

and transversely, as measured along the surface of the instrument panel, within ± 6 mm (± 0.2 in) of the point that is defined by the intersection of the instrument panel and a line between the volumetric center of the smallest volume that can encompass the folded undeployed air bag and the volumetric center of the static fully inflated air bag.

S22.4.1.3 Locate the vertical plane parallel to the vehicle longitudinal centerline through the point located in S24.4.1.2. This is referred to as "Plane D."

S24.4.1.4 Locate the horizontal plane through the point located in S24.4.1.2. This is referred to as "Plane C."

S24.4.2 *Position 1 (chest on instrument panel).*

S24.4.2.1 Set the seat and seat cushion in the positions determined in S16.2.10.3.1. If the seat back is adjustable independent of the seat, place the seat back at the manufacturer's nominal design seat back angle for a 50th percentile adult male as specified in S8.1.3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. If adjustable, set the head restraint in the lowest and most forward position.

S24.4.2.2 Remove the legs of the dummy at the pelvic interface.

S24.4.2.3 Place the dummy in the front outboard passenger seat such that:

(a) The midsagittal plane is coincident with Plane D within ± 10 mm (± 0.4 in).

(b) The upper arms are parallel to the torso and the hands are next to where the thighs would be.

(c) Without changing the seat position and with the dummy's thorax instrument cavity rear face 6 degrees forward of the vertical, move the dummy forward until the dummy head/torso contacts the instrument panel. If the dummy loses contact with the seat cushion because of the forward movement, maintain the height of the dummy while moving the dummy forward. If the head contacts the windshield before head/torso contact with the instrument panel, maintain the thorax instrument cavity angle and move the dummy forward such that the head is following the angle of the windshield until there is head/torso contact with the instrument panel. Once contact is made, raise or lower the dummy vertically until Point 1 lies in Plane C within ± 10 mm (± 0.4 in). If the dummy's head contacts the windshield and keeps Point 1 from reaching Plane C, lower the dummy until there is no more than 5 mm (0.2 in) clearance between the head and the windshield. (The dummy shall remain in contact

with the instrument panel while being raised or lowered which may change the dummy's fore-aft position.)

S24.4.2.4 If necessary, material with a maximum breaking strength of 311 N (70 lb) and spacer blocks may be used to support the dummy in position. The material should support the torso rather than the head. Support the dummy so that there is minimum interference with the full rotational and translational freedom for the upper torso of the dummy and the material does not interfere with the air bag.

S24.4.3 *Position 2 (head on instrument panel).*

S24.4.3.1 Place the front outboard passenger seat at the mid-height full rearward seating position determined in S24.1.2. Place the seat back, if adjustable independent of the seat, at the manufacturer's nominal design seat back angle for a 50th percentile adult male as specified in S8.1.3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. Position an adjustable head restraint in the lowest and most forward position.

S24.4.3.2 Place the dummy in the front outboard passenger seat such that:

(a) The midsagittal plane is coincident with Plane D within ± 10 mm (± 0.4 in).

(b) The legs are perpendicular to the floor pan, the back of the legs are in contact with the seat cushion, and the dummy's thorax instrument cavity rear face is 6 degrees forward of vertical. If it is not possible to position the dummy with the legs in the prescribed position, rotate the legs forward until the dummy is resting on the seat with the feet positioned flat on the floor pan and the back of the legs are in contact with the front of the seat cushion. Set the transverse distance between the longitudinal centerlines at the front of the dummy's knees at 112 to 117 mm (4.4 to 4.6 in), with the thighs and the legs of the dummy in vertical planes.

(c) The upper arms are parallel to the torso and the hands are in contact with the thighs.

S24.4.3.3 Using only the control that primarily moves the seat in the fore and aft direction, move the seat forward, while maintaining the thorax instrument cavity rear face orientation until any part of the dummy contacts the vehicle's instrument panel.

S24.4.3.4 If dummy contact has not been made with the vehicle's instrument panel at the full forward seating position of the seat, slide the dummy forward on the seat until contact is made. Maintain the thorax instrument cavity rear face orientation. If the dummy loses contact with the

seat, from that point forward maintain the height of the dummy. Except as provided in S24.4.3.5, maintain the angle of the thigh with respect to the horizontal.

S24.4.3.5 If head/torso contact with the instrument panel has not been made, maintain the angle of the thighs with respect to the horizontal while applying a force towards the front of the vehicle on the spine of the dummy between the shoulder joints until the head or torso comes into contact with the vehicle's instrument panel or until a maximum force of 222 N (50 lb) is achieved. If the head/torso is still not in contact with the instrument panel, hold the femurs and release the 222 N (50 lb) force. While maintaining the relative angle between the torso and the femurs, roll the dummy forward on the seat, without sliding, until head/torso contact with the instrument panel is achieved. If seat contact is lost prior to or during femur rotation out of the horizontal plane, constrain the dummy to rotate about the dummy H-point.

S24.4.3.6 If necessary, material with a maximum breaking strength of 311 N (70 lb) and spacer blocks may be used to support the dummy in position. The material should support the torso rather than the head. Support the dummy so that there is minimum interference with the full rotational and translational freedom for the upper torso of the dummy and the material does not interfere with the air bag.

S24.4.4 Deploy the front outboard passenger frontal air bag system. If the frontal air bag system contains a multistage inflator, the vehicle shall be able to comply with the injury criteria at any stage or combination of stages or time delay between successive stages that could occur in a rigid barrier crash test at or below 26 km/h (16 mph), under the test procedure specified in S22.5.

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S26.2.2 Mark a point on the steering wheel cover that is longitudinally and transversely, as measured along the surface of the steering wheel cover, within ± 6 mm (± 0.2 in) of the point that is defined by the intersection of the steering wheel cover and a line between the volumetric center of the smallest volume that can encompass the folded undeployed air bag and the volumetric center of the static fully inflated air bag. Locate the vertical plane parallel to the vehicle longitudinal centerline through the point located on the steering wheel cover. This is referred to as "Plane E."

S26.2.3 Place the seat and seat cushion in the position achieved in S16.2.10.3.1. If the seat or seat cushion