

## AVET EX 4/02 Maintenance

It's funny how you don't really appreciate something until it's gone. pull up the schematics at <http://avetreels.com/pdf/ProEX4-02spd.pdf> and follow along. before you open up this reel, call avet at (818)576-9895 and order up three brake disc pin c clips (part #exw402-019), three brake pin springs (part #exw402-025) and a 5/02 handle (part #ex502-087).

here's the reel.

remove the left endcap screws (key #1).

the endcap housing (key #4) comes off cleanly. the only thing that might fall out is the spool stop knob (key #14) and spring (key #15). set everything aside.

now remove the spool assembly and set it aside.

remove the right end cap screws (key #1).

you are now down to four pieces.

remove each harness lug screw (key #9), one at a time, add a small bead of grease and replace the screw.

back out each rod mount screw (key #90), one at a time, shoot in a bead of grease and torque the screw down nice and tight. you don't want these to back out on you later.

this reel did not come with rod mount bolts (key #91), but we'll grease the screw holes anyway.

let's take a minute now to put a very small bead of grease in every end housing screw hole.

now for the right end housing assembly. it contains three bearings. we're going to pull each bearing, pack it with grease, reinstall the bearings, grease all the screw holes and change out the handle grip for a larger one.

remove the cover screws (key #80) and the crank arm cover (key #79).

grab the knob of the release arm (key #77) and gently lift the arm, spring (key #75) and lock plate (key #74) as a unit.

remove the crank arm nut (key #73) and push arm (key #78) as a unit.

don't forget the washer (key #71).

remove the handle assembly and drive shaft washer (key #69).

to remove the main gear and drive shaft assembly, simply lift the right end housing up and leave the gear/drive shaft assembly where it sits. oh, and let's also leave it in one piece.

locate and remove the two drive shaft bearings (key #67) and the drive shaft tube (key #68). set them aside.

pry out the gear bearing (key #32). this is also commonly referred to as the right main side plate bearing and is usually the first bearing to fail. take care to leave the cam assembly in place (key #'s 33, 34, 35 and 36).

carefully remove the seals from the bearing with a small scalpel or thin blade. we will need to re-install the seals later, so don't mangle them. note that the bearing is not totally packed with grease. these air pockets will allow salt water intrusion, front and back.

let's pack both sides of the bearing carefully with yamaha engine grease ....

.... and reinstall the shields.

press the bearing back into the cam housing.

remove the seals from the drive shaft bearings (key #66).

note that these bearings are also not fully packed with grease.

pack these with grease and reinstall the seals.

reinstall the drive shaft, bearings and tube.

note the lip on the drive shaft washer (key#69). it faces down.

reinstall the handle assembly.

reinstall the washer (key #71) and push knob assembly (key's #73 and 78).

to make sure the lock plate lines up properly, tighten the crank arm nut (key #73) until the point lines up with the spring pin (key #76).

install the lock plate (key #74), release arm spring (key #75) and release arm (key #77) as a unit.

add a bead of grease to the screw holes and install the crank arm cover (key #79) and screws (key #80).

now let's check the button and release arm to make sure they both work!

i'd like to remove the 4/0 grip and install the larger 5/0 grip.

remove the handle lock screw (key #88) and washer (key #87), and switch grips.

remove the three cover plate screws (key #52) and three plate screws (key#42), one at a time, add a bead of grease and reinstall each screw.

add a small amount of grease around each screw hole in the right end housing (key #39).

install the right end housing.

now for the spool assembly. let's start by removing the left brake screw (key #17) and lock washer (key #18). i have noted that many reels do not have this lock washer

remove the left brake (key #20) and brake retracting spring (key #22).

here's the only tricky part. you should have already ordered a set of brake disc c-clip pins (key #19). even knowing that these have wings, i still lose one out of every 10. take a very small pair of wire cutters and push the clip out and off the pin. cover the pin with your left index finger first, then set it aside in a safe place.

remove the disc brake (key #21).

remove the 3 brake pin springs (key #25) and set them aside.

remove the left brake (key #20).

remove the spool shaft assembly and carefully tap out the bearings.

here's a shot of the spool shaft assembly as it sits in the spool ....

.... and separated.

interestingly, the bearings are not fully sealed. the outsides have seals, the insides are open.

it is still my preference to remove the seals of these spool bearings, clean out any amount of grease, lube them with corrosion x and re-install them open.

to waterproof the drag washer, apply a generous coat of shimano or cal's drag grease. make sure you get the edges as well.

take a clean rag and vigorously rub off all of the excess grease.

here's a greased drag washer on the left and a dry drag washer on the right. not much difference, in appearance or function, but the greased drag washers are impervious to water.

install the left brake (key #20) and brake pin springs (key #25). a bead of grease in the hole will help keep the springs from getting lost.

ok, now, follow me on this one. a stock avet ex 4/02 will typically give you 17-18#'s of drag at strike before losing freespool. changing the configuration of the belleville pressure washers from "()" to "((((" has little effect. the only other way is to scooth the inside drag washer as close as possible to the drag disc. i had never thought of this until i tried to hotrod a daiwa sld 30 two speed. and the double drag design of the daiwa sld is very similar to the avet ex 4/02. i got 30#'s of drag at strike out of a daiwa sld 30 two speed. i tried the same thing with an avet ex 4/02 and got the same results.

there are two ways to move the inside drag washer closer to the disc. one is to move the drag washer closer to the metal disc by putting a thin washer between the bearing and the drag washer. the other way is to move the metal disc closer to the drag washer by putting a thin washer under each of the c-clips or by choosing the short set of pins. for the avet ex 4/02's that i've worked on so far, i've been able to get 30#'s of drag out of most of them by simply choosing the short set of pins. interestingly, the first couple of reels needed a washer under inside drag washer as well. for now, let's just go with the shorter pins.

first, let's figure out which pins are short and which ones are tall. place the disc brake (key #21) so that it rests ON TOP of the brake pins. i know the photo is blurry, but look carefully. you will note that the pin to the left of the spring is taller than the pin to the right. and they alternate tall, short, tall, short, tall, short.

to get the maximum amount of drag out of this reel, let's put the brake disc c-clips (key #19) on the short pins.

grease the left brake (key #20) and rub off the excess.

install the brake retracting spring (key #22) and the left brake (key #20).

install the left brake screw (key #17) and lock washer (key #18).

45 seconds of freespool for the bare spool.

install the completed spool assembly back into the frame.

now for the left end cap. normally i'd pull the end cap bearing (key #5) out but this one was pressed in so tight that i could now pry it out. i removed the seal, packed the bearing with grease as best i could, and replaced the seal.

add a small amount of grease around the screw holes of the left end cap (key #4).

add some grease to the dogs (key #7) to hold them in place. line up with end cap housing with the frame, then turn the handle slightly and it will snap into place. don't forget the spool stop knob (key #14) and spring (key #15).

tighten down the the end housing screws (key #1) and you're done! whew!

These reels have just been coming out of the woodwork. this particular reel had a max drag at strike before losing freespool of 32#'s after it was all said and done. the last half dozen reels have varied from a low of 28#'s to a high of over 40#'s. i believe the reason for such a wide range was because of varying heights of the disc brake pins. interestingly, the first two reels that i worked on had pins that were so high that i needed a thin washer between the bearing and left brake to close the gap. note also, that at these higher drag settings, the drag is either "on" or "off." when you throw the lever forward, the drag ramps up immediately. nothing subtle about it!

If you look at 20 and-30 sized two speed reels in the \$300 class, only the the avet ex 4/0's and the daiwa sld two speeds have all aluminum frames. both reels can be hotrodged to give you 30#'s of drag at strike before losing freespool. that means you can fish either of them with 100-130 pound spectra and topshots of 40, 50, 60, 80 or even 100#'s. the handle upgrade for the avet is only \$10. the daiwa sld's very are difficult to service. so much so that i do not ever plan to write a rebuild post on this reel. the daiwa has an unusual red fiber drag material, not my trusted carbon fiber. "out of the box" freespool for the daiwa is legendary, but the avet is close enough. for all of these reason, i am going to call the avet ex and exw 4/02's the overall best reels in their class, even standing shoulder to shoulder with reels costing hundreds more.

Too bad they've been discontinued.....

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