

Flyin' Miata

Ninja timing belt tool hints

35-62000

Congrats on your purchase of the latest in Miata timing belt tools! This won't serve as instructions on how to do a timing belt change, but it will give you some hints specific to our tool.

- Please be sure to use a torque wrench to torque the cam gear bolts. Its strong enough to allow you to torque the cam gear bolts to factory spec but over-torquing them can cause the tool to fail. If you use it to loosen the bolts, which were over-torqued initially or are currently seized, the tool could fail through no fault of its own (we don't recommend using it to loosen bolts for that reason). Also, do not use it to try and lock the crankshaft while tightening the crank bolt. This will most certainly cause the tool to fail. Use it as instructed and it'll work great for years. Non-VVT cam gears torque to 36-44 lb-ft, VVT cam gears torque to 47-61 lb-ft.

- Be sure to line up all of the timing marks before you attempt to install this tool. That would be the "E" and "I" on the cam gears (as shown in the picture, "E" is missing on '01 - '05 cars) and their corresponding notches, and the notch at the crank. Once they're lined up, slide the tool into place. It can sometimes take lightly rotating the cam gears back and forth to get the alignment just right. The clearance is intended to be tight. Starting in late 2020, the ninja tool design was updated to include the timing marks built into the tool as shown. Those with older tools still need to use the timing marks on the rear timing cover.

- If you're not going to change the cam seals, there's no reason to remove the cam gears. If you are going to change the cam seals (generally a good idea when you do a timing belt), you'll need to remove the gears. In order to be sure that everything is still lined up when you put it back together, use the holes in the ninja tool to hold the tool to the gears using zip-ties. You'll need to rotate the cams as you put the gears back on, since you're holding the gears stationary. Be aware that the pin on each cam can go in one of two or three slots (depending on what type of gear you have), so be absolutely sure that you have each pin in the correct slot. On the intake cam, the pin will be lined up with the "I" slot (which should be vertical), on the exhaust cam the pin will be lined up with the "E" slot, which again should be vertical. There's a wrench surface on the cams to facilitate rotating them.

- When you put the new belt on, you may have to rotate the crank slightly in order to get the belt onto the timing belt gear at the crank. Get this as close as possible, then remove the tool. Next, spin the crank through 1-5/6 revolutions, until it lines up with the mark to the right (passenger-side, left if you're looking at the front of the engine) at roughly 10 o'clock. Let the spring on the tensioner pulley apply tension at this point (don't add any additional tension by hand), tighten the bolt, then rotate it farther so that all of the marks line up. As long as everything was done properly, all of your marks should line up.

