

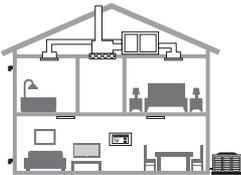
## QUICK START

Congratulations on the purchase of your new home. Blue Mountain Construction Services has worked with your homebuilder to install a heating, ventilation, and air conditioning (HVAC) system to keep your home comfortable year round.

Here are a few simple steps that you can do to start enjoying this system right away.

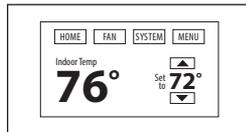
### 1. Locate

Locate the different components of your home's HVAC system, especially the thermostat, filter, registers, and condensate lines. Be sure that they appear clean and free of damage.



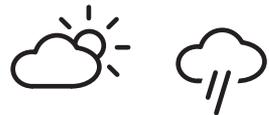
### 2. Set Thermostat

On your thermostat set the fan to "Auto", the system to "Heat" or "Cool", and a temperature that you would like the home to be. It can hold this temperature until you program it for your regular daily routine using the thermostat's manual.



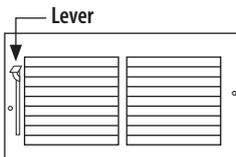
### 3. Outside Condition

Depending on outside conditions open and close windows and window coverings to increase comfort and minimize HVAC system run times.



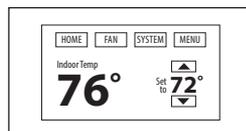
### 4. Airflow

If more or less air flow is needed in a room you can adjust the louvers in the register supplying that room with the lever on its side.



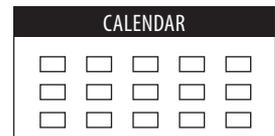
### 5. Program System

Once you are settled in your home you can program the system to vary the temperature based on your schedule. Settings for "Sleep, Wake, Away, and Home" can typically be scheduled. See page 4 for programming tips.



### 6. Air Filter

Be sure to change the air filter every three to six months as dust builds up. Not doing so will shorten the life span of your HVAC system and increase utility bills unnecessarily.



## SYSTEM EXPECTATIONS

Your HVAC system is designed to maintain a comfortable temperature under normal weather conditions for the area your home exists in. Abnormal heat or cold spells may exceed the systems capability. In the summer, the system can be expected to maintain an indoor temperature of 75-78 degrees. When cooling the home, the system can only lower the temperature 1-2 degrees an hour, so it is better to set and maintain a comfortable temperature instead of letting the home get warm and then turning the system on. Keep in mind the HVAC system is not just cooling the air, it is cooling the furniture, appliances, and surfaces inside the home. In the winter, the system can be expected to maintain an indoor temperature of 65-68 degrees. As with cooling, it is better to set and maintain a comfortable temperature instead of letting the house get cold and then turning the system on.

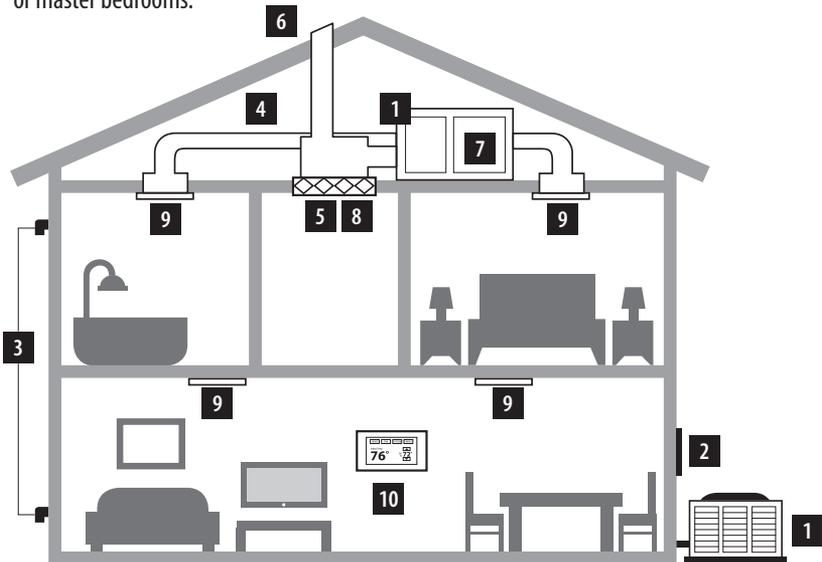
To help maintain a comfortable temperature it is critical to install and use window coverings to insulate the home. The sun shining through a window on to the floor or furniture will increase the temperature in the room significantly. Conversely cold or windy outdoor weather can be felt through the glass of an uncovered window.

Some room-to-room variance in temperature is to be expected in your home. Rooms with different window area, exterior walls, ceiling heights, or outside shade will put a different demand on the HVAC system. You can adjust for this by slightly opening or closing the air supply for each room, thereby forcing air flow into the rooms that need it most.

## HVAC TERMS

- 1. Air conditioner** – The mechanical system responsible for cooling air. It has two components connected by refrigeration lines; a compressor with coils outside of the home and cooling coils mounted in line with the furnace, typically, in the attic.
- 2. Circuit breakers or disconnects** – These safety devices are responsible for interrupting the flow of electricity to your HVAC equipment if a problem occurs. You can find an electrical disconnect next to the air conditioner outside of your home and circuit breakers for your furnace and air conditioner are located in the main electrical panel for the home. Neither of these should need to be interacted with under normal circumstances. If a circuit breaker does trip, it should be turned completely off and then back on again. If this happens often it may indicate a problem with the system. The electrical disconnect located in a box near the outdoor air conditioner compressor should only be used when the unit is being serviced or in the event of an electrical emergency.
- 3. Condensate line(s)** – This is typically a plastic pipe that exits the home and provides a drain for water that collects on the cooling coils during air conditioning. There are normally two condensate lines, one (primary) down low which may have water running out of it during air conditioning, and one (secondary) higher up, usually above a window to make it more visible. The primary line may be connected to the waste line to the sewer and not visible. The secondary line above the window should not have water running out of it unless there is an issue with the primary line.

4. **Duct work** – This is flexible or rigid passageways for air to move through as it travels to or from the living space to the furnace. Ductwork can be found in the attic, in between floors, and inside wall spaces.
5. **Filter** – The filter plays the critical role of keeping dust and debris out of the furnace and from being circulated around the living space. It should be changed every three to six months.
6. **Fresh air intake** – Some newer homes are equipped with a small air inlet that allows fresh air to be pulled from outside of the home and mixed with air moving to the living space. This helps improve indoor air quality and can usually be found inside of the main return and has its own air filter that needs regular maintenance.
7. **Furnace** – The mechanical system responsible for heating and circulating air in the home. It is typically located in the attic or a closet and requires electrical power and natural gas to burn for heat. Exhaust fumes are vented through the roof.
8. **Return** – The location at which air is pulled into the furnace from the living space. This is usually covered by a grill mounted in a common area and can be in the ceiling or low on a wall. This is the location for the main air filter and often times the optional fresh air intake.
9. **Register** – This is usually a ceiling or floor mounted grate that covers the duct work where conditioned air enters the living space after passing through the furnace. Each room usually has one or more registers, however smaller rooms may not have them. These often have louvers that can be adjusted to vary the air flow seasonally through the register.
10. **Thermostat** – This is the interface between the user and the HVAC system. It senses temperature, and occupancy in some models. The system can be turned on, turned off, and programmed from it. There is one thermostat per zone and they are usually wall mounted in common areas or master bedrooms.



## THERMOSTAT OPERATION

Your thermostat(s) has two primary functions – sense the temperature in the room and allow users to interact with their HVAC equipment. It can either be turned on and off as needed, or it can be programmed to come on automatically at preset times according to your schedule. New optional Wi-Fi enabled smart thermostats can also be controlled from apps running on smart phones or tablets.

For more information about programming your thermostat consult its owner's manual. Additional information can be found on these manufacturers' websites.



### Honeywell

[yourhome.honeywell.com/en/products/thermostat](http://yourhome.honeywell.com/en/products/thermostat)



### Nest

[nest.com/support/thermostat/](http://nest.com/support/thermostat/)

**“Through proper use of pre-programmed settings, a programmable thermostat can save you about \$180 every year in energy costs.” — [www.energystar.gov](http://www.energystar.gov)**

Smart thermostats can also track your occupancy and schedule and will adapt to best meet your comfort needs. Thermostats with this capability may pre-heat or pre-cool your home prior to your arrival or request for a temperature change.

**Homeowners can set temperatures to their preference but this will have an impact on utility bills. Moderate settings will keep expenses lower.**

For cooling, a temperature of 78 degrees is recommended during the summer.  
For heating, a temperature of 68 degrees is recommended during the winter.

## FILTER CHANGES

Just like a car, your HVAC system needs regular maintenance. One of the most important things you can do is change your HVAC systems filter on a regular basis. This filter keeps dust and debris from entering the furnace and from circulating around the house. Your system may have multiple filters at these locations:

- Main return – usually located in a hallway or common room
- Fresh air inlet – usually mounted behind the main return filter
- Secondary return – usually found in a master bedroom

These filters should be changed every three to six months to prevent restricted air flow. Keeping clean filters in the system has many benefits including:

- Less dust in the air
- Longer life for your HVAC equipment
- Lower energy bills

When replacing the filter:

- Open the grate at the return (usually by turning some small latches)
- Remove the old filter or filters (noting the air flow direction)
- Install new clean filters and close the grate up



Replacement filters are available at most hardware or home improvement stores or on-line. Be sure your replacement filters are the same size and type as what was originally installed and are mounted with the same air flow direction as the original, usually indicated with an arrow on the filter.

High efficiency replacement air filters are available, but caution needs to be used when selecting them. Air filters are rated with a MERV number (Minimum Efficiency Reporting Value). This standard rates the filter's overall effectiveness. A higher value means finer filtration and fewer dust particles passing through it. However, it also means the furnace needs to work harder to pull air through the filter and that the filter will need to be changed more often. A MERV rating no higher than 8 is recommended for your system to not impact overall system performance.

## PRE-SEASON SYSTEM CHECK

Taking your HVAC system for a “test drive” prior to each season is a great idea and can prevent discomfort. Each April turn the air conditioner on and confirm that cool air is coming out of the registers. Each September turn the furnace on and make sure warm air is blowing out into each room. A smoky smell is to be expected at the first running of the furnace as dust is being burned off, this should stop in 15-30 minutes. You may want to open windows to air the house out during the pre-season check.

By testing the system before it is needed you can be sure your home will be comfortable when the weather changes. Also, if there is a problem, you can beat the rush for a technician to come out and service the system before they get busy with other calls.

**“Having the most energy-efficient system ever built won’t matter much if it’s not maintained. Lack of maintenance is the number one killer of HVAC systems. Before each cooling season, it’s recommended that your system get a professional tune-up.”**  
— [www.homeadvisor.com](http://www.homeadvisor.com)

## QUICK CHECK GUIDE

Some issues with the system can be addressed by the homeowner, keeping the home comfortable instead of waiting for a service technician. If you run into a problem try these simple solutions:

Problem	Solutions
No heat	Check that the thermostat is set to “Heat” Check the circuit breakers and reset if necessary
No cool air	Check that the thermostat is set to “Cool” Check the circuit breakers and reset if necessary
No airflow to rooms	Check the register in the room and adjust if necessary Check the air filters to be sure they are not dirty
Smoky smell from vents	It is not uncommon for the furnace to burn off a layer of dust the first time it is started up each season
Water dripping from drain line	Water dripping from the primary condensate line (lower) is normal Water dripping from the secondary line (higher) should be investigated

## FAQ

### **Q: Where is my filter and how often should I change it?**

A: You may have multiple filters in your home. A main return filter should be located in a common area, possibly in a ceiling hallway or a main room lower wall. Behind that there may be a fresh air filter for incoming air. Finally, you may have a secondary return in the master bedroom. All of the filters should be changed every three to six months to keep your HVAC system running optimally.

### **Q: Why do I have two pipes sticking out of my house that drip water?**

A: These pipes are condensate drip lines that run up to the furnace in your attic. It is common for the primary drain, the lower one, to drip water when cooling your home as moisture condenses from the air going through the A/C coils. This is normal. On some homes the primary line is connected to the waste line going to the sewer and not visible. However, if you see water dripping from the higher drip line it could mean a problem and should be investigated. It is possible that the primary drip line is clogged.

### **Q: Why does my system sometimes run and the air coming out doesn't seem warmer or colder than the rest of the air in the house?**

A: This can happen for a few reasons. If the fan is turned on air from one part of the house is circulated to another part, this is common with multiple zone systems. Also modern HVAC systems are required to bring small amounts of fresh air into homes to improve indoor air quality.

### **Q: Where is my furnace and is it gas or electric?**

A: The majority of furnaces are located in the attics of homes and use a combination of natural gas and electricity. The gas is burned to warm air passing through the furnace. Electricity is used to power the circuitry and the blower motor that moves the air from the return through the furnace and then out to the registers in each room.

### **Q: If I have the same floorplan as my neighbor, why is my home not the same temperature as theirs?**

A: Your home's temperatures will vary based on many factors, including orientation to the sun, use of window coverings, flooring differences (ex: carpet vs. tile), the number of occupants, the number and type of electrical appliances, and more. Each home is unique so set your comfort system accordingly.

### **Q: Why is my upstairs a different temperature than the rest of the house?**

A: It is a law of physics that hot air rises. When trying to heat the downstairs the warm air will want to move upstairs. Also when trying to cool the upstairs the cool air will sink to the lower parts of the home. It may be necessary to adjust the air flow to certain rooms by opening or closing the registers in those rooms during different seasons.

### **Q: Why is my thermostat heating or cooling my house before it is set to?**

A: Today's smart thermostats can track trends, sense occupancy of the home, and anticipate comfort demands. A thermostat that repeatedly sees a need for heating or cooling a home at a given time, or if it sees a repeatedly long run time to reach a set temperature will begin pre-heating or pre-cooling a home prior to a set schedule.

# HVAC SERVICE CALLS

If service is needed for your HVAC system please contact Blue Mountain Construction Services as listed below. Be sure to have the following information available:

Home builder \_\_\_\_\_

Subdivision name \_\_\_\_\_

Lot number \_\_\_\_\_

Address \_\_\_\_\_

Move in date \_\_\_\_\_

Brief description of the issue \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## Blue Mountain

Construction Services, Inc.

707 Aldridge Road, Suite B, Vacaville, CA 95688

Call us at **707-820-2323**

Email us at **info@bluemountainair.net**

**www.bluemountainair.net**

**f @BlueMountainConstructionServices**

CCL: 398668

“Maintain your equipment to prevent future problems and unwanted costs. Keep your cooling and heating system at peak performance by having a contractor do annual pre-season check-ups.” — [www.energystar.gov](http://www.energystar.gov)