



AS9100B & ISO9001-2000
CERTIFIED

Essex PB&R Corporation

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Contract No.
GS-07F-0483N

ESSEX PB&R PLUS 15 (Filtered Escape Respirator)



TECHNICAL DATA PACKAGE



PLUS 15 Technical Manual

GENERAL INFORMATION:

Intended Use: The PLUS 15 is intended to be used as an escape filter hood in fire and smoke emergencies where oxygen exists in sufficient quantity to sustain life. Most fire situations contain sufficient oxygen. It is for a single use only.

The PLUS 15 is not intended for chemical spills or confined space situations where sufficient oxygen may not be available. In these situations a self-contained breathing apparatus, such as an Essex VRU should be considered.

All fire situations are unique, and so it is impossible to predict exactly what toxic fumes will be given off. The PLUS 15 has been designed in consideration of testing done by recognized international regulatory agencies that have studied fires. The contaminants that the PLUS 15 will remove, are based on these international studies. However, it is not possible to guarantee that the PLUS 15 will remove all of the contaminants from any particular fire.

Duration of Use: The PLUS 15 will provide 15 minutes of protection against exposure to toxic gases. Longer time durations can be achieved against less severe environments. (Reference the Challenge Atmosphere Section of this Technical Data Package)

Size: 7in long x 4 in tall x 5 in wide when packaged in its protective nylon pouch

Weight: Approx. 450 grams, individual weight varies, specific weight is listed on the foil barrier pouch.

Packaging: The PLUS 15 is folded inside a hermetically sealed, waterproof barrier pouch, which is then packaged inside a protective nylon pouch. The barrier pouch can be opened by hand and requires no additional tools.

Shelf Life: The PLUS 15 has a shelf life of 5 years and 6 months from date of manufacture as long as the hermetically sealed barrier pouch has not been damaged and unit is properly stored in its nylon pouch.



STATEMENT OF WARRANTY FOR THE ESSEX - PLUS 15 UNIT

Essex P. B. & R. Corp. warrants that: (1) The Essex Plus 15 (hereinafter referred to as the “unit”) will remain free from defects in material and workmanship, whether patent or latent, for up to the replace by date which is a period of five (5) years and six (6) months from the date of manufacture when properly stowed in containers supplied or approved by Essex P. B. & R. Corp.

The loss of vacuum in the inner packaging does not render the unit unserviceable. Units with barrier pouches that have lost vacuum remain serviceable as long as the humidity indicator remains blue. Although if a unit is found to have a damaged barrier pouch, e.g. cut, puncture or other damage, the unit should be pulled from service and sent back for repair at the customer’s expense.

The liability of Essex P. B. & R. Corp. for any defect in any unit, and the sole and exclusive remedy of the buyer, shall be limited to the repair or replacement of the defective unit, or a refund of the original purchase price (pro-rated in proportion to the five (5) year and six (6) month warranty) at the sole discretion of Essex P. B. & R. Corp. The obligation to repair, replace, or provide a pro-rated refund shall terminate five (5) years and six (6) months after the date of manufacture of the unit.

This warranty is in lieu of all other warranties and representations, expressed or implied, and all other obligations and liabilities of Essex P. B. & R. Corp. Correction of defects, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of Essex P. B. & R. Corp. whether based on warranty, tort, contract or otherwise. Under no circumstances shall Essex P. B. & R. Corp. be liable for any punitive, special, incidental or consequential damages.

This warranty shall not apply to any unit that has been stowed in an unauthorized container, which has been repaired or altered by anyone other than Essex P. B. & R. Corp., or which has been subject to misuse due to negligence or accident, or the failure to use the unit in accordance with the Product’s Manual supplied by Essex P. B.& R. Corp.

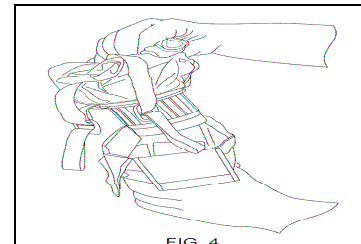
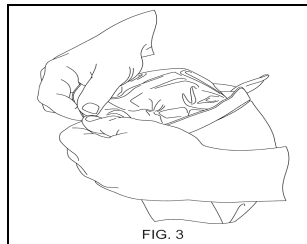
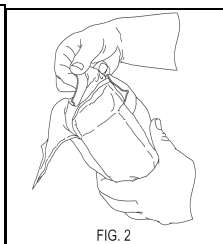
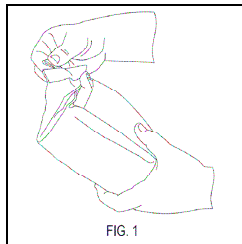
THE FOREGOING WARRANTIES ARE IN LIEU OF ALL WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY, NON-INFRINGEMENT, OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY OTHER OBLIGATION ON THE PART OF ESSEX P. B. & R. CORP.

Donning: The PLUS 15 can be donned in less than 30 seconds. This includes the time to: remove the PLUS 15 and barrier pouch from the nylon pouch; removing the PLUS 15 from its barrier

pouch; and placing the PLUS 15 over the head and positioning in front of the mouth and nose and tightening all fit straps.

To Remove your PLUS 15 from the Pouch:

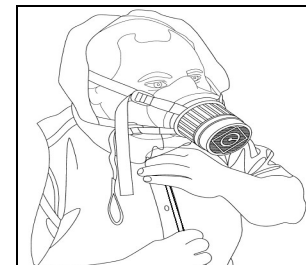
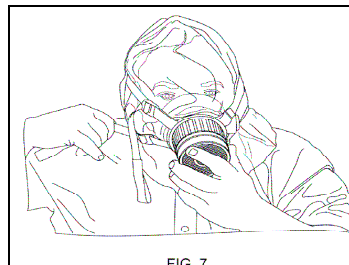
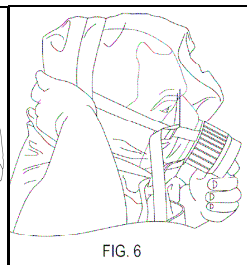
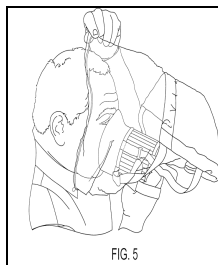
WARNING: Do not use your PLUS 15 if there is any damage to the pouch, the pouch has lost its vacuum seal, or if your PLUS 15 is otherwise damaged.



1. Open both sets of flaps on the pouch.
2. Pull the red tape to open the pouch.
3. Remove your PLUS 15 from the pouch. Unfold your PLUS 15.

To Don your PLUS 15:

WARNING: Do not use your PLUS 15 if it is torn or otherwise visibly damaged.



1. Gently place the hood fully over your head with the nose cup in front of your face as shown, being sure to pull the hood down completely in the rear.
2. Pull both red straps on the right hand side of the nose cup seal the nose cup around your mouth and nose.
3. Slide the synch ball to your neck to tighten the neckseal. Do not over-tighten.

When unit is properly donned the nose cup should be fully sealed around the mouth and nose held in place by the red straps, and the hood should be tightened around the neck.



Size and Fit: The PLUS 15 comes in only one size. Though the unit is designed to be one-size fits most, leakage may occur due to variables such as unique facial characteristics, facial hair, facial piercing, etc.

Breathing Resistance: The breathing resistance for inhalation is 3.2 in of H₂O maximum and exhalation is 1.2 in of H₂O maximum.

Visibility: The PLUS 15 offers a large field of visibility, with the use of clear FEP material for the hood.

Protection Factor: The PLUS 15 provides an average protection factor of 50 inside of the nose cup. The air being breathed inside the PLUS 15 is on average 50 times cleaner than the air outside of the hood.

Verbal Communication: Though the nose cup may muffle communication the PLUS 15 still allows for communication without removing the hood or mask.

Oxygen: The PLUS 15 does not provide oxygen. The contaminated air is drawn through the filter, cleaned and delivered to the user. **Do not use the PLUS 15 in an oxygen deficient atmosphere.**

Carbon Dioxide: Carbon Dioxide is introduced into the hood by the reaction of the carbon monoxide filter and by the breath exhaled by the user. Carbon Dioxide is removed from the hood when the user exhales, opening the exhalation valve adjacent to the filter and emitting air from inside the breathing zone.

Carbon Monoxide: Carbon Monoxide (CO) is a toxic gas found in almost all fires. It is the by-product of incomplete combustion. The Plus 15 protects against CO concentrations as high as 10,000 ppm for over 15 minutes.



Filter Capacity:

The PLUS 15's Filter Elements have been tested against the following Single toxic gases:			
Challenge Gas	Concentration	Allowable Breakthrough	Actual Breakthrough
Carbon Monoxide*	2,500 ppm	200	27 min
Carbon Monoxide*	10,000 ppm	200 ppm	28 min
Hydrogen Cyanide	400 ppm	10 ppm	58 min
Hydrogen Chloride	1000 ppm	5 ppm	170 min
Acrolein (Propenal)	100 ppm	.5 ppm	37 min

Test data represents laboratory testing of Last Chance Rescue Filter, conducted at AT Labs a unit of Assay Technologies, Pleasanton, CA.
Gas Conditions: Air Flow: 30lpm Constant Flow/ Temperature 20°C/ Relative Humidity: 70%

* Gas Conditions: Air Flow: 30lpm Constant Flow/ 25°C/ Relative Humidity: 90%

** Time Weighted Average

Fire Resistance: The PLUS 15's hood is made from FEP film, which has a rated melting temperature of 500 to 540°F (250 to 280°C).

Inspection Method: The PLUS 15 is acceptable for use if the "Replace By Date" marked on the label of the barrier pouch has not been exceeded and the barrier pouch has not been punctured, torn or lost vacuum.



Storage and Maintenance: The PLUS 15 may be stored at temperatures between 85°C (185°F) and -30°C (-20°F). The only maintenance needed for the PLUS 15 is to inspect the barrier pouch for any tears, punctures, and loss of vacuum or gain in weight. If there is any damage to the barrier pouch or the pouch has lost vacuum or the unit is otherwise damaged DO NOT USE THE DEVICE.

MATERIALS OF CONSTRUCTION:

Hood Materials:

Hood:	FEP+ film
Neck Seal:	Elastic draw chord with synch ball
Head Harness:	Urethane Coated Rip Stop
Harness Straps:	Flame Retardant Coated Nylon
Nose Cup:	FDA Grade Silicone

Filter Materials:

Filter Holder:	Polycarbonate
Particulate Screen:	Pleated N95 filter
Acid Gas Pack:	Granular Activated Carbon
Carbon Monoxide Removal:	Granular CO Catalyst

Ordering Information:

<u>Part Number</u>	<u>Description</u>
MR-10015N	Essex PB&R PLUS 15 Air Purifying Escape Respirator w/ Soft Pouch
MR-10016N	Essex PB&R PLUS 15 Trainer