3M Reusable Respirators Technology Innovations Over the Years

1977
3M offers the first reusable "Maintenance-Free" Half Facepiece Respirator

1987
3M designs and develops the "bayonet-style" cartridge connection

1989
3M manufactures a "swept-back" designed cartridge for its 5000 Series Facepiece for better peripheral vision and weight distribution

1991
3M develops first disc filters with loaded web filter media—the first non-woven, non-fiberglass filters

1992
3M develops and incorporates a new integral filter technology in its 4000 Series Facepiece, creating a lighter weight respirator

As 3M’s latest advancement in respiratory protection, the lightweight Ultimate FX FF-400 was developed to provide maximum comfort and durability with unique features that make it the optimal choice for a variety of industrial applications:

Large Lens Featuring Scotchgard™ Protector
- Paint and stain-resistant lens—3M’s exclusive Scotchgard™ coating causes some paints and stains to bead up on the surface so they can be wiped off easily
- Helps lens stay clearer during some spray applications
- Provides a wide field of view

Durable, Long-lasting Head Harness
- Features a six-strap configuration for a secure fit
- Harness straps pulled over one million times in development durability testing

Comfort Cradle
- Positions the respirator more comfortably on the head

Soft, Silicone Nose Cup and Faceseal
- Engineered for maximum durability, comfort and resilience
- Three sizes help the respirator fit a broad range of face shapes and sizes

Easy to Use
- Respirator attachments twist on and off easily for quick assembly and disassembly

Bonded Silicone Gaskets
- Eliminates loose gaskets that can be lost

Passive Speaking Diaphragm
- Optimally positioned for clearer and easier communications

Cool Flow™ Valve
- Allows for easier breathing
- Reduces heat and moisture buildup for cool, dry comfort

3M™ Ultimate FX Full Facepiece Reusable Respirator FF-400 Series
Comfortable, durable protection for demanding, X-treme conditions
3M™ Full Facepiece Reusable Respirator 6000 Series

Reliable, convenient, compatible protection

- Unique center adapter directs exhaled breath and moisture downward, and helps reduce debris from depositing in the valve. Smooth surface allows for quick and easy cleaning
- Large lens provides wide field of view and excellent visibility
- 3M™ Cool Flow™ Valve helps provide cool, dry comfort
- Meets requirements of ANSI Z87.1-2003 for high impact (Z87+)
- Lightweight, well-balanced design with silicone face seal for enhanced comfort and durability
- Available in air purifying respirator (APR), supplied air and powered air purifying respirator (PAPR) modes

3M™ Full Facepiece Reusable Respirator 7800S Series

Designed for durability and protection

- Silicone facepiece enhances fit and improves durability
- Double-flange face seal and six adjustable straps help provide a secure fit
- Can be used with a passive or electronic clip-on welding lens
- Available in air purifying respirator (APR), supplied air and powered air purifying respirator (PAPR) modes
- FR-7800B (First Responder) version available
  - Butyl rubber seal to minimize permeation
  - CBRN approved with FR-15-CBRN

3M develops first rectangular filter with unique seal-check capabilities
3M develops first HF P100 nuisance OV filter. Offers lowest breathing resistance on the market
3M develops first Full Facepiece Respirator with Scotchgard™ coating, overmolded gaskets, and comfort head cradle

3M launches its 6000 Series Full Facepiece Respirator offering best-in-class field of view and lightweight characteristics
3M introduces Cool Flow™ Valve for reduced heat and moisture in the 7500 Half Facepiece Respirator
3M develops easier breathing, longer lasting disc filters

3M™ Half Facepiece Reusable Respirator 7500 Series

Easy breathing, comfort and durability

**Soft Seal Design**
- Advanced silicone material provides a softer feel on the face
- Unique adjustment design helps reduce tension and pressure points on the face for unsurpassed comfort

**Cool Flow™ Valve**
- Valve design helps make breathing easier
- Helps reduce heat and moisture buildup for cool, dry comfort

**Unique Exhalation Valve Cover**
- Directs exhaled breath and moisture downward
- Smooth surface allows for quick and easy cleaning
- Helps reduce debris from depositing in valve area

**Dual-mode Head Harness**
- Adjusts easily so user has the option to wear the respirator in either traditional or drop-down mode

**Adjustable Head Cradle**
- Allows wearer to adjust for optimum fit and comfort
Standard Drop-down

• Easy to use and convenient
• Pre-assembled with permanently attached cartridges; no maintenance necessary
• Facepiece is made from soft, lightweight material
• Ideally suited for:
  - Intermittent respirator use
  - Plant shutdowns and turnarounds
  - Dirty applications where respirators wear out or become difficult to clean in a short time

Facepiece is made from soft, lightweight material
Available with a standard or drop-down head harness option. Drop-down model allows wearers to lower the respirator without removing hard hat or faceshield
Head harness assembly and spare parts are available

3M™ Half Facepiece Disposable Respirator 5000 Series

Balanced design, disposable convenience

• Easy to use and convenient
• Pre-assembled with permanently attached cartridges; no maintenance necessary
• Facepiece is made from soft, lightweight material
• Ideally suited for:
  - Intermittent respirator use
  - Plant shutdowns and turnarounds
  - Dirty applications where respirators wear out or become difficult to clean in a short time
### Identify the Hazards

<table>
<thead>
<tr>
<th>Applications and Industries</th>
<th>Potential Hazards</th>
<th>Cartridge/Filter Options*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spray Painting, Varnishing, Staining &amp; Coating</td>
<td>Solvent-based</td>
<td>OV/P95</td>
</tr>
<tr>
<td></td>
<td>Water-based Latex</td>
<td>Nuisance OV*/P95</td>
</tr>
<tr>
<td>Sanding &amp; Grinding</td>
<td>Particulate</td>
<td>N95</td>
</tr>
<tr>
<td>Welding</td>
<td>Weld Fume</td>
<td>N95</td>
</tr>
<tr>
<td></td>
<td>Stainless Steel &amp; Galvanized</td>
<td>Nuisance OV**/P95</td>
</tr>
<tr>
<td>Abatement</td>
<td>Lead &amp; Asbestos</td>
<td>P100</td>
</tr>
<tr>
<td></td>
<td>Mold</td>
<td>N95 - P100/0V</td>
</tr>
<tr>
<td>Cement Work</td>
<td>Silica/Dust</td>
<td>N95</td>
</tr>
<tr>
<td>Cleaning &amp; Janitorial</td>
<td>Bleach</td>
<td>AG/P95</td>
</tr>
<tr>
<td></td>
<td>Ammonia</td>
<td>AM/MA/P95</td>
</tr>
<tr>
<td></td>
<td>General Cleaning Products</td>
<td>OV/P95</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Pesticides &amp; Insecticides</td>
<td>OV/AG/P95</td>
</tr>
<tr>
<td>Construction</td>
<td>Particulate</td>
<td>N95</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Solvents</td>
<td>OV</td>
</tr>
<tr>
<td></td>
<td>Particulate</td>
<td>N95</td>
</tr>
<tr>
<td>Pharmaceutical Manufacturing</td>
<td>Particulate</td>
<td>N95/P100</td>
</tr>
<tr>
<td>Chemical Manufacturing</td>
<td>Sulfur Dioxide, Chlorine</td>
<td>AG/P95</td>
</tr>
<tr>
<td></td>
<td>Ammonia</td>
<td>AM/MA/P95</td>
</tr>
</tbody>
</table>

*Respirator facepiece or system must be chosen based on the airborne concentration and the necessary assigned protection factor.

**Nuisance level refers to concentrations below the Occupational Exposure Limit (OEL) or other applicable government regulations, whichever is lower.

If you are uncertain of the concentration levels of contaminants or recommended levels of respiratory protection, contact the 3M Technical Service Helpline at 1-800-243-4630.

This guide is only an outline. It should not be used as the only means for selecting a respirator. Details regarding performance and limitations are set out on the respirator package and User Instructions.

Before using any of these respirators, the wearer must read and understand the User Instructions for each product.

### Select the Right Respirator

<table>
<thead>
<tr>
<th>Select the Right Respirator</th>
<th>5000</th>
<th>6000 HF</th>
<th>7500</th>
<th>6000 FF</th>
<th>7800S</th>
<th>FF-400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhanced Durability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance Free</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhanced Comfort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drop-down Feature</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3M™ Cool Flow™ Valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compatible with 3M™ Supplied Air System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compatible with 3M™ PAPR Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye Protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaking Diaphragm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spare Parts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six-point Head Harness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silicone Facesel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compatible with Welding Shield</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clip-on Welding Shield</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*6000DD Version.
Find a Combination that Works Best for You

Gas and Vapor Protection Combines Particulate and Gas and Vapor Protection

6000 HF
7500
6000 FF
7800S
Ultimate FX FF-400

Particulate Protection
Gas and Vapor Protection
Combines Particulate and Gas and Vapor Protection

Dual Airline Supplied Air Respirator

Face-mounted PAPR† (available for 6000 FF only)
Belt-mounted PAPR†

For all 6000, 7000 and FF-400 Series Respirators
For 6000 and 7000* Series Full Facepiece Respirators

†Powered Air Purifying Respirator
*Belts-mounted PAPR only
3M™ Particulate Filters and Gas/Vapor Cartridges

All 3M Particulate Filters and Gas/Vapor Cartridges can be used interchangeably with 3M™ Reusable Respirators 6000, 7000 and FF-400 Series.

**3M™ Particulate Filters 2000 Series and 2200 Series**

- Lightweight and easy to breathe through
- Assortment of filters available for a wide range of applications
- Easier breathing through new 3-layer advanced Electret Filter Media in 2200 Series Filters

**3M™ Particulate Filter 7093, P100**

- Unique, spring-loaded filter cover design simplifies negative pressure user seal checks
- Swept-back design provides enhanced field of view and greater comfort
- 7093C offers a lightweight, low profile design that combines P100 filtration with carbon-loaded features found in heavier combination cartridge products

**3M™ Gas/Vapor Cartridges 6000 Series**

- Low-profile design helps maintain good field of vision
- Full range of cartridges to meet your needs

**3M™ Combination Cartridges/P100 Particulate Filters 6000 Series**

- Particulate filter is permanently attached to cartridge for easy, one-step assembly
- Unique design for enhanced comfort and visibility

---

**For More Information**

In the United States, contact:

- Technical Assistance: 1-800-243-4630
- Customer Service: 1-800-328-1667
- Internet: www.3M.com/OccSafety

In Canada, contact:

- Technical Assistance: 1-800-267-4414
- 3M Canada Customer Care: 1-800-364-3577
- Internet: www.3M.ca/safety

---

### 3M™ Gas/Vapor Cartridges 6000 Series

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6001</td>
<td>Cartridge, Organic Vapor</td>
</tr>
<tr>
<td>6002</td>
<td>Cartridge, Acid Gas**</td>
</tr>
<tr>
<td>6003</td>
<td>Cartridge, Organic Vapor/Acid Gas**</td>
</tr>
<tr>
<td>6004</td>
<td>Cartridge, Ammonia/Methylamine</td>
</tr>
<tr>
<td>6005</td>
<td>Cartridge, Formaldehyde/Organic Vapor</td>
</tr>
<tr>
<td>6006</td>
<td>Cartridge, Multi Gas/Vapor**</td>
</tr>
<tr>
<td>6009</td>
<td>Cartridge, Mercury Vapor or Chlorine</td>
</tr>
</tbody>
</table>

### 3M™ Combination Cartridges/P100 Particulate Filters 6000 Series

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>60921</td>
<td>Cartridge/Filter, Organic Vapor/P100</td>
</tr>
<tr>
<td>60922</td>
<td>Cartridge/Filter, Acid Gas/P100**</td>
</tr>
<tr>
<td>60923</td>
<td>Cartridge/Filter, Organic Vapor/Acid Gas/P100**</td>
</tr>
<tr>
<td>60924</td>
<td>Cartridge/Filter, Ammonia/Methylamine/P100</td>
</tr>
<tr>
<td>60925</td>
<td>Cartridge/Filter, Formaldehyde/Organic Vapor/P100</td>
</tr>
<tr>
<td>60926</td>
<td>Cartridge/Filter, Multi-Gas/Vapor/P100**</td>
</tr>
<tr>
<td>60928</td>
<td>Cartridge/Filter, Organic Vapor/Acid Gas/P100**†</td>
</tr>
<tr>
<td>60929</td>
<td>Cartridge/Filter, Mercury Vapor/Chlorine Gas/P100</td>
</tr>
</tbody>
</table>

---

* 3M recommended for relief against nuisance levels of organic vapors and acid gases. Nuisance level organic vapor and acid gas refers to concentrations not exceeding OSHA PEL or applicable government occupational exposure limits, whichever is lower. Do not use for respiratory protection against acid gases or organic vapors (except hydrogen fluoride).

** Reminder: These cartridges are approved for respiratory protection from hydrogen sulfide gas up to 10 times the permissible exposure limit (PEL) with half facepiece respirators and full facepiece respirators when qualitatively fit tested, or up to less than 300 parts per million (ppm) with full facepiece respirators when quantitatively fit tested or according to specific OSHA standards or applicable government regulations, whichever is lower. 300 ppm is the concentration considered Immediately Dangerous to Life or Health (IDLH) for hydrogen sulfide.

† As recommended by the California Department of Pesticide Regulation No. 01-009-Methyl Bromide Field Fumigation. 3M recommended for use against radioiodine and methylbromide. Note: not NIOSH approved for methylbromide or radiiodine.

### Important

- Before using these respirators, you must determine the following:
  1. The type of contaminant(s) for which the respirator is being selected.
  2. The concentration level of contaminant(s).
  3. Whether the respirator can be properly fitted on the wearer’s face. All respirator instructions, warnings and use and time limitations must also be read and understood by the wearer before use.

Before use of these respirators, a written respiratory protection program must be implemented, meeting all the requirements of OSHA 29 CFR 1910.134, including training and fit testing.