

**SCHROTH**<sup>®</sup>  
RACING

2018





# Safety through Technology

For over 50 years SCHROTH has been manufacturing racing and tuning (street legal) harnesses. Since 1960 SCHROTH has been conducting crash tests to further increase product quality and performance to meet the increasing safety requirements. With the knowledge gained from our extensive testing, SCHROTH is the technology leader in racing and aviation harnesses, supplying to F1, IndyCar, WRC, NASCAR, Porsche, ALMS, Dakar Rally, FIA GT and many other top teams and series world-wide!

SCHROTH technology has initiated improvements of standards and products industry wide. Examples of SCHROTH innovations include the development of the asm® safety system, the patented pending SHR FLEX, the patented "Double Take" racing net system, the patented RFR™ rotary (cam lock) buckle, patented SlipStop™ surface for HANS® systems and the patented HYBRID™ restraint. As an approved licensee to manufacture and distribute the HANS® device, SCHROTH continues to further develop and improve the FHR through extensive testing.

Looking for the world's most technically advanced racing harness? SCHROTH is your partner! In addition to the wide range of standard models, SCHROTH can produce a racing harness in accordance to your exact specifications and needs. The largest number of FIA approved components allows you to design numerous versions of individualized harnesses, fitting the installation specifics in your race car.





© LAT

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## Technology

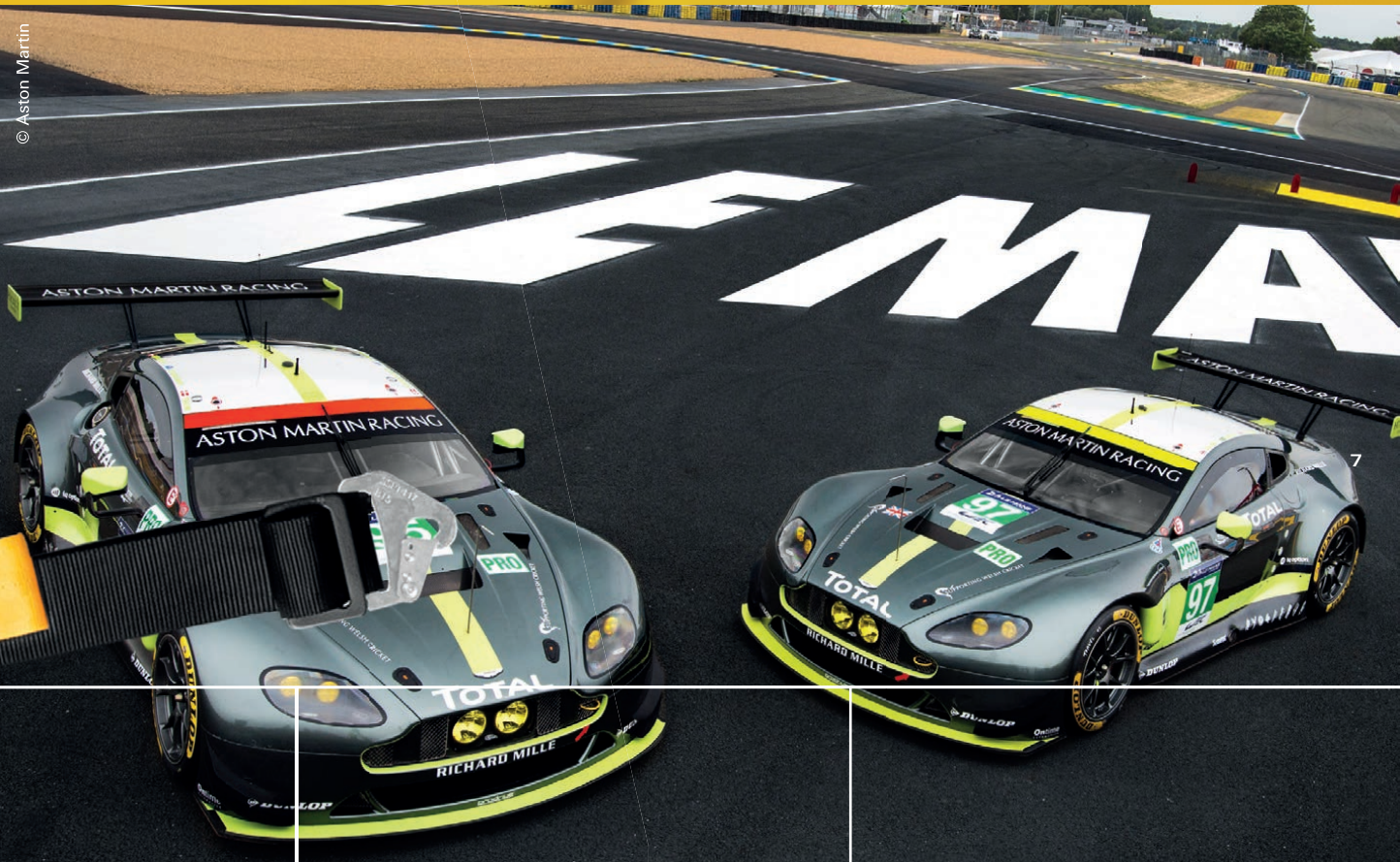
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# Designed to save lives

6



© Aston Martin





Oni



# FIA 8853-2016 - Harness Standard

## 8853-2016 - Technical Background

Accident analysis of the many championships fitted with Accident Data Recorders (ADR) has shown that very high G (>70g) crashes are now survivable with good vehicle crashworthiness and cockpit environments together with best practice safety equipment. On this basis, the performance levels for FIA approved safety equipment have been newly defined to manage the forces and energies generated during 70g accidents.

### Test Values

As test dummies are somewhat more aggressive than real (human) occupants are, the new FIA harness test prescribes a 60+g pulse to ensure the harness can manage the loads exerted during real accidents up to at least 70g. Based on development testing with a 50th percentile Hybrid III dummy, the following loads (RHS column) have been evaluated as appropriate. (Note: Development Testing has been done with Hybrid III 50% – the homologation testing will be conducted with an ECE R-16 50th percentile dummy as no internal instrumentation is required).

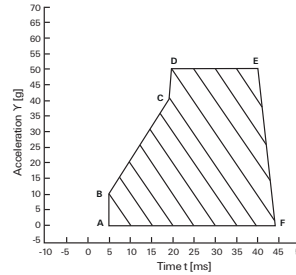
## Dynamic Testing

The most significant change for the new FIA 8853-2016 standard is increasing the severity of the dynamic requirements of the sled/crash testing.

- The impact speed will be increased from 50+/- 1km/h to 67+/- 1km/h
- The peak change in velocity will be increased from 32g to 60+g

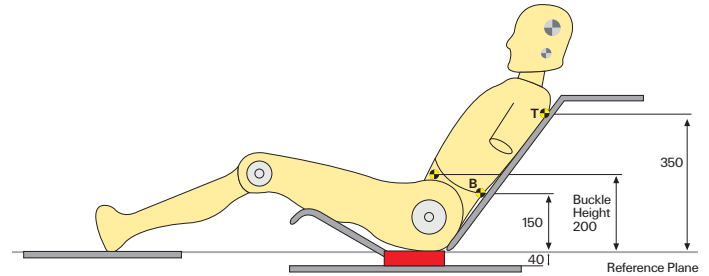
### Additional Changes and Enhancements:

- 8854/98 (4pt FIA harnesses) will remain in place for historical cars
- 5pt harness systems will not be accepted or qualify for homologation under 8853-2016
- V-Strap harness systems (sub-strap with single merge/point connection to buckle) will not be accepted or qualify for homologation under 8853-2016
- Harnesses with an additional "Z-Strap" or Negative "g" strap may be homologated under 8853-2016



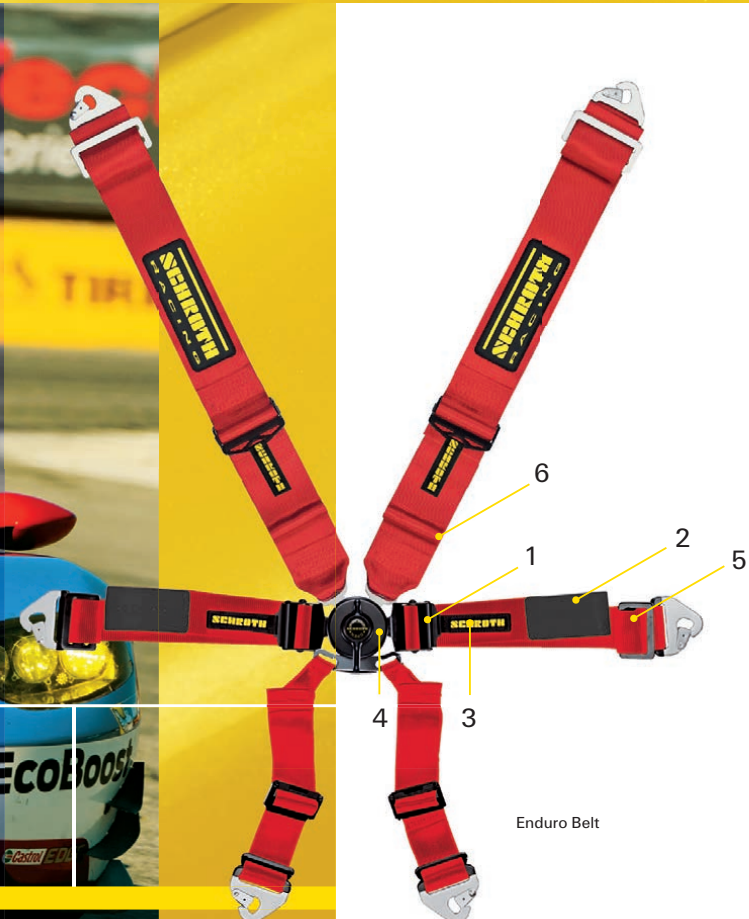
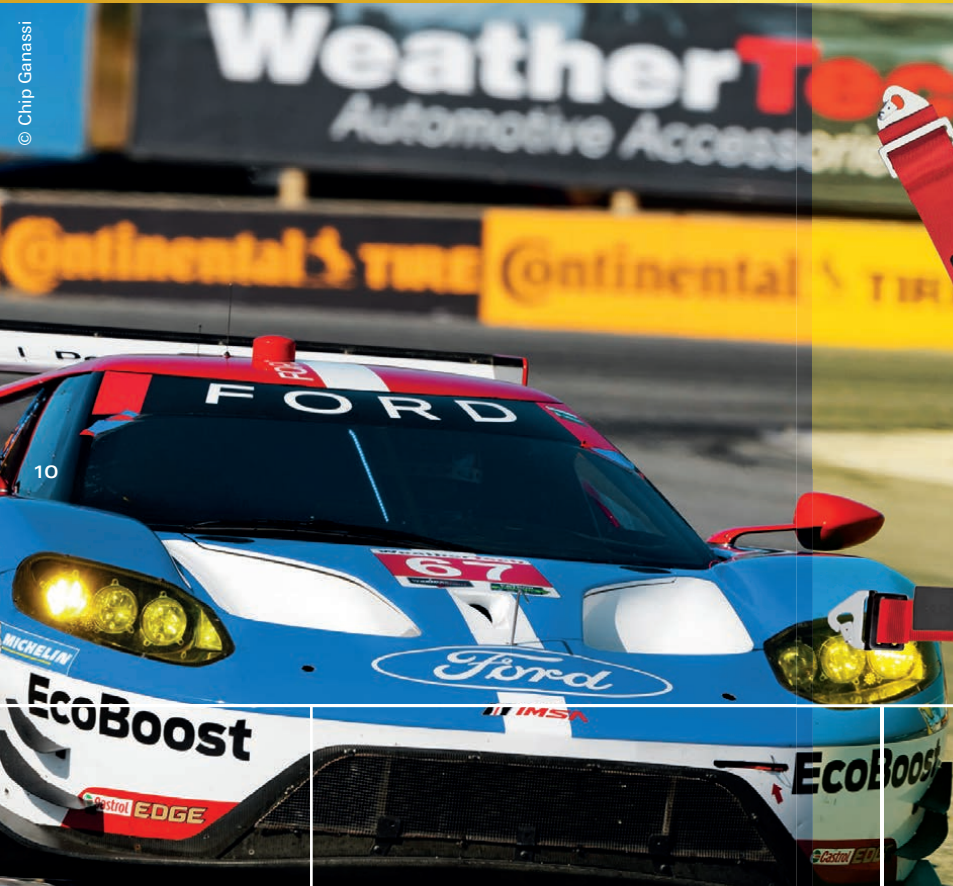
Point	Time t [ms]	Acceleration Y [g]
A	5	0
B	5	10
C	19	40
D	20	50
E	40	50
F	44	0

Bottom limit of trolley acceleration/deceleration curve as a function of time.



The seating position will be reclined as shown below and the seat will be yawed at an angle of 30° relative to the longitudinal axis of the trolley/sled, in order to simulate an angled impact.

Measuring points for movement of a seated dummy - "T" is the measurement point for the chest and "B" is the measurement point for the pelvis (dimensions in millimetres – tolerance for the measuring points is ± 5 mm).



Enduro Belt

# Enduro Belt

SCHROTH 6-point Enduro harness - super-fast, super-easy pull-down adjustment is ideal for driver changes or tight cockpit arrangements. The original "Enduro" belt.

- Simple and easy to adjust "ZIP Adjusters" integrated into the lap belt latches (1)
- Extra large, easy to see yellow or red "hand loops" on the lap belts (2)
- Clearly marked lap belt release straps (3)
- Rotary buckle (4)
- 2 inch (50 mm) lap belts for unmatched comfort (5)
- Pull-tabs on shoulder belt adjusters (6)
- For Touring Car and Sports Car applications!



Enduro Belt 3x2



Enduro Belt 2x2

- 94500-0 Enduro 3x2
- 94500-2 Enduro 3x2

- 94510-0 Enduro 2x2
- 94510-2 Enduro 2x2

- 94710-0 Enduro Porsche 996/997 2x2
- 94720-0 Enduro Porsche 991/981 2x2






## Profi - 6pt

### Profi 3x2





SCHROTH 6-point Profi harness – the benchmark for professional racing harnesses as used by top OEM's and race teams world-wide. 3" (75 mm) shoulder belt, 2" (50 mm) profi pull-up or pull-down lap belt – FIA homologated (8853-2016).

-  94540-0 (pull-up)
-  94540-2 (pull-up)
-  94541-0 (pull-down)

### Profi 3x3



SCHROTH 6-point Profi harness – similar to the Profi 3x2, but with 3" (75 mm) wide lap belts – SCHROTH always recommends using 2" (50 mm) lap belts! Please see "Tech Tip" on page 44. 3" (75 mm) shoulder belt, 3" profi lap belt – FIA homologated (8853-2016).

-  95500-0
-  95500-1
-  95500-2

## Profi - 6pt FHR

### Profi 2x2




SCHROTH FHR specific 6-point Profi harness – the benchmark for professional racing harnesses as used by top OEM's and race teams world-wide. 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) profi lap belt – FIA homologated (8853-2016).

-  94550-0
-  94550-2

## FHR Specific Restraint



Flexi 2x2 









SCHROTH FHR specific 6-point Profi harness – the benchmark for professional racing harnesses as used by top OEM's and race teams world-wide. 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) flexi lap belt – FIA homologated (8853-2016).

Profi XLT 2x2



SCHROTH FHR specific, super-lightweight WRC inspired 6-point Profi harness – the lightweight option for professional racing harnesses as used by top OEM's and race teams world-wide. 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) profi XLT pull-up or pull-down lap belt – FIA homologated (8853-2016).

-  94530-0
-  94530-1
-  94530-2
-  94530-H3

-  94580-0 (pull-down)
-  94581-0 (pull-up)



What is a FHR specific restraint? SCHROTH designed and developed the 2"/3" FHR specific shoulder belt configuration in 2002 when the FHR was first being introduced into motorsport. The concept of the FHR specific restraint is quite simple, we designed a belt which fits cleanly and completely onto the surface of the FHR without any extra webbing to hang off the side of the FHR. The fitment of the 2" webbing on the FHR allows for secure and optimal routing of the restraint. With the introduction of FIA 8853-2016 standard for restraint systems, a full 2" shoulder belt version may now be used as well as the 2"/3" shoulder belt combination. The FHR 2" design is available on almost all of our 6-point models. The FHR specific 2" restraints are used by our teams in F1, NASCAR, Porsche Cup cars, WRC. If you use, or are planning on using a FHR we recommend one of our 2" FHR specific restraints. FHR specific restraints must ONLY be used with FHR.





## Clubman

### Clubman 3x2



SCHROTH 6-point Clubman harness – entry level pricing with proven SCHROTH quality 3" (75 mm) shoulder belt, 2" (50 mm) profi lap belt – FIA homologated (8853-2016).



94560-0

### Clubman 2x2



SCHROTH FHR specific 6-point Clubman harness – entry level pricing with proven SCHROTH quality 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) clubman lap belt – FIA homologated (8853-2016).



94570-0

### Clubman II asm



Entry level harness with SCHROTH's rotary buckle and asm technology incorporated into a sport level harness. For saloon and sports car type fitment with 3" shoulder straps (wrap/snap hook fitting) snap-on, pull-up, 2" lap belts. FIA approved, FIA regulations (FHR compatible!)



left

91131-0

91131-1

91131-2

91131-9

right

91132-0

91132-1

91132-2

91132-9

## Formula

### Formula 2x2



SCHROTH FHR specific 6-point Formula harness – the proven solution for formula type vehicles as used by top OEM's and race teams world-wide. 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) formula lap belt – FIA homologated (8853-2016).

bolt-in/wrap fitting



94620-0

94620-2



## Porsche GT4, GT3 and GT2

Profi Porsche 991/981 3x2



Profi Porsche 991/981 2x2



Enduro Porsche 991/981 2x2



Profi Porsche 996/997 3x2



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SCHROTH 6-point OEM vehicle specific harness – the benchmark for professional racing harnesses as used by top OEM's and race teams world-wide. 3" (75 mm) shoulder belt, 2" (50 mm) profi lap belt – FIA homologated (8853-2016).

SCHROTH FHR specific 6-point OEM vehicle specific harness – the benchmark for professional racing harnesses as used by top OEM's and race teams world-wide. 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) profi lap belt – FIA homologated (8853-2016).

SCHROTH FHR specific 6-point OEM vehicle specific Enduro harness – super-fast, super-easy pull-down adjustment is ideal for driver changes as used by top OEM's and race teams world-wide. 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) enduro lap belt – FIA homologated (8853-2016).

SCHROTH 6-point OEM vehicle specific harness – the benchmark for professional racing harnesses as used by top OEM's and race teams world-wide. 3" (75 mm) shoulder belt, 2" (50 mm) profi lap belt – FIA homologated (8853-2016).

	991	981
●	94650-0	94670-0
●	94650-2	94670-2

	991	981
●	94660-0	94680-0
●	94660-2	94680-2

	991/981
●	94720-0

	996/997
●	94690-0
●	94690-2



## Profi Porsche 996/997 2x2



SCHROTH FHR specific 6-point OEM vehicle specific harness – the benchmark for professional racing harnesses as used by top OEM's and race teams world-wide. 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) profi lap belt – FIA homologated (8853-2016).

## Enduro Porsche 996/997 2x2



SCHROTH FHR specific 6-point OEM vehicle specific Enduro harness – super-fast, super-easy pull-down adjustment is ideal for driver changes as used by top OEM's and race teams world-wide. 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) enduro lap belt – FIA homologated (8853-2016).

996/997  
94700-0  
94700-2

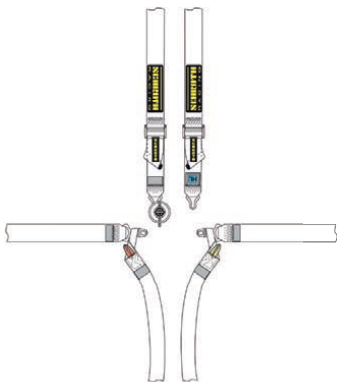


996/997  
94710-0



## Hybrid

### Hybrid XLT 2x2



18

SCHROTH FHR specific 6-point patented Hybrid harness - the lightweight solution for unmatched comfort and belt geometry used by top OEM's and race teams world-wide. Ideal for formula type seating positions. 2" (50 mm) FHR specific shoulder belt, 2" (50 mm) hybrid lap belt - FIA homologated (8853-2016). Ask for our specification sheet for customized belts!

## Hybrid - Technology in Action!

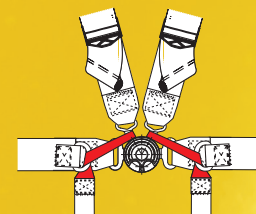
SCHROTH's patented restraint design improves on driver safety.

The Hybrid restraint from SCHROTH offers a light, comfortable and secure solution for motorsport participants. The crutch straps of the revolutionary Hybrid restraint from SCHROTH are not routed through D-rings or attached to a T-Bar but are held directly by the specially developed lap belt latches (see illustration). The load (force) is transferred from the shoulder belts through the buckle into the anti-sub straps and vice versa in case of a rear impact.

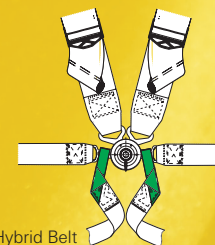
This direct load transfer is important for optimal restraining performance, keeping the buckle, lap belt and upper torso in place. The routing of the anti-sub straps are wide enough not to apply pressure to the crutch region or upper thighs. The direct attachment to the buckle system allows for an optimal anchor point downwards and slightly rearwards not requiring an extreme backwards mounting position. The Hybrid type restraint also allows for an additional 7th point anti-sub-strap to further reduce displacement during an impact. A further advantage of the Hybrid is weight savings over standard T-Bar and Formula belts, where less hardware (no T-Bar or D-rings) and webbing required.

Due to the attachment style of the anti-sub straps (loops, not latches) the Hybrid restraint is not optimal for endurance events where rapid driver changes are a must. Hybrid belts are the ideal solution for touring and sports cars, rally cars, formula chassis and prototypes.

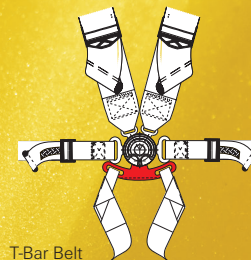
**SCHROTH** *Tech Tip*  
RACING



Formula Belt



Hybrid Belt




T-Bar Belt

© Fredy Barth






## Profi - 4pt

Profi II asm 



Lightweight 4-pt professional harness with snap hook fittings on 3" shoulder (wrap/snap hook fitting) and 2" pull-up lap straps with rotary buckle and alloy adjusters. asm feature on shoulder strap and optional crutch strap facility. FIA approved (as a 4-pt. harness) . FIA regulations (FHR compatible!)

	left	right
	20000	25000
	20100	25100
	20200	25200

Profi II asm  



Lightweight 4-pt professional harness with snap hook fittings on 3" shoulder (wrap/snap hook fitting) and 2" Flexi Belt lap straps with rotary buckle and alloy adjusters. asm feature on shoulder strap and optional crutch strap facility. FIA approved (as a 4-pt. harness). FIA regulations (FHR compatible!)

	left	right
	20001	25001
	20101	25101
	20201	25201
	20901	25901



Profi III asm 





Lightweight 4-pt professional harness with snap hook fittings on 3" shoulder (wrap/snap hook fitting) and 3" lap straps with rotary buckle and alloy adjusters. asm feature on shoulder strap and optional crutch strap facility. FIA approved (as a 4-pt. harness). FIA regulations (FHR compatible!)

	left	right
	40001	45001
	40201	45201

## Profi - FE

Profi II-FE asm  

Profi III-FE asm  



20

Lightweight 4-pt professional harness with wrap/snap-on attachment 3" shoulder belts and snap-on 2" lap straps. FE push button buckle (ECE and FIA). Alloy adjusters and asm feature on shoulder strap and optional crutch strap facility. Buckle is attached to in-board lap belt, must be ordered left and right side specific. Available with 2" or 3" lap belts. FIA approved (as a 4-pt. harness). FIA regulations (FHR compatible!)

	left/ 20071	right/ 25071
	20171	25171
	20271	25271

	left/ 40071	right/ 45071
	40271	45271





## Lotus - 4pt

Lotus II 





OEM 4-pt professional harness with wrap attachment 3" shoulder belts and Lotus specific bolt-in 2" lap straps. Rotary buckle (FIA). asm feature on shoulder strap and optional crutch strap facility. Designed for most Elise and Exige models (S1 & S2). Buckle is attached to in-board lap belt, must be ordered left and right side specific. FIA approved (as a 4-pt. harness). FIA regulations (FHR compatible!)

	left/	right/
	91158-0	91159-0
	91158-2	91159-2

Lotus II-FE  



OEM 4-pt professional harness with wrap attachment 3" shoulder belts and Lotus specific bolt-in 2" lap straps. FE push button buckle (ECE and FIA). asm feature on shoulder strap and optional crutch strap facility. Designed for most Elise and Exige models (S1 & S2). Buckle is attached to in-board lap belt, must be ordered left and right side specific. FIA approved (as a 4-pt. harness). FIA regulations (FHR compatible!)


	left/	right/
	91158A-0	91159A-0
	91158A-2	91159A-2

## Caterham - 4pt

Caterham II 



Lightweight Caterham specific 4-pt professional harness with bolt-in 3" shoulder belts and bolt-in 2" lap straps. Rotary buckle. asm feature on shoulder strap and optional crutch strap facility. Buckle is attached to in-board lap belt, must be ordered left and right side specific. FIA approved (as a 4-pt. harness). FIA regulations (FHR compatible!)



	left/	right/
	91184-0	91185-0
	91184-2	91185-2

## Westfield - 4pt

Westfield II 



Lightweight Westfield specific 4-pt professional harness with snap-on 3" shoulder belts and bolt-in 2" lap straps. Rotary buckle. asm feature on shoulder strap and optional crutch strap facility. Buckle is attached to in-board lap belt, must be ordered left and right side specific. FIA approved (as a 4-pt. harness). FIA regulations (FHR compatible!)





	left/	right/
	91186-0	91187-0
	91186-2	91187-2

## Anti-sub straps

### Anti-sub strap II



T-Bar Crutch Strap for all 4-point restraints without FIA approval – Street or Trackday use only with 8854/98 belts.


	rotary buckle
	49002
	49102
	49202
	49902

## Padding

### 3" Shoulder Pads

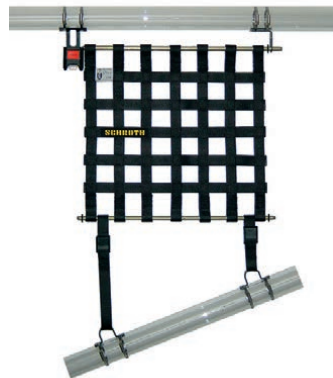


High Quality NOMEX® covered 3" Shoulder Pads (Pair)

	logo yellow	logo silver
	00209	00229




## Window Nets

### Window Net






### Window Net (hardware incl.) Small

400 mm x 405 mm [l x h] (15.75" x 16") for 4-door and compact cars; meets all applicable international standards (e.g. SFI/USA/NASCAR and FIA appendix J)

	left	right
	09043-0	09543-0
	09043-1	09543-1
	09043-2	09543-2




### Window Net Small

400 mm x 405 mm [l x h] (15.75" x 16") for 4-door and compact cars; meets all applicable international standards (e.g. SFI/USA/NASCAR and FIA appendix J)

	09053-0 without hardware
	09053-1
	09053-2




### Window Net (hardware incl.) Large

525 mm x 467 mm [l x h] (20.7" x 18.4") for 2-door and larger race cars; meets all applicable international standards (e.g. SFI/USA/NASCAR and FIA appendix J)

	left	right
	09045-0	09545-0
	09045-1	09545-1
	09045-2	09545-2

### Window Net Large

525 mm x 467 mm [l x h] (20.7" x 18.4") for 2-door and larger race cars; meets all applicable international standards (e.g. SFI/USA/NASCAR and FIA appendix J)

	09055-0 without hardware
	09055-1
	09055-2



## QUICK CURE RESIN

## iNDi SEAT

SCHROTH Racing iNDi Seat kit uses a vacuum casting bag with a unique bead and quick cure resin (30 min.) making it a simple, easy to use and professional system to fit any driver into any race car or seat. The SCHROTH Racing iNDi Seat kit provides the driver an "iNDi-vidual" seating solution for the optimum racing position, improved performance and driver safety. SCHROTH Racing iNDi Seat kit materials have been tested extensively at an FIA Approved Test Laboratory.

## Seat Kit Size: 15 Litre

For karts.

## Seat Kit Size: 20 Litre GT

Ideal for replacing seat shell padding.  
Designed to fit legs, lumbar or back area.

## Seat Kit Size: 25 Litre

Ideal for Big Drivers in a tight cockpit or seat shell. Designed to fit torso or legs etc.

## Seat Kit Size: 30 Litre

Applications: F1, GP2, Touring Car, LMP, Formula Ford, WSR, F3 & Historic cockpits with bigger drivers.

## Seat Kit Size: 40 Litre

As above for 30 Litre but with a smaller driver.

## Seat Kit Size: 50 Litre

Formula Renault, GP2, GP3, F3, World Series Renault plus LMP & also has been used for smaller drivers in seat shells such as GT, Touring Cars & some extractable seats.

## Seat Kit Size: 70 Litre

Caterhams, Radical, Sports 2000, & also has been used for small drivers in Formula Renault, F3, IRL, Indy Lights & Super Formula. No quick cure resin.

23



15 Litre kit	77515
20 Litre (GT) kit	77520
25 Litre kit	77525
30 Litre kit	77530

40 Litre kit	77540
50 Litre kit	77550
70 Litre kit	77570

## Towing Straps

### Towing Straps



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Towing Strap with bendable stainless steel bolt-on hardware for up to 7/16" or max 1/2" bolt; available in two lengths, one fixed at 100 mm (4") and an adjustable version up to 400 mm (16"); colour: red; capable of pulling approx. 1800 kg (4000 lbs); meets FIA appendix J for minimum size towing strap.

sewn loop (4") adjustable loop (16")

90372 90373

## Hardware + Kits

### B 23 Kit



B 23 brackets allow snap-on installation where eye bolts do not have enough space or access to the anchor point or if restricted seat adjustment is impaired when an eye bolt is installed. Two brackets each with bolts. Hardware Kit is NOT part of harness homologation - verify the acceptance of this installation method with your series regulations.

01324 B 23 Kit

### Bolt-in Kit



2 each bolt-in brackets with swivelling reduction inserts and washers for 3/8", 5/16", M8 and M10 bolts and 7/16" shoulder bolts included.

01327 Bolt-in Kit

### Snap-on Kit



Snap-on Kit with 2 snap-on brackets BK B 15 and 2 eye bolts SG 23 with 22 mm length.

01312 Snap-on Kit



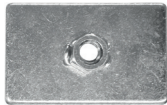
## Wrapping Techniques + Hardware

### Eyebolts



00040 7/16" thread, length: 22 mm

00079 7/16" thread, length: 38 mm



00080 Reinforcement plate 50 x 80 mm with welded nut 7/16"

### Pull Tabs

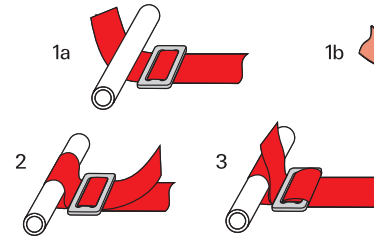


Pull Tabs SCHROTH Racing – release straps for length adjuster BK LV 14 for an easier adjustment and better grip.

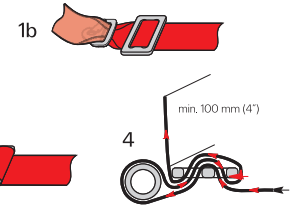
00092LV Pull Tabs SCHROTH Racing

### Wrapping Techniques

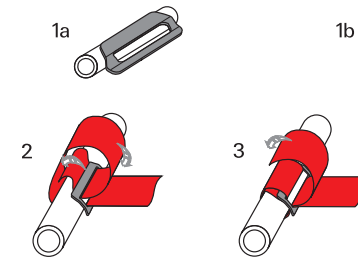
#### Roll Cage



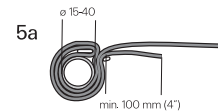
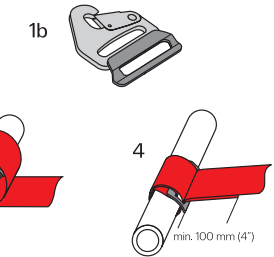
#### Attachment Hardware



#### Roll Cage



#### Attachment Hardware





## FHR Technology

The SCHROTH range of FHR devices (SCHROTH XLT, PRO, EVO) have been chosen by racers world-wide for unparalleled protection in competitive or sport racing series and track-days as well! The full range of SCHROTH FHR devices includes the newest and lightest FIA approved FHR models to date.

The line of SCHROTH XLT products are on average 25% lighter than the previous PRO Systems. The XLT (XtraLight) devices have been optimized through extensive testing and advances in carbon fiber technology to reduce overall weight and to reduce driver fatigue.

These advantages allow for an increase in overall performance while maintaining the high level of comfort drivers world-wide have come to expect from the SCHROTH FHR systems.

The new SCHROTH EVO uses eco-friendly high strength materials for performance while maintaining an entry level price.

All SCHROTH FHR devices are supplied with padding systems and protective bag for carrying and storage. Professional fitment and guidance is recommended to ensure your safety and comfort.

Trained FHR technicians are available to answer questions regarding fitment and appropriate helmet usage and requirements. The device can be used with most FIA approved racing harnesses or with any of the specifically designed FHR specific SCHROTH harnesses.

Sizing is based on neck size or shirt collar size and should be stated when ordering. 38 to 47 cm (15" to 18.5") medium and over 46 cm (18"+) for large versions. Detailed fitting instructions are provided with each device.

## HANS XLT, PRO, EVO

- Sliding Tether System - Standard on all HANS
- Patented SlipStop™ Plus contact surface with retaining winglets
- Proven comfortable shapes to fit all types of drivers and seating positions
- Wide range models
- Free carrying bag to protect your HANS
- Interchangeable Padding System (Foam kits available from SCHROTH Racing)

### Model Range

HANS	XLT	PRO	EVO
10° Medium		•	
20° Medium	•		*
20° Large	•	•	*
30° Medium	*		
30° Large	*		*
40° Medium		*	

- With SlipStop™ Plus surface
- \* Without SlipStop™ Plus surface

Weights without padding and including tethers

## Installation and Optimization of HANS



CORRECT

INCORRECT

Shoulder belts should run at an angle behind your HANS to keep the belts from slipping off the HANS.

Shoulder belts should be installed between 0° and -20° and have no interference with the seat openings.

Belt adjuster must be positioned on the lower end of the HANS System. Do not use shoulder belt padding between the shoulder belt and the HANS system!

Sliding Tether System - Standard on all HANS devices from SCHROTH see more details on page 28.

WARNING

Never modify the HANS System structure. Any modifications will invalidate the FIA homologation and may be dangerous! HANS tethers and padding systems may be adjusted or replaced as needed.

# HANS

## XLT



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Extra lightweight carbon fiber XLT version. Equipped with sliding tethers and patented SlipStop Plus contact surface with retaining winglets. Weight around 440 g.

## PRO



Lightweight carbon fiber PRO version. Equipped with sliding tethers and patented SlipStop Plus contact surface with retaining winglets. Weight around 500 g.

## EVO



Exceptional performance and value at an entry level price. Equipped with the sliding tether system and retaining winglets. Weight around 775 g.

20° Medium XLT	42282
20° Large XLT	42283
30° Medium XLT	42382*
30° Large XLT	42383*

\* Without SlipStop™ Plus surface

10° Medium PRO	42102A
20° Large PRO	42263A
40° Medium PRO	42462

20° Medium EVO	422E2
20° Large EVO	422E3
30° Large SPORT I	42373HDI



© EKS



© EKS

Without HANS With HANS HANS Models and Seating Position



Your specific HANS Model is based on individual seating position and body shape.

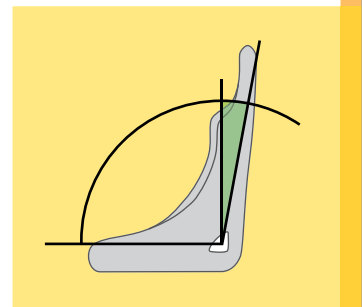


50 Kph (31 Mph) Impact Speed  
 28 g Maximum Deceleration  
 ECE-R 16 Crash Pulse  
 SCHROTH 6pt Harness  
 Hybrid II Dummy - 77 kg (170 lbs)  
 Test Date: Oct 2001

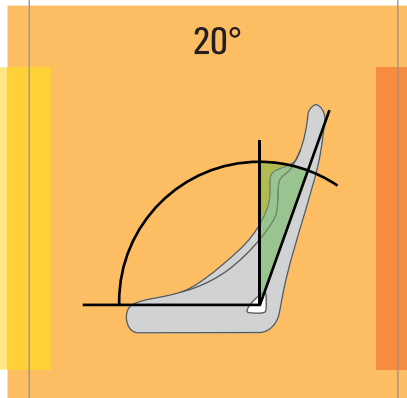
Designed for extreme upright seating positions such as sprint cars or rally co-driver with a very upright seating position. Drivers with a very slim upper body/chest or smaller female drivers may find a 10° HANS for touring car applications suitable.



10°



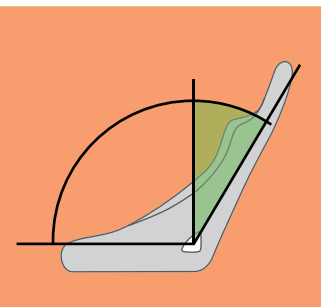
20°



Designed for upright seating positions in all sports cars (Porsche, BMW, Ford, etc.) and touring car series with racing shell seats (Cobra, Sparco, Recaro, etc.).



30° + 40°



Designed for semi-reclined seating applications such as formula cars, single seat sports cars and similar seating positions. Large stature drivers may find a 30° HANS for touring car applications suitable.

## Accessories

### Sliding Tethers



- FIA 8858-2010
- Standard on all 10°, 20° and 30° HANS, including the new SPORT series
- Can be retrofitted to any HANS device ever made
- Available in 3 different lengths! Recommended length is 18" and comes standard on all Medium and Large HANS. For users with open face helmets where the clips are located further back on the helmet or those looking for a slightly shorter version we have the 17" version. In addition we also have a 19" version for slightly more movement or for a 20° XL HANS.


Length 18" (457 mm) 00030-18  
 Length 17" (432 mm) 00030-17  
 Length 19" (483 mm) 00030-19

## Padding

### HANS Pads 10°, 20°, 30°, 40°



- Padding with NOMEX® Cover
- HANS Replacement Shoulder Pads - Interchangeable 13 mm
  - HANS Shoulder Pads Kits - Interchangeable 10 mm, 13 mm and 16 mm
  - HANS Comfort Foam Shoulder Pads - (Temperature Sensitive) Interchangeable 12 mm

	Standard	Standard Kit	Comfort Foam
	00043A	00043-KIT	00045A

© Aston Martin



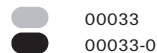


## Accessories

### HANS Clips 8858-2002



HANS post anchor helmet clips are FIA approved and compatible with all HANS systems. Professional installation recommended. Not all motorsport helmets are approved for HANS clips.



00033

00033-0

### HANS Clips 8858-2010



8858-2010 HANS post anchor Clips. These helmet clips are approved for use in FIA 8858-2010, FIA 8860-2010 or SNELL SAH 2010 Helmets ONLY. These will not be compatible or approved for use with earlier helmets or standards.



00048

00048-0

00048-1

SHR FLEX **Sfi**

The SHR FLEX™ is the latest in FHR (Frontal Head Restraint) technology. Designed and developed by the team at SCHROTH we have improved on comfort, fit and flexibility verses existing systems on the market.

The new SHR FLEX™ is a dynamic Head and Neck Protection system with many technological advances.

Design highlights include patent pending dynamic articulation of the collar, a rate responsive bump stop to manage peak neck tension loads as well as a stabilizing dual tether system and form fitting lower legs to provide optimal fit and reduce interference with the seat.

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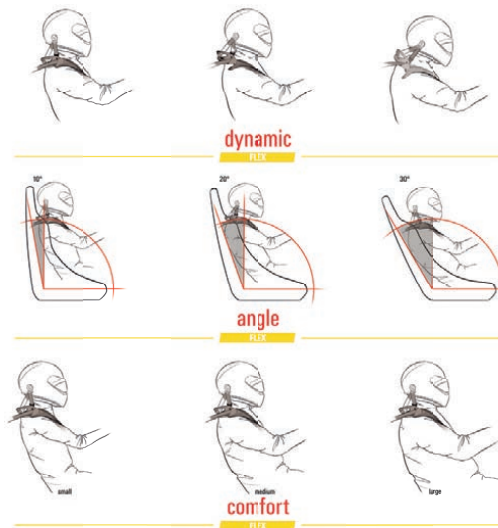
The SHR FLEX™ has been designed with a low collar to be angle independent of your seating position and the pliable legs form fit to the upper body and chest of the user providing excellent stability without the need for excessive padding systems.

In addition to advanced comfort design of the SHR FLEX™ the new device has been optimized with winglets on the upper collar and SCHROTH's patented SlipStop system on the lower legs to assist in belt retention for off-road and rally competitors.

The SHR FLEX™ has been designed and tested for use with standard 3" racing belts as well as FHR specific 2" shoulder belts.

The SHR FLEX™ is SFI 38.1 approved only!

SHR FLEX Medium	42602A-SL
SHR FLEX Large	42603A-SL



US Patent Pending





- High Strength Carbon Reinforced Materials
- Retention Winglets
- Rate Responsive Bump Stop
- SlipStop Systems
- Angle Independent Low Collar Design
- Dynamic Articulating Collar
- Sliding "Twist Anchor" Tether System
- Integrated Padding Systems
- Form Fitting Lower Legs

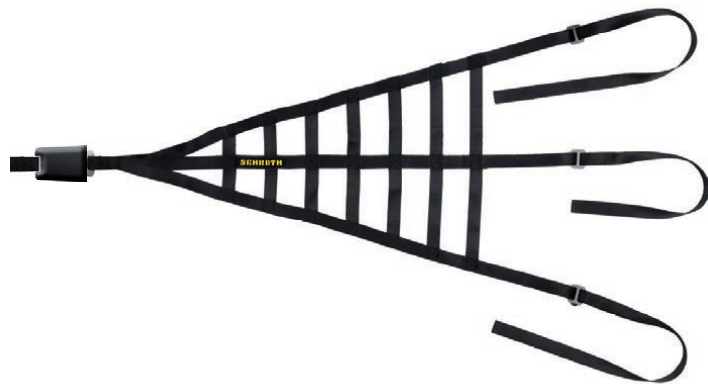
US Patent Pending





## Interior Net

### Interior Net

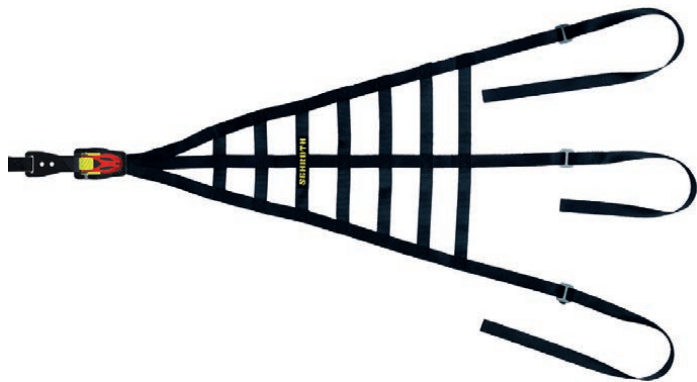


SCHROTH Racing Driver Nets are engineered in accordance to the latest FIA 8863-2013 standard to help control occupant movement and enhance your overall safety system (seat, harness, cage etc.) by strengthening the headrest and shoulders of the seat system and help guide the occupant back into the seat system during an impact. Exclusive from SCHROTH, our easy to handle push button buckle, makes proper installation nearly effortless. Tested by SCHROTH Racing, SFI and the FIA, these nets provide proven performance both in the lab and on the track. All nets feature high quality materials and construction and are equipped with a Quick Release mechanism to insure a fast exit.



09072

## "Double Take" Interior/Roll Cage Net



High quality interior driver's net. Patented Double Take ratchet/quick release. Ideal for door side installations – easy to latch and tension.

· FIA & SFI approved



09075



# Street Style- Track Tested





asm autocontrol

Rallye

asm autocontrol II **ECE** **asm**



3-point automatic harness belt; shoulder and lap belts: 50 mm (2") wide webbing; asm system; quick disconnect tail strap.

asm autocontrol II silver **ECE** **asm**



3-point automatic harness belt; shoulder and lap belts: 50 mm (2") wide webbing; asm system; SCHROTH Racing logo; quick disconnect tail strap.

asm autocontrol III silver **ECE** **asm**



3-point automatic harness belt; shoulder belts: 75 mm (3") and lap belts: 50 mm (2") wide webbing; asm system; SCHROTH Racing logo; quick disconnect tail strap.

Rallye 3 asm **ECE** **asm**



3-point static harness belt; shoulder and lap belts: 50 mm (2") wide webbing; asm system; quick disconnect tail strap.

38

	flock colour yellow	
	left	right
●	11010	11510
	flock colour black	
	left	right
●	11090	11590
●	11011	11511
●	11012	11512
●	11013	11513

	left	right
●	11029	11529

	left	right
●	11039	11539

	flock colour yellow	
	left	right
●	10010E	10510E
	flock colour black	
	left	right
●	10090E	10590E
●	10011E	10511E
●	10012E	10512E
●	10019E	10519E

Rallye 4 asm



4-point static harness belt; shoulder and lap belts: 50 mm (2") wide webbing; asm system; quick disconnect tail strap. The V-shaped tail strap creates an almost perfect symmetry to the shoulder straps.

Rallye Cross asm



4-point static harness belt; shoulder and lap belts: 50 mm (2") wide webbing; asm system. Must not be installed when rear seat occupancy is desired.

flock colour black/  
left/ right/  
16090E 16590E



flock colour black/  
left/ right/  
13090E 13590E  
13042E 13542E



## Profi - FE

Profi II-FE asm  



Profi III-FE asm  





40

Anti-sub straps please see RACING-Belts, page 22/

4-point Professional Restraint; approx. 1.48 kg (3.26 lbs); shoulder belts: 75 mm (3") and lap belts: 50 mm (2") wide webbing; FE Push Button Buckle fixed to the inboard lap belt; asm system; FIA (motor sports) and ECE-R 16.04 (street legal) approved; meets the applicable provisions of FMVSS 209 (US street legal); allows for upgrade to 6-point competition restraint.

4-point Professional Restraint; approx. 1.63 kg (3.59 lbs); shoulder and lap belts: 75 mm (3") wide webbing; FE Push Button Buckle fixed to the inboard lap belt; asm system; FIA (motor sports) and ECE-R 16.04 (street legal) approved; meets the applicable provisions of FMVSS 209 (US street legal); allows for upgrade to 6-point competition restraint.

	left/ 20070	right/ 25070
	20170	25170
	20270	25270

	left/ 40070	right/ 45070
	40270	45270

© racepix.eu











## Padding

### 2" Shoulder Pads



Any restraint operates better with matching shoulder pads. The SCHROTH shoulder pads are made of a special foam that consists of millions of tiny air bubbles that helps to optimize the pressure loading over your shoulders. For 50 mm (2") webbing and fits standard automotive seat belts. 100 % cotton fabric, pair.

flock colour yellow flock colour grey flock colour black






	00109	09109	09309
			01109
			02109
			03109
			09209
	Leather SCHROTH logo embossed/		00149

### 2" Shoulder Pads Racing Logo



Any restraint operates better with matching shoulder pads. The SCHROTH shoulder pads are made of a special foam that consists of millions of tiny air bubbles that helps to optimize the pressure loading over your shoulders. For 50 mm (2") webbing and fits standard automotive seat belts. 100 % cotton fabric, pair.

SCHROTH Racing colour silver SCHROTH Racing colour yellow

	09119	00119
		01119
		02119
		03119
	09219	

### 3" Shoulder Pads Racing Logo



For 75 mm (3") shoulder belts as for asm autocontrol III silver; with SCHROTH Racing logo; 100 % cotton fabric; pair, NOT intended for racing!

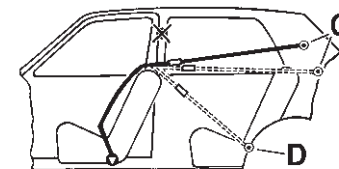
	09229
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## Adaptor

### Adaptor for Installation



For asm autocontrol installation. Needed for installation to anchor point D.



	01003
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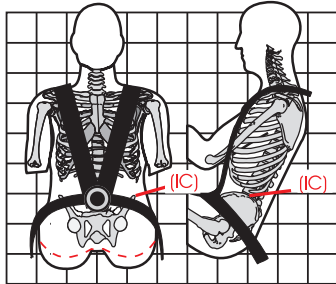
# Safety through Technology

42





## 50 mm (2") Lap Belts



4.4

To explain why 50 mm (2") webbing is more effective than 75 mm (3") webbing, one needs to look at the shape of the human body. The Iliac Crest (IC) is the part of the pelvic bone that sticks out above the hips. 50 mm (2") webbing fits entirely within the recession created by the Iliac Crest, where 75 mm (3") webbing rides over the top of the Iliac Crest. The 75 mm (3") webbing has less contact area by percentage than the 50 mm (2") webbing which will cause more bruising during an impact where the belt is making contact with the pelvic bone. Since the 50 mm (2") webbing rides inside the Iliac Crest it can be worn as much as 25 mm (1") to 40 mm (1.5") tighter and at the same time is more comfortable.

Since the 50 mm (2") webbing fits well within the Iliac Crest of the pelvis, it is less likely to slide up above the crest and cause submarining a condition where the body slides down below the lap belt possibly causing internal organ damage.

Research shows that the faster the pelvis is captured, the lower the resultant loads on the chest, head and neck. There is no difference in the strength of the 50 mm (2") webbing. All webbing: 50 mm (2") or 75 mm (3") must meet the same homologation test loads.



An additional benefit of the 50 mm (2") lap belts, the required force to properly and tightly adjust the belts in the cars is much easier than with 75 mm (3") belts.

## Buckle Types



### Aluminium Rotary Buckle

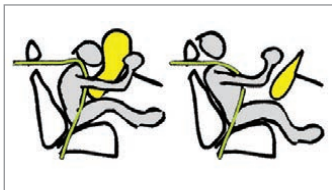
Newly designed compact aluminum rotary buckle. Features include quicker, more positive "click" and ergonomic release lever.



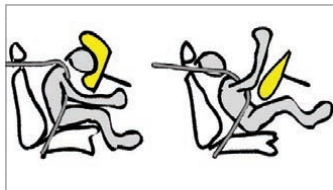
### Push Button Buckle

Designed to meet FIA and ECE/FMVSS standard. The SCHROTH "FE" buckle can be used for FIA and Street Legal applications.

asm



With asm



Without asm

The **SCHROTH asm** system offers a unique safety advantage for 4-point harnesses. **asm** is the acronym for anti submarining. The risk to submarine (sliding underneath the lap belt), a well known phenomenon during frontal impacts, is significantly reduced by the **asm** safety system. The energy converter is located in the inboard shoulder belt. Therefore make sure you purchase left and/or right harnesses.

Severe injuries or death are possible using 4-point harnesses without the **SCHROTH asm** safety system or an anti-sub strap. **SCHROTH** harnesses designed for use on public roads (FE push button models) or those likely to be used as 4-points come with the **asm** safety system. The performance of the **SCHROTH asm** safety system has also been positively tested in conjunction with airbags.

Racing harnesses without **asm** must be worn with an anti-sub strap!

## Webbing

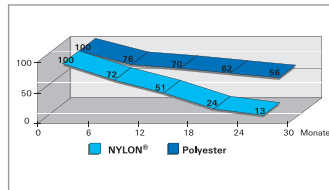


Figure 1: Remaining strength in percent over a 2 year period

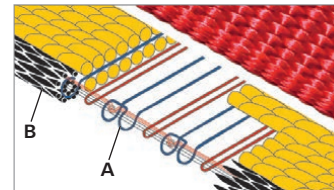


Figure 2: A points to the woven in mono filaments, responsible for the "memory effect". B points to the round edges for additional comfort.

Webbing that makes the difference!

The webbing we use is especially designed and manufactured for **SCHROTH**. Each lot manufactured must pass our stringent quality control procedures. **SCHROTH** only uses Polyester material. Polyester has advantages over Polyamide (NYLON®) webbing. Advantages, such as lesser degradation under light (see figure 1) and a resistance against acids like battery acid. In addition Polyester does not absorb moisture so the performance of **SCHROTH** harnesses do not change whatever the climate may be. Polyester also has a better force/elongation ratio so a well designed webbing can dissipate more energy during an accident.

Unique to **SCHROTH** is the „memory effect“ we have designed into our webbing. Special mono filaments laterally woven in, perform like small leaf springs and keep the webbing flat. This results in better load spreading over the full width of the **SCHROTH** webbing. An additional advantage of the **SCHROTH** webbing: The special weaving technology forms round edges for additional comfort (see figure 2).

## ECE-R 16.04



Use all seats./

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**SCHROTH** street legal harness belts are unique in their ability to be installed to factory provided mounting points along with the factory provided seat belts. **SCHROTH** harness belts meet all certification requirements by the German TÜV, ECE-R 16.04 and US-DOT for use on public roads. Each belt comes with complete installation and operating instructions. If your vehicle is listed in the included Vehicle Reference List the installation has been tested and approved with the stock seat or the listed aftermarket seats. Vehicle specific!

Unlike most other aftermarket harness belts, most **SCHROTH** street legal harness belts have a unique disconnect feature between the front part of the harness and the rear tail strap. When you are not using the **SCHROTH** street legal harness belts, they can be stored out of the way allowing complete access for all passengers and full use of all factory seat belts.

## Flexi Belt

**SCHROTH** Tech Tip  
RACING



Photo shows "Flexi Belt", individual components and assemblies: "pull-up" and "pull-down"./

**Flexi Belt** - one harness, many variations! Length adjusters in lap belts come as „pull-ups“ or „pull-downs“. In addition they often have to be positioned differently to achieve optimal operation. **SCHROTH** has developed the solution which covers your different needs with just one lap belt model: the „**Flexi Belt**“.

The lap belt latches and brackets supplied with the harness can be assembled to the lap belt with a two-bar sliding bracket allowing you to change the configuration. With this you decide on pull-up or pull-down versions and if applicable, different for the left and right lap belt portion. You may also vary the lengths to optimize the adjuster position depending on your car, your seat and seating position. Even exchanging mounting hardware is possible (e.g. a bolt-in bracket for a snap-on bracket).

## Adjusting ranges of racing restraints

Adjusting ranges	Shoulder belt	3" lap belt per side	2" lap belt Flexi Belt per side	2" lap belt per side	Dual crutch strap
Profi/Flexi/Enduro	51 - 200 cm	26 - 67 cm	18 - 76 cm	23 - 76 cm	28 - 61 cm
Clubman	51 - 200 cm			23 - 76 cm	28 - 61 cm
Formula	53 - 80 cm				21 - 74 cm
Profi/Clubman II asm	51 - 165 cm		18 - 76 cm	23 - 76 cm	
Profi FE snap	51 - 165 cm	26 - 67 cm		23 - 76 cm	
Profi FE bolt	51 - 167 cm	28 - 69 cm		25 - 78 cm	

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## Legend

asm

**asm**  
SCHROTH anti-submarining technology (see page 45)

HANS

**HANS**  
FIA standard 8858 homologated (see page 26)

ECE

**ECE**  
Tested and approved in accordance to the ECE-R 16.04 standard (see page 46)

SFI

**SFI**  
A non-profit organization established to issue and administer standards for specialty/performance automotive and racing equipment

Flexi Belt

**Flexi Belt**  
SCHROTH's versatile racing belt system (see page 46)