



# FIA STANDARD GUIDELINES FRONTAL HEAD RESTRAINT (FHR) SYSTEM

JAPAN  
AIRLINE



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## SCOPE

The FIA safety regulations are made up of several different types of document. Some of the documents, such as FIA Standards, FIA Homologation Regulations for Safety Equipment and FIA labelling guidelines, are targeted to the safety equipment manufacturers. Some regulations aim to ensure that the safety equipment used in competitions appearing on the FIA International Sporting Calendar delivers a specified level of safety protection. There are other documents, such as Appendices to the International Sporting Code, Technical and Sporting Regulations, that aim to regulate the use of the safety equipment in competitions appearing on the FIA International Sporting Calendar.

The aim of these new Safety Equipment Guidelines (“Guidelines”) is to complement the FIA safety regulations and to collect all the relevant regulatory information in one place, including the different Standards recognized by the FIA, the differences between them, the importance of safety equipment, the protection delivered, how to select, use and customize safety equipment, and how to avoid critical mistakes. It also gives tips on how to identify non-original products and what to do after an accident.

This document is intended to make the FIA regulations more easily understandable for competitors and scrutineers.

The text written here does not replace the official documents published on the FIA website and it has no regulatory value.

This is a living document that can be updated to reflect any new information, updates to regulatory or guidance documents or clarification that the FIA considers relevant to the competitors and officials. Please ensure that you take into consideration the latest available version.

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# INTRODUCTION

The FHR device is one of the most important pieces of safety equipment introduced by the FIA, and has saved several lives and prevented the risk of skull fractures and/or serious neck injuries. Therefore, it is important that drivers use the FHR properly and that they examine, or ask the manufacturer to check, their devices after a severe accident to identify whether or not the structural integrity of the device has been compromised.

## 1/ REGULATION REFERENCE

At the moment there is one FIA Standard for Frontal Head Restraint: 8858-2010. Check Appendix L to the ISC – Chapter III: Art. 3 and the Sporting Regulations of the Championship to understand in which categories it is required.



QR Code 1 - Appendix L to the International Sporting Code

The wearing, in a competition appearing on the FIA International Sporting Calendar, of any device intended to protect the head or neck which is attached to the helmet is prohibited, unless the device has been homologated according to the FIA Standards 8858-2010 or 8858-2002. Homologated FHR systems are listed in FIA Technical List No. 29.



QR Code 2 - Technical list No. 29 "List of approved FHR systems according to Standard 8858-2010"



QR Code 3 - Technical List No. 36 "List of approved FHR systems"

FIA-approved FHR systems must be worn by drivers and co-drivers in all competitions appearing on the FIA International Sporting Calendar, with the following exceptions or provisions:

The wearing of an FIA-approved FHR system is:

- a) mandatory for Formula 1 cars of period G onwards, except in case of written dispensation obtained from the FIA Safety Commission;
- b) recommended for other historic cars;
- c) not mandatory for the following categories of alternative energy vehicles: I, III, IIIA, IV, V Electric Karts, VII and VIII;
- d) recommended for alternative energy vehicles in categories II, V Cars and VI with a technical passport issued before 01.01.2006.

For other cars in which for technical reasons it is impracticable to fit the FIA-approved FHR, it will be possible to apply to the FIA Safety Commission for dispensation.



This chapter aims to give some basic guidelines on the aspects to consider when selecting and using a HANS®, HYBRID or HYBRID PRO device for racing competitions. These guidelines apply to the items approved according to FIA Standards 8858-2002 and 8858-2010 that are included in Technical List No. 29.

## 1/ DEVICE AND SIZE SELECTION

When choosing a Hybrid or Hybrid Pro device, the model type and size need to be considered. The Hybrid has a longer rear tail than the Hybrid Pro, and two straps that connect to the safety harness buckle, called the Seat Belt Anchoring System (SAS). The Hybrid Pro does not include the SAS.

The seating position angle does not influence the selection of the type of Hybrid or Hybrid Pro.

Unless specified, when Hybrid is mentioned in this document, it refers to both HYBRID devices and HYBRID PRO devices.

When choosing a HANS® device there are safety aspects that need to be considered. Comfort and weight will also help in selection. Drivers must ensure that they use an appropriate HANS® device. Specifically, the HANS® collar angle and HANS® width must be appropriate for the seated position and the driver's neck size, from XS to XL.

### HYBRID SIZING

Hybrid devices are sized by the Hybrid harness, which attaches the device to the wearer. The rigid part of the device is the same for sizes Extra Small to XXX Large. The Hybrid harness of the device is sized by measuring the wearer's chest circumference as shown in Fig. 1.

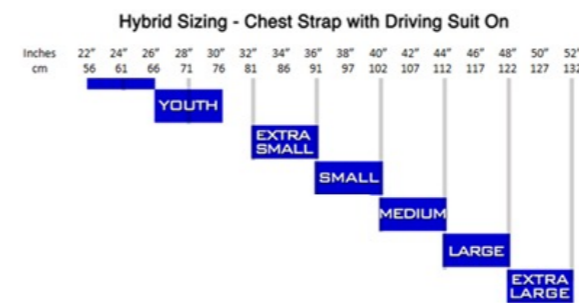


Fig. 1 - Sizing according to chest circumference.

### HANS® SIZING

To choose a HANS® device of the correct size, two steps are important: the driver's neck circumference and the correct angle according to the driving position.

### HANS® ANGLES

HANS® devices exist not only in different sizes, but also with different angles between the yokes (the part of the HANS® in contact with the driver's shoulders and chest) and the top of the collar (the part of the HANS® located behind the driver's helmet). Normally HANS® devices exist in a range of angles between 10° and 40°, and sizes from extra small to extra large. The manufacturer or distributor should be consulted on the best model for the motor sport activity and car concerned, regarding seating position and body shape.

When seated in the racing position with the harnesses tightened, the HANS® collar angle must be between 60° and 90° from the horizontal (see Fig. 2).



Fig. 2 - Correct collar angle for HANS® device

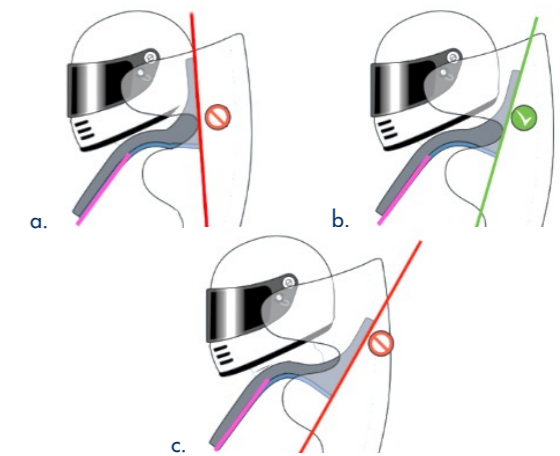


Fig. 3 - Examples of incorrect angle (a. and c.) and correct angle (b.) for HANS® device.

The HANS® device may be in light contact with the helmet, but if the HANS® pushes the head forward uncomfortably and the HANS® collar angle is greater than 90° from the horizontal (the top of the collar is pointing forwards instead of backwards), a more upright device may be required (for example from a 30° HANS® to a 20° HANS®) as shown in Fig. 3.a.

The HANS® device may be in light contact with the seat or headrest, but if the HANS® collar top goes backwards at an angle of less than 60° from the horizontal, a HANS® model with a wider angle may be required (for example from a 20° HANS® to a 30° HANS®) as shown in Fig. 3.c.).

The setup presented in Fig. 3.c. is frequent in reclined seating positions (for example, drivers using a 20° HANS® device in a sports prototype), and may be dangerous in case of a rearward crash.

Note: two drivers sharing the same car might need a different device angle depending on their respective body type (e.g. a slim driver might need a 20° device, while his teammate uses a 30° device).

The below picture shows an indication of model angles according to sitting position.



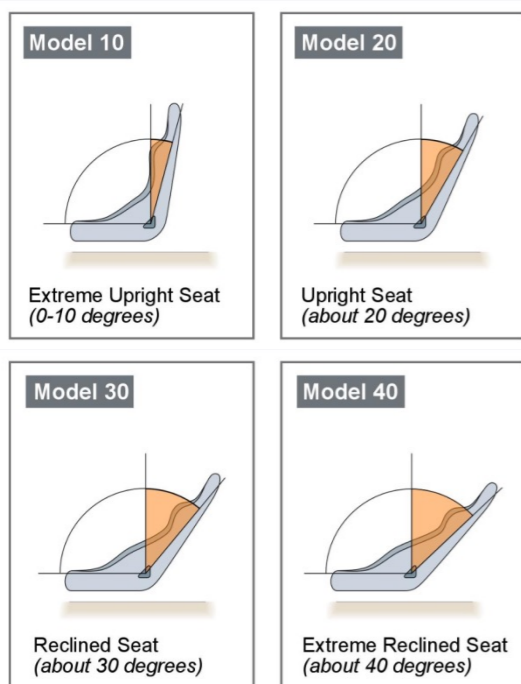


Fig. 4 - HANS® model angle according to sitting position

Some HANS® models have a small tab at the upper part of the HANS yoke on the side, in order to reduce the lateral movement of the shoulder belts (see Fig. 6). If the driver experiences problems with the shoulder belt tending to come out of the HANS yoke, these models may reduce this effect.



Fig. 6 - HANS® device model with small tabs on the side of the upper surface of the yokes

### HANS YOKE BRACKETS

The FIA authorises the HANS® device manufacturers to add brackets to the bottom part of the HANS yoke (see Fig. 7) in order to prevent the shoulder straps from coming out of the HANS yoke. The manufacturer or supplier should be consulted on the models with this option available.

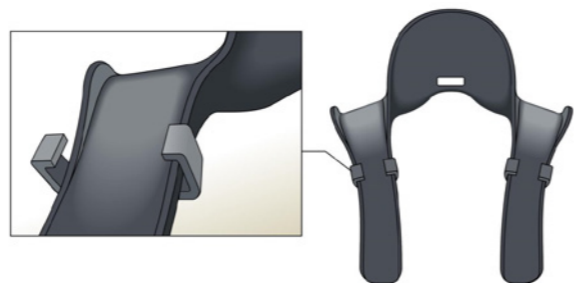


Fig. 7 - HANS® device with additional small brackets on the yokes

## 2/ WINGS OR TABS

Hybrid devices have small wings or tabs on the upper part of the shoulder belt-bearing surface, as shown in Fig. 5, to reduce the lateral movement of the shoulder belts and retain them on the device.

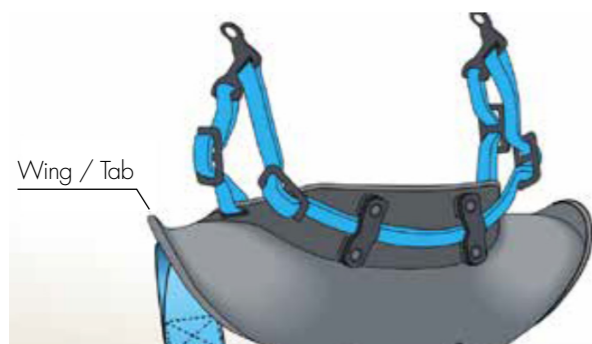


Fig. 5 - Example of wing on a Hybrid Pro device



## 3/ PREPARATION OF THE HYBRID DEVICE

The body of the Hybrid device must never be modified but there are some aspects that can be taken into account to prepare the Hybrid or Hybrid Pro.

### FRICITION RUBBER

The upper surface of some Hybrid devices is covered in a high-friction rubber to grip the lower surface of the shoulder straps. On these devices, drivers must not remove the friction material. The condition of the rubber surface must be monitored – no breakage, ripping, tears or other damage is acceptable. In case of repair, it must be done strictly in accordance with the manufacturer's instructions. The FIA strongly recommends that this operation is carried out by the manufacturer of the device.

If the Hybrid device is painted (only in conformity with the manufacturer's instructions), the rubber must be left completely uncovered to ensure that the friction with the shoulder belts is not compromised. Any painted Hybrid must respect the flame-resistance requirement of FIA Standard 8858-2010.

### PADDING

The surface of the Hybrid device in contact with the driver's body may be padded for comfort. Any padding used between the driver and the Hybrid must not be more than 15 mm thick when the driver is seated in the car fully equipped with the harness tightened. The padding must be covered by a flameproof material and must not extend any further than 8 mm from each side of the Hybrid.

### FHR TETHER LENGTH ADJUSTMENT

The tether assemblies for a Hybrid need to be adjusted to the individual driver, while seated in the racing position with the harnesses tightened.

Hybrid devices have two pairs of FHR tethers, as shown in the figure below.



Fig. 8 - Identification of the Hybrid device's tethers

The procedure for adjusting the tether assemblies in the car is as follows:

- 1) Once seated in the racing position with the harnesses tightened:
  - the rigid part of the Hybrid must be sitting on the shoulders between the driver's back and the seat, and the shoulder belts shall be on the belt-bearing surface of the device;
  - the FHR tethers shall be pulled up slightly to make sure that the device is up against the shoulder belts after the belts are tensioned.
- 2) The rear tethers shall be adjusted first.
  - the rear tethers can be partially unlaced from the 3-bar adjuster to allow for adjustment of the tethers.
  - the tether shall then be attached to the helmet on both sides of the helmet.
  - it is recommended to fit the tethers so that they allow the forward head movement of the wearer in the range of 25 mm to 50 mm from the wearer's static or starting position in the car, as indicated in

Fig. 9. The static position is the position that the wearer is in while driving the race vehicle. The helmet should not be up against the rear headrest, but rather in the normal driving position. (The chin should be up while doing this manoeuvre. It is a straight, forward motion.)



Fig. 9 - Movement to define the tether adjustment

- Always adjust the tethers on the right side of the restraint to the same length as those on the left side of the restraint.
- 3) The front tethers shall be adjusted next.
    - With the helmet anchor attached to the helmet, the front tether length shall be adjusted to a suitable length to be able to rotate the head to the left and right. The wearer must have free movement for at least the first 12 mm to 25 mm. The movement must be restricted to less than 90° on each side.

The condition of the tethers and clamping brackets and the screws securing them to the back of the Hybrid device must be closely monitored, and replaced if any wear is observed.

### SEAT BELT ANCHORING SYSTEM (SAS) STRAPS ON HYBRID DEVICES

Hybrid devices have two diagonal straps that run from the bottom of the rigid part of the device, around the wearer to the front of the wearer, and attach into the

seat belt buckle. These straps are called the Seat Belt Anchoring System (SAS), and are not present in Hybrid Pro devices. The end fitting of the SAS must be hooked to either the shoulder strap tongues, the lap strap tongues or the crotch strap tongues. Fig. 10 shows some examples of possible assemblies.

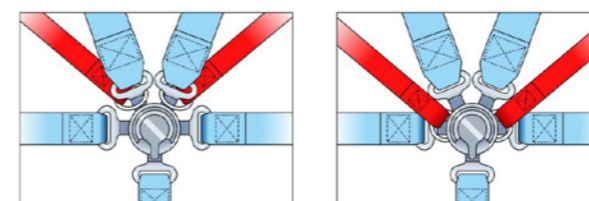


Fig. 10 - Examples of the SAS assembly into the seat harness buckle

The length of the SAS straps shall be adjusted once the seat belt harness and the rest of the Hybrid straps have been buckled and tightened.

## 4/ PREPARATION OF THE HANS® DEVICE

The body of the HANS® device must never be modified, but there are some aspects that can be considered when preparing the HANS®.

### FRICITION RUBBER

The surface of the HANS yokes in contact with the harness belt must be covered with a high friction rubber to grip the lower surface of the shoulder straps. The friction material must not be removed. The condition of the rubber surface must be monitored – no breakage, ripping, tears or other damage is acceptable. In case of repair, it must be done only if the manufacturer so recommends, and strictly in accordance with the manufacturer's instructions. If a rubber replacement is possible, the FIA strongly recommends that this operation is carried out by the manufacturer of the device.



If the HANS® device is painted (only in conformity with the manufacturer's instructions) the rubber must be left completely uncovered to ensure that the friction with the shoulder belts is not compromised. Any painted HANS® device must respect the flame-resistance requirement of FIA Standards 8858-2002 and 8858-2010.

### PADDING

Padding is authorised only between the device and the driver. It is recommended that the surface of the HANS® in contact with the driver's body is padded for comfort. Any padding used between the driver and the HANS yoke must not be more than 15 mm thick when the driver is seated in the car fully equipped with the harness tightened. The padding must be covered by flameproof material and must not extend any further than 8 mm from each side of the HANS yoke as shown in Fig. 11 (see Article 3.1 of Chapter III "Drivers' Equipment" of Appendix L to the International Sporting Code).

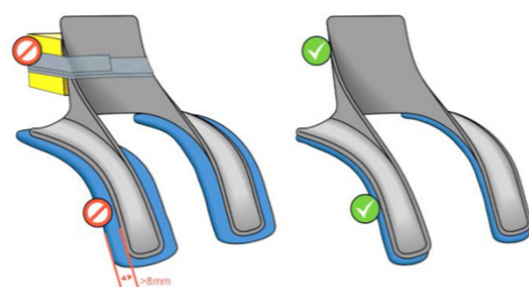


Fig. 11 - Examples of incorrect and correct HANS® padding

Thin padding or a small cushion (4 mm thickness maximum) is allowed on the top of the collar to prevent scratches on the back of the helmet.

### FHR TETHER LENGTH

It is not recommended to fit the FHR tether(s) very short and tight.

There are HANS® devices with sliding tethers and HANS® devices with fixed tethers. In case of fixed tethers, the two tethers must be adjusted to the same length.



A nominal length is 150 mm. A tolerance of +/- 25 mm is acceptable. The nominal length shall be measured as follows:

- the driver shall be seated in the car in the normal driving position, wearing the HANS® and helmet, and with the safety harness fastened;
- the driver should lean his/her body and head forward as far as possible - in this position the length must be measured from the leading edge of the HANS collar to the point of connection to the outside of the helmet.

The condition of the FHR tether(s), including the FHR end fitting and clamping brackets, and the screws securing them to the back of the HANS® must be closely monitored, and they must be replaced if any wear is observed.

Please refer to FIA Technical List No. 29 for further details of approved tether end fittings and their marking.

## 5/ HELMETS TO BE USED WITH A HYBRID OR HYBRID PRO OR HANS® DEVICE

An FIA-approved helmet according to FIA Standards 8858-2002, 8858-2010, 8860-2010, 8860-2018 or 8859-2015 is required. Please refer to FIA Technical Lists 33, 41, 49 and 69 for a full list of helmets approved for FHR use. Helmets with FIA labels 8858-2002 or 8858-2010 are only valid when they also have a SNELL SA sticker.

It is important to take into consideration the following date:

- Helmets approved according to FIA Standards 8858-2002 or 8858-2010 will not be valid after 31.12.2023, regardless of what SNELL certification they may have.

FHR devices must always be used together with the helmet and must be properly fitted (FHR tether end fittings clipped on the helmet and all device straps buckled and tightened).

Therefore, whenever a helmet is not worn, for example on rally road sections, the Hybrid must also be removed.

## 6/ INSTALLATION FOR HYBRID

### SEATS

When using a Hybrid with a saloon car, safety seats homologated according to FIA Standards 8855 1999, 8855-2021 or 8862-2009 must be used.

In these cases, it is important to ensure that the shoulder straps run freely between the seat shoulder slots. It is therefore recommended to centre the belt traps in the slots such that they do not touch the edges of the slots.

### HARNESSES

The safety belts to be used must be minimum five-point harnesses homologated to FIA standard 8853/98 or 8853-2016. Drivers must ensure that they remain properly tightened at all times.

Teams shall pay particular attention to the installation of the shoulder straps and the position of the buckle. The buckle position is regulated by Article 253.6.2 of Appendix J to the 2022 FIA International Sporting Code. See the extract of the related regulation below:

"Article 253.6 Safety Belts (...)

The lap straps must fit tightly in the bend between the pelvic crest and the upper thigh. Under no conditions must they be worn over the region of the abdomen."

Some teams tend to fit bungees on the shoulder belts in order to move them to the side of the seat. However, this also moves the shoulder belt sideways, such that the belt contact area is reduced, adversely affecting the Hybrid Pro device. Competitors must NOT fit bungees on the shoulder belts.



### HARNESS RESTRICTIONS

Hybrid devices can be used with harness models that are homologated with the standard shoulder strap width of a minimum of 70 mm, as well as with models that are homologated with a specific shoulder strap width of a minimum of 44 mm and that are marked "for FHR use only" or "for HANS® use only".

FIA-homologated double shoulder belt systems are not necessary or useful for use with the Hybrid or Hybrid Pro devices.

### POSITION OF ADJUSTERS

The shoulder belt length adjustment device must be positioned low on the chest.

### SHOULDER BELT ANGLES – TOP VIEW

The shoulder belt anchorage points on the car must be symmetrical about the centre line of the driver's seat. When viewed from above, it is recommended that the angle between the belts is approximately 20°-25° and never out of the 10°-25° range. Belts may touch or even be crossed over each other, if necessary, as shown in Fig. 12.

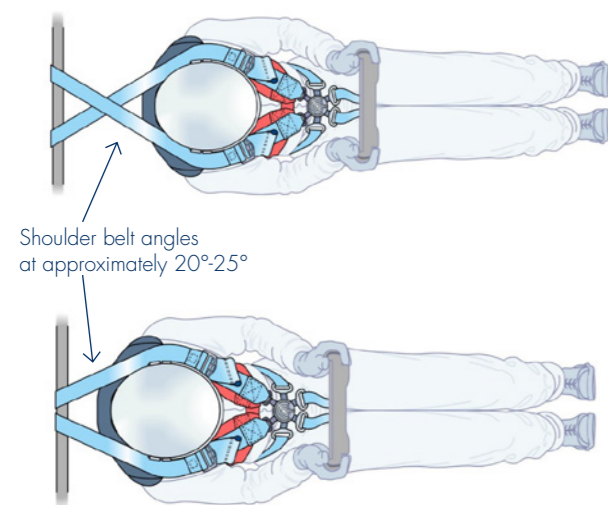


Fig. 12 - Examples of shoulder belt angles

It is important to make sure that the shoulder strap attachment cannot slide laterally.

### SHOULDER BELT ANGLES – SIDE VIEW

When using a Hybrid or Hybrid Pro with a saloon car, the rear section of the shoulder strap must be horizontal or sloping downwards from the uppermost point of contact with the Hybrid or Hybrid Pro belt-bearing surface to the anchorage point on the car. Acceptable angles are between 0° and 10° below the horizontal, as shown in Fig. 13.

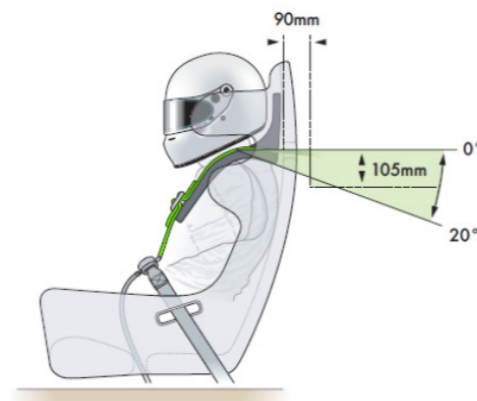


Fig. 13 - Side view to show recommended belt angles

When using a Hybrid device with a reclined seat (for example in an open cockpit car) it is recommended that the rear section of the shoulder strap is horizontal from the uppermost point of contact with the Hybrid belt-bearing surface to the anchorage point on the car, preferably a 0° angle. Angles between 0° and 10° are acceptable, as shown in Fig. 14.

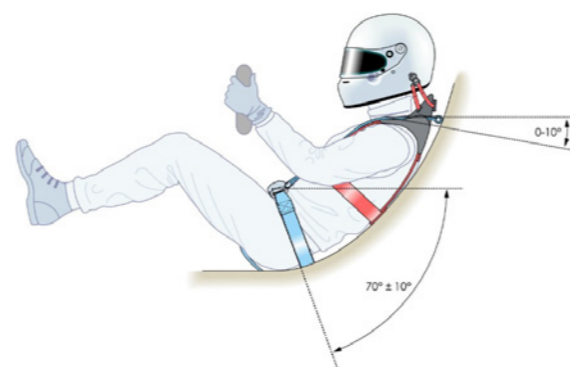


Fig. 14 - recommended belt angle for open cockpit cars

### HEADRESTS AND COCKPIT SURROUND WITH HYBRID

Since the Hybrid devices have a low collar design, no interference with the helmet, headrest or cockpit surround is expected.

### CAR EVACUATION WITH HYBRID

It is essential to practise rapid evacuations from the car with full race equipment fitted (including race attire, steering wheel, radio system and drinking system if applicable). This will help to ensure successful emergency evacuation in the event of an accident.

recommended to centre the belt straps in the slots such that they do not touch the edges of the slots, as shown in Fig. 15.

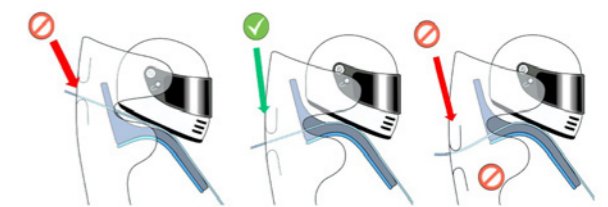


Fig. 15 - Example of incorrect and correct positioning of the harness straps in the seat slots

As described in section 3a, the seat may determine the HANS® angle to be used.

## 7/ INSTALLATION FOR HANS

### SEATS

When using a HANS® with a saloon car, a safety seat homologated according to FIA standard 8855 1999, 8855-2021 or 8862-2009 must be used.

In these cases, it is important to make sure that the shoulder straps run freely between the seat shoulder slots. It is therefore

### HARNESS

The safety belts to be used must be minimum five-point harnesses homologated to FIA standard 8853/98 or 8853-2016.

Drivers must ensure that the harness remains properly tightened at all times, and that the HANS® is under the shoulder straps as shown in Fig. 16 (see next section for exception of the double shoulder belt harnesses).



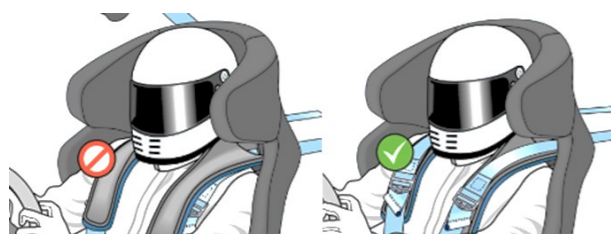


Fig. 16 - Example of incorrect and correct positioning of the harness straps when using a HANS®

Teams shall pay particular attention to the installation of the shoulder straps and the position of the buckle.

The buckle position is regulated by Article 253.6.2 of Appendix J to the 2022 FIA International Sporting Code. See the extract of the related regulation below:

“Article 253.6 Safety Belts  
(...)”

The lap straps must fit tightly in the bend between the pelvic crest and the upper thigh. Under no conditions must they be worn over the region of the abdomen.”

Some teams tend to fit bungees on the shoulder belts in order to move them to the side of the seat. However, this also moves the shoulder belt sideways, such that the belt comes out of the HANS yoke. Competitors must NOT fit bungees on the shoulder belts.

### HARNES RESTRICTIONS

HANS® devices can be used with harness models that are homologated with the standard shoulder strap width of a minimum of 70 mm, as well as with models that are homologated with a specific shoulder strap width of a minimum of 44 mm and that are marked “for FHR use only” or “for HANS use only”.

FIA-homologated double shoulder belt systems are also allowed. These are safety harness systems with two straps on each shoulder. They provide one body belt that is positioned on the driver’s shoulders (beneath the HANS®) and a second HANS belt that is positioned on the HANS yokes (as for standard HANS® use). It is important that the HANS belt is at least as tight as the body belt. An

example of the double belt system is shown in Fig. 17.

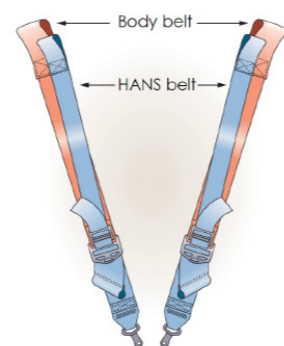


Fig. 17 - Double shoulder belt system

### POSITION OF ADJUSTERS FOR HARNESSES WITH 5, 6 OR 7 ATTACHMENT POINTS TO THE VEHICLE

If the shoulder belt length adjustment device is positioned on the HANS yoke, then the upper edge must be not more than 70 mm from the lower edge of the HANS yoke as shown in Fig. 18 (this does not apply in the case of the double shoulder belt system described in the previous section).

If the shoulder belt length adjustment device is positioned between the HANS yoke and the buckle, it must be at least 25 mm lower than the HANS yoke.

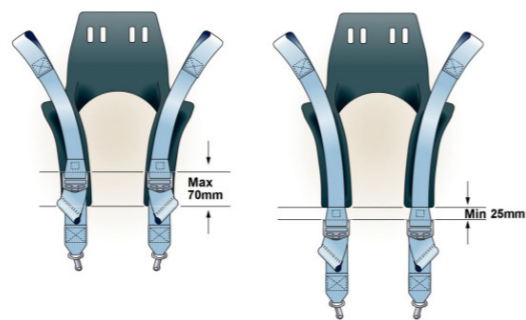


Fig.18 - Correct position of shoulder strap length adjustment device on HANS-yoke

### POSITION OF ADJUSTERS FOR HARNESSES WITH 8 OR 9 ATTACHMENT POINTS TO THE VEHICLE

When using double shoulder belts, there MUST be a minimum distance (B) between the lower edge of the HANS yokes and the merging of the two belts where the HANS belt is stitched to the body belt (see Fig. 19).

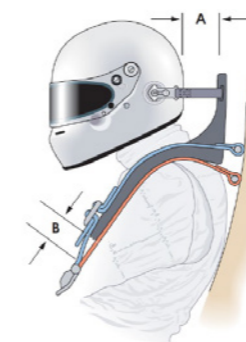


Fig. 19 - Minimum distance between HANS yokes and double shoulder belt merge point

The minimum distance (B) shall be determined as follows:

- the driver shall be seated in the car in the normal driving position, wearing the HANS® and helmet and with the safety harness fastened;
- the driver should lean his/her body and head forward as far as possible - in this position the horizontal distance from the front surface of the HANS collar to the rearmost point of the helmet shall be measured (distance (A));
- minimum distance B = 100 mm – distance (A).

### SHOULDER BELT ANGLES FOR HARNESSES WITH 5, 6 OR 7 ATTACHMENT POINTS TO THE VEHICLE – TOP VIEW

The shoulder belt anchorage points on the car must be symmetrical about the centre line of the driver’s seat. When viewed from above, it is recommended that the angle between the belts is approximately 20°-25°, as shown in Fig. 20, and never out of the 10°-25° range. Belts may touch, or even be crossed over each other if necessary.

It is important to make sure that the shoulder strap

attachment cannot slide laterally.

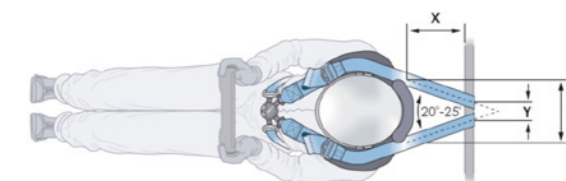


Fig. 20 - Position of shoulder belt anchorage points to achieve desired belt angle (plan view)

### SHOULDER BELT ANGLES FOR HARNESSES WITH 5, 6 OR 7 ATTACHMENT POINTS TO THE VEHICLE – SIDE VIEW

When using a HANS® with a saloon car, the rear section of the shoulder strap must be directed downwards from the uppermost point of contact with the HANS belt-bearing surface to the anchorage point on the car, preferably at about 20° below the horizontal. Acceptable angles are shown in Fig. 21.

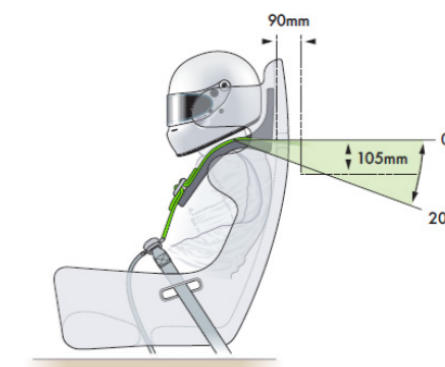


Fig. 21 - Side view to show recommended belt angles

When using a HANS® with a reclined seat (for example in an open cockpit car) it is recommended that the rear section of the shoulder strap is horizontal from the uppermost point of contact with the HANS belt-bearing surface to the anchorage point on the car, preferably at a 0° angle. Angles between 0° and 10° are acceptable, as shown in Fig. 22.

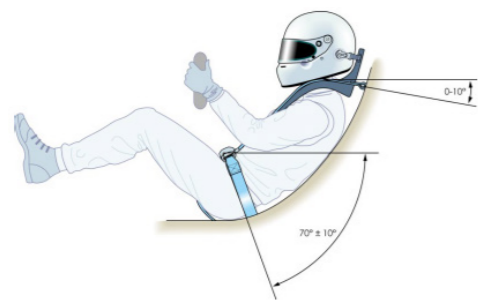


Fig. 22 - recommended belt angle for open cockpit cars

### SHOULDER BELT ANGLES FOR HARNESSES WITH 8 OR 9 ATTACHMENT POINTS TO THE VEHICLE – SIDE AND TOP VIEW

When double shoulder belts are used with a reclined seat (for example in an open cockpit car), the body belt anchorage points must be positioned 60 mm +/- 15 mm below the HANS belt anchorage points (see Fig. 23).

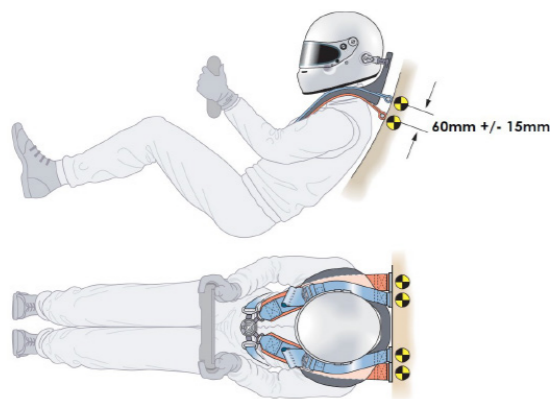


Fig. 23 - Installation of HANS double belts in cars where (X < 200mm)

When double shoulder belts are used in saloon cars, the body belt anchorage points can be at the same height as the HANS belt anchorage points (see Fig. 24).

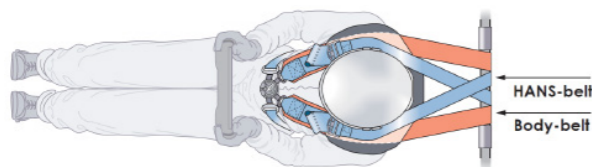


Fig.24 - Installation of HANS double belts in cars where (X > 200mm)

In both cases (X < 200mm and X > 200mm), the HANS belts must be installed as defined in Fig. 20.

If the HANS belts and body belts are installed on the same roll cage tube, the HANS belts must be installed as defined in Fig. 20 and be attached to the tube inboard of the body belts, as shown in Fig. 24. The body belts may, exceptionally, be installed with a greater dimension Y if necessary to accommodate this, up to the point of being parallel to each other but not divergent.

### HEADRESTS AND COCKPIT SURROUND WITH HANS®

In order to ensure compatibility with the rear headrest, sufficient clearance is necessary between the rear of the HANS® and the seatback bulkhead or top of the seat. The HANS® worn by the driver may not be less than 25 mm away from any structural part of the car when seated in the normal driving position.

### CAR EVACUATION WITH HANS®

It is essential to practise rapid evacuations from the car with full race equipment fitted (including race attire, steering wheel, radio system and drinking system if applicable). This will help to ensure successful emergency evacuation in the event of an accident.

## 8/ COMPATIBILITY

Below are a few diagrams to graphically summarise the compatibility between tethers and FHR:

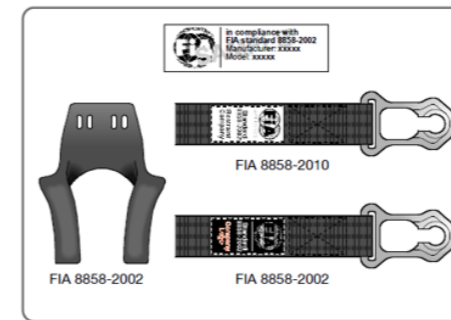


Fig. 25 - 8858-2002 FHR can be used with FIA-approved 8858-2002 and 8858-2010 FHR tethers (Technical List No. 29)

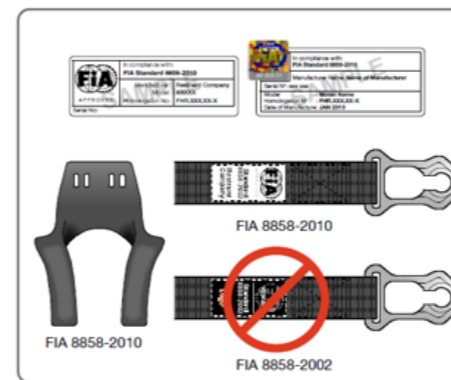


Fig. 26 - 8858-2010 FHR – can only be used with FIA-approved 8858-2010 FHR tethers (Technical List No. 29)

Below are a few diagrams to graphically summarise the compatibility between helmet and Helmet-M6-anchorage:



Fig. 27 - 8858-2002 Helmet-M6-anchorage – can only be used with FIA-approved 8858-2002 helmets (Technical List No. 41 – Part 2)

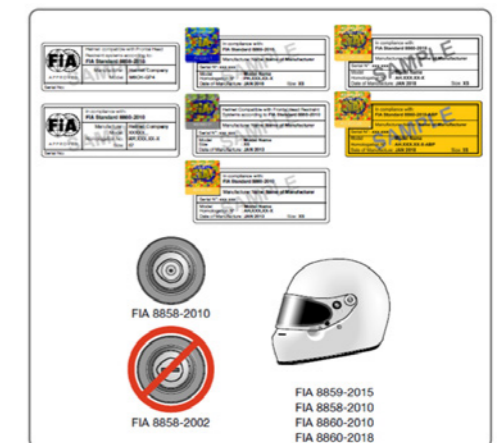
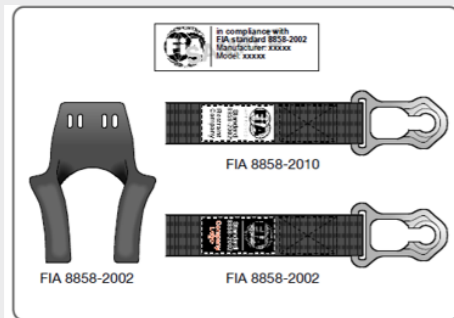


Fig.28 - 8858-2010 Helmet-M6-anchorage – can be used with FIA-approved 8858-2010, 8859-2015, 8860-2010 and 8860-2018 helmets (Technical Lists Nos 41-Part 1, 33, 49 and 69)

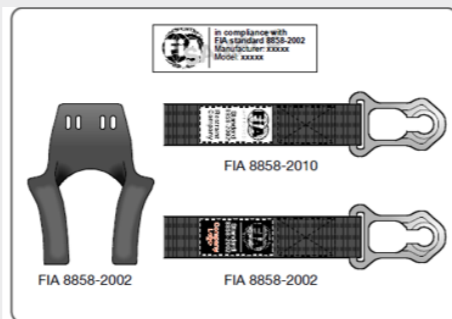
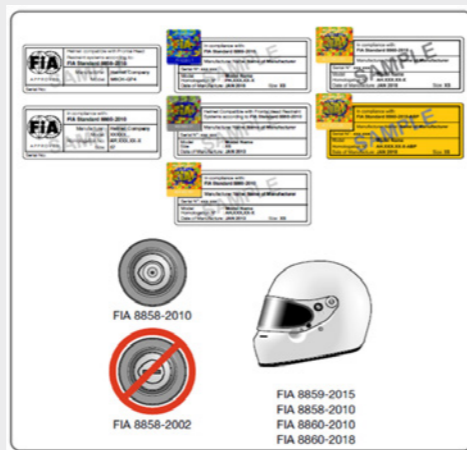
Any of the combinations below are acceptable as they respect the requirements that:

- the compatibility between the tethers and the FHR itself, as well as between the M6-Anchorage and the Helmet itself, is confirmed; and
- there is the correct mechanical compatibility between the tether end fitting and the Helmet-M6-anchorage (i.e. the devices can be correctly attached).

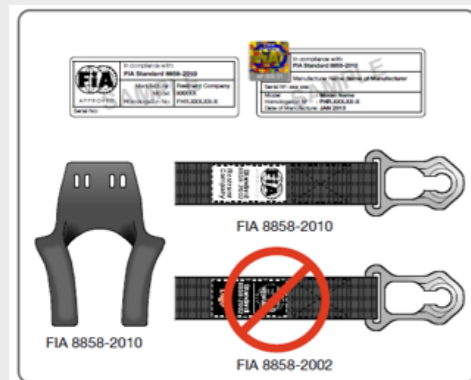
### Combination 1



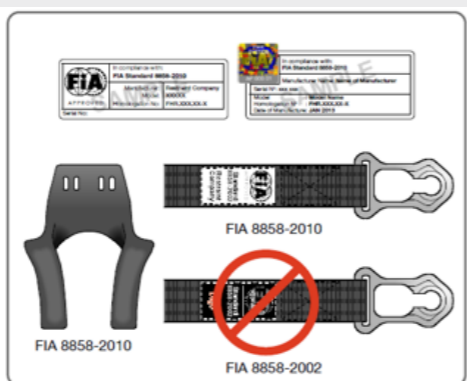
### Combination 3



### Combination 2



### Combination 4





## 1/ PRE-EVENT CONTROL

First, please ensure that you have downloaded the latest version of the technical list. The technical list contains the basic information to allow you to check that the safety equipment is in compliance with the FIA Safety Regulations.

### FIA LABELS

The FIA-approved label is affixed on the products only if they comply with the FIA's safety requirements. It is easy to identify which products have been subject to the stringent tests defined in the FIA Standard: simply look for the FIA hologram and/or label on the product.

FIA labelling  
8858-2002 & 8858-2010:

• Technical List No. 29



| STANDARD  | CURRENT LABEL   | OLD LABEL  |
|-----------|---|--|
| 8858-2002 | <p>In compliance with FIA standard 8858-2002<br/>Manufacturer: Restraint Company<br/>Model: RCB-001</p>   |  |
| 8858-2010 | <p>In compliance with FIA Standard 8858-2010<br/>Manufacturer Name: Name of Manufacturer<br/>Serial N°: XXX XXX<br/>Model Name: Model<br/>Homologation N°: FHR.XXX.XX-X<br/>Date of Manufacture: JAN 2013</p> | <p>In compliance with FIA Standard 8858-2010<br/>Manufacturer: Restraint Company<br/>Model: RCB-001<br/>Homologation No: FHR.XXX.XX-X<br/>Serial No:</p> |

Use the above example of labels to check conformity with the technical list and prove the authenticity of the equipment. In case of doubt, contact the ASN or the officials for the event.

Alternatively, compare the label/hologram with another product which you are confident complies with the regulations.

### CHECK LIST TO IDENTIFY FHR COMPLIANCE WITH FIA REGULATIONS

1. Compare the FIA label and hologram affixed on the FHR with the label template shown on the respective Technical List. The way the information is displayed, the font and the use of bold type must be the same as

on the template. The standard, manufacturer's name, homologation number, model name, and validity date must always be present.



2. Compare the information shown on the FIA label with the information shown on the respective Technical List.

| N° Homol.    | Constructeur<br>Manufacturer | Modèle<br>Model | Début<br>d'homologation<br>Homologation<br>beginning | Fin<br>d'homologation<br>Homologation<br>end <sup>(1)</sup> |
|--------------|------------------------------|-----------------|--|---|
| FHR.074.19-A | STAND 21                     | 30M-FL          | 28.05.19   | 31.05.24  |

3. Compare the date of manufacturer with the homologation date (the manufacturing date must be after the homologation date).  
The validity of an FHR has no end if the device is in good condition and has not suffered any severe impact.

After a severe accident that involves loading of the FHR, it is recommended to replace the helmet and the FHR device. The respective manufacturers may be able to provide an inspection service to determine whether the helmet and/or the FHR device has suffered any damage during less severe accidents.

## 2/ POST-ACCIDENT ANALYSIS

The tethers must be replaced after frontal impacts or angled frontal impacts with a yaw angle of up to 45°, or sooner if wear is observed.

Definition of a severe accident: a severe accident is any frontal or angled frontal accident with a yaw angle of up to 45°, and with an estimated impact speed of over 50 kph.

## HOW TO CHECK THE FHR DEVICE

After any frontal or angled frontal accident with a yaw angle of up to 45°, and especially after a severe accident, check:

- Whether the FHR tether or FHR end fitting is damaged, as shown in Fig. 29.



Fig. 29 – Deformed end fitting (top right and left, and bottom left), and stretched FHR tether (bottom right)

- Whether there are any signs of wear or friction on the FHR surface in contact with the shoulder belts, as shown in Fig. 30.



Fig. 30 – Signs of wear on the rubber surface

- Whether the shoulder belt has been stretched, as shown in Fig. 31.



Fig. 31 – Shoulder belts stretched after a severe crash

If any sign of damage as mentioned in the points above is identified, the FHR device must be sent to the manufacturer so that non-destructive tests can be performed in order to check the structural integrity of the part. Please also check whether there is any damage to the Helmet M6 anchorages. If there is any damage, the helmet must be sent back to the manufacturer for further checks.

The safety harness must be replaced with a new one, as webbing that has been stretched will not perform as desired during a second accident.

Even if there is NO damage as mentioned in the points above, the FHR tether must be replaced, because the FHR tether may have been stretched and consequently it may not work properly in the event of a second severe accident.

Please note that FIA Standards 8858-2002 and 8858-2010 have been worded in such a way that the first part of the device to be damaged in the event of an accident is the FHR tether. In any case, depending on the severity of the accident, non-visible damage to the FHR part may have occurred, compromising the structural integrity of the FHR device. Therefore, it is important to undertake the above checks.

## QR CODES - SUMMARY

Appendix L



Technical List 29



Technical List 36





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