



PBE

PROTECTIVE BREATHING EQUIPMENT

Oxygen for Crewmembers During Cabin Emergencies

ESSEX[™]
INDUSTRIES



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The Essex PBE is a lightweight, portable, self-contained, personal breathing device designed to safeguard flight attendants and crewmembers from the effects of smoke, carbon dioxide, harmful gases and oxygen deficiency while managing fire, smoke or fume emergencies. The equipment improves the wearer's visibility in smoke-filled compartments, protects the head and face from melting or dripping plastics, and shields the head against brief exposure to heat and flame.

The PBE is a proven design that has been in service worldwide in commercial aviation fleets since 1989. Thousands of units have been actuated over the years in product development, testing and actual use.

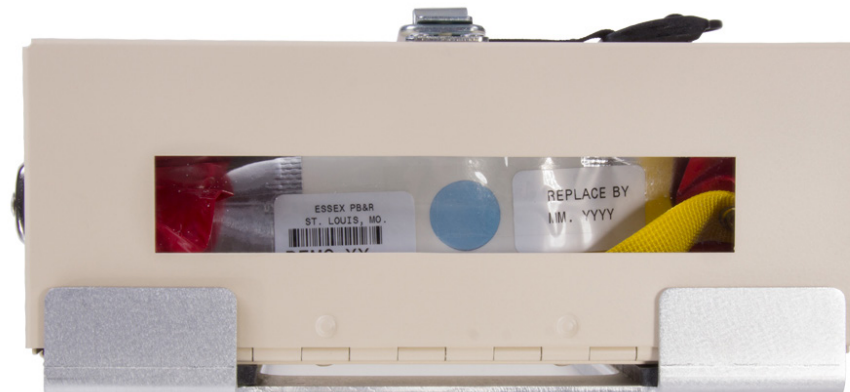
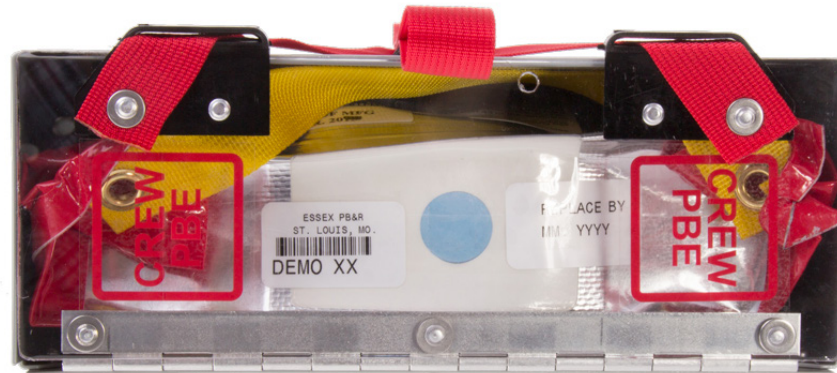
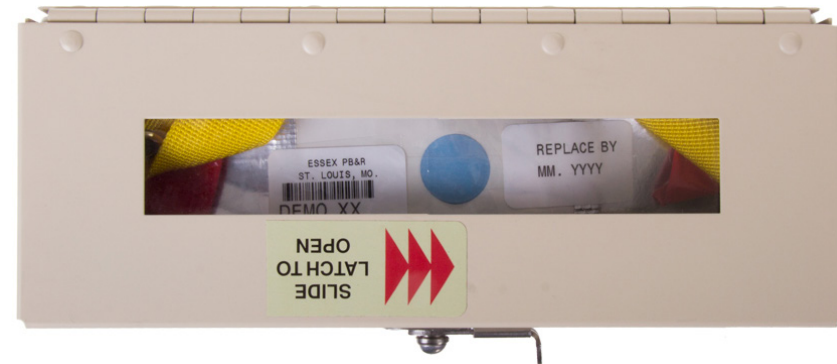
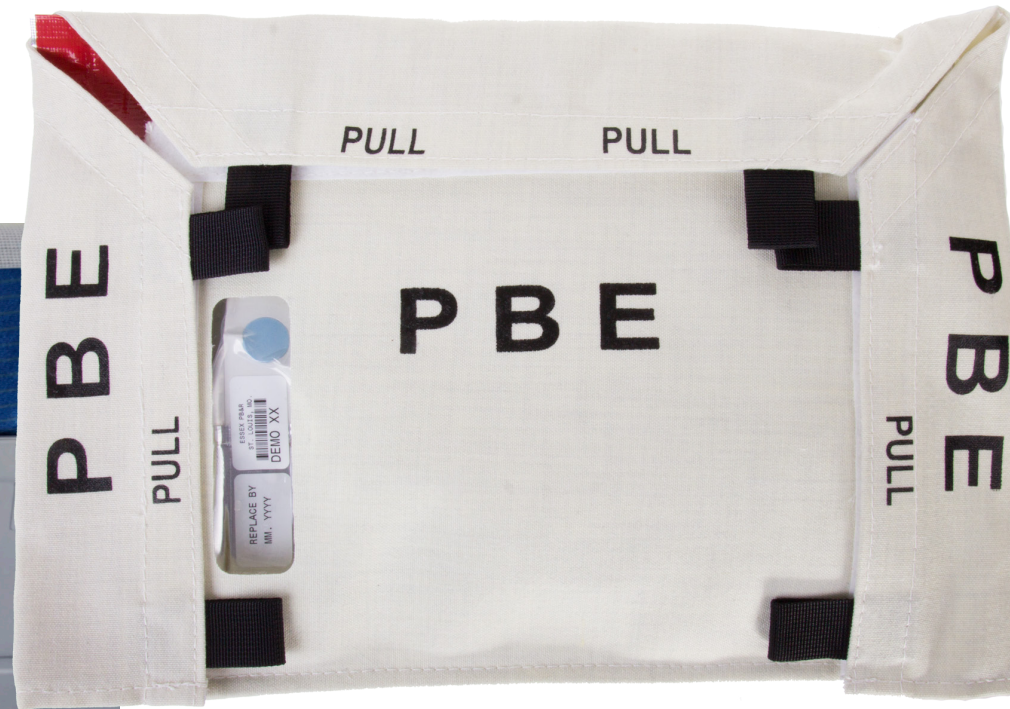
DESIGNED FOR PERFORMANCE

OXYGEN SYSTEM

Unlike other products that use chemical-oxygen generators, the PBE oxygen system consists of two oxygen cylinder assemblies mounted to the bottom side of the neck seal. Each of the oxygen cylinder assemblies holds 18 liters of aviator's grade oxygen (36 liters total) and an actuator assembly. Upon activation, the actuator assembly safely pierces a hole in the oxygen cylinder, allowing cool oxygen to flow into the hood. The oxygen system is hermetically sealed to prevent leakage and is equipped with an over-pressurization, protective rupture disc. The oxygen cylinder assemblies are tethered together such that the operator is unable to don the unit until after both oxygen cylinder assemblies have been activated.

CO₂ REMOVAL

Special panels inside the hood control carbon dioxide buildup created during exhalation by the operator. These panels contain a dustless lithium hydroxide absorbent sealed inside a double walled membrane, which keeps carbon dioxide concentrations at safe levels during the hood's service period.



DESIGNED FOR SAFETY

SERVICE/END-OF-SERVICE INDICATOR

The PBE features a battery-powered green and red light service/end-of-service Indicator. Mounted slightly below eye level on the left inner side of the hood, this light functions as a secondary indicator for monitoring oxygen activation, reassuring the operator that the unit is functioning properly. It also provides a signal when the unit's service life has ended; however the primary indicator for the unit's end of service life is when the hood deflates to the point of contacting the operator's head and face.



BARRIER POUCH ASSEMBLY

The PBE is folded and vacuum-sealed in a moisture-resistant barrier pouch with material that has an extremely low moisture/vapor transmission rate and high puncture strength. This barrier pouch assembly is equipped with a replace by date label and an internal humidity indicator. If the replace by date has been exceeded, the unit must be immediately replaced.

The humidity indicator shows if moisture has penetrated inside the barrier pouch and could come in contact with the lithium hydroxide CO₂ scrubbers. If the humidity indicator is blue in color, the unit is acceptable. If the humidity indicator is pink in color, this indicates that moisture has penetrated into the barrier pouch assembly and the unit needs to be removed from service in the near future.

Loss of barrier pouch vacuum does not render the PBE unserviceable. If no cuts, punctures or tears are present, and the humidity indicator is blue in color, the PBE remains serviceable.

STOWAGE AND SHIPPING

The Essex PBE requires very little stowage space. It also has the lightest stowage and end use weight. Fifteen different stowage options are available to meet any requirement. Its design allows the PBE to be shipped via next day air service.

DONS IN JUST 15 SECONDS



DESIGNED FOR RELIABILITY

THE ESSEX PBE HAS THE FOLLOWING APPROVALS:

Federal Aviation Administration (FAA) approved to: TSO-C116, Crewmember Protective Breathing Equipment and TSO-C99, Crewmember Protective Breathing Equipment
Civil Aviation Authority (CAA) approved (United Kingdom)
Civil Aviation Authority of China (CAAC) approved
Brazilian Civil Aviation Authority (ANAC) approved
European Aviation Safety Agency (EASA) approved to: ETSO-C116, Crewmember Protective Breathing Equipment and ETSO-C99, Crewmember Protective Breathing Equipment

SPECIFICATIONS

W"x L"x H"	16 x 2 x 11 (HOOD FOLDED IN POUCH. NO BRACKET)
WEIGHT	3.2 LBS (HOOD AS WORN. NO POUCH)
TIME DURATION	UP TO 60 MINUTES, 15 MINUTES MINIMUM UNDER HEAVY WORKLOAD
SOURCE OF BREATHABLE AIR	AVIATOR GRADE COMPRESSED OXYGEN. O ₂ CYLINDER, WITH OVERPRESSURE PROTECTION TO PREVENT RUPTURE.
CARBON DIOXIDE CONTROL	PATENTED PASSIVE SCRUBBERS
DONNING TIME	LESS THAN 15 SECONDS
CARBON DIOXIDE (MAX AVERAGE)	4%
OXYGEN (MINIMUM VALUE)	18%
OXYGEN ACTIVATION	SEMI-AUTOMATIC
SHELF LIFE	10-YEARS 6-MONTHS FROM THE DATE OF MANUFACTURE
SIZING/FITTING	FITS 5TH TO 95TH PERCENTILE ADULTS WITHOUT ADJUSTMENT
VISIBILITY	270°
ORAL COMMUNICATION	EFFECTIVE AT 12 FEET
INSIDE HOOD TEMPERATURE	104°F MAX @ 68°F AMBIENT
OPERATING TEMPERATURE RANGE	5° F TO 120° F
STOWAGE TEMPERATURE RANGE	-20° F TO 185° F
CABIN PRESSURE ALTITUDE	8,000 FEET
THERMAL RESISTANCE	RADIANT HEAT - 1.0 BTU/SQ. FT. FOR UP TO 60 SECONDS, DRIPPING THERMOPLASTIC - 390°F, TRANSIENT FLAME - 1800°F FOR 5 SECONDS
PROTECTION FACTOR RATIO (TYPICAL)	260 @ 80 WATTS
STOWAGE OPTIONS	MULTIPLE STOWAGE OPTIONS AVAILABLE

⚠ WARNING: THIS PRODUCT CAN EXPOSE YOU TO CHEMICALS INCLUDING LEAD, WHICH IS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. FOR MORE INFORMATION GO TO www.P65Warnings.ca.gov.