

### BATTERY CHARGE INDICATOR

ALL CleanSpace Respirators are equipped with an indicator of battery charge.

There are three (3) battery indicator lights. Three green lights are lit up when the battery is fully charged and has minimum four (4) hours of operating time. The Respirator should be fully charged before use.



CleanSpace Respirators will function with one (1) or two (2) green battery lights illuminated. If two (2) battery indicator lights are on, the Respirator has between 25% and 75% charge and will typically operate for between 1 and 3 hours. If only one (1) battery indicator light is on, the battery has less than 20% charge and we recommend that you charge the Respirator before use. When the battery approaches a level at which it would not be able to supply the Manufacturer's Minimum Design Flow, an alarm sounds (3 beeps, repeated once per second). All green battery lights are extinguished. **If the low battery alarm sounds you must leave the contaminated area immediately and recharge the battery.**

*Operating time is strongly affected by work rate, altitude, and other factors. The operating times quoted above are average durations at moderate work rates at sea level. Actual operating times may vary widely from average durations.*

### LOW BATTERY ALARM

All CleanSpace™ respirators have a battery indicator light and low battery alarm. The battery alarm is triggered when the battery has approximately 5 minutes life remaining. If the battery alarm sounds (one beep), leave the contaminated area immediately, re-charge the battery or attach a charged CleanSpace2™ Endurance Pack.

### CHARGING THE INTERNAL BATTERY

CleanSpace respirators have internal charging circuits that require a suitable DC source to charge. The charging is automatic and requires no user intervention. Use only the PAFtec specified power source to charge. ONLY CleanSpace™ chargers should always be used to charge the CleanSpace™ batteries or you will invalidate your warranty.

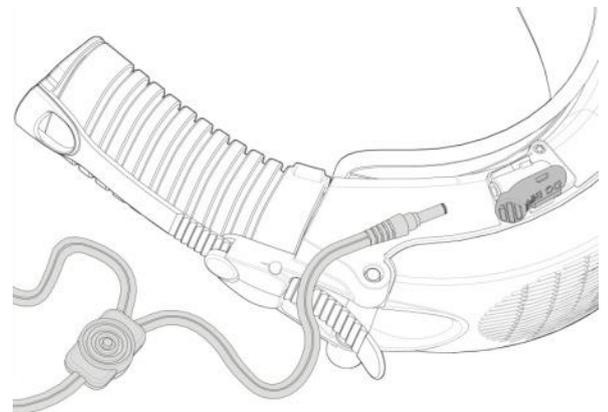
**STEP 1.** Turn the Respirator upside down, and locate the charging port.

**STEP 2.** Lift off the flexible polymer charging port cover. Slide the charger cable connector into the charging port.

**STEP 3.** Ensure the charger is plugged into a power socket.

**STEP 4.** Charging is complete when the Power Unit shows three (3) green solid lights. A fully charged internal battery typically gives you 6 hours of operating time.

**STEP 5.** When the Respirator is fully charged, disconnect the charger cable from the Power Unit charging port. **IMPORTANT** Replace the charging port cover to prevent dirt and contaminants getting into the port.



### NOTES ON CHARGING:

- **DO NOT CHARGE THE POWER UNIT WHEN THE UNIT IS BEING WORN.**
- Your CleanSpace™ charger comes with a lead with two connectors. This is so you can charge two CleanSpace™ Power Units at the same time.
- The CleanSpace2™ Power Unit cannot be charged at temperatures below 0°C.

## GENERAL BATTERY INFORMATION

The CleanSpace™ Respirator has an internal 13.5V lithium ion (Li-ion) polymer battery. Lithium ion (Li-ion) batteries have the highest energy density of all battery types, and are widely used today in portable electronic devices across many different industries. The commonly available Li-ion polymer batteries are similar to Li-ion batteries, except they are packaged in a soft polymer film as opposed to the metal case commonly used for Li-ion cells. The soft packaging allows the cells to expand slightly under extreme heat, making them safer. The optimal performance for an internal lithium ion polymer battery lasts for 3 to 5 years. After 3-5 years, the battery's operating time will reduce and will require to be charged more often.

## RESPIRATOR STORAGE AND CARE

To maintain the integrity of the internal battery, the Respirator should be stored under the following conditions when not being used:

Long term storage (> 3 months)	18°C to 28°C @ 45-85% RH
Medium term storage (< 90 days)	-10°C to 35°C
Short term storage (< 30 days)	-10°C to 45°C

For added safety, all CleanSpace™ internal batteries have a built-in Protection Circuit Module (PCM) to ensure the batteries are protected against over-charge and over-discharge.

Like all batteries, care must be taken to ensure best performance, battery life, reliability and safety. The following precautions must be followed during use:

- Avoid mechanical shocks or impacts from any sharp or hard objects
- Do not use or place the Respirator in extreme heat, such as in direct sunlight, near heat sources, etc. The battery will be damaged if its temperature goes above +100°C. Note: The CleanSpace™ will stop functioning if its internal temperature rises above +60°C
- Do not dispose of the Respirator or Endurance Packs in fire
- Do not use CleanSpace™ Respirator in heavy rain, or allow it to get wet or immersed in liquid
- Do not disassemble the Power Unit case. There are no user serviceable parts inside. Disassembling the power unit will void the manufacturer's warranty.
- Do not use the CleanSpace™ Respirator if there are any signs of severe mechanical damage

**IMPORTANT: IN THE EXTREMELY RARE CIRCUMSTANCE WHERE THE BATTERY IS DAMAGED AND ELECTROLYTE COMES IN CONTACT WITH EYES, FLUSH WITH WATER IMMEDIATELY AND SEEK URGENT MEDICAL ATTENTION**