6.5HP Briggs IPT Pump Maintenance

These procedures cover 2 levels of maintenance:

A) <u>Corrosion</u> in Pump is preventing it and Engine from rotating. Problem is identified when attempting to pull engine's recoil cord, and it stops in 3-5 inches. This procedure can be done quickly, and returns the pump to normal service.

B) <u>Obstruction</u> in Pump is preventing it from rotating due to it being pulled into the impeller. Problem is identified when during normal operation; there will be a sudden grinding noise and possible seizing of the pump, thus preventing it from working.

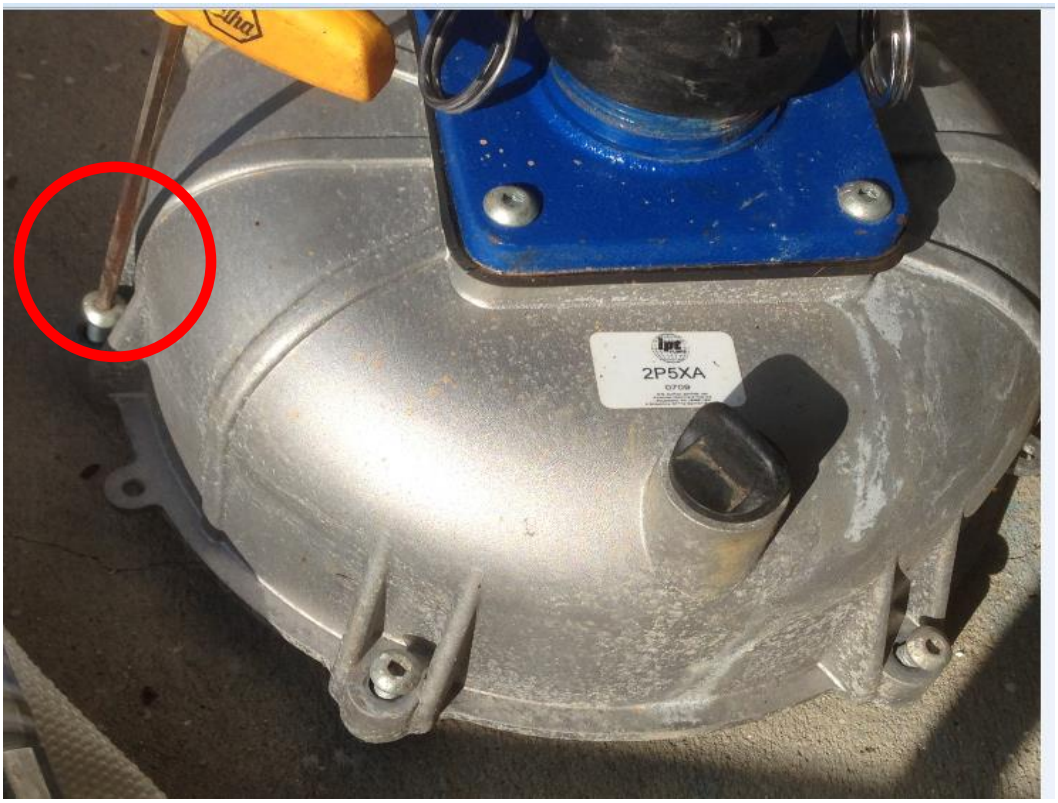
Maintenance procedures A and B both follow steps 1 thru 14.

If a ferrous metal brush (hand tool or rotating brush on drill motor) is used when performing the maintenance, clean/wash all surfaces before putting the pump back into service. Ferrous metal fragments that enter a swimming pool will rust and stain the bottom.

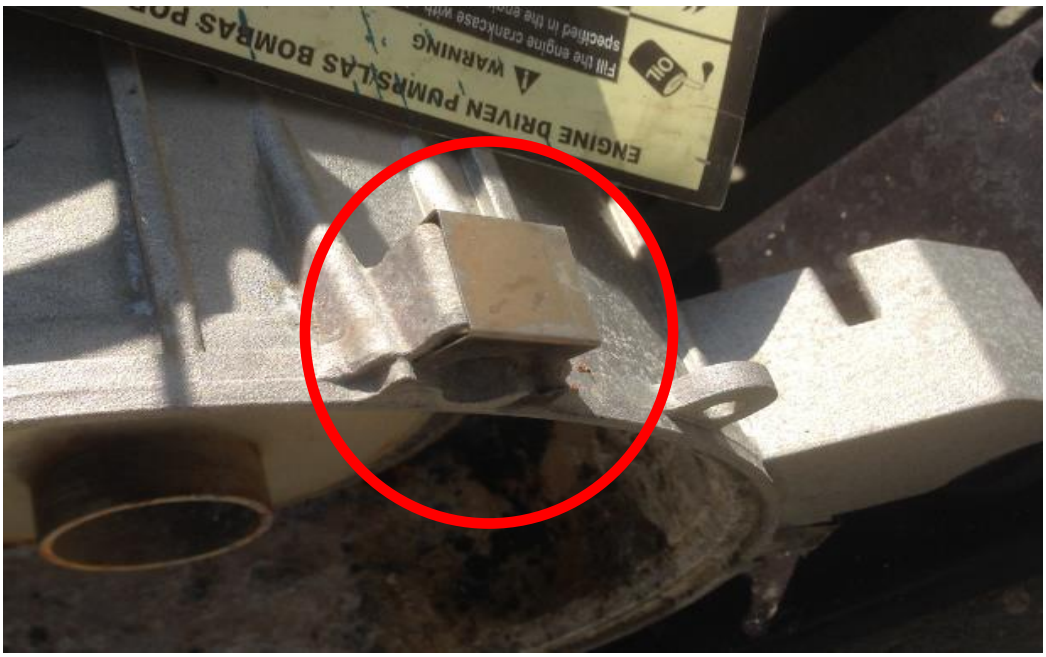
1) Need 3/16 Hex wrench for removal of Pump cover

2) IMPORTANT: Turn off ignition to "off" position to prevent engine starting unintentional.

3) Remove 6 hex bolts from pump cover. Carefully nudge cover to loosen from engine/pump – do not strike it with a metal object. (Cover has already been removed in image below.)



9) If the stainless steel retainers holding the nuts on the pump case come loose, press them back over the nuts. If the retainer comes off, expand them slight when pressing them back over the nut.



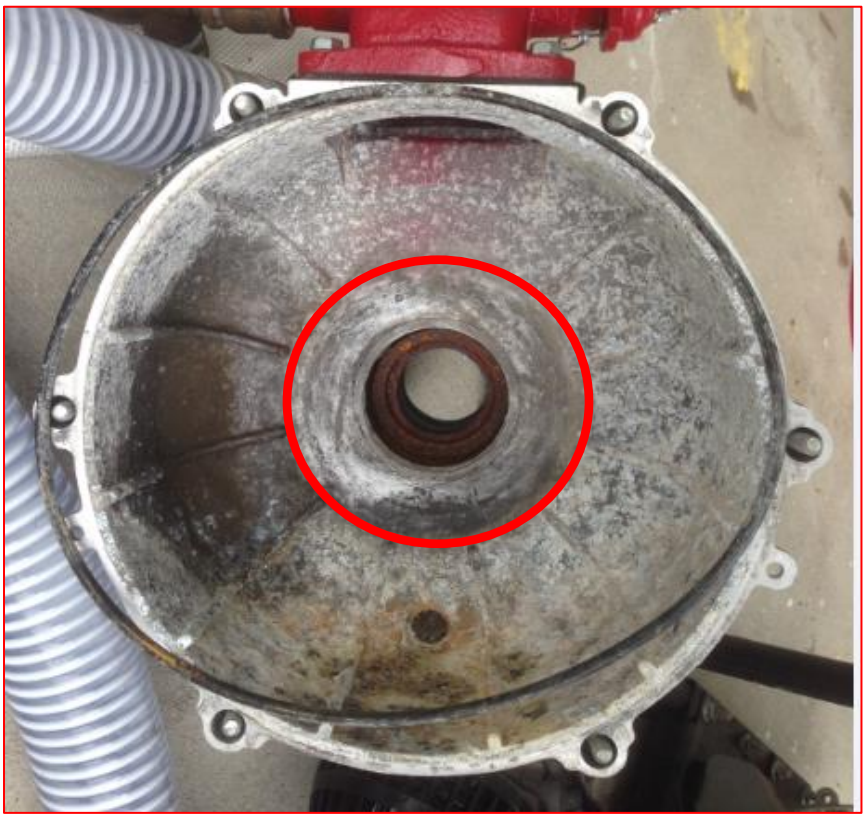
10) Remove the "O" ring seal from the cover.

Seal needs to be cleaned using a non-petroleum product – wd-40 or similar.

Take care to not stretch the O ring when cleaning it – if it stretches, it may not seal properly when replaced.

If seal is "pinched", broken or stretched, contact me for replacement.

11) Remove corrosion from the Prime <u>seal face</u> on inside of pump cover (flat area within large circle below). This ensures a tight fit between the seal (shown in #12) and cover.



Use sand paper, do <u>not</u> use a steel wool pad.

12) Clean the surfaces (at end of finger below) on the pump cover to ensure the O ring will effectively seal when re-assembled. Cleaning can be done with a stiff wire brush.

13) Remove the prime seal (black rubber covering over "mouth" of volute). Clean it with a non-petroleum cleaner to remove calcium deposits that may interfere with seal.

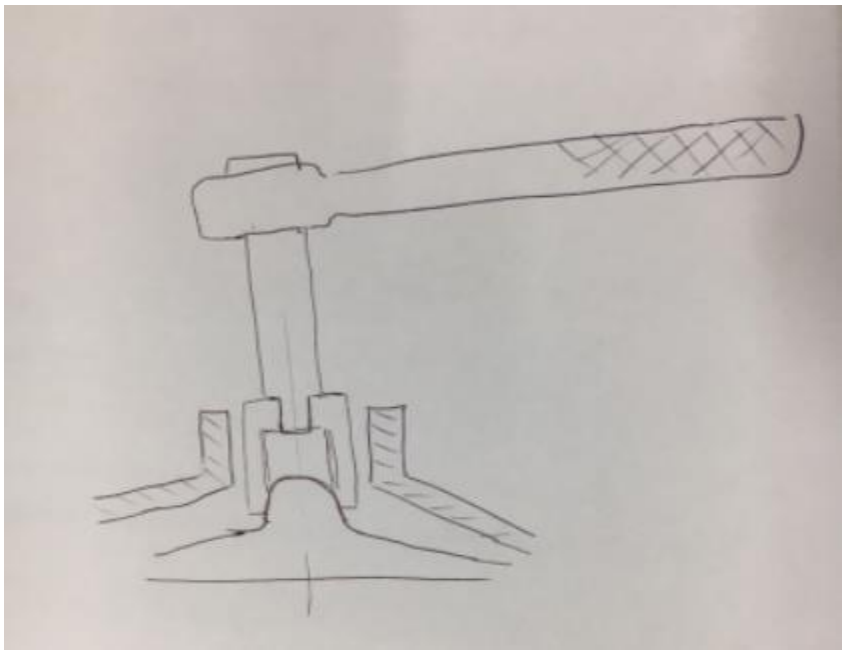
13) Note the “key” notch in the top of the prime seal – this provides a guide for re-installing it later.

14) Removal of the prime seal exposes the mouth of the volute.

A) Rotation of Impeller to free it from Corrosion:

A1) At back of the volute, the center of the impeller can be seen as a round cap-like fitting, per below.

A2) Using a socket wrench, the impeller can be rotated. Socket should be 1". Insert the socket using an extension, and push the socket onto the rounded fitting. Moderate pressure may be necessary to push the socket onto the cap so the socket "grips" the cap. Below is diagram of how the socket is positioned on the impeller.

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A3) Rotate impeller one full rotation by turning Clockwise. If the impeller does not loosen and rotate with a socket wrench (or an impact/drill motor), the problem may be an obstruction.

A4) Confirm the impeller now rotates by removing tool(s) from the volute and pulling the engine recoil cord slowly.

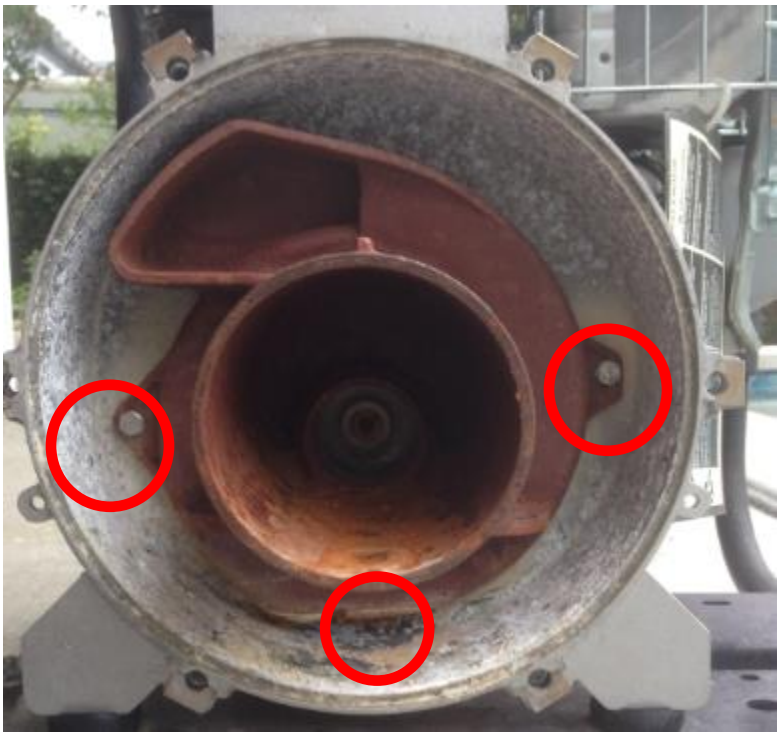
A5) Replace the pump cover by reversing the Steps 1 thru 14.

End of maintenance procedure A.

B) Removal of Volute to clear Impeller of any Obstruction

B1) Remove the 2 bolts holding the volute. Models have a 7/16" or 1/4 " bolt head.

B2 Remove the volute – this may require striking it with a non-metal object to loosen it.

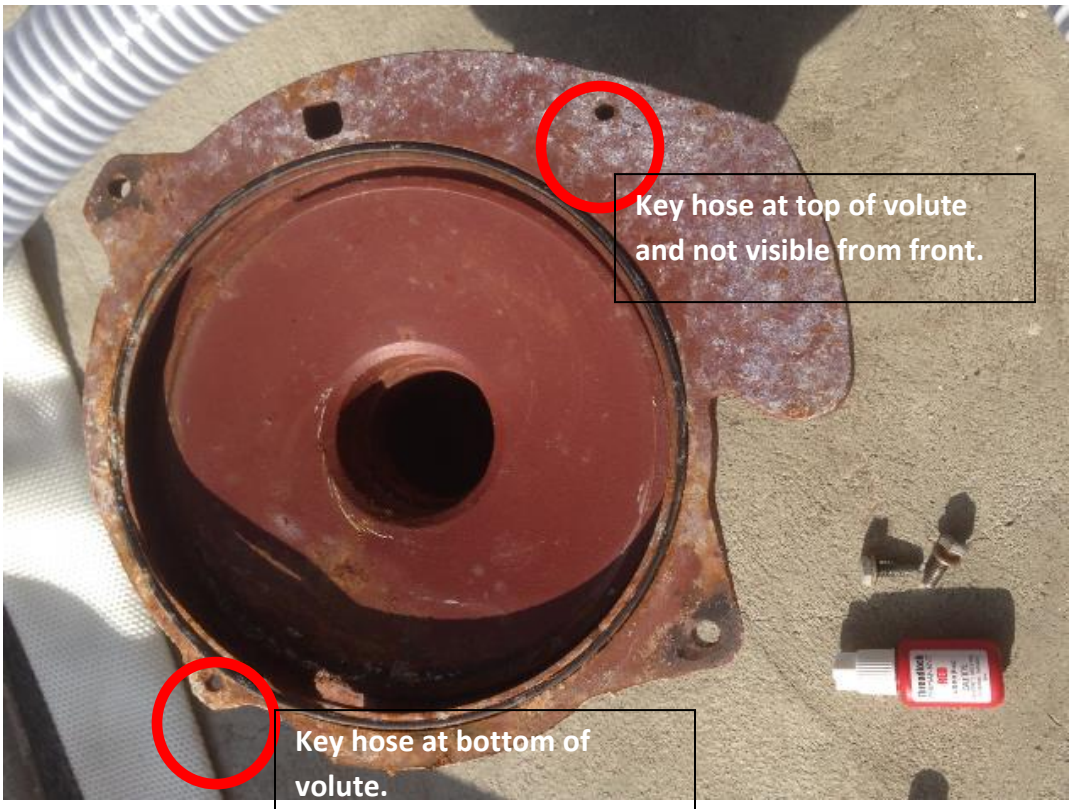


If bolts are not stainless, replace them with ¼" diameter x ¾" length, 20 thread count.

Note the positioning pin at the bottom of the volute – this does not have a cap on it, and does not come out. Its purpose is to position the volute when re-installing it.

B3) Volute is shown below removed from pump case, mouth down, with back exposed.

Note the "O" ring – similar to the pump cover O ring, remove and clean it carefully and do not stretch it. Contact us if you need a replacement O ring.



Also note the key hole on the back side of the volute at the top – when re-installing the volute, the key in the back of the pump case must fit into this hole for the volute to fit flush to the case.

B4) Cleaning the volute:

- Required: the machined face on the back of the volute should be scraped, sanded, and repainted (this the surface around the volute's O ring). After cleaning the volute's back face and O ring, coat the O ring with Vaseline or similar product, and carefully place the O ring into the groove while not stretching it.

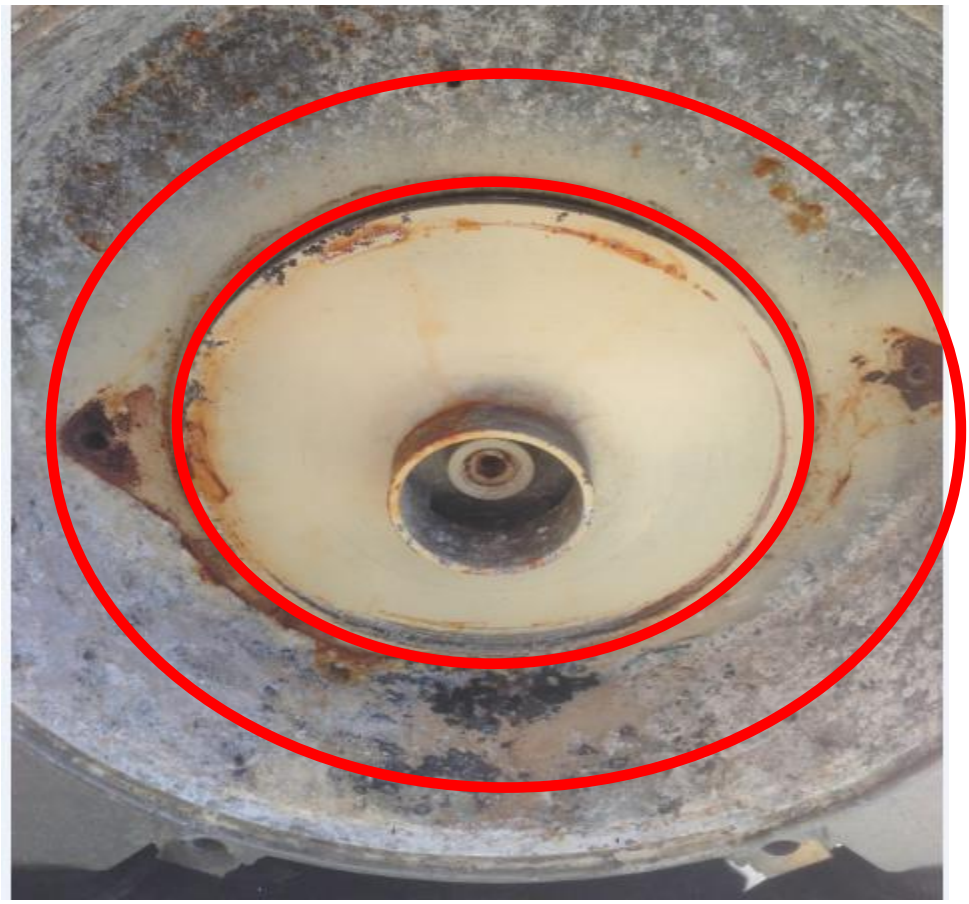
- Optional: scrape the volute with a stiff brush to remove most rust from front and back. Consider using rust remove liquid product available from auto-parts or hardware store. After cleaning, spray with Rustoleum's Rusty Primer paint (2 coats) on both front and back of volute. This will inhibit rust formation.

B4) Impeller is now exposed at back of pump case – clean impeller of any obstruction and excessive corrosion with a stiff brush. If it appears the impeller has been damaged and/or bent, contact us for a replacement.

B5) Rotate impeller using your hand. If impeller does not rotate, proceed to step #B6, if the impeller does rotate continue to step #B7.

B6) Impeller is removed by rotating counter-clockwise, with the engine shaft not rotating. This is not easy – requires penetrating oil, a gear puller, and patience. Recommend you get assistance from a Briggs repair shop to remove it, if necessary.

B7) Clean the machined surfaces on back of pump case that volute will be bolted onto (area between the 2 circles). Clean with stiff brush and sandpaper down to metal.



B8) Sand/polish the outside surface of the impeller's hub to remove any corrosion.

B9) Re-assembly and testing:

a) Volute:

- **verify O ring is seated in the groove coated in vasoline or similar lubricate, and will not slip out easily.**
- **position volute against back of pump case over the impeller, first with the bottom key inserted, and then with the top key inserted (you cannot see the top key, but must "feel" it). Volute will be flush against the back when it is positioned over the 2 keys.**
- **coat the 2 bolts with thread lock liquid, and then use to attach the volute to the case. Torque to 50 lbs pressure.**

b) Flush out pump case, volute and pump cover prior to final assembly using water or similar non-petroleum product. Purpose is to avoid any ferrous metal particles staying in the pump and later being exhausted into a swimming pool or water tank during maintenance.

c) Rotation Test prior to completion:

- **With pump cover off, and ignition in "off" position, pull recoil cord on engine to verify the engine and pump shaft rotates without obstruction.**

d) Volute prime seal:

- **install prime seal (see step #13) on volute, careful to locate "key" at top.**

e) Pump Cover:

- **verify O ring is seated on face of cover using vasoline or similar lubricate.**
- **position cover on case and insert 6 bolts. Tighten to 100 lbs pressure.**

f) Completion Testing:

- **With ignition in "off" position, pull recoil cord on engine to verify the engine and pump shaft rotates without obstruction. If ok, connect pump intake to suction hose, setup discharge (back to water source or connect to fire hose) and turn ignition to "on" position.**
- **Verify nozzle(s) are shut and restart engine to confirm pump is performing at appropriate pressure level.**

End of maintenance procedure B.