

FAQs

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General

What are the MAXAIR CAPR Systems?

MAXAIR CAPR Systems are uniquely designed Powered Air Purifying Respirators that are setting standards for today and the future of respiratory and contact protection.

CAPR Systems provide workers an unprecedented level of safety, comfort, convenience, and cost effectiveness while protecting them against harmful aerosolized particulates.

MAXAIR pioneered the NO-Hose, integrated Helmet design, and our CAPR Systems are often referred to as *The NO HOSE PAPRs*.

The many different full configurations available fall within three primary groups -

- Cuff configurations - NIOSH HE*, APF = 25, high cost effectivity, easy donning/doffing
- Shroud configurations - NIOSH HE*, APF = 1000, full 360° Head and Neck protection
- Hood Configurations - NIOSH HE, APF = 1000, full 360° Head and Neck protection, high fluid resistance (ASTM 1671)

* relief from N-OV, nuisance levels of organic vapors, optionally available

CAPR[®]

The No-Hose PAPR



CAPR

Other

What system configurations are available?

Currently there are four Systems to choose from that are the basis for the many different full configurations of the MAXAIR CAPR. Each system consists of a Helmet, a Battery, a Battery Belt, and a Charger.

- The belt is the 2000-76, and the charger is the 2600-02.
- The two helmet choices are the 2081-03 for all non-Hard Hat configurations, and the 2083-03 for all Hard Hat configurations.
- To create a full System Configuration a choice of Head and Face Cover is made as indicated in the tables below. (More graphical descriptions of the many different full configuration options are provided in the Products>Systems pages of the Website.

SYSTEM	CA-DLC-CAPR-36		CA-DLC-CAPR-37		CA-DLC-CAPR-36-HH		CA-DLC-CAPR-37-HH	
HELMET	2081-03		2081-03		2083-03		2083-03	
BATTERY	2500-36TSC		2500-37TSC		2500-36TSC		2500-37TSC	
FILTER CARTRIDGE	2167-10	2166-10	2167-10	2166-10	2167-10	2166-10	2167-10	2166-10
ASSIGNED PROTECTION FACTOR, APF								
CUFF	25	25	25	25	25	25	25	25
SHROUD	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
DOUBLE SHROUD	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

SYSTEM	CA-DLC-CAPR-36	CA-DLC-CAPR-37
HELMET	2081-03	2081-03
BATTERY	2500-36TSC	2500-37TSC
ASSIGNED PROTECTION FACTOR, APF		
HOOD	1,000	1,000
DOUBLE HOOD	1,000	1,000

Are all MAXAIR Systems NIOSH approved?

Yes, the NIOSH approval numbers for the different configurations are listed in the table below.

The exclusive manufacturer for the MAXAIR Systems line of PAPRs is Syntech International.

Schedule	Approval	Manufacturer Name	Facepiece Type	Product Line or Model
21C	0812	Syntech International (BMD)	Helmet	Maxair PAPR with Tri-Snap Helmet
21C	0813	Syntech International (BMD)	Helmet	Maxair PAPR with Single Post Helmet
21C	0849	Syntech International (BMD)	Helmet	Maxair Loose Fitting Universal CH Helmet Power Air Purifying Respirator
21C	0850	Syntech International (BMD)	Helmet	Maxair Series Powered Air Purifying Respirator with Universal CH Helmet
21C	0851	Syntech International (BMD)	Helmet	Maxair Series Powered Air Purifying Respirator with Universal CH Helmet
21C	0911	Syntech International (BMD)	Helmet	Maxair Loose Fitting Helmet Powerd Air Purifying Respirator with the Universal-CH Helmet
21C	0912	Syntech International (BMD)	Helmet	Maxair Loose Fitting Helmet Powered Air Purifying Respirator with the Universal-CH Helmet
21C	0915	Syntech International (BMD)	Helmet	Maxair Powered Air Purifying Respirator with Loose Fitting Helmet
21C	0942	Syntech International (BMD)	Helmet	Model Maxair Loose Fitting Powered Air Purifying Respirator with Helmet and Filter
21C	0960	Syntech International (BMD)	Hood	MaxAir Loose Fitting Powered Air Purifying Respirator with the HE DLC Hood
21C	0961	Syntech International (BMD)	Hood	MaxAir Loose Fitting Powered Air Purifying Respirator with HE DLC Hood
21C	0962	Syntech International (BMD)	Hood	MaxAir Loose Fitting Powered Air Purifying Respirator with HE Universal Hood
21C	1014	Syntech International (BMD)	Helmet	MAXAIR Powered Air Purifying Respirator with Helmet and Filter
21C	1035	Syntech International (BMD)	Helmet	MAXAIR System, Powered Air Purifying Respirator with Helmet and Filter
21C	1036	Syntech International (BMD)	Helmet	MAXAIR System, Powered Air Purifying Respirator with Helmet and Filter
21C	1038	Syntech International (BMD)	Helmet	MAXAIR System, Powered Air Purifying Respirator with Helmet and Filter
21C	1039	Syntech International (BMD)	Helmet	MAXAIR Powered Air Purifying Respirator with Helmet and Filter
21C	1040	Syntech International (BMD)	Helmet	MAXAIR Powered Air Purifying Respirator with Helmet and Filter
21C	1041	Syntech International (BMD)	Helmet	MAXAIR Powered Air Purifying Respirator with Helmet and Filter
21C	1047	Syntech International (BMD)	Helmet	MAXAIR Powered Air Purifying Respirator with Helmet and Filter
21C	1049	Syntech International (BMD)	Helmet	MAXAIR Powered Air Purifying Respirator with Helmet and Filter
21C	1050	Syntech International (BMD)	Helmet	MAXAIR Powered Air Purifying Respirator with Helmet and Filter
21C	1051	Syntech International (BMD)	Helmet	MAXAIR Powered Air Purifying Respirator with Helmet and Filter
21C	1089	Syntech International (BMD)	Helmet	MAXAIR Powered Air Purifying Respirator with Helmet and Filter

What areas / applications can I use the MAXAIR for?

MAXAIR PAPR Systems can be configured with appropriate face/head covers to provide protection against airborne particulates and varying degrees of contact/splash, in a broad range of markets, including but not limited to the following.

- Healthcare
- Emergency Preparedness
- EMS
- Bio-Safety/ Bio-Labs
- Pharma/Bio-Technology
- Nuclear
- Abatement
- Powder Coating
- Light Industrial

Do I need to be fit tested?

No. All MAXAIR Systems are positive pressure, loose fitting powered air purifying respirators that supply 6 to 9 cubic feet per minute (cfm) of airflow. OSHA does not require fit testing for positive pressure loose fitting PAPRs.

OSHA does require annual fit testing on negative pressure respirators as N95s, and tight fitting PAPRs, as both these technologies require a tight fit to the face.

Additionally, OSHA does require all respirator users to complete a medical evaluation questionnaire before using any respirator and to undergo annual retraining on respirators used.

What do you recommend to clean / disinfect MAXAIR?

Alcohol based wipes.

Can one MAXAIR System accommodate multiple users?

Yes. After decontamination, replacement of the comfort strips and single use face/headcovers, MAXAIR is ready for the next user.

What is the noise level of the system?

MAXAIR'S noise level specifications are lower than conventional PAPRs; the average decibel level is typically below 62 db.

Can I use a stethoscope with your system?

Yes. The audio quality is optimum with the Cuff configurations.

Can I wear this system if I have a beard and/or wear glasses?

Yes, all configurations fit users with facial hair, that wear glasses, and nearly all head sizes and shapes. No additional attachments are needed.

Where can I find Donning and Doffing Information?

Assembly, Disassembly, Donning, and Doffing instructions for all MAXAIR System configurations may be found in the MAXAIR UIMs (User's Instructions Manuals) supplied with each MAXAIR Helmet, and in the individual IFUs (Instructions For Use) which are included one in each box of face/head covers. ([Click to go to MAXAIR Systems User Instructions](#))

Helmet

With your "hose-free" technology, where does the air supply come from?

The fan module (located in the top rear of the helmet) draws in ambient air through the filter. The filtered air is channeled inside the helmet, flows downward against the lens, while cooling the user and preventing fogging of the lens. The air flow exhausts carbon dioxide from the user's breath through the face/head cover.

How much airflow am I getting?

The default factory setting is on Low which provides 6-7 cfm of airflow. The user can adjust the airflow switch, located at the posterior of the helmet, between Low (6-7 cfm), Medium (7-8 cfm), and High (8-9 cfm). This adjustment allows the user to match the air flow for widely varying work environments and activity levels.

What do the Safety Status LEDs indicate?

The Safety LEDs are uniquely always on and visible in the peripheral vision of the user. They allow the user to maintain complete focus on patient care, and automatically alert the user when it is time to exit the environment and re-charge or change out the battery, and/or change the filter.

When lighted, the yellow LED indicates a low airflow condition. If it becomes lighted during use it indicates that the system is nearing a point when it won't be able to maintain desired air flow and it is time to check the filter to see if replacement is necessary.

The three green LEDs together with the red LED provide the user general progress status of the battery charge level. Three green lit LEDs indicate approximately 75%-100% charge remaining, two green lit LEDs indicate approximately 50%-75% charge remaining, one green lit LED indicates approximately 25%-50% charge remaining – if not before, at this condition the user should be planning on recharging the battery or replacing it at the next opportunity. No green lighted LEDs and a red lighted LED indicates 0%-25% charge remaining and that it is urgent that the user replace or recharge the battery as soon as possible.

If both red and yellow LED's are lit, both battery and filter need to be checked for change out.

In the typical healthcare environment, the yellow LED should rarely illuminate because it is not a "heavy particulate loading" environment as compared to industrial applications.

How does MAXAIR accommodate different user head sizes?

The helmets are equipped with a universal Liner/headband with a ratchet knob to adjust for different head sizes. The headband ratchet knob adjusts for proper circumferential fit. The headband side straps have height adjustments to allow proper vertical size adjustment, and proper tilt of the helmet to ensure easy visualization of the safety LEDs in the peripheral vision.

Is there a hard cover which can be placed on top of the helmet, to further simplify the decontamination process and provide additional protection to the filters?

Yes, all MAXAIR Cuff and Shroud System configurations have a filter cover that protects the filter/filter cartridge.

For CAPR Systems the cover is the 2061-08 Filter Cover Cap (FCC), the 2061-05 High Fluid Resistant Filter Cover Cap (HFR FCC), or the 2061-04A Hard Hat (HH).

We suggest the use of Alcohol based wipes to decontaminate these covers.

Filter Media

What is the (blue) combination filter? (pre CAPR Systems)

The 2160-10 HE Filter is an overall light weight, high performance filter that is designed to be ideally compatible with the Filter Cover (2061-01) in the 2000-700 System configurations.

What are the CAPR System Filter configurations?

Cuff and Shroud Systems – Filter Cartridges:

The 2167-10 XP and 2166-10 XP N-OV filter cartridges are convenient snap-on/snap-off filters for use with the MAXAIR CAPR Cuff and Shroud System configurations.

The 2167-10 XP Filter Cartridge provides High APF (APF = 1,000) performance when used with CAPR Shrouds. (**NOTE:** OSHA mandates that all NIOSH approved PAPR Cuff configurations are APF = 25.)

The alternate 2166-10 XP N-OV Filter Cartridge provides -

- High APF (APF = 1,000) performance with Shrouds.
- HE performance (APF = 25) for Cuffs.
- Relief from nuisance levels* of organic vapors when used with both Shrouds and Cuffs.

* Levels below the OSHA PEL level, typically 5%-10% of the OSHA PEL.

Hood Systems Filters:

CAPR Hoods have an XP (APF = 1000) filter integrated into the top of the Hood. Additionally, each Hood has a HLF (Heavy Loading Filter) that is assembled over the top of the Hood.

Will the filters withstand water?

In general, MAXAIR System filters are not intended to be exposed to water.

If water spray is a potential, it is recommended to use -

1. A Shroud configuration which includes a Filter Cover Cap (FCC) that protects the Filter Cartridge.
2. A Hood configuration with a HFR FCC (High Fluid Resistance Filter Cover Cap) that protects the Hood Filter.

If filters do become wet with non-toxic and otherwise non-harmful material, they should be allowed to dry thoroughly before next use.

Note that all head and face covers are designed for single use. Hoods (with integrated filters) are single use headcovers.

How often does the filter need to be changed?

It depends upon the application, the environment where used, the frequency and duration of use, and the organization's protocol for the prevention of cross contamination.

In addition, due to its self-monitoring system, the yellow LED will illuminate when airflow intake nears the threshold of 6 cfm (170 lpm), allowing the user ample time to exit the working environment, and change out a heavily loaded filter.

Otherwise, filter change-out a minimum of every six-to-twelve months is recommended.

What is the proper configuration for Infection Control in hospitals?

Most users prefer to use the Cuff system configuration for Infection Control in patient care areas because it more conveniently accommodates stethoscope use.

The Cuff configurations are the primary choice where contact and fluid contamination is not of major concern as the neck and side and back of head are exposed with a Cuff configuration.

Shroud configurations are usually recommended over cuffs when -

1. Contact and fluid contamination needs to be considered
2. When it is acceptable and desirable to use the Filter multiple times.

Hood configurations are typically the configuration of choice for when the combination of maximum protection of a Shroud is needed or desired, and when the easy discarding of the entire head cover and filter is acceptable and economic.

Both Shroud and Hood configurations are available in both single or double shroud styles -

1. The outer shroud is always worn on the outside of the outer body gown to protect against splash.
2. The inner shroud of the double-shroud and double-hood configurations provides
 - a. An improved "airborne contaminant seal".
 - b. A filtered air escape mechanism.

Which HE filter is used for pathology, laboratories, and industrial settings?

MAXAIR Cuff and Shroud configurations use a separate, independently assembled Filter Cartridge, either the 2167-10 XP Filter Cartridge or the 2166-10 XP N-OV Filter Cartridge. All MAXAIR Hoods have the XP Filter integrated into the top of the hood.

MAXAIR XP filter designations indicate they meet the NIOSH HE approval for PAPR filtration and additionally, for Shroud and Hood configurations, they meet the HAPF, APF of 1000, criteria.

NOTE: Regardless of Filter Cartridge used with Cuff configurations, OSHA states that all cuff configurations receive an APF = 25 protection rating.

The N-OV designation of the 2166-10 XP N-OV Filter Cartridge indicates that it additionally provides relief from nuisance levels of organic vapors when used with CAPR Shrouds, i.e. levels below the OSHA PEL level, typically 5%-10% of the OSHA PEL.

Some additional considerations for when to choose different configurations include:

The Cuff configurations are the primary choice where full 360° head contact and fluid contamination is not of major concern as the neck and side and back of the head are exposed with a Cuff configuration.

Shroud configurations are usually recommended over cuffs when -

1. Contact and fluid contamination needs to be considered
2. When it is acceptable and desirable to use the Filter multiple times.

Hood configurations are typically the configuration of choice when the combination of maximum protection of a Shroud is needed or desired, and the easy discarding of the entire head cover and filter is acceptable and economic.

Both Shroud and Hood configurations are available in both single or double shroud styles.

1. The outer shroud is always worn on the outside of the outer body gown to protect against splash.
2. The inner shroud of the double-shroud and double-hood configurations provides
 - a. An improved "airborne contaminant seal".
 - b. A filtered air escape mechanism

Battery, Belt & Charger

What is the standard MAXAIR System battery and how long does one battery charge last?

The 2500-36TSC Lithium-Ion battery is the primary battery included in system configurations. It typically provides 8-10 hours of continuous use per charge, ideal in a low particulate filter loading environment as a Hospital. This battery is small and lightweight.

The 2500-37TSC Lithium-Ion battery is an alternate for all systems; it typically provides 12-15 hours continuous use per charge. It is the same size and weight as the 2500-36TSC.

The latest TSC battery design now includes a secure lock mechanism (spring loaded push-button operated) to ensure added safety of the connection between the power cord and the battery.

NOTE: Thoroughly review the MAXAIR Ensure Readiness Program for proper care and use of MAXAIR Batteries. (To view the MAXAIR Ensure Readiness Program, go to SUPPORT>SPECIAL PROGRAMS and click on "[CLICK For Ensure Readiness](#)").

How many times can the battery be recharged?

The battery can be recharged between 450-500 times (also known as "cycles"). A cycle is defined as a complete discharge and recharge.

Partial cycle charging is safe and reliable with Lithium Ion batteries. Partial cycles are additive to make up complete cycles when estimating the number of charging cycles to expect from the useful life of a battery.

NOTE: Thoroughly review the MAXAIR Ensure Readiness Program for proper care and use of MAXAIR Batteries. (To view the MAXAIR Ensure Readiness Program, go to SUPPORT>SPECIAL PROGRAMS and click on "[CLICK For Ensure Readiness](#)").

How long does it take to charge the battery?

The 2500-36TSC Lithium-Ion battery takes approximately 4-6 hours to completely re-charge; the 2500-37TSC requires approximately 5-7 hours for a complete recharge; the 2500-30TSC requires approximately 6-8 hours for a complete recharge.

NOTE: Thoroughly review the MAXAIR Ensure Readiness Program for proper care and use of MAXAIR Batteries. (To view the MAXAIR Ensure Readiness Program, go to SUPPORT>SPECIAL PROGRAMS and click on "[CLICK For Ensure Readiness](#)").

How long can I leave the battery on the charger?

Do NOT leave batteries on the charger after they are fully charged and the Charger LED turns Green.

There is no practical benefit to leaving a MAXAIR Lithium Ion Battery connected to a MAXAIR Charger after it is fully charged. Leaving batteries on chargers any longer than a maximum of 8-10 hours only increases risk of something between the mains power source and the battery to go wrong and adversely affect the battery.

Once the Charger Green LED turns on, disconnect the Battery from the Charger.

NOTE: Thoroughly review the MAXAIR Ensure Readiness Program for proper care and use of MAXAIR Batteries. (To view the MAXAIR Ensure Readiness Program, go to SUPPORT>SPECIAL PROGRAMS and click on "[CLICK For Ensure Readiness](#)").

If I don't use the system on a regular basis and only use it for emergency preparedness, how often does the battery need to be maintained?

Upon initial purchase, the battery is delivered and can be stored "as is" (at about 50% of full charge) and will provide 4-5 hours of use without being charged.

Thereafter, we recommend you recharge the battery at least annually or bi-annually.

Refer to the User's Instructions included with each Helmet shipment for details about intermittent use and long term storage.

NOTE: Thoroughly review the MAXAIR Ensure Readiness Program for proper care and use of MAXAIR Batteries. (To view the MAXAIR Ensure Readiness Program, go to SUPPORT>SPECIAL PROGRAMS and click on "[CLICK For Ensure Readiness](#)").

There are no electrical outlets in the ante room. Where do you suggest we charge the battery?

Check with your Bio-Hazard / Bio-Engineering or Safety department for existing hospital protocol and procedures for charging batteries.

Batteries MUST NEVER be charged in patient care areas.

NOTE: Thoroughly review the MAXAIR Ensure Readiness Program for proper care and use of MAXAIR Batteries. (To view the MAXAIR Ensure Readiness Program, go to SUPPORT>SPECIAL PROGRAMS and click on "[CLICK For Ensure Readiness](#)").

Healthcare users are typically wearing scrubs. Do you have a belt to hold the battery?

Yes, a belt is supplied with all systems and is available for purchase as an add-on/replacement.

The MAXAIR Systems Belt and Battery should be worn under the outer infection control gown and therefore only one, standard belt is needed.

Additionally, as the Belt and Battery are worn under the infection control outer gown, decon of the battery and belt is not required.

Do you have a gang charger?

A 6-Gang Charger, the 2602-06, is available and includes six, 2600-02 chargers clipped on a single bracket. It includes wall mounting hardware.

A 6-Gang Charger Bracket, the 2602-06B, is available for use with up to six existing 2600-02 chargers. A single, bracket-to-wall power cord and wall mouting hardware are included.

Other Parts & Accessories

What material are the disposable cuffs, shrouds, and hoods made from?

Cuffs: Barrier Material and polyurethane/polypropylene.

Shrouds: White portions are polypropylene; Blue portions are polypropylene/polyurethane/polyethylene.

Hoods: Polypropylene, polypropylene modacrylic blend.

What material are the lenses made from?

Polycarbonate and PETG (DLC Cuffs).

Is the lens fog proof?

MAXAIR Helmets uniquely channel the airflow down the inside of the lens, in front of the user's face, maintaining a "fog free" lens and providing a cooling effect to the wearer.

How do we change out the comfort strips on the head band?

The Velcro backed foam strips are for comfort and hygiene on MAXAIR Systems.

Replace the comfort strips by simply pulling off the used ones and pressing on the new strips.

The CAPR Systems utilize a removable front headband comfort strip. The rear headband has a "cleanable" closed-cell foam strip that **does not need routine replacement**.

One 2000-201 Box contains 36 Comfort Strips, sufficient for 36 changes.

Where do I store (hang) my MAXAIR Systems?

The helmets are either stored in a cart, inside a cabinet in the anti room, or they may be hung at a location of choice on "J" hooks. MAXAIR Systems has the following available:

- 2000-204 "J" hooks, 6 hooks per bag - see PRODUCTS>ACCESSORIES
- 2782-06 MAXAIR Systems Cart, mobility/storage/security for up to 6 Systems plus all primary accessories - see PRODUCTS>ACCESSORIES
- 2000-SB Sample bag for carrying 1-2 MAXAIR Systems - see PRODUCTS>ACCESSORIES

Cleaning & Decontamination

What is the recommended decontamination procedure for MAXAIR?

Please refer to your institution's standard operating procedures for cleaning surfaces with blood or bodily fluid contamination.

- Dispose of the pre-filter, filter, and filter cartridge if there is blood or bodily fluid contact.
- Helmet – We suggest the use of Alcohol based wipes for wiping down all external surfaces other than the pre-filter, filter, and comfort strips.
- Lens – We suggest the use of Alcohol based wipes. These materials will not adversely affect the clarity of the lens.
- Rayon Cuff (gray) – This cuff can be washed like other hospital garments (i.e. scrubs) up to 10 times or until visibly worn.
- Disposable Cuff (white) and DLC – Dispose of after one time use. In emergency situations these cuffs may be cleaned with Alcohol based soaking solutions and dried.

- Disposable Shrouds and Hoods - Dispose of after one time use. In emergency situations, the outer body cover, BELOW the Filter, of the fluid resistant shrouds and hoods may be cleaned with Alcohol based soaking solutions and dried.
- Battery & Power Cord – We suggest the use of Alcohol based wipes. They will not adversely affect the function of the battery and power cord.