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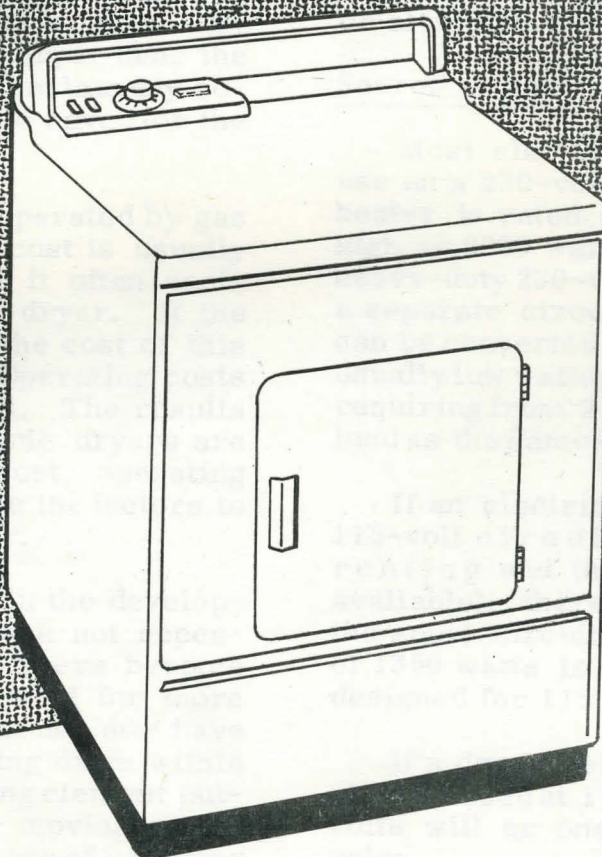
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Selection and Use of

AUTOMATIC DRYERS

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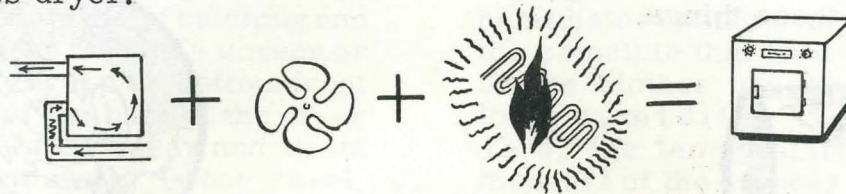
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Selection And Care Of Automatic Dryers

Kay Conway

Two burdensome and energy consuming chores connected with household laundry are carrying baskets of wet clothes to the clothesline and lifting each garment from the basket to pin it on the line. These tasks can be made easier by locating the line close to the laundry center, by using a cart to raise the basket, or by other means. But they can be eliminated altogether through use of an automatic clothes dryer.

other substances to rust-proof them, and to provide a smooth finish so clothes are not snagged or torn as they tumble. More than half the current models have perforated steel drums with 3 to 6 baffles to keep the clothes tumbling. Other drums are unperforated or are pierced on the ends only. Screened openings are used in some dryers.



The location of a dryer is important if it is to be a real labor saving piece of household equipment. A dryer should be placed adjacent to or very near the washer. By placing both the washer and dryer near the part of the home where the most laundry accumulates, many steps can be saved for the homemaker.

Many of the current models depend on circulation of air to keep the cabinet cool. The rest use insulation such as glass wool or aluminum foil.

Source of Heat

Clothes dryers may be operated by gas or electricity. The initial cost is usually higher for gas dryers, but it often costs more to install an electric dryer. If the dryer needs to be vented, the cost of this must be considered also. Operating costs vary with the cost of the fuel. The results obtained with gas and electric dryers are comparable, so the initial cost, operating cost, and installation cost are the factors to consider in choosing a dryer.

Most electric dryers are designed for use on a 230-volt circuit since the average heater is rated at 4500 watts and some as high as 8000 watts. These dryers require heavy-duty 230-volt wiring and should have a separate circuit. Some electric dryers can be converted for use with 115 volts, but usually low wattage dryers are much slower, requiring from 2 to 3 times as long to dry a load as the same dryer on a 230-volt circuit.

The principles involved in the development of automatic dryers are not necessarily complicated, but as dryers become more versatile there is a need for more controls. Dryers that are in use now have few main parts -- a revolving drum within an insulated cabinet, a heating element outside the drum, a system for moving heated air through the clothes, a means of carrying away moisture-laden air, a trap to catch lint, and controls.

If an electric dryer must be used on a 115-volt circuit (if, for example, one is renting and there is no 230-volt circuit available), there should be nothing else on the same circuit with the dryer. A rating of 1350 watts is about average for dryers designed for 115-volt circuits.

If a dryer designed for 230-volt operation is used at 115 volts, the power at 115 volts will be one-fourth the rating at 230 volts.

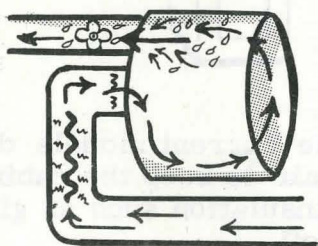
The drum revolves slowly to tumble the clothes at about 50 revolutions per minute. Drums are finished in porcelain enamel or

Gas dryers may be used with bottled, manufactured, or natural gas. For best results, the dryer should be designed for, or adapted to, the type of gas used. Gas dryers vary in consumption from 13,000 to 20,000 Btu per hour. All gas dryers need to be

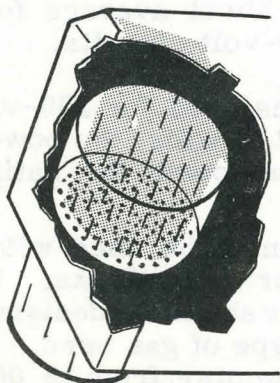
connected to a 115-volt circuit to revolve the drum, activate the fans, supply electricity to lights in or on the dryer, and in some cases activate the glow coil which lights the pilot. Some type of gas regulating device is generally provided on the dryers to eliminate fluctuations in gas pressure while the dryer is in use. Gas dryers may be lit manually or by an automatic ignition system which is available in most top models.

Operating Principles

All dryers do a good job of removing moisture, fluffing clothes and conditioning clothes, but they use various operating principles to accomplish these things.



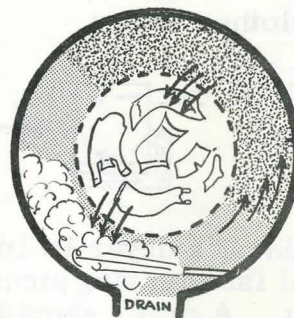
Most dryers use a suction or airflow system in which a suction fan brings air from outside the cabinet into the dryer, over the heating element, and forces the heated air through the tumbling clothes. Hot moist air is pulled from the cylinder into the lint trap and out through the vent. These dryers may use either high heat and low air flow, or low heat and high air flow. There are usually thermostatic heat controls on the high-heat, low air-flow dryers and these provide low, medium and high settings which range from 130° to 225° F. The low-heat and high air-flow dryers operate on the same principle except most have a single heat setting and fans are a little larger. Some newer models feature two temperature settings, high for regular loads and low for fine fabrics.



Several dryers use large, turbine-type blower fans to channel heated air into the

center of the cylinder and out through the lint screen in a more direct pattern. Air is blown through the dryer at the rate of 150 cubic feet per minute or up to 200 CFM in the high-speed dryers. Temperature controls are available on these models also.

Several dryers use a sealed air system sometimes called the "carrier current" principle in which there is no air intake into the clothes compartment and the dryer is not vented. The clothes are placed in the sealed inner cylinder; heated air is circulated and re-circulated through the clothes and finally cooled.



There are two methods of cooling the air:

1. The water condensing method involves passing a constant stream of cold water through the outer cylinder and down the drain, carrying all lint and moisture with it. A screen catches most of the lint.
2. In cold air condensing, a fan blows cold air against a series of condenser tubes, condensing the water vapor into liquid which falls into the pan below. Wet lint adheres to the tubes and is removed periodically.

In many dryers the drum revolves about 5 minutes after the heating element shuts off; this allows the clothes to cool somewhat before they are handled.

Venting

As much as one gallon of water is extracted from a load of clothes. This can create excessive humidity which in turn may damage woodwork, foundations and wall-paper and can cause discomfort to persons in the house. A large, warm, well-ventilated room may be able to handle the moisture without venting, but a room which is adequate in summer may not be adequate during cold months.

Most dryers are vented; all gas dryers should be vented. Venting pipe can be run for a distance of 25 feet if it is kept straight, but for shorter distances if there are bends

or turns in the piping. Venting kits are available for outside venting of many models. Modern vent kits are self-sealing and close automatically to keep dirt and rodents out. Some dryers have vents at the top, others at the bottom; many dryers can be vented from either side. Some vents can be mounted flush and others cannot. Since vent arrangement contributes to efficiency and convenience as well as being a major factor in neat installation, it is important to check venting arrangements carefully when buying.

Lint Removal

Dryers do not create lint, they remove it. All dryers have some means of catching and disposing of lint. There may be a screen or perforated metal tray at top or bottom front of the dryer or against the back of the dryer or there may be a water spray and drain connection to flush lint away. In one model, condensed moisture deposits lint in a series of tubes.

Cost of venting is eliminated when a water condensation type dryer is used, but the cost of the cold water must be considered in the operating cost.

Controls

The control knobs are usually placed at the rear of the dryer, out of the reach of children. This is not a good arrangement if the dryer is to be built-in or placed under a counter, so some models have controls at the front of the machine. Front controls also allow placing the dryer under stairs and in other smaller places.

Gas dryers have the AGA Seal of approval and many electric dryers carry the U. L. Seal, which indicate that they have been tested and are approved for use. Safeguards such as a motor fuse to guard against motor overload or a stalled motor and devices which guard against over-heating, air flow obstructions, a sticking solenoid valves, and improperly positioned lint screens are incorporated into dryers. A motor throw-out switch on gas dryers prevents the main gas burner from igniting until the motor attains proper speed.

A control which is important for safety and convenience in operating a dryer is the door switch. When the door is opened, this switch stops the motor, drum, and in a gas dryer, the main burner. It also operates

the lamp which illuminates the drum and a germicidal or ozone lamp, if there is one. Gas dryers should have an additional control which will shut off the entire fuel supply if the pilot flame goes out or if something else goes wrong.

Controls for drying time, temperature, and method of operation are the controls with which the operator is most often concerned. Many dryers use a timed drying cycle with timer controls averaging 1 to 75 minutes. With timed drying, there is some danger of over drying, but with a little experience the operator can choose the best setting for each fabric. Some dryers use a humidistat control; this system depends on the principle that heat builds up in a dryer as the clothes become drier. As the air loses humidity, its temperature rises. Thus, the temperature becomes a direct measure of the dryness of the clothes. The control turns off the heating element when the temperature of the exhaust air indicates the desired dryness. Still other dryers use a combination of time and temperature control with which many feel there is less danger of over drying or under drying any type of fabric.

Some dryers have a fixed heat, approximately 140° F., while others have a choice of temperatures. The levels indicated are usually low, medium, and high, and the temperatures for these vary from 130° F. to approximately 200° F. Occasionally the kind of fabric is indicated on the dial or the words "damp-dry" and "ready-for-ironing" appear instead of temperature settings.

With some dryers it is possible to have such settings as air circulation with no heat, air circulation with no heat or tumbling, or heat or air with no tumbling. These special operations are convenient for such varied items as lamp shades, wet shoes, sweaters, etc.

More emphasis is being placed on speed in drying; at present, a dryer usually keeps up with automatic washers but lags behind conventional washers.

Washer-dryer combinations save space and eliminate lifting clothes, but so far there is no saving in cost. All washer-dryer combinations use a tumbling cylinder washing action and a sealed-air drying action. The wash and dry cycles are completely independent of each other.

Loading

All dryers are tumbler-type and open from the front. Many have right hand doors although some open to the left and a few open down.

The actual capacity of most dryers is standard at 9 pounds dry weight or 18 pounds damp weight of clothes. However, the latest USDA research indicates that a lighter load of approximately 6 pounds dries faster.

Features

Buzzers, bells or other signals are available on some dryers to remind the operator that the clothes are dry or that the lint trap is full.

The use of composition tops in decorator colors adds useful work surface to the laundry area.

Special lamps are provided in some dryers which temporarily give a fresh odor to the clothes.

Care

Accumulation of lint reduces the effici-

ency of the dryer, increases the operating time, and can also create a fire hazard. The lint trap should be emptied after every load or after every three loads depending on the types of fabrics dried. Lint is easily removed from the wire basket in the lint trap. Traps with tube construction may be cleaned with a long-handled brush or washed under running water. The compartment holding the lint trap should be wiped out or vacuumed periodically.

Dryers need an occasional cleaning. The dryer should be disconnected and the detachable panels of the cabinet removed to clean around the drum. A vacuum cleaner may be used to blow some of the lint away and then suction action used to finish the cleaning. A long-handled brush will also do a satisfactory job of cleaning the dryer.

Dryers need to be greased and oiled occasionally. Instruction books may not give explicit directions for this. It may be done at home or by a member of your dealer's service department.