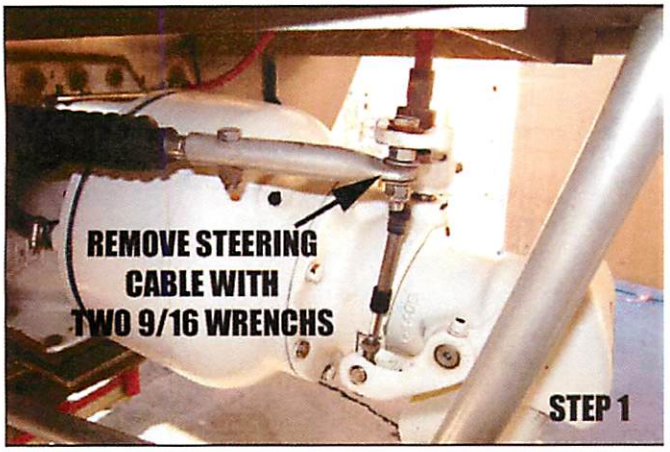
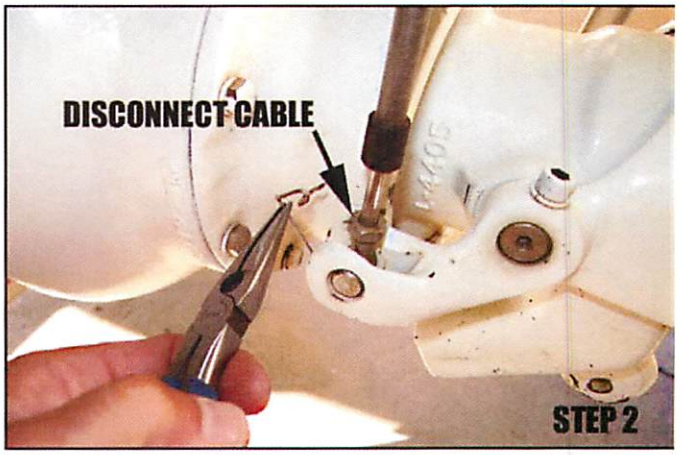
THE POWER IS IN THE PUMP!

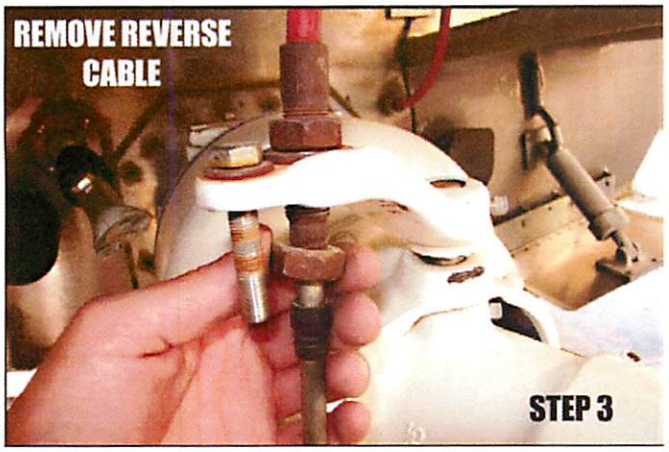
AMERICAN TURBINE

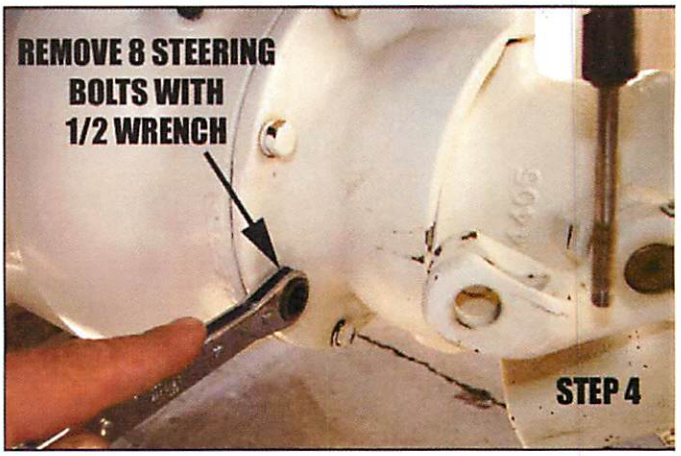
BERKELEY OVERHAUL MANUAL

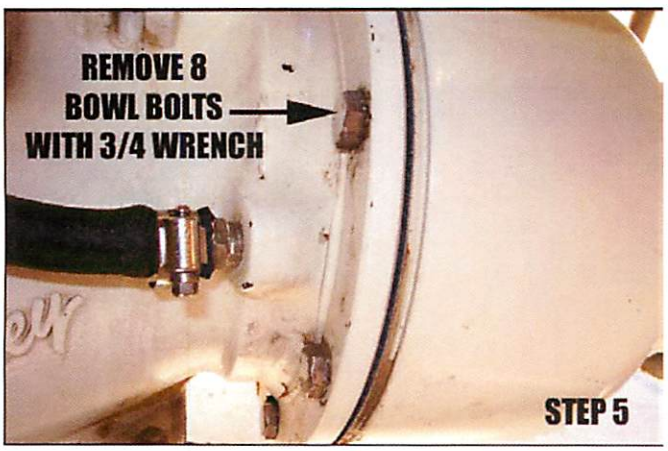
DISASSEMBLY





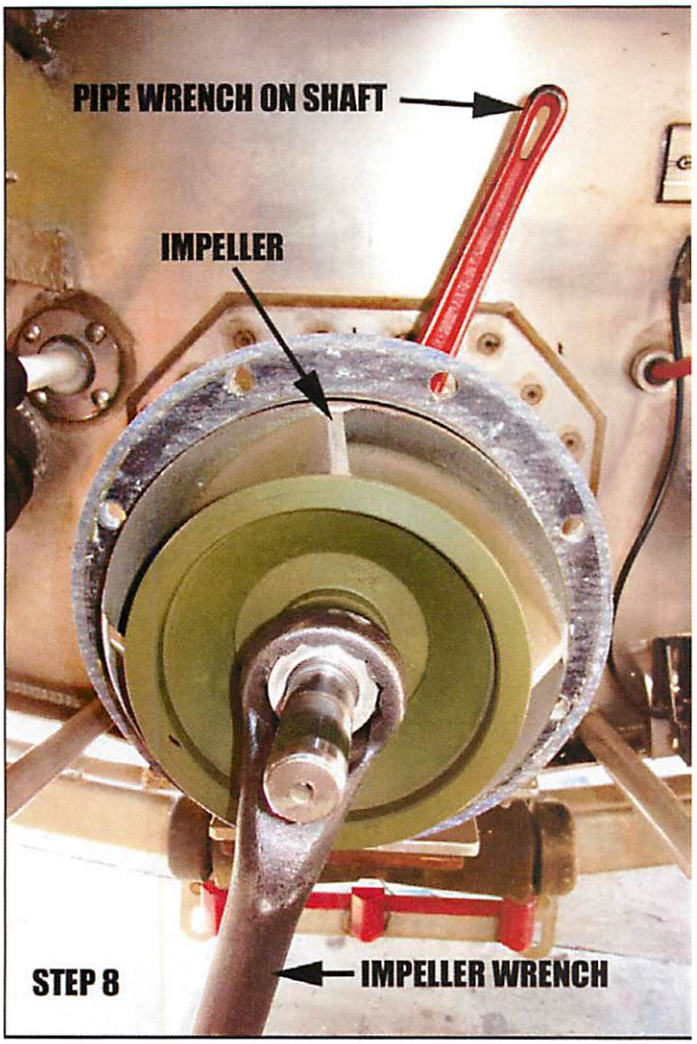






DISASSEMBLY

STEP 7 Slide the bowl and steering unit off the back end. This might require the help of a large soft face hammer to break the seal. If you have a transom adaptor (large square housing that bolts to transom that seals over the bowl) you can leave the adaptor on but you will need to break the seal. You will need a putty knife and razor blade to help scrape away silicone.



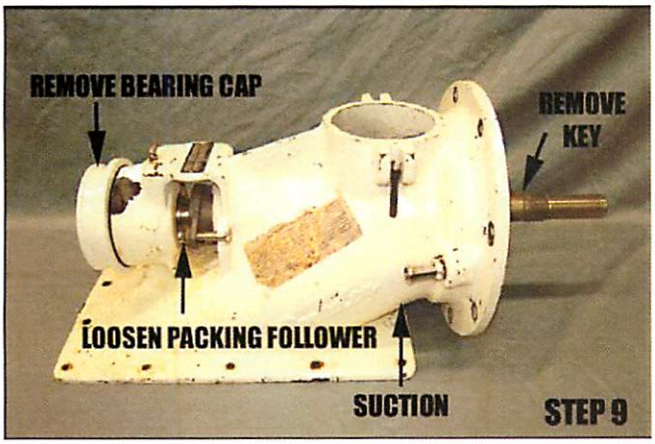
The **pipe wrench** is used to hold the shaft while you remove and install the impeller nut.

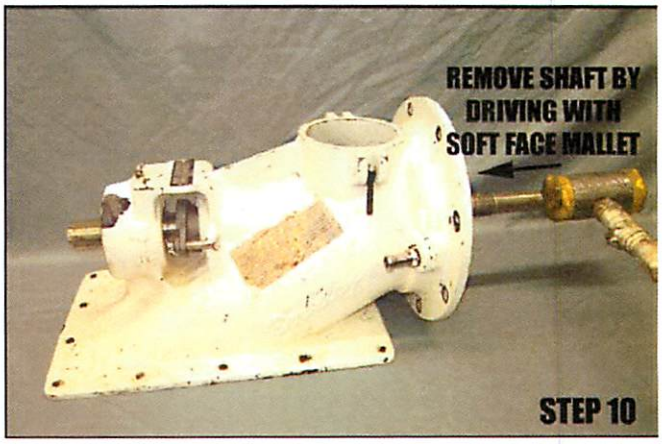
The **Impeller wrench** can be purchased from American Turbine. A person can use a large crescent wrench but it is not the preferred tool. Once you have the shaft stabilized strike the impeller wrench with a large dead blow hammer. This will loosen the nut. If the boat has been in saltwater you may need to apply some heat. You may need to use a puller to remove the impeller. **(SEE THE BACK PAGE)**

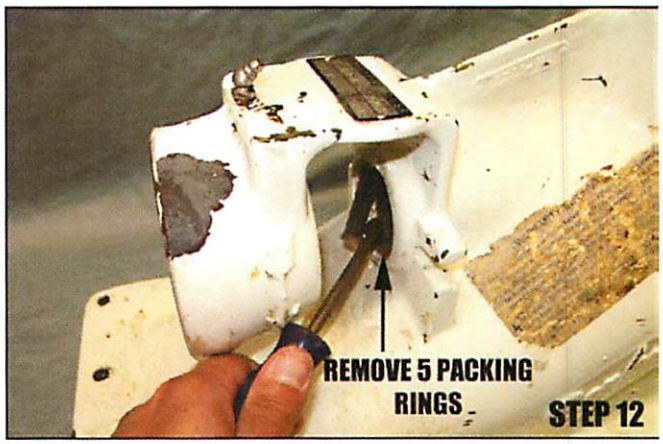
ONCE THE IMPELLER IS REMOVED SET IT ASIDE.

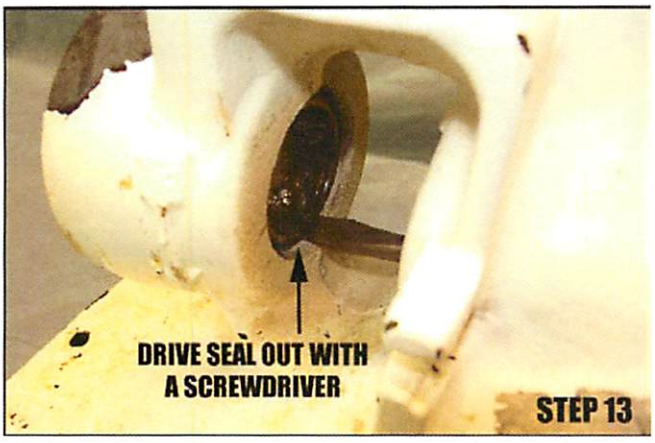
SUCTION DISASSEMBLY

THE SUCTION CAN BE LEFT IN THE BOAT OR TAKEN OUT.

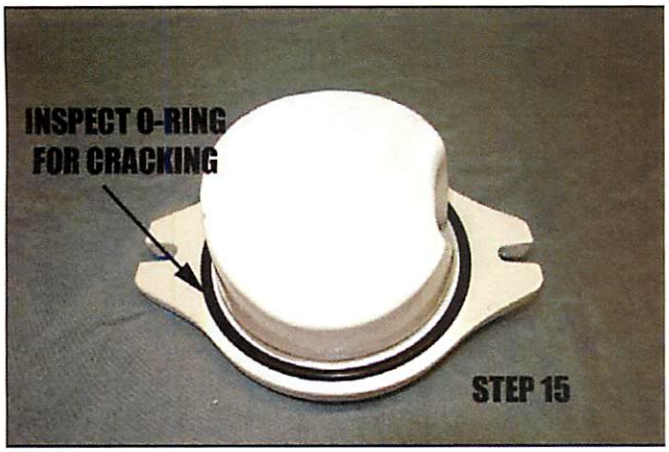




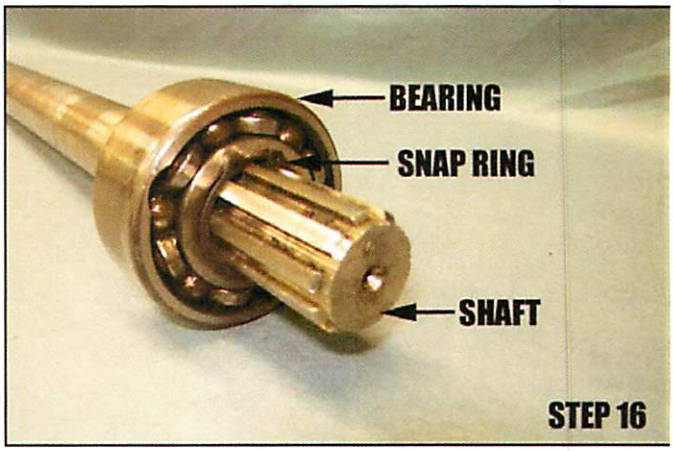




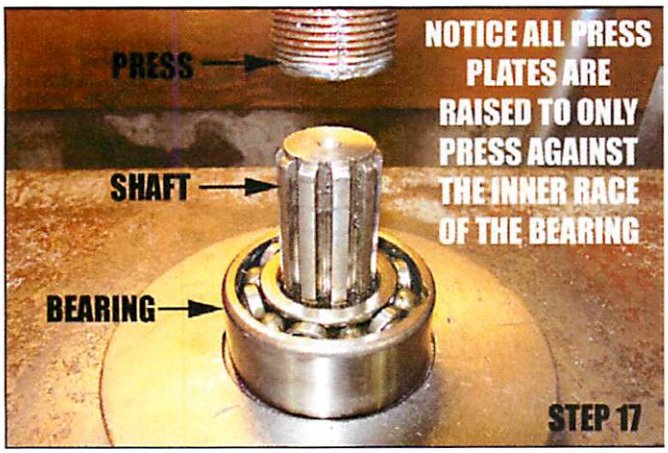
SHAFT ASSEMBLY



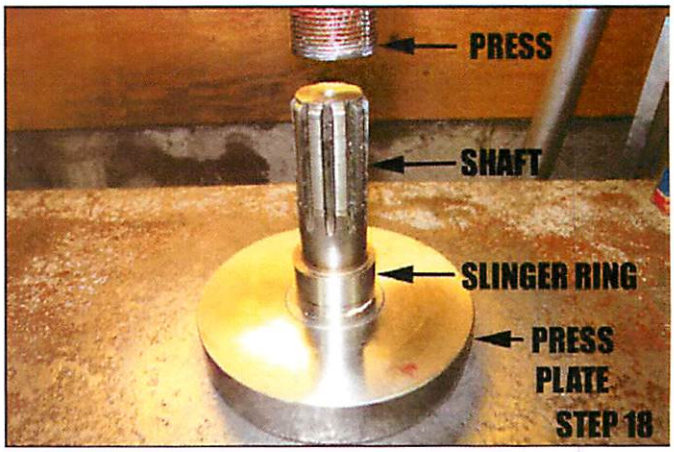
Inspect hand hole cover



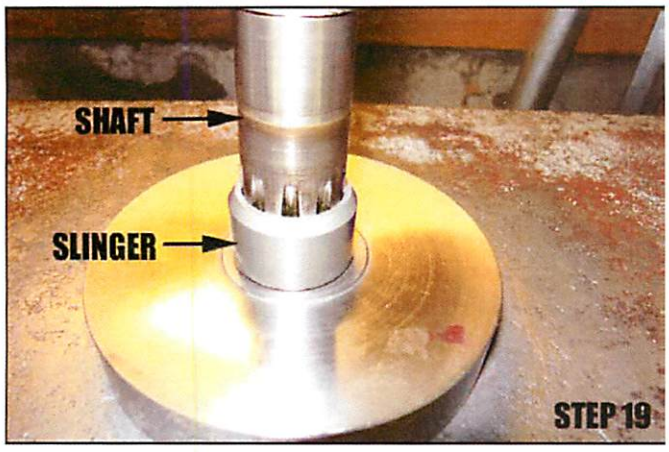
Remove snap ring



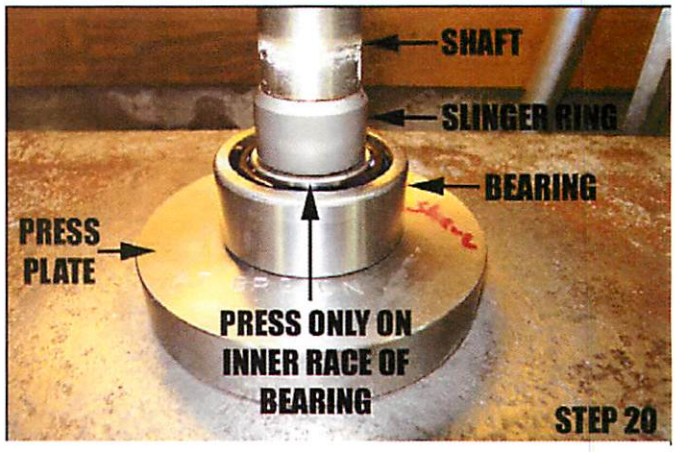
Press off bearing



Press off slinger

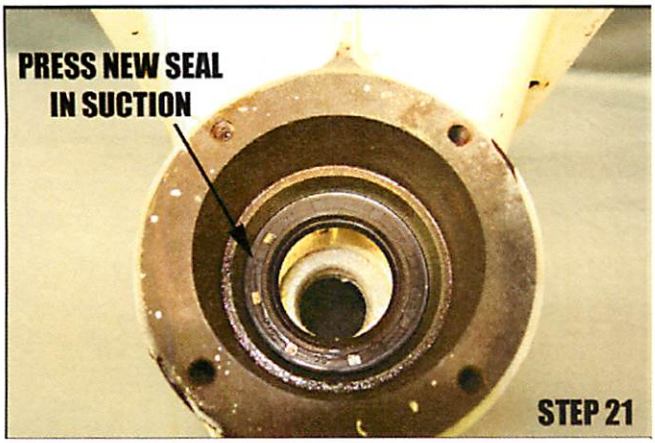


Press on slinger



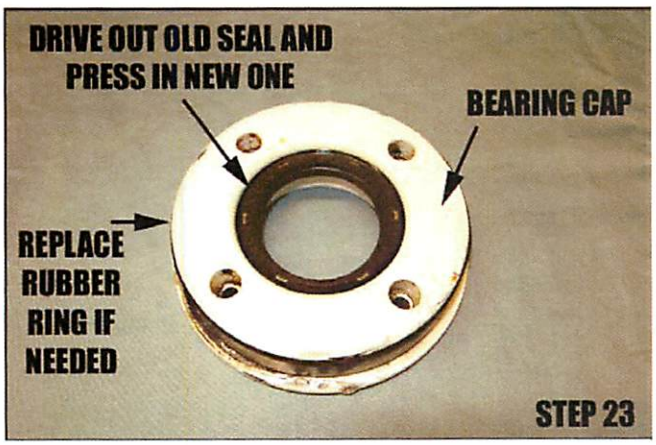
Press on bearing and replace snap ring

SUCTION ASSEMBLY

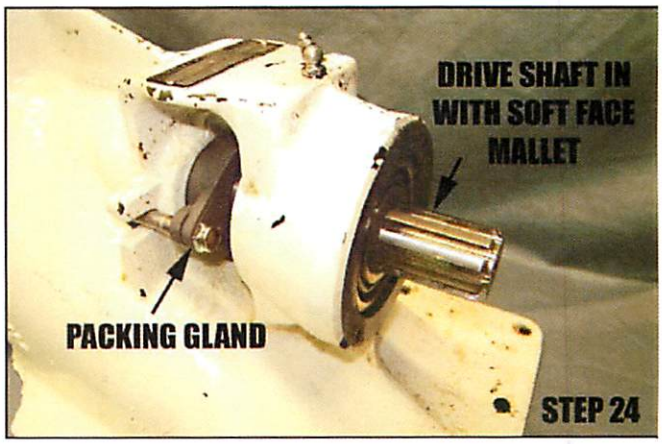


LUBE SEAL WITH WD-40

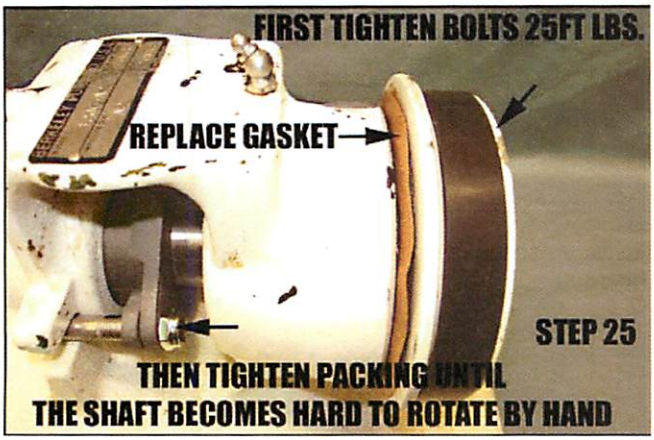
SPRAY PACKING WITH WD-40

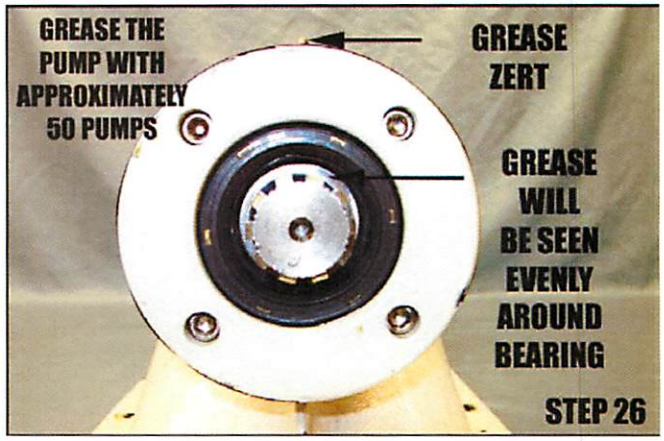


TORQUE CAP TO 25FT LBS.



KEEP BEARING FREE OF DEBRIS



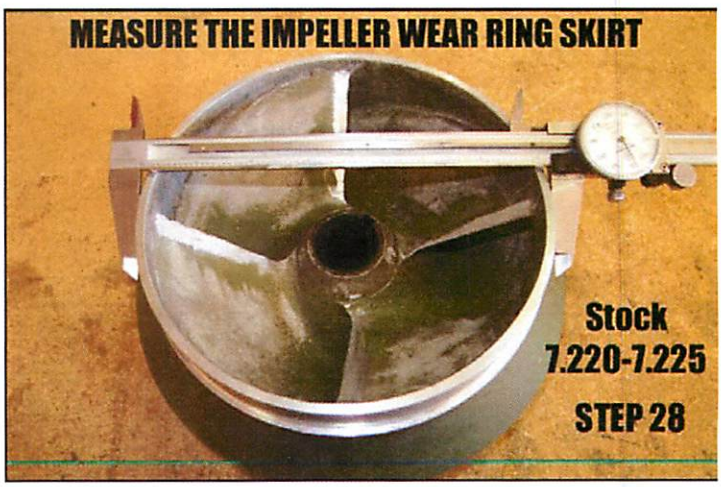


RECOMMENDED GREASE: SFR, MOBIL 1 OR VALVOLINE SYNTHETIC

IMPELLER INSPECTION

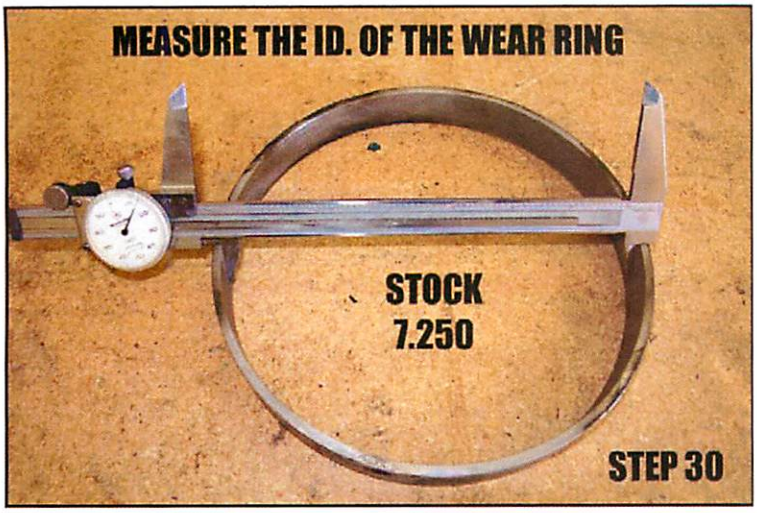
Dull **Impeller blades** will cause excessive cavitation and a loss of performance. You can use a die grinder and a file to sharpen the blades. To prevent dullness do not run the boat up on beaches or use the jet to back off beaches.

The **clearance** between the impeller and wear ring is .012 per side, .024 total. As the impeller and wear ring wear this clearance increases. Measure the Impeller to fit with an undersized wear ring. By doing this you can bring the clearance back to the original setting. Stock measurement is **7.220 to 7.225**



REMOVING THE WEAR RING. Using a propane torch **heat** the wear ring until the liner behind it starts to melt. Melting should occur all the way around the ring. Then use a bent screwdriver to pull the ring out.

WEAR RING INSPECTION

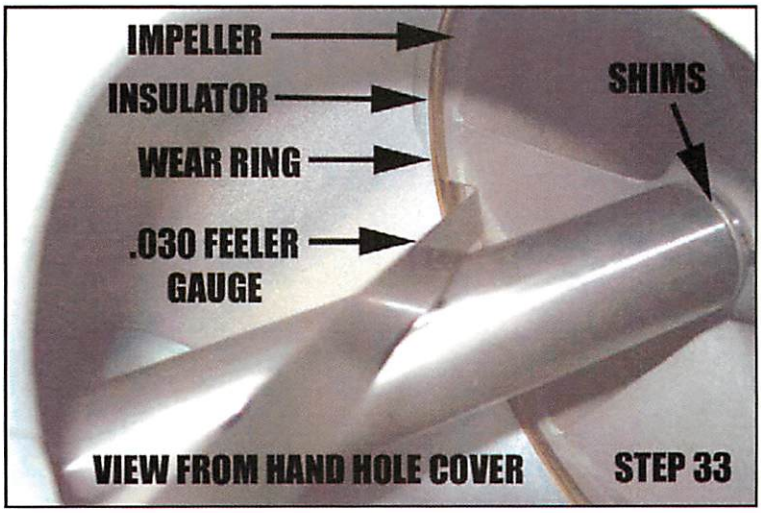


Measure the ID of the wear ring to determine if it needs to be replaced. Stock measurement is 7.250. Take the OD measurement from the impeller and subtract it from the ID measurement of the wear ring. This will tell you how much wear you have. Factory setting is .012 each side or .024 total. Undersized rings to tighten the gap can be purchased from AT.

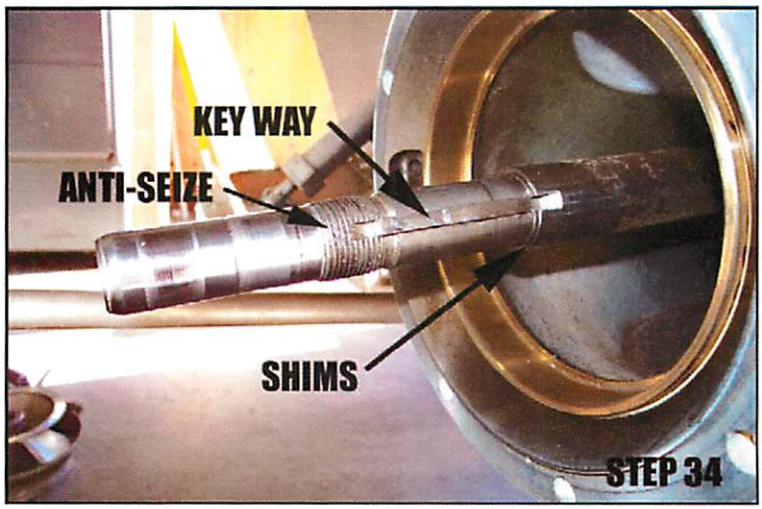
WEAR RING INSTALL

To aid in installing the wear ring, toss the ring in the freezer for a few hours. First insert the liner into suction with the lip toward the motor and lube with WD-40. Then push the wear ring in as far as you can by hand. Then use a wooden block to drive it in square. It is very important that the ring goes in square +-.004 If the suction is out of the boat you can use an old impeller and the press to install ring.

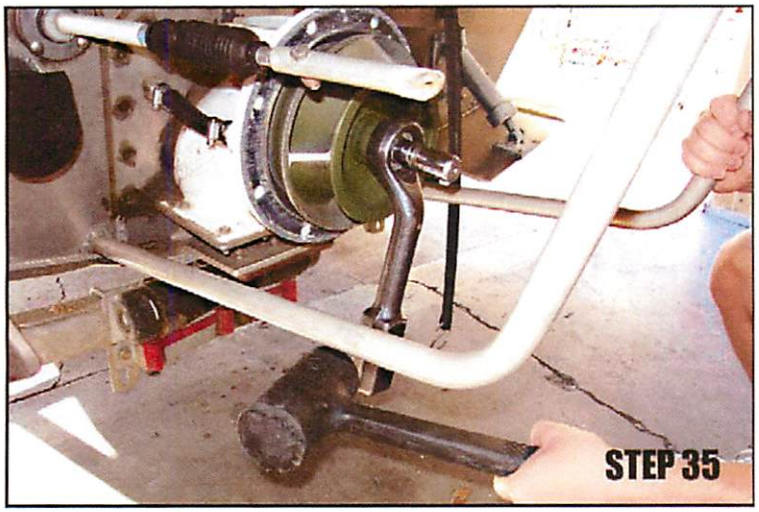
IMPELLER INSTALL & SHIMMING



Slide the impeller down the shaft until it seats in the wear ring. Looking in the inspection hole check the axial clearance between the impeller and the wear ring shoulder. Clearance should be between .025 and .035. We recommend using a .030 feeler gauge. Add shims on shaft until desired clearance is achieved. Keep in mind when you draw the impeller nut tight clearance will also tighten up. When you achieve the desired clearance remove impeller and install key. Coat shaft and threads liberally with anti-seize.

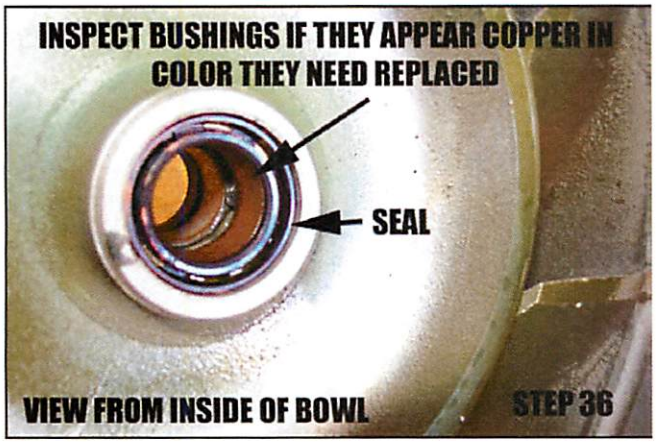


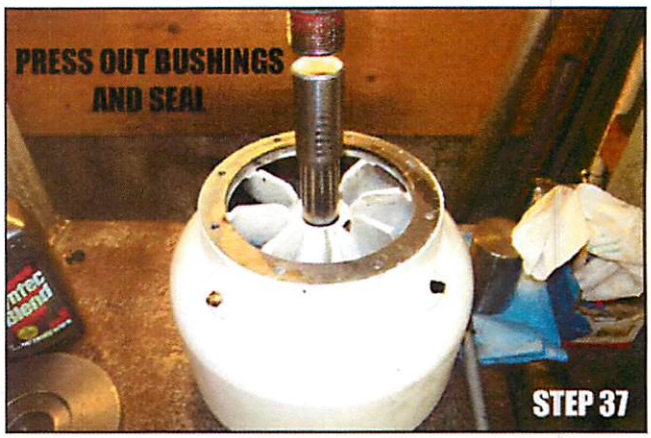
IMPELLER INSTALLATION



With clearance set, key installed and anti-seize applied now **install** the **impeller** and **nut**. Put pipe wrench back on shaft. Tighten the nut until tight. With a large hammer hit the wrench 2-4 times to ensure it is tight. If you have access to a torque wrench we recommend 70ft lbs. Re check clearance.

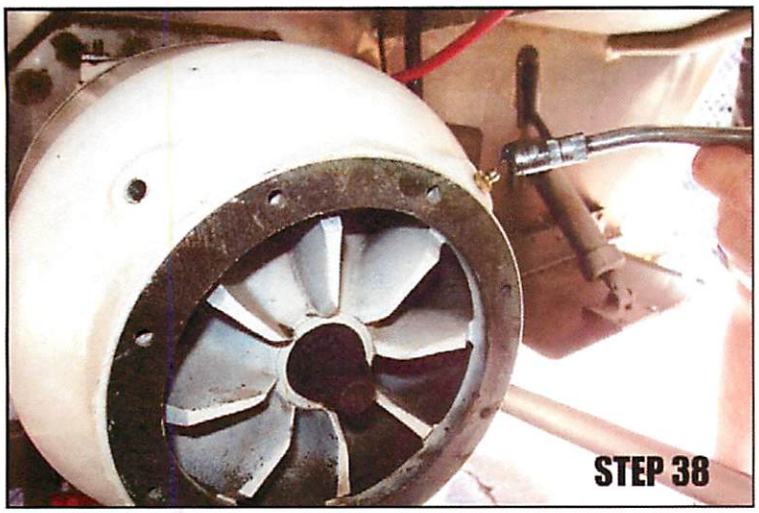
BOWL INSPECTION





First remove plastic bowl plug on the end of the bowl. Next press out the old bushings, pay close attention to their location. Special mandrels to remove and install bushings and seals can be purchased from AT. Notice the bushings are staggered. Try to get the new bushings as close as possible to the location of the old bushings. Drive the seal in with a soft face dead blow hammer and a large socket. This seal is notorious for coming out. We recommend a small drop of super glue to help hold it in place. Install bowl and torque bolts to 50ft. lbs.

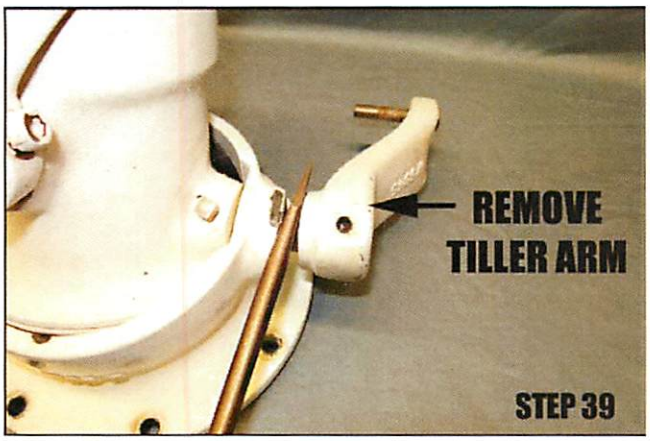
BOWL INSTALLATION

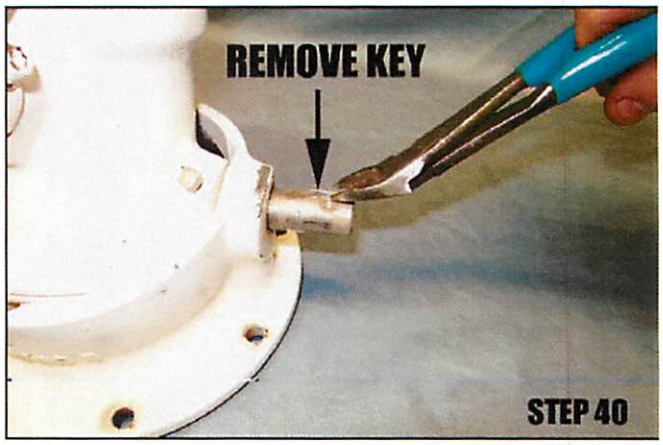


Install bowl plug. We recommend using grease instead of 90 weight gear oil. You can replace one bowl reservoir plug with a grease zert. Pump the bowl until grease comes out the other side. This may take 50 to 100 pumps.

RECOMMENDED GREASE: SFR, MOBIL 1 OR VALVOLINE SYNTHETIC

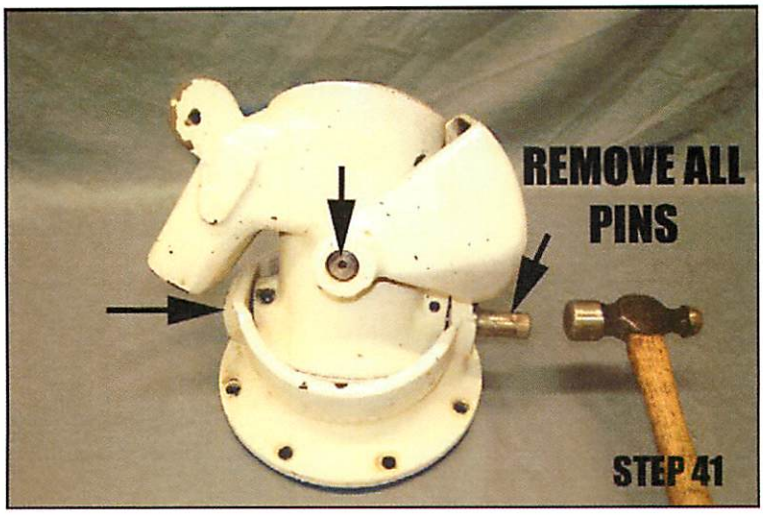
STEERING DISASSEMBLY AND ASSEMBLY

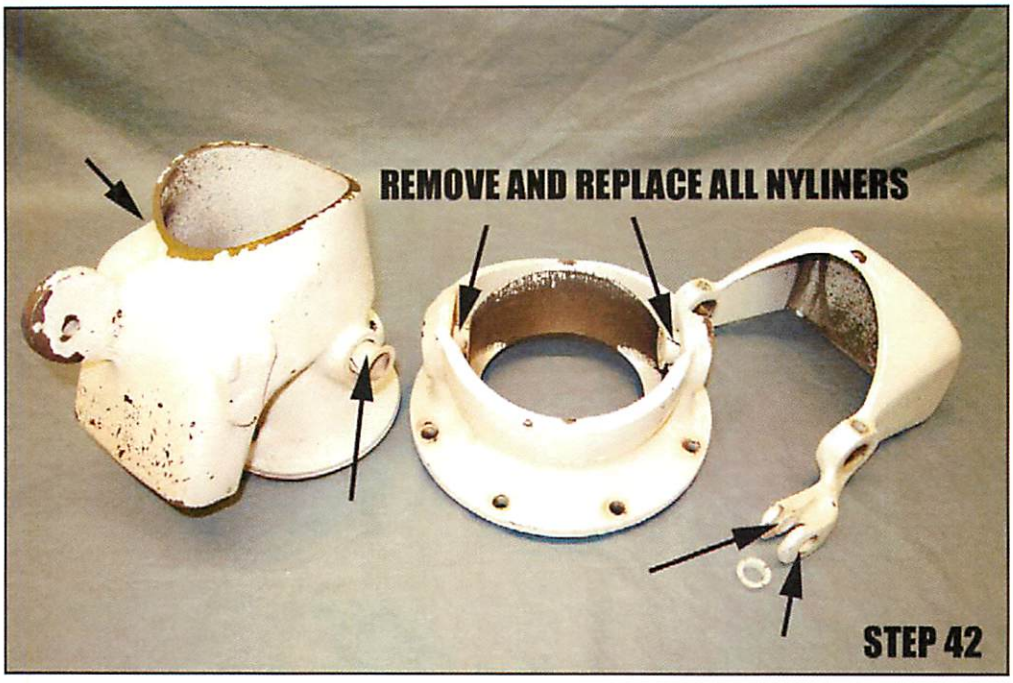


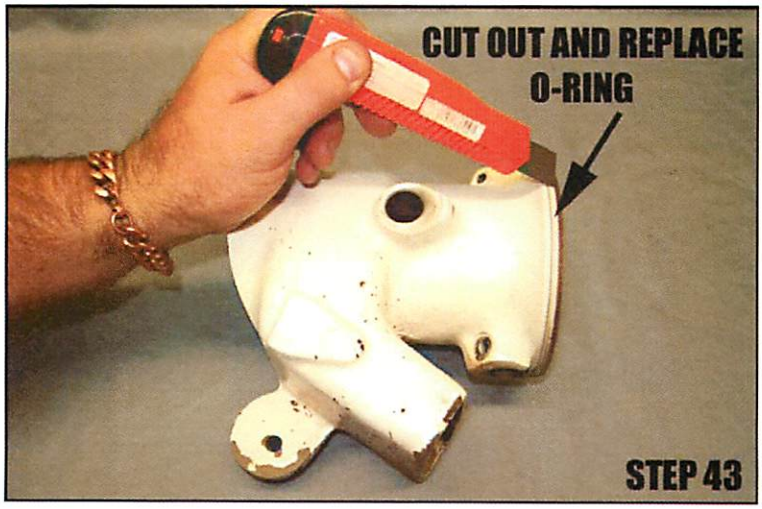


Steering parts may be difficult to disassemble. You may need a rubber mallet along with some type of lubricant (WD-40 or Aerokroil). If you have a stubborn piece you may need to apply heat.

STEERING DISASSEMBLY

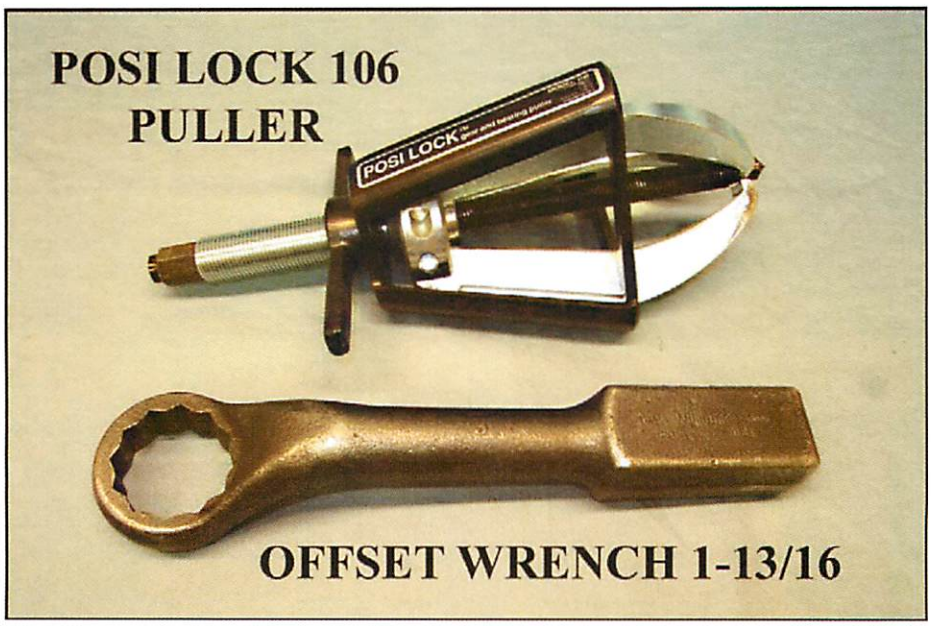






ASSEMBLY

When you reassemble the steering reverse the order of disassembly. Use loctite on all bolts and torque to 25ft. lbs. You now can reinstall the steering unit, steering cable and reverse cable. To adjust the reverse bucket shift shifter into reverse. Then adjust reverse cable so that the bucket comes down tight against the nozzle.



SPECIALTY TOOLS CAN BE PURCHASED FROM AMERICAN TURBINE

<u>Care for you jet</u>:

You will need to grease your main thrust bearing every 10 hrs with approx 4-5 pumps of SFR, Mobil 1or Valvoline synthetic grease. Grease the bowl every 30 hrs and pump until grease comes out the opposite side of the bowl. Avoid sand or silty waters. Do not run up or back off of beaches. You will need to replace your wear ring every 200 hrs. Keep the leading edge blades sharp on the impeller. If you follow these guidelines your jet shall last you a lifetime.