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

Audi AG
2010 Audi A5 Coupe, Passenger Car
NHTSA No. CA5800

General Testing Laboratories, Inc.
1623 Leedstown Road
Colonial Beach, Virginia 22443

August 5, 2010

Final Report

Prepared For

U.S. Department of Transportation
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
1200 New Jersey Ave., SE
Washington, D.C. 20590
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### Abstract
Compliance tests were conducted on the subject, 2010 Audi A5 Coupe 2-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 Audi A5 Coupe 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 Audi A5 Coupe Passenger Car. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: WAU3FAFR4AA027203

B. NHTSA No.: CA5800

C. Manufacturer: AUDI AG

D. Manufacture Date: 10/09

E. Color: Black

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 202a testing during the time period June 29 through July 21, 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 Audi A5 Coupe 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 Audi A5 Coupe Passenger Car.
DATA SHEET 1 (1 of 2)
SUMMARY OF RESULTS

VEH. MOD YR/MAKE/MODEL/BODY STYLE: 2010 AUDI A5 COUPE PASSENGER CAR

VEH. NHTSA NO.: CA5800; VIN: WAU3FAFR4AA027203

VEH. BUILD DATE: 10/09; TEST DATE:

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

<table>
<thead>
<tr>
<th></th>
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<th>FAIL</th>
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<tr>
<td>Rear Designated Seating Positions</td>
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C. OWNER’S MANUAL

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D. REMOVABILITY

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E. NON-USE POSITION

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### SUMMARY OF RESULTS

#### F. ENERGY ABSORPTION TEST

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#### G. HEIGHT RETENTION TEST

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<th>Fail</th>
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<tbody>
<tr>
<td>Driver's Side</td>
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<td>___</td>
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<tr>
<td>Passenger's Side</td>
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**RECORDED BY:** G. FARRAND  
**DATE:** 07/21/10  
**APPROVED BY:** D. MESSICK
DATA SHEET 2a (1 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

VEH. NHTSA NO.: CA5800 TEST DATE: 06/29/10

Seat Location: FRONT DRIVER

Height Measurement

SAE J826 three-dimensional manikin torso angle: 25°

Striker to H-Point (mm): 337 mm Striker to H-Point angle: Down

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

Height, Hh (mm): 845 mm X PASS

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): 800 mm X PASS

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): 735 mm

Width, W (mm): 214 mm X PASS

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
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

Backset Measurement (Front Head Restraints Only)

Position the HRMD and record the following measurements.

HRMD torso angle: ______ 25°_________

Striker to H-Point (mm): ___ 337 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): _______ 43 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: 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: _____ 06/29/10 _________

APPROVED BY:  D. MESSICK ___________
Seat Location: FRONT PASSENGER

Height Measurement

SAE J826 three-dimensional manikin torso angle: 25°

Striker to H-Point (mm): 331 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): 808 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): 743 mm

Width, W (mm): 214 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: 25°

Striker to H-Point (mm): 331 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): 43 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: 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: 06/29/10

APPROVED BY: D. MESSICK
DATA SHEET 2a (1 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

VEH. NHTSA NO.: CA5800 TEST DATE: 06/29/10

Seat Location: REAR DRIVER

Height Measurement

SAE J826 three-dimensional manikin torso angle: 26°

Striker to H-Point (mm): 433 mm Striker to H-Point angle: Down

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

Height, Hh (mm): 800 mm

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

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, W (mm): 225 mm

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
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: 06/29/10

APPROVED BY: D. MESSICK
DATA SHEET 2a(1 of 2)
DIMENSIONAL REQUIREMENTS FOR ADJUSTABLE HEAD RESTRAINTS

VEH. NHTSA NO.: CA5800 TEST DATE: 06/29/10

Seat Location: REAR PASSENGER

Height Measurement

SAE J826 three-dimensional manikin torso angle: 26°

Striker to H-Point (mm): 435 (Ahead) Striker to H-Point angle: Down

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

Height, Hh (mm): 805 mm

Pass 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

Pass 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.

Height, Hw (= Hh – 65): 740 mm

Pass X Pass FAIL

Width, W (mm): 225 mm

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
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: 06/29/10

APPROVED BY: D. MESSICK
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: 06/29/10

APPROVED BY: D. MESSICK
DATA SHEET 4
REMOVABILITY

VEH. NHTSA NO.: CA5800 TEST DATE: 06/29/10

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:

Front head restraints are adjusted electrically by pushing the adjustment button up or down.

Rear head restraints are adjusted by pushing in the release button and pulling up or pushing down on the head restraint.

Description of distinct action for removal:

REMARKS:

RECORDED BY: G. FARRAND DATE: 06/29/10

APPROVED BY: D. MESSICK
VEH. NHTSA NO.: CA5800  TEST DATE: 07/21/10

Seat Location: REAR DRIVER  Type of head restraint: ADJUSTABLE

Test Number: 6775

635 mm Height Measurement for lower boundary of the impact zone

SAE J826 three-dimensional manikin torso angle: 26°

Striker to H-Point (mm): 433 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): 23.42 KpH

Impact location: Centerline of head restraint, 760 mm up from “H” point.

Maximum deceleration (< or = 785 m/s² (80 g)): 40.7  PASS  X  FAIL

REMARKS:

RECORDED BY: G. FARRAND  DATE: 07/21/10

APPROVED BY: D. MESSICK
DATA SHEET 6
HEIGHT RETENTION TEST
(ADJUSTABLE HEAD RESTRAINTS ONLY)

VEH. NHTSA NO.: CA5800 TEST DATE: 07/19/10

Seat Location: DRIVER Test Number: 6769, 6770

Pre-test measurements

SAE J826 Manikin torso angle: 25° Top of Head Restraint Height (mm): 845 mm
Striker to H-Point (mm): 337 mm Striker to H-Point angle: Down

Description of height retention lock: Electrically operated motor which raises and lowers the head restraint. Whenever head restraint is not moving it is locked in position.

Test measurements

Initial load (50 N ± 1 N): 51 N Initial Displacement, D1 (mm): 6.9 mm
Initial Displacement (D1) < 25 mm 6.9 mm PASS X FAIL
Maximum load (495 N ± 5 N): 498 N Maximum Displacement, D2 (mm): 23.2 mm
Return load (50 N ± 1 N): 50 N Return Displacement, D3 (mm): 7.7 mm
Total displacement (D3-D1) < 13 mm: 0.8 mm PASS X FAIL

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/19/10
APPROVED BY: D. MESSICK
DATA SHEET 7
BACKSET RETENTION TEST

VEH. NHTSA NO.: CA5800 TEST DATE: 07/20/10

Seat Location: PASSENGER Type of head restraint: ELECTRIC ADJUSTABLE

Test Number: 6772, 6773, 6774

Pre-test measurements

SAE J826 Manikin torso angle: 25° Top of Head Restraint Height (mm): 808 mm
Striker to H-Point (mm): 331 mm Striker to H-Point angle: Down

Displacement torso reference line

Test device back pan angle: 25°

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

Initial head form displacement, D1 (< or = 25 mm): 15.1 mm PASS X FAIL
Load range to generate a 373 ± 7.5 Nm rearward moment (N): 502 N
Actual load applied (N): 503 N Resultant moment (Nm): 373.7 Nm

Maximum Head form displacement, D2 (< or = 102 mm): 65.7 mm PASS X FAIL
Final head form displacement, D3 (mm): 25.2 mm measured at (37 ± 0.7 Nm)
Total displacement (D3-D1) < 13 mm : 10.1 mm PASS X FAIL
Maximum applied load (> or equal to 885 N): 887 N PASS X FAIL

REMARKS:

RECORDED BY: G. FARRAND DATE: 07/20/10
APPROVED BY: D. MESSICK
### TABLE 1 – INSTRUMENTATION & EQUIPMENT LIST

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>DESCRIPTION</th>
<th>MODEL/ SERIAL NO.</th>
<th>CAL. DATE</th>
<th>NEXT CAL. DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRMD</td>
<td>RONA KINETICS &amp; ASSOCIATES LTD.</td>
<td>HRMD 0-62</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>J826 MANIKIN</td>
<td>ALDERTON RESEARCH LABS</td>
<td>3 DM/92</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>INCLINOMETER</td>
<td>MITUTOYO</td>
<td>PRO 360</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>STEEL TAPE</td>
<td>STANLEY</td>
<td>33-890</td>
<td>04/10</td>
<td>04/11</td>
</tr>
<tr>
<td>TORPEDO LEVEL</td>
<td>SANDS</td>
<td>500</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>FORCE GAUGE</td>
<td>CHATILLON</td>
<td>DPPN-50 870</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>LEVEL, LASER</td>
<td>BLACK &amp; DECKER</td>
<td>360</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>LEVEL, LASER</td>
<td>SEAN &amp; STEPHEN CORP</td>
<td>90°, 45°</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>LEVEL, LASER</td>
<td>GAERTNER</td>
<td>2789-A</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>ACCELEROMETER</td>
<td>ENDEVCO</td>
<td>FZ03</td>
<td>07/10</td>
<td>07/11</td>
</tr>
<tr>
<td>LOAD CELL</td>
<td>SENSOTEC</td>
<td>257818</td>
<td>07/10</td>
<td>07/11</td>
</tr>
<tr>
<td>LOAD CELL</td>
<td>INTERFACE</td>
<td>27246</td>
<td>02/10</td>
<td>02/11</td>
</tr>
<tr>
<td>LOAD CELL</td>
<td>INTERFACE</td>
<td>38068</td>
<td>02/10</td>
<td>02/11</td>
</tr>
<tr>
<td>STRING POT</td>
<td>WALDALE</td>
<td>102</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>STRING POT</td>
<td>CELESCHO</td>
<td>69</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
</tbody>
</table>
SECTION 5
PHOTOGRAPHS
2010 AUDI A5
NHTSA NO. CA5800
FMVSS NO. 202a

FIGURE 5.1
LEFT SIDE VIEW OF VEHICLE
2010 AUDI A5
NHTSA NO. CA5800
FMVSS NO. 202a

FIGURE 5.3
¼ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE
FIGURE 5.4
¾ REAR VIEW FROM RIGHT SIDE OF VEHICLE
## FIGURE 5.6
**VEHICLE TIRE INFORMATION LABEL**

The combined weight of occupants and cargo should never exceed 400 kg or 882 lbs. The seating capacity is 4 people, with 2 in the front and 2 in the rear.

<table>
<thead>
<tr>
<th>TIRE LOCATION</th>
<th>SIZE DIMENSIONS</th>
<th>COLD TIRE PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRONT AVANT</td>
<td>255/35 R19 96 Y</td>
<td>230 KPA, 33 PSI</td>
</tr>
<tr>
<td>REAR ARRIERE</td>
<td>255/35 R19 96 Y</td>
<td>230 KPA, 33 PSI</td>
</tr>
<tr>
<td>SPARE DE SECOURS</td>
<td>T125/70 R 19</td>
<td>420 KPA, 61 PSI</td>
</tr>
</tbody>
</table>

See owner’s manual for additional information.
FIGURE 5.7
PRE-TEST VIEW OF DRIVER SEAT HEAD RESTRAINT IN LOWEST POSITION

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NHTSA NO. CA5800
FMVSS NO. 202a
FIGURE 5.8
PRE-TEST VIEW OF DRIVER SEAT HEAD RESTRAINT IN HIGHEST POSITION
FIGURE 5.9
PRE-TEST VIEW OF FRONT PASSENGER SEAT HEAD RESTRAINT IN LOWEST POSITION
FIGURE 5.10
PRE-TEST VIEW OF FRONT PASSENGER SEAT HEAD RESTRAINT IN HIGHEST POSITION
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NHTSA NO. CA5800
FMVSS NO. 202a

FIGURE 5.11
FRONT HEAD RERAINT ADJUSTMENT SWITCH FOR UP
FIGURE 5.12
FRONT HEAD RESTRAINT ADJUSTMENT SWITCH FOR DOWN
FIGURE 5.13
PRE-TEST REAR DRIVER HEAD RESTRAINT IN LOWEST POSITION
FIGURE 5.14
PRE-TEST REAR DRIVER HEAD RESTRAINT IN HIGHEST POSITION
FIGURE 5.18
WIDTH MEASUREMENT ON FRONT DRIVER SEAT HEAD RESTRAINT
FIGURE 5.19
WIDTH MEASUREMENT OF FRONT PASSENGER SEAT HEAD RESTRAINT
FIGURE 5.20
WIDTH MEASUREMENT OF REAR DRIVER SEAT HEAD RESTRAINT
2010 AUDI A5
NHTSA NO. CA5800
FMVSS NO. 202a

FIGURE 5.21
WIDTH MEASUREMENT OF REAR PASSENGER HEAD RESTRAINT
FIGURE 5.22
SAE J826 MANIKIN IN FRONT DRIVER SEAT
FIGURE 5.24
MEASUREMENT OF FRONT DRIVER SEAT BACKSET
FIGURE 5.25
SAE J826 MANIKIN IN FRONT PASSENGER SEAT

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FMVSS NO. 202a
2010 AUDI A5
NHTSA NO. CA5800
FMVSS NO. 202a

FIGURE 5.26
HRMD IN FRONT PASSENGER SEAT
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FIGURE 5.27
MEASUREMENT OF FRONT PASSENGER SEAT BACKSET
2010 AUDI A5
NHTSA NO. CA5800
FMVSS NO. 202a

FIGURE 5.28
SAE J826 MANIKIN IN REAR DRIVER SEAT
2010 AUDI A5
NHTSA NO. CA5800
FMVSS NO. 202a

FIGURE 5.29
PRE-TEST SET-UP FOR HEIGHT RETENTION
FIGURE 5.30
HEAD RESTRAINT AT INITIAL 50 N LOAD

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FMVSS NO. 202a
FIGURE 5.32
HEAD RESTRAINT AT POST 50 N LOAD
FIGURE 5.33
PRE-TEST SET-UP FOR BACKSET RETENTION
2010 AUDI A5
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FIGURE 5.34
BACK PAN AT FULL LOAD
FIGURE 5.36
HEAD FORM AT 373 Nm LOAD
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FMVSS NO. 202a

FIGURE 5.38
HEAD FORM AT 895 N LOAD
FIGURE 5.39
HEAD FORM POST TEST

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FIGURE 5.40
PRE-TEST SET-UP FOR ENERGY ABSORPTION
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FMVSS NO. 202a

FIGURE 5.41
POST TEST HEAD RESTRAINT FOR ENERGY ABSORPTION
SECTION 6
TEST PLOTS
GTL 6769
202, Head Restraint Retention, Vertical

Time in Seconds

Force in Newtons/Disp. in MM/10

0  20  40  60  80  100  120  140  160  180  200  220  240  260

0  100  200  300  400  500  600
GTL 6770
202, Head Restraint Retention, Vertical
GTL 6771
202, Head Restraint Retention, Back Pan
GTL 6774

202, Head Restraint Retention, Headform

Time in Seconds

Force in Newtons/Displ. in MM/10

(Thousands)
Activating remote control key memory

To be able to recall the stored settings with the remote control key, the function has to be activated in the radio or MMI®.

- Select function button [CAR] > Seat adjustment > Driver's seat > Key mem. profile > On.

Tips

If you do not want another driver to store their settings on the remote key, switch off the Memory function using the radio or MMI® or the AF button. → page 74.

Head restraints

Adjusting the front head restraints

Head restraints that are adjusted according to body size, along with the seat belt, offer effective protection.

Raising/Lowering the head restraint

- The head restraints on the front seats can be adjusted to provide safe support to head and neck at the optimum height → fig. 77. When optimally adjusted, the top of the restraint should be level with the top of the head → page 173, "Proper adjustment of head restraints".
- Grasp the sides of the head restraint with both hands and stellen Sie die gewünschte Position ein.

**Electric height adjustment**

- Push the switch up or down ⇒ page 76, fig. 78 to adjust the height of the head restraint.
- Adjust the headrest so the upper edge is as even as possible with the top of your head ⇒ page 76, fig. 77 ⇒ page 173, "Proper adjustment of head restraints".

Refer to ⇒ page 173, "Proper adjustment of head restraints" for guidelines on how to adjust the height of the front head restraints to suit the occupant's body size.

**WARNING**

- Driving without head restraints or with head restraints that are not properly adjusted increases the risk of serious or fatal neck injury dramatically.
- Read and heed all WARNINGS ⇒ page 173.

**Tips**

Correctly adjusted head restraints and safety belts are an extremely effective combination of safety features.

---

**Adjusting the rear head restraints**

[Diagram of rear seats with head restraints]

**Fig. 70: Rear seats**

**Head restraint**

**Raising the head restraint**

- Grasp the sides of the head restraint with both hands.
- Move the head restraint upward as far as it can go.

**Lowering the head restraint**

- Grasp the sides of the head restraint.
- Press the button (A) ⇒ fig. 79 and push the head restraint down.

The most effective protection is achieved when the top of the head restraint is even with the top of your head.

So that the driver can have a better view to the rear, the head restraints should be pushed down completely when the rear seats are not occupied.

**WARNING**

- Driving without head restraints or with head restraints that are not properly adjusted increases the risk of serious or fatal neck injury dramatically.
- Read and heed all WARNINGS ⇒ page 173.
Proper adjustment of head restraints

Correctly adjusted head restraints are an important part of your vehicle’s occupant restraint system and can help to reduce the risk of injuries in accident situations.

Fig. 182. Correctly adjusted head restraint viewed from the side

The head restraints must be correctly adjusted to achieve the best protection.

- Adjust the head restraint so that the upper edge of the restraint is level with the top of your head, but no lower than eye level and so it is as close to the back of your head as possible. ⇒ page 172, fig. 182.

Adjusting head restraints ⇒ page 76.

⚠️ WARNING
Driving without head restraints or with improperly adjusted head restraints increases the risk of serious injuries in a collision. To help reduce the risk of injury:

- Always drive with the head restraints in place and properly adjusted.
- Every person in the vehicle must have a properly adjusted head restraint.

⚠️ WARNING (continued)

- Always make sure each person in the vehicle properly adjusts their head restraint. Each head restraint must be adjusted according to occupants’ size so that the upper edge is as even with the top of the person’s head, but no lower than eye level and so it is as close to the back of the head as possible.
- Never attempt to adjust head restraint while driving. If you have driven off and must adjust the driver headrest for any reason, first stop the vehicle safely before attempting to adjust the head restraint.
- Children must always be properly restrained in a child restraint that is appropriate for their age and size. ⇒ page 273.

Examples of improper seating positions

The occupant restraint system can only reduce the risk of injury if vehicle occupants are properly seated.

Improper seating positions can cause serious injury or death. Safety belts can only work when they are properly positioned on the body. Improper seating positions reduce the effectiveness of safety belts and will even increase the risk of injury and death by moving the safety belt to critical areas of the body. Improper seating positions also increase the risk of serious injury and death when an airbag deploys and strikes an occupant who is not in the proper seating position. A driver is responsible for the safety of all vehicle occupants and especially for children. Therefore:

- Never allow anyone to assume an incorrect seating position when the vehicle is being used.

The following bullets list only some sample positions that will increase the risk of serious injury and death. Our hope is that these