



**FEDERATION INTERNATIONALE DE L'AUTOMOBILE**

**RACING NETS INSTALLATION SPECIFICATION  
FOR TOURING AND GRAND TOURING CARS**

**29-01-2025 v9**

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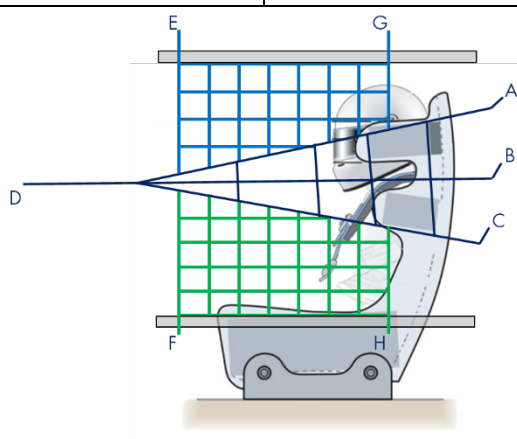
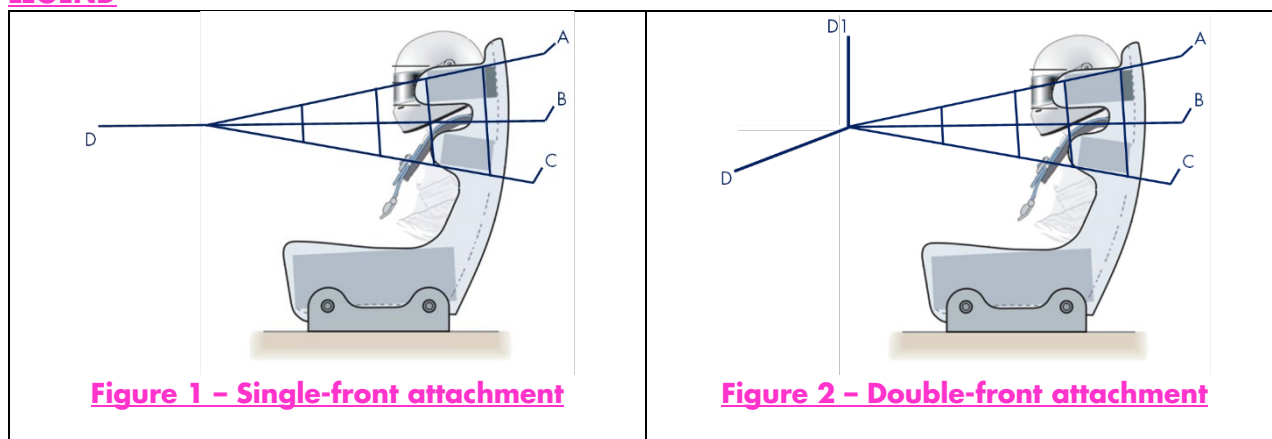
## FOREWORD

Racing Nets are designed to provide lateral restraint to the driver during lateral and angled lateral impacts. When racing nets are fully attached to the chassis / safety cage, they also provide additional lateral restraint to the seat.

**FIA Standard 8863-2013 on racing nets specifies three types of nets: single attachment (Figure 1); double attachment (Figure 2) and door net (Figure 3).**

The aim of this specification is to provide objective installation requirements of FIA-approved 8863 racing nets (see Technical List n°48) in association with FIA-approved 8862 and 8855 seats with either fixed or sliding brackets. This specification defines requirements on the positioning of the racing net's **main element**, its attachment to the car and a load case for the attachment points.

## LEGEND



**Figure 3 – Door net**

## I. GENERAL REQUIREMENTS

### 1. Load case for attachment points

#### 1.1 Single-Front-Attachment

The front-straps of each Racing Net shall have a single attachment to the car. The attachment shall be designed to sustain 10kN MIN with 15mm MAX deformation.

## 1.2 Dual-Front-Attachment

The forward and upper front-straps of each Racing Net shall each have a single attachment to the car. The attachment shall be designed to sustain 10kN MIN with 15mm MAX deformation.

## 1.3 Door Net

**The front strap of the door net's main element must have a single attachment to the car. The attachment must be designed to sustain 10kN with a 15mm max deformation.**

## 2. Fitment of handed nets

Nets are typically handed; left or right. The net horizontal webbing shall be located towards the driver, to provide the smoothest surface for the helmet to glide on, with the net vertical webbing located away from the driver.

### 2.1 Fitment of door nets

**Given their design, door nets must be installed on the side of the driver's door ONLY.**

## 3. Quick release mechanism

When the driver is seated in his/her racing position with seatbelts tightened, he/she must be able to reach and open the quick release mechanisms of both nets.

In addition, the position of the quick release mechanisms must allow rescue crews to easily access and open them.

## 4. Positioning of main triangle element of the racing net

In order to ensure optimal protection, it is imperative that the driver is, first, correctly fitted to the FIA-approved 8862 or 8855 seat as defined in Appendix A of this document.

Once this has been achieved, the FIA-approved 8863 Racing Net shall be installed as detailed below; with the upper strap **of the main element** positioned relative to driver's eye position (with additional limits in Z relative to the seat-side-head) and the lower-strap **of the main element** positioned relative to the seat-side-shoulder.

It is recommended that, where possible, the upper-strap of the **main element facing-net** is positioned *inside* the seat-side-head as shown in Figure + 4 (see also Figures 3 5 and 4 6).

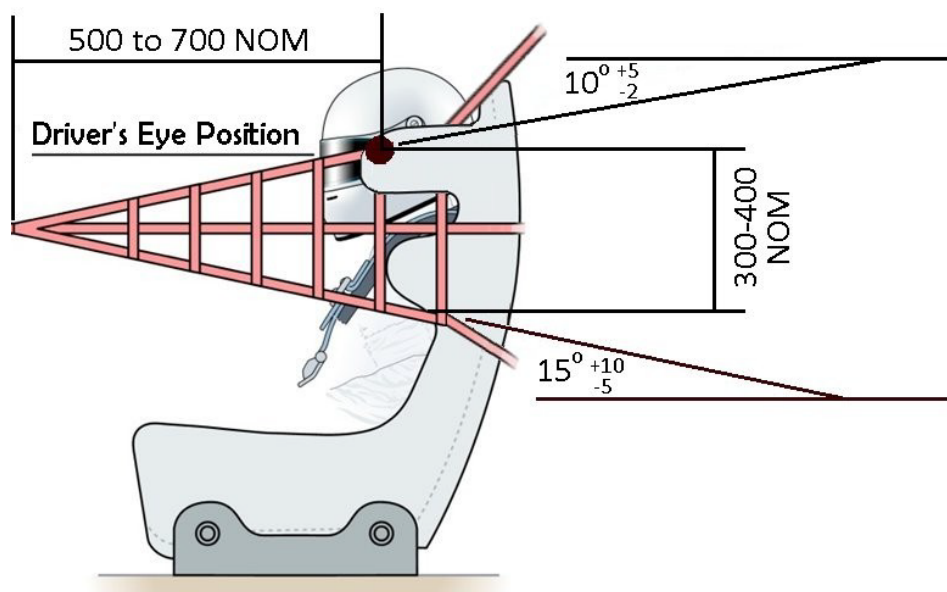


Figure + 4: Positioning of net with upper-strap **of the main element** *inside* the seat-side-head (applicable to **both door net designs**, single-front attachment design and to dual-front attachment design)

Note: NOM dimensions for guidance only

Where the above position cannot be achieved, for instance, if the seat-side-head and seat-side-shoulder of the seat are integrated, the upper-strap **of the main element** may be positioned *outside* the seat-side-head as shown in Figure 3 4. **In this case, two vertical straps must always be in contact with the seat-side.**

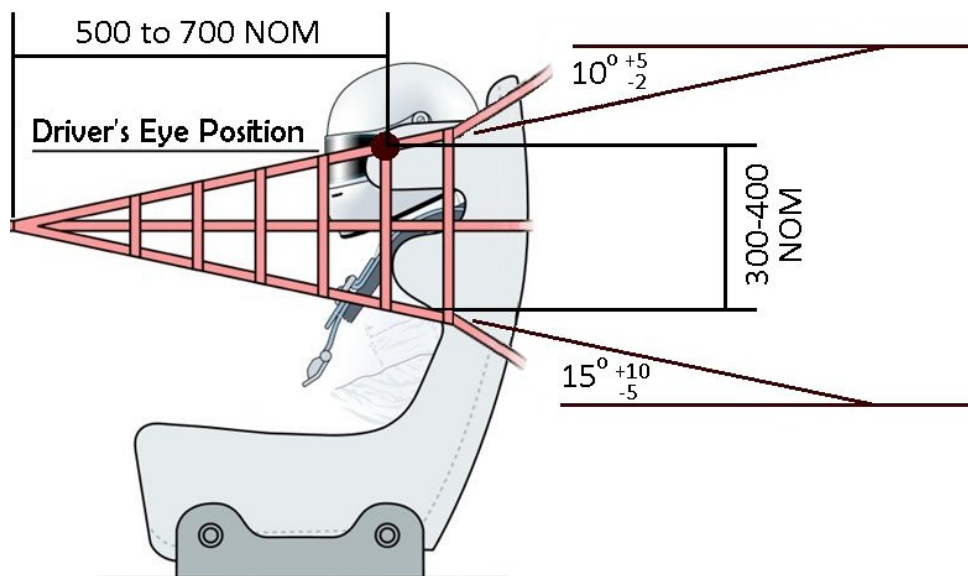


Figure 2 5: Positioning of net with **the upper-strap of the main element** *outside* the seat-side-head (applicable to **both door nets**, single-front attachment design and to dual-front attachment design)  
 Note: NOM dimensions for guidance only



Figure 3 6: Photograph showing upper-strap inside the seat-side-head, shown with single-front-attachment design (external view, but valid also for dual-front attachment **and door nets**)



Figure 4 Z: Photograph showing upper-strap inside the seat-side-head, shown with single-front-attachment design (internal view, but valid also for dual-front attachment and door nets)

**When viewed from the side:**

4.1 – **Positioning of main element's upper strap**

the upper-strap<sup>1</sup> shall pass through the eye position +80mm(Z)-15mm(Z) and shall be angled at 10° <sup>+5</sup> relative to the horizontal plane. Additionally, the upper-strap<sup>1</sup> shall not run more than 40mm above the top edge of the seat-side-head. And the upper-strap<sup>2</sup> shall not run below the bottom edge of the seat-side-head.

4.2. – **Positioning of main element's middle strap**

the middle-strap shall be horizontal ± 10° relative to the horizontal plane.

4.3. – **Positioning of main element's middle strap**

the lower-strap<sup>3</sup> shall run along the bottom edge of the seat-side-shoulder +0(Z)-100(Z) and shall be angled at 15° <sup>+10</sup> relative to the horizontal plane.

4.4. – **Positioning of quick-release**

the merge point will, typically, be 500-700mm forward of the driver's eye position.

4.5. – **Contact between main element and seat-side**

the ~~net-main~~ **element** shall have a minimum of two vertical webbings in contact with the seat-side-head.

4.6. – **Drivers' eye positions**

the eye position of all drivers shall be marked on the external side of the seat-side-head support.

Dual-front attachment only (see Figure 5 8);

4.7. – **Positioning of front strap for dual-front attachment nets**

When viewed from the side, the forward strap shall be horizontal +0 – 30deg

#### 4.8. – Positioning of main element's upper-strap for dual-front attachment nets

When viewed from the side, the upper strap shall be vertical +45deg (forward) - 20deg

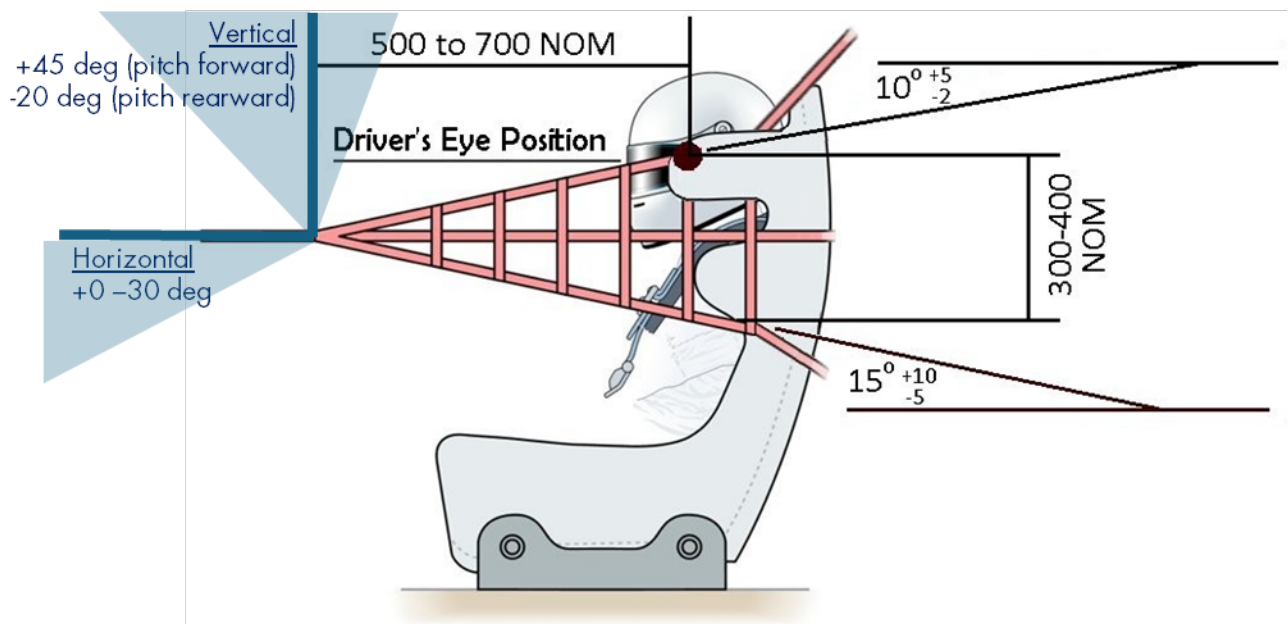


Figure 5 8. Positioning of net with dual-front attachment design

- 1 measured from top edge of upper-strap
- 2 measured from bottom edge of upper-strap
- 3 measured from bottom edge of lower-strap

#### 5. Attaching the front and rear straps of the racing-net main element

When viewed from above:

5.1 - the front straps of **the main element** shall be parallel to the longitudinal axis of the car  $\pm 6^\circ$  as shown in Figure 6 9.

5.2. - the tension in the racing-net shall be such that, at any x-position of each upper, middle and lower strap of the **triangle main element**, a load of 50N applied in a lateral direction away from the driver shall produce a maximum deformation of 50mm.

5.3 - in order to minimise any potential interference between the front-strap and the driver's arms or hands, a bungee may be fitted to pre-tension the net away from the driver. Such an installation should not impede the driver's egress when the quick-release of the net is disconnected. Furthermore, the requirements of 5.1 shall be satisfied before the bungee is fitted.

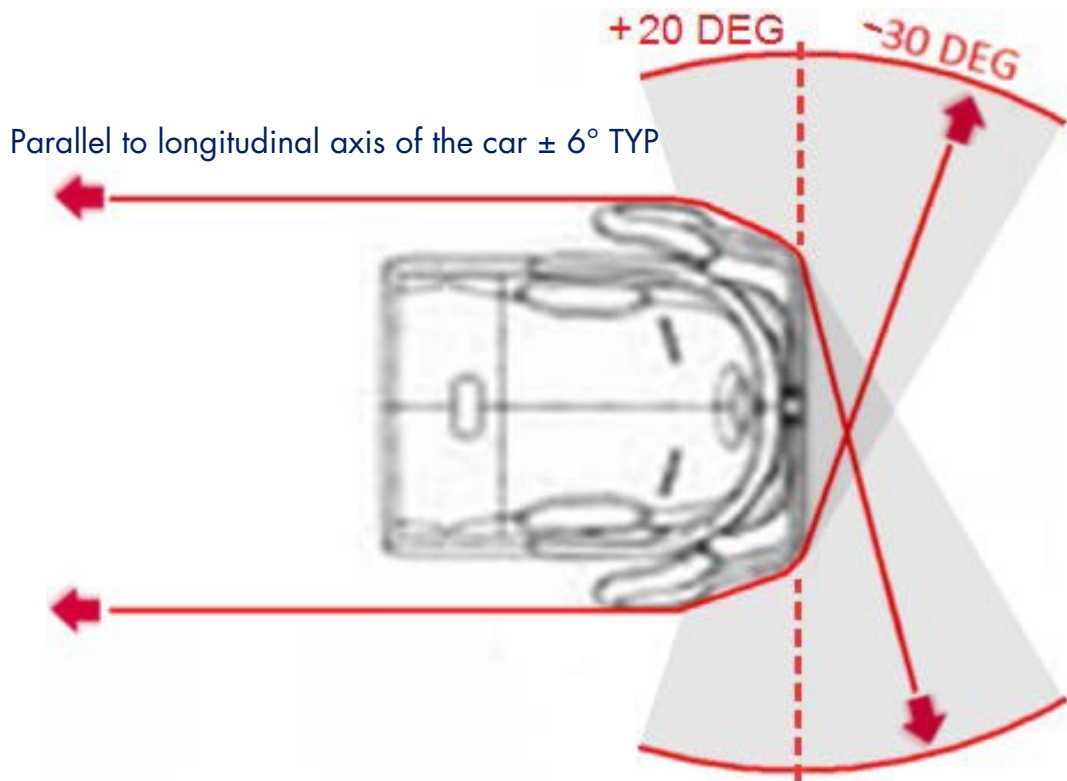


Figure 6 9.: Attachment of front and rear straps

#### 6. Door net attachment only (see Figure 9)

The additional elements of the door net may be installed on inward and outward plans, which differ from the ones specified above for the main element, as long as the following conditions are met:

- The main element installation must be compliant with the specifications prescribed in this document.
- The upper element must be installed in such way that the area of the rollcage opening between the main element and the top roll bar must be covered. The vertical straps of the upper element may be installed on the top rollbar(s) of the rollcage or to an attachment point directly on the chassis. When attached to the top of the rollcage (chassis), these straps must not interfere with the rollcage padding and with the driver's helmet when seated in the proper racing position.
- The lower element must be installed in such way that the area of the rollcage opening between the main element and the top edge of the seat-side-pelvis must be covered. The vertical straps of the lower element may be attached on the lower rollbar(s) of the rollcage or to an attachment point directly on the chassis. When attached to the rollcage (chassis), these straps must not interfere with other safety equipment installed in the vehicle.
- The attachment points (rollcage or chassis) must be structurally sound to hold the elements in place, and any sliding along the attachment points must be avoided to keep the driver's limbs inside the vehicle.

## II. SPECIFIC REQUIREMENTS FOR RACING NETS FULLY ATTACHED TO THE CHASSIS/ROLLCAGE

### 1. Load case for attachment points

Each rear-strap of the **Racing Net main element** shall attach to the car at a separate position. The attachments shall be designed to sustain 10kN MIN with 15mm MAX deformation.

### 2. Positioning main **triangle element** of the racing net

The **net main element** shall have a minimum of two vertical webbings in contact with the seat-side-head.

### 3. Attaching the front and rear straps of the **triangle main element**

When viewed from above;

3.1 - the rear-middle-strap and rear-lower-strap **of the main element** shall wrap the seat and attach to rollcage (or chassis) at an angle parallel to the lateral axis of the car within range [+20°; -30°] as shown in Figure 6-9, in order to maximise the lateral restraint of the seat and driver.

3.2 - if the upper-strap is positioned inside the seat-side-head (as shown in Figure 3-4), the rear-upper-strap shall attach directly to the main hoop or roof tube. The attachment point shall be carefully chosen to maximise lateral restraint and vertical control of the **net main element** whilst ensuring it does not interfere with the helmet (during normal race conditions).

3.3 - if the upper-strap is positioned outside the seat-side-head (as shown in Figure 2-5), the rear-upper-strap shall wrap the seat and attach to rollcage (or chassis) at an angle parallel to the lateral axis of the car within range [+20°;-30°] as shown in Figure 6-9 in order to maximise the lateral restraint of the seat and driver.

Exceptionally, the rear-upper-strap may attach directly to the main hoop or roof tube, without having to satisfy the +20° -30° angle prescribed in Figure 6-9, if either of the following two conditions is encountered:

- the upper-strap would otherwise run above the top edge of the seat and would interfere with the helmet (during normal race conditions)
- doing so provides a better vertical load proportioning with the rear-lower-strap and prevents the racing-net from slipping down on the seat
- In such cases, the attachment point shall be carefully chosen to maximise lateral restraint and vertical control of the net.

3.4 - it is preferable that all three **main element's** rear straps attach to rollcage joints rather than mid-tube. Any mid-tube attachment should be fitted with a clamp or similar restraint to prevent sliding along the tube.

3.5 - the **main element's** rear-middle strap may be attached to the middle of main hoop if this achieves the best geometrical installation.

3.6 - the **main element's** rear-upper strap shall attach close to the roof.

3.7 - the **main element's** rear-lower strap shall attach close to the floor.

3.8 - if the side profile of the seat is such that the **main element's** lower-strap is able to slide upwards above the bottom edge of the seat-side-shoulder, an additional vertical strap may be wrapped around the lower-strap, close to the seat-side-shoulder and secured to an appropriate attachment point below it.



### III. SPECIFIC REQUIREMENTS FOR RACING NETS ATTACHED TO AN FIA-APPROVED 8862-2009 SEAT

The **main element's** three rear-straps may be attached to an FIA-approved 8862-2009 seat providing it has the relevant marking on the label: "Valid for attaching racing nets (optional)".

Each of the **main element's** three rear-straps shall attach to the seat in the same way the net has been homologated and as per the seat manufacturer's instructions.

Each of the **main element's** three rear-straps shall be positioned in such a way that the strap cannot slide downward.

The **main element's** rearmost vertical strap must intersect the seat-side-shoulder in side-view.

The net straps shall not be twisted by the seat guides and attachments or constrained in a way that is not prescribed in the seat and net manufacturers' instructions.

## IV. CONCESSIONS

### NOTES:

- Article IV is not applicable for new cars homologated as from 1.1.2017.
- Article IV-1.2 will not be applicable for any cars as from 1.1.2021.
- Article IV-1.3 and IV-1.4 will not be applicable for any cars as from 1.1.2020.

### 1. General

1.1 The seat may be modified to provide location points for the straps (bonded only), upon approval from FIA.

1.2 If the angle of the upper-strap prescribed in section 4.1 cannot be achieved, the front strap attachment must be chosen to satisfy, as close as possible, this requirement (4.1). The other requirements of section 4 shall be satisfied.

1.3 If the racing net installation cannot meet the tension criterion prescribed in section 5.2, primarily due to backlash in the quick-release, the net should be configured such that it is as tight as possible when the quick release is connected, and the maximum deformation under the 50N lateral load must not be greater than 80mm.

1.4 For cars unable to satisfy the load case for attachment points prescribed in section I and II, the attachments may be designed to sustain 6kN MIN with 15mm MAX deformation.

### 2. Sliding seats

When sliding seats are used, the racing net installation specification must be respected. However, in order to ensure compatibility, each of the rear-upper-strap, rear-middle-strap and rear-lower- strap may attach to the rollcage (or chassis) at a minimum angle of 10° parallel to the longitudinal axis of the car as shown in Figure [Z 10](#).

If there is no appropriate attachment point for the rear-middle-strap or the rear-lower-strap, either of them shall be positioned as close as possible to this above requirement. In any case, the racing net shall be in contact with the seat.

The attachment points shall be carefully chosen to maximise lateral restraint and vertical control of the net.

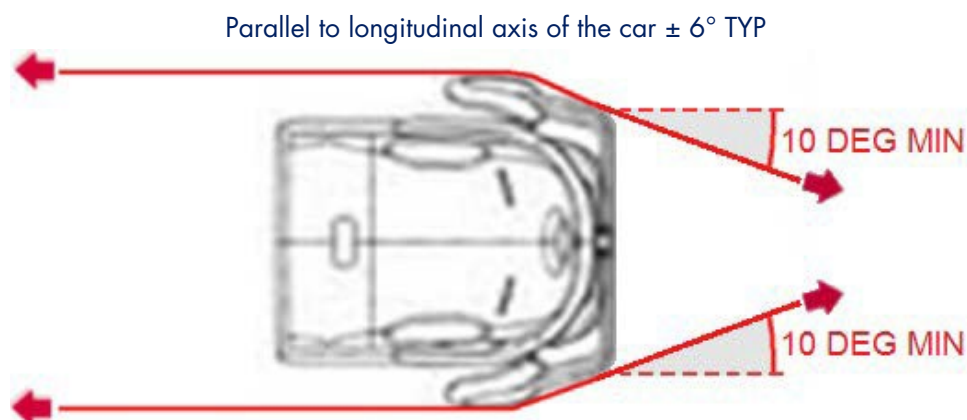


Figure [Z 10](#).: Attachment of front and rear straps

APPENDIX A

**FIA REQUIREMENTS FOR DRIVER FITMENT IN AN FIA-APPROVED 8862-2009 SEAT**

A1. - The driver shall choose a seat that fits well. When seated in the normal racing position, the seat shall support comfortably at the pelvis, shoulder and head as follows:

- the eye line shall be below the top edge of the side head support and above the bottom edge of the side head support;
- the shoulder should fit within the side shoulder support of the seat;
- the pelvis should be adequately supported by the side pelvis support.

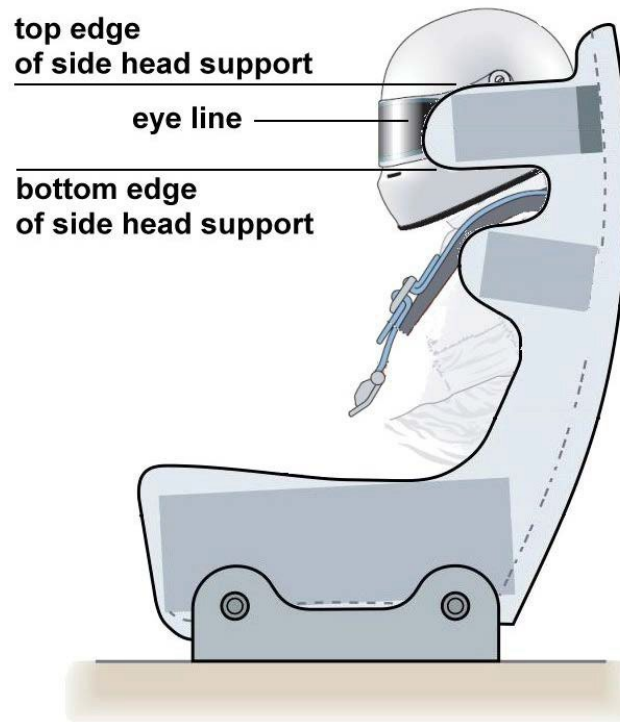


Figure A1 - Position of drivers head relative to side head support