

# Flyin' Miata

## ATI Damper Install 04-955XX

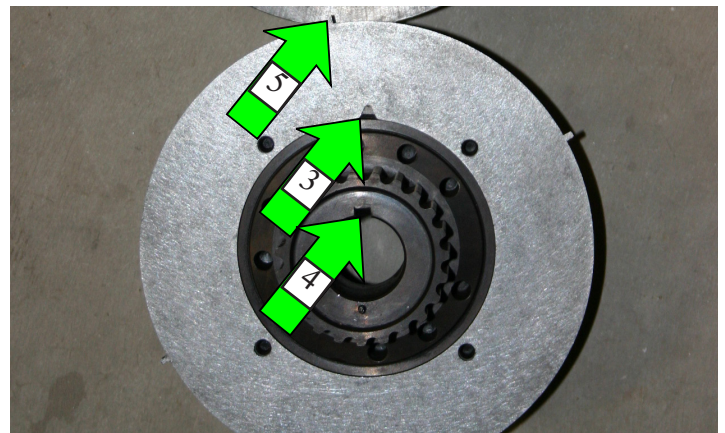
1. First, you'll need to remove the stock crank pulley. Begin by removing the intake (if necessary), accessory belts, valve cover, timing belt covers, crank pulley, timing belt, and timing belt gear. This is a great time to do a full timing belt kit, partially because you're in there now, partially because it'll be more difficult with the ATI damper installed.



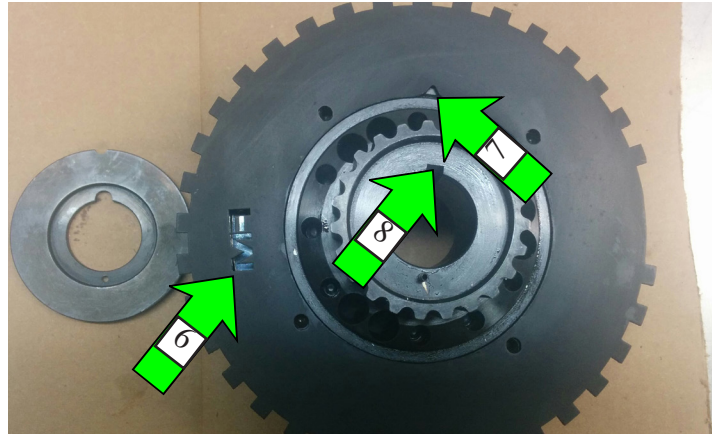
2. Next, work the rear-most flange (1) off. It's held in place with a roll pin (2), so rock it back and forth slightly (don't bend the pin!) until it slips off.



3. **Four tooth timing wheel only (96-05):** Be sure you have the orientation right, per the picture. The notch (3) should be lined up with the keyway (4), with one tooth just to the left (5, viewed from the back), not to the right - again, per the picture. For 99-05 cars with our Stage 1 Turbo Kit that uses a VooDoo box, you will need the -6 Degree Timing Wheel. The installation procedure is the same for either timing wheel.



4. **36-2 tooth timing wheel only:** The 36-2 tooth wheel should have “FM” legible from the front (6, backwards from the back). If you don’t know what a 36-2 tooth wheel is, you don’t have one. Be sure that the notch in the wheel (7) lines up with the keyway (8).



5. Slip the spacer over the toothed gear, and tighten it down - be sure to use blue Loctite (242) here. Slip the rear-most flange back into place. Be sure to line up the roll pin appropriately.



6. Check for a smooth chamfer on the crank nose - clean it up if need be. Smear moly lube on the inside of the crank pulley and the outside of the crank. It’s important to adequately lube both of these surfaces. Slip the timing belt over the gears, then slip the pulley onto the crank. Don’t worry about lining anything else up with the new belt, it will just hang loose for the time being.

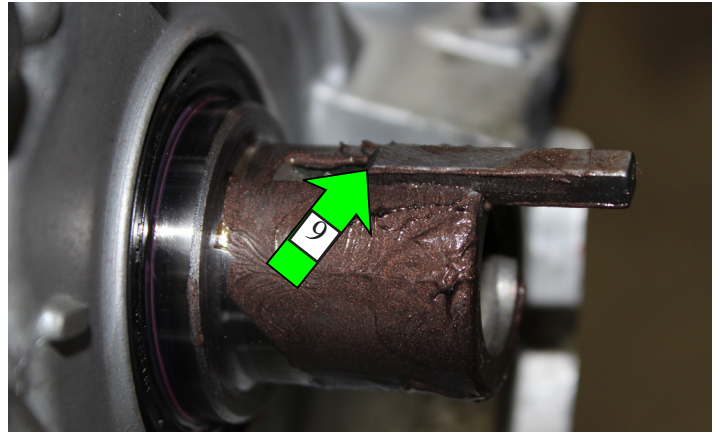


7. You might need to trim the lower timing belt guide (as shown) so that it can fit around the ATI pulley. Test fit it first, but bear in mind that you won’t be able to fully install it until the pulley is fully pressed into place. Generally, covers that are in very good shape don’t need to be trimmed, covers that are in rough shape (e.g., swollen from oil) need to be trimmed.





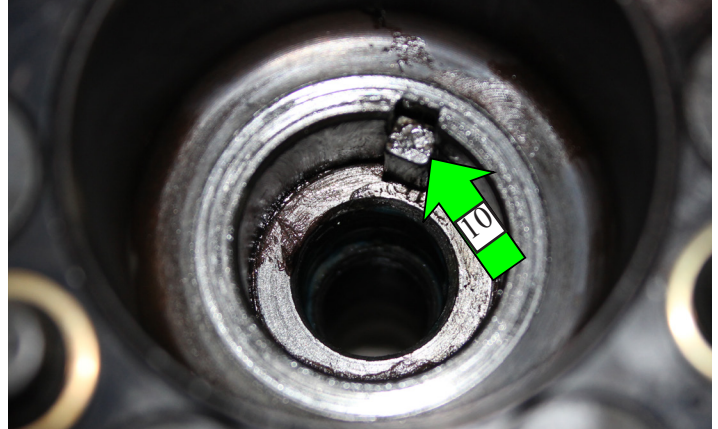
8. Slip the Woodruff key into the keyway on the crank. Be sure one of the two rounded edges point down into the slot of the crank, and towards the engine (9). Slip the key far enough into the keyway to ensure that the crank pulley will remain properly oriented, but allow room for the key to move up the slot as the pulley is installed. If the key is fully installed initially, it will get forced beyond the keyway, damaging the crank.



9. Slip the timing belt over the gears, then slip the pulley onto the crank. Don't worry about lining anything else up with the new belt. Using the old crank bolt (NOT the new one), install the pulley. Do not put Loctite on this bolt, as it's just a temporary tool. Carefully line up the pulley, then tighten the bolt to seat the pulley. It's important that it goes on straight, so pay attention. Tighten this down until the pulley bottoms out, but don't torque it.



10. Remove the old bolt (pitch it), and be sure that your Woodruff key hasn't been pulled too deep into the keyway (10). Gently tap the Woodruff key all the way into the keyway, but don't force it. It should be roughly 6mm (~0.240") below the lip on the pulley.



11. Put blue Loctite (242) on the threads of the new bolt, then install it and torque to 125 lb-ft. If you're using our crank bolt tool (which will make your life much easier), use the wide pattern on the 91-05 end and bolt it in place using two of the 12-point bolts. Be sure they're snug (no fore-aft play), then rotate the crank until the tool contacts the water pump neck.



12. Finish up the timing belt job. When setting the timing, be sure you use the mark labeled “TDC”. When setting the cam timing, “TDC” should be lined up with “T”. When setting the ignition timing, “TDC” should line up with whatever your base timing is - typically 10°. You can ignore the other marks, although “10” on the pulley should line up with “T” on the cover when “TDC” on the pulley lines up with 10 on the cover.



13. If you need to remove the pulley, you'll need to pull it off. First, use the crank bolt tool to loosen the large bolt in the middle (refer to step 11). Then remove the three 12-point bolts (and the main crank bolt), then bolt a puller into place. From there, you just need to pull it off. Be sure to follow these directions when you reinstall it.

