

Proven ways to fix Prius air conditioning problems.

Modern Car users have a range of problems to contend with and how to sort Prius air conditioning problems is top among them. Given the need to maintain a suitable body condition while driving, the demand for AC fitted cars have been on the rise. Much of this is evidenced in the fact that car dealers are always keen to give details of the features of the Air condition systems of their cars in a bid to improve the chances of making a sale. However, since the use of a product doesn't translate to having a technical knowledge about the product, diagnosing and fixing air conditions often constitute a challenge to car owners.

Symptoms of car AC problems.

✓ Cold but not cool air

When the AC is turned on, the fan cranks up and the condenser cools the output of the compressor to bring the temperature in the car to its lowest. However, when the air doesn't feel cold enough, it is a warning sign of reversible damage to the AC cooling system. This problem could be due in part to a leaky refrigerant; Often limiting the maximum flow of cool air through the vents. It can also be caused by a damaged compressor thereby reducing the rate at which the refrigerant gets to the rest of the cooling system.

✓ Warm/hot air

This is majorly caused by a damaged condenser, compressor, and expansion valve. Primarily, a compressor forces hot air to the condenser, which in turn cools the air. Its cooling action converts the air to liquid and it is passed to the expansive valve which converts the liquid to gas again. The cool air is now passed to the accumulator at which point, moisture is removed from the air. These chain of events are needed for the final refrigerant to escape the vent as a cool air. However, discrepancies such as tube blockage, leaky refrigerant and aged components can impair the function of the condenser, usually resulting in the emission of hot refrigerant through the vents.

✓ Odd Noises arising from the compressor

The working condition of the compressor of any air condition is core to its functionality. As such, it is often the first point for diagnosing abnormal sounds in an AC. The compressor uses a sealed bearing to guide its movement and this bearing can wear out when it is poorly lubricated; oftenly producing a grinding sound of metal-to-metal. Other unusual sounds may be due to internal part breakage or an interruption by either the belt pulley or the compressor clutches.

✓ Oil leaks

The bearing of a compressor doesn't just dictate its orientation, it also help prevent oil leak while the compressor does it work. Oftentimes, oil spillage results from failure of the bearing to hold out lubricants. Oil spillage also derives from a weary and aging condenser. Since the condenser receives refrigerant at high pressure, fragile components of a condenser such as the seal can let out oil during operations.

Common Prius AC problems

✓ Failed compressor

To set the records straight, there can be no air condition system without a compressor, i.e, a compressor is the most important component of an air condition. Infact, a compressor is to an air condition as a heart is to a human. Therefore, a Prius AC compressor should be given utmost attention. However, the compressor in a Prius AC is so efficient that its failures are easily picked or noticed by an observant user. The major problem of a Prius AC compressor lies in its non usage, by which period, the oil in the bearing and seals settles and dry out, such that when it is turned on again, it is unable to deliver pressurized air to the condenser. Since a failed compressor can't build up pressure, this problem can be diagnosed by observing the pressure gauge meter of the compressor.

✓ Selective compressor oil

Another common problem of the Prius AC compressor is that it is highly selective when it comes to the use of compressor oil. A typical Prius compressor is equipped with a special compressor oil; a special ester with a delicate mixture of additives. This special ester offers maximum protection against the high voltage that passes through the compressor when the AC is turned on. As such, there is always a risk of being electrocuted when another universal oil is used.

✓ Leaks

Two types of leaks occur in a Prius air condition system; refrigerant leak and compressor oil leak. Refrigerant leak is the least noticeable since the gas leaking out of the compressor is colourless and odourless. This leakage may be due in part to a reduction in the efficiency of the seals and bearing. The outcome of such a leak may be a reduction in the amount of air coming out of the radiators. Moreover, damaged or aged body parts can also result in oil leakage.

✓ **overcharged air condition**

An overcharged Prius air condition presents more troubles than solutions. Oftentimes, the system gets overcharged when a naive user seeks alternatives to a moderately cool air by stocking the AC with more than enough refrigerant. When the Prius air condition gets overcharged, the compressor system is doomed to fail because of excess refrigerant in the compressor system. The net consequence of this is the overworking of the compressor; leading to the giving off of hot air. The excessive pressure that also builds up as a result of excess refrigerant could push liquid into the lubricant, Putting the compressor in harm's way.

✓ **blown fuse**

A typical AC is an electronically built closed circuit with a power source and various electrical components. In this rather complicated circuit, the fuse functions as a safety device to prevent overvoltage in the air condition system. Thus, when a sudden change occurs in a Prius AC, or any of the electrical components stops working, the fuse might have been blown. Every Prius AC fuse has an ampere rating above which the fuse would blow off, when it does happen, the whole system shuts down until the fuse is replaced.

✓ **clog in the expansion valve**

Like every other air conditioner, the expansion valve of a Prius AC helps convert liquid back to gas. At which point, the gas is passed to the accumulator for moisture removal. The valve also controls the amount of refrigerant delivered to the evaporator. However, when there is a clog in the expansion valve, hot air is delivered at a continuous rate; usually requiring the owner to shut down before the car cools down. Instead of receiving cool refrigerants from the condenser, hot air accumulates in the tubes, preventing the cooling of the gaseous air. Unless the entire system is completely discharged, the hot air will constitute blockage in the low side of the compressor, sabotaging any attempt to replace refrigerant.

Solutions of Prius car AC problems

✓ **Failed compressor**

The solution to a failed Prius compressor depends on the degree of damage or failure of the device. Repair or replacing its parts becomes an option when your budget is not flexible,

however, replacing the entire compressor system offers more value for money. Since obstruction and leaks are often the causes of a failed Prius compressor, the ideal method of repair should include complete evacuation of refrigerants and conducting leak checks. This would cost you about 80 to 90 dollars depending on your location.

✓ Leaks

There are two important steps to solving the problem of leakage in a Prius AC. First, is to identify the source of the leakage and second is to recharge the system with a suitable refrigerant. This is because a leak is most difficult to spot when there is no gas in circulation. Also, since the refrigerant is colourless and odourless, it is pertinent to use phosphorescent fluid, which will pass through the various tubes in the components. During this movement, a suitable lamp for spotting this coloured fluid can be used to highlight the leakages. Another effective way of detecting leakage is through the use of solid electrolyte semiconductor detectors such as Robinair detectors. Replacing refrigerant could cost between \$45 to \$85. However, if you factor the cost of equipment and manpower, leak repair could gulp as high as \$250 to \$450.

https://youtu.be/5ALnB47_0Jg.com/How-to-use-a-leak-detector/

✓ Overcharging

An overcharged prius AC means that there are more than enough freons (refrigerant) for the compressor to help circulate through to the other components of an air condition. Therefore, the simple solution is to discharge the system. However, since refrigerants are always harmful to the skin due to its too-low temperature, there are laws and regulations guiding the discharge of an air condition without necessary certifications. So, it is best to allow a professional mechanic to handle the discharging process.

✓ Blown fuse

A blown fuse is not repairable, i.e the damage cannot be reversed as it is a delicate and fragile device for regulating voltage in a car AC. However, they are easily replaceable since excess voltage through the AC components can affect the functionality of the entire system. Moreover, it is prudent to allow a professional mechanic to handle the replacement, so as to detect and assess other damages that the blown fuse might have caused.

✓ Clog in the expansion valve

A blocked valve constitutes a major challenge to Prius AC, often preventing the passage of refrigerant to the evaporator. This problem usually manifests through the release of warm air through the vents. The ideal solution is to replace the valve to guarantee maximum function of the AC. Replacement cost varies between \$190 to \$400. This includes the charge for labour and equipments.

How to fix overcharged AC in Car system

An overcharged AC can damage the compressor system and blow out warm air through the vents. The only solution in this case is to discharge the AC, i.e, remove excess refrigerant. The following are steps by which an AC can be discharged:

Step 1

Get a pressure gauge, a flat surface nail, and a rag. The pressure gauge is to determine the amount of refrigerant present in the system, and the rag serves as protective covering for your hands against frostbite.

Step 2

Turn on the car and press the AC max button. Connect the hose of the pressure gauge to the pressure valve of the condenser. Observe the scale and confirm that the Mark is on the red part of the scale.

Step 3

Wrap the rag around the nail, this is to prevent frostbite as the air gushing out is at a freezing temperature. Poke the opening of the valve to allow escape of air against the rag. Do this until there is a yellow stain on the rag; this confirms that compressed air has been eliminated and only fluid is left in the system.

<https://youtu.be/m8ba7Xq3CR8.com/how-to-discharge-an-overcharged-AC/>

Nevertheless, domestic discharge is strictly regulated by authorities because of the dangerous refrigerant. As such, AC discharge is better left for professional mechanics to handle. A special

machine is used by mechanics to gauge the pressure as well as creating a vacuum for sucking out excess refrigerant. This method is safer as the pulled refrigerant goes into a closed container. However, it's not as cheap as it seems because repair costs run into thousands of dollars.

Causes of AC problems in a car

✓ Damaged compressor

This is the most important aspect of a car AC system. It keeps the refrigerant in circulation and compresses it against the condenser for cooling. When a compressor is damaged, hot air could accumulate in the car even when the AC is turned on.

✓ Electrical problem

It takes more than the information in the user manual to be able to diagnose electrical problems. As such, the service of a technician is usually required to discern electrical problems in a car AC. Much of the electrical problems arise from a blown fuse and wrong wiring.

✓ Faulty cooling fans

A perfectly working cooling fan ensures that the condenser receives cool air. If the fans are faulty, only hot air gets delivered to the condenser making it difficult for the condenser to cool the compressed refrigerant. A faulty fan can be caused by a crack and a replacement is the only option.

✓ Broken condenser

A broken condenser could result from an ageing component or debris from the grill of the car. When this happens, the condenser is unable to deliver cool fluid to the expansion valve even if the cooling fans are functional.

✓ Leaking refrigerant

Refrigerants or coolants have different escape routes in a car AC system. Oftentimes, coolants escape along the hose connections to the various tubes in a car AC. However, it is difficult to correctly pinpoint the spot of the leak and this is where the use of a phosphorescent fluid and a leak detector come in handy.

Prevention of AC problems

✓ Regular servicing

Time has a debilitating effect on anything that breathes and moves; they get weary and old. A car AC system is not an exception as microorganisms, dust and other debris can form a clog on the AC ducts and vents. As such, the AC should be serviced at least once in every 4 to 5 months. This is not only to ensure a healthy cooling system but also to save the cost of replacing components.

✓ Use sealant to prevent refrigerant leakage.

A leakage anywhere in an AC is indicative of weary hose connections. To prevent this, you have to use sealants to glue hose connections especially when oil begins to accumulate at such places.

✓ Regular Replacement of major AC components.

Major components like the fans, compressor, condenser and fuse are often responsible for the majority of the technical glitches in a car AC system. Due to their active use, they wear out with time and sometimes break up in the middle of a journey. As such, regular replacements are prudent to ensure longevity of the entire AC system.

✓ used of recommended compressor oil

The high voltage that passes through the compressor underlines the importance for an insulating media. This is provided by the compressor oil as it ensures that the voltage is properly grounded. However, when the recommended oil is not used, it can cause electric shock when handled inappropriately.

Conclusion

Prius air conditioning problems often present a plethora of challenges to its user, especially those that favour Prius products over others. The common problems generated from the use of this AC include, damaged compressors, refrigerant leaks, overcharged AC, a blown fuse and clogs in the expansion valve. Solutions to these problems have been provided in this article to aid or guide users in discerning these challenges. Almost all problems associated with Prius AC are reversible and preventable and a proper appreciation of the information provided here can be helpful in that regard.

FAQ

✓ why is my car air conditioning suddenly not cold?

There are many reasons why your conditioning suddenly stops being cold. They include:

Damaged compressor

A compressor does the work of heating the refrigerant and emitting hot air to the outside of the car. When the compressor is damaged, refrigerant circulation is limited and hot air accumulates in the system.

Leaky Refrigerant

When refrigerants leak to the outside, the compressor does little work in circulating air around the system, thereby causing the accumulation of hot air in the condenser.

Broken fan

A broken fan means that the condenser gets little to no air in cooling the compressed refrigerant, when this happens, the air passed to the evaporator becomes warm and sometimes, even hot.

✓ What are the symptoms of a bad AC compressor?

The symptoms of a bad AC compressor include the following:

- ✓ Warm air
- ✓ abnormal noise
- ✓ refrigerant leakage
- ✓ Electrical shock when touched
- ✓ Reduced air flow
- ✓ compressor not turning on.

✓ **What makes the Prius AC not turn on?**

The following are reasons why a Prius AC won't turn on:

✓ **Not in use for a long time**

A compressor is the first of an AC component to react to non usage. It usually responds by refusing to start. This is as a result of a sudden shock after having not been in use for a long time.

✓ **A faulty or blown fuse**

Like every modern AC, the Prius AC is an electrically built automatic system; requiring a proper voltage dispensation to start up. The fuse is the device that regulates the voltage in the system. When this is not the case, the AC can break down and refuse to start up.

✓ **What do I do when my air conditioning isn't cold?**

The first thing to do is to check for compressor, fan, condenser and expansion valve damage. A warm AC can also be due to leaky refrigerant. If any of these is the case, see the attention of a professional for repair.

✓ **What do I do when my AC is overcharged?**

An overcharged AC requires a discharge for optimum function. This can be done using a vacuum machine to suck out the excess coolants. Moreover, the AC can also be discharged manually using a towel and a flat-faced nail. Open the compressor valve and poke the nail into it with the towel wrapped around your hand. This will discharge the excess air and reduce the pressure on the compressor.