



Trouble Shooting Guide



3M™ Versaflo™ TR-300 Powered Air Purifying Respirator (PAPR) Assemblies

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Replaces all previously issued until superseded.

The following table is intended to help the user troubleshoot certain situations that may occur with the 3M™ Versaflo™ TR-300 Powered Air Purifying Respirator Assemblies. If you cannot identify your problem in the chart below, please consult your supervisor or contact 3M Technical Service. There are no user serviceable parts in the TR-300 motor/blower or battery packs. For additional assistance with the TR-300 PAPR or the TR-300 batteries and chargers consult their *User Instructions*. Also see 3M Technical Data Bulletin #178 – Maintenance and Care of 3M Powered Air Purifying Respirator Battery Packs.

Fault/Problem	Possible Cause	Possible Solutions
Low airflow alarm (audible and fan LED flashing).	<ol style="list-style-type: none"> 1) Filter is fully loaded with particles. 2) Breathing tube is blocked. 3) Air inlet is covered. 	<ol style="list-style-type: none"> 1) Change high efficiency (HE) filter and prefilter or spark arrestor/prefilter if used. 2) Check and remove blockage or obstruction. 3) Check air inlet and remove obstruction.
Motor/blower battery alarm (audible and battery LED) sounds and flashes.	<ol style="list-style-type: none"> 1) Low battery charge (voltage). 2) Battery not properly installed. 3) Battery temperature too hot (greater than 140°F or 55°C). 4) Battery not recognized by the turbo. 	<ol style="list-style-type: none"> 1) Recharge the battery pack. 2) Remove and reinstall battery. 3) Bring to cooler environment and allow battery pack to cool. 4) Check that correct 3M battery is used. Remove and reinstall battery.
All alarms on blower unit flash and sound simultaneously.	<ol style="list-style-type: none"> 1) Software system malfunction. 2) Motor/fan not turning due to obstruction. 3) Damaged motor. 	<ol style="list-style-type: none"> 1) Power down (turn off) motor/blower to clear alarms. If unit does not reset contact 3M Technical Service. 2) Remove filter and check for obstruction in the fan. 3) Replace turbo or contact 3M Technical Service.
No airflow, no alarm(s), motor/blower does not start.	<ol style="list-style-type: none"> 1) Battery contact is obstructed or damaged. 2) Battery is completely discharged. 3) Damaged circuit board. 4) Damaged motor. 	<ol style="list-style-type: none"> 1) Check that the battery contact on both the battery and turbo is clean and that the pins are not bent or broken. Replace battery pack if contact is damaged. Replace turbo if the pins are bent, broken, or otherwise damaged. 2) Fully charge the battery pack. 3) Contact 3M Technical Service. 4) Contact 3M Technical Service.
Airflow indicator shows proper airflow, no alarm but user perceives lower flow than expected.	<ol style="list-style-type: none"> 1) If S-600, S-700 or S-800 Series hoods or M-series headgear is used, airflow distribution setting may not be optimized for user 	<ol style="list-style-type: none"> 1) Adjust headgear airflow to optimal setting for users comfort. Consult the <i>User Instructions</i> for the specific headgear used.

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Fault/Problem	Possible Cause	Possible Solutions
Airflow indicator shows proper airflow, no alarm but user perceives lower flow than expected, continued	<ul style="list-style-type: none"> comfort. 2) Breathing tube damaged or improperly connected. 3) Airway obstructed in breathing tube or headgear. 	<ul style="list-style-type: none"> 2) Inspect and replace or reconnect breathing tube. 3) Check breathing tube and headgear and remove blockage or obstruction.
Low airflow as indicated by airflow indicator but no alarm(s).	<ul style="list-style-type: none"> 1) Damaged circuit board. 2) Damaged motor. 3) Airflow indicator not held in vertical position. 4) Airflow indicator ball or tube may be damaged or dirty. 	<ul style="list-style-type: none"> 1) Contact 3M Technical Service. 2) Contact 3M Technical Service. 3) Ensure flow indicator is held in vertical position during airflow check (consult TR-300 PAPR <i>User Instructions</i>). 4) Rinse airflow indicator in clean water to help free a stuck ball. If indicator is damaged replace with a new airflow indicator.
Motor/blower low airflow indicator alarms (audible and fan LED flashing) but airflow indicator reads adequate flow.	<ul style="list-style-type: none"> 1) Use in high altitude (above 2600 ft (800m)). 	<ul style="list-style-type: none"> 1) Changing the high efficiency (HE) filter prefilter or spark arrestor/prefilter (if used) may help. Contact 3M Technical Service. You may need to use an alternate PAPR
Motor/blower slow to float the airflow indicator ball.	<ul style="list-style-type: none"> 1) Ball stuck. 2) Not a malfunction. 3) Circuit board or other system failure. 	<ul style="list-style-type: none"> 1) Rinse airflow indicator in clean water to help free a stuck ball. 2) Under normal operation the TR-300 motor/blower may take up to 1 minute to ramp up to a stabilized airflow. Review airflow check procedures in the TR-300 PAPR <i>User Instructions</i>. 3) If the motor/blower is taking longer than expected for normal operation, contact 3M Technical Service.
Motor/blower does not turn off when power button is pressed.	<ul style="list-style-type: none"> 1) Power button not held an adequate length of time. 2) Circuit board malfunction. 	<ul style="list-style-type: none"> 1) To turn off the motor/blower, press and hold the power button for 2 seconds. 2) Remove battery and reinstall. If unit does not reset contact 3M Technical Service.
User detects odor or taste of contaminants or feels eye or throat irritation.	<ul style="list-style-type: none"> 1) Incorrect respirator for application and /or environment. 2) Breathing tube or headgear damaged. 3) Breathing tube not connected or improperly connected to PAPR or headgear. 4) High efficiency (HE) Filter not in place or filter gasket damaged. 5) Nuisance odor carbon on filter is exhausted. 	<ul style="list-style-type: none"> 1) Consult on-site industrial hygienist or safety director. 2) Inspect breathing tube and headgear per their <i>User Instructions</i>. Replace if damaged. Do not attempt to repair. 3) Detach breathing tube and reconnect per <i>User Instructions</i>. 4) Replace high efficiency (HE) filter. 5) Replace high efficiency (HE)/nuisance odor filter.
Bottom bar of battery pack charge indicator flashes.	<ul style="list-style-type: none"> 1) Low battery charge (voltage). 	<ul style="list-style-type: none"> 1) Recharge the battery pack.
Battery charge indicator shows less than 5 bars after charging.	<ul style="list-style-type: none"> 1) Battery is past its service life. As the battery pack ages, it will normally lose capacity. An older battery pack may show less than 5 bars after completing a charge cycle or may not run as long as a new battery. 	<ul style="list-style-type: none"> 1) Replace battery pack.

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Fault/Problem	Possible Cause	Possible Solutions
Battery pack's charge lasts less than expected.	1) Inadequate charging. 2) High efficiency (HE) filter is loaded with particles, making the motor run harder. 3) Battery pack reaching end of service life. As the battery pack ages, it will normally lose capacity. An older battery pack may not run as long as a new battery. 4) Use at high elevation (above 2600 ft (800m)). 5) Using TR-330 Economy battery pack, situation may require high capacity battery pack.	1) Ensure battery pack is fully charged per battery pack indicator. 2) Replace the high efficiency (HE) filter and prefilter or spark arrestor/prefilter if used. 3) Replace battery pack. 4) Changing high efficiency (HE) filter and prefilter or spark arrestor/prefilter (if used) more often may help. Use alternate PAPR. 5) Install high capacity battery pack (TR-332).
At beginning of charge cycle, charger display indicates error.	1) Internal software needs to be reset.	1) Remove battery pack from charger. Place on motor/blower and run for 30 seconds. Replace on charger. If situation does not resolve contact 3M Technical Service.
"Power on" indicator on charger not lit.	1) AC power cord not connected to wall outlet or power cord not connected to charger cradle or 4-station base. 2) Power cord not functioning. 3) Cradle not seated properly in multi-base. 4) Power supply (source) not functioning. 5) Defective charger cradle. 6) Blown fuse (TR-344N)	1) Check all power supply connections. 2) Replace power cord. 3) Remove and reseat cradle. 4) Switch to an alternate power supply (source). 5) Replace charger cradle. 6) Replace fuse 250V; 15A.
Battery will not go into charge mode (will not charge, no fault indication on charger).	1) Battery is fully charged. 2) Battery not seated properly in cradle. 3) Defective battery. 4) Defective charger. 5) Battery too hot or too cold. 6) Charger cradle pins broken or damaged.	1) No action necessary. 2) Remove battery and reseat in cradle. 3) Replace battery. 4) Replace charger. 5) Allow battery to return to room temperature. 6) Replace charger cradle.
Error message (amber and green light flashing) on charger.	1) Fault condition identified. 2) Defective battery	1) Remove battery from cradle and reinsert. Reseat cradle in docking station if used. If situation does not resolve contact 3M Technical Service. 2) Contact 3M Technical Service.
Charger indicates complete charge, but battery pack charge status indicator shows less than 5 bars.	1) Battery pack has reduced capacity due to age or damage.	1) Remove battery pack from service and replace with new pack.
Battery pack does not accept a full charge.	1) Charging location (environment) or battery excessively hot.	1) Review procedure for battery charging in <i>the User Instructions</i> . Charge battery in room temperature location. Allow battery to cool to room temperature prior to charging.

Fault/Problem	Possible Cause	Possible Solutions
Motor/blower slides along belt.	1) 3-bar slides not installed on belt.	1) Install two 3-bar slides on belt per TR-300 PAPR <i>User Instruction.</i>

 **WARNING**

These respirators help protect against certain airborne contaminants. Use of 3M™ Powered and Supplied Air Respirators by untrained or unqualified persons, or use not in accordance with the instructions, **may adversely affect product performance and result in sickness or death.** Powered and supplied air respirators are to be used only by qualified persons who are properly trained in their use and maintenance and only in accordance with their operating and maintenance manuals. Each person using these products must first read and understand the operator's manual. See supervisor for assistance or call 3M OH&ESD Technical Service in U.S.A. at 1-800-243-4630. In Canada call 1-800-267-4414.

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For More Information:

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Technical service: 1-800-243-4630
In Canada: Website: www.3M.com/CA/occsafety
Technical Service: 1-800-267-4414

3M Occupational Health and Environmental Safety Division
3M Center, Building 235-2W-70
St. Paul, MN 55144-1000

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