3M Science. Applied to Life.™

3M™ Powered Air Purifying Respirators

Implementation Guide for Healthcare

Information is current as of September 2021 and is based on current United States federal and Canadian provincial and federal requirements. Other local, state, provincial, national, and international requirements may be applicable, and are subject to change.

Important Remarks

This guide assumes you have already discussed use of powered air purifying respirators (PAPRs) and are considering or plan to implement PAPRs in your facility.

Always consult User Instructions and follow local laws and regulations.

3M product User Instructions and technical bulletins, Occupational Safety and Health Administration (OSHA) Standards, The U.S. Centers for Disease Control and Prevention (CDC) Guidance, Environmental Protection Agency (EPA) Guidance, Canadian Standard Association (CSA) Standards, technical references are included to provide information on how PAPRs may be implemented in healthcare settings. This information has been collected and communicated to the best of our knowledge and is subject to change.

This guide contains an overview of general information and should not be relied upon in isolation, to make specific decisions, as the content is often accompanied by additional and/or clarifying information or discussion.

Completing this guide does not certify proficiency in safety and health.

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About This Guide

Your health and safety are essential to deliver quality care to patients. As we navigate through this time of change together, we share a common goal: Making respiratory protection the highest priority. Thank you for considering the use of the 3M™ PAPR in your facility.

3M™ PAPRs offer a sustainable option to help protect healthcare workers from potentially infectious airborne particles. When used with replaceable particulate filters, PAPRs offer a minimum of 99.97% filtration. Some 3M™ PAPR models can also provide protection from certain hazardous gases and vapors.

We're proud to help provide you with the resources you need to drive change at your facility and achieve the outcomes most important to your patients, your organization and you. The following pages are a compilation of current 3M guidance, regulatory guidance and practice standards and 3M technical data. The goal is to provide comprehensive guidance on how 3M™ PAPRs can effectively be implemented in healthcare settings.

This guide will lead you through resources available for successful implementation. While the guide is extensive, it is not all-inclusive, meaning other resources and guidance do exist. Many have been noted in the appendix at the end of this document. Other local, state, provincial, national, and international requirements may be applicable, and are subject to change. Always read and follow *User Instructions*.

If you need additional resources or support not found in this guide, please contact your 3M Account Manager.

Information is current as of September 2021 and is based on current United States federal and Canadian provincial and federal requirements. Other local, state, provincial, national, and international requirements may be applicable, and are subject to change. The facility (employer) is ultimately responsible for determining the suitability of personal protective equipment (PPE) and cleaning and disinfecting procedures for their workplace.

How To Use This Guide

Each section of this guide is designed to walk you through steps to help implement a successful PAPR protocol. Divided into three sections, this guide begins with pre-planning your protocol and ends with full facility introduction and implementation.

Section 1: **Plan your protocol**

- Provides worksheets for Organizational Leadership to establish key protocols prior to implementation
- Explore criteria to select your “Organizational Champions” to help with implementation

Section 2: **Train your Organizational Champions**

- With your Organizational Champions selected, this section will help teach them the ins and outs of the 3M™ PAPRs
- Walk through established protocols from Section 1

Section 3: **Deploy to your teams**

- Resource hub for teams

Look for **QR codes** throughout this guide for a direct link to the resources.

Key Definitions

Below are key definitions that will be used throughout this Guide

Term	Definition
Respiratory Protection Program	Employers are required to develop and implement a written respiratory protection program with required worksite-specific procedures and elements for required respirator use.
Respiratory Protection Program Manager (RPPM)	Is accountable for the respiratory protection program — Oversees implementation and conducts the required evaluations of program effectiveness.
Organizational Leader	With RPPM, responsible for establishing protocols for successful implementation and use.
Organizational Champion	Responsible for implementation of protocols developed by the Organizational Leader and assessment of ongoing needs for staff education.
Cleaning	Removal of soil (organic and inorganic) and foreign material from objects and surfaces. This is typically accomplished with water and mechanical action. Mild detergents may be used to assist in the process.
Disinfection	A process of inhibiting or destroying disease-producing microorganisms (but may not kill bacterial spores).

PAPR Components

3M™ Versaflo™ S-Series Hoods and Headcovers

S-103S/L

S-133S/L

S-403S/L

S-433S/L

3M™ Versaflo™ BT-Series Breathing Tubes

BT-20S/20L

BT-30

BT-40

3M™ Versaflo™ TR-300+ or TR-600 PAPR Assemblies

TR-300

TR-600

3M™ Versaflo™ TR-300+ and TR-600 HE Filters

TR-3712N

HE filter for TR-300+

TR-6710N

HE filter for TR-600
Other filter and cartridge options available for TR-600.

Accessories

BT-922

Breathing tube cover (optional)

TR-653

Cleaning and storage plugs for TR-600

Section 1

Plan your protocol

The first section of this implementation guide is all around helping establish key protocols for your 3M™ PAPRs prior to implementation. We'll review criteria for selecting your Organizational Champions, potential cleaning and disinfection processes, as well as many important resources that will help prepare for a successful implementation.

What you'll find in this section:

- Checklist of what needs to be done by the leader (Documented by Respiratory Protection Program Manager (RPPM))
  - ☐ Determine where PAPRs are worn
  - ☐ Determine if PAPR assemblies will be individually assigned or shared
  - ☐ Establish cleaning and disinfection protocol
  - ☐ Establish storage and maintenance protocol
  - ☐ Determine your champions
- Worksheets

Plan your protocol

Determining Use

PAPRs are commonly used to help reduce the wearer's exposure to airborne particles, aerosolized hazardous drugs, and certain disinfectants or sterilants. **With input from an industrial hygienist, occupational health, infection prevention, and/or other applicable stakeholders, determine where in the facility the PAPRs will be worn.**

Will use of the PAPR blower units be dedicated to a single user or shared between users?

- A PAPR assembly could be assigned to an individual or could be available for multiple users.
- Breathing tubes may be shared depending on the protocols established by the facility.
- PAPR hoods and headcovers are generally assigned to an individual.

Potential healthcare customer use applications:

- Cohort Unit
- Environmental Services
- Emergency Medical Services
- Pharmacy
- Laboratory
- Biosafety Labs
- Emergency Department
- LTACH (long term acute care hospital)
- Other Areas

As with all personal protective equipment (PPE), employers must determine if these products can be safely used in their particular healthcare environments.

A note on source control

Source control is defined by the United States Centers for Disease Control (CDC) as “Use of well-fitting cloth masks, facemasks, or respirators to cover a person’s mouth and nose to prevent spread of respiratory secretions when they are breathing, talking, sneezing, or coughing” in their guidance Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic.

3M™ PAPRs are designed to help protect the wearer from certain airborne hazards in the surrounding environment. 3M™ PAPRs are tested and approved by the National Institute of Occupational Health and Safety (NIOSH), a division of the Center for Disease Control and Prevention (CDC), to provide respiratory protection to the wearer.

The US CDC states that PAPRs should not be used in surgical settings due to concerns that the blower exhaust and exhaled air may contaminate the sterile field.[1] There is no regulatory agency in the US or Canada that evaluates respirators or surgical masks for outward leakage of particles exhaled by the wearer. Such tests are not required by the FDA, NIOSH or CSA. Howard et. al, 2020, investigated sterile field contamination from both PAPRs and surgical masks and found no statistical difference between their effectiveness in reducing aerosol contamination.[2] Further research is needed on the topic of outward leakage from masks and respirators.

As with all personal protective equipment (PPE), employers must determine if these products can be safely used in their healthcare environments. While the use of a PAPR will help to reduce a wearer’s exposure to airborne particles, including bioaerosols, decisions about respirator use and infection prevention should be made on a use and user-specific basis in consultation with applicable requirements and guidance, including from infection prevention and occupational health and safety teams.

Please refer to the following site for the guidance from the government of Canada: https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html

Cleaning and Disinfection

Determine the cleaning and disinfection process for the 3M™ PAPRs by considering the following questions:

1. Who is responsible for cleaning and disinfection of the PAPR?

2. How will the cleaning and disinfection process be implemented?

3. How will the PAPR and components be stored and maintained?

Why consider cleaning and disinfection of PAPRs?

Due to potential contamination of the respirator surface, it is key to develop protocols for cleaning and disinfection after use to successfully operationalize your PAPR.

- Viruses and bacteria that cause acute respiratory infections can survive on respirator components for variable periods of time, from hours to weeks.[3]

- The U.S. Occupational Safety and Health Adminstration (OSHA) and CAN/CSA Z94.4 Selection, use and care of respirators require care and maintenance procedures to be included in an employer's respirator protection program.[4,5,6]

The following pages will assist in answering the above questions including, but not limited to, OSHA and CSA Guidance and 3M *User Instructions*.

The facility (employer) is ultimately responsible for determining the frequency and suitability of cleaning and disinfection procedures for their workplace.

Key US regulatory requirements for cleaning and disinfection.

The U.S. Occupational Safety and Health Administration (OSHA) requires care and maintenance procedures to be included in an employer's respiratory protection program.[4,5]

The frequency guidance from OSHA:

Dedicated Use
Respirators issued for the exclusive use of an employee shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.

Shared Use
Respirators issued to more than one employee shall be cleaned and disinfected before being worn by different individuals.

*OSHA standard [1910.134(h)(1)(i)] [1910.134(h)(1)(ii)].

1910.134 OSHA Respiratory Protection Standard

- The employer shall provide each respirator user with a respirator that is clean, sanitary and in good working order.
- The respirators shall be cleaned and disinfected at the **following intervals:**
  - Respirators issued for the **exclusive use of an employee** shall be cleaned and disinfected as often as necessary to be maintained in sanitary condition;
  - Respirators issued to **more than one employee** shall be cleaned and disinfected **before being worn by different individuals.**
- The employer shall ensure that respirators are cleaned and disinfected using the procedures in **Appendix B-2,** or procedures recommended by the respirator manufacturer, provided that such procedures are of equivalent effectiveness.

Information is current as of April 2021 and is based on current United States federal requirements. Other local, state, national, and international requirements may be applicable, and are subject to change. The facility (employer) is ultimately responsible for determining the suitability of cleaning and disinfecting procedures for their workplace.

Key requirements for cleaning and disinfection from CAN/CSA Z94.4-18 Selection, use and care of respirators

The CSA Standard requires care and maintenance procedures to be included in an employer's respiratory protection program.[6]

The frequency guidance from CSA:

Dedicated Use
Respirators shall be cleaned and sanitized in accordance with the respirator manufacturer's instructions or in accordance with procedures authorized by the program administrator in consultation with the respirator manufacturer. Respirators designed not to be cleaned shall be disposed of after use as directed by the manufacturer.

Shared Use
When the respirator is not individually assigned, cleaning and sanitizing shall be performed before the next use.

*CAN/CSA Z94.4-18: Section 11

CAN/CSA Z94.4-18: Section 11.1.1	11.1.1 Each respirator shall be properly maintained to retain its original effectiveness. Respirator care and maintenance programs shall include: a) cleaning and sanitizing b) inspection, testing, and repair c) storage; and d) recordkeeping
CAN/CSA Z94.4-18 Annex F (informative).	• Procedures for cleaning and sanitizing respirators

Source: Clause XX, *CAN/CSA Z94.4-18, Selection, use, and care of respirators* © 2018 Canadian Standards Association. Please visit store.csagroup.org

Cleaning and Disinfection

The process for cleaning and disinfection is as follows:

Initial Steps and Inspection

1. It is important to follow the User Instruction inspection procedures to identify any damage, excessive wear, or deterioration of components and replace them as necessary.
2. Detach the belt from the motor/blower and the headcover/hood from the breathing tube. Remove all the plastic clips from the belt (if present).
3. Discard the breathing tube cover, if one is used.
4. If a filter change is needed, remove the filter from the PAPR blower assembly– see the filter change section below.

Cleaning

Clean all parts of the PAPR assembly with a clean soft cloth dampened with warm water containing a mild pH neutral (pH 6-8) detergent (refer to specific product User Instructions for water temperature guidance).

- While the breathing tube is still attached to the blower, begin cleaning with the exterior of the breathing tube, then the exterior of the blower/battery. Avoid allowing liquid to enter the breathing tube.
- Remove the battery and wipe the top of the battery and the battery cavity of the blower if necessary. Avoid wiping the blower pins and battery pads.
- Wipe the belt and headcover/hood.

Disinfecting

Disinfect the PAPR assembly with the selected disinfectant. Follow the user instructions and EPA label for the selected disinfectant. Surfaces must be visibly wet with disinfectant for the full specified contact time.

- With breathing tube attached, start by wiping the exterior of the breathing tube and the top of the blower outlet.
- Remove the breathing tube.
- If cleaning and storage plugs are available for your blower model (TR-600), secure the blower outlet plug.
- Then, taking care not to allow liquid to drip into the blower, disinfect the rest of the blower body, battery, belt and headcover/hood as needed, avoiding the blower pins and battery pads.

Rinse and Dry

Remove disinfection solution from the PAPR assembly by wiping with a clean cloth dampened with fresh water. Rinse the cloth often to help ensure effective removal of the disinfectant solution. Do not allow liquid to enter the air inlet and outlet ports.

All components should be allowed to air-dry completely prior to reuse or storage. Air dry in an uncontaminated atmosphere, temperature not to exceed 49 °C (120 °F). Breathing tube drying can be accelerated by connecting it to the motor/blower unit and using it to force air through the tube until dry. If using this method, orient the blower and breathing tube in such a way that prevents liquid from entering the blower.

Inspect the PAPR assembly and headtop following the inspection procedures in the *User Instructions* for that item.

The 3M™ Versaflo™ Storage Plug BT-957 is an optional breathing tube accessory that can be used during storage of BT-Series breathing tubes.

Additional Considerations

Should cleaning and/or disinfection be required at the point of care based on your facility hazard assessment and infection prevention and control policy, the outer surfaces of the TR-300, TR-300+, and TR-600 motor/blower assembly and battery pack (still attached) may be wiped with a soft cloth dampened in a solution of water and mild, pH neutral detergent.

Only certain chemicals can be used to wipe down the 3M™ PAPR assemblies. Using methods other than the chemicals recommended by 3M may degrade materials and shorten the useful life of PAPR assemblies. Please see Inspection, Cleaning, and Storage Procedures for 3M™ Versaflo™ PAPR TR-300, TR-300+, and TR-600 technical data bulletin and page 17 (below) for additional details and acceptable cleaners and disinfectants.

Follow the user instructions and/or EPA label for the selected disinfectant. Surfaces must be visibly wet with disinfectant for the full specified contact time. **Respirator components may experience detrimental effects over time with prolonged or extended use of disinfecting products. A water wipe/rinse step should occur after required contact time to remove residual disinfectant and help avoid premature degradation.**

Disinfection of the exterior of PAPR Headcovers/Hoods

Disinfection of the exterior of PAPR headcovers/hoods can be considered, taking into consideration your facility's infection control policy and the user instructions and/or EPA label for your selected disinfectant.

When disinfecting the headcover/hood exterior, the same cleaning, disinfecting, rinsing and drying wipe-down steps can be followed as outlined for the PAPR assembly.

Disinfection of the interior of the PAPR headcover/hood has not been evaluated.

To determine product condition, follow the inspection guidance located within the *User Instructions* before and after each use.

Filter Replacement

When to Change PAPR Filters Used to Help Reduce Exposure to Airborne Biological Aerosols

Particulate filter change schedules for PAPRs are determined by two main considerations:

1. filter loading (clogging of the filter from captured particulates)
2. and a facility's infection control policy.

If the PAPR system is being used to reduce exposure to airborne biological aerosols such as droplets containing viruses or bacteria, the filter will not typically load from these particles to the point that they will affect the airflow for the PAPR as determined by the airflow indicator or the PAPR airflow indicator alarm. As a result, loading of PAPR filters is typically not an issue when used for biological aerosols.

In healthcare facilities, PAPR filter change schedules for airborne biological aerosols are primarily determined by the facility's infection control policy. The infection control policy should be developed based on applicable national, state, and local guidelines. Most healthcare organizations develop their filter use and reuse policy based on the biological agent of concern, likelihood of the filter becoming contaminated, and potential for patient-to-patient and patient-to-worker cross-contamination. While the outside filter body can be wiped down for cleaning, do not attempt to clean the filter media inside the filter body. When changing the PAPR filter, follow the hygiene and infection control practices established by your employer based on the specific contaminants to which the respirator assembly has been exposed and the cleaning agent used. Dispose of the filter according to your infection control policy and all applicable requirements.

Close consideration needs to be given to the policies and practices used for cleaning the PAPR. It is important to remember that a PAPR is used to filter out contaminants from the air, and therefore contaminants are concentrated on the filter/cartridge itself, and potentially on other surfaces of the PAPR system. While the outside filter body can be wiped down for cleaning, do not attempt to clean the filter media inside the filter body.

Cleaning and Disinfection

Who will be performing the cleaning and disinfection?

User cleans and disinfects...

if cleaning and disinfection is to be done by individual health care workers, likely on their units.

- Requires space and supplies on the unit
- Storage and availability may be potential barriers to implementation
- Cleaning and disinfection may be time-consuming for the user and relies on the ability of the user to properly clean and disinfect the respirator and its components

-OR-

Centralized cleaning and disinfection...

if cleaning and disinfection is done in a centralized process, likely within the facility.

- Storage and availability may be potential barriers to implementation
- Centralization of cleaning and disinfecting procedures may avoid user compliance challenges
- Organized transportation of the respirators to the central location and in storing the clean respirators may overcome process challenges

Cleaning and Disinfection: Disinfecting Agents

Your employer should review all applicable information thoroughly prior to selecting a disinfecting product for your equipment and specific application. Follow the hygiene and infection control practices established by your employer for the targeted organisms. NOTE: 3M relies on the expertise of the CDC and EPA with respect to microbiological efficacy and has not evaluated the effectiveness of these agents with regards to inactivating viruses on 3M equipment.

Below are some products with good expected compatibility with your 3M™ Powered Air Purifying Respirator.

Acceptable Cleaners for Wiping TR-300, TR-300+ and TR-600 Components

- Mild dish detergent and water (Dawn®, etc.)
- 70% Isopropyl Alcohol (IPA)
- 1:10 ratio of bleach to water (0.5% sodium hypochlorite)
- 3M™ Respirator Cleaning Wipes 504
- 3% hydrogen peroxide

Acceptable Disinfectants for Wiping TR-300, TR-300+ and TR-600

- 70% Isopropyl Alcohol (IPA)
- Sodium hypochlorite solution (at a free chlorine concentration of 5,000 ppm) with 1-minute contact time (1:10 ratio of bleach to water (0.5% sodium hypochlorite)
- Hydrogen Peroxide up to 30%
- 3M™ C Diff Disinfectant (EPA ID 71847-6)
- Clorox® Healthcare Bleach Wipes (EPA ID 67619-12) - 0.55% Sodium Hypochlorite
- Clorox® Healthcare Bleach Trigger Spray (EPA ID 56392-7) – 0.65% Sodium Hypochlorite
- Sani-Cloth® Bleach Germicidal Disposable Wipe (product of PDI Inc.) – Orange Top (EPA ID 9480-8)
- Peridox RTU® (EPA ID 8383-13)
- ECOLAB® KLERCIDE™ 70/30 IPA (EPA Reg. No. 1677-249)

Reminders

- A water wipe/rinse step should occur after required contact time to remove residual disinfectant and help avoid premature degradation.
- Respirator components may experience detrimental effects over time with prolonged or extended use of disinfecting products.
- Inspection before each use should occur to ensure the product is in good condition and any necessary parts are replaced.

For the most updated information on chemical compatibility please see the following 3M Technical Data Bulletins on:

- Cleaning and Disinfecting 3M™ Versaflo™ Powered Air Purifying Respirator Assemblies following Potential Exposure to Coronaviruses (https://multimedia.3m.com/mws/media/1793956O/cleaning-and-disinfecting-3m-paprs-following-potential-exposure-to-coronaviruses.pdf)
- Inspection, Cleaning, and Storage Procedures for 3M™ Versaflo™ PAPR TR-300, TR-300+, and TR-600 (https://multimedia.3m.com/mws/media/1758484O/inspection-cleaning-storage-procedures-for-3m-versaflo-tr300-tr300-tr600-technical-bulletin.pdf)
- It is the responsibility of the employer to ensure appropriate cleaning chemicals are used which do not damage the system and components or cause harm to the wearer.

Pay close attention during inspection and replace components as needed.

The US EPA label of a registered disinfectant will provide detailed guidance on:

- Cleaning (sometimes called pre-cleaning) requirements
- Dilution instructions (if applicable)
- Antimicrobial claims and their relevant contact times

Search by EPA registration number here to access the EPA label for your selected disinfectant:

Click / Scan

To search for an EPA-registered disinfectant for use against SARS-CoV-2: US EPA:

Click / Scan

Health Canada

- Health Canada has published a list of hard-surface disinfectants that are likely to be effective for use against COVID-19. This list is updated regularly.
- https://www.canada.ca/en/health-canada/services/drugs-health-products/disinfectants/covid-19/list.html

Cleaning and Disinfection: Additional Guidance

Respirator Washer (TR-600 only)

Machines may be used to expedite the cleaning, sanitizing, rinsing, and drying certain components of PAPRs.[6] Some washers (e.g. Georgia Steel Respirator Washer) are made specifically for cleaning respirators. With the 3M™ Cleaning and Storage Kit TR-653 installed, the TR-600 can now be rinsed under running water, submersed in water, or put in a respirator washer for further cleaning. Blowers which have been dropped or damaged should not be immersed or put into a respirator washer due to potential water ingress, and subsequent damage to the system. NOTE: Gaskets should be replaced every 30 uses or yearly, whichever comes first, to minimize use of worn gaskets.

Water temperature should not exceed 122°F (50°C).

Avoid tumbling or agitation style washers.

Only tray-style washers should be used. Avoid washers with exposed heating elements (such as most dishwashers).

Always inspect the respirator following cleaning and disinfection.

Cleaning and Disinfection: Additional Guidance

Submersion Cleaning (3M™ Versaflo™ TR-600 Powered Air Purifying Respirator only). 3M™ Versaflo™ TR-300+ Powered Air Purifying Respirator CANNOT be submerged or rinsed under running water.

Only the following TR-600 PAPR items may be submerged:

- Filter Covers
- Belts
- Breathing Tubes
- TR-600 PAPR and battery using the 3M™ Cleaning and Storage Kit TR-653

With the blower inlet and outlet plugs installed the TR-600 PAPR has an International Protection or Ingress Protection (IP) rating of IP67 (EN 60529: 1992). The TR-600 batteries also have an IP67 rating with the cleaning strap installed. The IP67 rating indicates the unit is protected against infiltration of dusts and water that would interfere with normal operation when immersed in water up to 1 meter (3 feet) for up to 30 minutes. However, best practice would be to limit immersion to the shallowest depth and shortest time required for effective cleaning.

- If submersion cleaning is desired, remove the filter/cartridge and breathing tube. To minimize material falling onto the motor/blower, remove the filter/cartridge and breathing tube while each of those connections are facing downward. Attach the air inlet and air outlet cleaning and storage plugs (3M™ Cleaning and Storage Kit TR-653) into the TR-600. The TR-600 can now be rinsed under running water, submersed in water, or put in a respirator washer for further cleaning.
- If needed, the battery strap included with the 3M™ Cleaning and Storage Kit TR-653 can be used to protect the pads during cleaning. With the strap in place, the battery can now be rinsed under running water, immersed, or put in a respirator washer for further cleaning.
- Blowers which have been dropped or damaged should not be immersed or put into a respirator washer due to potential water ingress, and subsequent damage to the system.
- NOTE: The plug gaskets and battery strap should be inspected for damage and wear prior to each use. Worn or damaged gaskets must be replaced. Washing the TR-600 while using damaged plug gaskets may cause damage to the TR-600 and void the warranty. Plug gaskets should be replaced every 30 uses or yearly, whichever comes first, to minimize use of worn gaskets.

Water temperature should not exceed 122°F (50°C).

Always inspect the respirator following cleaning and disinfection.

Storage & Maintenance

How will the respirator and components be stored?

Considerations for successful adoption and use:

- Storage procedures and assuring availability.
- Assurance of job duties for transportation and storage is clear and defined.

Motor/Blower

- Store in a clean, contaminant free environment, protected from prolonged exposure to heat, sunlight, radiation and chemicals.
- For prolonged storage, the motor/blower should be run at least once per year for 5 minutes to ensure continued proper lubrication of the motor.
- NOTE: Respirators used for emergency purposes must be inspected monthly per OSHA 29CFR1910.134. This should include running the motor/blower.

Filters and Filter Accessories

- HE filter, prefilter, and spark arrestor/prefilter should be stored at temperatures and conditions similar to the motor/blower.
- Store the filter and spark arrestors in the original 3M packaging until ready for installation in the motor/blower.
- HE filters should not be stored long-term on the motor/blower as this may damage the filter gasket.
- HE filters have a shelf life of 5 years when stored in their original packaging.

Battery Pack

- Refer to the appropriate Chargers and Battery Packs User Instructions and Technical Data Bulletin 223 Battery Maintenance for 3M™ Versaflo™ Respirators for additional information.
- Battery packs should be charged immediately and fully upon receipt.
- The battery should be fully recharged after each use and at least every 9–12 months depending on the battery.
- Recommended storage conditions: -22° F (-30° C) to 122° F (50° C); Optimal: 59° F (15° C). Dry conditions, relative humidity < 85%.
- The battery pack may be stored on the charger. The battery pack should be disconnected from the motor/blower during storage.

Headtops

- Hang your S-Series hood or headcover by the loop sewn into the top of the hood or lay it flat. Never fold or crush the visor.
- Store products in a clean area that is protected from contamination, damage, dirt, debris, product distortion, UV, and direct sunlight. Do not store next to furnaces, ovens, or other sources of high heat. Do not store outside the recommended storage temperature conditions (see Specifications Section) or above 90% humidity.

Plan your protocol

Engaging Champions

Determine how you will train and educate your staff on the protocols for use of the 3M™ PAPRs. To help, consider the role of a champion and key attributes they will possess.

Who are the champions?	Who will train?	Training date?

Key attributes

- ☐ Supervisor.
- ☐ Product superuser.
- ☐ Familiar with the department requiring training (e.g., central sterilization or ICU).

"champions are crucial to effective healthcare-related implementation..."[7]

Responsibilities

- ☐ Influence, motivate, and facilitate change in others.
- ☐ Demonstrate commitment, promoting innovation with passion and persistence, and effective team-building ability.[7]
- ☐ Train and educate staff on the Organizational Leaders decided protocols for use.
- ☐ Ongoing implementation support.

Worksheet

3M™ PAPR Protocol

Where are PAPRs worn	
Use of PAPR Assembly	
Cleaning and Disinfection	
Cleaning and Disinfection	
Filter Replacement	
Storage	

Individually Assigned	Yes		No		
Shared Use	Yes		No		

User responsibililty	Yes		No		
Facility Responsibility	Yes		No		

Champions	**Champion Name**	**Training Date/Time**	**Staff Training Dates/Times**

Other Facility Specific Guidance	

Section 2

Train your champions

With your champions identified, it is now time to arm them with tools to lead implementation in your facility. Champions influence, motivate, educate, help navigate the process and answer questions for supporting staff during the Deploy phase. This phase will help ensure the entire team is set up for success.

What you'll find in this section:

- Training documents to help educate staff on the use of their PAPRs
  - PAPR respirator use
    - Training videos
    - Protocol review
- In-service presentation

This guide will lead you through resources available for successful implementation. While the guide is extensive, it is not all-inclusive, meaning other resources and guidance do exist. Many have been noted in the appendix at the end of this document.

Information is current as of September 2021 and is based on current United States federal and Canadian provincial and federal requirements. Other local, state, provincial, national, and international requirements may be applicable, and are subject to change. The facility (employer) is ultimately responsible for determining the suitability of personal protective equipment (PPE) and cleaning and disinfecting procedures for their workplace.

Where are PAPRs worn					
Use of PAPR Assembly	Individually Assigned	Yes		No	
	Shared Use	Yes		No	
Cleaning and Disinfection	User responsibililty	Yes		No	
	Facility Responsibility	Yes		No	
Cleaning and Disinfection					
Filter Replacement					
Storage					

Champions	**Champion Name**	**Training Date/Time**	**Staff Training Dates/Times**

Other Facility Specific Guidance	

PAPR In-Service Training Modules

Now that you reviewed your facility protocol, and reviewed PAPR use, you are now ready for in-service product training.

The training videos below are intended to provide general guidance and may serve as a resource.

3M™ Versaflo™ Easy Clean PAPR Kit TR-300N+ ECK Training Module

- This training presentation covers: selection, parts overview, pre-use inspection & check, assembly and disassembly, donning and doffing and cleaning and storage (with imbedded videos on cleaning)
- https://multimedia.3m.com/mws/media/1875144O/training-presentation-msd-3m-versaflo-easy-clean-papr-kit-tr-300n-eck.pptx

3M™ Versaflo™ TR-600 PAPR Product Training

- This training presentation covers: Respiratory Protection Overview, TR-600 Overview, Other Components, Inspection, Airflow Check, Assembly, Donning and Cleaning and Storage
- https://multimedia.3m.com/mws/media/1601221O/3m-versaflo-tr-600-papr-training-healthcare.pdf

PAPR Instructional Videos

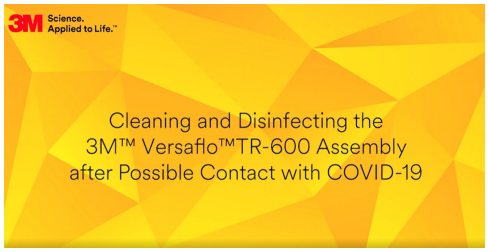
3M™ Versaflo™ PAPR TR-300+ Instructional Video. This video covers:

- System assembly
- HE filter expiry date verification, HE filter inspection and installation
- Battery charge status and connection to the blower
- Turning on and start-up sequence
- Airflow check and low flow alarm check
- Connecting the breathing tube to the blower and headtop
- Donning
- Airflow selection
- Interim surface cleaning and disinfection
- https://multimedia.3m.com/mws/media/1568692O/3m-versaflo-papr-assembly-tr-300-video.mp4

3M™ Versaflo™ PAPR TR-600 Instructional Video. Note: Interim surface cleaning and disinfection is not covered in this video. This video covers:

- System assembly
- HE filter insertion into filter cover and connection to the blower
- Belt attachment
- Battery charge status and connection to the blower
- Turning on and start-up sequence
- Airflow check and low flow alarm check
- Connecting the breathing tube to the blower
- Airflow selection
- Connecting the breathing tube to the headtop
- Battery chargers and charging
- Matching filters/cartridges to the corresponding filter cover
- Filter inspection
- Installation of optional pre-filters or spark arrestor (required for hot work)
- Turning off
- Disassembly
- Installation of cleaning and storage plugs
- https://multimedia.3m.com/mws/media/1410599O/evolve-to-tr-600-assembly-full.mpassembly-tr-300-video.mp4

Cleaning and disinfecting 3M™ Versaflo™ TR-600/TR-300+ PAPRAssembly after possible contact with Coronavirus Video. This video covers:



- Cleaning
- Disinfection
- Rinsing
- https://multimedia.3m.com/mws/media/1813618O/cleaning-and-disinfecting-the-3m-versaflo-tr-600-english-sd.mp4

Donning and Doffing Personal Protective Equipment (PPE) with a PAPR Ensemble. This video covers:

- https://multimedia.3m.com/mws/media/1814378O/donning-and-doffing-ppe-for-healthcare-environments-papr-hd.mp4
- Demonstrated donning and doffing procedures with the help of a trained observer and includes hand hygiene.
- Turning on and start-up sequence
- Airflow check
- Connecting the breathing tube to the blower and donning the blower
- Donning a gown or coverall and verification of PAPR air inlet
- Connecting the breathing tube to the headtop and donning the headtop (single and double shroud guidance)
- Donning additional PPE
- Doffing

Section 3

Resource Hub

This guide will lead you through resources available for successful implementation. While the guide is extensive, it is not all-inclusive, meaning other resources and guidance may exist.

Information is current as of September 2021 and is based on current United States federal and Canadian provincial and federal requirements. Other local, state, provincial, national, and international requirements may be applicable, and are subject to change. The facility (employer) is ultimately responsible for determining the suitability of personal protective equipment (PPE) and cleaning and disinfecting procedures for their workplace.

Resources for PAPR Assemblies:

Item	3M™ Versaflo™ TR-300+ PAPR	3M™ Versaflo™ TR-600 PAPR
User Manual	https://multimedia.3m.com/mws/media/1276771O/3m-versaflo-chargers-and-battery-packs-for-the-papr-tr-300-tr-300-assemblies-user-instructions.pdf	https://multimedia.3m.com/mws/media/1427970O/3m-versaflo-papr-tr-600-series-user-instructions.pdf
User Manual for Batteries and Chargers	https://multimedia.3m.com/mws/media/1276771O/3m-versaflo-chargers-and-battery-packs-for-the-papr-tr-300-tr-300-assemblies-user-instructions.pdf	https://multimedia.3m.com/mws/media/1082570O/3m-versaflo-chargers-and-battery-packs-for-papr-tr-600-assemblies-user-instructions.pdf
Battery and Charger Guidance	https://multimedia.3m.com/mws/media/1000747O/battery-maintenance-for-3m-versaflo-respirator-system-technical-bulletin.pdf	https://multimedia.3m.com/mws/media/1000747O/battery-maintenance-for-3m-versaflo-respirator-system-technical-bulletin.pdf
Care and Maintenance Poster	https://multimedia.3m.com/mws/media/1653502O/versaflo-tr-300-series-parts-and-accessories.pdf	https://multimedia.3m.com/mws/media/1020096O/70-0716-7142-7-versaflo-tr-600-exploded-view-poster.pdf
Quick Start Guide	https://multimedia.3m.com/mws/media/1599688O/3m-versaflo-papr-assembly-tr-300-with-hoods-and-headcovers-quick-start-guide.pdf	https://multimedia.3m.com/mws/media/1000746O/3m-versaflo-tr-600-quick-start-guide.pdf
Technical Specifications	https://multimedia.3m.com/mws/media/1674704O/3m-versaflo-tr-300-papr-assemblies-technical-specifications.pdf	https://multimedia.3m.com/mws/media/1000749O/3m-versaflo-tr-600-technical-specifications.pdf
Training Presentation	https://multimedia.3m.com/mws/media/1875144O/training-presentation-msd-3m-versaflo-easy-clean-papr-kit-tr-300n-eck.pptx or https://multimedia.3m.com/mws/media/1611317O/3m-versaflo-papr-tr-300n-systems-healthcare.pdf	https://multimedia.3m.com/mws/securemedia/1932362O/3m-versaflo-tr-600-product-training-presentation.pptx or https://multimedia.3m.com/mws/media/1601221O/3m-versaflo-tr-600-papr-training-healthcare.pdf
Instructional Video	https://multimedia.3m.com/mws/media/1568692O/3m-versaflo-papr-assembly-tr-300-video.mp4	https://multimedia.3m.com/mws/media/1410599O/evolve-to-tr-600-assembly-full.mp4
Cleaning Video	https://multimedia.3m.com/mws/media/1813049O/cleaning-and-disinfecting-the-3m-versaflo-tr-300-english-sd.mp4	https://multimedia.3m.com/mws/media/1813618O/cleaning-and-disinfecting-the-3m-versaflo-tr-600-english-sd.mp4

Item	3M™ Versaflo™ TR-300+ PAPR	3M™ Versaflo™ TR-600 PAPR
Inspection, Cleaning, and Storage Procedures for 3M™ Versaflo™ PAPR TR-300, TR-300+, and TR-600	https://multimedia.3m.com/mws/media/1758484O/inspection-cleaning-storage-procedures-for-3m-versaflo-tr300-tr300-tr600-technical-bulletin.pdf	
Cleaning and Disinfecting 3M™ Versaflo™ Powered Air Purifying Respirator Assemblies following Potential Exposure to Coronaviruses	https://multimedia.3m.com/mws/media/1793956O/cleaning-and-disinfecting-3m-paprs-following-potential-exposure-to-coronaviruses.pdf	
3M™ PAPR Comparison Chart	https://multimedia.3m.com/mws/media/1290291O/versaflo-tr-300-vs-tr-600-chart.pdf	

Resources for PAPR Hoods and Headtops:

Item	3M™ Versaflo™ S-Series Headgear	3M™ Versaflo™ M-Series Hoods and Headcovers
User Manual	https://multimedia.3m.com/mws/media/597769O/3m-versaflo-s-series-hoods-and-headcovers-user-instructions.pdf	https://multimedia.3m.com/mws/media/707590O/3m-versaflo-m-series-headgear-user-instructions.pdf
Care and Maintenance Poster		M-200: https://multimedia.3m.com/mws/media/1604485O/70-0716-9769-5-versaflo-series-poster-m-200.pdf M-300: https://multimedia.3m.com/mws/media/801316O/3mtm-versaflotm-m-300-series-parts-and-accessories-poster.pdf M-400: https://multimedia.3m.com/mws/media/801314O/3mtm-versaflotm-m-400-series-parts-and-accessories-poster.pdf

Item	3M™ Versaflo™ S-Series Headgear	3M™ Versaflo™ M-Series Hoods and Headcovers
Technical Specifications	https://multimedia.3m.com/mws/media/1601193O/3m-s-series-hoods-and-headcovers-technical-specifications.pdf Liquid Permeation bulletin: https://multimedia.3m.com/mws/media/704791O/3m-versaflo-s-series-hoods-liquid-permeation-tdb.pdf	https://multimedia.3m.com/mws/media/708254O/3m-versaflo-m-series-headgear-technical-specifications.pdf
Inspection, Cleaning, and Storage Procedures		https://multimedia.3m.com/mws/media/774950O/inspection-cleaning-and-storage-procedures-for-3m-versaflo-m-series-headgear-technical-bulletin.pdf
Cleaning and Disinfecting following Potential Exposure to Coronaviruses	https://multimedia.3m.com/mws/media/1793956O/cleaning-and-disinfecting-3m-paprs-following-potential-exposure-to-coronaviruses.pdf	https://multimedia.3m.com/mws/media/1853996O/cleaning-and-disinfecting-m-series-headgear-following-potential-exposure-to-coronaviruses.pdf

Additional Resources:

- 3M Worker Safety COVID-19 Website: https://www.3m.com/3M/en_US/worker-health-safety-us/covid19/
- 3M Technical Bulletin: Respiratory Protection for Airborne Exposures to Biohazards: https://multimedia.3m.com/mws/media/409903O/respiratory-protection-against-biohazards.pdf
- Respiratory Protection for Hydrogen Peroxide, Peracetic Acid and Acetic Acid : https://multimedia.3m.com/mws/media/1625482O/respiratory-protection-for-hydrogen-peroxide-peracetic-acid-and-acetic-acid-technical-bulletin.pdf
- Find a 3M PPE Sales Rep: https://www.3m.com/3M/en_US/worker-health-safety-us/safety-equipment-support/find-a-rep/find-a-3m-sales-rep/
- OSHA Respiratory Protection Standard: https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134
- OSHA Hospital Respiratory Protection Program Toolkit: https://www.osha.gov/sites/default/files/publications/OSHA3767.pdf
- CSA Standard access: https://community.csagroup.org/login.jspa?referer=%252Findex.jspa
- AIHA: https://www.aiha.org/
- CDC COVID-19: https://www.cdc.gov/coronavirus/2019-ncov/index.html
- EPA List-N: https://www.epa.gov/coronavirus/about-list-n-disinfectants-coronavirus-covid-19-0
- Health Canada Hard-surface disinfectants and hand sanitizers (COVID-19): List of disinfectants with evidence for use against COVID-19: https://www.canada.ca/en/health-canada/services/drugs-health-products/disinfectants/covid-19/list.html
- The National Academy of Science (NAS) Institute of Medicine (IOM) The Use and Effectiveness of Powered Air Purifying Respirators in Health Care: Workshop Summary. http://iom.nationalacademies.org/
- OSHA Emergency Temporary Standard for Healthcare. https://www.osha.gov/coronavirus/ets

We hope these materials will serve as a resource for implementation for your facility. If you have questions about 3M™ Versaflo™ PAPRs, please connect with your supervisor, program administrator or contact your 3M Account Manager.

References

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7. Hendy J, Barlow J. The role of the organizational champion in achieving health system change. Social Science & Medicine. 2012; 74(3): 348–355.
8. OSHA Emergency Temporary Standard for Healthcare. https://www.osha.gov/coronavirus/ets

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