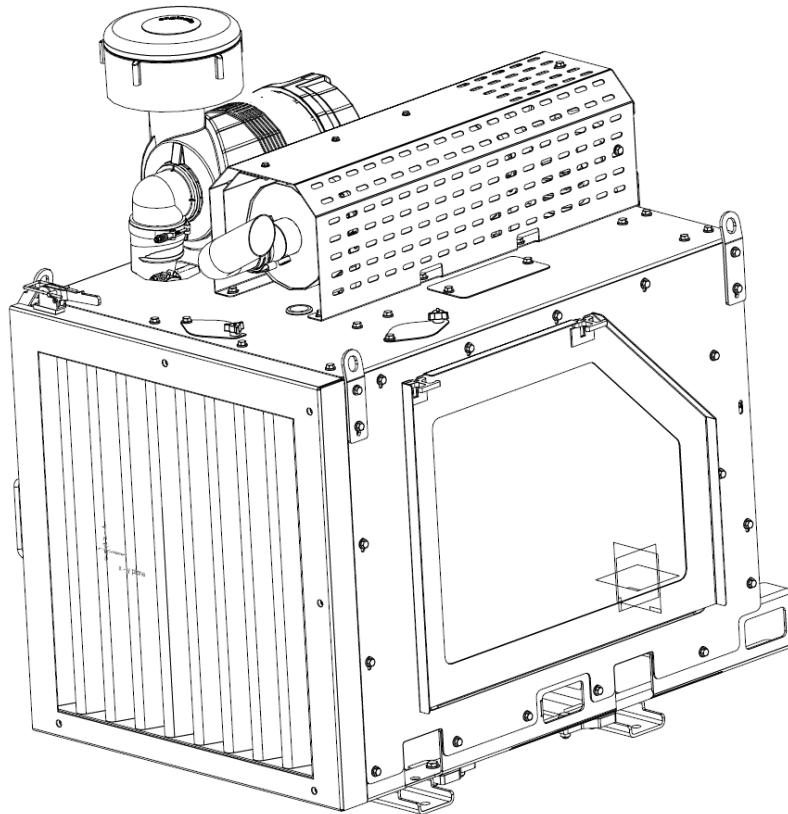


Morbark Ford 6.2 Engine Post Production Modification (PPM-103)



Note: Make sure you read and understand these instructions before performing the procedure. If you are confused or uncertain about the contents of this document, contact your local dealer or Morbark directly at 800-255-8839.

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Overview

This document describes the steps required to identify what modifications are required to your specific machine to remedy any instances of engine overheating and include the following:

- Replace current radiator (debris) screen with Assembly #40861-451
- ECM replace or update
- Replace rear and top engine enclosure panels if thermal insulation is present.
- Adjust exhaust tube “Y-Pipe” for clearance to firewall (Note: Replace U bolt clamps with Morbark PN: 29323-598 as required)
- Purge cooling system to remove any trapped air
- Replace radiator fan if existing fan exhausts air from engine assembly instead of “pulling” air INTO engine assembly.

Affected Machines

- Any of these models that use the Ford 6.2L engine: EB 1821 (Pre Ser# 26469), EB 1922 (Pre Ser# 52783), EB 2131

Verify and Obtain Parts from this List

Note: Not all of these parts will be required to upgrade your machine. Inspect your machine and create a checklist of all parts that need to be ordered for your machine.

Place an “X” if associated item(s) apply	Assy/Part No.	Description:	Qty:
Order if existing panel HAS thermal insulation.	40780-451	Rear Panel	1
Order if existing panel HAS thermal insulation.	30501-451	Top Panel	1
Order if existing exhaust clamps are “U Bolt” type	29323-598	Clamp, Exhaust	3
Order if existing fan is configured to pull air AWAY from engine instead of INTO engine assembly (see Note 1)	29119-013	Fan, Puller	1
This item must be replaced for all machines.	40861-451	Debris Screen	1

Note 1: Refer to Appendix at back for fan identification photos.

Contact Morbark Service at 800-255-8839 if you have ANY questions or need clarification.

Safety

Dangers, Warnings and Cautions



A Danger explains hazards that will result in personal injury or death.



A Warning explains hazards that might result in personal injury or death.



A Caution explains hazards that could cause damage to equipment and/or machinery.

Personal Protective Equipment (PPE)

For your safety, always adhere to the following guidelines when performing this procedure:

- Always wear personal protective equipment (hard hat, safety goggles/weld mask, work/weld gloves, hearing protection, etc.) when working on this equipment.
- Know and avoid pinch/ crush points.
- Clean all oil spills, and debris around work area to reduce the risk of slips, trips and falls.
- If lifting or leveraging equipment and/or assemblies always make sure all ramps, hoists, lift straps/chains, jacks, jack stands, etc., are rated and approved for the weights being carried/lifted.

Engine Modification Procedure

- 1) See Figure 1. Remove the Debris Screen (1), Access Panel (2), Engine Air Intake Assembly (3), Exhaust Heat Shield (4), Muffler Assembly (5) and Rear Panel (6) in the order as numbered and set aside.

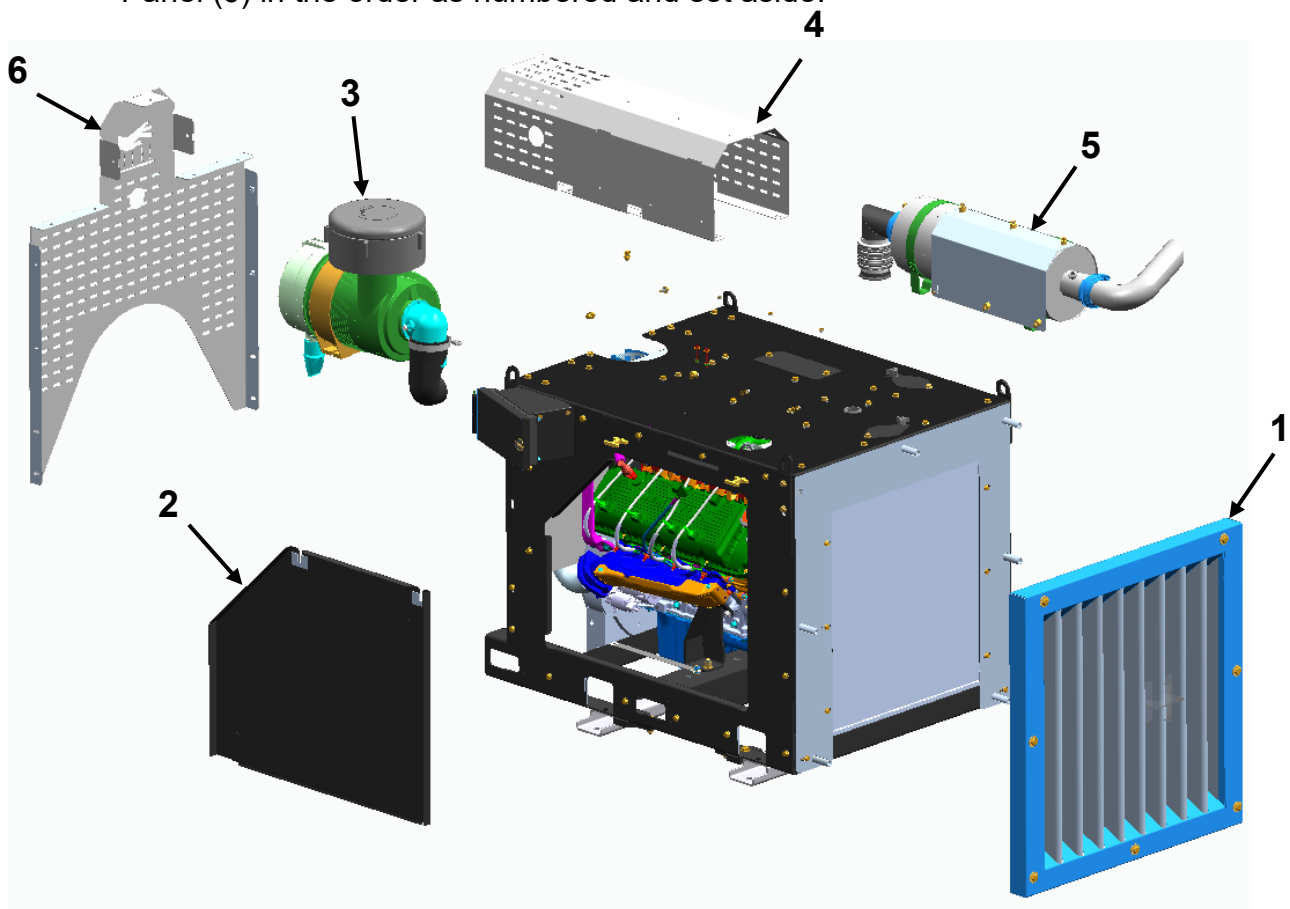


Figure 1

- 2) See Figure 2. Remove Exhaust Pipe (1), Engine Enclosure Top (2) and Chimney Weldment (3) in the order as numbered and set aside.

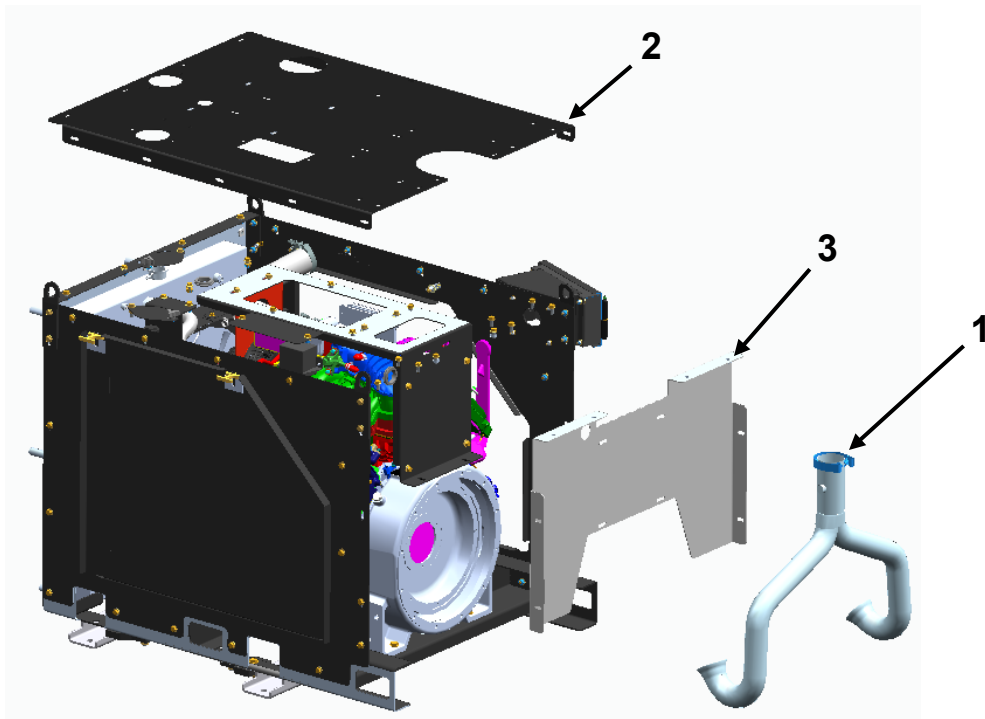


Figure 2

- 3) See Figure 3. Assemble new Chimney Weldment (1), Engine Enclosure Top (2) and existing Exhaust Pipe (3) in the order as numbered using existing hardware. **Note: See Figure 4 (next page) for exhaust pipe details before installing.**

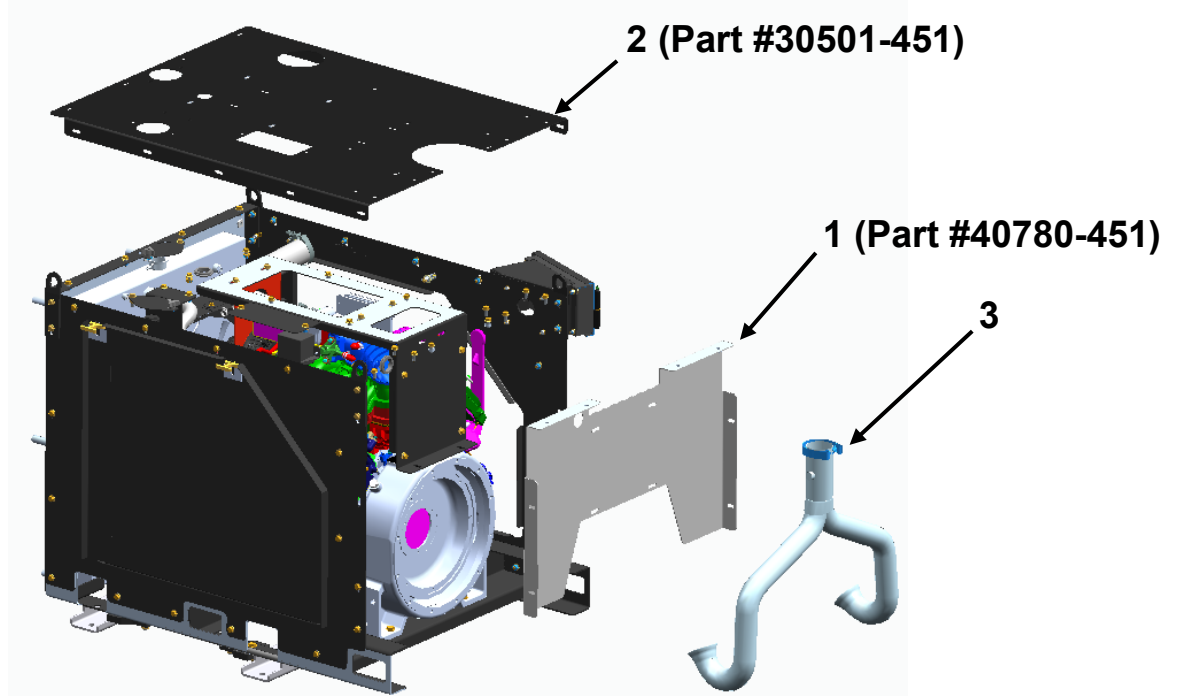
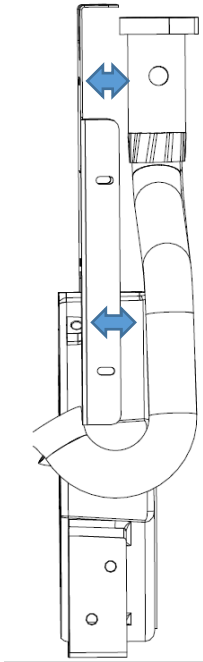


Figure 3

NOTES:

- When changing the fans, adjust the exhaust Y-pipe so it is straight up and down. We initially had these clamped to the firewall but this allowed too much heat to pass through the firewall.
- Loosen the exhaust manifold joints and pull the pipe back away from the fire wall and re-torque.
- The Catalyst assembly can be adjusted forward and back to allow better fitment of the 90 degree exhaust elbow. Here are some pictures of what it should look like.
- Also remind anyone running a Ford 6.2 liter to only use **5w-30 motor oil**. Using a thicker oil with a higher winter weight (10w, 15w) in the winter may cause timing chain damage.
- Double check that all wiring harnesses are tied back away from any heat sources like the exhaust manifolds.



NOTE: Do NOT reuse U bolt clamps when re-installing Y-pipe.

Make sure pipe is aligned so that there is even clearance between pipe and chimney weldment as



Use 3" band clamp. Make sure elbow is fully seated and there are no leaks at slots.



Figure 4

4) See Figure 5. Install Rear Panel using existing hardware.

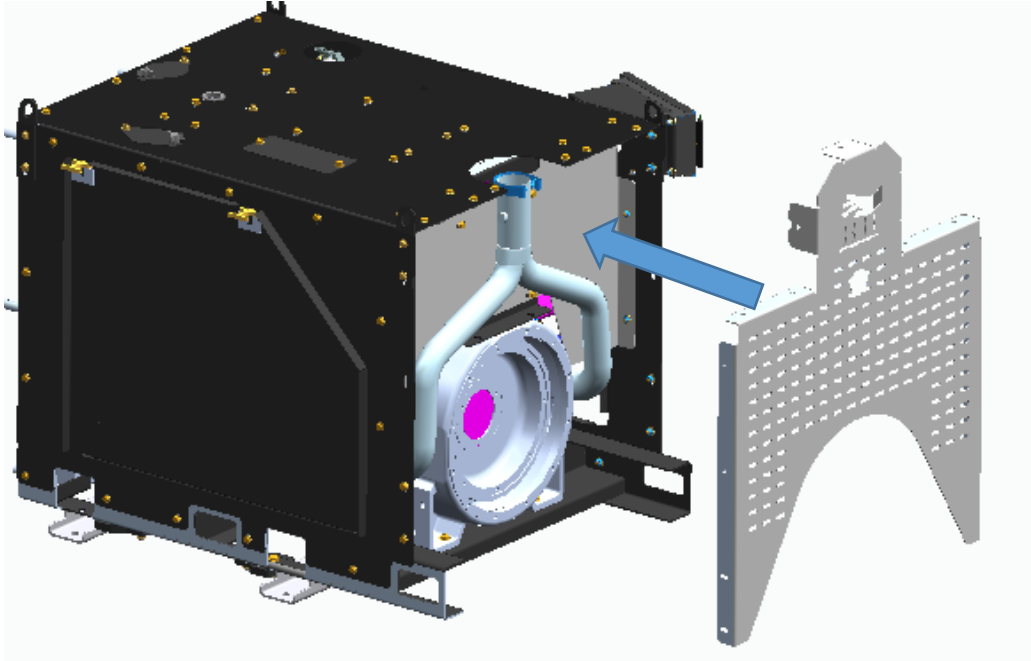


Figure 5

5) See Figure 6. Install Muffler Assembly, Radiator Cover, Access Panel, and Engine Air Intake Assembly using existing hardware then install replacement debris screen as shown.

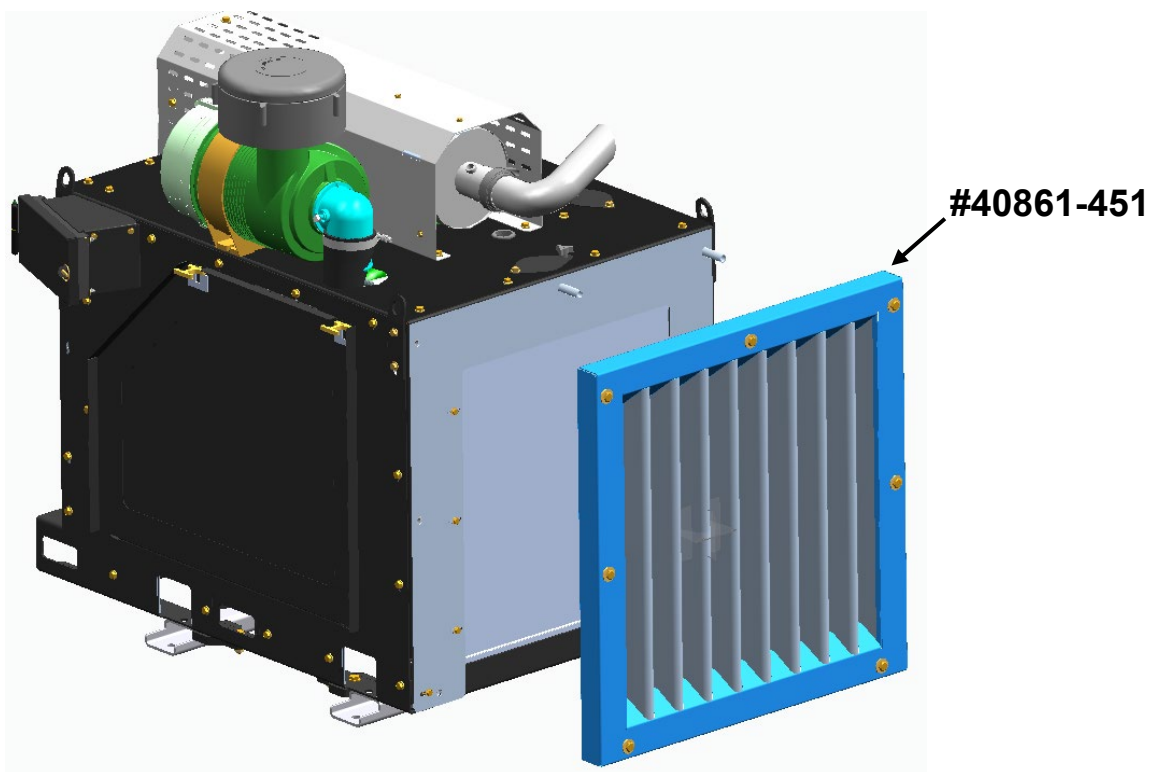


Figure 6

Update or Replace ECM

To update existing ECM contact Art Wicks EDI Service Manager (art@edi-dist.com) to update existing ECM.

- Calibration: 5380R35D_GAS_TSC1_1200-3200

Or, to replace ECM do the following:

- 1) See Figure 7. Remove screws.
- 2) Disconnect wire harnesses.
- 3) Remove ECM.
- 4) Install new one in reverse.

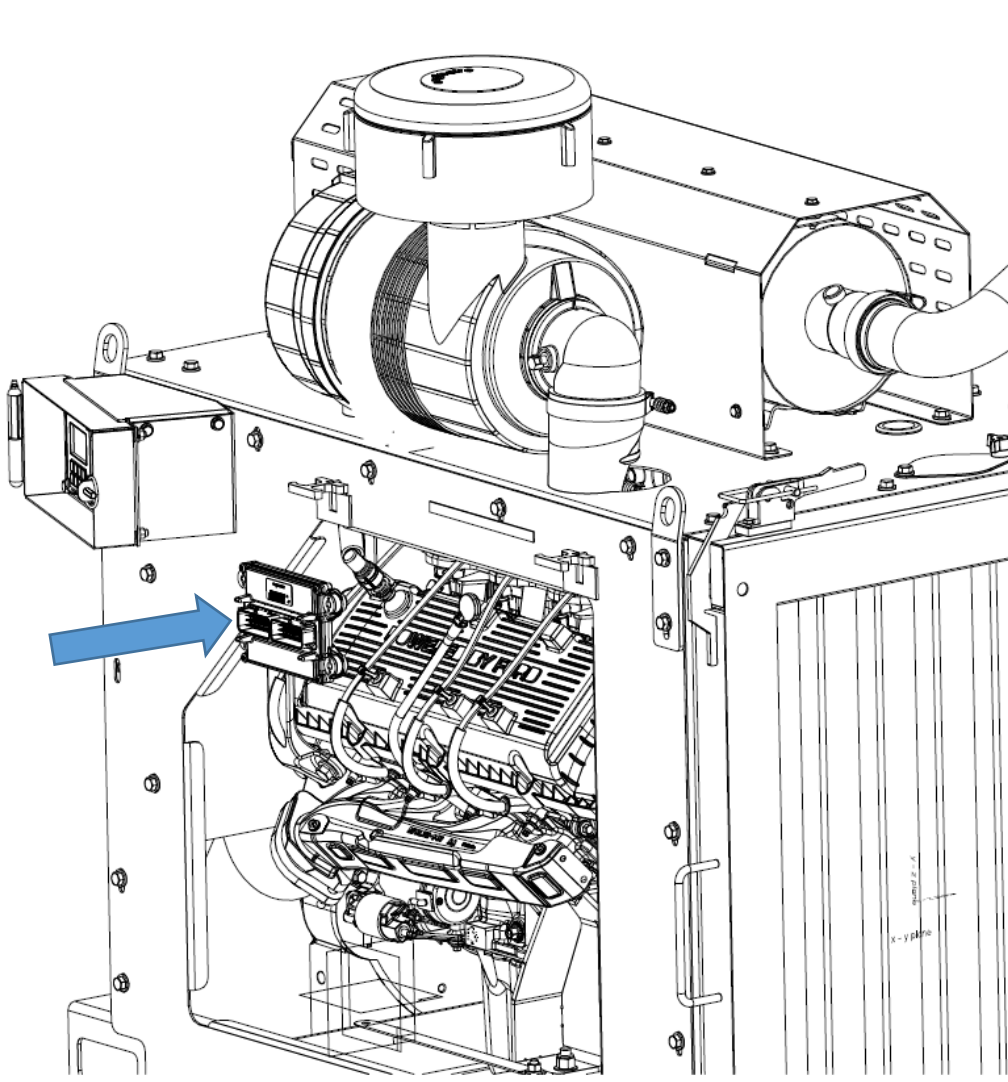


Figure 7

Purging Air from Radiator Coolant

Note: You can drain and vacuum fill the system or use the following procedure, which would require a spill-free funnel. (See links below)

Cooling system purge:

<https://www.lislecorp.com/specialty-tools/spill-free-funnel-606>

[Lisle 24680 Spill-Free Funnel \[IMPROVED\]](#)

- 1) Using correct adaptor insert funnel into radiator.

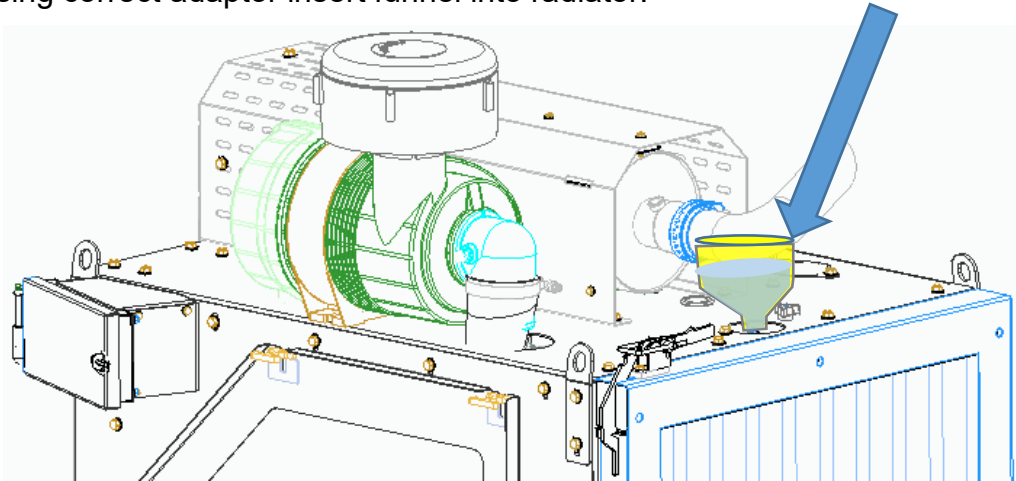


Figure 8

- 2) Add fluid coolant (**USE: Peak Cool 50/50 Pre-diluted Extended Life anti-freeze and coolant, 150,000 mile protection, or equivalent that meets or exceeds WSS-M97B51-A1, ASTM D3306**). NOTE: Make sure the funnel is no more than one-third full to avoid overflow when engine heats up.
- 3) Start car. Let engine idle until engine temperature reaches 205°F. Trapped air will escape through funnel.



Figure 9

- 4) Shut down the engine and let cool.
- 5) Repeat Steps 3 and 4 up to four times to cycle air out.

- 6) Squeeze radiator hose then insert the stopper. Remove funnel and install radiator cap.

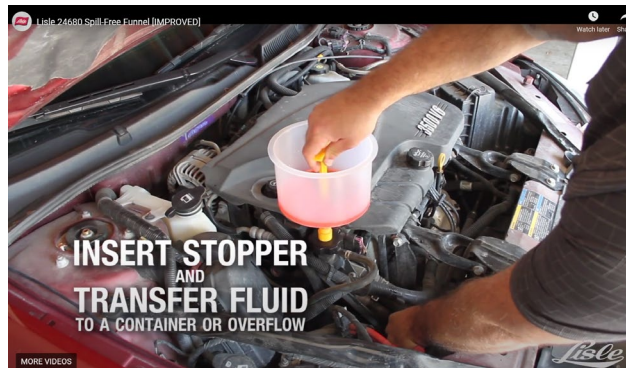


Figure 10

- 7) Transfer remaining coolant to reservoir.



Figure 11

Appendix - Fan Identification/Verification

Wrong fan – Arrow points to right.



Correct fan – Arrow points to left.

