# How to Clean a Steam Radiator Air Valve

[Steam heating systems](https://www.thespruce.com/hot-water-vs-steam-radiators-1821916) can use one of [two types of piping systems](https://www.thespruce.com/types-of-home-heating-systems-1824772): single-pipe, and two-pipe. While both types have valves fitted on the radiators, only the single-pipe system has air valves that may need to be periodically cleaned.

Two-Pipe Vs. Single-Pipe Systems

In the two-pipe system, there is one network of pipes that [distributing steam outward from the boiler](https://www.thespruce.com/residential-steam-boilers-1824732) to the radiators, and separate pipes that collect the condensed steam as it turns back to water.

In the single-pipe system, however, the same set of pipes both delivers steam outward to the radiator and collects the moisture that condenses and transports it back to the [boiler](https://www.thespruce.com/repairing-a-hot-water-boiler-1824781). The single-pipe system depends on special one-way radiator valves that close when they heat up. They are designed to prevent steam from escaping from the radiators but must open to allow free passage of air when the system is cool.

Identifying a Single-Pipe Air Valve

The [air valves](https://www.thespruce.com/steam-radiator-air-vents-1824733) on radiators for a single-pipe system are usually bullet-shaped devices, pointed on one end. The air valve is located on the opposite side of the radiator from the control valve, which has a twist knob. In single-pipe systems, there is very often a characteristic hissing sound when the radiator is cool air is passing through the air valve. This hissing sound will occur as the system is just beginning to heat up, as well as when the system is cooling down.

Operation

During the system's heating cycle, the heat-sensitive air valve closes to contain the steam inside the system and prevent it from escaping into the room. At the beginning of the heating cycle, air within the radiator will escape through the valve, often with the characteristic hissing sound. Then, once the valve senses the high temperature as steam fills the radiator, it closes tightly to contain the steam. As the system cools down again and moisture condenses, the air valves open again to allow room air back into the system.

Occasionally the air valve may clog with rust or mineral deposits. Sometimes a [troublesome radiator air vent](https://www.thespruce.com/steam-radiator-and-air-valve-repair-1824753) must be replaced, but in many instances, a simple cleaning will restore it to working order, as described in the following steps.

Cleaning Instructions

1. Turn off, the steam to the radiator by closing the supply valve (if you have one) found on the end of the radiator opposite the air vent.
2. Using an [open-end wrench](https://www.thespruce.com/best-wrench-sets-4150024), remove the valve from the radiator by turning it in a counter-clockwise direction.
3. Heat a small pot of [vinegar](https://www.thespruce.com/vinegar-definition-green-cleaning-uses-1707034) and submerge the air valve in the hot vinegar. Allow it to soak for about 30 minutes, allowing the vinegar to dissolve any mineral deposits and loosen any rust.
4. Rinse the vent with cold water.
5. Test for free airflow by blowing through the valve. If you cannot blow through the air vent, then repeat the process again. If you still cannot blow through the valve, then it needs to be replaced with a new valve.
6. If you were able to blow air through the valve, then reinstall it in the radiator by wrapping three loops of [Teflon plumber's tape](https://www.thespruce.com/how-to-use-teflon-tape-2718712) around the threads in a clockwise direction, then screwing the air vent until it is hand tight. The pointed end should face upward.
7. Reopen the steam supply valve on the radiator and test the operation of the valve. The valve should allow air to vent as steam begins filling the radiator, but then should close to retain the steam as the system gets hot. As the system cools, the heat-sensitive valve should open again to allow air back into the system. If the valve does not close as the system heats up and open as the system cools, then the steam radiator air valve needs to be replaced.

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