

## Understanding Breathing Air Systems

To understand breathing air, you **MUST** first understand the various types of NIOSH approved respirators available for use in the workplace.



All respirators are classified as either **Negative Pressure** or **Positive Pressure** Respirators.



### Negative Pressure Disposable Mask Respirator

The respirator wearer must inhale through the mask - approved for dusts, mists, vapors and fumes.

**Not approved for use in IDLH atmospheres  
(Immediately Dangerous to Life or Health)**

### Negative Pressure Disposable Cartridge Respirator

This style of respirator has replaceable cartridges or filters and comes in half mask or full face. Powered Air Purifying Respirators (PAPR) are a type of cartridge filtering respirator with a battery powered blower. They are approved for use where a filter cartridge is approved for the contaminant.

**Note: Users must be fit tested to assure a proper face seal is achieved.**

**Not approved for use in IDLH atmospheres**



### Positive Pressure (Type-C or CE) Airline Respirator - Constant Flow Hood Style

**All constant flow respirators supply air continuously to maintain positive pressure inside the face piece or hood.**

All airline respirators are classified by NIOSH as Type-C or Type-CE (approved for sandblasting).

Hood Style airline respirators are required by NIOSH to flow 6-15 cfm air flow per person.

Hoods are available in low pressure style for use with ambient air pumps, requiring 3-15 psi.

High pressure hoods, 25-110 psi, would require Grade-D breathing air provided by a Breather Box®.

**Note: No fit test is required with a hood style respirator.**

**Not approved for use in IDLH atmospheres**



### Positive Pressure (Type-C) Airline Respirator - Constant Flow Style

Positive Pressure respirators are available in half mask or full face and are required by NIOSH to flow 4-15 cfm per mask, and available in low pressure style for ambient air pumps, requiring 3-15 psi. High pressure style, 25-110 psi, would require Grade-D breathing air provided by a Breather Box®. Constant flow respirators provide higher protection factors than air-purifying negative pressure respirators and are not recommended for use with high pressure bottled air systems due to their high air consumption.

**Not approved for use in IDLH atmospheres**



### Positive Pressure (Type-C) Airline Respirator - Pressure Demand Style

Pressure Demand (PD) respirators supply air "on demand" and maintain a minimum positive pressure in the face piece at all times. PD respirators are required by NIOSH to flow 4-15 cfm to the mask like a constant flow style respirator. Pressure demand respirators provide a high protection factor and can be used on high pressure cylinder air or low pressure filtration systems such as a Breather Box®.

All PD respirators operate between 60-110 psi and require the use of Grade-D breathing air provided by a Breather Box® or Grade-E cylinder air.

**A PD respirator supplied with a five minute escape cylinder is approved for use in IDLH atmospheres**

