

There is a rash of air mix servo motor failures in the 2001-2009 model Toyotas. In the last year, I've had bad ones on my 2003 4Runner, my wife's 2004 4Runner and yesterday my Dad's 2002 Avalon. Hopefully I can save you some time troubleshooting your vehicle and possibly allow you to fix it for free. I had my truck serviced under an extended warranty, and it took two service calls and over \$2000 of warranty work. On the other two vehicles, I fixed the problem for free in about an hour.

Symptoms - Grinding or clicking noise coming from under the dash.

Diagnosing - You can usually look up under the dash towards the center of the vehicle and see the white plastic lever moving rapidly back and forth. The purpose of the servo is to mix cool air from the A/C or outside with warm air from the heater to match the temperature you have set. The white lever has a travel of 90 degrees. One extreme is all cold air (no hot air mix), and the other extreme is all hot air. The A/C computer sets the position of the servo based on the air temps and the desired temp setting. For the servo to make the noise, it has to be in the middle region between the two extremes. This is generally when the set temp is close to the actual temp. You can try moving your set temp from very cold to very hot and watch the white lever move from one extreme to the other. Note that if it's too hot or too cold, you might not be able to get the servo to stay in between the two extremes. When the lever is in between the two extremes of travel, it should be very stable although it may move a bit every minute or two. The broken ones continually move back and forth which makes the grinding or clicking noise.

Replace - If you see these symptoms, there is a small chance that something else is damaged, but it's almost certain that your servo is bad. Note that dual temp A/C's have servos on drivers and passenger sides. The easy option is to buy a new servo for about \$100-\$130. However, I have successfully fixed two of them using a screwdriver and pair of small, long nosed, needle nose pliers.



Repair - Unscrew the servo unit from the car and disconnect the electrical cable. Gently pry the plastic clips with a flat screwdriver so you can separate the two halves of the case. Take note of the orientation of the motor and the white lever so you can replace them correctly. (With a marker, put a mark on the motor and the large gear so it's easy to identify their positions). Snap the motor out. Under the large plastic gear (which doesn't come out) you will see about 6 copper fingers that rub on the back of the gear. I believe the problem is that the fingers lose their spring and do not press hard enough against the resistive coating on the back of the gear. Take a small pair of long nose, needle nose pliers and grip all of the fingers near the base. Bend the fingers slightly upwards. Check that the white lever is in the same position as it was when you took the motor out. Reinstall the motor in the correct orientation making sure its electrical contacts fit between the copper fingers in the case. You can now put the cover back on. Note that if you break a clip, it's probably not a big deal since the mounting screws will hold the unit together.

Testing - NOTE- watch your fingers! Without installing the unit on the car, plug the electrical cable into the servo. Run your AC or heater as above to move the lever from one extreme to the other and back into the middle region. If it no

longer rapidly jumps around, it's probably fixed.

