

filter elements. They should see that the edges of the valves are not curled and that valve seats are smooth and clean. Inhalation and exhalation valves should be replaced periodically.

In addition to the daily check, respirators should be inspected weekly by trained persons. During the weekly inspection, rubber parts should be stretched slightly for detection of fine cracks. The rubber should be worked occasionally to prevent setting (one of the causes of cracking), and the headband should be checked to be sure that the wearer has not stretched it in an attempt to secure a snug fit.

Sometimes, in an effort to reduce resistance to breathing, workers will punch holes in the filter, the rubber facepiece, or other parts. Underlying causes of this mistreatment should be discovered and corrected. For instance, it may be found that in the interest of economy, filters are allowed to become completely plugged before they are replaced.

In cleaning respirators, dirt and dust should first be blown from them by means of compressed air at not more than 10 to 20 psi of pressure, through a fixed nozzle directed towards an exhaust hood. The cleaners should wear dust-tight goggles. Dust filters should not be cleaned by brushing.

Then filters, screens, headbands, and cotton facelets should be removed. If the respirators are coated with paint or other foreign matter, they should be soaked for three hours in a cleaning solution of 1½ pounds of commercial alkaline base cleaner and 7 gal of water. Fresh paint can be wiped off with a clean rag moistened in alcohol. Thorough rinsing is always necessary before use.

Respirators having no visible accumulation of foreign matter should be scrubbed in warm soapy water, rinsed, disinfected, then rinsed again and dried.

Knitted facelets should be washed in warm soapy water, rinsed and dried before reuse. Dirty or oily elastic headbands should be washed in warm soapy water and rinsed. The water should be warm to remove perspiration and hair oil from the elastic fabric.

How filters are best cleaned depends on their design. The U.S. Bureau of Mines approves respirators that have replaceable filters, which can be cleaned and reused. The cleaning methods vary with the filter

composition and design. Only cleaning methods that are recommended by the manufacturer should be used.

Rubber parts should never be dried by direct application of heat or sunlight.

Employees should be instructed to wipe off oil, grease, and other harmful substances from headbands and other parts of the respirator as soon as they collect. They should be warned not to use solvents to clean plastic or rubber parts.

Most face and mouth pieces for respiratory protective devices are made from rubber or rubber-like compounds. Usually hand brushing or agitation in a washing machine, using detergent and warm water is sufficient to clean them.

Hypochlorite or quaternary ammonium compounds in the proper strength in aqueous solution can be used to disinfect the parts.

Ethylene oxide gas, handled under proper precautions, is sometimes used where large quantities of respirators must be disinfected.

All detergent should be rinsed from the device before disinfecting, except where combination detergent and quaternary ammonium compounds (that both clean and disinfect) are used.

After cleaning and disinfecting, the parts should be rinsed in clean water and dried quickly. It may also be desirable to rinse parts treated with quaternary ammonium compounds since their disinfecting properties continue and except for rare cases, it will not produce a skin irritation.

Hot water, steam, solvents, and ultraviolet light should not be used to clean and disinfect rubber parts because they have a deteriorating effect.

Petroleum jelly should not be used to prevent skin irritation from rubber facepieces, for it is harmful to rubber. Disinfection and the use of clean cotton facelets will eliminate the need for a salve.

Respirators should be turned in at the end of each shift to be cleaned and repaired if necessary. They should be disinfected at least once a week when retained by the same employees.

In some plants, maintenance service for respirators, as well as for other kinds of personal protective equipment, can be effectively provided by traveling service carts (Fig 38-37).