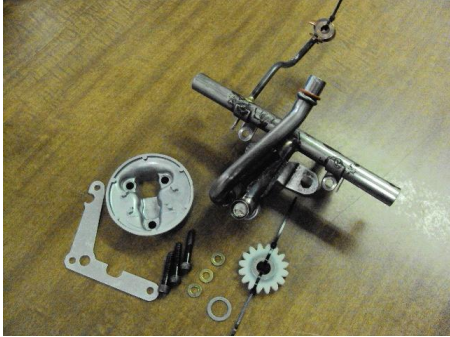


Pro-Oiler Installation Instructions

for 1985-2007 Yamaha V-Max



Here are the parts for the Pro-Oiler. There are 3 six MM flat washers for the pickup, one pickup, pump spacer, relief spring shim, three 30 MM long six MM machine screws for mounting the pump, new drive gear and the oiling manifold with new o-rings installed.

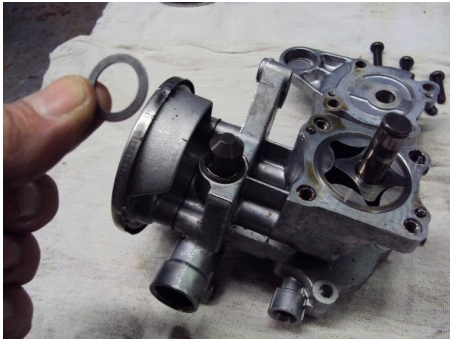
This instruction will start for someone who is trying to install this kit in a fully assembled bike. It's best to put this kit in during an overhaul but it can be done in the bike. The key is a good set of right angle cir-clip pliers like the Blue Point PR-349A. If you grind a small amount off of the back side of the tool it will fit in the V-Max engine perfectly. First, drop the oil and filter, pull the exhaust off and figure out how to hang the bike by the front end so it is at a 45 degree angle or better. Pull the oil pan, remove the stock oil manifold and oil pump. Leave the little alternator siphon tube in the engine.



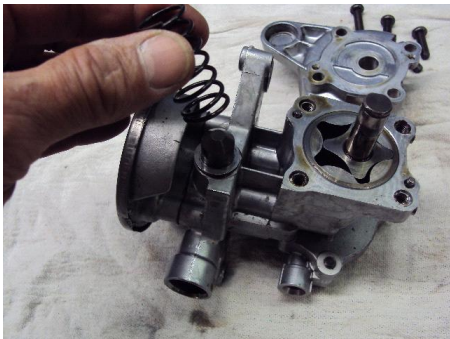
Get a small set of circlip pliers and remove the clip that holds the drive gear in place.



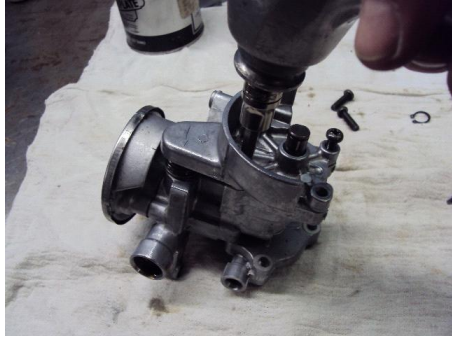
Remove the four screws that hold the face of the pump on.



You should clean the pump out once you have it apart. I won't show that here. I just want you to know where all the parts go. If the rotors are all chewed up you may want to send it to us for a rebuild or by a new one. The boost shim shown in the pic fits right over the relief valve.



Put the spring on top of the new shim and place your pump cover back on. Pull the cover down against the spring with your thumb and fore finger and put one screw in to hold it in place.



Install the rest of the screws using a small amount of locktite 262 on the threads. Once all your cover screws are tight install the drive gear and cir-clip.



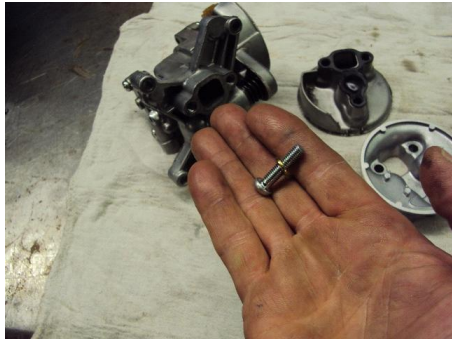
Now it's time to change the pickup. Carefully pry off the screen and remember the arrow points to the rear of the bike.



Here are the three screws you need to remove.



Clean off any gasket material from the pump. When you install our pickup use some 3 Bond 1194 or Yamabond case sealer in between the two surfaces.



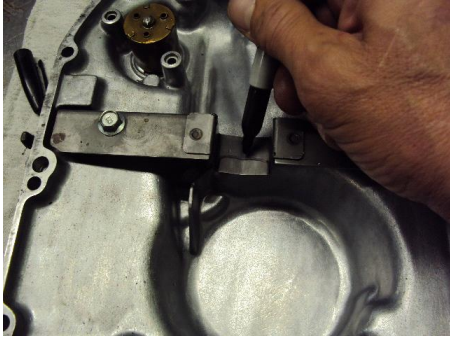
Install a 6 MM flat washer from the kit on each one of the screws. Put a drop of 262 on each bolts, put your sealer on the mating surfaces and install the kit pickup on the pump.



I hope your pickup screen does not look like this one. There may be some junk trapped in there. Make sure it is clean before putting it back on the pump. I use a screw driver and lightly tap the four points on the tiny screen to crimp it back on the pickup. Don't forget, arrow points to the rear.



Now we can start the work on the pan. Make a mark with a sharpie as shown in the above pic.



Mark out this spot on the baffle rail.



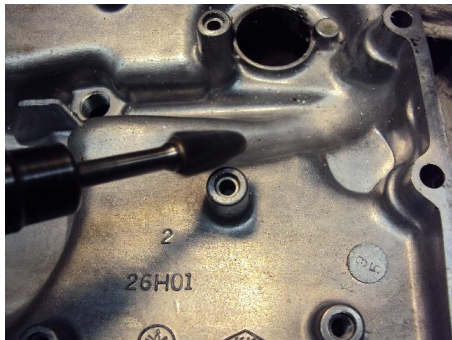
Un-bolt your parts including the oil level sensor and find a bench grinder.



Grind both pieces as shown. Clean off all the rough edges when you are done.



With your hand grinder it's time to cut down the casting that rides just below the oil pump mounting bolts. Yamaha wanted to make sure the bolts would not drop out of the pump if they came loose. Just bring these three spots down flush.



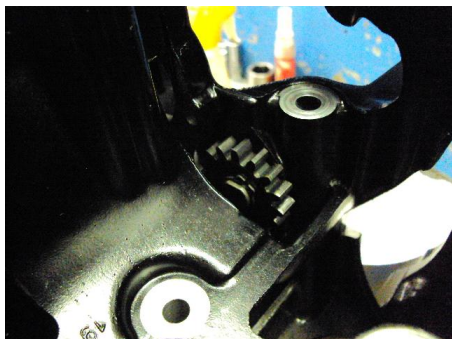
You now have to grind back the positioning lug for the oil cup.



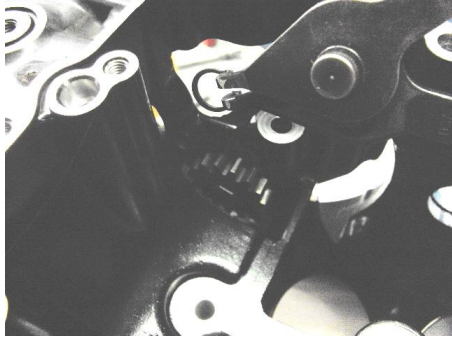
It should look like this when you are done.



Here is your pan clean and assembled. Don't forget the oil level sensor.



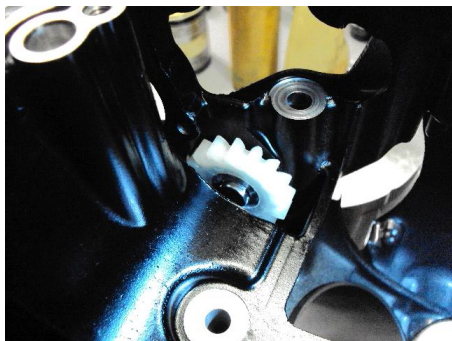
Now the hard part. I am not going to crawl under my V-Max dripping with oil to take all these pictures for you. I will simulate the procedure with a set of empty engine cases on my bench in the engine room. Just imagine all the rest of the parts being there. You will get it. First find this little gear on the end of the idler shaft that is driven by a gear on the back of the clutch basket. You will need to pull the clutch basket out to get to the three machine screws that hold the idler shaft retainer plate. Make sure you use a good phillips bit and an impact to get these screws out. Yamaha puts a lot of 262 on them. Now you can move the idler shaft in and out.



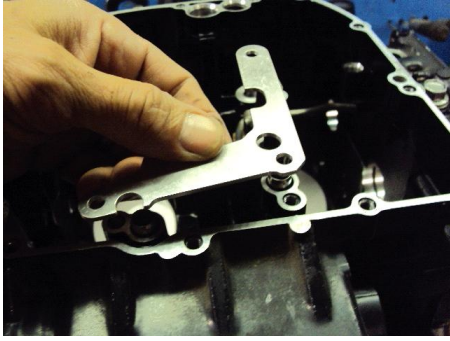
This photo is dark but you see the removal of the clip with the Blue Point pliers. If you grind the back of these pliers they fit perfectly. Once the clip is off, pull the shaft out just far enough to remove the gear.



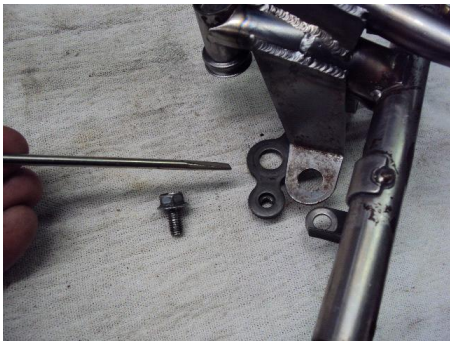
Clip the tie wraps off your new drive gear and prepare to slide it on the shaft. Make this side of the gear face the inside of the engine.



I used a pair of my wife's tweezers to position the gear on the shaft. Slowly turn the shaft until the flat of the shaft engages the gear. Push the shaft in slowly so as not to disturb the three washers I have greased together in the counterbore of the gear. Once the shaft is all the way through, install the cir-clip. If you are careful not to spread the clip too much you can use them over and over again. Just make sure it is not too loose on the end of the shaft after install. If it is buy a new one.



The hard part is over! Install the pump spacer over the dowel pins that locate the pump.



You have to take a 14 MM six point socket and a big 1/2" ratchet and remove the two main case bolts that hold the oil manifold retaining plate in the engine. It's the two center bolts towards the front of your engine. Install the oiling manifold retainer to the new oil rail but do not tighten the 2 six MM bolts.



I use white lithium on all the o-rings. The Pro-Oiler comes with all new o-rings already installed.



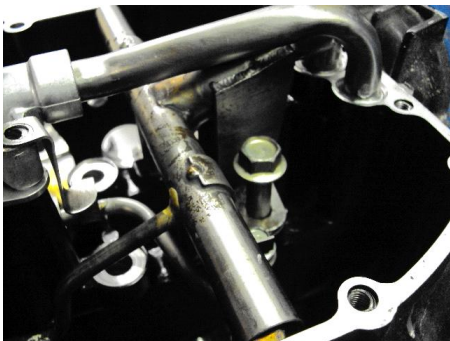
Very important! The square hole has to be between the banjo and the engine case. The round hole on the other side of the copper seal goes up against the flange bolt to seal the oil pressure going to the transmission. If this is reversed you will restrict the oil flow to your transmission!



This seems hard to do at first but it is probably much worse doing it upside down under your bike. If you push the alternator siphon tube into the port on the pump (make sure the 06667 o-ring is in place) and then slide the pumps main oil tube into it's home you can push the whole assembly in place. Make sure the drive gears are meshed properly.



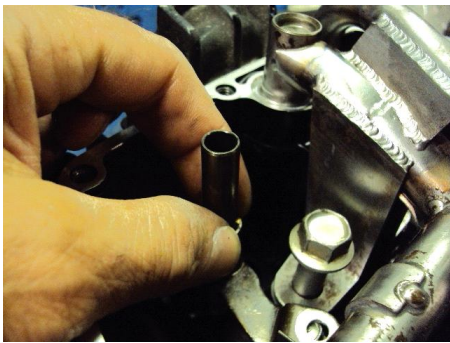
This how it looks when its all the way installed.



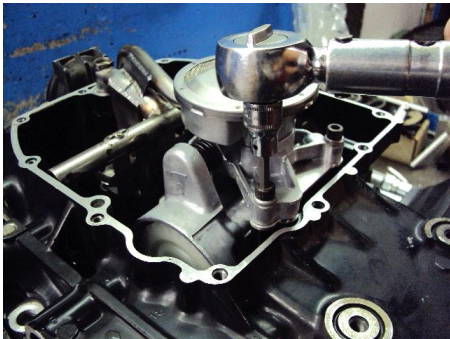
Install the main case bolts through the straps of the oil manifold and torque them to 29 foot pounds.



Install the 8 MM bolt that goes through the oiling banjo. Make sure the copper seal is on the correct way!! Torque this to 18 foot pounds.



Make sure you install the drip pipe on the 6 MM flange bolt on the water pump side of the engine. Once that is in place torque the 2 screws to 104 inch pounds and push the light metal tabs over the heads to keep them from falling out.



Install the three 30 MM bolts from the kit to hold down the pump. I put a small drop of 262 on them just to be safe. Torque these to 104 inch pounds. Put your pan on and you are done!

Any questions just call our shop.

PCW Racing, Inc.

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