

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

## Technical datasheet

### Description

The 3M™ Versaflo™ Powered Air Turbo TR-600 is a belt-mounted air purifying device. It can be combined with an approved headtop or facepiece to form a power-assisted system for respiratory protection against particles, nuisance odours (where applicable) and gases and vapours. A range of approved breathing tubes are available depending on which headtop or facepiece is selected.

- ▶ Three user selectable flow rates
- ▶ Controlled airflow delivers steady flow as battery discharges or filter loads with particulates
- ▶ Display shows battery charge status and particulate loading status during use
- ▶ No user calibration of the turbo is required
- ▶ Electronic audible, visual and vibratory alarm in case of low battery and/or low air flow
- ▶ Six filter options available:
  - ▶ P
  - ▶ P plus nuisance level\* organic vapours and acid gas which also offers protection against Hydrogen Fluoride up to 10 x Occupational Exposure Limit
  - ▶ A1P
  - ▶ A1B1E1P
  - ▶ A2P
  - ▶ A2B2E2K1Hg
- ▶ Lightweight lithium ion battery with LED to indicate charge status
- ▶ Two belt options:
  - ▶ Easy-clean belt
  - ▶ High durability belt
- ▶ Suitable for shower decontamination (IP54) when using filter cover and temporary submersion (IP67) when fitted with cleaning plugs

### Breathing tube options

Headtop/facepiece	Breathing tube
3M™ Versaflo™ S-Series Hoods and Headcovers	
3M™ Versaflo™ M-Series Faceshields and Helmets	BT-20S/L, BT-30* or BT-40
3M™ Speedglas™ 9100FX Air, 9100Air and 9100MP Welding Headtops	
3M™ Full Facepiece Respirators 6000 Series	BT-63 or BT-64
3M™ Half Facepiece Respirators 7500 Series	
3M™ Full Facepiece Respirator, FF-600 Series	BT-54
3M™ Full Facepiece Respirator, FF-300 Series	

\*Note: BT-30 is not approved for use with 3M™ Versaflo™ Helmets M-400 Series and 3M™ Versaflo™ Powered Air Turbo TR-600

### Standards and approvals

The TR-600 Powered Air Turbo has been tested and approved to the following standards:

- ▶ EN 12941:1998+A2:2008 with approved headtops
- ▶ EN 12942:1998+A2:2008 with approved facepieces

The TR-600 also meets the following requirements:

- ▶ Dust protection and protection against spraying water from all directions to EN60529 IP 54
- ▶ Dust tight and temporary submersion to 1m to EN 60529 IP 67 when fitted with cleaning and storage plugs

The Certificate and Declaration of Conformity are available at the following website [www.3M.com/Respiratory/certs](http://www.3M.com/Respiratory/certs) and [www.3M.com/Welding/certs](http://www.3M.com/Welding/certs)

Note: This product also complies with the European EMC Directive 2014/30/EU.



## Applications

The TR-600 Powered Air Turbo, when used as part of an approved system with appropriate filters, provides protection against:

- ▶ Particles e.g. fine dusts, mists and metal fume
- ▶ Nuisance odour\* levels (below the Occupational Exposure Limits) of organic vapours
- ▶ Nuisance odour\* levels (below the Occupational Exposure Limits) of acid gases and up to 10 x Occupational Exposure Limits of Hydrogen Fluoride
- ▶ Organic gases and vapours (with boiling point > 65°C)
- ▶ Inorganic gases
- ▶ Acid gases
- ▶ Ammonia
- ▶ Mercury vapour

\*Nuisance level refers to concentrations below the Occupational Exposure Limits

The TR-600, when used with an appropriate 3M headtop and filters, can be used in various applications including:

- ▶ Agriculture
- ▶ Chemical industry
- ▶ Construction and building renovation
- ▶ Demolition
- ▶ Food and beverage
- ▶ Medical and healthcare
- ▶ Metalworking
- ▶ Pharmaceutical manufacturing
- ▶ Pulp and paper processing
- ▶ Smelting and foundries
- ▶ Surface preparation, paint spraying and coating
- ▶ Woodworking

## Limitations

The TR-600 Powered Air Turbo should not be used in the following conditions:

- ▶ Asbestos removal
- ▶ In atmospheres containing less than 19.5% oxygen
- ▶ Confined spaces (lack of ventilation)
- ▶ When the risk is considered to be Immediately Dangerous for Life or Health (IDLH)
- ▶ Where the contaminant concentration is above the Occupational Exposure Limit defined for the headtop or facepiece used (see headtop user instruction or relevant breathing tube user instructions for information on systems comprising facepieces)

## Materials

Component	Material
Turbo body	Polycarbonate/acrylonitrile butadiene styrene blend
Filter cover	Polyamide
Battery casing	Polycarbonate/acrylonitrile butadiene styrene blend
Easy clean belt	Ethylene vinyl acetate foam, polyamide webbing
High durability belt	Ethylene vinyl acetate foam, leather belt

## Product range

The TR-600 Powered Air Turbo is available to buy as:

- ▶ TR-602E Turbo Unit (includes TR-971 Airflow Indicator and TR-662 Spark Arrestor x 2)
- ▶ TR-619UK/E Starter Kit includes the TR-602E Turbo Unit, TR-632 High Capacity Battery, TR-641UK/E Single Station Battery Charger Kit, TR-971 Airflow Indicator, TR-6310E (A2P) Filter, TR-6300FC Filter Cover, TR-6600 Prefilter (x 10), TR-662 Spark Arrestor, TR-627 Easy Clean Belt and BT-30 Length Adjusting Breathing Tube
- ▶ TR-600E-HIK Ready-Pak includes the M-307 Helmet, TR-602E Turbo Unit, TR-632 High Capacity Battery, TR-641E Single Station Battery Charger Kit, TR-971 Airflow Indicator, TR-6310E (A2P) Filter, TR-6300FC Filter Cover, TR-6600 Prefilter (x 2), TR-662 Spark Arrestor (x 2), TR-626 High Durability Belt, BT-30 Length Adjusting Breathing Tube BT-926 Flame Resistant Breathing Tube Cover and TR-653 Cleaning and Storage Kit
- ▶ TR-600E-HKL Ready-Pak includes the S-133L Headcover, TR-602E Turbo Unit, TR-632 High Capacity Battery, TR-641E Single Station Battery Charger Kit, TR-971 Airflow Indicator, TR-6710E (P) Filter, TR-6700FC Filter Cover, TR-6600 Prefilter (x2), TR-627 Easy Clean Belt, BT-30 Length Adjusting Breathing Tube, BT-922 Disposable Breathing Tube Cover and TR-653 Cleaning and Storage Kit
- ▶ TR-600E-ECK Ready-Pak includes the S-433L Hood, TR-602E Turbo Unit, TR-632 High Capacity Battery, TR-641E Single Station Battery Charger Kit, TR-971 Airflow Indicator, TR-6710E (P) Filter, TR-6700FC Filter Cover, TR-6600 Prefilter (x 2), TR-627 Easy Clean Belt, BT-30 Length Adjusting Breathing Tube, BT-922 Disposable Breathing Tube Cover and TR-653 Cleaning and Storage Kit



## System classifications and protection factors

The information in the table below depends on the headtop or facepiece used. Refer to specific datasheet for headtop or facepiece for more information.

	EN 12941:1998 + A2:2008		EN 12942:1998 + A2:2008	
Classification	TH2	TH3	TM2	TM3
NPF	50	500	200	2000

Note: The Nominal Protection Factor (NPF) is a number derived from the maximum percentage of total inward leakage permitted in relevant European Standards for a given class of respiratory protective device.

This may not be the level of respiratory protection that can be realistically expected in the workplace by wearers. Many countries apply Assigned Protection Factors (APFs) for example UK and Germany. Employers may apply a value lower than the NPF/APF if deemed applicable. Please refer to EN 529:2005 and National workplace protection guidance for application of these numbers in the workplace. Please contact 3M for further information.

## Storage conditions

-30°C to +50°C < 90%RH

Refer to filter user instructions for filter storage conditions

## Operating temperature

-10°C to +55°C

## Shelf life\*

5 years from date of manufacture

\* The shelf life as defined above remains an indicative and maximum data, subject to many external and non controllable factors. It may never be interpreted as a warranty.

## Outlet flow characteristics

	Flow rate	
	In combination with approved headtop	In combination with approved facepiece
<b>MMDF<sup>1</sup></b>	170 l/min	115 l/min
<b>Standard flow</b>	185 l/min +/- 10 l/min	135 l/min +/- 10 l/min
<b>Medium flow</b>	205 l/min +/- 10 l/min	150 l/min +/- 10 l/min
<b>High flow<sup>2</sup></b>	225 l/min +/- 10 l/min	170 l/min +/- 10 l/min

**Note:** <sup>1</sup> MMDF = Stated Manufacturer's Minimum Design Flow (MMDF)

<sup>2</sup> Systems incorporating certain filters must not be used with the Powered Air Turbos operating at high flow. These specific systems may display a low flow alarm immediately when used. The specific systems are: FF-600 Series with TR-602E – TR-6310E/TR-6580E must not be used in high flow setting.

## Battery charge time

Standard battery	Less than 3.5 hours
High capacity battery	Less than 4.5 hours

## Battery duration (hours) – with approved headtops

	Standard flow		Medium flow		High flow	
	All filters	P filter	All filters	P filter	All filters	P filter
<b>TR-630 battery</b>	6–12	10–12	5.5–11.5	9.5–11.5	4.5–9.5	8.5–9.5
<b>TR-632 battery</b>	9.5–19	15–19	8.5–15	14.5–15	7–14.5	13.5–14.5

## Battery duration (hours) – with approved facepieces

	3M™ Full Facepiece Respirators 6000 Series 3M™ Half Facepiece Respirators 7500 Series			3M™ Full Facepiece Respirator , FF-600 Series 3M™ Full Facepiece Respirator , FF-300 Series		
	Standard Flow	Medium Flow	High Flow	Standard Flow	Medium Flow	High Flow
<b>TR-630 battery</b>	9–12	7–11	6–9	6–9	4–7	4–5.5
<b>TR-632 battery</b>	12–18	11–16	8–14	10–13	6.5–11	6–8.5

Note: Battery durations are with new battery and clean filter at 20°C

## Spare parts and accessories

Part number	Description
TR-630	Standard battery
TR-632	High capacity battery
TR-640	Battery charger cradle
TR-641E/UK	Single station battery charger kit (Europe/UK)
TR-644E/UK	4-station battery charger kit (Europe/UK)
TR-626	High durability belt
TR-627	Easy clean belt
TR-627X	Easy clean belt extender
TR-6710E	Particulate filter
TR-6820E	Particulate filter plus nuisance level organic gases and vapours below TLV (Occupational Exposure Limit), nuisance level acid gases below OEL and Hydrogen Fluoride gas up to 10 x OEL
TR-6110E	A1P – organic gases and vapours (bp > 65°C) and particulates
TR-6130E	A1B1E1P – organic gases and vapours (bp > 65°C), inorganic, acid gases and particulates
TR-6310E	A2P – organic gases and vapours (bp > 65°C) and particulates
TR-6580E	A2B2E2K1HgP – organic gases and vapours (bp > 65°C), inorganic, acid gases, ammonia, mercury vapour and particulates
TR-6100FC	Filter cover for TR-6100 Series Filters
TR-6300FC	Filter cover for TR-6300 Series Filters
TR-6500FC	Filter cover for TR-6500 Series Filters
TR-6700FC	Filter cover for TR-6700 Series Filters
TR-6800FC	Filter cover for TR-6800 Series Filters
TR-6600	Pre-filter

Part number	Description
TR-662	Spark arrestor
TR-651	Filter latch assembly
TR-653	Cleaning and storage kit (for TR-600 and TR-800 Powered Air Turbo)
TR-654	Replacement seals (for TR-653 cleaning and storage kit)
TR-971	Airflow indicator (for checking TR-600/ TR-800 Powered Air Turbo when used with headtops)
TR-973	Airflow indicator (for checking TR-600/ TR-800 when used with facepieces)
BPK-01	Backpack
TR-655	Backpack adaptor
TR-329	Braces
BT-20 S/L*	Lightweight breathing tube small/medium or medium/long)
BT-30*	Self-adjusting breathing tube
BT-40*	Heavy duty breathing tube
BT-63*	Length-adjusting tight fitting breathing tube
BT-64*	Heavy duty tight fitting breathing tube
BT-54*	Heavy duty tight fitting breathing tube
BT-922	Disposable breathing tube cover (for BT-20S/L, BT-30, BT-40 and BT-54)
BT-926	High durability, flames resistant breathing tube cover (for BT-20S/L, BT-30, BT-40 and BT-54)
BT-953	Cleaning and storage kit (for BT-63 and BT-64)
BT-957	Storage plugs (for all BT-Series breathing tubes)

\* See breathing tube options table

## Important notice

The use of the 3M product described within this document assumes that the user has previous experience of this type of product and that it will be used by a competent professional. Before any use of this product it is recommended to complete some trials to validate the performance of the product within its expected application. All information and specification details contained within this document are inherent to this specific 3M product and would not be applied to other products or environment. Any action or usage of this product made in violation of this document is at the risk of the user.

Compliance to the information and specification relative to the 3M product contained within this document does not exempt the user from compliance with additional guidelines (safety rules, procedures). Compliance to operational requirements especially in respect to the environment and usage of tools with this product must be observed. The 3M group (which cannot verify or control those elements) would not be held responsible for the consequences of any violation of these rules which remain external to its decision and control.

Warranty conditions for 3M products are determined with the sales contract documents and with the mandatory and applicable clause, excluding any other warranty or compensation. Respiratory protection is only effective if it is correctly selected, fitted and worn throughout the time when the wearer is exposed to respiratory contaminants. 3M offers advice on the selection of products, and training in the correct fitting and usage.

For more information on 3M products and services please contact 3M.

### Personal Safety Division

3M Centre  
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[www.3m.co.uk/respiratory](http://www.3m.co.uk/respiratory)

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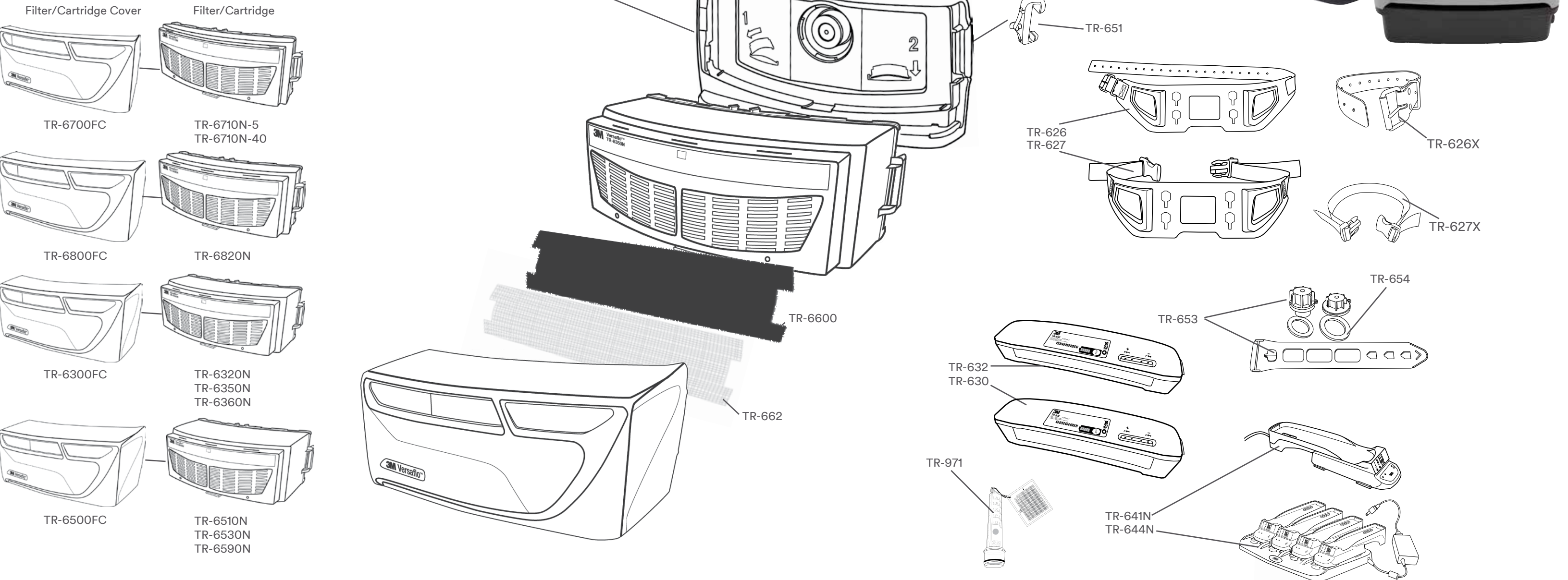
3M™

Versafo™

TR-600 Series

Parts and Accessories

TR-600 Series



Part Number/AAD	General Description	Description	Replace when maximum life is reached or when/if:	UPC Ordering #
System Kits				
TR-600-ECK/37375	Easy Clean PAPR Kit	Kit includes: S-433L Hood with Integrated Head Suspension, BT-30 Length Adjusting Breathing Tube, TR-6710N (HE) Filter, TR-641N Single Station Battery Charger, BT-922 Breathing Tube Cover, TR-602N PAPR Unit, TR-630 Standard Battery, TR-627 Easy Clean Belt, TR-6700 Filter Cover, TR-6600 Prefilter (x2), TR-662 Spark Arrestor (x2), TR-971 Airflow Indicator	replace component(s) in kit based on guidance in table below, and/or reference component user instructions	00051131373754
TR-600-HIK/37374	Heavy Industry PAPR Kit	Kit includes: M-307 Respiratory Hard Hat Assembly with Premium Visor and Faceseal, TR-602N PAPR Unit, TR-632 High Capacity Battery, BT-30 Length Adjusting Breathing Tube, TR-626 High Durability Belt, TR-6530N OV/AG/HE Cartridge, TR-6500 Filter Cover, TR-641N Single Station Battery Charger Kit, TR-971 Airflow Indicator, BT-926 High Temperature Breathing Tube Cover, TR-6600 Prefilter (x2), TR-662 Spark Arrestor (x2)	replace component(s) in kit based on guidance in table below, and/or reference component user instructions	00051131373747
TR-600-HKS/HKL	Head Cover PAPR Kit	Kit includes: S-133 Soft Headtop, TR-971 Airflow Indicator, TR-641N Single Station Battery Charger, TR-653 Cleaning and Storage Kit, TR-991 Carrying Bag, TR-602N PAPR Unit, TR-630 Standard Battery, BT-30 Length Adjusting Breathing Tube, TR-627 Easy Clean Belt, TR-6700FC Filter Cover	replace component(s) in kit based on guidance in table below, and/or reference component user instructions	HKS: 00051131274990 HKL: 00051131275010
Series Assemblies				
TR-613N/37339	PAPR Assembly	PAPR Assembly: includes blower unit (TR-602N), flow indicator (TR-971), high durability belt (TR-626), standard battery (TR-630), and length adjusting breathing tube (BT-30).	replace component(s) in assembly based on guidance in table below, and/or reference component user instructions	00051131373396
TR-614N/37340	PAPR Assembly	PAPR Assembly: includes blower unit (TR-602N), flow indicator (TR-971), Easy clean belt (TR-627), standard battery (TR-630), and length adjusting breathing tube (BT-30).	replace component(s) in assembly based on guidance in table below, and/or reference component user instructions	00051131373402
TR-616N/37341	PAPR Assembly	PAPR Assembly: includes blower unit (TR-602N), flow indicator (TR-971), high durability belt (TR-626), high capacity battery (TR-632), and length adjusting breathing tube (BT-30).	replace component(s) in assembly based on guidance in table below, and/or reference component user instructions	00051131373419
TR-617N/37342	PAPR Assembly	PAPR Assembly: includes blower unit (TR-602N), flow indicator (TR-971), Easy clean belt (TR-627), high capacity battery (TR-632), and length adjusting breathing tube (BT-30).	replace component(s) in assembly based on guidance in table below, and/or reference component user instructions	00051131373426
Component Parts (* denotes alternatives(s) available)				
TR-602N/37338	Blower	Replacement Blower for Versafo™ TR-600	damaged or unable to resolve alarms	00051131373389
TR-626/37343	Belt*	High Durability belt for Versafo™ TR-600/TR-800 PAPR	damaged	00051131373433
TR-626X/37344	Belt Extender	Belt extender for TR-626 High Durability Belt	damaged	00051131373440
TR-627/37345	Belt*	Easy Clean belt for Versafo™ TR-600/TR-800 PAPR	damaged	00051131373457
TR-627X/37346	Belt Extender	Belt extender for TR-627 Easy Clean Belt	damaged	00051131373464
TR-630/37347	Battery*	Standard battery for Versafo™ TR-600 PAPR	damaged or no longer achieving desired run-time	00051131373471
TR-632/37348	Battery*	High capacity battery for Versafo™ TR-600 PAPR	damaged or no longer achieving desired run-time	00051131373488
TR-640/37349	Charger*	Replacement charger cradle for TR-641/TR-644 kits (not shown)	damaged, broken, or unable to charge battery	00051131373495
TR-641N/37350	Charger*	Single-bay charger kit for Versafo™ TR-600/TR-800 PAPR batteries	damaged, broken, or unable to charge battery	00051131373501
TR-644N/37351	Charger*	4-bay charger kit for Versafo™ TR-600/TR-800 PAPR batteries	damaged, broken, or unable to charge battery	00051131373518
TR-6600/37354	Prefilter	Prefilter for Versafo™ TR-600/TR-800 PAPR	damaged or clogged	00051131373549
TR-662/37355	Spark Arrestor/Prefilter	Spark arrester/Prefilter for Versafo™ TR-600/TR-800 PAPR	damaged or unable to clean	00051131373556
TR-6710N-5/37357 TR-6710N-40/37358	Filter*	HE Filter for Versafo™ TR-600/TR-800 PAPR	damaged or when change is indicated by the PAPR low flow alarm	00051131373575 00051131373582
TR-6820N/37360	Filter*	HE and Nuisance OV/AG filter for Versafo™ TR-600/TR-800 PAPR	damaged, when change is indicated by the PAPR low flow alarm or when nuisance odor relief is no longer provided	00051131373605
TR-6320N/37363	Filter/Cartridge*	Acid Gas/HEPA Cartridge for Versafo™ TR-600/TR-800 PAPR	damaged, when change is indicated by the PAPR low flow alarm, when indicated by service life software, or if breakthrough is detected	00051131373636
TR-6350N/37365	Filter/Cartridge*	Formaldehyde/HEPA Cartridge for Versafo™ TR-600/TR-800 PAPR	damaged, when change is indicated by the PAPR low flow alarm, when indicated by service life software, or if breakthrough is detected	00051131373650
TR-6360N/37364	Filter/Cartridge*	Ammonia/Methylamine/HEPA Cartridge for Versafo™ TR-600/TR-800 PAPR	damaged, when change is indicated by the PAPR low flow alarm, when indicated by service life software, or if breakthrough is detected	00051131373643
TR-6510N/37361	Filter/Cartridge*	Organic Vapor/HEPA Cartridge for Versafo™ TR-600/TR-800 PAPR	damaged, when change is indicated by the PAPR low flow alarm, when indicated by service life software, or if breakthrough is detected	50051131373612
TR-6530N/37362	Filter/Cartridge*	Organic Vapor/Acid Gas/HEPA Cartridge for Versafo™ TR-600/TR-800 PAPR	damaged, when change is indicated by the PAPR low flow alarm, when indicated by service life software, or if breakthrough is detected	00051131373629
TR-6590N	Filter/Cartridge*	Multi-Gas/HEPA Cartridge for Versafo™ TR-600 PAPR	damaged, when change is indicated by the PAPR low flow alarm, when indicated by service life software, or if breakthrough is detected	50051131373667
TR-6700FC/37356	Filter Cover	Filter cover for 6700 series filters for Versafo™ TR-600/TR-800 PAPR	damaged or broken. No longer securely attaches to filter/cartridge	00051131373563
TR-6800FC/37378	Filter Cover	Filter cover for 6800 series filters for Versafo™ TR-600/TR-800 PAPR	damaged or broken. No longer securely attaches to filter/cartridge	00051131373785
TR-6300FC/37380	Filter Cover	Filter cover for 6300 series filter/cartridge for Versafo™ TR-600/TR-800 PAPR	damaged or broken. No longer securely attaches to filter/cartridge	00051131373808
TR-6500FC/37381	Filter Cover	Filter cover for 6500 series filter/cartridge for Versafo™ TR-600/TR-800 PAPR	damaged or broken. No longer securely attaches to filter/cartridge	00051131373815
TR-971/56707	Flow Indicator	Flow indicator for Versafo™ TR-600/TR-800 PAPR	damaged	00051141567075
TR-651/37382	Filter Latch	Replacement filter latch assembly for TR-602N blower	damaged	00051131373822
TR-653/37373	Cleaning/Storage Kit	Cleaning and Storage Kit for TR-602N/TR-802N PAPR, and TR-630/TR-632/TR-830 batteries	damaged, broken, gaskets changed after 30 washings	00051131373730
TR-654/37384	Cleaning/Storage Kit	Replacement gaskets for TR-653 cleaning and storage kit	damaged, broken, gaskets changed after 30 washings	00051131373846
BPK-01/17358	Backpack*	Backpack for Versafo™ TR-600/TR-800 PAPR (not shown)	damaged	00051131173583
TR-655/37385	Backpack Adapter	Backpack Adaptor to connect TR-602N to BPK-01 (not shown)	damaged	00051131373853
TR-329/17362	Suspenders*	Suspenders for use with any Versafo belt (not shown)	damaged	00051131173620
BT-30/17379	Breathing Tube	Length adjusting breathing tube to connect Versafo™ TR-600/TR-800 PAPR to Versafo™ family of headgear (not shown)	damaged, broken, holes, cuts or tears	00051131173798



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Internet

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8:00 a.m. – 4:30 p.m. CST  
1-800-328-1667  
7:00 a.m. – 5:00 p.m. CST  
3M.com/PPESafety  
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⚠WARNING

These respirators help protect against certain airborne contaminants. Before use, the wearer must read and understand the User Instructions provided as a part of the product packaging. A written respiratory protection program must be implemented meeting all the requirements of OSHA 1910.134 including training, fit testing and medical evaluation. In Canada, CSA standards Z94.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate. Improper use may result in injury, sickness or death. For correct use, see supervisor and User Instructions, or call 3M PSD Technical Service in USA at 1-800-243-4630 and in Canada at 1-800-267-4414.