

EuroNCAP Belt Positioning Procedure 2020 Using 5% Female HIII Dummies

Excerpts from:

EUROPEAN NEW CAR ASSESSMENT PROGRAMME (Euro NCAP) FULL WIDTH FRONTAL IMPACT TESTING
PROTOCOL Version 1.2 June 2019

See:

<https://cdn.euroncap.com/media/53141/euro-ncap-frontal-fw-test-protocol-v12.pdf>

3.1 General

Hybrid III 05F test dummies should be used for the front driver seat and the second-row passenger seat, on the opposite side to the driver. They should conform to U.S. Department of transportation, Code of Federal Regulations Part 572 Subpart O, except for modifications and additions stated later.....

6.4.9 Seat belt

- 6.4.9.1 Where possible, initially position the upper seat belt anchorage in the manufacturers 5th percentile design position. If no design position is provided, set the adjustable upper seat belt anchorage to the lowest position.
- 6.4.9.2 Carefully place the seat belt across the dummy and lock as normal. It will be necessary to re-position the hands as described in Section 6.4.5.
- 6.4.9.3 Remove the slack from the lap section of the webbing until it is resting gently around the pelvis of the dummy. Only minimal force should be applied to the webbing when removing the slack. The route of the lap belt should be as natural as possible.
- 6.4.9.4 Place one finger behind the diagonal section of the webbing at the height of the dummy sternum. Pull the webbing away from the chest horizontally forward and allow it to retract in the direction of the D-loop using only the force provided by the retractor mechanism. Repeat this step three times, only.
- 6.4.9.5 After following the above steps, the seatbelt should lie in a natural position across the dummy sternum assembly and shoulder clavicle. Where this is not the case, for example the belt is close to or in contact with the neck shield or the belt is above the shoulder rotation adjustment screw, and the upper belt anchorage is adjustable the anchorage should be lowered and steps 6.4.9.3 and 6.4.9.4 repeated.
- 6.4.9.6 The upper anchorage should be lowered by a sufficient amount to ensure a natural Belt position following the repetition of steps 6.4.9.3 and 6.4.9.4 repeated. This may require multiple attempts.

- 6.4.9.7 Once the belt is positioned the location of the belt should be marked across the dummy chest to ensure that no further adjustments are made. Mark also the belt at the level of the D-loop to be sure that the initial tension is maintained during test preparation.
- 6.4.9.8 Where the fitment of the shoulder belt loadcell significantly influences the natural position of the belt, the loadcell may be supported from above with the use of a weak non metallic wire or thread.

EuroNCAP Belt Positioning Procedure 2020 Using THOR and HIII 50% Male Dummies

Excerpts from:

MPDB FRONTAL IMPACT TESTING PROTOCOL Implementation 1st January 2020 Version 1.1.1 October 2019

See:

<https://cdn.euroncap.com/media/55858/euro-ncap-mpdb-testing-protocol-v111.pdf>

3.1 General

- 3.1.1 A THOR 50th percentile male test dummy shall be used on the front driver's seat and shall conform to the specification detailed in Technical Bulletin TB026.
- 3.1.2 A Hybrid III 50th percentile male test dummy shall be used on the front passenger's position. It shall conform to U.S. Department of Transportation, Code of Federal Regulations Part 572 Subpart E and ECE Regulation No. 94, except for modifications and additions stated later - See Section 3.6.
- 3.1.3 Details of the child dummy preparation and certification are contained in the Euro NCAP Child Occupant Protection Testing Protocol.

6.4.11 Seat belt

- 6.4.11.1 Where possible, initially position the upper seat belt anchorage in the manufacturers 50th percentile design position. If no design position is provided, set the adjustable upper seat belt anchorage to the mid-position or nearest notch upward.
- 6.4.11.2 Carefully place the seat belt across the dummy and lock as normal. It will be necessary to re-position the hands as described in Section 6.4.7.
- 6.4.11.3 Remove the slack from the lap section of the webbing until it is resting gently around the pelvis of the dummy. Only minimal force should be applied to the webbing when removing the slack. The route of the lap belt should be as natural as possible.
- 6.4.11.4 Place one finger behind the diagonal section of the webbing at the height of the dummy sternum. Pull the webbing away from the chest horizontally forward and allow it to retract in the direction of the D-loop using only the force provided by the retractor mechanism. Repeat this step three times, only.

- 6.4.11.5 After following the above steps, the seatbelt should lie in a natural position across the dummy sternum assembly and shoulder clavicle.
- 6.4.11.6 To check for a straight belt routing, a line laser could be used to visualise the optimal belt routing between D-loop and belt buckle. Position a line laser in front of the dummy in the vertical and longitudinal plane (e.g. on the steering wheel centre where this is in the same longitudinal plane as the vehicle seat) and align the laser line with D-loop and buckle. The belt should be routed parallel to this line provided a natural position across the dummy sternum and shoulder clavicle is maintained.
- 6.4.11.7 Where the belt is close to or in contact with the neck shield and the upper belt anchorage is adjustable, the anchorage should be lowered and steps 6.4.11.3 and 6.4.11.4 repeated.
- 6.4.11.8 Once the belt is positioned the location of the belt should be marked across the dummy chest to ensure that no further adjustments are made. Mark also the belt at the level of the D-loop to be sure that the initial tension is maintained during test preparation.
- 6.4.11.9 Measure the vertical distance between the dummy chin and the top of the diagonal webbing at the dummy centreline.
- 6.4.11.10 Measure the horizontal distance between the top of the diagonal webbing at the dummy centreline and the door/window.
- 6.4.11.11 Where the fitment of the shoulder belt loadcell (Section 4.3.4) significantly influences the natural position of the belt, the loadcell may be supported from above with the use of a weak non-metallic wire or thread
- 6.4.11.12 If the vehicle is moved following the dummy positioning, verify that the dummy position has not changed. Detail any changes in the test report.
- 6.4.11.13 If a test run is aborted and the vehicle is brought to a standstill using an emergency braking method, the dummy placement procedure shall be repeated.

EuroNCAP Belt Positioning Procedure 2019

Excerpts from:

OFFSET DEFORMABLE BARRIER FRONTAL IMPACT TESTING PROTOCOL Version 7.1.3 September 2018

See:

<https://cdn.euroncap.com/media/41757/euro-ncap-frontal-odb-test-protocol-v713.201811061520248726.pdf>

6.5.9 Seat belt

- 6.5.9.1 Where possible, initially position the upper seat belt anchorage in the manufacturers 50th percentile design position. If no design position is provided, set the adjustable upper seat belt anchorage to the mid-position or nearest notch upward.
- 6.5.9.2 Carefully place the seat belt across the dummy and lock as normal. It will be necessary

to re-position the hands as described in Section 6.5.5.

- 6.5.9.3 Remove the slack from the lap section of the webbing until it is resting gently around the pelvis of the dummy. Only minimal force should be applied to the webbing when removing the slack. The route of the lap belt should be as natural as possible.
- 6.5.9.4 Place one finger behind the diagonal section of the webbing at the height of the dummy sternum. Pull the webbing away from the chest horizontally forward and allow it to retract in the direction of the D-loop using only the force provided by the retractor mechanism. Repeat this step three times, only.
- 6.5.9.5 After following the above steps, the seatbelt should lie in a natural position across the dummy sternum assembly and shoulder clavicle. Where this is not the case, for example the belt is close to or in contact with the neck shield or the belt is above the shoulder rotation adjustment screw, and the upper belt anchorage is adjustable the anchorage should be lowered and steps 6.5.9.3 and 6.5.9.4 repeated.
- 6.5.9.6 The upper anchorage should be lowered by a sufficient amount to ensure a natural belt position following the repetition of steps 6.5.9.3 and 6.5.9.4 repeated. This may require multiple attempts.
- 6.5.9.7 Once the belt is positioned the location of the belt should be marked across the dummy chest to ensure that no further adjustments are made. Mark also the belt at the level of the D-loop to be sure that the initial tension is maintained during test preparation.
- 6.5.9.8 Measure the vertical distance between the dummy nose and the diagonal webbing.
- 6.5.9.9 Measure the horizontal distance between the diagonal webbing and the door/window.
- 6.5.9.10 Where the fitment of the shoulder belt loadcell (Section 4.2.5) significantly influences the natural position of the belt, the loadcell may be supported from above with the use of a weak non metallic wire or thread.