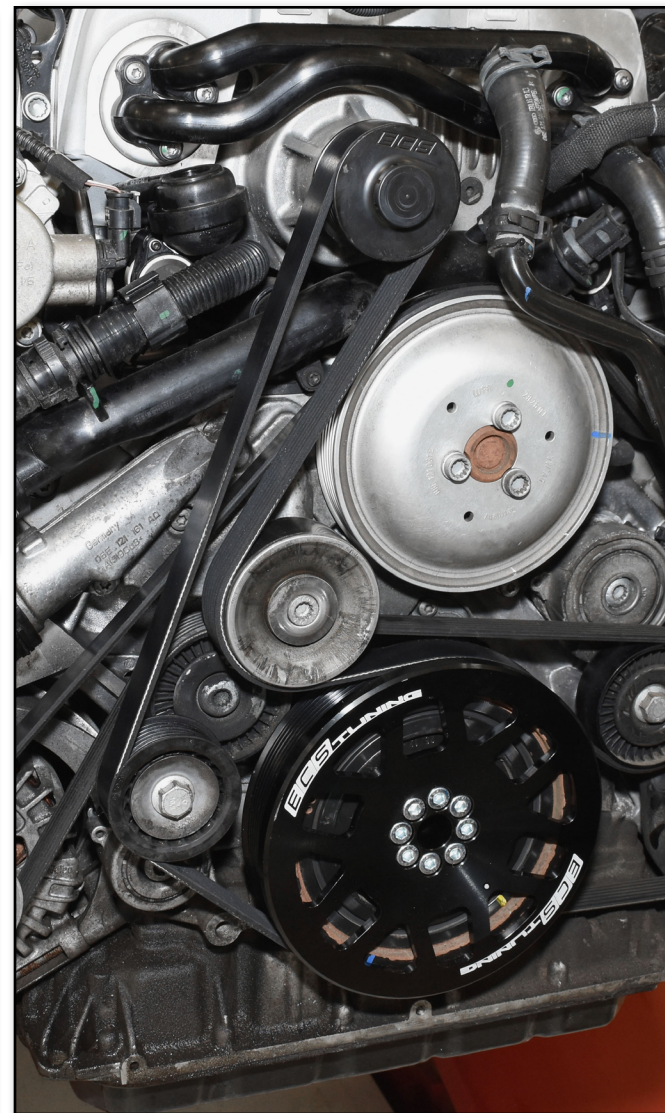




## Audi B8 3.0T ECS Supercharger & Crankshaft Pulleys Installation Instructions - [Click HERE to Shop](#)



**Skill Level**  
**2 - Moderate**  
**Some Experience**  
**Recommended**



Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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**ECS 3.0T Supercharger Pulley Upgrade**  
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**ECS 3.0T Crankshaft Pulley Upgrade**  
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**ECS 3.0T Dual Pulley Kit**  
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## REQUIRED TOOLS

Note: The tools required for each step will be listed by the step number throughout these instructions.

### Standard Automotive Tools

- **Protecta-Sockets (for lug nuts)** ..... [ES#2221243](#)
- **3/8" Drive Ratchet** ..... [ES#2765902](#)
- **3/8" Drive Torque Wrench** ..... [ES#2221245](#)
- **3/8" Drive Deep and Shallow Sockets** ..... [ES#2763772](#)
- **3/8" Drive Extensions** ..... [ES#2804822](#)
- **Hydraulic Floor Jack** ..... [ES#2834951](#)
- **Torx Drivers and Sockets** ..... [ES#11417/8](#)
- **1/2" Drive Deep and Shallow Sockets** ..... [ES#2839106](#)
- **1/2" Drive Ratchet**
- **1/2" Drive Extensions**
- **1/2" Drive Torque Wrench** ..... [ES#2221244](#)
- **1/2" Drive Breaker Bar** ..... [ES#2776653](#)
- Bench Mounted Vise
- Crows Foot Wrenches
- Hook and Pick Tool Set ..... [ES#2778980](#)

### Required For This Install

### Available On Our Website

- 1/4" Drive Ratchet ..... [ES#2823235](#)
- 1/4" Drive Deep and Shallow Sockets ..... [ES#2823235](#)
- 1/4" Drive Extensions ..... [ES#2823235](#)
- Plier and Cutter Set ..... [ES#2804496](#)
- Flat and Phillips Screwdrivers ..... [ES#2225921](#)
- **Jack Stands** ..... [ES#2763355](#)
- Ball Pein Hammers
- **Pry Bar Set** ..... [ES#1899378](#)
- Electric/Cordless Drill
- Wire Strippers/Crimpers
- Drill Bits
- Punch and Chisel Set
- **Hex Bit (Allen) Wrenches and Sockets** ..... [ES#11420](#)
- Thread Repair Tools ..... [ES#1306824](#)
- **Open/Boxed End Wrench Set** ..... [ES#2765907](#)

### Specialty Tools

- **Triple Square Sockets** ..... [ES#1910125](#)
- **Schwaben Stubby Socket Driver Set** ..... [ES#3103367](#)
- **Supercharger Pulley Removal Tool Kit** ..... [ES#3559093](#)
- **Die Grinder**
- **Paint Pen**

## INSTALLATION NOTES

- **RH** refers to the *passenger side* of the vehicle.
- **LH** refers to the *driver side* of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process **BEFORE** you begin.

## GENERAL PREPARATION AND SAFETY INFORMATION

ECS Tuning cares about your health and safety, please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- Whether lifting a vehicle using an automotive lift or a hydraulic jack, be sure and utilize the factory specified lift points.
- Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- **ALWAYS** support the vehicle with jack stands.
- **ALWAYS** read and follow all safety information and warnings for the equipment you are using.



**NEVER** get underneath a vehicle that is supported only by a jack, and **ALWAYS** make sure that the vehicle is securely supported on jack stands.



# Please read this entire page before proceeding



## GETTING THE VEHICLE READY FOR INSTALL

If you are installing our supercharger pulley, now is a good time to get it in the oven at 400-450°F (as shown in **photo #1**). This will slightly expand the metal, making it **MUCH** easier to install onto the supercharger.

Regardless of which pulley you are installing onto your B8 S4, you will need to place the lock carrier into service position as space is very limited in front of the engine. You can watch our YouTube video that covers this part of the procedure by clicking [HERE](#) or on **photo #3**. You can also reference the list below:

- Disconnect the negative battery terminal (arrow in **photo #2**).
- Remove the air box and radiator shroud cover.
- Disconnect the small plastic coolant return pipe from the reservoir.
- Disconnect the headlights and fog lights.
- Safely lift and support the vehicle, then remove the belly pans and front wheels.
- Remove the screws from the radiator support braces.
- Remove the screws from the front of the fender liners, peel the liners back slightly, then loosen the 10mm nuts that secure the bumper cover to the fenders.
- Release the front bumper cover from each fender.
- Remove the T30 screws that hold the top of the bumper cover to the radiator support.
- Slide the bumper cover off of the vehicle, disconnect any electrical connectors, then remove the bumper cover and set it aside.
- Remove one bolt from each crash beam bracket and install M8x1.25x45mm (or longer) bolts in their place.
- Remove the remaining crash beam bolts.
- Remove the T30 screws that secure the top of the radiator support to the chassis.
- Slide the lock carrier outward a few inches, being careful not to strain any hoses or wiring harnesses.



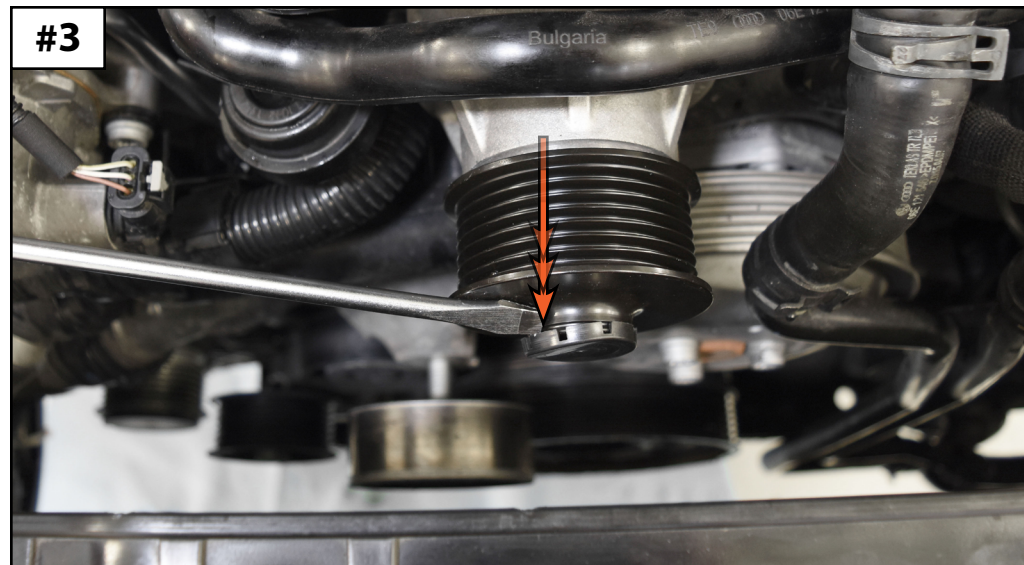
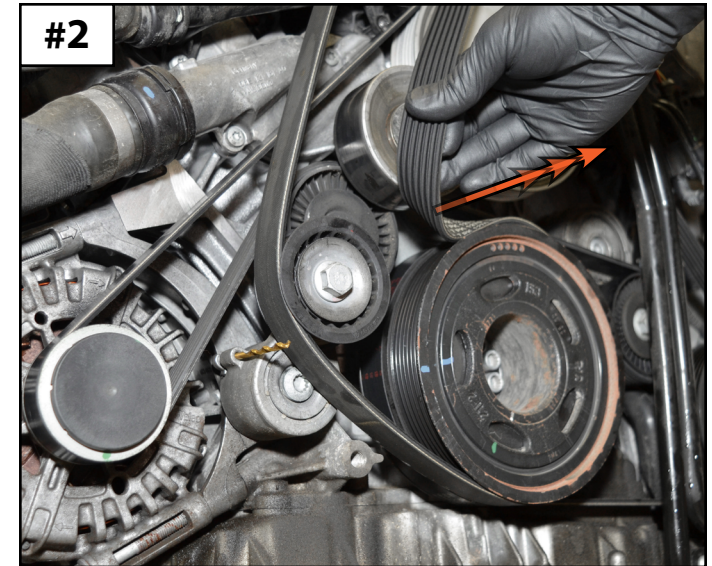
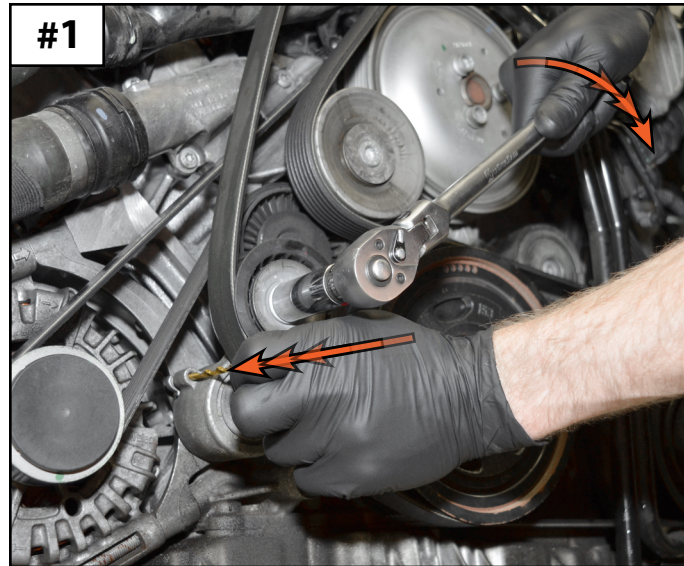


## INSTALLING THE NEW CRANKSHAFT PULLEY

### Step 1:

Rotate the supercharger belt tensioner clockwise to release the tension from the belt and slide a drill bit through the tensioner to lock it in the released position (as shown in **photo #1**), then remove the belt (as shown in **photo #2**).

Gently pry the plastic cap from the supercharger pulley (as shown in **photo #3**).

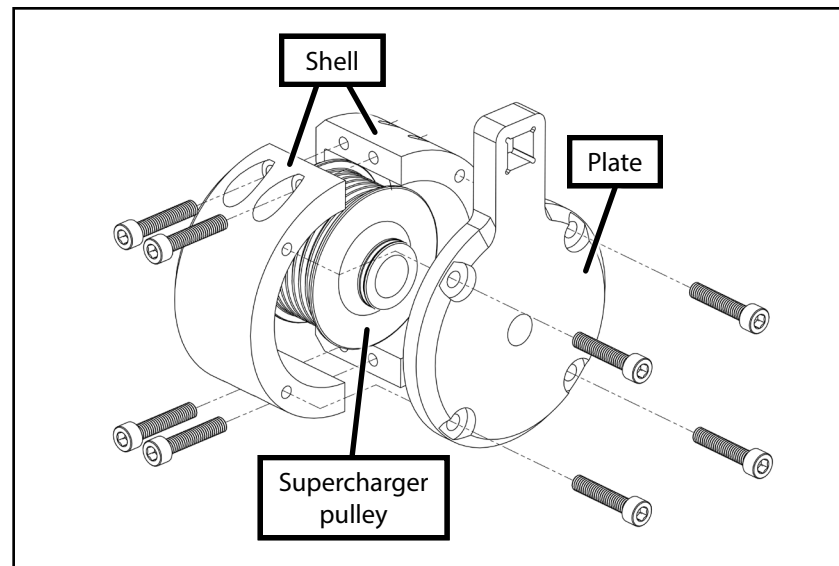


## INSTALLING THE NEW SUPERCHARGER PULLEY

### Step 2: 5mm Hex (Allen) Socket & Ratchet

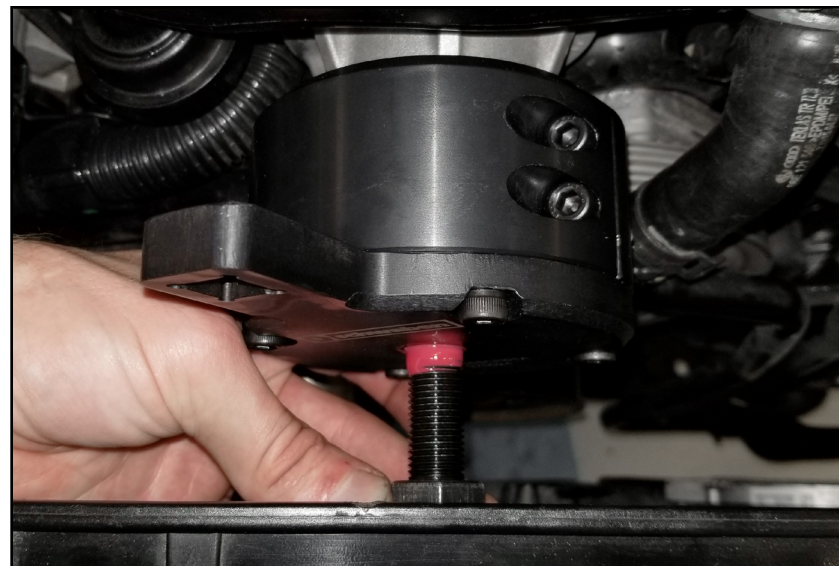
Now it's time to assemble our supercharger pulley removal tool:

- Completely disassemble the tool
- Slide the two halves of the shell in behind the pulley, then thread in the bolts by hand
- Line up the plate onto the end of the two shell halves, then thread in the bolts by hand
- Tighten all of the bolts until snug.



### Step 3:

Apply grease to the threads of the large center bolt. Thread the bolt into the tool until it makes contact, then **STOP**. Proceed to the next page.

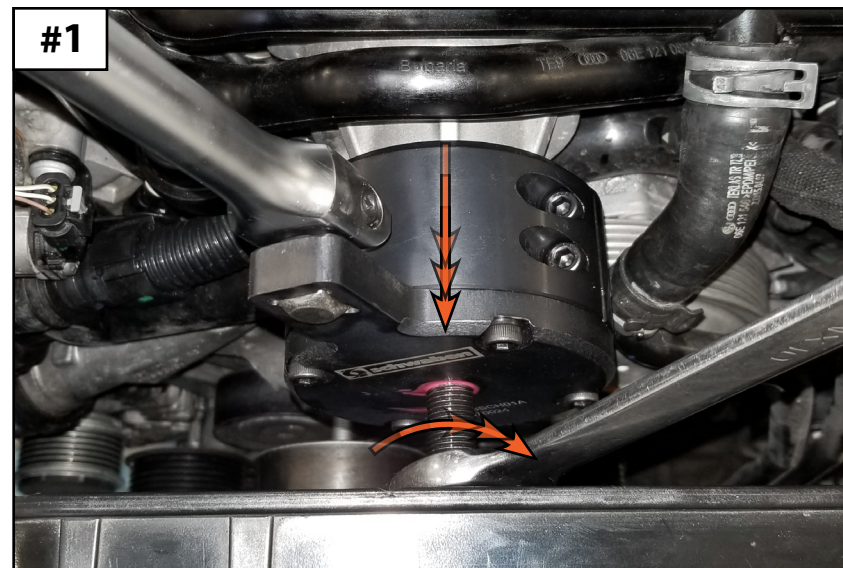




## INSTALLING THE NEW SUPERCHARGER PULLEY

### Step 4: 22mm Wrench, Breaker Bar

Insert a ½" breaker bar into the tool, then use a 22mm wrench to turn the bolt clockwise (as shown in **photo #1**). This will apply force to the back side of the pulley, slowly pulling it off of the supercharger snout. Once the pulley has been removed from the supercharger you can pivot the tool to the side and remove it from the engine bay (as shown in **photo #2**).





## INSTALLING THE NEW SUPERCHARGER PULLEY

### Step 5:



**CAUTION:** This pulley will be extremely hot, use appropriate protection to avoid burns.



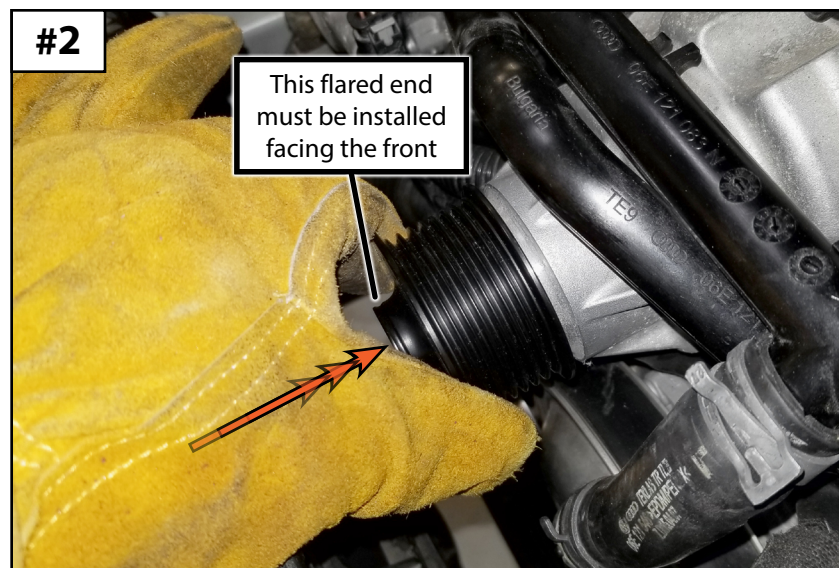
*This next step must be done quickly. Be sure to read through all of the text below before beginning:*

By now the new supercharger pulley should be fully heated, causing it to expand enough to allow it to be slid onto the supercharger snout. To further aid in assembly, you can invert a can of compressed air and spray the supercharger snout, causing the metal to cool and shrink (as shown in **photo #1**).

We would highly recommend the use of welding gloves (or comparable protective gloves) when handling the pulley.

Please note the orientation of the flared end on the pulley, this is where the OEM plastic end cap will be installed.

Remove the new supercharger pulley from the oven and quickly install it onto the supercharger snout (as shown in **photo #2**). It's very important that you push the pulley **all the way** onto the supercharger snout. If it cools down and gets stuck partway on you'll need to remove it with the pulley removal tool, then reheat and reinstall it.

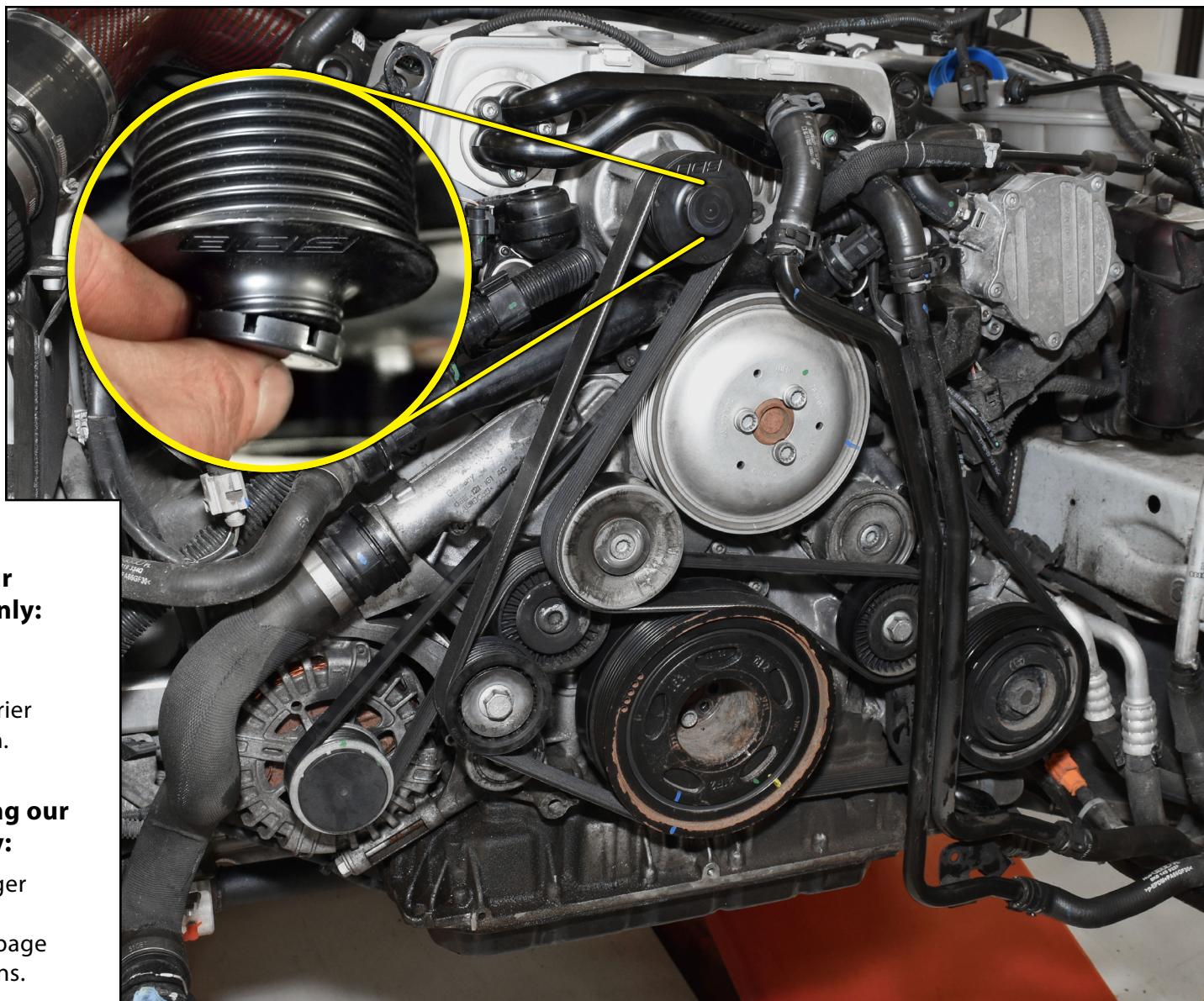




## INSTALLING THE NEW SUPERCHARGER PULLEY

### Step 6:

Allow the supercharger pulley to completely cool down before continuing. Once the pulley has cooled reinstall the OEM plastic end cap (as shown in inset photo).



#### **If you are installing our supercharger pulley only:**

- Install the new supercharger belt.
- Reinstall the lock carrier in its normal position.



#### **If you are also installing our upgraded crank pulley:**

- Leave the supercharger belt off for now.
- Proceed to the next page for further instructions.





# Please read this entire page before proceeding



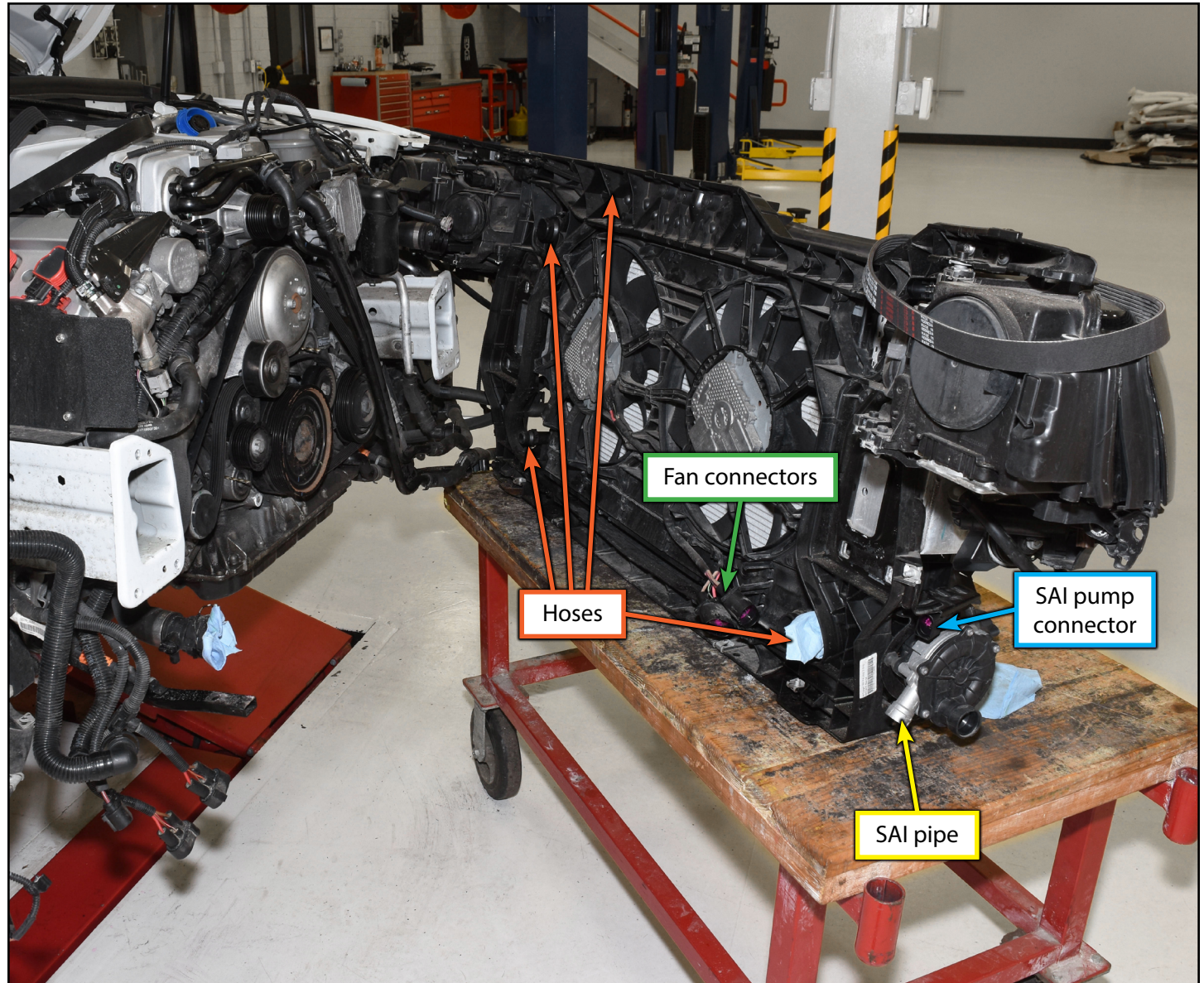
## INSTALLING THE NEW CRANKSHAFT PULLEY

### Step 1:

**NOTE:** This is **COMPLETELY OPTIONAL**.

For our install we pivoted the lock carrier outward for ease of access and visibility. While not required for the installation of the crank pulley, we recommend this extra step if you feel comfortable with the additional work. To move the lock carrier from service position to the position shown in the photo on the right only takes an additional 20-30 minutes.

You'll need to drain the coolant then disconnect the hoses from the radiator (**ORANGE** arrows), the fan connectors (**GREEN** arrows), the SAI pipe (**YELLOW** arrows), and the connector on the SAI pump (**BLUE** arrow). You'll also need to disconnect the headlight washer nozzles (if equipped), then support the lock carrier from below and swing it outward.



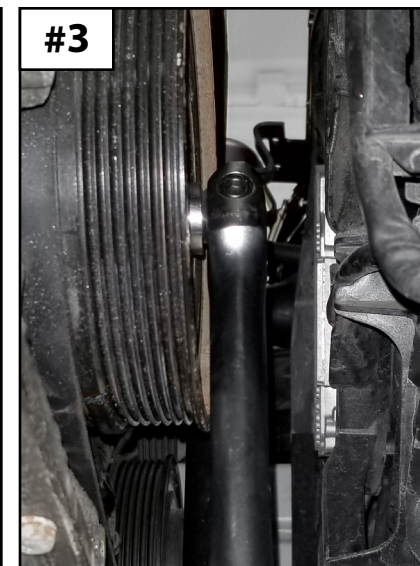
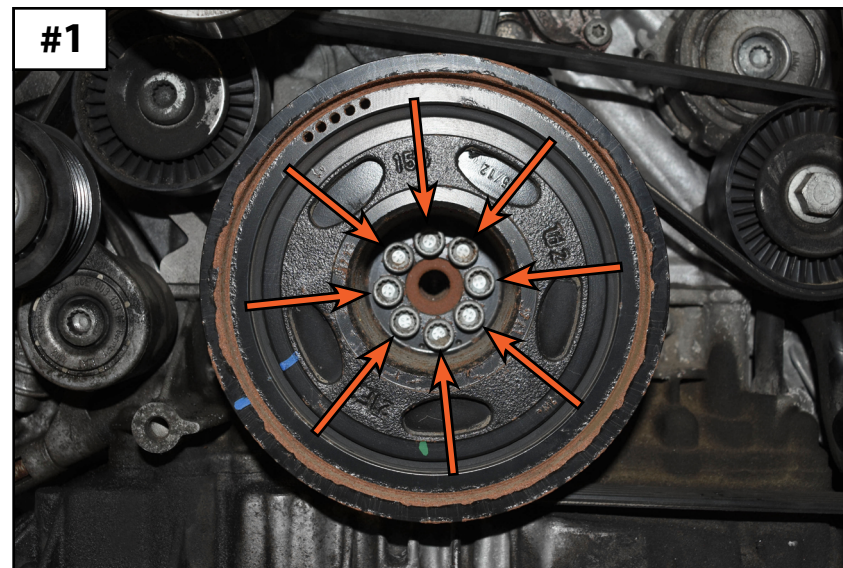


## INSTALLING THE NEW CRANKSHAFT PULLEY

### Step 2: M10 Triple Square Socket & ½" Breaker Bar

Loosen the crank pulley bolts (arrows in **photo #1**) slightly.

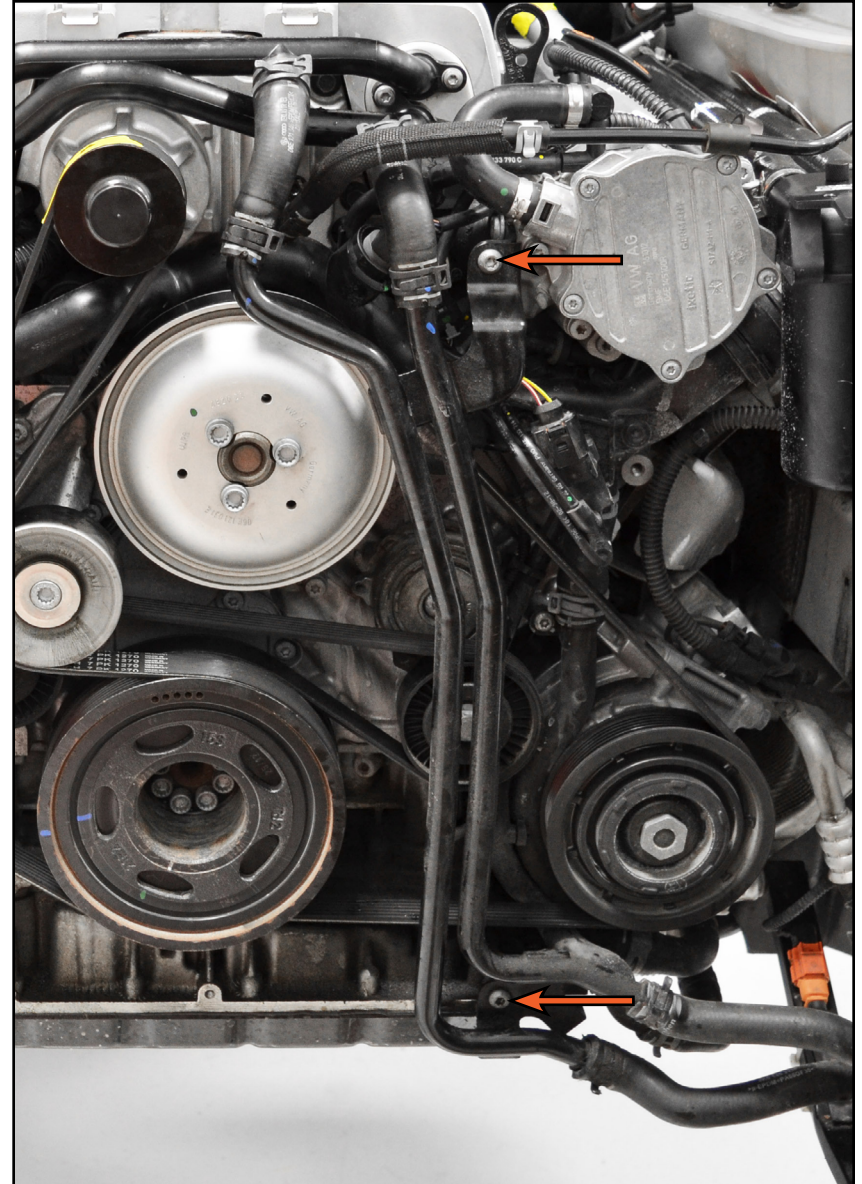
We found that we were able to use our Schwaben triple square socket and ½" breaker bar to loosen these bolts even with the lock carrier in service position (**photos #2 & #3**).



## INSTALLING THE NEW CRANKSHAFT PULLEY

### Step 3: T30 Torx Socket & Ratchet

Locate and remove the two bolts (arrows) that secure the coolant pipe to the front of the engine.

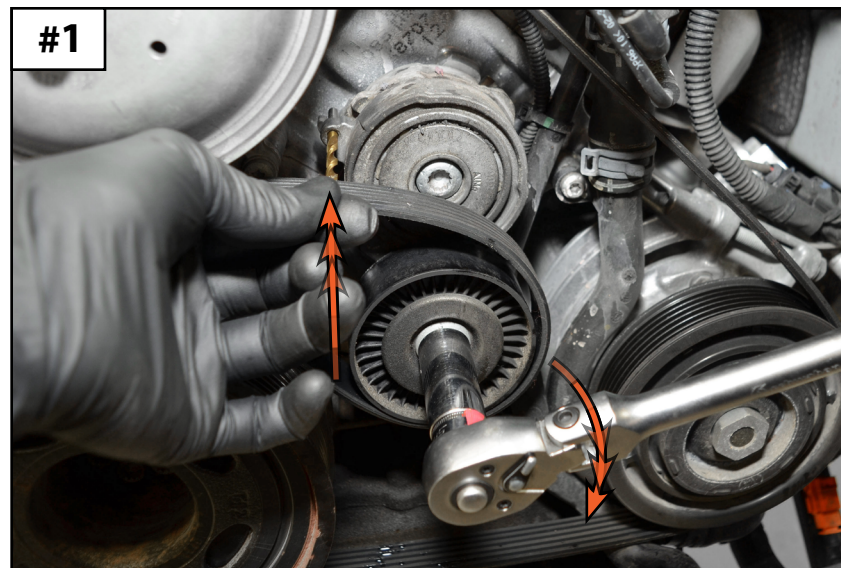




## INSTALLING THE NEW CRANKSHAFT PULLEY

### Step 4: 17mm Socket & Ratchet, or 17mm Wrench

Rotate the accessory belt tensioner clockwise to release the tension from the belt and slide a drill bit through the tensioner to lock it in the released position (as shown in **photo #1**), then remove the belt (as shown in **photo #2**).





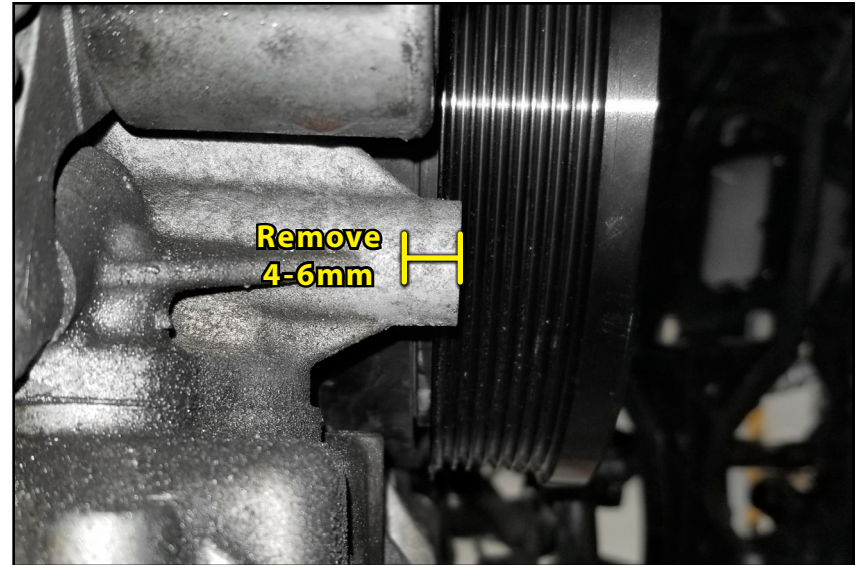
## INSTALLING THE NEW CRANKSHAFT PULLEY

### Step 5: Die Grinder

There is a threaded mounting post located next to the crank pulley that will interfere with the supercharger belt once the new crank pulley is installed. Using a die grinder, remove 4-6mm of material from the end of the post (reference the photo on the right).

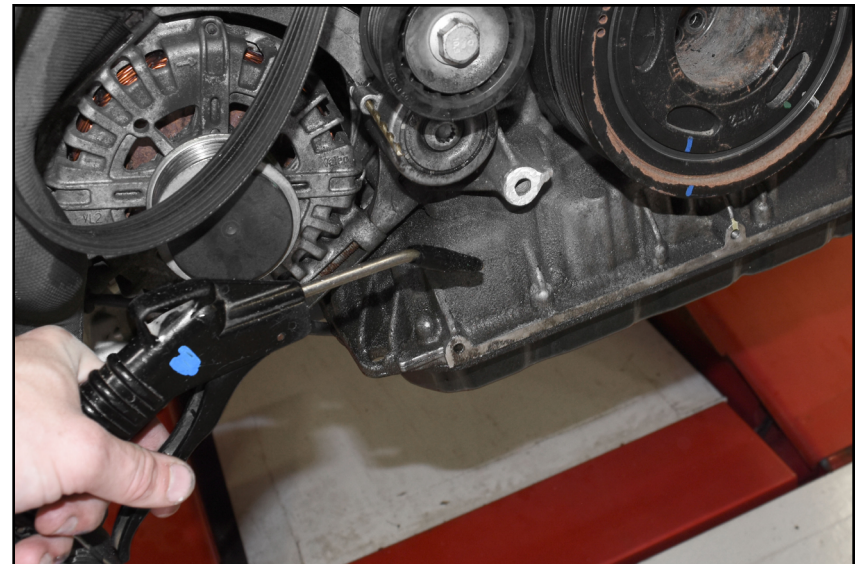


We opted to leave the crank pulley installed for this step to protect the crank seal from any flying metal shavings or debris from grinding.



### Step 6:

Remove any metal shavings or debris from the area with compressed air.



## INSTALLING THE NEW CRANKSHAFT PULLEY

### Step 7: M10 Triple Square Socket & Breaker Bar

Using a paint pen, make an alignment mark on the crank pulley and the timing case (as shown in **photo #1**). This mark must be made in the area between the two belt channels on the pulley, and it will make it much easier to install the crank pulley later on.

Once the alignment mark is made, remove all of the crank pulley bolts (arrows in **photo #2**) and continue to the next step.

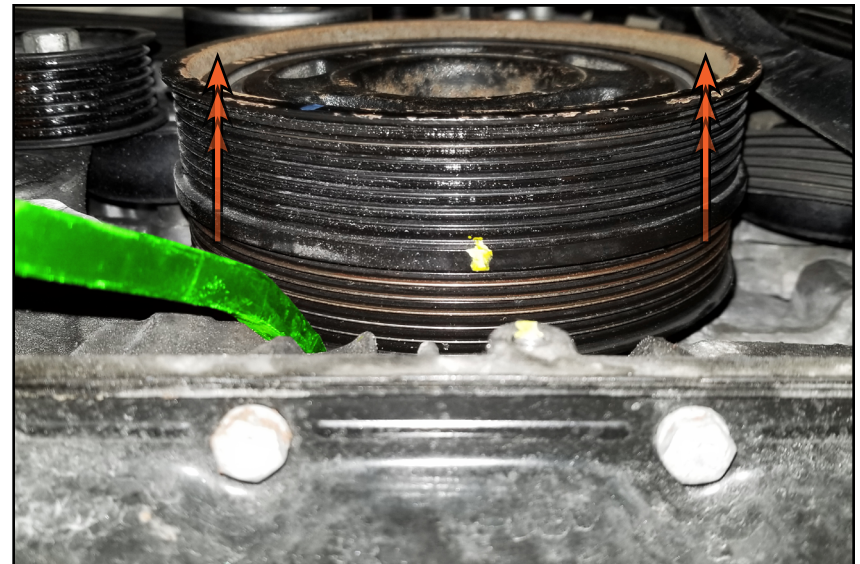


### Step 8: Pry Bar

Using a pry bar (highlighted in **GREEN**), gently pry the crank pulley off of the hub.



You may find that you need to alternate prying on the LH and RH side of the pulley to “walk” it off of the hub.



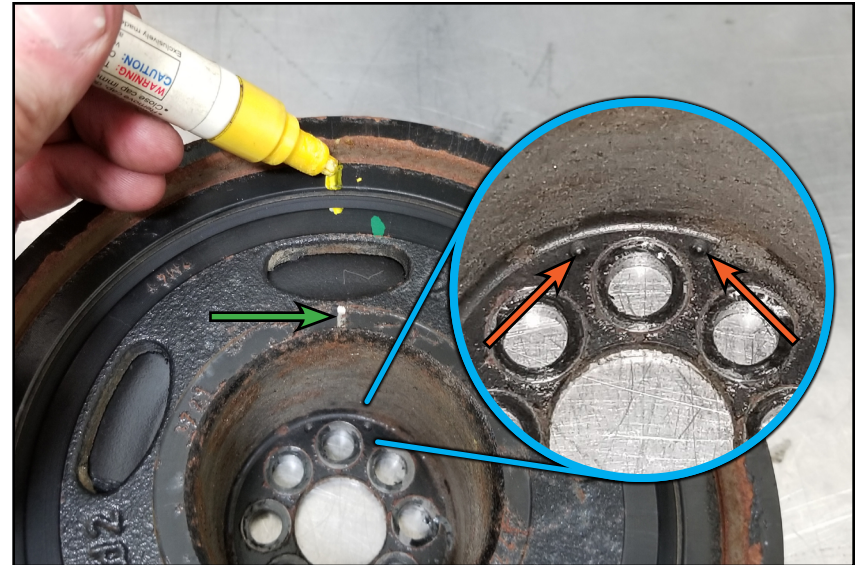


## INSTALLING THE NEW CRANKSHAFT PULLEY

### Step 9: Paint Pen

One of the bolt holes in the OE crank pulley will be offset by 1mm. This is very important to identify because you won't be able to install the new pulley without aligning this offset bolt hole properly. The offset bolt hole can be identified by the machined divots on either end of the bolt hole inside the hub bore (arrows in the inset photo), and the white mark on the front face of the pulley (**GREEN** arrow).

Use a paint pen to extend the white alignment mark on front face of the OE crank pulley.



### Step 10:

Slide the new crank pulley into the OE crank pulley, aligning the machined hole on our pulley with the paint mark we made on the OE pulley in previous step (arrows). Insert one of the supplied bolts to keep the pulleys in alignment, then continue to the next step.



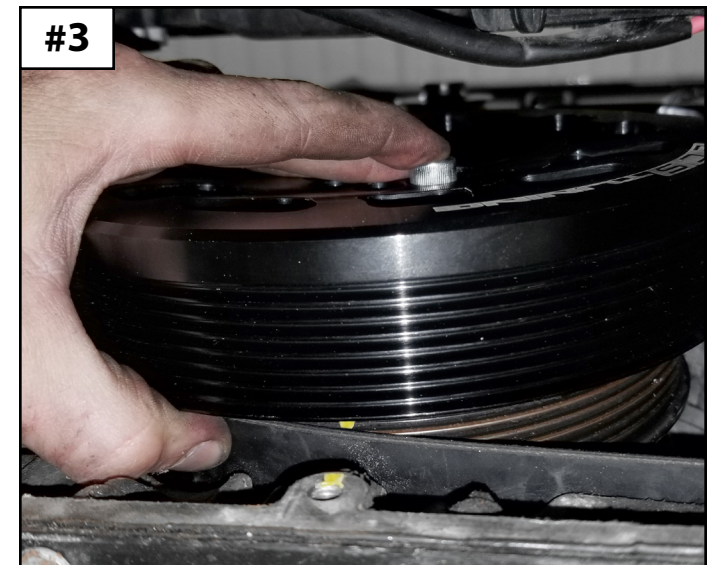


## INSTALLING THE NEW CRANKSHAFT PULLEY

### Step 11:

Before installing the pulley, it's important to make sure that the accessory belt is routed around where the crank pulley will sit once installed (as shown in **photo #1**). It's ***much*** easier to route the belt, rather than once the pulley has been installed.

Slide the crank pulley between the engine and the lock carrier (as shown in **photo #2**), then align the paint mark we made on the OE crank pulley and the mark on the timing case, and thread the crank pulley bolt in by hand (as shown in **photo #3**).

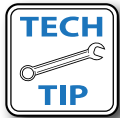


## INSTALLING THE NEW CRANKSHAFT PULLEY

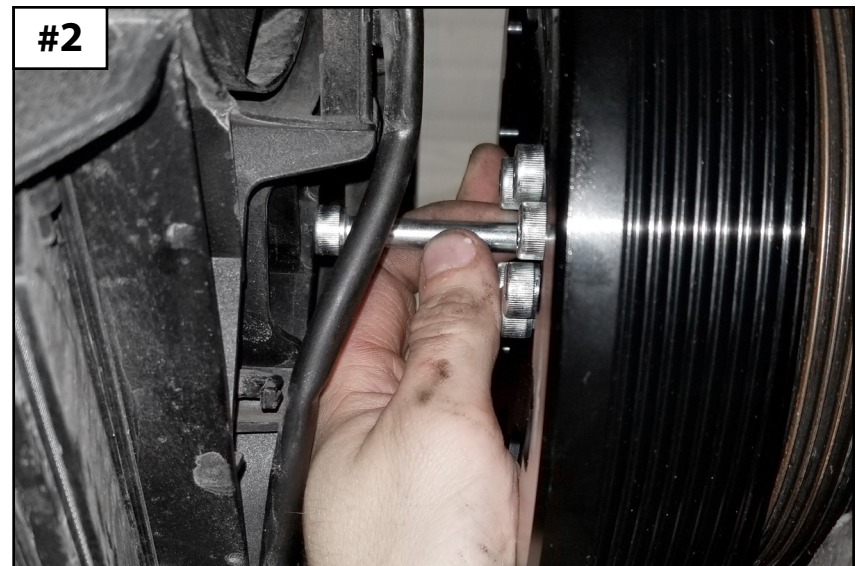
### Step 12: 6mm Hex (Allen)

Apply 2-3 drops of threadlocker to the threads of each bolt (as shown in **photo #1**), then insert them through the crank pulleys and thread them in by hand (as shown in **photo #2**) and continue to the next step.

Even with the lock carrier in service position there is very little room to work on this step. Be patient and try to use the open spaces in the fan shroud to slide the heads of the bolts into while lining them up with the bolt holes.



Even with the lock carrier in service position there is very little room to slide the bolts into the pulley. Slide the heads of the bolts into the open spaces in the fan shroud while lining them up with the bolt holes. The Schwaben Stubby Socket Driver Set ([ES#3103367](#)) makes it much easier to tighten these bolts in such a tight space!





## INSTALLING THE NEW CRANKSHAFT PULLEY

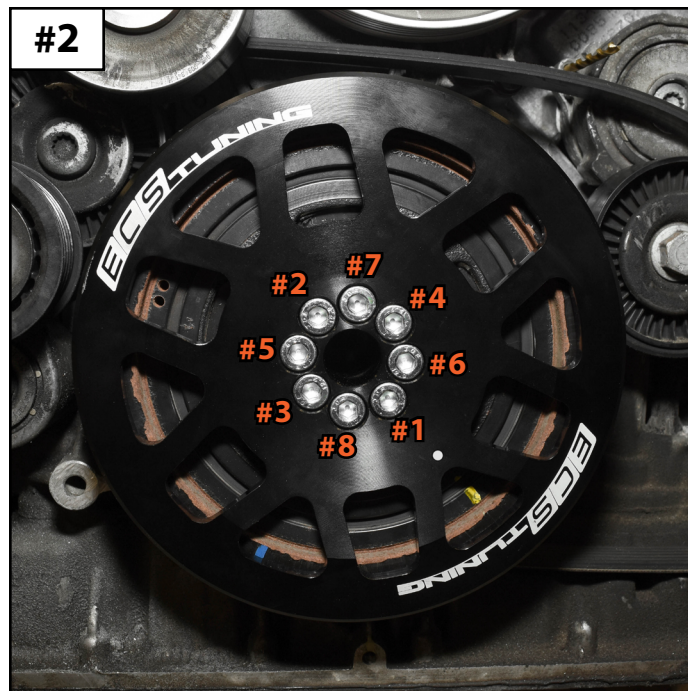
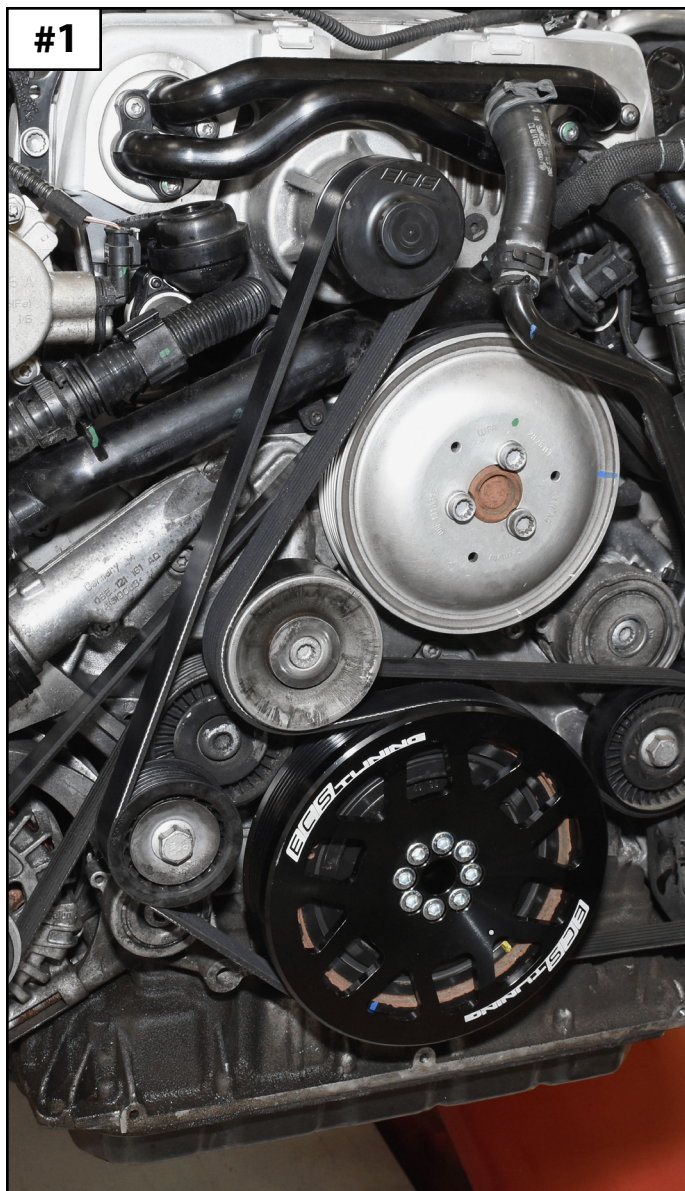
### Step 13:

Install the new supercharger belt (as shown in **photo #1**). We've included a belt routing diagram on [Page 21](#) for your to reference.

Torque the crank pulley bolts in the pattern shown in **Photo #2**, first to 20 Nm, then an additional 90°.

Please note that due to the size of the upgraded crank pulley, the accessory belt won't be able to be removed without loosening or removing the supercharger idler pulley (**photo #3**).

***Your installation is complete!***



**NOTE:** The supercharger idler pulley will need to be removed in order to replace the main drive belt in the future.



## BELT ROUTING DIAGRAM

Please reference the photo on the right for the locations of belt driven accessories and the routing of both the accessory belt and the supercharger belt.

**Supercharger Belt**

**Accessory Belt**

**SC:** Supercharger Pulley

**I:** Supercharger Belt Idler

**T:** Supercharger Belt Tensioner

**CRANK:** Crank Pulley (drives both belts)

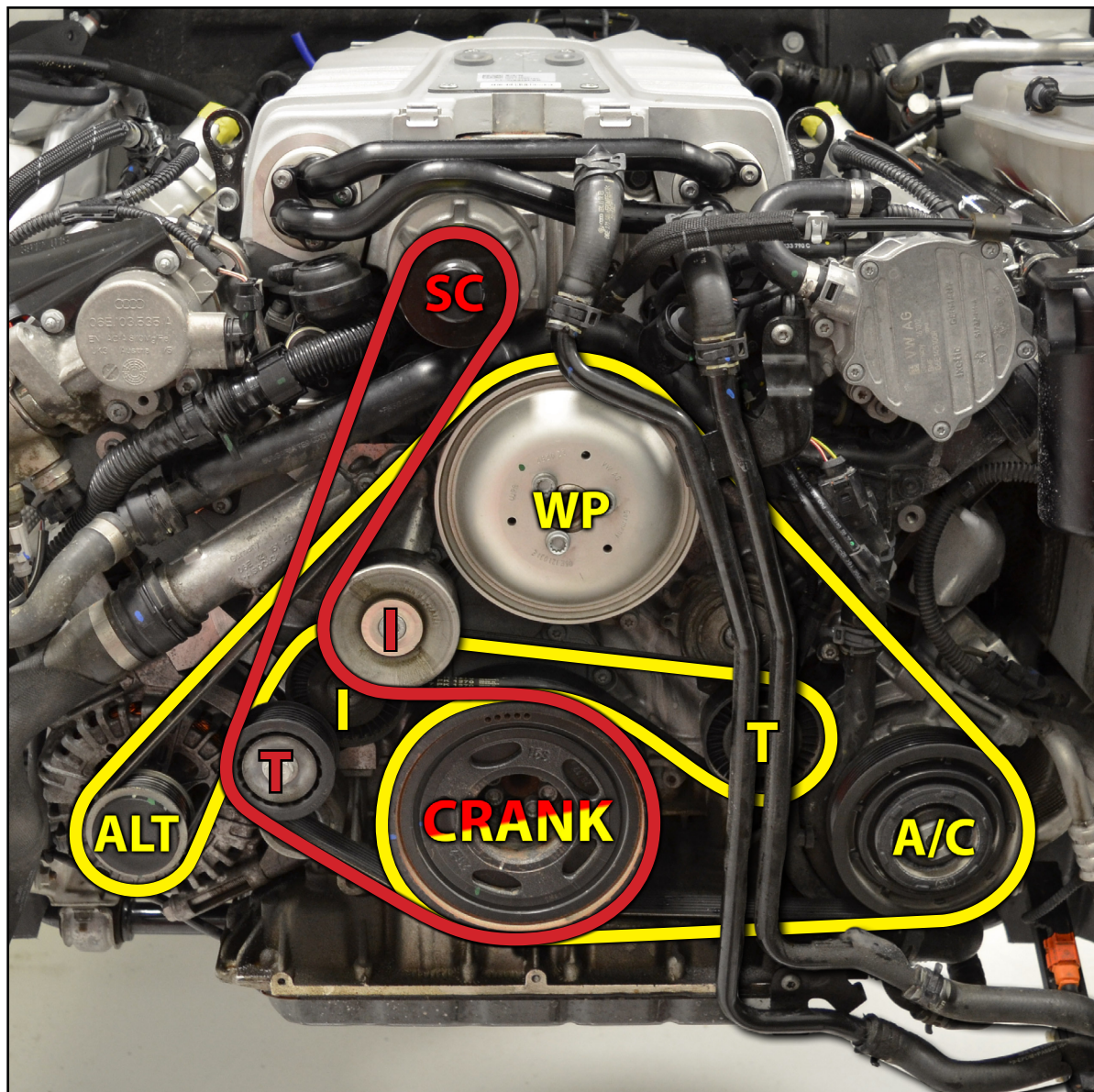
**WP:** Water Pump Pulley

**I:** Accessory Belt Idler

**T:** Accessory Belt Tensioner

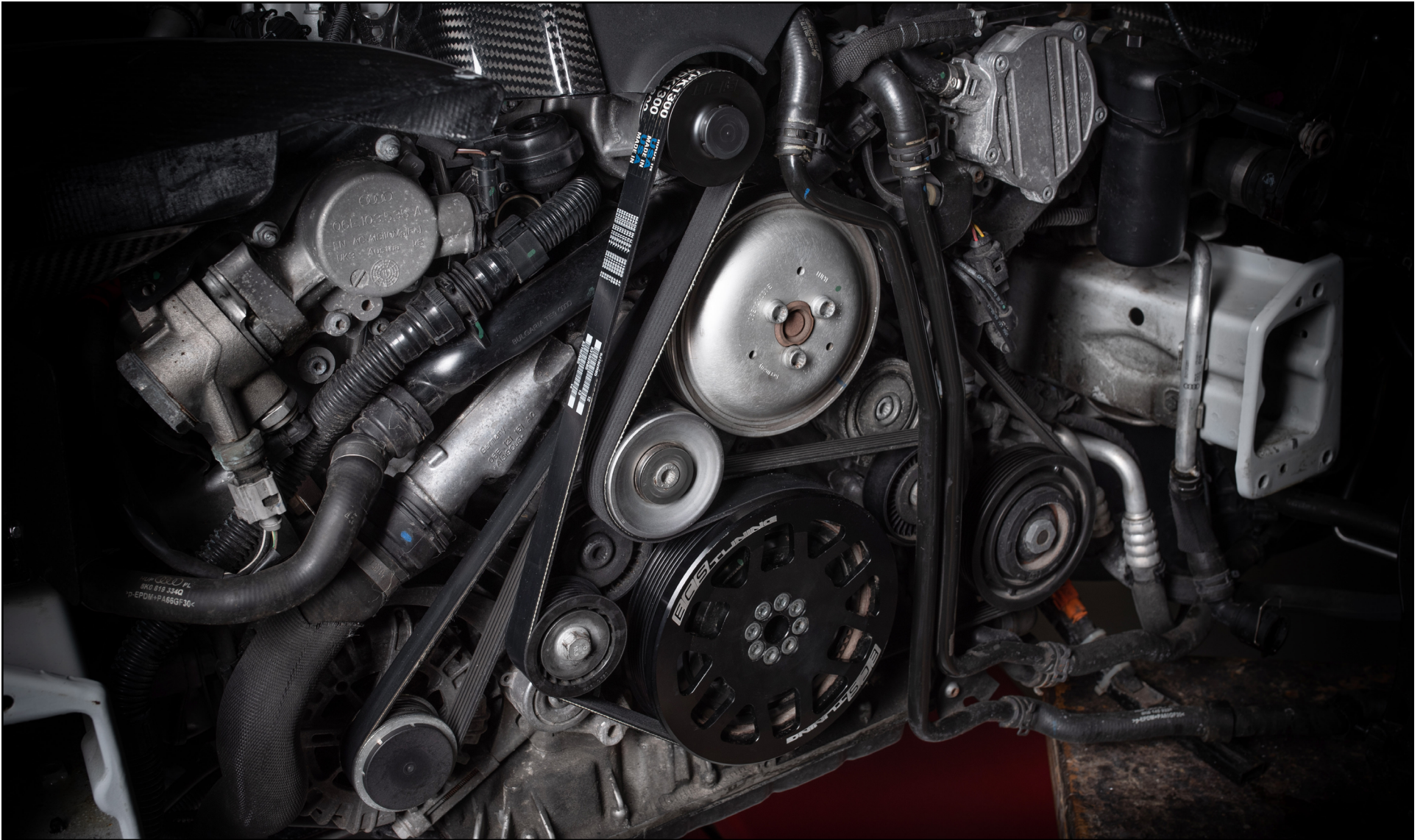
**A/C:** A/C Compressor

**ALT:** Alternator





## Your 3.0T Pulley Upgrade installation is complete!



### These instructions are provided as a courtesy by ECS Tuning

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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