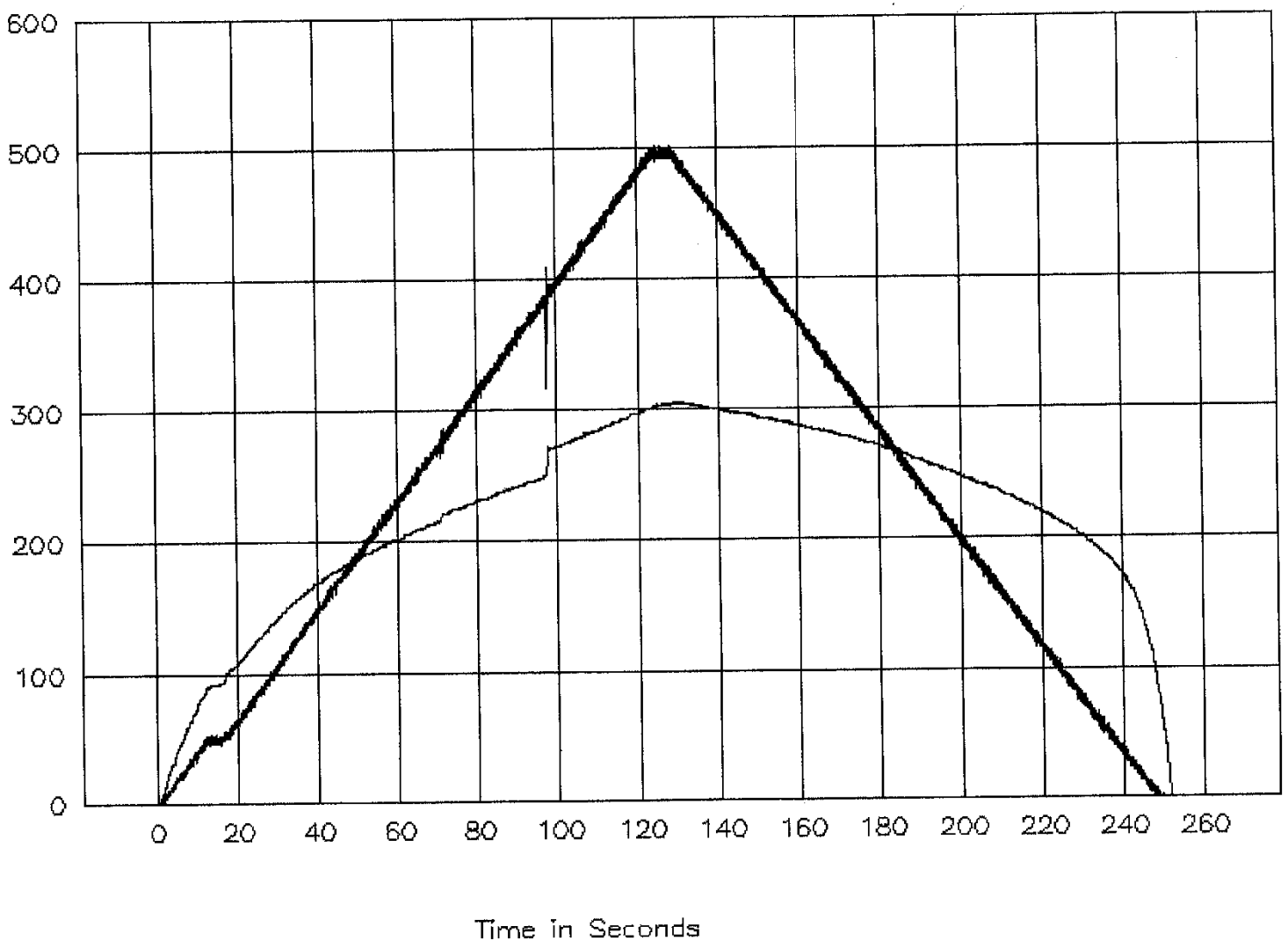
2010 MAZDA 6
NHTSA NO. CA5403
FMVSS NO. 202a

FIGURE 5.41
POST TEST HEAD RESTRAINT FOR ENERGY ABSORPTION

SECTION 6
TEST PLOTS

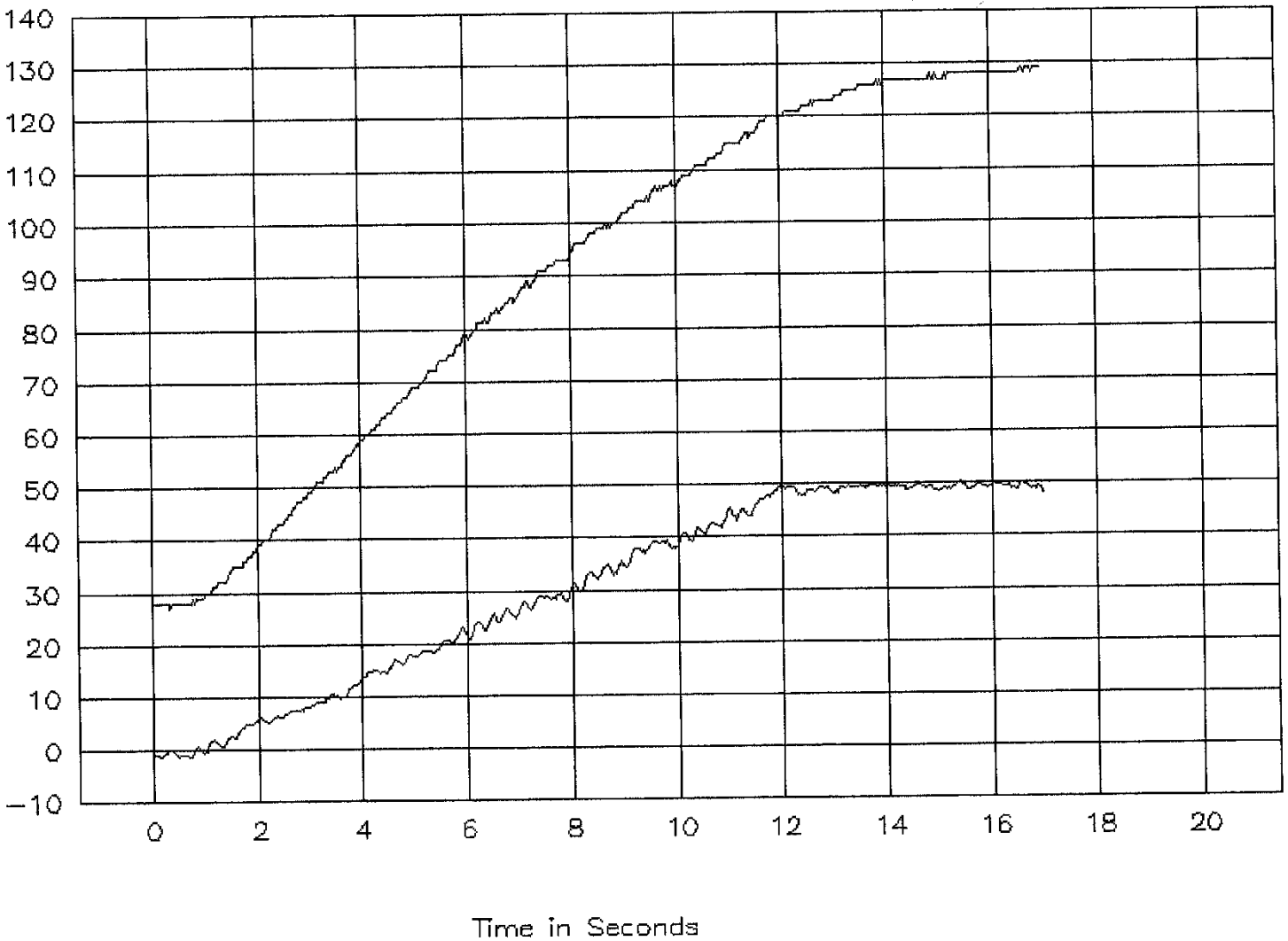
GTL 6783

202, Head Restraint Retention, Vertical



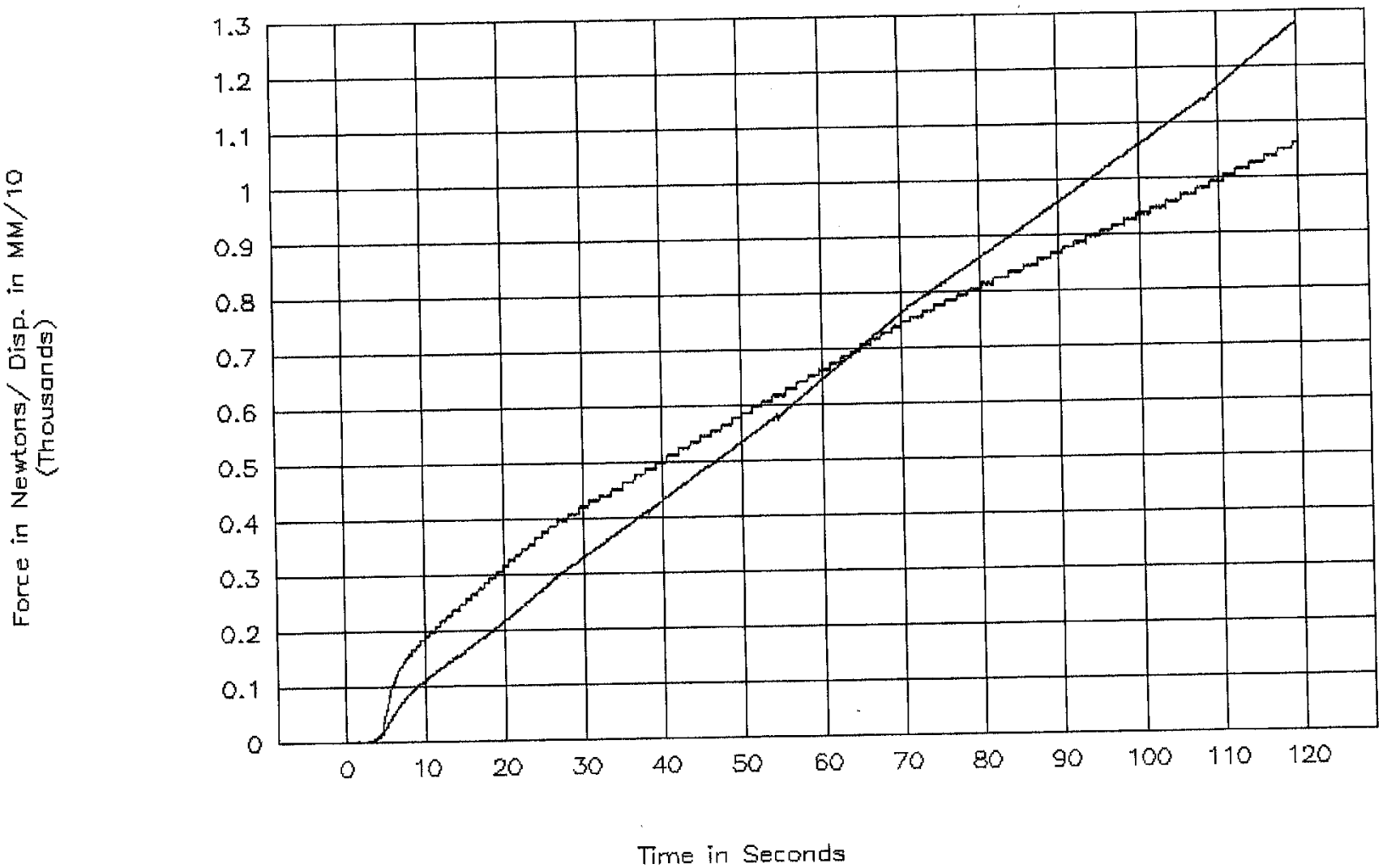
GTL 6784

202, Head Restraint Retention, Vertical



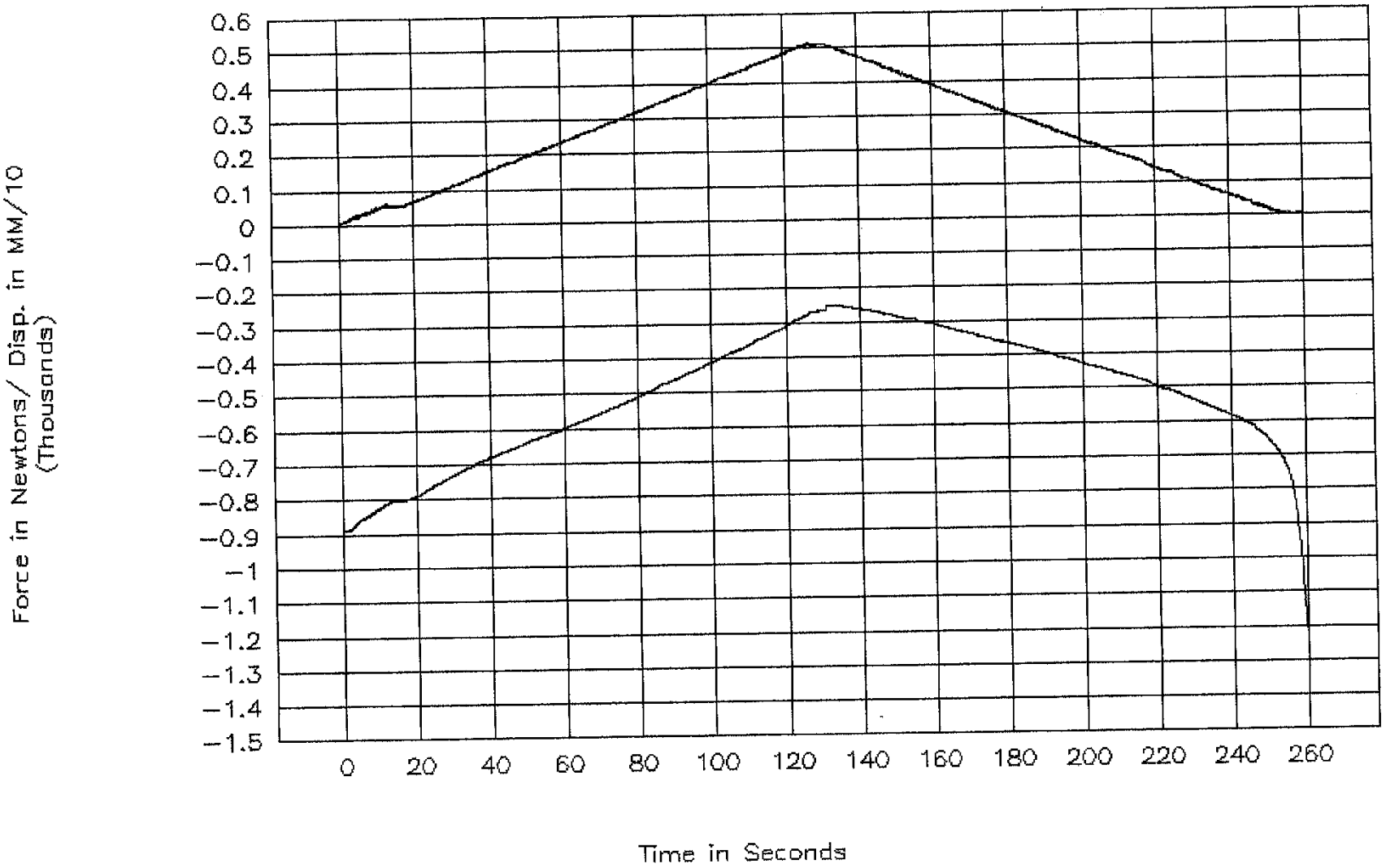
GTL 6785

202, Head Restraint Retention, Back Pan



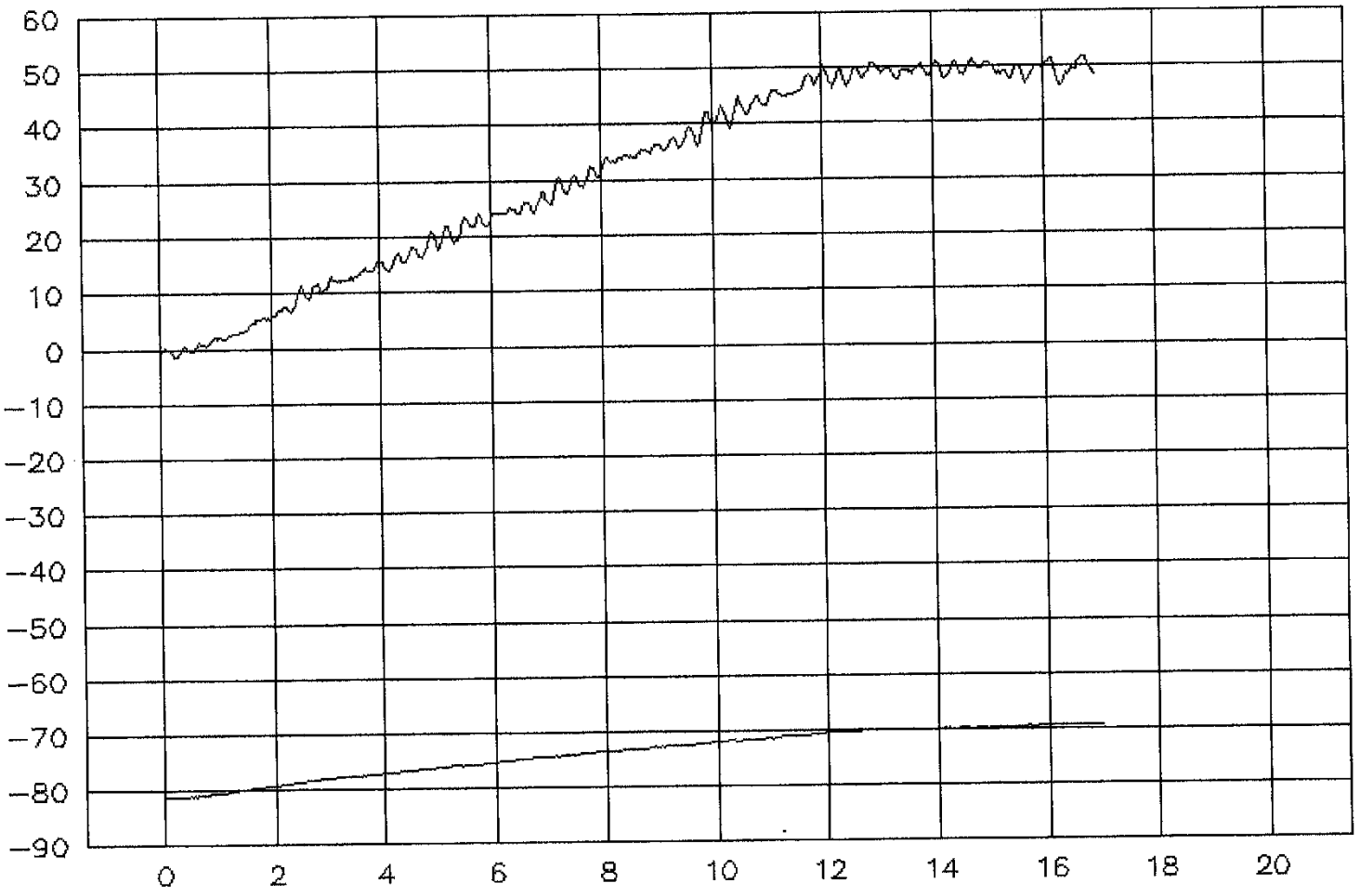
GTL 6786

202, Head Restraint Retention, Headform



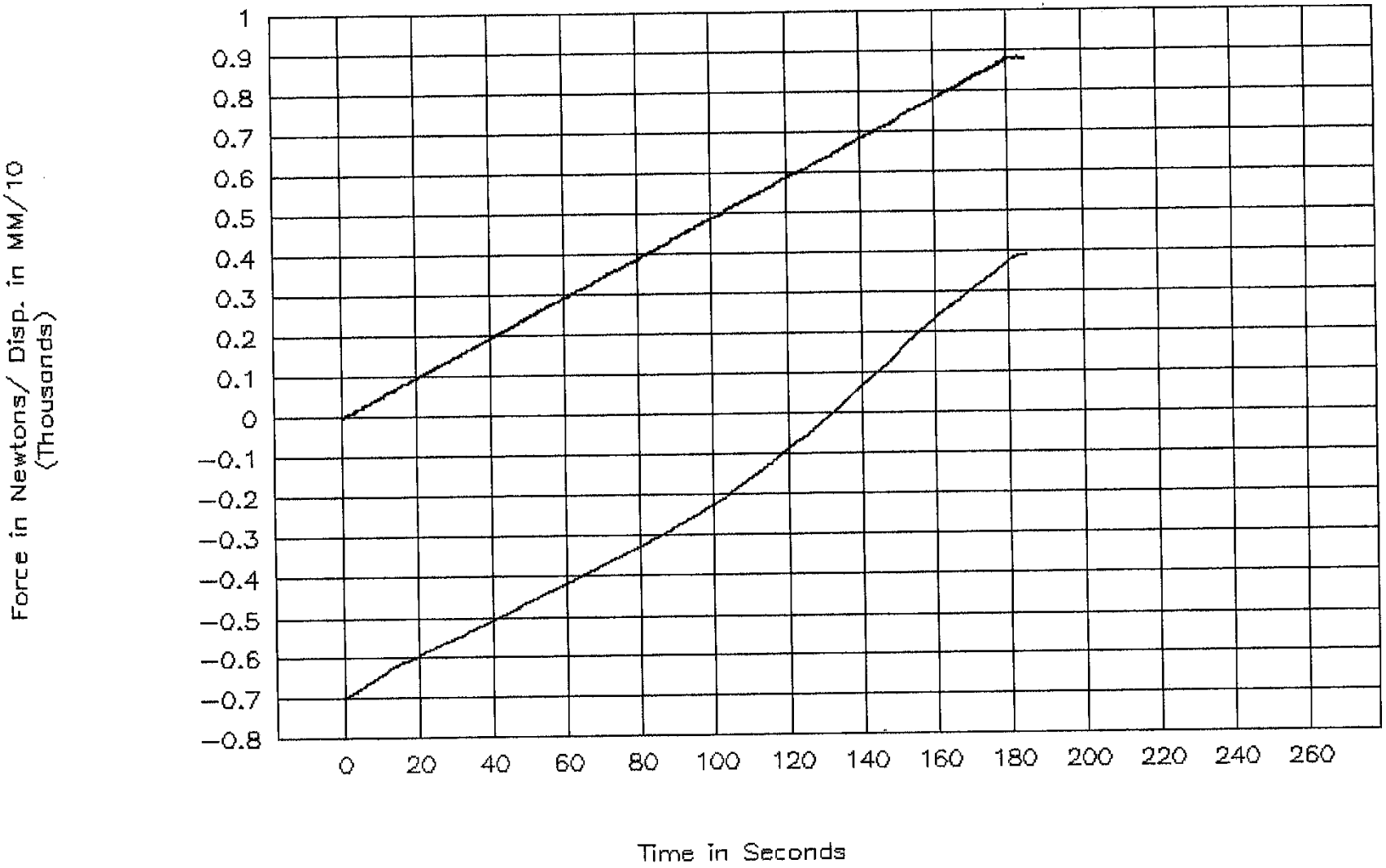
GTL 6787

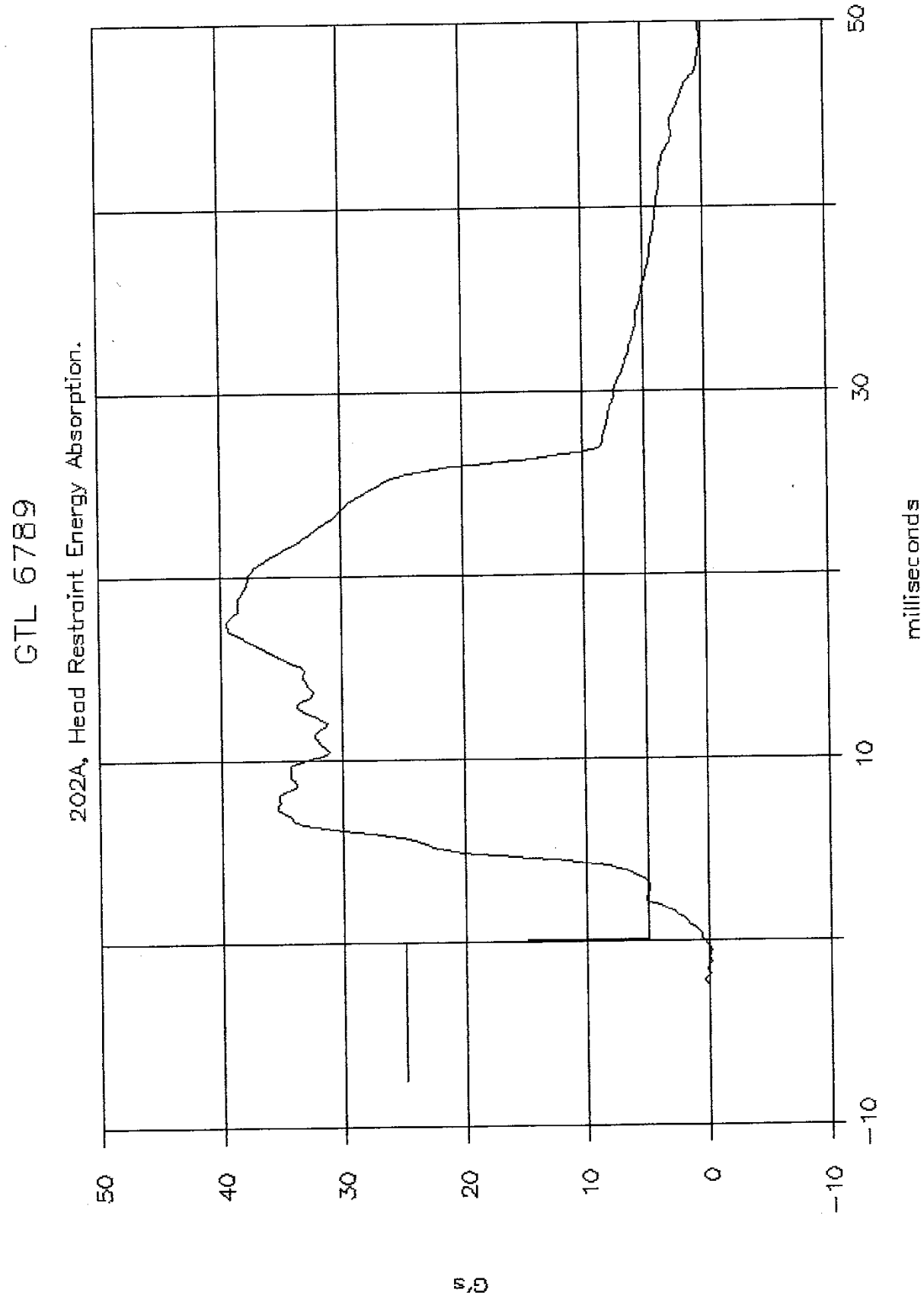
202, Head Restraint Retention, Headform



GTL 6788

202, Head Restraint Retention, Headform




GTL 6789
202A, Head Restraint Energy Absorption.
G's
50
40
30
20
10
0
-10
-10
10
30
50
milliseconds

SECTION 7
OWNER'S MANUAL INFORMATION

Head Restraints

Head restraints are intended to help protect you and the passengers from neck injury.

⚠ WARNING

Always drive with the head restraints installed when seats are being used and make sure they are properly adjusted:

Driving with the head restraints adjusted too low or removed is dangerous. With no support behind your head, your neck could be seriously injured in a collision.

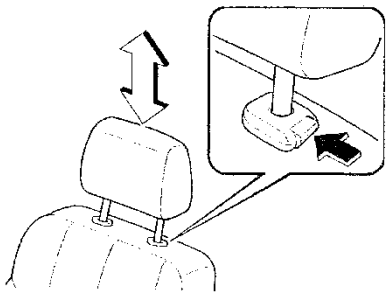
Height adjustment

To raise a head restraint, pull it up to the desired position.

To lower the head restraint, press the stop-catch release, then push the head restraint down.

Adjust the head restraint so that the top is even with the top of the passenger's ears, never the passenger's neck to prevent injury.

Front seat



Rear seat