

CorkSport Performance

ATK-6-121 Short Ram Intake & Turbo Inlet Pipe

Installation Instructions for the CorkSport Performance Short Ram Intake & Turbo Inlet Pipe for Mazda's equipped with the 2.5L Turbo engine.

Written By: Cody Dunton



INTRODUCTION

In this installation guide we have provided step by step instructions to setup, remove the OEM intake and turbo inlet pipe and install the CorkSport Performance Short Ram Intake and Turbo Inlet Pipe.

Advisory:

- The engine bay will be hot after recent vehicle operation. Allow the vehicle to cool or use a fan to cool the engine bay before working on the vehicle.

TOOLS:

- [1/4" Ratchet](#) (1)
- [3/8" Ratchet](#) (1)
- [10mm Socket-Deep](#) (1)
- [12mm Socket - Deep](#) (1)
- [Wrench, 12mm](#) (1)
- [Wrench, 13mm](#) (1)
- [Small Flathead Screwdriver](#) (1)
- [Phillips Screwdriver](#) (1)
- [Diagonal Cutting Pliers](#) (1)
- [3mm Allen key](#) (1)
- [5mm Allen Key](#) (1)

PARTS:

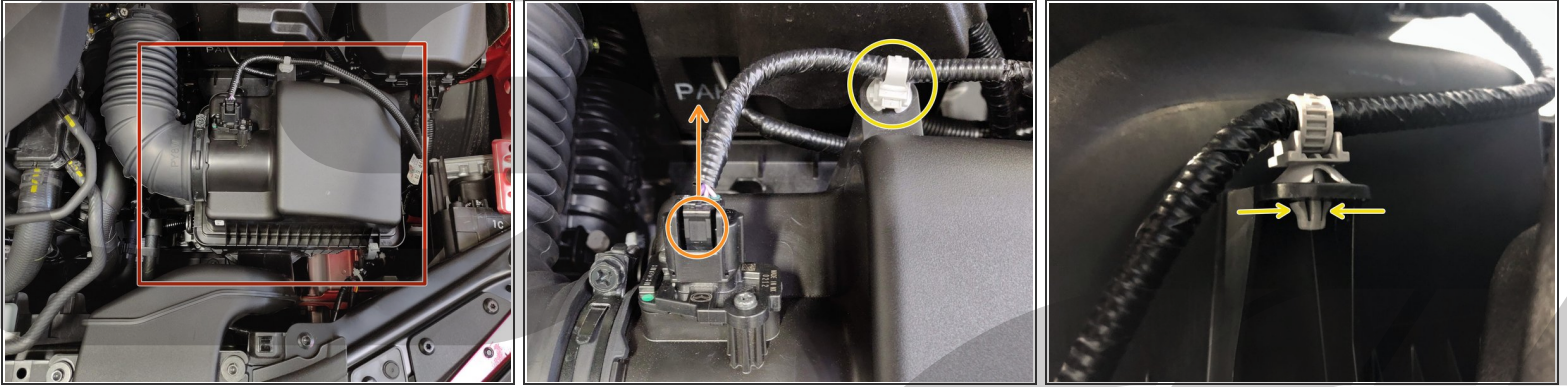
- [CorkSport Turbo Inlet Pipe](#) (1)
- [CorkSport TIP Intake Silicone](#) (1)
- [CorkSport TIP Turbo Silicone](#) (1)
- [CorkSport TIP Breather Silicone](#) (1)
- [CorkSport TIP Mounting Bracket](#) (1)
- [CS T-Bolt Clamp - 86-94mm](#) (1)
- [CS T-Bolt Clamp - 57-65mm](#) (1)
- [CS T-Bolt Clamp - 92-100mm](#) (1)
- [9/16" Barbed Hose Fitting](#) (1)
- [5/16" Nylon Spacer](#) (2)
- [1/2" Nylon Spacer](#) (1)
- [CorkSport Turbo MAF Housing](#) (1)
- [CorkSport Turbo MAF Support Braceket](#) (1)
- [CorkSport 3.5" Dry-Flow Filter](#) (1)
- [CS T-Bolt Clamp - 95-103mm](#) (1)
- [M4x8mm Socket Head Cap Screw](#) (2)
- [M6x10mm Socket Head Cap Screw](#) (2)

Step 1 — Getting Started



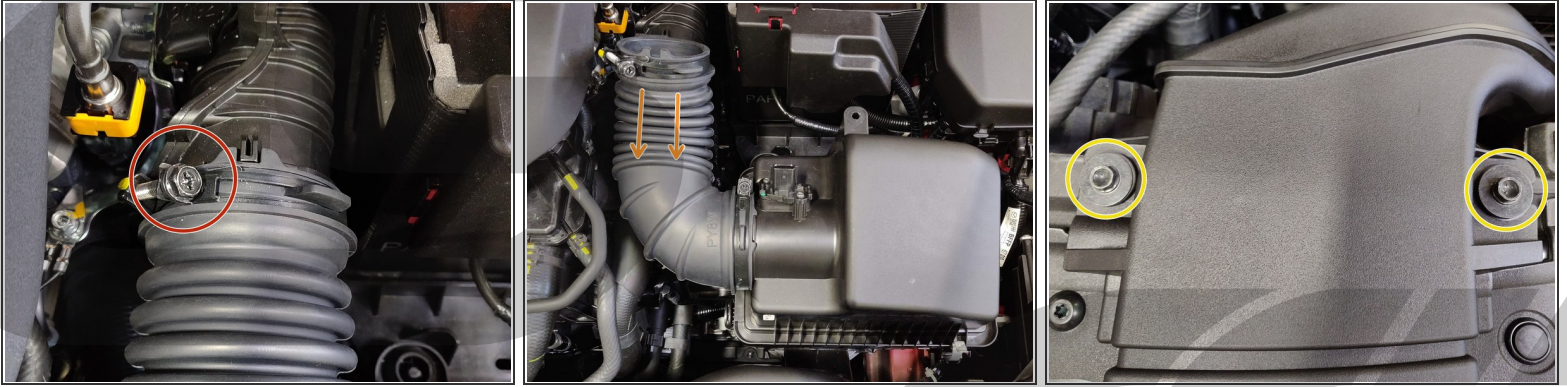
- First and foremost; **THANK YOU** for becoming a part of the CorkSport Family. We hope to bring you the highest level of Parts, Customer Service, & Support
- ⓘ How To Use These Instructions: The instruction format will relate colored marking in the image to the color dot in the text to the right of the image
- ⓘ The Mazda 3 / CX-30/50 Turbo was used during this installation. The Mazda 6 / CX-5 / CX-9 are similar but have some minor differences.

Step 2 — Removing the OEM Intake Part 1



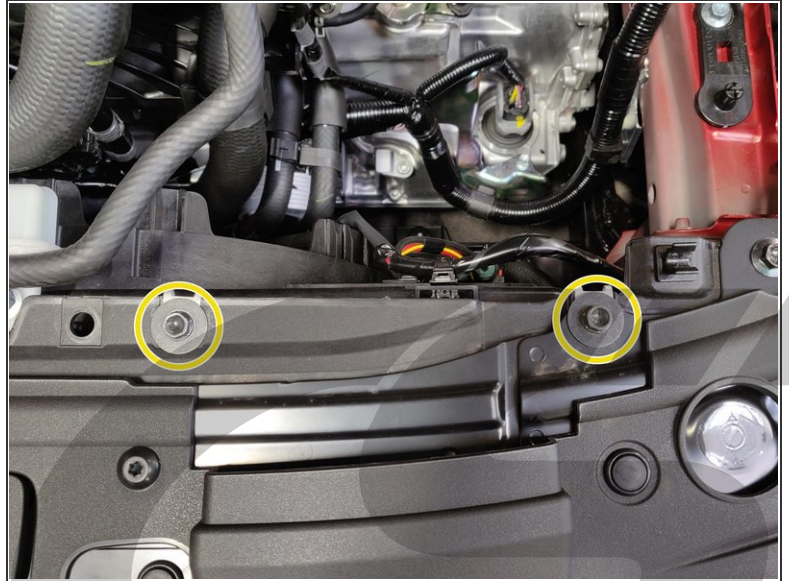
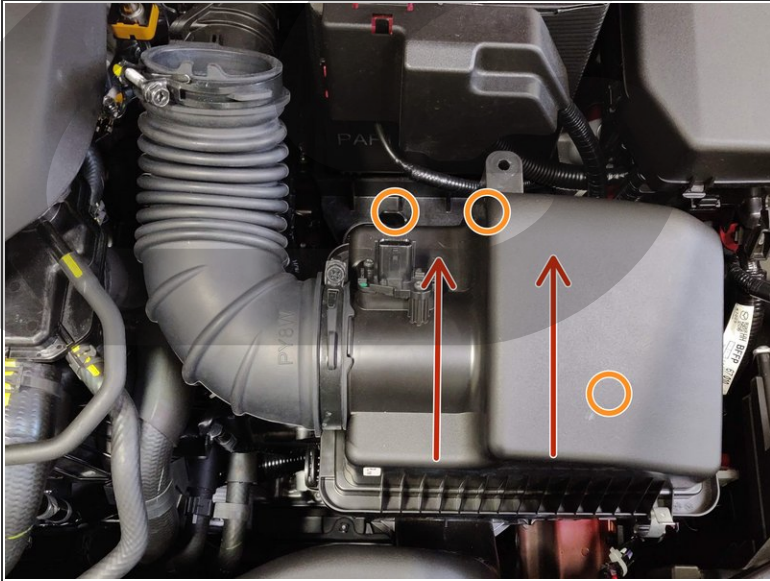
- Locate the OEM intake system in the engine bay.
- Unplug the MAF sensor by pushing down on the top tab and sliding the connector up.
- Using your fingers or a flathead screw driver, squeeze the underside of the clip to release the two locking tabs in the direction shown.
 - ⓘ You may have to rotate the clip to get access to each of the locking tabs.
 - ⓘ Place the wiring out of the way for later

Step 3 — Removing the OEM Intake Part 2



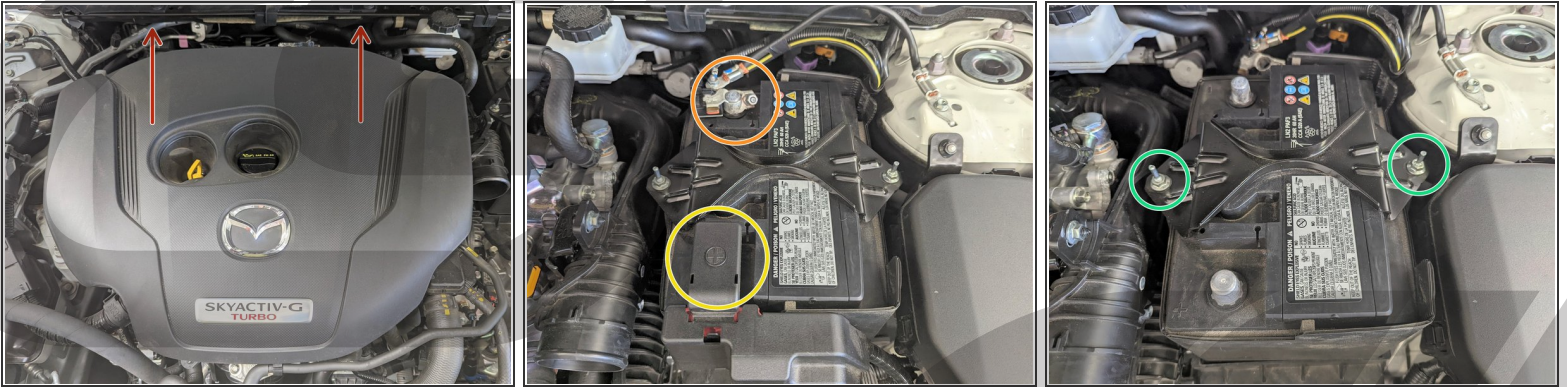
- Using a 10mm socket and ratchet, loosen the clamp that attaches the OEM rubber intake tube to the turbo inlet pipe.
- Pull the intake tube off of the turbo inlet pipe by grabbing where the clamp is located at and pulling to the front of the car.
 - ⓘ Let the intake tube rest on top of the turbo inlet pipe.
- Use the 10mm socket and ratchet again to remove the two bolts that secure the front of the intake.

Step 4 — Removing the OEM Intake Part 3



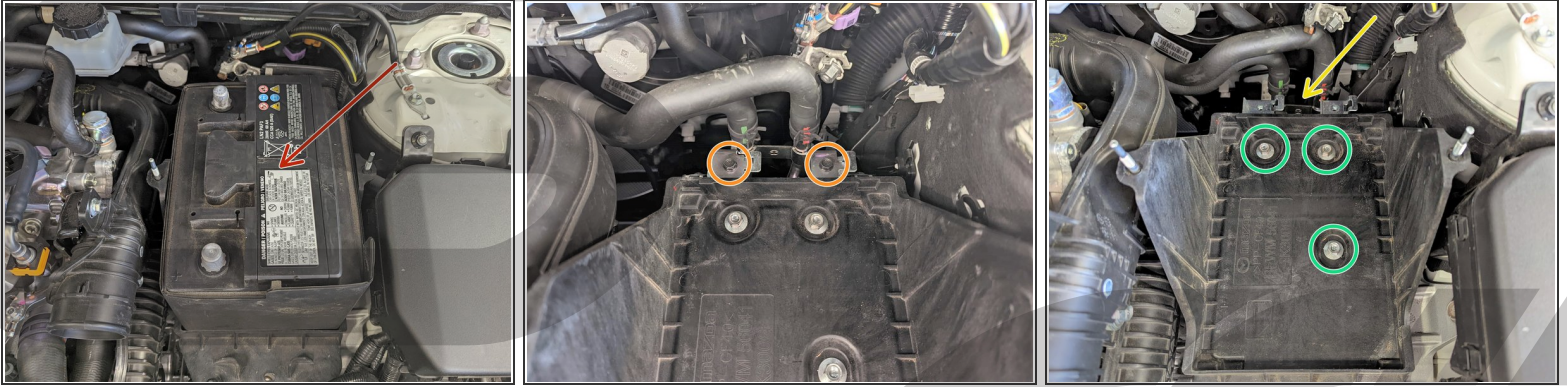
- Pull vertically upwards to remove the OEM intake.
- There are three rubber isolators that will release when lifting upwards and their locations are circled for reference.
- **Optional:** Reinstall the two 10mm bolts that were previously removed from the front air duct for a cleaner look if you are installing the CS SRI only. Leave them out for later if installing the CS Heat Shield.

Step 5 — Removing the Engine Cover & Battery



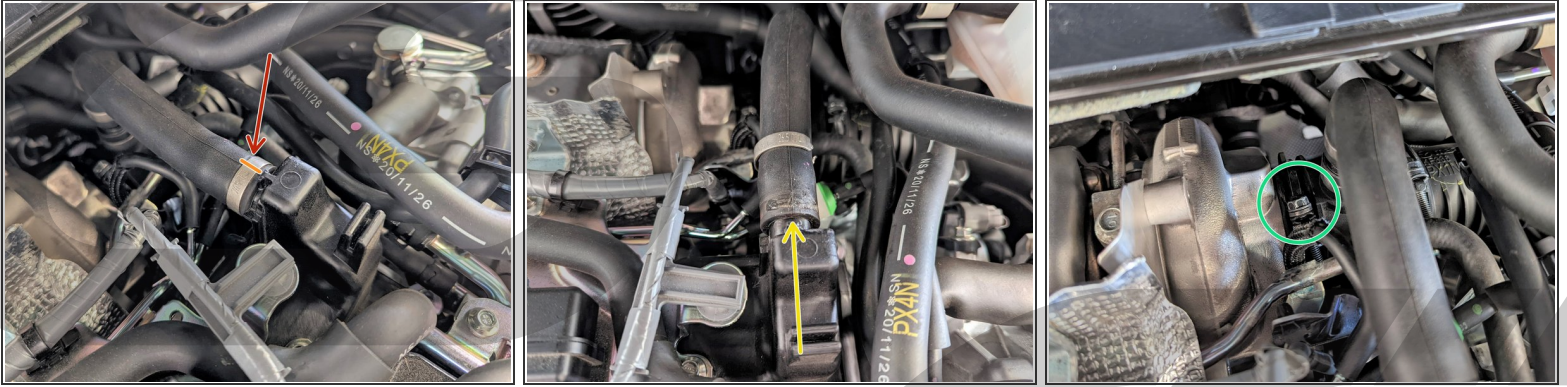
- Lift up on the engine cover and remove.
- Remove the negative terminal from the battery using a 10mm socket and ratchet.
 - ⓘ The nut does not have to be fully removed, only loosened enough to pull off of the battery stud.
- Now remove the positive terminal by lifting up the plastic cover and loosening the nut and removing the terminal.
- ⓘ The Mazda 3 / CX-30/50 has a different battery tray than the Mazda 6 / CX-5/9 and removal will be slightly different between the models.
- Uninstall the battery tie down by removing the two 10mm nuts circled.

Step 6 — Removing the Battery Tray



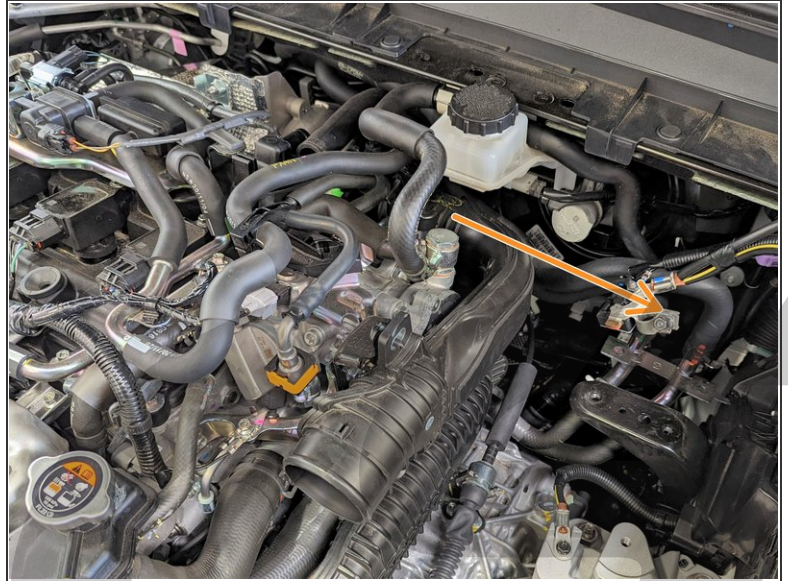
- Remove the battery.
- Using the 10mm socket and ratchet again, remove the 2 bolts at the back of the battery tray as shown securing the heater hoses.
 - ⓘ Some models may not have heater hoses present in this location
- Take the heater hose bracket and set it behind the battery tray.
- Remove the 3 bolts circled using a 12mm socket and ratchet.
- Remove the battery tray.

Step 7 — Removing the OEM Turbo Inlet Pipe - Part 1



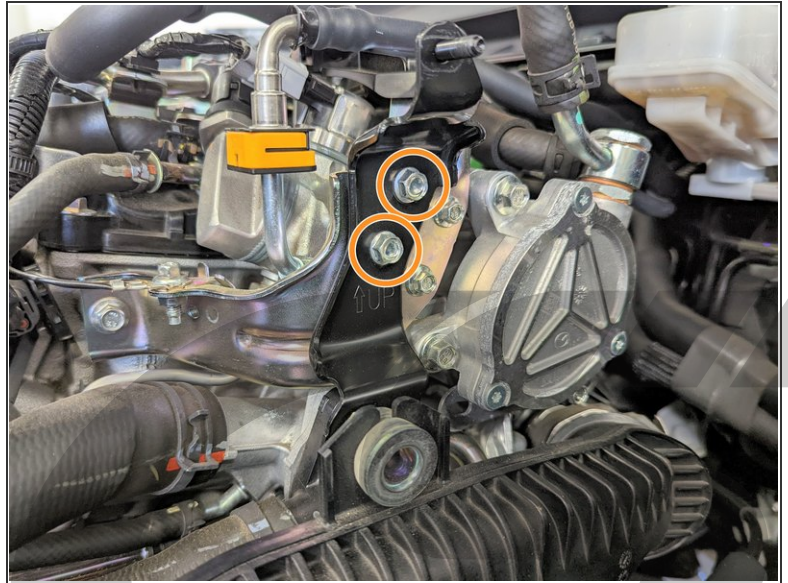
- Locate the metal clamp that secures the breather hose to the valve cover.
- Using a pair of diagonal cutting pliers, cut the metal clamp and discard.
 - ⓘ The metal clamp can be difficult to remove using the pliers. Another option is to use a Dremel with a cutoff wheel. Ensure proper safety measures are taken.
- Remove the hose from the valve cover.
- Loosen the clamp shown using the 10mm socket and ratchet.
 - ⓘ The bolt and clamp do not have to be fully removed, only loosened enough to remove from the turbo.

Step 8 — Removing the OEM Turbo Inlet Pipe - Part 2

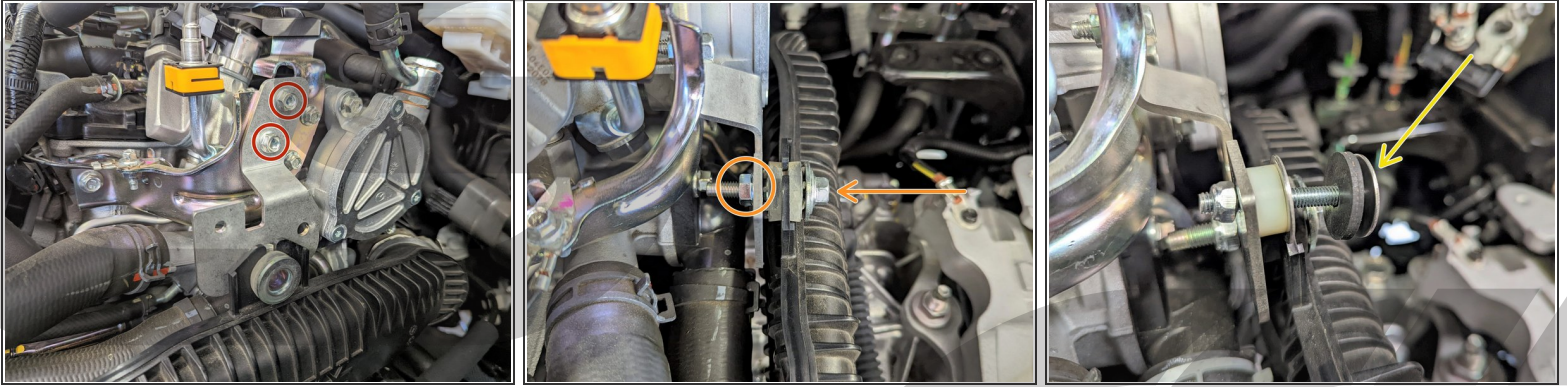


- Using a 10mm socket and ratchet remove the nut circled.
- Remove the Turbo Inlet Pipe by pulling it towards the drivers side of the vehicle.

Step 9 — Removing the OEM TIP Bracket

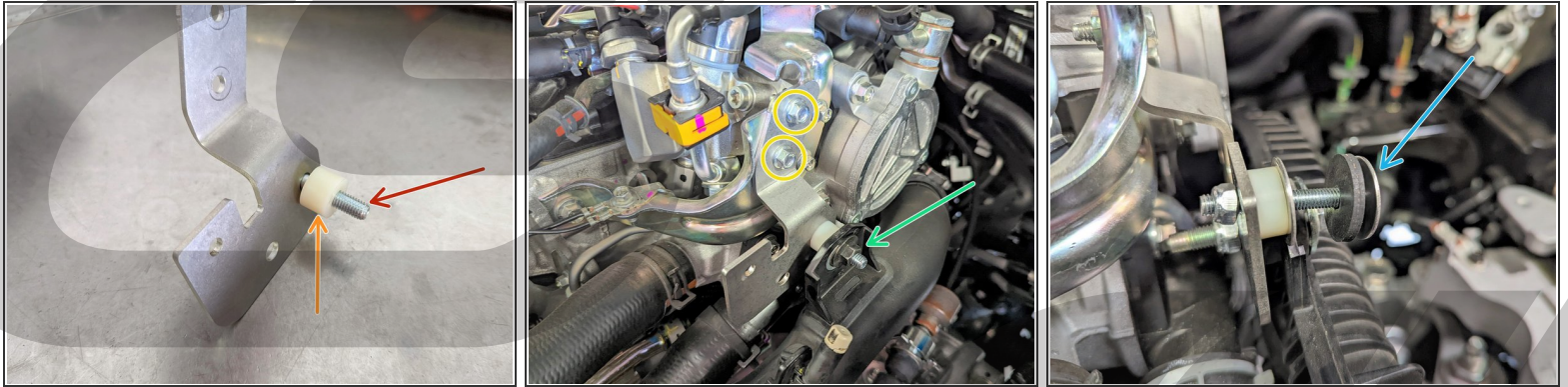


- Remove the 12mm bolt circled.
- ① For Mazda 6, CX-5 and CX-9 models there will be a nut instead.
- Now remove the bracket by using the 10mm socket and ratchet to remove the 2 bolts shown.

Step 10 — Installing the TIP - Part 1 for Mazda 3 / CX-30/50

- ① After installation is completed there will be left over hardware which is normal. This is from the CS TIP being able to fit on multiple models.
- ① **If you are installing on a Mazda 6/ CX-5 / CX-9 skip to the next step.**
- Install the CS TIP bracket using the 2 OEM 10mm bolts and torque to **80 in-lbs**.
- Reinstall the OEM 12mm bolt into the bracket as shown with the supplied 13mm flange nut and tighten to **15 ft-lbs**.
- Using the supplied M6 lock nut, 5/16in nylon spacer, metal washer, rubber washer, metal washer and M6 bolt, install them into the bracket in that order. Only thread the nut on a few turns.

Step 11 — Installing the TIP - Part 1 for Mazda 6/ CX-5 & 9



ⓘ If you are installing on a Mazda 3/ CX-30/ CX-50 skip to the next step.

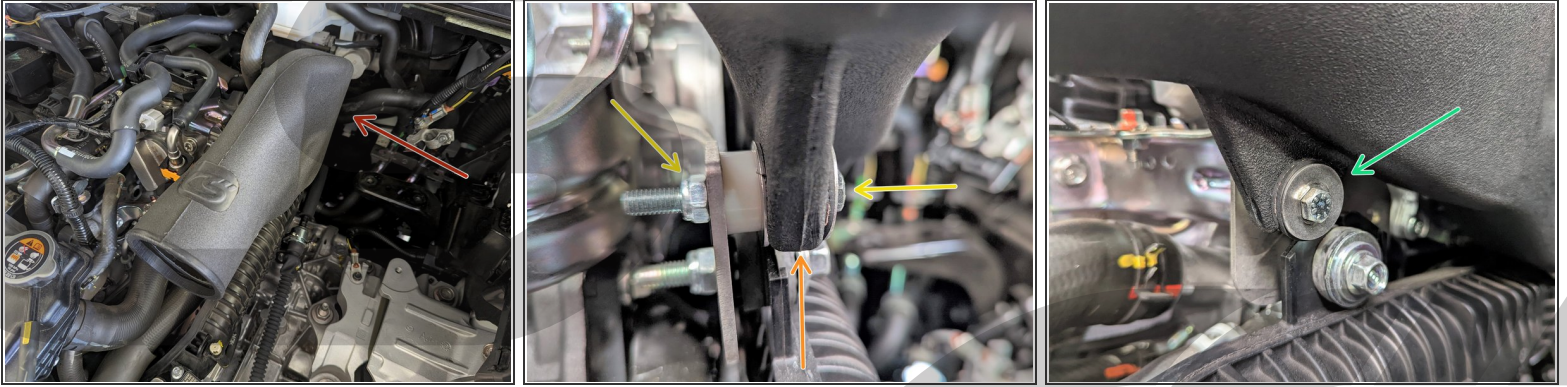
- Install the M8 bolt into the TIP bracket with the M8 washer as shown.
- Place either the 1/2in or 5/16in spacer on the bolt depending on the gap between the TIP bracket and the charge pipe.
 - ⓘ For the factory charge pipe we recommend using the 1/2in spacer.
- Install the TIP bracket as shown using the two OEM 10mm bolts torquing them to **80 in-lbs**.
- Reinstall the factory nut onto the bolt and tighten using a 12mm socket and wrench to **15 ft-lbs**.
- Using the supplied M6 lock nut, 5/16in nylon spacer, metal washer, rubber washer, metal washer and M6 bolt, install them into the bracket in that order. Only thread the nut on a few turns.

Step 12 — Installing the Turbo Inlet Pipe - Part 2



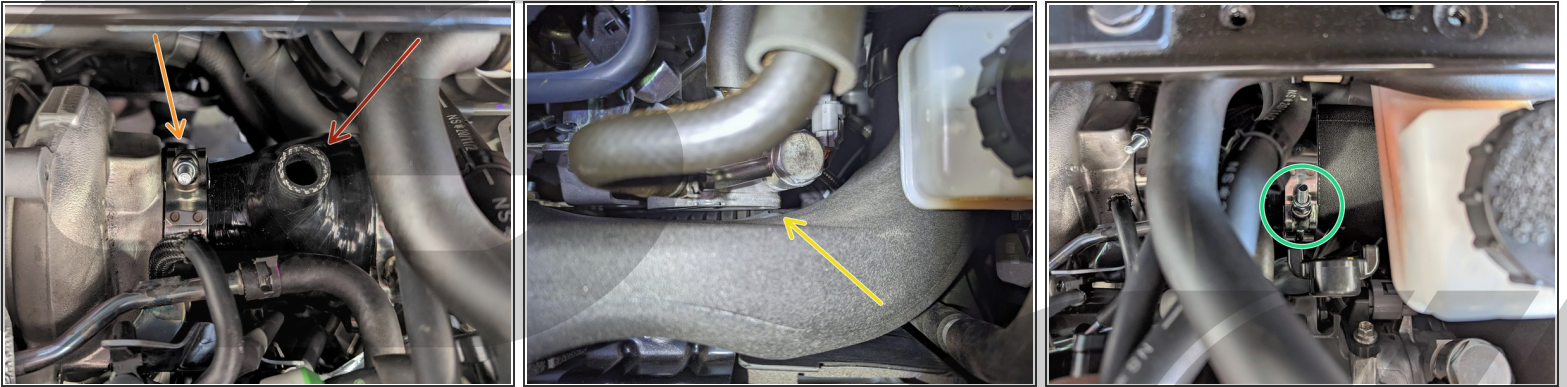
- Place the 86-94 T-bolt clamp on the outlet side of the TIP in the orientation shown.
- Locate the silicone piece shown and install on the TIP.
- Rotate the silicone so that the top port is perpendicular to the end of the TIP as shown
- Now place the 86-94 clamp on the silicone as shown and tighten, leaving it loose enough that it can still be rotated if need when installed in the car.
- Place the 57-65 T-bolt clamp on the TIP as shown leaving it loose enough that it can still be rotated.

Step 13 — Installing the Turbo Inlet Pipe - Part 3



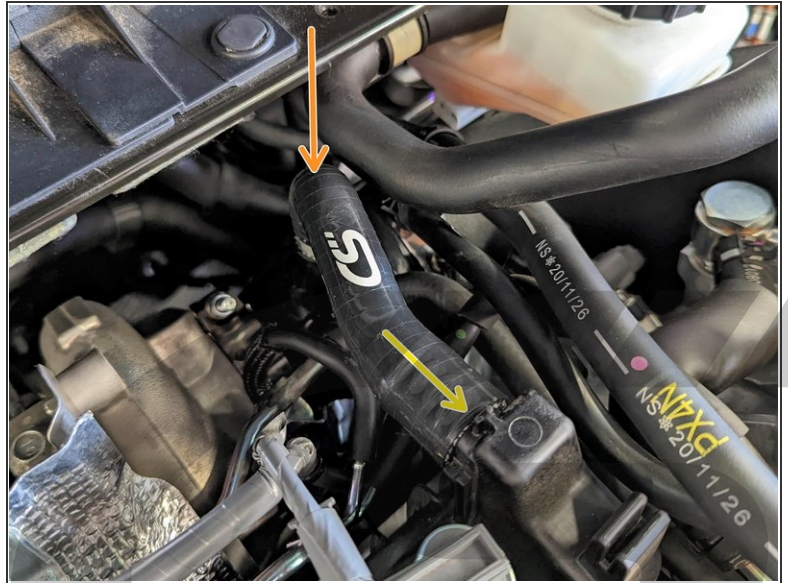
- Install the TIP and silicone coupler making sure that it is fully installed on the turbo inlet
 - ⓘ Do not tighten the clamps yet as that will be done in the next step
- Place the tab on the TIP in between the metal washer and rubber washer as shown.
 - ⓘ The rubber washer should be on the right side of the TIP tab.
- Using a 10mm wrench and a 10mm socket and ratchet, tighten the bolt shown to **35-40 in-lbs**.
 - ⓘ Make sure that the tab on the TIP is fully seated on the bolt when tightening
 - ⓘ You can gently pull up on the TIP to see if the bolt is tight enough and is properly securing the TIP.
- This image shows an example of what it will look like after the TIP and bolt are installed correctly.

Step 14 — Installing the Turbo Inlet Pipe - Part 4



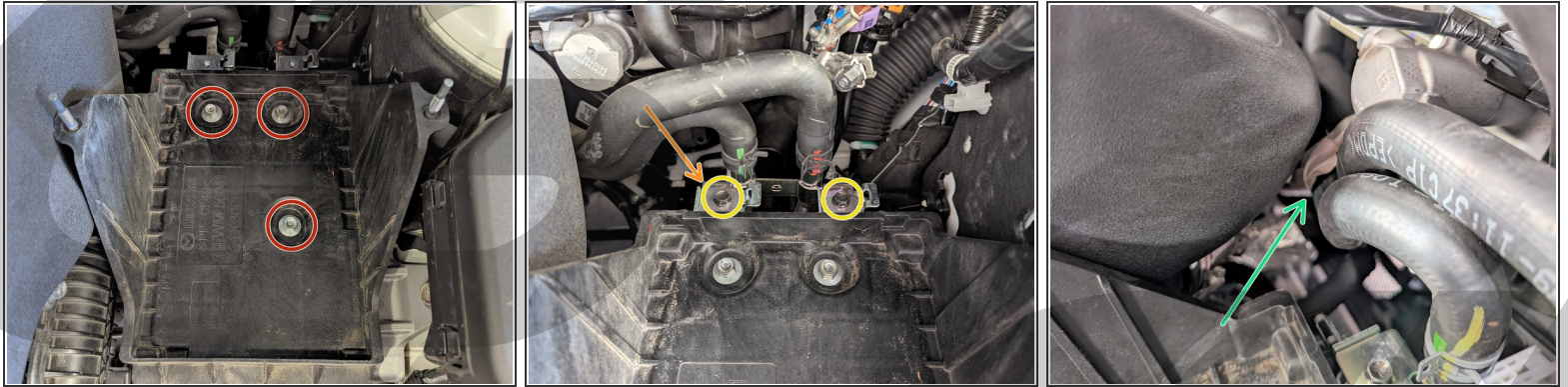
- If necessary adjust the orientation of the silicone so that the port for the barb is vertical.
- Ensure that the T-bolt clamp at the turbo is orientated as shown and using the 10mm socket and ratchet tighten to **20-25 in-lbs**.
 - ⓘ Confirm after tightening that the clamp is straight and even, with a small gap from the end of the silicone.
- Adjust the position of the TIP so that there is small gap of ~1mm between it and the vacuum pump in the location shown
 - ⓘ This will provide the most room for the battery tie down that will be installed in a few steps
- Now ensure that the T-bolt clamp on the TIP side of the coupler is orientated as shown and tighten it to **20-25 in-lbs**.
 - ⚠ **Do not over tighten the T-bolt clamp on the TIP as it may deform/crush the opening.**
 - ⓘ Confirm after tightening that the clamp is straight and even, with a small gap from the end of the silicone.

Step 15 — Installing the TIP - Part 5



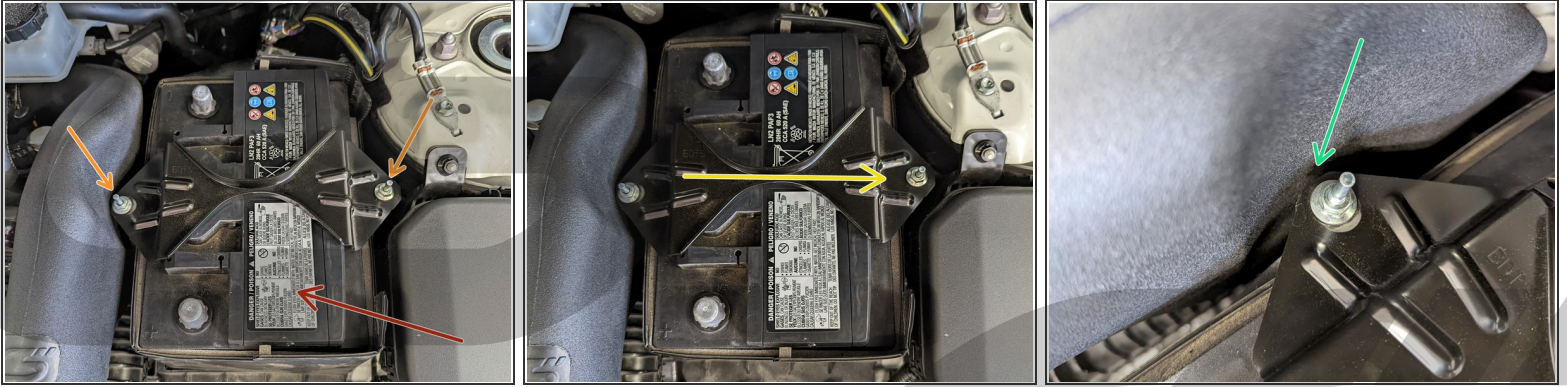
- Locate the plastic barbed fitting and install it into the silicone as shown.
 - ⓘ Using a lubricant such as glass cleaner helps make installation easier.
- Now install the silicone breather hose onto the barbed fitting.
- Install the other end on the valve cover.
 - ⓘ No clamps are necessary for installation.

Step 16 — Reinstall the Battery Tray and Adjust Coolant Lines

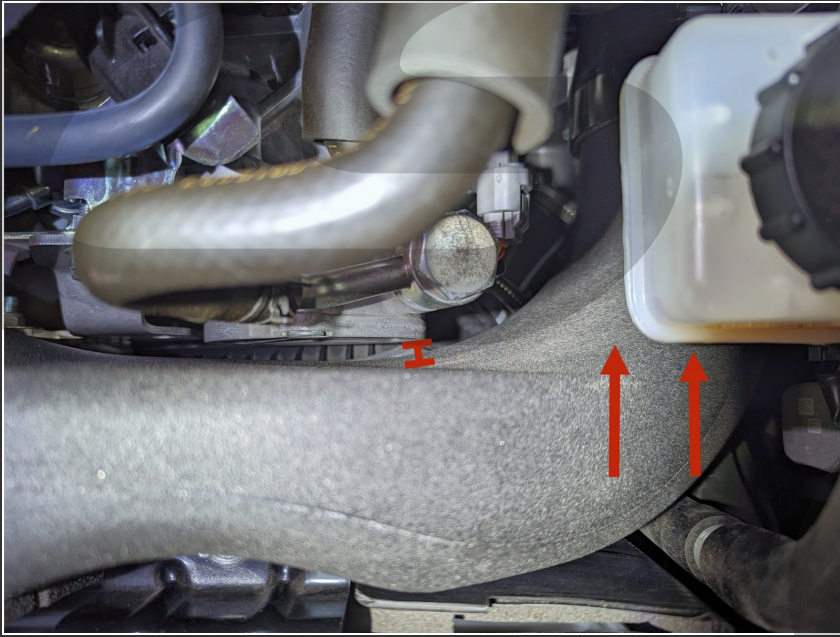


- Place the battery tray back and tighten the 3, 12mm bolts to **20 ft-lbs**.
- Reinstall the heater hose bracket onto the battery tray.
- Tighten the 10mm bolts securing the heater hoses to **80 in-lbs**.
- The heater hoses may need to be adjusted so they do not come in contact with the TIP. If the hoses are close to the TIP, readjusted them as shown.

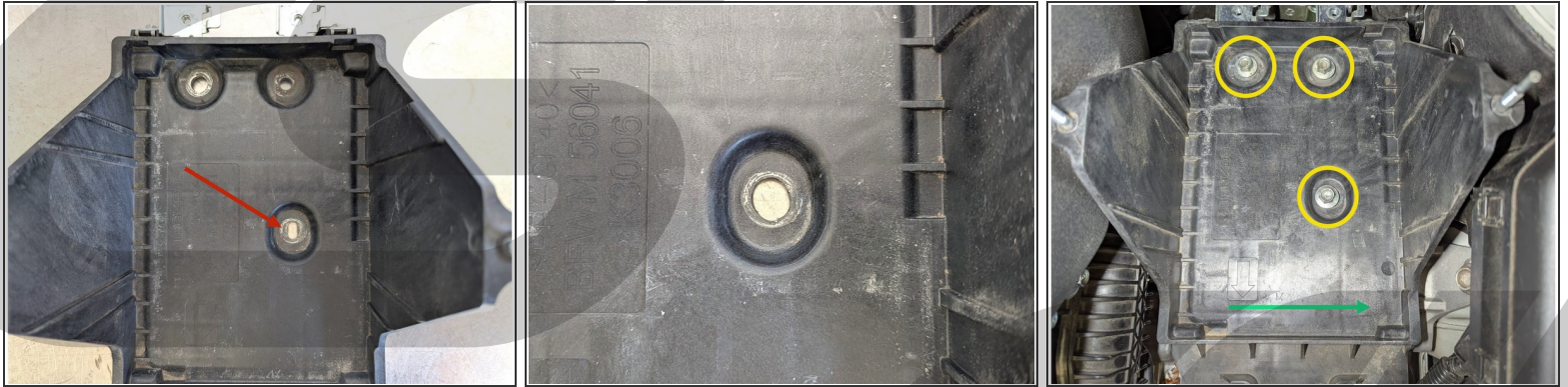
Step 17 — Reinstalling the Battery and Tie Down



- ⓘ The Mazda 3 / CX-30/50 has a different battery tray that is wider than the Mazda 6 / CX-5/9 and installation will be slightly different between the models.
- Place the battery back into the battery tray.
- Reinstall the tie down as shown with the pair of 10mm nuts leaving them loose.
- To ensure that the battery tie down does not contact the TIP, move and hold the tie down all the way towards the drivers side while tightening to **45-60 in-lbs**.
- ⓘ This is to ensure that the tie down will not contact the TIP
- ⓘ After driving, recheck the distance to verify it has not moved.
- Make sure the TIP and battery tie down are not making contact, however, if struggling the next two steps have some recommendations for extra clearance.

Step 18 — OPTIONAL: Extra Clearance for Battery Tie Down Part 1

- ① **Due to minor manufacturing differences between different vehicles, battery tie downs, battery trays, and CS turbo inlet pipes, fitment can be a little tight in some cases between the battery tie down and the CS turbo inlet.**
- ① Steps 18-20 have a few options to gain you some extra room to keep things from rubbing on your new TIP. Complete any and/or all of them as needed. If you had good clearance after the last step, continue on your install on Step 21!
- **Option 1:** Ensure the CS TIP is fully inserted into the silicone coupler between the TIP and turbocharger. Double check Step 14 to ensure the TIP is fully inserted into the silicone without any rubbing on the engine.

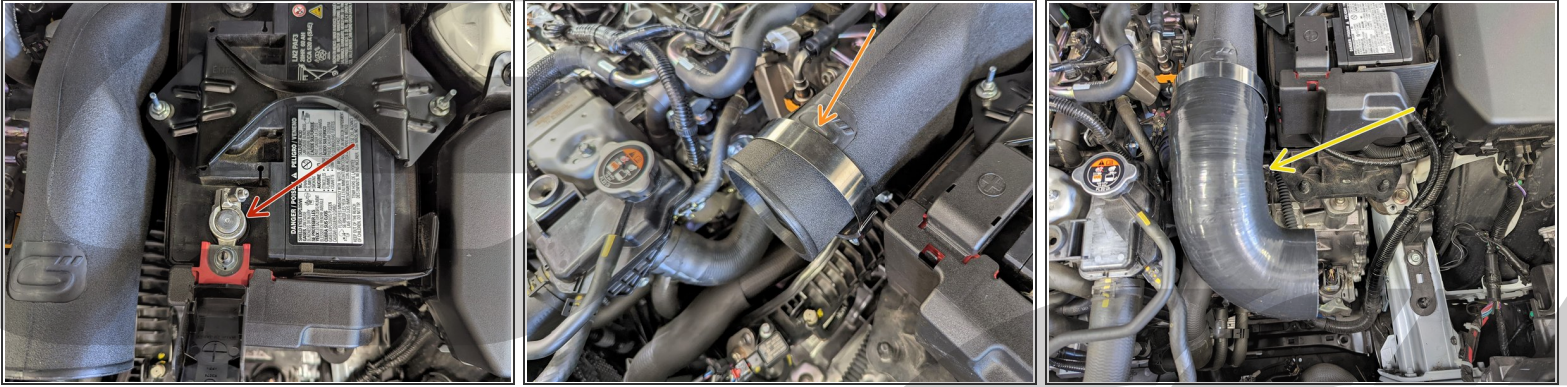
Step 19 — OPTIONAL: Extra Clearance for Battery Tie Down Part 2

- Option 2: Enlarge the front mounting slot of the battery tray
 - ① Enlarging to slot will allow the battery tray to be rotated counter-clockwise slightly to provide additional room for the Turbo Inlet Pipe
 - Remove the battery tray and locate the front slotted hole.
 - Using a drill and a 1/2in drill bit or a Dremel tool, enlarge the slot as shown
 - Place the battery tray back into position and start the 3 bolts leaving them loose
 - Move the front of the battery tray to the right to provide more clearance to the Turbo Inlet Pipe
 - Tighten the 12mm bolts as before to **20 ft-lbs**.

Step 20 — OPTIONAL: Extra Clearance for Battery Tie Down Part 3

- **Option 3:** The battery tray and/or battery tie down bracket can be shaved/trimmed down with a Dremel or grinder to gain some extra clearance. Its easiest to do this with the parts removed from the vehicle
 - ⚠️ Ensure proper safety measures are taken to prevent injury and/or damage
 - ⓘ Ensure there is still enough material for the nut to grab onto after trimming
 - ⓘ We recommend Option 1 & Option 2 before Option 3

Step 21 — Reconnecting the Battery Cable and Installing the Silicone



- Place the positive battery cable back on the stud and tighten with a 10mm socket and ratchet to **35-50 in-lbs**.
- Place the 92-100 T-bolt clamp over the end of the TIP as shown.
 - ⓘ Make sure the clamp is orientated so the CS logo is facing towards you.
- Install the silicone elbow onto the TIP.
 - ⓘ For this silicone coupler the CS logo will be on the bottom side of the silicone.
 - ⓘ The silicone has a ledge on the inside to limit how far it can be installed onto the TIP.

Step 22 — Mazda 3 / CX-30/50 MAF Sensor Transfer

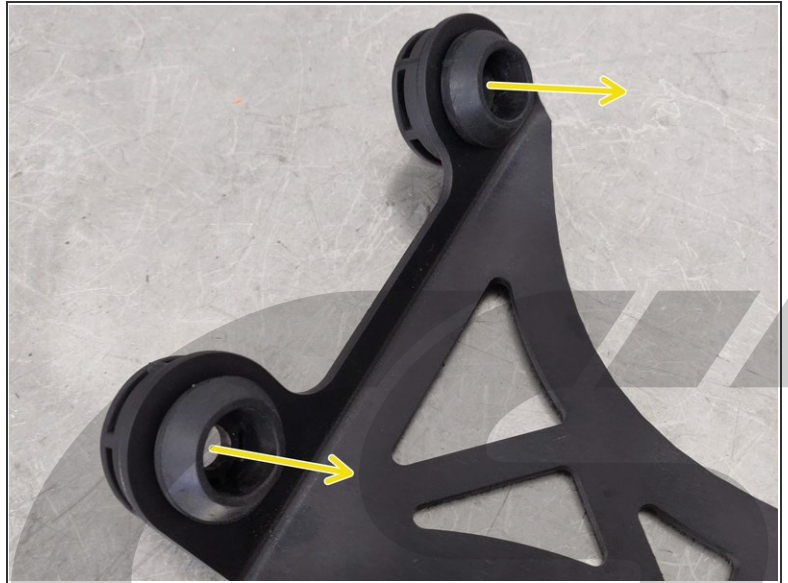
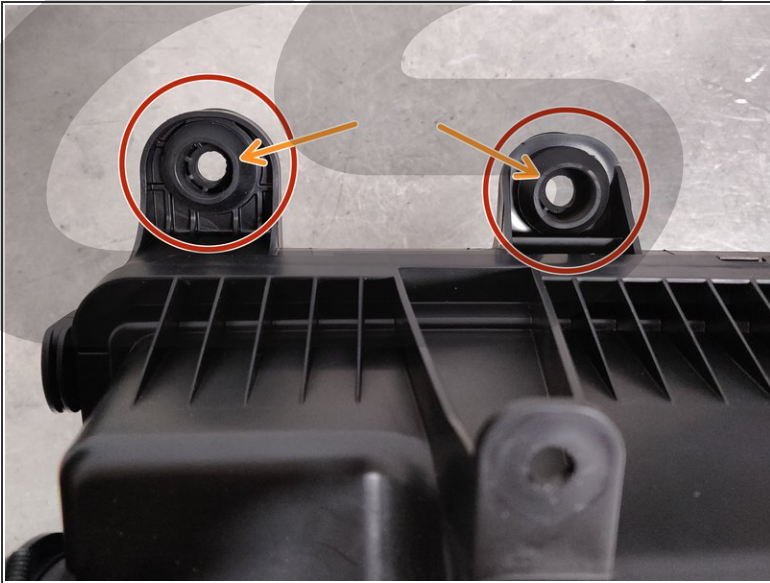


- ⓘ The steps for the Mazda 3 / CX-30/50 Turbo are shown. Continue onto the next step for the Mazda 6 / CX-5/9.
- Using the Phillips screwdriver remove the two screws holding the MAF sensor to the OEM intake. Carefully pull upwards to remove the MAF from the OEM intake.
 - ⓘ We recommend threading the Phillips head screws back into the OEM intake so you do not lose them if you ever need to reinstall the OEM intake.
- Unscrew the Socket Head Cap Screws from the CorkSport MAF housing using a 3mm Allen Key.
- Carefully install the MAF sensor into the CorkSport MAF housing and tighten until both screws are snug.
 - ⚠ Ensure the MAF sensor O-ring is not pinched or damaged during installation.
- ⓘ The MAF sensor can only be installed in one orientation.

Step 23 — Mazda 6 / CX-5/9 MAF Sensor Transfer

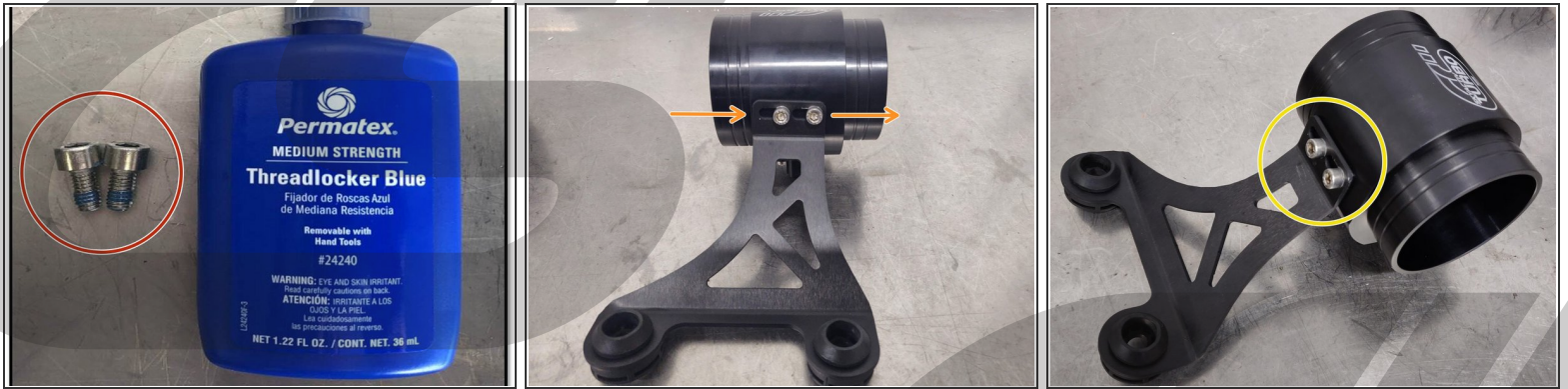


- Using the Phillips screwdriver remove the two screws holding the MAF sensor to the OEM intake. Carefully pull upwards to remove the MAF from the OEM intake.
 - ⓘ We recommend threading the Phillips head screws back into the OEM intake so you do not lose them if you ever need to reinstall the OEM intake.
- Unscrew the Socket Head Cap Screws from the CorkSport MAF housing using a 3mm Allen Key.
- Carefully install the MAF sensor into the CorkSport MAF housing and tighten until both screws are snug.
 - ⚠ Ensure the MAF sensor O-ring is not pinched or damaged during installation.
 - ⓘ The MAF sensor can only be installed in one orientation.

Step 24 — MAF Support Bracket Install Part 1

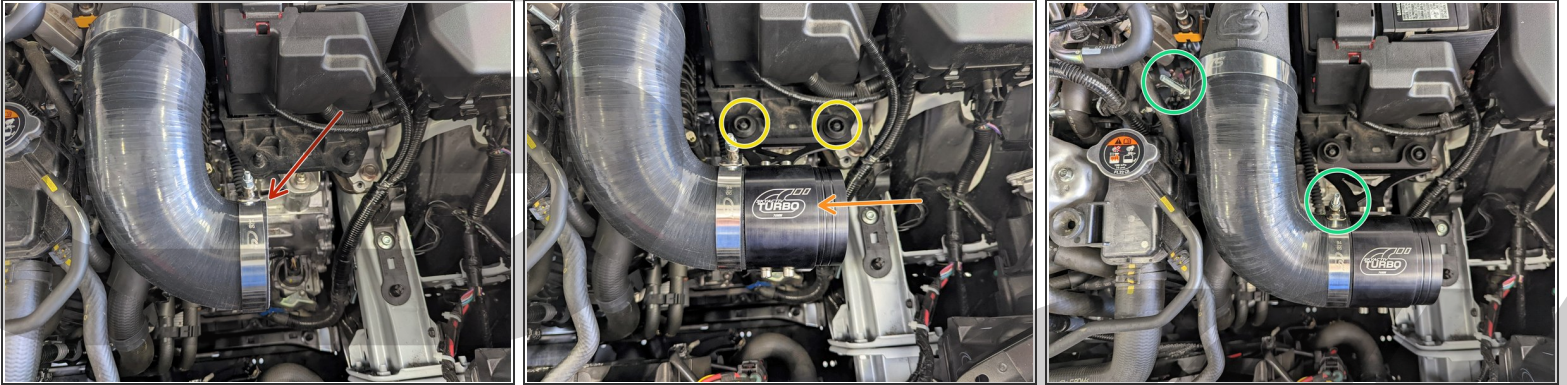
- Looking at the OEM intake, locate the two rubber isolators that are on the back.
- Remove the two isolators by pushing on the top side of the isolator.
- Install the two rubber isolators into the CorkSport MAF support bracket by laying the bracket flat and pushing the angled side of the isolators through the holes in the bracket.
- ⓘ Make sure the rubber isolators are orientated as shown in the picture.

Step 25 — MAF Support Bracket Install Part 2



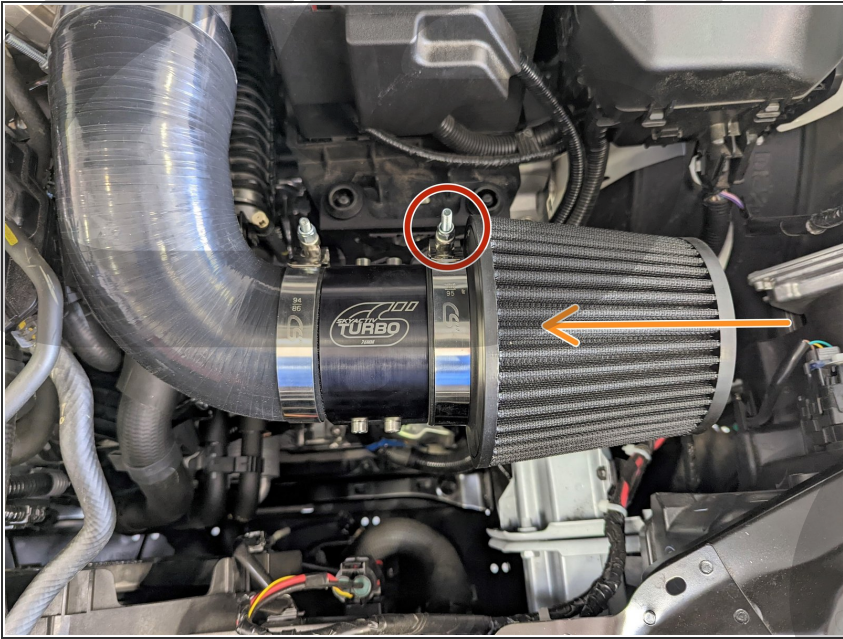
- Apply blue threadlocker to the two supplied M6x10mm Socket Head Cap Screws.
 - ⚠ Failure to use threadlocker could result in the bolts vibrating loose or an air leak in the MAF housing.
- Using the two screws, secure the MAF housing to the MAF support bracket and slide the MAF all the way to the right as shown.
 - ⓘ Make sure the orientation of the bracket is the same as shown.
 - ⓘ Final MAF bracket adjustment may be required after installation
- Tighten both screws until snug using a 5mm Allen Key.

Step 26 — Installing the CS MAF Housing



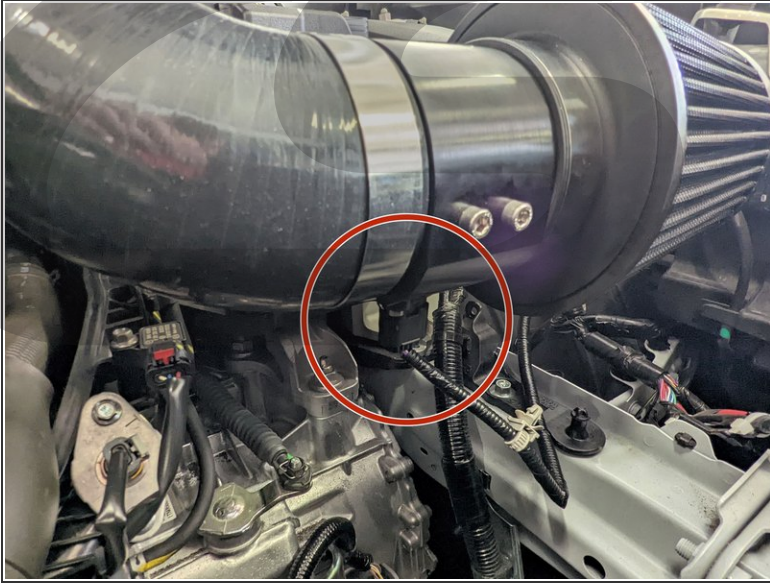
- Place the 86-94 T-bolt clamp on the MAF end of the silicone as shown.
- Insert the MAF housing into the end of the silicone elbow.
- Press the rubber isolators that are installed on the CorkSport MAF support bracket over the two circled pegs. For best alignment, you may need to loosen and adjust the MAF bracket screws installed in the previous step.
- Once happy with silicone alignment, tighten the clamps with a 10mm socket and ratchet to **20-25 in-lbs.**
 - ⚠ Do not over tighten the T-bolt clamp on the TIP as it may deform/crush the opening.
 - ⚠ Make sure to match the orientation of the T-bolt clamp on the TIP so it clears the engine cover.
 - ① Ensure the clamps are straight and even, with a small gap from the end of the silicone.
 - ① When tight, the silicone around the edges of the clamps will bulge slightly.

Step 27 — Installing the CS 3.5" Dry-Flow Filter



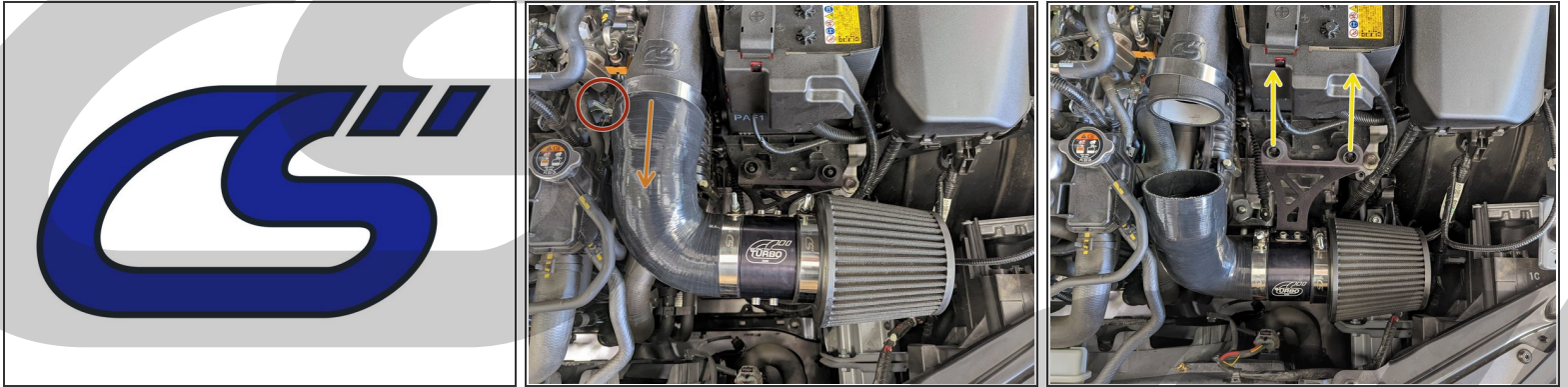
- Slide the 95-103 T-bolt clamp over the end of the CorkSport 3.5" Dry-Flow Filter and make sure orientation matches as shown.
- Install the CorkSport 3.5" Dry-Flow Filter onto the end of the MAF housing and tighten the clamp to **25-30 in-lbs**.
 - ⓘ Ensure the clamp is straight and even, with a small gap from the end of the silicone.
 - ⓘ When tight, the silicone around the edges of the clamp will bulge slightly.

Step 28 — Reconnecting the MAF Sensor Wiring



- ⓘ If you are installing the CS Heat Shield then you can skip to the next step.
- Locate the MAF sensor wiring and plug it back into the MAF on the underside of the MAF housing.
 - ⓘ Ensure the MAF wiring is out of the way and will not rub on anything or get stuck in any moving parts.
 - ⚠ Failure to reconnect the MAF sensor wiring will result in CELs and/or poor vehicle performance.
- Reinstall the engine cover.
 - ⓘ Make sure that the T-bolt clamp on the TIP is not contacting the engine cover.
- Reinstall the negative battery cable and tighten the 10mm nut to **35-50 in-lbs.**
- ⓘ This completes the installation of the CS SRI and TIP.

Step 29 — Optional: Installing the CorkSport SRI Heat Shield



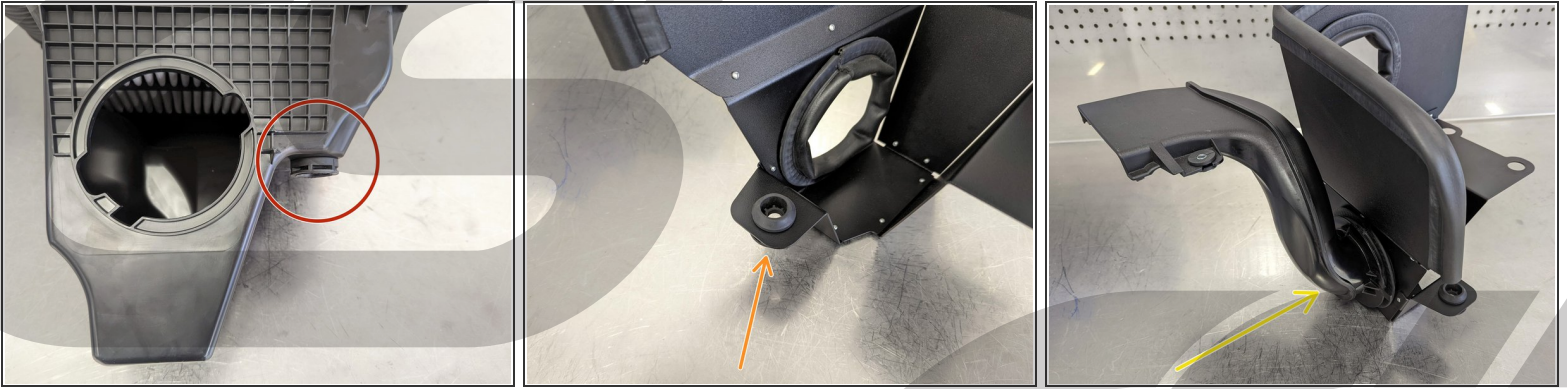
- ① If you are not installing a CorkSport Heat Shield, skip to **Step 35**.
- ① The installation of the CorkSport Heat Shield requires you to backtrack a few steps. This is intentional as it allows the CS SRI silicone and MAF housing to be properly aligned beforehand.
- Start by using a 10mm socket to loosen the clamp that connects to the TIP.
- Now slide the silicone off of the turbo inlet pipe by pulling towards the front of the car.
- Remove the SRI assembly by lifting up on the MAF housing bracket to remove the rubber isolators from the two pegs and set aside for later.

Step 30 — Removing the OEM Air Duct



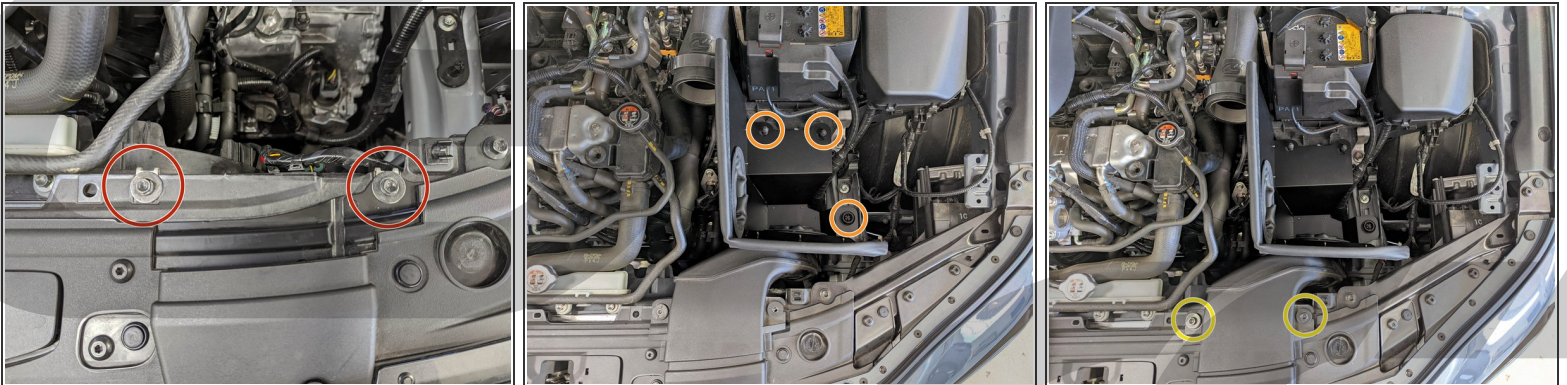
- Now locate the OEM intake that was removed earlier and find the tab that is circled on the side of the air duct.
- Using a flat head screw driver pry up on the plastic tab while twisting the air duct counter-clock wise to release it from the groove.
- After the tab has been rotated out of the groove a little ways, turn the air duct to the same orientation shown and pull towards you to remove it.

Step 31 — Remove and Install Rubber Isolator and Air Duct



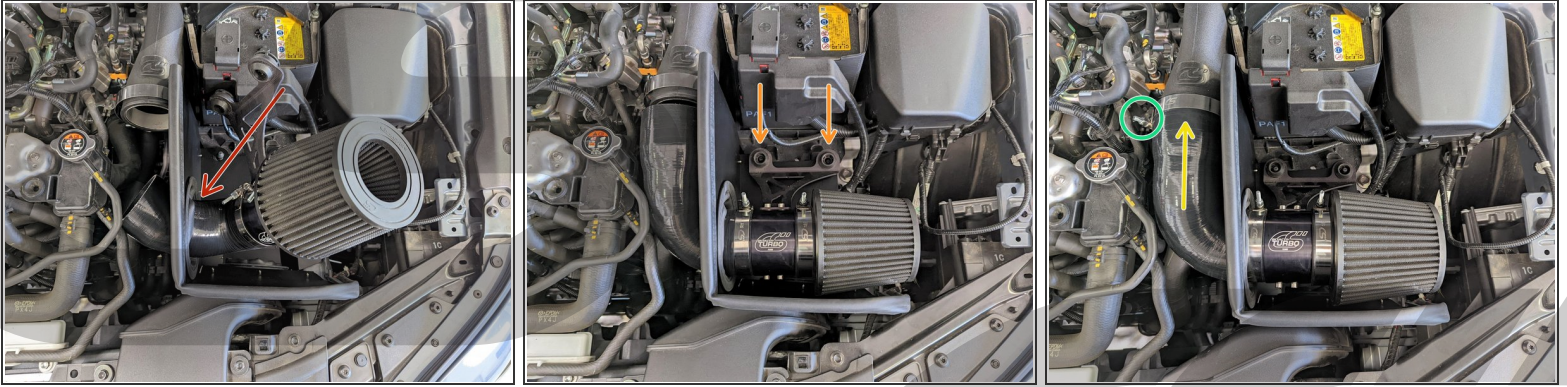
- Remove the rubber isolator from the OEM intake that is circled by pushing on the top side of the isolator and pulling on the bottom.
- Install the rubber isolator into the CorkSport Heat Shield by pushing the angled side of the isolator through the bottom of the hole shown.
- ⓘ Make sure the rubber isolator is orientated as shown in the picture.
- Insert the OEM air duct into the lower hole in the CS Heat Shield as shown

Step 32 — Install the CorkSport Heat Shield



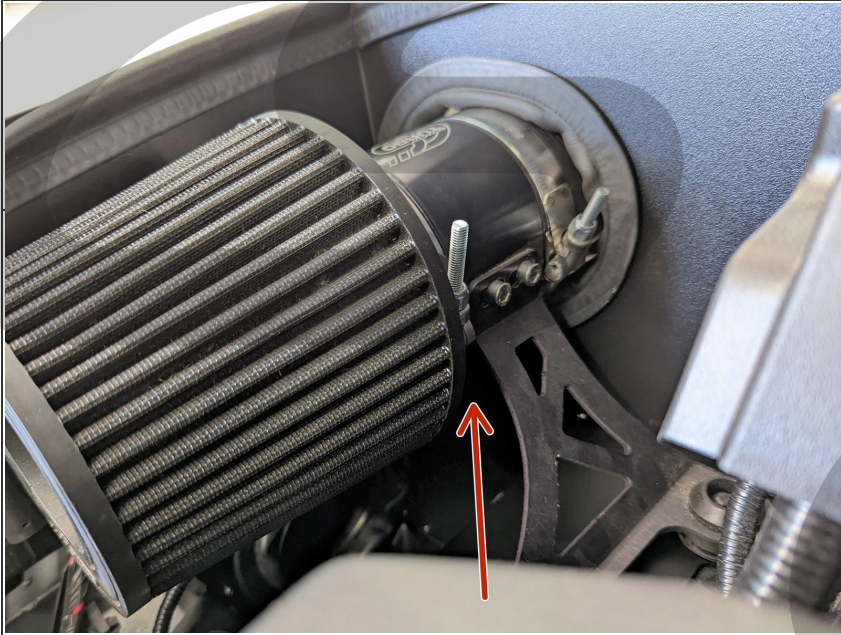
- Make sure the two 10mm bolts that hold the air duct are removed from the two locations circled.
- Place the CS Heat Shield with the OEM air duct into the engine bay and line up the three holes circled with the pegs. Push down on the rubber isolator once it is centered on the peg until it is fully seated.
- Reinstall the two 10mm bolts into the air duct and tighten until they are snug.

Step 33 — Reinstall the CorkSport SRI



- Place the end of the silicone through the hole in the heat shield.
 - Maneuver the SRI until it is in the position shown and place the two rubber isolators over the pegs and press down until they are fully installed.
 - Install the end of the silicone over the turbo inlet pipe.
 - Place the clamp back over the end of the silicone and tighten the clamp to **20-25 in-lbs**.
- ⚠ Do not over tighten the T-bolt clamp on the TIP as it may deform/crush the opening.
- ⓘ When tight, the silicone around the edges of the clamps will bulge slightly.

Step 34 — Reconnecting the MAF Sensor Wiring



- Locate the MAF sensor wiring and plug it back into the MAF on the underside of the MAF housing.
- ⓘ Ensure the MAF wiring is out of the way and will not rub on anything or get stuck in any moving parts.
- ⚠ Failure to reconnect the MAF sensor wiring will result in CELs and/or poor vehicle performance.
- Reinstall the engine cover
- ⓘ Make sure that the T-bolt clamp is not contacting the engine cover.
- Reinstall the negative battery cable and tighten the 10mm nut to **35-50 in-lbs.**

Step 35 — Installation Complete



- This completes your installation of the CorkSport Performance Turbo Inlet Pipe with Short Ram Intake and Heat Shield!
- ⓘ Added engine noise and/or suction sounds are normal.
- If any other noises are present, you may have a vacuum leak and need to readjust the clamps and/or silicone.
- 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.