User Instructions

CAPR® IH Integrated Helmet Base System

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**** IMPORTANT - Please note WARRANTY AND TERMS AND CONDITIONS regarding your MAXAIR Systems by thoroughly reading the information on the MAXAIR Systems' Website**

https://www.maxair-systems.com

Syntech International, Inc. Disclaimer

NOTE

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THE SELLER SHALL BE IN NO WAY RESPONSIBLE THE GOODS’ PROPER USE AND SERVICE, AND THE BUYER HEREBY WAIVES ALL RIGHTS OF REFUSAL AND RETURN OF GOODS.

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Syntech’s exclusive distributor - Bio-Medical Devices International Inc. DBA MAXAIR Systems - has a warranty and return program that can be viewed online at: https://maxair-systems.com/terms-and-conditions.

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MAXAIR®

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1. Warnings, Cautions, Notes, Symbols

1.1. Important Information

The words WARNING, CAUTION, and NOTE have special meanings and should be reviewed.

WARNING	The personal safety of the user may be involved. Disregarding this information could result in injury to the user.
CAUTION	These instructions point out special procedures or precautions and must be followed. Disregarding this information could result in jeopardizing the product reliability.
NOTE	Provide special information that supplements and/ or clarifies important instructions.
	A triangle with an exclamation point alerts the intended user to place extra emphasis on reading and understanding the accompanying instructions for operating, maintenance and safety information.

Warnings and Cautions

WARNING

This User Instructions and Instructions for Use, that accompany each package of system items, including the Warnings, Cautions and Special or Critical User Instructions, must be read thoroughly and followed carefully by all persons who have, or will have, the responsibility for using the system. The system will perform as designed only if it is used and maintained per the User Instructions. Failure to follow the User Instructions may be hazardous to the user's health.

NIOSH Cautions and Limitations

A Not for use in atmospheres containing less than 19.5% oxygen, or more than 25% oxygen.

B Not for use in atmospheres immediately dangerous to life or health.

C Do not exceed maximum use concentrations established by regulatory standards.

F Do not use powered air-purifying respirators if airflow is less than 4 CFM (115 LPM) for tight fitting face pieces or 6 CFM (170 LPM) for hoods and/or helmets.

I Contains electrical parts that may cause an ignition in a flammable or explosive atmosphere.

J Failure to properly use and maintain this product could result in injury or death.

L Follow the manufacturer's instructions for changing cartridges, canisters and/or filters.

M All approved respirators shall be selected, fitted, used, and maintained in accordance with MSHA, OSHA, and other applicable regulations.

N Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.

O Refer to User Instructions, and/or maintenance manuals for information on use and maintenance of these respirators.

P NIOSH does not evaluate respirators for use as surgical masks.

S Special or Critical User instructions and specific use limitations apply. Refer to User Instructions before donning.

1.2. S- Special or Critical User Instructions

WARNING

Special or Critical User Instructions

- NIOSH approved PAPR100-N filters can be used for protection against non-oily particulate aerosols only.
- Do not use near flame or other heat source.
- The use of MAXAIR Systems in an alarm condition is only for immediate exit to a safe environment.
- During high energy work (exertion) rates, it is possible to over-breathe the MAXAIR System and create a negative pressure situation.
- If air flow is cut off, immediately hold your breath and immediately exit to clean air.
- In the power-off state, little or no respiratory protection is to be expected. Attempted use in this manner is an abnormal situation.
- In the powered-off state, rapid buildup of carbon dioxide and depletion of oxygen within the Headcover may occur.
- MAXAIR Systems' users must avoid situations where the Helmet, Battery or face/head cover (Cuff, Shroud, Hood, etc.) could become caught up simultaneously with a sudden and strong movement that could cause the Helmet to become dislodged from the users head and result in loss of respiratory protection.
- Materials of HFR Hoods are tested per ASTM F1671 and AATCC 127 to provide an indication of fluid resistance. NIOSH does not conduct this testing as part of their approval.
- Use only MAXAIR NIOSH approved respirator configurations.

CAUTION

- Do not operate in environments with temperatures exceeding 54°C
- A suitable environment is when an employee can work a full shift comfortably without any special paraphernalia other than normal clothing.
- Replace damaged or worn Filters immediately.
- Always start with a fully charged battery.
- Charge Li-Ion Batteries with MAXAIR Lithium-Ion Battery Chargers only.
- Do not immerse system items in liquid.
- Never use compressed air to clean any part of the MAXAIR System.
- There are no user-serviceable parts inside the Helmet and Li-Ion Battery. Do not attempt to disassemble, open or service the Helmet and Li-Ion Battery. Call Customer Service, 1-800-443-3842, for assistance.

1.3. SYMBOLS – General and Packaging

		Do not use if package is damaged and consult instructions for use.	19		Serial Number.
2	NIOSH	National Institute for Occupational Safety and Health.	20		Part Number.
3		Refer to approval label and User's instructions for cautions, limitations, and approved assembly configurations.	21		Batch Code.
4	HE	High Efficiency Particulate Power Air Purifying Respirator.	22		Quantity.
5		Use By Date.	23		Reference Number.
6		Material Fluid Resistance.	24		Caution, Warning.
7		Consult instructions for use (IFU) .	25		Indoor Use Only.
8		Consult User Instructional Manual (UIM) of MAXAIR System.	26		Type L and Type R Listing Marks for Canada and the United States.
9		Do Not use in environments requiring intrinsic safety.	27		UL Recognized Component Marks for Canada and the United States.
10		Place of Manufacture.	28		Recyclable.
11		Date of Manufacture.	29		Caution, risk of electrical shock. High Voltage.
12		Kept Dry.	30		Double insulation.
13		Storage Humidity Upper limitation.	31		
14		Storage Temperature limitation.	32		
15		Battery: Operational Upper limit of temperature.	33		
16		Per Directive 2006/96/EC, product must be collected separately. Do not dispose of as unsorted municipal waste. Contact local distributor for disposal information.	34		
17		Per Directive 2006/66/EC, collect and recycle batteries/ battery packs according to EU Member State regulations.	35		
18	STERILE EO	Sterilized using Ethylene Oxide	36		

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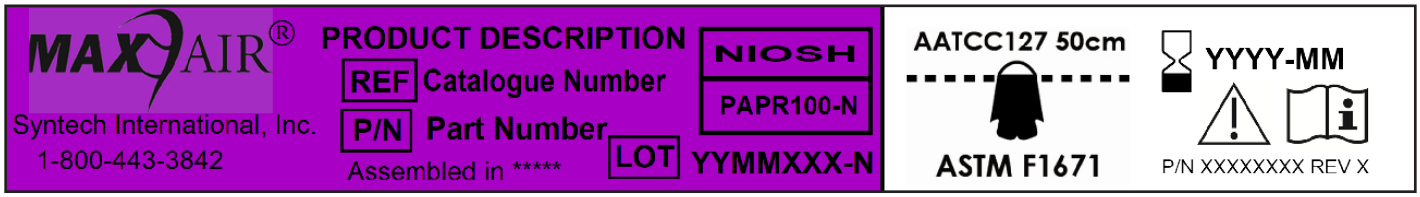
2. Regulatory Marking Definitions

Filter markings and colors contain shared and unique information respective to the NIOSH.



NOTE

Artwork Shown is for Reference Only.

NIOSH (Contents within magenta background): MAXAIR Systems provides PAPR100-N Particulate Air Filtering per NIOSH 42 CFR 84.

- “PAPR100-N" and "NIOSH" are specific terminology for Filter Protection Classifications per NIOSH CFR.
- Purple label background color is specific to NIOSH Filter color coding requirement per ANSI Z88.7-2001.

CAUTION

The purchaser/user is responsible for determining the appropriateness of the CAPR System for each/any of their particular applications/environments.

3. Introduction

3.1. Part Numbers Reference

Catalog Numbers, indicated by the symbol REF, are used throughout the User Instructions descriptive text; NIOSH Numbers are indicated by the symbol P/N. Table 1 lists the Catalog Numbers and respective NIOSH Numbers for each item.

Table 1. Part Number Reference Chart

DESCRIPTION	REF	P/N
HELMET		
CAPR IH (turnlock w/Cage, Headband, standard style adapters)	2086-03	03831011 Helmet 03831053 Headband 03531406 Cage
HEADBAND		
Headband	2071-20	03831053
COVER		
Cage	2051-08	03531406
BATTERIES		
Lithium Ion Battery, 2-Pack	2500-25	01532198
CHARGERS		
Charger for batteries removed from Helmet	2600-03	01432234
Charger for batteries assembled to Helmet	2600-04	01432232
ACCESSORIES		
Comfort Strips	2000-201	2000-201
Back Headband Comfort Strip	2000-209	2000-209
Hangers	2099-26	03731071

3.2. CAPR IH Base System

The Base System is configured from three item types, Helmet, Battery, and Battery Charger.

- Helmet: 2086-03
- Battery: 2500-25
- Battery Chargers: 2600-03, 2600-04

MAXAIR CAPR® IH Systems are multi-application, Li-Ion battery based Powered Air Purifying Respirators (PAPRs) for airborne particulates. They are designed to optimize user safety, convenience, ease-of-use, and cost effectiveness. Complete CAPR IH Systems are composed of the Base System plus a selection of headcovers, peripherals, and accessories to meet various application needs.

This UI for the Base System fundamentally describes the complete assembly, disassembly, cleaning, and maintenance of the CAPR IH Base System.

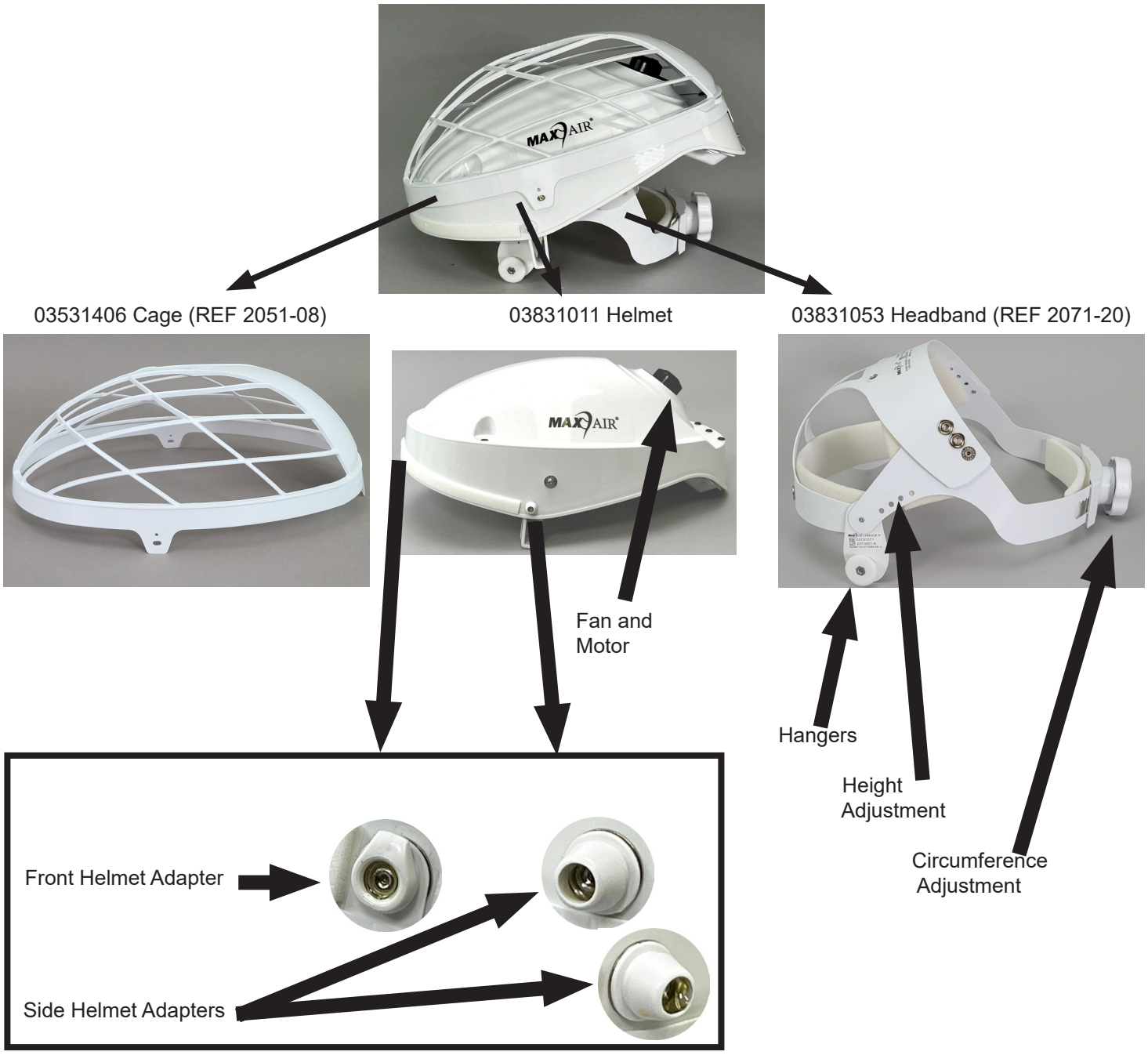
The different headcovers and other peripherals, options, and accessories, are covered in the individual User Instructions accompanying those items.

ITEM	REF	P/N	DESCRIPTION
		CAPR-IR-25	
1	2086-03[1]	03831011 Helmet 03831053 Headband 03531406 Cage[2]	Helmet Assembly
2	2500-25	01532198	Li-Ion Battery, 2 Pack
3	2600-03	01432234	Charger, Batteries out-of-Helmet
4	2600-04	01432232	Charger, Batteries in-Helmet

1 Each 2086-03 Helmet ships with a 2071-20 Headband and 2051-08 Cage pre-assembled to the helmet.
[2] The Cage provides shipping protection for the fan and motor, and support and fit for filters during use.

3.2.1. Base System Helmet Assembly, 2086-03 CAPR IH

2086-03 CAPR IH



3.2.2. Base System Batteries and Chargers

2500-25 Batteries, 2 Pack

#	Characteristics
1	Two type 18650 Li-Ion Batteries per 2500-25

2600-03 Charger

#	Characteristics
1	Charges one or two batteries simultaneously.
2	Batteries must be placed in charger.

2600-04 Charger

#	Characteristics
1	Charges batteries, one or two, while they are assembled to the Helmet.

Battery Symbol Definitions

These symbols are applicable warnings regarding the use of MAXAIR LIi-Ion Batteries

Battery

	Rechargeable. For use only with MAXAIR Li-Ion Batteries		Do not attempt to disassemble, open, or service.
	Do not place near or in a flame.		Do not drop.
	Do not immerse in liquid.		Do not puncture.

4. Cleaning/ Decontamination

CAUTION

Do not immerse the battery, helmet and fan module into water or other liquid. This will cause irreparable damage to the helmet.
Do not use solvent or alcohol to clean the helmet. Use of isopropyl alcohol may deface the Helmet.
Do not subject helmet to any sterilization cycles.
Do not use organic solvents or strong oxidizing agents to clean the helmet.
The air channels should never need cleaning. If they do, the Filters are not being maintained properly or replaced at the appropriate intervals.
If other cleaning agents are to be used, it is recommended to test their use on a small section of a Bonnet Lens and/ or a small section of the Helmet Headband to determine short and long term side effects.

General Cleaning

Supplies Needed:	Frequency:	Accomplishes:
● Clean Damp Cloth ● Cleaning Agent: Mild application of skin friendly soap.	● Wipe between uses and between different users wearing the system.	● Reduces cross contamination. ● Extends useful life. ● Improves hygiene.
Procedure:		
1. Use a damp cloth with cleaning agent to clean all outer and inner exposed surfaces.	2. Let air dry.	

NOTE

If desirable, replace the damaged or soiled Headband Comfort Strips.
The rear Closed Cell Foam comfort strip may be cleaned for reuse.

Decontamination

MAXAIR® CAPR IH Systems are a product line of NIOSH approved, PAPR100 Class, loose fitting Powered Air Purifying Respirators.

The multi-use, core items of a MAXAIR CAPR IH System include:

1. A hose-free designed Helmet with integrated Motor and Fan
2. A Li-Ion Battery or Battery Pair
3. Single piece Battery Charger/Power Supply.

Additional multi-use items that need cleaning consideration can include:

1. Filter Cover Cap (FCC)
2. Cage
3. High Fluid Resistance Filter Cover Cap (HFR FCC)

Each MAXAIR System is configured with different accessories and peripherals, primarily single use, disposable face, head, and body coverings, and limited use filters. As these are single and limited use items that are not accessible except when removing for disposal, they are not included in these cleaning instructions.

Other MAXAIR Systems items are not cleanable and should be disposed of according to institutional protocol for contaminated waste if soiled, damaged, or contaminated.

Key materials used in the multi-use items of concern when choosing cleaning agents include:

- ABS
- Acetal
- Brass
- Nickle
- Nylon
- Polycarbonate
- Polyethylene
- Polypropylene
- PVC
- Rubber

WARNING

Prior to use of any cleaning agent on any material, it is always recommended to try the agent on a test sample to determine short and long term effects for overall product and user safety.

MAXAIR Systems is not responsible for results of any cleaning procedures that are outside of full compatibility, simultaneously with the cleaning agents and protocols included in this Technical Bulletin and with the cleaning agent manufacturers' recommendations regarding the Key Materials listed herein.

MAXAIR Systems has determined that the following cleaning agents are safe to use on the multi-use, non-disposable items.

Agent #	Active Ingredient	Brand	Model	PN	QTY
1	Quaternary Ammonium/ Isopropyl Alcohol	PDI (Professional Disposables International, Inc.)	Super Sani-Cloth Germicidal Disposable Wipe	Q55172	1 Container
2	Hydrogen Peroxide	Clorox	Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectants	CLO30825	1 Container

RECOMMENDED CLEANING PROTOCOL - Agent 1

Agent	Step	Procedure
Super Sani-Cloth Germicidal Disposable Wipe	1	Wear proper protective gloves and other PPE as appropriate.
	2	If there is visible detection of dust, dirt, blood or other organic material, use one or more wipes to remove as necessary.
	3	Wipe top surfaces of the article for a minimum of two minutes. Ensure all corners and crevices are wiped thoroughly. Ensure all surfaces are continuously wet during the two minutes; a minimum total of two wipes is recommended. Use additional wipes as needed.
	4	Wipe bottom surfaces of the article for a minimum of two minutes. Ensure all corners and crevices are wiped thoroughly. Ensure all surfaces are continuously wet during the two minutes; a minimum total of two wipes is recommended. Use additional wipes as needed.
	5	Discard used wipes per institutional protocol for contaminated waste.
	6	Let air dry for a minimum of 30 minutes.

RECOMMENDED CLEANING PROTOCOL - Agent 2

Agent	Step	Procedure
Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectants	1	Wear proper protective gloves and other PPE as appropriate.
	2	If there is visible detection of dust, dirt, blood or other organic material, use one or more wipes to remove as necessary.
	3	Wipe top surfaces of the article for a minimum of one minute. Ensure all corners and crevices are wiped thoroughly. Ensure all surfaces are continuously wet during the one minute; a minimum total of two wipes is recommended. Use additional wipes as needed.
	4	Wipe bottom surfaces of the article for a minimum of one minute. Ensure all corners and crevices are wiped thoroughly. Ensure all surfaces are continuously wet during the one minute; a minimum total of two wipes is recommended. Use additional wipes as needed.
	5	Discard used wipes per institutional protocol for contaminated waste.
	6	Let air dry for a minimum of 30 minutes.

5. General System Maintenance and Storage

CAUTION

Prior to each use, if any of the following issues are discovered for any system item(s), replace the particular item(s) by following the assembly/disassembly procedures for the particular item(s).

- Tears or Breaks.
- Contamination from blood or other bodily fluids not safely removed by following approved disinfection procedures.
- Compromise between the and FCC seal.
- Damage or distortion to the filter gasket.
- Filter is soiled or challenged with particulates such as to compromise its performance or cause the yellow LED to be lighted.
- Compromise between the filter and helmet seal.
- Any other damage and threat to proper function.

NOTE

The complete MAXAIR CAPR IH System and all items and accessories should be stored indoors in a safe, clean and secure environment at all times, protected from adverse environmental conditions, i.e. conditions that would be considered incompatible with normal human working conditions without special equipment.

General System and Item Storage Environment

Temperature/ Humidity

Temperature: 0° C to +35° C
Maximum Humidity: 80% Relative Humidity.

Helmet Headband

If the Helmet Headband is loosened after repeated assembly/disassembly so as to compromise its attachment mechanism or causes the Helmet mounting to be unstable and if there are any tears or breaks in the Headband, it should be replaced by following its assembly and disassembly procedure.

Helmet

If the Helmet is damaged or operating improperly, do not attempt repair. Contact Customer Service, 1-800-443-3842 for the return procedure for evaluation and possible repair or replacement.

WARNING

Ensure that a 2051-08 Cage is properly assembled to the Helmet whenever the Helmet is being handled and stored.

Filter

If the Filter is soiled or loaded (clogged) with particulate such as to compromise its performance or cause the Yellow LED to be lighted, or if there are tears or breaks, or if there are compromises between the seal and the Helmet, or any other damage, the Filter should be replaced by following the assembly and disassembly procedures for the FCC and the Filter.

Particular attention must be made to inspection of the Filter (black) Gasket for any damage that could adversely affect its seal with the Helmet. If there is any damage or doubt regarding the seal, replace the Filter.

Filter Cover Cap (FCC)

- The FCC should be inspected before each use. If the FCC is loosened after repeated assembly/disassembly such as to compromise its attachment mechanism or causes the Helmet mounting to be unstable, or if it has tears or breaks, the FCC should be replaced by following its assembly and disassembly procedures.

All Disposable Face and Head Covers

- All Face and Head Covers are designed for single use, once on/once off the Helmet. Repeated assembly and disassembly will compromise the attachment mechanism or cause the Helmet mounting to be unstable. These items should be discarded as contaminated waste after removal from the system and replaced by following the appropriate item assembly and disassembly procedures in this User Instructions and the individual Instructions For Use.
- If there are any tears or breaks or fluid penetration in these items, or any issues with the visual clarity of the Lenses, they should be replaced by following the appropriate assembly and disassembly procedures.

Battery

- MAXAIR Systems Li-Ion Batteries are designed to be maintenance free. If a battery has any damage or malfunction, contact Customer Service at 1-800-443-3842, for an RMA (Return Material Authorization) for evaluation and possible replacement.
- Also see Section 6, “Battery Use, Maintenance and Storage”, for additional instructions regarding Batteries.


Do not drop


Do not puncture.


Do not immerse in liquid.


Do not attempt to disassemble, open, or service.


Do not place near or in a flame.

Battery Charger

- MAXAIR Systems Battery Chargers are designed to be maintenance free. If a charger has any damage or malfunction, contact Customer Service at 1-800-443-3842, for an RMA (Return Material Authorization) for evaluation and possible replacement.


Do not drop


Do not puncture.


Do not immerse in liquid.


Do not attempt to disassemble, open, or service.


Do not place near or in a flame.

6. Battery Use, Maintenance and Storage

CAUTION

Do not store batteries for more than three months without subjecting them to normal discharge and recharge cycling. Ideally, batteries not being used routinely on a less than monthly frequency should be charge-cycled every three months, minimum.

Optimal storage for Lithium Ion batteries is at about 50% charge and approximately 0ºC-10ºC.

CAUTION

MAXAIR Systems Lithium Ion (Li-Ion) Batteries (LIBs) are secondary (rechargeable) batteries, not primary (storage) batteries.

MAXAIR Systems Li-Ion Batteries (LIBs) hold much of their charge for a year or longer. However, as with all rechargeable batteries, the amount of charge will decline slowly in use or storage *(self- discharge rate)*, depending on time and temperature, and the maximum *recoverable charge* level diminishes gradually over the life of the battery.

6.1. Routine Infection Control use in med/surg and ED areas

- If LIBs are being used more than once per month, they should be connected to chargers in between uses.
- Before each use, physically inspect the LIB. If you perceive physical damage or tampering, use a different MAXAIR LIB and replace the damaged LIB as soon as possible.
- Routinely, every 3-6 months, perform the “LIB Check Procedure” (See Section 6.3.7). If this procedure results in a “Suspect LIB”, use a different MAXAIR LIB and replace the Suspect LIB as soon as possible.
- Check LIBs that are connected to MAXAIR chargers on a daily basis. If the charger LED is green, the LIB is ready for use and should be disconnected from the charger.

CAUTION

Check LIBs connected to chargers on a daily basis.

If a LIB is warm-to-hot to the touch, disconnect the LIB from the charger and replace it immediately. If this condition is ever observed, please mark the specific battery and the specific charger it was connected to when the heating was noted, and contact us for replacement. Call Customer Service, 1-800-443-3842, for return and replacement instructions.

If the charger LED is Green, the LIB is fully charged and ready for use, therefore disconnect if from the charger.

It is not recommended to leave the LIBs on the chargers after the charger LED turns Green.

6.2. Emergency Preparedness (EP) and In-Frequent Use

- MAXAIR batteries are shipped to customers at about the 50% charge level (approximately 3.7v output level). This is the approximate level recommended for long term storage of Li-Ion batteries, and therefore what we recommend for EP use to achieve the longest overall useful life of the batteries.
  - For new single battery (operating on only one of the 2500-25 2-pack) this represents typically 1.5-2.5 hours of use before recharging to a fully charged level.
  - For a 2500-25 battery pack this represents typically 3-5 hours of use before recharging to a fully charged level
- For systems that may be in storage and not used for longer than a year, the battery charge should be revalidated every 3-6 months, minimum.

6.3. General Use, Maintenance, and Storage

WARNING

Failure to read and follow these instructions and guidelines may result in fire, personal injury and damage to property. Your MAXAIR LIBs need to be handled/transported, used/discharged, charged, and stored properly. Follow the safety rules listed below.

Follow these instructions and the Battery User Instructions at www.maxair-systems.com, Resources, User Instructions, and use MAXAIR LIBs in accordance to the warning labels on the MAXAIR LIBs to properly manage and control charging and discharging of all MAXAIR LIBs.

1. Keep MAXAIR LIBs and Chargers away from children.
2. Test MAXAIR LIBs before using to ensure they are operating properly and safely with the MAXAIR Helmet or on the MAXAIR Charger. See Section 6.3.7).
3. As with all Li-Ion battery packs, misused and defective Li-Ion cells may explode and cause fire. If at any time a LIB starts to balloon, swell up, smoke or get hot, emit an unusual smell, change color, or appear abnormal in any other way, discontinue its use immediately, disconnect the LIB from the Helmet or Charger, and observe it in a safe place for approximately 15 minutes. If any of these conditions occur, the LIB should be replaced.

CAUTION

These conditions may result in LIB cell leakage. Since delayed chemical reaction can occur, it is best to observe the LIB as a safety precaution in a safe area outside of any building or vehicle and away from any combustible material. In the event of coming in contact with any leakage from a LIB, do not rub or touch the eyes, immediately rinse all contacted areas thoroughly with water, and immediately seek medical care. If left untreated, the LIB leakage could cause eye and other serious injury.

4. In the event of any damage or perceived damage to a LIB due to bad shipment or other reason, remove the LIB to a safe location for observation and place it in a safe open area away from any combustible material for approximately 15 minutes.
5. Do not place LIBs in direct sunshine, or use or store LIBs inside relatively closed environments (cars, etc.) in hot weather and anywhere extreme temperatures may exist. Doing so may cause the LIB to generate heat, rupture, or ignite. Using the LIB in this manner may also result in a loss of performance and a shortened life expectancy.
6. Do not use, charge or store LIBs in or near microwave ovens, high pressure containers, or conduction cookware.
7. Do not expose LIBs to water, salt water, any other liquid, or moisture, beyond air with a relative humidity between 10%-90%.
8. Do not connect LIB terminals together, even momentarily, with any material including touching with the human body.
9. Do not allow a LIB to make contact with a hard object (dropping, throwing, striking, piercing, etc.) so as to subject it to strong impact, shock, or other mechanical stress.
10. Do not open, penetrate, or attempt to disassemble or modify a LIB case in any manner without contacting the manufacturer. The LIB contains safety and protection devices which, if damaged, may cause the LIB to generate heat, rupture, or ignite.
11. Do not submit to static electricity.

6.3.1. Recommended Temperature Ranges

Degrees Centigrade		Degrees Fahrenheit		Activity
min.	max.	min.	max.	
0	54	32	129	Handling & Transporting
0	54	32	129	Use/Discharging
0	45	32	113	Charging
0	35	32	95	Storage

If recommended temperature ranges are exceeded, let the LIBs cool down or warm up, as appropriate, to ambient temperature, and ensure all condensation, if any, has evaporated before charging or use.

6.3.2. Use/Discharge

WARNING

Do not discharge a LIB by using any device except a MAXAIR Helmet.
The temperature range over which a LIB is to be discharged is 0° C-54° C (32° F-129° F). Use outside of this temperature range may damage the performance and reduce the life expectancy of the LIB.

CAUTION

When the LIB has reached its usual and customary useful life (See Section 6.3.6) -
Immediately discontinue use of the LIB and replace it.
Insulate the connection terminals with adhesive tape or similar material before disposal.

6.3.3. Charge

WARNING

Always use a MAXAIR Charger when charging a LIB; never use any other type of charger for a MAXAIR LIB.
Never connect a LIB to any device other than a MAXAIR Helmet or a MAXAIR Charger.
Never charge a LIB outside the temperature range of 0° C to 45° C (32° F to 113° F). Charging the LIB at temperatures outside of this range may cause the battery to become hot or damaged. Charging the LIB outside of this temperature range may also harm the performance of the LIB or reduce the LIBs life expectancy. When the LIB becomes hot, the built-in safety equipment is activated, preventing charging further. Additional heating can destroy the safety equipment and can cause accelerated temperature increases, ignition, or other damage to the LIB.
Do not continue charging the LIB if it does not recharge within the maximum charging time (See Section 6.3.8) Doing so may cause the LIB to become hot, rupture, or ignite.
Always charge in an isolated area, away from flammable materials.
When charging LIBs, always monitor the charging process and react to potential problems that may occur.

6.3.4. Store

WARNING

Store in closed containers and packaging that prevents short circuits and damage during storage or transportation.
In case of mixed storage of goods and articles, organize separate storage areas for LIBs, for example, by maintaining a distance of 2.5 meters between the LIB storage area and other goods.
Store in limited quantities and in isolated area with frequent surveillance.
Keep in a dry, cool and well-ventilated place, within the recommended storage temperature range of 0° C-35° C (32° F-95° F). Cooler and dryer environments of storage are safer and extend useful life.
The temperature range of 19° C-25° C (66° F-77° F) at 30%-50% full charge will optimize battery useful life.
Perform a charge and LIB Check Procedure (6.3.7) every 3 to 6 months; this will help prevent the potential of an over-discharge.

6.3.5. Handling and Transport

Lithium-Ion batteries are classified as Dangerous Goods for the Transport by Road/Rail, Sea and Air. When considering transporting LIBs to other locations, conform to the requirements of the UN Regulation on the Transport of Dangerous Goods.

Internal transfer of Lithium-Ion batteries should follow the minimum safety rules imposed by the local legislation/regulation regarding the handling of Dangerous Goods.

When handling LIBs, use caution, specifically to avoid shorting the connector terminals.

WARNING

Do not exceed the temperature range of 0° C-54° C (32° F-129° F) when handling and transporting LIBs.
Do not expose battery packs to direct sunlight and/or heat for extended periods.

6.3.6. Useful Life

Li-Ion batteries begin aging when they are manufactured - not when you begin using the battery. Lithium-Ion batteries are prone to aging somewhat rapidly. The useful capacity (Recoverable Capacity) of a Lithium-Ion battery decreases about 10% to 20% each year. Therefore, Lithium-Ion batteries have a useful aging-service life of approximately four years.

Li-Ion batteries have a useful capacity-service life of about 300-500 cycles (one cycle being the time of one full use from a full charge).

Therefore, the recommended useful life expectancy, or replacement schedule, for a Li-Ion battery is after four years or about 300-500 discharge cycles, whichever occurs first.

6.3.7. LIB Check Procedure - MAXAIR LIB Test for Diminishing Battery Capacity

NOTE

A MAXAIR Helmet and MAXAIR Charger are required to perform this basic battery test. The helmet must be in good working order. Set the helmet Air Flow Switch to Low for the test.

CAUTION

If the LIB performs in one of the “Suspect LIB” categories below, discontinue using it and replace that LIB as soon as possible.

Case 1: The LIB has been connected to a charger and the charger green LED is on.

Procedure: Properly assemble the fully charged LIB(S) in the Helmet. Allow the helmet to settle for about 10 seconds.

Good LIB: The helmet runs with 3 or 2 green indicator lights on.

Suspect LIB: The helmet runs with only 1 green indicator light on.
Suspect LIB: The helmet runs with the red indicator light on.
Suspect LIB: The helmet doesn’t run.

Case 2: The LIB has been in storage.

Procedure: Properly assemble the fully charged LIB(S) in the Helmet. Allow the helmet to settle for about 10 seconds.

Good LIB: The helmet runs with 3, 2 or 1 green indicator light on.

Suspect LIB: The helmet runs with the red indicator light on.
Suspect LIB: The helmet doesn’t run.

Case 3: The LIB is connected to the MAXAIR Charger.

Good LIB: the LIB is felt to be about room temperature.

Suspect LIB: the LIB is warm or hot to the touch.

6.3.8. Reference Information

Typical Charging Time Specifications:

Time to fully charge a fully discharged MAXAIR LIB

CHARGING TIME		
BATTERY	2600-03 Charger (Off Helmet Charging)	
	Minimum	Maximum
2500-25: 1 or 2 Batteries	5.2 hrs	7.0 hrs
	2600-04 Charger (On Helmet Charging)	
2500-25: 1 Battery	2.6 hrs	3.5 hrs
2500-25: 2 Batteries	5.2 hrs	7.0 hrs

Lithium-ion Battery main items:

SDS for Li-Ion Battery Cells are available under Safety Data Sheets at www.maxair-systems.com, Resources, Product Literature.

6.3.9. Charging Protection from Electrical Surges

It is highly recommended to always connect the MAXAIR Charger directly to a Surge Protection Device, adequate for all anticipatable occurrances, during all charging activities of MAXAIR LIBs, and whenever the Charger is connected to a mains power source.

To choose an appropriate surge protector you should consult with your Engineering department regarding specifics to your physical plant and geographical environment. You may want to consider the following common fundamentals of surge protection.

- ▲Indicator light – surge protectors will not last forever – when a surge protector properly diverts a surge, the protector itself can be damaged in the process. An indicator light will indicate that the surge protector is working fine.
- ▲UL Rating - good surge protectors come with a UL rating (or equivalent regulatory mark for non U.S. countries, e.g. CE Mark, etc.), a rating put out by the independent Underwriters Laboratories that tests the safety of electronic devices.
- ▲Clamping voltage - the voltage measurement that prompts the surge protector to start redirecting the excess electricity away from the plugged-in devices.
- ▲A surge protector with a lower clamping voltage will trigger earlier, thus better protecting electrical devices.
- ▲Joule rating - the maximum amount of energy the surge protector can absorb. If the surge exceeds this maximum, the surge protector will be rendered useless. The higher the joule rating, the more energy can be absorbed by the surge protector, therefore, a higher joule rating will often indicate a longer lifespan for the product.

6.3.10. Projected LIB Level vs Temperature As A %, At Initial Manufacture

Year(s) Elapsed from Manufacture Date	Storage Condition: 50% charged				Storage Condition: 100% charged			
	Residual Capacity (due to Self-Discharge)		Recoverable Capacity		Residual Capacity (due to Self-Discharge)		Recoverable Capacity	
	23°C	60°C	23°C	60°C	23°C	60°C	23°C	60°C
1	96%	76%	99%	92%	90%	60%	94%	80%
2	92%	52%	98%	84%	80%	20%	88%	60%
3	88%	28%	97%	76%	70%	0%	82%	40%
4	84%	4%	96%	68%	60%	0%	76%	20%
5	80%	0%	95%	60%	50%	0%	70%	0%
Year(s) Elapsed from Manufacture Date	Self-Discharge Loss		Permanent Capacity Loss		Self-Discharge Loss		Permanent Capacity Loss	
	23°C	60°C	23°C	60°C	23°C	60°C	23°C	60°C
1	4%	24%	1%	8%	10%	40%	6%	20%
2	8%	48%	2%	16%	20%	80%	12%	40%
3	12%	72%	3%	24%	30%	100%	18%	60%
4	16%	96%	4%	32%	40%	100%	24%	80%
5	20%	100%	5%	40%	50%	100%	30%	100%

6.3.11. Glossary

LIB
Lithium Ion Battery, Li-Ion Battery

Self Discharge
The rate at which the battery charge level declines while it is just sitting in storage, usually quoted as a decline in %-per-month.
Self-discharge increases with age, cycling and elevated temperature.
Discard a battery if the self-discharge reaches 30 percent in 24 hours.

Recoverable Capacity
The amount that a battery can be “fully charged back to” over time, usually quoted as a certain % of the full charge level when the battery was initially manufactured.

7. Disposal

WARNING

Dispose of potentially contaminated disposable items, all Face and Head Covers, all Filters, etc., in accordance with approved institutional protocol for medical waste and current local regulations.

Lithium-Ion Rechargeable Batteries contain toxic chemicals and must be disposed of following current local regulations, and your local recycling program. Additional information may be found at earth911.com and ecyclingcentral.com.

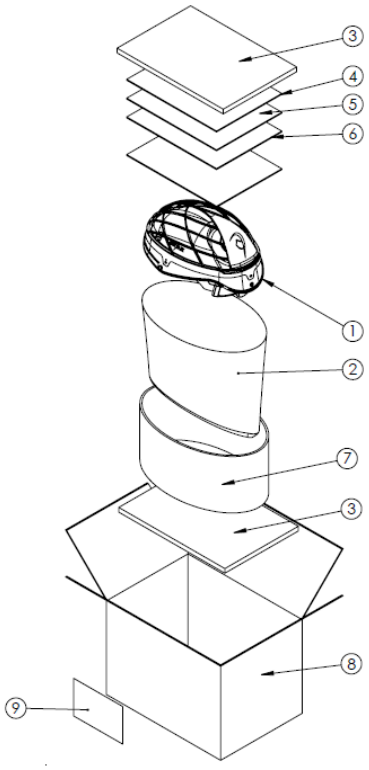
Helmets and Battery Chargers contain electronic items and must be disposed of following current local regulations, and your local recycling program. Additional information may be found at earth911.com and ecyclingcentral.com.

8. Unpacking Base System Items

8.1. Unpacking the 2086-03 CAPR IH Helmet

Carefully unpack the 2086-03 MAXAIR CAPR IH Helmet from the shipping box. Verify there are no missing or loose items and that the helmet shows no signs of physical damage. Assemble the Helmet into the desired configuration and verify that it is fully functional. Report any damage to the shipper immediately for resolution. (Follow similar procedure for all MAXAIR Helmets.)

Contact Customer service 1-800-443-3842, if you have questions.

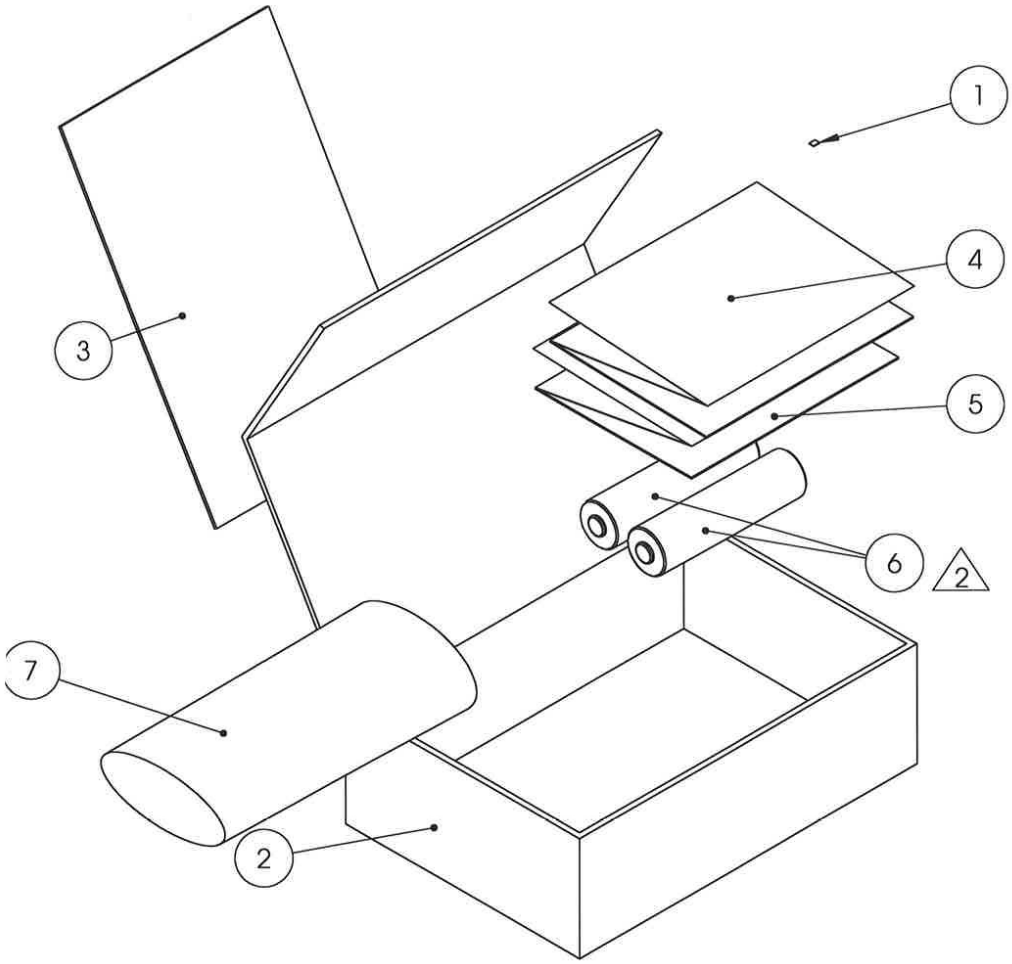


Item No.	Part No.	Description	Qty
1	03831012 / 03831011	HELMET ASSY / NIOSH	1
2	P900037	POLYBAG, 18 x 24	1
3	03523060	Foam Pad, 9 x 12	2
4	03521080	Symbol Definition Chart	1
5	03823080	User Instruction Manual Helmet (UIM)	1
6	08031003FFL	NIOSH Approval Label	1
7	03523054	Single Face Corrudated Pad	1
8	03521053	Box 13 x 9 x 7	1
9	03833079	Box Label	1

8.2. Unpacking the 2500-25 Battery Pack

Carefully unpack the 2500-25 Battery Pack from the shipping box. Verify there are no missing or loose items and that the Battery show no signs of physical damage. Connect the Battery to a fully assembled CAPR IH Helmet with Cage and Headband assembled and verify that it powers the Helmet and that at least one Green LED lights. Report any damage or non-function to the shipper immediately for resolution. (Follow similar procedure for alternate MAXAIR CAPR IH Batteries.)

Contact Customer service 1-800-443-3842, if you have questions.



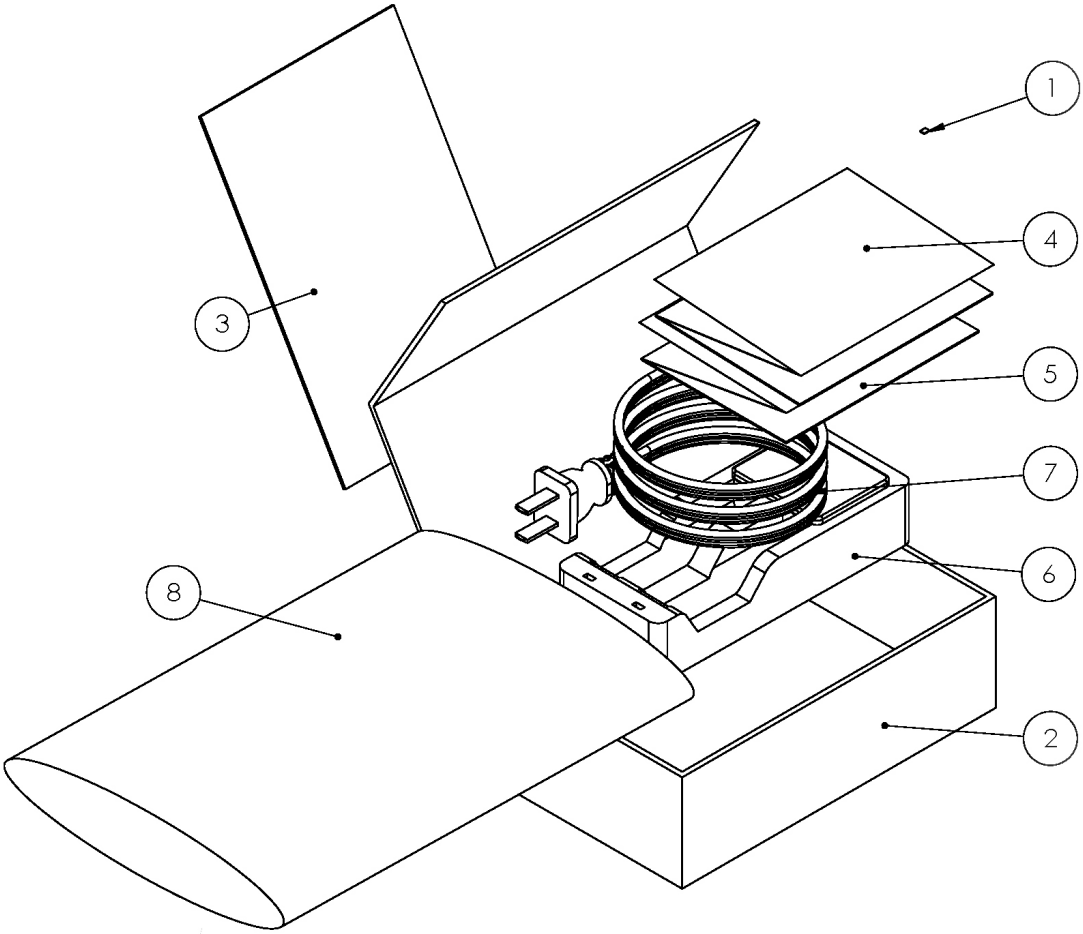
Part List

ITEM NO.	Part Number	Part Name	Material	QTY.
1	00011340	Buble Wrap, 12" x 300 ft	Plastic	0.006 ROLL
2	P900127	Box 4.5 x 6.5 x 2	Cardboard	1
3	01533196	Box Label	Adhesive Label	1
4	01523197	Instructions Sheet	Paper	1
5	03521080	Maxair CAPR System Symbol Definition Chart	Paper	1
6	01532225 / 01532198 (NIOSH)	Lithium Ion Battery, 18650 3.7v protected	Various	2
7	03521074	Bag, 3 x 5 poly	Plastic	1

8.3. Unpacking the 2600-03 Battery Charger

Carefully unpack the 2600-03 Battery Charger from the shipping box. Verify there are no missing or loose items and that the Charger shows no signs of physical damage. Connect the Charger to an appropriate surge protector that is properly connected to a working wall outlet and verify that the Charger Green LEDs are lighted. Connect the 2500-25 Batteries to the Charger and verify that the Charger LEDs change to red to indicate charging. Report any damage or non-function to the shipper immediately for resolution. (Follow similar procedure for alternate MAXAIR CAPR IH Chargers.)

Contact Customer service 1-800-443-3842, if you have questions.



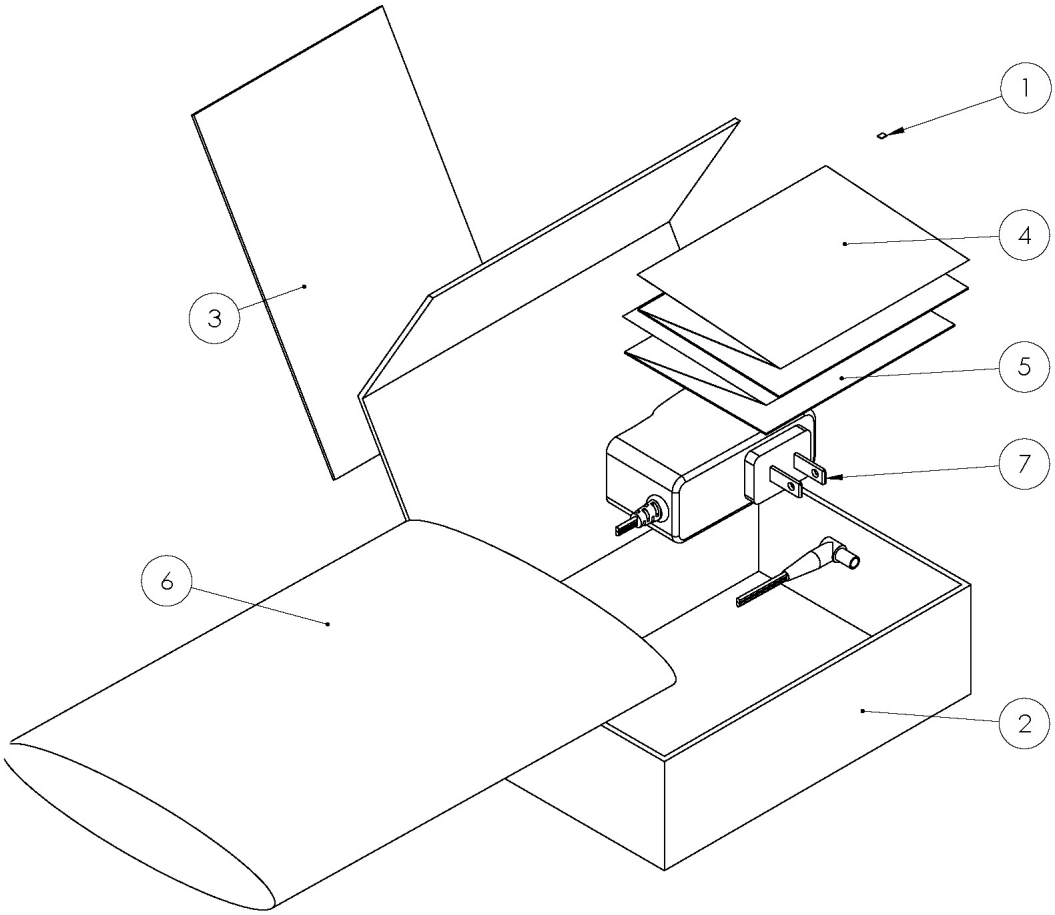
Part List

ITEM NO.	Part Number	Part Name	Material	QTY.
1	00011340	Buble Wrap, 12" x 300 ft	Plastic	0.003 ROLL
2	P900127	Box 4.5 x 6.5 x 2	Cardboard	1
3	01533207	Box Label	Adhesive Label	1
4	01523208	Instructions Sheet	Paper	1
5	03521080	Maxair CAPR System Symbol Definition Chart	Paper	1
6	01432235 / 01432234 (NIOSH)	Li-on Battery Charger, 18650		1
7	-	Cord		1
8	07631076	Bag, Reclosable 9 x 12	Plastic	1

8.4. Unpacking the 2600-04 Battery Charger

Carefully unpack the 2600-04 Battery Charger from the shipping box. Verify there are no missing or loose items and that the Charger shows no signs of physical damage. Connect the Charger to an appropriate surge protector that is properly connected to a working wall outlet and verify that the Charger Green LEDs are lighted. Connect the Charger to a CAPR IH Helmet with non fully charged 2500-25 Batteries installed and verify that the Charger LEDs change to red to indicate charging. Report any damage or non-function to the shipper immediately for resolution. (Follow similar procedure for alternate MAXAIR CAPR IH Chargers.)

Contact Customer service 1-800-443-3842, if you have questions.



Part List

ITEM NO.	Part Number	Part Name	Material	QTY.
1	00011340	Buble Wrap, 12" x 300 ft	Plastic	0.003 ROLL
2	P900127	Box 4.5 x 6.5 x 2	Cardboard	1
3	01533213	Box Label	Adhesive Label	1
4	01523214	Instructions Sheet	Paper	1
5	03521080	Maxair CAPR System Symbol Definition Chart	Paper	1
6	07631076	Bag, Reclosable 9 x 12	Plastic	1
7	01432233 / 01432232 (NIOSH)	Assy, Li-on battery Charger, Helmet	Various	1

9. Base System Configuration Set Up

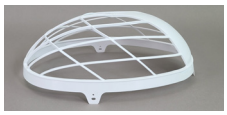
9.1. Items Check List

ITEM			DESCRIPTION
CAPR-IH-25			
1	2086-03	03831011 Helmet 03831053 Headband 03531406 Cage	Helmet Assembly
2	2500-25	01532198	Li-Ion Battery, 2 Pack
3	2600-03	01432234	Charger, Batteries out-of-Helmet
4	2600-04	01432232	Charger, Batteries in-Helmet

9.2. Setting Up

1. Check the position of the Headband Comfort Strips. (See Section 10.6 for Comfort Strip assembly and replacement instructions).
2. Adjust the Rear Headband Ratchet Adjustment Knob counterclockwise to expand the Headband circumference to ensure the Helmet will fit easily before donning. (See Section 13 on Donning for more detail.)
3. Adjust the Height Adjustment Snaps on the Helmet Headband to ensure proper and secure fit of the Helmet on the head and good visibility of the Safety Status Indicator LEDs. (See Section 10.5 for more detail.)

9.3. Assemble and Disassemble Components Overview

STEP	ASSEMBLE		STEP	DISASSEMBLE
1	Inspect and ready the 2086-03 Helmet for use.		4	If required, prep the 2086-03 Helmet for storage.
2	If required, assemble the 2071-20 Headband to the Helmet. Ensure the Headband Hangers are securely in place. The Hangers may be rotated up and forward out of the way but remain on the Headband for headcovers not requiring their use.		3	If required, disassemble the 2071-20 Headband from the Helmet. The Hangers may be rotated up and forward out of the way but remain on the Headband for headcovers not requiring their use.
3	Ensure the 2051-08 Cage is securely assembled to the Helmet.		2	Ensure the 2051-08 Cage is securely assembled to the Helmet between uses and particularly during storage to protect the fan and motor.
4	Assemble one or two, depending on run time desired, fully charged batteries from the 2500-25 pack into the Helmet Battery Compartment.		1	If required, disassemble the batteries from the Helmet Battery Compartment.

9.4. Inspections

NOTE

If you have difficulty with the proper operation of a MAXAIR System, first check for any visible damage to the outer and inner surfaces of the helmet, and any damage to the attached battery(ies)

Prior to each use, if any of the following issues are discovered for any system item(s), replace the particular item(s) by following the assembly/disassembly procedures for the particular item(s).

- Tears or Breaks.
- Contamination from blood or other bodily fluids not safely removed by following approved disinfection procedures.
- Compromise between the Headcover and Helmet or FCC seal.
- Damage or distortion to the filter gasket.
- Filter is soiled or loaded (clogged) with particulate such as to compromise its performance or cause the yellow LED to be lighted.
- Compromise between the filter and helmet seal.
- Any other threat to proper function.

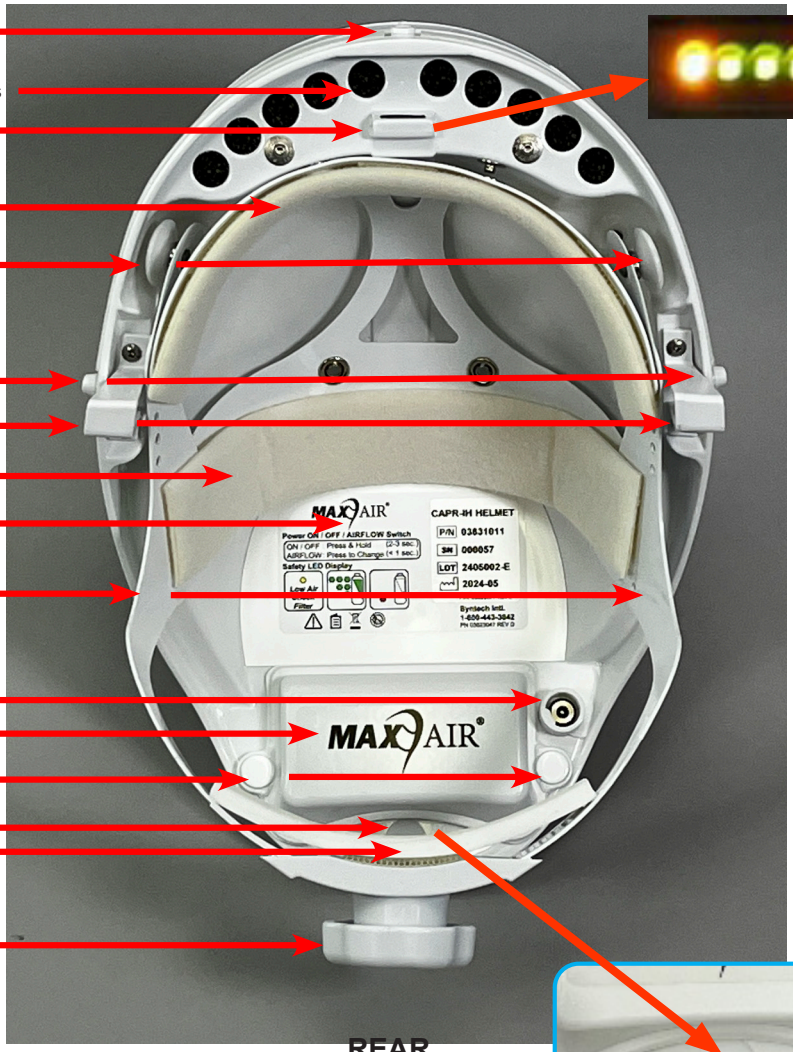
MAXAIR Systems are very reliable, essentially sealed helmet systems that do not require periodic maintenance. With careful and recommended use and adherence to all cautions, all items are expected to provide reliable service for their full useful life.

10. Base System Helmet Assembly, 2086-03 CAPR IH

10.1. Helmet with Headband Features

FRONT

1. Front Helmet Adapter
2. Clean Air Flow Distribution Holes
3. LED Safety Status Indicators
4. Front Headband Comfort Strip
5. Hangers
6. Side Adapters
7. Side Tabs
8. Top Headband Comfort Strip
9. Helmet ID Label
10. Side Height Adjustment Straps with Snap Holes
11. Charger Connector
12. Battery Compartment/Cover
13. Battery Cover Snaps
14. On/Off and Airflow Switch
15. Back Headband Comfort Strip
16. Headband Ratchet Knob



REAR

Power On/Off and Airflow (Speed) Control Button	
Sequential Long-Time Depresses (2-3 seconds)	Will turn Power On, then will turn Power Off, etc.
Sequential Short-Time Depresses (< 1 second)	Will set Airflow to one of five difference speeds, sequentially, and continue to cycle through the selections. (When first powered up, the Helmet runs at the speed last selected on its previous use.)

10.2. Features Details

1 Front Helmet Adapter - For assembly of Hoods to Helmet

2 Clean Air Flow Distribution Holes - 10 air vents bringing filtered air to the user.

3 LED Safety Status Indicators

WARNING

Failure to heed the LED Safety Status Indicators and exit immediately to a safe environment when alarm conditions are present may be hazardous to the user's health.

When Green LEDs are not lighted, the user should immediately exit to a safe area to obtain a recharged Battery.

- The CAPR Helmet has five LED Safety Status Indicators located on its underside front that are always visible in the user's peripheral vision. They alert the user to the safe operating conditions of the system. They will provide an early warning alert to the user when the CAPR Helmet is no longer able to maintain adequate airflow and/or Battery charge to provide adequate or continuing protection for the user.
- There are five LED Safety Status Indicators, one yellow, three green, and one red. On start-up, all LED's should come on briefly (LED test) before proceeding to normal operation. During normal operation, the LEDs continuously indicate the status of the Airflow and Battery charge level.
- Airflow is proper if the Yellow LED is off. A continuously lit or flickering Yellow LED indicates low or marginal airflow. If the Yellow LED is lit, check the Filter for excess particulate/dirt build-up and damage, and replace if necessary.
- The Battery charge level is indicated by the three Green and one Red LEDs. The approximate charge level is continuously indicated by the changing LEDs.

CONDITION	DESCRIPTION	YELLOW	GREEN 3	GREEN 2	GREEN 1	RED
1	Battery charge OK, 75% to 100%, Airflow OK		✓	✓	✓	
2	Battery charge OK, 50% to 75%, Airflow OK			✓	✓	
3	Battery charge OK, 25% to 50%, Airflow OK				✓	
4	Battery charge LOW, 0% to 25%, Airflow OK					✓
5	Airflow LOW, Battery charge LOW	✓				✓
6	Airflow LOW, Battery charge OK, 75% to 100%	✓	✓	✓	✓	
7	Airflow LOW, Battery charge OK,50% to 75%	✓		✓	✓	
8	Airflow LOW, Battery charge OK, 25% to 50%	✓			✓	

- When all three Green LEDs are lit, the Battery has approximately 75% to 100% of its charge.
- When two Green LEDs are lit, the Battery has approximately 50% to 75% of its charge.
- When only one Green LED is lit, the Battery has approximately 25% to 50% of its charge. When this occurs the user should prepare to exit to a safe area to obtain a fully charged Battery.
- When all three Green LEDs are off and the Red LED is lit, the Battery level is low, with approximately 0% to 25% charge left. When this occurs the user should promptly exit to a safe area to obtain a fully charged Battery.
- If the Batteries do not provide typical run time, 3-5 hours for one battery or 6-10 hours for two batteries, change to fully charged Batteries or recharge the current Batteries.

4 Front Headband Comfort Strip - Provides cushion for comfort. Attached via Velcro, and removable.

5 Hangers - Provides proper seal for certain Headcovers

6 Side Adapters - For assembly of Hoods

7 Side Tabs - Part of air sealing system.

8 Top Headband Comfort Strip - Provides cushion for comfort. Attached via Velcro, and removable.

9 Helmet ID Label

10 Side Adjustment Straps with Snaps - Height adjustment. Four holes represent four possible height adjustments to accommodate different head sizes and ensure convenient viewing of the LED Safety Status Indicators. Secure into desired position by snapping against post/stud. Both sides are to be in the same hole position.

11 Charger Connector - for connecting 2600-04 charger for charging batteries installed in Helmet.

12 Battery Compartment/Cover

13 Battery Cover Snaps - Secure the Cover over the Battery Compartment.

14. On/Off and AirFlow Switch - Refer to 10.1 for details.

15 Rear Headband Comfort Pad - Provides cushion for comfort. Attached via Velcro, and removable.

16 Headband Ratchet Knob - Sets tightness of Helmet on head for safety and comfort.

CAUTION

The Air Flow Switch is user adjustable to match the amount of air flow with the user's activity level and breathing requirements.

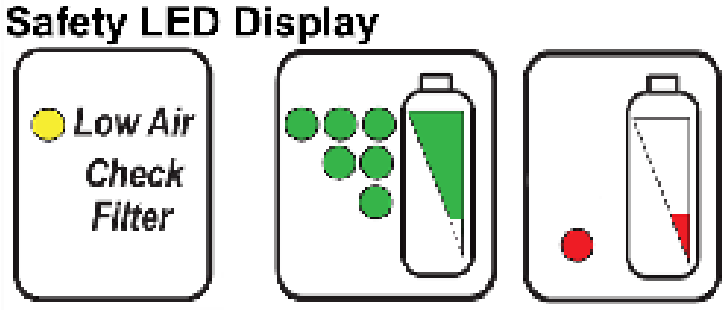
CAPR IH Helmets are equipped with a switch which adjusts the operating airflow. When the Helmet is turned on it will resume at the Airflow level it was last set at during last use position.

NOTE

When the Helmet is turned on, initially all five LED Safety Status Indicators are lighted briefly indicating all are functional. The red and yellow LEDs will then turn off and the airflow level resumes at the level is was last set at during its most previous use. The green LEDs will be on as appropriate to the battery charge level as indicated in the LED Safety Status Indicators table (previous page).

10.3. Helmet Symbol Definitions

These symbols are located on the underside of the Helmet and are defined as follows (refer to table in 10.2):

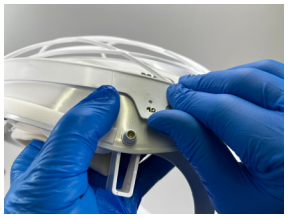


Yellow safety LED = Is lighted to indicate that Airflow is approaching the lower safety limit and reminds the user to check the filter and replace if necessary.	Green Safety LEDs (three) = Lighted according to estimated battery charge remaining.	Red Safety LED is lighted when the estimated battery charge remaining is below 25%.

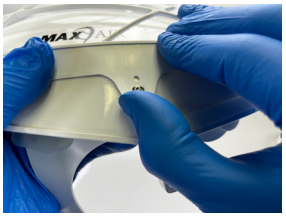
10.4. Helmet Cage, 2051-08

The 2051-08 Cage has two purposes:
1. The Cage protects the Helmet Fan and Motor during shipping. All MAXAIR Helmets ship with a Cage pre-assembled.
2. The Cage provides a mounting and fit frame for filters

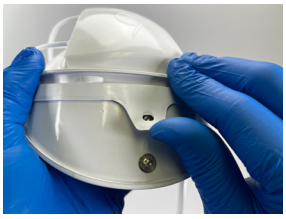
Disassembly - Cage from Helmet



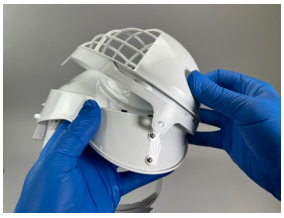
1. Unsnap the left (or right) side Snap Tab from the Helmet left (or right) Snap.



2. Unsnap the other side Snap Tab from the Helmet other side Snap.

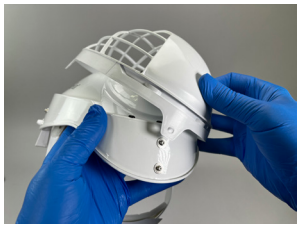


3. Unsnap the rear Snap Tab from the Helmet rear Snap.

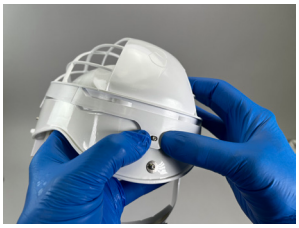


4. Lift the Cage up and off the Helmet.

Assembly - Cage to Helmet



1. Place the Cage over the top of the Helmet.



2. Snap the rear Snap Tab to the Helmet rear top Snap.

3. Snap both right and left side Snap Tabs to the Helmet right and Left side Snaps.

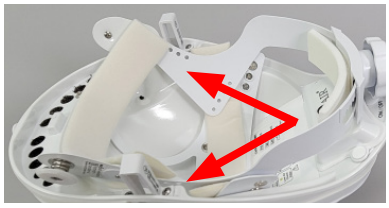
4. Ensure all three Snap Tabs are secure on the Helmet Snaps.

10.5. Helmet Headband, 2071-20

NOTE

The Helmet Headband side Height Adjustment Tabs are un-snapped from the sides of the Headband during shipment for safer shipping. Before use, they must be snapped securely to the sides of the Headband.

Assembly - Headband Side Height Adjustment Tabs to Helmet



1. Both side Height Adjustment Tabs are un-snapped when first removed from the shipping box.

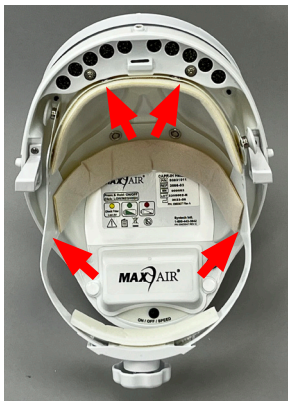
2. Snap one side Tab to the Headband. (Typical for most users is to start using the second-from-bottom position, when holding Helmet upside down.)

3. Both side Height Adjustment Tabs should be attached to the Headband sides and in the same position.

4. Both side Height Adjustment Tabs in proper position for use.

CAUTION

Prior to assembly, inspect and verify the Headband mounting holes (4) are in good condition. If the mounting holes are worn and connections to the helmet are weak or loose, replace the Headband.
Always assemble the Headband to a Helmet that already has a Cage attached.

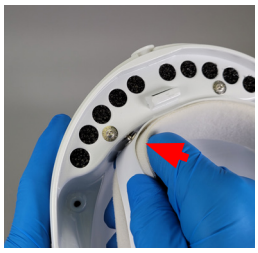


NOTE

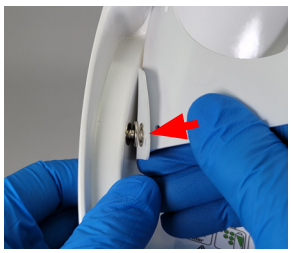
The Headband attaches to four Helmet Mounting Snaps (red arrows).

Assembly - Headband to Helmet

1. Place one front Headband Snap over the respective Helmet front Snap and press together to secure them.



2. Repeat Step 1 for the other front snaps.



3. Place one side Headband Snap over the respective Helmet side Snap and press together to secure them.

4. Repeat Step 3 for the other side snaps.

5. Ensure all four Headband Snaps are secure to their respective Helmet Snaps.

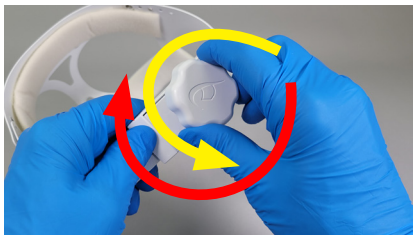
Disassembly - Headband from Helmet

Reverse Assembly Steps 1-4 (above) to remove the Headband from the Helmet

Headband Adjustments for Fit on Head

Circumference Adjustment

To ensure the Helmet is comfortable and secure on the head for all activities, it is necessary to adjust the ratchet Adjustment Knob as tightly as comfortable.

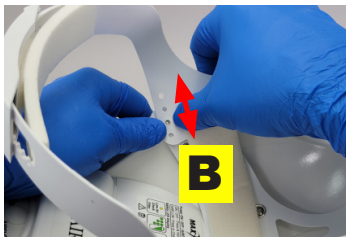


1. Tighten (Red) the Headband Adjustment Knob clockwise to ensure the most secure fit of the Helmet on the head for all activities. Do not over tighten to cause discomfort.

2. Loosen (Yellow) the Headband Adjustment Knob counterclockwise for easy doffing and donning of the Helmet onto the head.

Height Adjustment

If the Helmet is not secure and comfortable on the head, and if the LED Safety indicators are not easily visible in the upper peripheral vision, it may be necessary to change the Height Adjustment.



Unsnap one Side Adjustment Strip (A) and reposition upward or downward and re-snap (B), until the optimum fit for comfort and security is determined. Repeat for the other side. Ensure that both tabs are in the same hole position and that the Snaps are secure.

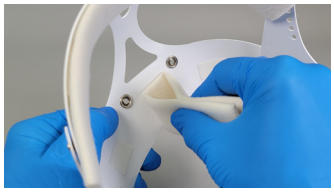
Headband Comfort Strips

Front Comfort Strip, 2000-201

Top Comfort Strip, 2000-201

Back Comfort Strip, 2000-209

1. To remove a damaged or soiled Comfort Strip, grasp one end and pull it up and off the Headband.



2. To attach a new Comfort Strip, align it parallel to the Headband with the loop side facing the Headband and press it on.

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10.6. Headband Comfort Strips

The Comfort Strips, 2000-201, provide comfort and moisture absorption when placed on the front and top of the Headband. They may be changed at user discretion for hygiene purposes.

Assembling and Disassembling the Comfort Strips

NOTE

Only one side of the comfort strip will attach to the hook tape on the Headband.

Assemble / Disassemble Comfort Strips

1. To replace a front Comfort Strip, grasp one end and pull it away from the Headband until it is free.

2. Test which side of a new Comfort Strip sticks to the Headband Velcro, center the strip on the Headband, and press down firmly on the strip, all along its length.

3. Repeat steps 1 and 2 for the top Headband Comfort Strip.

The Rear Comfort Strip is closed cell foam and may easily be cleaned with a decon wipe and reused until worn or otherwise unsuitable for use.

1. To remove a damaged or soiled Rear Comfort Strip, pull it away and off of the Headband.

2. To attach a new Rear Comfort Strip, align it parallel to the Headband with the loop side facing the Headband and press it on.

11. Base System Li-Ion Batteries

The CAPR IH Helmet may be powered by one or two LI-Ion batteries available in the 2500-25 Battery Pack.

- One Battery use - typically 3-5 hours/charge
- Two Battery use - typically 6-10 hours/charge

CAUTION

Inspect the Batteries for damage before every use. Do not use if damaged.
Always start with a fully charged Battery and use with the MAXAIR System only.
Fully recharge Batteries immediately after every use.
Charge the Battery only with a MAXAIR Lithium Ion Charger. (See Section 12.)
If the Charger LED is red when the Battery is connected, the Battery is not fully charged.
If it is necessary to use a non-fully charged Battery, precede using extreme CAUTION. Take very careful note of the Helmet LED Safety Status Indicators when the Helmet is powered on. Refer to the Helmet LED Safety Status Indicator LED Matrix table (See Section 10.2) to estimate the amount of useful time remaining on the Battery if it is not in a fully charged condition. Proceed once it is determined that there is sufficient charge in the Battery for the next activity.

Assemble the Batteries to the Helmet

1. Grasp the Battery Compartment Cover and pull it up and off the Helmet.

2. Place the negative "-" end of one of the 2500-25 batteries into one of the right side spring holders and push down so it is fully seated against the Helmet.

3. Press that Battery's positive "+" end down similarly into the left side spring holder.

4. Repeat steps 2 and 3 for the second Battery for additional run time.

5. Place the Battery Compartment Cover snaps over the respective Helmet snaps and secure and snap and secure the cover firmly to the Helmet.

Disassemble the Batteries from the Helmet

One Battery Use

1. Grasp the Helmet Battery Compartment cover and pull it off the Helmet. Grasp one end of the Battery and pull it up and out is its Helmet Spring Clip. Continue to pull the Battery to release it from the other Spring Clip and remove completely from the Helmet. Re-assemble the Compartment cover by securely snapping it onto the Helmet as it was at the start.

Two Battery Use

2. When two batteries are in use, perform step 1 for each battery in sequence.

Battery Cell Material Safety Data Sheet (MSDS) available at maxair-systems.com, Resources, Product Literature.

12. Base System Chargers

WARNING

MAXAIR chargers should only be used in an isolated area away from patients and other activities, and away from flammable materials. Inspect the charger for damage before every use. Do not use if damage is apparent or suspect.

A battery should be connected to a charger only until the Charger LED turns Green indicating a fully charged Battery. When the Charger LED turns Green, the Battery should be disconnected from the Charger.

See Section 6 for details regarding intermittent use and storage of batteries.

2600-03 Charger

2600-04 Charger

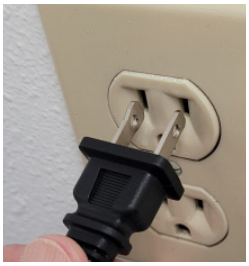
Intended Use

1. MAXAIR Chargers are designed for indoor use only and should not come into contact with water or excessive dust. To prevent overheating they should not be covered during use.
2. The mains power socket should be easily accessible. In the event of operational error, the plug should be immediately removed from the socket.
3. MAXAIR Chargers are for use with MAXAIR Lithium-Ion Batteries. For safety reasons, these Chargers must be used only for MAXAIR Batteries. These Chargers contains dangerous voltages and their cover should not be removed.
4. All recommended maintenance work should be carried out by qualified personnel who can get assistance by contacting the manufacturer's agent.
5. A fuse protects the Charger against short circuiting and overloading.
6. This symbol ⧈ means that the charger is double insulated (Insulation Class II)
7. If the Charger is mounted in a vehicle it can only be used when the vehicle is not in use.
8. The Charger has a plastic casing; avoid its coming into contact with oils, grease etc., as most types of plastic can be broken down by chemicals and solvents.

The 2600-03 is for charging one or two 18650 type MAXAIR Li-Ion batteries inserted into its spring-loaded holders..

The 2600-04 is for charging one or two 18650 type MAXAIR Li-Ion batteries assembled into the CAPR IH Helmet.

2600-03 Charger - Charging with Batteries Removed from the Helmet

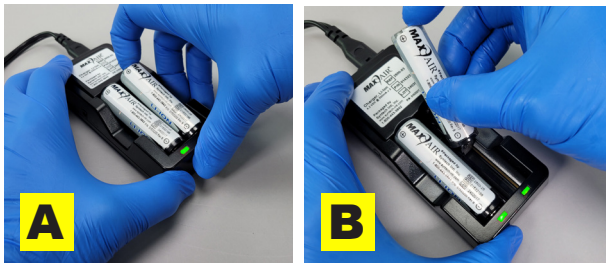


1. Plug the Charger into a secure power outlet and note that the green LEDs are lighted.

2. Insert a Battery into the spring-loaded Charger battery holder: A) Catch the "-" end of one battery on one spring foot and push the Battery downward to expand the spring, B) Press the "+" end of the battery inward and secure the battery into the holder. C) When a battery is fully seated and needs charging, the Red LED is lighted. D) Repeat for a second battery if desired for longer run time.

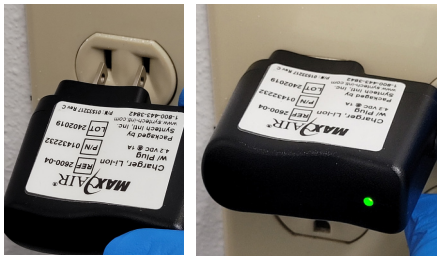
3. When Batteries are fully charged their (Charger) LED will turn back to Green indicating ready for use.

2600-03 Charger - Removing charged Batteries

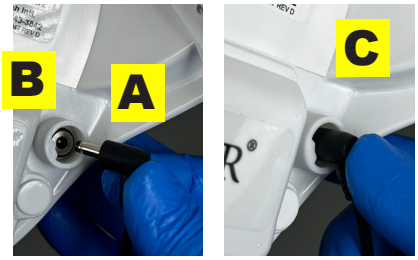


With charging is complete, remove batteries from the Charger. A) Using the tip of the forefinger, pry the top ("+") end of the battery up and down towards the "-" end to release the battery from the spring and B) lift it up and away from the charger. Repeat for the other Battery as appropriate.
Disconnect the Charger from the power outlet and store for next use.

2600-04 Charger - Charging with Batteries Assembled in the Helmet



1. Plug the Charger into a secure power outlet and note that the green LED is lighted.



2.Press the Charger charging connector (A) into the Charging Port (B) on the MAXAIR Helmet. Ensure the connector is fully down onto the Port (C).

3.The LED will turn red if charging is required. When it turns back to Green, charging is completed. Reverse steps 1 and 2 to disconnect the Charger from the Helmet and the Power outlet, and store for next use.

WARNING

If a Charger fails, contact Customer Service at 1-800-443-3842 for a Return Material Authorization (RMA).

Charging Protection from Electrical Surges

It is highly recommended to always connect the MAXAIR Charger directly to a Surge Protection Device, adequate for all anticipatable occurrences, during all charging activities of MAXAIR LIBs, and whenever the Charger is connected to a mains power source.

To choose an appropriate surge protector you should consult with your Engineering department regarding specifics to your physical plant and geographical environment. You may want to consider the following common fundamentals -

▲Indicator light – surge protectors will not last forever – when a surge protector properly diverts a surge, the protector itself can be damaged in the process. An indicator light will indicate that the surge protector is working fine.
▲UL Rating - good surge protectors come with a UL rating (or equivalent regulatory mark for non U.S. countries, e.g. CE Mark, etc.), a rating put out by the independent Underwriters Laboratories that tests the safety of electronic devices.
▲Clamping voltage - the voltage measurement that prompts the surge protector to start redirecting the excess electricity away from the plugged-in devices.
▲A surge protector with a lower clamping voltage will trigger earlier, thus better protecting electrical devices.
▲Joule rating - the maximum amount of energy the surge protector can absorb. If the surge exceeds this maximum, the surge protector will be rendered useless. The higher the joule rating, the more energy can be absorbed by the surge protector, therefore, a higher joule rating will often indicate a longer lifespan for the product.

13. Base System Assembly, Donning, Doffing, Disassembly

CAUTION

If there is any question about the disinfection status of the CAPR System due to a previous use, it is recommended to disinfect it before using.

This section describes assembly, donning, and doffing of the CAPR IH Base System. Refer to individual component User Instructions for headcovers, accessories, options, and peripherals.

Assemble the Batteries to the Helmet

1. Grasp the Battery Compartment Cover and pull it up and off the Helmet.

2. Place the negative "-" end of one of the 2500-25 batteries into one of the right side spring holders and push down so it is fully seated against the Helmet.

3. Press that Battery's positive "+" end down similarly into the left side spring holder.

4. Repeat steps 2 and 3 for the second Battery for additional run time.

5. Place the Battery Compartment Cover snaps over the respective Helmet snaps and secure and snap and secure the cover firmly to the Helmet.

Disassemble the Batteries from the Helmet

Reverse Assemble steps 1-5 above to remove Batteries from the Helmet.

Powering the Helmet On

Before Donning with a Headcover, power on the Helmet with a long press (2-3 seconds) of the On/Off Switch. Cycle to the desired speed by sequential short presses (<1 second), pausing between presses to allow the motor to adjust to each new setting. (When first powered up, the Helmet runs at the speed last selected on its previous use.)

Power the Helmet Off

Power off the Helmet with a long press (2-3 seconds) of the On/Off Switch only after removing the headcover of a Donned Helmet or after Doffing a Helmet with the Headcover attached.

CAUTION

Always power on the Helmet prior to assembling a Headcover to a Donned Helmet.
Never power off the Helmet if it is Donned and a Headcover is still assembled. First Doff the Helmet/Headcover or disassemble the Headcover from the Helmt before powering off the Helmet.

Don the Helmet

1. Loosen the Headband Ratchet Knob fully counterclockwise, and pull the Helmet over and down on the head.

2. Tighten the Ratchet Knob (clockwise) as tight as comfortable for all anticipated activities.

CAUTION

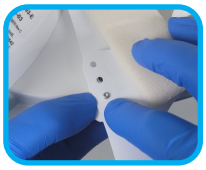
Optimum donning is when the helmet is secure on the head for all required movements and there is good visualization of the LED Safety Status Indicators in the upper peripheral vision.

≤ 1/2 Inch (~1.25 cm)

Position the Helmet so the front headband is within about ½ inch of the eyebrows and the rear headband is resting under the occipital bone above the vertebrae on the neck, and then tighten the Headband Adjustment Knob clockwise to ensure the most secure fit of the helmet on the head for all activities. Do not over tighten to cause discomfort.

CAUTION

For security and comfort, it may be necessary to change the Headband Height Adjustment, which raises and lowers the rear headband and the Helmet angle with respect to the head and positions the Lens from the chin. Unsnap the Adjustment Tabs on each side of the Headband and reposition upward or downward. Be sure both Height Adjustment tabs are in the same position.



Doff the Helmet

1. Loosen the Headband Ratchet Knob counterclockwise.

2. Lift the Helmet up, forward, and off the head.

Cleaning

The entire CAPR IH Helmet Assembly may be cleaned with mild applicaton of skin friendly soap and a damp cloth, and decontaminated with recommended agents - See Section 4.

Charging with Batteries Assembled in the Helmet - (2600-04 Charger)

1. Plug the Charger into a secure power outlet and note that the green LED is lighted.

2. Press the Charger charging connector (A) into the Charging Port (B) on the MAXAIR Helmet. Ensure the connector is fully down onto the Port (C).

3. The LED will turn red if charging is required. When it turns back to Green, charging is completed. Reverse steps 1 and 2 to disconnect the Charger from the Helmet and the Power outlet, and store for next use.

NOTE

See Section 12 for charging batteries removed from the Helmet with the 2600-03 charger.

14.System Specifications

Specifications listed are approximate and may vary between units.

PROPERTY	SPECIFICATIONS (NIOSH)
Complete Device Classification	PAPR, Loose Fitting Filter Series PAPR100-N
Fit Factor	Minimum 500
Maximum allowable Percent Leakage: Dioctyle-Phthalate Test	0.03% @ 107 LPM
Minimum allowable NaCl efficiency	99.97% @ 125 lpm
Minimum Airflow	170 LPM
Noise Level maximum	80 dBA limit

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