CorkSport Performance

NDM-6-310-10 Aluminum Crank Pulley

Installation Instructions for the CorkSport Performance Aluminum Crankshaft Pulley for the 2016+ Mazda MX-5 Miata

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INTRODUCTION

In this installation guide we have provided step by step instructions to install the CorkSport Performance Crank Pulley

Advisory:

- Working under the vehicle requires a safe and sturdy location for the vehicle to sit on jackstands.
- Reference the owner's manual for proper lifting and jack stand locations
- Engine components will be hot after vehicle use, let the vehicle cool for at least 30 minutes or use a fan to cool the underside of the engine before starting project

TOOLS:

- Hydraulic Jack (1)
- Jack Stand (2)
- Flathead Screwdriver (1)
- 14mm Wrench (1)
- 17mm Wrench (1)
- 1/4" or 3⁄8" Drive Ratchet (1)
- 5mm Allen Key Socket (1)
- 8mm Socket - Deep (1)
- 10mm Socket - Deep (1)
- 12mm Socket - Deep (1)
- 14mm Socket - Deep (1)
- 17mm Socket - Deep (1)
- 21mm Socket - Deep (1)
- Breaker Bar (1)
- Pliers - Large (1)
- 1⁄2" Impact (if available) (1)
- Pry Bar (1)
- Micro Fiber Towel (1)
- Dead Blow Hammer (1)
- Friend (1)

PARTS:

- NDM-6-310 Crank Pulley (1)

Step 1 — Getting Started

- First and foremost; **THANK YOU** for becoming a part of the CorkSport Family. We hope to bring you the highest level of Parts, Customer Service, & Support

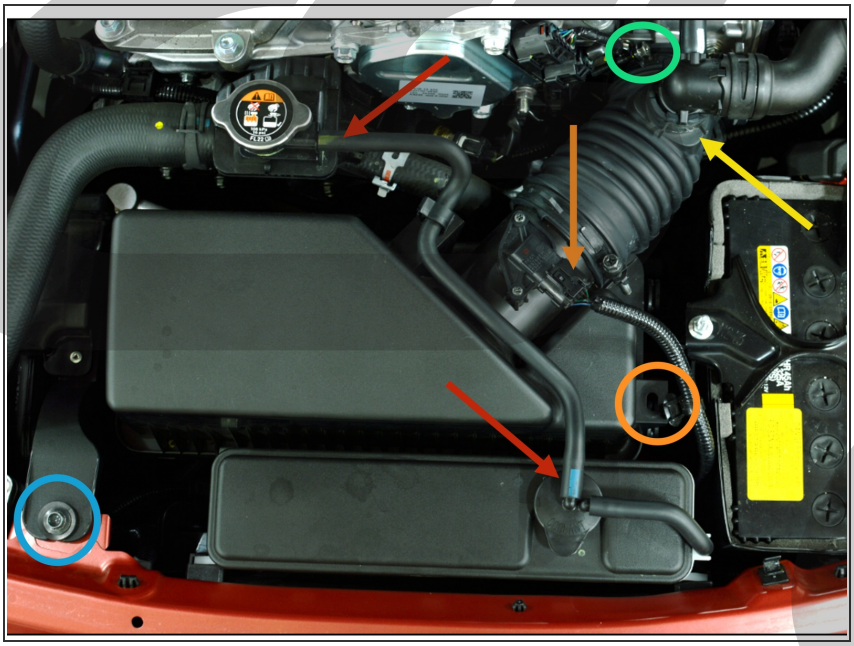
ⓘ How To Use These Instructions

- The instruction format will relate colored marking in the image to the color dot in the text to the right of the image

ⓘ Assistance from another person is recommended for some portions of the install.

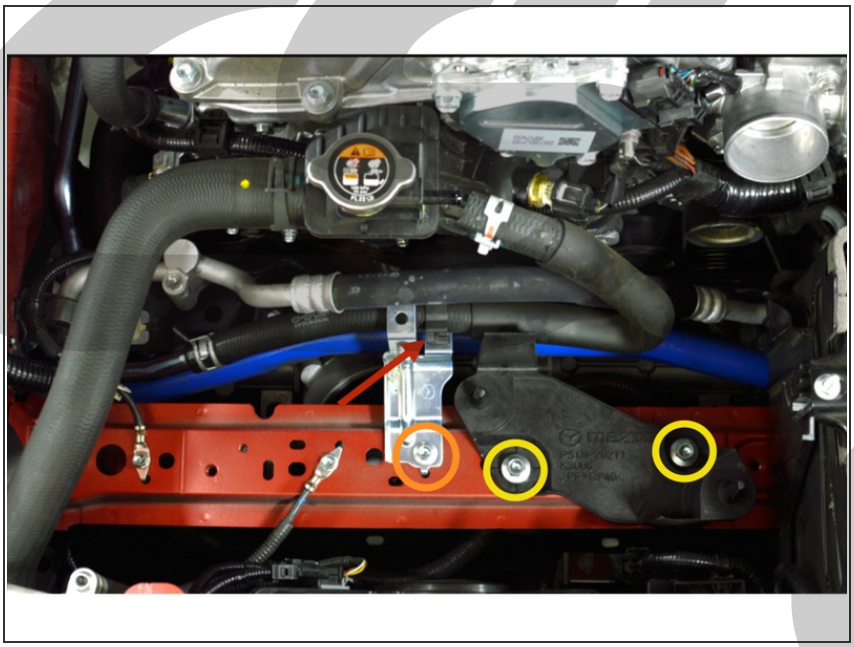
ⓘ Installation instructions are shown using a 2016 Mazda MX-5 Miata

Step 2 — Removing the Intake



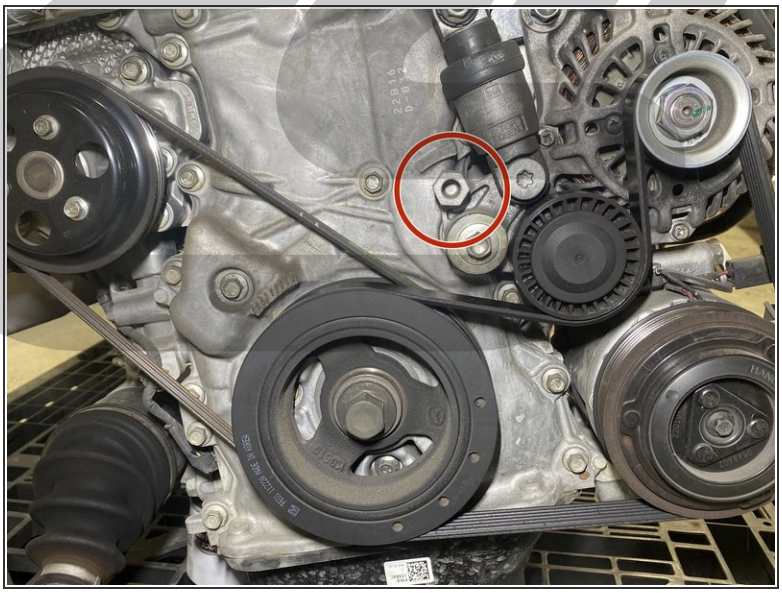
- Remove both ends of the coolant overflow hose from the coolant overflow tank and reservoir
- Disconnect the MAF sensor wiring along with the clip that is circled securing it to the air box
- Using a set of pliers, remove the breather hose from the throttle body coupler
- Loosen the throttle body clamp using a 10mm socket
- Remove the 10mm mounting bolt on the left side of the air box
- Now pull up on the battery side of the air box to remove it from the rubber grommets and rotate the intake up and out of the vehicle

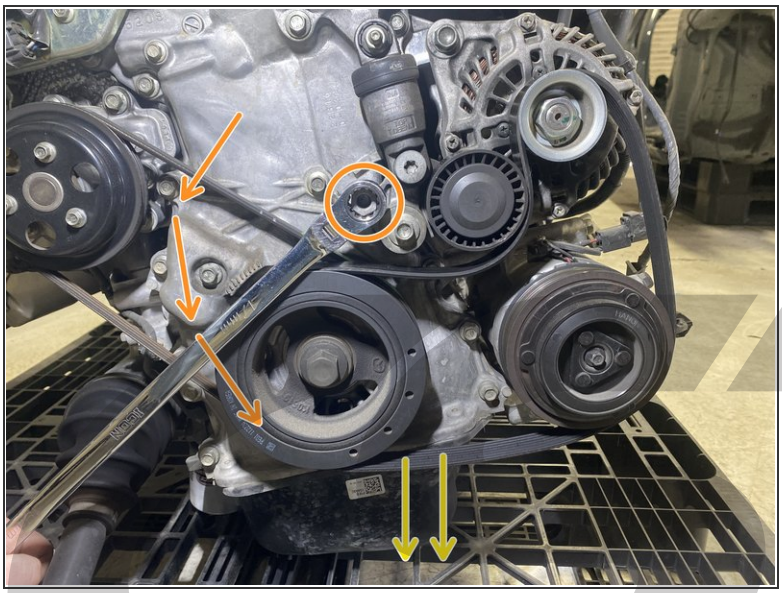
Step 3 — Removing the Brackets



- Release the plastic clamp on the bracket holding the radiator hose using a flat blade screw driver
- Remove the metal bracket using a 10mm socket
- Remove the plastic bracket with the two bolts securing it using a 12mm socket

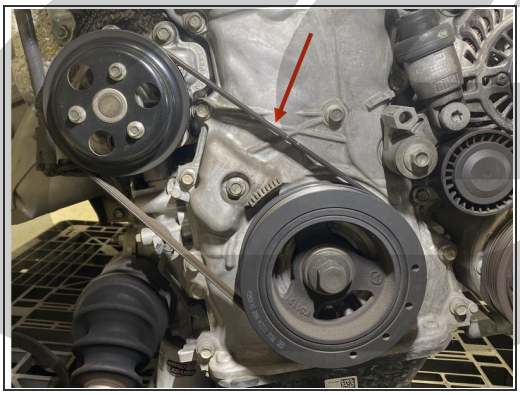
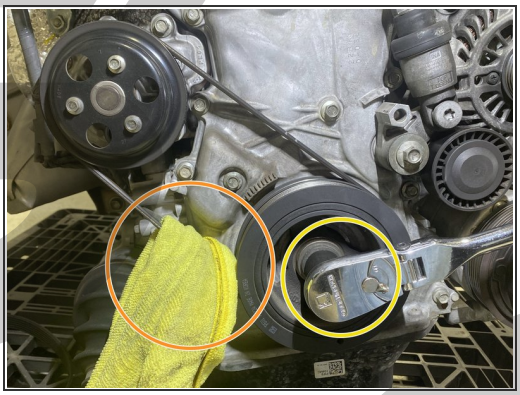
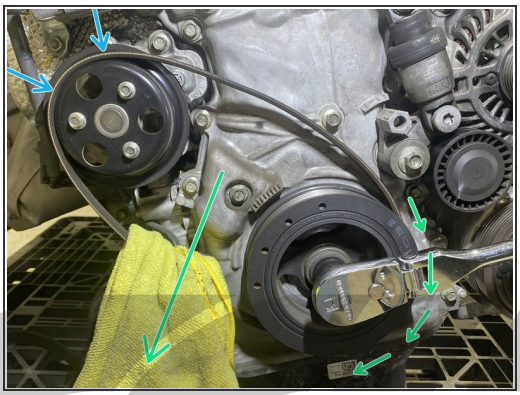
Step 4 — Removing the Serpentine Belt





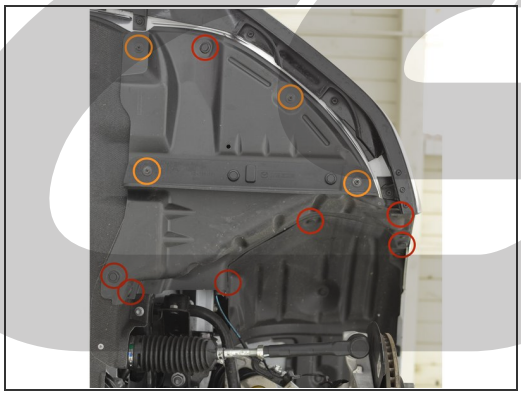
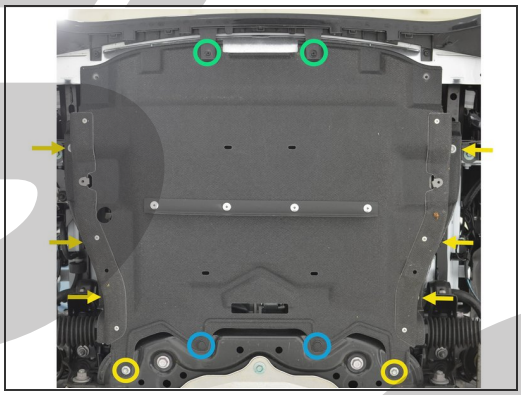
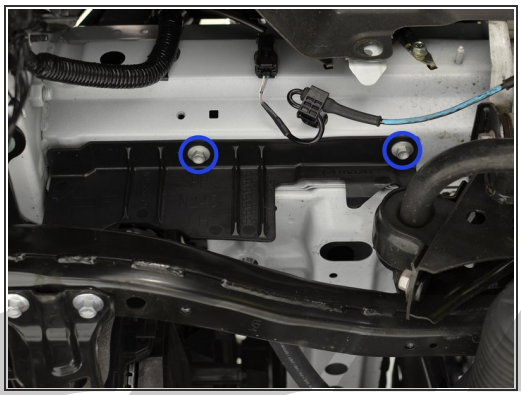
- ⓘ The next few steps are shown with an engine removed from a vehicle for clarity. These components are relatively easy to access, it is easier to show this way
- Above the crank pulley is a aluminum hexagon, this is the portion of the tensioner that needs to be rotated to relieve the serpentine belt tension
- Place a 17mm wrench or socket on this aluminum hexagon and rotate the hex counter-clockwise to compress the tensioner and release the tension on the belt
- While holding the wrench with the tension released, remove the serpentine belt from the crank pulley
  - ⓘ The belt can be removed from the pulley system completely if desired

Step 5 — Removing the Water Pump Belt

- The remaining belt on the crankshaft pulley is the water pump belt
- Place a towel over the water pump belt as shown
- Place a 21mm socket and ratchet on the crank pulley as shown
- Pull downward and outward on the towel while rotating the engine clockwise. This will slowly work the water pump belt off the water pump pulley
- If done correctly, the water pump belt will come free from the water pump pulley as shown
- Remove the water pump belt from the crankshaft pulley

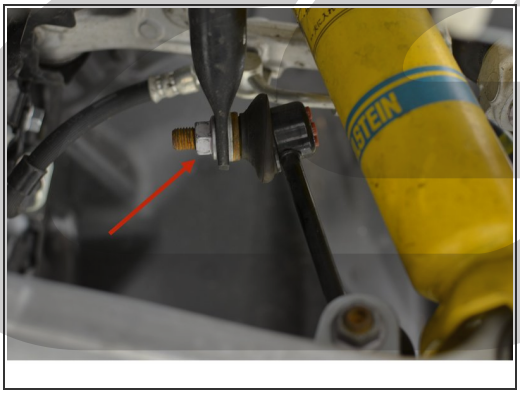
Step 6 — Optional: Moving the Front Sway Bar Part 1

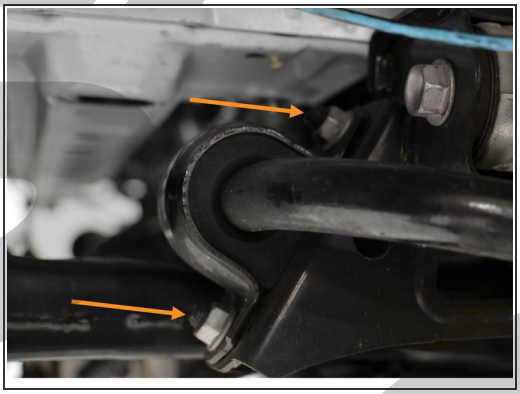




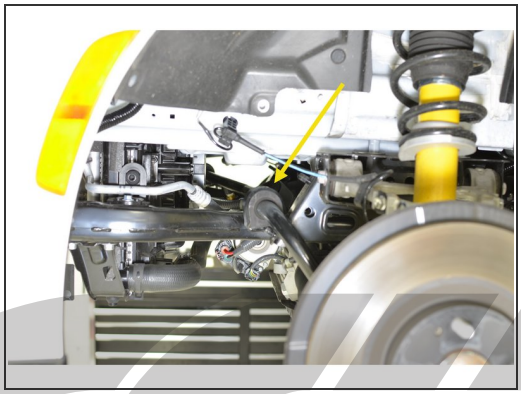
ⓘ The following steps may apply if you have an aftermarket sway bar and are limited on room between the front sway bar and the crank pulley. You should not have to do this with the stock sway bar and you can skip to **Step 8**

- Using OEM lifting locations, start by lifting up the front of the car using the hydraulic jack and jack stands to access the following components
  - Remove the 8 push clips that are circled using a flathead screwdriver
  - Using an 8mm socket remove the 4 screws. The lower inner fender liner will now be able to be removed. Repeat on the opposite side
  - Remove the 8 bolts that are shown holding the undertray using a 10mm socket
  - Using an 8mm socket remove the 2 screws shown
  - Remove the 2 push clips using a flathead screwdriver, being sure to hold the undertray so it does not fall
  - With a 10mm socket remove the 2 bolts shown holding the air deflector. Repeat on the opposite side

Step 7 — Optional: Moving the Front Sway Bar Part 2

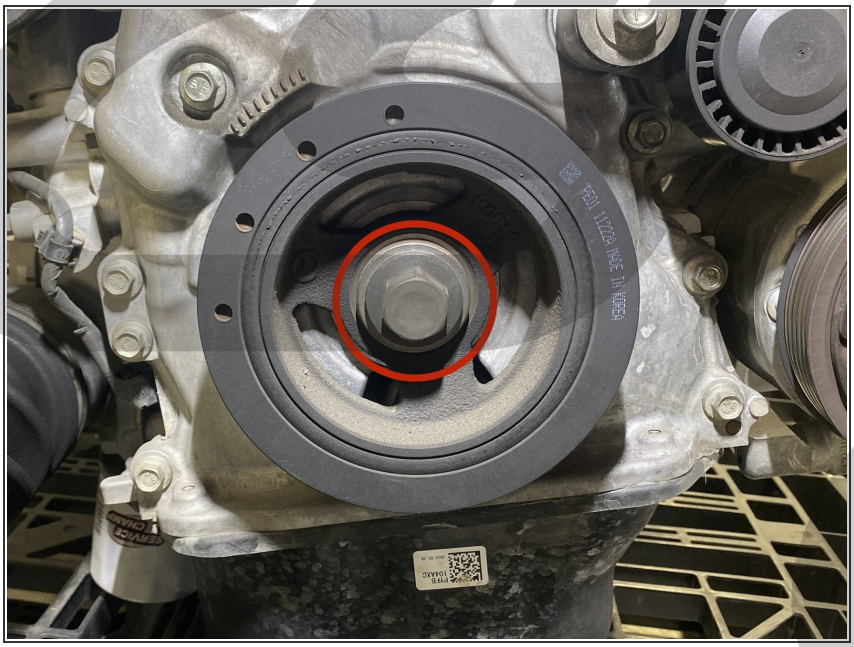






- Use a 14mm wrench and 5mm Allen to remove the nut holding the endlink to the front sway bar on both sides
- Remove the 2 14mm nuts on the front sway bar mounts on both sides
  - ⓘ To access these nuts on some aftermarket swaybars, the subframe may need to be lowered slightly. See the CorkSport ND front swaybar instructions for details
- The sway bar should be able to be rotated out of the way as needed

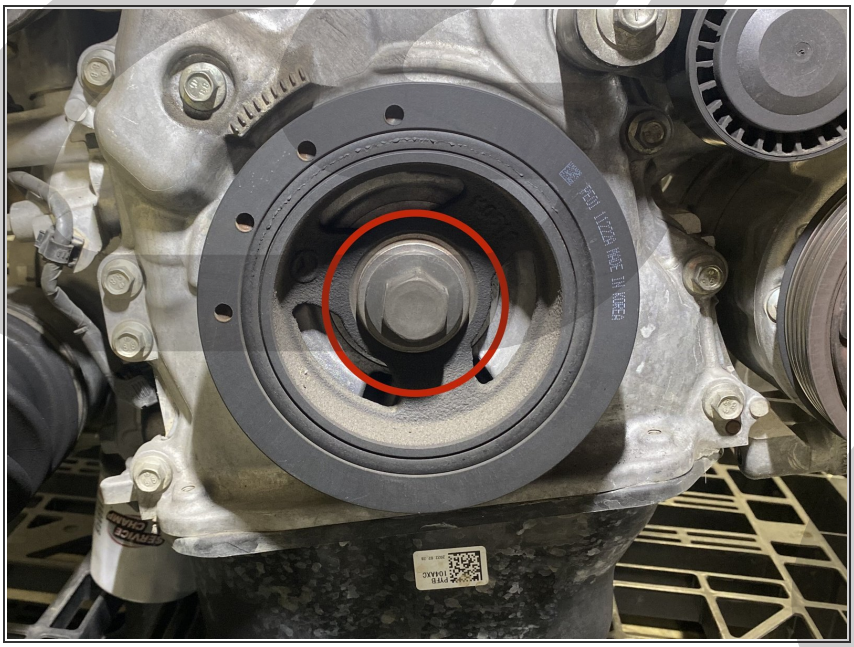
Step 8 — Removing the Crankshaft Pulley Bolt MT



ⓘ If you have an **automatic transmission**, skip to the next step

- Put the car in 6th gear and set the parking brake. If this is not enough to hold the wheels from moving, have a friend apply pressure to the brake pedal.
- Use a breaker bar and 21mm socket to remove the crankshaft pulley bolt
  - ⓘ A small amount of oil will typically leak out of the crankshaft bolt hole. This is normal

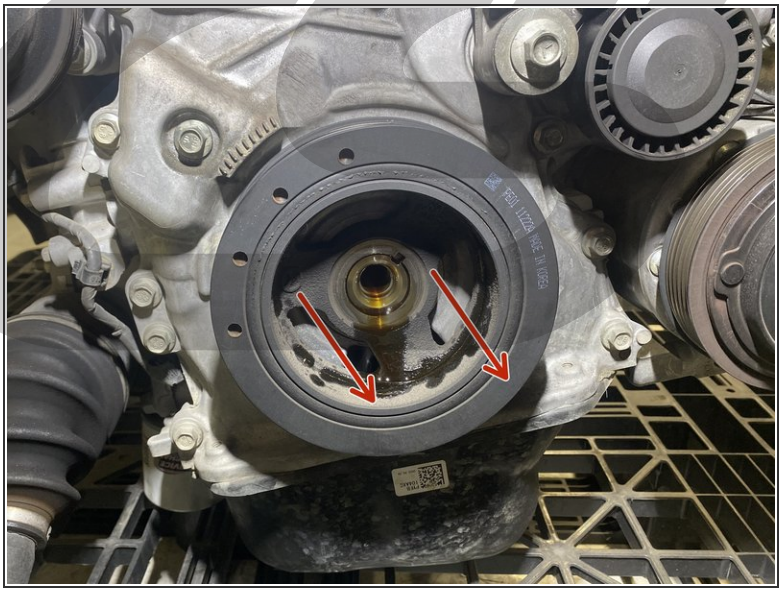
Step 9 — Removing the Crankshaft Pulley Bolt AT

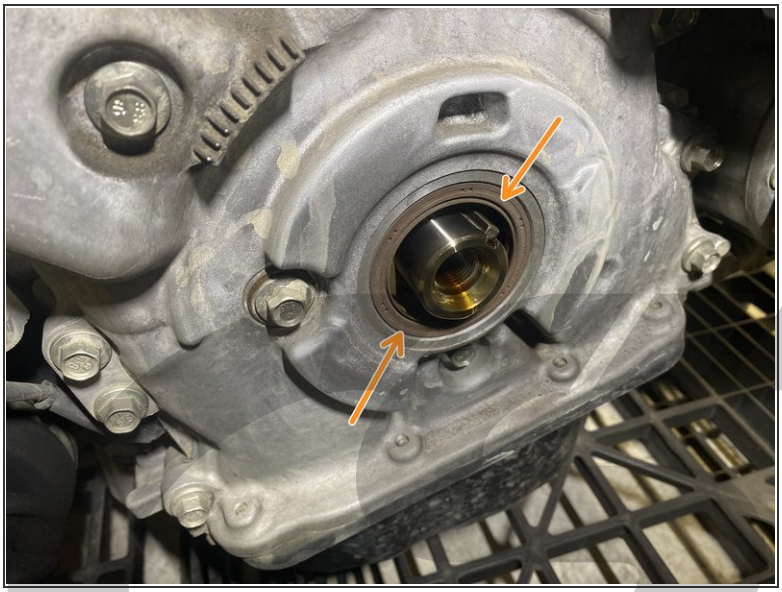


ⓘ If you have a **manual transmission**, skip to the next step

- Make sure the car is in park and parking brake is set. If this is not enough to hold the wheels from moving, have a friend apply pressure to the brake pedal.
- Use a breaker bar and 21mm socket to remove the crankshaft pulley bolt
  - ⓘ If the pulley continues to turn without the bolt coming loose, a tool such as a pulley holder may need to be used to ensure it cannot rotate.
  - ⓘ A small amount of oil will typically leak out of the crankshaft bolt hole. This is normal

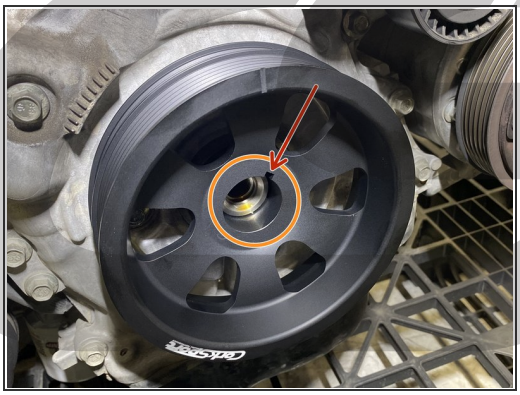
Step 10 — Notes before CorkSport Pulley Install

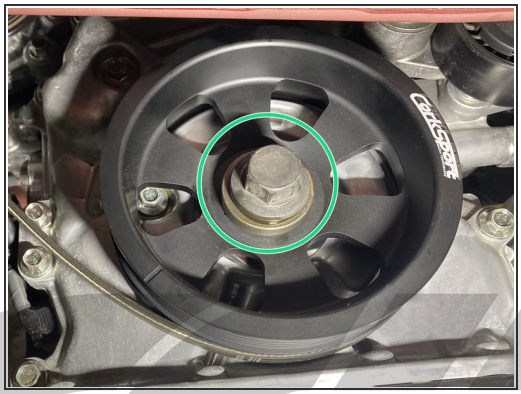




- Remove the OEM crankshaft pulley from the engine. If having difficulty removing, try rocking it back and forth while pulling away from the engine
- ⓘ There may be a small amount of oil that leaks when the crankshaft pulley is removed, this is normal
- Inspect the crankshaft pulley seal for any damage and replace if needed
- ⓘ It is also a good time to check your water pump belt and serpentine belt for any cracks, rips, or fraying and replace if needed
- Clean the oil from the crankshaft and crankshaft bolt

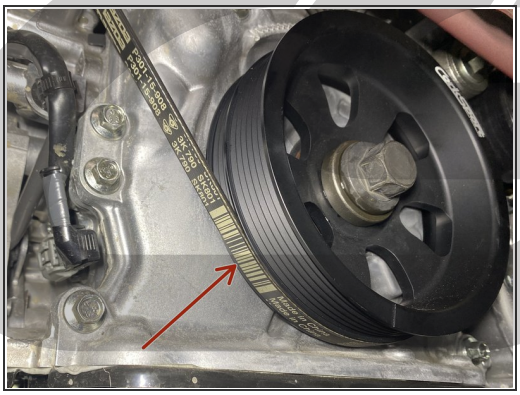
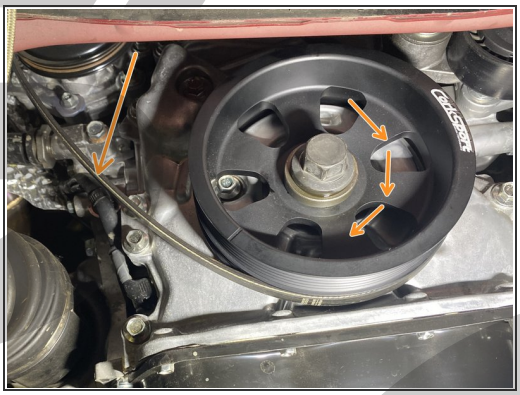
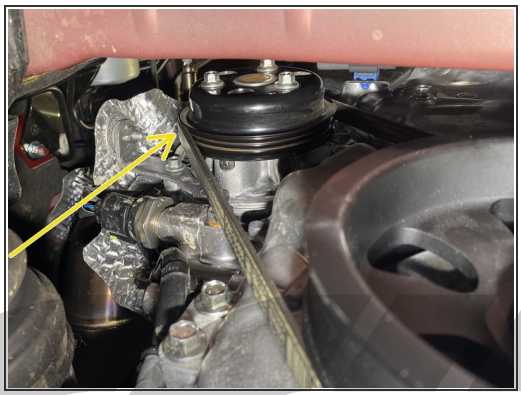
Step 11 — Installing the CorkSport Crankshaft Pulley





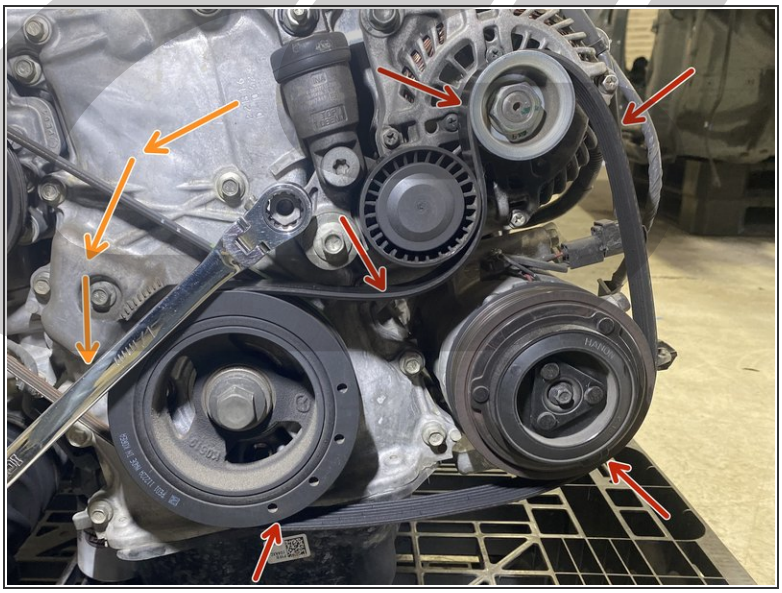
- Install the CorkSport Crankshaft Pulley onto the end of the crankshaft. Ensure the keyway is lined up with the key on the crank
- Use a dead blow hammer or rubber mallet gently to help seat the pulley fully
  - Image 1: Pulley not seated
  - Image 2: Pulley fully seated
- When fully seated, the crank will remain inset from the pulley by a small amount; just under 1/8 of an inch
- Once fully seated, reinstall the crankshaft pulley bolt, and torque to **67-80ft-lbs.**
  - For Manual Transmission owners, see Step 8 for preventing the engine from rotating while tightening
  - For Automatic Transmission owners, see Step 9 for preventing the engine from rotating while tightening

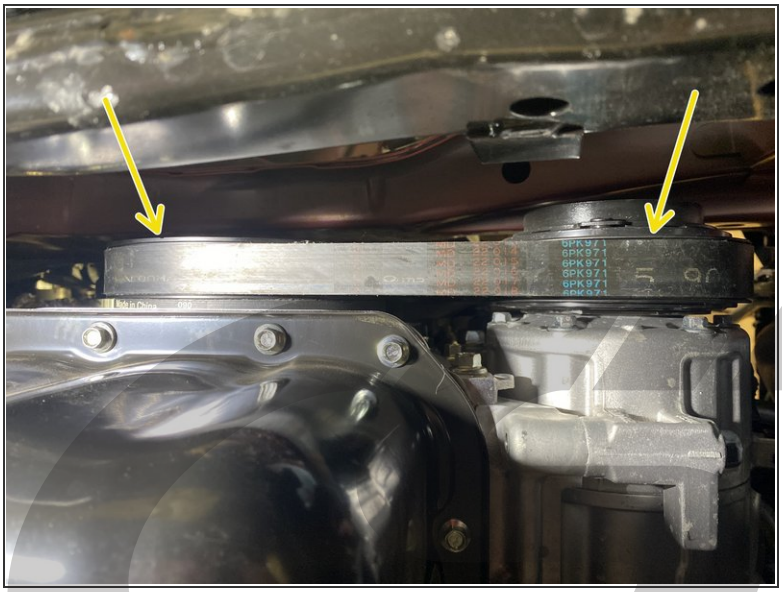
Step 12 — Water Pump Belt Reinstallation

- Place the water pump belt over the inside groove section of the CS crank pulley
- The other end of the water pump belt should sit on the smooth portion of the water pump pulley on the outer edge
- Using a 21mm socket and ratchet as before, rotate the crank pulley clockwise while pushing the water pump belt towards the engine
- If done correctly the water pump belt will pop onto the water pump pulley as shown

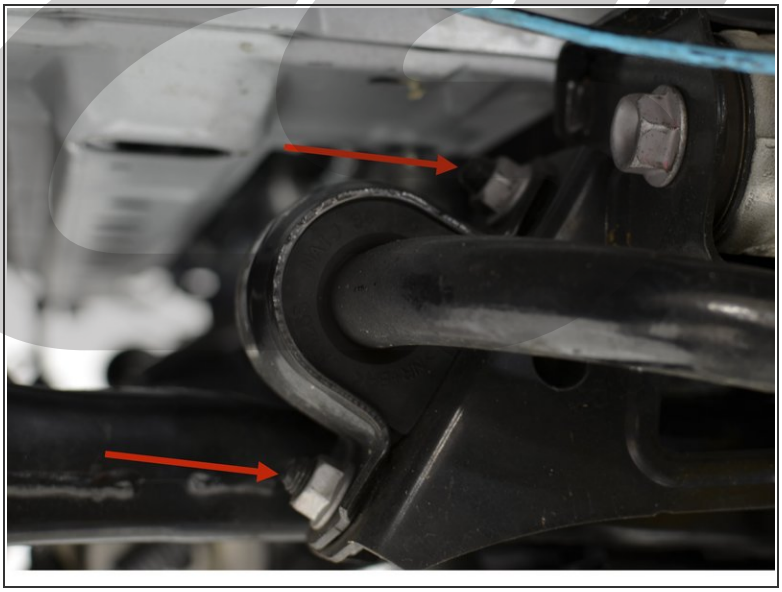
Step 13 — Serpentine Belt Reinstallation





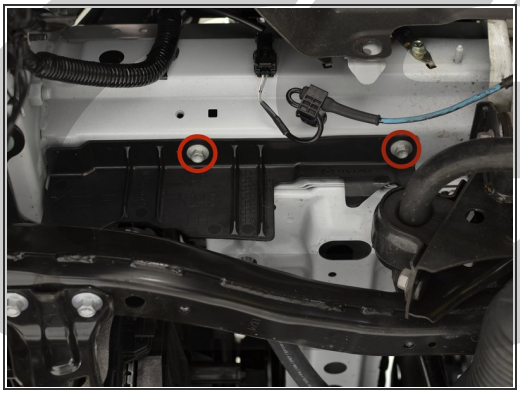
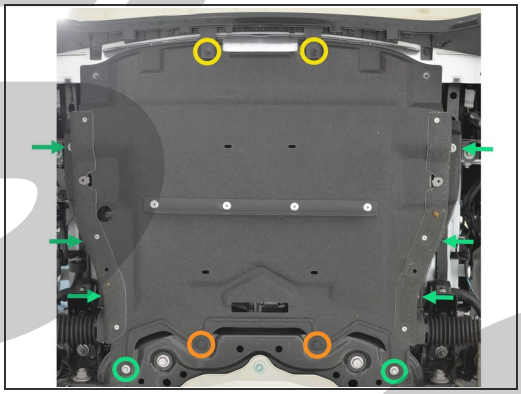
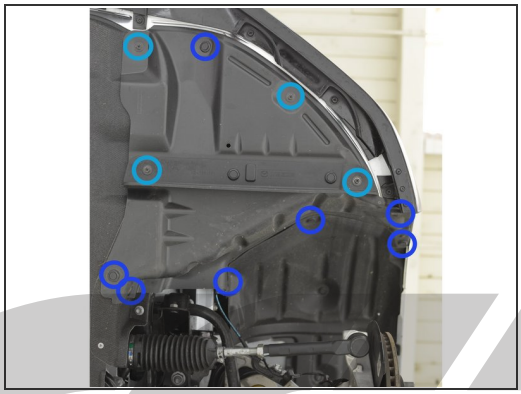
- ⓘ OEM pulley shown for a portion of this step, the process is the same for both pulleys
- Place the serpentine belt around the pulleys in the routing shown. Leave the bottom of the belt off the bottom of the crank pulley
- Using a 17mm wrench or socket and ratchet, rotate the hex of the tensioner counter-clockwise to compress the tensioner
- While holding the tensioner hex, place the belt over the bottom of the crank pulley
- Verify the belt is centered on all pulleys as shown, including the tensioner pulley

Step 14 — Optional: Reinstalling the Front Sway Bar Part 1



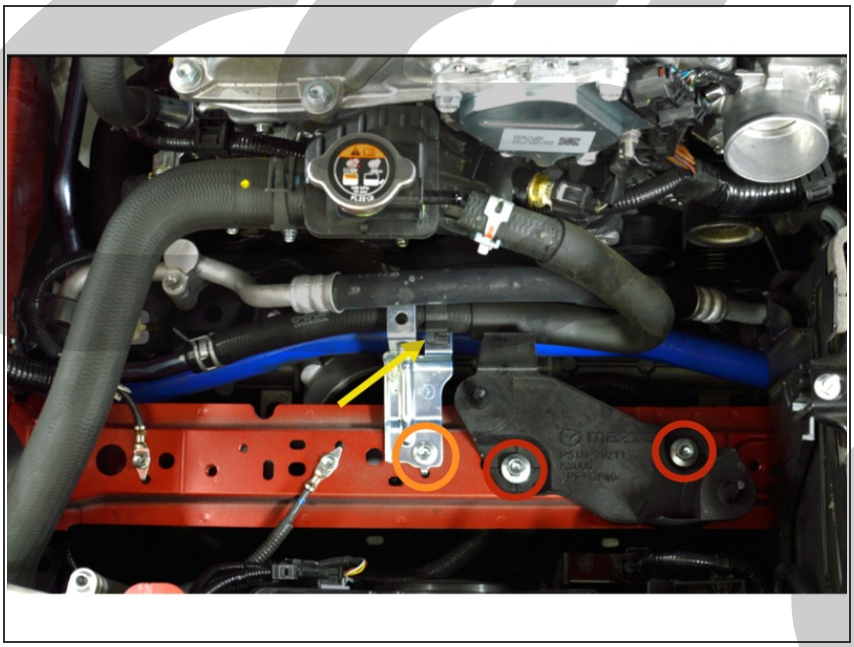
- The following steps only apply if you had to move the sway bar out of the way in the previous steps. Skip to **Step 16** if you did not move the sway bar.
- Put the sway bar back into position and reinstall the 2 14mm nuts on the front sway bar mounts and torque to 15-18 ft-lbs on both sides
- Place the endlink back into the sway bar and tighten the 14mm nut with a wrench and 5mm Allen to 32-38 ft-lbs on both sides

Step 15 — Optional: Reinstalling the Front Sway Bar Part 2

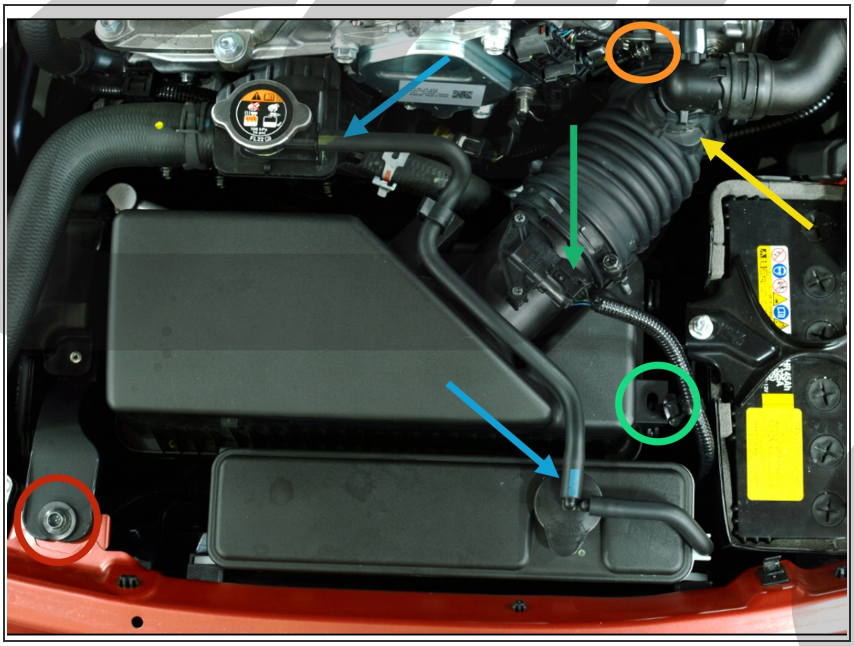
- Reinstall the 2 10mm bolts shown holding the air deflector. Repeat on the opposite side
- Place the undertray back into position and install the 2 push clips
- Using an 8mm socket install the 2 screws shown
- Reinstall the 8 bolts that are shown using a 10mm socket until snug
- Place the lower inner fender liner back into position and with an 8mm socket, install the 4 screws. Repeat on the opposite side
- Install the 8 push clips that are circled on both sides

Step 16 — Reinstalling the Brackets



- Install the plastic bracket with the two bolts using a 12mm socket and torque to 17-22 ft-lbs
- Place the metal bracket back into position and tighten with a 10mm socket until snug
- Attach the plastic clamp back around the radiator hose

Step 17 — Reinstalling the Intake



- Place the intake back into position and push down to lock the rubber grommets onto the pegs
- Install the 10mm mounting bolt on the left side of the air box and tighten until snug
- Tighten the throttle body clamp using a 10mm socket until snug
- Using a set of pliers, reinstall the breather hose into the throttle body coupler
- Connect the MAF sensor wiring along with the clip that is circled securing it to the air box
- Attach both ends of the coolant overflow hose onto the coolant overflow tank and reservoir

Step 18 — Installation Complete

- This completes your installation of the CorkSport Performance Crank Pulley!
  - ⓘ Check to make sure your belts look good and are still in the correct position after the first start
  - If ever needing to complete timing work, the machined notch in the CS crank pulley is your TDC marker!
- Contact us with any questions or concerns at sales@corksport.com or (360) 260-2675.
- Please leave a review here: https://corksport.com/
- Share your experience using #CorkSport on Instagram, Facebook, and Twitter.