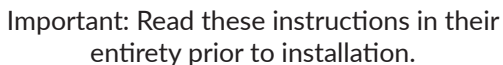




MADE IN USA



Rev 200421

APPLICATIONS

- 1996-2004 4.6L Ford Modular V8 Mustang GT, chassis code SN95
- Cobra and Mach 1 trims require an optional 1.75" to 1.50" radiator hose reducer (sold separately). The included silicone radiator hose must also be trimmed for these applications.

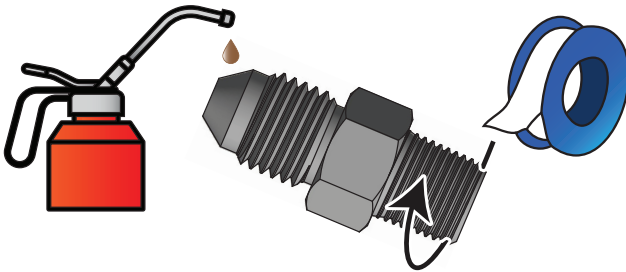
PARTS LIST & HARDWARE

Qty	Part Number	Description
1	EFR-100	Remote Oil Filter and Cooler Adapter, Ford 4.6 & 5.4 Modular V8 Engine
1	EFR-800	Radiator Hose, with Clamps
4	OM-10-10	-10AN ORB to -10AN Male Adapter Fitting
1	OB-16-28	-16AN ORB to 1.75" Hose Barb Adapter Fitting
1	ENV-140-F4	Remote Oil Filter Mount, M22x1.50 Filter Thread, with Mounting Brackets
2	EFR-600-50	Pre-assembled Oil Lines
1	EFR-600-62	Oil Line Hardware Pack

BEFORE YOU BEGIN

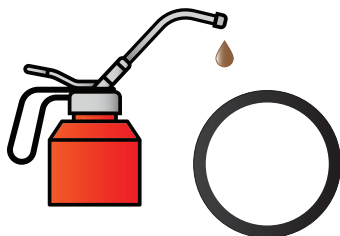
⚠ WARNING: This product should only be installed by a qualified mechanic. Improper installation could result in severe engine damage.

💡 Tip: Use aluminum tools to avoid damaging fittings.



💡 Lubricate all fitting flares for a better seal.

💡 Wrap tapered pipe (NPT) threads with Teflon (PTFE) tape or apply thread sealant to seal the threads.



- 💡 Lubricate O-rings prior to installation to prevent damage and ensure a leak-free seal.

PREPARING FOR INSTALLATION

1. Raise the front of the vehicle and support with approved automotive frame stands, lift, or ramps.

⚠️ WARNING: NEVER work under a vehicle supported only by a jack.

2. Remove any underbody panels necessary to access the oil filter.
3. Place a drain pan under the filter, remove the oil filter and allow the oil to drain.

⚠️ Caution: Oil may be hot!

4. Remove the front bumper cover and head lights to gain access to the front bumper. Refer to the vehicle's factory service manual for detailed instructions.
5. Place a drain pan under the lower radiator hose connection at the radiator.
6. Use channel-lock pliers to release and slide away the hose clamp on the lower radiator hose at the radiator connection.
7. Remove the hose from the radiator to drain the coolant.

💡 **Tip:** If the hose is stuck, use a plastic tool to loosen the hose from the barb.

8. Use channel-lock pliers to release and slide away the hose clamps at the engine and coolant overflow tank connections.
9. Remove the lower radiator hose from the vehicle completely.
10. Unplug the wire harness from the pressure sensor on the factory oil filter manifold.
11. Use a $\frac{13}{16}$ inch wrench to remove the pressure sensor from the factory

manifold.

12. Use a 10 mm socket wrench to remove all four screws from the factory manifold, then carefully remove the oil filter and coolant manifold from the engine block.

13. Inspect and clean the engine block's sealing surface.

⚠ Important: Sealing surface must be clean and smooth to allow the O-rings to seal properly without leaks.

INSTALLING THE OIL COOLER ADAPTER

⚠ WARNING: Pay close attention to the oil line routing. Incorrect line routing may impede oil flow to the engine.

1. Note the port identification and directions of flow illustrated in Figure 1.

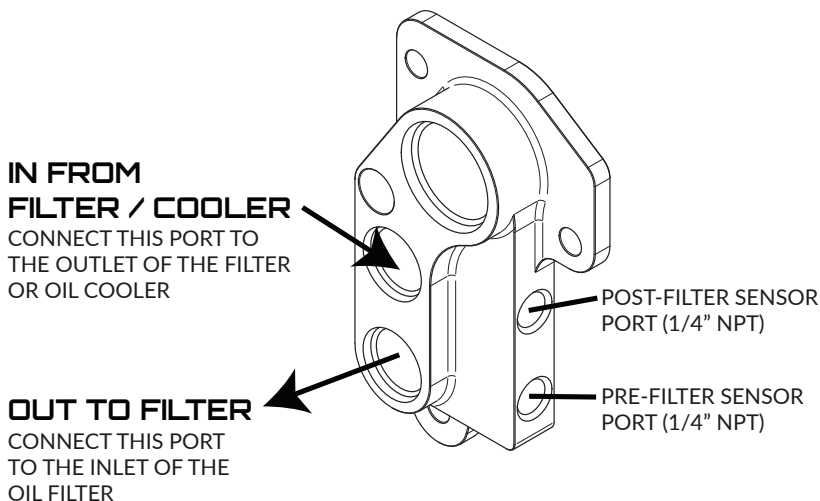


Figure 1 - Port Descriptions

2. Wrap the male threads on the provided 90° 1/4 inch NPT adapter fitting with Teflon tape three or four times or apply Teflon thread sealant.
3. Install the provided 90° 1/4"-18 NPT adapter fitting into the sensor port of EFR-100.
4. Clean the threads on the factory pressure sensor. Wrap the threads three to four times with Teflon tape or apply Teflon thread sealant and install into the provided 90° NPT adapter fitting.
5. Install the provided 1/4"-18 NPT plug into the second sensor port on

EFR-100 if no other sensors are being used.

6. Install the coolant barb fitting and oil cooler adapter fittings into EFR-100. Torque the coolant barb fitting to 30 lb-ft (41 N-m). Torque the oil line adapter fittings to 20 lb-ft (27 N-m).

 **Tip:** Lubricate the O-rings with engine oil to prevent O-ring damage.

7. Ensure that three O-rings are installed into the glands of EFR-100 prior to installation. HRG-1018 and HRG-1019 should be inserted into the glands as shown in Figure 2.

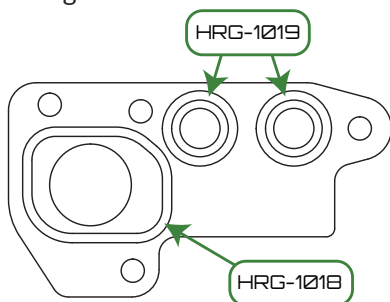




Figure 2 - HRG-1018 and HRG-1019 O-Ring Placement

 **Tip:** Lubricate the O-rings with engine oil to help retain them in the glands during installation.


8. Using a 6 mm hex key, carefully install the EFR-100 onto the engine block using the provided M8x1.25 socket screws.

 **Use caution not to pinch or damage the O-rings.**

9. Torque all M8 socket screws to 18 lb-ft (24 N-m).
10. Install the new silicone lower radiator hose and clamps, part number EFR-800.

 **Application Note:** See the next section for radiator hose installation for the 1996-2004 SVT Cobra and Mach 1 Mustangs.

1996-2004 SVT COBRA & MACH 1 MUSTANGS ONLY

 **Important:** Perform these steps for the 1996-2004 SVT Cobra and Mach 1 Mustangs only. Skip this section for all other vehicles.

1. SVT Cobra and Mach 1 Mustangs use an inline coolant thermostat on the lower radiator hose. This requires cutting the supplied radiator hose

to fit to the inline coolant thermostat housing. Cut the EFR-800 radiator hose with a sharp razor or box cutter along the line shown in Figure 3 below. Only the right side of the hose will be used.

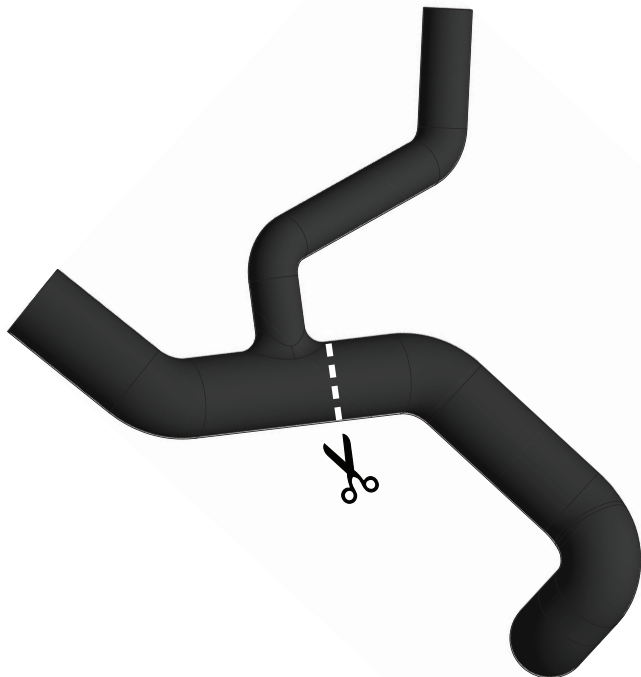


Figure 3 - For fitment on SVT Cobra and Mach 1 Mustang models, cut the supplied radiator hose along the line shown.

2. Install the right end of the hose in Figure 3 onto the EFR-100 oil filter adapter's radiator hose barb and secure with the provided worm clamp.
3. A 1.75" to 1.50" hose reducer, part number RHR-175-150 (sold separately) is required to connect the EFR-800 hose to the inline coolant thermostat. Insert the reducer into the cut end of the hose and secure to the inline thermostat with the included worm clamp.

INSTALLING THE REMOTE OIL FILTER PEDESTAL

1. The recommended mounting location for the remote filter pedestal is the left side of the bumper bar, facing rearwards. An existing mounting hole in the bumper bar may be used so that only one additional hole needs to be drilled.
2. Secure the mounting bracket to the filter pedestal and position it against

the bumper bar with threaded backing plate and screws provided, as shown in Figure 4.

3. Level the filter pedestal mark the unused hole location.
4. Remove the filter pedestal assembly from bumper bar.
5. Strike the hole center with a sharp punch.
6. Drill a hole into the bumper bar using a sharp, high-quality, cobalt steel 3/8" drill bit. The bumper bar is made from very hard steel and a good cobalt steel drill bit is required to cut through it.
7. Reinstall the bracket and backing plate onto the bumper bar using two screws from the filter pedestal hardware kit. Torque the screws to 24 lb-ft (33 N-m).



Figure 4 - Remote Filter Mount Installed on Front Bumper Bar

8. Use the two plugs provided with the ENV-140 to plug the unused ports as shown in Figure 5.
9. Connect the oil lines provided between the EFR-100 and ENV-140 as shown in Figure 5.
 - a. Connect the 45-degree hose ends to the EFR-100.
 - b. Connect the 150-degree hose ends to the ENV-140. Note the orientation of the hose end fittings in Figure 4.

⚠ WARNING: Ensure that the lines are connected correctly, or oil flow to the engine will be blocked.

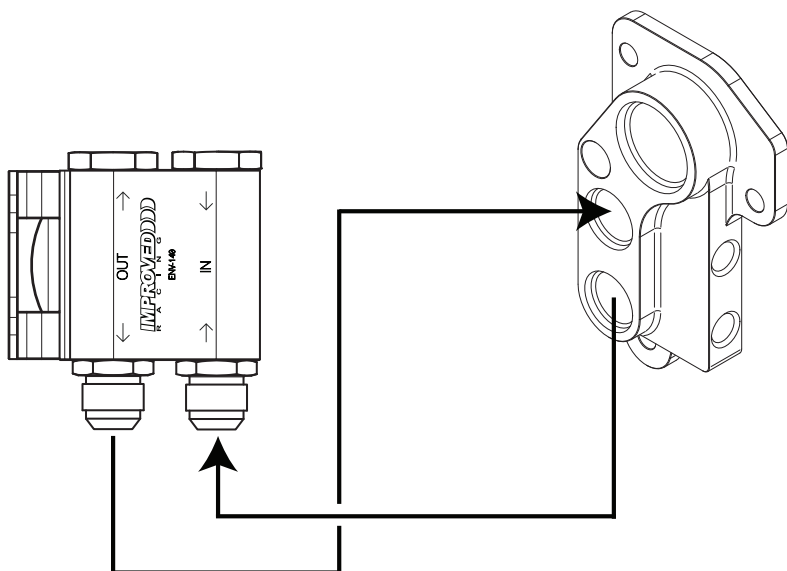


Figure 5 - Oil Line Routing Between EFR-100 and ENV-140

10. Lubricate the oil filter seal, pre-fill with engine oil, and install the oil filter into the remote oil filter pedestal.
11. Trim the plastic fascia panel located on the front left side of the frame rail as shown in Figure 6 to clear the oil lines.



Figure 6 - Trimming the Front Left Fascia Panel

12. Use the provided zip-tie to secure the oil lines to the existing hole in the frame rail, as shown in Figure 7.



Figure 7 - Securing the Oil Lines to the Frame Rail


13. Reinstall the trimmed fascia panel, as shown in Figure 8. Note that the oil lines now clear the fascia panel.
14. Install the hose separator provided in the hardware kit on the oil lines near the engine block to keep the lines together. Ensure that the lines are away from the front accessory drive pulleys.




Figure 8 - Trimmed Fascia Panel Installed

COMPLETING THE INSTALLATION

1. Check that all lines and fittings are snug.
2. Check the engine oil level and add oil if necessary.
3. Refill the engine's coolant system using the manufacturer's approved method for your specific vehicle.

 **Tip:** Consult the vehicle's factory service manual for the correct coolant specifications and refill procedure.

4. Start the vehicle and inspect for oil and coolant leaks.

 **IMPORTANT:** Check that the engine has oil pressure immediately after startup. If the oil pressure is abnormal or if the engine makes excessive noise that does not subside within 3-5 seconds, turn off the engine immediately and check the oil line connections for routing errors or a kinked oil line.

5. Turn-off the vehicle, inspect the engine oil and coolant levels and add oil or coolant as needed.
6. Reinstall the front bumper and all underbody panels. Lower the vehicle back onto the ground.
7. Inspect lines and fittings for leaks after one heat cycle. If any leaks are detected, re-tighten the fittings until the leak is eliminated.

Installation is now complete. Thank you for purchasing an Improved Racing product!