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Cougar “Capture Cavitation Plate” Installation Instructions

The Cougar Capture Cavitation Plate is quite frankly the best designed and finest quality cav plate available anywhere. Unlike other brands that fit poorly, vibrate eating away lower unit cases and fall apart, the Cougar Capture Cavitation Plate, when properly installed, literally ‘captures’ the lower unit’s cav plate securely not allowing for vibration or movement of any kind. Also, our design funnels the water exiting a boat’s tunnel to the outboard motor’s water cooling intakes and holds it there where the prop can take a bigger and stronger bite. This results in better and more efficient motor cooling and a vastly enhanced hole shot and running performance, even when the motor is raised.

Every Cougar Capture Cavitation Plate is hand-crafted from the finest fiberglass materials available and is reinforced with carbon fiber for added strength in critical areas. Also, each cav plate comes with the main plate pre-drilled, high quality 18-8 stainless steel fasteners, and a 5 Year Factory Limited Warranty.

Installation of the Cougar Capture Cavitation Plate is relatively easy and under normal circumstances can be completed in 30 minutes to an hour.

TOOLS REQUIRED: You will need the following tools and other items in order to properly install your new cav plate. Unfortunately, there are no shortcuts and installing it in any different manner could reduce its efficiency and/or void its warranty.

- 7/16” wrenches and socket wrenches.
- Pencil, ruler or tape measure, and 3/4” to 2” masking tape.
- Drill with a 1/4” drill bit.
- In most cases, a jig saw with a fine toothed metal cutting blade (18 teeth per inch or more).
- A 4 to 4 1/2” angle grinder with a 36 to 50 grit disc.
- 4-6 large spring clamps with protective tips.
- Tube of “high quality” 100% clear marine silicone, “Boat Life, Life Seal” or “Marpac RTV Silicone” recommended. (DO NOT USE 5200*)
- Several paper towels.
- In rare cases, a Dremel tool with a sanding drum may be required, or coarse grit sand paper.

(*) Some outboard motors may need the cavitation plate removed to change lower unit gear case oil or a water pump. Therefore, the use of 5200 is discouraged.

STEP 1: Record The Serial Number



Every Cougar Capture Cavitation Plate is serial numbered for two reasons. First, it allows us to monitor quality of our materials should a problem come about at a later date. Secondly, and most important, it is a way to track ownership, should one be stolen. Therefore, we encourage you to write down your plate's serial number in a safe place should it be stolen or for warranty purposes.

STEP 2: Read Instructions Before Beginning

Before beginning the installation, it's best to first pre-read through all of the steps in order to better understand the entire process. Then, go on to "STEP 3".

STEP 3: Mask Off The Motor's Lower Unit



The larger plate is the "main" plate and the smaller is the "upper" plate.

To prevent any scratches to the paint on your motor's lower unit when installing the main plate, use masking tape, and tape a 2" to 3" section just below lower unit's metal cav plate, above the prop.

There is typically no reason to remove the prop for installation.

STEP 4: Main Plate Center Cut-out Fit



At this point you need to measure, as best as possible, the thickest section of the lower unit, which is normally about half way back under the L/U cav plate, and compare it to the cut-out center section of the lower, main plate. If the L/U is wider than the cut-out, you will need to widen it using a jig saw and/or grinder. If using a jig saw, use masking tape on the main plate to avoid scratching it. **Be sure to measure carefully so as not to over-cut the center section too much.** Test fit the main plate to be sure it slides on easily and fully so that the point of the L/U is in the front point of the main plate.

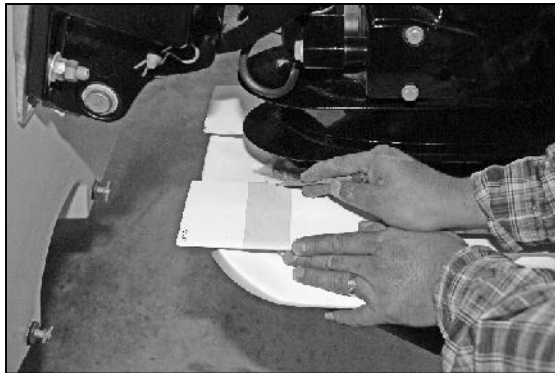
STEP 5: Upper Plate Center Cut-out Fit

With the main plate now fitting properly, it's time to check that the upper plate will slide on "above" the L/U cav plate. Very seldom does the upper plate's center cut-out require being widened, but check it just to be sure and if needed, widen it using a jig saw or grinder as before.

STEP 6: Upper Plate Length

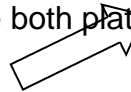
To do this step, it's best to have someone help you from this step onward.

Slide on the main plate until it's snug up against the front point of the L/U. Then, slide on the upper plate until the back of the center cut-out touches the back edge of the L/U cav plate.



Using a pencil, mark the front of the upper plate on both sides directly across from the front point of the lower L/U. This will be the upper plate's overall length.

Remove both plates and set aside the main plate.



Using masking tape, tape off both sides of the upper plate as shown, aft of the pencil marks and draw a slight curve backward to the outer edge of the plate to about one inch



farther back. You may want to make a cardboard pattern of the curved shape so that both sides match.

This will keep the upper plate from riding up on the front curve of the main plate and potentially cracking. Using a jig saw, cut off the excess length of the upper plate. To clean up the curved shape, you can either hand sand it or use a grinder.

STEP 7: Upper Plate Center Cut-out Rear Fit

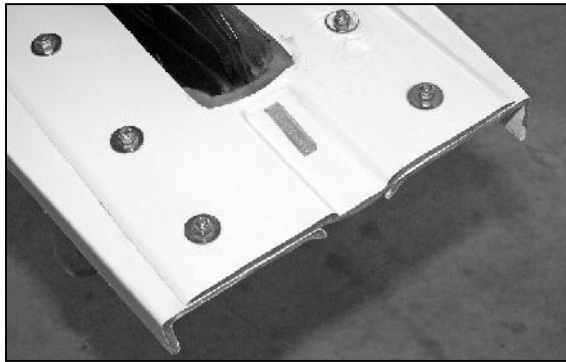


The metal cav plate on most outboard lower units is basically square across the back. However, in some cases it may be rounded or pointed. So, to prevent water from splashing up from this area, the back of the upper plate's center cut-out must be shaped as closely as possible to that of the L/U cav plate back end.

This can be done by drawing a guide line and using a jig saw or a Dremel moto tool.

It doesn't have to be absolutely perfect, just a close fit (within 1/8"). Test fit to be sure.

STEP 8: Rear Edge Modification Of Upper And/Or Main Plates



Have someone slide the main plate into position and you slide the upper plate on until it rests against the back edge of the L/U's metal cav plate. At this point, the upper plate will be extending out past the back of the main plate and will need to be shortened.

Be sure that both plates are centered properly!

The 'rule of thumb' is if the serial number on the upper plate is forward, ahead of the back of the main plate, then all you'll need to do is cut off the back of the upper plate flush with the back of the main plate. To do this, position both plates squarely on the L/U, and using a pencil, mark the underside of the upper plate at the back of the main plate. Also, it's a good idea at this time to mark the outside edges of the upper plate onto the main plate, for positioning purposes later on. Then, mask off the underside of the



upper plate, and cut it. Particularly on larger motors, where the upper plate serial number is even with or slightly overhanging the back of the main plate, the back of the upper plate will need to have a curve to it in order to preserve the serial number. To do this, position the plates squarely on the L/U and mark the top outside edges of the upper plate even with the back of the main plate. Mask off the area behind these marks and draw a consistent curved shape that extends behind the serial number, and cut it off.

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STEP 9: Double Check Alignment

At this point it's a good idea to double check the alignment and fit of both plates with the lower unit. Make sure that...

- A. The main plate fits closely to the L/U and that the front center cut-out section is snug up against the point at the front of the L/U.
- B. The upper plate does not extend past the front of the point of the L/U.
- C. The gap between the upper plate and back of the L/U cav plate is 1/8" or less.
- D. The back of the upper plate is either flush with the back of the main plate, or the outside back corner edges of the upper plate are flush with the back of the main plate and the curved section extends beyond that.
- E. That the alignment pencil marks at the edges of the upper plate on the main plate are correct and the plates are square and straight.

STEP 10: Drilling The Holes In The Upper Plate



Assuming that your alignment marks and back edges of the plates are correct, remove the plates and place them together in their proper positions. Using large spring clamps, clamp the plates together, two on the front and two in the back. What you're doing is using the main plate as a pattern for drilling the upper plate holes so alignment and positioning is critical.



Double check alignment, and using a 1/4" drill bit drill one of the back corner holes, and pin it in place using one of the supplied bolts. Continue drilling the corner holes one at a time, pinning them as you go to make sure the plates don't change position. Once all of the 4 corner holes are drilled, just drill all of the remaining holes.

STEP 11: Preparing For The Final Installation

After drilling all of the holes in the upper plate, clean off any dust or fiberglass debris.

Next, get your wrenches, hardware package and caulking gun with the cartridge of silicone ready.

Remove masking tape from the motor's lower unit.

STEP 12: Installing The Cav Plate



Put a thick (1/4" to 3/8") bead of silicone on the top of the main plate next to the center cut-out and close to the outside of the holes as shown.

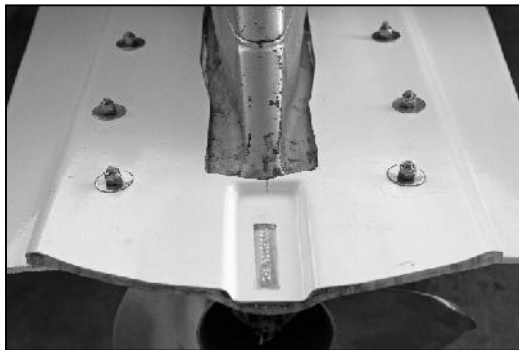


Also, place a bead of silicone on the top of the motor's lower unit metal cav plate out by its edge.



Carefully place the main plate in position under the L/U cav plate and then put on the upper plate, aligning the holes, sandwiching the L/U's cav plate between them.

Insert a bolt with a fender washer from the underside of the main plate upward through the upper plate at both front and rear sets of holes. Install a fender washer and nut and tighten slightly, but not completely.



Re-check that the plates are centered and square on the L/U, then install all of the remaining bolts and tighten all of the nuts and bolts.

STEP 13: Sealing The Cav Plate To The Lower Unit.



Using silicone, you will need to seal the openings at the nose and rear of the cav plate.

It's best to place a bead of sufficient size to seal these areas starting on the underside, then on the top. To smooth out the silicone beads, use a wet finger and wipe off any excess on a paper towel.

BE CAREFUL NOT TO REMOVE TOO MUCH OF THE SILICONE, OR IT WILL LEAK!



For best results, allow the silicone to cure a minimum of 24 hours before using.

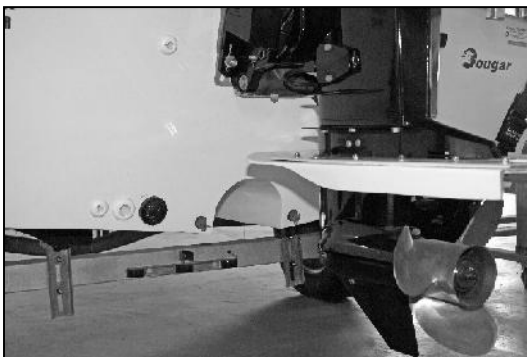
VERY IMPORTANT LAST STEPS!

STEP 14: Checking Prop Clearance.

Install the prop and with the shifter in neutral, slowly turn the prop to see that all of the blades clear the underside of the cav plate by at least 1/4".

In some cases, it may be necessary to grind a small section of the lower lip on the center cut-out of the main plate to allow for clearance. This is best done using a Dremel moto tool with a drum sander.

STEP 15: Motor Height.



For best performance, the cavitation plate should be approximately 3/4" or higher above the "water stream" exiting the boat's tunnel. If your boat is not equipped with a jack plate, that height will normally be about 3/4" to 1" above the tunnel. Boats equipped with a jack plate will require that the cav plate be higher, typically about 2" for every 5" of jack plate setback.

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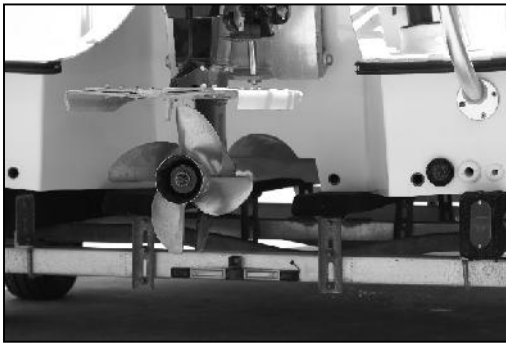
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STEP 15 CONTINUED...

TO AVOID DAMAGE TO YOUR CAV PLATE, LOWER UNIT OR PROP, remember, at no time should the tunnel water stream be allowed to go over the top of the front tip of the cav plate once the boat is on plane!



The ideal position for the cav plate with the motor in its correct position can be determined by using a long straight edge, yard stick or similar straight object and placing it inside the top of the tunnel extending out under the cav plate to determine where the water flow will hit/contact the underside of the cav plate. The best place for the water to contact the cav plate is several inches behind the nose of the cav plate with the motor trimmed level.



You may need to adjust the height of your motor (normally higher than where it was mounted before installing a cav plate) in order for the tunnel water stream to contact the cav plate underside at the proper spot. For motors with jack plates, you want to make sure that with the jack plate fully lowered, that the tunnel water stream contacts the proper area. This may require raising the motor height and/or both the motor and jack plate.

DO NOT ALLOW THE JACK PLATE TO LOWER THE CAV PLATE INTO THE TUNNEL'S WATER STREAM!

STEP 16: Safety Precautions.

NEVER use the cav plate as a boarding ladder.

NEVER stand, sit or kneel on the cav plate.

NEVER operate your boat if the cav plate is damaged, cracked or broken.

NEVER operate your boat at high speeds, above 15 miles per hour, in rough offshore waters and/or high wave conditions.

ALWAYS, before use, check the tightness of all bolts and for damage to the cav plate.

STEP 17:

GO FISH!

Got Questions? Contact

Cougar Marine USA

2400 W. Hwy 77 #P, San Benito, Texas 78586
956-399-3272

E-mail: cougarmarineusa@rgv.rr.com

Cougar Capture Cavitation Plate 5 Year Factory Limited Warranty

SUPERIOR FIBERGLASS & COMPOSITES, dba Cougar Marine USA, herein referred to as "Cougar", warrants, to the original owner and/or purchaser, that every Cougar Capture Cavitation Plate, herein referred to as "unit", we produce to be void of defects in materials and workmanship, under normal use, material tolerances, and when properly maintained and installed according to our instructions. It is our obligation under the stipulations of this warranty, to make good at our factory any unit, which under our own scrutiny shall, to our final satisfaction, be deemed defective.

This warranty is in lieu of any and all other warranties or representations, whether expressed or implied, and of any and all other liabilities in conjunction with the sale or use of said unit.

Cougar does not warrant any unit that has not been registered by the Purchaser within thirty (30) days of purchase, or that has been improperly installed, modified, repaired by others, altered in any manner, misused, involved in any kind of accident, or that is used in any manner that is not in accordance with our written instructions and safety precautions, nor normal wear and tear, nor units transferred from one outboard motor to another that is not the exact same model.

This warranty does not cover incidental damages to other property, nor injuries or death resulting from any of the above stated non-warrantable items.

Purchaser must contact Cougar regarding any suspected warranty claim for instructions, before removing the unit from the outboard motor. Any unit shipped to or brought into Cougar for a suspected warranty claim that has been removed from the outboard motor will result in the claim being denied.

All warranty claims for field repairs must have the written approval of Cougar in advance. This warranty is non-transferable.

For questions about your warranty, or to file a warranty claim, or status of a warranty claim, contact the offices of Cougar Marine USA, 2400 W. Hwy 77 #P, San Benito, Texas 78586 USA 956-399-3272 or by E-mail: cougarmarineusa@rgv.rr.com, Monday through Friday 8:30am to 5:00pm CDST.

Cut On Line

WARRANTY REGISTRATION CARD

Cougar Capture Cavitation Plate

Please Print Or Type Clearly {All information below is required}

Purchaser Name _____ Home Phone [_____] _____
Address _____ Apt _____ Work Phone [_____] _____
City _____ State _____ Cell Phone [_____] _____
Zip Code _____ Country _____ E-mail: _____

Purchased From _____ Date Purchased _____

*** Please attach a copy of your sales receipt when submitting this Warranty Registration.**

Plate Serial Number _____ Plate Color _____

Plate Installed By [] Purchaser [] Seller [] Other

Make, Model & HP Of Outboard Motor _____

Make & Model Of Boat _____

What body of water do you normally use your boat in? _____

Average Depth? _____ Average Wave Heights? _____ Times Per Year? _____

*Thank You For Purchasing A
Cougar Capture Cavitation Plate!*

MAIL TO: Cougar Marine USA
2400 W. Hwy 77 #P, San Benito, TX 78586