

# INSTALLATION GUIDE

2019+ Mazda Miata ND2 Oil Cooler

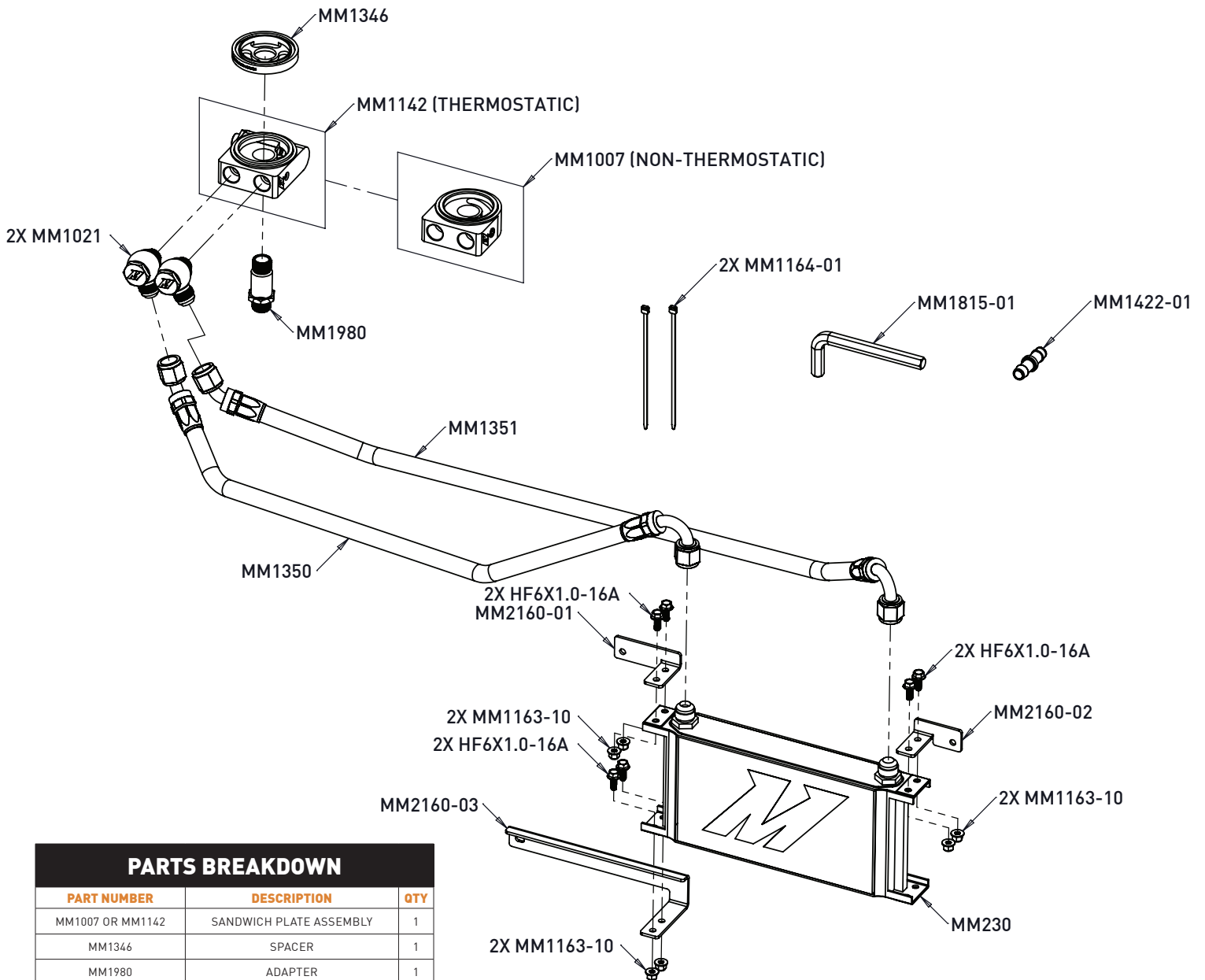
SKU: MMOC-MIA-19

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## RESOURCES & CONTACT

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


**PARTS BREAKDOWN**

PART NUMBER	DESCRIPTION	QTY
MM1007 OR MM1142	SANDWICH PLATE ASSEMBLY	1
MM1346	SPACER	1
MM1980	ADAPTER	1
MM1021	BANJO FITTING	2
MM2160-01	BRACKET 1	1
MM2160-02	BRACKET 2	1
MM2160-03	BRACKET 3	1
MM230	19 ROW OIL COOLER	1
MM1350	10-12045-1150-SS-CPE HOSE	1
MM1351	10-12045-1400-SS-CPE HOSE	1
HF6X1.0-16A	M6 BOLT	6
MM1163-10	M6 LOCKING NUT	6
MM1422-01	HOSE FITTING	1
MM1164-01	ZIP-TIE	2
MM1815-01	12MM ALLEN WRENCH	1

## 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

10MM DEEP SOCKET	TORQUE WRENCH
12MM DEEP SOCKET	FLATHEAD SCREWDRIVER
3/8" DRIVE 6" EXTENSION	PHILLIPS SCREWDRIVER
3/8" DRIVE RATCHET	-10AN WRENCH
10MM RATCHET WRENCH	STRAP WRENCH OR OIL FILTER WRENCH
27MM WRENCH	WRENCH
1/2" DRIVE RATCHET	POP-CLIP TOOL
1/2" DRIVE 6" EXTENSION	MAZDA-APPROVED OIL (1QT)
1 1/16" DEEP SOCKET	DRAIN PAN

## INSTALL TIME: 2 HOURS

INSTALL DIFFICULTY: 

## DISCLAIMER

- 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.

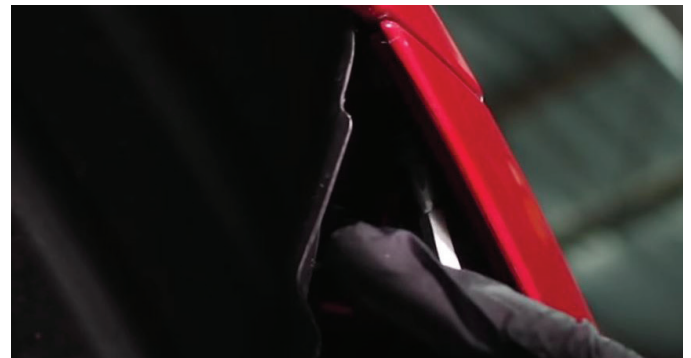
- Mishimoto suggests that a trained professional install all Mishimoto products.

## INSTALLATION INSTRUCTIONS

- 01.** Set up your Miata on a lift, or raise it with a jack and place it securely on jack stands. Refer to your owner's manual for safe lifting points if you are unsure.
- 02.** Raise the hood and remove the two screws located on top of the front bumper. (2x Phillips screws)
- 03.** Remove the four plastic pop-clips on top of the bumper. (4x pop-clips)
- 04.** Locate and remove the four pop-clips that hold the fender liner to the front bumper in the wheel well. Do this on both sides. (8x pop-clips)



- 05.** Gently pull back the fender liner to expose a Phillips screw that attaches the bumper cover to the fender. Remove this screw on both sides. (2x Phillips screws)



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**06.** From underneath the vehicle, remove the eight screws that secure the center and outer splash panels. (8x Phillips screws)

**07.** Remove the pop-clip on each outer splash shield. (2x pop-clips)

**08.** Fold the outer splash shields downward to access and disconnect the wiring harness connectors from the driving light. Each harness is secured with a tree-clip. Detach the tree-clip by squeezing the tabs and pulling away from the light housing. Do this on both sides. (2x tree-clips)



**09.** Remove the nine bolts that secure the aluminum splash panel under the oil pan. Then remove the panel from the vehicle. (9x 12mm bolts)

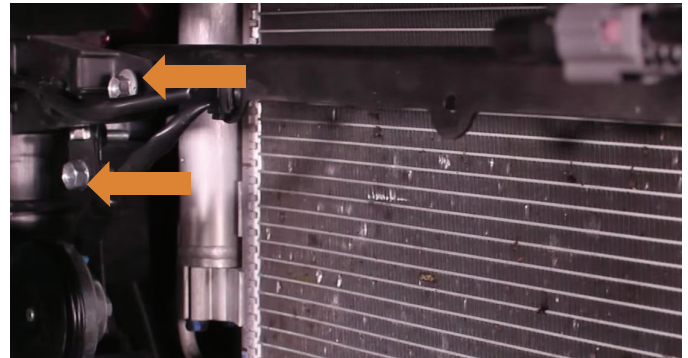
**10.** Separate the front bumper cover from your Miata, but do not fully remove it.

**11.** Reach behind the bumper cover and disconnect the wiring harness for the side marker light. Disconnect the squeeze clip that holds the wiring harness to the bumper cover. Do this on both sides. (2x squeeze clips)

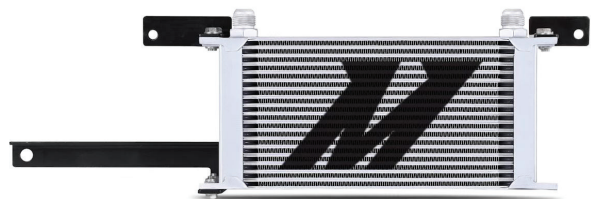


**12.** Remove the bumper cover by sliding it forward.

**13.** Remove the two bolts that secure the plastic ducting to the black steel support brace located just under the body-colored bumper. (2x 10mm bolts)

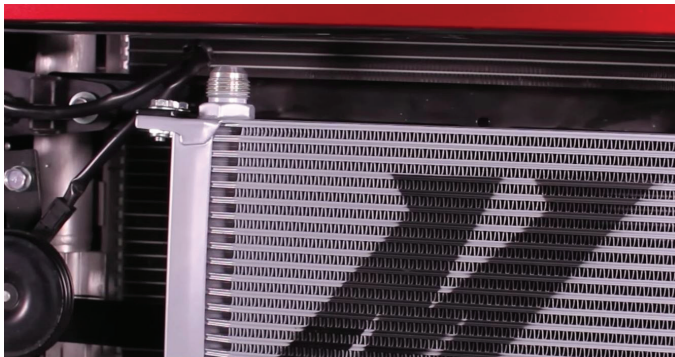


**14.** Install the three provided brackets to the oil cooler. To orient the cooler, the fittings are at the top, and the Mishimoto M logo will face forward. The longest bracket attaches to the bottom of the oil cooler on the passenger side. The shortest bracket attaches to the top of the cooler on the driver side. The remaining bracket attaches to the top of the cooler on the passenger side. (6x 10mm bolts, 6x nylon-insert lock nuts)



**15.** Prime the oil cooler. Insert a funnel in one fitting, and pour Mazda-approved motor oil in until you can see oil rising to the other fitting.

**16.** Taking care not to spill, position the oil cooler under the body colored bumper, and secure it using the two bolts you removed earlier. The cooler brackets should sit between the plastic ducting and the steel support brace. It may be helpful to disconnect the clip that secures the horn wiring harness to the steel brace while installing the cooler. (2x 10mm bolts)



**17.** Using the provided hardware, secure the bottom cooler bracket on the passenger side of the vehicle. The cooler should now be firmly mounted to the vehicle. (1x 10mm bolt and nut)

**18.** Position a drain pan underneath the oil filter. Remove the filter, allowing the oil to drain into the pan. Make sure the seal on the oil filter is still in place. Clamp off the inlet and outlet coolant hoses feeding the stock oil cooler/warmer (or drain the cooling system). Next, remove the coolant hoses from the stock oil cooler/warmer. Using the provided 12mm Allen wrench, remove the stock oil cooler/warmer. Join the two coolant hoses together using the provided hose fitting, then secure it out of the way with the provided zip-ties.

**19.** Install the two banjo fittings on the Mishimoto sandwich plate. The threaded section of the fittings should face away from the rubber seal on the sandwich plate. Do not fully tighten these fittings yet, as you will need to make adjustments when installing the oil lines. (2x banjo fittings)

**20.** Lubricate the rubber seals on the sandwich plate and spacer with clean motor oil. Orient the spacer so that the rubber seal will contact the engine. Orient the sandwich plate so that the rubber seal will contact the metal surface of the spacer. Now slide both the spacer and sandwich plate over the center bolt of the oil filter housing, and secure them with the provided center bolt adapter, but do not fully tighten the adapter yet. The spacer should sit between the engine and the sandwich plate, and none of the rubber seals should touch each other. (1x center bolt adapter). SEE IMAGE ON RIGHT.



**21.** Feed the 45° fitting side of the oil lines above the passenger-side splash shield. The lines should pass along the outside of the frame rail, near the sway bar, and reach over to the banjo fittings. Attach these fittings to the sandwich plate fittings, but do not fully tighten yet.



**22.** Fully tighten the center bolt adapter on the sandwich plate to 35 ft-lb.

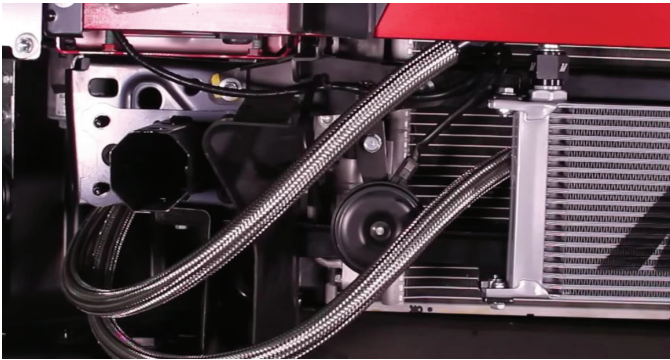
**23.** Fully tighten both banjo bolts to the sandwich plate.

**24.** Fully tighten the 45° oil line fittings to the banjo bolt fittings.

**25.** Lubricate the oil filter O-ring with clean engine oil, and install the oil filter. Be sure to check for clearance issues before proceeding.

**26.** Route the short oil line around the front of the vehicle and under the octagonal frame extension. Connect this oil line to the passenger-side fitting on the oil cooler, but do not fully tighten it yet.

**27.** Route the longer oil line behind the oil cooler, being careful not to bend the AC condenser fins. Connect the oil line to the driver-side fitting on the oil cooler, but do not fully tighten yet.



**28.** Fully tighten both oil line fittings onto the oil cooler.

**29.** Check to make sure all oil line fittings and mounting bolts are tight. Check the routing of the oil lines to ensure that they will not contact suspension components during driving.

**30.** Check the oil level and top off as needed. Start the engine and allow it to run for 5–10 seconds to build oil pressure, then shut off the engine and check the engine oil level. Top off as needed with Mazda-approved oil. Start the engine again and allow the vehicle to warm up to operating temperature. While the engine is running, inspect around the sandwich plate and at every connection for oil leaks. Once you are sure the system is fully sealed, shut off the engine and check the oil level one more time.

**31.** Reinstall the aluminum splash panel using nine bolts. The metal pegs on the panel face toward the rear of the vehicle. (9x 12mm bolts)

**32.** Slide the bumper cover into place. Reach behind the bumper cover and reattach the side marker electrical connector and harness-support squeeze clip. Do this on both sides. (2x squeeze clips)

**33.** Install the two screws that attach the top of the bumper cover, but do not tighten them yet. This will hold the bumper in place while everything else is connected. (2x Phillips screws)

**34.** From underneath the vehicle, locate the alignment tab in the front of the center splash shield. Gently pull forward on the bottom

of the bumper cover, and slip the tab above the bumper to secure the shield.

**35.** From underneath the vehicle, fold down the outer splash shields, and connect the wire harness for the driving light. Install the squeeze clip for the harness support to the light housing. Do this on both sides. (2x squeeze clips)

**36.** Install two pop-clips on the lower splash shields. (2x pop-clips)

**37.** Install eight screws on the splash shields. (8x Phillips screws)

**38.** Install four large pop-clips that secure the top of the bumper. (4x large pop-clips)

**39.** Gently pull back the fender liner, and install the screw that secures the bumper cover to the fender. Do this on both sides.

(2x Phillips screws)

**40.** Tuck the fender liner back behind the bumper cover, and install four pop-clips. Do this on both sides. (8x pop-clips)

**41.** Fully tighten the two screws on the top bumper.

Congratulations, you've completed the 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](https://www.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](https://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](https://www.p65warnings.ca.gov)