

# MSA ADVANTAGE 290 & 900 ELASTOMERIC RESPIRATOR TRAINING



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# What is an MSA Advantage 290 or 900 Elastomeric Respirator?

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- The MSA Advantage 290 & 900 Respirators are reusable elastomeric negative pressure half-face respirators
  - Note: This respirator model is not labeled as completely latex-free but after review of the mask components with the manufacturer and BILH Allergy, we are not concerned about potential allergic reactions. If you have any concerns, you can be fit tested to an alternative respirator.
- The MSA 290 & 900 are able to be worn in sterile environments through the elimination of the exhalation valve and therefore can also be used for universal masking, if desired, as it also provides source control
- HEPA/P100 cartridges will filter at least 99.97% of particles greater than 0.3 micrometers
  - P: strongly resistant to oil particulates
  - 100: filter efficiency
- Regulated by OSHA, approved by NIOSH
  - CDC and NIOSH recommend use of elastomeric respirators in most situations in which a disposable N95 could be used
  - Unlike 3M elastomeric respirators, MSA respirators **can be worn** in areas where **sterile procedures** are performed

# You have been fit tested to a specific sized respirator

- 3 different sizes of the MSA Advantage 290 & 900 respirators are available and not interchangeable (small, medium and large)
- MSA Advantage 290 & 900 elastomeric respirators do not have exhalation valves and therefore may be used in the operating room or other sterile areas (e.g., cardiac cath lab)
  - Unless indicated by standard precautions, the MSA Advantage respirator does not require a covering surgical mask
  - If a splash or spray is anticipated, it is preferred to cover your respirator with a full face shield



# Familiarize yourself with the parts of your respirator

- 1) Facepiece – secures filters and head straps to create a tight seal around your face
- 2) 4-point yoke – adjustable connector between facepiece and neck straps
- 3) Filter cartridges – allows filtered air to flow both in and out of the respirator
- 4) Head harness – sits on crown of head to secure respirator

Write **your name** on the front of **your respirator** and also on **your storage bag** with first use!



# Filters will be distributed to individual healthcare workers

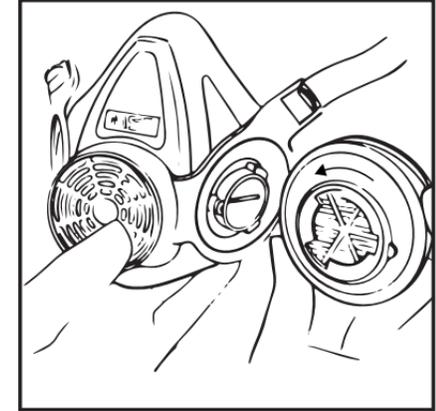
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- Low-Profile P100 filters are compatible with all MSA Advantage 290 & 900 respirators
- Filters will be changed based on [BILH Respirator Service Life by Respirator Type](#)
- Plan for new filters to be issued at annual fit testing sessions
- Replace filters immediately if:
  - grossly contaminated and unable to be cleaned
  - damaged or wet
  - breathing becomes noticeably more difficult for the user
- If new filter is needed prior to the scheduled interval, please contact Distribution
- Proper disinfection of the exterior of the filter is essential to reduce cross contamination

# Filter cartridges will be replaced whenever necessary and at a minimum, annually

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1. Remove the expended cartridges and dispose of properly
2. Remove the replacement cartridges from storage bags
3. Place cartridges on connectors carefully
  - Line up matchmark on cartridge with small lug on facepiece connector
  - Make sure cartridge connector lugs align with the cartridge opening
  - Push down and tighten cartridge clockwise until the stops are engaged.
4. To ensure a good seal against the facepiece, tighten each cartridge by gripping as much of the circumference of the cartridge as possible and then slowly turning the cartridge until tight.



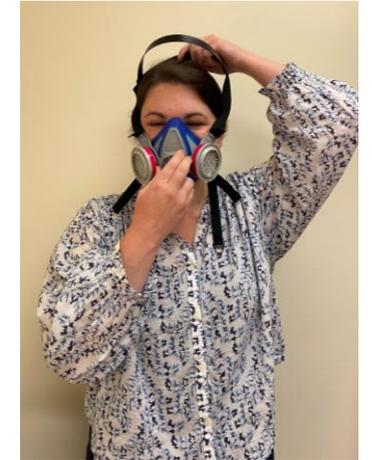
# Inspect Respirators Prior to Each Use

1. Confirm neck strap/headband are intact and retain their elasticity. Inspect for breaks or tears and make sure all adjusters are in place and work properly
2. Check facepiece for cracks, holes and dirt. Be certain facepiece, especially face seal area, is not distorted
  - Make sure rubber is flexible, not stiff, and yokes have no cracks
  - *This is particularly important if you clean your respirator with alcohol-based disinfectant wipes (per BILH guidance)*
3. Ensure cartridge connectors are in place and check for cracks or damage
4. Make sure filters and cartridges are clean, inspecting for scratches, cracks or other damage, particularly the sealing bead around the bottom
5. If your respirator is not in good working order, please utilize an alternative and seek a replacement respirator as soon as possible



# Donning your MSA respirator

1. Perform hand hygiene
2. Remove respirator from storage bag and **inspect for integrity**. Respirator storage bags are cleanable and reusable.
3. Loosen all the straps by pulling the tab back on the latch with your finger. Pull the neck strap over your head and place it around your neck, laying flat.
4. Place the top portion of the facepiece on the bridge of your nose and swing the bottom of the facepiece inward. The facepiece should fit comfortably around your nose, mouth and chin.
5. Pull the cradle headband over your head, ensuring it is laying flat.
6. Pull the ends of the both the cradle head band and neck straps to tighten
  - **The straps should be just snug enough so that no air leaks around the facepiece. They should not be pulled so tight that the respirator digs into your face. Be careful not to over-tighten.**
  - Adjust the cradle head and neck straps. If the fit is too tight, unlock the strap by pulling back on the tab on the latch, then pull to desired comfort.



# Follow these steps for a successful user seal check

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- Perform hand hygiene and use palms to cover the filters on the face piece and inhale gently for 10 seconds
- If you feel the facepiece collapse slightly and pull closer to your face with no leaks between the face and facepiece, a proper seal has been obtained



- Adjust straps and/or reposition facepiece until seal check is successful and no face seal leakage is detected
- Perform hand hygiene (and don clean gloves as appropriate) after user seal checks
- **Do NOT enter patient care area without performing a successful user seal check**

# Follow the removal procedure to prevent self-contamination

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1. Remove additional PPE in the appropriate order and perform hand hygiene
2. Remove eye protection or face shield used over the respirator
3. Unhook bottom straps using both hands
4. Pull the head harness over your head and away from your face
  - Avoid touching the potentially contaminated front of respirator and filters



# Individual healthcare workers will clean their own respirators

Clean and disinfect your respirator after each **removal** with hospital-approved germicidal wipes, following manufacturer's contact times for the disinfectant. *BILH has performed a risk assessment and allows for the cleaning of MSA Advantage 290 & 900 Respirators with alcohol-based products.*

1. Perform hand hygiene and don clean gloves
2. Wipe down all parts of the facepiece, including straps and head harness
3. Wipe down the exterior of the filters
  - Avoid getting the interior of the filter wet
  - Allow to air dry completely prior to storing
4. Place the respirator into storage bag labeled with your name
5. Remove gloves
6. Perform hand hygiene
7. Carry your reusable respirator bag with you or store the bag in your department's designated storage location



# Clinical concerns and elastomeric respirators

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- Care and maintenance of the respirator is the responsibility of the healthcare worker
  - If you have questions about how to properly perform any of the steps described in this training, please reach out to your institutional Safety Officer or appropriate department prior to using your respirator
- Elastomeric respirator design may require you to speak loudly and slowly when communicating with patients and other care team members in order to be heard
  - The MSA 900 is updated with a speaking diaphragm to assist with this issue
- Healthcare workers may experience facial heat and/or skin breakdown after prolonged periods of wear
  - Additionally, moisture may build up inside the respirator due to the lack of an exhalation valve. This is normal, but can affect your seal. If this occurs, periodically remove the respirator to wipe the respirator dry followed by cleaning and disinfection
- If you cannot achieve a proper fit, see your supervisor or contact institutional Safety Officer and do not enter area requiring respirator use

## Now you are always ready with sustainable respiratory protection

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- Reusable respirators allow you to have respiratory protection available whenever you need it!
- For even more tips and tricks on using your reusable respirator, please watch [this video](#).
- Thank you for continued attention to safety and for all that you do for our patients!