

## The voice of the customer in Power and Supplied Air product innovation

At 3M™, we believe in listening to the people who use our products, listening to what they have to say and designing the product that they want and need.

### 3M's history in respiratory protection and P&SA products

3M™ have been designing and creating respiratory protective products for over 40 years. Although we have a history of stability, innovation and leadership, many of our product ranges grew organically with little inter-system compatibility.

Several years ago we looked at our Powered & Supplied Air (P&SA) products and came to several conclusions:

- When needs changed, customers want to be able to change one or two components rather than purchase an entirely new system
- The number of P&SA users and applications has both greatly expanded over the years. This has resulted in an increasingly diverse range of customer needs, demanding more highly flexible solutions
- New technologies and materials can be used to further enhance our products and the protection that they provide

From this work, we decided that 3M™ needed to design an entirely new, flexible and modular P&SA system, and so the 3M™ Versaflo™ range was conceived.

### 'Voice of the Customer' led product design

To establish our customer needs and to get opinions on our products, we conducted 23 focus panels and 61 customer visits across 8 different countries in North America, South America, Europe, Asia and Australia. In total we listened to the needs and opinions of over 250 existing P&SA users.

#### Joe (US product user)

**"It's nice of them to come out and get our opinions instead of telling us what we need"**

### 3M™ design and development

Designing an entirely new P&SA product platform is no easy task. We used our respiratory protection and product design experts in laboratories in the US, Canada and the UK. We also brought in external specialists on fabrics and functional design to provide the greatest breadth and depth of knowledge to the project.

The Versaflo™ system was designed around the following principles:

- Easy to use and maintain, so helping improve productivity in the workplace
- Enhanced wearer comfort: Reduced physical size and weight, good balance
- Integrated protection against multiple hazards: Respiratory, head, face, eye and hearing protection
- Customisable airflow from the turbo and within the headtop
- Reliable protection for a wide range of environments, applications and hazards
- Part of an extensive and yet simplified modular range
- Intelligent turbos that can provide visual, audible and vibrational feedback on warnings and status

### 3M™ Versaflo™ Powered and Supplied Air System

3M™ initially launched a new range of both fabric- (2009) and helmet-based (2010) headtops, with supporting breathing tubes. The new TR-300 turbo (2010) complemented the new products to create the Versaflo™ P&SA system, being approved for use with the new headtops as well as legacy headtops and 3M™ Speedglas™ welding headtops.

The TR-300 was supplemented with the Versaflo™ V-Series supplied air regulators and air supply components, as well as our existing and well loved Jupiter™ Turbo. But, this still left space for a new, high performance and modern turbo that is compatible with a wide range of particulate and gas/vapour filters.

### The 3M™ Versaflo™ Powered Air Turbo TR-600

Thanks to comprehensive research and an in-depth understanding of customer needs, 3M™ created the most advanced, versatile solution yet. Simply put: It's designed to help make breathing and working easier.

### Protection

With similar design elements and styling to its smaller sibling the 3M™ Versaflo™ Powered Air Turbo TR-300, the evolutionary 3M™ Versaflo™ Powered Air Turbo TR-600 delivers protection, comfort and performance.

The TR-600 helps provide durable protection in harsh environments with lithium-ion batteries, three airflow options, an expanded range of CE-approved filters for protection such as particulates, organic vapours and acid gases.

All this, with the compatibility of the 3M™ Versaflo™ Respirator Systems family of products offering integrated protection for eye, head, face, skin and respiratory protection to EN 12941 Class TH2 or TH3, depending on the headtop.





**Versatility**

Taking your need for flexibility and modularity, the 3M™ Versaflo™ Powered Air Turbo TR-600 is designed to be compatible with multiple configurations of headtops, breathing tubes, batteries, filters and more. Choose a durable system configuration that gets the job done for you.

**Endurance**

The 3M™ Versaflo™ Powered Air Turbo TR-600 is equipped with two battery options (standard and high capacity) that are more efficient and intuitive than ever.

TR-600 batteries have a long run time and short charging time, which ultimately reduce the user's downtime. The TR-600 battery has intuitive charge-level indicators and user interface to help make sure you're prepared and getting the most out of the battery.

- LED status lights for battery charge on both the battery and the turbo
- Low-battery warnings, including vibratory, audible and visual alarms
- Provides approximately 15 minutes of warning prior to automatic low battery shutdown

**Ease of Use**

The 3M™ Versaflo™ Powered Air Turbo TR-600 features a user-friendly design with intuitive, colour indicated touch points and visual, vibratory and audible low-flow and low-battery indicators. The TR-600 is tough but lightweight, and it's easy to clean and maintain.

- Battery charge and particulate filter loading status indicators
- Low-flow and low-battery alarms
- Tight fitting facepiece option with automatic air flow adjustment
- Easy tool-free maintenance
- Colour indicated touch points
- Durable and easy clean belt options
- Pre-calibration makes product ready to use, directly out of the box
- Meets IP53 rating while in use in decontamination shower
- Meets IP67 rating when used with cleaning and storage plugs to enable full submersion for easy clean-up and decontamination

**History of 3M P&SA 1975 to 2007**

