

# SAFETY HARNESSSES

## OFF ROAD RACING IN AUSTRALIA

The following is provided for information only and does not purport to be endorsed by CAMS, FIA or SFI Foundation.

### WHO DECIDES THE STANDARDS/SPECIFICATIONS

#### FIA

The [Fédération Internationale de l'Automobile \(FIA\)](#) is the governing body for motorsport events. It is a non-profit association established in 1904 to represent the interests of motoring organisations and motor car users.

Headquartered in Paris, the FIA consists of 213 national member organisations in 125 countries worldwide, of which [CAMS](#) is one.

#### SFI Foundation

The [SFI Foundation, Inc. \(SFI\)](#) is a US non-profit organisation established to issue and administer standards for specialty/performance automotive and racing equipment.

SFI was originally a foundation run by SEMA, the US automotive aftermarket trade organisation. The letters "SFI" stood for "SEMA Foundation, Inc." Although SFI is now completely independent from SEMA, the Foundation has retained the name SFI Foundation, Inc. but the "S" no longer means SEMA.

[CAMS](#) is a member of SFI Foundation.

### WHAT IS HOMOLOGATION

Homologation is the approval process that a part or product (and vehicles and race tracks) must go through to be used/raced in a given sphere of competition. The regulations and rules that must be met are set by the sanctioning body. The word is derived from the Greek *homologeō*—literally 'same words' - for 'agree'.

Manufacturers and Resellers will often describe a harness as 'FIA homologated' which, by inference, in reference to 5 or 6 point harnesses, means that it complies with FIA Standard 8853-98 (see below).

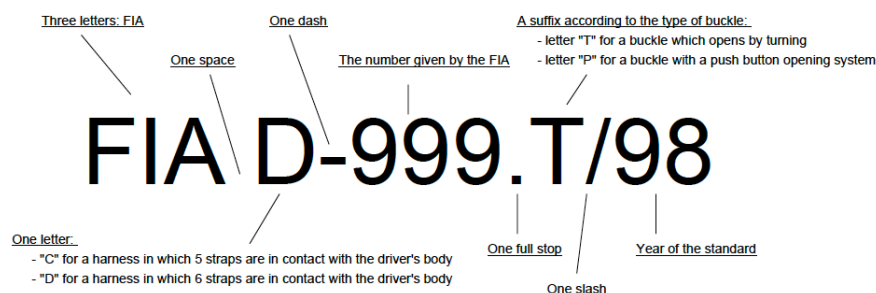
## WHAT ARE THE SPECIFICATIONS

SFI Specification 16.1 refers to Driver Restraint Assemblies. Note: SFI Specification 16.5. is for Stock Car Driver Restraint Assemblies (NASCAR) and is not applicable to off road racing in Australia.

The FIA Standard 8853-98 is for 5 or 6 point harnesses. FIA-homologated harnesses must satisfy the requirements of [Standard 8853-98](#)

The FIA publishes a list of [approved harnesses](#). The FIA also publishes a list of approved test houses for safety harnesses.

A harness that complies with the 8853-98 standard has a label similar to that below.



Note: FIA Standard 8854-98 is for 3 and 4 point harnesses and is not applicable to off road racing in Australia.

When adopted as part of the rules of a race sanctioning body, enforcement of the specifications is entirely up to that organisation. The manufacturer then provides the racer with product that is in compliance with the specifications enforced by the sanctioning body.

### CAMS Requirements for Safety Harnesses (Off Road Racing)

The regulations concerning Safety Harnesses may be found in the CAMS Manual under [Schedule I of General Requirements for Cars and Drivers](#). The requirements **as they relate to Off Road Racing in Australia** are paraphrased here.

#### 1. General Requirements

A safety harness shall be compliant with the SFI 16.1, FIA 8853/98 or FIA 8853-1985. Harnesses of a higher level than specified are permitted and encouraged.

#### 2. Mountings

A safety harness shall be securely mounted on at least five points in compliance with the prescriptions of Drawings I-1, I-2 and I-3 in [Schedule I](#). If the two shoulder straps join prior to a common mounting point then that junction shall be at least 150mm behind the wearer's neck.

A safety harness shall be mounted to the safety cage or to a substantial part of the vehicle structure.

Where a safety harness is affixed to an un-reinforced section of the body shell, each attachment point shall be reinforced by the use of a plate not less than 75mm x 50mm x 3mm thick as per drawing I-4 of [Schedule I](#).

### 3. Damage




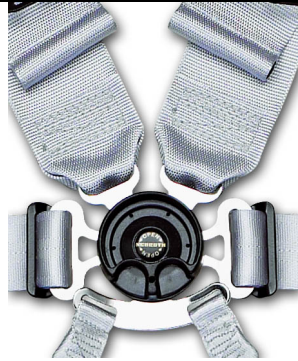
A safety harness damaged in any way, including in a collision, shall be subject to inspection by a scrutineer. If appropriate, the log book shall be endorsed with a requirement that the belt/harness be replaced.

### **TWO YEARS, FIVE YEARS or TEN YEARS**

SFI 16.1	2 years	
FIA 8853-98	5 years	See revised period for use in Australia

In 2008 the period of validity of FIA homologated harnesses used in Australia in non-international events was extended for five years after the validity date shown on the harness label, subject to the harness being accepted as being in good condition after inspection.

## COMPONENTS OF HARNESSSES

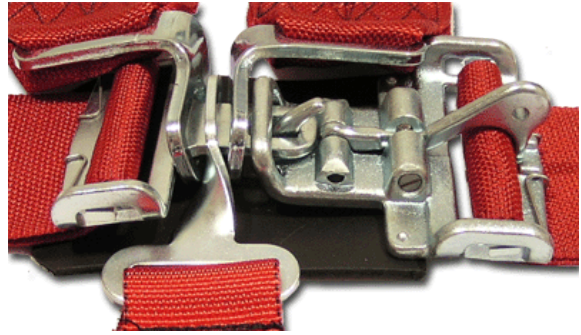
<b>Number of Restraints</b>		
<p>5 POINT</p> <p>Shoulder straps x 2</p> <p>Pelvic strap x 1 (in two pieces)</p> <p>Crotch straps x 1 (also known as a sub belt or anti-submarining belt or ASM belt)</p>	 <p style="margin-top: 5px;">Pyrotec 5 Point Latch</p>	 <p style="margin-top: 5px;">Sparco 5 Point Rotary</p>
<p>6 POINT</p> <p>Shoulder straps x 2</p> <p>Pelvic strap x 1 (in two pieces)</p> <p>Crotch straps x 2 (also known as a sub belt or anti-submarining belt or ASM belt)</p>	 <p style="margin-top: 5px;">G Force 6 Point Latch</p>	 <p style="margin-top: 5px;">Rotary 6 Point Push Button Release</p>

<b>Width of Restraints</b>		
<p>SFI Specification 16.1</p> <p>Shoulder/Pelvic</p> <p>Crotch</p>	<p>3"</p> <p>2"</p>	<p>2" do not meet Spec.</p>
<p>FIA 8853-98</p> <p>Shoulder</p> <p>Pelvic/Crotch</p>	<p>not less than 70mm.</p> <p>not less than 44mm.</p>	<p>The parts of the crotch straps not in contact with the thighs may have a minimum width of 25 mm.</p>

## Securing Buckle

### Latch

Known as Latch and Link or simply Latch, this system incorporates a pivoting "hammer," sometimes called a duckbill, which locks all of the belts into place on the tang.



Crow 5 Point Latch

### Rotary

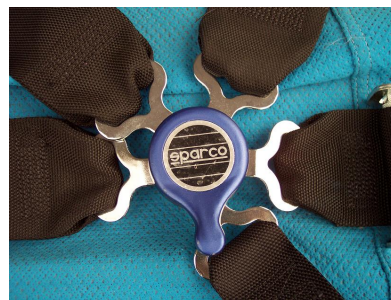
Sometimes called Camlock or Kamlok.

There are two types of Rotary Buckles – Push or Lever. If a Lever release is used it must point down to preclude accidental release.



Rotary Buckles are susceptible to malfunction as a result of internal dirt contamination although Schroth claim their RFR Rotary Buckle is insensitive to dust and other environmental influences.

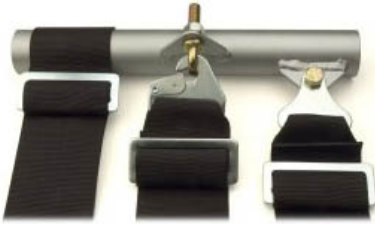





Schroth - RFR Rotary Buckle



Sparco 5 Point Rotary Lever Release

Adjusters/Tensioners		
Shoulder	Pelvic	Crotch
<p>Shoulder restraints are always pull-downs.</p> <p>Steel or Alloy available.</p> 	<p>Pull-down adjustment/ tensioning is more common - the belts tighten by pulling away from the driver (pull-out might be a better description).</p> <p>A pull-up belt is easier in a cramped cockpit.</p> <p>Steel or Alloy available.</p>	<p>Generally remains set after initial adjustment.</p> 

Attachment of Harness		
		
Wrap	Snap	Bolt
		
<p>Wrapped around a horizontal bar on the safety cage. Correct feeding of the belt through the buckle is vital.</p>	<p>Allows harnesses to be easily removed for cleaning, close inspection.</p>	<p>Under no circumstances shall a safety harness mounting bolt be used to affix a safety cage to the bodyshell.</p>