SIMPSON®

Hybrid

Sport

Hybrid S

SIMPSON Hybrid PRO

SFI-38.1 CERTIFIED

NASCAR APPROVED

FIA APPROVED

DRIVEN BY SAFETY

USER AND INSTALLATION MANUAL

INSTALLATION MANUAL

SIMPSON

You're ready to use the technology that protects the world's top drivers. Here are the steps to get started.

Questions? Call us at 800.654.7223

OF COURSE, IT'S THE SAFEST. IT'S A SIMPSON.

Simpson Hybrid Head Restraints are the best choice for racing protection.

HYBRID S, HYBRID PROLITE and HYBRID SPORT Head Restraints are SFI 38.1 Certified and FIA 8858-2010 Certified. Designed for easily exiting the car without the danger of getting hung up on other gear, our Head Restraints also offer the lowest profile and highest level of multiple angle impact protection of any competing device. Plus, they provide you with maximum comfort and maneuverability. Expertly engineered by Trevor Ashline with Safety Solutions technology, Simpson Head Restraints give you every advantage on the track.

SIMPSON HEAD RESTRAINT

Figure 1

The Simpson Hybrid head restraints series carries SFI 38.1 certification; the Hybrid and Hybrid Pro Lite are NASCAR certified, the Hybrid S, Hybrid Prolite, and Hybrid Sport are FIA Approved. Our head restraints are recognized by most major sanctioning bodies across the world. If you are unsure, check with your local sanctioning.

Hybrid Prolite pictured with optional M6 upgrade

SNELL 2010 AND PRIOR HELMET ANCHOR INSTALLATION INSTRUCTIONS

Initial Steps for Helmets without holes for tether anchors.

1. Apply masking tape around the bottom of your helmet approximately 1” (26mm) up from the top edge of the rubber molding. See Figure 2
2. On the masking tape at the back of the helmet, mark three points 1.5” (43mm) above the rubber molding and spaced about a half inch apart. Connect the dots to create a horizontal line. See Figure 3
3. Using a flexible ruler, measure the same distance from a fixed point (for example - the visor mounting hole) on each side of the helmet back to the horizontal line. The center line of the helmet is midway between where the two lines intersect the horizontal line at the back of the helmet. See Figure 4
4. Measure 5.5” (139.7mm) forward from the rear center line on each side of the helmet to a point 1.75” (44.45mm) above the rubber molding. See Figure 5 Make sure you have two marks, each 6” forward from the rear center line a 1.5” above the top edge of the rubber edge molding.
5. Slowly drill a 1/4” (6mm) hole at the two hole centers marked above. Drill through the helmet shell but not through the soft padding. A thin piece of sheet metal can be slipped between the shell and padding to help this. See Figure 6
6. De-burr and clean holes.

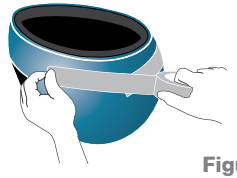


Figure 2

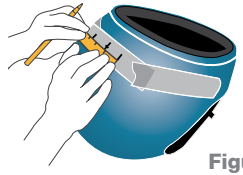


Figure 3

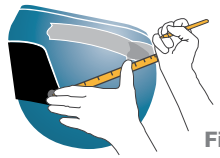


Figure 4

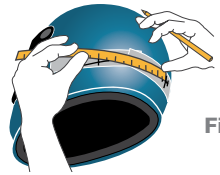


Figure 5

POST ANCHORS

Final Steps - Helmets without holes and pre-drilled helmets.

Gently pry helmet liner away from shell using a blunt instrument. See Figure 7
Insert the nutwasher inside the helmet against the shell using a wrench. Align with hole. Insert post through the cap, spring and base and screw into nutwasher. Tighten until the point of the post faces 40 degrees downward. Use a 7/16" (11mm) wrench to hold the post anchor outside of the helmet in position and tighten from inside. See Figure 8

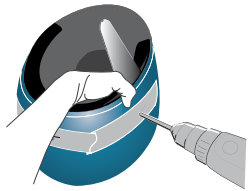


Figure 6

Tighten 1/4 turn beyond snug. The flats and slot of the post anchor should be at a 40 degree angle and the point of the post should face the rear of the helmet.

Figure 7

M61 QUICK RELEASE ANCHORS

Gently pry helmet liner away from shell using a blunt instrument. See Figure 7
Insert the nutwasher inside the helmet against the shell using a wrench. Align with hole. The M61 Quick Release Helmet Anchors are handed, the pin opening needs to be pointed toward the back of the helmet on each side. The anchor needs to be angled downward from the helmet at about 40 degrees down. With this orientation, the Simpson logo should be level on the side of the helmet. When tensioning the screw, hand tighten until secure and then add an additional ¼ turn to tension. Attach the Velcro patch provided to the front chin bar of the helmet and attach the end of the release tether to it. **Refer to page 15 for picture

Figure 8

SAFETY NOTE Simpson recommends using thread locking fluid when assembling helmet anchors.
*REFER TO YOUR SANCTIONING RULES FOR HELMET INSTALLATION.

Helmets with Bonded-In Threaded Anchor Terminals

Helmets marked Snell SA2015 have a bonded-in and threaded terminal (nutwasher) making Simpson anchor installation easy. Screw the anchor into the nutwasher. Hand tighten until the correct degree position is reached. See diagram on page 7. Once in correct position tighten the mounting screw 1/4 turn beyond snug.

Snell decal located inside helmet

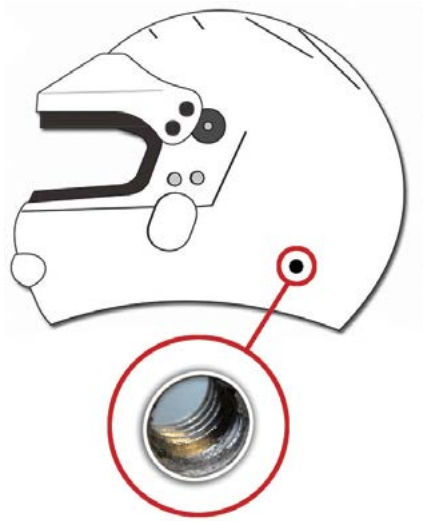


Figure 9

Bonded-in terminal on sides of helmet

SAFETY NOTE Simpson recommends using thread locking fluid when assembling helmet anchors.

Complete, Correct Anchor Installation

Figure 10

Simpson Post Anchor Collar (Point) and M6 Post Quick Release Anchor (opening) should face the rear of the helmet at a 45° downward angle.

Rear of helmet 90°

Figure 11

Hasp / tether on quick click style faces rearward after installation.

Rear of helmet

Helmet / Post Anchor Exploded View

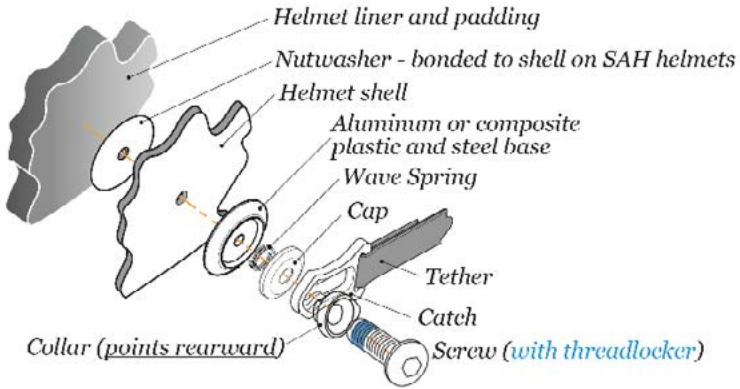


Figure 12

IN CAR HELMET TETHER ADJUSTMENT

Helmet Tethers MUST be adjusted for proper fit before use.

Helmet tether adjustment needs to be made with the driver seated and buckled into the vehicle with full gear including, suit, helmet, and seatbelt harnesses.

RESTRAINT TETHERS

1. Get into car and buckle fully into the seat with seat belts. The head restraint should fit comfortably under the shoulder harnesses.

2. Seat the restraint against the shoulder belts by pulling up on the helmet tethers, before they are hooked to the helmet. The device will rest against the shoulder belts on the top, the seat in back and the driver's shoulders.

3. The helmet tethers should be adjusted or changed to allow for no more than 2.25" of straight forward head movement. Measure from a resting position **(See Figure 13 dotted line)** moving your entire head forward (not your chin to your chest). You should still be able to rotate your chin to your chest.

4. Adjust the rear helmet tether first; they are the PRIMARY RESTRAINT The tethers are easily adjusted by unlacing the tether webbing through the 3-bar

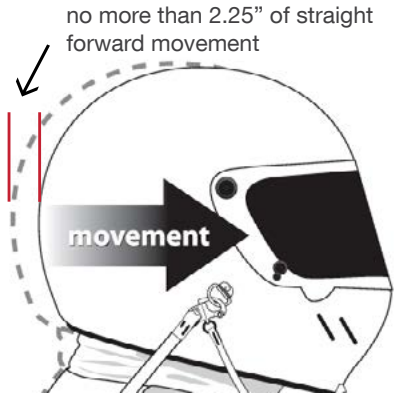


Figure 13

adjuster and lengthening or shortening the tethers through the 3-bar adjustments.

5. The forward helmet movement can be checked by measuring the amount of forward movement as the driver moves their head straight forward, with the chin up.

6. The tether adjustment is the measurement when the tethers first have **slight tension.**

7. When the rear tether adjustments are complete make sure to lock down the tether by weaving the webbing back through the adjuster one last time. Use the rubber O-ring to hold the excess webbing in place.

9. Unhook the tether from the helmet.

10. Hold the tether up to the Anchor on the helmet.

11. Adjust the length of the front tether so that the tether attachment clip is even to 3/4 of an inch above the Anchor point on the helmet.

Figure 14

3-bar webbing lock down

SIDE STABILIZING GUSSET (SSG) ADJUSTMENT

NOTE: *Some drivers may want this tether shortened for more side to side restriction. The tether may be adjusted shorter by as much as 1" depending on driver comfort. With this adjustment too short, the helmet will be pulled downward on the driver's head and may be uncomfortable. When adjusted too short it can affect side to side head rotation*

12 Tethers adjusted properly should create a "Triangle" in the tether adjustment. See Figure 15

Figure 15

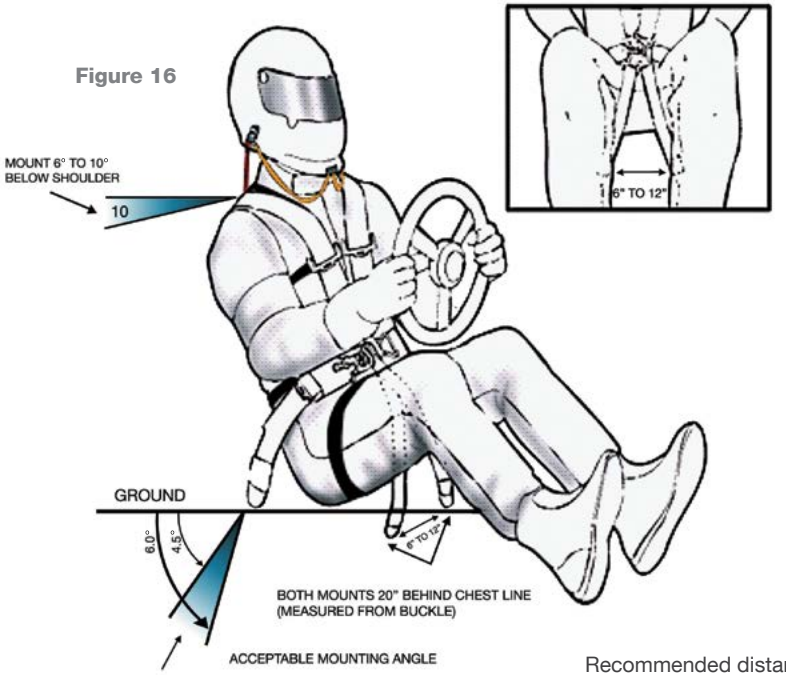
FITTING THE RESTRAINT

The Hybrid Head Restraint has an adjustable chest strap to fit a variety of body types. Custom made restraints are also available. Call Team Simpson at 800-654-7223 for more information.

To adjust the chest strap: loosen the chest strap at the buckle and slide the buckle to fit the occupant's chest size. Chest strap should fit snug, but comfortable.

The shoulder belts should be mounted as close to the occupant as possible, separated by 2-3 inches between the inside edges of the belts.

Figure 16



CRISSCROSS
BELT POSITION

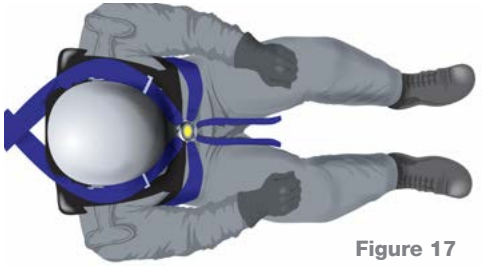


Figure 17

SEPARATED
BELT POSITION

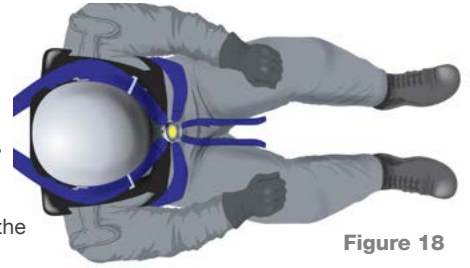


Figure 18

Recommended distance between the **inside edges** of the belts is 2" - 3".

HPD HYBRID S USAGE

To Install a Hybrid S into a 3 point seat belt system, the SAS, Seat Belt Anchoring System, are not used. (The SAS straps anchor loops hook into the seat belt buckle in a 5, 6 or 7 point set of seat belts in a Race Car.) as shown on page 14

Just as in a Race Seat installation, the occupant puts on the Hybrid S and gets into the seat. **See Figure 19**

Follow the instructions on fitting the device to the wearer.

Hook up the 3 point belt and sit in your normal driving position.

Have a helper, apply gentle pressure to the shoulder pads on the top of the device. This will keep the device stable during the tether adjustment procedure. The device should be in a comfortable position behind the driver's back, against the seat cushion.

If the device is uncomfortable in the seat, a device pad can purchased that will attach to the back of the seat and provide a slot for the device to sit. This is not normally needed for the use in a soft back seat such as in a passenger car or HPDE.

To adjust the Helmet Tethers:
While your helper is holding the device in it's location and the wearer is looking straight forward, hold the triangulated tether up to the side of the wearer's helmet.

Adjust the side tethers so that the tether end fitting can be easily inserted into the helmet anchor without having it apply downward pressure to the helmet. A comfortable adjustment on the side tether is to have about an additional ¼" of slack in the tethers at this point.

With your helper still holding the device down and the wearer looking straight forward, adjust the rear tethers so that there is between ½" to 1" of slack in the rear tether. Test the amount of head movement by moving the head Straight Forward.

The wearer should have between ½" to 2" of Straight Forward head movement before the slack is taken out of the tether system. Remember when checking this, not to rotate the head down, but translate it straight forward. This should be plenty of head movement to be able to drive the car for on track activities.

Your Device is now ready for use.

Figure 19

OPTIONAL SAS : NOTE ONLY AVAILABLE IN SFI 38.1

The SAS straps need to attach to the seat belt buckle; the SAS is an additional load path for the restraint allowing for stabilization of the driver.

Camlock Attachment Slide each SAS O-ring onto two of the camlock buckle tongues. See Figure 20

Latch-in-Link Attachment Pair the SAS O-rings and slide them into the latch link shoulder belts or the five point depending on your set-up. See Figure 21

The SAS straps should be adjusted to be snug when the buckle is latched with no more than 2 fingers of room. Adjustment is made by sliding the 1” webbing attached to the loops through the 3-bar adjuster.

Figure 20

Figure 21

OPTIONAL SAS LOOPS AVAILABLE

Figure 22

Figure 23

Hybrid S Molded Seat Pad is placed behind the driver between the seat and the driver's back and shoulders.

Hybrid Device Pads
Need more comfort? Simpson offers both standard device pads and extra comfort (off road) device pads.

For more information and additional accessories visit www.teamsimpson.com or all 1-800-654-7223 and speak with a customer service specialist.

Figure 24

OPTIONAL HELMET TETHERS

QUICK RELEASE TETHERS
USED WITH D-RING (STANDARD)

HYBRID QUICK CLICK TETHERS

EZ SLIDE LOOPS
USED WITH SIMPSON QUICK CLICKS

M61 DUAL END FITTING TETHER
USED WITH M6 ANCHOR SYSTEM

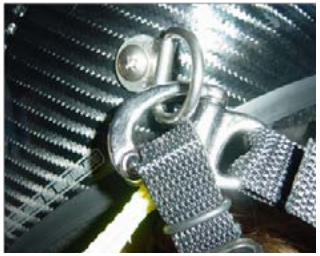
EZ SLIDE DUAL END FITTING TETHER
AVAILABLE WITH QUICK RELEASE OPTION

HYBRID POST CLIPS
USED WITH SIMPSON POST ANCHORS

M6 ANCHOR FIA APPROVED
WITH DUAL END FITTING

SIMPSON POST ANCHORS FIA APPROVED

SIMPSON QUICK CLICK SYSTEM



QUICK RELEASE ANCHORS

Q: My Helmet came pre-drilled, can I use the pre-drilled hole?

A: Simpson helmets will be the correct location. If your helmet is not a Simpson check with your helmet manufacturer to confirm the location.

Q: Do I need special seat belts to work with your devices?

A: No, our devices work with 2 or 3 inch seat belts, Latch and Link or Cam Lock.

Q: Do I need to replace my head restraint if I am involved in a wreck?

A: Your Simpson Head Restraint device is built to sustain the most violent of wrecks. However, in the event of a hard wreck, you should send your restraint to us for proper inspection by a Simpson Safety Specialist. We may recommend replacing the helmet tethers. While the chances of the device being unharmed are great, it is not worth taking a chance.

Q: Can two people of different sizes share the same device?

A: Yes, we have a chest extender that will plug into the chest strap to give more length in the chest.

Q: Is my device adjusted wrong if I can touch my chin to my chest?

A: No, with your device adjusted correctly you should be able to rotate you head enough for your chin to touch your chest.

Q: I am having trouble turning my head even after adjustments, what should I do?

A: Call you Simpson Safety Specialist; your setup may require an EZ Slide System.

Q: When I measure my helmet for the anchors hard foam in the way on the inside, what should I do?

A: Very gently use a large flat screw driver or small pry bar to wedge between the liner and the shell. This liner is not glued into the helmet, but use caution not to compromise the shell or the liner. Then simply slide the nut washer into place. DO NOT DRILL THROUGH OR COMPROMISE THIS FOAM LINER.

Q: I have a Hybrid and it feels like it pushes me forward out of the seat. What can I do?

A: You can order the optional molded seat pad that can be cut, trimmed, shaved or ground to be whatever shape you need to be comfortable.

Q: My child is just getting started racing, will I have to purchase another device as they grow?

A: Probably not. This will depend on how big they are and how fast they grow. Once the child is at a 28 inch chest, the device that they wear will be able to be re-sized to whatever size they need.

Q: How often should I replace my head restraint?

A: Each Sanctioning body is different. As of 2012 SFI required all SFI 38.1 certified devices to be inspected every 5 years.

For additional information on recertification please check out our web site at www.teamsimpson.com

Have questions we haven't answered?
Call us directly at 800.654.7223

SINCE 1959, SIMPSON PERFORMANCE PRODUCTS has been the leading manufacturer of safety equipment for the Motorsports Industry. We believe in putting safety first and are dedicated to elevating the standards of racing safety through continuous development, refinement and testing as well as a strong partnership with racing sanctioning bodies worldwide. The Hybrid Head Restraints are certified by SFI and FIA.

SFI: THE SFI FOUNDATION, INC is a non-profit organization established to issue and administrate safety standards for specialty and performance of automotive and racing equipment. SFI Oversees testing and standards for fire suits, restraints and many other high performance safety products in the United States. NASCAR and NHRA are among the sanctioning bodies who abide by SFO standards.

MORE INFORMATION CAN BE FOUND AT WWW.SFIFOUNDATION.COM

FIA: THE FEDERATION INTERNATIONALE DE L'AUTOMOBILE is a non-profit organization that brings together 227 national motoring and sporting organizations from 132 countries on five continents. FIA Formula One World Championship, FIA World Rally Championship and FIA World Touring Car Championship are among the sanctioning bodies who abide by FIA standards.

MORE INFORMATION CAN BE FOUND AT WWW.FIA.COM

DISCLAIMER

Vehicle racing is inherently a dangerous sport with significant risk of person injury or even death. When a user participates in vehicle racing, he accepts the risk inherent therein. Simpson Performance, Inc. makes no warranty that the use of its products or parts guarantees personal safety or freedom from physical injury or operates as a life saving device.

SIMPSON PERFORMANCE, INC.'S PRODUCTS AND PARTS ARE SOLD "AS IS" WITHOUT ANY WARRANTY WHATSOEVER. EXPRESS WARRANTIES, IMPLIED WARRANTIES, WARRANTIES OF MERCHANTABILITY AND WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. THE ENTIRE RISK OF QUALITY AND PERFORMANCE OF SUCH PRODUCTS AND PARTS IS WITH THE BUYER, USER SUBSEQUENT USER, OR AGENT THEREOF (HEREIN "USER"). SHOULD SUCH PRODUCTS OR PARTS PROVE DEFECTIVE FOLLOWING THEIR PURCHASE, THE BUYER AND NOT THE MANUFACTURE(S), DISTRIBUTOR(S), OR RETAILER(S), ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICES OR REPAIR.

Simpson Performance, Inc. disclaims all liability for any special, direct, incidental or consequential damages, or any damages whatsoever, including, without limitation, the loss of life or limb, or damages due to bodily or personal injury, which may arise or result from the sale, installation, or use of any of its products and parts.

It is the user's responsibility to inspect and verify the dimensions, specifications, and performance of all products and parts as being appropriate for the use to which the user will put them prior to any actual installation and/or use of said products and parts.

Simpson Performance, Inc.'s products and parts are to be inspected by the user before each use for evidence of damage, defect, or wear. Any deviation by the user from the manufacturer's specifications concerning use, maintenance, repair, alterations and modifications constitutes willful negligence.

The installation of Simpson Performance, Inc.'s products or parts may adversely affect other vehicle components, safety equipment or manufactured goods (collectively "goods"). Simpson Performance, Inc. assumes no responsibility for any damage to other goods, or bodily injury that may arise due to failure of other goods, due to installation and/or use, either proper or improper, of its products or parts.

The liability of Simpson Performance, Inc. is limited to the replacement of defective products or parts found under examination by manufacturer to be defective in material or workmanship within 60 days after purchase, and which has not been caused by an accident, improper use, alteration, tampering, excessive use, misuse, modification or abuse. The damage of the user shall be deemed liquidated in the costs of replacement of the product or part.

Simpson Performance, Inc. assumes no responsibility for errors, omissions, diagrams, pictures, illustrations or text in these instructions or the documents contained herewith.

By purchasing or using this product, the user agrees that if any provision of this Disclaimer is held to be illegal, invalid or unenforceable under present or future law, such provision shall be fully severed from the Disclaimer and this Disclaimer shall be construed and enforced as if such illegal, invalid or unenforceable provision never comprised a part hereof, and the remaining provisions hereof shall remain in full force and effect and shall not be affected by the illegal, invalid, or unenforceable provision, there shall be added automatically as part of this Disclaimer a provision as similar in its terms to such illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable.

NOTES

MODEL # _____ SERIAL # _____

VERSION: HY.MANUAL.3.2018

DRIVEN BY SAFETY

SIMPSON®

CALL CUSTOMER SERVICE TOLL FREE 800.654.7223
OR E-MAIL SALES SALES@TEAMSIMPSON.COM
VISIT TEAMSIMPSON.COM