



Installation Instructions

Remote Oil Filter and Oil Cooler

FOR MIATA 1990-2005

PART # 902-120

Tools needed for Remote Oil Filter installation:

10, 14 mm, wrenches and sockets with ratchet
7/8" open wrench
Oil Filter wrench (Optional Moss # 900- 900)
Drill bit set
Electric drill
Large adjustable jaw pliers

Tools for additional Oil Cooler installation:

15/16", 1-1/16" wrenches
Wire cutting pliers

Note: Please read all Instructions completely before attempting installation!

Oil Filter and Cooler Instructions:

1. To install the Moss Remote Oil filter or cooler kit, it will be necessary to elevate the front of your Miata safely using a jack and jack stands or ramps. **Under NO circumstances should you attempt to work under your Miata using only a jack.** Consult your Owner's Manual for the proper jack points.

After opening your hood and raising the front of the car, start by removing the black plastic under tray located under the engine. It is attached by ten bolts with 10-mm heads and 2 nuts. You will find that under the two nuts located in the front cor-

ners is the slender brace used to support the corner of the Miata's "nose". As the nose is flexible, you can carefully pull the brace of the stud under the nuts and just let them hang until re-installation. After removing the front under tray, remove the inner shroud that fits inside the "nose." This is detached by removing the six bolts with a 10-mm socket wrench where the inner shroud meets the bottom edge of the Miata's "nose" as viewed from the bottom. Inside the aperture of the nose itself on the top, remove the three plastic cross head screws with their snap-in bases, and on the bottom, the three snap-in wedge head shaped fasteners.

2. Using the oil cooler itself as a pattern, position it in the center behind the vertical supports of the shroud, and mark and drill four 6.25 mm or 1/4" holes. (see Illus. #4) Using the 6-mm nuts, bolts and washers provided, attach the cooler to the shroud using a 10-mm wrench. (see Illus. #4) Fill the oil cooler with new, clean motor oil and re-install the inner shroud in the reverse order that you removed it.

3. From under the hood, locate the intake manifold support brace under the mani-

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fold. (see Illus. #1) Remove the bolt or bolts that attach it to the manifold with a 14 mm socket wrench: 1.6L cars will have one bolt, 1.8L cars have two. From under the car, locate the other end of the brace that attaches it to the side of the block and remove the bolt that secures it. (It will be VERY tight). With the under tray and manifold brace removed, remove the oil filter using an oil filter wrench. Install the new adapter plate, first lubricating the seal ring with clean motor oil, and then screw the adapter on the engine's filter nipple. Tighten the adapter firmly using a large pair of adjustable jaw pliers. Note that on the adapter, the nipples are marked IN and OUT.

4. Under the hood, on the passengers side of the firewall, locate the oil filter mount (see Illus. #2) approximately 9" from the edge of the fender and as high up as possible. Note that on the mount, the nipples are marked IN and OUT (see Illus. #3). Use the mount as a pattern mark and drill three 8.25 mm or 21/64" holes, ensuring that the filter and mount will be as vertical as possible, and that the mounting bolts and nuts will not interfere with the black plastic windshield flashing on the other side of the firewall. This flashing can be removed during installation by squeezing the ends of the plastic rivets that hold it to the firewall and pushing them back through their holes. Attach the oil filter mount to the firewall using the bolts, washers and lock nuts supplied with a 13-mm wrench. Now install the oil filter on the mount after lubricating the sealing ring and filling it with clean motor oil, tighten it only by hand.

5. On Miata's fitted with ABS brakes, use part #166-000 aluminum spacer block between the oil filter mount and the firewall. This spacer will provide needed

space between the brake lines and the oil filter on ABS equipped cars."

6. Observe the three oil lines, note that they are not the same length. Choose the shortest of the oil lines and attach one 90° end to the (OUT) nipple furthest from the center of the adapter plate and the other 90° end to the mount (IN) nipple furthest from the fire wall. Select the longest line in the kit, it will have a 90° fitting on one end and a large straight fitting on the other. Extreme care must be taken when attaching the oil lines to the cooler, the nipples on the top of the cooler are made of soft aluminum and can easily be damaged if cross-threaded or over tightened. The best way to connect the oil lines is to leave the connections finger tight until all the Ty-Wraps securing oil line are in place. Then using a 15/16" wrench, hold the hex shaped base of the nipple on the oil cooler and tighten the oil line fitting to it with a 1-1/16" wrench. Under no circumstances should the hex base on the oil cooler be allowed to rotate. If so, a leak will result. Starting at the cooler, attach the large straight fitting to the right hand nipple on top, the line making a large gentle curve and then passing under the bottom right hand corner of the radiator, following the right side frame rail backward until the 90° end will attach to the OUT nipple on the oil filter mount at the firewall.



Illustration 6

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Illustration 6 cont.

Then connect the remaining line's large straight fitting to the left top nipple on the cooler making a large gentle curve. This line will also pass under the bottom right corner of the radiator, following the right side frame rail backward to the IN nipple (center most) on the Engine adapter plate, finger tighten only.

7. Using the Ty-Wraps provided, wrap the two oil lines together and attach them at the rigid vapor and fuel lines that cross the frame rail. Also, where they cross the sway bar makes a good attachment point. Be careful not to kink or constrict the oil lines. If your car has Air Conditioning, simply wrap the Ty-Wraps around the A/C lines and then the oil lines, as they take the same path to the front of the car. In front of the radiator, the hood latch support brace makes a good attachment point for the oil lines before they meet the cooler. It may be necessary to reposition the Miata's horn by loosening the bolt and moving the bracket up slightly. It is also a good idea to pre-fill the oil lines at this time, using a small funnel and new, clean motor oil.

7. Tighten and recheck all fittings and reinstall the Manifold brace by fastening the upper bolt(s). Have a friend start the

engine while you observe under the hood for any oil leaks. If everything is tightened properly, you should have no oil leaks. The final step in the Remote Oil Filter and Cooler installation is to reinstall the under tray which is the reverse of its removal. Fitting of the Remote Oil filter and Cooler kit will add approximately 1-1/2 quarts to your oil capacity.

ILLUSTRATION #2

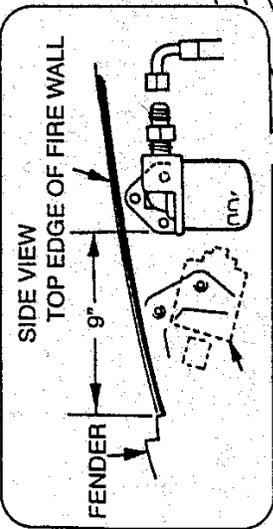


ILLUSTRATION #3

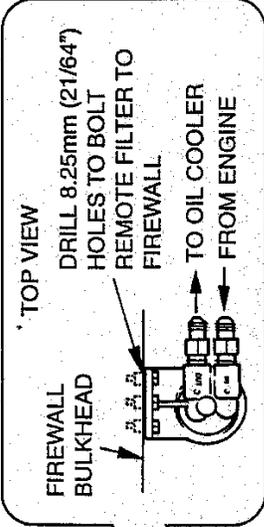


ILLUSTRATION #4

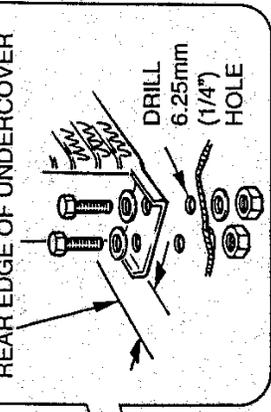


ILLUSTRATION #1

