

MX-5 Oil Cooler Kit Installation Instructions

For 2006+ Mazda MX-5
PART #904-670

Tools required: a jack, jack stands, wheel chocks, a ratchet, 8mm, 10mm, 12mm and 1 1/8" sockets, 10mm, 12mm, 7/8", 13/16", 3/4" and 1 1/8" combination wrenches, Phillips screwdriver, oil drain pan, Teflon tape, new oil filter, 6 quarts of manufacture specified oil, oil filter wrench and pliers

Note: It is not necessary to remove the bumper cover for the installation of this kit. It has been removed for photographic purposes only. The oil filter will be removed so this is a good time to perform an oil change service. Your vehicle will hold more oil due to the extra capacity of the oil cooler.

1. Chock the rear wheels. Jack the front of the vehicle up and place it on jack stands. Do not work on the vehicle while it is on the jack. Use an 8mm socket to remove the ten screws securing the splash shield and the front inner fender liners to the front bumper cover. Use a Phillips screwdriver to remove the six plastic fasteners securing the front inner fender liners to the splash shield and the splash shield to the sub frame. Remove the two bolts securing the splash shield to the sub frame using a 10mm socket. Illustration 1.

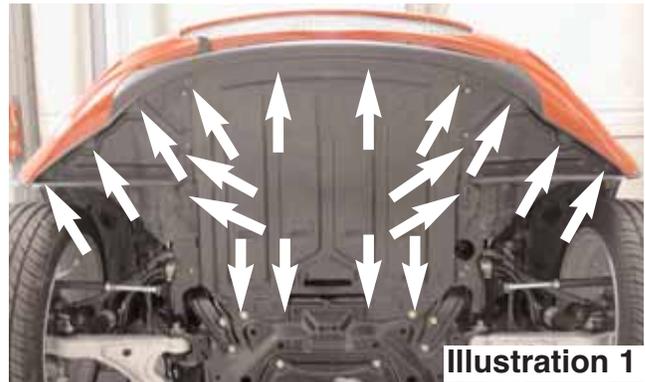


Illustration 1

2. In the fender well area, use a 10mm socket to remove the two bolts from each side of the vehicle securing the splash shield to the body. You will need to hold the front inner fender liners out of the way while you access the front bolts on each side. Remove the two final plastic fasteners (one on each side) securing the splash shield to the body. Remove the ABS sensor wires from the splash shield. Use pliers to pinch the clips holding the wires on the back side of the splash shield. Remove the splash shield from the vehicle. Illustration 2.

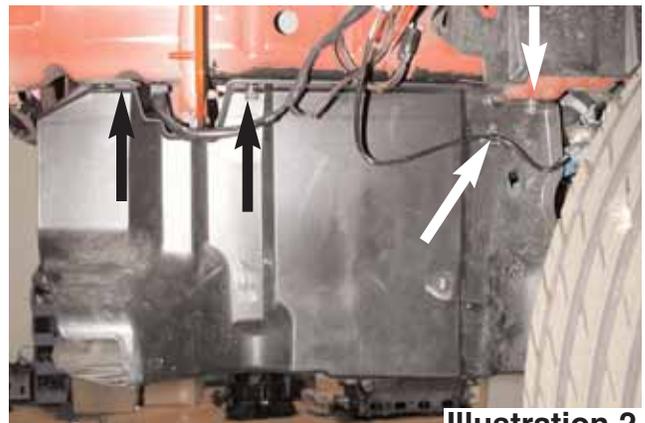


Illustration 2

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3. Remove the oil filter from the engine using an oil filter wrench. The oil filter is located on the drivers' side, toward the back of the engine and just above the sub frame. Use a drain pan to catch the oil. If you will be changing your oil, remove the drain plug from the oil pan and let it drain into the drain pan. Illustration 3.



Illustration 3

4. While the oil is draining, gather the oil filter adapter, two of the straight adapter fittings, Teflon tape, a 13/16" combination wrench and a new oil filter. Wrap the 3/8" pipe threads on each fitting with Teflon tape. Start the fittings in the adapter. Use the 13/16" combination wrench to tighten the fittings. Lightly oil the o-ring with clean engine oil and place it in the groove of the oil filter adapter. Install the oil filter adapter assembly to the engine with the o-ring in between the engine and the adapter. The fittings should point as far rearward as possible. The adapter should be up against the casting on the engine. Use a 1 1/8" socket or combination wrench to tighten the adapter nut to the engine. Install the new oil filter. If you drained your oil, reinstall the drain plug. Illustration 4.



Illustration 4

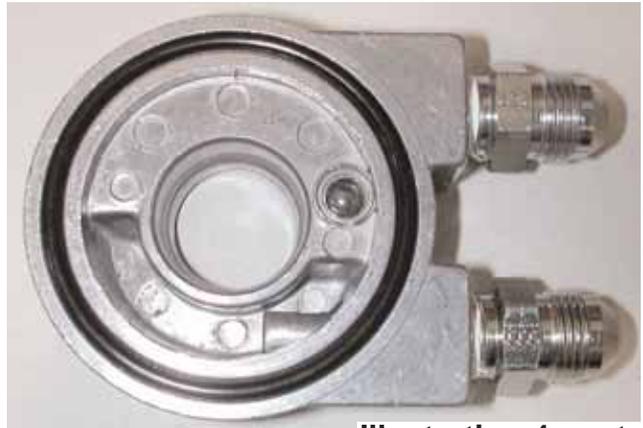


Illustration 4 cont.



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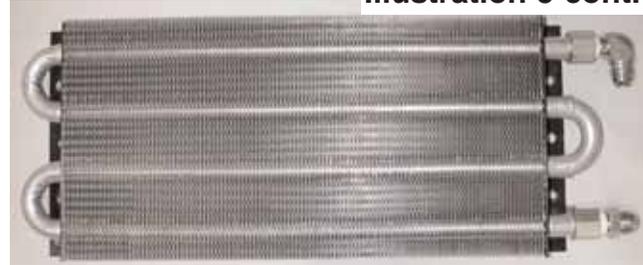
5. Gather the oil cooler, the 90 degree fitting, the last straight fitting and Teflon tape. Lay the cooler on a workbench so that the inlet and outlet are on your right and the cooler brackets are flat on the bench. Wrap the 3/8" pipe threads on each fitting with Teflon tape. Screw the 90 degree fitting in to the oil cooler port that is farthest away from you (the top port). Be careful when tightening the fittings to the oil cooler as the cooler is aluminum and can be damaged if over tightened. Use 7/8" and 3/4" combination wrenches to tighten the 90 degree fitting to the cooler. The fitting should point toward the lower port on the cooler when tight. Screw the straight fitting in to the port closest to you (the bottom port). Use 7/8" and 13/16" combination wrenches to tighten the fitting to the cooler. Illustration 5.



Illustration 5



Illustration 5 cont.



6. Use a 12 mm socket or combination wrench to remove the two lower, inner bumper bolts (one each side). Use a 10mm socket to remove the horn from the bumper tab on the drivers' side. Gather the two oil cooler brackets, and two M6 bolts. Use the stock bumper bolts and the M6 bolts to loosely bolt the oil cooler brackets and the horn to the vehicle. The long fingers of the bracket will point toward each other. Illustration 6.



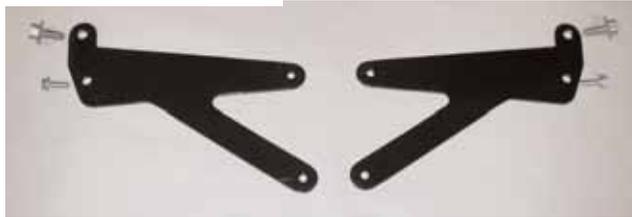
Illustration 6



Oil Cooler Kit Installation Instructions



Illustration 6 cont.



7. Gather the oil cooler, the four remaining M6 bolts, and the four M6 lock nuts. Bolt the oil cooler to the oil cooler brackets that were installed in the last step. Slip the bolts through the oil cooler first then the brackets and finally, start the nuts on the back side. The fittings should be on the drivers' side of the vehicle with the 90 degree fitting on the top. Tighten all six M6 bolts to 6ft. lbs. Now tighten the bumper bolts to 18 ft. lbs. Illustration 7.



Illustration 7



Illustration 7 cont.

8. Next gather the two hoses. You will notice one hose is slightly longer than the other. Also each hose has a 90 degree end and a 45 degree end. The 90 degree ends of both hoses will be attached to the oil filter adapter and the 45 degree ends will be attached to the oil cooler. Attach the 45 degree side of the longer hose to the 90 degree fitting in the top port of the oil cooler. Attach the shorter hose to the bottom port of the cooler. Do not tighten the hoses at this time. Route both hoses around the radiator, up over the anti-sway bar, under the steering shaft and toward the oil filter adapter. Attach the hose from the top fitting in the oil cooler to the fitting closer to the front of the vehicle in the oil filter adapter. Tighten this hose to the oil filter adapter using 7/8" and 13/16" wrenches. Attach the remaining hose to the rearward fitting in the adapter and tighten it. Illustration 8.

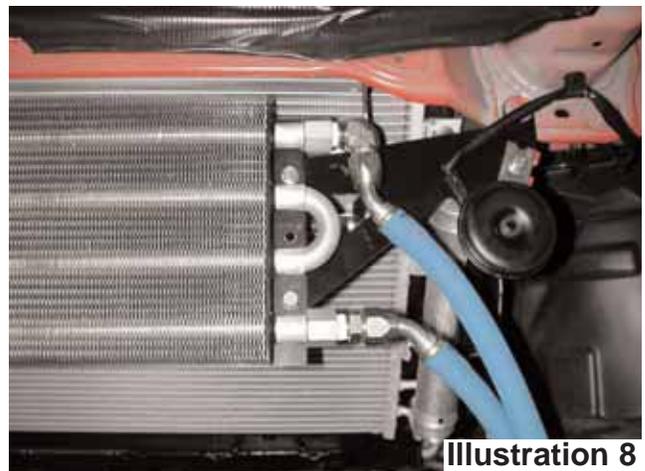
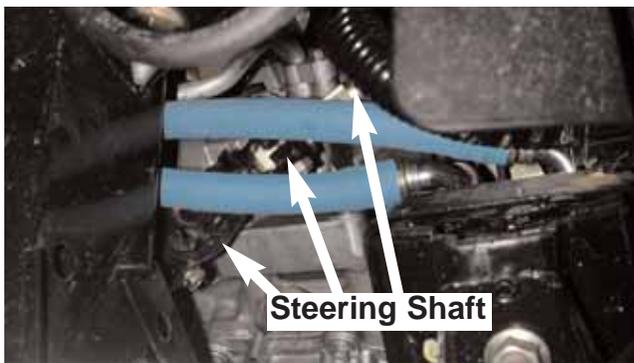


Illustration 8

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Illustration 8 cont.



9. Use the zip ties to secure the hoses to the vehicle in several places. Start by placing a zip tie around both hoses and the wiring harness near the brake line on the drivers' side. This will keep the hoses from rubbing on the steering shaft. Next, secure both hoses to the radiator hose just above the anti-sway bar. Secure the hoses together in two more places between the radiator hose and the oil cooler. Finally, use the additional zip ties to secure the hoses away from any moving parts that might damage them. Tighten the top hose to the oil cooler using 3/4" and 7/8" combination wrenches. Tighten the bottom hose using 13/16" and 7/8" combination wrenches. Illustration 9.

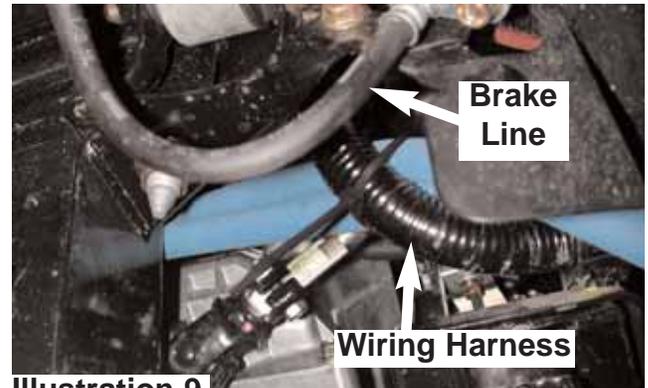
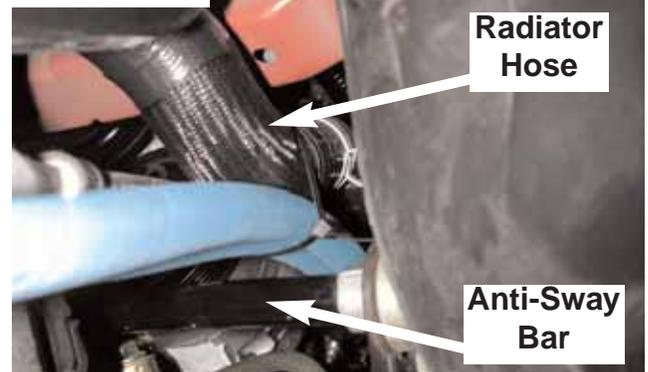


Illustration 9



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10. If you drained your oil start by adding 5 quarts of oil to your engine. If you only changed the filter, start by adding a 1/2 quart of oil to your engine. Start the engine and let it run for a minute. Check the engine oil and add as necessary. Check for oil leaks at all fittings before reinstalling the splash shield. Test drive the vehicle and recheck for oil leaks at all fittings. Periodically check the oil lines for damage and oil leaks. Enjoy your new Oil Cooler!