

CS/CN Gas Masks

ADVANTAGE[®] 1000 **ADVANTAGE[®] 3000 Model 3200** **Twin-Port**

Full Mask Facepiece Respirator

Instructions for Use

NIOSH approved for respiratory protection in atmospheres containing CS/CN and particulates under the 42 CFR 84 P100 classification (99.97% efficiency level) against all particulate aerosols, including oil-based aerosols.

⚠ WARNING

This manual, 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 separate insert for NIOSH Approval Information. (P/N 818082)

See inside for Instructions, Cautions and Limitations, and Warnings. Please call 1-800-MSA-2222 during regular working hours.

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



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NIOSH APPROVAL INFORMATION

1. Protection

P100—Particulate Filter (99.97% filter efficiency level) effective against all particulate aerosols.

CS - Chlorobenzylidene Malononitrile

CN - Chloroacetophenone

2. 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. Follow established cartridge and canister change schedules or observe ESLI to ensure that cartridges and canisters are replaced before breakthrough occurs.
- I. Contains electrical parts which have not been evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.
- J. Failure to properly use and maintain this product could result in injury or death.
- L. Follow the manufacturer's Users 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's 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's instructions and/or specific use limitations apply. Refer to User's Instructions before donning.

S - SPECIAL OR CRITICAL USER INSTRUCTIONS

⚠ WARNING

- 1. This device does NOT supply oxygen, and must only be used in adequately ventilated areas containing at least 19.5 percent oxygen.
- 2. This respirator must be used in conjunction with the proper chemical or particulate canisters for protection against specific contaminants.

3. **Do not use when concentrations of contaminants are unknown or immediately dangerous to life or health (IDLH).**
4. **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.**
5. **Use strictly in accordance with instructions, labels, and limitations pertaining to this device.**
6. **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 face-piece. Do not use this respirator if such conditions exist.**
7. **Never alter or modify this device.**
8. **This respirator is for use by trained, qualified personnel only.**
9. **The respirator may not adequately protected against propelled or falling objects. Consequently, in riot or similar situations, it is imperative that a proper faceshield be worn in conjunction with the respirator for protection.**

Failure to follow the above warnings 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 maximum use concentrations established by regulatory standards.
2. The limitations outlined in the applicable NIOSH approval.
3. For respirators with class P filters: Replace filters when excessive breathing resistance occurs while inhaling.
4. For respirators with chemical canisters:
 - a. Users must follow an appropriate canister change-out 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 work environment. Canisters 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 canister 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 canister change-out, or using an air-supplied respirator or SCBA. For further information refer to MSA's Response Respirator Selector.
 - c. Replace canisters every shift or sooner, if indicated by change-out schedule or end-of-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 canister when not in use. If using the respirator for escape, replace canisters after each escape.

Once the user breathes through the respirator in a contaminated atmosphere, the canisters may not provide adequate protection for additional escapes. Additionally, once the canisters are initially placed into service or carried by the user in anticipation of escape, they must be replaced based on an appropriate canister change-out schedule. Extended exposure of the canisters to nuisance levels (below the PEL) of the contaminant may prevent the canisters from providing adequate escape protection.

5. For respirators with combination canisters (chemical canisters with filters): The limitations specified above for chemical canisters as well as the applicable filter class apply for combination canisters.
6. Applicable respirator use requirements as specified in the OSHA Respiratory Protection Regulation 29 CFR Part 1910.134 (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).
7. Do not use canister(s) after expiration date on label.

RESPIRATOR USE LIMITATIONS IN CBA (CHEMICAL - BIOLOGICAL WARFARE AGENT) ATMOSPHERES:

The recommended work environments for this respirator include operations where exposure to vapor or liquid Chemical Agents or Biological Agents is possible but not expected, or, for escape from possible CBA contamination and controlled low level CBA atmospheres which do not exceed the maximum use concentration as determined by the governing authority.

In the event a maximum use concentration has not been established by the governing authority, it is **recommended** that the use of the respirator should be limited to atmospheres 100 times (or less) the defined permissible Airborne Exposure Limit (AEL) or Time Weighted Average (TWA) of the contaminate (except for Mustard and Lewisite. For these agents, the recommended use concentration is to be limited to the AEL or TWA).

▲ WARNING

For uses in atmospheres containing chemical or biological warfare agents, as with all hazardous atmospheres, it is recommended that a complete respiratory and body protection program be developed and full protective ensemble be utilized. This program should as a minimum include the following items:

Before Entering a CBA Contaminated Area

1. **All users should be trained (on a regular basis) in use of the protective equipment, the hazard, the effects and physical signs of agent over-exposure, governing protocols or regulations concerning the hazard and user, medical needs, emergency and first aid procedures in case of over-exposure, decontamination, and handling and disposal of contaminated equipment.**
2. **Each user should be quantitatively fit tested in the facepiece they will**

- be using and have a tested fit factor of 1000 or greater.
3. It is recommended that each user should be outfitted with a facepiece with CBA canister, a hood, and full chemical protective suit including gloves and shoe coverings.
 4. The user should determine or check with the safety office to verify that the protective equipment to be used is sufficient for exposure to their particular hazard and contamination level. Mis-use of the protective equipment can result in serious personal injury or death.

During the Stay in the CBA Contaminated Area

1. It is recommended that the area be real-time monitored (with alarm) for exposure levels of the contaminate. If the monitored contaminate level is above the allowable exposure limit or maximum use concentration (as determined by the governing protocol), the user should leave the area immediately.
2. The user should not remove any of the CWA protective clothing while in the contaminated area. This action could result in a serious injury or death.
3. If symptoms of CBA over-exposure are present, seek medical treatment and attention immediately.

After Exposure to a CBA Contaminated Area

1. A decontamination procedure for the user and the protective equipment should be developed and implemented.
2. Once the user leaves the contaminated area, he should enter the decontaminated area and follow the set decon procedure. Failure to follow an acceptable decon procedure could lead to serious injury or death.
3. Once the user and the protective equipment have been decontaminated, proper disposal of affected equipment is to be performed. Disposal is to be performed as required by federal, state and/or local laws that apply to CBA contaminated materials.

Failure to follow accepted safety and protection procedures when exposed to hazardous atmospheres can result in serious personal injury or death.

GENERAL DESCRIPTION

PRINCIPLE OF OPERATION:

The Gas Mask must be used with appropriate canister(s) to provide respiratory protection. When properly used, the gas mask provides protection against specific contaminants. The gas mask is NIOSH approved for CS, Chlorobenzylidene Malononitrile, CN, Chloroacetophenone and all particulate aerosols including oil-based aerosols as listed on the canister label. During inhalation, air is drawn through the canister removing or neutralizing the contaminants. The inhalation valves open and the exhalation valve remains closed to prevent contaminated air from entering the facepiece. During exhalation, the exhalation valves open and the inhalation valve(s) close to prevent exhaled air from passing back through the canister. The exhalation valve permits exhaled air to exit the gas mask.

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.

QUANTITATIVE TEST - If a Quantitative Fit Test is used, a fit factor that is at least 1000 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 1000.

Regardless of facial dimensions and respirator sizing charts, respirator fit testing, either qualitative or quantitative, must be performed to ensure the respirator selected provides an adequate fit.

⚠ 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.

FILTER(S) / CANISTER(S)

See separate insert for NIOSH Approval Information (P/N 818082).

PREPARATIONS FOR USE

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

1. Headbands: Check to see that the headbands still have their elasticity. Inspect for cracks or tears and make sure all buckles 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.
3. Inhalation and exhalation valves: Check for cracks, tears, distortion, dirt or build-up of material between valve and valve seat.
4. Canister receptacle(s): Check to make sure gaskets (if appropriate) are in place and check for cracks and damage to threads or bayonets.
5. Canister and/or filters: Make sure canister and filters are clean. Never try to clean a filter or canister by washing it or using compressed air. Inspect canister for dents, scratches or other damage, particularly the sealing bead.

Note: If using a threaded canister, a canister adapter must be used and must be inspected prior to use.

ASSEMBLING THE GAS MASK

Attaching the Canister

Place canister(s) onto inlet port carefully. Align the cutouts on the canister with the lugs on the connectors. Hand-tighten by turning clockwise to stops to ensure a good seal against the facepiece. When using a single canister, an inlet cap plug must be used on the facepiece connector opposite the canister. Hand-tighten clockwise as directed with the canister.

Note: If using a thread adapter and threaded canister(s), the canister(s) must seal against the gasket on the adapter. Hand-tighten the canister(s) clockwise until tight. Refer to the facepiece component diagram to find the required canister adapter parts.

USE OF INLET CAP PLUG

The design of the gas mask allows the use with a single canister on either the right side or the left side of the facepiece. The receptacle on the side of the facepiece opposite the mounted canister must be sealed off by an Inlet Cap Plug. The Inlet Cap Plug must seal to the facepiece. Seal the cap onto the facepiece by turning the cap clockwise onto the connector to stops.

DONNING THE RESPIRATOR

DONNING THE ADVANTAGE 1000 RESPIRATOR GASK MASK AND ADVANTAGE 3200 WITH RUBBER HARNESS

1. Loosen the adjustable harness straps. Grip the straps by inserting thumbs through the straps. Insert chin well into the lower part of facepiece, then pull the harness back over head.
2. Pull the back of the harness downward toward the neck until it is centered at the back of your head. If necessary, hold the component housing of the mask with one hand and position the harness with the other hand, until obtaining a firm and comfortable fit against the face at all points.
3. Tighten the adjustable straps so that the mask is snug against face. Make sure the back of the harness is centered on the back of the head. The harness straps must be flat against the head.
4. If the mask does not feel snug against face, loosen the adjustable straps and reposition the back of the harness. Make sure that the back of the harness is positioned on the back of the head. If the mask does not become snug against the face, remove the mask and adjust the length of the straps.

DONNING THE ADVANTAGE 3200 GAS MASK RESPIRATOR WITH PLASTIC ADVANTAGE 3000 HARNESS

Note: There are two recommended donning procedures.

Donning Procedure A

1. Completely loosen the two bottom straps. Spread the straps of the head harness with both hands and place chin into the mask. Pull harness over head all the way, until plastic cradle lies flat on back of head.
2. Tighten neck straps evenly so that the mask is snug against the face.

3. If necessary, adjust the mask and tighten harness by pulling loop on the back of harness.

Donning Procedure B

1. Completely loosen the two bottom straps, insert fingers and hold the loop on the back of the harness.
2. Place chin into the mask.
3. Pull the harness over head with the loop, pull harness down to the back of the head, until plastic cradle lies flat on back of head.
4. Tighten neck straps evenly so that the mask is snug against your face.

TEST FOR TIGHTNESS BEFORE EACH USE

The respirator must be subjected to the Tightness Test before each use by one of the following Methods:

Negative Pressure Method — Place your palms over the canister(s) lightly. Gently inhale so that the facepiece collapses slightly and hold your breath. 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 the exhalation valve cover lightly. Gently exhale so that a slight positive pressure builds up inside the respirator and hold your breath. 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 the test until there is no leakage. If other than facial seal leakage is detected, investigate and correct the condition before testing again. The respirator must pass one of the tightness tests above before the respirator is used. The respirator will not furnish protection unless all inhaled air is drawn through suitable canisters.

⚠ 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 canister is 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 an oxygen concentration sufficient to support life is questionable.**
5. **Respirator does not leak (see Test for Tightness).**
6. **Canister does not need to be replaced. Discard exhausted canister.**

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

REMOVING THE RESPIRATOR

Return to an uncontaminated area before removing the respirator. Check that the respirator and your clothing are free from contaminant before removing the respirator.

To remove the facepiece

1. Push the straps' buckles forward to loosen and fully extend the bottom straps.
2. Insert thumbs under the harness straps. Pull it up and away from face.

CLEANING AND DISINFECTING

The facepiece assembly (with canister removed) should be cleaned and disinfected after each use. MSA recommends using Confidence Plus™ Cleaning Solution. Refer to the label of the cleaning solution for use instructions. A solution as effective as Confidence Plus™ Cleaning Solution and compatible with MSA respirator components may be substituted. Rinse thoroughly in plain warm water (110°F to avoid possible overheating and distortion of parts) and then air dry. ANSI suggests that users should be trained in cleaning procedure.

▲ CAUTION

Alcohol should not be used as a germicide because it may deteriorate rubber parts.

▲ CAUTION

If not rinsed thoroughly, cleaning agent residue may irritate the wearer's skin.

▲ CAUTION

Do not force-dry the parts by placing them in a heater or direct sunlight. This will cause the rubber to deteriorate.

▲ CAUTION

Cleaning and Disinfecting at or below 110°F temperature will avoid possible overheating and distortion of parts which would require replacement.

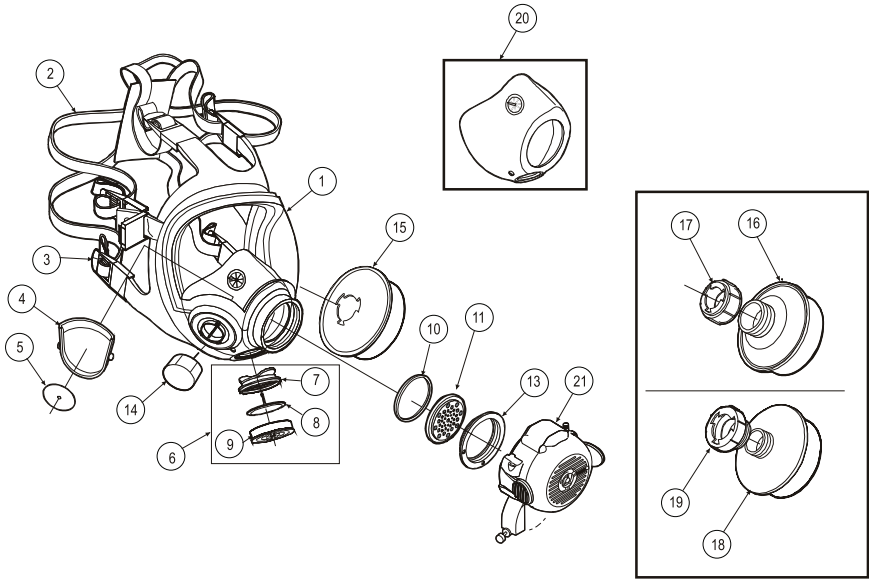
MAINTENANCE

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 its storage bag or container and in a clean dry location. Do not distort the facepiece during storage. When disposing of the respirator or its components, do so in accordance with local, state and federal regulations.

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.

ADVANTAGE® 1000

| Advantage 1000 Facepiece Assemblies | |
|-------------------------------------|----------------------------------|
| Part No. | Description |
| 813860 | Small, Advantage 1000 Facepiece |
| 813859 | Medium, Advantage 1000 Facepiece |
| 813861 | Large, Advantage 1000 Facepiece |



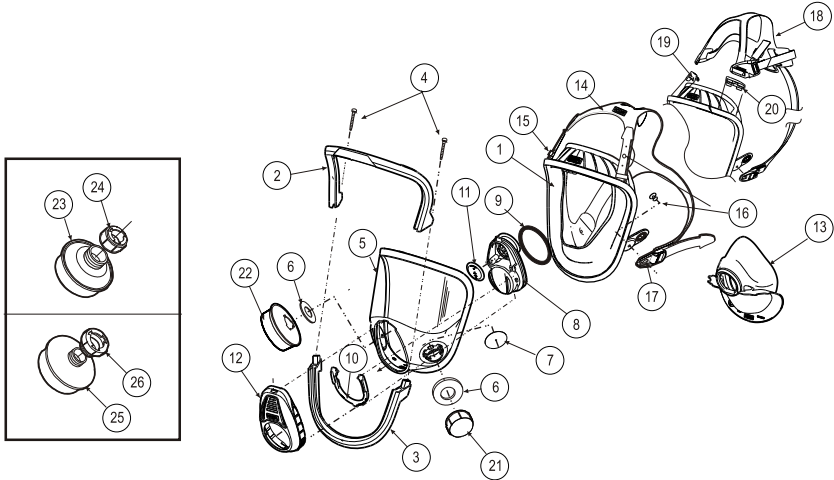
| Facepiece Components | | | Facepiece Components | | |
|---|----------|---|--|----------|--|
| Item No. | Part No. | Description | Item No. | Part No. | Description |
| 1 | 805099 | Small Advantage 1000 Face Blank-Lens Assembly | 15 | 817590 | Advantage Bayonet Canister (817588), 6 per Package |
| | 805097 | Medium Advantage 1000 Face Blank-Lens Assembly | 16 | 818264 | Millennium Canister (818263), 6 per Package |
| | 805101 | Large Advantage 1000 Face Blank-Lens Assembly | 17 | 10012413 | Adapter for Millennium Canister |
| 2 | 805114 | Head Harness | 18 | 817591 | Phalanx™ Canister (818263), 6 per Package |
| 3 | 637279 | Buckle | 19 | 813339 | Adapter for Phalanx™ Canister |
| 4 | 805118 | Deflector | Accessories and Optional Components | | |
| 5 | 801700 | Inhalation Valve | 20 | 806468 | Small, Nosecup |
| 6 | 462185 | Exhalation Valve Assembly Complete with Body, Valve and Cover | | 806466 | Medium, Nosecup |
| 7 | * | Exhalation Valve Body | | 806470 | Large, Nosecup |
| 8 | * | Exhalation Flapper Valve | 21 | 10026265 | ESP II Amplifier Communication System |
| 9 | * | Exhalation Valve Cover | Not Shown | 805350 | Microphone / Voicemitter |
| 10 | 805110 | Gasket | Not Shown | 806461 | Speaking Diaphragm with Retainer Wrench |
| 11 | 805103 | Speaking Diaphragm | Not Shown | 807543 | Retainer Wrench |
| 13 | 805111 | Metal Retaining Ring | Not Shown | 454819 | Spectacle Kit |
| Canisters, Adapters and Cap Components | | | Not Shown | 813832 | Cover Lens, Clear, 25 per Package |
| 14 | 813341 | Cap Plug | Not Shown | 813833 | Cover Lens, Smoke, 25 per Package |

* Item Available in Assembly

ADVANTAGE[®] 3000

facepiece model 3200 dual/twin port

| Advantage 3200 Facepiece Assemblies | |
|-------------------------------------|---|
| Part No. | Description |
| 10028996 | Small, Advantage 3200 Facepiece with Rubber Harness |
| 10028995 | Medium, Advantage 3200 Facepiece with Rubber Harness |
| 10028997 | Large, Advantage 3200 Facepiece with Rubber Harness |
| 10031340 | Small, Advantage 3200 Facepiece with Advantage Plastic Harness |
| 10031309 | Medium, Advantage 3200 Facepiece with Advantage Plastic Harness |
| 10031341 | Large, Advantage 3200 Facepiece with Advantage Plastic Harness |



| Facepiece Components | | | Facepiece Components | | |
|----------------------|----------|--|---|----------|--|
| Item No. | Part No. | Description | Item No. | Part No. | Description |
| 1 | 10025280 | Small Silicone Advantage 3000 Face Blank | 15 | 10030797 | Slide for Classic Rubber Harness, 10 per Package |
| | 10025258 | Medium Silicone Advantage 3000 Face Blank | 16 | 10030795 | Harness Button, 12 per Package |
| | 10025259 | Large Silicone Advantage 3000 Face Blank | 17 | 10030796 | Buckle for Classic Rubber Harness, 6 per Package |
| -Kit- | 10030785 | Lens Ring Kit | -Kit- | 10030798 | Advantage Harness (Plastic) Kit |
| 2 | * | 1 - Upper Lens Ring | 18 | * | 1 Advantage Harness |
| 3 | * | 1 - Lower Lens Ring | 19 | * | 1 Right Adapter Clip |
| 4 | * | 2 - Lens Ring Screw | 20 | * | 1 Left Adapter Clip |
| 5 | 10030786 | Dual/Twin Port Lens with Bayonet Connectors, Gaskets, and Valves | Canisters, Adapters and Cap Components | | |
| 6 | 10030787 | Dual/Twin Port Bayonet Gasket, 10 per Package | 21 | 813341 | Cap Plug |
| 7 | 10030788 | Inhalation Valve, 10 per Package | 22 | 817590 | Advantage Bayonet Canister, 6 per Package |
| -Kit- | 10030790 | Dual/Twin Port Housing Replacement Kit | 23 | 818264 | Millennium Canister, 6 per Package |
| 8 | * | 1 - Dual Port Housing | 24 | 10012413 | Adapter for Millennium Canister |
| 9 | * | 1 - O-ring | 25 | 817591 | Phalanx™ Canister, 6 per Package |
| 10 | * | 1 - Retainer Clip | 26 | 813339 | Adapter for Phalanx™ Canister |
| 11 | 10030789 | Exhalation Valve, 6 per Package | Accessories and Optional Components | | |
| 12 | 10025291 | Cover | 13 | 10030792 | Medium/Large Nose Cup |
| -Kit- | 10030794 | Classic Rubber Harness Kit | | 10030793 | Small Nose Cup |
| 14 | * | 1 - Rubber Harness | Not Shown | 10029298 | Spectacle Kit |
| 15 | * | 2 - Slide | Not Shown | 10031542 | Cover Lens, Clear, 25 per Package |
| 16 | * | 4 - Harness Button | Not Shown | 10031543 | Cover Lens, Smoke, 25 per Package |
| 17 | * | 2 - Buckle | | | |

* Item Available in Kit