



THE SOUND OF SAFETY

HEADSET FITTING AND OPERATIONS MANUAL

DANR THP DANR THPC

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Overview

The Digital Active Noise Reduction (DANR) Triple Hearing Protector (THP) offers superior performance as a double hearing protector with the addition of digital active noise reduction, for a third layer of protection. The DANR Triple Hearing Protector with Communications (THPC) represents Gentex Corporation's top of the line product for combined communications and hearing protection for excellent performance in extreme noise fields.

Before Usage

Always evaluate the adequacy of your protective gear before entering hazardous environments.

The wearer should ensure that:

- The earmuffs and earplugs are fitted, adjusted, and maintained in accordance with the manufacturer's instructions. Improper fit of this device will reduce its effectiveness in attenuating noise. Consult the included instructions for proper fit.
- The earmuffs and earplugs have been inspected for serviceability.
- The earmuffs and earplugs are worn at all times in noisy surroundings.

The use of any hearing protective device will not guarantee adequate protection for hearing loss for all persons under all circumstances. Consult your physician or audiologist frequently when being exposed to high noise levels. If exposure to high noise levels occurs during employment activities, also consult your employer regularly.

US Federal Law requires the following additional statements:

The level of noise entering a person's ear, when hearing protector is worn as directed, is closely approximated by the difference between the A-weighted environmental noise level and the Noise Reduction Rating (NRR).

Example:

1. The environmental noise level as measured at the ear is 92 dB(A)
2. The NRR is 32 decibels (dB)
3. The level of noise entering the ear is approximately equal to 60 dB(A)

Caution:

For noise environments dominated by frequencies below 500 Hz, the C-weighted environmental noise level should be used.

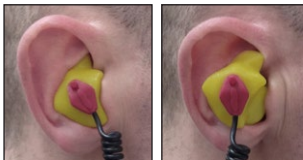
Although hearing protectors can be recommended for protection against the harmful effects of impulsive noise, the NRR is based on the attenuation of continuous noise and may not be an accurate indicator of the protection attainable against impulsive noise such as gunfire.

Earplug Insertion

See DANR Earplug manual for more detailed instructions

- Improper fit of this device will reduce its effectiveness in attenuating noise. Consult the included instructions for proper fit.
- Inspect the earplugs before each use. The earplugs should be free of debris, tears, and other physical damage.
- Inspect the earplug cable and the cable connection to the earplug.
- Lubricate the earplugs with water or Aegisound Ear Gel around the canal tip. DO NOT fill tip opening with fluid.

Correct Insertion
(Earplug locked
in helix)



Incorrect Insertion
(Earplug not locked
in helix)

Custom Earplug Familiarization

- Wearing custom earplugs for long periods of time may require an adjustment period of a week or more.
- Begin by wearing earplugs for one hour at a time for the first several days.
- Once acclimated to the earplugs, start wearing them for two or more hours until they can be worn for an entire shift. Do not risk exposure to noise without wearing hearing protection.

Headset Assembly and Fitting

Connecting DANR Earplugs to Headset

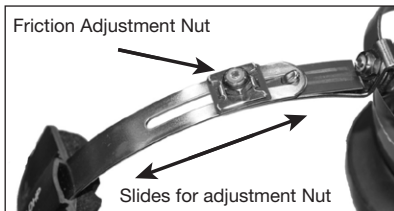
1. Rotate the earcup to gain access to the inside.
2. Identify the right and left sides of the headset. The right DANR earplug (RED) connects to the battery module side, and the left DANR earplug (BLUE) connects to the microphone (or blank) module side. The inside of each earcup is also labeled "R" and "L" corresponding to Right and Left respectively.
3. Grasp one DANR earplug connector, and insert the connector into the receptacle inside the appropriate earcup by aligning the red dot on the connector with the red dot on the receptacle. Gently press the connector until it snaps in place as shown in the right picture below.
4. Repeat Step 3 for the remaining DANR earplug.
5. To remove the connector, grip the knurled sleeve of the connector body and pull in the direction indicated in the right picture below. DO NOT pull on the earplug cable.



Aegisound's Argonaut Communication Earplugs (P/N 05-016017) may be used to offer two-way communications without active noise reduction when DANR earplugs are unavailable. The Communication Earplugs are compatible with Gentex's Low Profile Custom Communications Earplugs (LPCCE) and Aegisound's Full Concha Custom Communications Earplugs (FCCCE) as well as Comply™ foam eartips, and provide double hearing protection with two-way communications.

Headband Adjustment

The headband is assembled to slide for adjustment at the factory. The friction required to adjust the headband or to fix the headband in place may be adjusted by tightening or loosening the lock nut on each side of the headband near the headpad with an 11/32 inch or adjustable wrench.



Fitting DANR THP(C) Headset



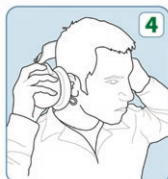
1. Position the headset around the neck so that the right (RED) earplug is positioned on the right shoulder and the left (BLUE) earplug is positioned on the left shoulder.



2. Insert the right (RED) earplug into the right ear.



3. Insert the left (BLUE) earplug into the left ear.



4. Place the headset on the head and allow the coil to pull into the earcup.



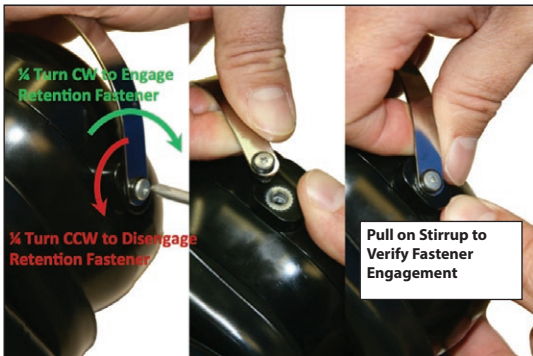
5. Place the headset comfortably over the ears. Make sure the coil is completely inside the earcup. Do not allow the coil to break the headset earseal. The coiled cable should completely retract into the headset.

If the headset is installed in a helmet, the helmet should be placed on the head so that the earcups can be rotated away from the ears, allowing earplug insertion before donning the headset.

Earcup Removal and Attachment

To install the headset into some head protective devices, one or both of the earcups may need to be temporarily removed.

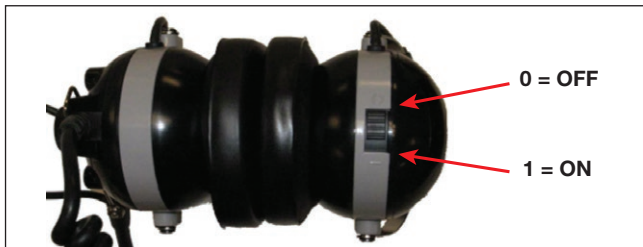
1. Use a #1 Phillips screw driver to remove the $\frac{1}{4}$ turn fastener holding each side of the earcup to the metal stirrup.
2. To remove, gently rotate the fastener $\frac{1}{4}$ turn counter clockwise (CCW). The cam will disengage, and the fastener will stop turning when the fastener is disengaged. Too much applied torque may break the fastener or damage the insert.
3. Pull the stirrup away from the cup. The fastener is captured on the stirrup so it will not fall away.
4. To reinstall the cup, insert the fastener into the receptacle, and gently rotate the fastener $\frac{1}{4}$ turn clockwise (CW) to reengage the fastener. A click should be heard as the fastener cam engages. Too much torque may cause damage to the fastener or the insert.
5. Gently try to pull the stirrup away from the earcup to verify the fastener is reengaged.
6. Repeat for the opposite earcup side.



Operation

Power

The power switch is located below the battery at the bottom of the right side earcup. The switch slides forward and backward with the 0 indicating the OFF position and 1 indicating the ON position. The headset power should be in the OFF position when not in use and anytime the earplugs are not fully inserted in the ears.



DANR Controller

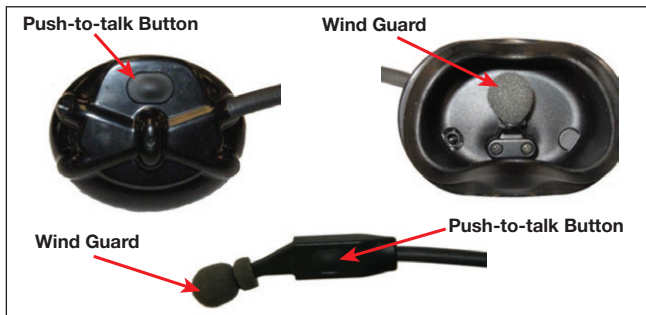
The headset controller automatically initializes to the user's ear each time the power is turned on. This process is referred to as "AutoID". AutoID should be conducted with the **earplugs fully inserted**, with the **ear cups in normal position over the ears**, and in a **relatively quiet environment**. The user should wait 1-3 minutes after inserting the earplugs before turning on the power. After turning on the power, the user will hear a brief noise in both ears for 3-10 seconds. After the initial AutoID sequence has stopped, the system may take as long as 60 seconds to initialize to the user. The user will hear a voice stating that the headset is online after the controller comes on. If the AutoID process fails, or if the user hears objectionable noises after the controller turns on, the power should be cycled off and then back on, to repeat the AutoID process. The different voice messages and when they will be heard are summarized in the table to the right.

Message	When
"Identifying User"	After power up
"Headset Online"	~1 min after power up
"ANR Disabled"	within 1min if error on start
"Headset Problem, Restart Headset"	Error is detected after start
"Battery Low"	Battery power is low

In the event that either "ANR disabled" or "Headset Problem" messages are delivered, two-way communications capability will remain completely operational. Communications is also available during headset initialization.

Muzzle and Boom Communications Modules

The muzzle and boom communications modules provide two-way communication capability to the DANR THPC. The muzzle contains a digital noise canceling microphone surrounded by a plastic housing lined with a compliant seal, called the "muzzle". The boom contains a similar microphone without the housing and seal. There is a replaceable wind guard over the microphone that is held in place with a small o-ring.



After connecting the DANR THPC headset to the radio, use the oval shaped button on the back of the muzzle or boom (shown above) to transmit the voice. In most cases, the radio PTT button can also be used. When talking in high noise environments, the muzzle should be centered and tightly sealed around the mouth to transmit the best speech quality.

It is advisable to first connect the DANR THPC to the radio or phone and turn the headset on before turning on the radio or phone.

Battery Charging and Maintenance

The battery is supplied with a minimal charge. Charge the battery to a full charge level prior to its first use per the battery charger instructions. When the user has the earplugs installed, a vocal audio warning from the headset will alert the user when the battery charge is low.

See instructions for the particular battery charger used.

Removing the Battery from Headset

The rechargeable battery is attached to the earcup. A four step action is required to release the battery, as illustrated below. A locking lever prevents the battery from accidentally becoming disengaged from the headset.



1. Place the index finger on the release lever.



2. Push the release lever towards the earcup until it stops.



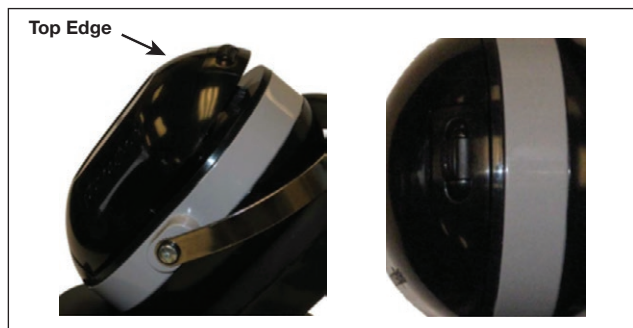
3. With the release lever in position, press the button down.



4. With the button pressed, pull back on the release lever and remove the battery.

Battery Installation into Headset

The battery is installed by placing the battery bottom in the earcup pocket and pushing the top edge of the battery against the earcup until it latches in place.



Earseal Replacement



Remove the seal by grasping and pulling the rear flap of the seal over the retention lip of the earcup on each side.



Replace the earseal by stretching the rear flap of the earseal over the retention lip of the earcup on each side.

Maintenance

The earplugs should be cleaned periodically with warm, soapy water and/or non-alcohol wipes to prevent buildup of dirt and to disinfect. (NOTE: Do NOT submerge or allow water to enter the sound port in the tip of the canal.) Earseals, earcups, and headband may be wiped down with a cloth dampened with water.

The earplugs, headset, and associated equipment should be stored in the protective cases provided.

See the Troubleshooting and Maintenance guide for details on headset maintenance.

See the DANR Earplug Manual for required DANR earplug service and maintenance.

Replacement Parts	Description	
05-021001	DANR Earplug Set	Earplugs
05-021008	Replacement Waxguards with Applicator	
05-999002	Aegisound® Ear Gel	
05-999001	Replacement Earseal Kit	
05-005001	DANR THP base headset with blank module (battery not included)	Headset
05-005023	Battery Pack	
05-012001	Two Gang Desktop Battery Charger	
Boom and Muzzle Modules	Please contact Gentex Corporation for information on currently available configurations	

Warning



This hearing protector is provided with active noise reduction. The wearer should check correct operation before use. If distortion or failure is detected, the wearer should refer to the manufacturer's advice for maintenance and replacement of the battery.



Performance may deteriorate with battery usage. The typical period of continuous use that can be expected from the hearing protector is 12 hours.



The hearing protector is provided with electrical audio input and output to allow for two-way communications. The wearer should check correct operation before use. If distortion or failure is detected, the wearer should refer to the manufacturer's advice.



The performance of the active noise reduction may be adversely affected when sustained oscillation (whistling or instability) is perceived. If refitting the hearing protector or replacement of the batteries does not overcome this malfunction, the wearer should contact the supplier or manufacturer.



The output of the electrical audio circuit of this hearing protector may exceed the daily limit sound level and/or upper action level.



The audibility of ambient warning signals at a specific workplace transmitted by sound generated outside the hearing protector may be impaired.



Protection afforded by the DANR system will be severely impaired if:

- The earmuffs and earplugs are not fitted, adjusted, and maintained manufacturer's instructions.
- The earmuffs and earplugs are not regularly inspected for serviceability.
- The earmuffs and earplugs are not worn at all times in noisy surroundings.



Earmuffs, and in particular cushions, may deteriorate with use and should be examined at frequent intervals for cracking and leakage, for example.



The fitting of hygiene covers to the cushions may affect the acoustic performance of the earmuffs.



This product may be adversely affected by certain chemical substances. Further information should be sought from the manufacturer.



See supplemental component manuals for additional warnings and cautionary statements.



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