



CONGRATULATIONS ON PURCHASING YOUR **EDDIE MARINE THUNDER EXHAUST SYSTEM**

PLEASE READ ALL INSTRUCTIONS FIRST BEFORE INSTALLING YOUR **EMI THUNDER EXHAUST SYSTEM**

IF YOU HAVE ANY QUESTIONS ABOUT INSTALLING THE **EMI THUNDER SYSTEM**, PLEASE FEEL FREE TO CONTACT SALES AT **EDDIE MARINE INC.**

PLEASE CHECK ALL BOXES FOR PARTS. ANY DISCREPANCIES SHOULD BE REPORTED TO **EDDIE MARINE INC.** WITHIN 48 HOURS

PARTS LIST FOR MERCURY 496 MANIFOLDS

- 1- PORT SIDE MANIFOLD W/ FRONT OIL FILTER MOUNTING BLOCK
- 1- STARBOARD SIDE MANIFOLD
- 1- PORT SIDE RISER W/ SENSOR PORT
- 1- STARBOARD SIDE RISER W/ SENSOR PORT
- 1- UPPER OIL FILTER BRACKET (SMALL)
- 1- LOWER OIL FILTER BRACKET (LARGE)
- 2- OIL LINES
- 2- MANIFOLD TO HEAD GASKETS
- 2- U SHAPE JUMPER WATER HOSES
- 8- 8 MM X 80 MM MANIFOLD BOLTS W/ WASHERS
- 8- 8 MM X 25 MM MANIFOLD BOLTS W/ WASHERS
- 2- 3/4" PIPE PLUGS
- 2- 3/4" 90 DEGREE WATER FITTINGS
- 8- 1/8" PIPE PLUGS
- 2- 3/8 X 2" BOLTS, W/ NUTS AND WASHERS
- 2- 5/16 3/4" BOLTS, W/ NUTS AND WASHERS
- 2- 5/16 X 1/2" BOLTS, W/NUTS AND WASHERS
- 4- #10 HOSE CLAMPS
- 2- 3/4" RUBBER WATER CAPS
- 36" X 1" WATER HOSE
- 2- MANIFOLD TO RISER GASKETS
- 4- 3/4" WATER FITTINGS
- 4- #10 HOSE CLAMPS
- 8- 3/8" X 2" STUDS, W/ NUTS AND WASHERS

INSTALLATION INSTRUCTIONS

Always disconnect battery before working on boat !!!

Because the manifold can be awkward to work with, you may want a second person to help install the new manifold on the engine.

Starboard side (right side) installation

1. Remove plastic cover on top of engine.
2. Disconnect 4" exhaust hose from engine.
3. Drain the water from stock exhaust manifolds.
4. First remove the riser bolt that is holding the shift quadrant bracket to your riser. Then remove the 2 bolts on the back of the bracket. Remove quadrant from bracket, there is no need to remove cables from the unit.
5. There is no need to remove riser.
6. Remove the temperature sensor from the top rear of the exhaust manifold, behind Riser, (do not lose o-ring on sensor).
7. Remove 1" water hose from the lower water inlet of the manifold.
8. Remove lower jumper hose between manifold to 1 ¼" water TEE.
9. Remove the manifold bolts from the manifold. Leave the two outside bolt, in place until you are ready to remove manifold from engine. Once you are in a good position, remove the final two bolts and lift the manifold out. Because you are working in the engine compartment it can be cumbersome, having another set of hands to help lift manifold off the engine may be helpful.
10. Before reinstalling the shift quadrant, you will need to remove one leg from the bracket, as shown. The EMI Thunder manifold will not accommodate this extra leg. Re-install shift quadrant on to new bracket supplied in the kit. Do not install on engine yet.
11. Clean the exposed head surface of any left over old gasket.
12. Install the 4- 1/8" pipe plugs, (snug only, do not over tighten) and the 90 degree water inlet fitting on bottom of manifold, pointed toward front of engine. Install ¾" pipe plug in upper rear port of manifold behind riser. We have found that using anti-seize compound on 1/8" pipe plug works the best, you may have to remove them later, to winterize. Use pipe sealant on all other water fittings.
13. Install new manifold and gasket with new bolts and washers from kit. You may want to apply a thin layer of gasket sealant to help hold gasket in place while you install the manifold bolts.
14. Tighten the manifold bolts evenly to **25 lb. of torque**.
15. Install riser with 3/8 x 2" studs, nuts and washer, with temperature sender bung pointing in toward engine. Tighten all 4 nuts with washers evenly. Appox. **20 lb. of torque**, "Do not over tighten".
16. Reinstall shift quadrant and new bracket using only the rear bolts. Reconnect wiring plug.
17. Install the temperature sensor with o-ring, into the bung located on the side of the water inlet on riser. Do not over tighten!!!! Reconnect wiring plug.
18. Reinstall your 4" exhaust hose and tighten the hose clamps to a watertight seal.
19. Remove stock 1" lower water hose and install the new longer 1" hose, connect to lower 90 degree water fitting on manifold.
20. Install ¾" rubber cap with clamp on 1 ¼" water line TEE



21. Install 3/4" water fittings (2) one in riser and one on the top front of the manifold. Connect fittings with U- shape hose and clamps.

Port side (Left side) installation

22. You will need a low profile oil drain pan. Remove the oil lines from the oil cooler and drain them into the oil pan. Remove the oil lines from the oil filter. ,

23. Remove front oil filter brackets, adaptor and power steering reservoir tank from the riser and manifold. There is no need to remove P/S lines from reservoir tank.

24. Remove the temperature sensor from the top of the manifold.

25. Remove 1" hose from the lower water inlet on manifold.

Remove lower jumper hose connecting from manifold to oil cooler

26. Install 3/4" rubber cap with clamp on oil cooler fitting.

27. Remove all bolts from the stock exhaust manifold. Remember to leave two end bolts loose enough to remove with your fingers, until you are ready to lift the manifold from the engine compartment.

28. Remove the ECM unit, relays and circuit breaker from bracket. Do not disconnect wiring from components. Remove bracket from the top of the intake manifold. You will be replacing this bracket later with a new bracket provided in the kit.

29. Before installing manifold, clean the gasket surface on head.

30. Install the 4- 1/8" pipe plugs and the 90 degree water inlet fitting on bottom of manifold, pointed toward front of engine. Install 3/4" pipe plug in upper rear port of manifold behind riser.



31. Install manifold and gasket, tighten the manifold bolts evenly to **25 lb. of torque.**

32. Install the new riser on manifold with 3/8 x 2" studs, nuts and washer, with temperature sender bung pointing in toward engine, but do not tighten bolts yet.

33. Install the temperature sensor with o-ring, into the bung located on the side of the water inlet on riser. "Do not over tighten" Reconnect wiring plug.

34. Install 3/4" water fittings (2) one in riser and one on top front of manifold behind riser. Connect fittings with U- shape hose and clamps.

35. Assemble oil relocation bracket. You will use the stock oil fitter adaptor and the 2- new bracket supplied in the kit, 1- small, 1-large. Assemble as pictured





36. Bolt assembly to manifold, using bolts supplied, bolt bracket to lower front of manifold and upper front bolts on riser, do not tight yet.
37. Bolt the power steering reservoir tank to front of upright bracket.
38. Install your ECM, relays and circuit breaker to the new ECM bracket supplied with the kit. This new bracket will utilize the same mounting holes that your original ECM bracket used.
39. Install your new oil lines to the oil filter adaptor. Route the oil filter lines between the head and manifold down to the oil cooler. Note lines will only fit one way. Install both ends before tightening.



40. Tighten up the riser studs and nuts approx. **20 lb. of torque**
41. Tighten all other nuts and bolts on Oil filter relocation bracket and U hose clamps
42. Reinstall stock lower 1" water hose (cut off stock hose 3" from end)
43. Reinstall your 4" exhaust hose and clamps to a watertight seal.
44. Start and run your engine checking for leaks of any kind.
45. Check engine oil level, add as needed.
46. Check shift cable adjustments for proper shifting.



If you experience any difficulties while installing your new exhaust system, please feel free to contact sales at **EDDIE MARINE** with any questions. We will be glad to assist you in any way we can..

Once you have run your boat for approximately three hours, re-tighten your exhaust manifold bolts to **25 lb. of torque**. This will prevent bolts from loosening up and creating exhaust leaks later.

Now that you have run your boat with your new EMI Thunder exhaust system and re-checked everything. You may want to try purchase a higher pitch propeller. In many of the test we have conducted, we have found it necessary to install a higher pitch propeller because of the increase performance when using the EMI system. A higher pitch propeller may be just what you needed to achieve the ultimate performance.

When it comes time to winterize your engine, you will need to remove the 4-1/8 pipe plugs from the bottom of each manifold and drain the water.

Once again, Thank you for purchasing your **EMI THUNDER SYSTEM** and happy boating !!!