



# Trouble Shooting Guide

## 3M™ Versaflo™ Powered Air Purifying Respirator TR-600

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**Rev: 1** Replaces all previously published guides on this topic until superseded.

**Before using the TR-600 PAPR, all users must read and understand the product *User Instructions*.**

Consult the TR-600 *User Instructions* for general system operation. Consult the TR-600 Charger and Battery Pack *User Instructions* for additional information. If you have further questions, consult your supervisor or call 3M Technical Service at 1-800-243-4630 (USA) or 1-800-267-4414 (Canada).

Use this *TR-600 Trouble Shooting Guide* to help identify possible causes and corrective action for problems you may experience with your TR-600 Power Air Purifying Respirator (PAPR). There are no user serviceable parts inside the TR-600 PAPR Assembly. The motor/blower unit should not be opened to attempt repairs. Contact 3M Technical Service to help identify additional possible causes and corrective actions for other problems you may experience.

Fault	Possible Cause	Possible Solutions
All LEDs flash and alarm	1) System software malfunction	1) To clear the alarm, power down motor/blower unit and remove the battery pack. Allow unit to sit for several minutes before reconnecting battery pack and turning the unit back on. If unit does not reset, contact 3M Warranty and Repair.
Low airflow alarm (audible, vibratory and/or LED flashing)	1) Breathing tube is blocked 2) Filter is blocked 3) Filter is fully loaded with particles 4) Outside recommended operating temperature range 5) Outside of elevation recommendations	1) Check & remove blockage or obstruction 2) Check filter & remove obstruction 3) Change HE filter and prefilter spark arrestor 4) Move to cooler location. May need to use alternative protection 5) Move task to adequate elevation. May need to use alternative protection
Bottom bar of battery indicator flashes; battery alarm sounds	1) Low battery voltage 2) Battery not properly installed. 3) Battery past service life 4) Battery temperature too hot (> 60C) 5) Contaminant on battery or blower contacts	1) Recharge the battery pack 2) Remove and reinstall battery 3) Install a new, fully-charged TR-600 battery pack 4) Bring to cool environment, allow battery pack to cool. 5) Ensure battery contacts are clean and dry
Motor/blower will not turn on. No airflow, no alarm(s)	1) Battery contact on battery pack or blower is damaged 2) Contaminant on battery or blower contacts 3) Battery is completely discharged (no charge) 4) Damaged motor/blower circuit board 5) Damaged motor 6) Battery internal safety circuit tripped	1) Check that the battery contact is not bent or broken 2) Ensure battery contacts are clean and dry 3) Fully charge the battery pack 4) Contact 3M Warranty and Repair 5) Contact 3M Warranty and Repair 6) Replace battery. Do not exceed battery immersion guidelines during cleaning
Low airflow as	1) Damaged circuit board	1) Contact 3M Warranty and Repair

indicated by flow indicator (TR-971) but no alarm(s)	<ul style="list-style-type: none"> <li>2) Damaged motor</li> <li>3) Faulty alarm</li> <li>4) Flow indicator not held in vertical position</li> <li>5) Wrong 'Zone' selected as reference on flow indicator</li> <li>6) Stuck float ball</li> <li>7) Extreme weather event causing high or low ambient pressure</li> <li>8) Faulty airflow indicator</li> </ul>	<ul style="list-style-type: none"> <li>2) Contact 3M Warranty and Repair</li> <li>3) Contact 3M Warranty and Repair</li> <li>4) Ensure flow indicator is held in vertical position during inspection</li> <li>5) Refer to the Inspection &gt; Airflow section of the <i>User Instructions</i> to select the correction 'Zone'</li> <li>6) Rinsing with clean water may help free a stuck float ball. Allow tube and ball to dry prior to using</li> <li>7) Refer to Tech Data Bulletin #221 Conducting Airflow Check on the 3M™ Versaflo™ PAPR TR-600</li> <li>8) Recheck with different TR-600 airflow indicator</li> </ul>
<p>User detects odor or taste of contaminants or feels eye or throat irritation</p> <p>[Note: User should exit contaminated area immediately, then attempt troubleshooting]</p>	<ul style="list-style-type: none"> <li>1) Incorrect respirator or filter/cartridge for application and /or environment</li> <li>2) The service life of the chemical cartridge has been exceeded</li> <li>3) Respirator is damaged</li> <li>4) Incorrect assembly of respirator components</li> </ul>	<ul style="list-style-type: none"> <li>1) Consult industrial hygienist, safety professional or supervisor. Check correct filter/cartridge selection for contaminant.</li> <li>2) Replace with new appropriate cartridge. Recalculate service life with the 3M Service Life Software.</li> <li>3) Inspect all components for holes, tears, and damaged.</li> <li>4) Reinstall the assembly carefully following these <i>User Instructions</i></li> </ul>
Battery pack's charge or runtime lasts less than expected	<ul style="list-style-type: none"> <li>1) Inadequate charging</li> <li>2) Filter/cartridge or prefilter/spark arrester is loaded with particles, making the motor run harder</li> <li>3) Battery pack reaching end of service life through natural aging</li> <li>4) Battery pack damaged due to exposure to environmental extremes</li> <li>5) Higher airflow setting selected</li> </ul>	<ul style="list-style-type: none"> <li>1) Ensure battery pack is fully charged</li> <li>2) Check the filter-loading indicator. Replace the filter/cartridge &amp; prefilter as indicated in the User Instructions, and examine the spark arrester</li> <li>3) Replace battery pack</li> <li>4) Replace battery pack and flow temperature use guidance</li> <li>5) Normal. Higher airflow settings use more battery power. Operating at the 'standard' airflow setting and with a clean filter/cartridge maximizes battery run time</li> </ul>
The motor runs "faster than normal"	<ul style="list-style-type: none"> <li>1) The filter/cartridge is loaded with particles</li> <li>2) Motor/blower airflow not yet stabilized</li> <li>3) Higher airflow setting selected</li> <li>4) Change in ambient temperature or pressure</li> </ul>	<ul style="list-style-type: none"> <li>1) Check the filter-loading indicator. Replace the filter/cartridge &amp; prefilter as indicated in the User Instructions, and examine the spark arrester</li> <li>2) Let the unit run for 2 minutes so it can automatically adjust to the new filter or changes to the filter configuration</li> <li>3) Normal. Higher airflow settings make the motor run faster and generally louder</li> <li>4) Normal. The motor/blower automatically compensates for changes in ambient temperature and pressure to maintain constant volumetric airflow. This may result in the motor running faster or slower</li> </ul>
The filter cover no longer securely attaches to the filter/cartridge	<ul style="list-style-type: none"> <li>1) The filter cover is worn out or damaged</li> <li>2) The filter cover is the wrong size for the selected filter/cartridge</li> <li>3) Prefilter or spark arrester is improperly installed causing interference</li> </ul>	<ul style="list-style-type: none"> <li>1) Replace filter cover</li> <li>2) Replace with correction filter cover size. Refer to the TR-600 Filter and Cartridge cover table for correct pairing</li> <li>3) Reinstall the prefilter or spark arrester as described in the <i>User Instructions</i> and reconnect the cover.</li> </ul>

## FOR MORE INFORMATION ON 3M PRODUCTS

### United States

#### For other 3M products:

1-800-3M-HELPS or 1-651-737-6501

[www.3M.com/PPESafety](http://www.3M.com/PPESafety)

### Canada

#### For other 3M products:

1-800-364-3577

[www.3m.com/CA/PPESafety](http://www.3m.com/CA/PPESafety)

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