

Oil Cooler Kit (OC-1 & -2)



Maximum Motorsports Oil Cooler Kit addresses the cooling needs of serious performance engines. Although more expensive than other oil cooler kits, anyone who has installed cheap inefficient coolers and hose will be pleased with the quality and value of the MM kit.

- The battery must be relocated outside of the engine compartment. The oil lines are routed around the radiator core support on the driver's side where the battery sits.
- Your car must be non-AC equipped. On cars that were originally equipped with AC, the power steering pump must be relocated using Ford Motorsports relocation bracket (Part Number M-8511-A50) . The recommended belt length for this application is 850-855mm which should be verified for your vehicle.
- A shorter oil filter than the Ford **FL-1A** is required on vehicles that have not relocated the engine back or relocated the swaybar forward. Use of a Ford **FL-300** oil filter is required. These can be purchased from a local Ford dealer or from Maximum Motorsports.

What to consider when installing the Oil Cooler Kit:

- Leave room in the radiator opening to eventually mount an aftermarket Power Steering Fluid Cooler.
- The placement described in these instructions are merely recommendations, you can mount the Oil Cooler Kit anywhere in the radiator opening that you desire.
- The stainless steel hoses need to be positioned so they do not come into contact with other components on your car , such as the radiator.

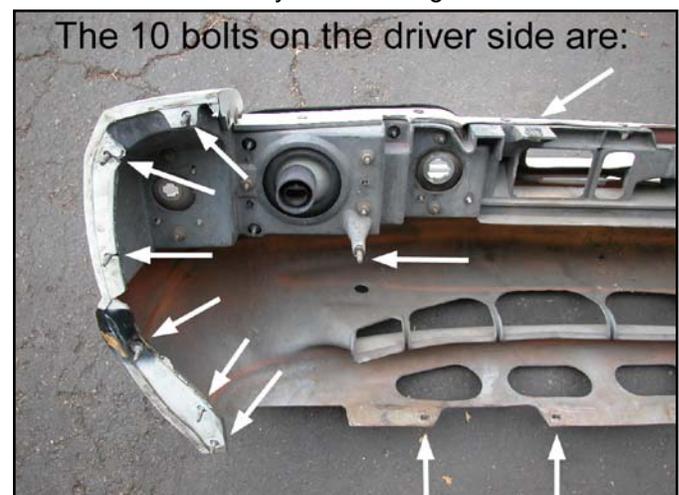
The hoses will act like a file and wear on any surface they come into contact with. A good way to eliminate this problem is to use rubber wrapping and zip ties.

Tools required

- 2 Locking C-Clamps
- 2 Jack Stands
- Floor Jack
- Masking or Electrical Tape
- Felt Pen
- Tape Measure
- Drill
- 5/16" drill bit
- 5/32" drill bit
- Center punch
- 1-1/2" holesaw
- Torque wrench
- Hacksaw with a 32 teeth per inch blade
- Typical selection of hand tools

Read all instructions before beginning work. Following instructions in the proper sequence will ensure the best and easiest installation.

1. Disconnect the ground terminal at the battery.
2. Loosen each lug nut by a 1/4 turn. Raise front of vehicle and support with jack stands. Remove the tires from your car.
3. Remove inner fender liners to gain access to the front facia bolts.
4. Remove the twenty bolts holding on the front facia.



5. Carefully slide the fascia forward enough to disconnect all light connections. Remove fascia from vehicle.

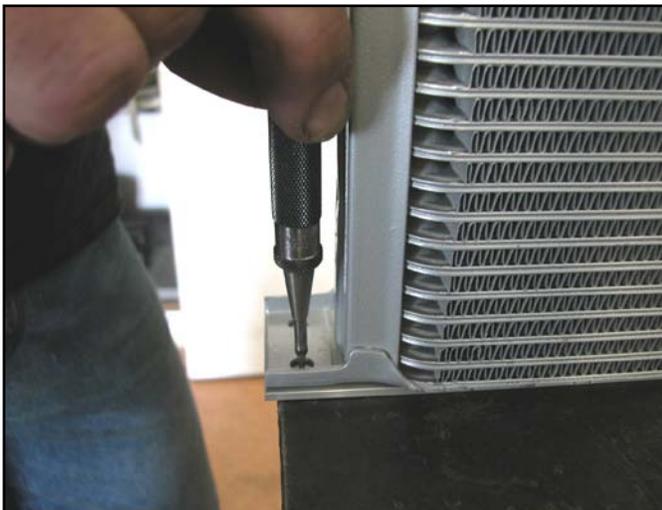


6. Remove front bumper by removing the eight mounting bolts.



7. Because a major portion of this install requires leaning into the engine compartment, it will be easier to install the wheels, lower the vehicle onto the ground and tighten the lug nuts.

8. The oil cooler will mount on top of the 13 inch long L-bracket. Rest oil cooler evenly on the long leg of the L-bracket and center punch the four lower mounting holes.



9. Drill out holes with 5/32" drill bit and de-burr.



10. On the short leg of the L-bracket, mark a point 1.25" from each end and centered on the leg. Center punch your marks, drill with a 11/32" drill bit and de-burr.



11. Remove upper radiator supports and slide radiator away from lower radiator core support to avoid damaging the radiator while drilling in the following steps.





12. Place the short leg of L-bracket against the outside of the lower radiator core support with the long leg on top facing forward. This bracket may be placed side to side as necessary to fit other existing or planned coolers. We commonly align the outside edge of L-bracket with inside edge of driver side lower radiator mount as shown below.



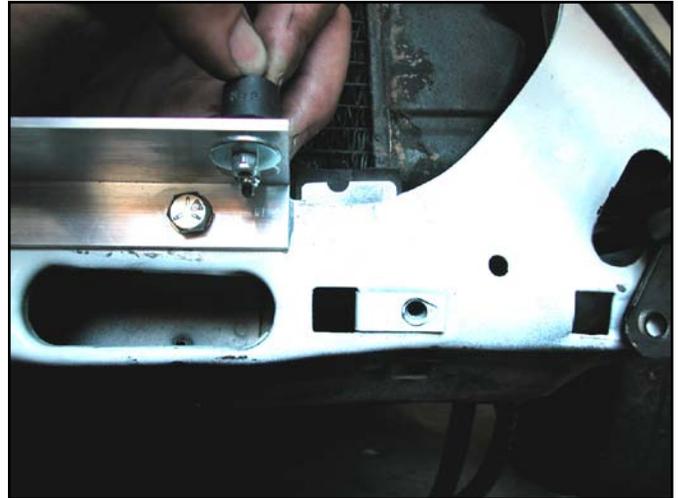
13. Using center punch, mark the center of one of the 5/16" L-bracket holes on lower radiator core support. To ensure accurate placement, **CAREFULLY** drill a pilot hole first, followed by a 11/32" drill bit. If necessary, use a file to de-burr the hole.



14. Place a 5/16 AN washer under the head of a 5/16" X 3/4" bolt. Position the bolt through the hole drilled in the L-bracket and radiator core support. Place a 5/16 AN washer on the backside of the radiator core support followed by a 5/16 nylock nut. Snug but do not tighten the nylock.

15. Rotate the L-bracket until it is level. Repeat steps 13 and 14 for the hole at the other end of the L-bracket. Torque the two 5/16" bolts to 19 ft-lbs.

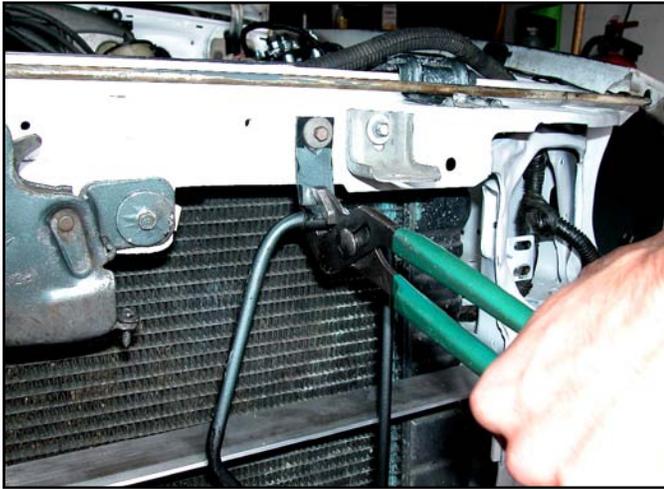
16. Install a vibration isolator on top of the L-bracket in each of the four holes with a fender washer and 4mm nylock nuts underneath. Tighten the nuts to 18 in-lb (1.5 ft-lb). **DO NOT OVERTIGHTEN.**



17. With oil cooler placed on vibration isolators, hold upper L-bracket against oil cooler outlets and mark the center of the fittings on the upper L-bracket. Make sure upper L-bracket is centered left-to-right on the car.



NOTE: Some modification may be required if you are using your stock power steering fluid cooler. If the upper L-bracket will not fit behind the power steering fluid cooler then bend the mounting tab towards the front of the car or use washers to shim the bracket forward.



18. Center punch the marks for the top fittings on the upper L-bracket and using a 1-1/2" holesaw drill ONE of the holes for the top fittings on the cooler.



19. Place the upper L-bracket onto the oil cooler and make sure your mark for the second hole still lines up with the second fitting. Repeat step 18 for the second hole. De-burr both of the holes.

20. Remove the oil cooler and upper L-bracket from the car. Mate the oil cooler and the upper L-bracket with the fittings centered through their holes. Center punch the four mounting holes at the top of the oil cooler.



21. Drill out holes with 5/32" drill bit and de-burr the holes.

22. Install a vibration isolator on the top of the oil cooler in each of the four holes with a fender washer and 4mm nylock underneath. Tighten the nuts to 18 in-lb (1.5 ft-lb).

23. Set the oil cooler back on the vibration isolators mounted to the lower L-bracket. Put upper L-bracket on top of the vibration isolators mounted to the oil cooler. Install a fender washer and 4mm nylock on top of each stud protruding through the upper L-bracket. Torque each nut to 18 in-lb (1.5 ft-lb).



24. Push down on the upper L-bracket and oil cooler assembly to make sure it is fully seated on the lower vibration isolators. Vise Grip the upper L-bracket through the headlight opening.





25. Due to the large variance in Ford's production tolerances the exact mounting position of the upper L-bracket will change from car to car. We found the following position worked best on our car: on the driver side measure 3/8" from the edge of the radiator support and mark this distance. Center punch your mark and drill a pilot hole through the radiator support and L-bracket. Then drill out hole with a 5/16" bit and de-burr. Install the provided 5/16" bolt, 2 AN washers and nylock nut. Make sure the nut is sitting flat against the back of the radiator support and tighten the nut to 19 ft-lbs.

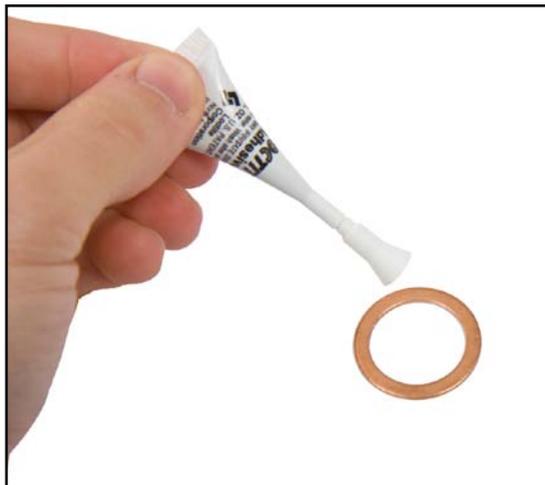


26. Repeat step 25 for the passenger side. Again, you will have to measure the spacing you have on your car to ensure our recommended mounting will work.

27. Install the remaining washers and nylock nuts onto the vibration isolators.
28. Install the two 90° fittings on the top of the oil cooler. For our recommended mounting of the oil cooler kit, you will want the fittings pointing towards the driver side of the car. Do not tighten the fittings because you will be removing them later on.



- 29a. If installing kit OC-2 (w/o thermostat) go to step 29b. If installing OC-1 (w/ thermostat), coat copper washer with Loctite Thread Sealant. Place washer over threads of adapter.



29b. If installing kit OC-2 (w/o thermostat), coat the tapered pipe threads of two AN to pipe fittings with Loctite Thread Sealant. **DO NOT COAT FIRST THREAD.**



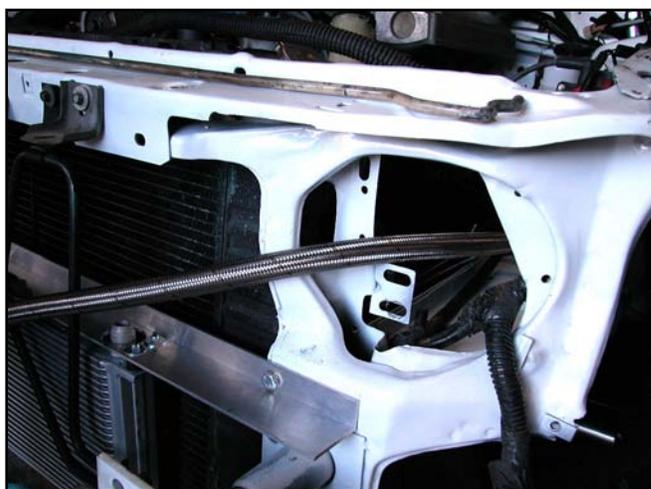
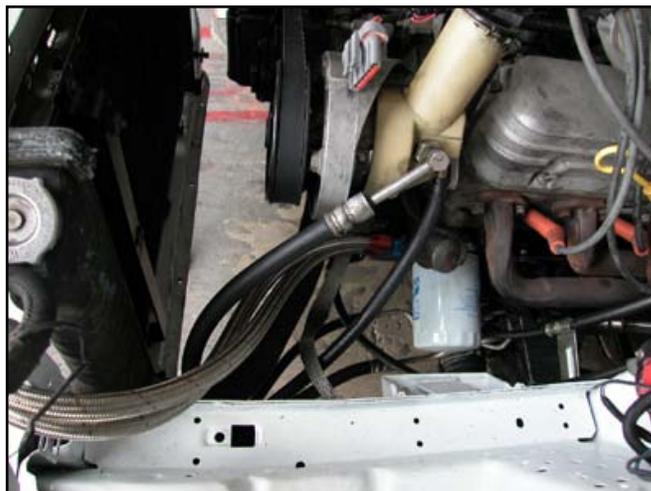
30. Remove rubber gasket from sandwich block and place block into a vise with "soft jaws".

31. If installing OC-1, tighten 1/2 BSP to -10 AN fitting to 50 ft-lbs. If installing OC-2, tighten 1/2 NPT to -10 AN fitting to 40 ft-lbs.

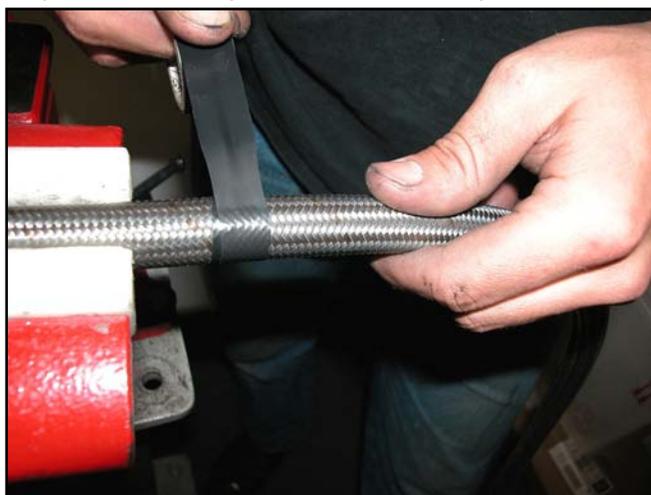


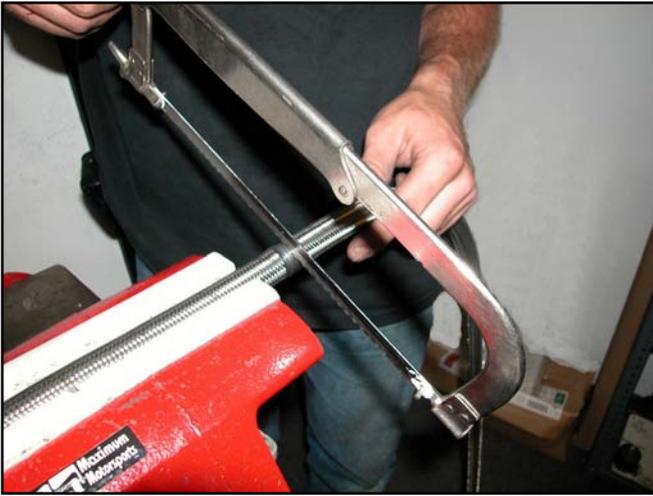
32. Re-install rubber gasket on sandwich block and apply grease to the mating surface. Remove oil filter from the engine and install the sandwich block onto your motor block. **DO NOT** tighten the sandwich block; you will need to be able to rotate it.

33. To determine where to cut the provided hose hold one end against the adapter end and route it through the headlight opening up to the fitting on the oil cooler. You must leave enough slack in the hose to allow for engine movement. Again, there are many options on how to route the hoses to the oil cooler. Shown below is our recommended routing.

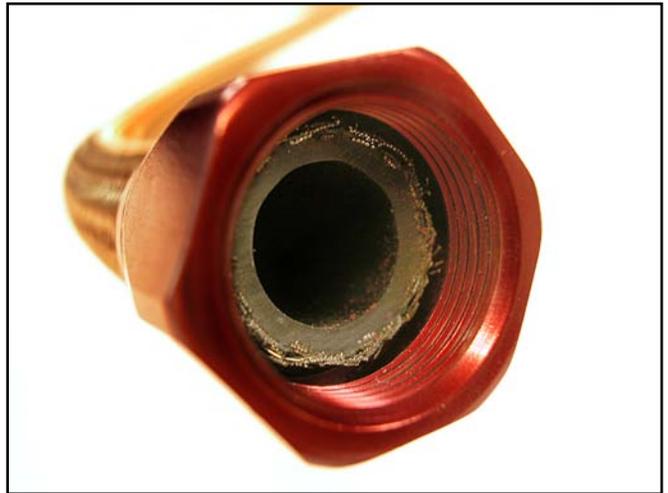


34. Once you have determined where you want to cut the hose, use masking or electrical tape to tightly wrap where you will be cutting. Squarely cut through the tape and hose with a sharp 32 teeth per inch hacksaw. Trim frayed ends of the hose with a sharp pair of metal snips and remove the tape.

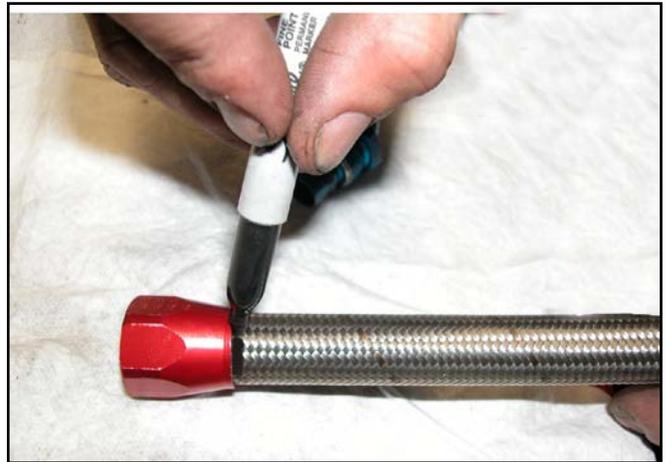




35. A 90° fitting and a straight fitting must be installed onto the ends of the cut hose. Disassemble the red socket from the blue nipple on one of the fittings. Use motor oil to lubricate the inside threads of the socket. Install the socket onto the hose by twisting the socket COUNTER-CLOCKWISE. Butt the end of the hose up to the base of the threads of the red socket.



36. Use a felt pen to mark the hose at the base of the socket, so that you can tell if the hose is getting pushed out during the rest of the assembly.



37. Use motor oil to lubricate the threads on the nipple and place the nipple in a vise. Hold the HOSE, not the socket, and push the hose and socket onto the nipple until the socket threads can be started. Again, holding the HOSE start the threads and go as far as you can by hand.

38. When you can no longer tighten the fitting by hand, put one end in the vise and an appropriate wrench on the other end. Tighten the fitting until the socket is within 1/16" of bottoming on the nipple. Do not use an adjustable or oversize wrench or you will damage the fitting.



39. Make sure your mark at the end of the socket has not moved more than 1/16", if it has return to Step 34.
40. Use CLEAN solvent to clean the hose and hose ends.
41. Repeat Steps 34-38 for the other end of the hose.
42. Determine the desired length for the second hose and repeat Steps 33-39.
43. After assembling the hoses, connect the straight fittings to the sandwich plate and the 90° fittings to the oil cooler. To tighten the 90° fittings use a wrench on the fitting and a wrench on the oil cooler fitting. Be careful with the fittings on the cooler because they are brazed into the cooler and can easily be broken. Tighten the sandwich block on the motor and re-install the oil filter.
44. Check to see if more motor oil needs to be added. Start the engine and examine all hose connections carefully to ensure everything is tight and that there are no leaks.
45. Loosen the lug nuts. Raise front of vehicle and support with jack stands. Remove the tires from your car.
46. Re-install the front bumper.
47. Re-install the front facia and reconnect all of the lights. Tighten bolts holding on front facia.
48. Install inner fender liners.
49. Install tires, lower vehicle to the ground and tighten lug nuts.
50. Reconnect battery.

OC-1 includes:

- 1 Sandwich Plate with Thermostat w/ 1/2" BSP ports
- 1 Oil Cooler
- 2 1/2" BSP to -10 AN Adapter
- 2 Straight Fitting
- 2 90° Fitting
- 1 Stainless Steel Braided Hose (10 feet long)
- 1 Aluminum L-Bracket (13 inches long)
- 1 Aluminum L-Bracket (38 inches long)
- 8 Vibration Isolator
- 16 4mm Nylock Nut
- 16 3/16" Fender Washer
- 4 5/16" Hexbolt
- 4 5/16" Nylock Nut
- 8 5/16" Washer
- 2 20mm Copper Crush Washer
- 1 Loctite Thread Sealant

OC-2 includes:

- 1 Sandwich Plate with no Thermostat w/ 1/2" NPT ports
- 1 Oil Cooler
- 2 1/2" NPT to -10 AN Adapter
- 2 Straight Fitting
- 2 90° Fitting
- 1 Stainless Steel Braided Hose (10 feet long)
- 1 Aluminum L-Bracket (13 inches long)
- 1 Aluminum L-Bracket (38 inches long)
- 8 Vibration Isolator
- 16 4mm Nylock Nut
- 16 3/16" Fender Washer
- 4 5/16" Hexbolt
- 4 5/16" Nylock Nut
- 8 5/16" Washer
- 1 Loctite Thread Sealant