

USER FRIENDLY SUPPLIED-AIR RESPIRATORS: Options for Auto Refinishers

To stay healthy, painters should wear a supplied-air respirator when spraying paints containing highly toxic chemicals such as isocyanates. In fact, some paint manufacturers say painters must wear supplied-air respirators when spraying isocyanate-containing paints. Although painters have complained that conventional supplied-air respirators lack comfort, visibility, and convenience, the newer designs and models, like the ones presented in this bulletin, are changing many painters' attitudes and behavior. Painters who have tried the new models want supplied-air systems. They find these respirators very comfortable—some are even air conditioned!—and, most importantly, they consider supplied-air the best way to protect their health from the toxic chemicals in paint coatings. DfE hopes that this bulletin helps you find a supplied-air respirator that is right for you. *NOTE: This guide provides insights into some of the respiratory protection equipment presently available that may be used by auto refinishers. It is not intended to be used as a respirator selection guide*

Loose-Fitting Hood Supplied-Air Respirators

Loose-fitting hoods are light-weight, low-maintenance (most are equipped with disposable visor covers), and offer a wide field-of-vision. As with all loose-fitting respirators, painters do not need a fit test to use the hood model--and can even have a beard and wear eyeglasses. In addition, loose-fitting hoods often provide the greatest cooling effect. (Prices range from \$200 to \$400.)



Picture courtesy of 3M

this type of respirator, painters need a fit-test and cannot have a beard or other facial hair. Eyeglass mounts are available with most models. (Prices start at about \$500.)

Loose-Fitting Facepiece Respirators

Another popular supplied-air respirator has a flip-up visor, which allows the painter to get a better view of the finish without removing the respirator. This model, a modified version of a loose-fitting hood, does not require fit testing and can accommodate eyeglasses and some facial hair. Painters using this respirator must remember to lift the visor only after the ventilation system has exhausted all paint overspray from the spray booth. (Prices range from \$200 to \$400.)

Are there any other considerations for using supplied-air respirators?

Yes. Shop owners must decide what type of breathing air system they will use for their supplied-air respirators. In-line air filtration units and low-pressure ambient air pumps are two common choices.



Picture courtesy of H.D. Bullard Co.

Tight-Fitting Full-Facepiece Respirators

Among supplied-air respirators, full-facepiece models typically provide the highest level of protection. With some designs, the breathing tube and airline attach in back, away from the work zone. Painters find that this rear-mount model helps prevent the airline from accidentally ruining the paint job. To ensure a tight seal with



Picture courtesy of SATA

In-line air filtration units convert your shop's existing high-pressure compressed air to clean breathable air. These units use replaceable filters to remove contaminants from the compressed air stream. To meet Occupational Safety and Health Administration (OSHA) requirements for breathing air, the filtration units should be equipped with a carbon monoxide monitor. Some systems can deliver air-conditioned or heated air, an attractive feature for painters. Of course, filters for these systems need periodic changes, which increase their cost over time. (Prices for portable or wall-mounted units with carbon monoxide monitors range from \$1,300 to \$4,000.)

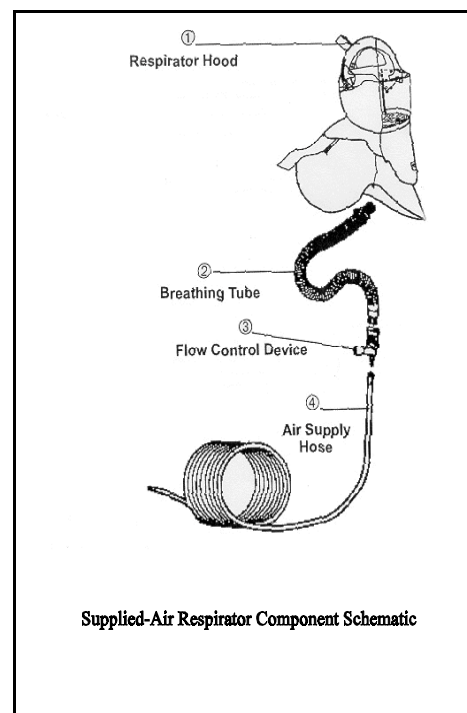


Picture courtesy of H.D. Bullard Co.

Low-pressure ambient air pumps differ from air filtration units in that they are electrically driven, oil-less compressors--and are usually placed in locations with fresh air away from work areas. Unlike other compressors, oil-less ambient air pumps typically do not require filters (other than a small inlet filter) or high-temperature alarms, if installed in a contaminant-free area (away from exhaust, chemicals, etc.). These systems can also be used when the shop's air compressor lacks the capacity to feed equipment and respirators. (Prices start at about \$600 for one-worker units and \$1,700 for two-worker units.)

Do supplied-air respirators need to be approved or certified?

OSHA's Respiratory Protection standard (29 CFR 1910.134) requires that employers select only National Institute for Occupational Safety and Health (NIOSH)-certified respirators. This OSHA standard further states that employers may not modify the respirator system or change/mix any of its components. Supplied-air respirators typically consist of the following four parts: facepiece or hood, breathing tube, flow control device, and air supply hose. Some models may include other components. To meet NIOSH certification, all respirator systems must be complete and properly assembled.



Where Can I Get Additional Information About Supplied-Air Respirators?

Contact NIOSH at 1-800-35-NIOSH or visit their web site:

www.cdc.gov/niosh.

Contact the OSHA Area Office near you or visit the OSHA web site:

www.osha.gov.

Contact local manufacturers and distributors about respirators: some may provide free services or demonstrations of their products. Information on respirators and the location of distributors is also available on manufacturers' home pages on the Internet.

Consult with Mary Cushmac (202-260-4443, cushmac.mary@epa.gov) or David DiFiore (202- 260-3374, difiore.david@epa.gov) of the DfE Project Team.



www.epa.gov/dfe/autobody/autobody.html

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THE DESIGN FOR THE ENVIRONMENT AUTO REFINISHING SHOP PROJECT'S GOAL IS TO WORK WITH AUTO REFINISHERS TO IDENTIFY AND ADOPT SAFER, CLEANER, MORE EFFICIENT PRACTICES AND TECHNOLOGIES.

SUPPLIED-AIR RESPIRATORS IN AUTO SHOPS: Get the Best Protection

Should painters wear supplied-air respirators when spraying?

Yes! *It is particularly important to a painter's health to wear supplied-air respirators when spraying paints containing highly toxic chemicals such as isocyanates.* In fact, paint manufacturers recommend that painters wear supplied-air respirators to ensure adequate protection from isocyanate-containing paints. Chemical-protective gloves, clothing, and eye protection are also essential safety equipment for painters.

Note, this guide provides insights into some of the respiratory protection equipment presently available that may be used by auto refinishers. It is not intended to be used as a respirator selection guide.

WARNING:

Isocyanates—a major ingredient in clear coats and many primers—present serious health risks, including asthma, allergic lung and skin reactions, and chronic lung disease. They have even caused painter deaths from asthma reactions.



Photo courtesy of SATA.

Do air-purifying respirators provide painters adequate protection?

Often no. Although air-purifying respirators or cartridge respirators provide a certain level of protection, supplied-air respirators typically offer greater protection against inhaling toxic chemicals. Further, if cartridges are not changed regularly or not maintained properly, an air-purifying respirator may provide little, if any, protection. Until paints are formulated without toxic chemicals, supplied-air respirators usually offer the best form of respiratory protection.

Are supplied-air respirators more expensive than air-purifying respirators?

Not necessarily. Some auto refinishing shops have found that the overall cost of a supplied-air respirator system—including initial purchase, installation, and maintenance—is comparable to, or less than, the overall cost of air-purifying respirators, with the continuing expense for organic vapor replacement cartridges.



Picture courtesy of H.D. Bullard Company

Do supplied-air respirators present challenges to auto refinishing shop workers?

Perhaps, but the health benefits of supplied-air systems make the challenges, such as convenience and up-front cost, worth overcoming. Painters have found supplied-air systems that are comfortable, do not hamper visibility, and are easy to put on and take off. Some of the newer models quickly convert to air-purifying respirators for non-spraying activities; others are even air-conditioned! More and more painters are opting for the greater protection of supplied-air respirators—the key is finding the system that's right for you.

How can I get more information on supplied-air respirators?

- (1) Talk to painters who use supplied-air systems for first-hand accounts.
- (2) Call your paint supplier, your equipment supplier, or a respirator manufacturer to learn about the variety of available respirators. Some of these companies might even offer free demonstrations of their products at your shop.
- (3) Consult with Mary Cushmac (202-260-4443, cushmac.mary@epa.gov) or David DiFiore (202-260-3374, difiore.david@epa.gov) of the DfE Project Team.



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