

AirHawk[®] II Air Mask

Bid Specifications



FACEPIECES	
Ultra Elite Facepiece	<ul style="list-style-type: none"> • Shall be available in three sizes in black colored silicone or Hycar rubber. • Shall have an inhalation check valve and exhalation valve to prevent exhaled air from entering and contaminating the mask-mounted regulator. • Shall have a speaking diaphragm with aluminum-coated membrane suitably protected, and located centrally to the facepiece for optimal voice projection. • Shall be able to incorporate an optional Heads-Up-Display System through a mounting bracket for a receiver. • All replaceable parts are to be easily replaced when necessary, in the field.
Nose Cups	Two sizes of removable nose cups shall be offered and the nose cup shall contain a voice collector system which enhances unamplified speech transmission.
Lenses	The lens shall be field-replaceable and of a non-shatter type and shall fit all three sizes of the facepiece
Head Harness	Head harness shall be either made of rubber with five adjustment points, or from a flame and heat-resistant Kevlar assembly featuring a four-point, adjustable suspension.
Options	<ul style="list-style-type: none"> • An optional flame and heat-resistant PBI neck strap shall be offered, to carry the facepiece in a ready position for quick donning. • A removable spectacle kit shall be available for mounting corrective lenses inside the facepiece. • Optional cover lenses shall be available in at least two types: clear and smoke-tinted.
Advantage 4000 Facepiece	<ul style="list-style-type: none"> • Shall be available in three sizes in black colored silicone or Hycar rubber • Shall have a single mounting location for attaching various facepiece adapters to the facepiece. Three facepiece adapters shall be available: <ul style="list-style-type: none"> ○ Push-To-Connect Adapter for FireHawk Regulator ○ RD40 Adapter ○ Twin Cartridge Adapter • Shall have an inhalation check valve and exhalation valve to prevent exhaled air from entering and contaminating the mask-mounted regulator. • All replaceable parts are to be easily replaced when necessary, in the field.
Nose Cups	Nose cups shall be available for use in reducing facepiece fogging in cold conditions. The nose cups shall fit a variety of face sizes and shapes. The nose cups shall be designed to be installed without special tools.
Lenses	The lens shall be field-replaceable and of a non-shatter type and shall fit all three sizes of the facepiece.
Head Harness	An adjustable silicone rubber head harness with 4 points of suspension shall be utilized. The harness shall be designed to adequately fit a wide range of head sizes: small, medium and large. An optional polyester net type harness with 4 points of suspension shall be available.
Options	<ul style="list-style-type: none"> • A removable spectacle kit shall be available for mounting corrective lenses inside the facepiece. • Optional cover lenses shall be available in at least two types: clear and smoke-tinted.

AIRFRAME CARRIER & HARNESS	
Harness	<ul style="list-style-type: none"> • All straps shall be made of nylon or Kevlar. • The SCBA shall have an adjustable double-pull waist belt secured with a nylon buckle.

	<ul style="list-style-type: none"> • Optional Nomex shoulder pads shall be available in addition to either the nylon or Kevlar shoulder straps. • Each of the shoulder straps shall feature a nylon friction buckle for easy adjustment and retention of pull-straps. • Optional mid-connect chest strap with snap-type fastener that properly positions the shoulder straps allowing full arm movement shall be available.. • An optional lumbar pad to enhance comfort to the lower back of wearers. <ul style="list-style-type: none"> ○ The lumbar pad shall also be available with an optional 6-way swivel feature to maximize the range of motion and comfort of the user. • All harness components shall be affixed with tri-bar slides and be field-replaceable with no tools required.
Backplate	<ul style="list-style-type: none"> • The backplate shall be constructed of a glass reinforced composite material that conforms to the user's back. • The backplate shall be equipped with large side handles for pulling and dragging a downed worker to safety. • The backplate shall be equipped with a centrally located carabiner attachment point for the purpose of dragging a downed worker. The attachment point shall be capable of holding a 1000 lb. load. • The cylinder band shall be made from either nylon or Kevlar and secured by an adjustable nylon buckle, allowing the band to properly retain various size cylinders. An optional adjustable, stainless steel cylinder band having a quick-opening device at one end to properly retain various size cylinders. The cylinder band must retain its open shape for easy cylinder change-out. • The backplate shall be equipped with a first stage regulator slide for ease of cylinder connection.

CYLINDERS

Construction	<ul style="list-style-type: none"> • Low-pressure (2216 psig) cylinders shall be available with in the following materials: <ul style="list-style-type: none"> ○ all-aluminum ○ fiberglass hoop-wound ○ carbon-wrapped • High-pressure (4500 psig) SCBA shall be carbon-wrapped cylinders in 30-, 45-, or 60-minute durations.
Valve	<ul style="list-style-type: none"> • The cylinder shall contain a closing valve which shall incorporate a pressure gauge to indicate the pressure in the cylinder at all times. The pressure gauge face shall be luminescent. The handwheel shall be at a 90° angle from the longitudinal plane of the cylinder. • The valve shall incorporate a flow control insert to limit the airflow over the first half-rotation of the handwheel, minimizing propulsion thrust in the event the cylinder is mishandled
Operating pressure	<ul style="list-style-type: none"> • Cylinders must be available in two operating pressures 2216 & 4500 psi. • Cylinders with 2216 psig operating pressure must be rated for 30 minutes. Cylinders with 4500 psi operating pressure must be available in 30, 45 and 60 minute durations.

REGULATORS

First-Stage Regulators	<ul style="list-style-type: none"> • Reduces the cylinder pressure down to an outlet pressure not to exceed 100 psi. Regulator outlet pressure must be adjustable. • There shall not be more than 14 replacement parts on the regulator. • Regulator redundancy shall be achieved by two inter-nested long-life springs. • The regulator body shall be constructed of a high strength heat treated aluminum alloy, and plated with a Teflon hard coat anodize to minimize corrosion and wear of internal components.
Mask-Mounted Regulator	<ul style="list-style-type: none"> • The mask-mounted pressure-demand regulator shall consist of the following: <ul style="list-style-type: none"> ○ An over-the-shoulder air-supply hose routed through a shoulder strap tunnel to the first-stage regulator. For durability, the air-supply hose must

	<p>be made of neoprene or silicone from the second stage regulator attachment to an inline swivel or quick-connect.</p> <ul style="list-style-type: none"> ○ As an option, the detachable regulator must have a push-to-connect attachment to the facepiece. This option of the regulator shall feature a non-indexing design, capable of mounting to the facepiece in any orientation. In this configuration, the regulator must rotate freely when connected to the facepiece, maximizing the user's freedom of head movement. ○ As an option, the detachable regulator must have a slide-to-connect attachment to the facepiece (for Ultra Elite Facepieces), with an audible click. The regulator's forked upper attachment slides down a track that is molded into the inhalation assembly cover of the facepiece. This provides an ambient air stand-by mode for the regulator, allowing the user to go on air quickly with a simple push of the regulator into the facepiece. In this configuration, the regulator must be restricted from rotation after attachment to maintain a consistent location of the regulator controls with respect to the user. ○ The second stage regulator shall not obstruct or reduce the field of vision of the wearer when installed on the facepiece. ○ When doffing the regulator, the disengagement of the regulator from the facepiece must simultaneously stop the flow of air. ○ The second stage regulator must not require any tools for disassembly. Field replaceable parts in the second stage regulator are not to exceed a count of 28 parts.
Primary Low Pressure Warning Device	An audible alarm shall be an air-actuated, self-cocking, continuous ringing audible warning bell automatically operating when air pressure in the supply cylinder reaches approximately 25% of the rated service life.

OPTIONS									
Air Line	An optional air line attachment shall be available allowing the user to connect into an independent air source, up to 300 feet away. This shall allow the worker to the capability of an airline respirator and SCBA all in one, allowing the worker to select their air source based on the task at hand.								
Heads-Up-Display (Ultra Elite Facepieces only)	<ul style="list-style-type: none"> • The Heads-Up-Display (HUD) System shall be wireless to eliminate snag hazards and provide modularity for easy maintenance. It shall be comprised of two primary components 1) Integrated Transmitter and 2) Receiver • The HUD Receiver shall provide the user with the remaining volume of air in their cylinder in 25% increments through a series of 4 colored LEDs. • The light logic used to convey remaining cylinder volume shall be as follows: <table border="1" style="margin-left: 20px;"> <tr> <td>Four Green Lights</td> <td>76 to 100% Cylinder Volume</td> </tr> <tr> <td>Three Green Lights</td> <td>51 to 75% Cylinder Volume</td> </tr> <tr> <td>Two Flashing Amber Lights</td> <td>26 to 50% Cylinder Volume</td> </tr> <tr> <td>Flashing Red Light</td> <td>0 to 25% Cylinder Volume</td> </tr> </table> • The HUD System shall allow the user to select between two modes of operation, a 1) Continuous lights on mode or 2) an Intermittent lights on mode for power conservation. • The HUD Receiver shall incorporate a light sensor that senses ambient light conditions automatically adjusting the display to one of 16 pre-programmed light intensities. • The HUD Receiver shall provide the user and their partner (by means of a buddy light) with a visual alarm indication of a low air cylinder. • The HUD Transmitter shall incorporate a refresh button that permits a user to update their display or change the receiver's mode of operation • The receiver shall use two AA alkaline batteries. • The HUD must be immune to radio frequency interference (RFI), and must function properly in the close proximity of hand-held radios. 	Four Green Lights	76 to 100% Cylinder Volume	Three Green Lights	51 to 75% Cylinder Volume	Two Flashing Amber Lights	26 to 50% Cylinder Volume	Flashing Red Light	0 to 25% Cylinder Volume
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Shoulder-Mounted Quick-Fill EBS System Accessory	<ul style="list-style-type: none"> • Must refill (less than one minute) an SCBA cylinder from a mobile compressor or cascade system. • Must be capable of transfilling between two SCBA wearers, providing an emergency breathing system (EBS), while maintaining NIOSH approvals. • Shall be capable of extending the users air supply over longer duration when a remote cascade system or other compressed gas source is located in a remote area. • Must be capable of transfilling and refill in immediately dangerous to life or health (IDLH) atmospheres.
ICM Tx, Integrated PASS/HUD Transmitter	<ul style="list-style-type: none"> • The combination integrated PASS and HUD Transmitter must be contained in a single enclosure to eliminate wires that can be snag hazards and for easy replacement in the event of damage. • The integrated PASS unit must be immune to radio frequency interference (RFI), and must function properly in the close proximity of hand-held radios. • The combination PASS and HUD Transmitter must be equipped with an optional heat sensor and time remaining display. The time remaining must update calculations every 30 seconds, based on the user's previous 3 minutes of air consumption. The initial calculation will appear after 3 minutes. • The unit shall have the capability of electronically storing the user's name into memory through an ID Tag. • The unit shall be capable of storing up to 25 hours of use information, in the form of sessions that are generated each time the SCBA is pressurized. The sessions must indicate the day, time, user's name, cylinder pressure, duration of use, and time of alarm (PASS and thermal), for each pressurization of the SCBA. • The sessions must provide the option of being downloaded to a personal computer for addition to maintenance records, or for use in incident investigations.
Emergency Escape Breathing Support system	<ul style="list-style-type: none"> • As an option, an emergency escape breathing support system must be accommodated by the SCBA. • The system must be available with a common airline quick-disconnect fitting. • The system shall connect to the intermediate pressure side of the SCBA, downstream of the first stage regulator.
Emergency Egress Rescue Belt	<ul style="list-style-type: none"> • Shall be available in two waist belt lengths, to fit waist sizes 33-54 inches and 33-74 inches. • Shall be available with two Kevlar rescue rope lengths, 50ft and 75ft. • The Kevlar rescue line shall be rated at 3000lbs static load. • The complete system shall be capable of a 1000lb static load, exceeding the NFPA 300lb requirement. • The belt system shall incorporate a shock absorbing rip-stitch feature on the descender strap, to help protect the Kevlar rescue line from impact loads. • The system shall include a carabineer and descender (brake) for rappelling in an emergency egress situation. • The belt shall be made of Kevlar, with an outer cover made of FHR Advance material. • As a safety feature, the Kevlar rope shall be detachable under load by the user, with a "pull to release" knot at the end of the Kevlar rope. • As a safety feature, the rope assembly shall have a tamper evident label to ensure the proper packing of the rope by trained personnel. • The rope assembly shall be available as a replacement part. • The Rescue Belt must be NIOSH certified.

CARRYING CASE

	<p>If specified, a carrying case shall be provided to retain the complete apparatus and the instructional manual. The carrying case shall be either the hard type with replaceable front latches or the soft, duffel bag type.</p>
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