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The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Tips, tricks & ideas for a better home and yard, delivered to your inbox daily. A: Cooling with a heat pump is a very economical option. The U.S. Department of Energy rates these appliances as an energy-efficient alternative to furnaces and air conditioners for all climates. While these devices usually give up to 10 years of trouble-free performance, even the best heat pumps can go wrong occasionally. The good news is that a heat pump not working often needs a relatively straightforward DIY fix. That said, a heat pump not cooling properly happens for a variety of reasons. But before investigating the reasons why a heat pump needs to be fixed, check the breaker box. Maybe something tripped the circuit? That could mean an electrical fault. If it keeps happening, wed generally recommend talking to a professional. If its not a tripped circuit, its important to take a close look at each of the potential causes in order to know the best fix. To supplement our own experience and research, we contacted a number of HVAC specialists for their input. Photo: istockphoto.com How a heat pump works is by exchanging air. Many heat pumps can be both a heating and cooling system. In the summer, they blow cold air into the room. In winter, they can switch to blowing warm air inside. Either way, theres a lot of air moving around! That air is full of dust, hair, bugs, bits of leaf, or other yard debris. All of these things can damage the insides of a heat pump, so filters are used to trap them. If those filters are clogged, it will reduce efficiency of the heat pump. Justin Cornforth, CEO of Ace Plumbing in South Carolina, told us: The consequences of dirty filters might seem exaggerated, but they can be the cause of many problems with a heat pump. Clogged filters restrict airflow, and less heat is absorbed from the room. This is why your heat pump is not cooling properly. Braden Cook, senior director at HVAC manufacturer Carrier agrees: Blockages in the indoor blower can result in air becoming obstructed and weak or no airflow into your home. Fortunately, if this is the reason for a heat pump not working, Cook told us the fix is easy and inexpensive. Inspect and clean your air filters, or replace them if necessary. Your owners manual should have relevant information on how to manage the filters on your model. Another common reason that a heat pump stopped working is either that the thermostat has been set to the wrong temperature or that it has developed a fault. I have personal experience with this issue. During the summer, theres a tendency to turn down the thermostat as the weather gets hotter because you want more cold air. Then, maybe in the winter, it was switched over to warm air and was never switched back. In my case, I didnt notice I had the thermostat set higher than the actual temperature of the air in the room. So my heat pump stopped working because it thought it had already done its job. As soon as I reset the temperature, it started again. If you want cooling air, the thermostat should be set 1 or 2 degrees lower than the actual room air. That way the heat pump works to bring the temperature down. The first step then is to check that setting. Try dropping the thermostat a couple of degrees and see if the heat pump starts. If it doesnt start, then the device itself could be faulty or the cause could be another on this list. If you have a smart thermostat, it may give you error codes. Whether it does or not, its likely youll need to call your HVAC engineer. Photo: gettyimages.com Heat pump coils are a key part of the heat transfer system. Generally speaking, there are condenser coils on the outdoor unit that work when the pump is supplying heat, and evaporator coils on the unit (or units) inside that absorb warm air and exchange it for cold. Cook from Carrier says: Things like cottonwood [seeds] and other dirt and debris can build up on your outdoor coil and reduce its ability to transfer heat effectively. Usual signs are either a drop in performance so theres lower air flow indoors or ice forming on the coils outdoors. Experts recommend the coils are cleaned once every 6 months. We have comprehensive advice on a low-cost DIY solution in our article on air conditioners not cooling, but its a job that some homeowners find intimidating. A maintenance contract with your local HVAC specialist is worth considering. The compressor sits in the unit outside along with the condenser coil. Its job is to distribute the cooling refrigerant to the indoor unit (often called the air handler). If the compressor fails, theres no coolant flow. A drop in the amount of cold air flow is one indicator that the compressor is bad. It might cause a breaker to trip, or there might be excessive noise from the outdoor unit. (Although, sometimes this noise can be the heat pump fan not working properly because the bearings wear over time). Unfortunately, compressors can fail without much warning. Alongside the compressor is the reversing valve. It controls which way the refrigerant moves so its responsible for switching from supplying hot air to cool air. The heat pump will either be stuck on hot or stuck on cold if its not working properly. While its possible to diagnose a fault in the outdoor unit, a DIY repair is not practical. Its time to call in a professional. When using a heat pump for cooling, it works a lot like a refrigerator. Just like those appliances, a heat pump needs a refrigerant to be circulating through the system. According to Allen Chenault, owner of Florida-based ACs Heating & Air LLC: The most common issue we find when a heat pump isnt cooling is low refrigerant levels, often due to leaks. This compromises the heat pumps efficiency in transferring heat, resulting in inadequate cooling. So if its such a regular problem (and other professionals we contacted confirm this) you might be wondering why weve put it so far down the list? The reason is that sadly theres nothing you can do except call a HVAC expert. Diagnosing leaks and recharging the system is a specialist task. Although some retailers sell kits, local regulations often mean its actually illegal to attempt the job yourself. Photo: istockphoto.com Strictly speaking this isnt a case of the heat pump not cooling, but it probably feels like it. Sometimes the heat pump just isnt powerful enough for the area it is intended to cool. It might happen if you moved into a home where a previous owner had tried to cut costs. Its also possible that whoever specified the unit miscalculated. The key issue is the BTU (British Thermal Unit) output. The higher the figure, the larger the area that can be heated or cooled. As an example, a 10,000-BTU heat pump is good for areas of around 450 to 500 square feet. If that unit was installed in an area of 600 or 700 square feet, it would feel like it was underperforming, even if it was running at peak efficiency. Unfortunately, the only way to cool the space properly is to invest in a properly sized replacement. Our article on heat pump costs offers useful information. Its frustrating to find a heat pump not cooling properly, and it typically happens when its needed most. However, as we hope weve demonstrated in the article above, a fix will often be something that even inexperienced DIYers can tackle. It could be something as simple as dirty filters that can be cleaned quickly or replaced at modest expense. As always, prevention is better than cure. Reading the owners manual and carrying out regular maintenance should help you maximize both energy efficiency and comfort levels. Of course, if youre in any doubt, its always a good idea to call your local HVAC professional for help or advice. They have the skills and equipment to diagnose faults quickly, and they can get your heat pump running like it should again. Whether youre selling or staying, everyone can get something out of a kitchen update. Learn why we consider this renovation the Most Valuable Project of 2025 and how to stay on budget. Several issues might be causing your heat pump to run endlessly. Identifying the problem sooner rather than later is key to preventing an overworked heat pump from breaking down and incurring a higher HVAC maintenance cost.Youre Asking Too Much of Your ThermostatYes, the point of your HVAC system is to cool your home in the hot summers and keep it cozy and warm during those long winter nights.However, if you have your settings on the very high or very low end of the temperature spectrum, your heat pump will work overtime to achieve that goal and never shut off. Make sure to figure out the ideal heat pump temperature setting, and dont deviate too much.Your Air Filters Are DirtyClogged air filters are one of the most common causes (and one of the easiest to remedy) of a constantly running heat pump. If youve been procrastinating on changing those air filters every few months, chances are theyre inundated with dust, pollen, pet dander, and other debris theyve collected.A clogged filter restricts airflow, forcing your heat pump to work overtime to pull air into the system. Open the returns on your HVAC system, examine the filters, and replace them if theyre full of debris.Your AC Coils Are DirtyYour heat pump has two coils that create warm and cool air: an evaporator coil and a condenser coil. Over time, dirt and debris can build up on these coils, causing them to become less efficient. When this happens, your heat pump must work harder and run longer to cool and heat your home. Whether you clean those dirty coils yourself or hire an HVAC pro to do it for you, its best to do so once a year to keep your heat pump in working order.Refrigerant Is LeakingLeaking refrigerant is one of the most common causes of heat pump problems. Your heat pump uses this liquid chemical to cool and heat air. As your heat pumps refrigerant supply slowly dwindles, it will struggle to meet the setting on your thermostat, causing it to run longer.Other signs of leaking refrigerant include ice buildup on the evaporator coils, increased indoor humidity, and rising utility bills. If you think your heat pump is leaking, call a professional HVAC repair company to locate the leak and make the repair.The Compressor Needs ReplacingThis component controls how much power is delivered to your heat pump; when its broken, your heat pump may never shut off. Call a local HVAC professional to have the part looked at and possibly replaced.3. Heat Pump Wont CoolIf your heat pump wont cool your home, it may need a simple cleaning or may require new parts. Heres how to diagnose the potential causes for your heat pump not working.The Thermostat Isnt Communicating ProperlySensing a pattern? Check the thermostats settings and make sure it is set to cool with the temperature you want. If it is displaying the correct settings, it might not be communicating with the heat pump or is misreading the temperature in your home. A local heat pump or HVAC technician should be able to troubleshoot further.The Reversing Valve Is BrokenThe reversing valve is the component that either moves hot air from your home outside (when your heat pump is in cooling mode), or brings hot air inside (when in heating mode). If your heat pump is on and set to cool, but is blowing warm air, the reversing valve may need to be replaced.It Needs a CleaningOver time, the coils and the fan in your heat pump can get dirty, preventing it from emanating heat. You should be cleaning your coils, filters, and fans regularly (monthly for the filters, every eight to 12 weeks for the coils and fan). Regular maintenance for your heat pump should be scheduled at least once per year.The Refrigerant Is LowIf the refrigerant levels are low or if there is a leak, the heat pump wont be able to cool (or heat) your home properly. Leaks usually occur at connector points, and the best way to prevent them is by scheduling regular maintenance for your heat pump.4. Heat Pump Is Blowing Cold Air or Wont HeatHeat pumps are efficient tools for heating and cooling your home, offering an environmentally friendly alternative to traditional heating systems. However, when they malfunction, they can cause significant discomfort and frustration. Understanding the common reasons why heat pumps fail to perform optimally can help homeowners identify issues early and seek timely repairs. When your heat pump isnt working as expected, its essential to start with basic troubleshooting to identify the issue. Check your thermostat settings to ensure they are appropriate for the desired temperature. If the thermostat isnt functioning correctly, it may be sending incorrect signals to your heat pump. Things like power outages can lead to a system reset, so checking the power supply is crucial. A click here and there on the right website can lead you to a quick guide on troubleshooting common problems, saving time, and reducing repair costs. Inspect all visible wiring and connections for damage or looseness, as these can hinder performance. Lastly, ensure that the outdoor unit is not obstructed by debris or ice. Any blockage can affect airflow and efficiency, making the system work harder than necessary. A common reason for a heat pumps poor performance is dirty filters. Filters should be cleaned or replaced regularly, as they collect dust, pollen, and other pollutants that restrict airflow. This restriction often forces the system to work harder and may lead to overheating or other operational issues. Similarly, outdoor coils can become dirty as they are exposed to the elements. Dirt and debris accumulation on these coils can significantly reduce their efficiency, affecting how well your heat pump can either heat or cool the air in your home. Regular cleaning of both filters and coils can extend the lifespan of your heat pump and improve its efficiency. Refrigerant is the lifeblood of your heat pump, transferring heat between the indoor and outdoor units. If your system is low on refrigerant, it may indicate a leak or improper charging. Low refrigerant levels can lead to inefficient system operation, as the unit may struggle to reach desired temperatures. Running a heat pump with insufficient refrigerant can result in compressor damage over time. Regular checks and maintenance by a qualified technician can prevent this issue, ensuring that your system remains charged and operates smoothly throughout its lifespan. The thermostat controls the heat pumps operation, telling it when to heat or cool the air. If the thermostat is faulty or incorrectly calibrated, it can lead to improper heating and cooling cycles. This may manifest as inconsistent temperatures or the system running continuously without achieving the desired comfort level. In some cases, a simple recalibration or replacement of the thermostat can resolve these issues. Modern smart thermostats offer advanced features, such as scheduling and adaptive learning, which can enhance system efficiency and user comfort. Like all appliances, heat pumps have a lifespan. Aging components can lead to reduced efficiency and eventual failure. As units age, wear and tear may affect parts such as the compressor, reversing valve, and outdoor coil, leading to increased energy costs and decreased comfort. Periodic inspections by a qualified technician can catch potential issues before they escalate. Replacing aging components at the right time can delay the need for a complete system replacement, saving expense and allowing for a more gradual upgrade. A heat pump must be properly sized for the space it serves to operate efficiently. Units that are too small will struggle to maintain desired temperatures, while oversized units may cycle on and off too frequently, wasting energy and causing discomfort. Its essential to consult professionals when installing a new heat pump or upgrading an existing system. They can perform calculations based on your homes size, insulation, and other factors to recommend the right system size for optimal performance. Regular maintenance is crucial for any heating and cooling system, including heat pumps. Neglecting this maintenance can lead to minor issues snowballing into major problems. Routine checks should include cleaning or replacing filters, inspecting electrical components, and ensuring the outdoor unit is functioning efficiently. A well-maintained heat pump not only operates better but also lasts longer. Engaging professional services for routine maintenance can provide peace of mind and avoid unexpected expensive repairs down the line. Finally, the installation process is critical to the long-term performance of your heat pump. Poor installation practices can lead to various issues, including airflow problems, refrigerant leaks, and electrical malfunctions. Its vital to hire licensed professionals who have experience installing heat pumps to avoid these pitfalls. Take the time to research installers, checking their qualifications and reviews. Proper installation ensures that your heat pump operates efficiently from day one, reducing the likelihood of early failures and costly repairs. In addressing these common issues, homeowners are better prepared to manage their heat pumps effectively. By understanding the signs of malfunction and implementing a plan for regular maintenance, your heat pump can serve you well for many years.Enjoy sharper detail, more accurate color, lifelike lighting, believable backgrounds, and more with our new model update. Your generated images will be more polished thanever.See What's NewExplore how consumers want to see climate stories told today, and what that means for yourvisuals.Download Our Latest VisualGPS ReportData-backed trends. Generative AI demos. Answers to your usage rights questions. Our original video podcast covers it allnow ondemand.Watch NowEnjoy sharper detail, more accurate color, lifelike lighting, believable backgrounds, and more with our new model update. Your generated images will be more polished thanever.See What's NewExplore how consumers want to see climate stories told today, and what that means for yourvisuals.Download Our Latest VisualGPS ReportData-backed trends. Generative AI demos. 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While some problems can be addressed with DIY fixes, others require professional assistance.Before diving into troubleshooting, it's essential to understand how your heat pump works. A heat pump transfers heat from one place to another, warming your home in winter or cooling it in summer. It comprises two main components: an indoor unit and an outdoor unit.1. Insufficient Heating or CoolingCause:Dirty air filters, blocked airflow, refrigerant leaks, or a faulty compressor.Check air filters:Regularly inspect and replace dirty air filters.Clear airflow:Ensure nothing is obstructing the outdoor unit and that it has at least 300mm clearance in front and 150mm from the wall behindRefrigerant leak:Listen for any high pressure sound and look for greasy or oily-looking stains around the flare nuts. Contact a professional to detect the location and repair leaks.Compressor issues:Professional diagnosis and repair are necessary.Cause:Loose components, worn-out fan blades, or refrigerant issues.Identify the noise:Determine the source of the noise (indoor or outdoor unit). Look for any rustLoose components:Generally ok to tighten any loose parts carefully but do not overtighten critical parts such as flare nuts. If unsure, contact a service Technician.Worn-out fan blades:Contact a technician for replacement.Refrigerant issues:Contact a service professional - make sure he has an Approved Gas Handling license3. Frozen Evaporator CoilCause:Insufficient airflow, low refrigerant levels, or a clogged drain line.Check airflow:Ensure proper ventilation around the indoor unit.Refrigerant levels:Contact a professional for a refrigerant check.Clogged drain line:Clear the drain line to prevent water build-up or contact a professional if unsure how to do this.Cause:Dirty filters, thermostat issues, or refrigerant problems.Replace air filters:Ensure clean air filters for optimal performance.Check thermostat settings:Verify correct temperature settings and calibration.Refrigerant leak:Professional inspection and repair are necessary.5. Cool or lukewarm Air During Heating ModeCause:Low refrigerant levels, faulty defrost cycle, or blocked airflow.Refrigerant check:Contact a professional for a refrigerant evaluation.Defrost cycle issues:Professional diagnosis and repair is required.Clear airflow:Remove any obstructions around the outdoor unit.Cause:Specific issues with the heat pump system can be identified by flashing lights on the indoor unit.Solution:As each brand usually has different error codes, refer to your heat pump's user manual for troubleshooting or contact a technician.1. Corrosion and Salt DamageCause: New Zealand's coastal locations and Rotoruas sulphurous environment expose heat pumps to salty air, leading to corrosion.Regular cleaning: Wash down the outdoor unit with fresh water to remove residue.Protective coating: Consider applying a corrosion-resistant coating to the outdoor unit.Professional inspection: Schedule regular inspections to check for signs of corrosion.2. Moisture-Related IssuesCause: New Zealand's humid climate can lead to condensation and mould growth within the heat pump.Proper ventilation: Ensure adequate ventilation around the indoor unit.Regular cleaning: Clean the indoor unit and drain pan to prevent mould and mildew.Dehumidification: Consider using a dehumidifier in very damp areas as the heat pump alone may not be able to manage to dehumidify the area by itself.Cause: This is a normal but annoying function which happens when the outdoor temperature and moisture level causes ice to form and the unit to turn itself off temporarily while it defrosts the ice.Defrost cycle: The heat pump's defrost cycle should handle light frost.Manual defrost: For a heavy frost, manually defrost the outdoor unit by switching to cooling mode for a short period.4. Underperformance in Extreme WeatherCause: Heat pumps generally decrease in performance, the colder the ambient temperature is.Regular maintenance: Ensure the heat pump is in optimal condition to handle weather extremes with correct gas pressure levels.Supplemental heating: Consider using a backup heating source during severe cold snaps.5. Power Surges and Electrical IssuesCause: New Zealand's electrical grid can experience fluctuations, affecting heat pumps.Surge protector: Install a surge protector to protect the heat pump from power surges.Professional inspection: Regular electrical checks can identify potential issues.Heat Pump Sizing:Ensure your heat pump is correctly sized to fit your home's specific needs.Insulation:Proper insulation helps maintain indoor temperature and reduces heat pump workload.Maintenance Contracts: Consider a maintenance contract for regular inspections and servicing.Government Incentives: Research available government incentives or rebates for heat pump installation or upgrades.By understanding the specific challenges posed by New Zealand's climate and taking appropriate measures, you can optimise your heat pump's performance and extend its lifespan.While some issues can be addressed with DIY solutions, it's essential to call a professional HVAC technician for more complicated areas as a sloppy repair may cause more damage. Some examples of when to call a professional in are:Refrigerant leaksComplex electrical or mechanical problemsPersistent issues despite troubleshootingRegular maintenance and inspectionsBy understanding common heat pump problems and taking proactive steps, you can enjoy optimal performance and efficiency from your heating and cooling system. Regular maintenance, prompt attention to issues, and professional assistance when needed will help prolong the life of your heat pump and ensure your comfort throughout the year. If you need help with maintaining your heat pump or you need heat pump servicing, call us at 0800-ONEAIR (663247). Key Takeaways Dirty filters, clogged coils, and incorrect thermostat settings are behind most common heat pump issues. Correct sizing and setup matter; an improperly sized or poorly installed unit cant heat or cool efficiently. Issues like refrigerant leaks and electrical failure need professional help. Heat pumps are becoming an increasingly popular alternative to conventional heating appliances because they can heat and cool efficiently, resulting in low energy usage. For instance, an air-source heat pump, which transfers heat between the air outside your home and the air inside, can provide 1.5 to 3 times more heat energy to a home than the electrical energy it consumes. In addition, their energy and cost efficiency make them a desirable purchase for homeowners. While heat pumps are efficient and convenient, they are subject to wear and tear like any other machine. If youre wondering how to troubleshoot a heat pump, dont worry. This article contains helpful tips that will get your unit up and running quickly. What Is a Heat Pump and How Does It Work?First, it is important to understand how a heat pump works to learn how to troubleshoot it. All heat pumps work on the same basic principle. Rather than burning fuel to create heat, they simply move heat from one place to another. There are two main types of heat pumps: Air-Source Heat Pumps Air-source heat pumps transfer heat between the air outside your home and the air inside. There are two further types: ducted vs. ductless air-source heat pumps. Ductless heat pumps are minimally invasive. Only a tiny hole in the wall is required to connect the indoor and outdoor units. Usually, there is one unit for each room. On the other hand, ducted heat pumps have one powerful central unit that heats or cools your entire home through ducts. Ground-source heat pumps, also known as geothermal systems, extract heat from the ground and transfer it indoors. Both air-source and ground-source heat pumps work on the same basic principle. In heating mode, a heat pump absorbs heat energy from the outside air and transfers it to the inside air. In cooling mode, a heat pump functions similarly to an air conditioner. It absorbs heat from the indoor unit and releases it through the outdoor unit.11 Common Heat Pump Problems Heat Pump TroubleshootingWith time, you might see a decrease in your heat pumps efficiency or working. Diagnosing heat pump problems can be challenging since they could be caused by plenty of reasons. Here are the 11 most common issues and some residential heat pump troubleshooting tips. Are you tired of sky-high energy bills and want to reduce your AC costs? If your heat pump is constantly running at full blast, it may be a significant factor behind high energy costs. Your heat pump may be constantly running for a few reasons. Fortunately, most of them are easily fixable. Incorrect Thermostat Settings If you set your thermostat at a temperature that is either too high or too low, your heat pump would have to run constantly to maintain the set temperature. In summer, the ideal thermostat setting is 78F to stay cool while avoiding high electricity bills. Set your thermostat to 78F for a few hours. Then, if you feel uncomfortable, decrease the temperature by a couple of degrees until you find the most comfortable temperature. In winter, set your thermostat anywhere between 68F to 72F. If you are having trouble adjusting to this temperature, add extra layers of clothing. Thats not enough, either. Set the temperature a few degrees higher and lower it to 72F gradually. If you are comfortable at 72F, try lowering the temperature a few degrees further. Another reason could be that your thermostat needs to be correctly calibrated. Heres a handy guide on how to calibrate your thermostat. Tip: Manually changing the thermostat settings now and then can get on your nerves. Invest in a smart thermostat to automate your home climate and easily make all the adjustments using the app.For a heat pump to run efficiently, it needs a steady supply of fresh, clean air. If your heat pump air filters are dirty and clogged, less air will pass through, and as a result, your heat pump will need to run constantly to maintain your set temperature. Replacing or cleaning the air filters will solve this problem. On average, you should clean your air filters every two weeks and replace them every three to four months. A visual inspection is more than enough to determine if your air filters are dirty. Hold them up against a light source, and if you can see through them unobstructed, you are good to go. If not, you can wash your air filters with soapy water and let them air dry before putting them back. Read our detailed guide on cleaning an air conditioner. Broken Compressor Contactor A contactor is a small device that controls the flow of electricity to your heat pumps components. If your compressor contactor breaks, your heat pump could run constantly. Youll need a professional to diagnose whether you have a broken compressor contactor and if you need to replace it or not.If you havent had your heat pump serviced for a while, there may be grime on the coils, which prevents them from working correctly. Also, since heat transfer occurs through the coils, they cannot function properly if dust, ice, or dirt are on them. Therefore, on average, you should clean your AC coils every two months.A refrigerant leak also forces your heat pump to run constantly. A refrigerant is a liquid inside the coils through which heat transfer occurs between the indoor and outdoor air. If the refrigerant charge is low, adequate heat transfer cannot happen. As a result, your heat pumps heating or cooling capacity decreases, so the heat pump must constantly run to maintain the temperature. If you suspect a refrigerant leak, contact an HVAC professional to diagnose the leak and fix it. You should never attempt to recharge the refrigerant or fix a refrigerant leak yourself. Incorrectly Sized Heat Pump If you have eliminated all other possibilities and your heat pump is still running constantly, it may be due to the wrong size. For example, if your heat pump is too small for your living space, it will have to run constantly to maintain the set temperature. Check our air conditioner sizing guide to see whether your unit is compatible with your homes needs.If you discover that your AC simply wont turn on or has stopped running, there are a few easy heat pump troubleshooting steps you can follow. However, in some cases, you will have to contact a professional to diagnose the problem. Here are some of the most common reasons your heat pump wont turn on: A thermostat tells your heat pump what temperature to maintain. If it loses power for some reason, it cannot communicate with the heat pump about what to do, and your heat pump will not turn on. If your thermostat screen is blank, it indicates that it does not have power. Replace the batteries or, for hardwired units, check your homes electrical panel. The circuit breaker may have tripped, or you may have a blown fuse. You can identify a blown fuse and replace it yourself. However, make sure that you disconnect the electrical power before removing the fuse. Related: Thermostat Not Working Properly? 14 Easy FixesYour heat pumps indoor and outdoor units have separate power switches. First, check the power switch on or near the indoor unit and confirm it is set to ON. Next, check the power switch on or near the outdoor unit and see if it is set to ON. Finally, check your homes electrical panel and see if you have a tripped circuit breaker or a blown fuse. If you have a ducted heat pump, check if all the registers are open and unobstructed. If you have obstructed the registers by any furniture or if they are clogged with dirt, it may feel as if your heat pump is not running because you are not receiving any air.If your air filters are filthy and clogged, your unit needs to receive more fresh air. As a result, your heat pump has to work overtime to maintain your desired temperature. The increased load can cause it to overheat and shut down. Remove your air filters and hold them up against a light source. If you can see through them unobstructed, your air filters are clean. If not, wash your air filters with soapy water and let them air dry.The starter capacitor delivers power to the motor driving the heat pump, providing a burst of energy to turn on the unit. If your starter capacitor breaks, your heat pump wont turn on. If you detect a faint clicking noise coming from your heat pump when you try to turn it on, that is a sign that your starter capacitor is faulty. You should never attempt to replace a starter capacitor on your own. Even with the power disconnected, it holds a lot of electric charges and can electrocute you.The reversing valve allows your heat pump to cool and heat your home. If your reversing valve is faulty, your heat pump may turn on in heating mode but not cooling mode and vice versa. If your heat pump only turns on for one of the modes, contact an HVAC professional to look at the reversing valve.In winter, a light layer of ice can cover your outdoor unit. Consequently, your heat pump has to go into defrost mode to remove that layer of ice. However, a thick layer of ice impedes heat transfer between the outside coil and outside air. As a result, your heat pump is unable to heat your house properly. If the ice is left on the external unit for too long, it could permanently damage your heat pump. Related: Air Conditioner Freezing Up? Explore the Causes of AC Freezing and What You Can DoIf piles of snow accumulate around your outdoor unit in winter, it can prevent the ice from melting. Unfortunately, the reduced airflow can cause even more ice buildup. Regularly clean snow from the area around the outdoor unit. To defrost the ice, never chip it away with a sharp tool. You can easily damage the coils. Instead, spray water from a hose to gradually melt the ice.In your outdoor unit, the fan blows air over the coil with refrigerant in it, which is essential to the heat transfer process required for heating or cooling your house. If your outdoor fan is defective, there is little to no airflow, which can cause your outdoor unit to freeze over. In this case, contact a professional to look at your outdoor fan motor.Since refrigerant plays an important role in heat transfer, there can no longer be adequate heat transfer if there is a refrigerant leak. Eventually, your heat pump will not produce enough heat to melt the ice on the outside unit. If you suspect a refrigerant leak, never attempt to fix it yourself. Instead, always leave it to a professional.In winter, your heat pump periodically switches to air conditioning mode to defrost the ice on the outside unit. Air conditioning mode heats the outdoor unit so that any frost or ice melts. If the unit is not defrosting, ice can build up quickly. The reversing valve is responsible for switching the heat pump from heat mode to air conditioning mode. If the reversing valve breaks, the unit does not defrost. Therefore, you should contact a seasoned HVAC professional to take a look at the reversing valve. Your unit could also have a malfunctioning defrost timer. The defrost mode on your heat pump is designed to turn on periodically. If your defrost timer is defective, your unit is not defrosting as frequently as it should, resulting in ice buildup. An HVAC professional can determine whether the defrost timer is working correctly.Dirty air filters impede airflow. If there isnt enough air circulating the coils, they become too cold and freeze. Once the coils freeze, they cannot heat or cool properly, causing a layer of ice to build upon the outside unit.If you have filthy coils with grease or grime on them, effective heat transfer between the coils and the outside air cannot occur. When the coils cannot lose heat to the air, the refrigerant inside them becomes too cold, leading to a layer of ice forming on the coils. As a result, your heat pump can neither heat nor cool properly. It also leads to it not being able to defrost the outside unit efficiently. Thus, the icing upon the external unit worsens.If water constantly drips on your outdoor unit in winter, it can freeze and form a layer of ice. First, defrost the outside unit by turning on the defrost mode or spraying water from a hose. Then, locate the water source, such as a leaking gutter, and fix it.An air handler works in conjunction with your heat pump to distribute air inside your home. If your outdoor unit is running, but you dont feel any air coming from the registers, your indoor air handler may not be running. Heres why this is happening:Your indoor and outdoor units have separate electrical connections. Check the circuit breaker for your indoor unit and see if it has tripped. Also, keep an eye out for any blown fuses. If your air conditioners circuit breaker keeps tripping, then check this article for ten possible causes.You could also have loose or frayed wires that are preventing power from reaching the indoor air handler.The worst-case scenario is that you have a blown blower motor. The blower motor is responsible for circulating air throughout your house. A blown blower motor means the heat pump cannot distribute air throughout your home. Unfortunately, you cannot replace a blown blower motor on your own. Instead, you must contact an HVAC professional to do the job for you. Most people expect their homes to be cozy in winter. Thats likely why you installed a heat pump in the first place. So, it can be uncomfortable, to say the least, if your heat pump stops heating. Here are some reasons your heat pump is not heating and what you can do to fix it: Incorrect Thermostat Settings Double-check if youve set your thermostat to cooling mode. If that is not the case, check if your fan is running continuously. If your fan is running continuously, the system is not actively heating. After that, set the system to heat mode and the fan to auto. Incorrectly Calibrated Thermostat Your thermostat could simply be reading the wrong temperature, leading to issues with heating. Firstly, have a look at your thermostats manual to see if there are any instructions on recalibrating it. If not, you can have it replaced or recalibrated by a professional.If your air filters havent been cleaned or replaced for a long time, dirt or debris could have clogged them. In case they are clogged, your unit does not receive adequate airflow, which causes it to stop heating. Simply wash your filters with soapy water or replace them to fix this problem.If there is a refrigerant leak, adequate heat transfer cannot happen, and your heat pump cannot warm your home.Since your heat pump operates through heat transfer, it cannot pull air from the outside to heat your home if snow or debris has blocked the outside unit. Go outside and clean any debris around your outdoor unit.For a central heat pump, if you have sky-high energy bills but less usage to justify it, you could have a duct leak. You can check any exposed ductwork for leaks by holding your hand over connection points. Unfortunately, most of your ductwork is hidden, so you will have to contact an HVAC professional to diagnose any leak deep inside. Has your heat pump failed in the middle of a heatwave? Dont panic! Instead, read these possible reasons why your unit is not cooling in summer, along with what to do.Ensure youve set your thermostat to cool mode. If the settings are fine, you could have an incorrectly calibrated thermostat.If your heat pump works in heating mode but not cooling mode, you could have a faulty reversing valve. Unfortunately, the reversing valve can only be repaired or replaced by a professional.If your refrigerant levels are too low, your heat pump wont cool or heat effectively. Contact a professional to detect any leak and fix it. Be mindful that your HVAC technician does not just top up the refrigerant without fixing the leak.Dirty air filters block airflow to your heat pump, preventing it from drawing enough air from the inside to cool effectively. Regularly clean and replace your air filters.If your outdoor unit is covered in debris or blocked by branches or foliage, it cannot effectively expel hot air outside. As a result, its cooling ability decreases. Regularly clean the area around your outdoor unit to prevent blockage.If your coils are dirty, heat transfer between the refrigerant in them and the air cannot occur. Check for dirt or frost on your coils. Then, clean your heat pump coils. If you see any ice buildup on the coils, allow it to melt. Never try to physically remove the ice, as you can damage the delicate coil fins.If your heat pump is too small, it wont be able to cool your entire house effectively. A certified HVAC technician can perform a sizing assessment to determine whether your heat pump is the correct size.If youre having trouble switching from heat mode to cool mode and vice versa, the reversing valve might be the issue.The reversing valve is responsible for switching the heat pump from one mode to another. It reverses the refrigerant flow and allows your heat pump to both heat and cool your home. If your heat pump does not switch from one mode to the other or works fine in one mode but not the other, there is a problem with the reversing valve. Contact an HVAC professional to inspect your reversing valve and fix any issues.Short cycling is when your heat pump repeatedly turns off soon after it turns on. Short cycling has several causes:If your unit is too large for your home, it will cool or heat your house too quickly. Once it achieves the desired temperature, it will shut down. Contact an HVAC technician to perform load calculations to check whether your heat pump is appropriate for your house.If you have dirty air filters, they can restrict airflow and cause your system to overheat. As a defensive mechanism, your heat pump shuts down.If there is a refrigerant leak, your heat pump may not have enough refrigerant to complete an entire cycle. Only an HVAC professional can diagnose and fix a refrigerant leak. Incorrectly Calibrated Thermostat If your thermostat generates an incorrect reading, your heat pump will have to keep turning on and off to achieve the desired temperature. First, ensure your thermostat is correctly calibrated. If not, you can recalibrate it or replace it. Another reason can be wrong thermostat placement. For example, if you have put it in direct sunlight, it will detect a higher temperature. As a result, your heat pump will shut down early even though it has not achieved the desired temperature. Similarly, if you place your thermostat near the ducts, the temperature it detects does not indicate the actual temperature inside your house. If you notice mold growing on the walls near your heat pump, there may be a leak. Never ignore a heat pump leaking liquid. Apart from causing decay, stagnant water inside your heat pump can also cause electrical damage. Here are some of the main reasons your AC could be leaking liquid:If your refrigerant leaks, ice can build up on the evaporator coils, hampering the efficiency of your heat pump. In addition, when you turn off your heat pump, this ice melts, causing it to leak water.When your heat pump is in cooling mode, it draws in humid air from your home to cool. This process results in condensation. The condensate travels to the condensate pan and is then drained through the drain line. If your condensate pan has any cracks, water can leak through it. Similarly, if your drain line is clogged, it can also lead to water overflowing. If you suspect your drain line is clogged, you can unclog it yourself or contact a professional.Your sense of smell is one of the best tools for determining whether anything is wrong and requires heat pump troubleshooting. Here are some of the main reasons your heat pump smells suspicious:If you smell a musty odor, chances are there is mold growing inside your heat pump or on the surrounding walls. Mold in air ducts can also adversely affect your health, so if you suspect mold, turn off the heat pump so no mold spores can circulate inside your home. You can clean the mold yourself if the extent of the problem is not too severe. If there is significant mold, you will either need to contact a professional for deep cleaning or replace the unit.If your heat pump smells like it is rotting, an animal may have crawled in and died. Firstly, remove the cover. See if you can remove the carcass yourself. If you are having difficulty, you can always contact an HVAC professional for help.If your heat pump smells burning, there may be a severe electrical issue on the inside, such as a damaged wire or failing motor. Never dismiss a burning smell. Turn off the circuit breaker immediately and contact an HVAC professional to find the cause of the smell. 11. Heat Pump Blowing Cold Air in Heat Mode Your heat pump may be blowing cold air due to several possible culprits, from clogged filters to incorrect thermostat settings. If heat pump maintenance is overlooked, it can affect its performance. This is why regular HVAC tune-ups are highly important. Clean your filters every two weeks and change them every three to four months. You should also clean the dust and debris on your coils every two months. Also, check the outdoor unit and remove any dust collected on it. Finally, the nearby vegetation should be trimmed as leaves can get stuck inside the system and damage the internal parts. Wrong Thermostat Settings You may have accidentally set your thermostat to cool mode or your fan to on instead of auto. If the fan is on, the heat pump will continuously blow out air, regardless of whether its heated or not. Check your thermostat and switch the settings to auto to fix this issue. Heat Pump Is in Defrost Mode In the defrost mode, your heat pump switches to cool mode and stops delivering hot air. Instead, it dissipates the heat outwards to help melt the ice on outdoor coils. This is a completely normal process in extreme cold, and there is nothing to worry about. Once the ice has thawed, the defrost cycle will stop, and your heat pump will start working as usual. Malfunctioning Reversing Valve The main function of a reversing valve is to reverse the flow of refrigerant in your heat pump, which means switching from cool to heat and vice versa. If the valve is damaged or has developed a problem, your heat pump may have trouble switching the mode. A heat pump is a versatile HVAC system with numerous advantages. However, like all electrical appliances, it is prone to occasional problems. With these handy heat pump troubleshooting tips, you are sure to be prepared whenever you run into any issues with your unit and keep your home comfortable all year long. Common causes of a heat pump that wont start include:Tripped circuit breaker or blown fuseThermostat set incorrectlyFaulty starter capacitorHow To TroubleshootCheck Power: Look for a tripped breaker or blown fuse in your homes electrical panel.Verify Thermostat Settings: Ensure its in the correct mode (heat or cool) and set it to the right temperature.Inspect Starter Capacitor: If the unit still doesnt start, the capacitor may be failing. This part should be tested or replaced by an HVAC professional.Heat P

always hire a professional if youre too squeamish to do this. You may also notice a smoky or fishy smell coming from any part of your heat pump system; it could mean the motor is overheating or the wires are clogged. Either way, the best thing to do is turn off the heat pump via its switch on the circuit breaker and call a technician to look inside it. Leaving it running can cause serious damage to the unit and could even cause a fire. If you notice an odour like a dirty sock coming from your heat pump, it could be due to bacteria build-up in the heat pumps drain pan. Much like in a household fridge, this common problem can be resolved by scheduling routine maintenance and cleaning to make sure there are no clogs in the drainage system. A heat pump is a machine with moving parts, so noises such as clicks, taps, humming, etc., are perfectly normal. However, some other noises could indicate you have a heat pump problem. If your heat pump is making strange noises or much more noise than usual, it could mean theres a loose piece of hardware, the motor has an issue, or the heat pump is working too hard. Heres what to look out for: Is the outdoor heat pump unit making a vibrating noise? This could mean a small piece of hardware is loose inside the unit or that its not properly screwed shut. Firstly, make sure the heat pump unit is screwed tightly shut. If the vibrating continues, something is loose inside, and a technician must fix it. If the heat pump makes a loud grinding, squealing, or shrieking sound, the motor or coils inside the unit wear out, or a faulty compressor is under high pressure. Grinding could also indicate dirty components or the need for lubrication. Under such circumstances, immediately turn off the heat pump via the circuit breaker and call a technician. Motor problems can be dangerous, so its best not to take risks. If the heat pump isnt making odd noises but is louder than usual, this means its working harder than it should be. This might be down to the weather, but it could also mean you have the wrong size heat pump for your home. If you think thats the case, call a professional to have the heat pump and your home assessed (again, just to stress, its a good idea to get the right size heat pump before you get it installed). Gurgles indicate low refrigerant levels, which can severely affect performance. Hissing typically indicates a large refrigerant leak and that the system will likely stop functioning soon. In either case, the heat pump will require urgent attention from a technician. If the system isnt running and makes humming or buzzing noises, this could indicate a stuck relay or contact, faulty capacitor, or motor issues. You should contact a technician. The final big heat pump problem you need to look out for is a serious one. Its normal for the outdoor unit of a heat pump to appear to leak slightly. This is caused by condensation building up inside the unit and dripping. However, if you have an air-to-air heat pump and notice a leak from an indoor unit or pipe, this could indicate a problem with the refrigerant or a clogged drain line. Low or leaking refrigerant can cause ice to build up deep inside an air-to-air heat pumps system. When the ice melts, itll cause a leak. If you notice this happening, get the heat pump checked by a professional. Air-to-air heat pumps have drain lines specifically designed to evacuate water caused by condensation. If the drain gets clogged by debris, water can build up and start leaking into other parts of the system. You can try to unclog the drain yourself, but its safer to have a technician examine the unit and save you from this particular heat pump problem. Heat pumps are great pieces of equipment, and using one to heat your home instead of a gas boiler will lower your carbon footprint. However, wed be lying if we said they had no faults; problems can occur with any machinery, including heat pumps. Luckily, youve read this article, so you know what to do if you have a heat pump problem. If you dont yet have a heat pump and would like to get one, we can help. Just fill in our short form with a few details, and well pass them on to professional heat pump installers. Theyll be in touch with quotes. Whilst you cant control if there is sun, rain or snow, there is one thing that you can do to maintain your indoor comfort during the upcoming season. Check for commonHeat Pump problems. In this article we look at 6 of the most common Heat Pump problems, how to check for them and what action needs to be taken to fix them. In some cases, these can be solved without the need of technical support and we explain to you how. CommonHeat Pump Problems that you can Check and Fix Yourself Check heat pump filters to see if they need cleaning. Perhaps the most common problem is one that impact the performance of yourheat pump in multiple ways, but it is also one of the simplest to check and take care of by yourself. Within the consequences that a dirty filter can cause are: Low airflow coming from theheat pump - The more dust and particles that the filter collects, the harder it is for air to pass through reducing the power of the airflow. Poor cooling when in use - This low airflow can lead to hot and cold spots in the room theheat pumpis being used in because the set air temperature is not able to reach all corners. Musty smell - The dust and other particles that settle on the filter can lead to unpleasant odors in the room that the heat pump operates in. Overheating heat pump - when a heat pump's filter becomes clogged, it must work harder to perform as desired and that can cause it to overheat. Higher energy bills - Because the filter has to work harder this has a direct effect on the energy that the heat pump uses, by up to 15%, according to the U.S. Department of Energy. Luckily, all of these can be prevented by checking and maintaining the cleanliness of your heat pumps filter. For example, with an Hitachi Cooling & Heating residential heat pump, it is easy to do and can help maintain the performance and reduce risk of increased energy consumption. 1. Make sure the heat pump is switched off 2. Hold both sides of the front panel and gently open it, allowing the panel to swing upwards 3. Locate the filters and remove them by pulling them towards you, out of the heat pump 4. Wash the filters using just room temperature water. Using any detergents might cause filter deterioration 5. Leave the filters to dry in a shaded place in the house. Exposure to the sun or excessive heat might cause them to shrink. Also, be sure that the filters are completely dry to avoid any issues with mold or mildew 6. Once dry, gently push the filters back into place, making sure the 'FRONT' mark is facing the front and close the front panel 7. Turn the power back on and yourheat pump is ready to be used again You can also find information about the best practices for cleaning your filter in the units Operational Manual.[NL10] Have the correct temperature settings been selected? Though this sounds relatively straight forward, using the incorrect temperature settings can lead to interrupted cooling and heating. This can happen when theheat pump mode has not been switched from heating to cooling (or vice versa) to match the change in temperature. If youve checked the temperature settings but the temperature still isnt as required, make sure that the thermostat isnt being exposed to direct sunlight. This can lead to exaggerated temperature readings and cause anheat pump to condition the space its being used in ineffectively. If during the changing of the season, you find that temperatures are fluctuating and theheat pump is switching on and off due to changing ambient conditions, opt for ventilation to keep the house cooler. TheHeat Pump Isn't Turning On Depending on your type of system you have at home and its installation, can you check your power supply? If the system doesnt show signs of activity and wont switch on, before calling for technical service, check the breaker box to see if the system has tripped. There are various reasons that a heat pump trips, including operational strain caused by dirty filters. When this happens, one of the first things you want to do check the breaker box and turn the switch to off and then back on again. It's worth considering if whether new electrical products have been installed since theheat pump was last in use and if this is putting a strain on the power being consumed in your home. If the problem persists then turn theheat pumpoff at the power supply and call technical services to come and inspect the unit before using it again. Poor air distribution throughout the space caused by furniture This is particularly true in the case of homes that have ductedheat pump systems and making sure that air vents (both return and supply) are open and are not being blocked by any furniture or items. Its worth investigating as Pacific Gas and Electric Company reported that blocked vents require up to 25% to distribute the air. Covering vents with large pieces of furniture (sofas, cupboards, rugs, drapes) means that the air in your home cant circulate effectively and air is getting trapped in the spaces between the vent and item and means that energy is being wasted. It is recommended that there are at least 10-inches between the vent and any large items to avoid any issues, this is also applicable to heat pumps, where tall items of furniture can have the same impact on the air flowing out of the unit. So, when moving furniture, remember to take the location of you air vents into consideration and check that there is no furniture in the way or that there is sufficient space to allow the air to circulate. These four common issues are simple enough to check yourself but do remember that if the solutions suggested above dont work or the problem posed is complex, contact the official technical service team, who will be able to solve yourheat pumpissues guaranteed. Issues that require a professional Among the common problems identified, these are the ones that preferably are attended to by a professional instead of attempting to diagnose and solve the problem yourself. Checking and cleaning the outdoor unit (ODU) For some, checking the outdoor unit can simply requires them to go their garden or driveway and double check that there is no plant matter or debris covering or blocking the unit. However, if you are living in an apartment or high-rise building, it is possible that your ODU is on a balcony, on the rooftop or even on wall brackets. In these cases, it is essential that you call a professional to come and check it out. One of the signs that your ODU needs cleaning is inadequate cooling inside the home. Just like indoor unit filters, ODUs can suffer from a buildup of dust, dirt and debris and this can impact the temperature that you want to achieve indoors. If your ODU is on ground level and accessible, this is something that you can investigate yourself and see just how dirty the system is. If the cause of the problem is indeed buildup around the units casing, then you can clean it yourself. But if your ODU is attached to the side of the building then it is time to call in the professionals and let them handle it. YourIndoor Unit is Leaking Water (IDU) This issue is generally a symptom of the drain pipeline becoming blocked with the dust and dirt that flows out of the IDU with the condensation during operation. This can lead to mold and fungus growing, and subsequently catch other particles passing through the pipeline. As this happens, the condensation cant drain and leads to droplets building up and falling from the IDU. This is generally easy to identify on wall mounted units as visible water droplets will gather on the casing. There are other ways to tell if the unit is leaking too. Not only does this cause water to leak from the heat pump, but it can lead to gasses and bad odors being released into your home, further impacting on comfort. A dirty filter could also be the culprit. Why? Because if the air cant pass through the unit effectively, this means that the evaporator coil isnt receiving warm air and it freezes. When any moisture in the air hits the evaporator coil, this also freezes, creating ice crystals within the unit, which later melts and can eventually leak out of the IDU. The latter problem can be avoided by adhering to decent filter maintenance (as mentioned above) but when your IDU is producing a leak, our recommendation is to contact our technical service team before attempting to fix it yourself. How Hitachi Cooling & Heating Can Help On our website, you can find the nearest technical service team via the Service Centers section. You can also send us an email via the Contact section, so that we can answer your questions. Our dedicated team and partners are on hand to guide through the steps that need to be taken to correct any issues. In these cases, Hitachi Cooling & Heating Air Conditioning Error Codes are helpful to diagnose the issue immediately and allow the technician to attend to the correct problem as swiftly as possible. To learn more about Hitachi Cooling & Heating Error Codes, click here. In this article, youll also meet our team of specialists called The Solvers, aimed at HVAC professionals, who explain how to solve a number error codes. Like any other heating, ventilation, and cooling (HVAC) appliances, heat pumps are prone to various problems you should be aware of for easy diagnosis, troubleshooting, unit maintenance, repairs, or whole-unit replacements. The unique characteristic of heat pumps the ability to cool and heat spaces from the same device, sets them up for frequent problems. As much as you enjoy heating, cooling, and dehumidification, be ready to address the occasional heat pump problem whenever necessary. This article will give you a detailed overview of common heat pump problems along with their causes, troubleshooting, diagnoses, and the solutions to get your heat pump running efficiently again. Heat pumps usually develop complications with repeated use. Fortunately, some of these are easy to troubleshoot and correct on your own. Some require the intervention of a qualified HVAC technician, which pushes maintenance and repair costs up further. Here are eight common heat pump problems you should be on the lookout for to ensure you use and maintain your unit accordingly for longevity even with regular use. IssueLikely MeansHeat Pump Not Turning OnPump may have power issues due to power outage, accidental switch-off, or tripped breakers.Heat Pump Not HeatingPump may be stuck in cooling mode, low on refrigerant, or has a broken reversing valve.Heat Pump Wont CoolPump may be stuck in heating mode, low on refrigerant, or has a broken reversing valve.Heat Pump Constantly RunsPump may be low on refrigerant or too is mismatched for space to heat or cool.Heat Pump Making Strange NoisesPump may have loose components, clogged air passages, bearing problems, high refrigerant pressure, or a faulty starting capacitor.Heat Pump Is Short CyclingPump may have clogged air filter, low on refrigerant, damaged compressor, or mismatched for the space.Heat Pump Smelling OddPump may have mildew or mold on evaporator coils or inside the air passages.Outdoor Unit is FrozenPump may be unable to defrost properly, low on refrigerant, or has excess ice on the outdoor unit. Sometimes a heat pump may fail to turn on at all when you need it for heating or cooling. It might seem like a small thing to happen, but it could simply mean that your unit has a small issue. Perhaps a bigger one. Like a total breakdown that necessitates whole system replacement. Power Loss: The very first thing to check if your heat pump wont start is whether or not it might be a power outage causing the problem. You can easily tell this by looking around the home for other everyday electrical appliances. If they are off, too, then its probably a power loss issue. Broken Power Supply: If you note that your home is still connected to power, the heat pump may be failing to start because of disconnection in its power supply line. Someone may have accidentally flipped off the mains socket switch.Photo credit: hvac.com You should also check the heat pumps two breakers to ensure that they are not tripped. If they are, flip them back on. The system should be on now. Another trip would mean an electrical fault, which an HVAC technician should repair. Thermostat Problem: The thermostat should always be set to the correct mode based on what you want the heat pump to do. You need to select the right temperature as well. There could also be miscommunication between the heat pump and the thermostat due to an electrical fault. Broken Starting Capacitor: If the capacitor that starts the motors is broken, the heat pump wont power on. Youll know if thats the case if you hear a low-volume clicking sound as the pump tries to start. Depending on what is causing the issue, the troubleshooting solution may be a simple DIY process or one requiring a professional HVAC contractor to help. Checking the homes power supply, reset the thermostat, and flipping switches and breakers back on can all be done easily. However, you should call in a technician for a deeper thermostat or broken capacitor issues. You may notice that your heat pump fails to heat your space when you want it to. It could be stuck in cooling mode even if the display indicates otherwise. Other times the system may be in the heating mode but still fail to heat as needed. Low Refrigerant Charge: Leaks may cause the refrigerant level to go so low that the heat pump fails to heat because there is very little of it for transferring the heat to the indoor space. Poor Airflow: Blocked filters cause poor airflow, which reduces the heating capability of a heat pump. Ensure the filter is clean and debris-free to improve airflow Check the system for possible refrigerant leakages and call a technician when you spot them Check the thermostat settings to confirm the pump is in the heating mode and is set to a temperature at least 3 degrees above the prevailing room temperature. A heat pump might fail to cool your indoor space when you want it to. When this happens, the indoor temperature remains high even if the pump is still operating. During the cooling failure period, the heat pump cannot take the heat from the indoor air in your home, business, or office to channel it outdoors. Broken Reverse Valve: The pump remains in the heating mode when the reverse valve breaks since it fails to reverse the refrigerants direction. Thermostat Issues: It could be bad temperature settings where you set it to operate at a temperature equivalent to or higher than that of the room. Other times there might be miscommunication between the pump and the thermostat. Low Refrigerant Charge: If your pump is low on the refrigerant, no cooling will occur. Or it could happen, but very little. Poor Airflow: The air circulation in the system may be faulty if components like air passages and the filter are dirty or clogged. Check the filter and clean it if its dirty. Reset the thermostat to cooling mode and set the temperature to about 3F below the current room temperature Check for refrigerant leaks and call a contractor to recharge. Sometimes a heat pump runs all the time and doesnt shut down. The phenomenon is quite common and could occur any time in winter or summer. Unless you force stop the pump or there is a power loss, the unit will remain running for a long time. A mismatch between pump heating capacity and the volume of the space in your home: If the pumps capacity does not match the amount of space in your home, the unit will have to stay on all the time to reach its goals. Clear ice and debris on the outdoor unit Check components like air filters for cleanliness or the need for replacements. Check your home for insulation loopholes like open windows and fix them Replace the heat pump if the one you have doesnt match the heating capacity with the amount of space you want to heat or cool. Typically, a heat pump will only produce a subtle humming sound when powering on or during operation. However, you may hear some strange noises like clanking, buzzing, whistling, squealing, or high-pitched screaming. Loose Internal Components: Any loose parts within the system will keep moving about and producing peculiar sounds when the heat pump is working. Clogged Air Routes: When too much dirt accumulates on the air passages and the filter, whistling sounds are produced as the air tries to flow through the narrow passages. Condenser Fan Bearing Problem: Squealing noises will be many in the outdoor unit when there is a bearing problem in the condenser fan.Photo credit: youtube.com Troublesome Starting Capacitor: If the starting capacitor is faulty, the heat pump keeps buzzing even after the start. High Refrigerant Pressure: Does your heat pump produce a high-pitched screaming sound? Its refrigerant might be under extremely high pressure, which could cause a total unit breakdown. Blower Motor Bearing Problem: Youll hear a squealing sound indoors if the blower motor has bearing issues. Compressor Failure: Both clunking and squealing can be heard at once if there is a compressor failure. It may be caused by a loose or worn-out pulley in a belt-driven unit. Check and replace or tighten loose and worn out components Lubricate the moving parts Call in an HVAC expert to check and lower the pressure of the refrigerant Ask a qualified technician to check the system and handle the issue of a broken capacitor Clean air passages Short cycling refers to a situation where an electrical appliance goes into a series of on-and-off sessions due to some malfunctioning. When a heat pump is short cycling, it has trouble heating or cooling and cannot maintain the temperature you set for it. The on-and-off habit can be a survival mechanism the heat pump uses to avoid overworking or a looming total crush. Photo credit: bettersoundproofing.com Clogged Air Filter: When the air filter has debris or dirt caked into it, the heat pump will struggle with proper or sufficient airflow, making it force itself into repeat on and off sessions as it tries to avoid overworking. Low Refrigerant Levels: Many heat pump problems arise from a system low on refrigerant. When the coolant level is too low, the system cant run sustainably and efficiently. The unit has to keep going on and off as it attempts to reach a healthy equilibrium. Bad Thermostat Settings: Setting the wrong temperatures for the heat pump means that it will keep going off and restarting as it tries not to overwork itself. You might have set a temperature that is too high for heating to be achieved. A faulty thermostat may also be the problem if the pump fails to reset to either heating or cooling after meeting its objective. For example, if the pump heats the space to the set temperature and doesnt readjust to cooling, miscommunication between it and the thermostat will cause it to keep shutting off to avoid overworking. Overheating Due to Airflow Issues: Electrical appliances that depend on airflow within them and have fans and coils are usually prone to overheating. As the device tries to protect itself or some crucial components from self-destruction, it tends to shut off completely or go into repeat on-and-off cycles. When it is broken, the refrigerant circulation will be affected, and the heat pump will keep shutting off and restarting as it struggles to heat or cool. Check the air passages and the filter for dirt and debris like hair, lint, or mold. Clean the affected parts to improve the airflow. Checking the thermostat to ensure it has the correct settings and is communicating fully with the heat pump. An HVAC expert can help you with checking for and correcting communication issues between the two. Ensure a technician checks your heat pumps refrigerant levels and recharges it if it is low. Remove the icing on the coils gently with gloved hands. Do not use force or sharp objects since the coils are delicate heat pump components. Re-evaluate the suitability of the heat pump about the size of the space you want it to heat or cool. Consider replacing it with a bigger one. Call in an HVAC contractor if you suspect the compressor is faulty. Although it is rare, sometimes heat pumps produce a bad odor and fill the home with an odd smell you cant withstand, especially if it is persistent. It could be the smell of rotten eggs. But most smelling heat pumps exhibit the dirty sock syndrome since they produce the odor of damp socks. Sometimes it could be a burning odor the kind that happens when an electrical device overheats or burns. Check the air passages and filter for dirt and clean them. Clean the moldy air filter and passages with a mold-killing solution for HVAC systems. A frozen outdoor unit is another common heat pump problem. It occurs any season but is more common in the winter when there is plenty of snow or ice, which causes the unit to cool down excessively and freeze. Excess Snow on the Unit: If too much snow collects on or around the unit, chances are high that it will cause the outdoor unit to freeze. Improper Defrosting: Heat pumps can defrost themselves. If this functionality is impaired, the system fails to clear all the icing, and the outdoor unit freezes. Impaired defrosting might be caused by a broken reversing valve or faulty controllers and sensors. Low RefrigerantRecharge: When the heat pump is low on refrigerant, the defrosting process and the pumps natural means of warming itself up fails, causing the outdoor unit prolonged exposure to cold and eventual freezing. Broken Outdoor Fan: The fan in the outdoor unit facilitates airflow over the coils to maintain a friendly working temperature within the unit.Check if the pump completes the defrosting cycle. If this doesnt happen, call in an HVAC professional to check and repair the system. Check the outdoor fan and replace it if it is broken. Call an HVAC expert to check the reversing valve, controllers, and sensors for impaired functionality. Use some water to melt the ice on the coils. Again, avoid removing it with pointed, hard, or sharp objects as the coils are fragile and prone to damage. Clear the snow around the outdoor unit during winter. Ensure no water leaks onto the unit from leaky gutters or unattended garden hoses. As noted earlier, you can either do troubleshooting or replacements of some parts or the entire heat pump. You might want to do basic troubleshooting and diagnosis in any (or a combination) of the situations highlighted below: When the unit is relatively new If there havent been any demanding repairs before If you have the proper basic understanding of HVAC systems and how a heat pump works If you still have the heat pumps manuals and can easily follow them to diagnose the unit Be sure to replace your heat pump when you are in any (or a combination) of the situations below. When the heat pump is too old or well past the average age of 10-15 years When the cost of maintenance and repairs exceeds the price of a similar new system When you want to upgrade from an inferior model to a finer one When the pumps problems are many and occur frequently If there are too many components that require frequent repair or replacement When you discover a mismatch between the pumps capacity and the size of your home, office, or other space where you use the unit. Despite their unique functionality for cooling, heating, and dehumidification using the same device, heat pumps are vulnerable to different problems that reduce their efficiency and necessitate regular repairs and part replacements or even changing the entire system. The good news is that you can easily diagnose and solve most heat pump problems with the help of the users manual or information from the Internet. However, some issues are complex to handle and always require the intervention of an expert HVAC contractor. Heat pumps are highly intriguing HVAC appliances because of their versatility. But as we noted earlier, its this same versatility that sets them on the path of developing different problems. Here are some frequently asked questions to help you understand heat pumps better. How Do You Know If You Have a Bad Heat Pump? If you notice any or most of the problems we have discussed here, you most likely have a bad heat pump. It could be a failure to cool, heat, or turn on. In other cases, the system may run constantly, produce strange noises, or keep going on and off frequently.The inefficient performance also indicates that you may be using a bad heat pump that requires routine maintenance, repair, or replacement.

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