



**Blue Mountain**

Construction Services, Inc.

**HEAT PUMP 101  
HOMEOWNER GUIDE**

**(707) 451-8111 • (800) 889-2085** after hours

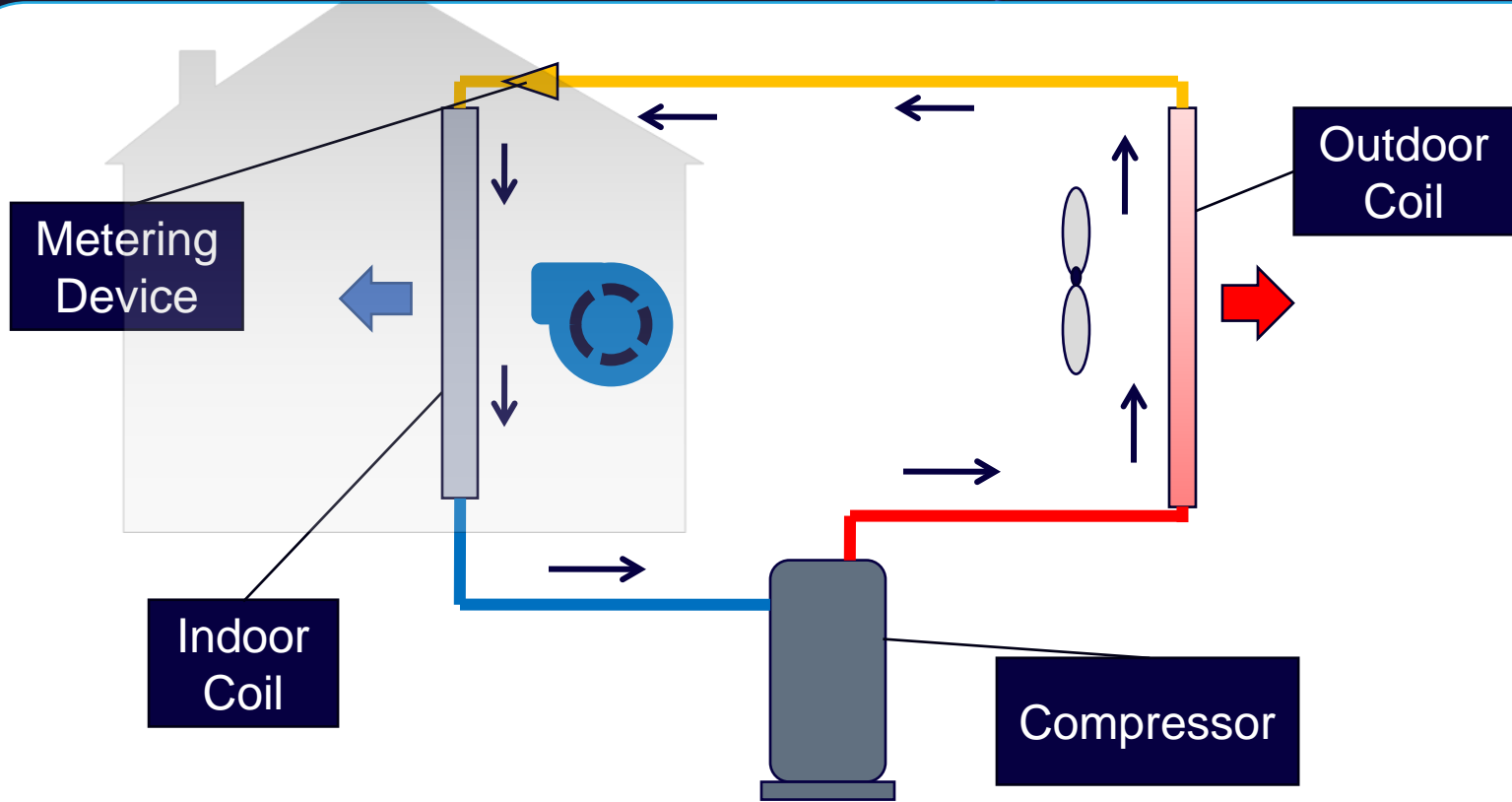
**BlueMountainAir.net**



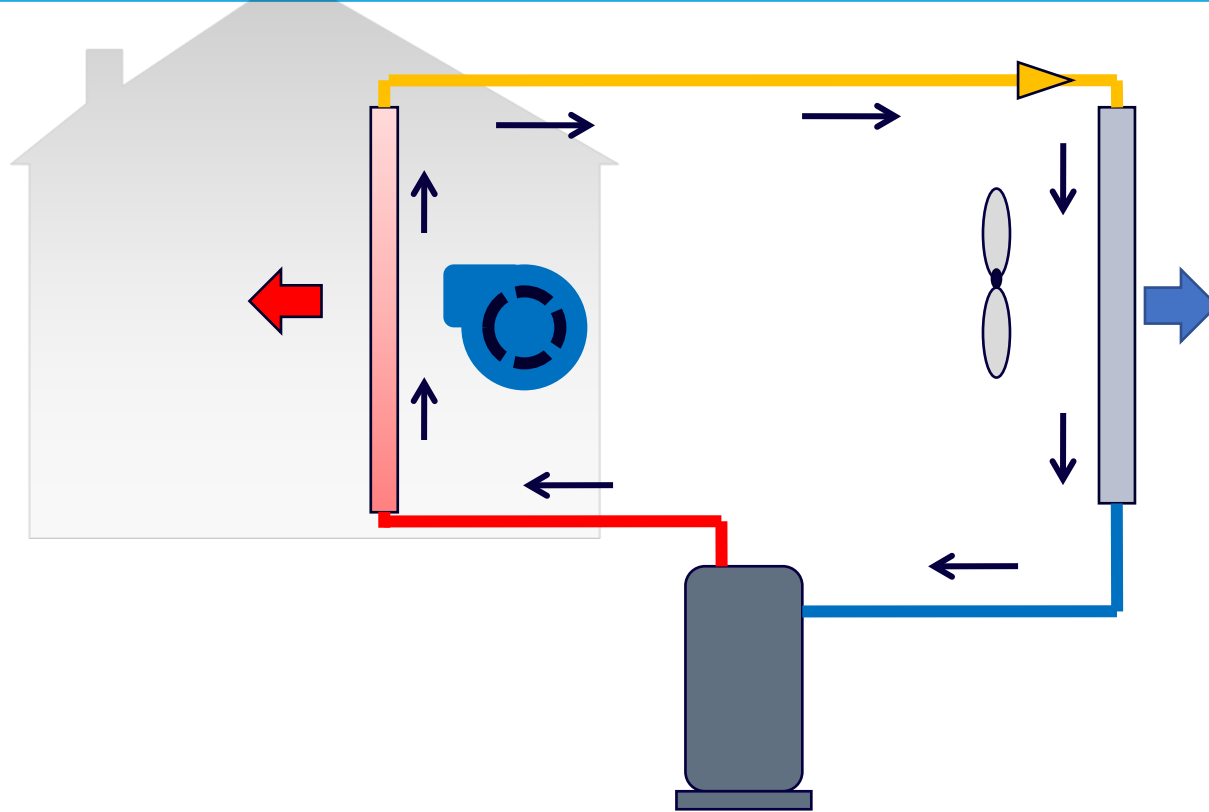
# What is a Heat Pump?



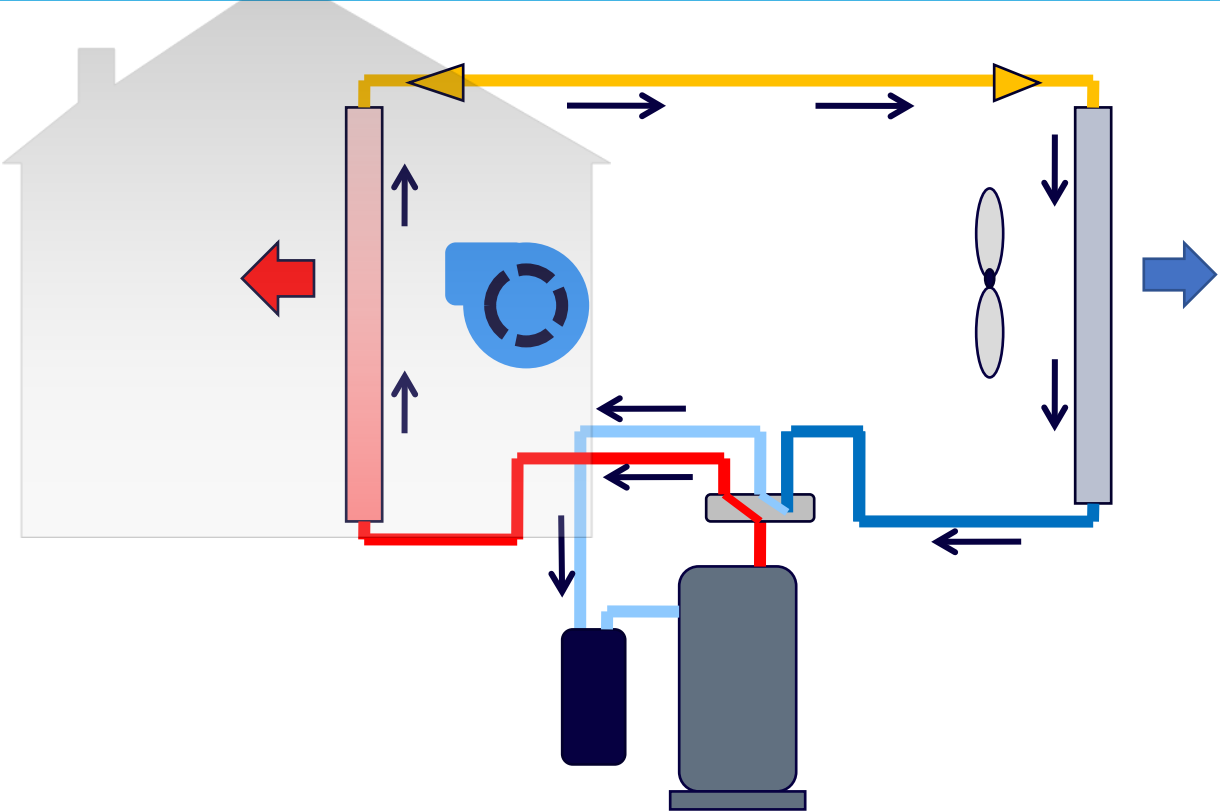
# Basic Refrigeration Cycle



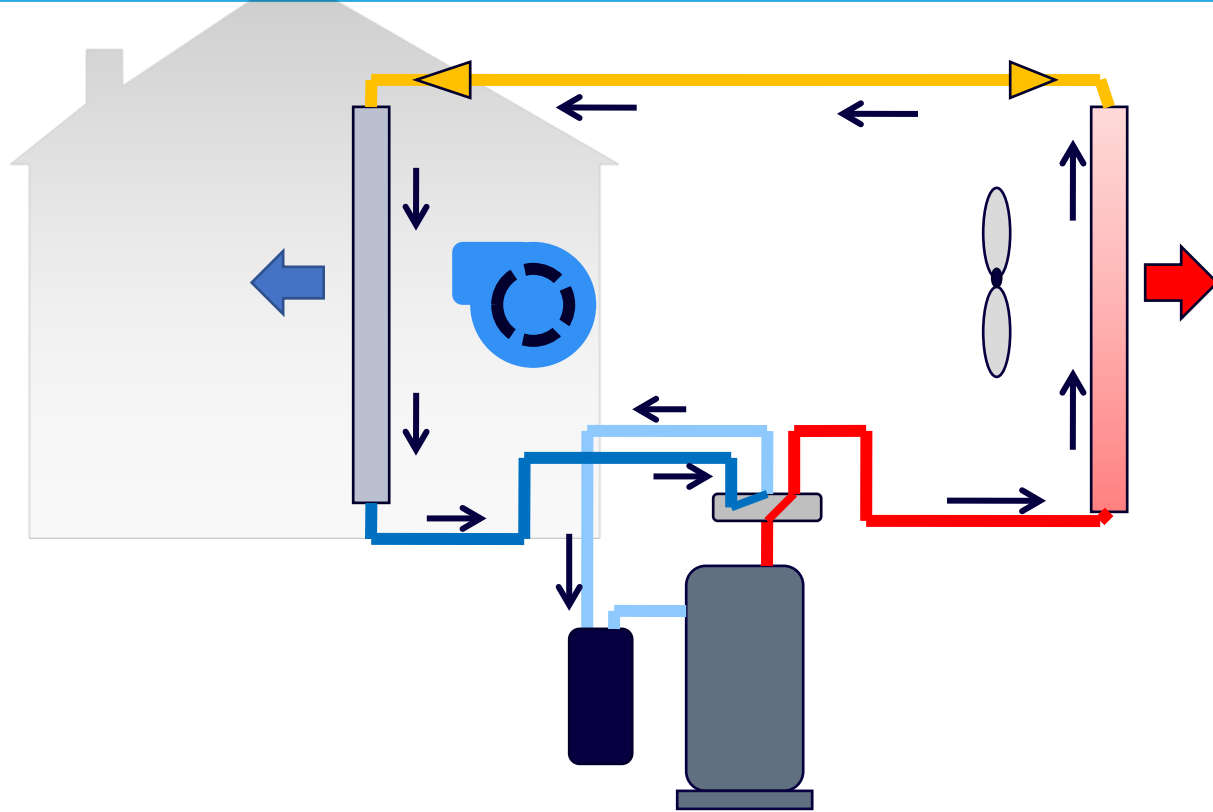
# Basic Refrigeration Cycle



# Heat Pump – Heating Mode



# Heat Pump – Cooling Mode



# What Does a Homeowner Need to Know?



# What Does a Homeowner Need to Know?

- How are they similar to a gas furnace and AC system?
- How are they different?
- What are the advantages?
- What are the potential disadvantages?

## How are they Similar to a Gas Furnace and AC System?

- They look the same and are of similar size
- The cooling cycle is the same
- Both have SEER2 and EER2 ratings
- Both use similar line set sizes and draw similar amps

# How are they Different from a Gas Furnace and AC System?

- They don't use gas for heating
- They use the heat outside to heat the inside
- Efficiency is measured in Heating Seasonal Performance Factor or HSPF2 (like SEER2 for heating)
- 230 volts of electricity is needed at the indoor fan coil
- Outdoor unit will run in both the summer and winter

## What are the Advantages?

- All electric for a “Greener” system
- No potential for gas leak or carbon monoxide poisoning
- Potentially lower heating cost if homeowner has solar
- Longer run times can provide better comfort versus the quick on/off cycles of an oversized gas furnace
- Incentives may be available

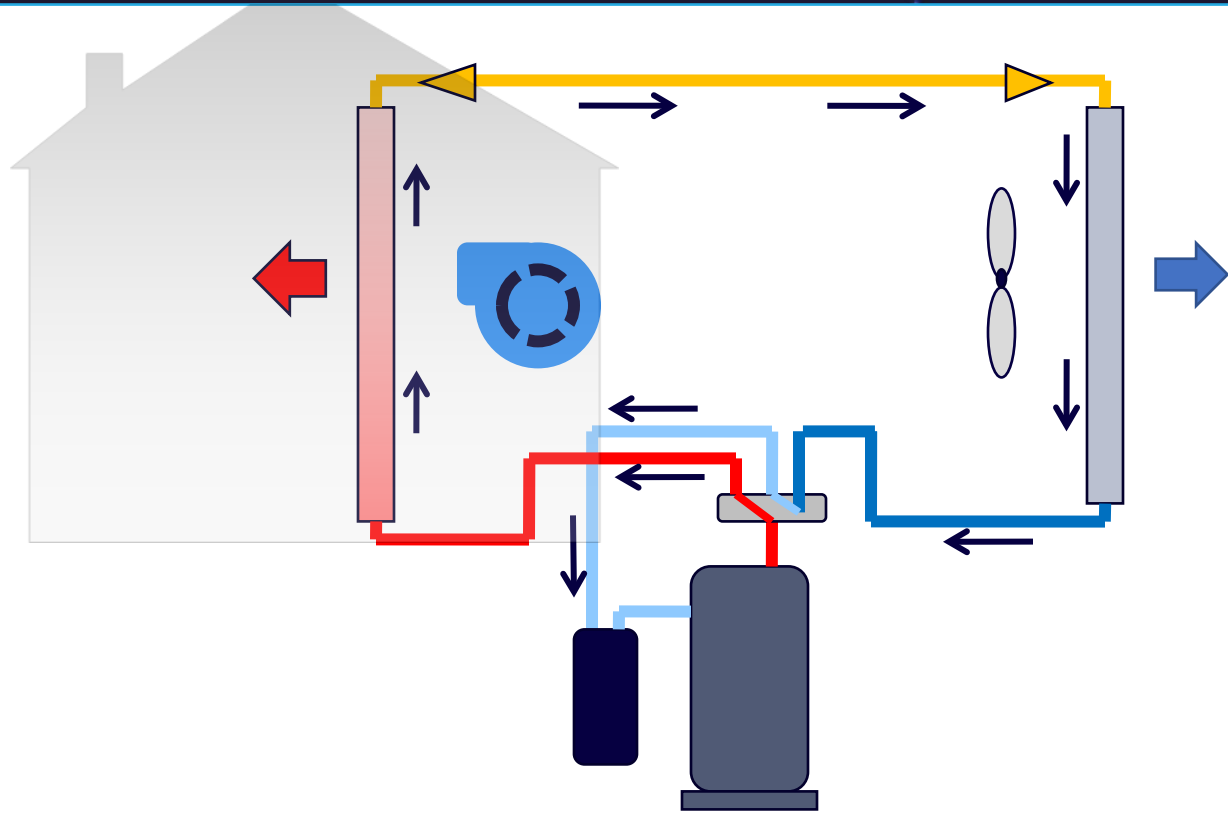
# What are the Potential Disadvantages?

- The system may need to run a defrost cycle
  - May cause a “Cold blow”
  - May “Leak” condensate on a sidewalk
  - May be temporarily “Noisy”
- Lower heating capacity as outdoor temperature drops
- Lower heating discharge temperature

# What is Defrost?



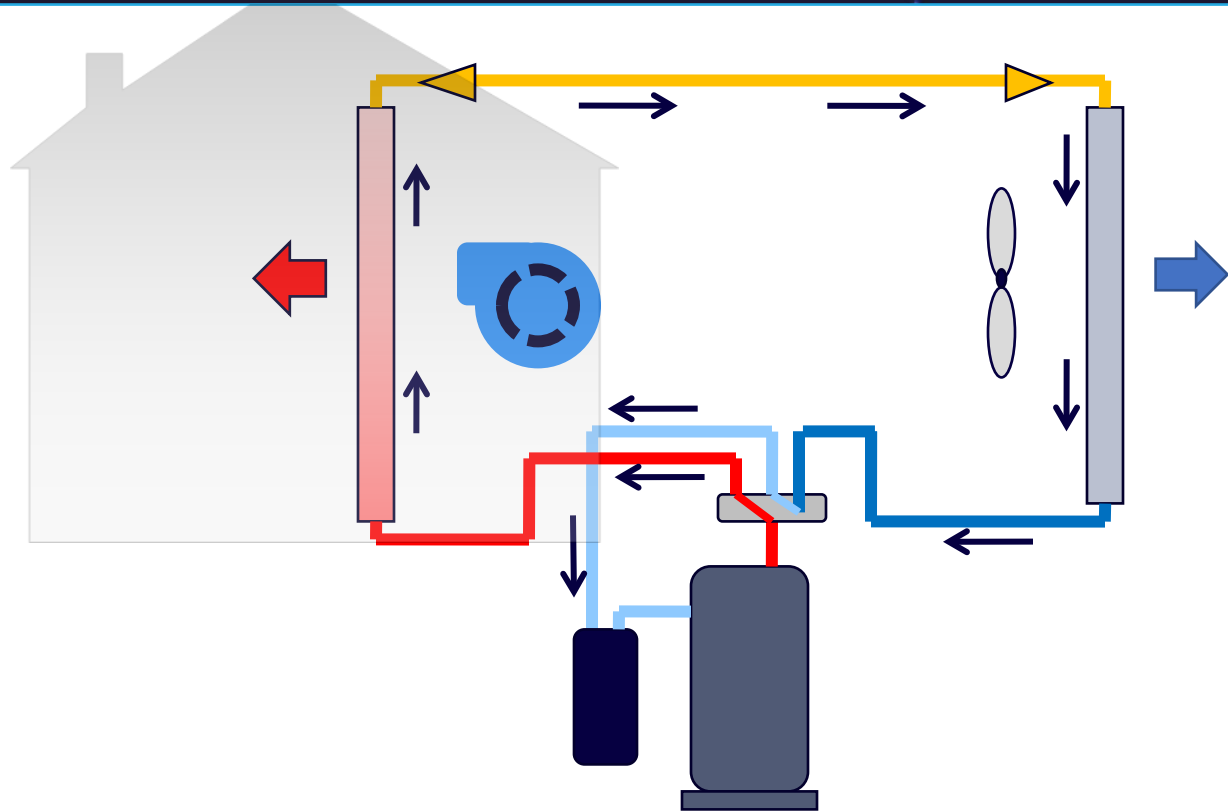
# What is Defrost?



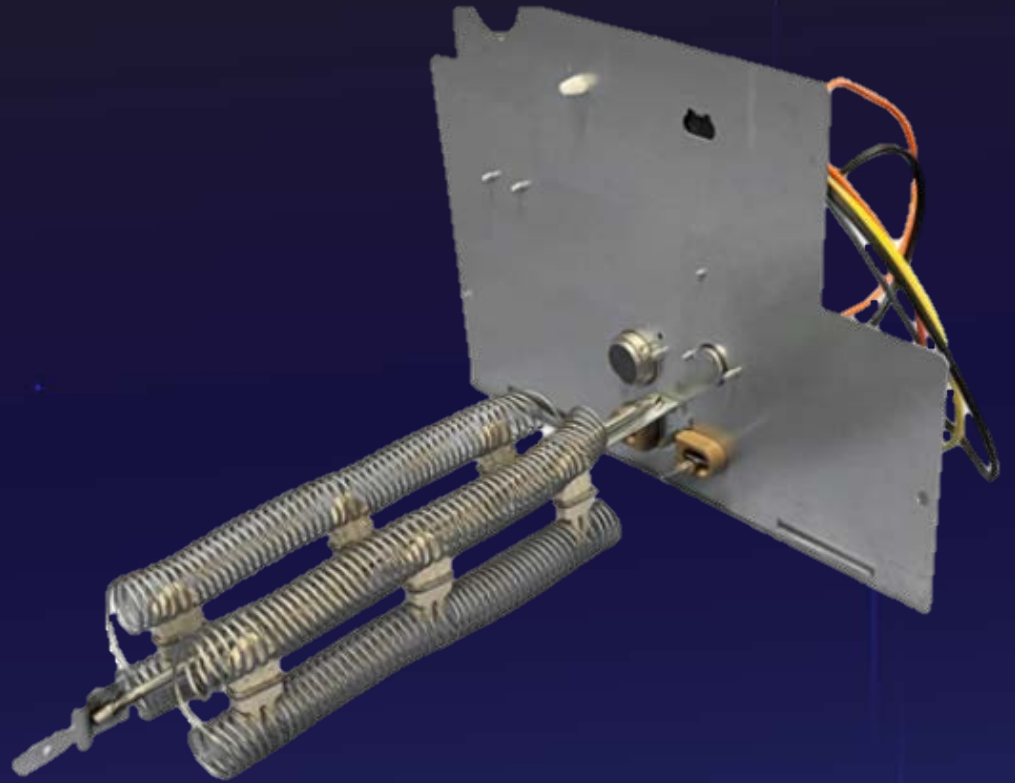




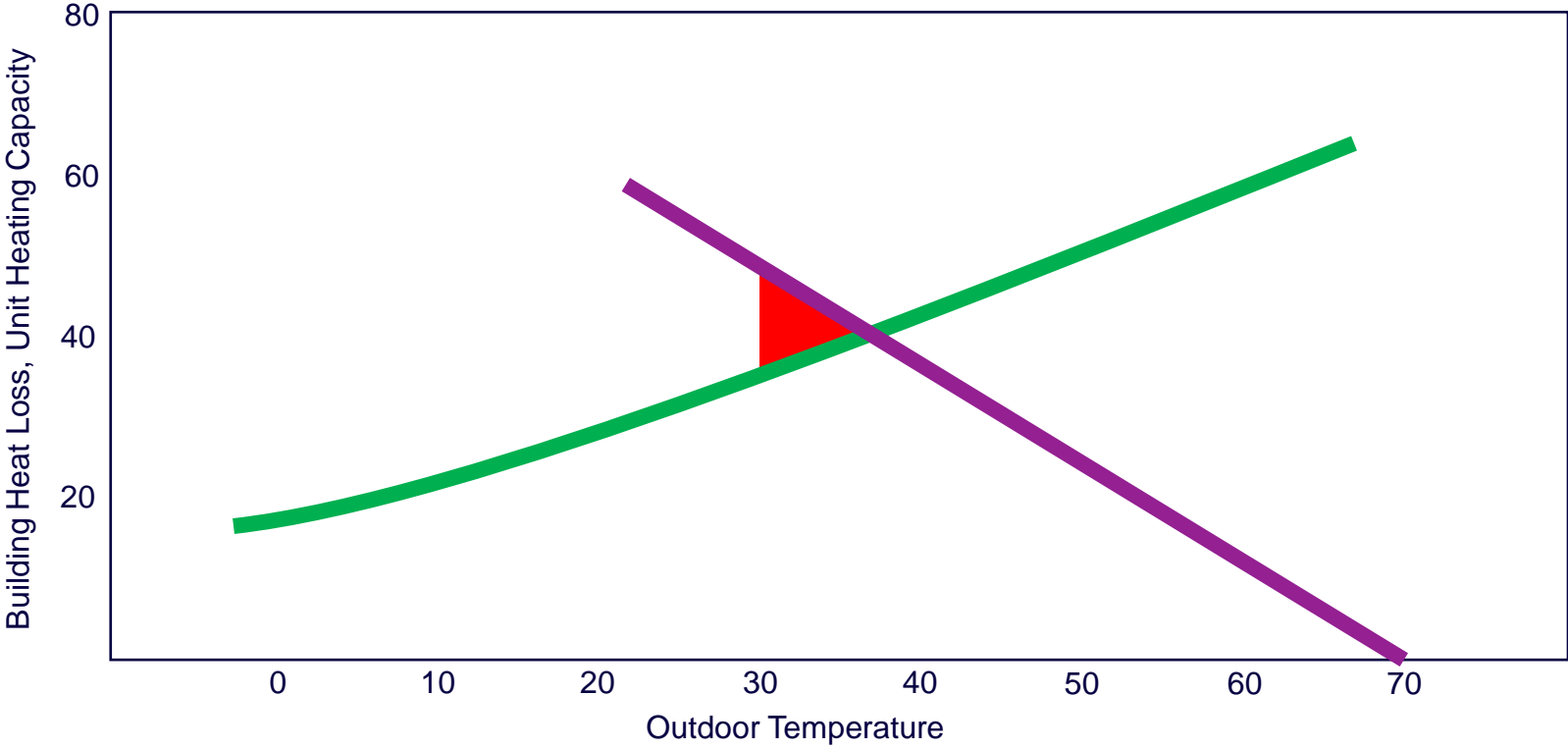
# What is Defrost?



# What is Electric Heat?



# What is Electric Heat?



**What are the  
Keys to Success?**



# What are the Keys to Homeowner Success?

- Understand that a heat pump is correctly sized while furnaces were oversized
- Just like in the summer, “Set it and forget it” in the winter
- Just like in the summer, don’t “Let the air out” on those coldest days
- Teach what will happen in defrost
- Teach the inefficiencies of electric heaters

# ABOUT US

Blue Mountain has been serving the heating, air conditioning, and indoor air quality needs of Northern California builders and residents for over 40 years. We have helped to keep tens of thousands of homeowners comfortable and have earned the trust of our community.

Your comfort is our top priority, and we are committed to delivering exceptional service with a smile. Contact us today to schedule an appointment for any inquiries. We look forward to helping you achieve the perfect temperature in your home.

## We can help you extend the life of your heating and cooling system.

Routine maintenance and service are essential for keeping your home's heating and cooling system running smoothly. Your furnace and AC are some of the most expensive products in your home and your comfort depends on them.

That is where The Club comes in. It is a renewable 12-month maintenance program designed to protect your heating and cooling system.



# CONTACT US



**(707) 451-8111**

After Hours  
**(800) 889-2085**



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**Blue Mountain**  
Heating and Air



# THE CLUB

MAINTENANCE PROGRAM

*Your Comfort is  
Our Passion*

**(707) 451-8111**  
**BlueMountainAir.net**



**Blue Mountain**  
Construction Services, Inc.

## WHAT'S INCLUDED?

- > 48 Hour Priority Service
- > \$49.95 Diagnostic Fee (Regular \$99)
- > Worry Free Scheduling (Service Appointment Reminders)
- > 15% Discount on Repairs
- > \$500 Off New System Install
- > 1 Year Parts and Labor Warranty
- > 10% Off On Indoor Air Quality Products
- > Attic/Crawl Space Efficiency and Safety Analysis
- > Priority Installation
- > Transferrable Plan

## ANNUAL MEMBERSHIP

**\$14.95**  
A MONTH



**\$179.40**  
A YEAR

Stay ahead of your HVAC system's maintenance service!

## AIR CONDITIONER 17-POINT INSPECTIONS

- > Check main system air filter(s)
- > Check thermostat for proper operation
- > Inspect the outdoor coil
- > Inspect the indoor coil, including metering valve
- > Inspect refrigerant lines
- > Inspect for visible refrigerant leaks
- > Inspect the condensate drain pan
- > Inspect the condensate drain line & p-trap
- > Inspect low voltage & line voltage at AC
- > Inspect the blower assembly
- > Verify suction & discharge pressure
- > Inspect unit components for wear (contactor, capacitor, time delay relay)
- > Verify temperature drop
- > Verify correct superheat or sub-cooling
- > Verify condenser fan motor amps
- > Inspect & verify blower speed
- > Cycle equipment to verify operation

## ERV/HRV SYSTEM INSPECTIONS

- > Remove & inspect core filter
- > Remove & inspect disposable filter
- > Clear debris from cabinet

**ORDER TODAY!**  
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## FURNACE 17-POINT INSPECTIONS

- > Check main system air filter(s)
- > Check thermostat for proper operation
- > Inspect wiring & control circuit
- > Inspect the blower assembly
- > Inspect pressure switch
- > Inspect Collector box
- > Visually inspect heat exchanger
- > Check/adjust fuel & air mixture
- > Check/adjust inlet & outlet gas pressures
- > Inspect flue and combustion air systems
- > Inspect condensate line & p-trap
- > Inspect gas valve in furnace
- > Inspect for gas leaks
- > Verify motor amp draw
- > Verify supply & return static pressures
- > Verify correct voltage to furnace
- > Cycle equipment to verify operation

## IS THE CLUB COST EFFECTIVE?

Yes. Definitely when compared to the costs of unexpected maintenance and repairs. In fact, the plan saves you money. Normal wear and tear alone are costly. Even if your climate control system requires only routine replacement parts and service. Review below the average repair costs that typically happen to the heating and cooling system.



	TYPICAL COST
Gas valve for furnace	\$250
Control board	\$220
Thermostat	\$190
Blower motor	\$380
Compressor	\$1,500
Condenser fan motor	\$280
Service call	\$130

