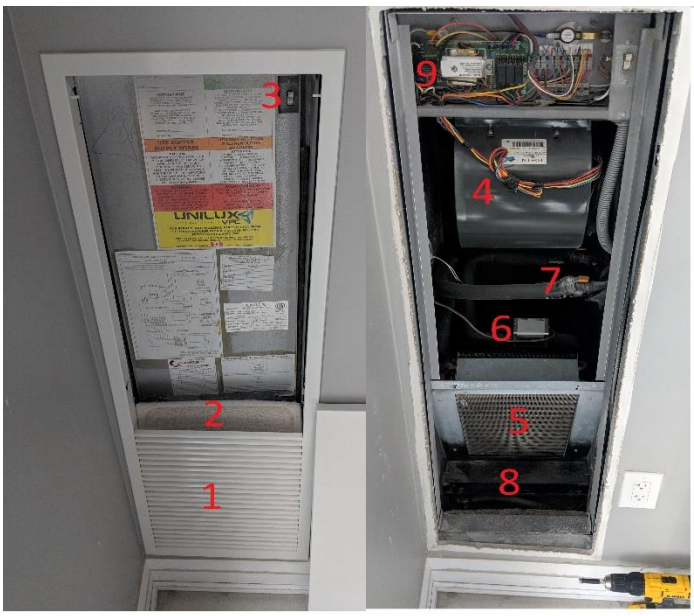
Fan Coil: Ownership and Maintenance

In a lot of our correspondence with residents, we end up talking about “fan coils”; but… what are they? How do they work? And, what do you need to know about them? Hopefully, after reading this informational package, you will understand the topic just a little bit better (and may even save yourself some money!).

So, What Is A Fan Coil?

Well, its this:



Legend:
1: Air intake vent
2: Air filter
3: Power Switch
4: Centrifugal Fan and Motor
5: Heat Exchanger Coil
6: Actuator
7: Shut Off Valves
8: Drip pan
9: System Controls

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Every apartment in the building has one (or two) of these, and it is the machine that is responsible for heating or cooling your home. It also attempts to filter out suspended particles such as dust. Whoever standardized this name wanted to keep it simple as the whole thing is governed by 2 major parts: the “fan”, and the “coil”, along with several other parts you can see listed above.

Now, for the parts you can’t see - if you were to open up your wall, you would see three pipes running by. One pipe supplies cold water to the coil, another collects the now warmer water and delivers it back to the building. The third pipe is a drain, which collects all the water which has “sweated” off the coil, and brings it to the sewers. These pipes are not owned by you (as an owner), as they supply everyone directly above and below you; that’s why when there is a shut-off for a leak in one of these, it’s usually only one unit per floor that is affected (example: all the 06’s).

How Do They Work?

I’m going to be explaining how the cooling would work as we’re about to get to that time of year; however, the heating is extremely similar, so I’ll point out any differences as we go.

When the thermostat calls for cooling, the fan runs and sends the warm air from your home through the vent and filter at the bottom. The filter’s job is to stop any airborne dust or other particles to help clean your air. The air then passes through the very cold coil it takes the heat out of the air and it is then taken into the fan and blown out to all the vents in your home.

Note: One side effect of the cooling process is that water from the air will condense onto the cold coils of the fan coil like morning dew. This will may lead to the air becoming dry; consider getting fresh air from an open window when the temperature is close to that of the indoors, or using a humidifier should the air be uncomfortable.

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What Should You Know?

Tips:

- To save on your bills and even repairs, **set the fan speed on your thermostat to "auto"** when possible. This setting means the fan will only run when needed. The water for cooling or heating is reused so it does not affect any water bills; however, since the fan itself runs on electricity, therefore, having it on less often will lead to less energy consumption. It will also give the motor a chance to rest and cooldown, leading to a longer lifespan for the motor itself.
- One thing that our fan coils cannot do is scrub out contaminants such as carbon dioxide (CO_2). Instead, **fresh air must be exchanged with your home by either outside air (opening a window) or from the Make-Up Air supplied in the hallways** (this air has been taken directly from outside, filtered taken to a more desirable temperature and delivered by ducts to the halls). This is why door frames are not air tight, and why we do not advise weather stripping even if air can be heard coming in. That is the building operating as intended delivering fresh air through your door and pushing the stale air out through your vents and windows while not exposing you to the outside temperatures and dust/allergens.
- **Keep the front of the vent clear and have room for the air to flow.** This means the fan won't have to work as hard, leading to less energy consumption. More airflow also means that more particles of dust or debris can be caught by the filter and removed from the air you breathe.
- **Clean your filters.** Don't wait for the semi-annual fan coil maintenance, check your filter maybe once a month and see if it has become dirty. You can vacuum it, take it outside and gently shake it off or if you want to purchase a fresh one contact Property Management. Keeping that filter clean will improve the air quality in your home as all your air conditioning passes through it.

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Troubleshooting:

Please read the below, and contact Property Management (or Security) if necessary or you require further clarification.

1) ***My thermostat seems to have no power/blank screen!***
   - Check the power sources (the switch under the cover of the fan coil, in the top right corner). This is often turned off while performing maintenance, and may have been left off.
   - If this does not help, check the breaker box (should be located somewhere on the wall closer to the entrance). Breakers can occasionally trip due to power surges. Remember to turn the breaker all the way off to reset it before turning it back on.
   - Call Property Management if not resolved.

2) ***I can hear my fan is running, but It isn't getting warmer or cooler!***
   - Is it the correct season? Unfortunately, due to the limitations of the building we can only provide cooling in summer and only heating in winter. This means on a cool summer night, it may get a bit chilly. Your fan coil does have a small heating unit in it to take some of the chill out of the air, but it will not be able to drastically raise the temperature should the building be providing cooling.
   - Beyond that, you may want to contact Management (or after business hours, contact Security), who can relay the information to a Superintendent. There are a few possible situations that may cause this, and can help to determine which is happening:
     - The building may have lost its heating or cooling. This can often happen due to things like power outages, surges or machine malfunctions. A superintendent will investigate and resolve the issue as soon as possible
     - There is a valve just before the coil, called the "actuator", which regulates how much hot or cold water is allowed into the coil to prevent things like having a very hot coil when not in use. This valve may malfunction and stop allowing the hot or cold water through. Unfortunately, this will require a repair from a technician. Management will have a contractor on file who you may contact to fix the part but please do not attempt a DIY repair- these have gone wrong in the past.
     - The thermostat may have a communication error. Reasons for this we have seen in the past included, a crossed wire when installing a new system like a Nest Thermostat, changes in the programming system for the thermostat, and thermostats being partially removed or damaged.

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3) My fan does not seem to run!

- The thermostat may have a communication error. Reasons for this we have seen in the past included, a crossed wire when installing a new system like a Nest Thermostat, changes in the programming system for the thermostat, and thermostats being partially removed or damaged.
- The motor may have malfunctioned or become damaged, this is especially likely if you smell burning wires (if this is the case we suggest removing the power to the unit from either the breaker or the switch inside the fan coil and making sure there are no signs of fire). From that point you will likely need a technician to come and replace the part. Management will have a contractor on file who you may contact to fix the part but please do not attempt a DIY repair- these have gone wrong in the past.

4) Water damage has started to appear around the unit!

- In our experience, there are two ways that this can occur:
    - The drain under the coil is not draining properly, either because the hose has come off, or because the drain has become clogged by debris such as hair or dirt. In the past, Superintendents have been able to solve this issue by cleaning out the drain and tightening clamps, so we will certainly try to help (and often don't need to break walls to do so!).
    - There could be a "pin hole leak" in either a pipe or a weld/solder joint. "Pin Hole Leaks" are caused over time by corrosion or poor installation these can be hard to avoid and even more difficult to repair as the are often in difficult to locate areas. This will require a technician and will likely require us accessing pipes through walls. Superintendents and plumbers will respond.

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