Hine Raw Water Impeller Change

This is an easy job, but if you don't know how to do it, you might put it off until it becomes a problem.

General rule of thumb is to change impellers every year. For recreational use, if you remove them during the winter, you can get at least 2 seasons out of impellers of decent quality (like Jabsco). They are constructed to be very rugged. If there are no cracks in the rubber when you bend the fins, and all fin blades are intact, you can consider squeezing another season out of them. I replace every 2 years now…but I remove in the winter.

The impellers are located at the fore of the engine. They are gear driven on the 4 cylinder Hinos. Some 6 cylinder raw water pump impellers are belt driven (the Kashiyama).

This is the pump for the 4 cylinder turbo'd. If you can do this, you can do any.

1- remove the 6 flat-head machine screws from the face plate.
2- The face plate easily pulls free of the impeller housing. Scrape any old gasket off cover and mating surface.
3- The impeller is pulled off the splined drive shaft (I use a pair of vise-grips and pull at the hub)
4- The impeller spins counter clockwise when you are looking at it. You can bend the finds or rotate in a counter-clockwise direction when you push the new impeller in place. It should slide relatively easily onto the splined shaft. Some folks advocate using dish soap on the impeller to ease installation, and that's probably O.K. Avoid using any petroleum lubricants on the impeller.
5- Use a new paper gasket supplied with the impeller, and replace cover. If machine screws appear worn, replace them. They are cheap and readily available.
6- I find it useful to remove the feed line from the pump and make sure it is full of water before firing up the engine, effectively "priming" the hose. It ensures your impeller will not spin dry for too long. Running an impeller dry severely shortens it's life expectancy. See attached pics. That is a dead impeller because I forgot to open the seacock.

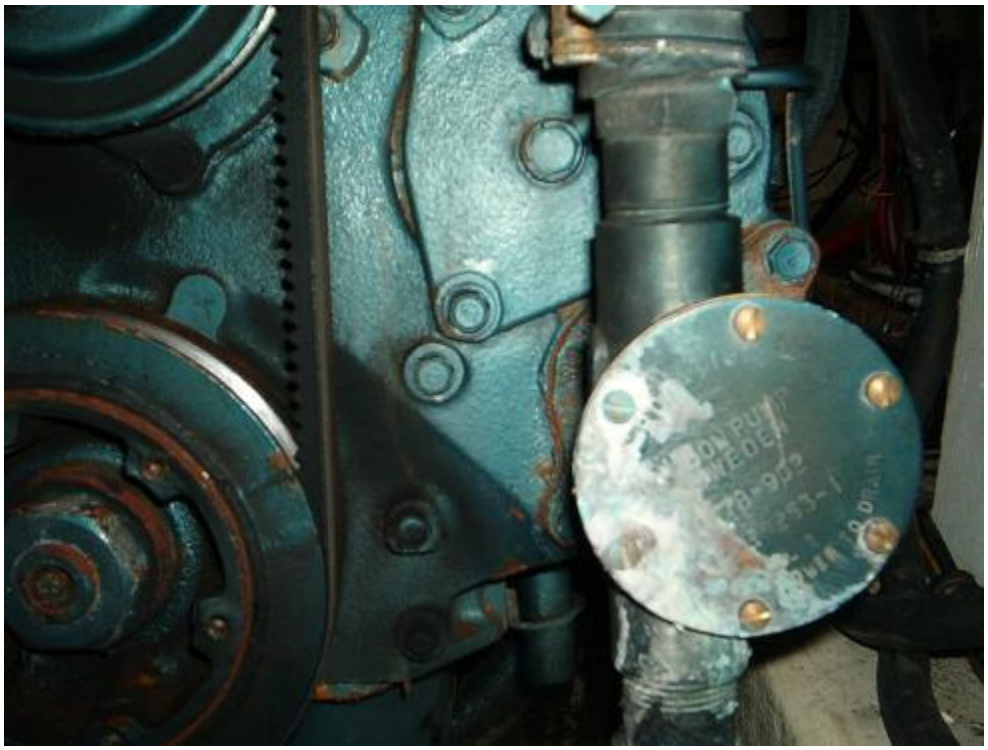
Other considerations.

Inspect the housing for wear. The first time I changed my impellers, I had just removed the impeller, and I was examining the housing. While just looking at the housing,, the "cam" slid from the 9 o'clock position to the bottom of the housing. I didn't even know what a cam was at the time. I thought that "hump" was integral to the housing. But the cam is the brains of the impeller housing. Its held in place by a machine screw at the 9 o'clock position on the exterior of the pump housing. I would inspect this screw every impeller change. If you have never changed the cam, and your boat is older than 10 years, put a new cam in, along with a new machine screw. They are susceptible to electrolytic damage.

I used to use some silicone sealant on the cover, but I don't any more. If there is excess

silicone, this is the kind of junk that makes its way to the heat exchanger, and plugs it up. The paper gaskets are good enough to make a nice seal. They swell when wet, and exclude other moisture from seeping through.

The cover plate may show wear on the inside. You can flip the covers "inside out" when the inner face is worn rough, and they will work well. Mine are currently both flipped, and working well.



Raw Water Pump Pictured. Accessed from Aft state room access panels

Failed Impeller