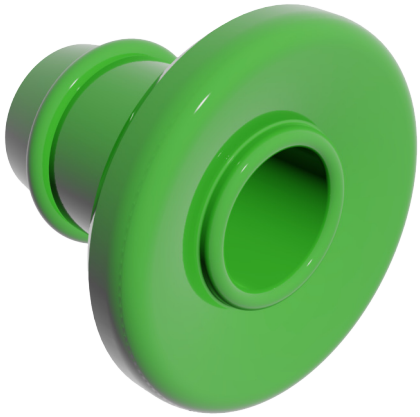
Application Note



C-Grid

Contents

1. History Revision

Revision Number/Date	Change from last revision
001/NOV-15-2011	1st revision.
002/NOV-24-2011	Compatibility section added. Barometric Relief Requirements section removed. Appendix 1 added.

2. Introduction

The C-Grid is a device that is designed to protect the sound outlet of an acoustic transducer. The C-Grid increases the life expectancy of a hearing instrument by preventing foreign material such as cerumen, (in solid or liquid form), from entering the transducer.

3. Design Basics

The C-Grid is designed for insertion and removal into a sound outlet port.

The material is PE, Low/Medium Density.

4. Shell Design

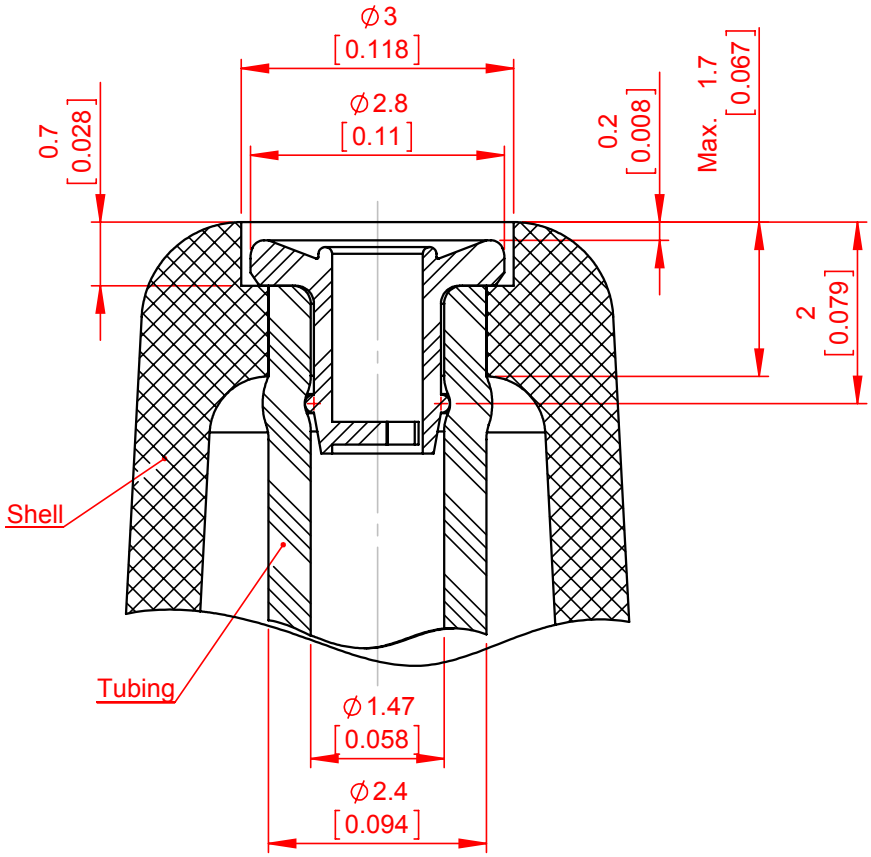


Figure 1: C-Grid assembled in the shell

The C-Grid is designed to be placed in a tube with inner diameter Ø1.47 mm and outer diameter of Ø2.4 mm. The tube is placed in a Ø2.4 mm opening in the hearing instrument shell with a depth of 0.7 mm and diameter of Ø3.0 mm. For C-Grid dimensions please refer to the 'Mechanical Dimensions' section in the C-Grid Data Sheet.

5. Compatibility

The C-grid is backward compatible to the former C-barrier™ solution offered by Sonion. The C-grid however, requires no special barometric relief of the receiver since the sound outlet is not closed.

6. Shell Design Considerations

In order to obtain a desirable insertion and pull out force of the C-Grid the tubing and shell dimensions should meet the following specifications:

Tube: Inner diameter Ø1.47 mm, outer diameter Ø2.4 mm. See figure 1.
Hole for tubing: Ø2.4 mm. This can be drilled with a standard drill. See figure 2.

The counter bore in the shell for the C-Grid can be made by using a stepped drill with Ø1.35 mm pin for positioning the drill inside the tube. The wider diameter of Ø3.0 mm is used for the C-Grid flange.

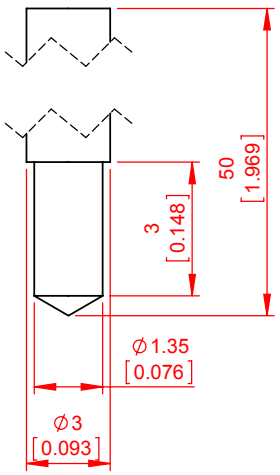


Figure 2: The drill required for making the hole for the C-Grid in the hearing instrument shell.

The 3.0 mm shaft should be lowered to 0.7 mm in the shell. The C-Grid flange has a height of 0.5 mm. When the C-Grid is pressed firmly into the shell, the C-Grid will be positioned with a recess of 0.2 mm relative to the surface of the shell. The recess will help to prevent possible damage to the C-Grid.

The diameter of the C-Grid flange is Ø2.8 mm and the drilled hole has a diameter of Ø3.0 mm.

This creates a space between the C-Grid flange and the shell of 0.1 mm. We recommend you maintain these specified dimensions for an optimum fit, making it easy to remove and replace the C-Grid. An opening with smaller dimensions than the Ø3.0 mm specification may interfere with placement of a new C-Grid, due to accumulated debris (earwax).

The thickness of the used shell should be limited to 1.7 mm. This makes it possible for the flange of the C-Grid to pass the shell during placement of the C-Grid, resulting in a more solid attachment of the C-Grid.

7. Place & Removal Tool

The Place & Removal Tool is used for mounting and dismounting the C-Grid. On the packaging the wheel should be turned so the opening is directly above a C-Grid. Then use the *place side* of the Place & Removal Tool to get the C-Grid out of the packaging and to place it in the outlet of the hearing instrument. See figure 3.

When a C-Grid should be removed from the hearing instrument the *removal side* of the Place & Removal Tool should be used. Removal is done by gently threading the *removal side* end clockwise into the C-Grid and gently pulling it straight out.

After removal the C-Grid can be placed in the disposal compartment in the center of the wheel.

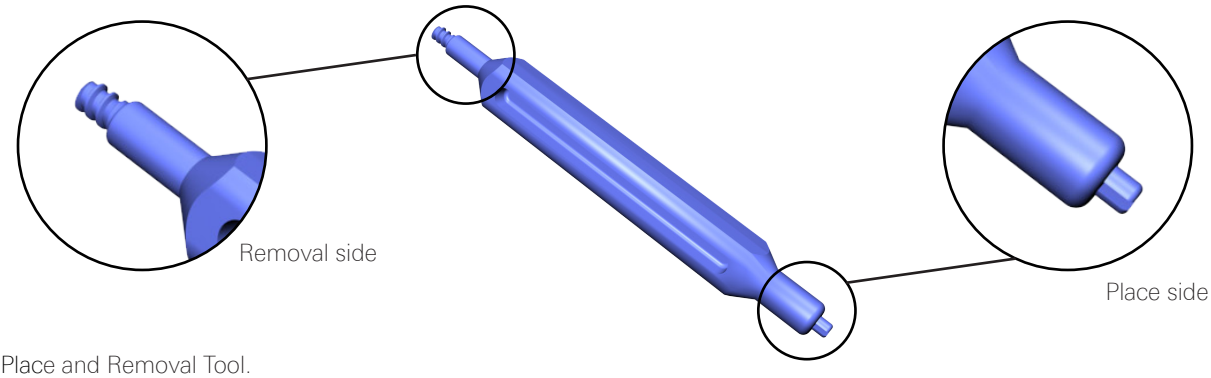
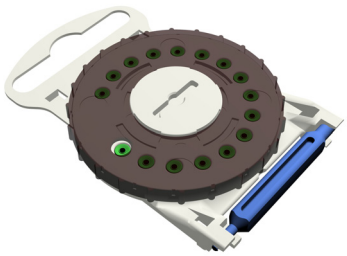


Figure 3: Place and Removal Tool.

8. Packaging

The C-Grids are delivered in a packaging of 16 pcs. with a Place & Removal Tool attached. For production environment C-Grids and Place & Removal Tools can be delivered separately.



9. Instruction Notes

During daily use, the sound quality of your hearing instrument may be affected by the natural build up of earwax. This build up can be transferred from your ear to the C-Grid.

To be sure the C-Grid is working properly you should inspect it on a regular basis. On a daily basis listen for any changes in the sound and distortion of your hearing instrument. Changes in the sound quality might indicate a build-up of earwax on the C-Grid.

The C-Grid system is disposable and not suitable for cleaning. When the C-Grid is partly blocked or the performance of the hearing instrument is reduced the C-Grid must be removed and a new inserted.

Do not clean the C-Grid as it might damage the hearing instrument.

The C-Grid system requires education of the patient, since cleaning methods such as brush, wire-loop, toothpick and other devices must not be used. For this reason alone, it is very important that the patient will be notified to carefully read the instructions before using a hearing instrument which contains a C-Grid.

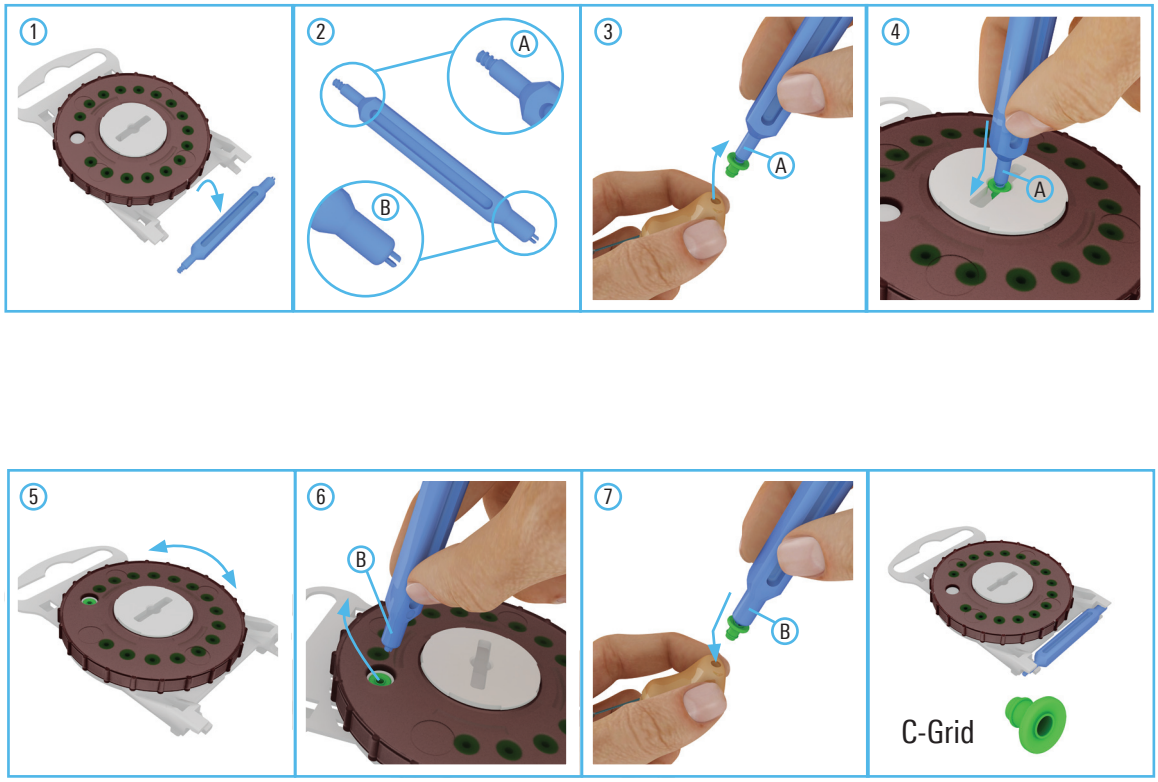
Never use running water or immerse the hearing instrument in water or other liquid cleaning.

If the C-Grid is filled with earwax it needs to be replaced.

10. Storage Conditions

Storage temperature: -40°C to +60°C
Storage humidity: 10 to 95% RH

Appendix 1: Place and Removal of C-Grid



Note: There may be two openings at the end of your hearing aid. The sound outlet will most likely have a larger opening with thin tubing inside.