Cleaning Your Hydraulic Steering System

Your hydraulic steering system is at least as important as your electronics, your engine or sails, or even the electrical system on your vessel. If you have ever been far offshore and lost hydraulic steering then you know exactly what I mean. When your hydraulic steering system fails you cannot simply turn the wheel like you can in your car, and expect it to function, just harder. Marine hydraulic steering does not work that way! When your marine hydraulic steering goes out, in most cases you will no longer be able to control your rudder or engine/outdrive angle with the steering wheel.

This is not a situation that you want to find yourself in. Depending on the weather and seas it can cause anything from irritation and discomfort waiting for a tow to extreme danger and loss of your vessel due to the fact that you cannot control your vessel without steering.

Cleaning your system on a routine basis

Your hydraulic steering system exterior surfaces should be cleaned after every use of the boat. Even if you don't have the time or energy to clean the entire boat, you MUST clean the steering system as it should be considered a part of your safety gear.

On outboard boats, the steering cylinder is always exposed to the elements. When you are in a saltwater environment, the salt will crystallize as the water evaporates and coat all the parts of the steering cylinder along with the rest of the boat. We have seen units in the shop that had no seals left; they were being sealed by the salt that had been carried under the wiper seal and then corroded the aluminum away in front of the seal. You must wash this cylinder with soap and water as frequently as possible in salt water areas. Even if you keep your boat on a trailer but store it near the coast, blowing saltwater will tend to build up salt on the aluminum parts of your system that will corrode over time. Also many of the shafts on the steering cylinders may look like stainless steel, but they may not be. Non-stainless shafts WILL corrode and then they will leak! Use a magnet to find out if yours is stainless steel. Just remember that even stainless will scratch over time from salt crystal deposits.

We recommend after cleaning thoroughly with soap and water use a Corrosion Block product to finish cleaning your steering cylinder. (use it on the steering wheel and shaft also)

On inboard or outdrive boats you have even more of a problem because the steering cylinder is usually "out of sight, out of mind" in the bilge of the boat or in a lazarette that you don't clean frequently. This can really create a problem because the same salt buildup occurs as on an outboard boat, but you don't wash it after every trip. Frequently it's months between the times that you look at your steering gear. You need to make a checklist of all the duties that you perform on EVERY trip that you take out your boat. One of them should be to check the steering gear and clean/lube it on every trip. Remember, offshore in a storm is not the time you want to lose steering!

Cleaning your system internally. Major Service.

Number One: READ YOUR OWNER'S MANUAL

Boat steering is one of the most ignored parts of a boat, probably because it is one of the most dependable systems on the boat and seldom creates any problems. One of the things that I recommend to any boat owner is that they clean the entire system anytime the hydraulic lines must be opened.

Usually the only time the hydraulic steering system should be opened is to repair a leak,or if you are going to do a scheduled service on the autopilot or other parts of your steering gear. Northern climates with freezing weather can cause steering system breeches that necessitate repairs frequently if you do not maintain your system properly. Don't forget, water freezes, expands, and breaks things. There should be NO water in your steering system. It can get there from condensation caused by temperature changes, or leaky seals or fittings on the top of the reservoir, or just magically appear even though you don't know where it came from. And those of us in warmer climes are just as prone to condensation as northerners.

As soon as you determine that you have a steering problem and the system is going to be opened either by you or a mechanic, budget and plan to clean the entire system.

If you plan to do it yourself, here is one recommended way(you could also print this and give it to your mechanic):

Get some oil absorbant rags

Get a bucket or other plastic container that will hold the amount of oil that you are going to drain.

Get an air compressor with a small tip to blow out the lines

Get all the proper size wrenches that you will need

Get enough of the manufacturer's recommended new fluid to fill your entire system (you MUST NOT reuse the old oil that you remove)

If you have a 3 line system with a reservoir, relieve the pressure in the reservoir by loosening one of the fittings on the top.

Starting at the lowest point in the system, remove the Hydraulic lines (usually the cylinder on small boats, on 3 line systems, start at the reservoir) Make sure you mark the lines as you take them off so you will know where to put them when putting it back together.

Put the ends of these lines in the bucket and cover it with a rag to catch the spray(it helps to have someone with you to hold them in the bucket when you start blowing them out)

Detach the other ends of these lines (marking them as well) and blow them out with the air compressor.

If you have a reservoir (3 line system), remove the reservoir at this time and empty the fluid.

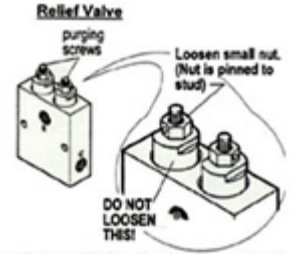
While the lines are off the steering cylinder, you can move the rudder or engine by hand, holding an oil absorbent rag over the line fittings and get most of the oil out of the cylinder.

If ANY of the oil that you removed looks discolored(clear, pink, or red is usually OK) you may have a problem with rust somewhere in the system (usually the helm is the cause of rust)

At this point, if the oil is discolored or muddy looking, you should have your helm and cylinder serviced by a qualified shop.

While your unit is out being serviced, the rest of the system, hoses and reservoir, should be thoroughly flushed with mineral spirits and blown dry. You can use a turkey baster to pour mineral spirits through the hoses and the reservoir should have mineral spirits added, shaken around and poured out.

WARNING!
Do not try to take the parts of the pressure relief valve out!



Once all your lines and parts are cleaned, put the system back together, refill with fluid(read the owner's manual) and purge the system(read the owner's manual)

You should be good now for several more years.