

FAE Installation Instructions

PLEASE inspect your FAE and read the instructions before installation (*before driving to the lake house*). Let us know if you think you are missing anything or don't understand something. Most instructions can be downloaded from our website at: www.FreshAirExhaust.com

We are available by cell phone to answer your installation questions. 512.647.7321 – Central Time

Tools and Supplies Needed

- Silicone sealant – any brand. Specifically formulated marine sealant is available at marine supply stores.
- 5/16" socket wrench or nut driver
- Phillips Screwdriver (if removing the swim platform)
- Typical wrench set
- Hacksaw, Sawzall or other metal cutting tool (to cut Square Tube and All-Thread bolt)
- Ruler
- Drill Motor
- 5/16" and 3/8" drill bit or Step Bit as shown here.

When drilling into stainless, the trick is to have the drill motor spin slowly but use firm downward pressure. A step bit works well; it is fat so you can press firmly without breaking the bit.



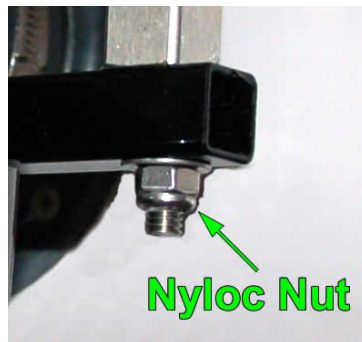
Unpacking the FAE

Avoid scratching the finish; leave the plastic wrapping on the FAE during installation. The FAE needs to be rotated from the shipping position; note the **Rotate Labels** on the elbows. First loosen the hose clamps that **do not** have tape around them. Do not loosen the hose clamps that have tape around them. As you rotate the two 90s, adjust the overall width of the FAE to fit the width of the boat's exhaust outlets. If the boat has a trim tab lay a cloth or towel over the trim tab to prevent it from scratching the FAE. You may also wish to place a blanket on the ground. An upside-down 5-gallon plastic bucket is about the correct height to place under the FAE to help hold it in position.

For all bolts, use oil (or suntan lotion) on the threads. You should use standard nuts to position everything; then complete the installation with the Nyloc Nuts. Once you install a Nyloc Nut it is very difficult to remove. You can either remove the standard nut and replace it with a Nyloc Nut or just screw the Nyloc Nut over the standard nut.



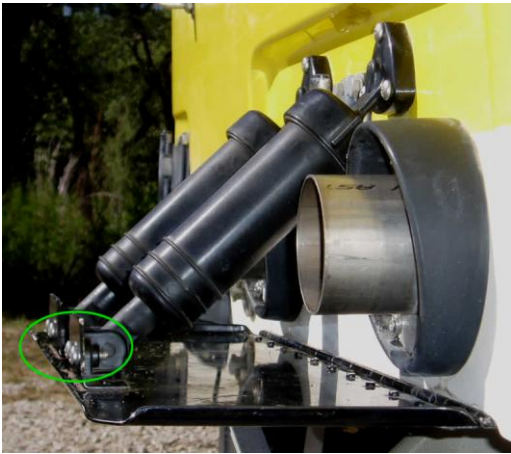
Standard Nut



During installation you will need to **cut the long All-Thread bolt**. Before cutting place a regular nut on the bolt; on the side of the bolt you want to keep. That way when you remove the nut, it will help clean up the threads you just cut.

Optional

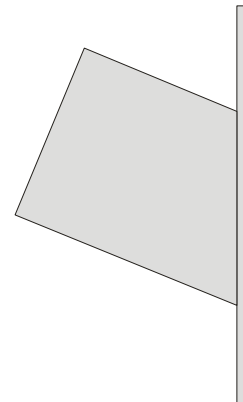
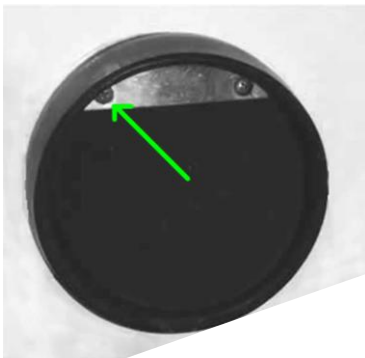
You may be able to drop the trim tab to obtain more working room. If you do this, make sure your Trim Tab is in the full up position first; then remove the screws attaching the bottom of the actuators to the trim tab (green circle below left).



If you remove these screws, when you re-attach the actuators to the trim tab, you may need someone to raise and lower the trim tabs to get the screws holes to line up. Be careful not to cross-thread the screws as the actuator bracket is plastic. If the plastic screw holes should strip, attach a nyloc to the screw (you may need a longer screw but these are a standard size and can be purchased at any hardware store).

Most boat's exhaust outlets – (picture below)

Remove the 2 screws and "half moon" plate holding the rubber flapper (*place these in a plastic bag and save*). Next remove the 2 screws at the bottom of the exhaust outlet (that were previously under the rubber flapper).



Rubber Gasket

Place the FAE Rubber Gasket between the FAE Flange and the existing exhaust outlet. Using the 4 screws just removed, mount the FAE Flange into the existing exhaust outlet (center picture above) - (except Master Craft – 2 screws are too short – longer screws are in the FAE parts bag). Use silicone sealant on the threads of these screws (use plenty; excess is easily removed with a dry paper towel). If your FAE Flange is angled, position it so the angle is directed upwards. The FAE rubber gasket does not need sealant.

Master Craft

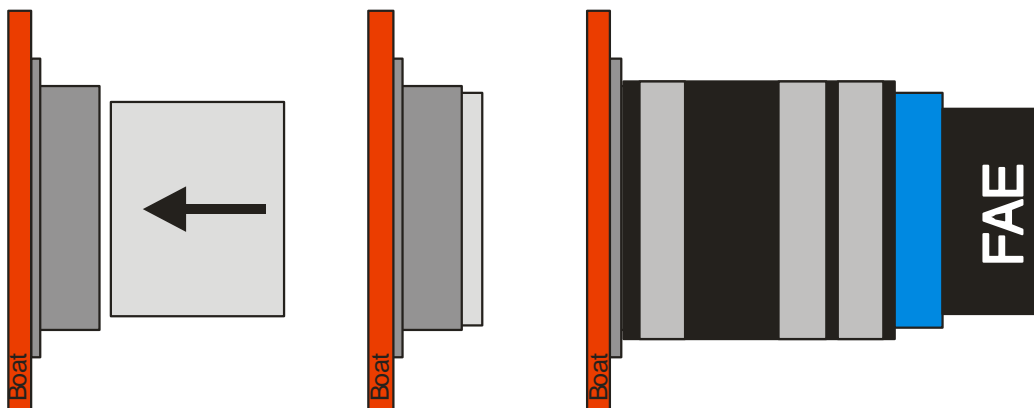
Master Craft uses several different exhaust outlets. Most use the standard exhaust outlet shown above (follow those instructions). For the Flat Master Craft exhaust outlet (shown below on left) remove the 2 screws and “half moon” plate holding the rubber flapper (*place these in a plastic bag and save*). Then remove the 3 remaining screws (that were under the flapper). Squeeze silicone sealant into the 5 screw holes. Use plenty of silicone sealant; the excess is easily removed with a dry paper towel. Place the FAE Rubber Gasket between the FAE Flange and the existing exhaust outlet. Also apply silicone to the 3 screws as you attach the FAE Flange. Do not put silicone on the FAE Rubber Gasket.



For the Master Craft “Tube” exhaust outlet (shown above center) position the FAE Adaptor as shown and install the rubber hose and hose clamps as shown (8 hose clamps per exhaust outlet). Position the lettering on the hose and the screw heads of the clamps towards the midline (to hide them).

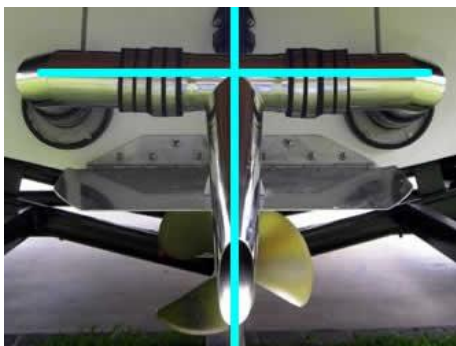
Moomba and Supra

Remove the hose clamp and flapper off the boat’s exhaust outlet. Insert the FAE metal tube into the boat’s exhaust outlet as shown below, narrower end first. Insert the metal tube almost completely; it should fit snugly. Attach the FAE rubber hose to the boat exhaust outlet – one clamp on the boat and 2 clamps on the FAE. Do not put 2 clamps on the boat’s exhaust outlet; there is not enough room and it will weaken the holding strength. For best alignment of the FAE you may angle the rubber hose on the FAE; but not on the Boat’s Exhaust Outlet. Your FAE was shipped with the rubber hose, on the ends of the elbows, in position. There is tape on the 2 hose clamps. If you loosen these clamps do not disturb the position of the inner rubber hose (shown blue in the picture below). You may move the hose slightly to better align the ends flush.



All Boats

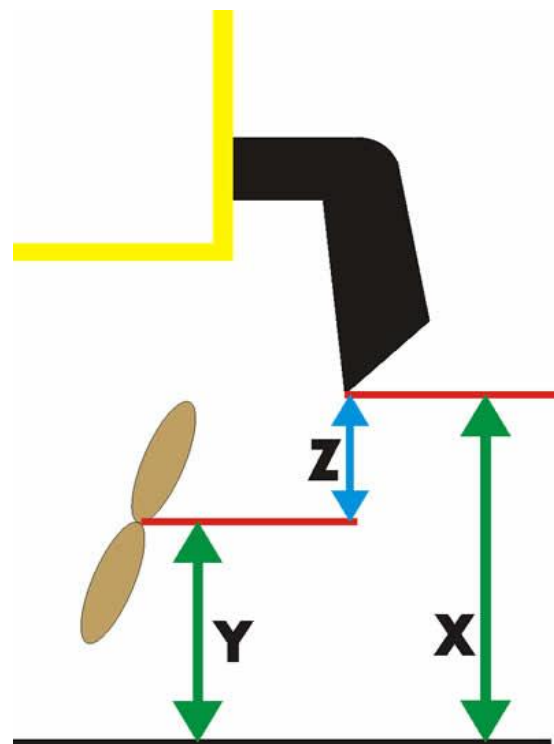
Push the FAE rubber hoses firmly into place (if necessary use Rubbing Alcohol as a lubricant). Looking from the rear, position the downpipe centered (left-right) and vertical (blue lines). Confirm that the longest edge of the FAE Downpipe faces towards the front of the boat. Tighten the hose clamps snug but do not tighten firmly yet. If your boat has an adjustable trim tab, verify that the trim tab does not touch the FAE when it is in the full up position (red line) or during up and down travel. This picture shows an installation with an upward angled FAE Flange, thus the elbows angle upward (purple line). The elbows should never angle downward; they should either be level or angled upward. Position the downpipe vertical or angled slightly rearward (looking from the side – green line – this picture shows the maximum angle rearward).

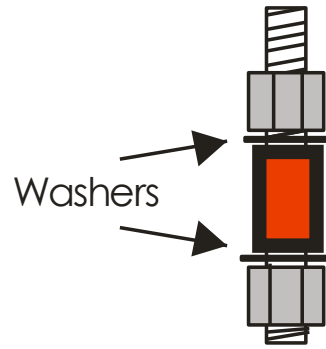


Hose Clamps

You **MUST** use a 5/16" socket wrench or nut driver to tighten the hose clamps; a screwdriver is not adequate. Check the tightness on one of the hose clamps marked with tape to feel how tight we tighten them. When a hose clamp is properly tightened, the portion of the band that sticks out will deviate to the side (as shown in drawing above). Before tightening the hose clamps position them so the bands are straight and parallel with each other.

Measurement Z is the distance from the tip of the FAE downpipe to the center of the propeller (blue line in drawing below). When making this measurement the boat needs to be approximately level; if on the trailer the trailer jack can be adjusted up or down. Measurement Z is determined by measuring from the bottom tip of the FAE to the ground (X) and then minus the measurement from the center of the propeller to the ground (Y). Measurement Z should be between 1-1/2" and 2-1/2" (contact us if you are unable to achieve this range). This adjustment is held in place by the length of the Long All-Thread Bolt (see following).





Long All-Thread Bolt

The long All-Thread bolt passes through the red rubber hose in the FAE. The all-thread can be positioned vertical (green line) or angled forward (purple line), whichever works best. You may make a slight bend in the all-thread about 1-1/2" from the end. Position the all-thread bolt with the regular nuts, not the nyloc nuts. **You must install washers above and below the red rubber hose.**

The all-thread bolt can be installed with the bolt head (welded nut) either on top or on the bottom.

- If the Bolt Head is on the bottom (the all-thread bolt pointing upwards) the all-thread is easier to cut but you need to remove your swim platform first.
- If the Bolt Head is on the top (the all-thread bolt pointing downwards) the all-thread can be inserted into the FAE-Mounting-Bracket before it is installed so you don't need to remove the swim platform. The all-thread bolt can also be measured and cut in a vise before installing it.
- However you install it or cut it, make sure you have a standard nut on the all-thread bolt before you cut the bolt as the nut will help clean up the threads of the cut bolt when you remove the nut.

Fiberglass Swim Platform

See the additional Fiberglass Swim Platform Instruction sheet.

Teak Wood Swim Platform

See the additional Teak Swim Platform Instruction sheet. When drilling into the wood not to drill through the top of the swim platform. Typically, where you are drilling the wood is 1 1/2" thick. You can mark the drill bit with a piece of tape at 1 inch and then don't drill deeper than that.

All Boats

Once everything is in place and aligned and the trim tab clearance verified, install the Nyloc Nuts. It is now okay to loosen any of the hose clamps to reposition them so they are evenly spaced and parallel. Position the hose clamp screw heads so they are hidden towards the middle/inside of the FAE. Verify that all the hose clamps are tight. Remove the plastic wrap and blue tape. Give your FAE a final inspection; you should be able to firmly push and pull on the downpipe without much movement.

It is recommended that you spend the first couple of hours on the water at wake surf speeds (below 15 mph). This will heat the rubber hoses to help them settle into position. After your first outing, double check that all bolts and hose clamps are tight before you go faster.

Clean and maintain your FAE just as you do the fiberglass on your boat.