

Performance Installs

ATK-6-141/-143 Intercooler Upgrade & Piping Upgrade

Installation Instructions for the CorkSport Performance Front Mount Intercooler & Piping Kit for 2018+ Mazda 6 Turbo, 2016+ CX-9, & 2019+ CX-5 Turbo.

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INTRODUCTION

In this installation guide we have provided step by step instructions to remove the OEM intercooler and/or piping and install the CorkSport Performance intercooler and/or piping.

Advisory:

- Working under the vehicle requires a safe and sturdy location for the vehicle to sit on jackstands.
- You will be removing the front bumper of your vehicle. It is easy to do, however, if you are not comfortable doing so, please seek a professional installer.
- Install instructions were created using a 2018 Mazda 6 Grand Touring Reserve. Other trim level Mazda 6, Mazda CX-9, and Mazda CX-5 Turbo will be similar.
- Installation on Mazda CX-9 requires very minor modification to the radiator core support for proper fitment.

TOOLS:

- Hydraulic Jack (1)
- Jack Stand (2)
- 3/8" Drive Ratchet (1)
- 3 8" Short extension (1)
- 7mm Socket - Deep (1)
- 8mm Socket - Deep (1)
- 10mm Socket - Deep (1)
- 12mm Socket - Deep (1)
- 10mm Wrench (1)
- Small Needle Nose Pliers (1)
- Flathead Screwdriver (1)
- Phillips Screwdriver (1)
- Push Clip Remover Tool (1)
- Blue Painters Tape (1)

PARTS:


- ATK-6-141 Intercooler (1)
Not included if piping kit purchased alone.
- ATK-6-141 OEM Piping Adapter Kit (1)
Not included if piping kit purchased.
- ATK-6-143 Intercooler Piping Kit (1)
Not included if intercooler purchased alone.

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
-  These instructions apply to if you are installing the intercooler alone, intercooler and piping together, or already have the intercooler and are just upgrading piping. **If you see the thumbtack symbol shown to the left, pay attention as you may need to skip steps for your specific install.**


Step 2 — Lifting the Car



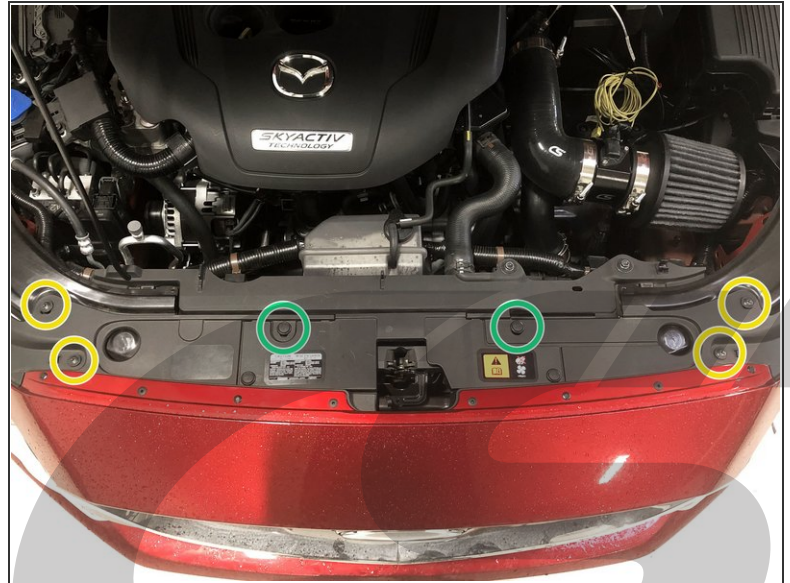
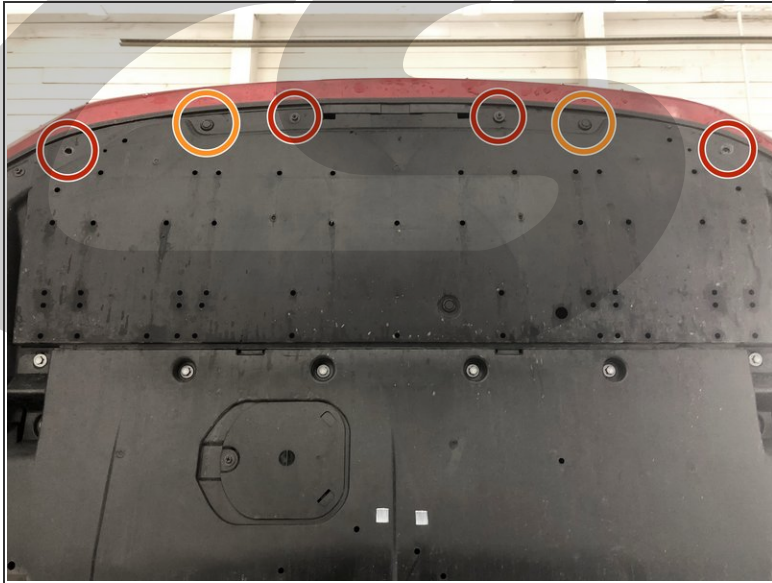
-  Ensure the vehicle is parked on a level surface before proceeding.
- Start by lifting up the front of the car using the hydraulic jack and jack stands.
-  Be sure to reference your owners manual for jack points and the jack manufacturer's instructions for proper practices.

Step 3 — Are you Installing on CX-5 or CX-9?



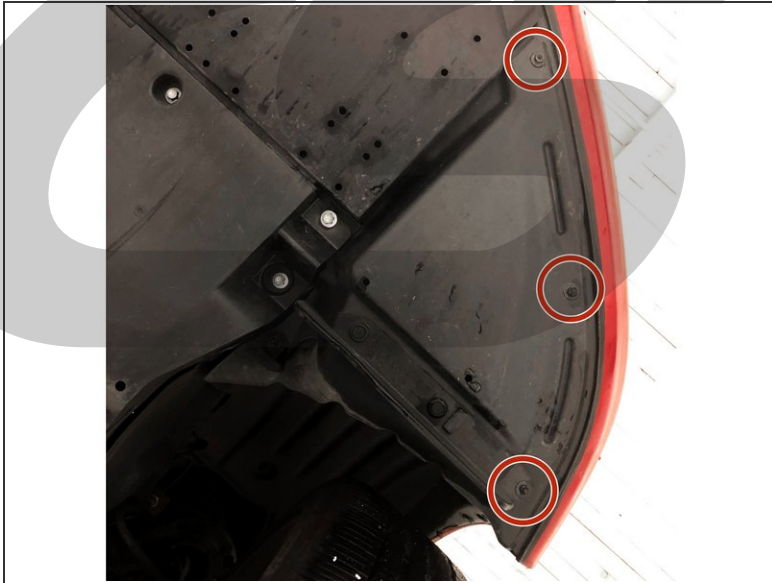
-  **Bumper removal is very different on the CX-5 and CX-9. Please skip to Step 11 for bumper removal instructions on the SUVs.**

Step 4 — Removing the Front Bumper Part 1



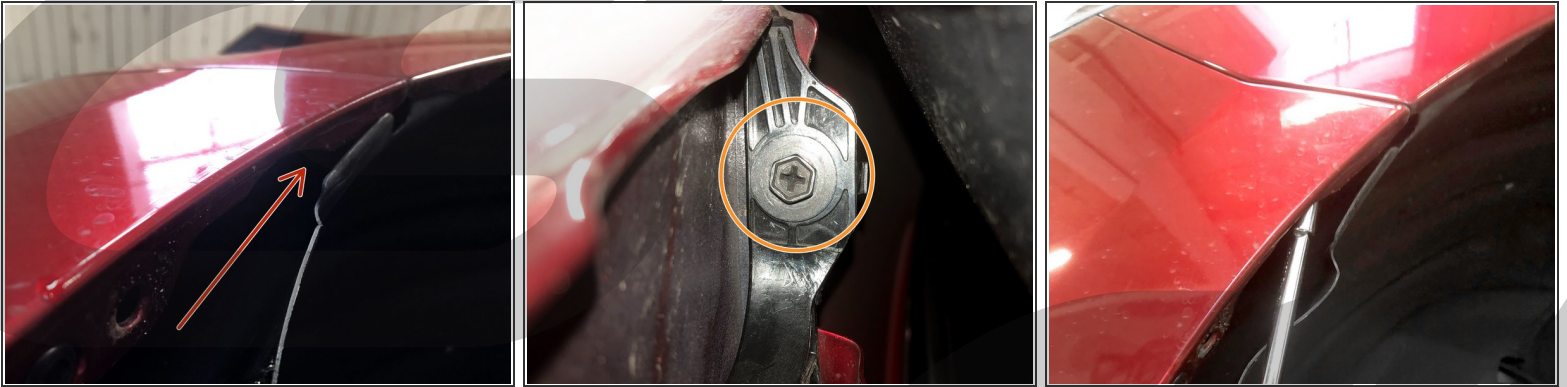
- Go underneath the car and remove the four 8mm bolts along the edge of the bumper using an 8mm socket and ratchet.
- ⓘ In image 1, the two outermost bolts had already been removed.
- Remove the two small push clips located on the front edge of the bumper.
- ⓘ Take note of large vs. small push clips throughout the install instructions.
- ☑ If you have already installed the CS intercooler and are upgrading to the CS piping kit, bumper removal is optional. If you do not wish to remove your bumper, skip to step 23.
- Remove the four Phillips head screws from the top portion of the bumper in the engine bay.
- Remove the two large push clips near the screws removed previously.

Step 5 — Removing the Front Bumper Part 2



- Remove the three 8mm bolts where the driver's side fender liner attaches to the bumper using an 8mm socket and ratchet.
- Look into the drivers side fender.
- Remove the four small push clips that attach the driver's side fender liner to the front bumper.
- Pull the fender liner away from the front bumper.

Step 6 — Removing the Front Bumper Part 3



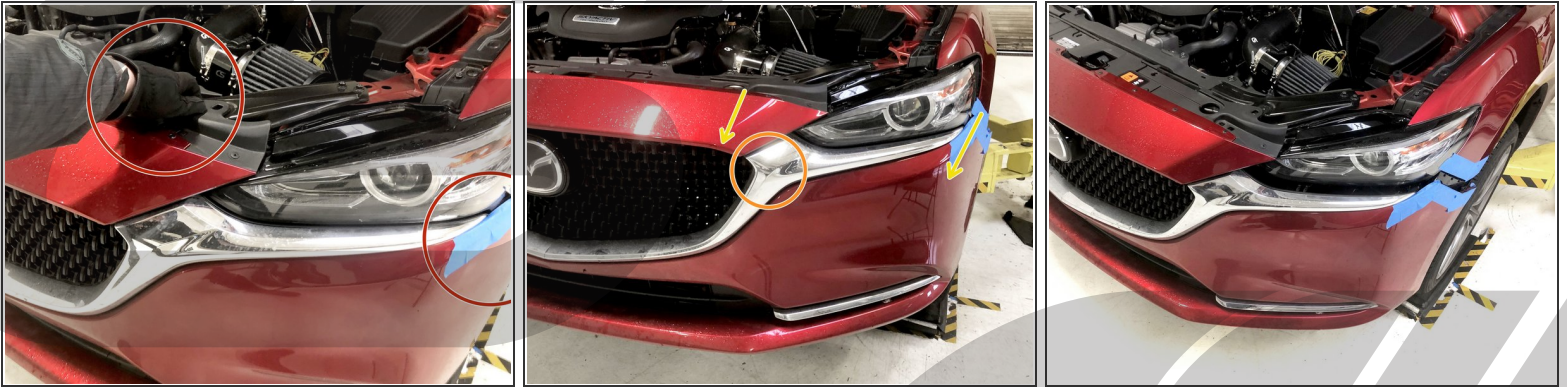
- With the fender liner pulled away from the bumper, look up at the corner of the bumper.
- Remove the 8mm bolt in this location using an 8mm socket, extension, and ratchet.
- Repeat steps 4 and 5 for the passenger side of the vehicle.

Step 7 — Removing the Front Bumper Part 4



- Apply blue painters tape to the areas shown to prevent scratches when removing/installing the bumper.
- Using your hand, pull outward on the corner of the bumper to unclip it from the fender. Image 2 shows it popped out.

Step 8 — Removing the Front Bumper Part 6



- Place one hand on the corner of the bumper as before. Place the other hand near where you removed the phillips screws in step 2.
 - There is a plastic clip that will need to release. It is located behind the bumper approximately where the orange circle is.
 - Pull outward on the bumper until you hear a loud click and the bumper pops outward slightly.
- ⚠ This clip requires a decent amount of force to remove, especially the first time. That being said, use caution to avoid damage.
- i** The third image shows the bumper popped out of place.

Step 9 — Removing the Front Bumper Part 7



⚠ After completing the next step, the bumper will be free and ready for removal. Use caution so it does not fall or get damaged.

- Repeat steps 6 and 7 to release the passenger side of the bumper from the vehicle.
- Remove the bumper by slightly lifting it to clear the hood latch.
- i** We recommend setting your bumper on cardboard or a blanket to prevent any scratches.

Step 10 — Are you Installing on Mazda 6?

- ★ If you are installing on Mazda 6, please skip to Step 17. The following steps show CX-5 and CX-9 bumper removal.

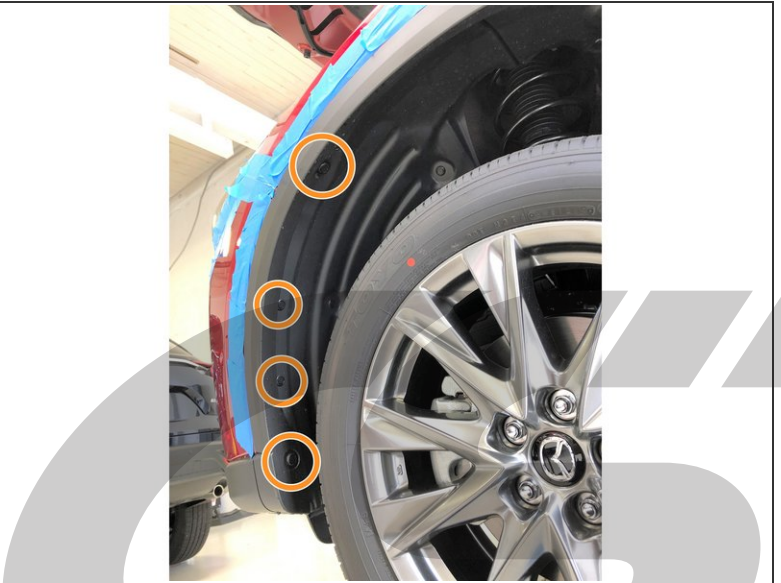
Step 11 — Removing the Front Bumper Part 1



i Instructions shown on 2019 CX-5. 2016+ CX-9 is nearly identical.

- Go underneath the car and remove the four 8mm bolts along the edge of the bumper using an 8mm socket and ratchet.
- Remove the two small push clips located on the front edge of the bumper.
- i** Take note of large vs. small push clips throughout the install instructions.
- Remove the four Phillips head screws from the top portion of the bumper in the engine bay.
- Remove the six large push clips that attach the top of the bumper to the chassis.
- Remove the plastic center portion above the radiator.
- Remove the two large push clips that are now visible near the hood latch release.

Step 12 — Removing the Front Bumper Part 2



- Apply blue painters tape to the areas around the plastic fender flare and where the bumper meets the rest of the vehicle.
 - ⓘ This prevents scratches during the next steps and during removal/install of the bumper.
- Look into the driver's side fender.
- Remove four small push clips located in front of the front tire.

Step 13 — Removing the Front Bumper Part 3



- Starting at the bottom of the plastic fender flare, pull outward gently to pop the flare free from the fender.
 - Work your way up the flare slowly. There should be four to five clips that will need to pop free.
 - Once you can access the black 10mm screw in the top corner of the bumper, you can stop removing the flare.
 - Remove this black 10mm screw with a 10mm socket and ratchet.
- ⚠** Do not pull the plastic fender flare too far outwards as it can be damaged or bent. Only gain enough clearance to access the black screw.
- i** If any clips remain attached to the bumper, pull them free and slide them into the slots on the backside of the fender flare for an easy reinstall later.

Step 14 — Removing the Front Bumper Part 4



- Behind the fender flare, at the bottom corner of the bumper, there will be one small push clip.
- Remove this small push clip.
- Back underneath the car, remove three 8mm bolts from the bottom of the fender liner using an 8mm socket and ratchet.
- Pull down the bottom of the fender liner to access connections for your fog lights and front end sensors.
- Remove two wiring connectors and one to two wiring clips as needed to free the bumper from the electrical components.

Step 15 — Removing the Front Bumper Part 5



- Starting at the top corner of the bumper, pull outward to pop the bumper free from its mounting clips.
- ⓘ There are two plastic layers in this top corner. You want to get your hand between the painted and black layers to free the bumper.
- Once free, move to the front of the bumper and place your hands as shown.
- Pull forwards to release a large clip located behind the corner of the grill. There will be a loud click and the bumper will pop forward slightly.
- ⓘ This clip requires a decent amount of force to remove, especially the first time. That being said, use caution to avoid damage.

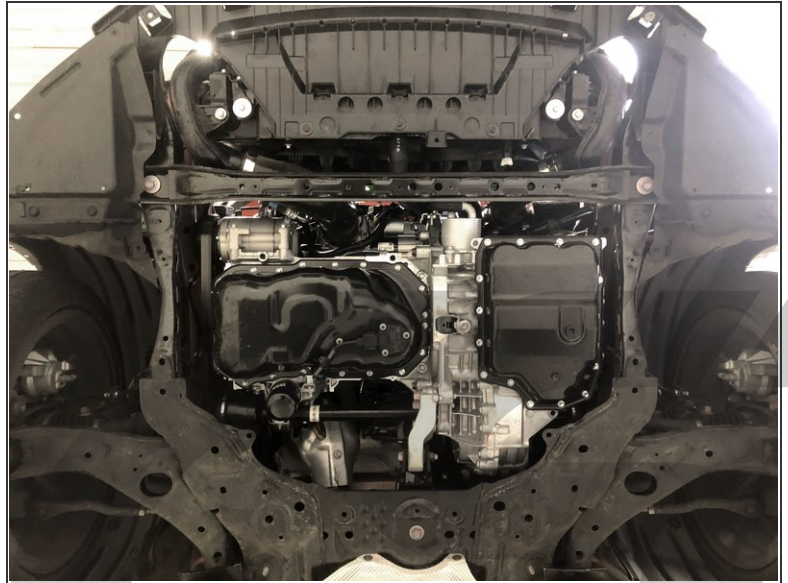
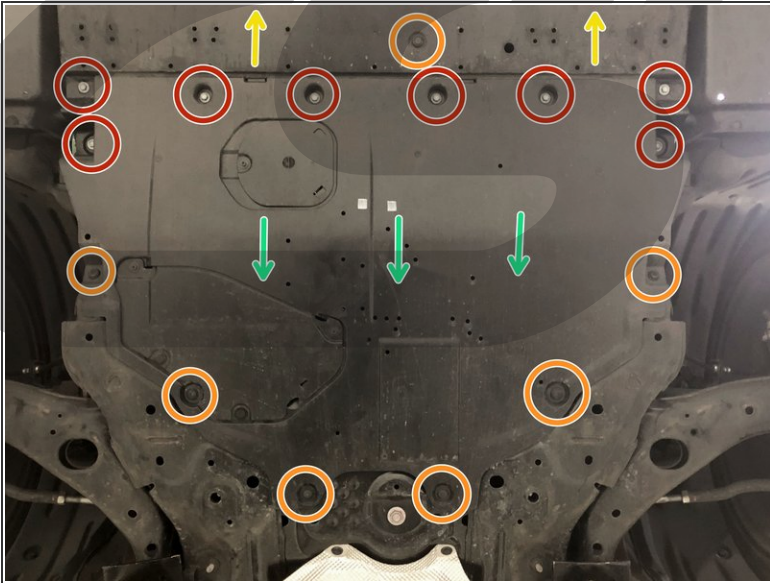
Step 16 — Removing the Front Bumper Part 6



⚠ After completing the next step, the bumper will be free and ready for removal. Use caution so it does not fall or get damaged.

- Repeat steps 12-15 for the other side of the bumper.
- Remove the bumper by slightly lifting it to clear the hood latch.
- ⓘ We recommend setting your bumper on cardboard or a blanket to prevent any scratches.

Step 17 — Removing the Engine Undertray

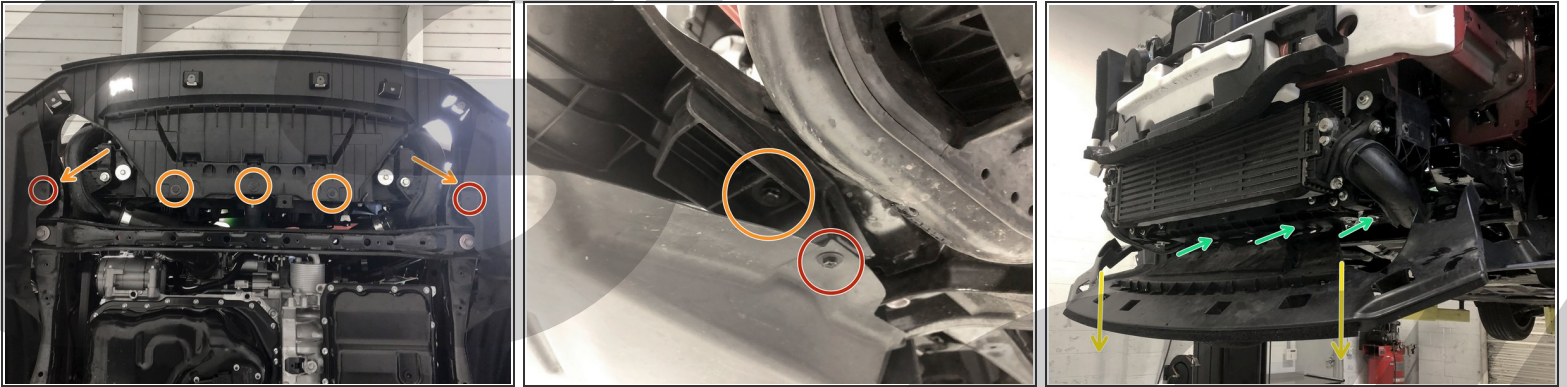


- Go underneath the car and remove the eight 10mm bolts holding the undertray to the chassis.
- Remove the 6 large and 1 small push clips from the engine undertray.
- Remove the front section of the engine undertray.
- Remove the rear section of the engine undertray.

Step 18 — Are you only installing the CS Piping Kit?

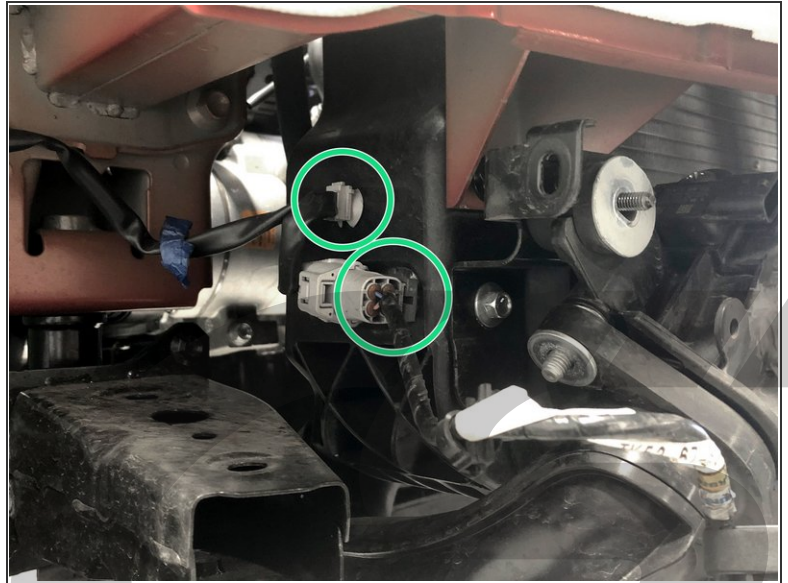
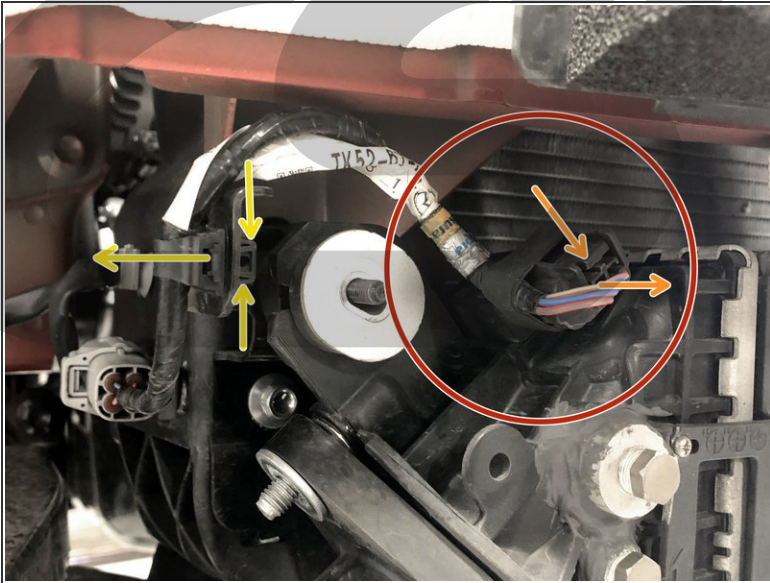
- **If you have already installed the intercooler and are upgrading to the piping kit, please skip to Step 23**

Step 19 — Removing the Front Bumper Support



- Remove the two 8mm bolts holding the fender liners to the front bumper support.
 - ⓘ CX-5 and CX-9 vehicles will have four 8mm bolts.
- Remove the five 10mm bolts holding the front bumper support to the chassis.
- ⓘ Image 2 shows a better look at the outer 8mm and 10mm bolts.
- Pull down on the front of the bumper support to unclip it from the radiator core support. (shown completed in image 3).
- Slide the bumper support rearward slightly to free it from the radiator core support. Then remove it from the vehicle.

Step 20 — Removing the OEM Intercooler Part 1



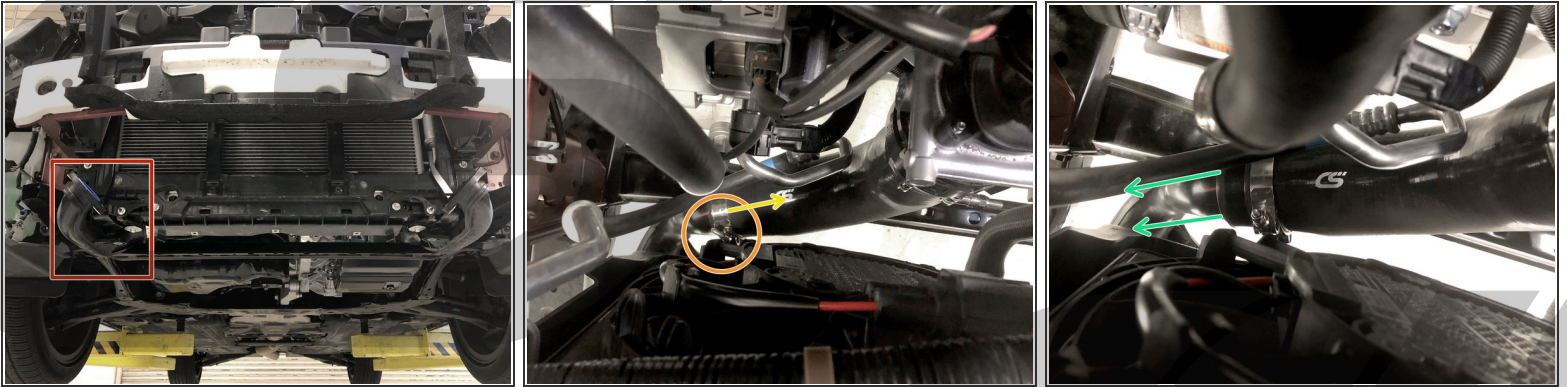
- Locate the MAP sensor on the passenger side endtank.
- Squeeze the electrical connector and remove it from the MAP sensor.
- Unclip the wiring from the OEM intercooler bracket using needle nose pliers.
- Pry the other two wiring clips off of the radiator core support and move the wiring out of the way.

Step 21 — Removing the OEM Intercooler Part 2



- The vehicle we used did not have the OEM plastic shrouds installed. Remove yours by removing one push clip.
- Remove the two 12mm nuts that connect the intercooler to the OEM intercooler piping extension.
- Remove the 12mm bolt that secures the lower portion of the OEM intercooler piping extension.
- Remove the 10mm nut and bolt that hold the FMIC to the OEM mounting bracket.
- Pull the OEM piping off the studs of the OEM FMIC.
- Repeat these steps for the other side of the intercooler.
- The intercooler can now be removed by pulling toward the front of the car.

Step 22 — Removing the OEM Intercooler Piping Extensions Part 1

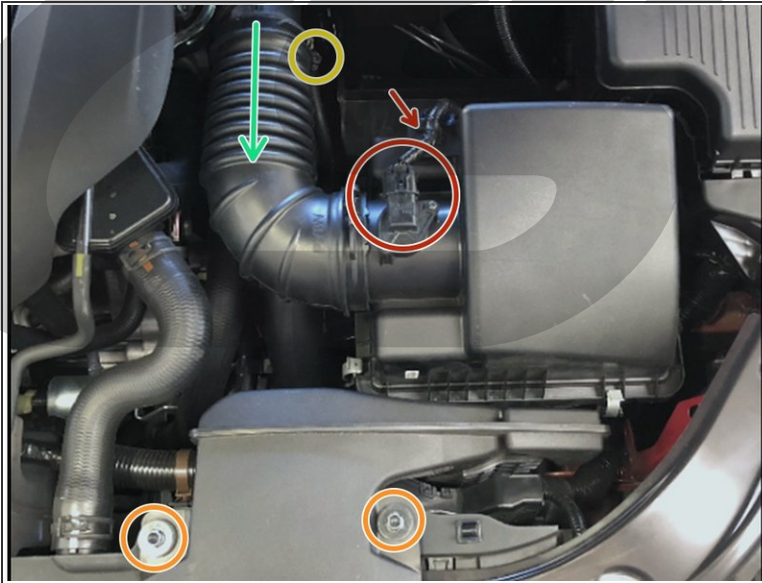


- i** The vehicle used for install had a CorkSport Boost Tube installed. The OEM boost tube disassembles exactly the same.

 - Locate the OEM cold side (passenger side IC piping extension).
 - Loosen the 10mm clamp that secures the OEM piping extension to the cold side boost tube.
- i** The clamp in the previous bullet can be accessed easiest when looking directly downward into the left side of the engine bay. Image 2 shows this perspective.

 - Slide the clamp up the boost tube and out of the way.
 - Slide the boost tube off of the end of the OEM IC piping extension and remove the extension from your vehicle.

Step 23 — Removing the OEM Intercooler Piping Extensions Part 2



i These instructions show removing the OEM intake. If you have a CS intake, the steps to remove are very similar, but you will not have the bolts circled in orange.

- Unplug the MAF sensor & unclip it from the top of the airbox.
- Remove the two 10mm bolts from the front of the intake.
- Loosen the 10mm clamp that attaches the intake tube to the turbo inlet pipe.
- Pull the intake tube off of the turbo inlet pipe.
- Lift upwards to release the OEM intake from the rubber mounts. Remove it from the vehicle.

Step 24 — Are you only installing the CS Piping Kit?



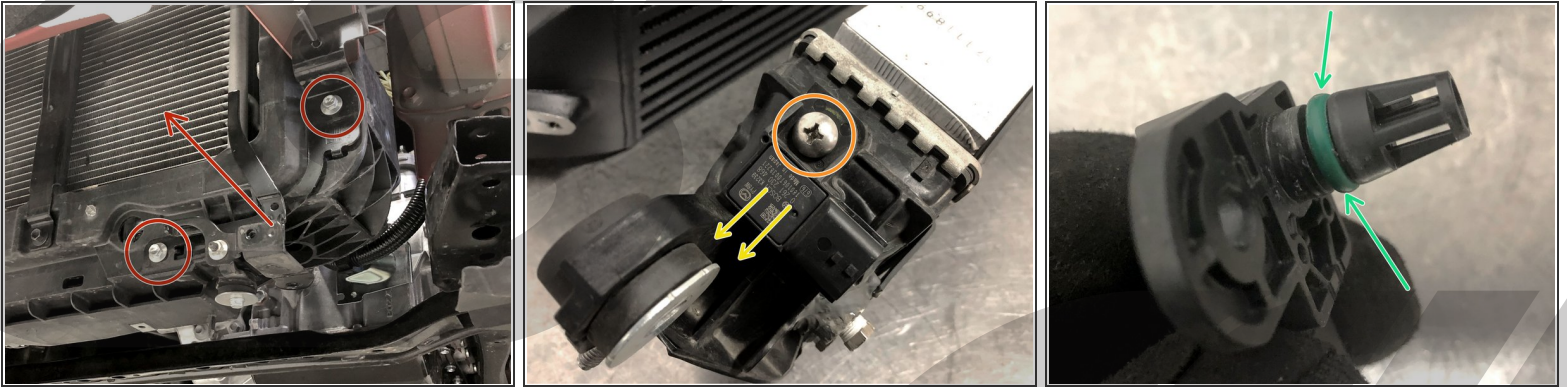
- If you have already installed the intercooler and are upgrading to the piping kit, please skip to step 45

Step 25 — Removing the OEM Intercooler Piping Extensions Part 3



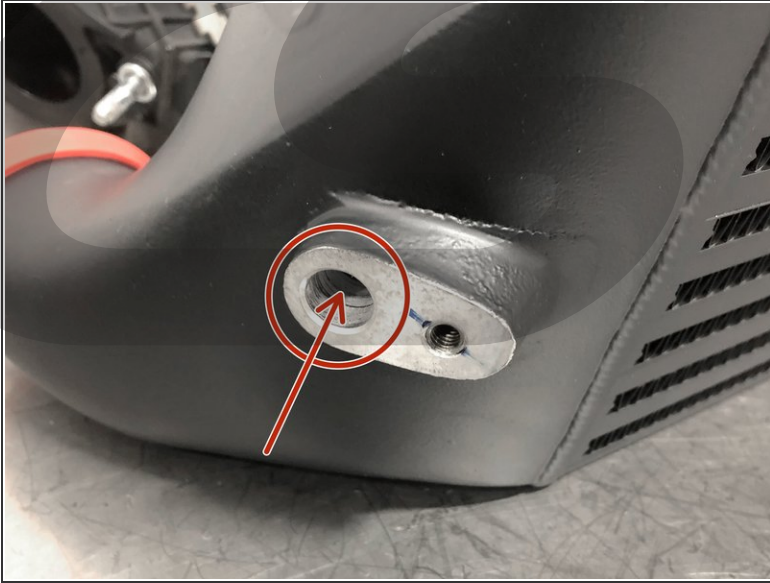
- Undo the click-lock of the OEM hot side boost tube.
- Using a screw driver or similar, pry outward on the metal wire.
- Both sides need to be "popped" out for the connection to separate. Image 2 shows just the forward side popped out. Image 3 shows both sides popped out. You may need to pop out both sides at the same time for best results.
- Pull downward to separate the upper plastic section from the lower rubber section. Then remove the lower rubber section and the OEM hot side IC piping extension from the vehicle.

Step 26 — Preparing for CS Intercooler Install Part 1



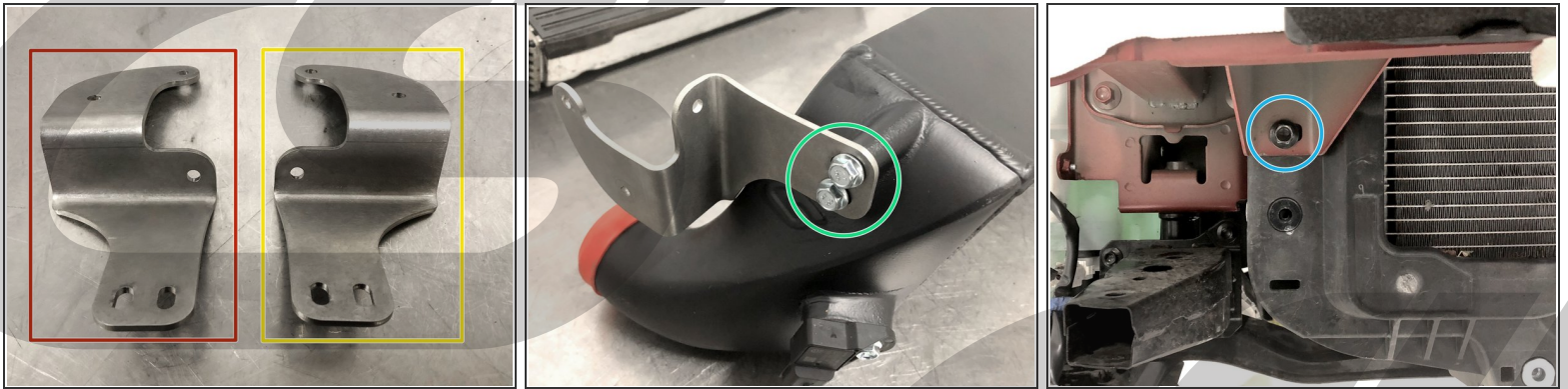
- Remove two 10mm bolts that attach the OEM intercooler mounting brackets. Then remove the OEM mounting brackets.
- Repeat the previous step for the other side.
- Remove the Phillips head screw that secures the MAP sensor to the OEM intercooler.
- Remove the MAP sensor from the OEM intercooler.
- Inspect the O-ring on the MAP sensor for any rips or tears. It will need to be replaced if any damage is present.

Step 27 — Preparing for CS Intercooler Install Part 2



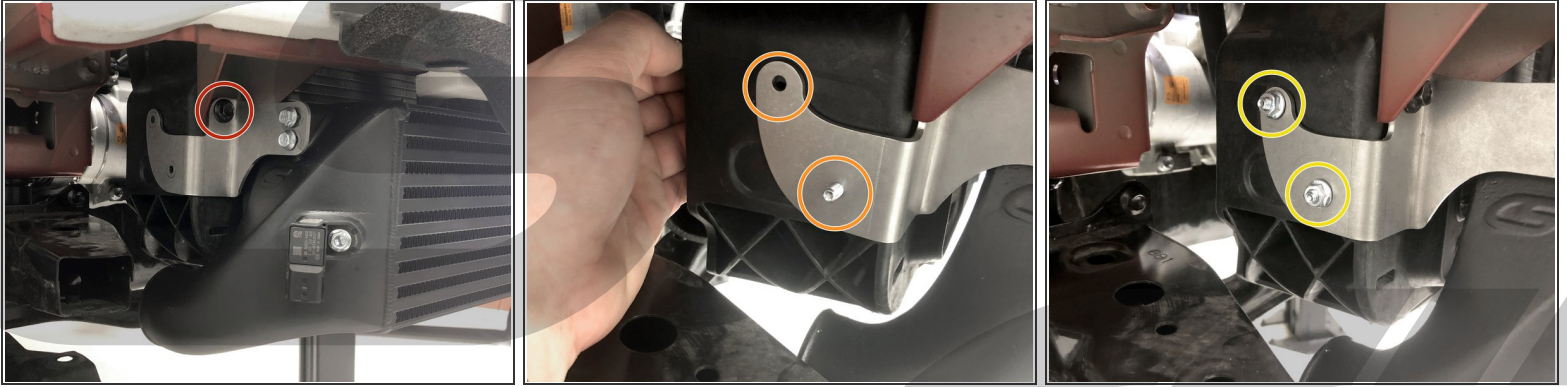
- Insert the OEM MAP sensor into the port on the CS FMIC.
 - ⓘ If it is difficult to install, do not force it as you could damage the O-ring. Some water or Lubriplate 105 grease can be used to help with install.
- Secure the MAP sensor in the CS intercooler using the supplied M6x1.0x16mm bolt. Tighten until snug.

Step 28 — Preparing for CS Intercooler Install Part 3



- Locate the supplied intercooler mounting brackets.
- Image 1 shows the passenger side (**red**) and driver side (**yellow**) mounting brackets.
- Using the four supplied M6x1.0x16mm bolts, loosely attach the mounting brackets to the intercooler.
- Remove one 10mm bolt **on each side** where the crashbar attaches to the radiator core support.

Step 29 — Installing the CorkSport Intercooler Part 1



⚠ The next step can be done by yourself however it is much easier to use a jack or a friend to hold up the FMIC while getting the first few bolts aligned.

- Lift the CS FMIC into position and loosely secure with the two OEM 10mm bolts removed in the previous step (only one side shown in image).

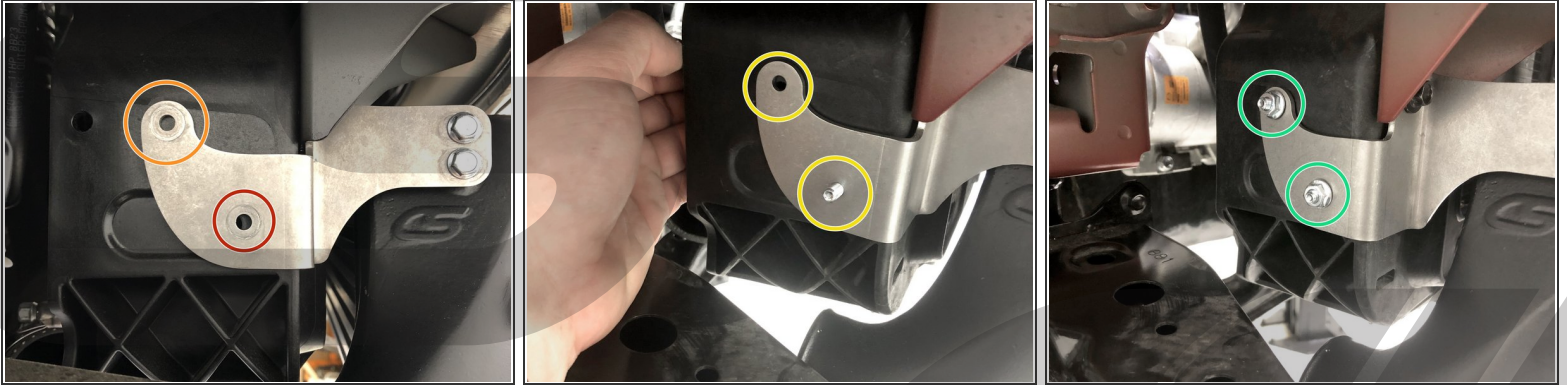
👉 **If you have a CX-9, please skip to the next step as your core support is slightly different and will require minor modification for fitment.**

- On the passenger side, feed two supplied M6x1.0x16mm bolts through the holes in the sides of the radiator core support & through the IC mounting brackets.

i You will be able to insert these bolts by reaching around the edge of the radiator core support like shown in image 2. The intercooler may need to be shifted around to align the holes.

- Loosely thread on two supplied M6x1.0 nuts.

Step 30 — CX-9 Intercooler Bracket Modification



- ⓘ When partially installed, your CX-9 bracket will look like image #1.
- ⓘ The lower hole in the core support will need to be lengthened in order to fit the lower hole in the bracket.
 - Use a small round file or 6mm drill bit (15/64") to lengthen the lower hole to fit the supplied M6 bolts. Use the hole in the IC mounting bracket as a guide.
- ⓘ There is no upper hole in the core support.
 - Use a 6mm (15/64") drill bit to drill a hole in the core support using hole in the bracket as a guide.
 - Feed two supplied M6x1.0x16mm bolts through the new holes in the sides of the radiator core support & through the IC mounting bracket.
- ⓘ You will be able to insert these bolts by reaching around the edge of the radiator core support like shown in image 2. The intercooler may need to be shifted around to align the holes.
 - Loosely thread on two supplied M6x1.0 nuts.

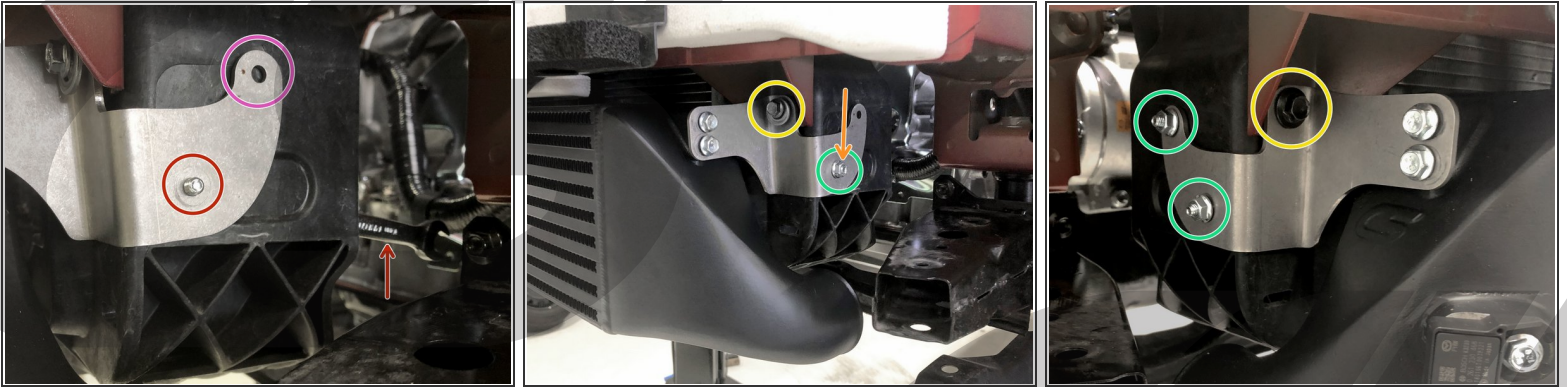
Step 31 — Installing the CorkSport Intercooler Part 2



i The driver side IC mounting bracket is a little more difficult to secure due to the design of the radiator core support. Also there is only one mounting hole. Follow the below steps closely for ease of install.

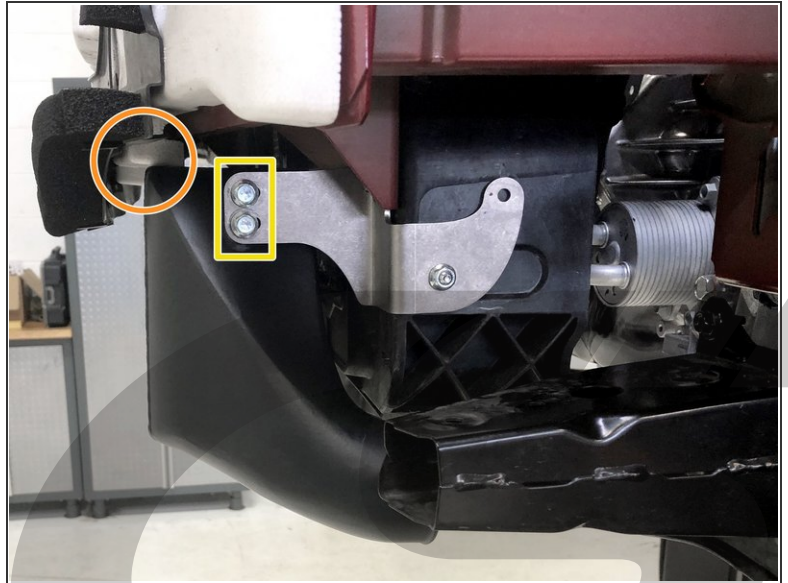
- Make a small loop of tape so the sticky side faces outward.
- Place the tape on a 10mm box end wrench.
- Push one of the supplied M6x1.0x16mm bolts into the box end of the wrench. The tape will hold it in place.

Step 32 — Installing the CorkSport Intercooler Part 3



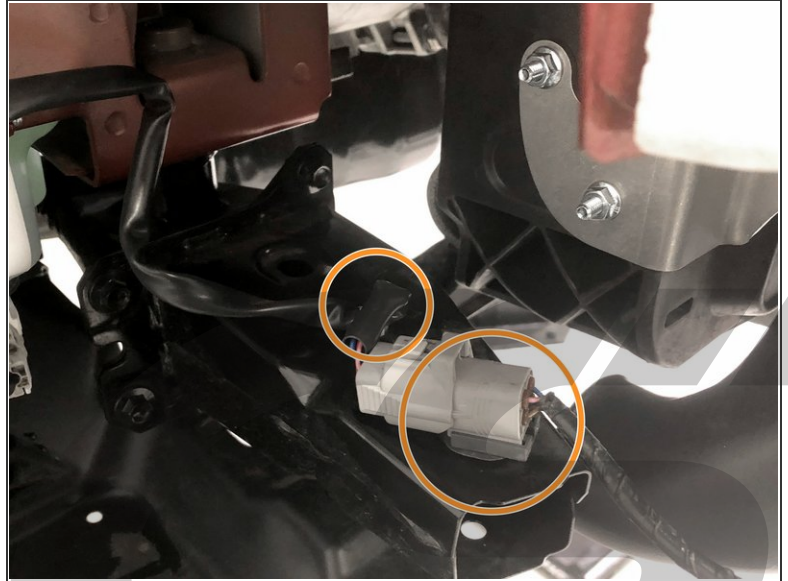
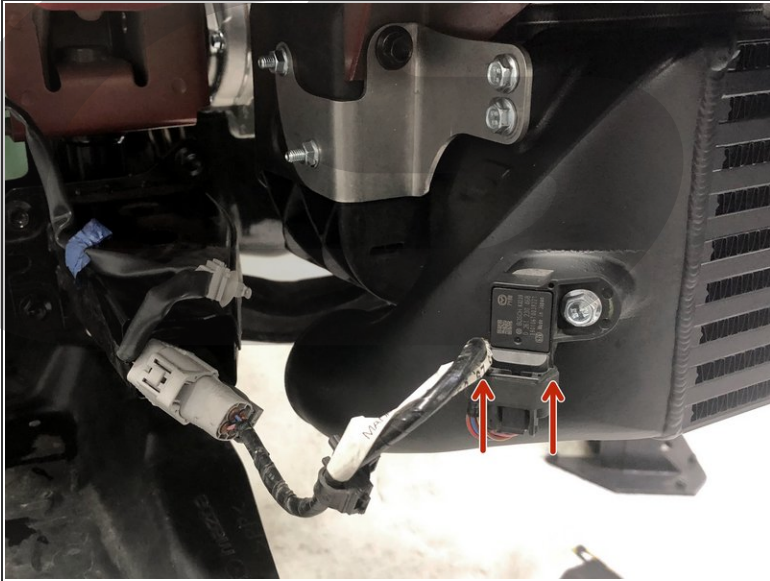
- Carefully feed the wrench & bolt through the back of the core support and into the hole of the CS mounting bracket.
 - Do not mind the extra mounting hole, this bracket is used with other CorkSport products
- Loosely thread on a supplied M6x1.0 nut.
- ⓘ Leave the wrench in position for now.
- Begin tightening the IC mounting brackets, starting with the two OEM 10mm bolts. Tighten to 12-15ft-lbs.
- Next, tighten the three 10mm bolts and nuts added to the sides of the radiator core support. Tighten to 12-15 ft-lbs.
- ⓘ The 10mm wrench with tape can be removed once tightening is complete.

Step 33 — Installing the CorkSport Intercooler Part 4



- Position the intercooler to give you good clearance between the inlet/outlet and the radiator core support. The IC can slide forward/backward on its mounting brackets.
- ⓘ Typically, all the way toward the front of the vehicle gives the most clearance.
- ⚠ Ensure the intercooler is parallel to the radiator
- The Styrofoam portion of the bumper will likely sit on the top row of the intercooler as shown in image 2. This is normal and will not cause any issues or noises.
- Once happy with positioning, tighten the four M6 mounting bolts to 12-15ft-lbs. (the image shows two bolts on the driver side, the other two are in the same location on the passenger side)

Step 34 — Installing the CorkSport Intercooler Part 5



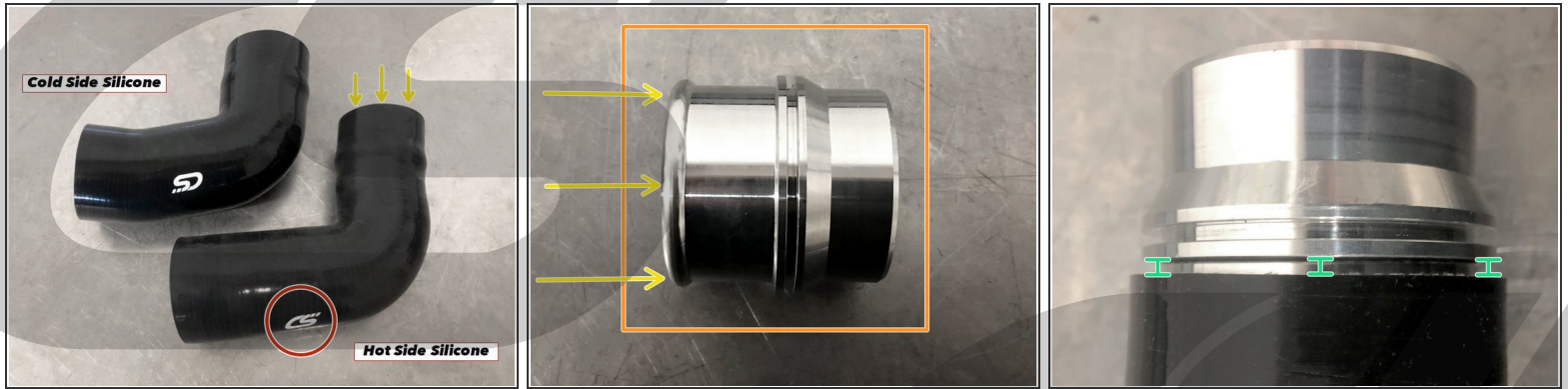
- Plug the MAP sensor wiring into the MAP sensor. It will click when fully plugged in.
 - Secure the wiring of the MAP sensor. We have found some of the wiring clips fit well in extra holes of the front crossmember.
- ⓘ You can also secure the wiring elsewhere with zip ties if you prefer.

Step 35 — Are You Installing the CS Piping Kit?



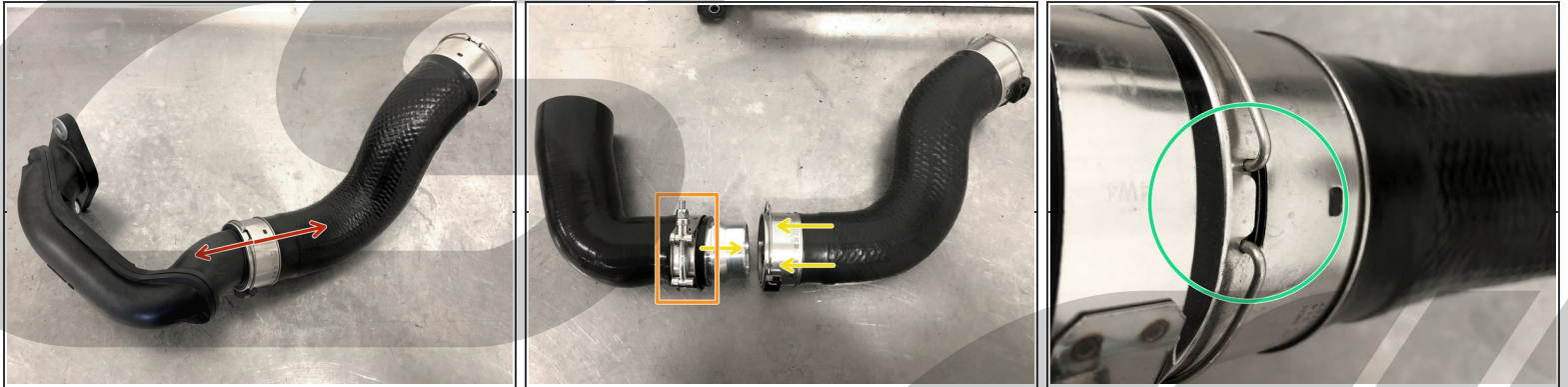
- ★ If you are installing the CorkSport Piping Kit with the CS Intercooler Kit, please skip to step 46.

Step 36 — Connecting to OEM Hot Side Piping Part 1



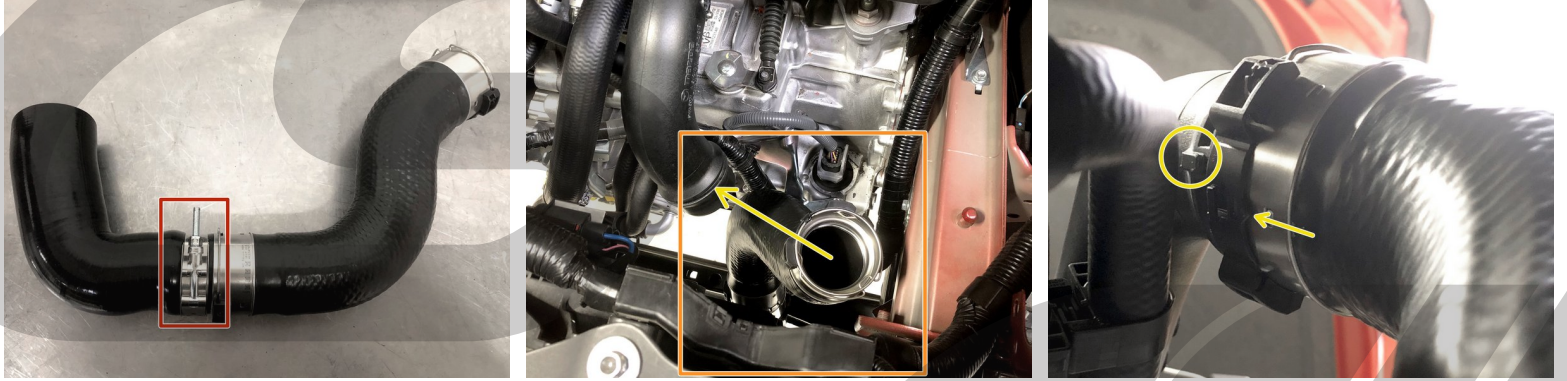
- Locate the hot side silicone. When set down on a table in the orientation shown, the "CS" logo will be the correct way up. It is also labeled in image 1.
- Locate the hot side aluminum adapter. It is different on each end.
- Loosely insert the end of the aluminum adapter labeled with the **yellow** arrow into the end of the silicone labeled with the **yellow** arrow.
- Leave a small gap between the end of the silicone and the flat on the adapter to ensure proper fitment.

Step 37 — Connecting to OEM Hot Side Piping Part 2



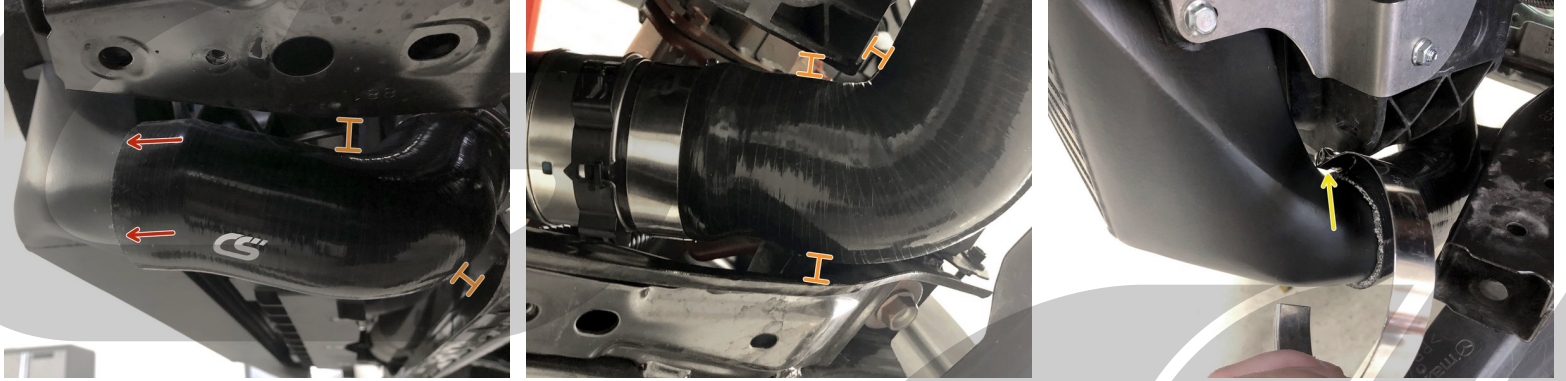
- Remove the OEM rubber hot side tube from the IC piping extension (removed in step 15). **Take note of which side was removed.**
 - ⓘ Please see step 15 for assistance in removing the OEM connection.
- Install one of the supplied 63-71mm T-bolt clamps onto the hot side silicone as shown
- Connect the newly removed side of the OEM rubber hot side tube to the other end of the aluminum adapter.
 - ⓘ It will push together and lock in position.
- Ensure the locking ring of the OEM connection is fully secure. Image 3 shows a secure connection.

Step 38 — Connecting to OEM Hot Side Piping Part 3



- Secure the silicone to adapter connection using one of the supplied 63-71mm T-bolt clamps. Tighten the clamp until snug.
 - ⓘ The silicone will bulge slightly around the edge of the clamp when tight.
 - ⓘ After tightening the clamp, the OEM hot pipe section should still be able to rotate. This will help with alignment. If the OEM section cannot rotate, there was not enough gap shown in **green** in step 24.
- Place the assembled silicone and OE rubber tubing into the engine bay through the intake location.
- Attach the upper OEM connection to the plastic OEM hot pipe.
 - ⓘ There is an alignment pin which will only allow the connection in one orientation. The alignment tab is circled, the alignment groove has an arrow.
 - Ensure this connection is secure like shown with **yellow** in step 25.

Step 39 — Connecting to OEM Hot Side Piping Part 4



- Insert the intercooler inlet into the open end of the hot side silicone. It should go in 1-1.5 inches.
- Using the rotation at the aluminum adapter, rotate the silicone until you have good clearance to the radiator core support and crossmember.
- Remove the nut from a supplied 70-78mm T-bolt clamp.
- Slip the clamp between the intercooler and the radiator core support.

Step 40 — Connecting to OEM Hot Side Piping Part 5



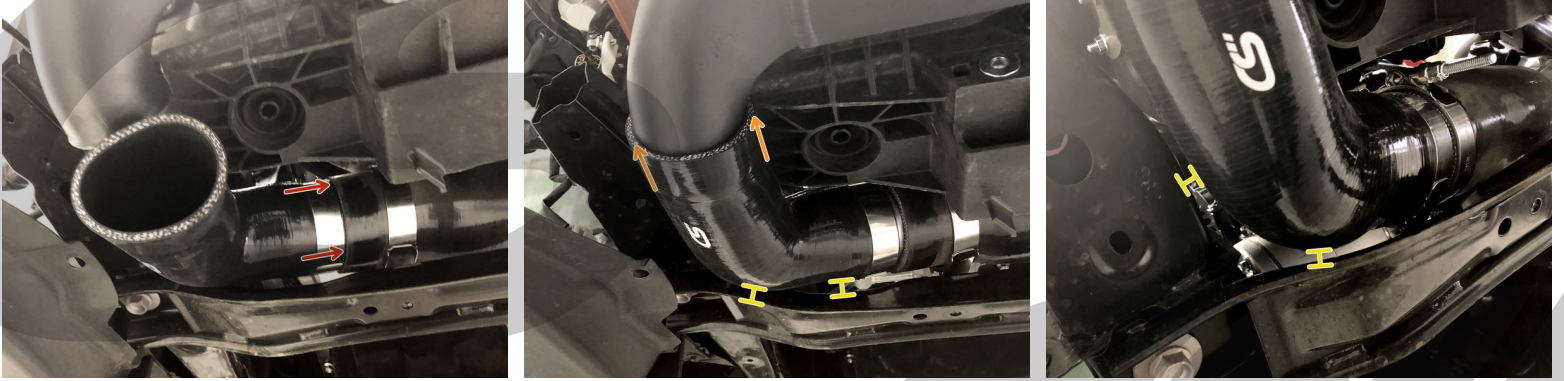
- Place the nut back on the clamp from the previous step and position it so there is a small gap between the end of the silicone and the start of the clamp.
- Tighten the clamp until snug using a 10mm socket and ratchet. The silicone will bulge slightly around the edges of the clamp when tight.
- ⚠ Tighten the clamp so the threaded portion sits roughly horizontal. If it sits vertical it can interfere with the bumper support and/or undertray.

Step 41 — Connecting to OEM Cold Side Piping Part 1



- Locate the cold side silicone. When set down on a table in the orientation shown, the "CS" logo will be upside-down. It is also labeled in image 1.
- Locate the cold side aluminum adapter. It is the same on each end.
- Loosely insert the end of the aluminum into the end of the silicone labeled with the **orange** arrow. Only insert it 0.75-1 inch.
- Secure the hot side silicone to the adapter using a supplied 70-78mm T-bolt clamp and a 10mm socket and ratchet. Tighten until snug. When tight, the silicone around the edge of the clamp will bulge slightly.

Step 42 — Connecting to OEM Cold Side Piping Part 2



- Insert the cold side silicone & aluminum adapter into the vehicle, starting with the adapter end into the OEM (or CS) cold side boost tube.
- Flex the cold side so that it fits around the intercooler exit. The IC exit should go in 1-1.25 inches.
- Rotate the cold side silicone as needed until there is good clearance between it and the radiator core support/front crossmember.

Step 43 — Connecting to OEM Cold Side Piping Part 3



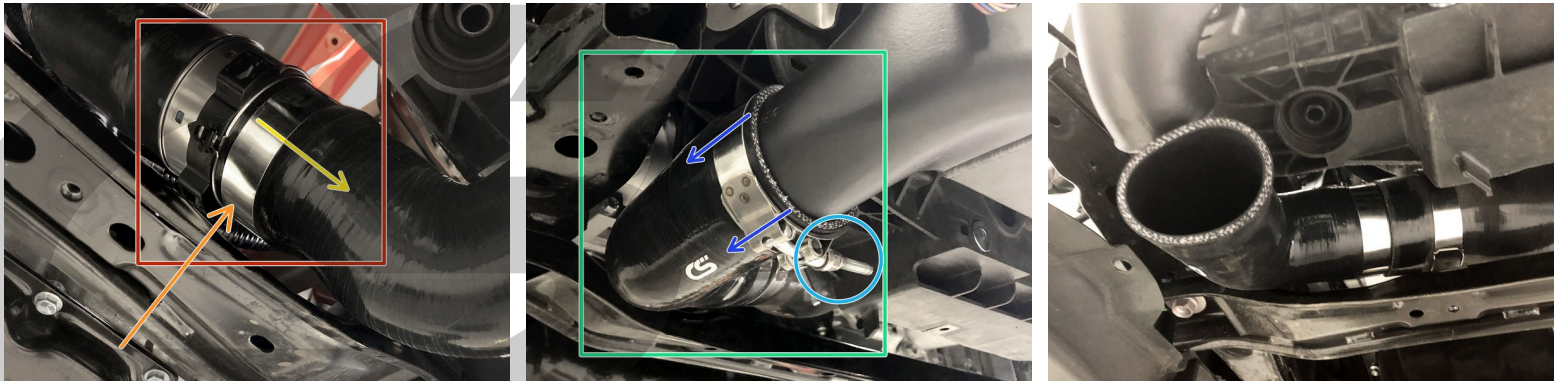
- Secure the OEM cold side boost tube to the adapter using the OEM clamp and a 10mm socket & ratchet. Tighten until snug. The rubber around the edge of the clamp will bulge slightly when tight.
- ⓘ Reminder that the vehicle used for images had the CS boost tube installed. The assembly procedure is identical.
- Remove the nut from a supplied 70-78mm T-bolt clamp and slip it between the radiator core support and the CS intercooler.
- Place the nut back on the clamp from the previous step and position it so there is a small gap between the end of the silicone and the start of the clamp.
- Tighten the clamp until snug using a 10mm socket and ratchet. The silicone will bulge slightly around the edges of the clamp when tight.
- ⚠ Tighten the clamp so the threaded portion sits roughly horizontal like on the hot side.

Step 44 — Intercooler Only Kit Install Complete



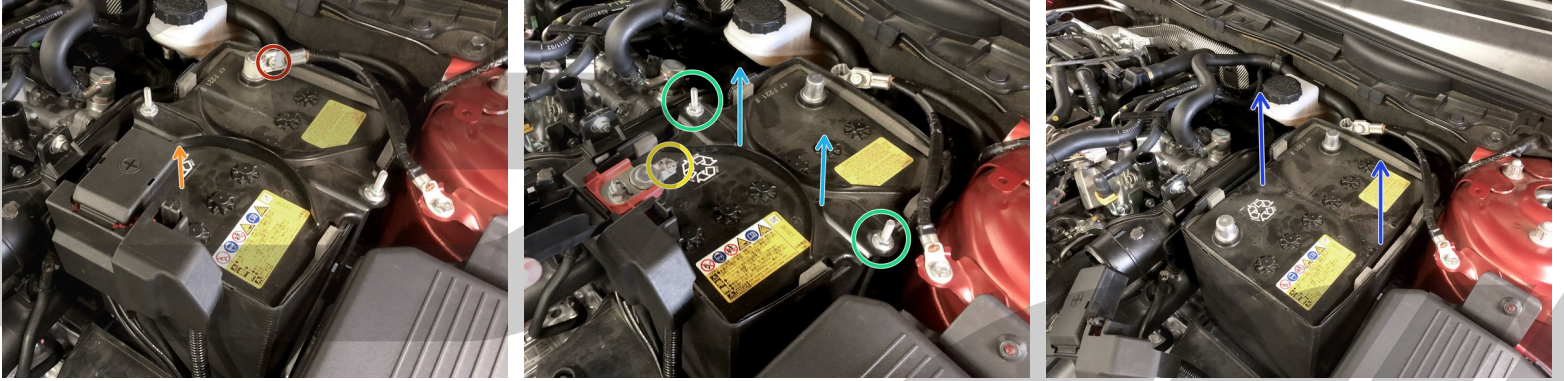
- ★ This completes the installation of the CS Intercooler Only Kit.
- ★ If you are NOT installing the CS Piping Kit please skip to step 65 for reassembly of the OE components to complete the installation.

Step 45 — CS FMIC Disassembly for Piping Kit Install



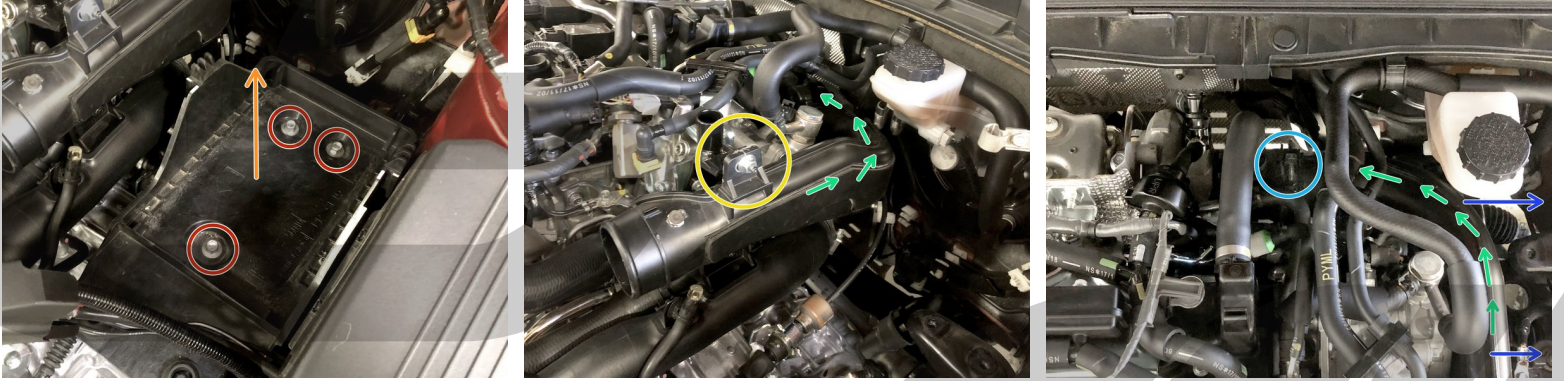
- Locate the CorkSport aluminum hot pipe adapter on the drivers side of the vehicle.
- Loosen the 63-71mm T-bolt clamp using a 10mm socket and ratchet.
- Then pull the aluminum hot pipe adapter & OEM rubber boost tube out of the hot pipe silicone.
- Locate the CorkSport cold side silicone on the passenger side of the vehicle.
- Loosen the 70-78mm T-bolt clamp using a 10mm socket and ratchet.
- Then pull the cold pipe silicone free from the intercooler outlet.

Step 46 — OEM Piping Removal Part 1



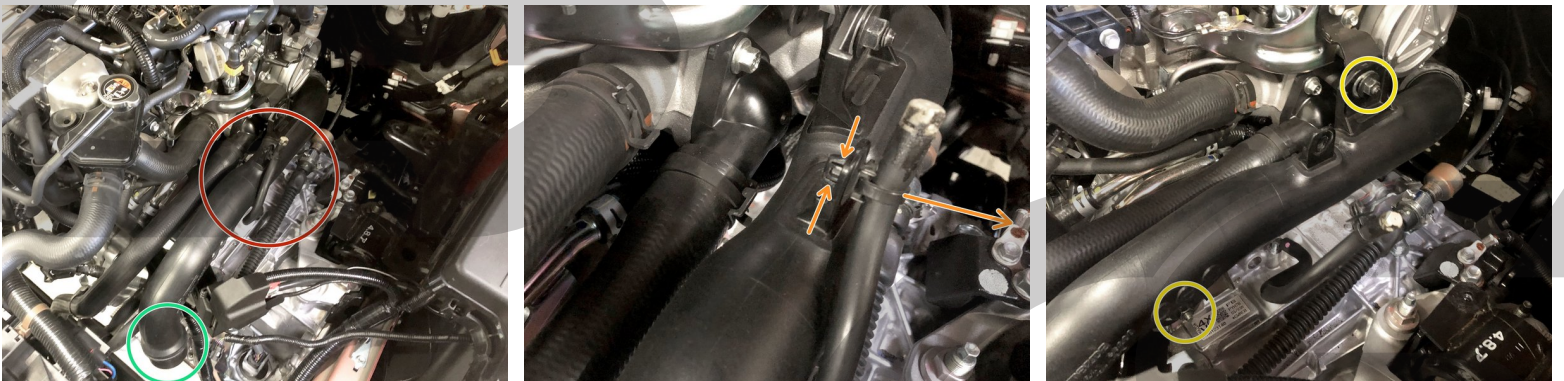
- Loosen the negative terminal on the battery using a 10mm socket and ratchet. Then remove the terminal from the battery.
- Flip open the positive terminal cover.
- Loosen the positive terminal on the battery using a 10mm socket and ratchet. Then remove the terminal from the battery.
- Loosen the two 10mm nuts holding the battery tie down bracket.
- Remove the battery tie down bracket.
- Remove the battery from the vehicle.

Step 47 — OEM Piping Removal Part 2



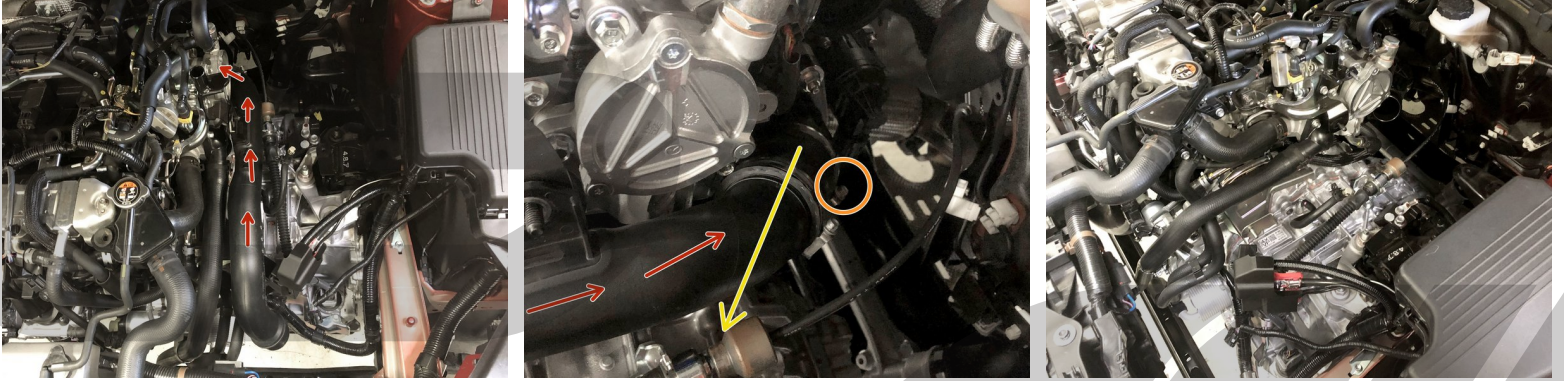
- Remove the three 12mm bolts from the battery tray using a socket and ratchet.
- Remove the battery tray.
- Remove one 10mm nut from the turbo inlet pipe (TIP) using a socket and ratchet.
- Trace the TIP back to the turbocharger to locate the clamp that connects the TIP to the turbo.
- Loosen the TIP clamp using a 10mm socket and ratchet.
- Remove the TIP from the vehicle by pulling toward the driver side.

Step 48 — OEM Piping Removal Part 3



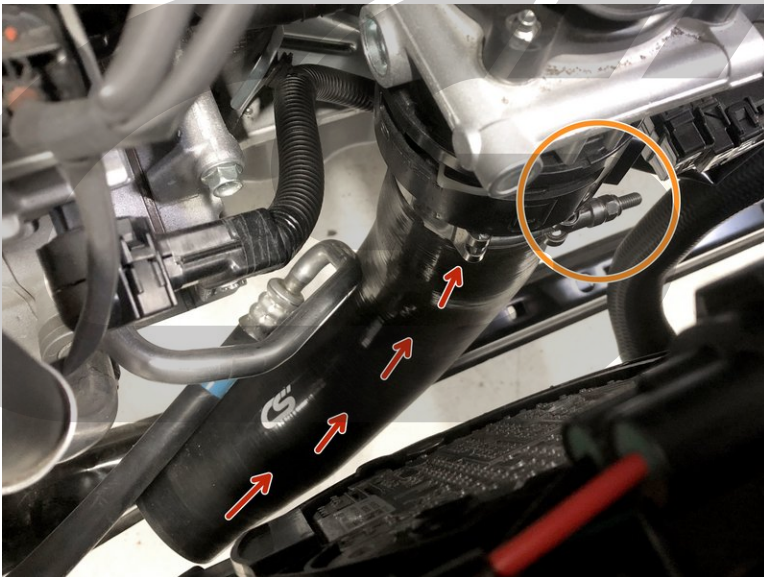
- Locate the transmission breather hose attached to the OEM plastic hot pipe.
- Pinch the plastic clip and remove the transmission breather hose from the OEM hot pipe.
- Remove the two 12mm nuts that attach the OEM hot pipe to the engine using a socket and ratchet.

Step 49 — OEM Piping Removal Part 4



- Trace the OEM hot pipe back until it reaches the turbocharger.
- Loosen the clamp that attaches the OEM hot pipe coupler to the turbocharger using a 7mm socket and ratchet.
- Remove the OEM hot pipe by pulling it toward the drivers side headlight.

Step 50 — OEM Piping Removal Part 5



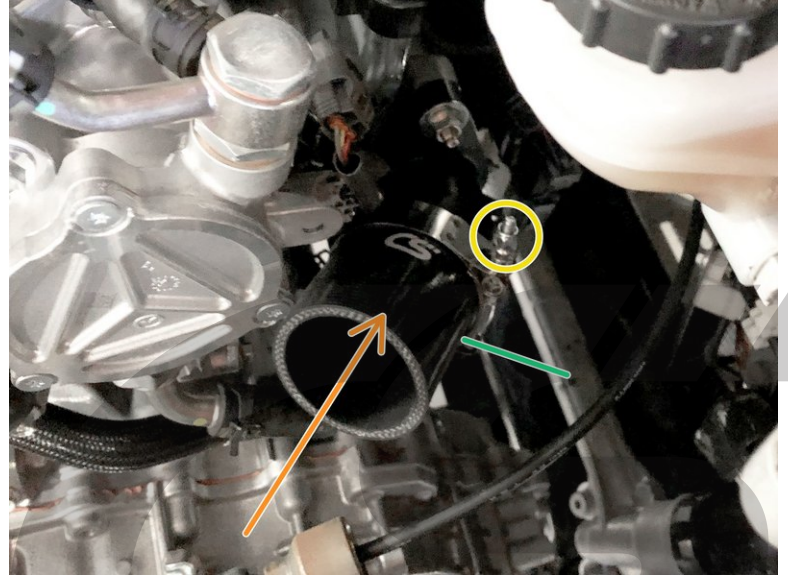
- Trace the OEM cold side boost tube up to where it meets the throttle body.
- Loosen/remove the clamp that secures it to the throttle body using a 10mm socket and ratchet.
- Pull the boost tube downward to release it from the throttle body, then remove it from the vehicle.

Step 51 — Adding the CS Piping Kit



- If you previously had the CS Intercooler installed and are upgrading to the CS Piping Kit, you will need to disassemble the CS hot side silicone
 - Disconnect and remove the OE rubber tubing
 - Loosen the T-bolt clamp with a 10mm socket and ratchet
 - Remove the billet adapter from the CS silicone
 - The billet adapter will not be reused with the CS Piping Kit

Step 52 — CorkSport Hot Pipe Installation Part 1



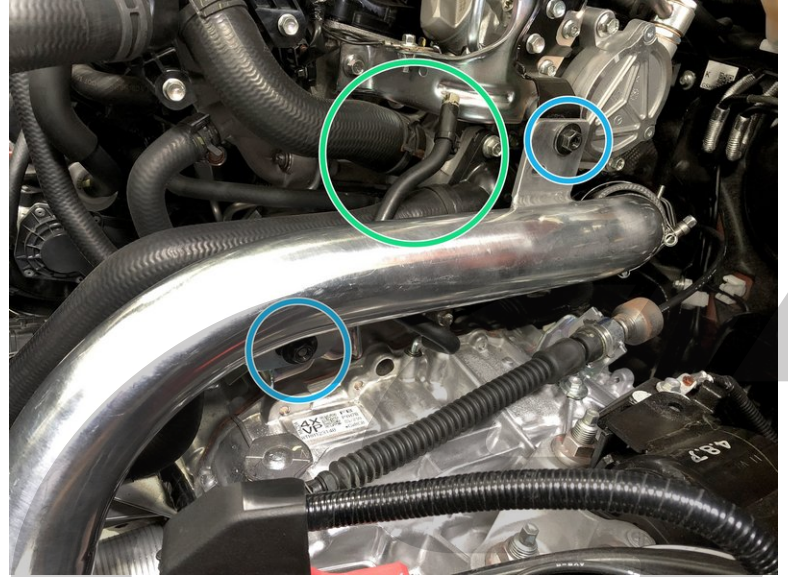
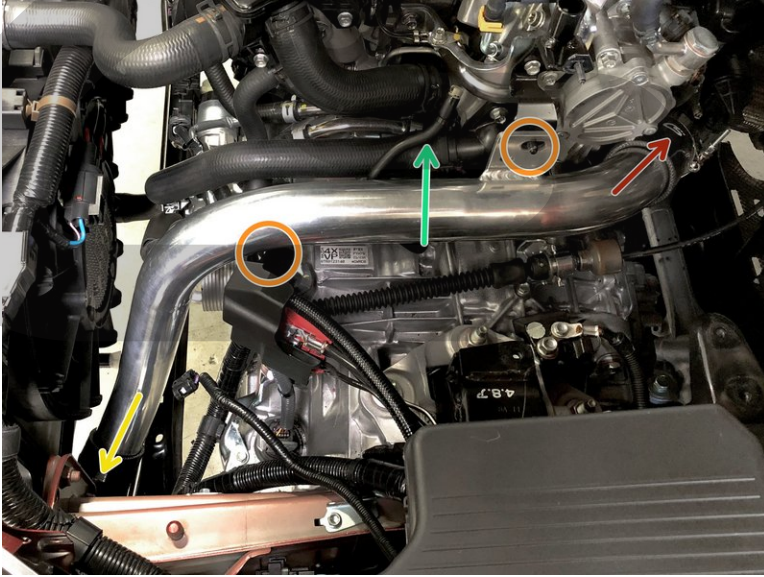
- Locate the CS straight coupler.
 - Push this coupler onto the turbocharger outlet.
 - Secure with a supplied 63-71mm clamp. Tighten until snug using a 10mm socket and ratchet. When tight, the silicone around the edge of the clamp will bulge slightly.
- ⚠ The image shown uses an incorrect clamp orientation that causes fitment issues with the turbo inlet pipe. Please follow the **green** line for correct orientation of the threads on the clamp.

Step 53 — CorkSport Hot Pipe Installation Part 2



- Locate the hot side silicone. When set down on a table in the orientation shown, the "CS" logo will be the correct way up. It is also the one with a similar diameter on either end.
- Insert the intercooler inlet into the end labeled with orange arrows of the hot side silicone. It should go in 1-1.5 inches.
- Rotate the hot side silicone until it is approximately in the location shown. There should be gaps between it and the radiator core support/front crossmember.

Step 54 — CorkSport Hot Pipe Installation Part 3



i The pipe shown is a pre-production prototype and does not have the black powdercoating. Fitment is the same.

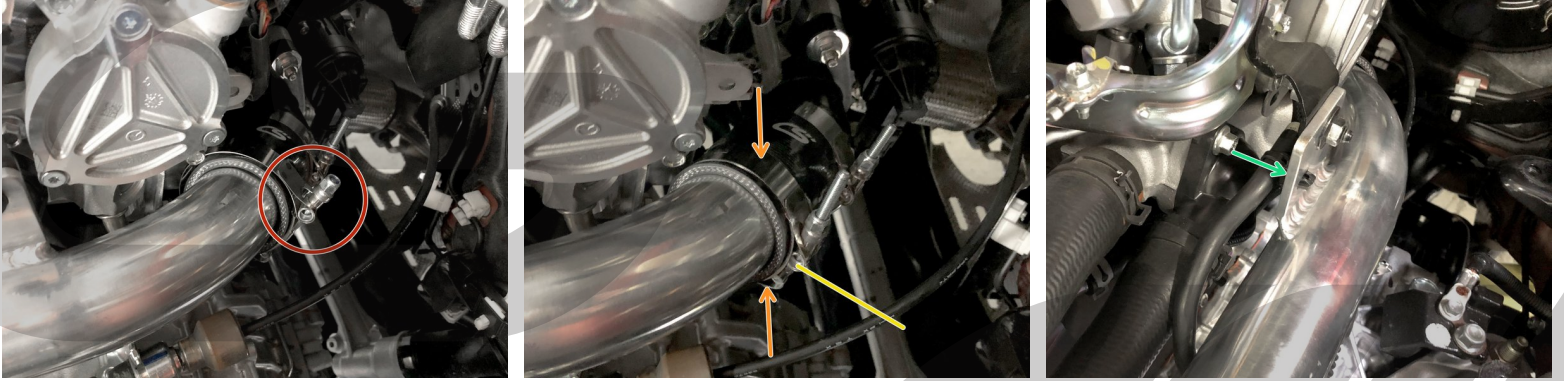
- Insert the CorkSport hot pipe into the vehicle.
 - Insert it into the straight coupler at the turbocharger exit.
 - Line up the two slotted holes with the two OEM hot pipe mounting studs on the engine.
 - Insert the other end of the CorkSport hot pipe into the CS hot pipe silicone.
 - Ensure the transmission breather routes behind the hot pipe, close to the engine.
- Secure with the two OEM nuts removed earlier. Tighten with a socket and ratchet to 16-20ft-lbs.
- i** Best alignment on our Mazda 6 put the studs right in the middle of the slots. Your Mazda may vary slightly.

Step 55 — CorkSport Hot Pipe Installation Part 4



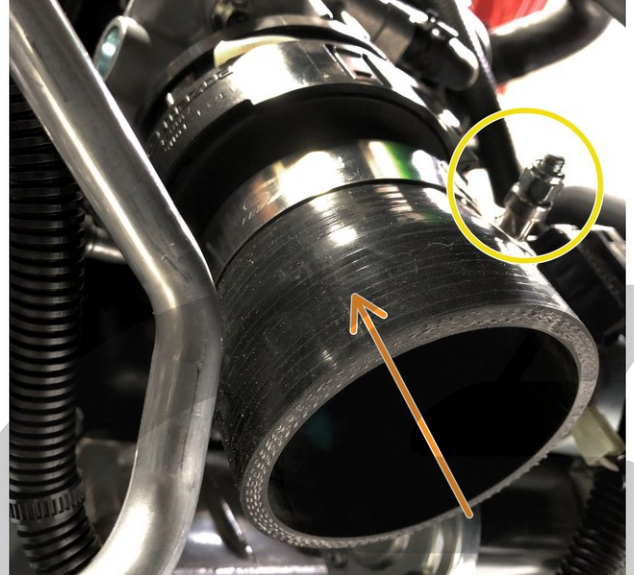
- Double check fitment and clearances around the hot pipe silicone.
 - Rotate the silicone as needed to get a gap between the silicone and radiator core support.
 - Once you are happy with position, remove the nut off a supplied 70-78mm T-bolt clamp and insert it between the intercooler and the radiator core support.
 - Tighten the clamp until snug using a 10mm socket and ratchet. When tight, the silicone around the edge of the clamp will bulge slightly.
- ⚠ Tighten the clamp so the threaded portion sits roughly horizontal. If it sits vertical it can interfere with the bumper support and/or undertray.
- Secure the other end of the hot pipe silicone with a supplied 63-71 mm T-bolt clamp. Tighten until snug using a 10mm socket and ratchet. When tight, the silicone around the edge of the clamp will bulge slightly.

Step 56 — CorkSport Hot Pipe Installation Part 5



- Secure the other end of the CS hot pipe by attaching a supplied 63-71 mm T-bolt clamp to the end of the turbo outlet coupler.
 - Tighten until snug. When tight, the silicone around the edge of the clamp will bulge slightly.
 - ⚠ The image shown uses an incorrect clamp orientation that causes fitment issues with the turbo inlet pipe. Please follow the **yellow** line for correct orientation of the threads on the clamp.
- Clip the transmission breather hose into the open slot on the rearward hot pipe mounting bracket.

Step 57 — CorkSport Cold Pipe Install Part 1



- Locate the CS throttle body silicone.
- Push the smaller end of this coupler onto the throttle body. Ensure it is fully seated against the base of the throttle body all around.
- Secure with a supplied 70-78mm T-bolt clamp. Tighten until snug with a 10mm socket and ratchet. When tight, the silicone around the edge of the clamp will bulge slightly.

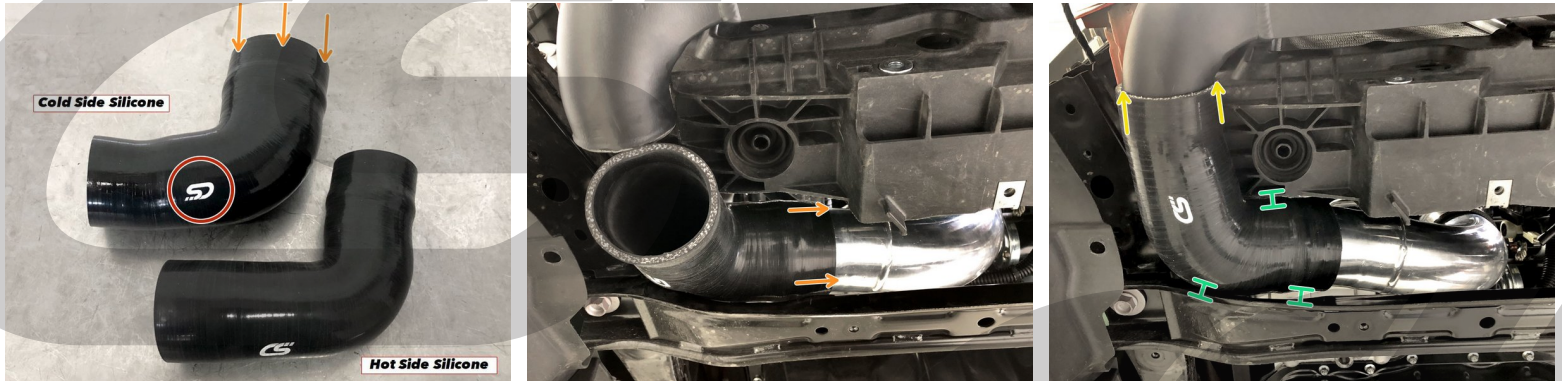
Step 58 — CorkSport Cold Pipe Install Part 2



i The pipe shown is a pre-production prototype and does not have the black powdercoating. Fitment is the same.

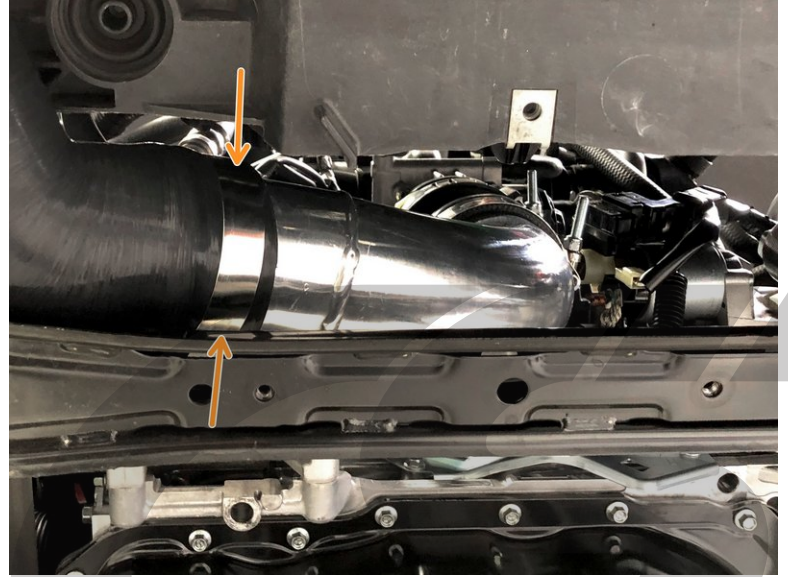
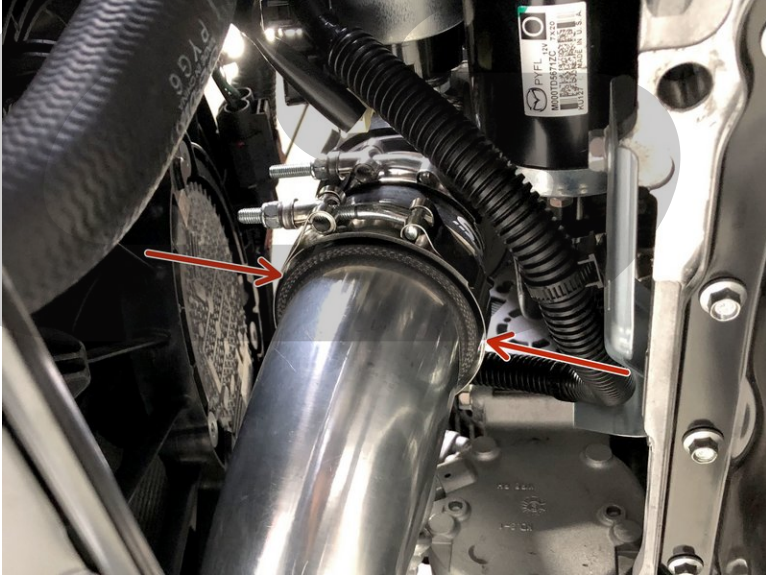
- Locate the CS cold pipe.
- Insert the end labeled with orange arrows into the throttle body silicone approximate 1 inch deep. Leave loose for now.
- Locate in the approximate orientation shown.

Step 59 — CorkSport Cold Pipe Install Part 3



- Locate the CS cold side silicone. When set down on a table in the orientation shown, the "CS" logo will be upside-down. It is also labeled in image 1.
- ⓘ If you previously had the CS FMIC installed with OEM piping, please note that this cold side silicone is larger than the previous version you had.
- Insert the CS cold pipe into the large end of the cold side silicone (labeled with the orange arrows). Slide it on about 1 inch.
- Insert the intercooler outlet into the smaller end of the cold pipe silicone
- Move the cold pipe and cold pipe silicone around until you are happy with fitment and each joint is square & secure. Check for clearances to radiator core support and crossmember.
- ⚠ Due to the much larger pipe size, cold side fitment is much tighter than the hot side. Take extra time to ensure everything is aligned. Some minor rubbing is OK but make sure the silicone is not rubbing on any sharp edges.

Step 60 — CorkSport Cold Pipe Install Part 4



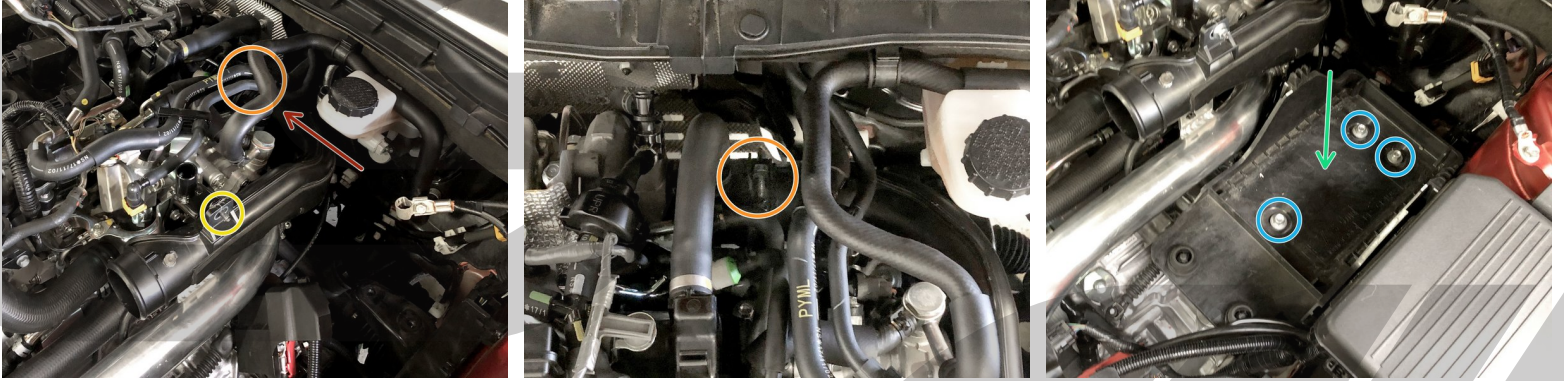
- Once you are happy with fitment, secure the cold pipe to the throttle body silicone with a supplied 83-91mm T-bolt clamp.
 - Tighten clamp until snug. When tightened properly, the silicone will bulge slightly at the edges of the clamp.
- Secure the cold pipe to the cold pipe silicone with a supplied 83-91mm T-bolt clamp. Tighten until snug. When tightened properly, the silicone will bulge slightly at the edges of the clamp.
- ⓘ Pre-production prototype silicone shown. Clamp is askew as fitment of prototype was not perfect. Ensure your connection is straight & secure.

Step 61 — CorkSport Cold Pipe Install Part 5



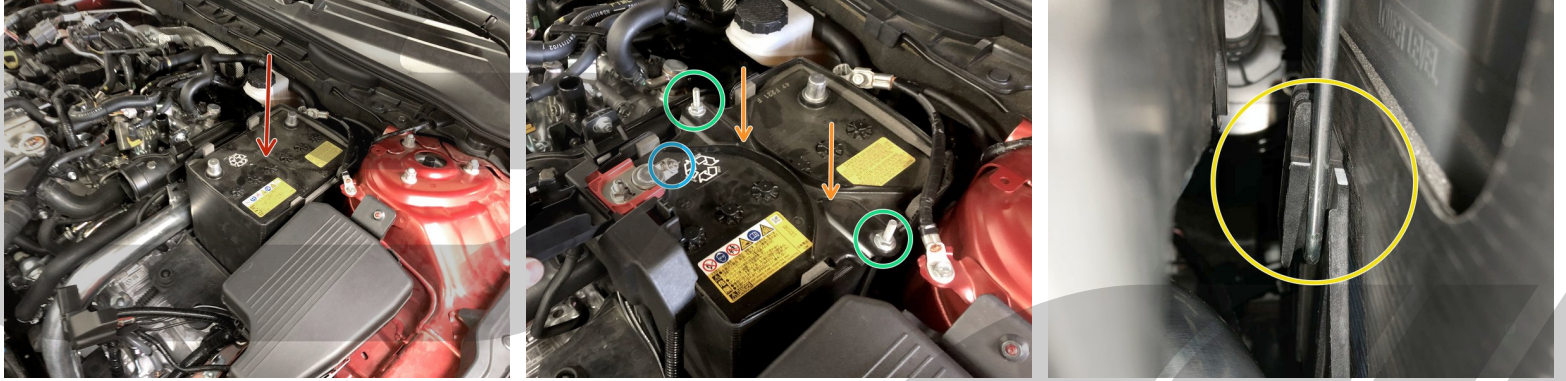
- Remove the nut from a supplied 70-78mm T-bolt clamp.
- Slip this clamp between the intercooler and the radiator core support.
- Place the nut back on the clamp from the previous step and position it so there is a small gap between the end of the silicone and the start of the clamp.
- Tighten the clamp until snug using a 10mm socket and ratchet. The silicone will bulge slightly around the edges of the clamp when tight.
- ⚠ Tighten the clamp so the threaded portion sits roughly horizontal like on the hot side.
- Double check all cold pipe connections and clearances. Adjust if needed.

Step 62 — OEM Engine Bay Reassembly Part 1



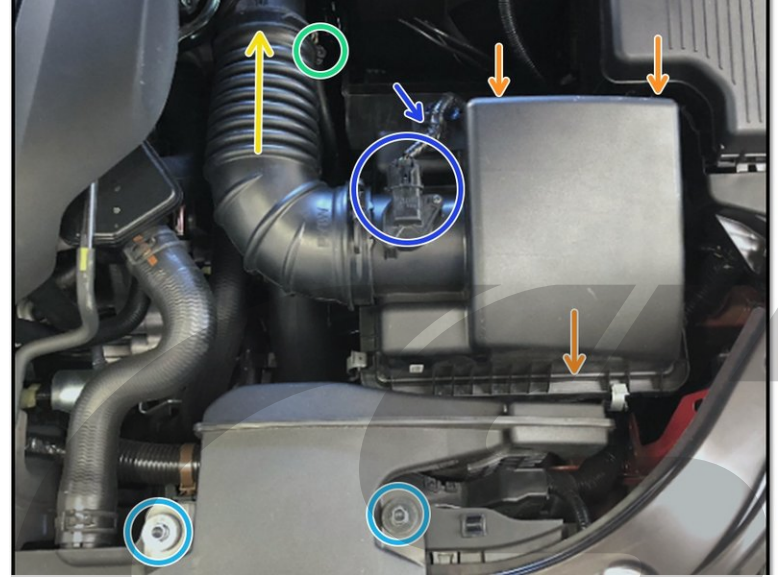
- Reinstall the turbo inlet pipe (TIP) by pushing it into the turbocharger inlet hose.
- Tighten the clamp on the turbo inlet hose using a 10mm socket and ratchet. Tighten until snug.
- Using the OEM 10mm nut, secure the TIP onto the stud on the engine. Tighten this nut to 10-15ft-lbs.
- Place the OEM battery tray back into position.
- Secure using the 3 OEM 12mm bolts. Tighten to 16-20ft-lbs.

Step 63 — OEM Engine Bay Reassembly Part 2



- Reinstall the battery into the battery tray.
- Reinstall the battery tie down bracket.
- Hook the bottom ends of the battery tie down rods around the battery tray protrusions as shown.
- Tighten the battery tie down nuts to 10-15ft-lbs. using a 10mm socket and ratchet.
- Reinstall the positive terminal of the battery. Tighten until snug using a 10mm socket and ratchet.

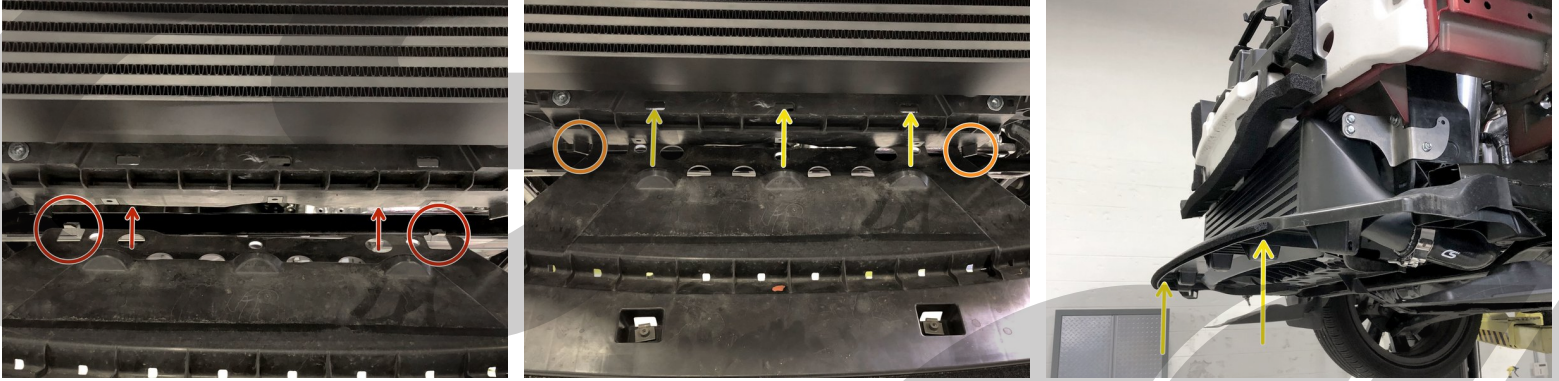
Step 64 — OEM Engine Bay Reassembly Part 3



- Reconnect the negative battery terminal. Tighten until snug using a 10mm socket and ratchet.
- Reinstall the OEM intake.
 - Push the airbox down onto the three rubber mounts. They will pop into place.
 - Push the rubber elbow onto the turbo inlet pipe.
 - Tighten the turbo inlet pipe clamp until snug.
 - Secure the front of the airbox with the two OEM bolts removed earlier. Tighten to 10-15ft-lbs with a 10mm socket and ratchet.
 - Reconnect the MAF sensor by pushing the connector together until it clicks. Also clip the wiring back into the hole on the airbox.

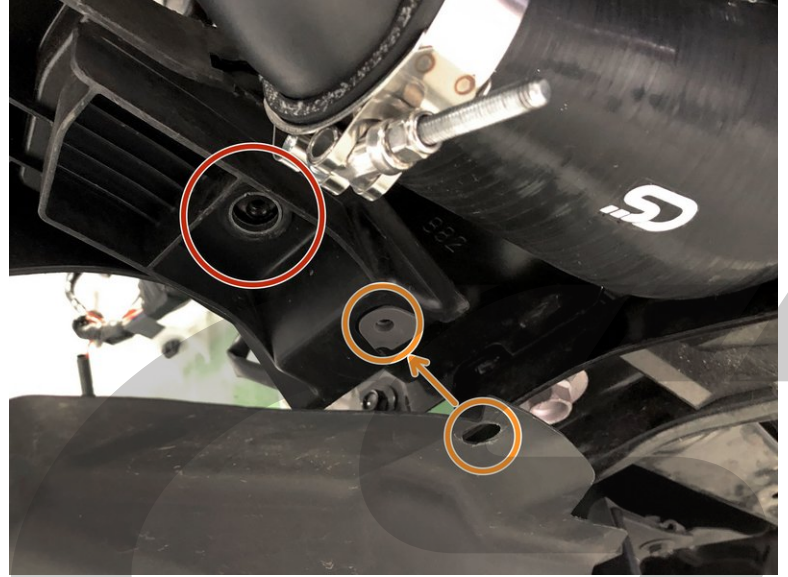
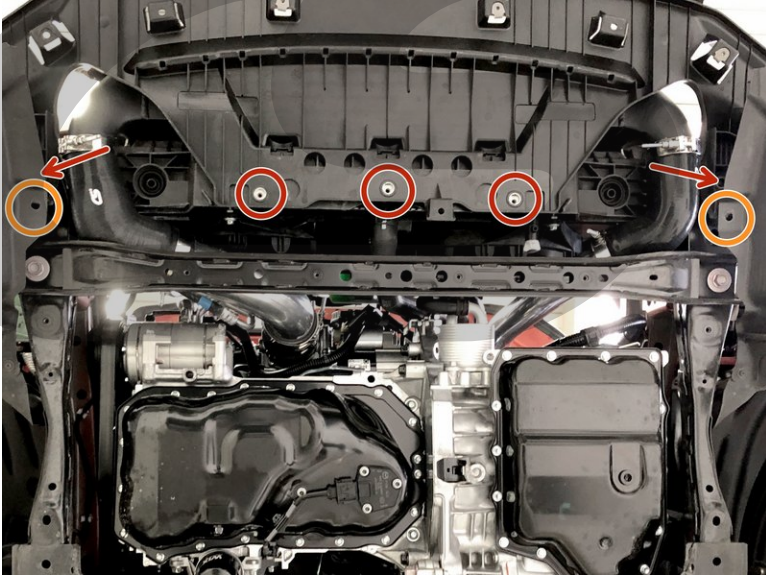
i CorkSport intake reinstallation will be similar.

Step 65 — Reinstalling the Front Bumper Support Part 1



- If you only installed the CS piping kit and did not remove your front bumper, please skip to step 78.
- There are two hooks at the rear of the front bumper support. Hook these over the rearward edge of the radiator core support.
- Align the bumper support left and right so it fits between the two tabs on the bottom of the core support.
- Push upwards on the front of the bumper support until the 3 clips at the front pop into place.
- ⓘ It will hold itself in position after these clips are secure.

Step 66 — Reinstalling the Front Bumper Support Part 2



- Secure the front bumper support with the 5 OEM bolts removed earlier. Tighten to 10-15ft-lbs. using a 10mm socket and ratchet.
- Replace the two OEM 8mm bolts that attach the fender liners to the front bumper support. Tighten until snug.

Step 67 — Are you Installing on CX-5 or CX-9?

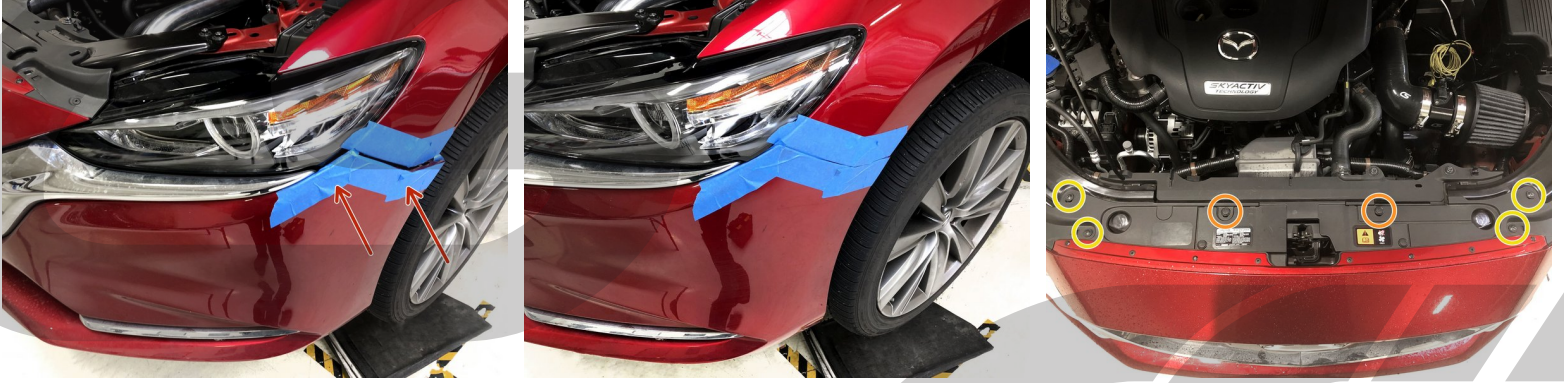
- **Bumper installation is very different on the CX-5 and CX-9. Please skip to Step 73 for bumper removal instructions on the SUVs.**

Step 68 — Reinstalling the Front Bumper Part 1



- Start by lifting the bumper near the front of the car.
- The bottom edge of the bumper (**red arrows**) must fit underneath the bumper support (**orange arrows**) as shown.
- Once positioned correctly at the bottom, lift the top up and over the hood release lever.
- Push the corners of the grill to snap in the large clips.
- ⓘ Once complete, the bumper will hold itself on the vehicle.

Step 69 — Reinstalling the Front Bumper Part 2



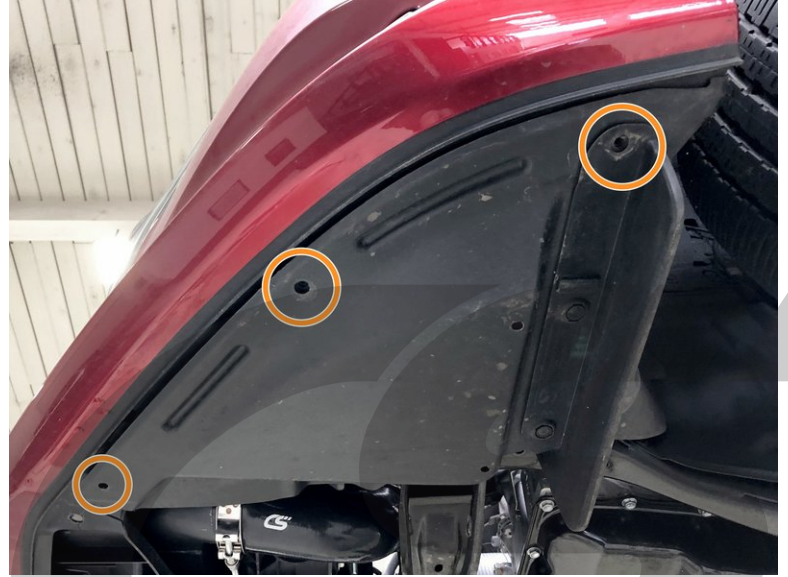
- Starting on the drivers side, position the bumper as needed to snap in all clips located between the fender and bumper.
- ⓘ Image 1 shows the bumper pulled out. Image 2 shows the bumper positioned correctly.
- Repeat this on the passenger side.
- ⓘ The protective tape can then be removed.
- Secure the top of the bumper using the two large push clips removed earlier.
- Reinstall the four OEM Phillips head screws into the top of the bumper.

Step 70 — Reinstalling the Front Bumper Part 3



- Pull the fender liner away from the corner of the front bumper.
- With the fender liner pulled away, look up at the corner of the bumper.
- Reinstall the OEM 8mm bolt that secures the corner of the bumper to the fender.
 - Tighten until snug.

Step 71 — Reinstalling the Front Bumper Part 4



- Reinstall the four small OEM push clips that connect the fender liner to the bumper.
- Reinstall the three 8mm OEM bolts that attach the bottom of the rear fender liner to the bumper using an 8mm socket and ratchet.
 - Tighten until snug.
- Repeat steps 55 and 56 for the other side of the vehicle.

Step 72 — Are you Installing on Mazda 6?

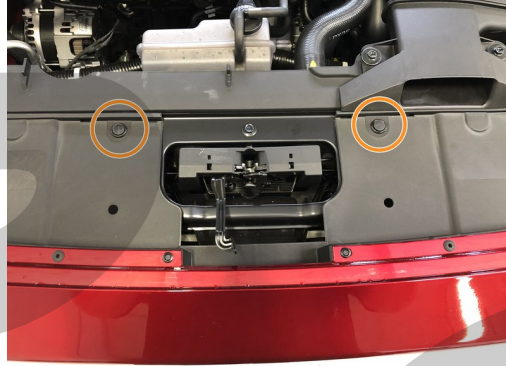
- If you are installing on Mazda 6, please skip to Step 78. The following steps show CX-5 and CX-9 bumper installation.

Step 73 — Reinstalling the Front Bumper Part 1



- Start by lifting the bumper near the front of the car.
- The bottom edge of the bumper (**red arrows**) must fit underneath the bumper support (**orange arrows**) as shown.
- Once positioned correctly at the bottom, lift the top up and over the hood release lever.
- Push the corners of the grill to snap in the large clips.
- (i) Once complete, the bumper will hold itself on the vehicle.

Step 74 — Reinstalling the Front Bumper Part 2



- On each side of the vehicle, position the bumper as needed to snap in all clips located between the fender and bumper.
- ⓘ You will need to fit the bumper between the fender and the black plastic fender flares. Be careful to not damage anything.
- Reinstall the two large push clips near the hood latch release.
- Reinstall the plastic center portion above the radiator. Ensure it fits underneath the OEM intake tube (if equipped).
- Reinstall the six large push clips that attach the top of the bumper to the chassis.
- Reinstall the four Phillips head screws that attach the top of the bumper to the chassis.

Step 75 — Reinstalling the Front Bumper Part 3



- Starting on the driver's side, pull down the bottom of the fender liner to access connections for your fog lights and front end sensors.
- Reconnect the two wiring connectors and one to two wiring clips as needed that were removed in step 14.
- Reinstall the three 8mm bolts that attach the bottom of the fender liner to the bottom of the bumper. Tighten until snug using an 8mm socket and ratchet.
- Reinstall the small push clip located behind the fender flare, at the bottom corner of the bumper.

Step 76 — Reinstalling the Front Bumper Part 4



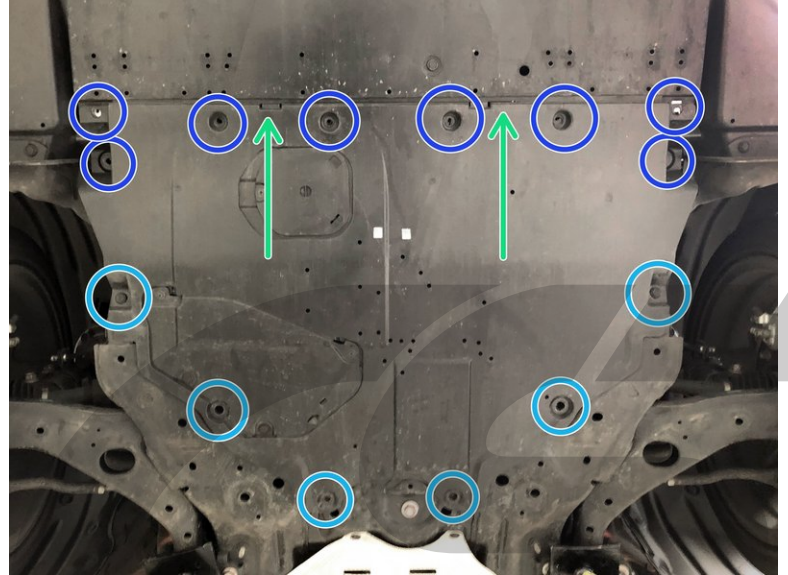
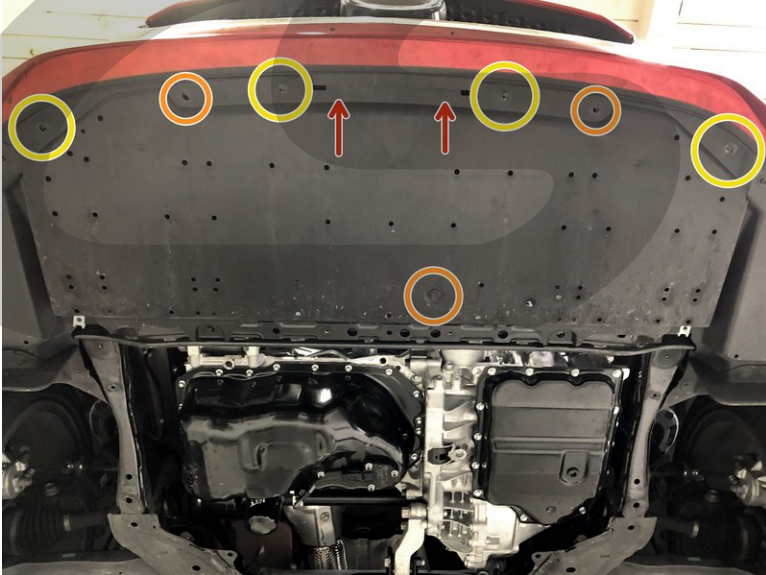
- Reinstall the 10mm screw located in the upper corner of the bumper that was removed in step 13. Tighten until snug using a 10mm socket and ratchet.
 - Starting at the top of the fender, push the fender flare inwards to snap it into position.
 - Work your way down the flare slowly. There should be four to five clips that will need to snap back into position.
- i** Once complete, the protective tape can be removed.

Step 77 — Reinstalling the Front Bumper Part 5



- Look into the driver's side fender.
- Reinstall four small push clips located in front of the front tire.
- Repeat steps 75-77 for the passenger side of the vehicle.

Step 78 — Reinstalling the Engine Undertrays



- Lift the front section of the engine undertray into position. Slide the center portion of the front edge up above the front bumper as shown.
- Secure the front section of the undertray in position by reinstalling the three small OEM push clips removed earlier.
- Secure the front section of the undertray to the front bumper using the four OEM bolts removed earlier. Tighten until snug using an 8mm socket and ratchet.
- Lift the rear section of the OEM undertray into position. Ensure the front edge mates with the front section as shown.
- Secure the rear section of the undertray in position by reinstalling the six large OEM push clips removed earlier.
- Finally, secure the rear section of the undertray to the subframe & front section using the eight 10mm OEM bolts removed earlier. Tighten to 10-15ft-lbs. using a 10mm socket and ratchet.

Step 79 — Installation Complete



- This completes your installation of the CorkSport Performance Intercooler and/or Piping Upgrade!
- ⓘ Listen for any strange noises and any loss in power upon first drive. If any issues are present, inspect the all intercooler piping connections.
- Contact us with any questions or concerns at sales@corksport.com or (360) 260-2675.
- Please leave a review here: <https://corksport.com/2018-mazda-6-turbo...>
- Share your experience using #CorkSport on Instagram, Facebook, and Twitter.