

## FRONTAL HEAD RESTRAINTS (FHRs) COMPETITOR GUIDANCE

### What is a Frontal Head Restraint?

It is a device that restricts the forward motion of the user's head and extension of the neck during periods of rapid forward deceleration. Your FHR will come with detailed instructions for use and it is essential that these are followed.



### How does it work?

There are a number of different products homologated by the FIA as FHRs. The most common device is the 'HANS' where a yoke is secured on the wearer's shoulders by the pressure of the safety harness shoulder straps. Straps connect the wearer's helmet to the vertical upstand integral in the yoke. The length of the tethers limits forward motion of the head relative to the body. An alternative device uses tethers to attach the helmet to a 'waistcoat' worn by the user, an example of which is the Simpson Hybrid.

### Which is the right FHR for me?

MSA Regulations require that where it is mandatory to use an FHR it must be FIA homologated. Whichever FIA homologated product you choose, determine the correct size. For example, HANS devices are available in three different widths. Having selected the appropriate width, select the device with the appropriate angle between the vertical upstand and the device body, there being five options. The required angle will be determined by the angle of the user's body relative to the vertical when inside the car, so the required device for a user driving a touring car will be different to that required by the same user driving a single-seater with a reclined seating position. There are now adjustable devices that are FIA homologated; if using one of these, make sure it is correctly adjusted and locked.

### Do I have to use a HANS specific harness?

No but the configuration of the harness is critical and some HANS are tailored for use with a HANS specific harness. The shoulder strap mounting points should be lower than the point at which the straps bear down on the HANS, such that the straps make an angle of  $10^{\circ}$  to the horizontal. The mounting points must be equally disposed about the user's centreline so that straps spread outward slightly from the mountings and around the HANS. This helps to keep the straps firmly engaged with the HANS.

**Can anything be interposed between the shoulder straps and the FHR?**

Not unless specified by the FHR manufacturer. The HANS device is designed to maintain a good level of friction to minimise slippage between the straps and the HANS device.

**How tightly should I wear my harness when using an FHR?**

Whether using an FHR or not, any harness must be worn as tightly as possible. Fully tighten the lap strap, then the shoulder straps. If you are using a five- or six-point harness, ensure crotch strap(s) are tight when the lap strap is tight.

**Can I use an FHR without a harness?**

A HANS requires the minimum of a four-point harness to be used. The Simpson Hybrid device does not require use of a harness but unless the body is restrained there is no advantage in controlling the movement of the head relative to the body.

**Can I use an FHR with any helmet?**

The helmet must be equipped by the helmet manufacturer or agent with FIA homologated fixation points and the helmet must be manufactured in accordance with one of the required Standards. Some helmets are specifically manufactured and homologated for use with HANS.

**Is a Frontal Head Restraint always of benefit?**

An FHR is of greatest benefit in a purely frontal impact or purely rearward impact incident. There is no type of incident in which the use of an FHR will be disadvantageous.

**How is the performance of my FHR maximised?**

Always buy the best quality device you can afford and avoid buying second-hand devices. Buy from a recognised source, ensuring that the product you purchase is a genuine item not a fraudulent copy. Check homologation labels and markings carefully.

Take care selecting the correct unit for you and your particular vehicle. Spend time setting up the seat, harness and FHR – the three items are a partnership. For FIA guidance, [click here](#).

If you have the slightest doubt about the condition of any piece of safety equipment, replace it.

