

Communications on SuperLite® 17B and 17C Helmets, KMB 18 and 28 BandMasks®

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1.1 General

The communications system in the SuperLite® 17B, 17C, the KMB 18 and 28, requires regular attention and maintenance for proper function. Clear two-way speech communications between the diver and surface crew is one of the most important capabilities of surface-supplied diving operations.

1.2 Earphone Inspection

To service the earphones, first remove the head cushion from the helmet. The earphones can be carefully pulled out of the retainers in the helmet shell for inspection and disassembly.



To gain access to the earphones, you must first remove the head cushion.



Remove the earphones from the retainers to inspect the speaker cones.

1. Remove the (clear) cover first and slide it along the wire to get it out of the way. Remove the earphone protector and then peel back the (black) rear cover.



Removing the rubber cover from the earphone.

or loose, replace the entire unit, see "1.4 Earphone Removal and Replacement" on page 17COM-5.



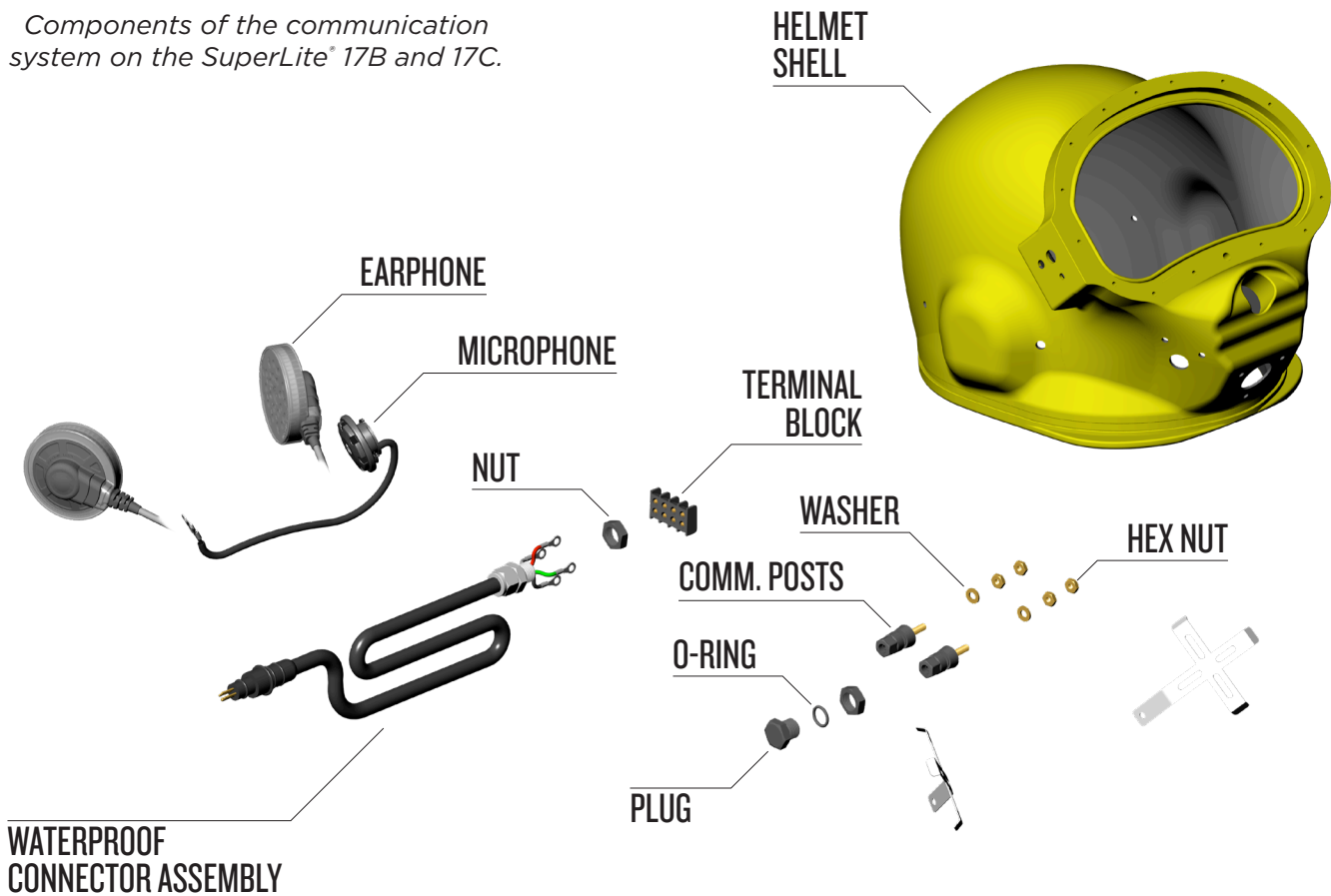
Inspect the mylar earphone.

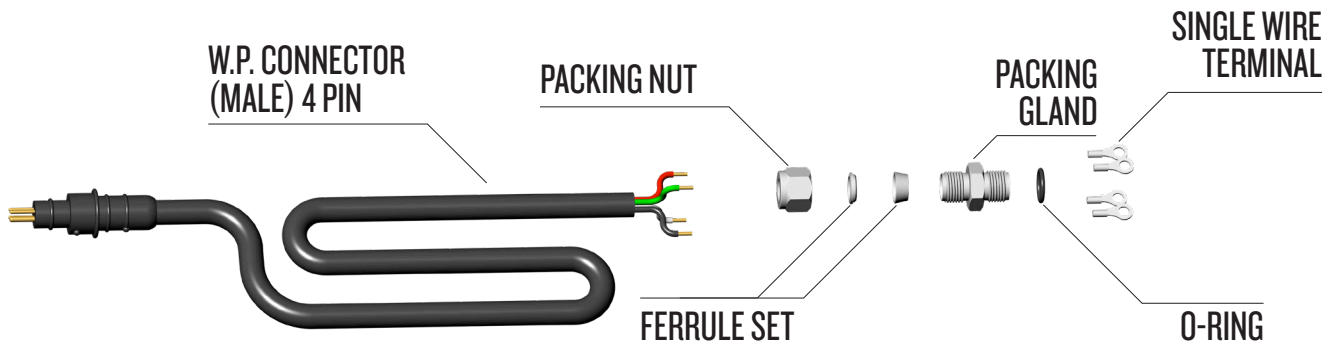
2. Check the wire connections. They should be solid.

3. Check the mylar diaphragm. If the mylar is torn

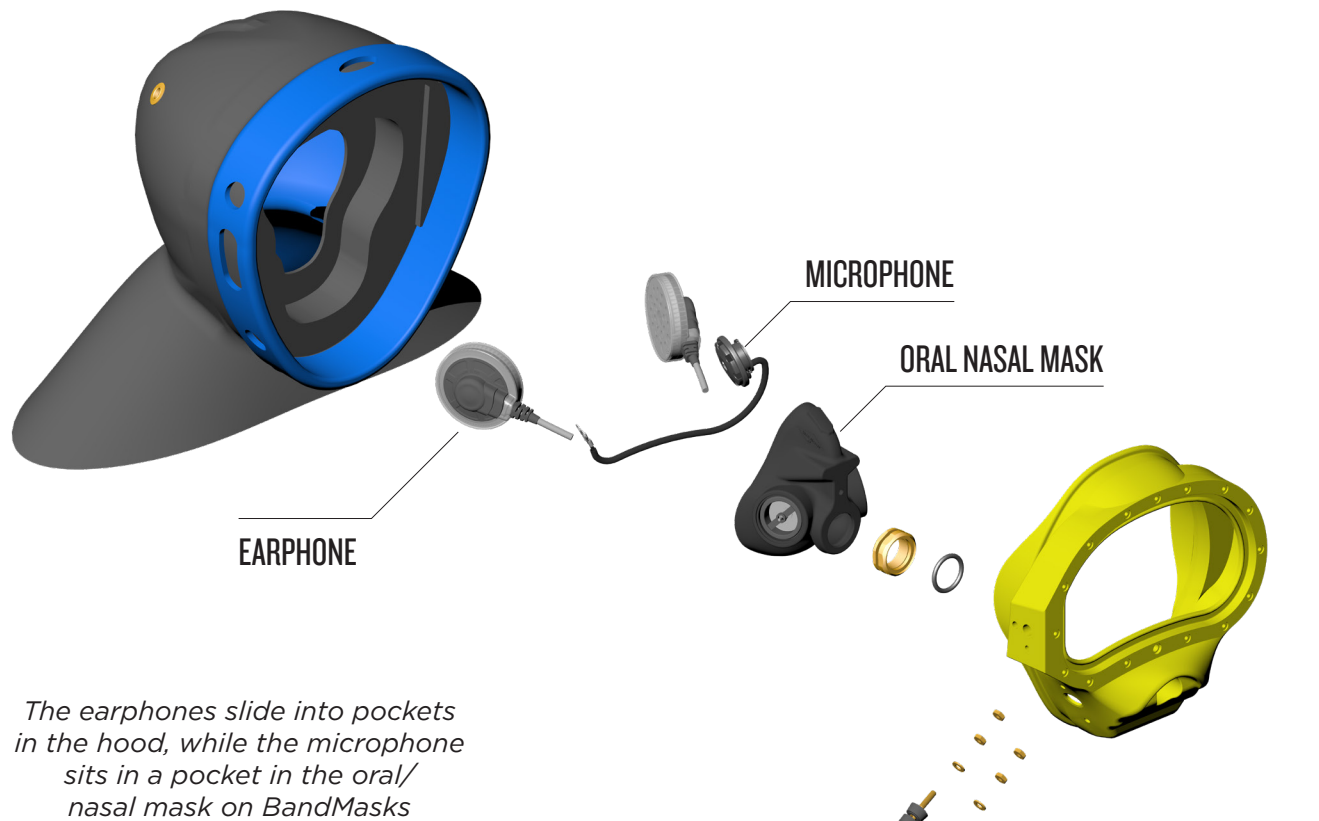
4. If the rubber covers are worn or damaged, replace them also.

Components of the communication system on the SuperLite® 17B and 17C.

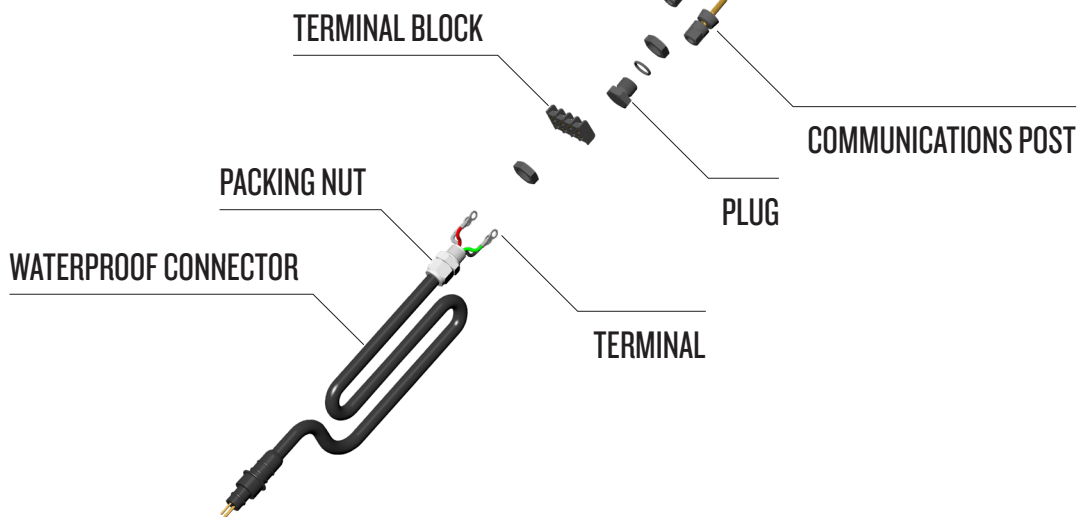




Components of the waterproof connector on the SuperLite® 17B and 17C helmets, KMB BandMasks.



The earphones slide into pockets in the hood, while the microphone sits in a pocket in the oral/nasal mask on BandMasks



1.3 Microphone Removal and Replacement

Tools Required:

- 1/8" Flat Blade Screwdriver
- 3/8" Open End Wrench

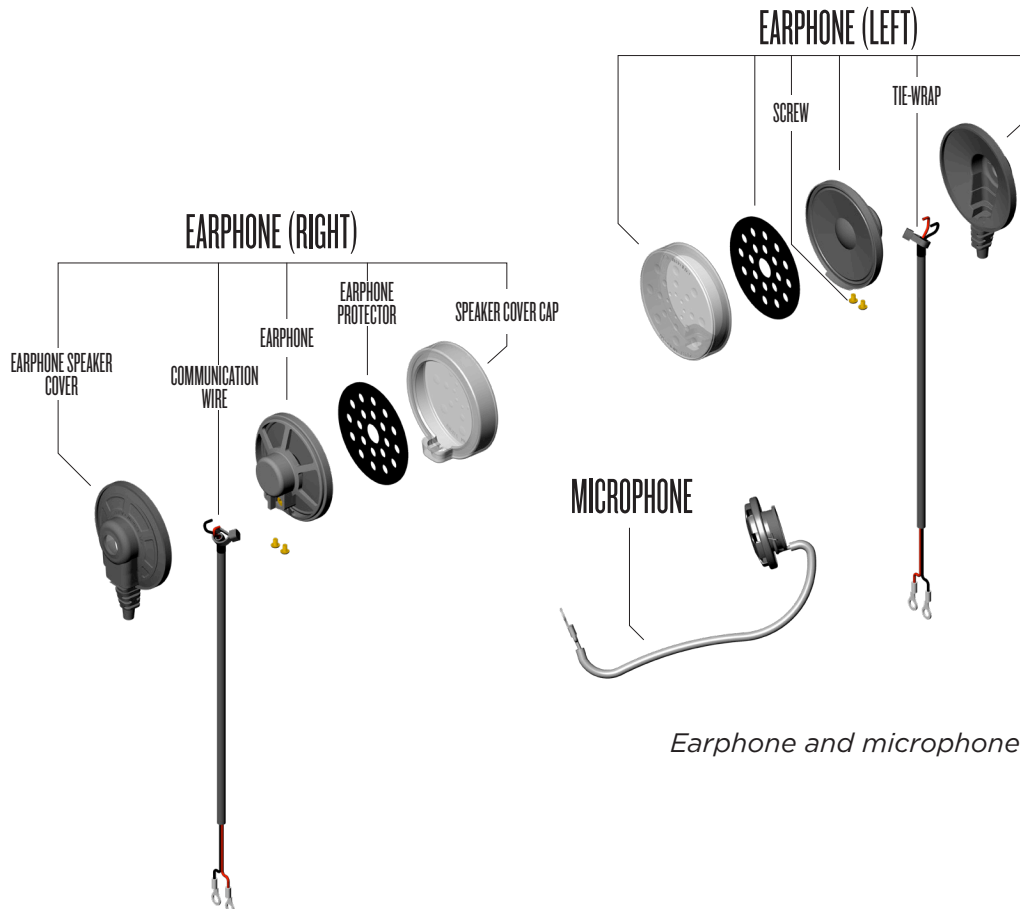
The entire microphone is replaced the same as the earphones by removing the wire lugs from the communications posts and replacing the entire unit. If a wire is broken it can usually be cleaned and soldered.

1. Remove the nuts and washers from the communications posts. If you are using the optional terminal block this may be where the wires from the earphone and microphone are connected.
2. Lift the terminal lugs off of the communications posts. NOTE the position of the terminal wires. They need to be installed in the same order.
3. Slowly pull the microphone out of the oral nasal mask. The wires that connect it to the communications posts will follow.

4. Install the terminals for the new microphone. NOTE that the wires must go on separate terminals as before.



Install the microphone into the oral nasal mask.



Earphone and microphone assemblies

5. Tighten the terminal nuts carefully, using a small drill bit, pin punch or opened large paper clip in the post hole to keep the post from turning. If the posts turn, it means that the seal made by the silicone sealant on the helmet shell or mask frame has been broken. If this happens the posts will allow water to leak in.

⚠ WARNING

Take care not to break the seal made by the silicone sealant where the communications posts penetrate. If these posts turn, the helmet or mask will leak and resealing using silicone sealant will be necessary.



The terminal block is where you will disconnect the earphones from the helmet or mask.

1.4 Earphone Removal and Replacement



If only the earphone speaker is damaged, it can be replaced by removing the tie wrap inside the covers, unscrewing the wire connection and replacing the necessary components. There is no need to completely remove the assembly from the helmet or mask.

Tools Required:

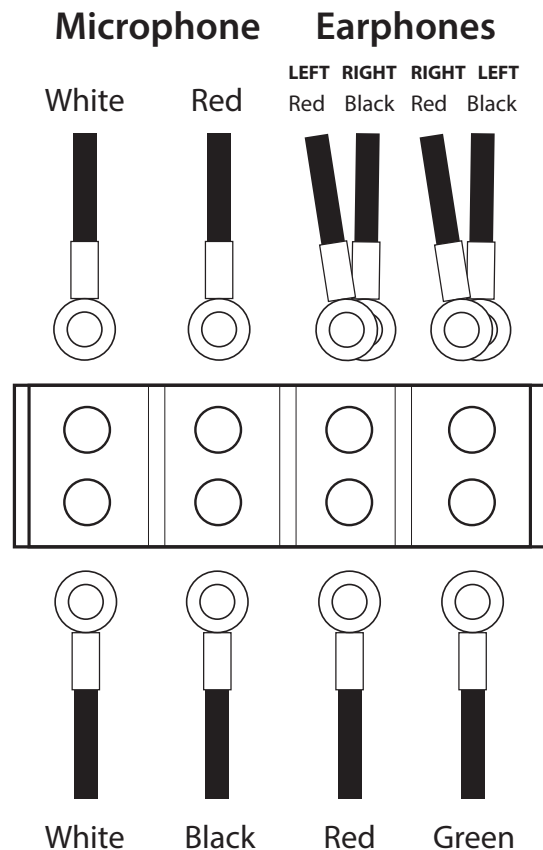
- 1/8" Flat Blade Screwdriver



The earphones may be replaced individually if needed.

1. Remove the nuts and washers from the communications posts. Remove the wires from the terminal block (or from the posts if no terminal block).

2. Lift the terminal lugs off of the communications posts. NOTE the position of the terminal wires.



Wiring diagram for the SuperLite® 17B, 17C and BandMasks

3. Install the terminals for the new earphones. Note that the wires must go on separate terminals as before.

4. Tighten the terminal nuts carefully, using a

small drill bit, pin punch or opened large paper clip in the post hole to keep the post from turning. If the posts turn, it means that the seal made by the silicone sealant on the helmet shell or mask frame has been broken. If this happens the posts will allow water to leak into the helmet or mask, requiring resealing.

⚠ WARNING

Take care not to break the seal made by the silicone sealant where the communications posts penetrate the mask or helmet shell. If these posts turn, the helmet will leak and resealing using silicone sealant will be necessary.

5. Test the communications to see if they are working.

1.4.1 Earphone Replacement



NOTE

If only the earphone speaker is damaged, it can be replaced by removing the tie-wrap inside of the covers, unscrewing the wire connection and replacing the necessary components. There is no need to completely remove the assembly from the communications module.

When handling the earphone speaker take special care of the FRONT as this side is more delicate than the back and damage can occur if handled improperly.



FRONT



BACK

Tools required:

- #1 Phillips Head Screwdriver

1.4.1.1 Removing Earphone Speaker

1. Remove the clear (front) earphone cover and slide it down the communication wire and away from the earphone speaker.



NOTE

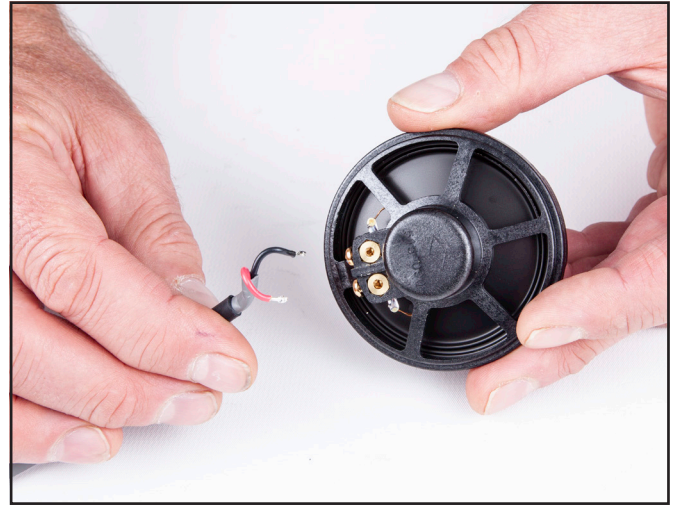
Earphone protector should fall away from earphone speaker as it is captured by the cover and held in place



2. Remove the black (back) earphone cover and slide it down the communication wire and away from the earphone speaker.



3. Cut the tie wrap that secures the wire assembly to earphone.



1.4.1.2 Installing Earphone Speaker

Verify that the earphone cover set is in place on the communication wire.



4. Using #1 Phillips screwdriver, loosen set screws.



5. Pull both black and red wires out and away from Earphone Speaker.

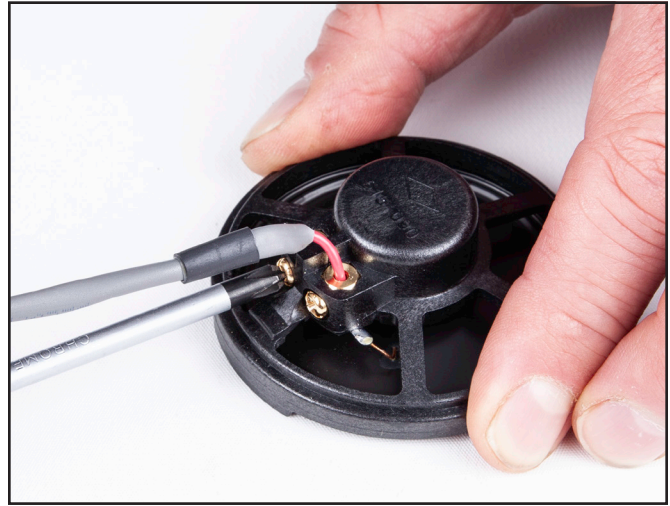
1. Unscrew the set screws from the terminals found on the earphone speaker two to three turns.



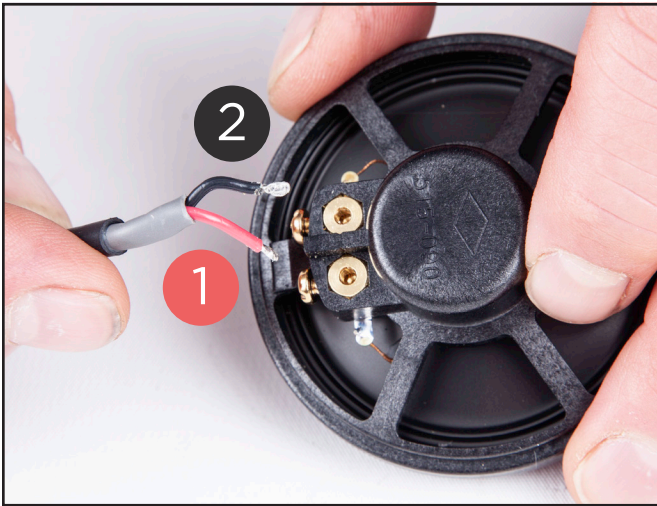
The set screws will have to be backed out far enough to allow the wires to enter the terminal without restriction. If screws are installed unscrew just enough to get the wires in the terminals.



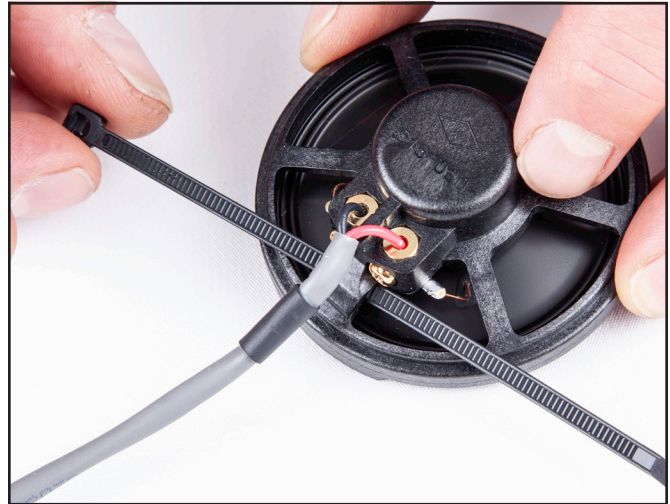
2. Put the red lead wire into the right terminal and tighten screw.



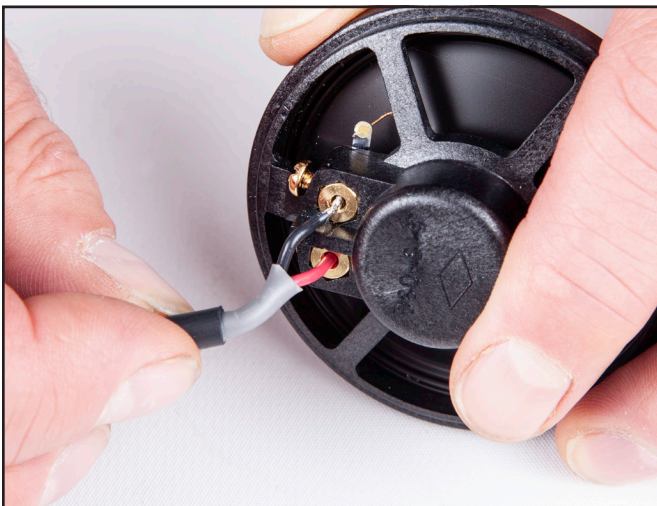
4. Use tie wrap P/N 520-038 to secure communication wire to earphone speaker. Be sure to loop tie wrap onto the gray jacket of the cable. Tie wrap should not touch black or red wire.

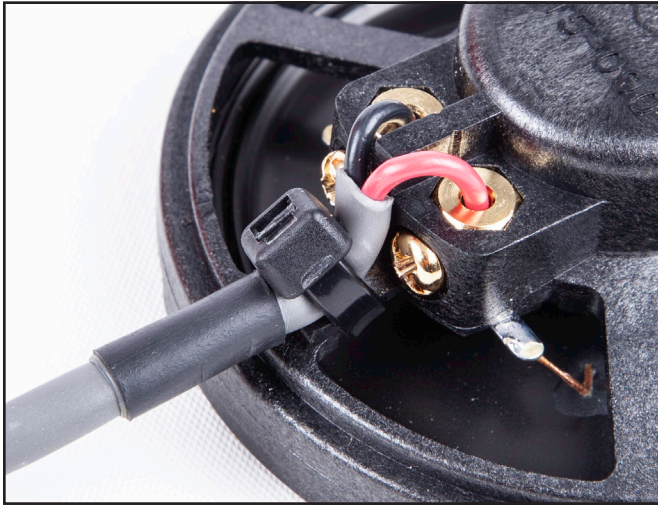


3. Put the black lead wire into the left terminal and tighten screw.



Tie wrap head should face to the side or away from the backside of the speaker.





5. Cut the excess from the tie wrap and replace cover set and earphone protector.



6. Test for proper function.



1.5 Waterproof Connector

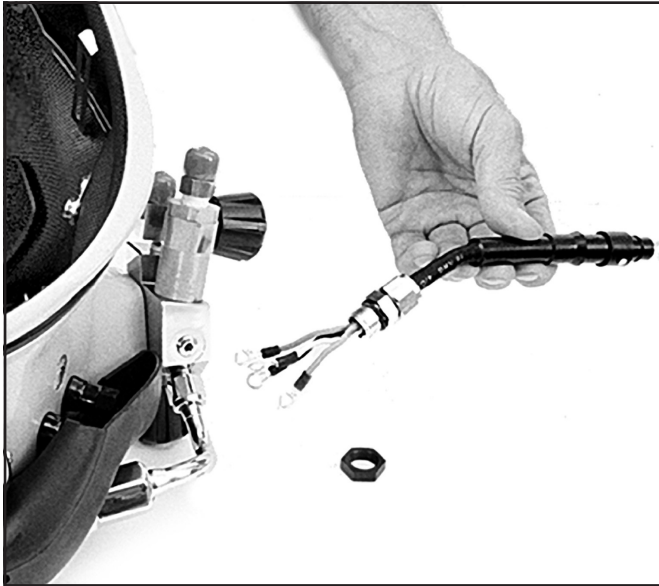
SuperLite® 17B and 17C helmets are supplied with a set of communications posts and/or an optional waterproof connector. The waterproof connector is durable but can fail if the wire and fitting receives rough handling. To replace the connector use the following procedure.

1.5.1 Connector Removal

Tools Required:

- 3/8" Open-end Wrench
- 5/8" Open-end Wrench
- 1 1/16" Open-end Wrench
- Torque Wrench with 1 1/16" Open End Attachment

1. Remove the earphone wire lugs from the interior of the communications posts and terminal block.
2. Remove the nut from the packing gland on the interior of the helmet or mask.
3. Separate the connector/packing gland assembly from the helmet or mask.



Removal of the waterproof connector.

4. Place the packing gland in a vice and unscrew the packing nut.
5. Pull the connector through the gland.



It will be much easier to do this if the terminals are cut off the end of the connector first. Save the front and back ferrules and the packing nut.

1.5.2 Connector Replacement

1. Lubricate the new connector with silicone lubricant (or recommended equivalent).
2. Slide the packing nut and ferrules onto the new connector.
3. Feed the connector through the packing gland.
4. Check the O-ring on the packing gland. Replace or lubricate as necessary.
5. Install the waterproof connector assembly into the helmet or mask.
6. Tighten the nut on the packing gland until snug.
7. Connect the wire terminals on the connector to the terminal block (or posts if no terminal block).
8. Test the communications to ensure they are working.

1.6 Communications Posts

1.6.1 Communications Post Removal

Tools Required:

- 3/8" Open-end Wrench

1. Disconnect the communications set as per "1.5.1 Connector Removal" on page 17COM-9.
2. Remove the nuts and washer.
3. Pull the communications post away from the helmet shell or mask frame.

1.6.2 Communications Post Replacement

1. Clean off all the old RTV silicone sealant from the shell and communications posts.
2. Apply fresh RTV to the communications post(s). Check posts for cracks and smooth turning for proper wire capture. Replace post if necessary.

⚠ CAUTION	
	<p>Use good ventilation when using RTV sealant. Fumes from this material may irritate your lungs. Read and follow the directions in the MSDS before using this material.</p>

⚠ CAUTION	
	<p>Wear eye protection when using RTV sealant. This material may irritate your eyes. Read and follow the directions in the MSDS before using this material.</p>

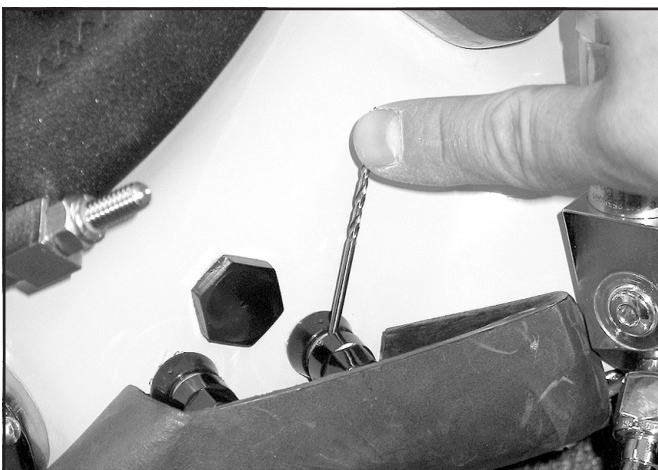
⚠ CAUTION

Wear hand protection when using RTV sealant. This material may irritate your skin. Read and follow the directions in the MSDS before using this material



The communications posts are sealed in place with silicone sealant.

3. Insert the communications posts into the helmet or mask. Before bottoming it against the shell, rotate it slightly to ensure an even spread of the RTV to completely seal the hole.



Make sure the holes in the binding posts are properly aligned so that you will be able to thread the communications wire through them easily when you are ready to dive.

4. The hole in the post should end up angled towards the earphone area of the helmet.

5. Install the washer followed by the nuts. Tighten the nuts snugly—do NOT overtighten. Using a small drill bit, pin punch or opened large paper clip in the post hole to keep the post from turning.

6. Wipe off all the excess silicone sealant from the helmet or BandMask.