



# Turbo Unit Instruction Manual



Adflo® Turbo Unit Powered Air Purifier

HÖRNELL



## WARNING

**Do not issue this product until the user reads and understands this instruction manual which is an essential part of this Adflo® Turbo Unit.**

**If equipment is not properly assembled, connected, and used in strict conformance with this instruction manual, contaminated air could be drawn into the Unit, resulting in exposure which may lead to serious bodily injury or loss of life.**

**Use by unqualified or untrained persons, or use other than in accordance with this instruction manual, is dangerous and could expose the user to serious bodily injury or loss of life.**

**Do not make any modifications to any part of this system, other than those specified in this manual. Do not use any replacement parts other than those specified in this manual. Unauthorized modifications and replacement parts will void the warranty and expose the user to the risk of personal injury.**

**Final determination of Purifier applicability and filter selection must be made by an on-site safety specialist or industrial hygienist.**

**Not to be used in atmospheres classified as IDLH.**

**Not to be used in atmospheres containing less than 19.5% oxygen.**

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## Chapter 1 General Information

### 1.1 Principles of Operation

Adflo® Turbo Unit is a belt-mounted, powered air purifier. Combined with the appropriate Hornell headpiece, it helps to provide respiratory protection from specific airborne contaminants.

The Adflo® Turbo Unit features a constant-flow blower and filter cover that houses a spark arrestor, a prefilter, and an HE particle filter. The Unit's battery pack, belt, breathing tube, airflow indicator, battery charger and carry bag are all standard equipment. An OV/SD/CL/HC Adflo® Cartridge is available and can be added to the Adflo® unit.

The Adflo® Turbo Unit draws ambient air through its filter/cartridge and supplies filtered air via a breathing tube. The Adflo® Turbo Unit's battery pack provides 5.5 to 13 hours of operation per charge, depending upon particle filter loading and filter configuration.

The Adflo® Turbo Unit is equipped with automatic flow control: the motor power is automatically regulated during operation to compensate for the state of the battery and the level of airflow resistance caused by the HE filter and prefilter being loaded with particles. This automatic control ensures a constant airflow to the user. Should the airflow fall below the manufacturer's minimum design flow rate for any reason, an audible alarm will sound and the red LED on the on/off switch will flash to warn the user to immediately leave the contaminated environment.

### 1.2 Respirator Approvals and Limitations

Refer to the (NIOSH 42 CFR 84) Approval Labels supplied with the Adflo® Turbo Unit for the approved purifier/headpiece combinations.

The Adflo® Turbo Unit has a new, exclusive design that features a "stacked" filtration system. Unlike any other design, the standard Adflo® configuration with the HE particle filter can be "stacked" with the addition of an Adflo® Cartridge for supplemental protection against specific fumes and vapors.

In either configuration, the standard **Adflo® Turbo Filter Cover holds a spark arrestor, prefilter and HE particle filter which always must be used.** The Adflo® Turbo Filter Cover snap-fastens directly onto the turbo unit to provide high efficiency particle filtration. When used with the Adflo® Cartridge, the Adflo® Turbo Filter Cover snap-fastens to the OV/SD/CL/HC cartridge. An on-site safety specialist or industrial hygienist must review the HE filter label to determine the applicability for a given environment/application.

The Adflo® Cartridge consists of OV/SD/CL/HC elements housed in a black plastic shell. The Adflo® Cartridge snap-fastens onto the Turbo Unit. Then, the Adflo® Turbo Filter Cover (with the installed spark arrestor, prefilter and HE particle filter) snap-fastens onto the Adflo® Cartridge to make a complete Purifier/filtration unit. This "stacked" filtration provides protection from particles, organic vapor, sulfur dioxide, chlorine, and hydrogen chloride. An on-site safety specialist or industrial hygienist must review the HE filter label combined with the OV/SD/CL/HC cartridge label to determine the applicability for a given environment/application.

The following limitations apply to all Adflo® Turbo Unit filter configurations:

- **NOT** for use in atmospheres Immediately Dangerous to Life or Health (IDLH).
- **NOT** for use in atmospheres containing less than 19.5% Oxygen.
- **NOT** evaluated as an ignition source in flammable or explosive atmospheres by NIOSH.
- **NOT** to be used without the Adflo® Turbo Unit turned on since there is a risk of high concentration of CO<sup>2</sup> and the oxygen level in the headpiece will fall.
- **NOT** to be used if the Adflo® Turbo Unit does not supply enough airflow (low flow alarm).
- **NOT** to be used in confined spaces with limited air supply.
- **NOT** to be used if the user is not sure about the contamination present in the ambient air.
- The Adflo® Turbo Unit is intended for use in the temperature range of 23° to 131°F (-5°C to 55°C). At temperatures below 50°F (10°C), the air inside the headpiece can be perceived as being cold.

The following limitation applies to standard HE filter configuration:

- **NOT** to be worn as protection against gases or vapors.

The following limitation applies to HE filter *plus* the OV/SD/CL/HC Cartridge configuration:

- Follow cartridge change schedule, as established by an on-site safety specialist or industrial hygienist, to ensure that cartridges are replaced before breakthrough occurs.

### 1.3 Headpiece Approvals and Limitations

For approved purifier/headpiece combinations, refer to the (NIOSH 42 CFR 84) Approval Label that was supplied with the Adflo® Turbo Unit.

For all other headpiece approvals—such as eye, face, helmet protection standards—see the separate manual that was supplied with the headpiece.

### 1.4 Unpacking

Open the cartons and inspect each item for shipping damage. Replace all damaged items prior to use. Verify that you have all of the components for a complete Adflo® Turbo Unit as listed:

- 1) “Adflo® Turbo Unit Instruction Manual” (this manual)
- 2) Hornell Respiratory Product Warranty Registration (postcard)
- 3) Breathing Tube
- 4) Adflo® Turbo Unit (belt-mounted, motor-driven fan)
- 5) One Adflo® Turbo Filter Cover with the following items installed:
  - A) Spark Arrestor
  - B) Prefilter
  - C) HE Particulate Filter
- 6) Adflo® OV/SD/CL/HC Cartridge (if ordered)
- 7) Belt
- 8) Battery Pack
- 9) Battery Charger
- 10) Carry Bag
- 11) Airflow Indicator
- 12) Approval Labels (not shown)

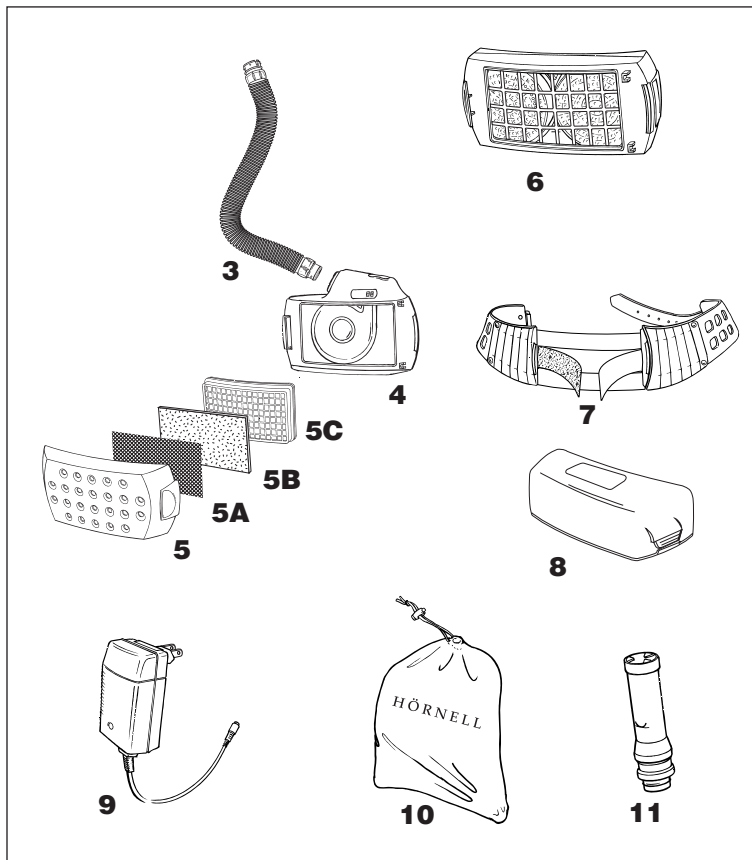


Figure 1:  
Exploded  
View of Adflo®  
Turbo Unit.

## Chapter 2 Adflo® Turbo Unit Use

### 2.1 Battery Charging/Discharging

All new units must be charged before they are used for the first time.

The charger must not be used in any circumstances for any other purpose than that for which it was manufactured. It is intended for indoor use only and must not be exposed to moisture or damp environments. It must not be used to charge non-rechargeable batteries.

The charger controls the charging automatically. The battery will be fully charged in approximately 3 hours, depending upon its residual capacity. After charging, trickle charging automatically starts and keeps the battery at full capacity. The battery will discharge during a long period in storage if not connected to the charger. For this reason, always re-charge the battery if it has been stored for more than 15 days.

**To achieve maximum power when the battery is new or has been stored for more than four weeks, fully discharge/charge the battery for three complete cycles. To discharge, run the unit until it completely stops—DO NOT SHORT CIRCUIT THE BATTERY TO DISCHARGE; DISCHARGE THE BATTERY ONLY BY RUNNING THE UNIT UNTIL IT STOPS. To fully charge the unit, follow the steps listed below. Complete the discharge/charge cycle three times.**

The output of the battery pack is protected by an automatic cut-out device which is activated when excessive current is drawn. Once the cause of excessive current is removed the device will reset after a few seconds.

The battery pack is equipped with a separate charging socket so that it can be charged without having to remove it from the Adflo® Turbo Unit. The battery can also be removed from the Adflo® unit for charging (see Section 3.2: Removing and Installing the Battery Pack).

Recommended ambient temperature for charging is 32°F to 104°F (0°C to 40°C). If the charger's LED blinks very rapidly during charging, it means that the environment is either too hot or too cold to charge.

- 1) Connect the charger output into the battery's charging socket (see Figure 2).
- 2) Plug the charger into a suitable source of AC power (110-120V). The charger's LED will stay on continuously during the initial charging stage, as symbolized by the unbroken line on the charger's label (see Figure 3).

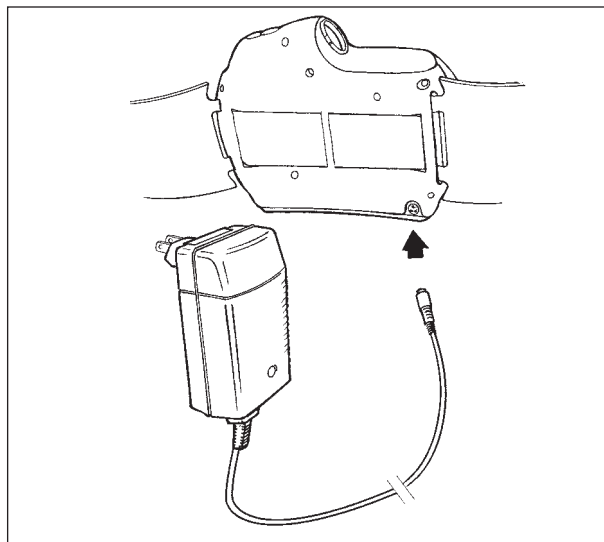


Figure 2:  
Battery Charging.



Figure 3:  
Close-Up of Battery Charger.

- 3) When the battery is fully charged, the charger's LED will blink slowly, indicating that the charger is in the trickle-charging stage, symbolized as a dashed line on the charger's label (see Figure 3). A fully charged battery can be left in the trickle-charging stage for a moderate amount of time (e.g. a weekend), but for maximum battery life it is best to disconnect the charger after a full charge has been received.
- 4) Disconnect the charger from the power source. Disconnect the charger output from the battery's charging socket.

NOTE: If the Adflo® Turbo Unit starts to run during charging, turn it off.

The Adflo® unit has a three-bar battery indicator (see Figure 4) that is operational when the unit is turned on.

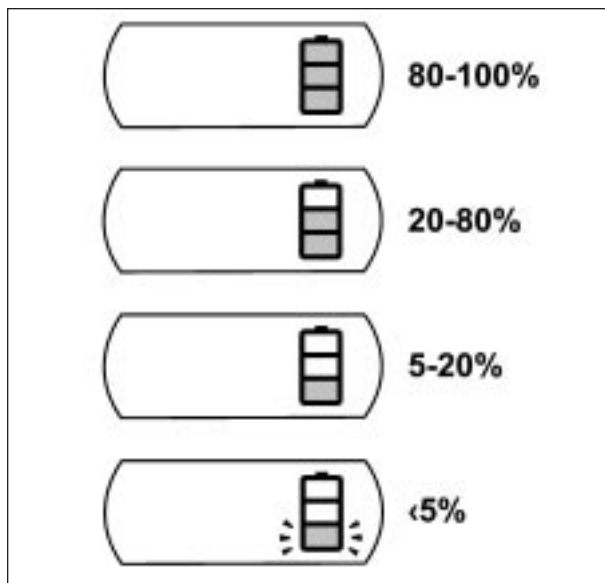


Figure 4:  
The Four Different Charge Indicators.

When all three bars are illuminated, the battery has 80-100% capacity. Two bars indicate 20-80% capacity. One bar indicates 5-20% capacity. During the last 30 to 60 minutes of charge, the bottom bar will flash continuously one second ON then one second OFF and the audible warning (beep) will beep four times in two seconds, repeating every 30 seconds. The final 15 to 60 seconds causes the beeper to beep every 1/2 second. NOTE: all airflow, lights and beeping will completely stop when the battery is fully drained.

## 2.2 Pre-Operational Adflo® Turbo Unit Inspection & Testing

Prior to beginning each work shift, perform the following Pre-Operational Inspection to ensure the proper airflow and alarm function of the Adflo® Turbo Unit.

- 1) Replace any missing or damaged parts.
- 2) Ensure that the HE filter is properly installed in the Adflo® Turbo Unit. If using the OV/SD/CL/HC cartridge, ensure that it is also properly installed in the Adflo® unit. See Chapter 3 for instructions on removing and replacing the HE filter and the OV/SD/CL/HC cartridge.
- 3) Confirm that the battery pack is fully charged and properly fitted to the Adflo® unit. See Chapter 3 for instructions on removing and reinstalling the battery pack.

- 4) If not already disconnected, disconnect the breathing tube from the headpiece assembly's airduct by carefully twisting the breathing tube end connector so it unlocks from the "J" channel on the airduct.
- 5) Insert the airflow indicator onto the end of the breathing tube.
- 6) With the airflow indicator in a vertical position, turn the Adflo® Turbo Unit on (see Figure 5). All three LEDs located on the ON/OFF switch will turn on for approximately one second; then the two green LEDs should remain on.

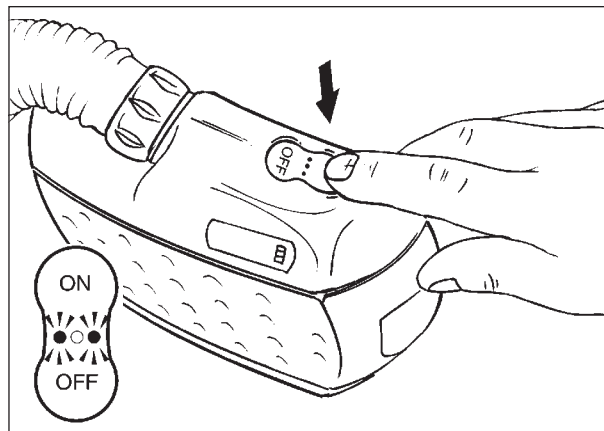


Figure 5:  
Turning On the Adflo Unit.

- 7) Ensure that the bottom of the floating ball rests at, or above, the minimum flow mark (see Figure 6).

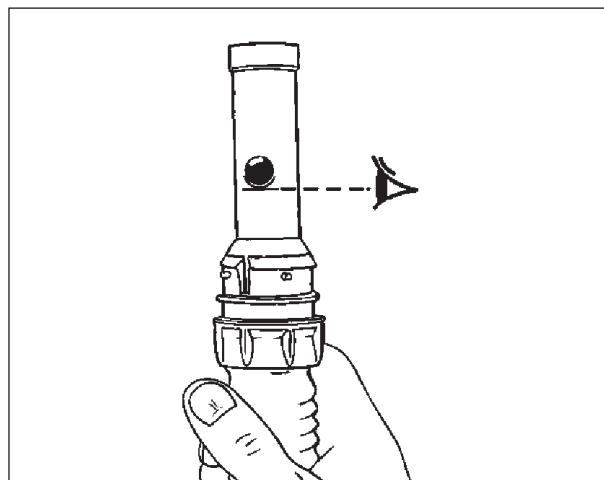


Figure 6:  
Airflow Indicator Check.

NOTE: If the floating ball of the airflow indicator fails to rest at or above the minimum flow level, refer to Section 2.5 Fault Location of this manual.



- 8) Remove the airflow indicator from the end of the breathing tube.
- 9) To check the low airflow/high particle load alarm, you will simulate a low airflow condition as follows: With the Adflo® unit turned on, tightly cover the end of the breathing tube with the palm of your clean hand; the motor will then automatically speed up, attempting to compensate for the low airflow condition. Continue to press your palm tightly against the end of the breathing tube, making a tight seal. When you have achieved a tight seal, the unit will sound an audible alarm and the center, red LED on the on/off switch will flash (see Figure 7).

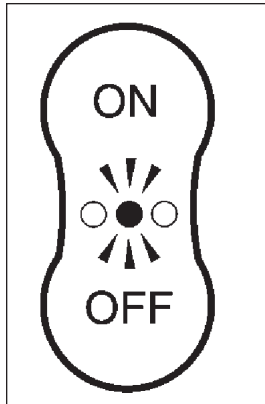


Figure 7:  
Low Airflow Warning LED.

- 10) Remove your hand from the end of the breathing tube; the audible alarm and the flashing red LED should both stop, while the motor returns to a slower speed.
- 11) Reattach the airflow indicator and repeat steps 5 and 7 above to confirm the airflow rate.

## WARNING

**To ensure adequate protection, the performance of this unit must be monitored in a non-hazardous environment. During user break periods, confirm sufficient airflow: the airflow indicator float rests at the minimum float level. Failure to confirm sufficient airflow in a non-hazardous environment could lead to contaminant exposure resulting in serious bodily injury or loss of life.**

- 12) If the unit does not operate as described in all of the above procedures, perform the Fault Location Procedures listed in Section 2.5.
- 13) To turn the unit off, press the off button for two seconds.
- 14) After confirming adequate airflow, filter condition, and alarm function, assemble breathing tube to the airduct of the headpiece assembly (see Figure 8). Make certain to twist the breathing tube end connector until it locks into place in the “J” channel of the headpiece’s airduct.

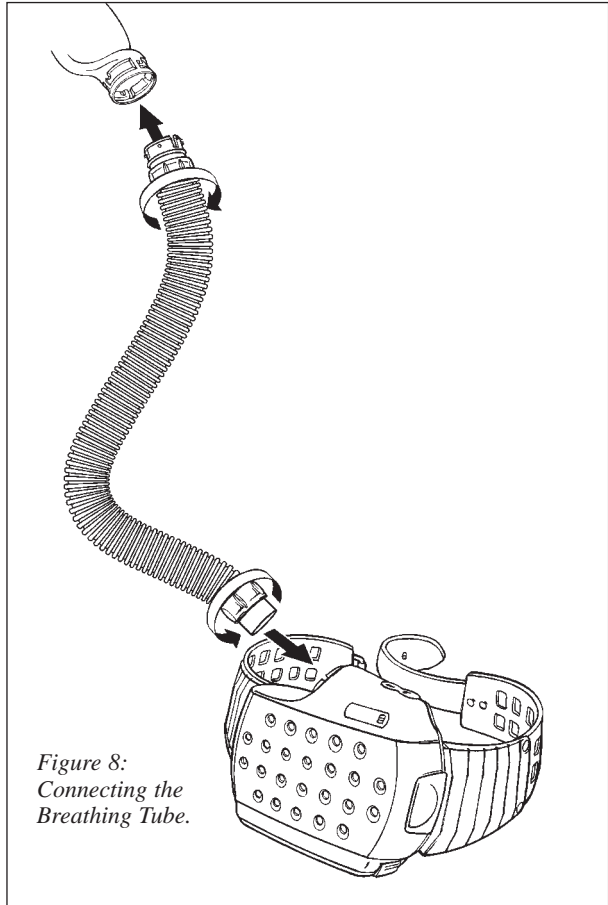


Figure 8:  
Connecting the Breathing Tube.

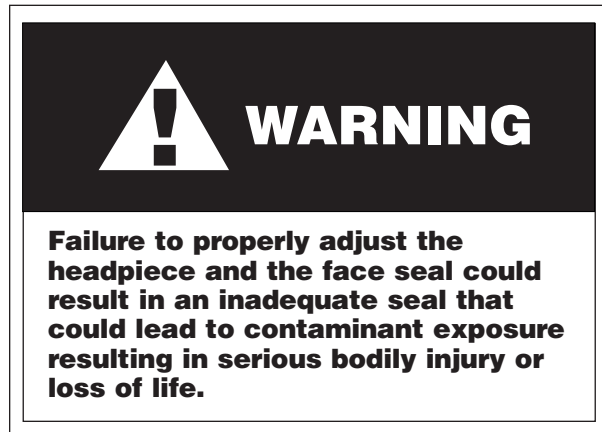
## CAUTION

**To avoid the disconnection of the breathing tube, be certain to fully insert and twist the breathing tube end connectors until they lock into place at the end of the “J” channels found on both the headpiece’s airduct and the Adflo® Turbo Unit.**



## 2.3 Headpiece Assembly Preparation

For all headpiece assembly preparation, see the appropriate separate manual that was supplied with the headpiece.



- 5) Perform the Pre-Operational Adflo® Unit Inspection & Testing (see Section 2.2 Pre-Operational Adflo® Unit Inspection & Testing). After confirming adequate airflow, filter condition, and alarm function, assemble the breathing tube to the airduct of the headpiece assembly. Make certain to twist the breathing tube end connector until it locks into place in the “J” channel of the headpiece’s airduct. Refer to the appropriate separate manual that was supplied with the headpiece.
- 6) Turn on the Adflo® Turbo Unit (see Figure 5).
- 7) Fasten the belt around the waist. Adjust the belt so it fits comfortably and securely around the waist, with the Adflo® Turbo Unit in the small of the back.
- 8) Put on the headpiece.

## 2.4 Donning the System

- 1) Install a fully-charged battery into the Adflo® Turbo Unit (see Section 2.1 Battery Charging/Discharging and Section 3.2 Removing & Reinstalling the Battery Pack).
- 2) Check the installation of the Adflo® Turbo Filter Cover, spark arrestor, prefilter and HE filter (see Section 3.3 Replacing the HE Filter, the Prefilter & the Spark Arrestor). Check the installation of the OV/HC/CL/SD cartridge, if used (see Section 3.4 Replacing/Installing the OV/HC/CL/SD Adflo® Cartridge).
- 3) The Adflo® unit is typically shipped already installed on its belt. Inspect the belt for tears or rips. Replace as needed (see Section 3.5 Replacing the Belt).
- 4) Inspect the breathing tube for any kinks, breaks, tears or holes. Insert the end connector of the breathing tube into the Adflo® unit and twist it until it locks into place in the “J” channel (see Figure 8).



## 2.5 Fault Location Procedures

# WARNING

**If, at any time during operation, the Adflo® Turbo Unit stops, or the airflow to the headpiece stops or is reduced, or if the user detects an odor or taste of gas, or feels eye or throat irritation, or if either the battery alarm or the low airflow/high particle load alarm is activated, the user must immediately leave the contaminated environment and perform the Fault Location Procedures on the Adflo® Turbo Unit. Failure to perform the Fault Location Procedures when any of the above conditions occurs could lead to contaminant exposure resulting in serious bodily injury or loss of life.**

Fault	Probable Cause	Possible Solutions
Audible alarm and all three LEDs are flashing (low airflow)	1) Breathing tube is blocked 2) Filter is covered 3) Filter is fully loaded with particles	1) Check & remove blockage or obstruction 2) Check air filter & remove obstruction 3) Change HE filter and prefilter (see Chapter 3)
Bottom bar of battery indicator flashes; battery alarm sounds	Low battery voltage	1) Fully charge the battery pack 2) Fully discharge & charge the battery pack 3 times, as per Section 2.1 3) Install a new, fully-charged Adflo® battery pack
No airflow, no alarms	1) Battery contact on battery pack is damaged 2) Battery is completely flat (no charge) 3) Damaged circuit board 4) Damaged motor	1) Check the battery contact (e.g. is it bent or broken?) 2) Fully charge the battery pack 3) Return to Hornell for repairs 4) Return to Hornell
Low airflow, no alarms	1) Damaged circuit board 2) Damaged motor	1) Return to Hornell 2) Return to Hornell
User detects odor or taste of gas or feels eye or throat irritation	1) Incorrect Purifier for application and/or environment 2) Time to change OV/SD/CL/HC cartridge	1) Consult on-site industrial hygienist or safety director 2) Change cartridge & develop a cartridge replacement schedule with your on-site industrial hygienist or safety director

<b>Fault</b>	<b>Probable Cause</b>	<b>Possible Solutions</b>
Battery pack's charge lasts less than 6 hours	1) Inadequate charging 2) HE filter is loaded with particles, making the motor run harder	1) Fully discharge & charge the battery pack 3 times, as per Section 2.1 2) Replace the HE filter & prefilter, and examine the spark arrestor
The motor runs "faster than normal"	1) The HE filter is loaded with particles 2) Recent user change from HE filter and OV/SD/CL/HC cartridge to just the HE filter	1) Replace the HE filter & prefilter, and examine the spark arrestor 2) Let the unit run for 2 minutes so it can automatically adjust to the new filter media or changes to the filter configuration
The motor runs "slower than normal"	1) Recent user addition of OV/SD/CL/HC cartridge	1) Let the unit run for 2 minutes so it can automatically adjust to the new filter configuration

If further assistance is required, contact your Hornell distributor or the Hornell technical support staff (see Chapter 4).

## Chapter 3 System Maintenance

### 3.1 Cleaning & Storage

The outer surfaces of the Adflo® Turbo Unit may be cleaned with a soft cloth dampened in a mild solution of clean water and mild detergent. **Abrasive cleaners or solvents must not be used.**

Detach the breathing tube from the Adflo® Turbo Unit and inspect for holes or tears. Wipe clean the connection sites on the Adflo® Turbo Unit and the headpiece assembly. **If you suspect that the inside of the breathing tube is dirty, it must be replaced with a new breathing tube (see Chapter 4).**



## WARNING

**Do not allow contaminant to enter into the breathing tube or Adflo® Turbo Unit. Failure to prevent contaminant from entering into the breathing tube or Adflo® Turbo Unit could lead to contaminant exposure resulting in serious bodily injury or loss of life. Consult your local safety professional in the event contaminant entry into the breathing tube or Adflo® Turbo Unit is suspected.**

**Do not allow water to enter into the Adflo® Turbo Unit or the battery pack. Failure to prevent water from entering into the Adflo® Turbo Unit or the battery pack could cause product failure leading to contaminant exposure resulting in serious bodily injury or loss of life. Any filters or cartridges which have been directly exposed to water must be disposed of in accordance with state, local and federal ordinances.**

**Do not clean any part of the system with gasoline, organic-based solvents, or chlorinated degreasing fluids (such as trichloroethylene). Failure to prevent cleaning with any of these substances could lead to contaminant exposure and/or product failure resulting in serious bodily injury or loss of life.**

The Adflo® Turbo Unit must be stored in a dry, clean area, in the temperature range of -4°F to +131°F (-20°C to +55°C) and relative humidity of less than 90%RH. The Adflo® Turbo Unit can withstand brief periods of storage at +185°F (+85°C).

If the Adflo® Turbo Unit is stored at temperatures below 32°F (0°C), the battery pack must be allowed to warm up to achieve optimal battery performance. The Adflo® Turbo Unit must be protected from dust, particles, and other contamination when stored between use, in a clean environment, in the Carry Bag.

### 3.2 Removing & Reinstalling the Battery Pack

Hold the Adflo® Turbo Unit so the “Adflo®” logo faces you; press in on the battery pack catch found immediately to the right of the logo (see Figure 9A) and lift out the battery.

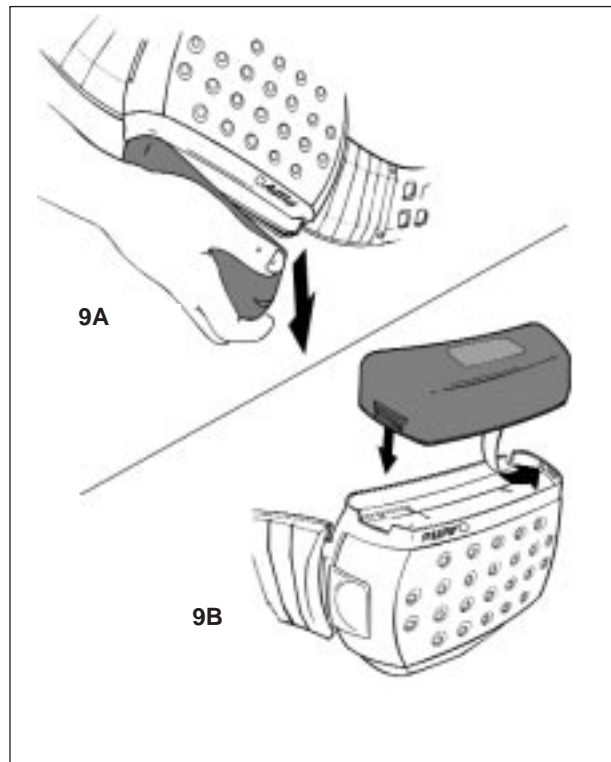


Figure 9:  
Removing & Reinstalling the Battery Pack.

To reinstall, hook the left edge of the battery pack into its holder and then press the right side of the battery until the catch fully engages (see Figure 9B).

### 3.3 Replacing the HE Filter, the Prefilter & the Spark Arrestor

The HE filter and prefilter must be changed if the battery operating time becomes too short—or if the airflow is diminished. The HE filter and prefilter **CANNOT** be cleaned; do not attempt to remove contamination from the HE filter or prefilter using compressed air as this action will not work and it will automatically void the Adflo® warranty.

To replace HE filter, the prefilter, or the spark arrestor, the user must first remove the Adflo® Turbo Filter Cover. Hornell designed the latch release for the Adflo® Turbo Filter Cover so it would not accidentally release if bumped into objects. The latch can be released simply, and without the use of tools, using the following method:



*Figure 10: Filter Cover Removal, Step 1*  
Place the Turbo Unit upright on a stable surface, such as a table. With the heel of your right palm, push firmly on the second column of air holes of the silver Filter Cover; the Cover will deflect slightly.



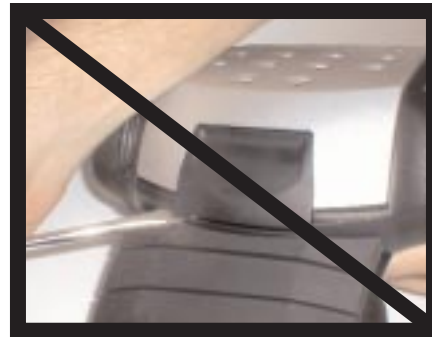
*Figure 11: Filter Cover Removal, Step 2*  
While continuing to slightly deflect the silver Filter Cover, press your fingers down on groove of the black latch until it releases.



*Figure 12: Filter Cover Removal, Step 3*  
Once the latch releases, the Filter Cover can be lifted from the Turbo Unit.



*Figure 13: Wrong Way 1*  
Do NOT push in the middle or the bottom edge of the latch: the latch will not release.



*Figure 14: Wrong Way 2*  
NEVER use tools to pry the latch; you can permanently damage the latch or the Filter Cover, making the unit inoperable.

Remove the used HE (particle) filter from the Adflo® Turbo Filter Cover. NOTE: the HE filter **CANNOT** be cleaned. Dispose of the used filter as per local and federal regulations.

After you have removed the HE filter, the prefilter is visible. The prefilter is designed to extend the service life of the HE filter by capturing many of the particles that would otherwise be captured by the HE filter. The prefilter shall always be used and should be changed at the same time the HE filter is changed. To remove it, simply lift the soft prefilter out with your clean finger. Note: the prefilter **CANNOT** be cleaned. Dispose of the used prefilter as per local and federal regulations.

After you have removed the prefilter, the spark arrestor (metal screen) is visible. Inspect the spark arrestor. If it is dirty, remove it and clean with a mild solution of clean water and mild detergent (dishwashing soap). Completely dry the spark arrestor with a clean cloth. If the spark arrestor does not come clean, or if it has any damage to it, replace with a new spark arrestor (see Chapter 4 for replacement parts).

Place the cleaned (or new) spark arrestor into the Adflo® Turbo Filter Cover. Next, place the new prefilter into the Adflo® Turbo Filter Cover. Then, place the new HE filter into the Adflo® Turbo Filter Cover (see Figure 15). To reinstall the Adflo® Turbo Filter Cover in the Adflo® unit, hold the Adflo® unit so the “Adflo®” logo faces you. Then hook the left side of the Adflo® Turbo Filter Cover into the Adflo® unit. Press down on the right side of the cover until the catch fully engages.

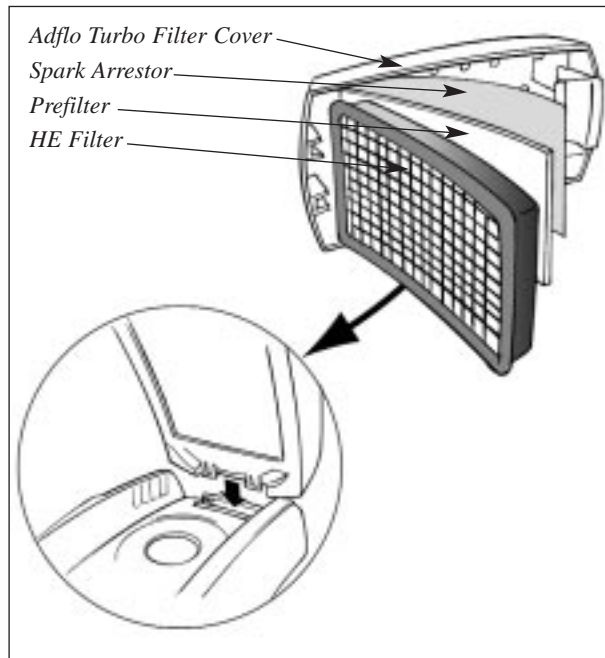


Figure 15:  
Installing the Spark Arrestor, Prefilter and HE Filter.

### 3.4 Replacing/Installing the OV/HC/CL/SD Adflo® Cartridge

The Adflo® Turbo Unit has an exclusive “stackable” capability that allows it to extend its applicability into welding environments requiring supplemental respiratory protection against specific fumes and vapors. This “stacked” filtration provides protection from particles, organic vapor, sulfur dioxide, chlorine, and hydrogen chloride. An on-site safety specialist or industrial hygienist must review the HE filter label combined with the OV/SD/CL/HC cartridge label to determine the applicability for a given environment/application (see Section 1.2 for Respirator Approvals and Limitations).

Some users will buy Adflo® Turbo Units that already have the OV/SD/CL/HC Adflo® cartridge installed from the factory; other users will choose to install the OV/SD/CL/HC Adflo® cartridge on their own to meet changing applications and/or environments.

**NOTE: IN ALL CASES, THE OV/SD/CL/HC ADFLO® CARTRIDGE IS ALWAYS USED WITH THE HE FILTER, PREFILTER, AND SPARK ARRESTOR.**

To replace or install an OV/SD/CL/HC Adflo® cartridge, you must first remove the Adflo® Turbo Filter Cover as follows: hold the Adflo® unit so the “Adflo®” logo faces you; press in on the Adflo® Turbo Filter Cover’s black catch on its right side, and lift off the cover (see Figure 16).

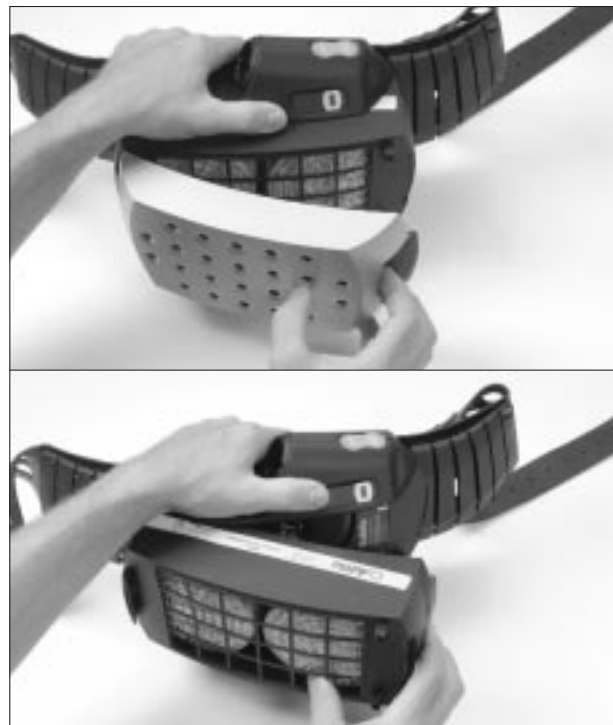


Figure 16:  
Removing the HE Filter and OV/SD/CL/HC Cartridge.



If an OV/SD/CL/HC Adflo® cartridge is already installed, remove it as follows: hold the Adflo® unit so the “Adflo®” logo faces you; press in on the OV/SD/CL/HC Adflo® cartridge’s black catch on its right side, and lift it out of the Adflo® unit. The OV/SD/CL/HC Adflo® cartridge CANNOT be cleaned. Dispose of the used cartridge as per local and federal regulations.

To install a new OV/SD/CL/HC Adflo® cartridge, hold the Adflo® unit so the “Adflo®” logo faces you; hook the left side of the new OV/SD/CL/HC Adflo® cartridge into the left end of the Adflo® unit; press the cartridge down on its right side until its catch fully engages (see Figure 17).



Figure 17:  
Installing the OV/SD/CL/HC Cartridge into the Adflo unit.

Next, inspect the Adflo® Turbo Filter Cover and its components. Replace as needed the HE filter, the prefilter and the spark arrestor (see Section 3.3 for complete instructions).

To reinstall the Adflo® Turbo Filter Cover, hold the Adflo® unit so the “Adflo®” logo faces you. Then hook the left side of the Adflo® Turbo Filter Cover into the left side of the OV/SD/CL/HC Adflo® cartridge (see Figure 18). Press down on the right side of the Adflo® Turbo Filter Cover until the catch fully engages.



Figure 18: Installing the Adflo Turbo Filter Cover onto the OV/SD/CL/HC Cartridge.

### 3.5 Replacing the Belt

Remove the old belt from the Adflo® Turbo Unit by unfastening the belt’s two Velcro® straps and pulling the Adflo® unit away from the unfastened belt.

To attach the Adflo® unit to the belt, first arrange the belt so its two ends are higher than its middle; the belt will look like a smile. Next, thread each Velcro® strip through the slot on the back of the Adflo® unit, and then on through the slot on the leather belt (see Figure 19).

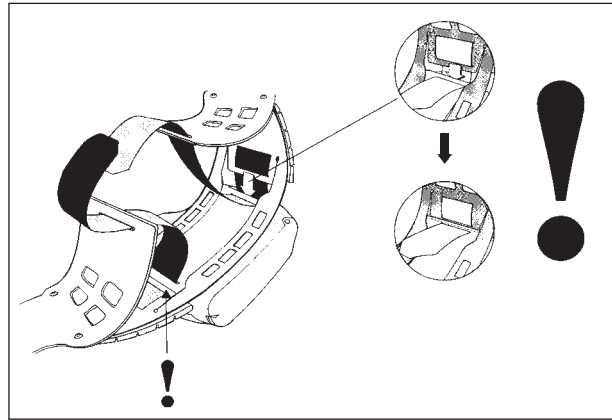


Figure 19:  
Adflo® Belt Installation.

Tightly pull the two Velcro® strips prior to fastening them to one another. When attached properly, the Adflo® unit is tight against the belt: it will not slide around. When worn by the user, the buckle will be on the left side and the belt’s tongue will be on the right side.



Figure 20:  
Adflo® Unit Installed on Belt



## Chapter 4 Customer Information

### 4.1 Customer Service

If you have any questions about your Hornell products, contact our Customer Service at: 800-628-9218 or Fax: 330-425-4576. (Canada: 800-676-6930 or Fax: 905-664-1402).

### 4.2 Adflo® Turbo Unit Warranty

Hornell, Inc. warrants all Adflo® Turbo Units obtained hereunder to be free from defects in material and workmanship in normal service and under normal conditions for 12 months from the date of delivery.

This warranty is void in the case of operator misuse, abuse, or neglect. Read your instruction manual to avoid certain situations which could void this warranty.

The foregoing warranty shall not apply, and Hornell, Inc. shall be held harmless and relieved of any obligation or liability to the buyer, if the equipment has been repaired or altered in a manner not authorized by Hornell, including the use of replacement components not approved by Hornell, or if the equipment has been subject to abuse, negligence or accidental mishandling.

*The foregoing warranties are in lieu of all other warranties expressed, implied, or statutory, including warranty of merchantability or fitness for a particular purpose.*

### 4.3 Warranty Return Procedure

- 1) Make a photocopy of your proof-of-purchase; include the serial number of the product being returned.
- 2) Call the Hornell Warranty Department toll-free at 888-773-3345 (Canada: 800-676-6930) to describe the warranty problem and receive a warranty return number.
- 3) Write the warranty return number on the proof-of-purchase photocopy and fax to Hornell Warranty Department at 330-487-5326 (Canada Fax: 905-664-1402). **Upon receipt, Hornell will send out a replacement product that will, in most cases, arrive the next business day.** Send the original product via UPS third party billing or a call tag issued by Hornell; **clearly write the warranty return number on the outside of the package.**

### 4.4 Out-Of-Warranty Repairs and Service

Hornell offers out-of-warranty repairs on all current models. For repair pricing and procedures, call the Service, Repair & Warranty Dept. toll-free: 888-773-3345 or Fax: 330-487-5326. (Canada: 800-676-6930 or Fax: 905-664-1402).

### 4.5 Replacement Parts and Accessories

When ordering replacement parts and/or accessories, use the part numbers and descriptions listed below. Failure to use only Hornell parts and accessories will void the product warranty and will expose the user to the risk of serious bodily injury or loss of life. Hornell, Inc. is not responsible for system performance if other than Hornell parts are used to repair or refurbish the equipment.

#### 4.5.1 Replacement Filters and Cartridges

Part Number	Description
15-0099-99X06	6-pack Adflo® Prefilter
15-0099-99X12	12-pack Adflo® Prefilter
15-0199-99X02	2-pack Adflo® HE Particle Filter
15-0199-99X06	6-pack Adflo® HE Particle Filter
15-0199-99X36	36-pack Adflo® HE Particle Filter
15-0399-99X02	2-pack Adflo® OV/SD/CL/HC Cartridge
15-0399-99X06	6-pack Adflo® OV/SD/CL/HC Cartridge
15-0009-99X02	2-pack Adflo® Spark Arrestor

#### 4.5.2 Adflo® Turbo Replacement Parts

Part Number	Description
15-1099-01	Adflo® Turbo Assembly and Filter Cover without Filter or Cartridge or Battery
15-1099-81	Adflo® Turbo Filter Cover
15-5401-01	Adflo® Turbo, complete with Breathing Tube Assembly, Flow Indicator, Belt, Spark Arrestor, Adflo® Turbo Filter Cover, Prefilter, HE Particle Filter, Battery and Smart Charger.



**CAUTION**

The only user-serviceable parts on the Adflo® Turbo Unit are the Adflo® Turbo Filter Cover, HE Filter, Prefilter, Spark Arrestor, the OV/SD/CL/HC Adflo® Cartridge and the Battery Pack.

The Blower Unit is supplied as a seal-tested unit. Any attempt to detach the flexible air inlet molding or fan scroll will result in the termination of the limited warranty contained in Chapter 4.1

**4.5.3 Headpiece Assembly Replacement Parts and Accessories**

See the manual that came with the headpiece assembly for a listing of replacement parts and accessories.

**4.5.4 Miscellaneous Replacement Parts and Accessories**

Part Number	Description
15-0099-05	Flow Indicator
15-1099-07	Adflo® Battery Pack
15-0099-08	Adflo® Battery Smart Charger
15-0099-10	Adflo® Breathing Tube Assembly (Rubber)
15-0099-16	Adflo® Leather Belt
18-0099-16	Comfort Belt
15-0099-06	Adflo® Leather Belt Front Piece Replacement
18-0099-33	Carry Bag

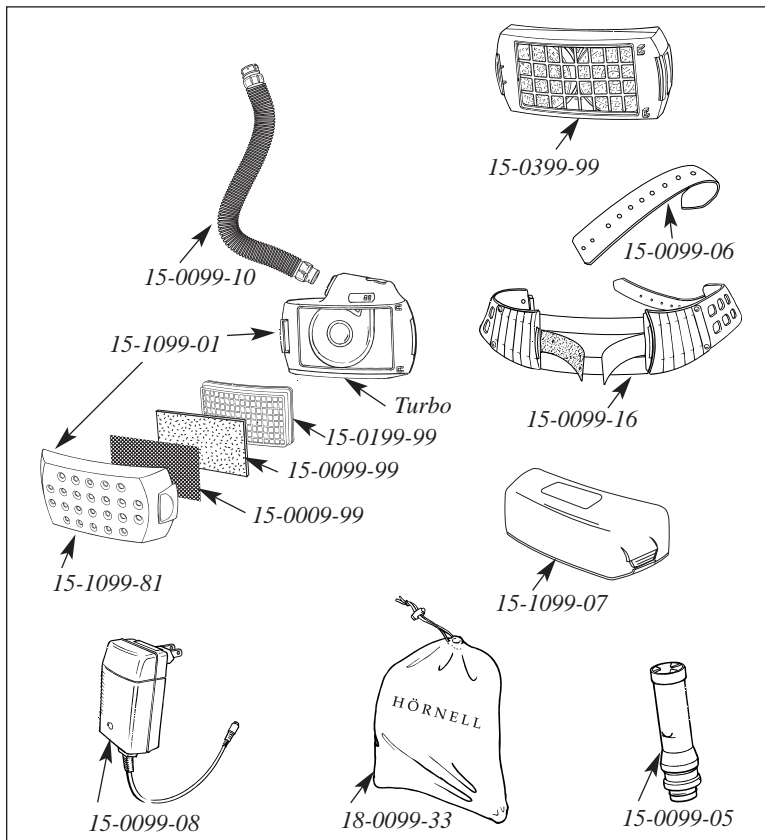


Figure 21:  
Exploded Adflo® Turbo Unit with Part Numbers.

## Appendix A

### Definition of Safety Signal Words per ANSI Z535.4



## WARNING

indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



## CAUTION

indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

## Appendix B

### Technical Specifications for Adflo® Turbo Unit Powered Air Purifier:

Assigned Protection Factor (for approved purifier/headpiece combination):	25
Airflow:	6+ cfm (170+ lpm)
Noise:	<70 db at maximum airflow
Weight, Adflo® unit with battery, belt, breathing tube:	4.48 lbs (2.03 kg)
Weight, OV/SD/CL/HC Adflo® Cartridge:	1.62 lbs (0.74 kg)
Operating Temperatures:	23° to 131°F (-5° to 55°C)
Respirator Approval:	refer to the (NIOSH 42 CFR 84) Respirator Approval Label for all approved purifier/headpiece combinations.
Battery Life:	Approximately 520 charges
Belt Size:	75-115 cm





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