ADVANTAGE® 1000

low maintenance respirator

instructions

⚠ WARNING

This booklet, including the warnings and cautions inside, must be read and followed carefully by all persons who use or maintain this product, including those who have any responsibility involving its selection, application, service or repair. This respirator will perform as designed only if used and maintained according to the instructions. Otherwise, it could fail to perform as designed and persons who rely on this product could sustain serious personal injury or death.

See inside for instructions, warnings, and cautions and limitations. For additional information, call 1-800-MSA-2222 during regular working hours, or 1-800-MSA-5555 after working hours or during emergencies.

See separate insert for NIOSH approval information.

MSA

ADVANTAGE 1000

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NIOSH APPROVAL INFORMATION

Cautions and Limitations

A- Not for use in atmospheres containing less than 19.5 percent oxygen.

B- Not for use in atmospheres immediately dangerous to life or health.

C- Do not exceed maximum use concentrations established by regulatory standards.

H- Do not wear for protection against organic vapors with poor warning properties or those which generate high heats of reaction with sorbent.

J- Failure to use and maintain this product properly could result in injury or death.

L- Follow the manufacturer's User Instructions for changing cartridges and/or filters.

M- All approved respirators shall be selected, fitted, used, and maintained in accordance with MSHA, OSHA and other applicable regulations.

N- Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.

O- Refer to User Instructions, and/or maintenance manuals for information on use and maintenance of these respirators.

P- NIOSH does not evaluate respirators for use as surgical masks.

S- Special or critical user instructions and/or specific use limitations apply. Refer to User Instructions before donning.

SPECIAL USER INSTRUCTIONS

Mixture of Contaminants

NIOSH allows this respirator to be used for protection against a mixture of contaminants that are present simultaneously, or alternately, against one contaminant then another (using the same cartridges or filters) if the mixture meets the following conditions:

a. The cartridge/filter must be approved for all contaminants present.

b. NIOSH permits mixing of the following contaminants: Organic vapors, sulfur dioxide, chlorine, ammonia, methylamine, chlorine dioxide, hydrogen sulfide, and hydrogen chloride.

c. Particulates can be mixed with any other particulate or any gas or vapor for which the cartridge is approved.

d. Contaminants present simultaneously must be below IDLH levels for the specific contaminants. If any one contaminant in the mixture exceeds the IDLH concentration, then the entire mixture must be treated as IDLH and the respirator cannot be used (except for escape from particulates with the appropriate filter).

e. Mersorb-P100 cartridges can be used against a mixture of chlorine and mercury that are both present simultaneously, but cannot be used if alternating between mercury-contaminated atmospheres and chlorine-contaminated atmospheres. Mersorb-P100 respirators utilize an end-of-service-life indicator for use against metallic mercury vapor. The band around the side of each Mersorb-P100 cartridge, consists of chemically-treated paper. In use, as the paper is exposed to metallic mercury vapor, it changes from orange to brown. When the indicator color changes to brown, the cartridge is beginning to lose its effectiveness against metallic mercury vapor and must be replaced. Thus, the wearer has a constant, positive check on the condition of his cartridge.

Time Use Limitation
N- and R- series filters shall be limited to 8 hours of use (continuous or intermittent against particulates). [Service time can be extended by performing an evaluation in the specific workplace setting that demonstrates (a) that the extended use will not degrade the filter efficiency below 95% or (b) that the total mass loading of each filter is less than 100 mg.]

Special Instructions for P100 with Splash Guard:

a) Test for Tightness – Support the cartridge from behind using your fingers and depress the button with your thumb. Gently inhale so that the facepiece collapses slightly and hold breath for ten seconds. The facepiece will remain collapsed while the breath is held, unless there is a leak inthe seal.

NOTE: If a leak is detected, adjust the straps or reposition the facepiece, ensure the push button is completely depressed, and repeat test until no leakage is detected.

⚠ WARNING

1. **This respirator must be used in conjunction with the proper chemical or particulate cartridges for protection against specific contaminants.**
2. **Leave area immediately if:**
   a. **Breathing becomes difficult;**
   b. **Dizziness or other distress occurs;**
   c. **You taste or smell contaminant;**
   d. **You experience eye, nose or throat irritation.**
3. **Use strictly in accordance with instructions, labels and limitations pertaining to this device.**
4. **This respirator may not provide a satisfactory seal with certain facial characteristics, such as beards or large sideburns, that prevent direct contact between the skin and the sealing surface of the facepiece. Do not use this facepiece if such conditions exist.**
5. **This respirator is for use by trained and qualified personnel only.**

Failure to follow these warnings can result in serious personal injury or death.

⚠ WARNING

- **This respirator/filter provides LIMITED protection. It may help reduce exposure to airborne biological agents, including H1N1 (swine) flu virus, avian (bird) flu virus, other types of influenza, SARS, or other bacterial or viral biological agents and help reduce the risk for influenza infection during a pandemic, but will NOT eliminate the risk of exposure, infection, illness, or death.**

- **This respirator/filter is certified by NIOSH to comply with the requirements specified for the designated filter efficiency level; however, appropriate authorities have NOT established a safe level of exposure to biological agents. Therefore, the respirator may NOT prevent transmission of influenza virus.**

- **Refer to the Centers for Disease Control and Prevention (CDC) at www.cdc.gov for guidance on the use of respirators to help decrease exposure to H1N1 virus or other airborne biological agents in community, home, and occupational settings. The CDC recommends fit testing, medical evaluations, and training for optimal effectiveness when a respirator is used in a non-occupational setting. Neglecting these preparatory measures may cause an unsafe condition. Respirators used in an occupational setting MUST be used in accordance with a complete respiratory protection program as required by OSHA, which includes proper selection, training, fit-testing, and fit-checking. Detailed information on a respiratory protection program is available by contacting OSHA or visiting www.osha.gov.**

- **Do NOT remove respirator in contaminated areas. The outer surface of the respirator MUST be treated as if it is contaminated at all times. Tight-fitting safety goggles, or a full-facepiece respirator, may further help prevent transmission of influenza virus.**

- **The CDC recommends frequent hand washing and wearing gloves to help prevent transmission of disease due to exposure to surfaces where contaminants may be present, and also immediately following removal of the respirator.**

- **Do NOT reuse or share maintenance-free respirators. ALWAYS clean cartridge-style respirators before reuse in accordance with the instructions provided.**

- **This respirator/filter is NOT for use by (a) children, or (b) people with a medical condition that may be adversely affected by using it.**

Failure to follow all warnings and instructions can result in serious personal injury or death.

RESPIRATOR USE LIMITATIONS

The wearer must comply with the following respirator use limitations:

1. MAXIMUM USE CONCENTRATION — Do not exceed any of the following:
   a. 100 times the exposure limit for the contaminants present.
   b. Immediately dangerous to life or health (IDLH) concentration for any contaminant present.
2. The limitations outlined in the applicable NIOSH approval.
3. For respirators with class N or R filters: Replace filters after no more than 8 (eight) hours of use (continuous or intermittent) or sooner if excessive breathing resistance occurs while inhaling. Service time can be extended by performing an evaluation in the specific workplace setting that demonstrates (a) that the extended use will not degrade the filter below the efficiency level for which it is approved, or (b) that the total mass loading of the filter is less than 200 mg.
4. For respirators with class P filters: Replace filters when excessive breathing resistance occurs while inhaling.

5. For respirators with chemical cartridges:
   a. Users must follow an appropriate cartridge changeout schedule developed by a qualified professional. The change-out schedule must take into account all factors that may influence respiratory protection including specific work practices and other conditions unique to the works environment. Cartridges equipped with an end-of-service-life indicator for a specific contaminant present must be replaced when the indicator changes to the specified color or sooner if using the respirator against a mixture and the cartridge change-out schedule specifies an earlier replacement.
   b. If using the respirator against substances having poor warning properties, over exposure can occur without user awareness. Take appropriate precautions to prevent over exposure, which may include an earlier cartridge change-out, or using an air-supplied respirator or SCBA. For further information refer to MSA's Response Respirator Selector.
   c. Replace cartridges every shift or-sooner, if indicated by change-out schedule or end-of-service-life indicator. Use beyond one shift could result in shorter than expected service time and over exposure due to contaminant desorption and migration through the cartridge when not in use. If using the respirator for escape, replace cartridges after each escape. Once the user breathes through the respirator in a contaminated atmosphere, the cartridges may not provide adequate protection for additional escapes. Additionally, once the cartridges are initially placed into service or carried by the user in anticipation of escape, they must be replaced based on an appropriate cartridge change-out schedule. Extended exposure of the cartridges to nuisance levels (below the PEL) of the contaminant may prevent the cartridges from providing adequate escape protection.
6. For respirators with combination cartridges (chemical cartridges with filters): The limitations specified above for chemical cartridges as well as the applicable filter class apply for combination cartridges.
7. Applicable respirator use requirements as specified in the OSHA Respiratory Protection Regulation 29 CFR Part1910.134 (or other requirements established by the Regulatory Agency with jurisdiction over the wearer). Additional OSHA Regulations may also apply for certain contaminants (See MSA's Response Respirator Selector).

EXPOSURE LIMITS

A listing of acceptable exposure limits from the following sources is provided in the Response® Respirator Selector from MSA:
- American Conference of Governmental Industrial Hygienists (ACGIH)
- Occupational Safety and Health Administration (OSHA).
- National Institute for Occupational Safety and Health (NIOSH)
- American Industrial Hygiene Association (AIHA)

Contact MSA at 1-800-MSA-2222 for information.

Exposure Limits for Mixtures
The American Conference of Governmental Industrial Hygienists (ACGIH) publishes the following information to determine the TLV of a mixture. First determine the total concentration of the chemical mixture ($C_{Mixture}$) from the individual contaminant

concentrations (C_1, C_2, C_3, ...) using the following formula:

$$C_{Mixture} = C_1 + C_2 + C_3 + ...$$

The TLV of the mixture is found by using the following formula where T_1, T_2, T_3, ... are the individual contaminant TLVs and C_1, C_2, C_3, ... are the individual contaminant concentrations.

$$T_{mixture} = \frac{C_{mixture}}{\frac{C_1}{T_1} + \frac{C_2}{T_2} + \frac{C_3}{T_3}}$$

Only use these equations if the contaminants present are actually mixed. Some substances do not mix and may be present separately, for example, in pockets or at different levels. In that case, the lowest TLV of the substances present must be used to determine the appropriate respirator category for protection against all contaminants present.

See MSA's Response Respirator Selector for additional information.

RESPIRATOR FIT TEST

A qualitative or quantitative respirator fit test must be carried out for each wearer of this respirator to determine the amount of protection it will provide. Respirator fit tests are explained fully in the American National Standard for Respiratory Protection, ANSI Z88.2, which is published by the American National Standards Institute, 11 West 42nd Street, New York, New York, 10036.

Quantitative Test — If a quantitative fit test is used, a fit factor that is at least 500 shall be obtained before that respirator is assigned to an individual.

Qualitative Test — If a qualitative fit test is used, only validated protocols are acceptable. The individual must pass a test designed to assess a fit factor of at least 500.

⚠ WARNING

The user must perform a respirator fit test and follow all warnings and limitations specified. Failure to do so can result in serious personal injury or death.

DESCRIPTION (FULL FACEPIECE RESPIRATOR)

The Advantage 1000 Respirator is an air purifying respirator which includes a full facepiece assembly and a pair of air purifying elements to provide respiratory protection against hazardous vapors, gases and/or particulate matter. When the wearer inhales, the contaminated air is drawn through the air-purifying elements, and depending on the elements used, removes the hazardous vapors, gases and/or particulate matter. The inhalation valves open and the exhalation valve remains closed to prevent contaminated air from entering the facepiece. During exhalation, the exhalation valve opens, and the inhalation valves close to prevent exhaled air from passing back through the air purifying elements. The exhalation valve permits exhaled air to exit from the respirator.

NOTE: An air-supplied (air-line) kit is available for this respirator (P/N 10003601).

PREPARATIONS FOR DONNING

The following inspection points must be checked before donning the respirator. A respirator that fails the inspection must not be used. The respirator must be repaired or replaced.

1. Head Harness: Check to see that the head harness straps still have their

elasticity. Inspect for breaks or tears and make sure all adjusters are in place and working properly.
2. Facepiece: Check facepiece for dirt, cracks, tears or holes. Inspect the shape of the facepiece for possible distortion that may occur from improper storage and make sure the rubber is flexible, not stiff. Also check for cracks.
3. Inhalation and exhalation valves: Check for cracks, tears, distortion, dirt or build-up of material between valve and valve seat.
4. Cartridge connectors: Check to make sure connectors are in place and check for cracks and damage.
5. Cartridges and filters: Make sure cartridges and filters are clean. Never try to clean a cartridge or filter by washing it or using compressed air. Inspect cartridges for scratches, cracks or other damage, particularly the sealing bead around the bottom.

Attaching Filter Cartridges
Carefully attach filter cartridges to facepiece connectors by first aligning the cutouts on the cartridges with the lugs on the facepiece connectors and then turning the cartridge clockwise by hand until tight. Align the small lug on the connector with the match-mark located on the cartridge body. (See Replacing Cartridges.)

DONNING THE RESPIRATOR
To put on the respirator:
1. Adjust the facepiece headstraps so the end tabs are at the buckles. (see fig. 1)
2. Grip the facepiece between the thumb and fingers with both hands. Insert your chin into the chin cup. (see fig. 2)
3. Pull the facepiece headstraps over your head. Smooth the straps flat against your head.
4. Support the facepiece by holding the speaking diaphragm housing with one hand.
5. To tighten the lower (neck) straps, pull the straps straight back, not out.
6. Tighten the side (temple) straps. (see fig. 3)
7. Adjust the forehead straps if needed to position the lens for best vision.
8. Perform the Test for Tightness Test.

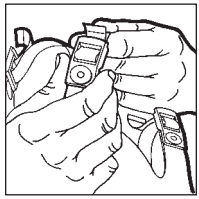


figure 1

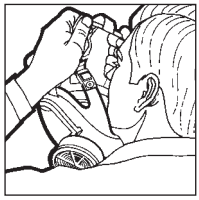


figure 2

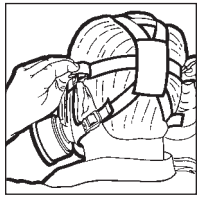


figure 3

NOTE: A nosecup accessory is available to reduce lens fogging. If the respirator will be used in areas of high humidity, or at temperatures below 32°F, the nosecup accessory may be installed. See page 5.

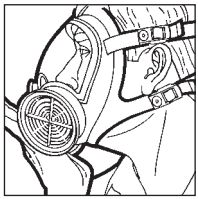
⚠ WARNING

Do not wear conventional eyeglasses with a full facepiece. The temple bars pass through the sealing surface of a full facepiece and prevent a seal. Use the spectacle kit from MSA. Failure to follow this warning may result in serious personal injury or death.

TEST FOR TIGHTNESS

Test for Tightness Before Each Use By One of the Following Methods:

NEGATIVE PRESSURE METHOD



POSITIVE PRESSURE METHOD

P100 WITH SPLASH GUARD METHOD

- Negative Pressure Method — Place your palms over cartridges lightly. Gently inhale so that the facepiece collapses slightly and hold breath for ten seconds. The facepiece will remain collapsed while the breath is held, unless there is a leak in the seal.
- Positive Pressure Method — Place your palm over exhalation valve cover lightly. Gently exhale so that a slight positive pressure builds up inside the respirator and hold breath for ten seconds. The positive pressure will remain while the breath is held, unless there is a leak in the seal. If any leakage is detected around the facial seal, readjust head harness straps and repeat test until there is no leakage. If other than facial seal leakage is detected, the condition must be investigated and corrected before another test is made. The respirator must pass one of the above tightness tests before the respirator is used. The respirator will not furnish protection unless all inhaled air is drawn through suitable cartridges.
- P100 with Splash Guard Method - Support the cartridge from behind using your fingers and depress the button with your thumb. Gently inhale so that the facepiece collapses slightly and hold breath for ten seconds. The facepiece will remain collapsed while the breath is held, unless there is a leak in the seal.

NOTE: If a leak is detected, adjust the straps or reposition the facepiece, ensure the push button is completely depressed, and repeat test until no leakage is detected.

⚠ WARNING

Do not enter any atmosphere with this respirator unless you know that:

1. **You have read, understood and followed all instructions and warnings pertaining to the respirator.**
2. **The respirator and conditions meet the requirements outlined.**
3. **The cartridges are the proper type for the contaminant or contaminants present.**
4. **The amount of oxygen is sufficient to support life (that is, at least 19.5 percent oxygen by volume at sea level). Do not use if oxygen concentration sufficient to support life is questionable.**
5. **Respirator does not leak (see test for tightness).**
6. **Cartridges do not need to be replaced. Discard exhausted cartridges.**
7. **You are not color blind and can distinguish between the beginning and ending colors of the end-of-servicelife indicator (when using Mersorb P100 respirators only).**

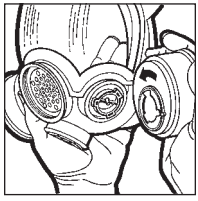
Failure to follow the above warnings can result in serious personal injury or death.

REPLACING FILTERS/CARTRIDGES

The following conditions indicate that the cartridges have served their useful life and must be replaced:

Chemical Cartridges: Odor or taste of gases or vapors; eye, nose, or throat irritation.
Filter Cartridges/Snap-On Filters: Excessive breathing resistance when inhaling or when time use limitation has been reached.
Combination Cartridges: Either of the above conditions. Brown color on end-of-service life indicator (Mersorb® Cartridges only).

To replace cartridges:

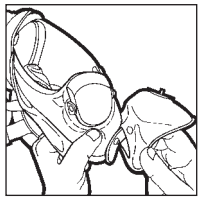


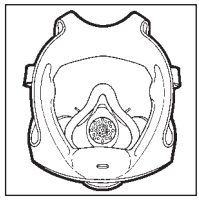
1. Remove the expended cartridges and dispose of properly.
2. Remove the replacement cartridges from storage bags.
3. Place cartridges on connectors carefully. Line up match-mark on cartridge with small lug on connector (on facepiece). Make sure cartridge connector lugs align with the cartridge opening. Push down and tighten cartridge clockwise until the stops are engaged. 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.

CLEANING AND DISINFECTING

If the facepiece is to be cleaned, remove the cartridges. The facepiece (with the cartridges removed) should be cleaned and disinfected after every use with Cleaner-Disinfectant Liquid from MSA (P/N 697284).

1. Prepare a solution of Cleaner-Disinfectant Liquid and water, following the instructions on the Cleaner-Disinfectant container.





2. Immerse soiled equipment in the solution and scrub gently with a soft brush until clean. Take care to clean the exhalation valve in the facepiece and all other parts that exhaled air contacts.
3. After the equipment has been immersed for the time specified on the Cleaner-Disinfectant Solution container, rinse thoroughly in plain warm water (maximum 120°F) and then air-dry.

⚠ WARNING

Cleaning and disinfecting at or below 120°F temperature will avoid possible overheating and distortion of parts of the respirator assembly, which would necessitate replacement.

MAINTENANCE

This respirator must be kept in good condition to function properly. When any respirator shows evidence of excessive wear or damage, it must be replaced immediately. Refer to the Preparations for Donning section for proper inspection of the respirator. This respirator, when not in use, should be stored in a clean dry location, such as its storage bag. Do not distort rubber facepiece during storage.

NOTE: Some cosmetic changes may become noticeable and are expected during the normal aging process. White residue

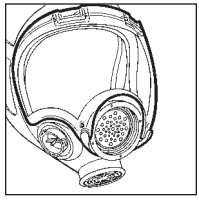
may appear and is caused by an FDA approved wax additive that is in the rubber by design. This wax was chosen because it is not harmful should it contact the user's skin. The wax affords the rubber the required protection it needs during expected product use. It is normal for this wax to come to the surface and can be cleaned by using MSA Confidence Plus (P/N 10009971). Rubber surface imperfections may be observed upon closer inspection of the mask and are typically caused by the white wax residue. These imperfections are also noticeable due to a "streaking" appearance where the wax does not come through the rubber. This rubber surface change is a result of the aggressive rubber primer used during the lens bonding process. It is required by the design to ensure a robust lens bond is made.

Installing a Nosecup

The nosecup assembly is to be placed onto the exhalation valve lugs inside the mask. The larger hole surrounded by 3 smaller holes at the bottom of the nose cup is to be used.

1. Push the exhalation valve/voicemitter area out through the back portion (face seal area) of the mask. Push until this portion of the mask becomes inverted and the wings of the exhalation valve are exposed and can freely accept this nosecup.
2. Bend the intern mask sealing lip away from the exhalation valve for easier installation.
3. Slide the larger lower nosecup hole over one of the wings of the exhalation valve. A mild soap solution can be used to aid in the installation and alignment process.
4. Stretch the nosecup over the other exhalation valve wing.
5. Orient the nosecup in the facepiece by rotating it around the exhalation valve. Use the respirator voicemitter and facepiece intern lip for locating and aligning the nosecup.
6. Return the facepiece to its original non-inverted position. Inspect the intern lip positioning of the facepiece to assure that the nosecup is underneath the lip and in the correct location. Now use the facepiece in the normal instructed manner.

Installing an Outsert Lens



Remove the outsert lens from the packaging. Place the two hook lugs at the top of the outsert lens over the top of the mask lens edge. Center the outsert lens on the mask. Next stretch the elastic retainer band (located at the bottom of the outsert lens) over the voicemitter housing and seat it under the voicemitter retainer flange. The respirator can be used in the normal prescribed manner.

For More Information, call 1-800-MSA-2222 or Visit Our Website at www.MSAsafety.com

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