LAUNDRY EQUIPMENT

The typical household in America cleans and dries about 300 loads of laundry in a year. Up to 90% of the energy used to wash clothes is used to heat water, and the energy use of dryers is directly related to the moisture content of the clothes; these two factors illustrate the energy-saving opportunities in a typical laundry room.

**Maintenance and repairs**

Older washers and dryers may require periodic maintenance to keep them operating properly. Here are a few things to check for:

**Washer:**
- Clean the tub of your washer every few months (or more often if indicated by odor or stains). Special cleaning products can be used in place of detergent and run through a complete cycle. Check with the manufacturer for recommendations.
- Inspect water and drain connections periodically for leaks. A buildup of rust or minerals at connections or stains along the side of the washer or on the floor indicate a leak.
- Replace water supply hoses that connect to washers every 3-4 years. The hoses can become brittle and susceptible to failure, leading to a flooded basement or laundry room.
- Pumps and motors have a limited lifetime; repairs or replacements may eventually be needed.

**Dryer:**
- Clean the dryer lint screen before each load. Lint restricts airflow and increases drying time and energy use.
- ONLY vent dryers to the outside! Venting into the living space will lead to high levels of moisture. In a basement it can lead to significant mold and mildew issues; in an attic it will lead to wet insulation, rot, and ice dams. Venting a gas dryer into the living space is also dangerous to the occupants because of flue gasses from the combustion process.
- Only use smooth, rigid, metal ducts for the dryer exhaust; connect sections with metal foil tape to prevent dangerous leakage of flue gasses into the living space. Flexible ducts restrict airflow and trap lint and are not permitted under the state firecode. Inspect periodically for leaks or separations.
- Inspect the outside exhaust vent monthly to insure the flapper is operating freely and no lint is blocking the opening. If the flapper sticks, lubricate the hinge or replace the vent. Poorly sealed exhaust vents can also be a source of air leakage and energy loss.
- Belts that drive the drum can stretch or break, necessitating adjustment or replacement.

**When is it time to replace?**

The expected lifetime of a washer and dryer is about 12-14 years, depending on model, use, and maintenance. Replacement opportunities include:

- **Costly repairs.** If an estimate for repairs exceeds several hundred dollars, it might make sense to look at replacement instead—depending on the age and condition of the rest of the appliance.
- **High energy usage.** A 10-year-old washer may cost you $135 more in energy costs annually than a newer ENERGY STAR® model.

**MEF, IWF, & HE washers**

Clothes washers must meet minimum efficiency standards in order to be ENERGY STAR® labeled, including:

- **Integrated Modified Energy Factor (IMEF)** is a measurement of the energy efficiency of the washer, taking into account the electric energy, the energy to heat the water, and the size of the tub. ENERGY STAR® front loading washers must have an IMEF of 2.76 or greater. Top loading washers must have an IMEF of 2.06 or greater.
- **Integrated Water Factor (IWF)** is the measurement of how much water is used, related to the capacity of the machine. ENERGY STAR® washers must have an IWF of 4.3 or less.

The latest design in energy-saving laundry appliances is known as the High Efficiency (HE) washer. Nearly all HE washers are front-loaders (although some top loaders are now available) and they have several advantages over less-efficient versions.

**HE washers:**
- **Use less water.** Because they tumble clothes rather than agitate them, HE washers can use up to 75% less water than a standard washer.
- **Use less hot water.** Using less water means using less hot water, which saves the energy to heat the water (nearly 90% of the energy use in a typical washer).
- **Wring out more water.** A spin rate of up to 2,000 rpm removes much more water, and a moisture sensor limits the spin time. Less water at the end of the wash means less energy needed to dry the clothes.
- **Are gentler on clothes.** The tumble action is easier on clothes than a typical agitator.
- **Require a special HE detergent.** Because of how an HE washer operates, regular detergent will over-suds and not work properly. Buy only HE detergent and follow instructions carefully. (Hint: you use much less than with regular detergent.)
**Shopping tips**

When evaluating a new washer, look closely at these features:

- **Sizing.** Select the size of your washer based on your family and laundry needs. One that is oversized will lead to running smaller, less-efficient loads or waiting for enough laundry to run a full load.

- **Top versus front-loading:**
  - Front-loading washers generally use less water than top-loaders, saving both water and energy to heat the water.
  - Front-loaders require less detergent; usually a special High Efficiency (HE) type.
  - Front-loaders spin at a much higher rate of speed (1,000 rpm or higher), wringing much more water out of the clothes. This significantly reduces the energy required to dry the clothes.
  - Front-loaders are frequently gentler on laundry, due to the tumbling action of the clothes, rather than the movement of the agitator in a top-loader.
  - Top-loaders are generally cheaper to purchase, initially; when factoring in energy savings, however, the purchase price will be offset over the life of the appliance.
  - Top-loaders are generally easier to load and unload for many people. Front-loaders, however, can be mounted on stands or have the dryer stacked on top to save floor space.

- **Efficiency.** Choose an ENERGY STAR® model with an IMEF of 2.76 or greater for front loading units and 2.06 or greater for top loading units and a IWF of 3.2 or less for front loading units or 4.3 or less for top loading units. Both IMEF and IWF numbers are listed for each model on the ENERGY STAR® website.

When evaluating a new dryer, look closely at these features:

- **Sizing.** Match the size of your dryer to the size of your washer.

- **Electric versus gas.** Although gas dryers may cost slightly more (for similar size and features), your choice may depend on the availability of certain fuels (and their connections) in your home. Other factors, such as health and safety concerns or the environmental effects of different fuels, may also inform your decision.

- **Features.** Dryers with sensors evaluate the moisture content of the laundry and reduce drying times. This is far better than using a timed cycle, which may over-dry clothing, wasting energy and potentially damaging clothes. Options for temperature settings allow for optimal use with different fabrics. Additional features, such as wrinkle-reducing cycles and drying racks, may not add significantly to energy use, but may be important convenience considerations.

- **Efficiency.** An efficient washer (with a high spin rate) will wring most of the water out before you put the clothes in the dryer—reducing drying time and energy use. New ENERGY STAR® standards for dryers require efficiency of at least 20% over standard dryers.

**Why not dry your clothes by hanging them in the basement?**

Hanging clothes on lines or racks in the basement—especially in the winter when the house is dry—seems like a logical, energy-saving approach. But caution is appropriate, and here’s why:

A typical load of laundry may contain several gallons of moisture. As it leaves the clothing, some of it will move to nearby cool locations (like a basement foundation wall or window) where the vapor will condense. Because this surface is usually cooler than the surrounding air, evaporation may be gradual—enough to encourage the growth of mold and mildew or cause damage to window frames, etc.

Condensation or frost on walls or windows is a sign of too much moisture in the air; make sure you are not trading small energy savings for a potentially damaging solution.

**Efficient use**

Follow these suggestions to keep your laundry energy usage to the minimum:

- Wash and dry properly sized loads. Too small, and you may be wasting energy; too large, and you may strain your equipment or get unsatisfactory results.

- Wash laundry in cold water (most detergents are now designed to work well in cold water). Occasionally, some heavily soiled loads may benefit from warm water; hot water washes/rinses should be used for bedding, to reduce allergy issues from dust mites.

- Lower dryer temperature settings to allow for longer “air tumble” times between “heating” times. Along with limiting heat damage to clothes, this will also save some energy; it will lengthen the amount of time to dry a load, however.

- Set your dryer to “less dry” and hang clothes to air-dry the final amount. This method can also reduce wrinkles and eliminate ironing for many clothes. (See sidebar on page 55 for caution about indoor drying.)

- Air-dry clothes outside to reduce dryer usage.

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