

3M™ Versaflo™ Powered Air Turbo TR-800

Technical Data Sheet

Description

The 3M™ Versaflo™ Powered Air Turbo TR-800 is an IECEx certified belt-mounted air purifying device that can be used in certain potentially explosive atmospheres. When combined with a 3M approved headtop, it forms a power-assisted system for respiratory protection against particles, nuisance odours (where applicable) and gases and vapours. The TR-800 Powered Air Turbo can be used with the 3M™ Versaflo™ S-Series and M-Series headtops.

Features

- Approved to Zone 0 requirements so may be suitable for areas where potentially explosive atmospheres are expected and permanent in normal operations (see technical specifications for more information).
- 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 and visual alarm in case of low battery and/or low air flow
- Simple, intuitive, easy to use two-button operation
- Four filter options available:
 - TR-6710ANZ PAPR-P3
 - TR-6820ANZ PAPR-P3 plus nuisance level* organic vapours and acid gas which also offers protection against hydrogen fluoride up to 10 x Workplace Exposure Standard
 - TR-6310ANZ PAPR-A1P3
 - TR-6580ANZ PAPR-A1B1E1HgP3
- Lithium ion battery with LED to indicate charge status
- Two belt options:
 - TR-627 Easy-clean belt
 - TR-626 High durability belt
- Suitable for shower decontamination (IP54) when using filter cover and temporary submersion (IP67) when fitted with TR-653 cleaning plugs.

* Nuisance level refers to concentrations below the Occupational Exposure Limit



TR-819A Starter Kit

Standards

When used as part of an approved 3M Respiratory system, the TR-800 Powered Air Turbo has been shown to meet the performance requirements of AS/NZS 1716:2012

IECEx

EN 60079-0:2011 – Explosive atmospheres, Equipment – General Requirements
EN 60079-11:2011 – Explosive atmospheres, Equipment protection by intrinsic safety “i”

EMC

EN 61000-6-4:2007+A1:2011 - Generic standards. Emission standard for industrial environments
EN 61000-6-2:2005 Generic standards. Immunity standard for industrial environments

Ingress protection

IEC 60529:1989+A1:1999+A2:2013 Degrees of protection provided by enclosures (IP Code)

RoHS

EN 50581:2012 Technical documentation for assessment of electrical/electronic products for RoHS



TR-802E

Limitation

The 3M™ Versaflo™ Powered Air Turbo TR-800 should not be used in the following conditions:

- 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 Workplace Exposure Standard defined for the headtop used (see relevant user instructions for the headtop)

Specifications

3M™ Versaflo™ Powered Air Turbo

IECEx

Non-mining gas atmospheres (Group II)

EN 60079-11 Ex ia IIB T4 Ga

ia – intrinsic safety for Equipment protection level Ga

IIB – Gas apparatus group

T4 – Max. surface temperature

135°C (-20°C ≤ Ta* ≤ 55°C)

Non-mining dust atmospheres (Group III)

EN 60079-11 Ex ia IIIC 135°C Da

ia – intrinsic safety for Equipment protection level Da

IIIC – Dust apparatus group

135 °C – Max surface temperature (-20°C ≤ Ta* ≤ 55°C)

Mining Atmospheres IEC 60079-11

Ex ia IMA

ia – intrinsic safety- safe with rare malfunction

I – Mining group

Ma – Equipment protection level mining

Outlet flow characteristics

- Manufacturer's Minimum Design Flow (MMDF) 170 l/min
- Nominal Standard flow = 185 lpm
- Nominal Mid Flow = 205 lpm
- Nominal High Flow = 225 lpm

Minimum battery duration (hours)**

Standard flow - 5.5 – 7.5
Medium flow - 4 – 6.5
High flow - 2*** – 5.5

TR-830 Battery charge time

Less than 3.5 hours

IP rating

(5 = dust protected, 4 = sprayed water from all directions) when using filter cover)
IP67 when fitted with TR-653 cleaning plugs (6 = dust tight, 7 = temporary submersion to a depth of 1m).

Storage conditions -30°C to +50°C < 90%RH

Operating temperature

-5°C to +55°C

Note: This is the operating temperature range for the 3M™ Versaflo™ Powered Air Turbo TR-802E when used as part of an AS/NZS 1716 compliant respirator.

Shelf life****

3M™ Versaflo™ Powered Air Turbo TR-800 and Filters = 5 years

Battery = 6 months (if unused beyond this period, batteries may not provide approximately 750 charge/discharge cycle equivalents during the first year of use while maintaining 80% of their original capacity)

Materials

Turbo body = Polycarbonate / Polydimethylsiloxane blend

Filter cover = Polyamide

Battery casing = Polycarbonate / Polydimethylsiloxane blend

Weight (including battery but excluding belt and filters)

Turbo = 1360g

*Ta defines the ambient temperature range within which the Temperature (T) class is defined, according to EN-60079-11

** Estimated system duration based on testing with a new battery and a new, clean filter at 20°C. Actual system duration may be extended or shortened depending on system configuration and environment.

*** To conserve battery power in high airflow setting, in some headtop/filter configurations, the Powered Air Turbo may automatically step down at this time to the medium airflow setting. If this occurs, a 4hr duration will be achieved. The step down feature can be overridden by the user by pressing the flow control button to move the airflow back to the high flow. The low battery alarm and low flow alarm will always operate as described in this user instruction. When either alarm sounds, users must immediately exit the contaminated area.

**** 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.

Compatible Hoods and Headtops



Ordering Information

The TR-800 Powered Air Turbo is available to buy as:

SAP ID	Legacy ID	Availability		Model #	Description
		AUS	NZ		
7100201471	70071732666	•	•	TR-819A	3M™ Versaflo™ Powered Air Purifying Respirator Starter Kit, Intrinsically Safe, TR-819A, 1 EA/Case includes TR-802E powered air turbo unit, TR-830 battery, BT-30 Breathing Tube, TR-6600 Pre filter, TR-627 Easy Clean Belt, TR-971 Airflow indicator, TR-641A single station battery charger and TR-838 battery attachment tool. Does NOT include a filter, filter cover, or headtop/hood which are required to be purchased separately
7100169179	70071730900	•	•	TR-802E	3M™ Versaflo™ Powered Air Purifying Respirator Unit TR-802E, Intrinsically Safe 1 EA/Case



BT-20 S/L



BT-30



BT-40

Breathing Tubes



QR-PSA-BT

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SAP ID	Legacy ID	Availability		Model #	Description
		AUS	NZ		
7100296133	70071767472	•		BT-20L	3M™ Versaflo™ Breathing Tube BT-20L, Medium/Large, 1 ea/Case. Fixed length lightweight Polyurethane L=965mm
7100134625	70071533023	•		BT-20S	3M™ Versaflo™ Breathing Tube, BT-20S/37309(AAD), Small/Medium, 1 EA/Case. Short Fixed length lightweight Polyurethane L=735mm
7100006955	XA007706584	•	•	BT-30	3M™ Versaflo™ Breathing Tube, Self-adjusting, BT-30 L= 525-850
7100069524	UU003085113	•	•	BT-40	3M™ Versaflo™ Heavy Duty Breathing Tube BT-40, 1 ea/Case Fixed length Neoprene Rubber L=840mm



TR-6300FC



TR-6310ANZ
PAPR-A1P3



TR-6500FC



TR-6580ANZ
PAPR-A1B1E1HgP3



TR-6700FC



TR-6710ANZ
PAPR-P3



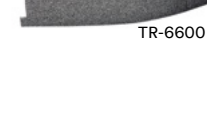
TR-6800FC



TR-6820ANZ
PAPR-P3 with nuisance* OV/AG



TR-662



TR-6600

TR-600/800 Filters



QR-TR68-FLTR

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SAP ID	Legacy ID	Availability		Model #	Description
		AUS	NZ		
7100135784	UU008996215 (AU) NT070007769 (NZ)	•	•	TR-6310ANZ	3M™ Versaflo™ Filter TR-6310ANZ, PAPR-A1P3 Organic Vapour & Particulate, 5 ea/Case
7100021336	70071622065	•	•	TR-6300FC	3M™ Versaflo™ Filter Cover TR-6300FC/37380 (AAD), for TR-6310ANZ Filter, 1 EA/Case
7100135783	UU008996223 (AU) NT070007777 (NZ)	•	•	TR-6580ANZ	3M™ Versaflo™ Filter TR-6580ANZ, PAPR-A1B1E1HgP3, 5 ea/Case for Organic Vapours, Acid Gases, Inorganic gases, Mercury vapour and particulates. Nuisance* Level Ammonia
7100021252	70071622073	•	•	TR-6500FC	3M™ Versaflo™ Filter Cover TR-6500FC, for TR-6580ANZ Filter, 1 EA/Case
7100135785	UU008996199 (AU) NT070007736 (NZ)	•	•	TR-6710ANZ	3M™ Versaflo™ High Efficiency Particle Filter TR-6710ANZ PAPR-P3, 5 ea/Case
7100021251	70071618261	•	•	TR-6700FC	3M™ Versaflo™ Filter Cover TR-6700FC/37356(AAD), for TR-6710ANZ Filter, 1 EA/Case
7100135786	UU008996207	•	•	TR-6820ANZ	3M™ Versaflo™ Nuisance* Odour OV/Acid Gas Plus PAPR-P3 Filter TR-6820ANZ, 5 ea/Case and hydrogen fluoride gas up to 10 x WES
7100021247	70071622040	•	•	TR-6800FC	3M™ Versaflo™ Filter Cover TR-6800FC/37378(AAD), for TR-6820ANZ Filter, 1 EA/Case
7100021255	70071618246	•	•	TR-6600	3M™ Versaflo™ Prefilter TR-6600/37354(AAD), for TR-600 PAPR, 50 EA/Case
7100035845	70071618253	•	•	TR-662	3M™ Versaflo™ Spark Arrestor, TR-662






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Video Library
on how to install
certain accessories

Spare Parts

SAP ID	Legacy ID	Availability		Model #	Description
		AUS	NZ		
7100035832	70071618147	•	•	TR-626X	3M™ Versaflo™ Belt Extender TR-626X, for TR-626 High Durability Belt, 1 EA/Case
7100035834	70071618162	•	•	TR-627X	3M™ Versaflo™ Belt Extender TR-627X/37346(AAD), for TR-627 Easy Clean Belt
7100222675	UU010933040	•	•	TR-626	3M™ Versaflo™ High Durability Belt, Leather, TR-626
7100222674	UU010916185	•	•	TR-627	3M™ Versaflo™ Easy Clean Belt TR-627, for TR-600/TR-800 Turbo, 1/case
7012875017 (AU) 7000144504 (NZ)	AT019494825 (AU) 52000053570 (NZ)	•	•	TR-641A	3M™ Versaflo™ Battery Charger Kit, Single Station, Euro, TR-641A, includes power cord, 1 ea/Case
7100342670	70100401622	•	•	TR-642A	3M™ Versaflo™ Single Station Battery Charger Kit TR-642A, for Versaflo™ TR-600 & TR-800, include power cord, 1 EA/Case (New to supersede TR-341A)
7100342637	70100401622	•	•	TR-642-3	3M™ Versaflo™ 3-Station Battery Charger Pack Only TR-642-3, for Versaflo™ TR-600 & TR-800, does not include a power cord, 1 Pack/Case (New)
7012873930 (AU) 7000144505 (NZ)	AT019494817 (AU) 52000053588 (NZ)	•	•	TR-644A	3M™ Versaflo™ Battery Charger Kit, Four Station, Euro, TR-644A, 1 ea/Case
7100035841	70071618428	•	•	TR-653	3M™ Versaflo™ Cleaning & Storage Kit, TR-653
7100260718	70071765625	•	•	TR-681	3M™ Versaflo™ PAPR Cover TR-681, for TR-600/800 PAPR, 10 ea/Case. Polypropylene non woven and polyester mesh. Does not include PAPR blower.
7100150925	70071697117	•	•	TR-830	3M™ Versaflo™ Battery TR-830/94243(AAD), Intrinsically Safe, for TR-800 PAPR, 44Wh, 1 EA/Case. Approximate run time of 4-8 hours. PAPR runtime will vary based on battery age, filter loading, filter or cartridge selection, and user selected air flow setting. Recharges quickly (90% charge in approximately 3.5 hours)
7100150921	70071697125	•	•	TR-838	3M™ Versaflo™ Battery Attachment Tool TR-838/94244(AAD), for TR-800 PAPR and TR-830 Battery, 1 EA
7100150941	70071697133	•	•	TR-851	3M™ Versaflo™ Filter Latch Assembly TR-851/94245(AAD), for TR-800 PAPR 1EA
7100300071	UU012452437	•	•	TR-927	3M™ Versaflo™ Easy Clean Backpack TR-927, 1 ea/Case
7100035846	70071668076	•	•	TR-971	3M™ Versaflo™ Air Flow Indicator TR-971 for all Versaflo™ PAPR units with M/S-Series loose fitting headtops, 1 EA
		•	•	BPK-HD	3M™ Versaflo™ & Speedglas™ Heavy-Duty Back Pack BPK-HD. Suitable for TR-300, TR-600, TR-800 and Adflo
7012880650	AT010601550	•	•	S1303-0166	3M™ Versaflo™ Storage PAPR Bag S1303-0166, 1 Bag/Case

3M Versaflo TR-300+, TR-600 and TR-800 Comparison Chart

	3M™ Versaflo™ TR-300+ PAPR	3M™ Versaflo™ TR-600 PAPR	3M™ Versaflo™ TR-800 PAPR
			
Availability	AU & NZ	AU & NZ	AU & NZ
Blower part no.	TR-302E+	TR-602E	TR-802E
AS/NZS 1716 Approved configurations	Yes	Yes	Yes
PAPR-P3 Filter	TR-3712E	TR-6710ANZ	TR-6710ANZ
Pre-Filter	TR-3600	TR-6600	TR-6600
Spark Arrestor	TR-362	TR-662	TR-662
Gas and Vapor Cartridges	No	TR-6310ANZ PAPR-A1P3 TR-6580ANZ PAPR-A1B1E1HgP3	TR-6310ANZ PAPR-A1P3 TR-6580ANZ PAPR-A1B1E1HgP3
Nuisance Level⁶	TR-3802E Organic Vapour TR-3822E Acid Gas	TR-6820ANZ Organic Vapour & Acid Gas	TR-6820ANZ Organic Vapour & Acid Gas
Battery Run Time¹ (~ hours) & Watt Hour (Wh)	TR-332: 8-12 60 Wh	TR-630: 4 - 12, 60 Wh TR-632: 7 - 19, 91Wh	TR-830: 4 - 8 44 Wh
Battery Charge Time (~ hours)	<3.5	< 3.5 hrs (TR-630) <4.5 hrs (TR-632)	<4
Chargers*	TR-341A Single TR-344A 4-Unit TR-342A	TR-641A Single TR-644A 4-Unit TR-642A	TR-641A Single TR-644A 4-Unit TR-642A
Approximate Airflow (Loose Fitting)	Std: 185 lpm High: 205 lpm	Std: 185 lpm Med: 205 lpm High: 225 lpm	Std: 185 lpm Med: 205 lpm High: 225 lpm
Approximate Airflow (Tight Fitting)	NA	Std: 135 lpm Med: 150 lpm High: 170 lpm	Std: 135 lpm Med: 150 lpm High: 170 lpm
Cleaning (blower only)	Wipe down only	Wipe down, or rinse or submerge with use of TR-653 Cleaning & Storage Kit	Wipe down, or rinse or submerge with use of TR-653 Cleaning & Storage Kit
Ingress Protection	IP-53 Rating in use ²	IP-54 Rating in use ³ IP-67 with cleaning & storage kit in place ⁷	IP-54 Rating in use ³ IP-67 with cleaning & storage kit in place ⁷
Elevation Limits	-610 m to 4300 m	-610 m to 5000 m	-610 m to 5000 m
Belt and Backpack Options*	TR-325 Standard Belt TR-326 High Durability Belt TR-327 Easy Clean Belt BPK-HD Backpack TR-927 Backpack TR-626X Extender TR-627X Extender	TR-626 High Durability Belt TR-627 Easy Clean Belt BPK-HD Backpack TR-927 Backpack TR-626X Extender TR-627X Extender	TR-626 High Durability Belt TR-627 Easy Clean Belt BPK-HD Backpack TR-927 Backpack TR-626X Extender TR-627X Extender
Blower Alarms	Visual/Audible	Visual/Audible/Vibratory	Visual/Audible
User Interface	Battery charge, filter loading and airflow status alarm	Battery charge, filter loading and airflow status alarm	Battery charge, filter loading and airflow status alarm
Battery Cycles	Approx. 500 – Full charge/discharge cycles equivalents until 80% of the original capacity over the course of the first year of service when used under recommended conditions	Approx. 500 – Full charge/discharge cycles equivalents until 80% of the original capacity over the course of the first year of service when used under recommended conditions	Approx. 750 – Full charge/discharge cycles equivalents until 80% of the original capacity over the course of the first year of service when used under recommended conditions

*Refer to code sections for further information on country availability.

	3M™ Versaflo™ TR-300+ PAPR	3M™ Versaflo™ TR-600 PAPR	3M™ Versaflo™ TR-800 PAPR
Battery Type	Lithium Ion	Lithium Ion	Lithium Ion
Headtops*	M-Series, S-Series	M-Series, S-Series, Selected Tight-fitting styles (bayonet style)	M-Series, S-Series, Selected Tight-Fitting (bayonet style)
Breathing Tubes (Loose Fitting)*	BT-20S, BT-20L, BT-30, BT-40	BT-20S, BT-20L, BT-30, BT-40	BT-20S, BT-20L, BT-30, BT-40
Breathing Tubes (Tight Fitting)*	NA	BT-63 BT-64	BT-63 BT-64
Approximate Blower Weight without battery	386 grams	635 grams	680 grams
Approximate Battery Weight	362 grams	453 grams 589 grams	680 grams
Approximate Blower Dimensions with HE filter and cover	20.3 cm W x 17.7 cm H x 7.6 cm D	25.4 cm W x 20.3 cm H x 7.6 cm D	25.4 cm W x 20.3 cm H x 7.6 cm D
Shelf Life	Blower: 5 years ⁵ Battery: 1 year ⁴ PAPR Filter: 5 years	Blower: 5 years ⁵ Battery: 1 year ⁴ PAPR Filter: 5 years	Blower: 5 years ⁵ Battery: 6 months ⁴ PAPR Filter: 5 years
Intrinsically Safe	No	No	Yes - Blower with battery certified to UL/IEC 60079 (2013) and SIMTARS IECEx SIM 19.0013

*Refer to code sections for further information on country availability

- 1) Estimated system run time based on testing with a new battery and a new clean filter at 20°C (68°F). Actual system run time may be extended or shortened depending on system configuration and environment.
- 2) Suitable for use in a decontamination shower with a spray angle of up to 60 degrees from vertical
- 3) The IP54 rating indicates the unit is protected against infiltration of dusts and water splash that would interfere with normal operation
- 4) Battery packs should be charged immediately and fully upon receipt. TR-300+ and TR-600 batteries should be recharged after each use and at least every 9-12 months. TR-800 battery should be recharged after each use and at least every 6 months.
- 5) The motor must be run for at least 5 minutes annually to ensure proper lubrication and operation
- 6) Nuisance level refers to concentrations not exceeding Workplace Exposure Standard/Limit (WES/WEL)
- 7) The IP67 rating indicates the unit is protected against infiltration of dusts and can now be rinsed under running water, immersed, or put in a respirator washer for further cleaning as long as the 3M™ Cleaning and Storage Kit TR-653 inlet and outlet plugs are installed.

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