HVAC&POWER

Invest in your equipment!!

With Our Maintenance Agreements.

Why Should You Spend the money?

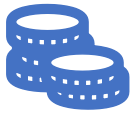
Prolongs equipment's life, regular maintenance is crucial to keeping your HVAC systems working efficiently and safely. Make sure to schedule preventive maintenance in time, so that you reduce the risk of an HVAC emergency and so your system will be well-prepared for the demands of the season.

Extra Benefits

Keeps your equipment running as efficiently as possible, saving you money on energy bills.

Optimization of cooling or heating performance

Cleaning of internal components that can affect your indoor air quality



Keep cost down!

Benchmark a System.

- We forget that an A/C system is more than a condenser and evaporator and that a host of subsystems is what makes it actually all work as a system. Each subsystem is critical to proper, safe, efficient operation, and if we start thinking of subsystems instead of trying to solve problems solely at the appliance, we will identify opportunity and address the root issue that often causes failure at the appliance itself. We need to test each subsystem to assure that primary components, the condenser, air handler, and coil work as engineered.
- What do we need to test and consider? Here is a list of things to consider below

- **Electrical System:** The system is tested to assure that the voltage is in the proper utilization range, meaning that there is sufficient voltage tot he appliance while it is under a load, that the compressor draws close the LRA when it starts (by measuring inrush current with a meter with inrush capability) to assure that the circuit is properly sized and does not have voltage drop that would cause a drop in current. The power factor is tested with a watt meter to be .96 or higher indicating that the current and voltage are in unity. This tests the capacitor health and the conductors for excessive voltage drops due to conductor size or loose connections. The electrical system should be periodically checked from the breaker through the disconnect to the contactor for loose connections and at least once for properly sized conductors, and proper fuses/breaker sizes for adequate system and wiring protection. Verify also that the system is grounded to protect against electrical strikes and to protect you from potential electrocution. *Issues with the electrical system can cause component failures, excessive electrical consumption, and issues like lights flickering when the A/C system starts.*

- **Air Distribution System:** Air distribution issues including leakage, sizing, and insulation are the primary causes of an inefficient A/C system. The air distribution system is tested for proper airflow, blower efficiency (fan watt draw), return duct leakage, supply leakage when possible, excessive heat gain, and excessive static pressures. *Issues with the air distribution system can cause poor cooling, poor IAQ, excessive run times, excessive amounts of noise, premature blower failure, humidity control issues, and dust recirculation problems.*

- **Air Filtration System:** The filtration system is tested for proper filter face velocity (correct amount of filter area for the airflow) Filter face velocity should be between 250-500 FPM. Excessive filter face velocity is due to undersized filters. Static pressure drop across the filter should also be measured and typically it should not be over 20% of the rated TESP. High static pressure drop across the filter is also an indication of an undersized filter. The filter should be taped around the edges when installed in a filter grille with painters tape to stop air from bypassing the filter allowing dirt to accumulate on the coil and in the condensate lines. *These faults will result in poor air quality (IAQ), noise, high duct static pressures, poor airflow, high fan watt draw, poor cooling and excessive power consumption.*

- **Condensate Drain System:** Condensate is the moisture removed during dehumidification. This system includes the primary drain, secondary drain, auxiliary drain pan, and or safety switches to shut down the system if proper drainage does not occur. It also includes a water trap that can keep air from entering the system through the drain eliminating the possibility for sewer, gas bugs and unconditioned air to enter the air handler compromising the indoor air quality. *This moisture must be carried away from the system so it does not cause property damage and so it is not reevaporated into the airstream*

- ***Refrigerant System:*** *Is tested to assure the proper levels in the evaporator (superheat) and the condenser (subcooling) as well as for non-condensibles or cross contamination. A refrigerant overcharge or undercharge will cause issues with cooling capacity, relative humidity removal, energy consumption, and equipment life.*

- **Outdoor Equipment:** The physical condition of the equipment is visually verified for condenser fin damage, coil fouling from dirt, pollen, lint or cotton wood, rust, missing panel screws, excessive vibration, motor condition, proper condenser fan blade pitch and alignment, evidence of refrigerant leakage, and electrical component failure. Verify that the condenser clearances are correct, condenser discharge air is not recirculating, and the clothes dryer is not exhausting within 10' of the condenser. Verify the bottom drain holes are clear, and leaves and other debris have not built up in the bottom. Verify that insect and rodent egresses are closed off, and the electrical components are not worn.
- **Indoor Equipment:** The physical condition of the equipment is visually verified for evaporator fin damage, coil fouling from dirt, rust, missing panel screws, vibration, blower/motor condition, evidence of refrigerant leakage, and electrical component failure. Make sure that the TXV blub, if equipped, is properly strapped with metal straps and insulated form ambient air if outside the cabinet.
- **Cooling Capacity:** The cooling sensible capacity is verified to operate within 95% of the expected sensible cooling capacity for the current load conditions. *Lower sensible cooing capacity will cause excessive run times and electrical consumption. Total capacity will not tell the whole story and can often be lower than expected on a perfectly operating system. Remember, a portion of the cooling is dedicated to cooling the air (sensible) and a portion dedicated to removing moisture (humidity) as latent load. First there has to be latent load to remove, and second, if the latent load is excessive, it can drive up the saturation temperature of the coil actually increasing the dew point and decreasing the moisture removal.*
- **Cooling Electrical Efficiency:** The cooling efficiency is verified to test your relative current efficiency compared to the relative efficiency of properly installed modern cooling equipment. Depending on the climate zone it may not be in the best interest of the customer to squeeze extra years out of low efficiency equipment. New models can provide significant savings in hot climates, many times 100's if not approaching 1000's of dollars a year in places like the Sunbelt Region.
- Does taking a system approach take longer? Maybe, but not more time and money then a callback that will result from taking shortcuts. It always takes longer to do it twice then it does to do it once right. What system testing will do is add to your bottom line. You will find real problems and be able to provide real solutions that will benefit you, your company and your customer. Start thinking about the bigger picture and you simply will become a better technician or company.

PLAN OPTIONS

Plans	A	B
Yearly Investment	$200.00	$300.00
Monthly Investment	$16.66	$25.00
Additional System (at same location)	$100.00	$100.00
Heating and Cooling inspection	included	included
Combustion Testing.	$150.00	included
Filter Replacement up to 2".	included	included
Drain line cleaning with treatment	included	included
Indoor fan blower cleaning	$100.00	included
Rinse Condenser Coils(water)	included	included
Chemical Condenser Cleaning	$250.00	included
Evaporator Cleaning with treatment	$250.00	$150.00
Benchmark System(read below for more info)	included	included
Priority Scheduling	included	included
% off any additional parts repair.	5%	15%
No Over Time or Weekend Fees	included	included
Transferable to your new home(DMV area only)	included	included
We will call you to schedule when you are avalibale	included	included
5% off on new installs	included	included
Term Length in years	3	3

Sensi Perdict

24 Hour Monitoring

No monthly payment with one of the above plans for a year.

Only pay for equipment and installation.

24/7 Monitoring

- Add 24/7/365 monitoring to your system Monthly Agreements and save even more.
- How? Sensi Predict is a remote monitoring system that alerts you and us of HVAC issues and protects your comfort. Custom sensors collect and analyze never-before-seen HVAC data. That way, you can prevent breakdowns, extend the life of your system, and save time and money.
- How does it work? A trained HVAC technician installs 10 custom sensors on your HVAC equipment. The sensors collect data about your system's performance and send it to the Sensi Predict monitoring center. Our team of experts analyzes the data. Once they verify an issue, you and your contractor will both receive an alert. It includes a recommendation to fix the issue, so it doesn't become a problem. The 24/7/365 monitor is compiled into monthly reports detailing your system's performance. That includes the monthly diagnostic check, how long your system runs, cost per day, and open alerts. It's like having the smartest technician in your home, every month!


1
2
Sensi Predict™
performance summary
Main floor

Combustion Testing

- Combustion Testing is a careful test of the heat exchanger in your furnace to ensure it's working properly. In fact, it's the *only* test that will truly identify safe operation. While most companies perform a visual inspection, it will not uncover hairline cracks, which can lead to carbon monoxide leaks.
- Hairline cracks become a problem when the gas is burning, and the crack becomes larger in the heat exchanger. Carbon monoxide is an odorless, poisonous gas produced by the incomplete burning of carbon based fuels.
- All of our technicians are equipped with a combustion analyzer, the tool that's carefully inserted into the flue pipe of your gas heating appliance. Readings on the device will indicate whether there is proper combustion and that all levels are within safe limits. A well detail report will be emailed with pass or fail fults.
- This should be done once a year!