

2016+ MAZDA MIATA OIL COOLER

PARTS LIST AND INSTALLATION GUIDE



PARTS LIST

- 3 PC** | APPLICATION-SPECIFIC MOUNTING BRACKETS W/ CORROSION-RESISTANT MOUNTING HARDWARE
- 1 PC** | 19-ROW OIL COOLER (SILVER OR BLACK)
- 1 PC** | 3/9" STAINLESS STEEL BRAIDED HOSE WITH STRAIGHT AND 45°/120° -10AN FITTINGS
- 1 PC** | 4', 7" STAINLESS STEEL BRAIDED HOSE WITH 45° AND 45° / 120° -10AN FITTINGS
- 1 PC** | THERMOSTATIC SANDWICH PLATE (NON-THERMOSTATIC AVAILABLE)
- 1 PC** | M20 EXTENDED-LENGTH STAINLESS STEEL SANDWICH PLATE ADAPTER
- 1 PC** | 10MM 6061 ALUMINUM SANDWICH PLATE SPACER
- 2 PC** | O-RINGS
- 2 PC** | BANJO FITTINGS W/ BOLT M20 X -10AN, BLACK MOUNTING HARDWARE

TOOLS NEEDED

- | | |
|-------------------------|-----------------------------------|
| 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 | POP-CLIP TOOL |
| 1/2" DRIVE RATCHET | MAZDA-APPROVED OIL (1QT) |
| 1/2" DRIVE 6" EXTENSION | |
| 1 1/16" DEEP SOCKET | |

INSTALLATION 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)



- 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)

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- 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)

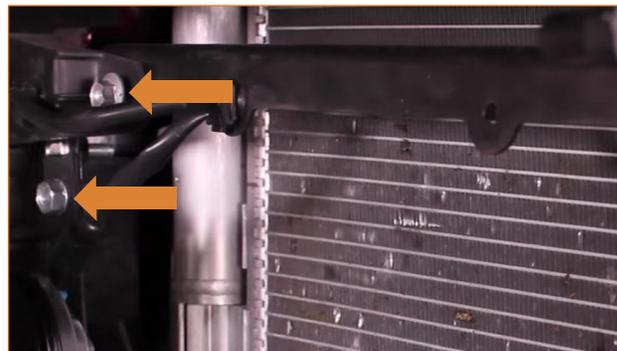


- 09.** Remove the nine bolts that secure the aluminum splash panel under the oil pan. Then remove the panel from the vehicle. (9x 12mm bolts)
- 10.** Separate the front bumper cover from your Miata, but do not fully remove it.
- 11.** Reach behind the bumper cover and disconnect the wiring harness for 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.

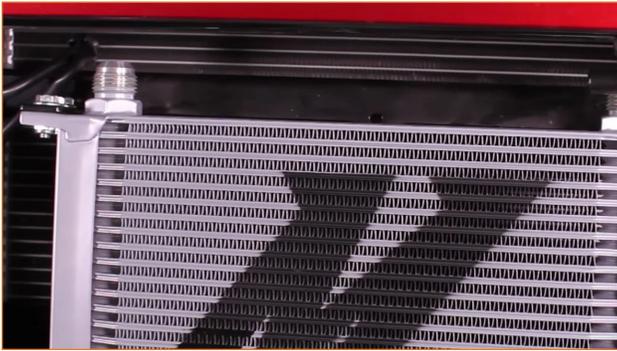
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- 16.** Taking care not to spill, position the oil cooler under the body-colored bumper, and secure it using the two bolts you removed earlier. The cooler brackets should sit between the plastic ducting and the steel support brace. It may be helpful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

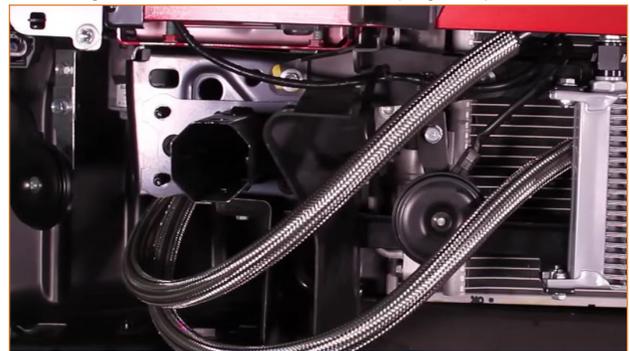


- 17.** Using the provided hardware, secure the bottom cooler bracket on the passenger side of the vehicle. The cooler should now be firmly mounted to the vehicle. (1x 10mm bolt and nut)
- 18.** Position a drain pan underneath the oil filter. Remove the filter, allowing the oil to drain into the pan. Using a clean rag, wipe off the mating surface where the oil filter attaches to the engine, and make sure the seal on the oil filter is still in place.
- 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)

- 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.

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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.

Congrats! You just finished installing the 2016+ Mazda Miata Oil Cooler.

