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## Average cost of furnace blower motor

Your car's blower motor is not only necessary for the operation of your air conditioner. Without a functioning blower motor your engine runs the risk of overheating. If you hear that the blower motor is operating but don't feel any air flowing through the vents, the problem is with the airflow controls [source: RepairPal]. If the blower motor isn't running you should:Use voltmeter or ohmmeter to check for a blown fuse. If you find one, replace it.Start car and see if blower motor works. If fuse blows again, check for loose circuits.If the circuits are in good repair but the blower motor keeps blowing fuses, replace the blower motor [source: You Fix Cars].If your engine's working fine but the blower motor isn't, you can test the blower motor to see if it needs cleaning or repair. Here's what to do:Disconnect car battery.Detach the blower motor from its connector.Unscrew all the screws on the blower motor. Place them in small container.Locate the retainer clip in the center of the blower wheel. Disconnect it from the motor shaft and set aside.Clean out any debris from the motor.Clean the blower motor with an electrical-parts cleaner.Oil the bearings.Check that the blower wheel spins freely and all the other parts are operating properly. If a part isn't working properly, clean and oil it, and test it again [sources: PartSource].If you can get the blower motor working again, reinstall it. If not, you'll have to buy a new blower motor. Hemera Technologies/AbleStock.com/Getty Images From the primitive two-speed bladed fans of yesteryear, to the infinitely-variable computer-controlled blowers of modern luxury cars, automotive ventilation systems have helped provide for comfortable and safe vehicle operations for decades. The speed of the air flow through ventilation systems has vastly improved in recent years, due, at least in part, to better construction and configuration of blower motors and impellers. Certain system shortfalls may mimic some symptoms of blower motor failures, of one type or another, and accurate diagnosis depends on their recognition. The blower motor may seem to be to blame when air flow becomes notably decreased, when in fact, the fault lies elsewhere. Insufficient flow at all blower speeds might be caused by a clogged air intake screen. Leaves, or other debris that obstruct the screen can make the blower motor efforts seem feeble, at best. Any debris particles that enter the plenum may contact the blower impeller, and the sounds produced could raise undue suspicions of motor infirmity. Faulty operations of doors in the ventilation plenum can misdirect air flow, and output at any vent register can be weakened. Discrepancies in the electric circuit for the blower, such as bad control switches or resistors, can halt all function, or prevent operation at certain speed settings. Once these possible causes are eliminated, remaining symptoms may indicate emerging blower motor failures. A weak blower motor may not clear interior glass as well as before. Sudden or evolving needs for manual efforts to dry the windshield might be an indication of reduced blower performance. Moisture collecting on interior trim, or exceptionally increased condensation output at the air conditioner drain, could also signify fading blower action. Frost that forms in the engine compartment, on air conditioner plumbing, may also indicate a lack of air flow in the plenum chamber. Smoke originating from the vent registers, or from under the dash, can be signs of catastrophic blower motor breakdowns. Unusual sounds emanating from the dashboard might be the first tell-tale signs of trouble with a blower motor. Squeals or squeaks that begin with blower operation, but fade to silence soon after, might be the only signal granted of motor bearing problems. The bearings are seldom serviceable, and the remedy requires motor replacement. This symptom is best acted upon quickly, to avoid imminent and complete loss of air flow. Clicking noises that rhythmically coincide with blower speeds may signify some discrepancy of the blower impeller, if debris in the area has ruled out as the cause. The plastic impeller can suffer breaks from the introduction of foreign objects, like coins, or fatigue due to radical temperature changes normally experienced in a vehicle ventilation system. Vibrations felt in the dashboard, or neighboring interior pieces, that increase with blower speeds are possible signs of an out-of-balance condition in the motor, or impeller. The constant vibrations may not affect air flow to any substantial degree, but the motor is incapable of surviving such hardships for long. Slight wisps of smoke might be confused with mists produced in humid vehicles at first sight, but the smell of electrical component failure quickly corrects any misgivings. Odors that are amplified by raised blower speeds might result from lackluster blower performance over an extended time period. Inappropriate ventilation selections, or heavy smoking in the vehicle can also be to blame. Cleaning the blower impeller and ventilation plenum may restore full function, in this instance. Skip to main contentHome House & Components Appliances Family HandymanBefore you sit down with an HVAC contractor to talk about your furnace, read up on what our pros and field editors think you need to know.Image Provided by ComstockBy the DIY experts of The Family Handyman MagazineYou might also like: TBDDon't get burned by a bad house furnaceNew furnaces are more complex than ever with lots of new features, higher efficiencies and higher costs. Knowing what to ask an HVAC contractor is key to buying the right furnace for your home and getting a quality installation.We asked experienced TFH Field Editors—HVAC pros who do this for a living as well as fellow DIYers who have recently bought a house furnace—for their top tips, warnings, lessons learned, gas furnace prices and best advice about buying a new forced-air furnace.Here are simple furnace fixes you can do yourself.Mid or High Efficiency Furnace CostsHow much is a furnace?Average Furnace Cost for Mid-Efficiency FurnaceCost: \$1,500 to \$2,500 installed (no A/C) AFUE: 80 to 89 percent. Savings: 15 to 20 percent of current heating costs (when replacing a 65 percent efficient unit). Venting: Into a masonry or metal chimney (existing chimney might require upgrading).Average Furnace Cost for High-Efficiency FurnaceCost: \$3,000 to \$5,000 installed (no A/C) AFUE: 90 to 97 percent. Savings: 25 to 30 percent of current heating costs (when replacing a 65 percent efficient unit). Venting: Directly through a wall to the outside through plastic PVC pipe. Known as "condensing units" because they recover extra heat from combustion gases by extracting water from them.Highest efficiencies make sense when...You live in a cold climate (may be required by law—see below).You will be staying in your house for 10 years or more.Local energy costs are high.You're replacing an inefficient heating system.The contractor markup is low (see "Top Tips from an HVAC Pro" above).You can take advantage of local, state and utility rebates and incentives. Federal tax credits on high-efficiency furnaces were not renewed for 2012. But state, local and utility rebates may still be available in many areas. Visit dsireusa.org for more information.The payback calculation is reasonable. Visit yourmoneypage.com/energy/furnace1.php to run a payback calculation.Single Stage or Two Stage Furnace CostSingle-stage A traditional single-stage furnace runs the burner at full blast and shuts off until heat is called for. It costs \$500 less than a two-stage furnace, but the trade-off is lower energy efficiency, hot and cold spots, and inconsistent temperatures.Two-stage A two-stage furnace has a high and a low burner setting. It normally runs on low unless full blast is needed. It costs \$500 more than a single-stage unit, but it delivers consistent heat, which means fewer drafts and temperature swings, and is quiet and energy efficient.Follow these tips and you can actually keep your furnace going for twice as long!Two-speed or a variable-speed blower?Standard two-speed A standard two-speed blower (aka "multi" speed) with a PSC motor has one blower speed for heating and one for cooling. It's \$600 cheaper than a variable-speed blower and is less complex, which means lower future repair costs. But it's noisier than a variable-speed blower and uses more electricity.Variable-speed A variable-speed blower uses an ECM motor, which runs on DC power and continually adjusts its speed to your home's needs. It uses a fraction of the electricity of most standard motors and is quiet and comfortable. It costs \$600 more than a standard blower and is a more complex system, which potentially means more expensive repairs. Furnace Cost Tips from an HVAC ProDave JonesDave Jones is a 35-year licensed professional engineer and a TFH Field Editor. He is the Engineering & Design Manager at Temperature Systems Inc. in Madison, WI, and has been involved in the design and construction of hundreds of HVAC projects across the United States, ranging from lake cabins to large research facilities.Don't go with the lowest bidder "Service calls are twice as likely to be related to poor installation as to defective equipment. The guy with the lowest bid often makes the biggest mistakes."Contractor markup makes a difference "The heating contractor actually pays about \$300 to \$500 more for a 95 percent house furnace than he does for a 90 percent furnace. So, if that added cost is passed through with little markup, you might be able to cost-justify it. If the contractor marks up the price a whole bunch, then you have no chance of making a payback in your lifetime."Have a pro install a new thermostat "Furnaces and thermostats, just like cars, have gotten increasingly computerized, and they can require some pretty serious know-how to get them to work right."High vs. very high efficiencies "Higher efficiency means higher complexity, and I like to keep the machinery as simple as possible. The more complex it is, the more expensive it is, and the more it will cost to fix when it breaks. Generally, your very best value is to get a 92 percent efficiency furnace with one of the new ECM fan motors."Get a proposal, not a bid "Go with someone who provides a detailed written proposal that outlines exactly what he will and won't do. He should list the manufacturer and model number of the proposed equipment as well as the cost of any plumbing, venting changes or electrical work required."Buy a reputable brand "Stick with the major brands or one of their subsidiaries. If you don't recognize the brand, don't trust what the contractor says about it. Do your own checking online before you buy."You may need a smaller house furnace "Older furnaces were usually oversized so that the house was always warm enough. But new higher efficiency furnaces can have a lower Btu rating and still put out the same amount of heat. For example, a new 94 percent efficient furnace that is rated at 80,000 Btu puts out as much heat as an old 75 percent efficient 100,000 Btu furnace."Beginning in May 2013, a new U.S. Department of Energy rule requires newly installed residential gas furnaces in 30 northern states to be rated at least 90 percent AFUE (annual fuel utilization efficiency). That means your new house furnace will vent directly through the wall instead of up your chimney or stack. Check with a local HVAC professional for more information or visit appliance-standards.org/product/furnaces.When you're shopping for a furnace, get your ducts checked at the same time. There's no sense in getting a new furnace if you'll let the hot/cold out through leaks or poor insulation in your ductwork. Thomas CzerwinskiFurnace Cost Tips from FHM FansWe've gained loads of insight over the years from many of our seasoned readers. Here are their best furnace cost saving tips.Highest efficiencies have higher repair billsDiminishing returns?I'm an HVAC repairman. Most furnace installers prefer that you buy the most efficient furnace and claim it will save you money. What they don't tell you is that the parts to repair it are about three times as expensive and in the long run you're not saving anything. You can buy a furnace rated at 95 percent and still stay away from the high repair bills of a 97 or 98 percent. Lee SchmidtConsider buying through a home centerSteve MarkmanWe got quotes from a few local contractors but went with a home center instead. The home center hired a reputable local company but backed the work, and even gave us a small discount for opening a credit card and charging the work on it.Steve's next project is a display case for the large wood sailing ship models he builds.Use an experienced proBruce FoxStick with reputable furnace contractors who have been in business for a long time. Chances are they're still in business because they do quality work, and they'll still be around if you have problems down the line. "Our HVAC company went out of business two years after they installed our unit. If we have a problem with it, there could be a big headache down the line."Bruce just finished remodeling his den from the studs up.Incentives can slash the priceThomas CzerwinskiMy gas company gave me a \$100 rebate, the manufacturer gave me a \$500 rebate and the city gave me a five-year interest-free loan to make the upgrade. I ended up saving a bundle.Tom just wrapped up a half-bath remodel (taking the room down to the studs and the subfloor and adding new windows, doors, vanity, sink, toilet, etc.) Don't assume the contractor knows everythingTom BergMost contractors I've talked to don't recommend variable-speed blowers because they don't really understand them. I dug into manufacturers' documentation and a few contractors' message boards on the Internet and read until I understood them. I guess that's what DIY is all about.Tom has taken on HVAC as a hobby and has reduced his utility costs by 25 to 30 percent by sealing ductwork and replacing his own furnace, thermostat and other HVAC equipment.Put details in writingJeff MontgomeryConfirm that your contractor will remove your old furnace without additional charges.Jeff's recent projects include installing flooring and cabinets in his children's home schooling classroom.Know the true cost of the furnaceDave YoungbloodI got quotes from \$2,800 (furnace and ductwork) to \$12,000. Do your own research on the Internet and find out how much you can purchase the unit for online so you can separate the unit from the labor.David is currently building a dock for his pond. Plus, these are the best furnace filters to buy. In a gas furnace, the blower will continue to run if the fan switch on the thermostat is set to any setting other than auto. The blower on a furnace will also continue to run if its filter is extremely clogged. When the furnace's thermostat is set to auto, the fan will only run until the space that is being heated or cooled reaches the preset temperature. Settings such as low, medium or high cause the fan to run continuously regardless of the temperature that is reached in the space. A clogged filter may cause the furnace's blower to run continuously because it can damage the furnace's limit switch. The limit switch is designed to detect the temperature inside of the furnace. It automatically shuts off the fire in the furnace if the temperature becomes too high until the furnace has the chance to reach a safe temperature. A clogged filter also restricts the air flow inside the furnace. This causes the safety switch to remain open, causing the fan to run continuously. The fan will not stop until the safety switch closes. In this case, a fan that continues to run is a sign that the furnace has overheated.

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