Ultimate FX Full Facepiece Reusable Respirator

User Instructions for 3M™ Ultimate FX Full Facepiece FF-401, Small, 3M™ Ultimate FX Full Facepiece FF-402, Medium, 3M™ Ultimate FX Full Facepiece FF-403, Large

IMPORTANT: Before use, the wearer must read and understand these *User Instructions*. Keep these instructions for reference.

This respirator has dual approval as a United States (US) National Institute for Occupational Safety and Health (NIOSH) full facepiece respirator and as Brazil Ministry of Labor full face piece respirator.

Standard specific information is provided where applicable. All other information is common to both standards.

⚠ WARNING

This respirator helps protect against certain airborne contaminants. **Misuse may result in sickness or death.** For proper use, see your supervisor, or *User Instructions* or call 3M in U.S.A.

FOREWARD

These *User Instructions* provide information about facepiece use only. Important information is provided in the *User Instructions* with each of the air filtration systems that are used with 3M™ Full Facepiece FF-401, FF-402 and FF-403. Read all *User Instructions* and warnings before using. Keep these *User Instructions* for reference. If you have questions regarding these products contact 3M Technical Service.

Intended Use

The 3M™ Ultimate FX Full Facepiece FF-400 Series Respirators (FF-401, FF-402 and FF-403) are designed to help provide respiratory protection against certain airborne contaminants when used in accordance with all use instructions and limitations and applicable safety and health regulations. All FF-400 series facepieces meet the impact requirements of the ANSI Z87.1-2003 standard, high impact level, for limited face and eye protection.

⚠ WARNING

Properly selected, used, and maintained respirators help protect against certain contaminants by reducing airborne concentrations below the Occupational Exposure Limit (OEL). It is essential to follow all instructions and government regulations on the use of this product, including wearing the complete respirator system during all times of exposure in order for the product to help protect the wearer. **Misuse of respirators may result in overexposure to contaminants and lead to sickness or death.** For proper use, see supervisor, refer to the product *User Instructions* or contact 3M Technical Service.

List of Warnings and Cautions within these *User Instructions*

⚠ WARNING

Failure to follow these instructions may reduce respirator performance, expose you to contaminants above the OEL, and **may result in sickness or death.**

- To help maintain a good seal between the face and the faceseal, the respirator faceseal must be clear of obstructions at all times. Do not use with beards or facial hair that prevent direct contact between the face and the respirator faceseal. Do not use with corrective eyeglasses. If corrective eyeglasses are required, a 3M™ Spectacle Kit must be used inside the respirator.
- Do not clean respirator with solvents. Cleaning with solvents may degrade some respirator components and reduce respirator effectiveness.
- Inspect all respirator components before each use to ensure proper operating condition.
- Do not alter, misuse, or abuse this respirator.

CAUTION

Failure to properly dispose of spent cartridges, filters, or respirators contaminated by hazardous materials can result in personal exposures as well as environmental harm. Handling, transportation and disposal of spent cartridges, filters, or respirators must comply with all applicable federal, state, provincial, and local laws and regulations.

NIOSH Cautions and Limitations for Negative Pressure Usage

The following restrictions may apply. See NIOSH Approval Label. If you are using the FF-400 series facepiece as part of a Supplied Air Respirator configuration, refer to the *User Instructions* that accompanies your air control device for information on NIOSH 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.
J - Failure to properly use and maintain this product could result in injury or death.
L - Follow the manufacturer's *User's Instructions* for changing cartridges, canister 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 configurationasspecifi ed 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's Instructions*

3M™ Organic Vapor Service Life Indicator Cartridges (6001i and 60921i) and Mercury Vapor Cartridges (6009S and 60929S) are equipped with a passive 3M™ End of Service Life Indicator (ESLI). The indicator must be readily seen when wearing the respirator without manipulation. If you cannot readily see the ESLI, use a mirror to observe the ESLI, rely on a co-worker who can see the ESLI, or go to a clean area, remove the respirator and view the ESLI. Do not rely solely on the organic vapor ESLI unless your employer has determined that it is appropriate for your workplace. See 6001i
or 60921i *User Instructions* for more information, including *Special Instructions* regarding the ESLI. The mercury vapor cartridges must be discarded when the ESLI changes to the discard color found on the mercury vapor cartridge label; or within 30 days of opening packaging; or when ESLI becomes dirty or damaged; or when odors of vapors or gases become noticeable; or according to chlorine service life; whichever occurs first. Mercury vapor has no odor.

Respirator Program Management

Occupational use of respirators must be in compliance with applicable health and safety standards. By law U.S. employers must establish a written respiratory protection program meeting the requirements of the OSHA Respiratory Protection Standard 29 CFR 1910.134 and any applicable OSHA substance specific standards. In Canada, CSA standard Z94.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate. In Brazil, follow the Respiratory Protection Program of the Ministry of Labor.

For additional information on this standard contact OSHA. Consult an industrial hygienist or call 3M Technical Service with questions concerning applicability of these products to your job requirements.

Table 1: Major Sections of OSHA 29 CFR 1910.134

Section	Description
A	Permissible Practice
B	Definitions
C	Respiratory Protection Devices
D	Selection of Respirators
E	Medical Evaluations
F	Fit Testing
G	Use of Respirators
H	Maintenance and Care of Respirators
I	Breathing Air Quality and Use
J	Identification of Cartridges, Filters, and Canisters
K	Training and Information
L	Program Evaluation
M	Recordkeeping

Assigned Protection Factors

Table 2: Assigned Protection Factors

Type of Respirator	APF
Full Facepiece Negative Pressure Air Purifying Respirator	10/50[1]
Full Facepiece Supplied Air Respirator (SAR) Continuous Flow	1000

[1] The respirator wearer must be fit tested using a quantitative fit test method in order to use an assigned protection factor greater than 10 when used as a negative pressure air purifying reespirator.

In Brazil, according to the Respiratory Protection Program of the Ministry of Labor, do not use full face piece respirator when concentrations of contaminants are greater than 100 times the permissible exposure limit in air-purifying mode.

OPERATING INSTRUCTIONS

Unpacking

Inspect the package contents for shipping damage and ensure all components are present (Refer to Fig. 27). The product should be inspected before each use following the procedures in the *Inspection* section of this *User Instruction*.

Assembly

3M™ Cartridge 6000 Series, Filter 7093, and Cartridge/Filter 7093C Assembly (Fig. 1, 2)

1. Align the cartridge or filter notch with the small solid bayonet lug on facepiece and push together.
2. Turn cartridge or filter clockwise until it is firmly seated and cannot be further turned (about 1/4 turn).
3. Repeat with second cartridge or filter.

3M™ Filter 2000 Series (Fig. 3)

1. Align opening of filter with filter attachment on facepiece and push together.
2. Turn filter clockwise until it is firmly seated and cannot be further turned.
3. Repeat for second filter.

Filter Assembly (for 3M™ Filters 5N11 and 5P71)

1. Place filter into 3M™ Retainer 501 so printed side of filter faces the cartridge.
2. Press cartridge into filter retainer. It should snap securely into filter retainer. When correctly installed, filter should completely cover face of cartridge (Fig. 4).
3. To replace filter, remove retainer by lifting on tab.

In Brazil, the 3M™ Filter 5935BR can be used with the 3M™ Filter Retainer 501 on the 3M™ Full Facepiece FF-400 Series.

3M™ Adapter Assembly 502

1. Align adapter over cartridge. Engage front snap by squeezing front of cartridge and adapter together, placing thumbs of both hands over top of adapter and fingers along bottom sides of cartridge (Fig. 5).
2. Engage back snap by squeezing back side of cartridge and adapter together using the same hand positions. An audible click should be heard as each snap is engaged (Fig. 6).
3. Place filter onto the filter holder so that filter comes into even contact with gasket. Twist clockwise a quarter turn until it is firmly seated and filter cannot be turned further. Repeat for second filter.

IMPORTANT: The 3M™ Adapter Assembly 502, once installed on a 3M™ Cartridge 6000 Series, is not to be removed or reused. Removal or reuse may result in leakage, overexposure, sickness or death.

3M™ Filter Adapter 603 Assembly and Filter Attachment (for 3M™ Filters 5N11 and 5P71)

1. Align notch on edge of 603 adapter with facepiece mark as shown (Fig. 7).
2. Turn adapter 1/4 turn clockwise to stop. To remove adapter, turn 1/4 turn counterclockwise (Fig. 8).
3. Place filter into 501 retainer with filter printing facing towards the 603 adapter. Snap together and ensure the filter seal is free from creases or gaps (Fig. 9).

In Brazil, the 3M™ Filter 5935BR can be used with the Filter Adaptor 603 and the Filter Retainer 501 on the 3M™ Full Facepiece, FF-400 Series.

3M™ Dual Airline Respirator Assembly

User must follow Dual Airline Supplied Air Respirator *User Instructions* provided with the 3M™ Dual Airline Supplied Air Respirators.

Assembly of Dual Airline Breathing Tubes

1. Hold the facepiece in front of you so that the 3M logo is facing you. Align the two branches of the breathing tube over the two bayonet mounts on facepiece (Fig. 10). For 3M™ Breathing Tubes SA-1500 or SA-1600, make sure that 3M logo on breathing tube and on facepiece are both facing towards you. For 3M™ Breathing Tubes SA-2500 or SA-2600, make sure that the 3M logo on breathing tube is facing in opposite direction to 3M logo on facepiece.
2. Twist each branch of breathing tube clockwise a quarter turn until it is firmly seated in the bayonet and cannot be turned further (Fig. 11 and 12). Do not forcibly overturn as the bayonet could be damaged. SA-1500/SA-2500 shown.
3. Attach airline to approved air regulators per pressure schedules in dual airline, supplied air respirators *User Instructions*.

Assembly of 3M™ Combination Dual Airline Breathing Tubes with Cartridges and/or Filters

The SA-1600 (front-mounted) and SA-2600 (back-mounted) versions of the 3M™ Dual Airline Breathing Tubes allow use of selected, NIOSH-approved 3M™ Cartridge 6000 Series and 3M™ Filter 2000 Series. For the listing of approved cartridges and filters, reference the NIOSH approval label included with 3M™ Dual Airline Adapter kits.

1. Attach SA-1600 or SA-2600 breathing tubes to facepiece per the procedures outlined previously. The procedure is identical to the SA-1500 and SA-2500 models.
2. Make a selection of cartridges and/or filters that meets your respiratory protection requirements, and attach to the outer bayonets of SA-1600 or SA-2600 breathing tubes.
3. Don facepiece per procedures outlined in *Donning Respirator* section of instructions.
4. After being properly fit tested, perform a positive and negative pressure user seal check each time the respirator is donned per procedures outlined in *User Seal Check* section of instructions.

If you cannot achieve a proper fit, DO NOT enter contaminated area. See your supervisor.

To assemble 3M™ Dual Airline Combination Breathing Tubes with 3M™ Cartridges/Filters, the facepiece inhalation valves must be removed.

IMPORTANT: If the facepiece is to be used in air-purifying mode (without using the SA-1600 or SA-2600 breathing tubes), the inhalation valves must be replaced in the facepiece before use.

Using the 3M™ Combination Dual Airline Breathing Tubes without Cartridges and/or Filters

To use the 3M™ Combination Dual Airline Breathing Tubes (SA-1600 and SA-2600) without cartridges or filters, attach a 3M™ Bayonet Cap 6880 to each outer bayonet mount on the dual airline breathing tube. When used as a straight, Type C, continuous flow supplied air respirator, the Assigned Protection Factor is 1000 times the PEL, OEL or TLV guidelines for full facepiece respirators.

FITTING INSTRUCTIONS

⚠ WARNING

Failure to follow these instructions may reduce respirator performance, expose you to contaminants above the OEL, and **may result in sickness or death.**

- To help maintain a good seal between the face and the faceseal, the respirator faceseal must be clear of obstructions at all times. Do not use with beards or facial hair that prevent direct contact between the face and the respirator faceseal. Do not use with corrective eyeglasses. If corrective eyeglasses are required, a 3M™ Spectacle Kit must be used inside the respirator.

These instructions MUST be followed each time respirator is worn.

Donning Respirator

NOTE: Two key factors in effective donning are placing the nose in the nose cup initially to center the respirator on the face and to tighten the straps twice following steps 4, 5, 6, first to snug the respirator then repeating steps 4, 5, 6 a second time to secure the facepiece seal. Care must be taken to not over tighten bottom straps on the first turn.

1. Fully loosen all six headstraps.
2. Hold the front of the facepiece with one hand and the straps/comfort cradle away from the facepiece with the other hand, creating an opening for the head. Pull the respirator assembly down over the head and face through the opening. Place the nose in the nose cup and chin in the chin cup area then press the facepiece firmly and evenly against the face (Fig. 13).
3. Pull head harness to back of head (Fig. 13).

NOTE: Repeat the sequence of steps 4-6 twice, once to snug the straps and take up slack and a second time to secure and seal the respirator facepiece to the face.

4. Tighten the bottom straps one at a time. Be careful to tighten both sides equally (Fig. 14).
5. Tighten the middle straps one at a time. Be careful to tighten both sides equally.
6. Tighten the top straps one at a time. Be careful to tighten both sides equally.
7. Recheck all straps to ensure that they are tight and evenly tensioned so that the head harness is centered on the back of your head. Ensure that the straps and tabs lay flat against your head.

If possible, have a partner verify that you have donned your respirator properly. Perform a user seal check as described below.

Initial Selection of Small, Medium or Large Facepieces

More than one facepiece size may need to be donned before you determine the best size for your face.

After donning verify the following.

1. Nothing (e.g. hair, jewelry, etc.) comes between the face and the sealing surface of the respirator. Facial hair or sideburns may have to be trimmed.
2. Bottom straps and middle straps do not cut into ears.
3. Eyes are looking between center and top 1/3 of the lens.
4. Respirator does not press so tightly against face that eyes are partly closed.
5. Bottom of the mask assembly does not cut into throat.
6. No visible gaps between the face seal and the face.
7. Skin in front of ear is not wrinkled.
8. Nosecup does not obscure vision.
9. Ensure that other safety equipment does not interfere with buckles or fit of respirator.

If any of these criteria are not met, it is possible that the respirator may not fit you adequately. Selecting a different size facepiece may provide you with a more adequate fit. More than one facepiece size may need to be donned before you determine the best size for your face. A fit test can confirm adequate fit. If you have further questions, see your supervisor.

User Seal Checks

Always check the seal of the respirator on your face <u>before</u> entering a contaminated area according to the instructions provided below for your specific respirator configuration. The positive pressure seal check is the primary and preferred method for verification of a good seal for all cartridge and filter configurations. The positive pressure seal check is the only method for this respirator with Filters 2000 Series. The negative pressure user seal check can also be done for additional verification of a good seal for this respirator with Cartridges 6000 Series and Filters 7093/7093C. Be careful not to disturb the respirator seal by pressing too forcefully during negative pressure seal checks.

IMPORTANT: If you cannot achieve a proper seal, DO NOT enter the contaminated area. See your supervisor. Before assigning any respirator to be worn in a contaminated area, a qualitative or quantitative fit test MUST be performed per OSHA Standard 1910.134, CSA Standard Z94.4 or Brazil Respiratory Protection Program of the Ministry of Labor.

Positive Pressure User Seal Check for all approved configurations and required for Filters 2000 Series

1. Remove the exhalation valve cover by depressing bottom of cover with thumb and sliding cover up, parallel with lens.
2. Place the palm of your hand over the exhalation valve and exhale gently (Fig. 15). Care must be taken to ensure a good seal of the exhalation valve. To do this, cover the entire face of the blue valve with the base of the palm.
3. If the facepiece bulges slightly and no air leaks are detected between the face and the facepiece, a proper seal has been obtained.
4. If faceseal air leakage is detected, reposition the respirator on your face and/or readjust the tension of the straps to eliminate leakage and recheck seal.
5. Replace exhalation valve cover by placing open end at top of exhalation valve assembly, guide tabs underneath valve cover assembly and slide downward until the valve cover snaps in place.

If faceseal air leakage is detected, reposition the respirator on your face and/or readjust the tension of the straps to eliminate the leakage and recheck seal. Care must be taken when performing the positive pressure seal check not to exhale too hard. The aim is to check the seal, not disturb the seal between the mask and the face.

Negative Pressure User Seal Check with Cartridges 6000 Series

1. Place palms of hands to cover face of cartridge or open area of 3M™ Filter Retainer 501and inhale gently. 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 (Fig. 16).
2. If faceseal air leakage is detected, reposition the respirator on your face and/or readjust the tension of the straps to eliminate leakage and recheck seal.

Be careful not to disturb the respirator seal by pressing too forcefully during negative pressure seal checks.

NOTE: Use of filter retainer 501 may aid respirator wearer in conducting a negative pressure user seal check.

Negative Pressure User Seal Check with Filters 7093/7093C

1. Using hands squeeze or press filter covers toward facepiece and inhale gently. 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 (Fig. 17).
2. If faceseal air leakage is detected, reposition the respirator on your face and/or readjust the tension of the straps to eliminate the leakage and recheck seal.

Be careful not to disturb the respirator seal by pressing too forcefully during negative pressure seal checks.

Negative Pressure User Seal Check with Dual Airline

1. Disconnect airline hose from air control valve.
2. With breathing tube still connected to the air control valve inhale gently. If you feel facepiece collapse slightly and pull closer to your face with no leaks between the face and facepiece, a proper seal has been obtained.
3. For combination dual airline where cartridges or filters are attached perform user seal check as described above under the appropriate cartridge or filter that is being used.
4. If faceseal air leakage is detected, reposition the respirator on your face and/or readjust the tension of the straps to eliminate the leakage and recheck seal.

IMPORTANT: If you cannot achieve a proper seal, DO NOT enter the contaminated area. See your supervisor. Before assigning any respirator to be worn in a contaminated area, a qualitative or quantitative fit test MUST be performed per OSHA Standard 1910.134, or CSA Standard Z94.4.

RESPIRATOR REMOVAL

1. Fully loosen all six head straps by lifting up on buckles.
2. Remove respirator by pulling straps over head.

FIT TESTING

The effectiveness of a respirator will be reduced if it is not fitted properly. Therefore, either qualitative or quantitative fit testing must be conducted prior to the respirator being used. **Fit testing is a U.S. Occupational Safety and Health Administration (OSHA), a Canadian CSA and a Brazilian BMOL requirement.** Fit testing should be conducted using the heaviest cartridge, canister, filter or combination that each wearer will use in their work environment. Respirators should also be fit tested while wearing any personal protective equipment (PPE) the wearer may use in their work environment that may affect the fit of the respirator (e.g. hoods, hardhats, hearing protectors, etc.). For further information concerning fit testing, contact 3M PSD Technical Service.

Quantitative Fit Testing

Quantitative Fit Testing (QNFT) can be conducted using a 3M™ Fit Test Adapter 601 and P100 filters such as the 3M™ Particulate Filters 2091 or 7093.

Qualitative Fit Testing

Qualitative Fit Testing (QLFT) with the 3M™ Qualitative Fit Test Apparatus FT-10 or FT-30 can be conducted using any of the NIOSH approved particulate filters.

Entering and Exiting a Contaminated Area

- Airborne contaminants which can be dangerous to your health include those that are so small you may not be able to see or smell them.
- Always conduct a user seal check before entering a contaminated area.
- Leave the contaminated area immediately if any of the following conditions occur:
  - Any part of the respirator becomes damaged.
  - Breathing becomes difficult.
  - Your feel dizzy or your vision is impaired.
  - You taste or smell contaminants.
  - Your face, eyes, nose or mouth become(s) irritated.
  - You suspect that the concentrations of contaminants may have reached levels at which this respirator may no longer provide adequate protection.
- Do not wear this respirator in areas where:
  - Atmospheres are oxygen deficient.
  - Contaminant concentrations are unknown.
  - Contaminant concentrations are Immediately Dangerous to Life or Health (IDLH).
  - Contaminant concentrations exceed the Maximum Use Concentration (MUC) determined using the Assigned Protection Factor (APF) for the specific respirator system or the APF mandated by specific government standards, whichever is lower.

INSPECTION, CLEANING, AND STORAGE

⚠ WARNING

Failure to follow these instructions may reduce respirator performance, expose you to contaminants above the OEL, and **may result in sickness or death.**

- Do not clean respirator with solvents. Cleaning with solvents may degrade some respirator components and reduce respirator effectiveness.
- Inspect all respirator components before each use to ensure proper operating condition.

Inspection Procedure

This respirator must be inspected before each use to ensure that it is in good operating condition. Any damaged or defective parts must be replaced before use. Do not enter a contaminated area with damaged or defective parts. The following inspection procedure is recommended.

1. Check facepiece for cracks, tears and dirt. Be certain facepiece, especially faceseal area, is not distorted.
2. Examine inhalation valves for signs of distortion, cracking or tearing.
3. Make sure that head straps are intact and have good elasticity.
4. Examine all plastic parts for signs of cracking or fatiguing. Ensure bayonet gaskets are in good condition.
5. Remove exhalation valve cover and examine exhalation valve and valve seat for signs of dirt, distortion, cracking or tearing. Replace exhalation valve cover.
6. Inspect lens for any damage that may impair respirator performance or vision.

Cleaning and Storage

Cleaning is recommended after each use.

1. Remove cartridges, filters and/or breathing tubes, and nose cup. The exhalation valve cover, exhalation valve assembly, speaking diaphragm, bayonet assembly, lens and faceseal can also be disassembled if necessary.
2. Clean facepiece (excluding filters and cartridges), by immersing in warm cleaning solution, water temperature not to exceed 120°F (49°C), and scrub with soft brush until clean. Add neutral detergent if necessary. Do not use cleaners containing lanolin or other oils.
3. Disinfect facepiece by soaking in a solution of quaternary ammonia disinfectant or sodium hypochloride (1oz. [30 mL] household bleach in 2 gallons [7.5 L] of water), or other disinfectant.
4. Rinse in fresh, warm water and air dry in non-contaminated atmosphere. Do not replace nose cup until facepiece is completely dry.
5. Respirator components must be inspected prior to each use. A respirator with any damaged or deteriorated components should be repaired or discarded.
6. The cleaned respirator should be stored away from contaminated areas when not in use.

SPECIFICATIONS

Contact 3M Technical Service for technical specifications (e.g. weight, materials of construction, etc). This product contains no components made from natural rubber latex.

Cartridge and Filter Selection and Approvals

Before using any of these products, the user must read the specific Use For, Use Limitations and Warning information in the *User Instructions* and product documentation or call 3M PSD Technical Service. Do not exceed maximum use concentrations established by local regulatory agencies.

	3M™ 6000 Series Cartridges																
NIOSH Approvals	6001	6001i	6002	6003	6004	6005	6006	6009S	60921	60921i	60922	60923	60924	60925	60926	60928**	60929S
Certain Organic Vapors	X	X		X		X	X		X	X		X		X	X	X	X
Chlorine			X	X			X	X			X	X			X	X	
Hydrogen Chloride			X	X			X				X	X			X	X	
Sulfur Dioxide			X	X			X	X			X	X			X	X	X
Chlorine Dioxide			X				X				X				X		
Hydrogen Sulfide			X	X			X				X	X			X	X	
Hydrogen Fluoride				X			X					X			X	X	
Formaldehyde						X	X							X	X		
Ammonia					X		X						X		X		
Methylamine					X		X						X		X		
Mercury Vapor								X									X
P100 Particulate Filter									X	X	X	X	X	X	X	X	X

** 3M Recommended for use against methylbromide or radioiodine up to 5ppm with daily cartridge replacement.

NOTE: Not NIOSH approved for use against methylbromide or radioiodine.

	3M™ Filters													
NIOSH Approvals	2071	2078**	2076 HF	2091	2096	2097**	2291	2296	2297**	5N11	5P71	7093	7093C	5935BR
P100				X	X	X	X	X	X			X	X	
P95	X	X	X								X			
N95										X				X
HF			X										X	
Nuisance level relief*														
Acid gases		X	X		X			X					X	
Organic Vapors		X				X			X				X	

* 3M recommended for relief against nuisance levels of acid gas or organic vapors. Nuisance level refers to concentrations not exceeding OSHA PEL or applicable exposure limits, whichever is lower. Do not use for respiratory protection against acid gas/organic vapors.
** 3M recommended for ozone protection up to 10 times the OSHA PEL or applicable government occupational exposure limits, whichever is lower.

NOTE: Not NIOSH approved for use against ozone.

In Brazil, the 5935BR filter is approved as a NIOSH N95 filter and a BMOL P3 filter.

3M™ Filter Adapters and Retainers

Number	Description
501	Filter Retainer for use with Cartridge 6000 Series and Filters 5N11 and 5P71
502	Filter Adapter for use with Cartridge 6000 Series and Filters 2000 and 7093/7093C
603	Filter Adapter for use with Filters 5N11 and 5P71

In Brazil, the 3M™ Filter 5935BR can be used with the Filter Adaptor 603 and the Filter Retainer 501 on the 3M™ Full Facepiece, FF-400 Series.

Service Life of Chemical Cartridges and Particulate Filters

CAUTION

Failure to properly dispose of spent cartridges, filters, or respirators contaminated by hazardous materials can result in personal exposures as well as environmental harm. Handling, transportation and disposal of spent cartridges, filters, or respirators must comply with all applicable federal, state, provincial, and local laws and regulations.

3M™ Chemical Cartridges 6000 Series must be used before the expiration date on cartridge packaging. The useful service life of these cartridges will depend upon activity of wearer (breathing rate), specific type, volatility and concentration of contaminants and environmental conditions such as humidity, pressure, and temperature. Cartridges must be replaced in accordance with an end of service life indicator (ESLI), established change schedule, regulations or earlier if smell, taste or irritation from contaminants is detected.

Particulate filters must be replaced if they become damaged, soiled or if increased breathing resistance occurs. N-series filters should not be used in environments containing oils. R-series filters may be limited to 8 hours of continuous or intermittent use if oil aerosols are present. In environments containing only oil aerosols, P-series filters should be replaced after 40 hours of use or 30 days, whichever is first.

REPLACEMENT PARTS INSTRUCTIONS

3M™ Ultimate FX Full Facepiece Assembly FF-400

The facepiece assembly consists of the head harness assembly, nose cup assembly, speaking diaphragm assembly, exhalation valve assembly, lens assembly, faceseal (small, medium or large), frame assembly (frame, nut and screw), bayonet assemblies and exhalation valve cover. To disassemble lens assembly from faceseal, remove the Phillips screw from frame, pull the frame away from the faceseal and remove faceseal from lens assembly.

Valve Cover Replacement

1. Remove valve cover by depressing bottom of cover with thumb and sliding cover up, parallel with lens (Fig. 18).
2. Replace valve cover by placing open end at top of exhalation valve assembly, guide tabs underneath valve cover assembly and slide downward until the valve cover snaps in place.

Exhalation Valve Assembly Replacement

1. Remove valve cover by depressing bottom of cover with thumb and sliding cover up, parallel with lens (Fig. 18).
2. Remove exhalation valve assembly by turning counter clockwise 1/4 turn (Fig. 19).
3. Replace exhalation valve assembly by aligning lugs with exhalation valve assembly opening in lens and turning clockwise 1/4 turn until firm stop.
4. Replace valve cover assembly.

Exhalation Valve Replacement

1. Remove valve cover by depressing bottom of cover with thumb and sliding cover up, parallel with lens (Fig. 18).
2. Remove exhalation valve assembly by turning counter clockwise 1/4 turn (Fig. 19).
3. Grasp valve and pull each valve stem out from valve seat.
4. Inspect valve seat making certain it is clean and in good condition.
5. Place new exhalation valve replacement over the exhalation port by inserting stems and pulling through from the opposite side until they are both snapped in place.
6. Replace exhalation valve assembly.
7. Replace valve cover.

NOTE: Conduct a negative pressure user seal check to ensure exhalation valve is functioning properly.

Nose Cup Assembly Replacement

The nose cup assembly consists of a nose cup and inhalation valves. It is designed to install directly to the lens and comfortably fit over the respirator wearer's mouth and nose to aid in purging exhaled breath and prevent lens fogging.

1. Remove the nose cup assembly by grasping the nose cup below the inhalation valve and gently pulling up and away from lens assembly (Fig. 20).
2. To replace, position nose cup assembly onto lens assembly by aligning hard plastic ring on nose cup with lens assembly and pressing firmly on center tabs until bottom nose cup tabs snap in place (Fig. 21).
3. Press down on top of nose cup ring until tabs snap in place.

Speaking Diaphragm Assembly Replacement

1. Remove the nose cup assembly by grasping the nose cup below the inhalation valve and gently pulling up and away from lens assembly (Fig. 20).
2. Remove valve cover by depressing bottom of cover with thumb and sliding cover up, parallel with lens (Fig. 18).
3. Remove exhalation valve assembly by turning counter clockwise 1/4 turn.
4. Remove speaking diaphragm assembly by turning counter clockwise 1/4 turn (Fig. 22).
5. Replace speaking diaphragm assembly by aligning speaking diaphragm lugs with speaking diaphragm opening in lens assembly.
6. Turn clockwise 1/4 turn until firm stop.
7. Replace exhalation valve assembly.
8. Replace valve cover assembly.
9. Replace nose cup assembly (Fig. 21).

Bayonet Assembly Replacement

The bayonet assembly consists of the bayonet ring, bayonet, and inhalation gasket.

1. Remove the nose cup assembly by grasping the nose cup below the inhalation valve and gently pulling up and away from lens assembly (Fig. 20).
2. Remove bayonet ring by rotating counter clockwise 1/4 turn (Fig. 23).
3. Remove bayonet from lens assembly (Fig. 24).
4. Align key on new bayonet with slot on lens assembly and hold firmly in place.
5. Align lugs on ring with slots on bayonets and rotate clockwise 1/4 turn until firm stop.
6. Replace nose cup assembly (Fig. 21).

Inhalation Valve Replacement

Inhalation valves are located on bayonet assemblies at the facepiece inhalation ports and inside the nose cup inhalation ports. These valves should be inspected before each respirator use and replaced whenever valves become damaged or lost.

1. Remove existing valve(s) by grasping valve and pulling valve stem out from valve seat.
2. Install new valve(s) onto valve seat(s) by pushing through valve stem seat(s). Be certain valve stem(s) is fully engaged through valve seat(s), lays flat, and moves freely (spins).

Head Harness Assembly Replacement

1. Remove existing head harness by unsnapping each buckle from the buttons (Fig. 25).
2. Pull the end tabs of the head harness, at an angle, out through the buckles. Note the orientation of the head harness tabs and buckles for re-assembly.
3. Place the head harness down on a flat surface with the 3M logo facing up (Fig. 26).
4. Thread the end tabs of the head harness through the buckles and pull each through until the end tab is completely through the buckle.
5. Place the facepiece lens down on a flat surface and lay the new head harness and buckle assembly over the facepiece. The head harness should be assembled with the 3M logo facing up.
6. Snap each buckle into corresponding button, ensuring that straps are not twisted.

Lens Frame Assembly Replacement

The lens frame assembly consists of a lens frame, nut, and screw.

1. Remove the Phillips screw from frame. Pull the frame away from the faceseal (Fig. 27).
2. Position new frame, aligning marks top and bottom. Install and securely tighten screw. Make certain alignment marks are properly aligned top and bottom with all components (Fig. 28).

Lens Assembly Replacement

The lens assembly consists of a hard-coated polycarbonate lens.

1. Remove the nose cup assembly by grasping the nose cup below the inhalation valve and gently pulling up and away from lens assembly (Fig. 20).
2. Remove the valve cover by depressing bottom of cover with thumb and sliding cover up, parallel with lens (Fig. 18).
3. Remove exhalation valve assembly by turning counter-clockwise 1/4 turn and withdrawing from lens center port (Fig. 19).
4. Remove speaking diaphragm by turning counter clockwise 1/4 turn (Fig. 22).
5. Remove bayonet assemblies by rotating bayonet rings counter clockwise 1/4 turn (Fig. 23) and removing bayonets from the lens assembly (Fig. 24).
6. Remove the Phillips screw from frame. Pull the frame away from the faceseal (Fig. 27).
7. Remove faceseal from lens.
8. Place new lens and faceseal together aligning marks at top and bottom. Position frame, again aligning marks top and bottom. Install and securely tighten screw. Make certain alignment marks are properly aligned top and bottom with all components (Fig. 28).
9. Install speaking diaphragm.
10. Install exhalation valve assembly.
11. Replace exhalation valve cover.
12. Replace bayonet assemblies.
13. Replace nose cup assembly (Fig. 21).

3M™ Ultimate FX Full Facepiece FF-400 Replacement Parts and Accessories

Number	Description
FF-401	Small
FF-402	Medium
FF-403	Large

Number	Description
FF-400-01	Head Harness Buckle
FF-400-02	Head Harness Button
FF-400-03	Lens Assembly
FF-400-04	Head Harness
FF-400-05	Frame Assembly w/ Screw
FF-400-06	Comfort Cradle
FF-400-07	Exhalation Valve Assembly
FF-400-08	Bayonet Assembly Inhalation Valve
FF-400-09	Exhalation Valve Cover (Standard)
FF-400-10	Exhalation Valve Cover (Solid)
FF-400-11	Nose Cup Assembly
FF-400-13	Speaking Diaphragm Assembly
FF-400-20	Spectacle Kit
7582	Inhalation Valve
7583	3M™ Cool Flow™ Exhalation Valve

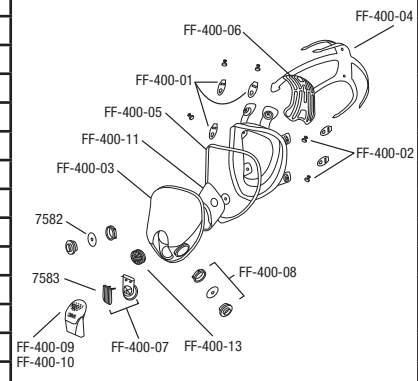


Fig. 29

Number	Description
FF-400-15	Lens Cover
FF-400-17	Semi-Permanent Lens Cover
504	Respirator Cleaning Wipes
601	Quantitative Fit Test Adapter

For Compliance in Brazil NOTE:

1. In Brazil, according to the Respiratory Protection Program of the Ministry of Labor, do not use when concentrations of contaminants are greater than 100 times the permissible exposure limit in air-purifying mode.
2. Do not use in deficient or enriched oxygen atmospheres.
3. Storage, Transportation and Care: store in a clean and dry place and away from contaminants and extreme temperature and humidity.
4. The components of this respirator are made of materials which are not expected to cause adverse health effects.
5. It is necessary to have special care to use this product in explosives atmospheres.
6. In Brazil do not use powered air-purifying respirators if airflow is less than 120 lpm for tight fitting facepieces or 170 lpm for hoods and/or helmets.

Product Manufacturing Date

The parts of the product show markings that bring information of manufacturing date, and its reading is described as in the example below:

Date Code = 12th month 1999 (12/99)


Fig. 1

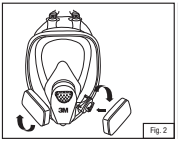
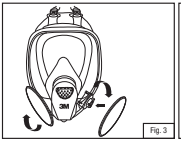


Fig. 2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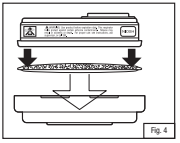
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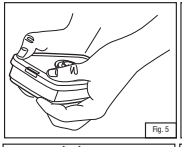
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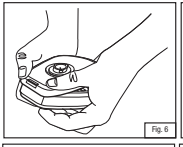
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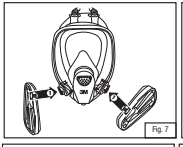
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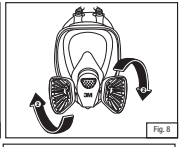
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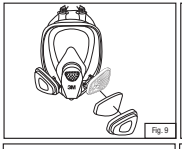
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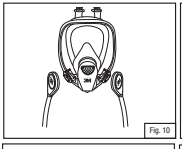
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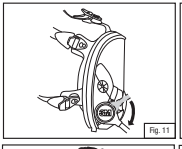
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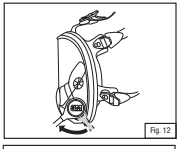
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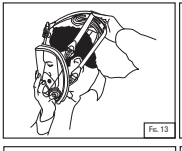
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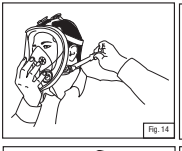
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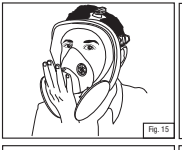
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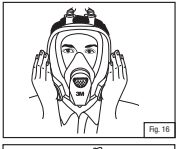
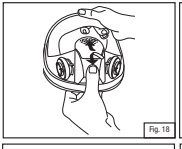


Fig. 16


Fig. 17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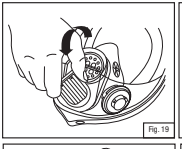
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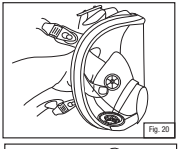
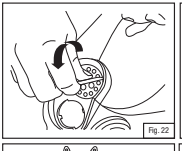


Fig. 20


Fig. 21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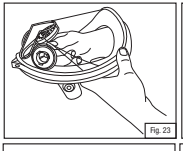
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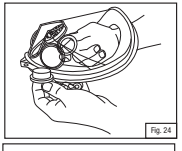
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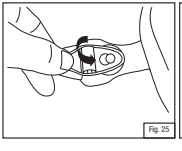
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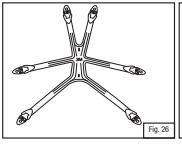
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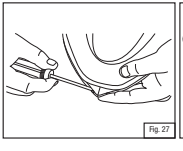
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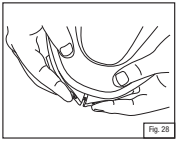
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