

MR. FIXIT ON HEATING SYSTEMS (January, 2007)

Ever wonder how your heating system works, or how to keep it happy? Here is an overview of how our heating system works and what you can do to prevent expensive repairs.

We have a hot water heating system, and the main boilers in the garage produce hot water for our faucets as well as for the hot air that heats our units. This is an efficient and effective system.

Hot water is supplied to our units by the main boilers. They are not our individual responsibility, as boiler maintenance is handled by the Association through our dues. All we need to do is report problems (for example, loss of hot water, long delay before hot water flows, water too hot, etc.) to our property management company, Citiscape, for boiler adjustments or repairs.

Our hot air system is another matter, and simple maintenance on our parts makes a great deal of difference in its efficient functioning. But first, let's look at how it works.

In your unit, you have a thermostat with a dial for setting fan speed (off, high, medium, low) and near this you have a large grille mounted low on the wall. Behind the large grille is an air filter and behind that a cavity containing a fan, an electrically operated valve and what engineers call a heat exchanger and you can think of as a radiator. It's a series of coils that air can pass through.

You set the thermostat for a desired temperature and select one of three fan speeds. When the thermostat senses a need for heat, it does two things. It turns on the fan in the cavity behind the grille and it opens the electrically-operated valve to let hot water from the boilers flow into the heat exchanger. The fan sucks air from your unit in through the grille and through the filter then pushes it over the heat exchanger coils. The air is warmed by the hot water in the coils and sent to the various rooms of your unit. The little grilles high on the walls distribute it throughout the rooms. When the thermostat senses that it is as warm as you asked for, it shuts off the fan, closes the hot water valve, and all is quiet. (Of course, you can set the fan for circulation without heating by turning the thermostat down.)

This is a very efficient and excellent method of heating. No waiting for steam to build up, no expensive electric heat, just gentle warm air to circulate through your unit. It's a simple system for providing high quality heat, and should work well for many years with no problems.

So what can go wrong? The thermostat should last essentially forever. The electrically-operated valve "should" last essentially forever but there have been some unexpected failures. It is an expensive replacement for affected homeowners. The fan motor is a permanently lubricated motor and will last essentially forever, provided it is not abused.

What is that abuse? Remember, there is a filter behind the large grille. If that filter gets plugged up with dust, the fan will work too hard and get overheated. That's abuse.

What can you do? Very simple -- replace that filter on a regular basis. Our Homeowners Association buys filters in bulk and keeps a store of them in the entrance guard's storage. They're free - just ask the guard for one. Undo the four screws on the large grille, pull it out, and lay it on its face. You'll see the old filter fastened to its back. The filter lies within a metal frame and is held in place with one end tucked under a metal lip and the other end secured with a short metal channel. Rotate the short channel and lift the filter out. Put the old filter in a bag and toss into the garbage. Insert the new filter by tucking one end under the metal lip, dropping the filter into its frame, then turning the channel to secure the other end in place. Set the grille back into the wall, replace the four screws and you're done!

Once a year, vacuum the cavity behind the large grille. This helps keep dust and dirt out of the heat exchanger and fan motor, and of course, keeps them feeling happier.

I said replace the filter on a regular basis, but how often is that? Well, it depends on many things - the amount of fresh air you let into the house, the amount of dust in your unit, and so on. I'd suggest you start off with an "every three months" schedule and see how dirty the filter is when

you change it. You might need a clean filter every other month, you might need one only twice a year. One look at the dirty filter will tell you what you need to know. If it's plugged with dust, it's been in service too long. In our case, we hold the filter up to the light. If it's becoming opaque with dust, it's ready to be changed. If lots of light passes through, the filter is good for another month.

On the small grilles that distribute warm air, there is an adjustment lever or screw. Leave it alone. Remember that fan in the cavity? It produces a certain amount of air flow (cubic feet per minute). The adjustment levers were set when the building was new to balance the air flows to the various rooms and need no further adjustment. If you change the adjustment on one grille, you will affect the flow in all other rooms of your unit, and possibly overwork the fan.

So now you see how your heating system works and how to maintain it. Take good care of it and it will work for a very long time.

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