



INSTALLATION GUIDE

2012–2017 BMW F10/F12/F13 M5/M6 Intercooler

SKU: MMINT-F10-12

TABLE OF CONTENTS

- Pg 1** RESOURCES AND CONTACT INFORMATION
- Pg 2** IMPORTANT SAFETY INFORMATION
 - SUPPLIED PARTS
 - REQUIRED TOOLS
 - INSTALLATION INSTRUCTIONS
- Pg 8** DISPOSAL INSTRUCTIONS
- WARRANTY INFORMATION

RESOURCES & CONTACT

-  **CALL 1-877-GOMISHI**
CUSTOMER SERVICE HOURS: MON-FRI 8:30AM-5:00PM EST
-  **MISHIMOTO**
-  **GOMISHIMOTO**
-  **MISHIMOTO**
-  **WEBSITE**
WWW.MISHIMOTO.COM
-  **ENGINEERING BLOG**
WWW.MISHIMOTO.COM/ENGINEERING

IMPORTANT SAFETY INFORMATION

- › Mishimoto recommends you use safety glasses and protective gloves during the installation of our products
- › Raise vehicle only on jack stands or on a vehicle lift
- › Allow vehicle to cool completely prior to attempting installation
- › Do not run the engine or drive the vehicle while overheating; serious damage can occur
- › Please dispose of any liquids properly
- › Mishimoto is not responsible for any vehicle damage or personal injury due to installation errors, misuse, or removal of Mishimoto products
- › If you need any assistance while installing our products, reach out to our Customer Service Team at 1-877-GOMISHI

REQUIRED TOOLS

T30 TORX SOCKET	2.5MM HEX KEY/SOCKET
T15 TORX SOCKET	3MM HEX KEY/SOCKET
E8 EXTERNAL TORX SOCKET	4MM HEX KEY/SOCKET
6MM SOCKET	10MM WRENCH
7MM SOCKET	PICK TOOL
8MM SOCKET	FLATHEAD SCREWDRIVER
10MM SOCKET	VACUUM COOLANT FILL TOOL
13MM SOCKET	OPTIONAL
¼" DRIVE RATCHET	EAR CLAMP REMOVAL TOOL
¼" EXTENSIONS	O-RING REMOVAL TOOL

INSTALLATION INSTRUCTIONS

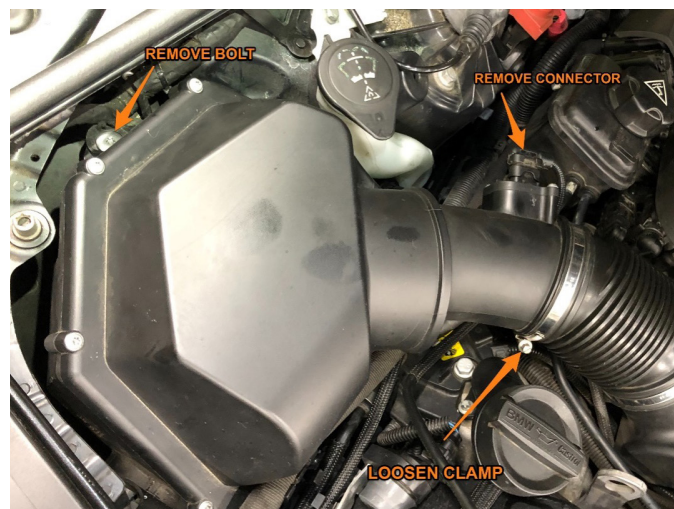
01. Disconnect the negative battery terminal located in the trunk. While working around the turbochargers, it is quite easy to drop a tool or part onto the positive alternator wire and create an arc or otherwise dangerous situation.

02. Remove the coolant reservoir cap for the intercooler system located above the right-side valve cover.



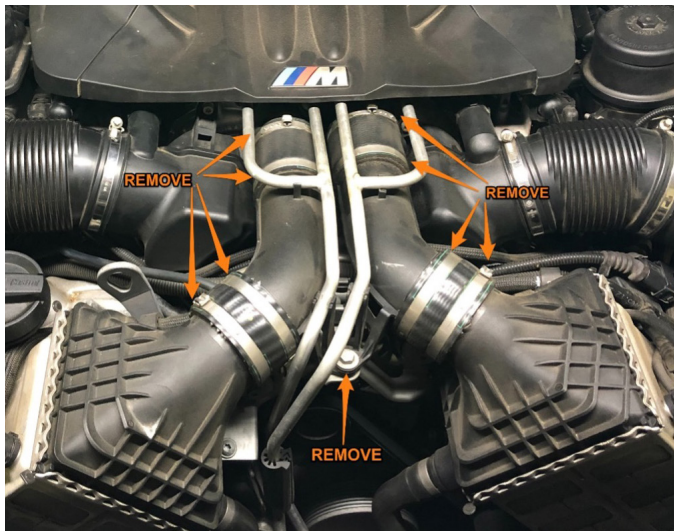
03. Remove the front plastic undertray with an 8mm socket. Drain the charge air cooling system by removing the lower fitting from each side radiator, one at a time. Do not drain the main radiator. Reattach lower fittings after draining.

04. Starting on the right side of the vehicle, remove the MAF sensor connector on the intake tube. Remove the T30 torx bolt holding the airbox to the body of the vehicle and loosen the clamp holding the airbox assembly to the turbo inlet tube and lift the airbox out of the vehicle. Be aware to remove any water lines or vacuum lines that are attached to the airbox during removal. Repeat for intake on left side of the vehicle.



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05. Remove the 8x Ear clamps securing the charge pipes to the turbos and intercoolers. Remove the 10mm bolt securing the charge pipes to the charge pipe bracket.

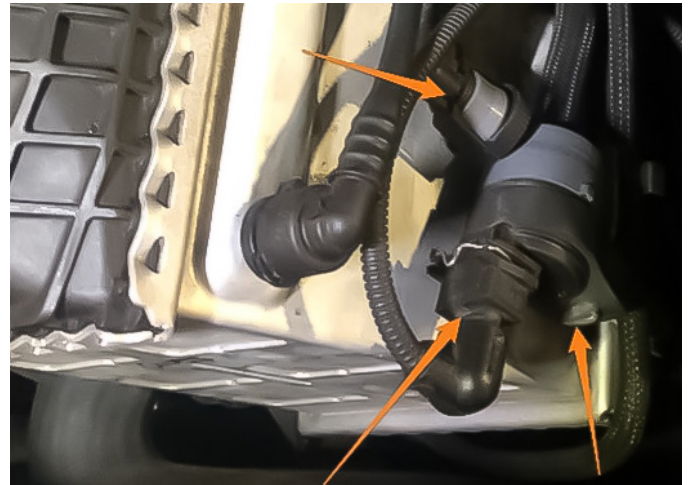


06. Remove the 2X water lines from each intercooler (4 total), using a pick tool to release the lock and pull the fittings and lines away from the coolers. Remove the 1X vent line from each intercooler (2 total) in a similar fashion.

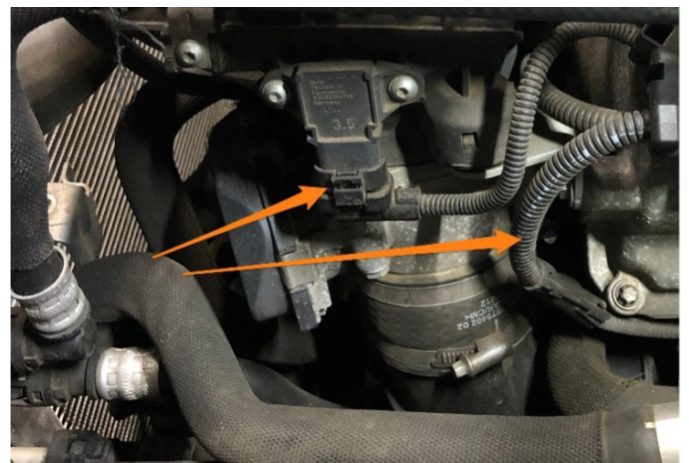


07. Remove the EVAP electrical connector, EVAP line, and remove the EVAP solenoid from the EVAP bracket from each intercooler.

(Image on right)



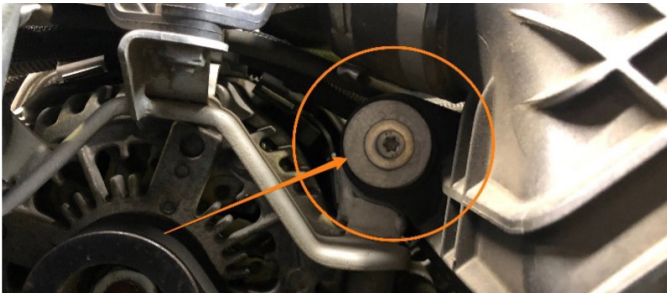
08. Remove the MAP sensor electrical connector and loosen the clamp connecting the throttle body coupler to the intake manifold, on the throttle body side. Repeat on other intercooler.



09. Remove the T30 torx bolt holding the intercooler to the intercooler bracket. Move the intercooler towards the front of the car to free it from the charge pipe and lift the intercooler up out of the throttle body coupler. Before fully removing it from the car, disconnect the electrical connector on the throttle body. Repeat for other intercooler. It may be necessary to cover the inlets to the intake manifold to ensure that nothing falls into them while transferring parts to the new Mishimoto intercoolers.

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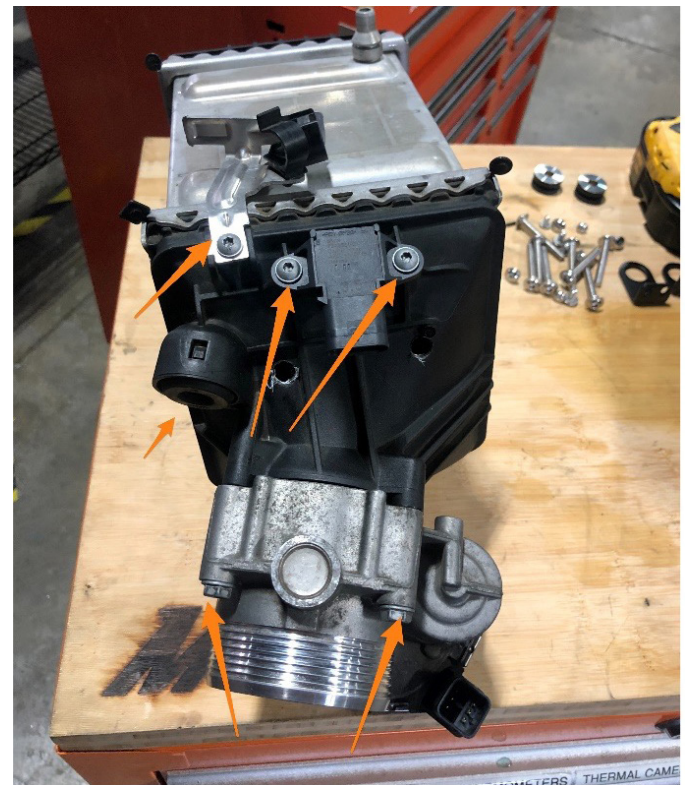
10. Remove the 1X 13mm bolt holding the electrical harness to the right-side valve cover near the oil fill cap and then remove the 2X E8 External Torx bolts holding the oil fill cap assembly and remove. Use a paper towel or tape to cover the hole to ensure nothing falls into the engine.



11. Remove factory charge pipes from the vehicle. There will be two identical Mishimoto transition couplers that will fit on the turbo outlet. Install 1X transition coupler on each turbo and install and tighten 1X 52-75mm worm gear clamp securing the coupler to the turbo. Repeat on other turbo. Install another 52-75mm clamp onto the other end of the coupler and push the long, straight end of the charge pipe into the coupler. Repeat with other charge pipe but leave loose for now.

12. [OPTIONAL] Remove O-rings located in each of the 4X coolant hoses as well as the 2X vent hoses that were attached to the intercooler. Replace each O-ring with the provided O-rings. Be careful to ensure that all O-rings are fully seated and are not damaged during installation.

13. On the right side intercooler (Passenger side on LHD), remove the 2X T15 Torx screws holding the MAP sensor to the intercooler and remove the map sensor. Remove the 1X T15 Torx screw holding the EVAP bracket to the intercooler and remove the bracket. Remove the 4X 10mm screws holding the throttle body to the intercooler and remove. Lastly, remove the rubber bushing from the factory intercooler using a pick tool.



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14. Transfer the throttle body to the right side Mishimoto intercooler. This is the intercooler that says "PUSH THE LIMITS". Inspect the throttle body gasket for any nicks or cuts and clean or replace if necessary (BMW PN 13547563377). Using 4X of the provided long M6 bolts, attach the throttle body to the outlet of the intercooler. Make sure to line up the extra hole in the throttle body with the pin that is installed on the intercooler for the correct alignment. Tighten the 4X bolts to approx. 10ft-lbs. Install the map sensor in the hole and secure with 2X of the provided M5 bolts. Install the EVAP bracket as shown with 1X of the provided M5 bolts. Lastly, install the factory rubber bushing in the recess in the Mishimoto intercooler. Make sure to line up the protrusion on the grommet with the hole in the recess.



15. Take 1X of the included grommets and the longer of the two included small black brackets and remove the metal insert from the grommet and install the grommet in the large hole in the bracket. Using the two of the provided M3 bolts, secure the boss on the inlet side of the intercooler. The holes on the bracket are slotted to provide adjustment if necessary. We suggest securing the bracket in the middle of its adjustment for the initial installation. Reinstall the metal insert into the grommet as shown.



16. Repeat steps 13-15 using the left side (driver's side LHD) intercooler and the Mishimoto intercooler with the "M | MISHIMOTO" logo on it and shorter bracket. (Images on next page)

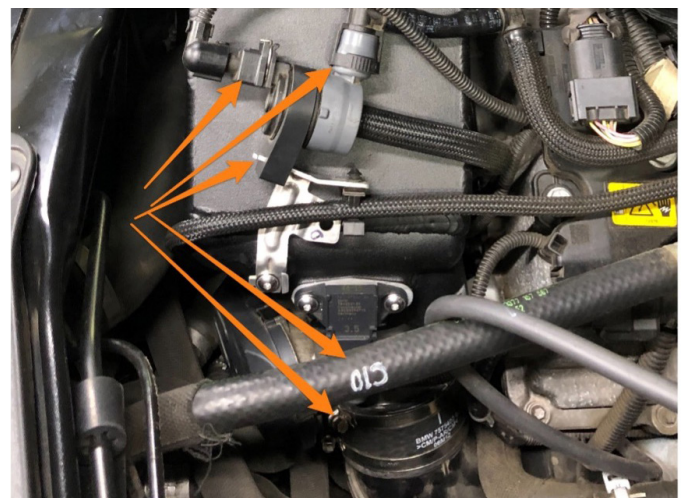
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17. Install 1X provided coupler onto the bent side of each charge pipe. This should be the coupler that fits onto the charge pipe on one side and transitions to a larger diameter on the other side, to fit onto the intercooler inlet. Pre-install 2X provided 52-75mm worm gear clamps onto each coupler, but do not tighten.

18. Starting on the left side of the vehicle (driver's side LHD), lower the intercooler into the vehicle with the throttle body pointed towards the ground. Locate the throttle body electrical connector and connect it to the throttle body. Align the rubber bushing with the bracket with the peg and fit the throttle body into the coupler on the intake manifold. It may be necessary to push some of the coolant and EVAP lines out of the way to get the intercooler fully seated. Once the intercooler is fully seated, align the charge pipe coupler with the inlet of the intercooler. Adjust if necessary to align the bracket with installed grommet with the threaded intercooler bracket. Reinstall the factory T30 Torx bolt through the grommet to secure the intercooler.

19. Use coolant to lubricate the O-rings inside the two coolant hoses for the intercooler and the one vent hose on top and connect to the ports on the intercooler. Each hose should only be able to reach the correct port. Connect the EVAP lines, MAP sensor, and tighten the clamp connecting to the throttle body coupler.



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20. Repeat steps 18 and 19 with the right side (“PUSH THE LIMITS”) intercooler. Adjust the charge pipe and couplers if needed and tighten the clamps with flathead screwdriver or 8mm socket.



21. Reinstall the Oil fill tube. Inspect the O-ring before installation and replace if necessary (BMW PN. 07119906276). Tighten both E8 Torx bolts to approx. 9 ft-lbs. Don't forget to reinstall the 13mm bolt securing the engine harness to the valve cover.

22. Install the included black bracket securing the turbo coolant lines to the intercooler bracket. First, use the 10mm factory bolt to secure the bottom part of the bracket to the intercooler bracket, making sure the coolant lines are lined up with the bracket. Then, use the included allen bolt and lock washer to secure the coolant lines using a 2.5mm allen key/socket.



23. Vacuum fill the intercooler cooling system and check for leaks and make sure that all electrical connections are connected. Reinstall intakes and complete the BMW electric water pump bleeding procedure.



Congratulations! You have finished your installation.

DISPOSAL INSTRUCTIONS

- › Do not dispose of any product as unsorted municipal waste. Use separate collection facilities. Contact your local authority for information regarding the collection systems available.
- › Never improperly dispose of any coolant, oil, or other chemicals.

WARRANTY INFORMATION



- › All claims must be accompanied with a picture of the Mishimoto product showing the issue for which the claim is being submitted.
- › Mishimoto asks that the customer inspect their purchased item for any damage immediately upon arrival.
- › Any product deemed dead on arrival (DOA) must be claimed within 14 business days of delivery. Claims outside of this time frame will not be covered under the Mishimoto Lifetime Warranty.
- › This warranty does not include payment and/or reimbursement of the cost of labor in connection with the removal of any product returned pursuant to the warranty policy or in connection with the installation of any replacement items provided under the warranty policy.
- › Mishimoto has the right to refuse a claim at any time.

- › When Mishimoto accepts a claim, Mishimoto retains full discretion to choose if it will: (i) repair or replace purchaser's original Mishimoto product; (ii) replace purchaser's original Mishimoto product with the most current available model; or (iii) provide the purchaser with a gift card redeemable on Mishimoto.com in the amount of the original purchase price of the original Mishimoto product. The provision of a replacement of a Mishimoto product is subject to availability and Mishimoto retains the right to substitute any warranty claim item with a comparable item or credit at any time.
- › If Mishimoto determines that it will provide a replacement item in connection with a claim under this warranty policy, and such item is out of stock, Mishimoto will place the customer on backorder and ship the replacement product to the purchaser once it becomes available.
- › Mishimoto is not liable for incorrect shipments in connection with a claim if a claim form is completed incorrectly, or if a model number is not included in a claim.
- › If you have a vehicle equipped with an automatic transmission, please make sure to specify this within the text box on the claim form. Mishimoto is not responsible for incorrect replacement shipments if transmission type is not indicated.



WARNING
Cancer and
Reproductive Harm
www.P65Warnings.ca.gov

This product can expose you to chemicals which are known to the state of California to cause cancer. For more information visit: www.p65warnings.ca.gov