

BIOPAK 240 REVOLUTION

Model AVIWT Communication Interface for AV3000/AV3500 Facemask User Manual

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1.0 Cautions and Limitations

- Failure to properly use and maintain this product could result in injury or death.
- Never substitute, modify, add or omit parts. Use only exact replacement parts in the configuration as specified by Biomarine Inc.
- The ongoing effectiveness and reliability of any protective breathing equipment is dependent upon the user/owner's expertise in using and maintaining the equipment.
- The user shall reference and abide by all cautions and limitation provided in the BioPak 240R respirator manuals.
- The user shall reference and abide by all cautions and limitation provided in the Innovative Wireless Technologies (IWT) *SENTINEL™* Wireless Mesh Communication and Tracking System manuals.
- The model AVIWT Communication Interface is suitable for use only with the Biomarine BioPak 240R respirator and associated AV3000 and AV3500 facemasks.
- The AVIWT components have not been evaluated for use in applications involving direct open flame or high radiant heat.
- The AVIWT components have not been evaluated for use in applications that may expose the user to chemical, biological, radiological or nuclear agents (CBRN).
- DO NOT attempt to fit the AVIWT Communication Interface to any other manufacture or model of respirator or facemask other than the BioPak 240R respirator, the AV3000 facemask or the AV3500 facemask.
- The user bears full responsibility for properly maintaining this equipment including inspections, cleaning, maintenance and care.
- The facemask and installed AVIWT components shall be thoroughly cleaned and disinfected prior to each use.
- If the respirator is going to be utilized without the services of the AVIWT communication interface it is strongly suggested to remove the interface components from the facemask and re-install the facemask voice emitter.
- The AVIWT Communication Interface may be used with IWT Part Number FAA9100-411 speaker microphone only.
- The AVIWT Communication Interface has been MSHA approved for intrinsic safety ONLY when properly interfaced with the following Innovative Wireless Technologies communication systems.

***SENTINEL™* Wireless Mesh Communication and Tracking System**

MSHA Approval No: 23-A120005-0

- **HEARING PROTECTION WARNING:** This communications product is designed to produce a specific audio output level at a maximum rated power. Many countries now have regulations defining the amount of noise that an individual can be subjected to during a normal workday. The duration of exposure, and the level of ambient noise will affect compliance to these regulations. Compliance is application dependent and standards vary. It is the **SOLE RESPONSIBILITY** of the end user to determine applicability of and compliance to local hearing protection regulations.

2.0 MSHA Electrical Approval

Innovative Wireless Technologies

1100 Main Street, Lynchburg, VA 24504 USA

Model: AVIWT

Permissible Communication Interface



MSHA Approval No: 23-A120005-0

Tested for intrinsic safety in methane-air mixtures only.

Warnings:

MSHA approved for use with one of the following IWT communication systems only:

*SENTINEL*TM Wireless Mesh Communication and Tracking System

The interface can only be connected to the Biomarine Inc. AV3000 or AV3500 facemask.

3.0 Introduction

The AVIWT Communication Interface will provide the user with a method to interface an Innovative Wireless Technologies intrinsically safe communication system with the NIOSH-approved BioPak 240R respirator. The system consists of a MSHA-approved interface component that will position a microphone into the internal portion of a Biomarine AV3000 or AV3500 facemask in the location of one of the two voice emitters. A lapel-mounted speaker will connect to the mask via either a 12" or 18" coax cable and the speaker will also interface to a two-way radio via a coiled cable. The radio and remainder of the communication system is supplied directly by Innovative Wireless Technologies.

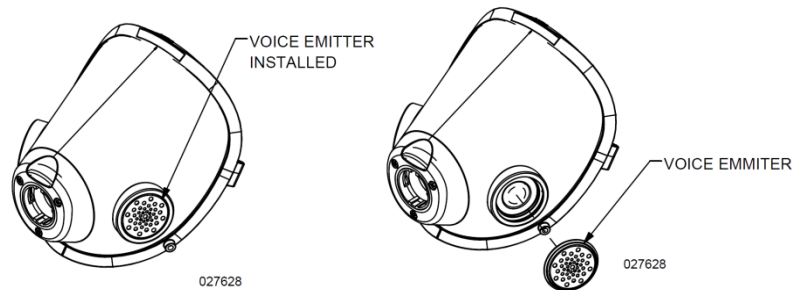
4.0 Installation

The AVIWT interface will install into the AV3000 or AV3500 facemask in place of either one of the facemask voice emitters. The speaker portion of the system will clip to the lapel of the user's shirt or to the harness of the BioPak 240R respirator. A cable is utilized to connect the facemask interface components to the speaker. The speaker is provided with a coiled cable attached that will interface with the 2-way radio supplied with the Innovative Wireless Technologies communication system.

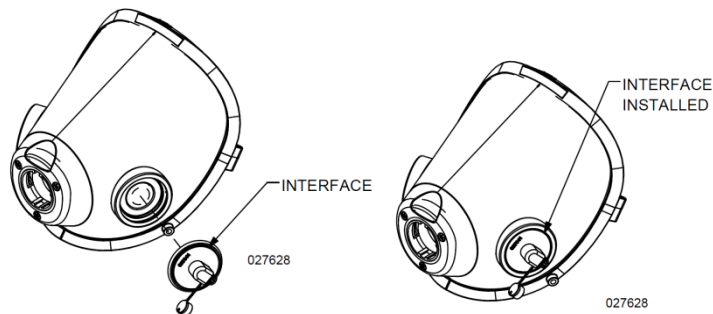
The interface components can be installed on either side of the facemask as per the user's preference. The remaining voice emitter can also be replaced with the Biomarine hydration system if so desired by the user.

1. Using a blunt pry bar (wooden tongue depressor or Popsicle stick), remove one voice emitter from one side of the facemask. Note that the AVIWT can be installed on either side of the facemask. Removal is achieved by sliding the end of the pry bar under the voice emitter and gently sliding the bar around the circumference of the voice emitter while forcing it out of the holder. Save the voice emitter for possible re-installation into the facemask.

Warning: Do not damage the voice emitter cup of the facemask during voice emitter removal. The facemask emitter cup shall not be cut, slit, marred or otherwise damaged. A damaged facemask emitter cup may prevent proper sealing of the installed AVIWT system or voice emitter.



2. Install the AVIWT interface assembly into the vacant voice emitter cup of the facemask. Slide the pry bar under the lip of the cup and gently slide the pry bar around the circumference of the interface disc to pry the edge of the cup lip over the disk. Make sure that the disk is fully seated within the cup. The disc can be positioned in any attitude desired by the user. The recommended positioning is depicted below.



Warning: Do not damage the voice emitter cup of the facemask during interface installation. The facemask emitter cup shall not be cut, slit, marred or otherwise damaged. A damaged facemask emitter cup may prevent proper sealing of the installed AVIWT system or voice emitter.

3. Determine the mounting location for the speaker. The speaker can be attached to the user's work clothes lapel or can be attached to the shoulder harness of the BioPak. Don a BioPak and connect the speaker where desired.
4. Don the facemask and determine which microphone cable is best suited for the user. The microphone cable will connect the interface assembly to the speaker and is supplied as a 12" or 18" length. The selected length shall not restrict head movement of the user and should be positioned to minimize the potential for snagging. The cable contains locking connectors on both ends. To engage the cable simply line up the connectors and press together. To disconnect the cable, pull back on the outer shell to release.
5. Prior to the using the system, leak test the facepiece to verify proper installation of the interface. Leak testing can be achieved utilizing the Biomarine AV3000 Field Test Kit, part number B6-02-5003-44-0, or the AV3500 Field Test Kit, B6-02-5003-43-0.
6. Follow the directions provided for the speaker and radio to ready the communication system for use.
7. **To Install the Speaker and Radio Cable to the 2-Way Radio:**
 - a) Turn the radio off. Installation of the speaker while the radio is powered may cause the radio to transmit constantly, locking the radio system. If this occurs, turn off power to the radio. The radio can then be powered on, restoring normal operations.
 - b) Remove any dust caps or covers from the radio cable connector.
 - c) Attach the speaker radio cable to the radio connector.
 - d) Tighten the mounting thumbwheel.

5.0 Communication System Use

Refer to instructions for the Innovative Wireless Technologies *SENTINEL™* Wireless Mesh Communication and Tacking System for proper operation of the radio and complete system. The user should speak in normal tones and not shout. Avoid talking when the mask is bumping or banging into other objects as the sound waves may be picked up the microphone and distort speech.

To speak into the facemask microphone, depress and hold the rubber side button of the speaker while speaking.

6.0 Communication System Post Use

At the completion of a mission, follow all instruction provided by Innovative Wireless Technologies to shut down the Innovative Wireless Technologies *SENTINEL*TM Wireless Mesh Communication and Tacking System. Remove the microphone cable from the interface and remove the speaker and radio from the user. The interface should remain installed in the facemask. Cover the connectors of the interface with the supplied cap to protect. Wash and inspect the facemask as described in the BioPak 240R Benchman Manual. Be sure that contacts of the interface connector are fully dry prior to reuse.

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|-----------------|---|
| Warning: | Make sure the contactors of the interface connector are fully dry before re-using the facemask. |
| Warning: | When not in use, keep the contactors of the interface protected by covering with the included cap. |
| Warning: | Do not allow the facemask with the interface installed to soak in disinfectant or remain submerged in liquid for extended periods. Ten minutes is all that is required to fully disinfect the mask. |
| Warning: | There are no servable parts within the interface component, cables or speaker. Do not disassemble the components or the validity of the MSHA intrinsic safety approval will be voided. |

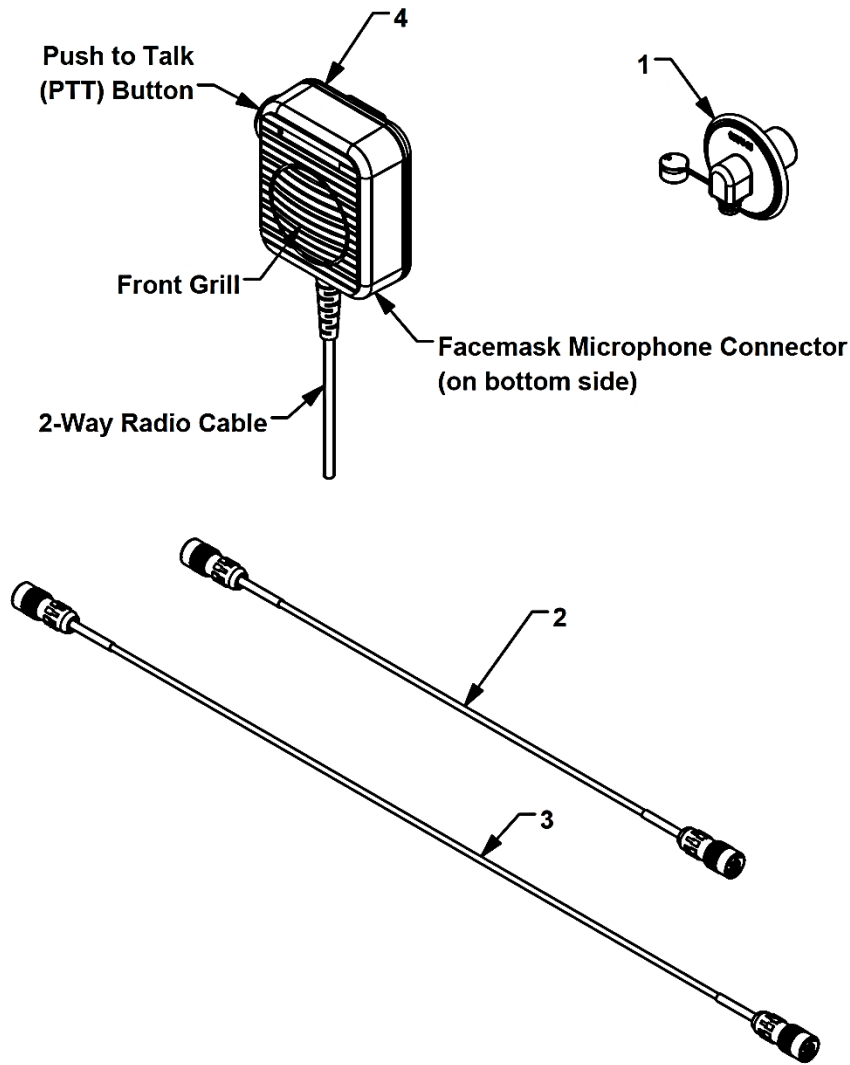
The front grill of the speaker can be removed for cleaning if needed. To remove the front grill, grip the speaker in one hand, use the palm of the other hand to press down on grill and turn ¼ turn to the left. Grill will lift out of housing. Grill can be removed to wipe away dust, dirt, moisture, etc. form inside cavity to ensure optimum performance. An optional debris screen, part number B2-06-6002-88-0, may be located under the front grill and is used in those environments with intense conditions. The debris screen can be washed with warm soapy water and replaced, when completely dry, back into the unit.

Removable Front Grill of Speaker

To remove the front grill of the speaker, reference Illustrated Parts List, grip speaker in one hand, use palm of other hand to press down on grill and turn ¼-turn to the left. Grill will lift out of housing. Grill can be removed to wipe away dust, dirt, moisture, etc. from inside cavity to ensure optimum performance. An optional debris screen, B2-06-6002-88-0, may be located under the front grill for use in environments with intense conditions. The debris screen can be washed with warm soapy water and replaced, when completely dry, back into the speaker.

7.0 Illustrated Parts List

Item No.	Part Number	Description
REF	B6-02-5003-57-0	AVIWT Communication Interface-Complete
1	B6-02-5003-57-1	Mask Interface Component
2	B6-01-5000-18-0	Microphone Cable, 12"
3	B6-01-5000-19-0	Microphone Cable, 18"
4	B2-06-6002-87-0	Speaker & Radio Cable
5	B2-06-6002-88-0	Optional Speaker Debris Screen (not depicted)
6	B5-06-6000-53-0	User Manual (not depicted)



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