



OIL COOLER KIT INSTALLATION INSTRUCTIONS

D570-0822

Application: 2011 E82 1-M Coupe with stock oil cooler

Congratulations for being selective enough to use a Dinan Engineering Oil Cooler. We have spent many hours developing this system to assure that you will receive maximum performance and durability with minimum difficulty in installation.

Please take the time to read these instructions thoroughly before proceeding. When performing the installation, read the entire numbered instruction before working on the car. If you feel that you do not have the requisite skill, please arrange for a qualified repair facility to perform the installation.

If you encounter any difficulties during the installation, or if these instructions are not clear to you, please call Dinan's Technical Support Staff at (408) 779-8584.

PARTS LIST

| <u>Qty</u> | <u>Part No.</u> | <u>Description</u> |
|------------|-----------------|------------------------------------|
| 1 | D573-0068 | Oil Cooler + Frame Assembly |
| 1 | D373-0023 | Oil Cooler Hose; Inner |
| 1 | D373-0018 | Oil Cooler Hose; Outer |
| 1 | D573-0044 | Oil Line Mount with O-rings |
| 1 | D573-0071 | Hardware Kit; includes: |
| | 1 | D572-0062 Front Oil Cooler Bracket |
| | 2 | D572-0060 Rubber Oil Cooler Mounts |
| | 1 | D671-0015 Orange Rubber Mount |
| | 1 | D670-0209 Double-Wide Loop Clamp |
| | 1 | D671-0526 M8 locking flange nut |
| | 1 | M8x25 ALLEN M8x25x1.25 allen bolt |
| | 1 | M8 SCHNORR M8 ribbed washer |
| | 2 | M6 WAVE 6mm wave washers |
| | 1 | M6 HEX 6mm plain nut |
| | 1 | M6x12 M6 x 12 bolt |
| | 5 | D502151 11" wire ties |
| | 1 | D673-0055 Edge Trim |
| | 2 | D670-0226 Hose Separators |
| | 2 | M8x25 FENDER M8 x 25mm washers |

Tools needed:

Basic Hand Tools

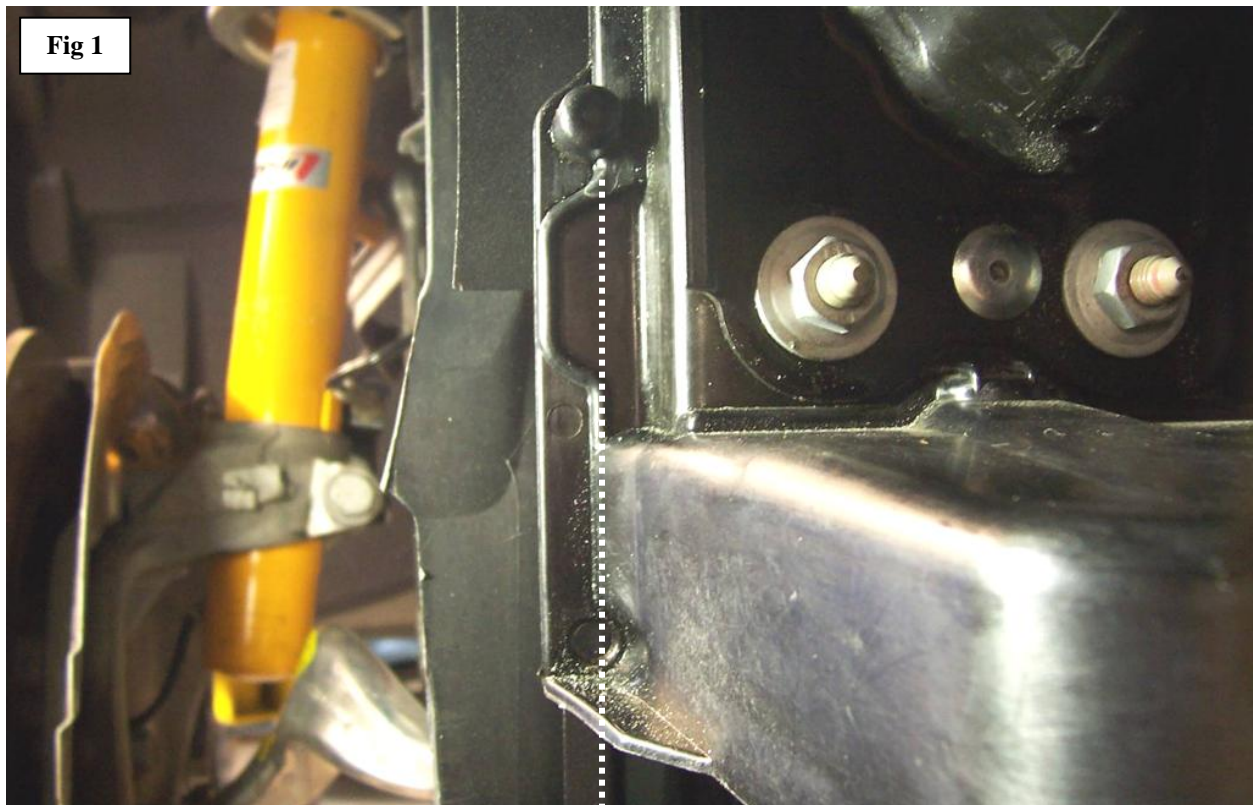
Fiberglass cutting disc for die grinder -or- Hacksaw

Small cutoff wheel -or- Xacto Knife

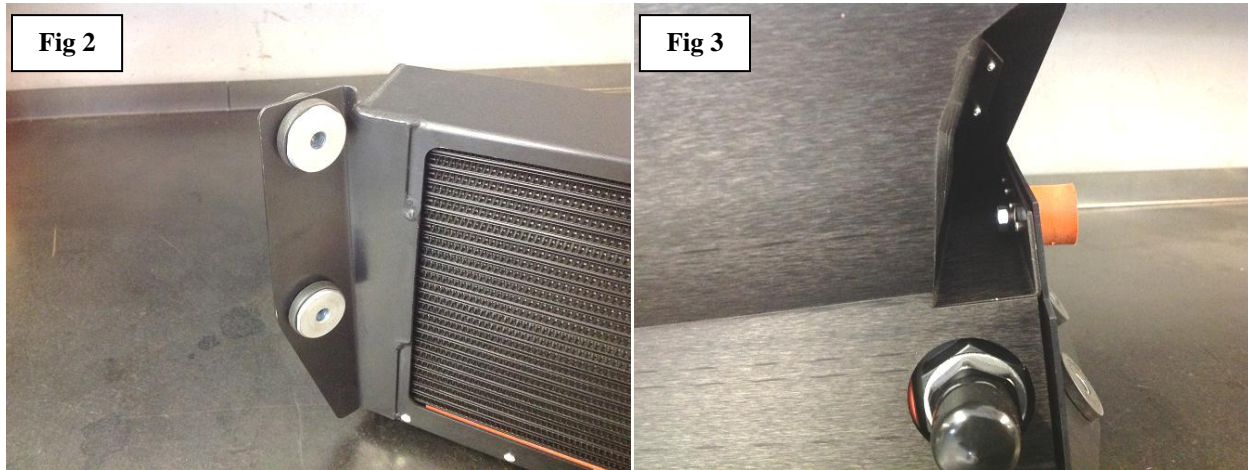
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Install Oil Cooler with Frame

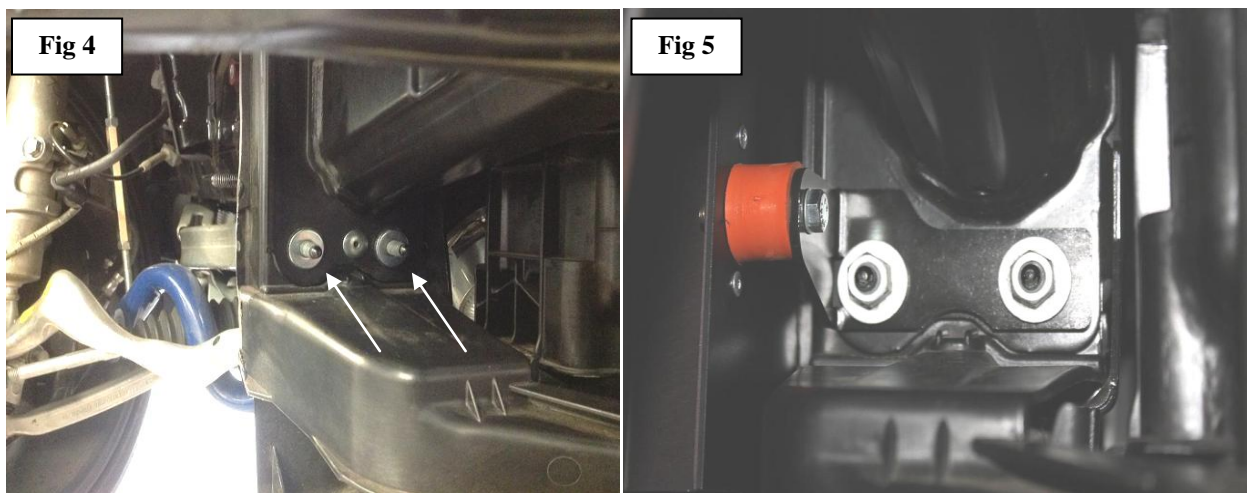
1. Raise the car and remove the right front wheel.
2. Remove the right side front wheel well liner and the front bumper cover as per TIS document # 51 11 156.
3. Refer to TIS document #'s 17 11 150 & 17 11 190 for removing the stock oil cooler and lines.
4. Cut off the small raised section of the plastic front panel as shown below in **Fig 1** (dotted line) using a hacksaw blade and/or a fiberglass cutting disc held in a die-grinder (disregard the cut-open wheel well liner in this view). Note that there is a small piece of sheet metal inside this piece of plastic.



5. Smooth and deburr the cut area where you removed the above edge section. Apply some black touchup paint to any bare metal surface you may have exposed to avoid rusting.
6. The **Dinan Oil Cooler** mounts to the two original M8 studs and to the two lower front bumper mounting studs. Use the Dinan rubber mounts (**D572-0060**) and stock metal insert bushings for mounting the Dinan Oil Cooler frame in the original location (see **Fig 2**). Install the orange rubber mount to the Dinan Oil Cooler frame as shown in **Fig 3** using one 6mm wave washer and one 6mm plain nut. Torque to 10Nm.



7. Remove the two lower nuts from the right side bumper mount and install the two supplied 8mm x 25mm washers as spacers (see **Fig 4**). Install the Front Oil Cooler Bracket (**D572-0062**) as shown using the two previously removed nuts. The slots in this bracket allow for a small amount of adjustment of the oil cooler in case the frame is too close or too far away from the fender liner. Torque these nuts to 24Nm. Attach the Front Oil Cooler Bracket to the orange rubber mount using one 6mm x 12mm bolt and one wave washer (see **Fig 5**). Torque to 10 Nm.



Install the Oil Line Mount

8. Remove the large dual intake scoop that runs over the top of the radiator to the air filter box (four torx 20 screws).
9. Install the O-Rings onto the **Oil Line Mount (D573-0044)** with a little motor oil on the O-rings. Put the 8mm x 25mm Allen head bolt and serrated lock washer in place.

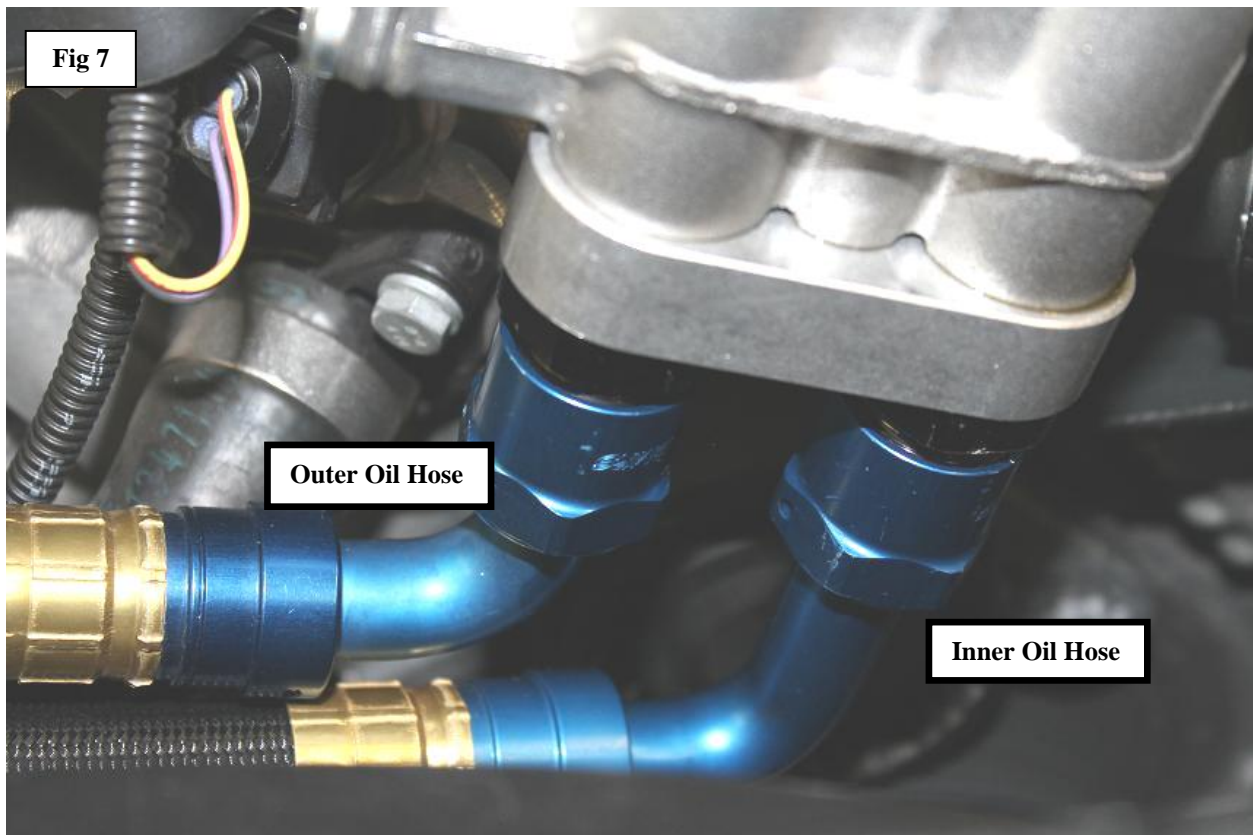
Fig 6



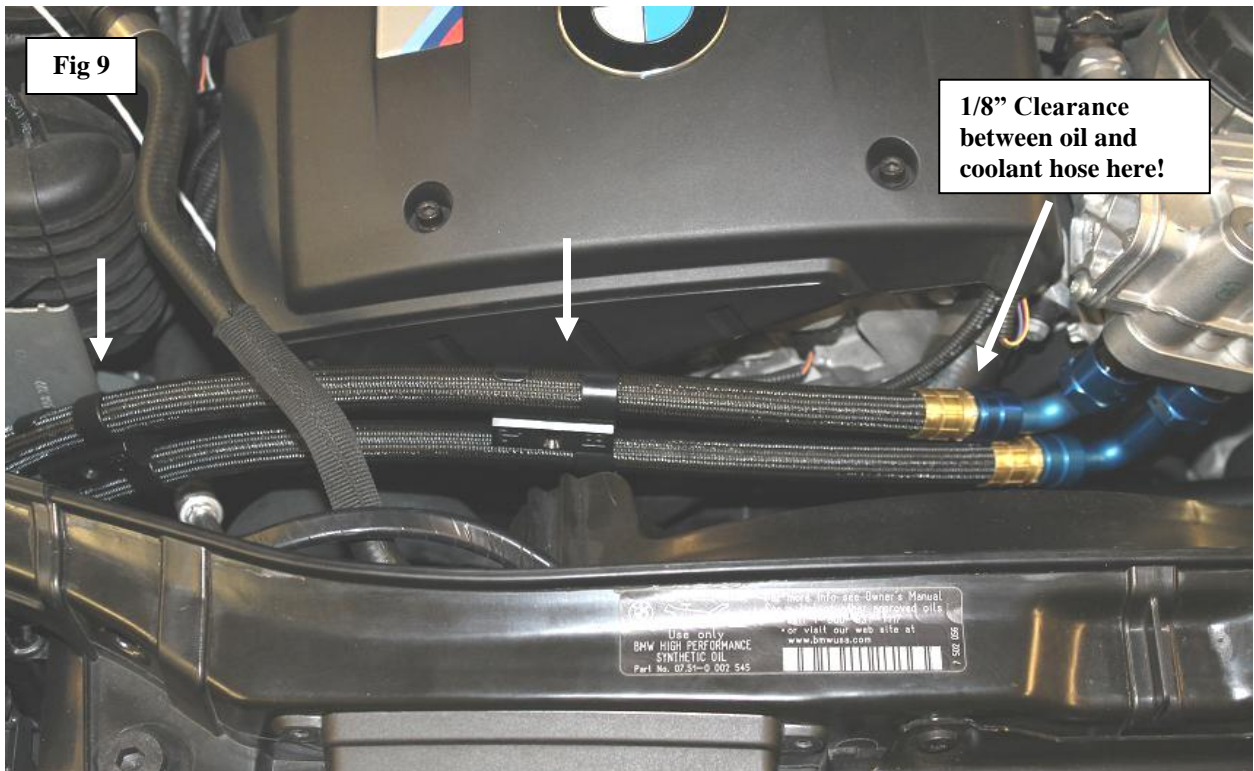
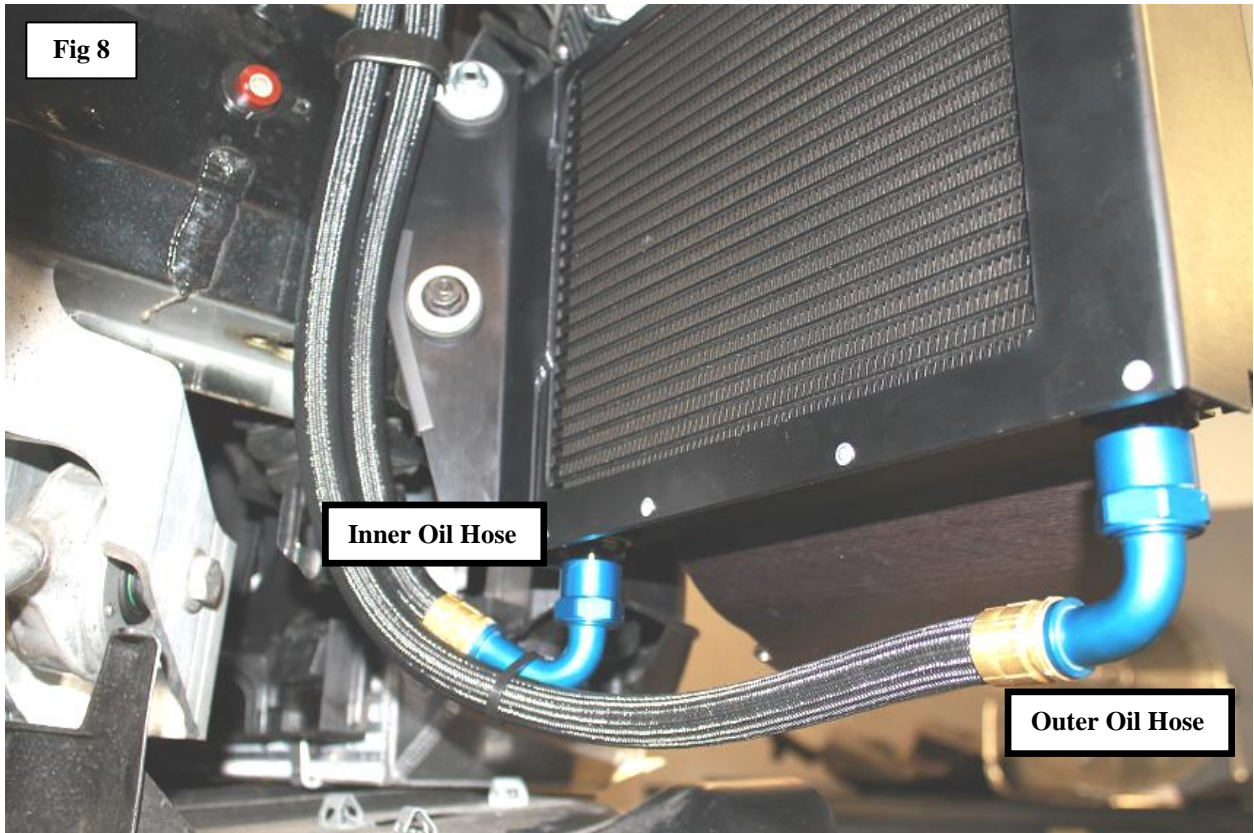
10. Install the Oil Line Mount onto the oil filter thermostat housing. Make sure the O-Rings don't get pinched as you install the block. Hold the Mount up against the thermostat housing firmly as you tighten the screw. Torque the bolt to 20Nm.

Install the Oil Cooler Hoses

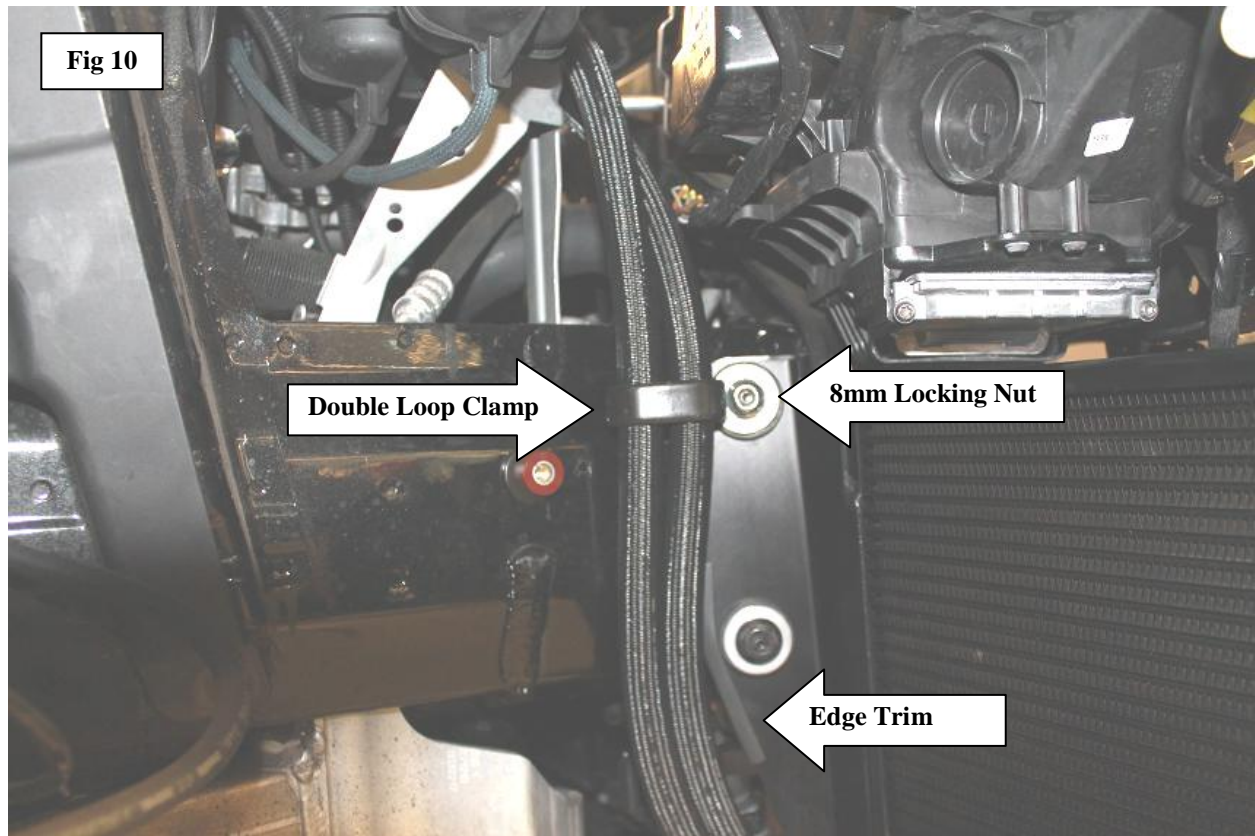
11. You must first install the **Outer Oil Cooler Hose (D373-0018)** between the Oil Line Mount and the **Outer** fitting on the Oil Cooler. The **90° “swivel”** end will connect to the oil line mount. I prefer to connect the hose end to the Oil Line Mount first then connect the remaining hose end to the outer fitting on the Cooler. Be sure to leave about 1/8” clearance between the upper hose end and the small water hose next to the top end of Oil Hose. Always apply a little anti-seize compound or engine oil to the threads and mating surfaces of these compression type fittings before assembly to avoid damage to them. Also make it a habit to **always start the fitting threads several turns by hand and only use the wrench to do the tightening, as these threads are very easy to cross-thread! If they do not turn easily by hand then they are not properly engaged!**



12. Note: Your hoses/hose ends may appear different than the hoses in the photos.



13. When you are satisfied with the fit and routing of the Outer Hose go ahead and **tighten the hose ends**. Note the hose routing in **Figures 8 & 9**. **Be sure to use a wrench to counterhold the compression fittings on the Oil Cooler and the Oil Line Mount while you tighten the hose ends**. When properly installed the hoses at the Oil cooler Mount end will have a slight stagger to them and there will be slight clearance (approx 1/8") between the outer oil hose and the coolant hose near the oil line mount (See **Fig 9**).
14. Note the recommend install locations (white arrows) for the Dinan Hose Separators (see **Fig 9**).
15. Next you will need to connect the **Inner Oil Cooler Hose (D373-0023)**. Again you should finger tighten the **90° "swivel"** end to the Oil Line Mount after applying a little antiseize compound to the threads and sealing surface of the hose end.
16. After the Oil Hoses are properly routed, use the **Dual Loop Clamp** to secure the Hoses to the upper mounting stud for the Oil Cooler as shown in **Fig 10**. Remove the factory upper nut and use the **M8 Locking Flange Nut** to secure the clamp.



17. By now you should have the Oil Cooler Hoses in place and all hose ends tight. If not, tighten them now.
18. Make sure the edge trim is in place (**D673-0055**) to avoid the hoses rubbing on the oil cooler frame (see **Fig 10**).

19. Use the five wire ties to secure the Oil Hoses together as necessary. Do not over tighten these wire ties or they will “pop” when the pressure builds up. The hoses should be secured in a manner that does not let them rub on anything.
20. The small plastic duct mounted to the inside of the bumper cover on the right side will need to be modified in order for the oil cooler to fit properly. See **Fig 11** below.



21. Remove the small bumper duct from the bumper cover.
22. Cut out the template on the last page of these instructions.

23. Place the duct on a table with the raised lettering facing downward (BMW Logo, E 82 M script, part number, etc). Align the paper template that was just cut out with the left and lower edges of the duct (see white arrows on **Fig 12**).



24. Scribe and cut out the small "House Shaped" area as shown in **Fig 12** using a sharp Xacto knife or a small cut-off wheel such as those found in many dremel tool kits. Deburr the hole and reinstall the duct back into the bumper cover.

25. **Fig 13** shows how the cut out should look. Enlarge this hole if necessary using a file or other suitable tool as needed to aid in proper fitment.



26. Add 1/2 to 1 quart of engine oil depending on where the oil level was initially.
27. I prefer to start the car and run it for several minutes so I can check for even the tiniest oil leak. Start the engine and run it at about 2,000 RPM's for a few minutes or until the oil thermostat opens if you have the time (preferred). Closely look over the hose ends and Oil Line Mount for possible leaks. Retighten as needed.
28. You can now reinstall the front "bumper skin," and the dual intake scoop that were previously removed.

29. The front section of the right side wheel well liner will need to be trimmed slightly to clear the oil cooler before reinstallation. Refer to **Fig. 14** on how to mark and trim this area.

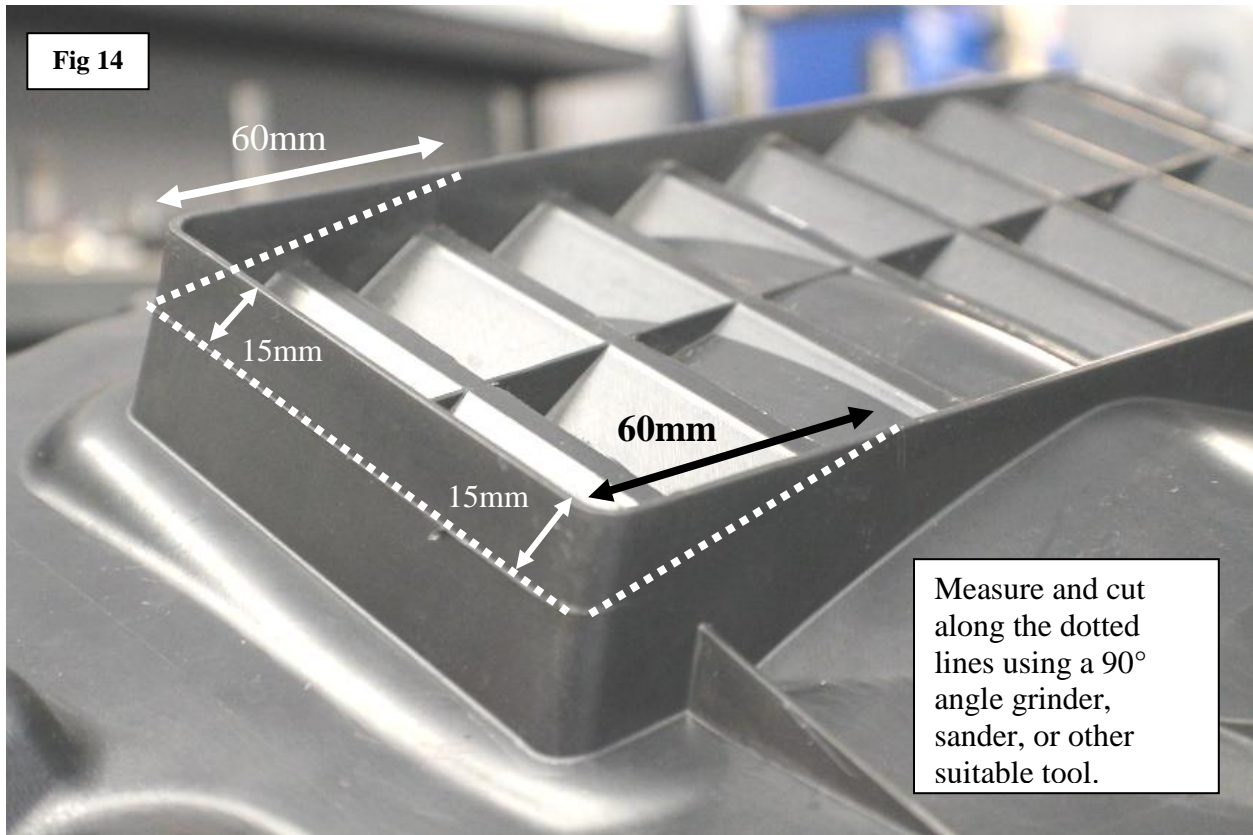
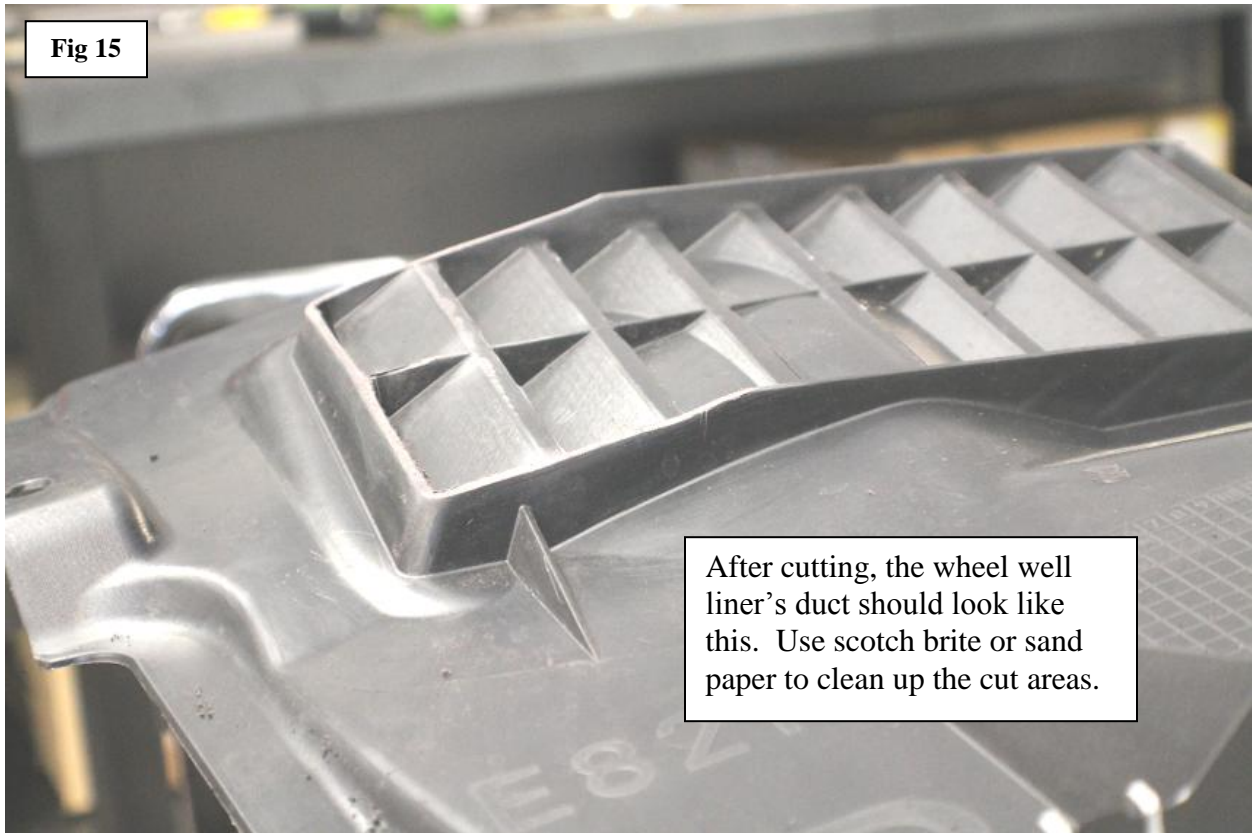


Fig 15



After cutting, the wheel well liner's duct should look like this. Use scotch brite or sand paper to clean up the cut areas.

30. Reinstall the right side front wheel liner.
31. Reinstall the right front wheel and torque to 88.5 ft-lbs or 120 nm (BMW spec).
32. Congratulations, you have completed the installation of the Dinan Oil Cooler!



Cut out this area of the right side bumper ducting

Align white arrows with the edges of the right side bumper duct