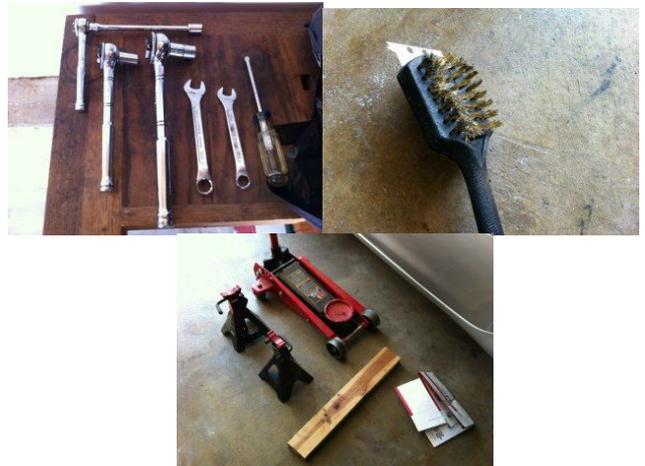


# How to remove, replace and tighten accessory belts for a second generation (NB, 1999-2005 ) Mazda Miata MX-5

If your Miata is squealing loudly either when you engage the air conditioner, turn on the car, or just drive around you may have a loose/worn out belt. If it has been doing this for a while then it is probably glazed (ruined). New belts are between \$10-\$20 each. They are simple to replace (1 – 2 hours) even for the non-technical person.

Gather the tools and parts. You need :

- 10mm, 12mm, 14mm sockets
- 12mm, 14mm wrenches
- Philips screwdriver
- Pliers
- Jack, jack stands and blocks
- Cardboard
- Brass brush (new BBQ brush works)
- New belts
- A bathroom scale



Setup your car. Jack the front wheels and put them on stands. Cardboard on the jack can help prevent dents in the metal. Make sure the parking break is on and that you block the rear wheels. Leaving the jack extended on one gives you added insurance.

Open your hood. To get at the belts you must remove the air duct just behind your radiator. It is attached at three points. Use your screwdriver to loosen the clamps on either end, then remove the middle clip with pliers. Wiggle the duct off each connection.





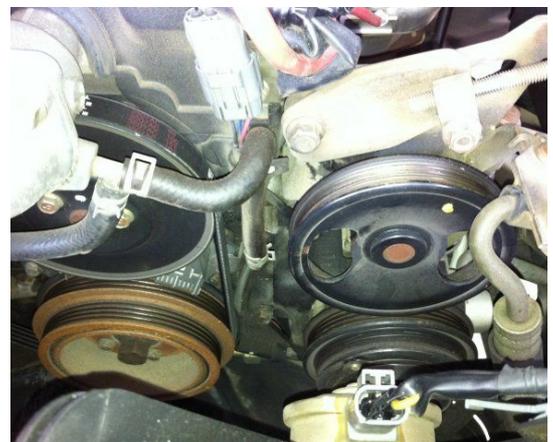
The belt closest to the radiator goes from the engine to the air conditioner compressor then the power steering. Not all miatas have this belt depending on A/C on power steering. The tension in this belt comes from the air conditioner compressor pulley. The tensioner (circled) needs to be adjusted to remove the belt.

Three bolts are used to adjust this tensioner. Bolt 2 is accessible through a gap in the power steering pump pulley. It may be necessary to turn over the engine to line up the bolt with the gap. The car will not run with the air duct out, but it should turn over. Loosen the bolts in the numbered order. Bolts 1 & 3 are 12mm and bolt 2 is 14mm.



You may need to secure the nut on opposite end of bolt 2. Use a 14mm wrench on the nut circled (photo looking over the top of the tensioner into engine compartment).

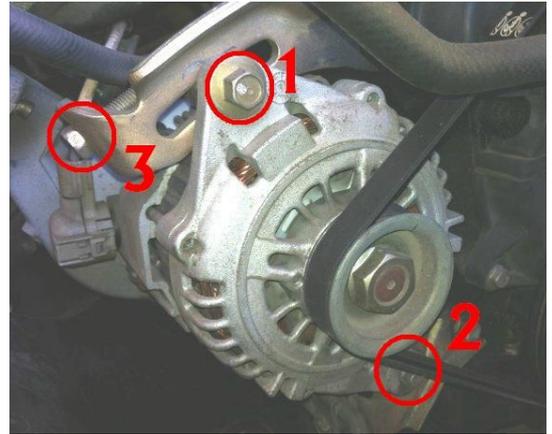
Loosen bolt 3 to slowly drop the air conditioning compressor down. A wrench is probably better so you don't get interference with the air intake using a ratchet. If you just want to tighten this belt, then skip down to page 5. Slip off the belt.





The second belt goes from the engine to the water pump pulley above then the alternator. The tension in this belt comes from the alternator compressor pulley. The tensioner (circled) needs to be adjusted to remove the belt.

Again, three bolts are used to adjust this tensioner. Bolt 2 is access from under and behind the alternator. We need to remove the splash guard under the car for access. Loosen bolt 1 using a 12mm socket.



You can get away with just removing the fasteners on the passenger side of the splash guard to access bolt 2. There should be 10mm bolts and Philips head screws holding it up. The left photo shows about where the bolts are (taken from below the car in front of the passenger tire, looking up). On the right shows the location of bolt 2 after the splash guard is moved (behind the coolant line).



Use a 14mm wrench to loosen bolt 2. Get up and dust yourself off. Loosen bolt 3 with a 12mm socket to move the alternator. If you just want to tighten this belt, then skip down to the next page. Slip off the belt.



Use the brass brush to scrub off the pulleys, especially if there is lots of gunk. Some people have used brake pad cleaner if they are really nasty. Brass is important because a steel brush can possibly score the pulleys, which wear the belts faster.



Wash your hands now so that you don't put any grease on your new belts. Also, use your bathroom scale to get a feel for how much 22 lbs is with one finger.



Put the new belt on the alternator loop. First wrap it around the water pump pulley, then the engine pulley (the groove closest to the engine) and lastly around the alternator. As you tighten bolt 3, check the tension on the belt with your *calibrated* finger. The belt need to be tightened so that 22 lbs causes 1/3 inch deflection. If you don't trust your finger, then you can get a belt tension gauge like the one to the right.



Tighten bolt 2 and then bolt 1. Reattach the splash guard under the car. Move onto the next belt.

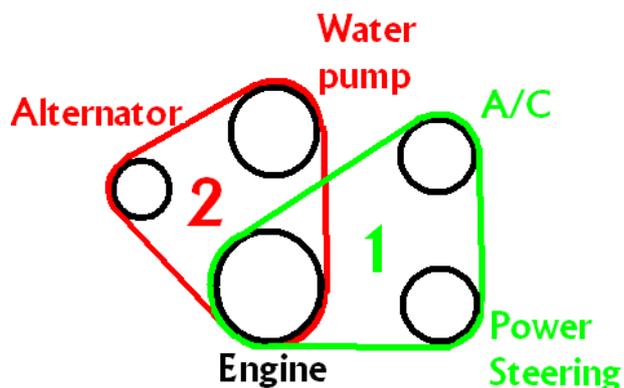
Stretch the new air conditioning belt around the engine pulley (the groove closes to the radiator), then the power steering pump pulley and finally around the air conditioning compressor pulley. While the belt is loose, orient the power steering pulley so that bolt 2 is accessible through the gap.



Tighten bolt 3 while checking the tension on the belt with your finger. The belt should be tightened so that 22 lbs causes 1/3 inch deflection. Tighten bolt 2 then bolt 1.

Reattach the air duct. Lower the car. Turn it on. Hopefully all the squeaks are gone.

This crude diagram show you the routing of the belts. Belt 1 is in front of belt 2.



For those with model NA miatas, check out Rob's guide on replacing the belts:  
[http://www.miata.net/garage/KnowYourCar/S9\\_Belt.html](http://www.miata.net/garage/KnowYourCar/S9_Belt.html)