

MAGNUSON

PERFORMANCE

2022+ Toyota Tundra Low Temperature Radiator Installation Guide



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Important Note: Before installing the Magnuson Performance Low Temperature Radiator kit, please read through the installation procedure and verify that all items are present.

LIMIT OF LIABILITY STATEMENT

The information contained in this publication was accurate and in effect at the time the publication was approved for printing and is subject to change without notice or liability. Magnuson Performance Products reserves the right to revise the information presented herein or to discontinue the production of parts described at any time.

SAFETY PRECAUTIONS

STOP! CAREFULLY READ THE IMPORTANT SAFETY PRECAUTIONS and WARNINGS BEFORE PROCEEDING WITH THE INSTALLATION!

Appropriate disassembly, assembly methods and procedures are essential to ensure the personal safety of the individual performing the kit installation. Improper installation due to the failure to correctly follow these instructions could cause personal injury or death. Read each step of the installation manual carefully before starting the installation.

- Always wear safety glasses for eye protection.
- Place ignition switch in the OFF position.
- Always apply the parking brake when working on a vehicle.
- Block the front and rear tire surface to prevent unexpected vehicle movement.
- If working with a lift, always consult vehicle manual for correct lifting specifications.
- Operate the engine only in well-ventilated areas to avoid exposure to carbon monoxide.
- Do not smoke or use flammable items near or around the fuel system.
- Use chemicals and cleaners in well-ventilated areas.
- Batteries produce explosive gases, which can cause personal injury. Therefore, do not allow flames, sparks or flammable substances to come near the battery.
- Keep hands and any other objects away from the radiator fan blades.
- Keep yourself and your clothing away from moving parts when the engine is running.
- Do not wear loose clothing or jewelry that can get caught in rotating parts or scratch surface finishes.
- Allow the engine, cooling system, brakes and exhaust to cool before working on a vehicle.

WORK SAFELY! Perform this installation on a good clean level surface for maximum safety and with the engine turned off.

Tools Required:

- Drill
- 1/4" drill bit (or step drill)
- Tape measure
- Pliers
- 10mm combination wrench
- Ratchet
- 10mm short and deep sockets
- 13mm deep socket
- Hose cutters (or sharp knife)
- Pen or Sharpie marker
- Flashlight



Contact Information:

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Any reference to LH or RH side is from the perspective of the driver seat looking forward.

1. Drain the coolant for the intercooler system at the location shown.



2. The core support needs to be removed from the vehicle so that holes can be drilled to support the Magnuson Low Temperature Radiator (LTR).

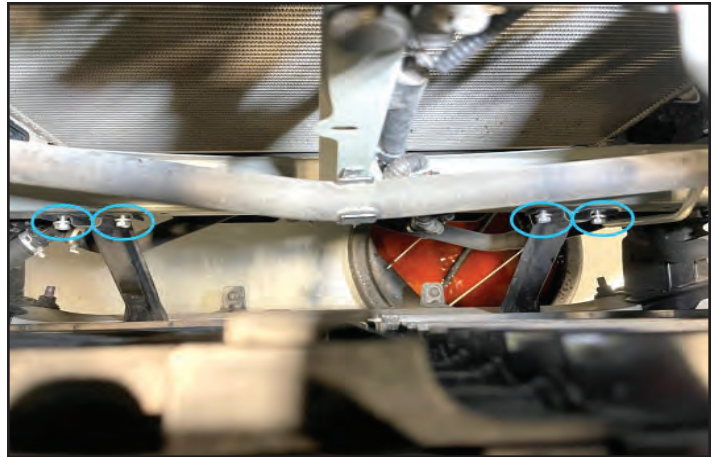
Four bolts secure it to the vehicle at the top.

Two plastic tabs secure it at the bottom.

See the following slides for removal detail.



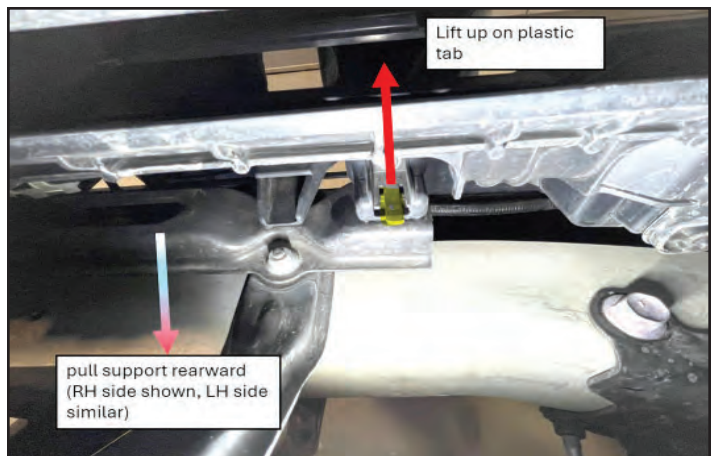
3. Looking down from the front of the vehicle, remove (4) M6 fasteners securing the core support in the locations shown.



4. Working from under the vehicle, there are (2) plastic tabs securing the support to the vehicle.

Gently lift up on the tabs then pull the support rearward to disengage it.

You can then remove it out from the bottom of the vehicle.



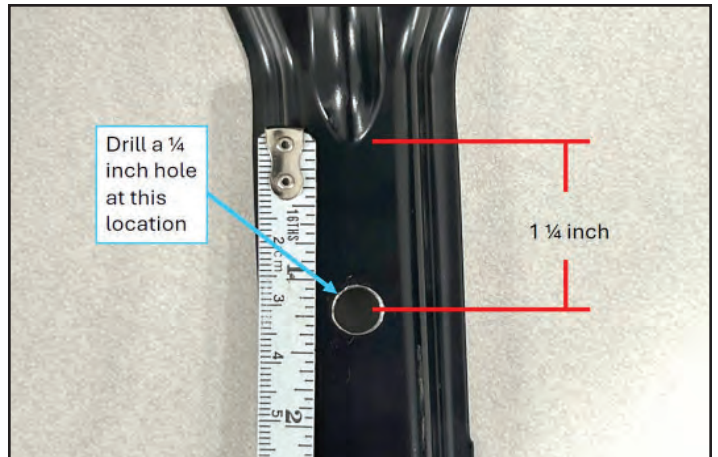
5. Mark and center punch the LH and RH brackets at the location shown.

See detail in the following step.



6. Mark the brackets, center punch them then drill them with a 1/4" drill in the location shown.

Remove any burrs or sharp edges from the bracket.



7. Remove the nut securing the plastic Y-pipe in the RH front corner of the radiator.

Pull the Y-pipe off the stud and allow the assembly to hang temporarily. This will make room to install the Magnuson LTR.



8. **IMPORTANT:** If your vehicle has active grill shutters, we recommend removing them to maximize airflow through the LTR.

If you choose to keep the shutters in place, you will need to modify the upper LTR bracket supplied in the kit so that the LTR does not come into contact with them as they cycle open and close.

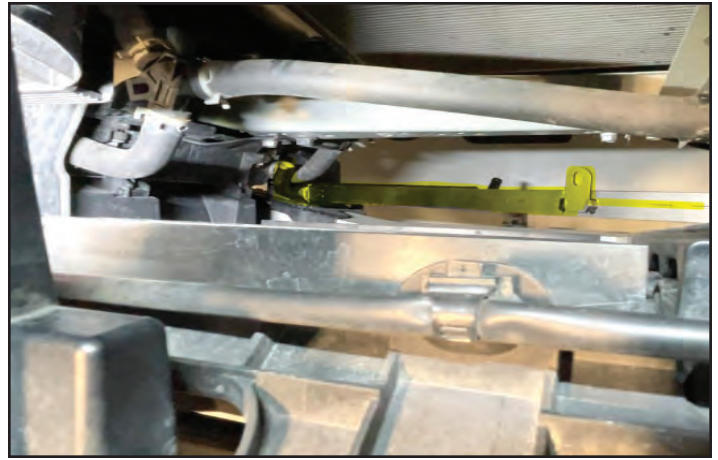
Bracket modification is detailed in a latter step.



9. Working from below the vehicle, begin to install the LTR with the inlet and outlet tubes facing toward the rear and at the RH side of the vehicle as shown.

IMPORTANT: start by slipping the upper LTR tube over the factory hose assembly that was removed from the stud in Step 7. You can then rotate the LH side of the LTR upward and work it into place.

Take care not to damage the fins as you work it into place.



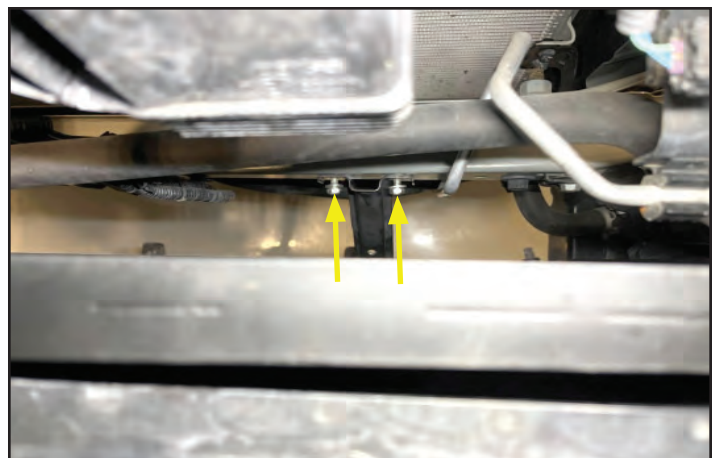
10. Use a zip tie or have a helper hold the LTR in place as high as possible so that the lower bracket that the holes were drilled into can now be re-installed.



11. Re-install the factory bracket assembly back in the vehicle, ensuring that it locks into place against the plastic tabs at both sides of the bottom.



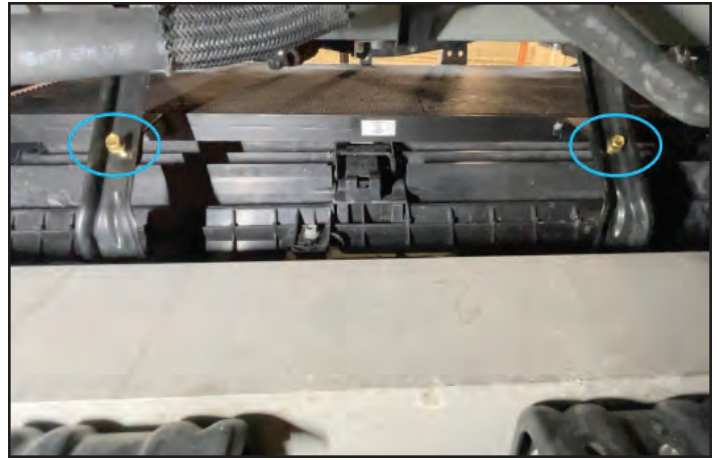
12. Re-install the factory fasteners through the bracket at the top (arrow locations) and tighten them (RH side shown, LH side similar).



13. You can now lower the LTR into place, aligning the bottom LTR brackets with the holes you drilled in the factory core support brackets.

Install (2) M6 fasteners supplied in the kit through the factory bracket and thread them into the lower LTR bracket as shown.

Tighten the fasteners to secure the LTR at the bottom.

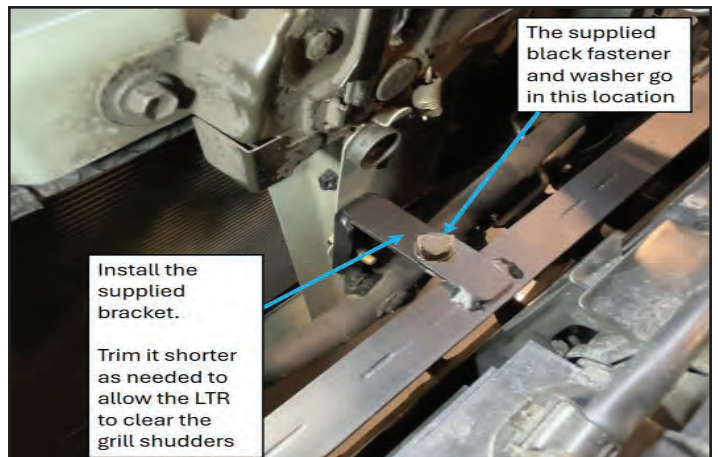


14. Re-install the factory Y-connector over the stud and secure it using the factory nut.



15. If your vehicle does not have active grill shutters, the supplied bracket will install without modification using the M6 fasteners in the kit. Note that the black fastener and washer are installed in the location shown.

If your vehicle does have active grill shutters, you will have to trim the top surface of the bracket by approximately $\frac{1}{2}$ " and drill a hole in the bracket to allow the LTR to move rearward and clear the shutter mechanism. An M6 nut is required but not supplied for this alternate installation.



16. The factory Y-pipe shown in the photo is secured to a metal bracket.

Inspect the clearance between the highlighted hose and the back of the LTR.

Use pliers to bend the bracket slightly rearward as needed so the hose has clearance to the LTR.



17. If your vehicle is a hybrid version, remove the speaker from the location shown and set it aside.



18. Temporarily remove the RH horn to gain access to this location of the vehicle.

Disconnect the wiring harness from the horn.



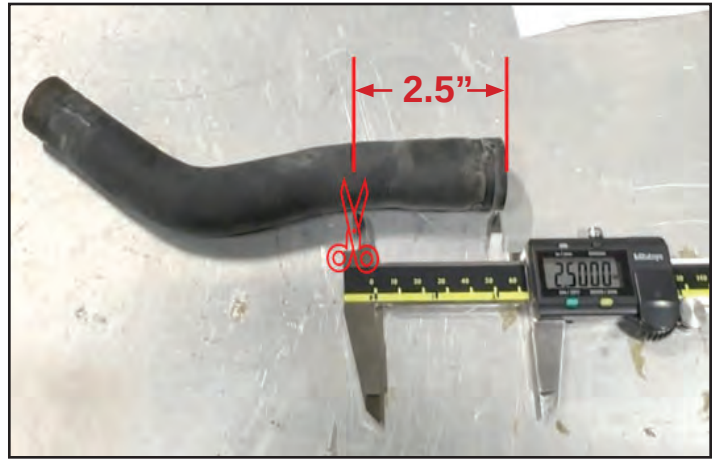
19. Remove the highlighted hose from the Y-pipe.



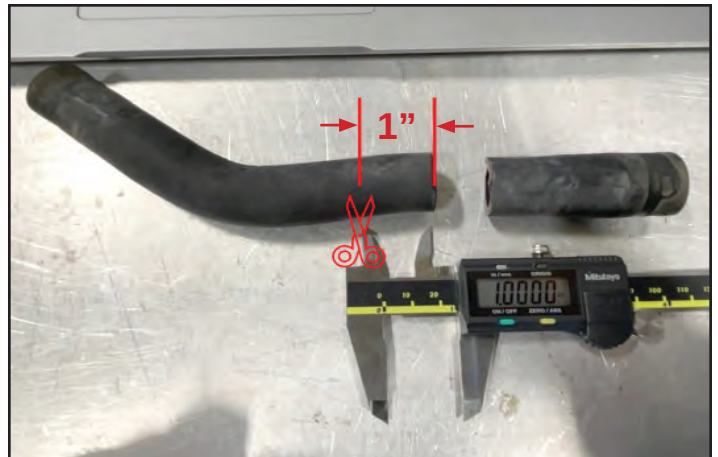
20. Remove the opposite end of the hose at the location shown.



21. Measure the hose you just removed from the vehicle, mark it and cut it at the 2.5 inch location shown.



22. Cut a 1 inch piece out of the longer section of hose as shown.



23. Pre-install $\frac{3}{4}$ " constant tension clamps to the ends of the cut hoses as shown.

Install a supplied Y-connector between the factory hose that was just cut. Note the orientation of the connector and hoses in the photos.

Secure the hoses to the connector with the constant tension clamps.



24. Re-install the modified hose sub-assembly back into the vehicle, securing it at each end using the factory constant tension clamps.



25. Re-install the opposite end of the modified hose back onto the factory tube as shown.

Secure it using the factory clamp.



26. Cut a 9 ½" long piece of bulk hose supplied in the kit. Pre-install ¾" constant tension clamps onto each end as shown.



27. Install the bulk hose between the upper tube on the LTR and the Y-connector that was installed previously.

Secure it at each end using the constant tension clamps.



28. Re-install the RH horn and secure it using the factory bolt.

Re-connect the wiring harness to the back of the horn, ensuring it is fully seated.



29. Remove (2) fasteners securing the RH inner fender panel just ahead of the RH front tire.

Fold the inner fender panel rearward and up so it rests against the tire. This will allow for clearance to the intercooler pump area.

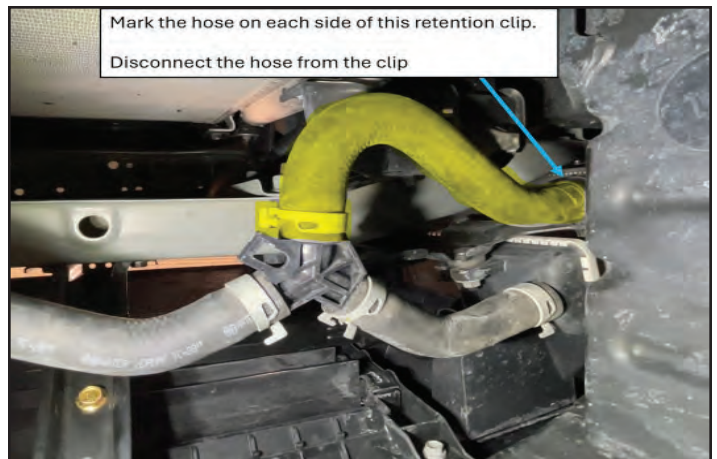


30. Mark the location of the hose at each side of the retention clip above the frame rail with a Sharpie marker or pen.

Remove the hose at the Y-connector as shown.

Disconnect the hose from the retention clip.

Remove the retention clip from the vehicle. It will not be re-used.



31. Remove the highlighted hose from the intercooler pump.

The hose can now be removed from the vehicle.

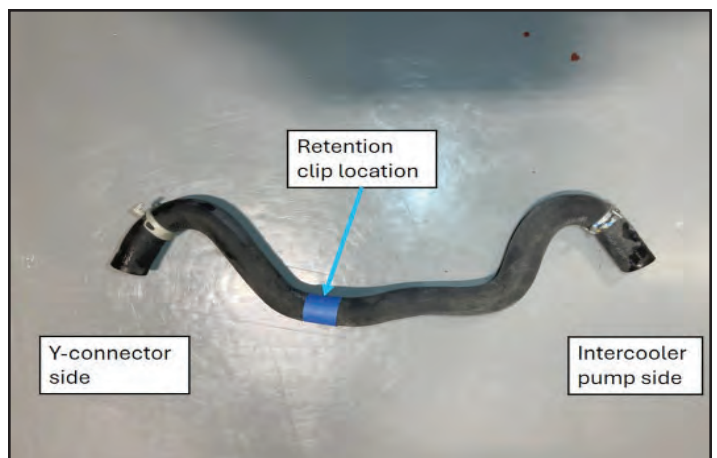


32. The photo shows the factory hose as it was removed from the vehicle.

The blue tape represents the location of the plastic retention clip and will be used as a reference point to cut the hose in the following slides.

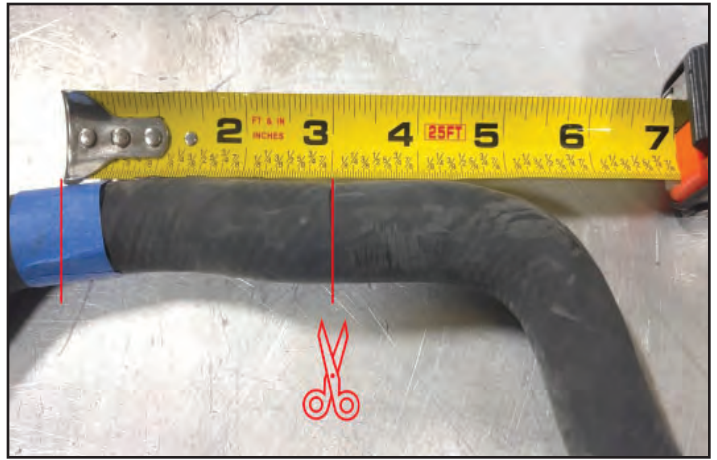
Use tape or clearly mark the hose at centerline of this location. We have used tape for clarity in the photos.

The factory hose will be cut and modified as detailed in the following slides.

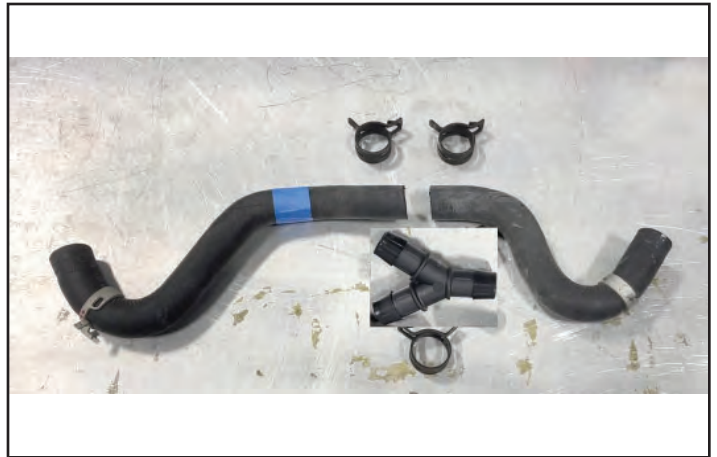


33. Measure 3 inches from the center line of where the plastic retention clip was located. Place a mark at this location.

Cut the factory hose using a sharp knife.



34. Select the Y-connector and (3) constant tension clamps from the kit.



35. Cut a piece of bulk hose 9 inches long.

We will finalize the exact length of the bulk hose after we re-install the hose assembly back into the vehicle in a subsequent step.



36. Sub-assemble (3) constant-tension clamps onto the hoses, then assemble the two factory hoses and one bulk hose to the Y connector in the orientation shown.

With the factory hoses installed and sitting on the table as shown, the Y connector will face vertically.

Secure all three hoses to the Y connector using the constant tension clamps.

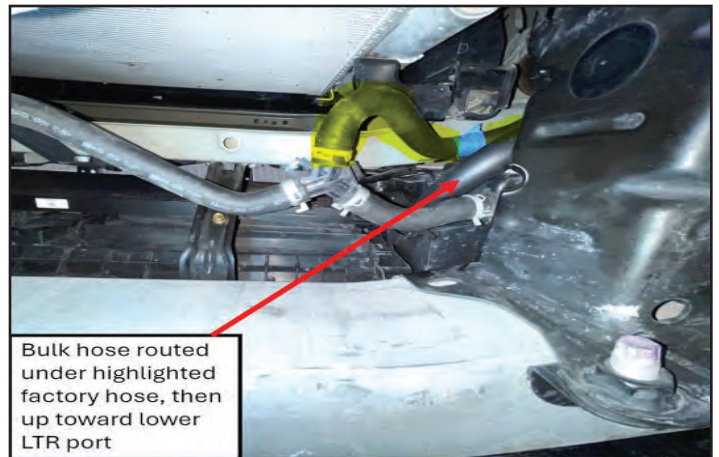


37. This is an alternate view showing the orientation of the hoses and Y-connector.



38. Re-install the updated hose sub-assembly back into the vehicle with the factory hoses in the same orientation as they were removed. The 9 inch piece of bulk hose should point down. This photo shows the highlighted connection to the factory Y-connector, inboard of the frame rail. Install the factory hose to the Y-connector and fully seat it but do not install the constant tension clamp yet.

A second photo in the following slide will show the installation at the opposite end to the pump.



39. This photo shows the connection to the pump. Fully seat the hose to the pump but do not install the constant tension clamp yet.



40. Route the piece of bulk hose to the bottom port of the Magnuson LTR ensuring it is fully seated.

Inspect the hose carefully to ensure it isn't kinked anywhere. If it is, remove it from the LTR port and shorten it ½ inch or so, then re-install it and re-check it.

Shorten it as needed in order to allow it to route smoothly from the new Y-connector to the Magnuson LTR.

The exact length will depend on where the new Y-connector was installed. The bulk hose must be custom fit to each application.

When you are satisfied with the routing, install the constant tension clamp to the hose at the LTR as shown.



41. This second photo shows an alternate view of the bulk hose routing between the newly added Y-connector to the bottom port of the Magnuson LTR.

Ensure that none of the hoses are laying against any sharp edges. A short piece of leftover bulk hose can be cut to length, slit open and zip tied in place to protect the coolant lines as needed.

Take your time and route everything carefully as there is minimal clearance in this area.

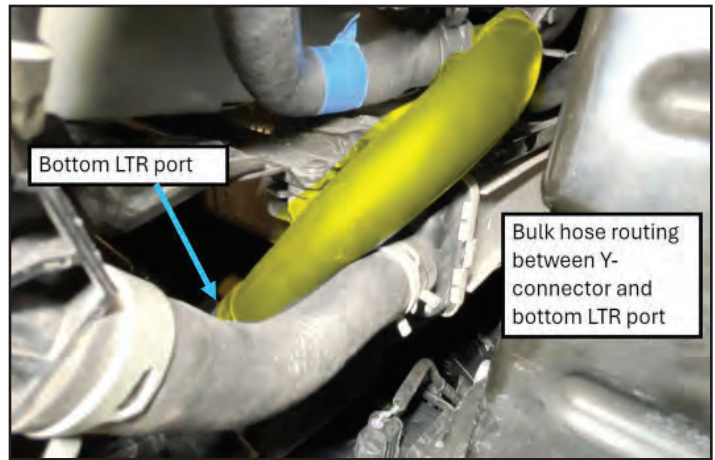
42. After the length of bulk hose has been finalized and you have inspected it to ensure it isn't kinked you can then go ahead and install the clamps at the highlighted locations to secure the ends of the factory hose to the pump and factory Y-connector.

43. Ensure you have re-installed and threaded the drain plug back into the port as shown.

44. Fill the intercooler reservoir with coolant to the correct level as indicated on the side. A vacuum fill tool will minimize aeration of the coolant.

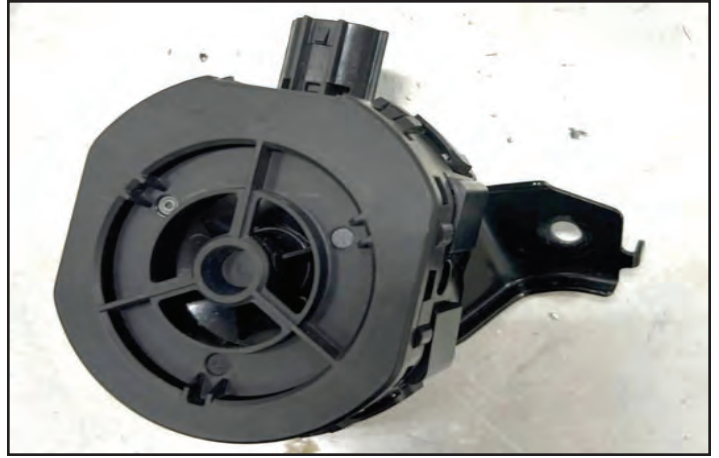
If you do not have access to a vacuum fill tool you will have to re-check the coolant level after starting the engine and allowing the air to be purged from the system.

Rev the engine up and hold it briefly at 3000RPM. This will increase the duty cycle of the pump to help purge air out of the system quicker.



45. **Hybrid Versions ONLY:**

The speaker used on hybrid models will have to be relocated to make room for the Magnuson LTR.



46. Re-install (2) screws securing the inner fender panel to the fascia at the bottom.

This concludes the installation of the Magnuson LTR kit.





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