

# CLEMCO

## Operator Safety Equipment



**Protection & Comfort For  
Abrasive Blast Operators**

# Protection Equals Productivity

*Abrasive blast cleaning requires specially designed protective clothing and an air-fed respirator. Clemco's Apollo helmets, blast suits, filters, and related equipment deliver the highest level of protection you can buy.*

*High-speed abrasive turns paint and rust into a cloud of dust, and the rebounding particles continuously bombard you. At a typical blast site, the dust can contain pulverized lead, asbestos, silica crystals, and any other material on the surface being cleaned or in the abrasive being used.*

*Wearing Clemco Operator Safety Equipment lets you concentrate on the job of abrasive blasting. Inside your comfortable Apollo helmet, you breathe clean, filtered air, while the Clemco blast suit and gloves protect you from rebounding abrasive.*

## Apollo Helmets ~ 1,000 times the protection

*The Occupational Safety and Health Administration (OSHA) has assigned Apollo helmets a protection factor of 1000 times the exposure limit for lead dust.*

Apollo helmets are the most comfortable supplied-air respirators you can buy; with spacious interiors which permit additional hearing protection and inclusion of a two-way FM radio, a significant safety feature.

Apollo helmets are equipped with fully adjustable suspensions and come in high and low-pressure versions. The high-pressure models need 15 cfm of Grade D breathing-air at 65 to 100 psi.

The Apollo 60 LP and the Apollo 20 LP are to be used only with an ambient air pump capable of providing 6 to 15 cfm of Grade D breathing-air at 8 to 12 psi.

The Apollo 60 HP and the Apollo 20 HP can be used with Clemco's complete line of respirator air control valves. Both Apollo low-pressure models require Clemco's Constant Flow Connector.

*The National Institute for Occupational Safety and Health (NIOSH) has approved Clemco's Apollo helmets for use in all blast applications.*



### Apollo 60 ~ The king of comfort

- Double-shell construction allows complete circulation of air
- Acoustical foam suppresses incoming air noise, providing exceptional quiet
- Large lens opening permits peripheral vision and lets in more light - feels less confining
- Full, nylon, four-clasp cape with washable zip-out collar keeps out dust and abrasive



### Apollo 20 ~ Economical protection

- Single-shell construction has simple air distribution
- Lens replacement is economical and easy
- Long-lasting sewn-in collar and 3/4 length nylon cape add operator protection
- Reliable Apollo protection at a lower price makes the Apollo 20 an ideal safety choice for blast operators and for secondary personnel in a blast cleaning environment

# APF 1000 What It Means To You

The APF 1000 rating is your assurance that your Apollo helmets will protect you from airborne lead dust at the concentrations commonly found at abrasive blasting sites.

For years, paint manufacturers used lead as a corrosion barrier for coatings on structural steel. Eventually, lead became widely used in paints for nearly all surfaces, from concrete to wood to pottery.

When lead, a heavy metal, reaches the bloodstream, it causes myriad short-term and long-term illnesses – including memory loss, liver and kidney disease, infertility, and nerve damage.

Lead gets into the bloodstream when it is ingested or inhaled. Abrasive blasting turns lead paint into dust, which an unprotected blast operator inhales.

To earn the APF 1000 rating, the Apollo 20 and 60 underwent extensive testing at the independent facilities of Los Alamos National Laboratories.

The test subjects wore Apollo helmets as they took part in exercises designed to mimic the movement and physical exertion experienced by blast operators.

The high-pressure helmets were tested at various air flow settings, and with and without the different approved options installed. Low-pressure helmets were fitted only with the Constant Flow Connector and attached to an ambient air pump.

To pass, the Apollo 20 and 60 supplied-air respirators had to maintain a continuous flow of air through the helmet at a slightly positive pressure – even when worn by test subjects undergoing strenuous exercise.

**All models passed the test to earn their APF 1000 ratings.**

**So, what does APF 1000 mean to you, the blast operator or employer? It means you can be certain your Apollo respirator delivers the highest level of protection against toxic dust.**

*Wearing an Apollo helmet does not preclude the need to monitor air quality in the blast area, and does not replace the OSHA requirements for containment ventilation or the EPA requirements for dust collection and disposal.*

## Clemco Respirator Air Control Valves

### NIOSH-approved options for high- and low-pressure respirators

All four of Clemco's respirator control valves feature quick connectors and come with web belts to keep the weight of the air line from interfering with the operator's head movement.

**Climate Control Tube**



Heats or cools incoming respirator air

**Cool Air Tube**



Cools respirator air efficiently

**Air Control Valve**



Allows control of respirator air volume

**Constant Flow Connector**



Maintains proper air volume at all pressures

Clemco's Climate Control Tube lets the operator increase or decrease the incoming air temperature through a range of plus or minus 25° F to conform to ambient temperatures in the work environment. The Cool Air Tube allows the operator to cool breathing-air as much as 25° F making the air more comfortable to breathe. The Air Control Valve permits the operator to adjust the volume of air flow into his helmet. The Constant Flow Connector is a fixed orifice valve; one model is designed for use with Apollo LP helmets, another for use with Apollo HP helmets.

# Protect Breathing Air Quality *and Safety*

Contamination common to compressed air can make working conditions miserable, ruin the respirator, and, in the case of carbon monoxide (CO), threaten the operator's health and life.

Clemco's CPF filters are designed to remove most of the moisture and oil vapors that can occur with compressors providing Grade D breathing-air. Clemco's Carbon Monoxide Alarms, CMS-1 and CMS-2, alert your operators to the presence of carbon monoxide, allowing them ample time to shut off a contaminated air supply.

## CMS-1 and CMS-2

### Detecting carbon monoxide

Carbon monoxide (CO) is odorless, colorless, and deadly.

Clemco's CMS-1 and CMS-2 continuously sample the breathing air supply and sound an alarm if CO concentrations exceed safe levels.



CMS-2

- Wall mounted CMS-1 for industrial applications
- Portable CMS-2 for contractor job-site
- Factory set to trigger at 10 ppm - alerts to CO as low as 2 ppm
- State-of-the-art electronics and sensors simplify calibration
- One CMS system serves all operators connected to that air source
- Output leads let you generate a permanent record of CO levels or monitor the CMS from a remote panel, PC, or strip printer

**Note:** CMS systems do not remove CO from an air supply.

## CPF Filters

### Protection from moisture, oil, dirt, and odors

- Graded activated charcoal to trap odors
- Desiccant to collect moisture
- Dense fiber pads and compressed wadding to trap dirt

The Clemco CPF system separates most of the moisture and oil mist from Grade D breathing-air before they reach the filter cartridge. Compressed air expands as it enters the CPF, releasing moisture and oil to fall to the bottom.

Clemco filter cartridges are assembled in Clemco's USA plant with all new materials.

Clemco mounts the pressure gauge and regulator on the clean-air side of the filter for longer life and more accurate control.

Clemco's CPF 20 filters air for one operator, the CPF 80 filters air for one to four operators.

#### **Note:**

**The CPF will not remove carbon monoxide or other toxic gases.**





CAP-1



CAP-4 with optional cart

## Ambient Air Pumps

### Low-pressure, big savings

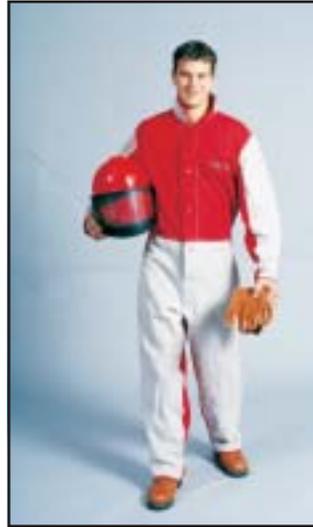
Oil-free ambient air pump supplies clean air to any NIOSH-approved low-pressure helmet.

If your compressor does not produce Grade D air, consider the air pump and a low-pressure helmet.

The air pump transfers air from a “clean air”

location to the low-pressure respirator.

The ambient air pump eliminates the need for high-temperature compressor shut-offs and in-line filter cartridges. Available for one to four operators.

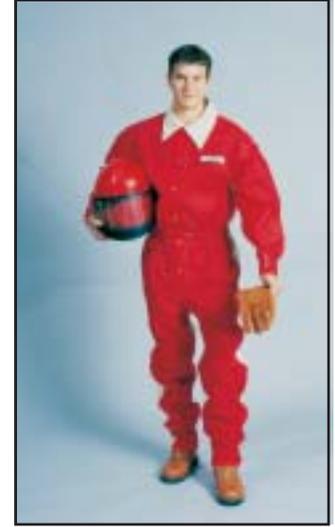


## Blast Suits & Gloves

### Clemco’s industrial and seasonal blast suits protect you completely

#### Industrial Blast Suit

Heavy cotton fabric back, durable leather front, double rows of industrial snaps, protect from rebound and keep out dust and abrasive.

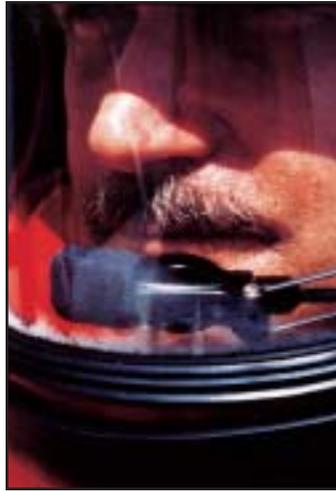


#### Seasonal Blast Suit

Protects the operator from the impact of rebounding abrasive. Represents a cost-effective alternative to an industrial suit for occasional or short-term blasting, and for nearby personnel.

#### Gloves

Made from supple, durable split leather, Clemco gloves protect your hands from rebounding abrasive and help keep dust and abrasive from entering the blast suit at the wrists.



## Helmet Communicator

### Enhancing safety and productivity

Clemco’s two-way FM radio set lets operators communicate with supervisors, pot tenders, and each other without stopping work. This can increase the productivity of experienced operators and reduce the training

time required for new personnel.

The headset and microphone mount inside the helmet. The transmitter attaches to a harness worn under the Apollo cape.

### USE GENUINE CLEMCO SPARE PARTS

Clemco manufactures safety equipment using the finest materials available. From the optical clarity of the lenses to the filtering efficiency of the CPF cartridge, quality is continuously monitored by our in-house technicians. This is your assurance that Clemco parts and accessories meet the rigid standards for performance, reliability, and safety you deserve from your respirator system.

To gain NIOSH approval, Clemco submits samples of each respirator in all its variations and with all its optional equipment. Any change in material, manufacturing process, or supplier requires a new submittal to NIOSH.

### Warning

Clemco safety equipment conforms to rigid standards and must be approved by NIOSH. Using replacement parts from other manufacturers voids the NIOSH approval and the Clemco warranty and subjects the blast operator to increased risk of injury and death.



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