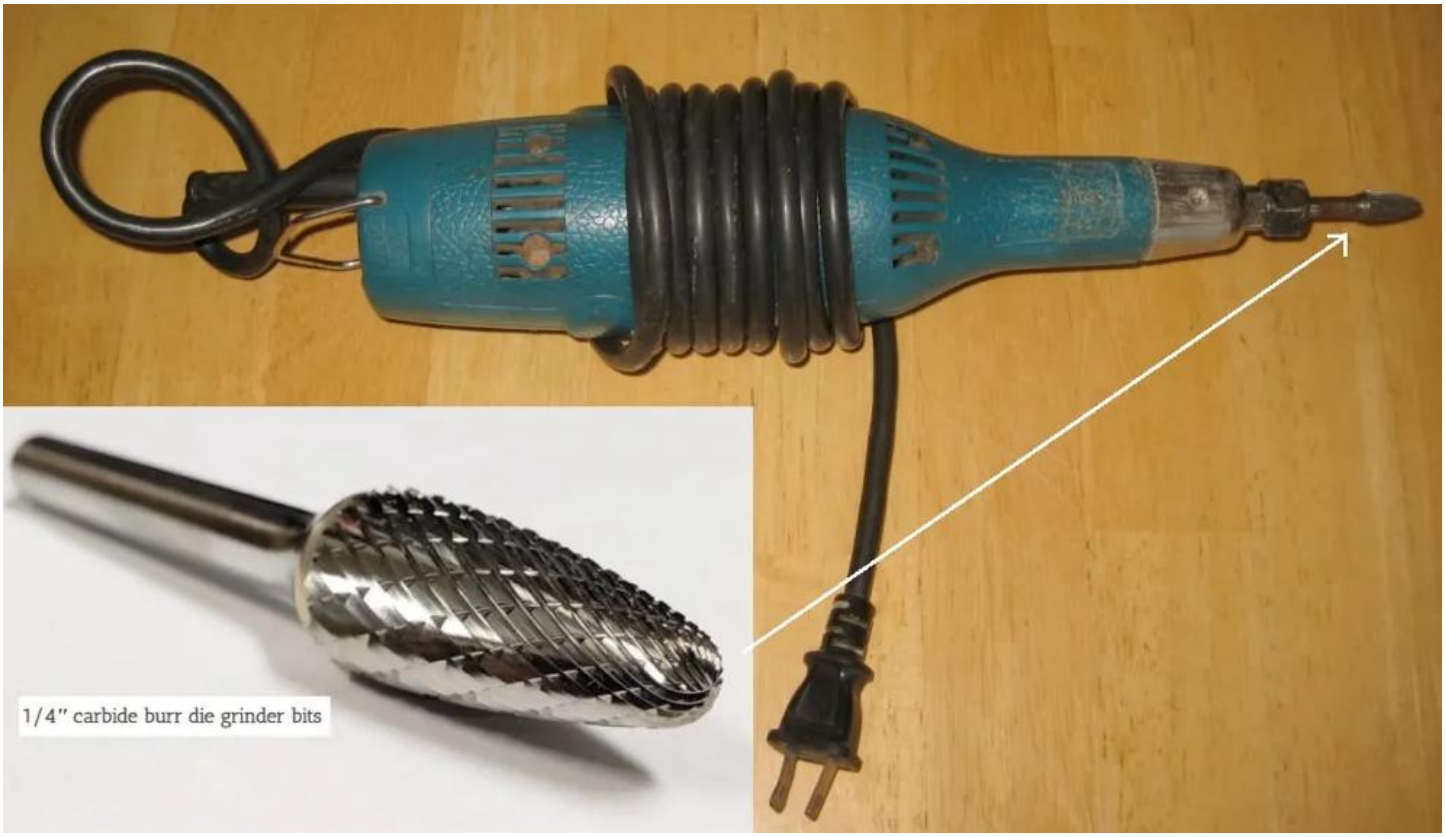
General directions for installing earmuffs in your helmet

1. The best way to get started is to remove side padding and the Styrofoam EPS side padding on each side of the helmet shell. You will be left with the helmet chin straps still attached to the helmet. Right side chin strap shown in this picture.

Remove both chin straps by grinding off the pop rivets that are used to connect the metal chin strap connectors to the helmet. Use some type of metal grinder wheel to grind off the head of the pop rivet holding metal chin straps in their original locations on each side of the helmet and remove chin straps. This high speed grinder with a 1/4" carbide burr grinder bit shown below works well to grind of pop rivet head to remove metal chin strap connector to a helmet.



It is necessary to remove the original chin straps as the original location of the chin straps pass thru the proper earmuff pocket locations in all helmets and interfere with earmuff installation. Circle drawn below will be the proper location of the earmuff.

Install the helmet on your head, then install the earmuffs and air bladders between the back side of the earmuffs and the inside of the helmet shell around your ears. This will verify there is enough room for earmuffs to fit comfortably around your ears in your particular helmet. It is possible you may need to cutting out an inch or so out of the upper

Styrofoam helmet padding just above the earmuffs for earmuffs to be positioned properly in your helmet. Make sure the bottom of the earmuffs are angled forward as shown in the picture below to properly fit in your helmet and over your ears .

Remove the earmuffs and air bladders and install the loop Velcro patches in the kit on each side of the helmet shell under where you determine the earmuffs should be located to fit properly over your ears.

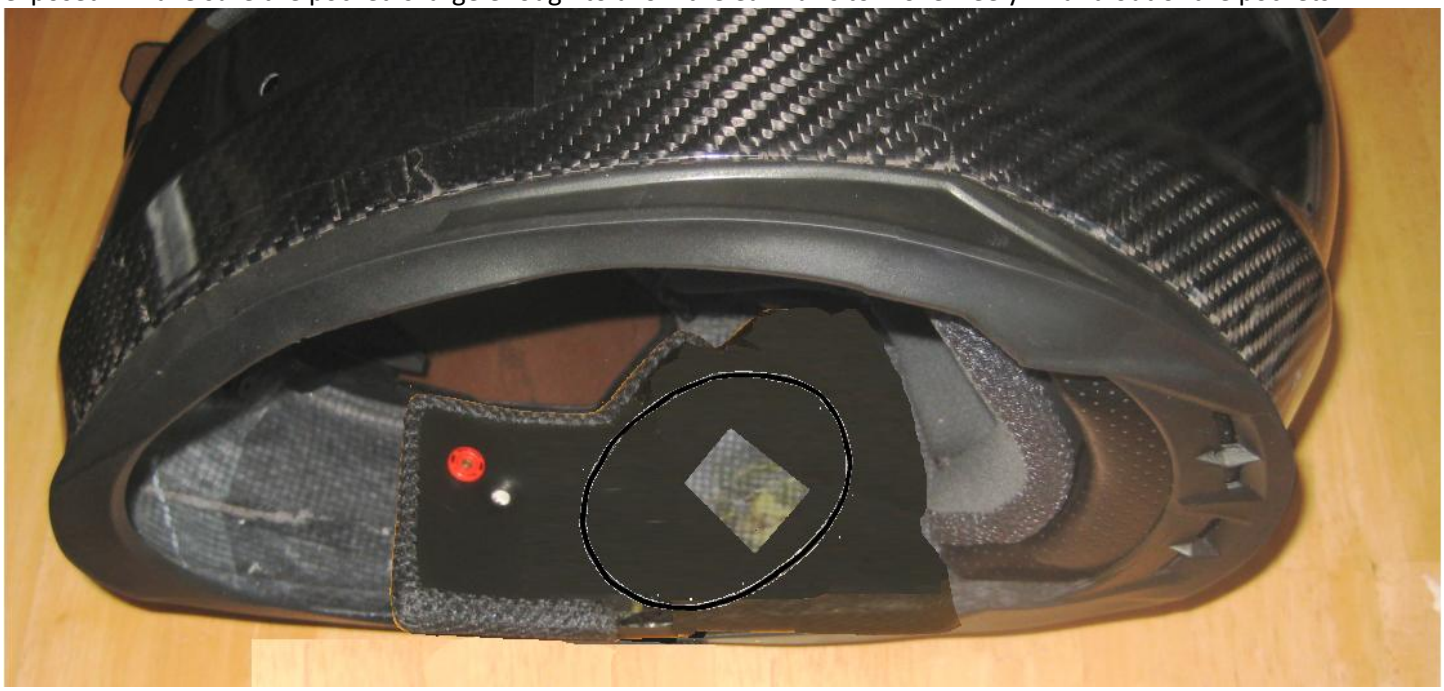
Velcro the air bladders which have hook Velcro stuck to each side of the bladders to the earmuffs and to the Velcro stuck to the inside of the helmet shell and reinstall your helmet. Make final adjustments to the position of the earmuffs until you feel they are in the proper position to fit over your ears.

You can now temporarily attach the air valve and pump air to the bladders to force earmuffs to seal around ears. When you are satisfied with their location, release the air pressure and remove the helmet leaving the earmuffs installed in the helmet.

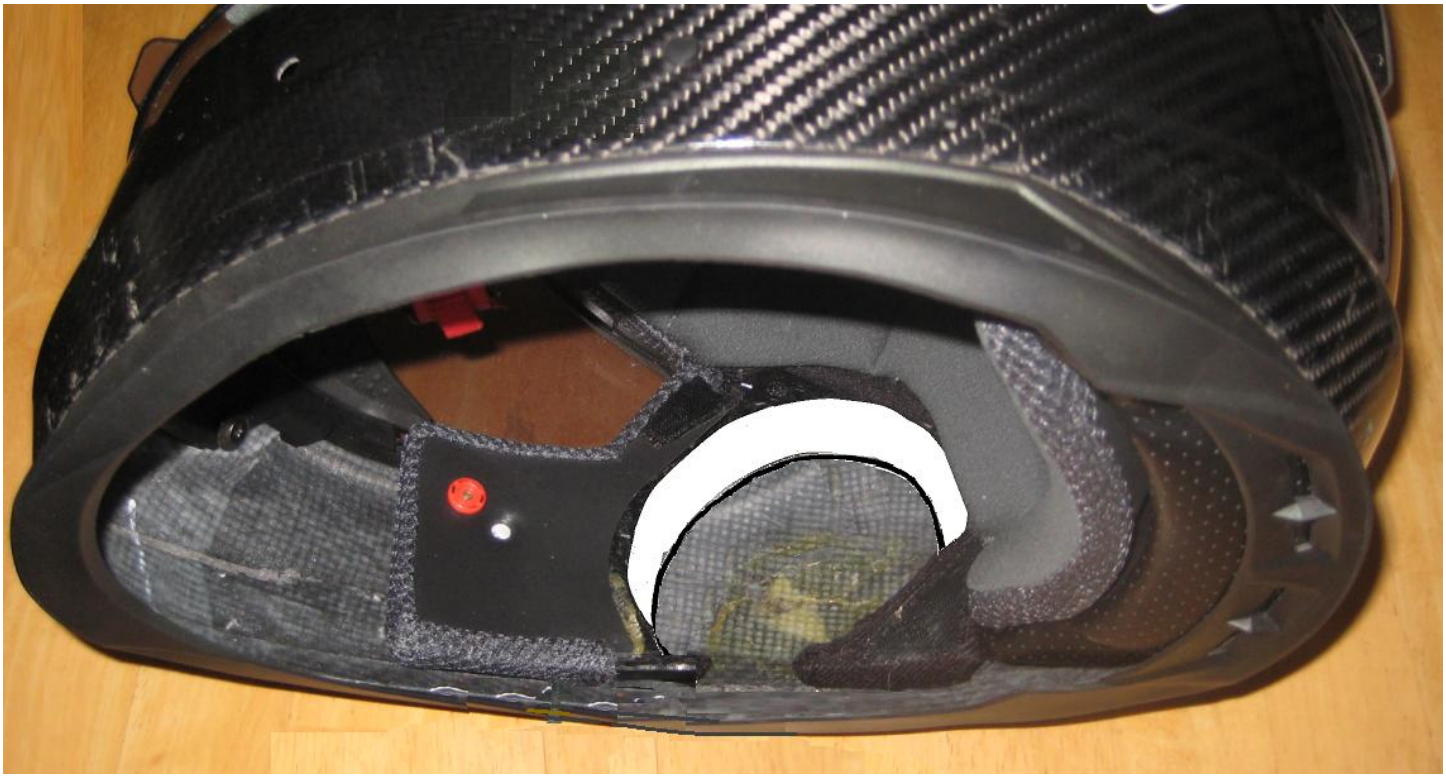
Take a magic marker and trace around the earmuffs still Velcroed in the helmet to mark the proper location for the earmuffs.

Remove the earmuffs from the helmet shell

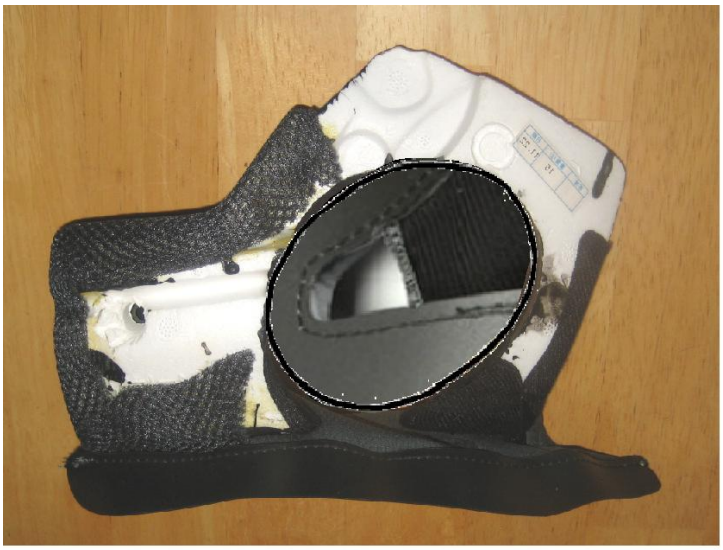
7. Reinstall the EPS side Styrofoam padding and calculate approximately where to cut earmuff pocket in the EPS Styrofoam on each side of the helmet by drawing the estimated earmuff pocket location on the EPS Styrofoam insert on each side. Use magic marker and make it at least a quarter inch smaller in every dimension to make sure you do not cut an over sized hole. Use a small sharp knife to cut out the pocket until the line drawn on the inside of the helmet shell is exposed. Make sure the pocket is large enough to allow the earmuffs to move freely in and out of the pockets



The picture below shows the pocket cut out to expose line drawn on the helmet shell



Once the pocket is cut out remove the EPS Styrofoam and reattach the side foam padding to the cut out EPS Styrofoam side padding as shown below. Mark a line using the magic marker on the vinyl material on the back side of the right and left foam padding shown as a black line. Detach the foam padding and cut out the vinyl and foam to make an opening for the earmuff to pass through the foam padding and into the pocket that will be Velcro to the air bladder that is Velcroed to the inside of the helmet shell.

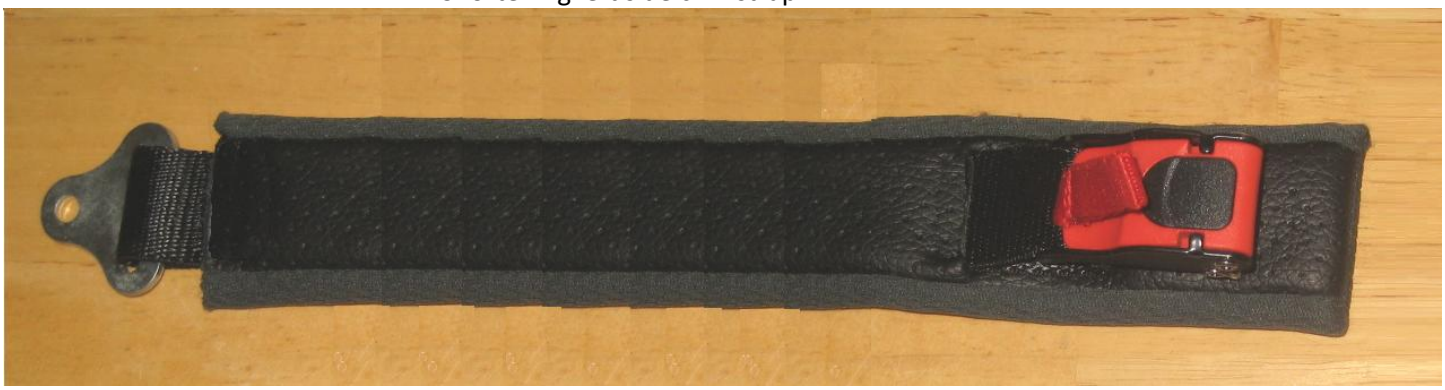


Cut the vinyl inside circle and the foam pad inside the circle.

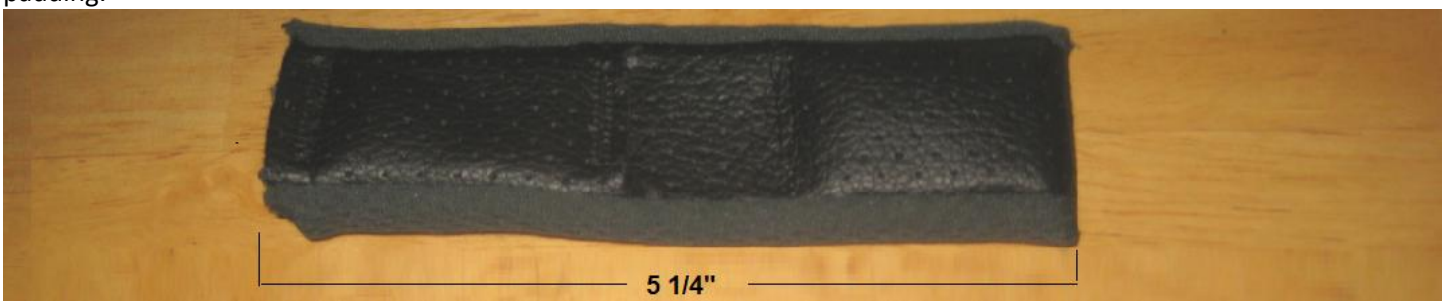
Leave enough cloth to cover the exposed foam padding and glue extra cloth onto the remaining vinyl on the back of the foam padding on the right and left side foam pads shown in picture one. I use the Shoe Goo product shown below that can be purchased at hardware stores. It is water proof , very sticky and dries in a few hours. In picture two, I could only save one snap on button to reattach the form earmuff pad to the EPS Styrofoam pad. As a result I suggest purchasing a foot of hook and loop Velcro from the hardware store to install small pieces as shown above to the back side of the foam earmuff pads and to the EPS Styrofoam. Smear Shoe Goo glue on surfaces to stick Velcro on and let it dry. Sticky back Velcro will stick to dried Shoe Goo very well.

The chin strap metal connection to the helmet must be relocated down and forward in the location shown below so the chin strap does not pass thru the earmuff pocket. This will require shortening the chin strap and chin pad for holding the helmet securely on the head as they will now be too long.

Shortening left side chin strap



Carefully cut stitching on padding covering chin strap and remove padding. I suggest shortening the chin strap padding to around 5 1/4" before reinstalling the metal chin strap and metal connection into the shortened chin padding.

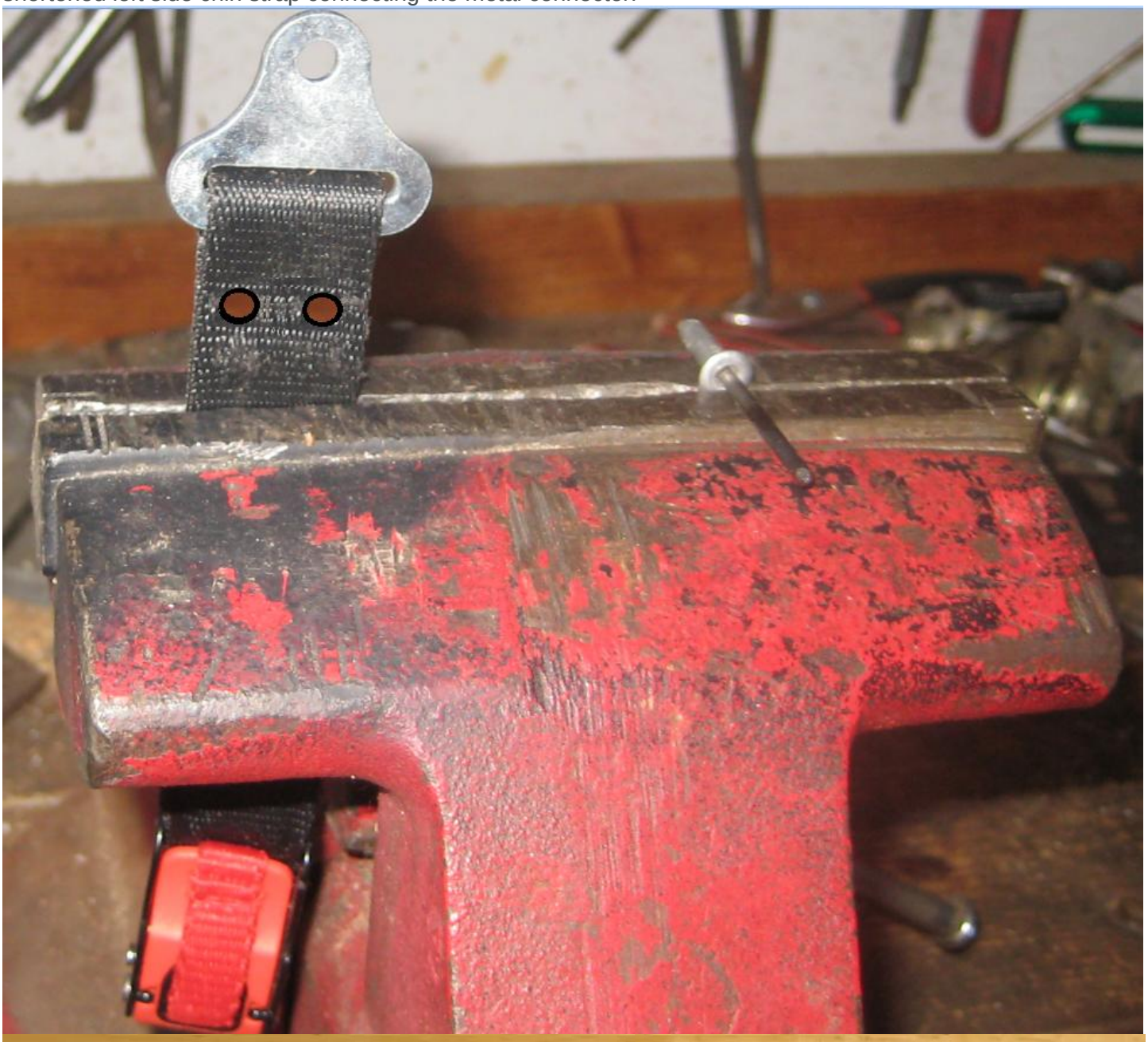


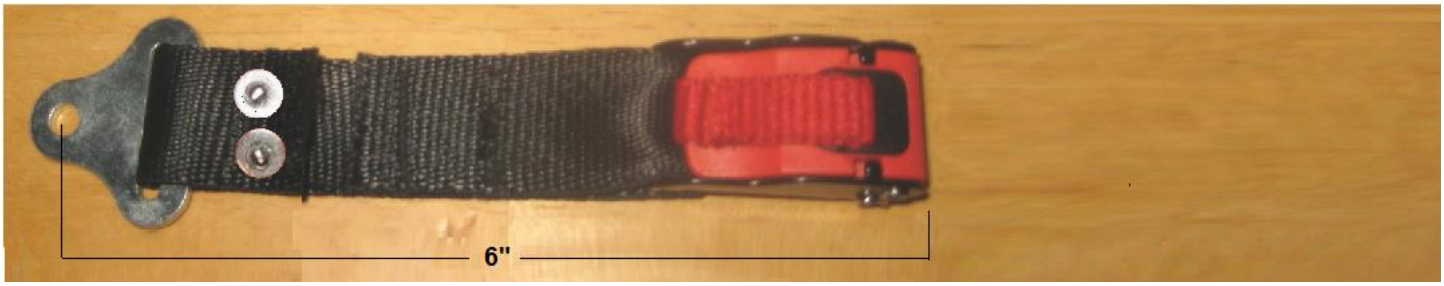
For this style chin connection the left side connection should be shortened to around 6" as shown below

Left side chin strap reinstalled in shortened left side chin pad using a small amount of "Shoe Goo" shown above to glue pad to chin strap.

Method for securing shortened left side chin strap to metal chin strap connection

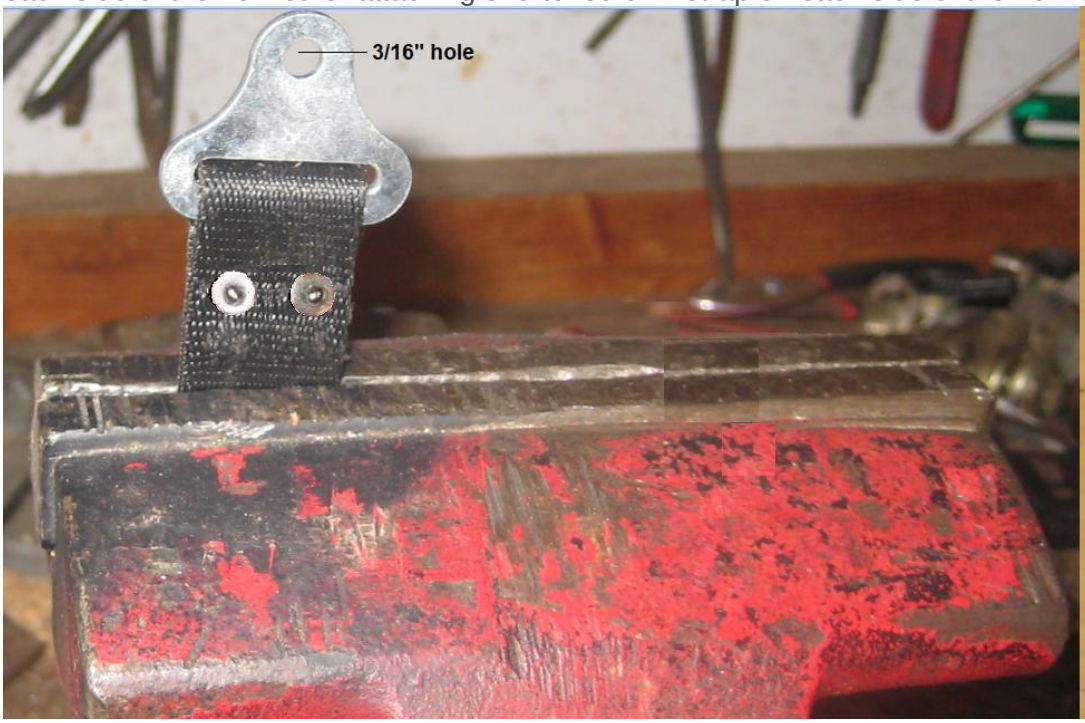
I heated up a small nail 1/8th" in diameter to melt a holes thru the shortened nylon strap held in a vise shown in the picture below so the holes in strap would not fray when the 1/8th" by 3/8th" pop rivets are riveted to the shortened left side chin strap connecting the metal connector.



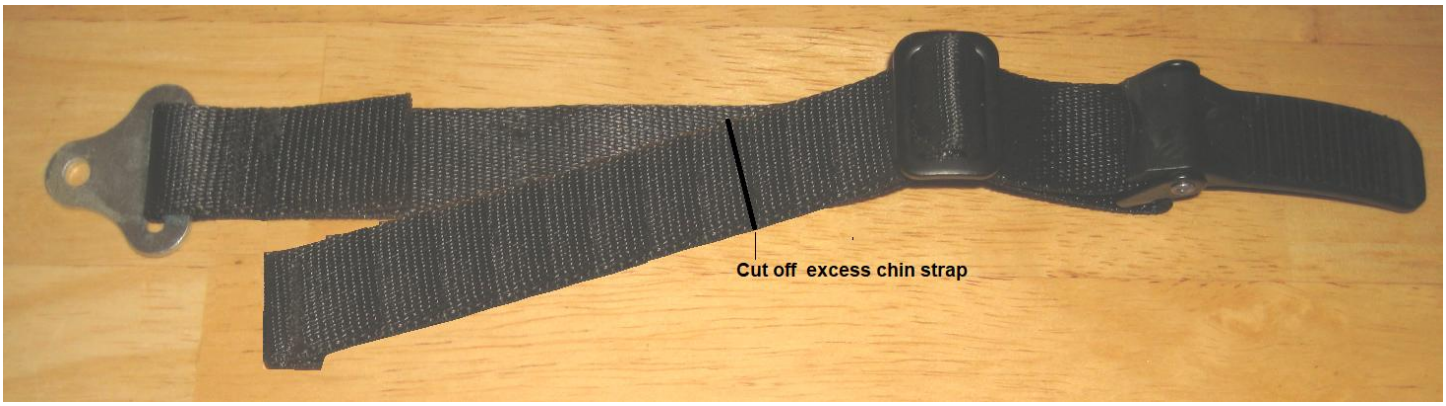


Cloth padding reinstalled over shortened left side chin strap using a small amount of "Shoe Goo" shown above to glue pad to chin strap.

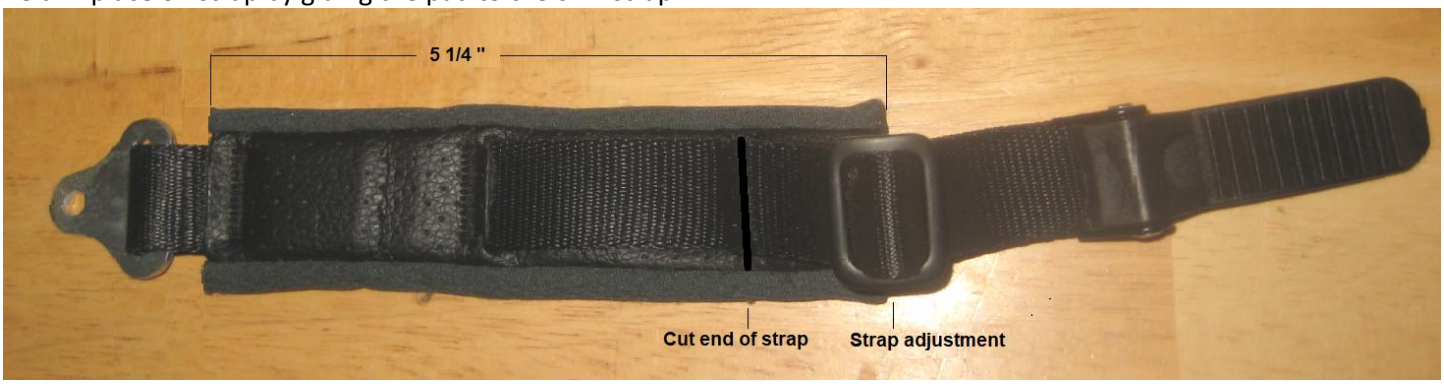
The 3/16th" by 7/16th" aluminum pop rivet will attach metal chin strap connector to 3/16th" holes drilled in on each side of the helmet for attaching shortened chin strap on each side of the helmet .

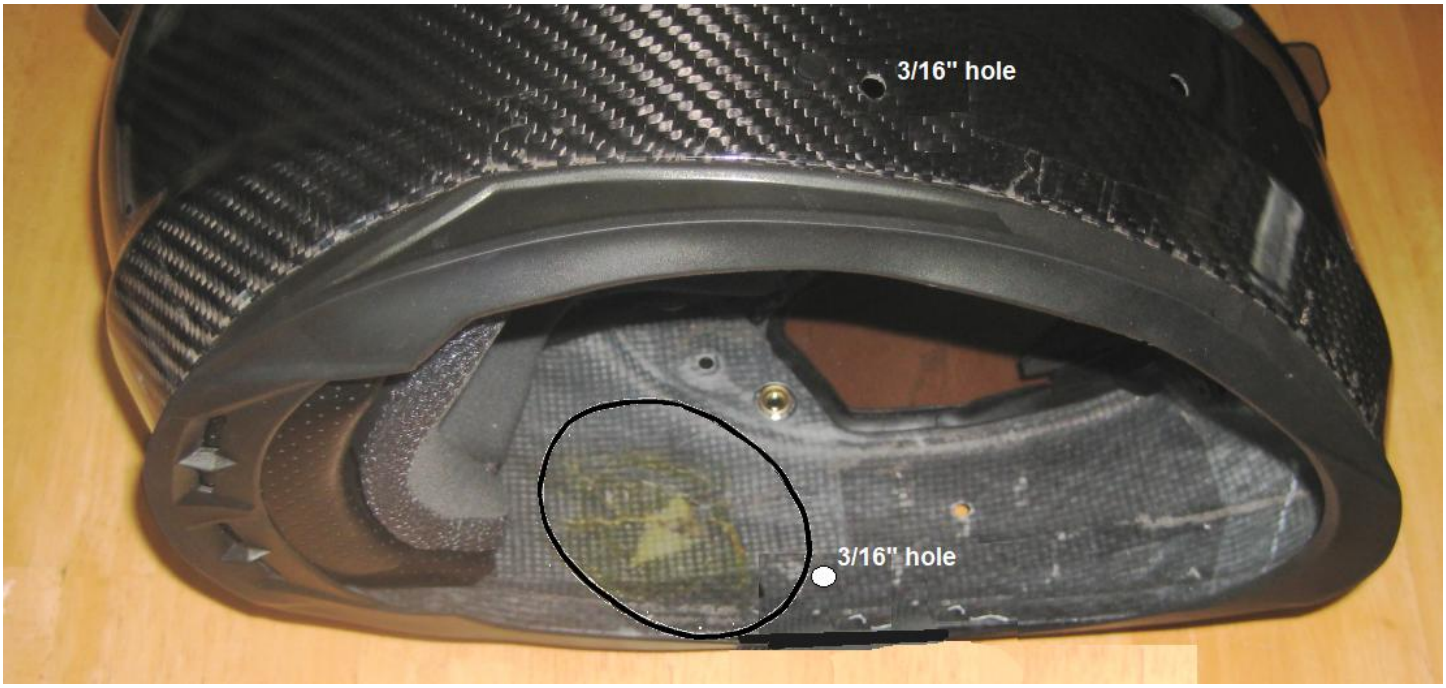


The right side strap adjustment mechanism shown below will be used to shorten the chin strap approximately 5 to 6 inches for chin adjustable connection to fit tight under users chin. Cut excess chinstrap as shown below. You will need to use a match to melt cut nylon strap end so it will not fray.



Picture of right side chin strap shortened with access strap cut off with pad reinstalled on right side chin strap with pad held in place on strap by gluing the pad to the chin strap.

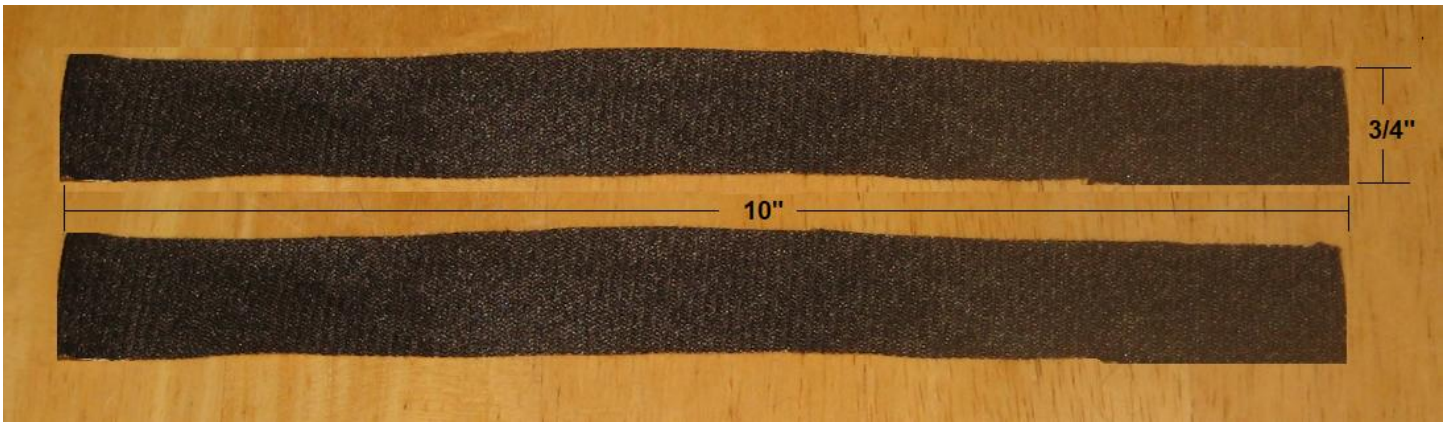




Drill 3/16" hole in locations shown in picture above and below to connect left and right side metal chin strap connections in new locations using a short 3/16" by 7/16th" pop rivets. The picture below shows left side chin strap pop riveted onto the helmet. **Note,** one metal washer with a 3/16" hole should be install between metal chin strap connectors and the inside of the helmet shell to make it easier to adjust the angle of the chin strap forward as it exits the helmet for proper fit under your chin.

Reinstall EPS side padding on each side after chin straps have be pop riveted onto the helmet in new locations

The earmuff pocket exposes the white EPS Styrofoam. When the exterior of the ABS plastic earmuff with electricians tape installed covering part of the earmuff pad and the ABS earmuff shell to provide additional noise reduction seal between the earmuff pad and the earmuff cup touches and moves back and forth against the EPS Styrofoam pocket it produces an irritating squeaking sound. Eliminating the sound involves cutting a piece of cotton cloth material 3/4" by 10" and gluing it over the white EPS exposed above. My suggestion is applying a thin layer of Shoe Goo product on the EPS Styrofoam and gluing a 3/4" by 10" piece of cloth over the exposed EPS Styrofoam in the pocket of each EPS side pad.

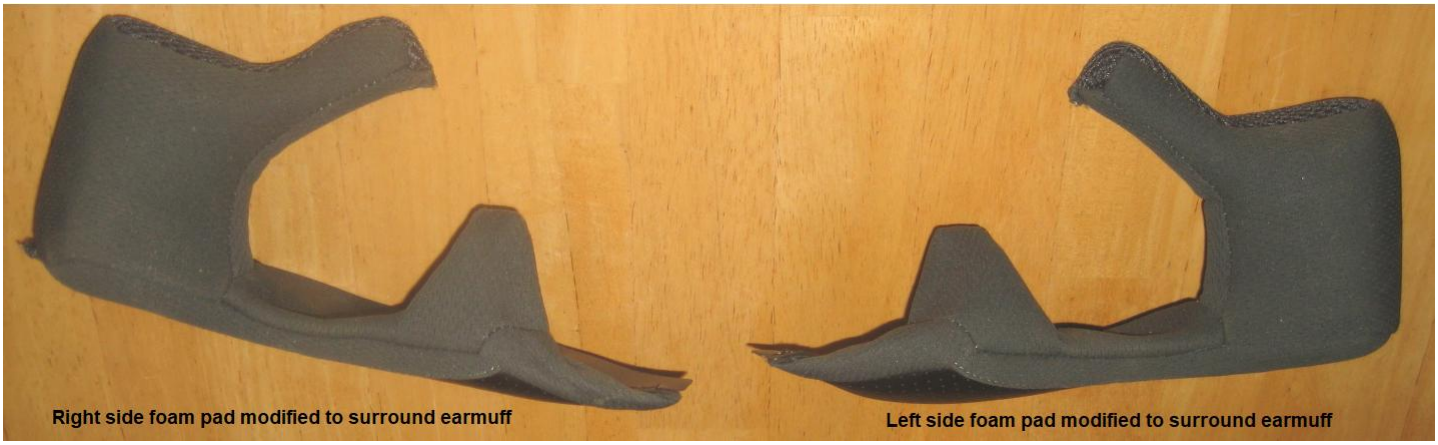


The pictures below show the cloth glued to the inside of EPS side pad pockets and loop Velcro installed

The chin straps exit the helmet between the back side of the EPS Styrofoam side padding and the inside of the helmet shell as shown in the pictures above and below which eliminates the chin strap running thru the earmuff pocket.

Air line
Air bladder
Hook Velcro
Air line

Air pressure bladders should be Velcroed in this exact location to apply equal air pressure to the top and bottom of the earmuff pad to form an air tight seal around ears. Air lines from air bladders connected to the air valve at the back of the helmet are shown in the picture. The air bladder line goes under the EPS Styrofoam side padding.



Modified foam pads form a pocket around earmuffs are reinstalled in the helmet below.

Note in the pictures above and below shows that the earmuffs are receded adequately into the sides of the helmet to facilitate the ears sliding in to and out of the earmuffs without stressing the ears. Once the ears are in place inside the earmuffs a small amount of air pressure is pumped into the air bladders to force the earmuff pads to seal around ears.

The air valve should be off set to the left side of the helmet for two reasons. One, so the code sticker can still be seen on the back of the helmet and two, it will make it easier to operate with the left hand while the right hand is still on the throttle to maintain speed. **Note**, when cutting the air lines from each bladder to the air valve be advised to cut air line a little too long when connecting to the air valve. Then evaluate how much more air line you could cut off without making the air lines too short . Be careful.

Normally it will take two or three days to complete the installation of noise reduction earmuffs that will reduce the wind and engine sound level in your ears by 50% or more to protect your hearing from tinnitus hearing problems.