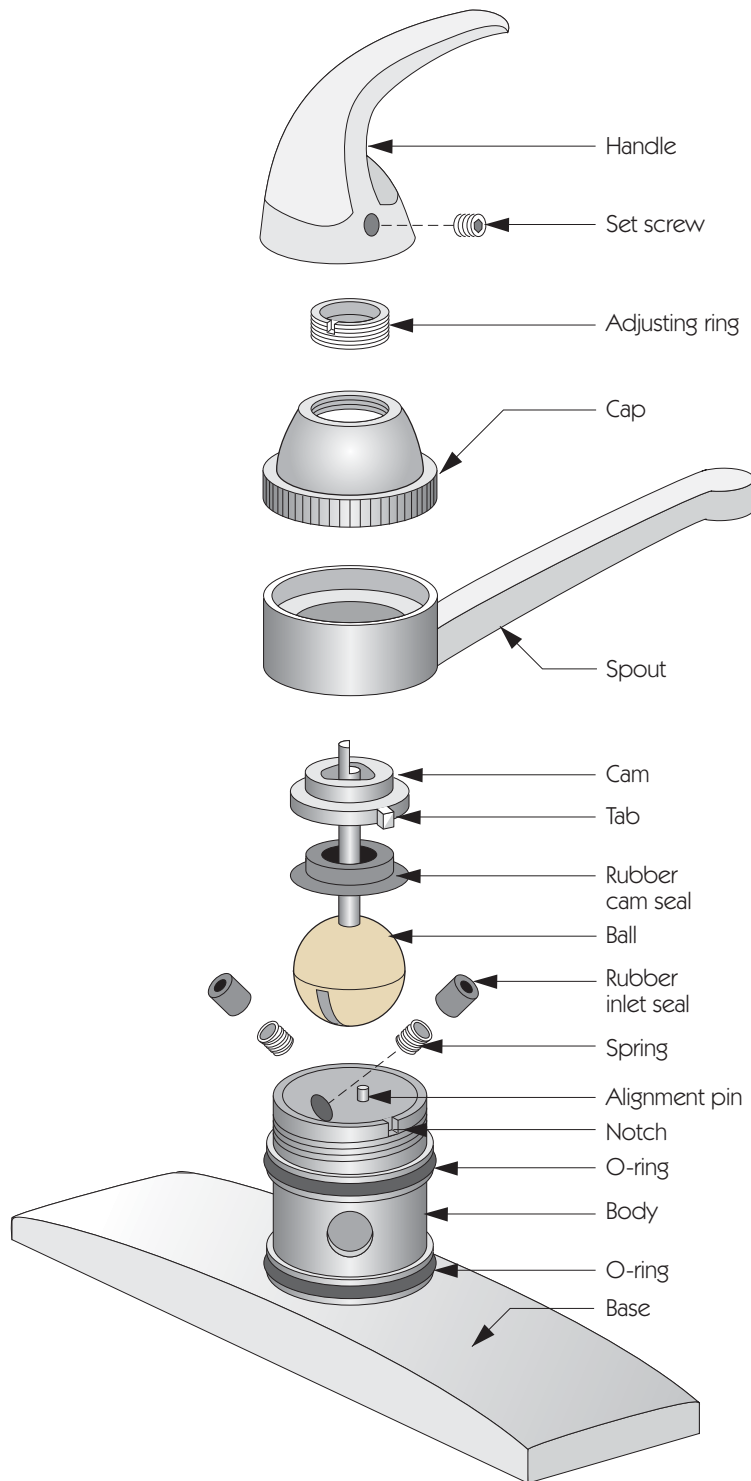


Ball-Type Faucet



How It Works

Inside the faucet body is a hemispherical recess with a fixed alignment pin and three holes: a cold-water inlet, a hot-water inlet, and a mixed water outlet. The hollow ball (plastic, brass, or stainless steel) is slotted. Moving the faucet handle rotates the ball up and down, and from side to side.

Up-and-down handle motion opens and closes the outlet, thus controlling the flow.

Side-to-side motion uncovers more or less of the two inlets, thus controlling the proportion of hot and cold and the resulting mixed temperature.

Before Calling a Plumber

If the faucet leaks from under the handle, remove the handle and tighten the adjusting ring inside the cap.

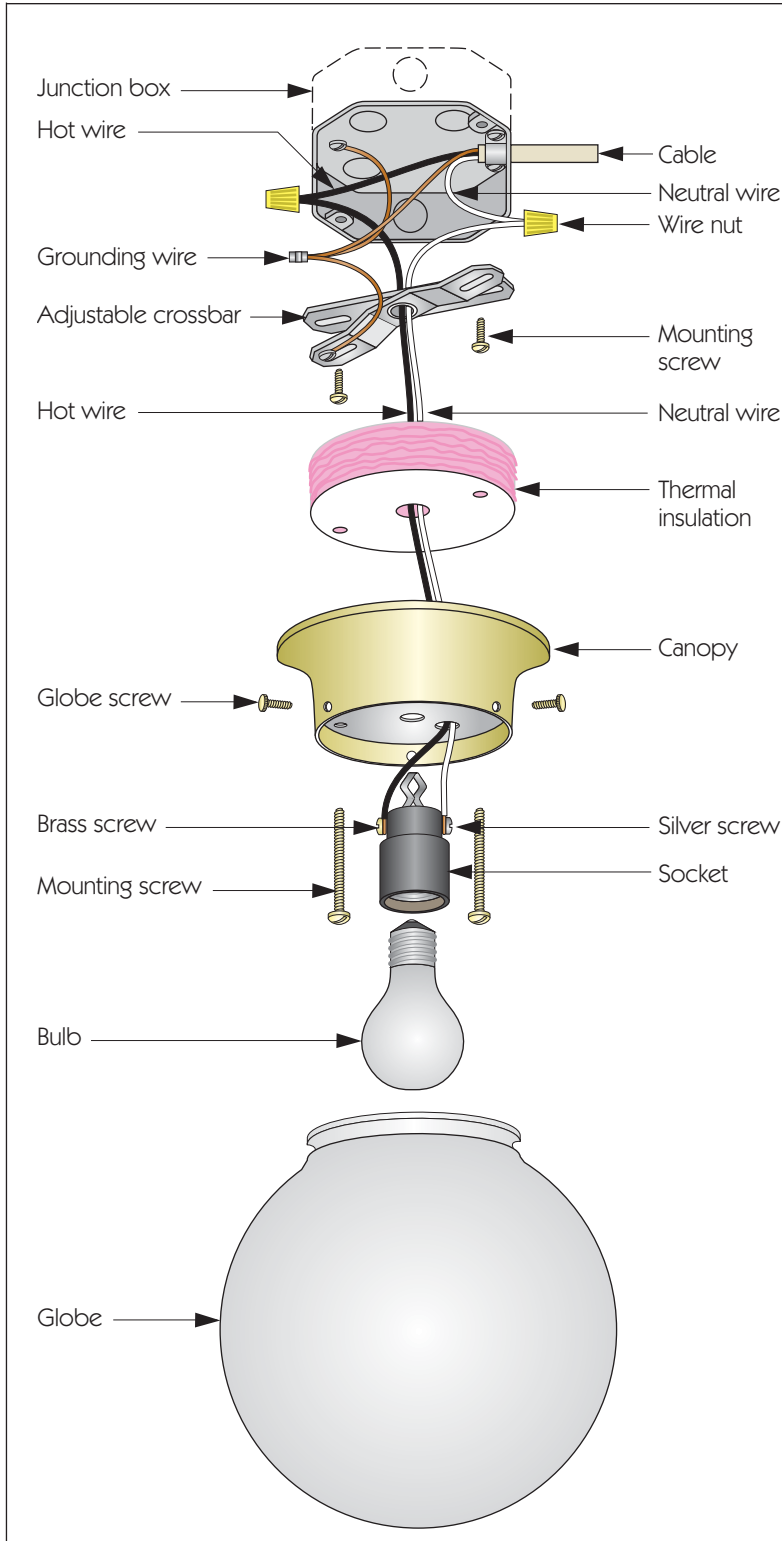
If water leaks from under the spout, remove handle, cap, and spout. Replace the two large body O-rings, lubricate with petroleum jelly, and reassemble.

If the spout drips, the rubber inlet seals are likely worn. To replace the seals, remove the handle and cap, and lift out the ball. Pluck out the seals (2) and springs (2) and replace them. If this doesn't work, replace the ball—preferably with a stainless steel one.

2

WIRING

Flush-Mount Light Fixture



How It Works

Ceiling fixtures typically involve many parts, but most are standard and may be found in home centers.

All fixtures start with a junction box firmly mounted on or between the ceiling joists. Provided the canopy is large enough, a 1/2"-thick "pancake" box allows mounting in a cut-out in the ceiling drywall.

Very heavy fixtures, such as chandeliers and some ceiling fans, may require support in addition to the junction box.

Although the fixture is out of reach, the wiring color code should be followed, with the hot (black) wire connecting to the darker terminal of the socket. This ensures that the socket shell is at ground potential.

Before Calling for Help

If a ceiling fixture won't light, the bulb is probably burned out. (Consider a compact fluorescent bulb for a longer-lasting replacement.) To replace the bulb, you usually unscrew the globe screws, and remove the globe.

Sometimes it is impossible to unscrew the bulb from the socket without the socket turning as well. If that happens, it may be necessary to turn off the power at the breaker box, remove the long mounting screws, and take the fixture apart. After separating the bulb and socket, the fixture is reassembled, the new bulb inserted, and the breaker turned back on.

Oil Warm Air Furnace

How It Works

- ① A thermostat in the area to be heated signals the oil burner for heat. (See pages 81 and 85.)

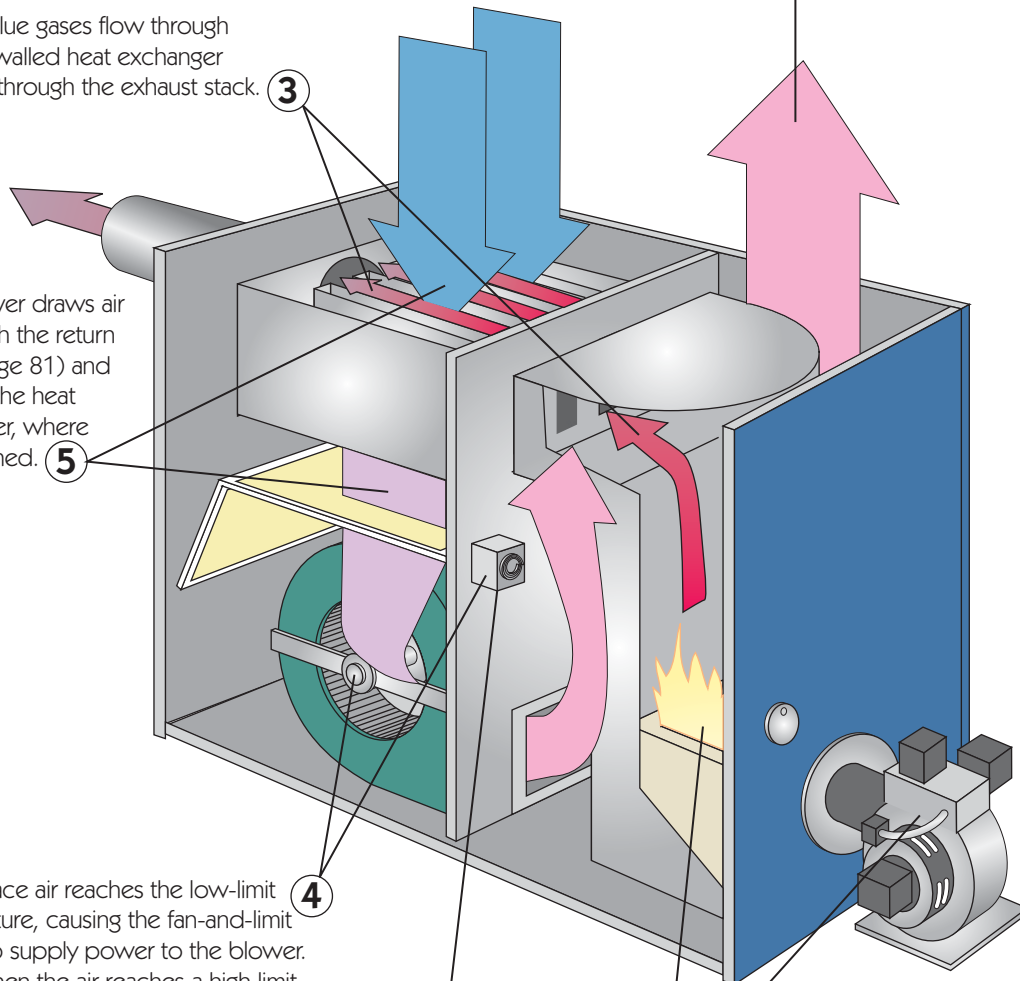
The hot flue gases flow through the thin-walled heat exchanger and exit through the exhaust stack.

The blower draws air in through the return duct (page 81) and through the heat exchanger, where it is warmed.

The furnace air reaches the low-limit temperature, causing the fan-and-limit switch to supply power to the blower. If and when the air reaches a high limit, the limit switch turns the oil burner off.

After the thermostat signals the oil burner to stop heating, the blower continues until the furnace air cools to the low limit, and the limit switch cuts the blower power.

- ⑥ The heated return air—now called "supply air"—flows out from the supply plenum through supply ductwork to heat the house.



4

COOLING

When the weather is hot, Americans have come to expect that they can be cooled. Unlike our ancestors, who depended on a variety of non-mechanical means to survive the “dog days” and nights of summer, we assume we can turn down a thermostat, and the room (or automobile) will cool. But air conditioning is expensive, and it may not be as necessary as we assume.

This chapter will first explain what determines “thermal comfort.” You will find that feeling cool involves several factors other than the temperature shown on a thermometer. In many situations, you can use these variables to achieve cooling without turning on the AC.

But the power of natural cooling is limited, so we will also show how room and central air conditioners work and how to keep them running most efficiently. Like heating systems, air conditioning equipment requires maintenance, such as cleaning vent covers, seasonally cleaning and covering condensers, and replacing air filters.

6

APPLIANCES

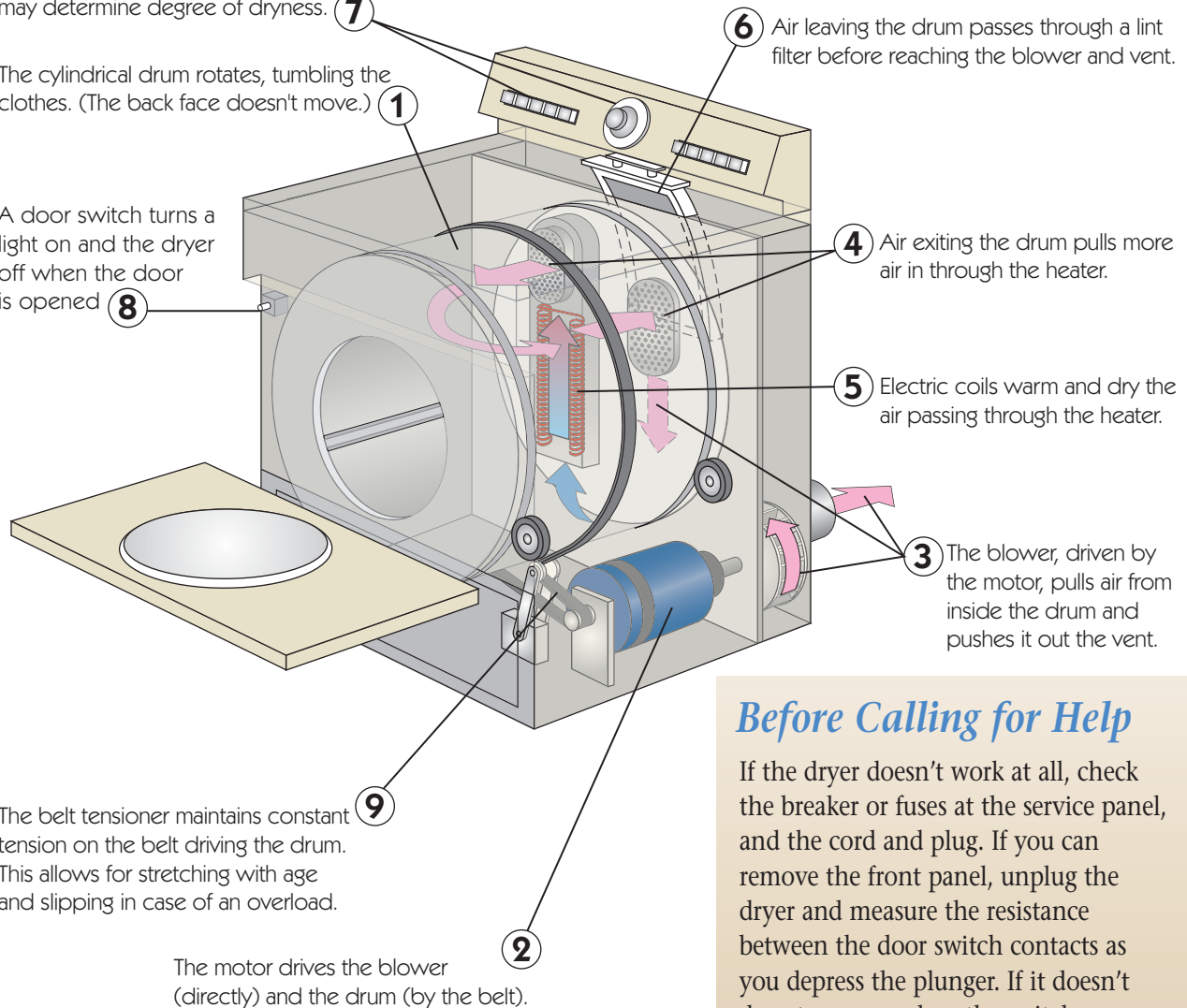
Electric Clothes Dryer

How It Works

Control buttons select the heat coils: high (all), low (half), air (none), while the rotary dial controls the timing. A humidity sensor (not shown) may determine degree of dryness. **7**

The cylindrical drum rotates, tumbling the clothes. (The back face doesn't move.) **1**

A door switch turns a light on and the dryer off when the door is opened **8**



The belt tensioner maintains constant tension on the belt driving the drum. This allows for stretching with age and slipping in case of an overload. **9**

The motor drives the blower (directly) and the drum (by the belt). **2**

Air leaving the drum passes through a lint filter before reaching the blower and vent. **6**

Air exiting the drum pulls more air in through the heater. **4**

Electric coils warm and dry the air passing through the heater. **5**

The blower, driven by the motor, pulls air from inside the drum and pushes it out the vent. **3**

Before Calling for Help

If the dryer doesn't work at all, check the breaker or fuses at the service panel, and the cord and plug. If you can remove the front panel, unplug the dryer and measure the resistance between the door switch contacts as you depress the plunger. If it doesn't drop to zero, replace the switch.

If the dryer is taking longer to dry the clothes than it used to, the vent could be clogged with lint. The hose or ductwork is easy to remove, and you can purchase a special cleaning brush at an appliance repair outlet.