



OFFSHORE EXHAUST SYSTEM

NOTICE TO INSTALLER:

1. Before installing your new GIL exhaust system, we strongly urge that the water circulating system be inspected and any worn parts replaced. This will help prevent premature failures due to insufficient water flow.
2. This exhaust system is designed to utilize the water circulation system plumbing shown in the attached diagrams "A" and "B". Standard factory MerCruiser circulating systems (except for Mercury Hi-Performance engines) do not circulate water through the manifold until the thermostat opens. Use of such systems on GIL cast aluminum manifolds may result in overheating and casting failure. GIL manifolds must have water circulation at all times.
3. It may be desirable to re-jet the fuel/air mixture of the carburetor to enjoy the full benefit of the horsepower increase your newly installed GIL exhaust system is designed to deliver. Re-jetting of carburetors also overcomes the potential for overheating due to lean fuel/air mixtures in certain applications. Spark plug readings should also be taken during carburetor re-jetting to insure proper fuel/air mixtures.
4. After the first ten (10) hours of operation, re-torque the four (4) 3/8 – 16 tailpipe flange nuts and the eight (8) manifold bolts to 30 foot lbs.

OFFSHORE EXHAUST SYSTEM INSTALLATION INSTRUCTIONS

1. Review the drawing included with this instruction packet. Determine if the water circulating systems is similar to drawing "A" or drawing "B". Some engines were equipped with the "B" system starting in 1988. Do steps 2 and 3; then follow instructions for system "A" or "B" below.
2. Remove the original exhaust. Clean all gasket surfaces thoroughly. This is a good time to change spark plugs and touch-up any rust spots on the engine.

FOR CIRCULATING SYSTEM "A"

3. Install both manifolds and tailpipes using all gaskets and bolts and water fittings furnished with this system. An exclusive feature of this exhaust system is the GIL exhaust TURBULATOR. The exhaust TURBULATOR prevents condensation formed in the tailpipe from returning to the engine. The TURBULATOR is a conical-shaped device that is installed between the two flange gaskets provided in each tailpipe kit. The cone should point upward and extend into the tailpipe flange.

For short wet tailpipes – those that mix the water with the exhaust at the end of the tailpipe and stop short of the transom – connect a 4” exhaust hose between the exhaust pipe and a 4” transom tip. Tips are not included.

To complete the installation, we recommend Mercury Marine approved GIL exhaust tips or silencers.

For dry tailpipes – those with a water outlet fitting – plumb the water outlet to a transom-mounted discharge fitting. Through-transom discharge fittings are available from GIL Marine.

4. Remove the outlet “Tee” and the two (2) hoses that were running to the old risers and plug the housing with a ¾ pipe plug. These lines will not be needed with the GIL system.
5. Remove the thermostat cover and remove the original gasket, which covers up the by-pass hole into the cover discharge lines. Install the furnished new gasket, which exposes the by-pass outlet hole and re-install the thermostat cover.
6. Plumb the rubber hose from the thermostat cover to the bottom front of each manifold. Plumb the water outlet from the top of the manifold to tailpipe using the “U” shaped molded 1” hoses.
7. Install the controls to GIL {Port (electrical) STBD (cable)} and bolt the brackets to the exhaust, using the two (2) inside manifold flange bolts. NOTE: Brackets are provided with Mercury Bravo Offshore Systems only; they are optional on all other offshore systems.
8. You will get maximum cooling system efficiency and engine longevity if the water pressure in the block is between 5 PSI and 20 PSI.

FOR CIRCULATING SYSTEM “B”

3. Drawing “B” shows the GIL installation on the starboard side. The original configuration is shown on the port side. Note that on the original installation, hose 1A connects to the riser. Hose 2A connects to the exhaust manifold.

In the GIL installation, hose 1B and hose 2B are connected to a “Y” fitting. Two “Y” fittings are included with every GIL system. A single hose then connects to the bottom inlet of the exhaust manifold.

Cut the hoses and install the “Y” fittings for both port and starboard manifolds.

4. Install both manifolds and tailpipes using all gaskets and bolts and water fittings furnished with this system. An exclusive feature of this exhaust system is the GIL exhaust TURBULATOR. The exhaust TURBULATOR prevents condensation formed in the tailpipe from returning to the engine. The TURBULATOR is a conical-shaped device that is installed between the two flange gaskets provided in each tailpipe kit. The cone should point upward and extend into the tailpipe flange.

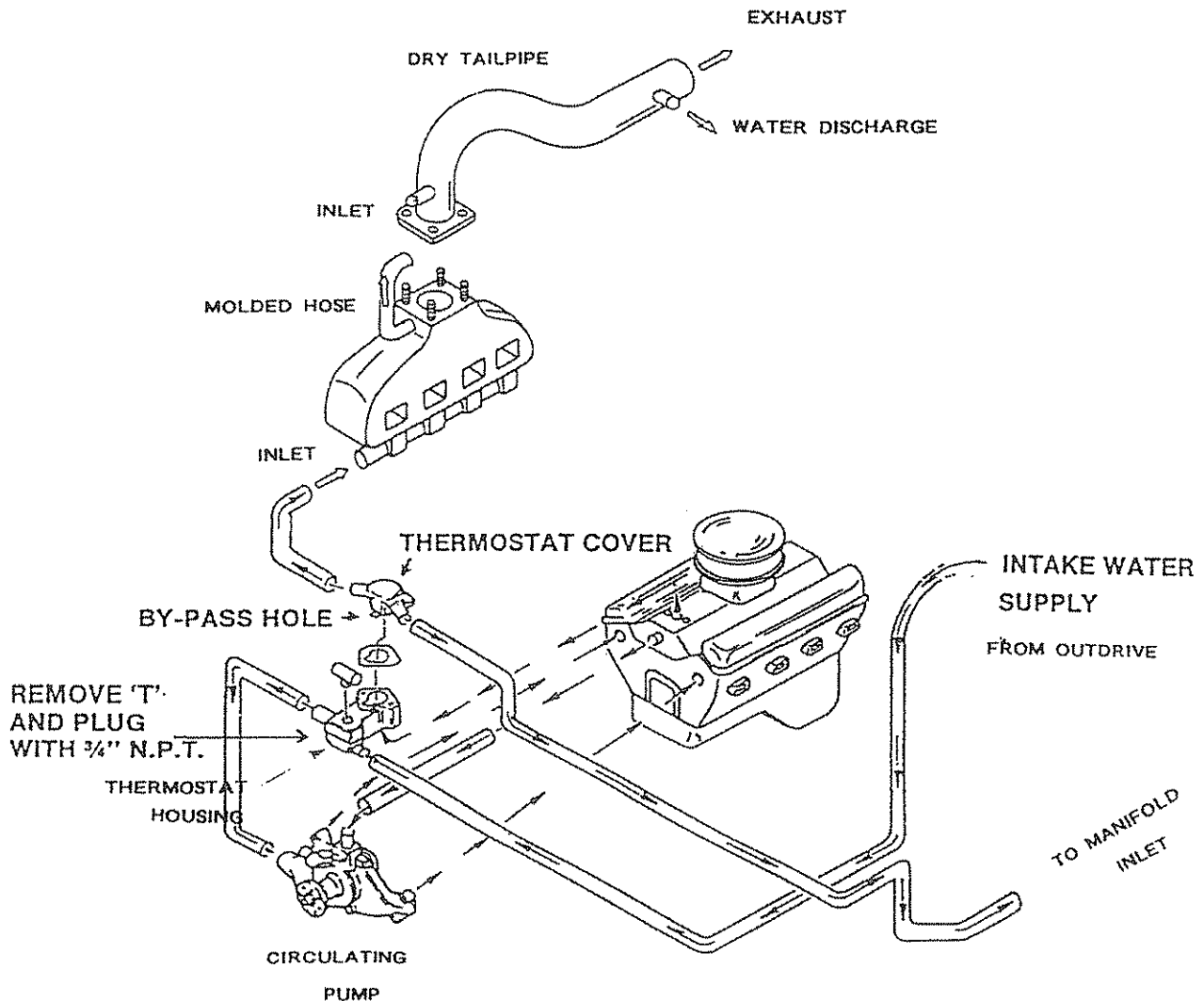
For short wet tailpipes – those that mix the water with the exhaust at the end of the tailpipe and stop short of the transom – connect a 4” exhaust hose between the exhaust pipe and a 4” transom tip. Tips are not included.

To complete the installation, we recommend Mercury Marine approved GIL exhaust tips or silencers.

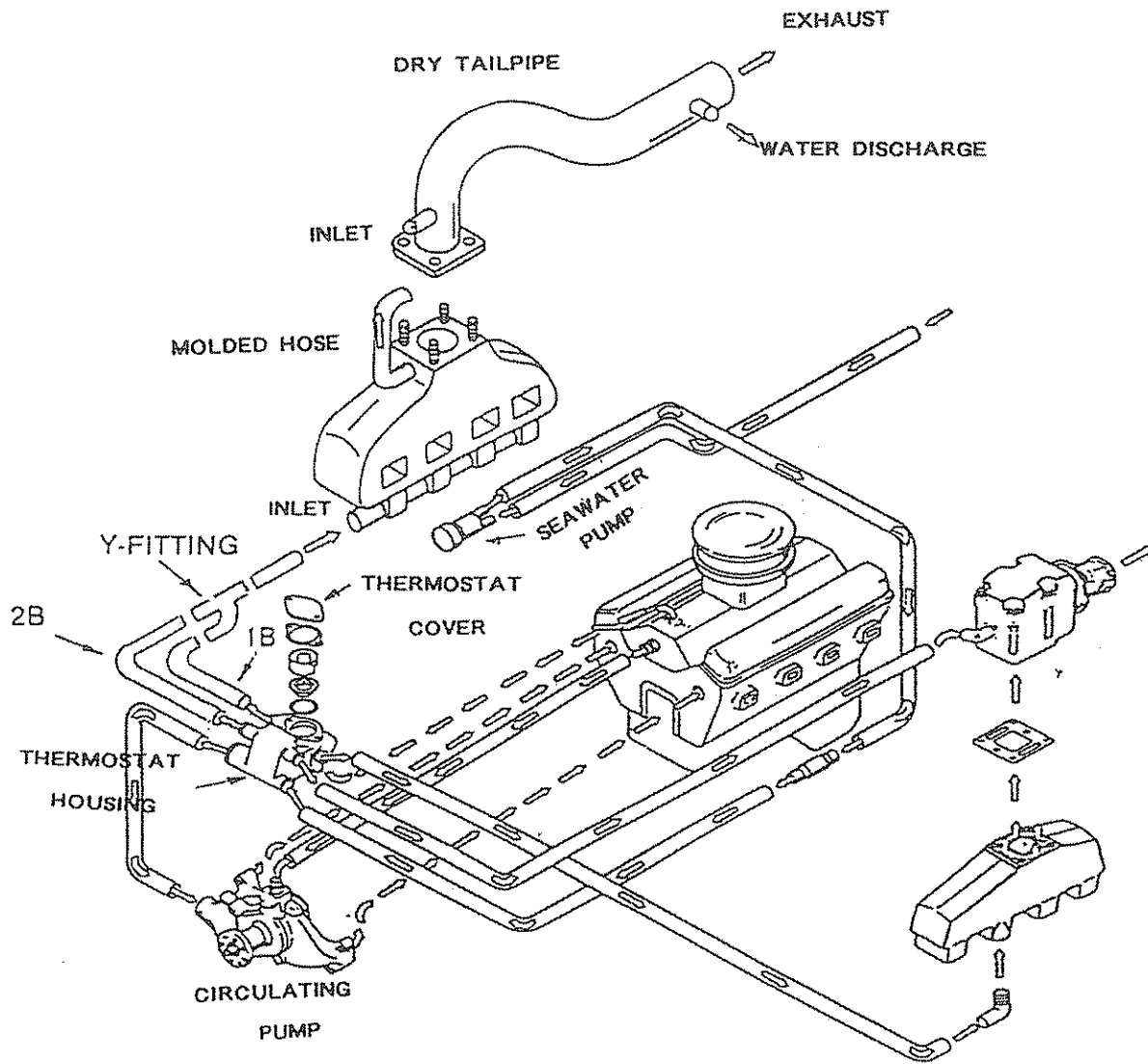
For dry tailpipes – those with a water outlet fitting – plumb the water outlet to a transom-mounted discharge fitting. Through-transom discharge fittings are available from GIL Marine.

5. Plumb the rubber hose from the “Y” fitting to the bottom front of each manifold. Plumb the water outlet from the top of the manifold to the tailpipe using the “U” shaped molded 1” hoses.
6. Install the controls to GIL {Port (electrical) STBD (cable)} and bolt the brackets to the exhaust, using the two (2) inside manifold flange bolts. NOTE: Brackets are provided with Mercury Bravo Offshore Systems only; they are optional on all other offshore systems.
7. You will get maximum cooling system efficiency and engine longevity if the water pressure in the block is between 5 PSI and 20 PSI.

WATER CIRCULATING SYSTEM “A”



WATER CIRCULATING SYSTEM "B"





OFFSHORE EXHAUST SYSTEM FOR MERCURISER EFI ENGINES

NOTICE TO INSTALLER:

1. Before installing your new GIL exhaust system, we strongly urge that the water circulating system be inspected and any worn parts replaced. This will help prevent premature failures due to insufficient water flow.
2. This exhaust system is designed to utilize the factory water circulation system plumbing shown in the attached diagram. Standard factory MerCruiser circulating systems (except for Mercury Hi-Performance engines) do not circulate water through the manifold until the thermostat opens. Use of such systems on GIL cast aluminum manifolds may result in overheating and casting failure. GIL manifolds must have water circulation at all times.
3. After the first ten (10) hours of operation, re-torque the four (4) 3/8 – 16 tailpipe flange nuts and the eight (8) manifold bolts to 30 foot lbs.

INSTALLATION:

1. Remove the original exhaust manifolds and pipes. Clean all gasket surfaces thoroughly. Tie the EFI control box out of the way until the new exhaust is installed.
2. Install manifolds and offshore tailpipes with hardware supplied. The electrical mounting bracket mounts to the inside two manifold studs on the starboard side of the engine. The EFI control box mounts to this bracket with the three (3) 1/4 -20x3/4 hex cap screws supplied.

An exclusive feature of this exhaust system is the GIL exhaust TURBULATOR. The exhaust TURBULATOR prevents condensation from returning to the engine. The TURBULATOR is a conical-shaped device that is installed between the two flange gaskets provided in each tailpipe kit. The cone should point upward and extend into the tailpipe flange.

3. Plumb the rubber hose from the thermostat cover to the bottom of each manifold using original molded hoses. Plumb the water outlet from the top of the manifold to the tailpipe inlet using the molded 1" hose included.
4. Install the exhaust hose to offshore tailpipe and secure with two (2) hose clamps. Install 4" exhaust tips and secure to exhaust hose with two (2) hose clamps. Tips are not included with this system.

OFFSHORE ASSEMBLY DIAGRAM

