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Technical Bulletin

June 2024

Care, Maintenance, and Cleaning Procedures for 3M™ Versaflo™ Faceshields and Helmets (M-Series)

Disclaimer

This document provides a general overview of 3M™ Versaflo™ Faceshields and Helmets M-Series care, maintenance and cleaning.

Local country or regional regulations and guidance varies, and the responsibility for the correct implementation of Personal Protective Equipment (PPE) care, maintenance and cleaning in compliance with local country or regional regulations, lies with the employer.

It is also important to follow the specific product user instructions.

It is also the employer's responsibility to ensure that the PPE is adequately cleaned to remove all hazardous contaminants before next use. This may include inspecting the product for areas where contaminant may have become trapped during the cleaning process and/or not removed adequately.

Why is care, maintenance, and cleaning important?

3M's recommended care and maintenance procedures can help ensure the product continues to provide the expected level of respiratory protection and maintain the effective lifetime of the product. Poor care and maintenance practices can result in additional costs to replace the product.

In some countries, inspection, cleaning, care and maintenance of reusable items of Personal Protective Equipment (including respirators) is mandatory.

General care, maintenance, and cleaning guidance

The need for care, maintenance, and cleaning will depend on the use of the product, the application, the employer's risk assessment, and any applicable local legislation.

However, 3M's recommendation is that general inspection and maintenance should be conducted before each use. When not in regular use, 3M suggests a monthly inspection and maintenance service.

Depending on the application and the contaminant that the product has been exposed to, cleaning may be required. Cleaning methods could include wiping the product down or using a respirator washer.

⚠ WARNING

When cleaning, it is important to be aware of the following:

- Do not use organic solvents (i.e. toluene, paint thinner) or abrasive cleaners as they may weaken and damage the plastic.
- All components must be rinsed to remove any residuals, then dried before use.
- Exceeding 50 ºC during the washing and/or drying process can degrade the plastics used in the helmets. This can reduce the protection provided by the helmets.

- Scents, fragrances and colouring agents added to cleaning products can have a detrimental effect on plastics. It is best to use pH neutral cleaning solutions that are free from scents, fragrances and colouring agents to reduce the risk of damaging the components of the helmets.

Cleaning - Wiping

Warm water with fragrance-free liquid household soap or pH neutral detergent

The following parts can be wiped down with a clean cloth/sponge dampened with a mild solution of warm water and fragrance-free liquid household soap or pH neutral detergent:

- Helmet shells
- Visors
- Visor frame
- Other plastic parts
- Head suspensions including webbing
- Certain faceseals and other components referred to in the "Inspecting and Cleaning" sections.

The water temperature must not exceed 50 ºC and all parts should be rinsed and dried inside and out thoroughly before storage or reuse.

Solvents

Cleaning with solvents can cause damage to plastic components including cracking, crazing, fogging, fading, and decreased strength and capability to withstand impact and penetration.

In order to determine the effect of cleaning with solvents and cleaners on the M-Series Headgear, 3M wiped a small number of visors and M- 300/400 headgear shells with a limited number of number of materials and examined them for signs of damage and changes in performance.

Further information on this testing can be found in *Technical Data Bulletin TDB # 196 Inspection, Cleaning and Storage Procedures for 3M™ Versaflo™ M-Series Headgear Assemblies*: https://multimedia.3m.com/mws/media/774950O/inspection-cleaning-and-storage-procedures-for-3m-versaflo-m-series-headgear-technical-bulletin.pdf?&fn=TDB196-MSeries-Maint-v1_R3.pdf.

The information in TDB #196 can be used as a guide for selecting alternate cleaning agents for use on a limited basis. Routine cleaning of plastic components with solvents or more aggressive materials can gradually cause plastics to weaken and lessen its ability to withstand impact. Users should thoroughly inspect the headgear following the cleaning cycle, looking for signs of cracking, fading, fogging, and other visual changes or damage before storage and next use and replace any damaged components.

Cleaning - Respirator Washer

Certain M-Series Faceshields and Helmets may be washed in certain commercial respirator washers and dryers. TDB #196 provides further information on using a Georgia Steel model GS 1200 respirator washer and model GS 3000 dryer: https://multimedia.3m.com/mws/media/774950O/inspection-cleaning-and-storage-procedures-for-3m-versaflo-m-series-headgear-technical-bulletin.pdf?&fn=TDB196-MSeries-Maint-v1_R3.pdf.

Alternatively, limited testing has been conducted on M-306 Helmets using a Meiko TopClean M respirator cleaning and disinfection machine including a GiO module using a specific wash cycle and a maximum temperature of 50°C. See more information at https://multimedia.3m.com/mws/media/2413524O/3m-versaflo-headtops-with-the-meiko-topclean.pdf.

The helmets were partially dissembled for washing. Faceseals and/or shrouds were removed and were **not** washed and dried as part of this test. See the relevant inspection and cleaning information in this document for more information on faceseals and shrouds.

The helmets showed no visual signs of degradation and no issues were observed. The helmets were tested for visor and helmet shell impact. All helmets tested continued to meet the requirements of the respective EN standards.

General Inspection of the Helmet Shell

The helmet shell should be inspected for signs of damage or wear, including dents, cracks, colour changes, chalking, fading, flaking and penetration. The helmet shell is not a replaceable component so the entire headtop must be replaced if signs of wear and/or damage are discovered.

Headtops that have been subjected to a severe impact must be replaced.

Inspecting and cleaning the M-957 Forehead Sweat Pad

The M-957 should be inspected for signs of damage and wear and be replaced if required.

The M-957 can be washed or laundered with a mild detergent. Ensure the part is completely dry and undamaged before use.

Follow the link to see how to remove and install the forehead sweat pad: multimedia.3m.com/mws/media/2100990O/3m-psa-m-series-htav-m-957-forehead-comfort-sweat-pad-components-how-to-video.mp4.

Inspecting and cleaning the M-935 and M-936 Faceseals

The M-935 and M-936 faceseals should be inspected for signs of damage and wear, including tears, holes, stretched elastic, gaps in the seams or damage to stitching. The rubber gasket should be inspected for tears or other damage and it should be pliable not brittle. The faceseal should be replaced if required.

The M-935 and M-936 faceseals can be wiped with a clean cloth/sponge dampened with a mild solution of warm water and fragrance-free liquid household soap or pH neutral detergent. The faceseal cannot be soaked, laundered or put in a respirator washer.

Follow the link to see how to remove and install a faceseal: multimedia.3m.com/mws/media/2075074O/3m-versaflo-m-series-headgear-face-seal-replacement.mp4.

Inspecting and cleaning M-937 Faceseals

The M-937 faceseal should be inspected for signs of damage and wear, including tears, holes, stretched elastic, gaps in the seams or damage to stitching. The rubber gasket should be inspected for tears or other damage and it should be pliable not brittle. The faceseal should be replaced if required.

The M-937 faceseal cannot be cleaned as doing so may affect their flame-resistant properties. The faceseal must be replaced if dirty.

Follow the link to see how to remove and install a faceseal: multimedia.3m.com/mws/media/2075074O/3m-versaflo-m-series-headgear-face-seal-replacement.mp4.

Inspecting and cleaning M-447 Outer Shroud

The M-447 outer shroud should be inspected for signs of damage and wear, including tears, holes, stretched elastic, gaps in the seams or damage to stitching. The rubber gasket should be inspected for tears or other damage and it should be pliable not brittle. The outer shroud should be replaced if required.

The M-447 can be wiped with a clean cloth/sponge dampened with a mild solution of warm water and pH neutral detergent. Alternatively, the M-447 shroud can be laundered with a mild pH neutral detergent. The shroud should be laundered separately from any other fabrics to prevent contamination with lint from flammable fibres. Do not use chlorine bleach or soaps. Soap scum may be flammable and could adversely affect the thermal protective performance of the material.

Follow the link to see how to remove and install a shroud: multimedia.3m.com/mws/media/2075075O/3m-versaflo-m-series-headgear-inner-collar-and-shroud-replacement.mp4.

Inspecting and cleaning M-448 Outer Shroud

The M-448 outer shroud should be inspected for signs of damage and wear, including tears, holes, gaps in the seams or damage to stitching. The rubber gasket should be inspected for tears or other damage and it should be pliable not brittle. The outer shroud should be replaced if required.

The M-448 outer shroud can be wiped with a clean cloth/sponge dampened with a mild solution of warm water and fragrance-free liquid household soap or pH neutral detergent. Alternatively, the M-448 shroud can be laundered with a mild pH neutral detergent.

Follow the link to see how to remove and install a shroud: multimedia.3m.com/mws/media/2075075O/3m-versaflo-m-series-headgear-inner-collar-and-shroud-replacement.mp4.

Inspecting and cleaning M-444 Inner Collar

The M-444 inner collar should be inspected for signs of damage and wear, including tears, holes, stretched elastic, gaps in the seams or damage to stitching. The inner collar should be replaced if required.

The M-444 inner collar can be wiped clean with a clean cloth/sponge dampened with a mild solution of warm water and fragrance-free liquid household soap or pH neutral detergent. Alternatively, the M-444 can be laundered with a mild pH neutral detergent. Fabric conditioner should not be used.

Follow the link to see how to remove and install the inner collar: multimedia.3m.com/mws/media/2075075O/3m-versaflo-m-series-headgear-inner-collar-and-shroud-replacement.mp4.

Inspecting and cleaning M-972 Flame Resistant Headcover

The M-972 flame resistant headcover should be inspected for signs of damage and wear, including tears, holes, stretched elastic, gaps in the seams or damage to stitching. The rubber gasket should be inspected for tears or other damage and it should be pliable not brittle. The flame resistant headcover should be replaced if required.

The M-972 headcover cannot be cleaned as doing so may affect its flame-resistant properties. The headcover must be replaced if dirty.

Inspecting and cleaning the M-976 Head, Neck and Shoulder Cover

The M-976 head, neck and shoulder cover should be inspected for signs of damage and wear, including tears, holes, stretched elastic, gaps in the seams or damage to stitching. The rubber gasket should be inspected for tears or other damage and it should be pliable not brittle. The head, neck and shoulder cover should be replaced if required.

The M-976 head, neck and shoulder cover may be wiped with a clean cloth/sponge dampened with a mild solution of warm water and fragrance-free liquid household soap or pH neutral detergent.

Follow the link to see how to remove and install the head, neck and shoulder cover: multimedia.3m.com/mws/media/2100984O/3m-psa-m-series-m-976-head-neck-and-shoulder-cover-components-how-to-video.mp4.

Inspection and replacement of other parts

For the products listed in this section, see Cleaning - Wiping and Cleaning - Respirator Washer for cleaning advice.

M-925 or M-927 Visor

The M-925 and M-927 visor should be inspected for damage including scratches or other visual distortions that could make it difficult to see through the visor. Visor should also be inspected for signs of warping or cracks.

If needed, the visor can be replaced: multimedia.3m.com/mws/media/2075077O/3m-versaflo-m-series-headgear-visor-replacement.mp4.

M-921 Visor Gasket

The M-921 visor gasket should be inspected for damage including tears. The gasket should be pliable not brittle. It should make contact with the helmet shell when the visor is in the down (closed) position.

If needed, the gasket can be replaced: multimedia.3m.com/mws/media/2075078O/3m-versaflo-m-series-headgear-visor-gasket-replacement.mp4.

M-920 Visor Frame and M-960 Pivot Kits

The M-920 visor frame and M-960 pivot kits should be inspected for damage. The visor frame should remain firmly in the up (open) and down (closed) position.

If needed, the visor frame and pivot kits can be replaced: multimedia.3m.com/mws/media/2100992O/3m-psa-m-series-m-920-visor-frame-and-m-960-replacement-visor-pivot-kit-components-how-to-video.mp4.

M-154 and M-353 Forehead Seal

The M-154 and M-353 forehead seals should be inspected for damage including rips, tears and holes.

If needed, the forehead seals can be replaced: multimedia.3m.com/mws/media/2100991O/3m-psa-m-series-m-154-replacement-forehead-seal-components-how-to-video.mp4.

M-956 Size Reducing Comfort Pad

The M-956 size reducing comfort pad should be inspected for damage.

If needed, the size reducing comfort pad can be replaced: multimedia.3m.com/mws/media/2100989O/3m-psa-m-series-htav-m-956-size-reducing-comfort-pad-components-how-to-video.mp4.

M-150 Head Suspension (used in the M-200 Faceshield)

The M-150 head suspension should be inspected for damage, including cracks, rips or fading. The web straps should also be inspected for rips, tears, fraying, fading or signs of wear.

If needed, the head suspension can be replaced: multimedia.3m.com/mws/media/2092378O/how-to-assemble-the-3m-versaflo-m-series-m-150-head-suspension.mp4.

M-350 Head Suspension (used in the M-300 and M-400 Helmet)

The M-350 head suspension should be inspected for damage, including cracks, rips or fading. The web straps should also be inspected for rips, tears, fraying, fading or signs of wear.

If needed, the head suspension can be replaced: multimedia.3m.com/mws/media/2092377O/how-to-assemble-the-3m-versaflo-m-series-m-350-head-suspension.mp4.

M-441 Jaw Gasket (used in the M-400 Helmet)

The M-441 jaw gasket should be inspected for damage including tears. The gasket should be pliable not brittle.

If needed, the jaw gasket can be replaced: multimedia.3m.com/mws/media/2100988O/3m-psa-m-series-htav-m-441-replacement-jaw-gasket-components-how-to-video.mp4.

M-116 and M-316 Airflow Deflector

The M-116 and M-316 airflow deflector should be inspected for damage.

If needed, the airflow deflector can be replaced: multimedia.3m.com/mws/securemedia/2100987O/3m-psa-m-series-htav-m-116-m-316-airflow-deflectors-components-how-to-video.mp4.

Storage

The M-Series Faceshields and Helmets should be stored in dry, clean conditions away from sources of high temperature and petrol and solvent vapours.

Do not store outside the temperature range -30°C to +50°C or with humidity above 90%.

⚠ **WARNING**

Do not store in direct sunlight.

Before Next Use

After completing the steps listed above and before next use, the M-Series Faceshields and Helmets should be checked to ensure they are complete, undamaged and correctly assembled. Follow the pre-use checks in the User Instructions.

Maximum Life (shelf-life plus in-use life)

The maximum life (shelf-life plus in-use life) is 5 years from the date of manufacture.

The helmet shell has a moulded date of manufacture, which must be used when calculating the maximum life.

The in-use life will vary with frequency and conditions of use. Faceshields and helmets subjected to more wear and tear or use outdoors in direct sunlight may need to be replaced more frequently than faceshields or helmets used indoors. Any faceshield or helmet showing signs of damage should be removed from use and serviced or replaced as appropriate.

Additional Information

Further information and videos on care and maintenance of 3M™ Powered Air Systems can be found on the 3M website: Versaflo Maintenance & Care Video Library | Respiratory Protection | 3M - US.

Certain videos from the website have also been linked in the appropriate section of this document.

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