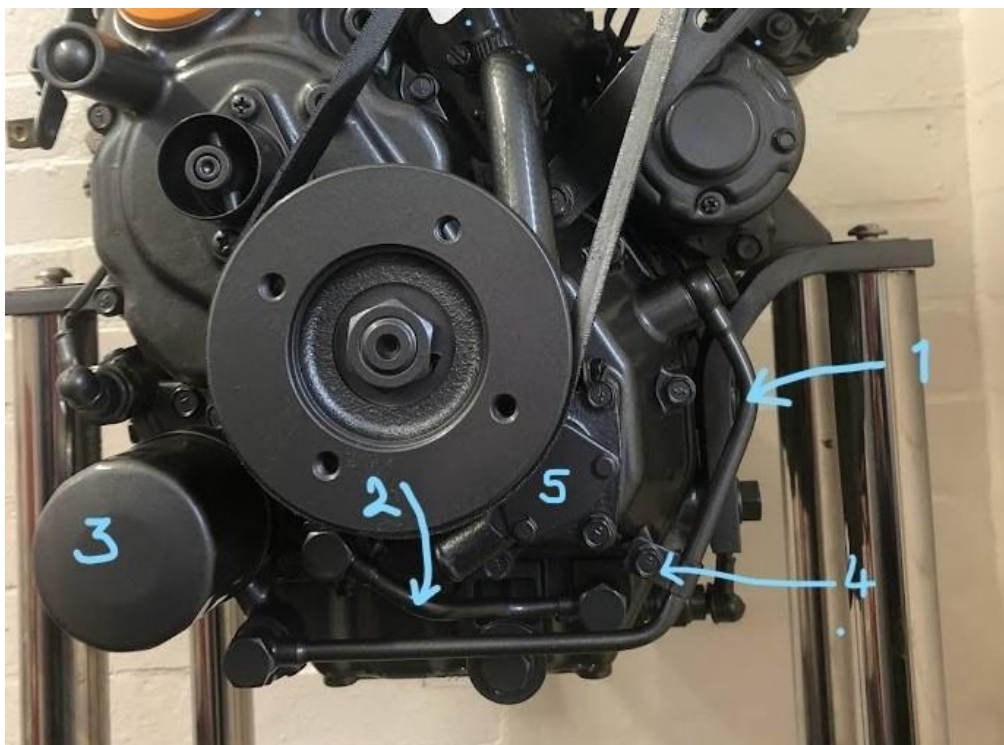


Changing the Oil Pipes on an Inboard Shrimper

By Jonathan Davies, Shrimper 19 *Merriwinds* (847) – July 2023

The Yanmar 1 GM10 has a well-known 'weak point' if it is not maintained correctly. The external oil pipes pass close beneath the water pump, which, if it leaks (even just an occasional drip) can allow sea water to run over the painted mild steel pipes, leading to rust. Eventually the corrosion can lead to a pipe failing, engine oil escaping into the bilge and the low oil pressure buzzer sounding to let you know you are in trouble. The motor then must be immediately stopped before it gets seriously damaged. This scenario is not uncommon in older boats.

It is therefore very important to ensure that the pipes are in good, undamaged condition. However, because of the way the motor is shoe-horned into a Shrimper, these important pipes are almost impossible to see and difficult to access.

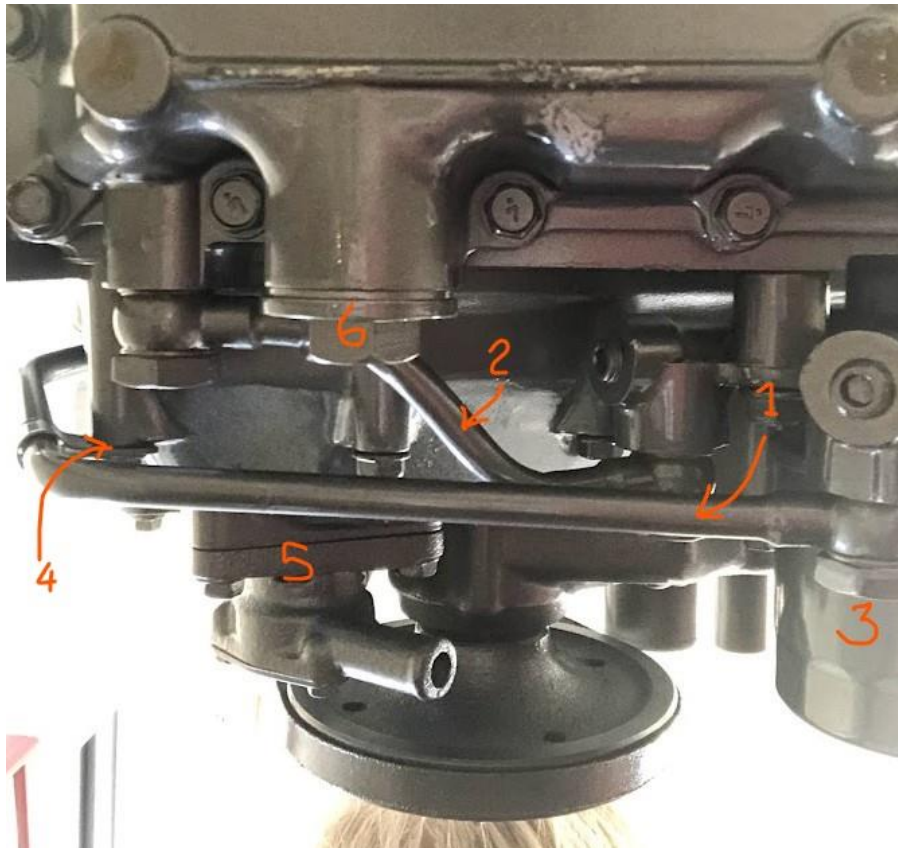


The above photo shows the positions of the various components:

1. Long oil pipe, directly beneath the water pump and the most likely to corrode
2. The short pipe, set slightly further back.
3. The oil filter.
4. The supporting bracket and bolt.
5. The water pump. (This view is also useful to see the position of two of the three small cover bolts, one is hidden behind the pulley, if you are intending to renew the impeller).
6. (Shown on next photo) is the sump drain plug, larger than 19mm it shouldn't be confused with the other bolts.

I had previously smeared waterproof grease over the pipes to protect them from damp as the motor is often wringing wet simply from condensation. Once cleaned of grease the pipes did feel a bit rough. At best, examination can only really be done by running your fingers along them. If the

surface isn't smooth then they are probably corroded. How badly can only be assessed by removing them for examination.



The view from underneath.

A local Yanmar agent told me they frequently replace these pipes, and the job can be done quite quickly by an experienced fitter. If you have your boat professionally serviced, they will check if they need changing. However, the job is possible to do yourself.

Removing the pipes

With the motor out, oil pipe removal would be ridiculously simple. Hidden in a Shrimper it is not easy, especially the first time you do it, but possible if you are well-prepared. I managed it working by feel from the top. As you cannot really see anything, you need to familiarise yourself with the layout by touch. Removal of the alternator might just ease some access but there seems to be no short cut, even a hole cut in the bulkhead will make little difference. Luckily the more rust-prone long pipe is slightly easier to get at. This is how I did the job, there may be other ways of tackling it. Much of the following has been learned by experience:

- Disconnect a battery terminal. (It is easy to short out the switch terminals with a spanner)
- Thoroughly dry the area under the motor. There is a chance of dropping oil, parts, tools etc.
- Slacken and turn the jubilee clip on the water inlet so that it will not catch the back of your hand.
- Place a container under the oil filter to catch about half a cupful of dirty oil.
- Remove the oil filter.
- Start with the long pipe, as it runs in front of the short pipe restricting access to it.

- Remove the supporting bracket bolt (10mm socket). The bracket itself can be changed over later if necessary.
- Using a 19mm socket or ring spanner, whichever can be manoeuvred into position (and this may take time and effort by touch alone), undo the lower bolt followed by the upper. Both bolts will be tight, and then suddenly give with a 'click.'
- The ends of the pipes are held with banjo style bolts, two washers each end. If you lose an old washer underneath, it isn't too serious, all must be replaced with new anyway.
- The pipe will then easily lift away complete with bolts, washers, and a drip of oil.



The photo shows the removed long pipe together with the tools I mainly used. At first sight it did not look too bad and I wondered if it was necessary to replace it yet. However, once cleaned back to bare metal with a wire brush, some quite deep pitting became more evident on the whole surface. The pipe could not be trusted for very much longer. In the eight years of my ownership the water pump has never been left to leak; perhaps the rust is just the result of 20 years exposure to sea air. The pipe has now been replaced with one made from stainless steel.



Removal of the short pipe is similar but a little fiddlier because it is further back. Mine was in good condition and I didn't feel it needed replacement yet. The short pipe goes back first. Don't be tempted to re-use the old copper washers, they will leak.

Replacing the pipes

Everything needs to be as clean as possible. Try a test fitting without washers to familiarise yourself with the layout and tools needed, and to be sure your replacement pipes will fit. The bolts only need to be finger tight. When you have practised replacement, assemble the complete pipe with the new copper washers lightly held in place with grease. The pipe assembly must be kept horizontal on fitting to avoid losing the washers. I had to pad the top of the motor and lie on my chest with both hands free. Once the bolts are in, they need to be tightened by hand and finished with a socket, but without too much pressure. The photo with the tools shows a broken bolt that I sheared off by using far too much pressure. The large bolts look very strong but are quite fragile as they have oil holes drilled through them. The broken bolt was in the worst possible position and for a while I despaired, believing it was going to be a hugely expensive 'engine out' job to access and repair. Eventually I removed the small pipe again and managed by feel to locate the broken inner piece and unscrew it using the jagged ends which still poked out a bit. I then got a replacement from Yanmar.

I obtained the stainless-steel replacement long pipe with washers from E bay for £99. The little supporting bracket was folded around it and I was relieved to see that it all fitted perfectly.

Everything else was put back, and the oil filter was replaced with a new one. The lost oil was topped up.

When the motor is restarted there will be some delay on the buzzer while the filter and pipes refill with oil. The new washers should be completely oil tight. If the pipes were replaced with genuine Yanmar parts a smear of waterproof grease over them will help protect from rust in the future.