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How Do You Test an Outboard Water Pump? On many outboards, you can simply put on the muffis and start the engine. You should see a steady stream of water coming out of the holes on the top of the engine. However, some brands do pump out a stream, but it might not look steady.

The water comes into the outboard's engine through the lower unit, which is below water level as the boat is moving. Without a pump of some kind, water couldn't flow up to the engine. The water pump is the heart of the cooling system.

Why did my outboard stop peeing?

Re: Outboard suddenly not peeing The impeller is probably broken. Don't run it anymore with no water flowing!!!! Take the lower unit off, disassemble the water pump, and you should know right away if something is amiss. I'm sure if you go to a merc dealer you can buy a water pump kit to replace the broken parts.

What happens when boat impeller fails?

If your impeller fails, the pump can't pump cool water to the engine causing your engine to overheat. If you catch that your impeller is failing early on, you might avoid major problems. However, if you're not fortunate enough to catch a bad impeller, the results can be catastrophic to your engine.

Generally speaking a 5 year interval likely works well for most folks. TomP. Mercury recommends changing the impeller every 300 hours...its in the owners manual. It's an easy enough job to do yourself if you have some mechanical skills.

When water flow through the outboard motor is disrupted or stopped entirely, overheating occurs. Here are top four things boat owners can do when they notice that water is not circulating through the outboard motor: The water pump impeller is the cause of most water circulation and overheating problems.

What to do if your outboard motor is not working?

If a foreign object is present, remove it and restart the engine after it has returned to normal temperature. In most outboard motors, the water output is a small tube-like structure that can easily get blocked. If the output becomes blocked, it will disrupt water flow throughout the entire engine.

When to replace the thermostat on an outboard motor?

If it becomes obvious that your thermostat has failed and the engine is not warming enough to maintain a satisfactory starting temperature, replace the thermostat immediately as running the outboard without a functioning thermostat will ruin the powerhead.

Speak with other boaters and you will likely discover that many owners have no idea what they are talking about when it comes to the water pump, let alone how to recognize when they have a defective outboard water pump. However, this critical component must be repaired on a regular basis in order to ensure the longevity of your outboard. An outboard water pump that is not functioning properly can result in lower water pressure than normal. In some cases, the outboard will cease pumping water out of the tell-tale, overheat, and reduce the available RPM, causing substantial damage if the problem is not addressed immediately.

In many circumstances, all that is required is a replacement of the impeller on the water pump!

Outboard water pumps are not difficult to use. It is conveniently situated directly above the bottom gear case assembly, making it simple to maintain and repair. The impeller of the pump is made of rubber and is keyed to the driveshaft, which is housed within the pump housing. Pump impeller rotation is caused by the water entering the lower gear case through the inlets located on one side of the lower unit and being turned by the driveshaft. The water is drawn into the housing by this pump, which is connected to the intakes.

Whenever the engine begins to crank up, these blades begin to move away from the lining.

In order to ensure that it circulates through the engine's cooling tubes, it goes up via the power head of the engine.

The most apparent method to identify whether your outboard water pump is malfunctioning is to keep an eye out for signs of overheating in the engine. Although there are a variety of possible causes for this problem, it's critical to check for a faulty outboard water pump as soon as possible.

On many outboards, you may start the engine by merely putting on the mufflers and turning the key. An even stream of water should be streaming out of the openings in the engine's hood as it cools. There are a few brands that actually produce a stream, albeit it may not appear to be consistent. While this may appear to be worrying, it is totally usual for those models in that situation. Simply said, it is dependent on the sort of outboard motor you have. It is also vital to keep this in mind while wearing the mufflers.

1. Others will.
2. Then there's the situation when the engine is submerged in water and is subjected to the back pressure of the water, and the bottom unit is completely submerged in water.
3. Depending on the sort of instruments you have on your boat, you can also check your gauges on the horizon.
4. At idle, the majority of impellers will create between 1-3 PSI of pressure.
5. However, this varies depending on the age, RPM, and type of the outboard and impeller.

In the event that you are unclear of how the outboard water pump is performing, it is not a bad idea to replace the impeller. It should be changed on a regular basis regardless, because it is the most common cause of water pump failure.

Outboard motors do not necessitate the use of a sophisticated system to force water through the cooling tubes of the engine. The straightforward design guarantees that the temperature is maintained at all times and that the engine does not overheat. Water that has ceased flowing regularly should be addressed as soon as possible to avoid long-term effects on the environment. Here are four measures you should do right away.

The impeller of the water pump is the most common source of circulation problems and overheated engines. This tiny, circular disc is equipped with rotating blades that transport water through the device. The failure of this component causes the engine to overheat because it prevents the flow of water to the engine from being interrupted. As a result of the low cost and ease of installation of this item, it is recommended to maintain a spare on hand. It should be changed on a regular basis as part of your outboard boat maintenance routine.

Typically, a damaged water pump impeller is to blame for most circulation problems and overheated engines. Using rotating blades, this tiny, circular disc moves water throughout the device. The failure of this component causes the engine to overheat because it prevents water from being supplied to it. Keeping a spare of this item on hand is a good idea because it is affordable and simple to install. Even as part of your routine outboard boat maintenance, it should be replaced on a regular basis.

A damaged water pump impeller is the most common cause of circulation problems and overheated engines. Using spinning blades, this tiny, circular disc moves water through the device. If it fails, it prevents the engine from receiving water, resulting in overheating. Because this component is affordable and simple to install, it's a good idea to have a backup on hand. In reality, it should be replaced on a regular basis as part of your outboard boat maintenance routine.

While this isn't a typical problem, it is something to keep an eye out for. Naturally, if the engine is not getting hot enough to sustain temperature, you should replace the outboard thermostat as soon as you notice the problem. If you don't, you run the risk of completely destroying the power head.

Water pump failure is frequently the consequence of a faulty impeller, which may be easily repaired. What is the impeller's function? The impellers circulate cold water through the engine, allowing it to cool down. The impeller is made up of a series of rubber vanes that are molded around a central hub to create rotation. There are a variety of reasons why these flexible vane tips wear out, none of which can be avoided. Aside from that, if the outboard engine is left unused for an extended period of time, the impeller might become brittle and rigid, leaving it useless.

Water is required for the lubrication of the impeller.

Detecting problems with the impeller as soon as possible is your best bet. If this is not done, the engine might suffer catastrophic damage as a result of overheating. Here are a few warning signals to look out for:

If the temperature of the engine begins to rise, you should be concerned. It's possible that your problem is caused by a faulty impeller. Additionally, you should inspect the cooling water outlet, which is situated on the bottom rear of your motor's top cowling at the bottom of the motor's top cowling. If you've had the boat in storage for a while, it's possible that bugs have made themselves at home in the storage space.

When the flow of water is limited, it is possible that a blockage will occur. In order to corroborate your suspicions, insert a small wire into the outlet. If you have previously taken the boat out without experiencing any issues, it is possible that the pump housing has been broken. Look for a crack or a hole in the water pump. Aside from that, if the pressure has just fallen, you can discover that a broken or worn impeller is to blame for the problem.

If you haven't replaced out the impeller in a while, you might want to do it right away to avoid any problems. As you make your winter preparations, make sure to check the water pump. You should consult the manufacturer's instructions to determine how frequently your impeller should be replaced. Some recommend that you do it once a year, while others recommend that you do it every three years. Whatever the time range, don't skip out on this critical preventative maintenance step!

Really, it all relies on how you operate it and what the manufacturer recommends. The water pump itself should not need to be replaced, but the impeller should be the first thing you check. You will need to change the impeller more frequently than other boats, if you are a thin runner who pumps a lot of sand into the water. The vast majority of manufacturers and experts advise that you should not use the present impeller for more than three years before replacing it with a new one. If this is not done, the bolts on the bottom unit may come loose, resulting in increased wear on the impeller.

Most water pump repair kits, which include the impeller, are available for less than \$100, and they are quite affordable. Installing this yourself will save you a significant amount of money in the long run. As an alternative, a shop may charge you for an hour or two, which may result in an hourly cost ranging from \$100 to \$350, depending on where you take your vehicle. Listed here are the measures to take if you decide to undertake your own outboard water pump service.

Draining the oil from the gearbox should be the first step. Remove the drain stopper by unscrewing it with a big screwdriver. Please make sure you have a pan below to capture any excess oil. Remove the higher oil-level plug as well, in order to allow air to enter the transmission.

Take out all of the nuts that are keeping the lower section together. The majority of outboards have between four and seven nuts or bolts.

If your socket does not fit, a ring wrench should be used instead. If the bottom unit is not in use, it should be removed. If not, you may need to give it a couple knocks with a gentle mallet to get it to move. Just be careful not to strike the cavitation plates on the flanges or they may shatter.

Once the bottom has been thoroughly cleaned, it is time to start the pump. Remove the seal that is located on top of the pump housing by sliding it off.

To remove the bolts holding the pump housing in place, use a ring wrench to turn them counterclockwise. Alternatively, if the pump hasn't been serviced recently, you may require the use of an impact wrench instead. Do not remove the bolts with an open-ended wrench under any circumstances. This is due to the fact that if you apply too much power on the bolt head, it is far more likely that the bolt head will shatter off, resulting in a completely different problem to deal with! Distinguish the two dwellings.

Make certain that the plate is removed.

All of the vanes on the impeller should be in good condition and parallel to one another. If they need to be replaced, now is the time to do it.

Take the time to thoroughly clean all of the mating surfaces. This procedure assures that there will be no leaks. If there are big chunks of sealant or gasket that need to be removed, a sharp razor blade can be used to do this. Fine emery paper should be sufficient for cleaning up tiny impurities. When you're finished, wipe it off with a clean towel to remove any remaining dust. Everything should be sparkling and brand new. After that, you may clean the inside of the pump housing. Gongs and score markers should be avoided at all costs.

Before reassembling everything, it is necessary to do a lower unit pressure test to see whether any of the seals are leaking.

The impeller, seals, O-rings, and gaskets are all included in a water pump repair kit, so you won't have to buy them separately. After everything has been cleaned, reassemble the system using the new parts. Apply a little amount of the gasket sealing compound and drop your gasket into position. Make certain that each and every hole is properly aligned. In addition, you'll want to install a new key. This is located in the flat section of the shaft. If you are installing a new impeller, be sure that the key in the hub corresponds to the key that was previously used.

This also serves to lubricate the pump for the first few seconds after the water enters the system.

As you lower the housing, ease it over the vanes while rotating the shaft in a clockwise direction to secure it. Because of this action, the blades are able to bend while the body of the pump is entirely supported by the base plate gasket. Replacing all of the bolts and tightening them until they are completely snug is critical. Pushing the new seal down until it is flush with the pump housing should be sufficient. In addition, the package should contain a setting tool, which you will use to press down on the top of the seal to fix it in place.

Not only will this spread everything out, but it will also ensure that there isn't an excessive amount of compression. A tiny amount of engine spline coupling grease should be applied to the top of the drive shaft. Grease the gear-shift coupler with a little amount of petroleum jelly.

Lower unit should be reinstalled once screw plugs have been replaced. Make sure you don't overtighten any of the nut and bolt combinations. Fill the gearbox with the correct type of oil. Once the job is completed, you should test the parts, just like you would with any other servicing. Run your outboard motor while keeping a close eye on the stream of water. Everything should be up and running at this point. Here are a handful of films that demonstrate some of these techniques!

If you are experiencing symptoms of a failing outboard water pump, read this article to learn how to diagnose the problem. We want to make sure that everything with your outboard is functioning well, which is why we have a plethora of tips and techniques on our YouTube channel. Also available are blog entries that address a variety of needs, ranging from general upkeep to major repair work. With our assistance, you can make the most of your sailing experience.

Please keep in mind that this is not a comprehensive guide on replacing a marine water pump. Always refer to your boat's instruction manual or the manufacturer's website for model-specific information. The motor water pump is a critical component of any outboard engine, yet the majority of people can't recall the last time they had their water pump repaired, let alone completely replaced. That being the case, it's probably time to replace the device in question. The use of marine engine cooling pumps and water pump impellers can assist to extend the life of the engine in your outboard boat.

How to detect whether a water pump is faulty and how to replace it when the time comes are topics we'll be discussing today.

The impeller of the engine's water pump is often the most prevalent source of water circulation and overheating problems. This tiny, round disc is

equipped with spinning blades that assist in the movement of water throughout the outboard motor's circuit. When it fails, the flow of water is interrupted, resulting in an overheated engine as a result. Causes:

1. The outboard motor is overheating
 2. It has to be replaced. The impeller is on borrowed time
 3. He is wasting his life. It appears that the stream of water coming from the cooling water outflow has been lowered
1. The Outboard Engine Is Overheating: When the water temperature around your outboard motor begins to rise, it is a reason for concern. In addition, if the motor is unable to create a consistent stream of water once it has achieved the proper working temperature, one of two possible explanations is most likely the impeller, which is most likely significantly worn or broken in some way. While it is unusual, wasps can also be a problem since they like to burrow in the cooling water exit during the winter. The Impeller Is Living on Borrowed Time: The Impeller is living on borrowed time. Each spring, as you prepare your boat engine's water pump, make sure to thoroughly examine the impeller. The impeller of your marine engine's water pump has a service life of around 300 operational hours or three years, whichever comes first, according to the manufacturer. The impeller should be replaced if it has been more than a certain number of years or operational hours. It appears like the flow of water from the cooling water outlet has been reduced: In the event that you're going on your first expedition of the season and you notice a reduced stream of water flowing from the cooling water outlet, it's probable that it's wasps once again. To rule this out, gently introduce a tiny wire into the outlet and poke about with it to see what you can find. In the event that this isn't your first expedition of the season and you're observing a diminished stream of water, you most likely have a broken pump housing or impeller.

Outboard motors are more dependable than they have ever been. Parts and components will, however, need to be replaced on a regular basis, just as they would with any other motor. Every year or every 100 running hours, whichever comes first, it is advised that you examine the impeller of your marine water pump. A detailed maintenance plan for your outboard water pump may be found in the operator's handbook for the particular model you have. It is easier to detect problems with your raw water pump if you inspect it on a regular basis and check it thoroughly.

1. Put the Motor in Reverse: First, put your motor in reverse gear
2. Then, put your motor in neutral. Remove the bolts from the nut. Next, you'll want to remove the mounting nuts that hold the lower unit to the middle, as well as any bolts under the trim tab, and then you'll be able to disconnect the shift rod. To ensure that you install the bolts accurately, it's a good idea to indicate the location of the bolts before removing them. Then, remove the shift rod from the vehicle. The fact that not all shift rods disengage in the same manner should not be overlooked. Some disconnect below the swivel bracket, while others disconnect by the powerhead, and yet others disengage above the gearbox. Refer to your product's instruction booklet for particular product instructions. Remove the Lower Unit and Bolts from the vehicle: Once the shift rod has been removed, you'll need to remove the bottom unit as well as the nuts that hold the water pump housing in place. Before removing the bolts, make a note of their location on the drywall. Remove the Water Pump from the system. Arrangements for housing and the impeller: You should now be able to simply remove the engine water pump housing and impeller from the gearcase with your hands. Additionally, you may remove the wear plate and gaskets from the gearcase at this time as well. The following steps are required to install the new marine water pump plate and gaskets: Read the installation instructions for your new water pump thoroughly before proceeding. Then, on the gearcase, put the marine engine water pump wear plate and gaskets that came with it. Make certain that you are putting the right sealant on the gaskets in order to limit the likelihood of leaks. Lubricate: Once the impeller cup, keyway, and driveshaft are in place, you may lubricate them as needed. Installing the Impeller is as follows: Install the impeller so that it is aligned with the impeller key after that. Install the Marine Water Pump Housing: The next step is to install the water pump housing, which is typically done by pushing the impeller into the housing liner with a little clockwise twist
3. Install the Marine Water Pump Housing As you set the housing on top of the impeller, turn the driveshaft to ensure that it is secure. For most normal rotation models, you'll want to spin the driveshaft in the opposite direction of the rotation. Then, in a crisscross pattern, tighten the housing nuts to ensure a tight gasket seal is achieved. In the water pump housing, insert the new water tube seal you just made. Then, when installing the bottom unit, make sure the driveshaft, water tube, and shift rod are all aligned. Take care not to overtighten the screws that hold the housing in place. Oil and reinstall the bolts that connect the lower unit to the midsection: At this point, you'll want to lubricate and reinstall the bolts that connect the lower unit to the midsection. Please keep in mind that you may be required to attach the shift rod before you can begin to bolt up the bottom unit. Start the engine: Finally, turn on the motor and flush it to confirm that the stream of water remains steady throughout the process. If that's the case, you're all set and ready to go

Hey! This website is financed by its readers, and we receive compensation if you make a purchase from a store after clicking on a link on our website. Boat engine operation differs from vehicle engine operation in that it requires more precision. A boat engine cools itself with saltwater, whereas a vehicle engine cools itself with coolant and the air flowing over the radiator. It may seem like a tiny distinction, but it implies that there are a few more steps involved in operating a boat motor.

If the water supply is interrupted, the engine may overheat and may suffer catastrophic damage.

If you perform your own labor, you may also want to learn how to inspect the water pump on an outboard motor if you own one of these machines.

Almost all marine engines utilize some type of raw or saltwater cooling to keep them running smoothly. A water pump is used to do this, which draws water from beneath the surface of the water. Afterwards, it cycles through the engine or through a heat exchanger before being pushed out to sea. When traveling by boat, raw water is readily available, making this a practical system. However, there are certain drawbacks to consider. For starters, that implies that you're always taking water from the reservoir through the engine.

It also implies that if the water is not clean, you run the danger of blocking the pump.

A water pump is a rather straightforward piece of equipment. They are almost usually powered by the engine, which means that as long as the engine is running, the pump will be running as well. When it comes to pumps, the impeller is the component that performs the actual work of pushing and pulling water through the system. It resembles a rubber paddlewheel in appearance. The impeller is not a completely unbreakable component. The impeller will become distorted and brittle as a result of prolonged inactivity.

Impurities in the water can also cause harm to the impellers (think sand and mud).

A faulty impeller may still be able to pump cold water, but the flow rate will be significantly decreased.

Raw water is the only coolant used by outboard engines; there is no additional coolant or heat exchanger in the engine. During motor operation, raw water is pushed up from the bottom unit and through the cylinder block in order to maintain a constant motor temperature. It is positioned on the upper portion of the bottom unit, on top of the water pump itself. The only way to get to it is to take the boat out of the water and carefully remove the bottom of the drive leg from the boat. It appears to be more complicated than it actually is, and changing a water pump takes approximately an hour.

- An intermittent trickle of water is released through a tiny hole in the side of the engine.
- The presence of less water than typical indicates the emergence of a possible issue.
- The fact that difficulties with outboards are not usually caused by broken impeller blades or other problems with the raw water pump should not be overlooked.
- In addition, the little cooling water outflow has the potential to become blocked.

Garden hose connections are available on many contemporary outboard motors as an option. Regularly flushing the engine with this approach is a good idea since the water pressure from the hose may aid in clearing filth from the cooling passages and other components of the engine.

The majority of inboard engines feature a system that is a little more sophisticated. There are two cooling circuits, one with coolant and one with raw water, which are essentially the same. Raw water is poured into the boat from the outside and passed via a heat exchanger. Essentially, this heat exchanger removes heat from the hot engine coolant and transfers it to the cold saltwater. The hot raw water is then utilized to cool the exhaust gas as it is released overboard, lowering the temperature of the gas.

1. The amount of water emitted with the exhaust serves the same purpose as the tell-tale indicator light on the dashboard.
2. As soon as there is no water in the exhaust, it indicates that a problem has already occurred.
3. The water pump is located on the auxiliary side of the engine and is often powered by a belt, although it can also be operated directly.
4. Most of the time, you will simply need to remove a few screws from an access plate in order to remove the old rubber impeller.

Looking for an outboard motor water pump test procedure? Look no further. Here is a summary of the most common indications that the pump may require care. Tell-tale flow rate is low (overboard discharge) Readings from a water temperature or pressure gauge When the water heater is functioning, water temperature warning lights or buzzers are activated. When running, there is a partial or complete loss of power.

Looking for an outboard water pump test procedure? Look no further. A list of the most common indications that the pump may require maintenance is provided below. flow from tell-tale valve is low (overboard discharge) Gauge measurements of the water's temperature or pressure When the water heater is functioning, the temperature warning lights or buzzers go out. When running, you may experience a partial or complete loss of power.

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As part of your investigation, you'll want to pay close attention to your motor. Consider the question of whether a water pump repair kit is available. Will replacing the impeller enough, or would it be better to repair the entire housing as well? If you are unfamiliar with the motor, it may be best to replace the complete water pump. Metal plates are used throughout the home and eventually wear out. Scratches on them will cause the impeller to lose effectiveness because they will prevent it from sitting absolutely flat with the shaft.

matter of seconds.

The pump will not be able to pump cold water to the engine if the impeller breaks, resulting in the engine overheating. If you notice that your impeller is failing early on, you may be able to avert more serious issues. If, on the other hand, you do not catch a faulty impeller in time, the consequences might be disastrous for your engine.

POST WITH SPECIAL ATTENTION

The 5th of November, 2019 Consider your alternatives carefully before making a large-scale purchase, such as purchasing a marine diesel engine, to ensure that you make the best decision. In addition to keeping your needs and budget in mind, you must be aware of the changes in horsepower, engine size, and propulsion between various engines. Choosing the most appropriate marine diesel engine might be difficult, but at Diesel Pro Power, we make the process as simple as possible. As a leading supplier of high-quality, dependable marine diesel engine components as well as other boat parts, we have built our website to make locating the appropriate parts easier than ever.

More information can be found at

The deadline for submissions is December 30, 2021. Cummins engines have been supplying power to machines all across the world for more than a century. Cummins has a global presence that extends to more than 190 nations and territories, thanks to a reputation for durability and dependability. Additionally, they manufacture engines in a variety of sizes and power outputs for usage in a variety of sectors and application areas. When it comes to acquiring Cummins engine components, knowing your engine number is an additional consideration when placing your purchase.

Your Cummins engine serial number is required in order to complete this task successfully.

The date is October 5, 2021. Your vehicle's Detroit Diesel or Cummins engine's head gasket is a vital component of the engine's performance. However, what exactly is a head gasket? Located between your engine block and cylinder head, this flat sheet of metal is often regarded as your engine's workhorse due to its high level of performance. What exactly is the function of a head gasket? In addition to sealing the engine block and cylinder heads of your engine to ensure that oil and coolant can circulate correctly, the head gasket also seals the combustion chamber of your engine to ensure that combustion occurs properly.

More information can be found at

The 21st of July, 2021 The Cummins 4BT diesel engine is a very popular choice among customers. Not only is it long-lasting, but it is also more compact than some of the other Cummins engines on the market. As a result, you'll see the 4BT engine powering SUVs and Jeeps on a frequent basis. The engine has remarkable performance ratings as well as being large and durable. If it is well-maintained, the engine should be capable of supplying power to your vehicle for hundreds of thousands of kilometers.

Continue reading to discover more about the 4BT Cummins specifications, as well as how following a maintenance regimen may help you get the most out of your engine.

The date is June 22, 2021. A global pioneer in the design and production of engines, filtration systems, and power generating equipment, Cummins Corporation is known for its innovation and leadership in the field of engine technology. A wise option is to invest in and make use of their components. Their most popular lines are 4BT Cummins, Cummins ISX, and N14 Cummins, just to name a few. The location of your buy, on the other hand, is almost as essential. Let's take a look at five reasons why you should always get Cummins components from Diesel Pro Power online.

Diesel Pro Power is a privately held American corporation with its headquarters in Miami, Florida.

More information can be found at

The date is June 18, 2021. Engine components from prominent manufacturers such as Cummins and Detroit Diesel are available from Diesel Pro

Power, an online retailer specializing in diesel parts. We have a large selection of Detroit Diesel components, so you're sure to find precisely what you're looking for at Diesel Pro Power. For this reason, in addition to Detroit Diesel brand engine parts, you'll discover Cummins engine parts and a wide variety of other high-quality brands on our website.

You'll only find Diesel at one site, whether you're looking for boat components or a diesel-powered delivery truck.

2021 (June 18th) Engine parts from prominent manufacturers such as Cummins and Detroit Diesel are available from Diesel Pro Power, an online dealer specializing in diesel components. Diesel Pro Power has a large selection of Detroit Diesel components, so you're sure to find what you're looking for. For this reason, in addition to Detroit Diesel brand engine parts, you'll discover Cummins engine parts and a wide variety of other high-quality brands on our website. In order to get you back on your feet as soon as possible, we provide 24-hour international delivery where it is available.

More information can be found at

I've used the fake-a-lake for years and it's always worked great. That said, I always make sure to set the height so that there is a good amount of pressure on the plunger portion to the hull of the boat. Also, I place the port where the water comes out of the fake-a-lake so that it is directly pointing into the intake scupper grate. Also, I think sometimes if you turn the water on full force before you startup, the water pressure buildup will keep the plunger from sealing well to the bottom of the hull. So I just crack the water open a little, startup, then open the garden hose valve all the way after its running. I had a fairly recent impeller seem to go bad on me at the lake and ended up hot swapping it on the beach. The impeller looked fine when I pulled it out, all blades intact. Put in the new one and backflushed the trans cooler and we were off again. Don't know quite what the problem was, but it seems good now. Maybe the impeller was spinning on the metal hub or something weird. To troubleshoot, this is what I would do. Hook up the fake-a-lake, disconnect the water line to the raw water pump. Make sure water goes through there. Hook the line back up, disconnect from the trans cooler, make sure water comes out there. You should have seen a bit more pressure coming from the output of the raw water pump. Hook the line back up, disconnect the next line to (probably the thermostat) and see if water comes out there. If you have water pressure to this point, then it might be worthwhile to replace the thermostat/gasket if they have any age to them at all. I'm not sure how you can really diagnose the engine driven water pump, but if you've checked all the lines for leaks, the impeller gasket/housing for leaks, and water is getting to the thermostat, that might be the next place to concentrate your efforts.

If you ask around at the marina, you'll find that the vast majority of boat owners have no clue when the water pump on their outboard was last inspected. Some folks are completely unaware that their engines are equipped with pumps. A water pump is an extremely critical component of any outboard motor. A pump that is clogged or not functioning correctly may cause the engine to overheat, which can cause irreparable damage to the engine. The water pump may need to be serviced if you feel that the outboard is overheating while running.

- It's not a difficult task, and the ordinary do-it-yourselfer is likely to have all of the essential equipment.
- If it's a large item, have it hauled away or complete the work while it's on the trailer in the driveway.
- The engine we worked on for this tale was a 1996 Mercury with 115 horsepower.
- While Adam Conte of Portside Marine in Danvers, Massachusetts, was servicing the pump, I snapped these photos.
- Is it possible to get a step-by-step how-to guide?

The first step is to drain the oil from the gearbox. Unscrew the drain plug with a large screwdriver, and the oil will run out. Be sure to place a suitable pan under the engine to catch the oil. Unscrew the upper oil-level plug, too, which allows air into the gearbox and ensures that all of the oil is removed. There are small washers under each screw head that often get stuck in the threads. If they do not come off with the screw, you may have to pick them out with a small screwdriver or other tool. Let the oil drain as you move on to the next step. Loosen and remove the nuts that hold the lower unit in place. Almost every outboard has four nuts holding it. A socket will not fit, so use a ring wrench to give good purchase on the nuts, which almost certainly will be difficult to loosen. Once a crack opens, insert a broad screwdriver and carefully pry it apart, being careful not to damage the castings of the mating surfaces. Lift the unit clear and place it on a suitable bench or a jig designed for holding it. With the unit clear of the top half of the outboard leg, you can get to work on the pump. The first thing to do is slide off the seal, which sits atop the pump housing. Unscrew the bolts that hold the pump housing in place. We needed an impact wrench because this pump had not been serviced for some time, but a ring wrench will work in most cases. Avoid using an open-ended wrench. If you round over the bolt heads, you'll have a bad day, for sure. Separate the housing and slide it up the shaft. You can see in this picture that the bottom plate is coming off with it. This plate must be removed, so if it remains stuck in place you might need to pry it up carefully. All in all, the pump was in pretty good shape. All of the vanes on the impeller were intact. Note the old impeller on the right, compared to the new one and its straight vanes. The vanes develop a set after they've been in the pump for several months. Before reinstalling the pump, clean the mating surfaces to ensure there will be no leaks. A razor blade can be used to scrape off the larger bits of gasket and sealant; some fine emery paper will get rid of the remainder. Wipe with clean rags when you are finished. Everything should be clean and bright. Wipe out the interior of the pump housing, making sure there are no score marks or gouges. If there are, water might leak past the impeller vanes, and the pump won't work as efficiently as it should. If there is any doubt about the condition of the housing, it should be replaced. After cleaning everything, reassembly can start. In addition to the impeller, all of the required parts for routine service — gaskets, O-rings and seals — are included in the water pump kit. Smear on a little gasket cement. Conte, at Portside Marine, swears by Permatex Form-A-Gasket, but any other brand should be fine. Lower the gasket into position, making sure the holes line up. The gasket is asymmetrical, so if

something looks wrong you may have it upside down. Install the new bottom plate. We used a little more gasket sealant before dropping this on. Install the smaller gasket, which seals the joint between the top and bottom sections of the pump housing. This gasket has a neoprene bead built in, so no cement should be used. Install the new key, which sits in the flat on the shaft. Slide down the new impeller, making sure that the keyway in the hub lines up with the previously fitted key (visible beneath the impeller here). A little glycerin or dishwashing liquid makes getting the pump cover on a bit easier and provides lubrication for the second or two before the water gets into the pump and lubricates the vanes. Do not use oil or silicone, which can attack the composition of the impeller and lead to premature failure. Slide the housing down and ease it over the vanes as you twist the shaft clockwise with the other hand. This bends the blades and allows the body of the pump to sit fully down onto the base plate gasket. Reinstall the bolts and tighten them until they are just snug. Slide the new seal down over the shaft until it just rests against the pump housing. Push the setting tool, included in the kit, down on top of the seal, which does the double duty of spreading it out and ensuring that it is not compressed too much. With the seal set, remove the compression tool, then smear a little engine spline coupling grease on the top of the drive shaft. Put a little more grease on the gear shift coupler, which should still be on the gear shift shaft inside the leg. This is a fairly loose push fit, so the coupler may have fallen onto the floor if it is not where it should be. Refill the gearbox with the correct oil. Note that the oil is pumped in from the bottom until it comes out of the upper-level hole. Reinstall both screw plugs with a new washer under each. Portside Marine services a lot of engines, so it has a big tub of oil. The average DIYer is more likely to use the oil that comes in squeezable quart bottles, but the technique is the same. Reinstall the lower unit. It helps to have someone rotate the engine by hand a little to get the splines to mesh. Replace the nuts and washers that hold the two parts together. There are torque settings for these, but Conte tightens them so they are just snug. As long as you don't swing on the wrench, it is difficult to overtighten them. With everything back together, the job is complete. We ran the engine in a barrel to make sure all was well. You can use muffs on the water pickup, but the pressure of the hose tends to force the water into the engine. Running it in a barrel ensures that the suction from the pump is correct. There should be a healthy spout of water coming out of the engine housing.

In many situations, this consists solely of replacing the impeller on the water pump. Working on this project isn't tough, and the average do it yourselfer is likely to have all of the essential equipment. However, do not attempt to do so while the boat is still in the water. If it's a major job, you may either have it hauled away or complete the work while it's sitting on the trailer in the driveway. Rubber water pump impellers are used on many types of inboard and outboard marine motors, including sailboats.

If the rubber blades become brittle over time, they are unable to maintain their seal within the water pump housing, resulting in a reduction in the circulation of cooling water.

In addition to being an impeller pump, it is often tucked away behind the timing belt cover on one side of the engine.

The pump's blades push coolant to flow through the engine and then back to the radiator, where it is cooled by a forced air cooling fan, as well as via the radiator.

A clogged or underperforming pump will cause the engine to overheat, resulting in permanent damage to the internal combustion engine.

The water pump is the primary component responsible for ensuring that this circulation is maintained.

When the water-cooled engine was first introduced, many automotive specialists believed that the water pump would be eliminated.

This attitude holds true even as technology has progressed through time, allowing for more energy-efficient air conditioning systems to be installed in today's automobiles.

Alternative Stabilizer Bar Hyperlinks for the Ford Blend – Boca Raton, Florida Ford's Primary Focus Is Electric Issues Along the Boynton Coastline in Florida Justin came across as incredibly knowledgeable, as well as being quite thorough.

Also check to see if any vapor is escaping from the engine compartment.

The use of the incorrect coolant will also result in deposit building inside the pump, which will delay the proper operation of the engine's air conditioning system. Heat buildup indicates that the water pump is leaking and requires immediate repair to prevent further damage.

- The differential is positioned either in the front or in the rear of your vehicle, depending on the make and model you drive, as well as whether your vehicle is front- or rear-wheel drive. Replacement of Stabilizer Bar Hyperlinks in a Ford Combination – Boca Raton, Florida Ford's Primary Focus Is Electric Issues Along the Boynton Coastline in Florida Justin had a great deal of experience and also had a lot of knowledge
- It is also possible that using the incorrect coolant can result in deposit building inside the pump, which would slow down the optimal process of engine air conditioning. Overheating is an indicator that the water pump is leaking and needs immediate attention. One of the most frequent causes of a motor failing to generate a stable stream of water after attaining its usual working temperature is the impeller, which is one of two possibilities
- The other being the bearing. In the same way, check to see whether any steam is being produced by the engine. Examine the underside of your car for any puddles of environmentally friendly fluids.

Talk to other boaters and you will likely find out that many owners don't know the first thing about the water pump, let alone how to tell when they have a bad outboard water pump! Yet, this vital component must be serviced regularly to maintain the longevity of your outboard.

A bad outboard water pump will produce lower water pressure than normal. The outboard can stop pumping water out the tell-tale, begin to overheat, restrict the available RPM allowed, and cause significant damage if not corrected.

Thankfully, you can service the water pump to ensure it runs smoothly. In many cases, it's just a matter of changing out the water pump impeller!

Outboard water pumps aren't complicated. It is located just above the lower gear case assembly, making it easy to service.

Inside the pump housing, there is a rubber impeller that is keyed to the driveshaft.

As water enters into the lower gear case via the inlets on the side of the lower unit, the driveshaft will turn the pump impeller.

This pump then draws water from the intakes into the housing. Impeller blades, or vanes, touch the liner as the driveshaft rotates.

As the engine starts to rev up, these blades back away from the liner. The pump sends out water from the top of the housing with a brass tube.

This travels up through the engine's power head, ensuring it circulates into the cooling passages of the engine.

The most obvious way to tell if the outboard water pump is failing is to watch for the engine to overheat. However, this problem can be caused by a number of issues, which is why it's vital to test for a bad outboard water pump.

On many outboards, you can simply put on the muffs and start the engine. You should see a steady stream of water coming out of the holes on the top of the engine.

However, some brands do pump out a stream, but it might not look steady. While this can be alarming, it is perfectly normal for those models. It just depends on what type of outboard you have.

It is also important to remember that while on the muffs. Some of those models will not produce enough vacuum to push water out of the tell tale or the holes on the top of the lower unit.

That is because there is less water pressure from the garden hose and the muffs. Than there is when the engine is in the water and has the back pressure of the water where the lower unit is fully submerged in the water. Forcing the impeller to be under the water.

You can also look on your gauge, depending on the type of gauges you have on your boat. A lot of newer models will show you the water pressure being produced right there on your gauge!

Most impellers at idle will produce anywhere from 1-3 PSI at idle. Then up to 20-25 PSI at wide-open-throttle! This does change depending on the age, RPM, and model of outboard and impeller though.

If you are unsure how the outboard water pump is functioning, it doesn't hurt to change the impeller. It should be changed often anyway and is the leading cause of water pump failure.

Outboard motors don't need a complicated system to push water through the engine's cooling passages. The simple design ensures that the temperature is always maintained and the engine doesn't overheat.

If you notice that water has stopped circulating normally, you want to take action immediately before permanent damage occurs.

Here are four steps to take now.

Most circulation issues and overheating engines are caused by a faulty water pump impeller. This small, round disc has spinning blades that move water through the unit.

If it breaks, it stops supplying water to the engine, which results in overheating.

Because this part is inexpensive and easy to install, it's best to keep a spare handy. In fact, it should be changed often as part of your outboard

boat maintenance procedures.

With the boat engine off, inspect for any debris, such as trash or weeds, which could be blocking water intake.

If you see a foreign object present, remove it now. Then, restart the engine to see if the problem is resolved.

With the majority of outboard motors, there is a water output. This small tube can easily become blocked.

When this occurs, the water flow is disrupted, causing trouble to the engine.

Take a thin piece of wire and run it through the output. Wiggle it around to dislodge any debris that might be inside.

Your water flow should appear steady in most outboards. You also want the water coming out to be warm, but not excessively hot.

While this isn't a common issue, it is something else to check. Obviously, if the engine isn't getting warm enough to maintain temperature, you want to replace the outboard thermostat immediately.

If you don't, you face ruining the power head altogether.

In many cases, the water pump failure is actually a result of a bad impeller. What is the impeller?

The impellers pump cold water into the engine, so it cools down.

The impeller is a series of rubber vanes that are molded around a hub. These flexible vane tips wear out for several reasons, none of which can be prevented.

Additionally, if the outboard motor sits unused, the impeller can become brittle and stiff, rendering it unusable.

What's worse is when the impeller is run dry. Water is needed to lubricate the impeller. In these conditions, it can go bad in just a couple of seconds.

Catching trouble with the impeller early is your best bet. Otherwise, there could be catastrophic damage to the engine as it overheats.

Here are a few signs to watch for:

If the motor temperature starts to climb, you should be concerned. Your problem could be due to a bad impeller.

Additionally, you want to examine the cooling water outlet, which is located on the bottom rear of your motor's top cowling. If you have had the boat in storage, it's likely that pests have taken up home in that area.

When the stream of water is reduced, there could be a blockage. Insert a thin wire into the outlet to confirm your suspicion.

If you have had the boat out previously without problems, you might have a damaged pump housing instead. Look for a hole in your water pump.

Plus, if the pressure has simply dropped, you might find that a damaged or worn impeller is the source of trouble.

If you haven't changed out the impeller recently, you might want to replace it now. Inspect the water pump as you make your seasonal preparations.

Check the manufacturer's recommendations to find out how often to change your impeller. Some suggest yearly, while others allow up to three years.

Whatever the time frame is, don't neglect this vital maintenance step!

It really depends on how you run it and what the manufacturer suggests. You shouldn't have to change the water pump itself, but the impeller should be a top concern.

For example, if you run skinny and tend to pump a lot of sand, you will need to change the impeller more frequently than other boaters.

The majority of manufacturers and mechanics suggest that you shouldn't go more than three years with the current impeller intact. Otherwise, the bolts on the lower unit could cease up, leading to more wear to the impeller.

Others suggest it's wise to change the impeller every season, just to be safe.

You can purchase most water pump repair kits for under \$100, which include the impeller. If you can install this yourself, you would save a lot of money.

Otherwise, a shop might charge you an hour or two, which could result in an hourly rate from \$100 to \$350, depending on where you take it.

If you choose to perform your own outboard water pump service, here are the steps to follow.

Begin by draining the oil from the gearbox. Use a large screwdriver to unscrew the drain plug. Make sure you have a pan underneath to catch the oil.

Unscrew the upper oil-level plug as well, to allow air into the gearbox.

Remove all of the nuts holding the lower unit in place. Most outboards have four to seven nuts or bolts. If your socket doesn't fit, use a ring wrench instead.

If the lower unit is free, remove it. Otherwise, you might need to give it a few taps with a soft mallet. Just don't hit the flange cavitation plates or they will break.

Once the bottom is clear, it's time to start on the pump. Slide off the seal, which is sitting on top of the pump housing.

Use a ring wrench to unscrew the bolts holding the pump housing in place. If the pump hasn't been serviced recently, you might need the help of an impact wrench instead.

Whatever you do, don't take the bolts off with an open-ended wrench. This is because you can put too much force on the bolt head and it's a lot easier to snap the head off and then you will have a whole other problem to deal with!

Separate the housing. Slide it up the shaft. Make sure you remove the plate.

All of the vanes on the impeller should be intact and straight. If they require replacement, now is the time.



Take time to clean off all of the mating surfaces. This practice ensures there won't be any leaks.

If there are large bits of sealant or gasket that need to be removed, use a sharp razor blade.

For smaller contaminants, fine emery paper should do the trick.

When you are finished, wipe it down with a clean rag. Everything should look bright and new.

Next, you can wipe the pump housing interior. There should be no gouges or score marks.

This is a good time now with the oil out and the seals exposed. To perform a lower unit pressure test, to see if any of the seals are leaking before reassembling everything!

When you purchase a water pump repair kit, you get a new impeller, as well as the seals, O-rings and gaskets.

Once everything is cleaned, use the new parts for reassembly.

Use some of the gasket sealing compound and lower your gasket into place. Make sure every hole is properly lined up.

You also want to install a new key. This sits in the flat part on the shaft.

If you are putting on a new impeller, line up the key way in the hub with the previously used key.

You can also use some glycerin or dish washing liquid to get the pump cover on easier. This also provides some lubrication for the first few seconds before the water gets into the pump. Never use silicone.

As you slide the housing down, ease it over the vanes while twisting the shaft clockwise. This motion allows the blades to bend while sitting the body of the pump fully down on its base plate gasket.

Reinstall all of the bolts and tighten them until each is snug. Slide the new seal down until it is resting against the pump housing.

The kit should also include a setting tool, which you will use to push down on the top of the seal. Not only will this spread it out, but it makes sure there isn't too much compression.

Put a small amount of engine spline coupling grease to the top of the drive shaft. Add a little more grease to the gear-shift coupler.

Replace the screw plugs and reinstall the lower unit. Make sure you don't over tighten any of the nuts.

Use the right oil to fill the gearbox.

As with any service, you want to test the parts once the job is complete. Run your outboard, carefully monitoring the stream of water. Everything should be running smoothly now.

Here are a couple of videos to show some of these process's!

If you are noticing signs of a bad outboard water pump, go through our article to troubleshoot the issues. We want to make sure everything is running well with your outboard, which is why we provide lots of tips and tricks on our YouTube channel.

You can also find blog articles that address a variety of needs, from maintenance to repair. Make the most out of your time boating with our help.



How to Test Run an Outboard Motor When Not on a Boat in the Water



One thing commonly known to most boaters, but not all newbies is that most outboard motors are water cooled (either artificially, or on a boat in a lake) and the water is pumped up into the powerhead to cool it. This being the case, NEVER run the motor without it being supplied sufficient water in one manner or another. Otherwise you will (1) ruin the water pump impeller even by running a few seconds. (2) If ran longer, since the motor is not cooled it will get hot enough to loose the temper in the piston rings, possibly even seizing the pistons in the cylinders and also seizing the motor. NOT A GOOD THING. Usually this is also accompanied with the paint on the powerhead becoming so hot the paint burns. A white powerhead now will be brown in the piston area.

Therefore, you need to be informed on how to test run your motor when not on a boat, in the water. This could be after you take it out of storage (long or short term), or if it was used in saltwater, it is then best to flush (run) it with freshwater long enough for the motor to warm up so the thermostat opens allowing the water to flow through the complete cooling system.

The method will depend on the make of the motor, the year of manufacture, and the size of the motor. The early (up until the early 1990s) motors did not have any provision for this, therefore requiring it to be submerged in a barrel.

Obviously what can be done on these older motors with a small 4 to 10 hp motor may be hard to do with a 35 or 50hp motor. A small motor may be able to be ran in a 5 gallon bucket where a 50 hp will require something much larger and a different method of getting it to the water.

Some older small motors did not have a gearbox where it had a neutral/forward or reverse. For these motors, the prop was always in gear. Most however, when ran in a small bucket need to be in neutral if possible, to eliminate splashing water out and then starving the water pump. Even a 6 hp motor in a 55 gallon barrel when in gear and revved to maximum will BLOW water up and out the rear top.

You have to also realize that anytime you run one of these motors where it is not on a boat in the water, and able to rely on the water to provide needed resistance to the prop, that it SHOULD NOT be revved up much over a high idle, as the engine now has no resistance from the prop/water connection and there is a chance it will "Run Away With Itself", thereby revving so fast that you may do major internal damage to the motor.

The number one requirement is to have a water flow into the motor. All water cooled motors will have a water intake on the lower unit. The older ones could have it through a screened tube in the exhaust housing outlet directly behind the propeller. Later motors will have the intake through slots located above the prop but in the main gearbox housing, centered in the main (largest) section, and they will usually be on both sides of this housing. These can utilize the "MUFF", which is a metal yoke holding rubber cups that cover these water inlets. Usually only one cup will have access fitting to connect to your city water hose.

The older motors with the inlet behind the prop, will need to be ran in a barrel.

With the above said, it is imperative to check these water inlets to be free of debris before you try to start the motor. And as important, if you have it running but the motor is not peeing, before you get excited and tear it apart to replace the water pump, or just the impeller, CHECK these water inlet screens. The earlier screens behind the prop, are considerably more prone to become plugged with weeds than the later motors, simply because they have smaller holes.

Different Methods, Type One ; c One of the earliest and simplest methods to do a test run on a small outboard motor is to fill a bucket with water and put the lower unit in the water. You will need some form of a mounting to keep the motor stationary, here the normal thing is to use a carpenter's sawhorse. The water height NEEDS TO BE high enough to cover the water pump intake screen/holes, as seen in the photo below. Also in this photo, you will see wooden blocks UNDER the bucket to accomplish this task of raising the bucket.

This motor has no transmission so the prop turns all the time the motor is running, thereby possibly needing water to be replenished as it is thrown out. Also you would have to be careful to not allow the prop to hit the sides of the bucket. This plastic one may not damage the OBSOLETE prop, but a metal bucket may do so. And finding replacement props for these old motors me be near impossible AND EXPENSIVE even if you could find one.

Here using an old (1947) small 2.5hp motor & a 5 gallon bucket of water to test run



For those who live on a farm, a cattle watering trough can even be used. I knew one guy who even backed his boat/motor up to his trough, let the motor down in the water while still on the boat, and ran this to flush out any saltwater.

The Ultimate Run in a Barrel: To make one of these run barrels seen in the photo below, use a 55 gallon steel fuel/oil barrel, cut part of the top out, but leave about 1/3 still attached. Cut back about 5" along the sides of this remaining top. Now bend this 5" section down into the barrel to form a downward lip. This will allow you to rev up the engine for short periods of time while in gear without blowing the water up and out of the barrel, (and all over yourself) as this baffle diverts the prop water back down into the barrel.

This barrel has been used to run motors up to 25hp, but the chore is they are heavy enough that this is usually a 2 person job.

Using this rear baffle in the 55 gallon test barrel, a higher RPM can be achieved.



One thing to check, is that if you leave the barrel set outside from year around with water in it, and you may have trees nearby, you should check for debris that gets inside. In the photo above you will be able to see on the ground beyond the barrel, the top of a galvanized garbage can that is used to keep debris out when not in use.

Also if you run motors a lot, these barrels seem to accumulate a lot of unburned fuel oil mix, so you need to empty and clean it occasionally.

Different Methods, Type Two ; The right photo below is from a 10hp Johnson and has a commercial aftermarket adapter (no longer available) with a 3/8" course thread placed inward in the rearward part. This allows the usage of Mercury's Quick-Silver Flushing Device described below. This flush plate apparently was NOT designed to be used when running, only for flushing, however this motor was a running motor, with no evidence of failure even with the flush hole plug missing. Since these are no longer made, you can fashion one by using the original plate as a sample/template, and soldering/brazing, (even epoxy) a 3/8" National Course nut onto the outside of it to screw the flushing adapter into. Or if your intention is to leave it in place and run the motor that way, I would solder the nut on the inside to give less resistance and less chance of debris hanging up on anything exposed.

In the LH photo below, Mercury sells a flushing adapter that uses a 3/8" National Course bolt thread on one end and a female garden hose end on the other. Mercury's Quick-Silver part number is #24789A 1 with the actual name being Flushing Device. Also OMC Johnson/Evinrude uses the same adapter to back-flush their 9.9/15hp 2 stroke outboard motors (and maybe more models) made from 1993 to 2007. These adapters also fit about all of the Japanese outboards that use a back-flush system.

You can remove the 3/8" plug bolt, screw the garden hose into the adapter, then into the motor, then turn on the water. It does not need to be full force of the standard house water pressure, but about 1/2 force. Start the motor up and let it run for long enough to get the motor warm enough to open the thermostat allowing water to flush thru the power-head.

In the RH photo below, you see a readers removable unit made from scrap metal and a trip to Home Depot.

Different Methods, Type Two & a Half ; OMC motors from the the late 1960s until the early 1990s main water supply to the water pump comes from a screened tube right behind the prop in the exhaust outlet which was carried over from earlier motors. Water is forced into the screened intake to the water pump by the prop thrust.

Some users report that when running these motors in a barrel, (usually a small one) that the prop has to be installed and usually in gear as apparently they need to get more water pushed to the water pump by the prop to get enough to cool when running at over an idle.

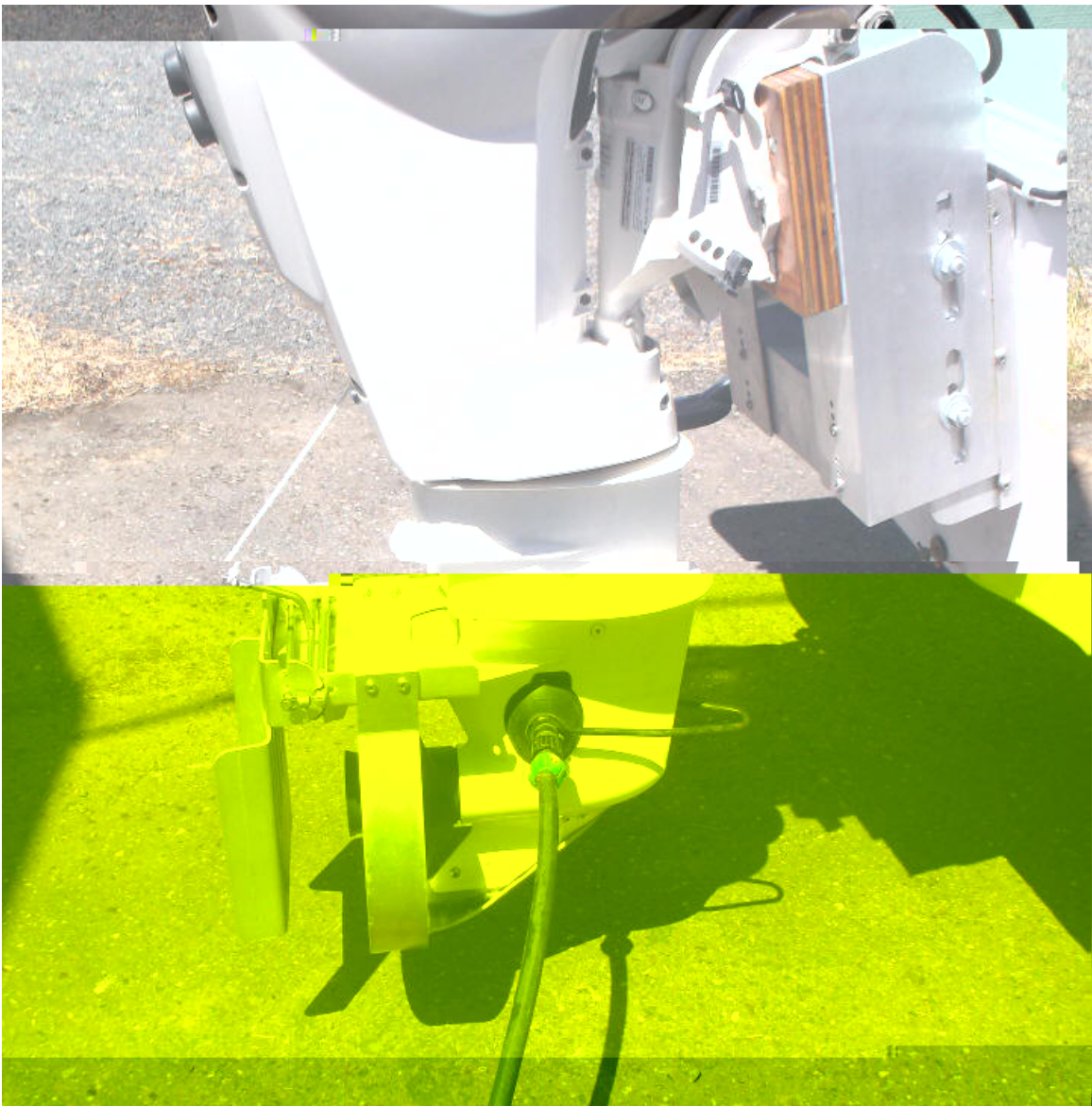
There is no stainless steel intake plate on the left side above the cavitation plate like the previous versions. Aftermarket flush kits for this motor are obsolete and rather scarce. There is really no provision currently available for a easy muff system to run this motor out of a tank. But there is hope. I think that I may be able, (by tearing mine down) to figure out a way to drill/tap/modify the lower unit near the water pump to where I may be able to utilize the later screw in flush adapters on this motor. But that is a project in itself.

Aftermarket Water Flushing Adapter Cover : This method of water intake does not allow the newer type of flushing muffs to be used. And soon after these motors came out with this type a water intake system, Tempo made Flush Kits #918FAA (as seen in the photos below) for a while for these motors, but now are not currently made and are rather scarce IF THE PERSON EVEN RECOGNIZES WHAT THE ARE. Those of you who frequent garage sales may be on the lookout for these.

1984 Johnson 6hp with Tempo Flush Kit in place



Different Methods, Type Three ; The method most used on later motors is using a "MUFF". These are commonly used to flush a motor after it has been ran in saltwater. I personally like to start my motor and run it the night before I take it out, just to be sure it starts for one and to also be sure that I will not have any problems when it hits the water. These units can handle motors upwards into the 20 j t,



On the motor in the photo above you will see a Prop Guard AND a Happy Troller plate, along with a Jack Plate used to raise the motor to be able to run in SKINNY water.