



sufficient suction with a lower motor speed. The motor determines durability more than any other part of the machine. A good heavy motor is likely to wear longer than a similarly designed lighter one.

"Junior" cleaners, which are about half the size of the standard household machines, are lighter to handle but have much less cleaning power. There are also small hand cleaners for use on stairs and upholstery. Attachments may be bought with the large cleaners for about the same price as the small cleaners, and they are adapted to use on many

surfaces such as upholstery, curtains, high moldings, and walls.

Good cleaners that need only a thorough renovating often are turned in for credit on new ones. It is wise before trading in an old cleaner to have it inspected by a competent repair man and be certain that it cannot be put into satisfactory condition for a nominal sum. In buying a reconditioned cleaner as an original purchase, however, it may or may not be worth the price asked. Though the original manufacturer may put it into the condition in which it was first sold, it is important to know whether the model includes desirable improvements.

The care given a cleaner greatly affects its efficiency and durability. Four points in particular need to be remembered: care of the bag; adjustment of the nozzle and brush; protection of the fan; oiling of the motor.

The bag acts as a filter, catching the dirt and letting out the air that is drawn through the nozzle by the fan. For a cleaner to be efficient the bag must be kept clean. No matter how hard the motor and fan work to create suction, they can produce only the flow of air that can escape through the bag. Dust clogs the pores of the bag and it should be emptied after each use and shaken vigorously to dislodge this oily deposit. Periodically the bag needs to be turned inside out and brushed thoroughly but carefully so as not to injure the fabric. Some manufacturers recommend a semiannual dry cleaning.

If the lips of the nozzle are not adjusted to the proper height above the surface of the nap on the rug, the cleaner cannot do a good job. Some of the newer types have automatically adjusting nozzles; others require that the operator turn an adjustment screw. The proper adjustment may be judged by placing a dime on the rug about a foot from the nozzle and adjusting the height until the dime dances and moves toward the nozzle.

Brushes should be kept free from hair and threads. They wear down in time and need readjustment. Most cleaners provide for several adjustments of the brush. The bristles should extend to approximately one thirty-second of an inch below the lips of the nozzle. They may be checked by placing a ruler or other flat object across the nozzle.

The fan may be thrown off balance or nicked and the belt that drives it may be cut if metal objects, such as pins, nails, and coins are drawn into the cleaner. These should always be picked up by hand.

The motor should be kept clean and oiled according to the manufacturers' directions. For some cleaners this may be done at home; for others it is advisable to send them to experts every 6 months to have the mechanism checked and oiled where necessary.

Nonelectric vacuum cleaners resemble the electric type in appearance, except that there is no motor. The revolving brush in the nozzle and the fan are operated by the action of the wheels as the cleaner is pushed across the floor covering. The dirt is drawn into a bag similar to that of electric cleaners. It combines

some of the suction of an electric cleaner with the sweeping action of a carpet sweeper, and its cost lies between the two.

Carpet sweepers are useful in sweeping the dust and litter from floor coverings. They have been described as a broom on wheels with its own dustpan. Some are made to adjust automatically to carpet pile of various heights with a minimum of pressure. Good Chinese bristles should be used for the brush and the sweeper should be easy to push. Rubber bumpers around the case save the furniture. Some have pans that empty by pressing a lever; in others, the handle is placed on the floor, the top lifted, and a pan taken out for emptying, which requires more time. There are cases in modern design, although the best mechanism is also used in the more traditional type of case at a somewhat lower cost.

Unless the sweeper is emptied after each use, lint and dust will, of course, drop back on the rug as the sweeper is operated. Unless the brush is kept clean, its efficiency is seriously impaired and the sweeper is harder to push. To remove string, hair, and ravelings without injuring the brush, it is better to clip them first with scissors. The brush should be wiped occasionally with a dry-cleaning fluid when it gets sticky from oil in the dust or wax on floors. The sweeper should be oiled regularly each month.

Carpet beaters The beating of carpets and rugs is not recommended because it loosens the pile tufts and may injure the backing of the rug.

However, in homes without vacuum cleaners where it is impossible to send floor coverings to a good cleaner once a year, it may be necessary to use a beater. Those made of rattan are less injurious to rugs than wire beaters. Rugs should be placed nap down on grass or snow, but should never be beaten while hung over a clothesline.

Selection of Cleaning Supplies

Water, soap, alkalis, acids, abrasives, waxes, and a few other substances are needed in addition to tools to keep surfaces in the home free from dirt and to preserve finishes.

It is convenient to have a basket or box with a handle, large enough to hold the brushes, dust cloths, sponges, and supplies that must be carried from one room to another. Running back and forth for tools and supplies is tiring, annoying, and wasteful of time. In some houses an additional supply of some of the materials used most frequently may be stored on the second floor.

Water Water, especially warm water, is a good cleansing agent. When it is uncomfortably hot to the hands it is likely to injure the finishes on which it is used. Although it loosens dirt it should always be used sparingly and wiped off at once. It should never be allowed to stand on floors, walls, furniture, or wood trim, nor soak into seams and cracks.

The degree of hardness in water varies with each water source. Certain minerals make water "hard" and react with soap, forming a scum or film of insoluble lime soaps. It is very difficult to rinse this scum from fabrics, and hard surfaces need to be rinsed and rubbed to get it off. It is not so necessary, however, to soften water for scrubbing and washing hard surfaces as for cleansing fabrics. An abundant water supply piped through the house, with a good drainage system to carry away the waste, is of first importance in making house cleaning easier.