



(powered by [www.big-game-board.info](http://www.big-game-board.info))

Big Game Board – Tutorials presents...  
an Alan Tani tutorial

## „Random thoughts and musings...”

taking a hard look at all of the two speed lever drag reels out there, here would be my recommendations. if you are going to fish a reel until it dies and never be able to service it yourself, i would recommend the tiagra. straight out of the box, i think it offers the best reliability, though not perfect.



if you are looking for decent performance and a reel that is the EASIEST to service, then i would point you in the direction of the first generation penn internationals.



if you have no problem getting in and out of a reel, then you can pretty much choose anything you want!









I've taken the liberty of making up some categories of fishing reels. i've done this on my own. yup, had a little too much time on my hands. so here is what i came up with. i would call a first generation reel one that will hold 300 yards of 30# dacron and deliver 7-10#'s of drag. a second generation reel is one that holds 300 yards of straight 30-40# mono and can deliver up to 15#'s of drag. a third generation reel is one that will hold 300 yards of 50-60# spectra, a short 30, 40 or 50# topshot and deliver a max of 25#'s of drag.

good examples of second generation reels would be the shimano trinidad/torium 30/40, the daiwa saltiga/saltist 30/40, the avet jx/lx, the shimano tld 15, and the penn 500/112h (barely!). good examples of third generation reels would be the progear classic series 501/551, the accurate 270/870N, and the penn torque 100/200. please note well, the differences between second and third generation reels. these newer spectras and high strength monofilaments allow you to fish similar sized third generation reels at nearly twice the drag range of their second generation counterparts. case in point, where an avet jx will deliver a maximum of 15# of drag, an accurate 870 will deliver 25-30. a shimano trinidad 20 is safe at 15#'s of drag but a penn torque 200 can be cranked down to 25#'s.

third generation versus second generation. spectra is making all the difference in the world!

To get the maximum freespool from a star drag reel, polishing the spool shaft and pinion gear are critical. i recommend a buffing wheel and buffing compound to polish the spool shaft. to polish out the pinion gear, i find a drill bit that matches closely in size, then run the pinion gear up and down on the fast moving drill bit. that's quick and does a pretty decent job.

for bearings, the answer is one that you knew already. every time you finish a fishing trip, you need to pull the bearings out, clean them, relube them and reinstall them. that's right, single use and then service. that's why a user friendly reel is important.

for abec 5 versus 7, the 7's are really used for high speed applications. their tolerances are extremely tight. a fishing reel is about as low a speed application as you will ever find. abec 7's will just gum up more quickly. that's all. and they're not worth the extra expense.

the gear sleeve for the 3-stack jigsaw style progear bridges are cut a little differently. i'd need to have the reel in hand to get a proper fit. i have a pair that i can send to you, plus a couple of bronze shim washers, but i'd rather be able to check it myself. would you mind sending it to me? or shall i just ship down a couple of the specially cut progear gear sleeves for you to try. you would use the stock bridge plate and just change out the gear sleeve (aka drive shaft). they're \$20 each.

There is the amount of pressure needed to start a spool moving. this is called "start up". there is an amount of pressure needed to keep a spool moving. this is called "drag." ideally, there should be zero "start up." you will frequently find 10 to 100% "start up" in reels that use drag systems other than greased carbon fiber. if a drag is set to 15#'s and takes 30#'s to get the spool moving, then 30#'s is not a drag setting. it is a disaster waiting for a place to happen.

so what do i define as a functional drag? my definition is "one foot every 5 seconds." put the reel on the rod, run the line through the guides, tie the line off to a desired amount of lead. if you have 30# test line and you want 10#'s of drag, tie the line off to a 10# downrigger weight. now cinch down on the drag good a tight, reel down to the weight, lift until the butt of the rod is at a 45 degree angle and the weight is hanging at the tip of the rod. now back off on the drag until the weight drops one foot every five seconds. if your drag system is smooth enough to do that, then you have a functional drag.

oh, and the last part. cut off the weight and turn the handle. see how smooth the gears are? now tie the line off to the bumper of a truck and let it speed off for 100 yards (or two). now reel the line back in and note what condition the gears are in. at 25#'s of drag, i would hazard to guess that the gears will be shredded.

had a couple guys ask about lubes recently. it's a work in progress, so here's where i'm at now .....

for bearings, i have some "speed" lubes for the bass guys, but they don't get used much. i'm pretty much exclusively using corrosion x, but i keep it in a reel x bottle. that's been a point of some confusion. i started at the recommendation of my local tackle shop. it's worked well enough, so i've seen no need to change. the reel x is \$5 for a tiny bottle, the corrosion x is \$17 for a big trigger spray bottle. the math is easy.

For drag grease, i just switched to cal's drag grease and i'm very happy with it. i had purchased 6 pounds of shimano drag grease late last year and finally ran out. cal's grease is \$24 per pound, shimano's is \$80. the math is pretty easy here as well.

for the screw holes and other non-exposed metal surfaces, i am still using yamaha engine grease. there are four reasons here. first, i was told way back by my yamaha dealer that this grease had excellent salt water resistance. i've never questioned that claim but it seems to have held up. two, it's available in cartridges for mini-grease guns. you've seen my grease gun before. it's a life saver. three, it's dirt cheap, at i think \$5 for a one pound tub or \$7 for a set of three mini-grease gun cartridges. and forth, the stuff says blue forever. i can open up a reel five years down the line and see that i've been there before. that helps me quite a bit, because i like to know if a reel comes back with a problem.

and then there was my secret sauce. i was goofing around with a mix of corrosion x and shimano drag grease for a while. i was looking for a lube that i could use in spool bearings. the goal was more protection than simple corrosion x, and more spin than heavy grease. i got my best results from a mix of 1 part shimano teflon grease and 5 parts corrosion x. even these results were disappointing, so i gave up. i've come to the conclusion that bearings will simply not last forever. if i want a reel to cast, i leave the bearing open and lubed with corrosion x. if the reel is used for trolling only, then i pack the bearings with grease and reinstall the shields or seals. it's one way or the other.

regarding the avet reel in general, i would have a couple of comments. please take all of this as my humble opinion and mentally add "i think" to the beginning of each sentence. these are just my opinions, some well founded, others perhaps less so. first, let me say that avet is an american company making a fine product. for that, they are to be commended. they have chosen a price point and have worked very hard to stay there. i'm sure it has not been easy. second, they have shown great courage in being willing to take a chance on a design (the open drag chamber) that was unproven, and i think that was brilliant. third, they have stubbornly continued to use dry drags when the rest of the world now uses greased carbon fiber. for that, i am deeply disappointed.

all reels, without exception, have issues with corrosion. the time required to grease all non-exposed metal surfaces is cost prohibitive. all shielded or sealed bearings have air gaps allowing salt water intrusion. cost is a factor here as well. all greased carbon fiber drag systems have a zero failure rate. carbon fiber is not cheap. all other drag systems have a 100% failure rate. it is just a matter of time. i have found drag failure to be the leading cause of structural damage to a reel. you will see this in the next series of photos that i will soon post on the daiwa saltist. don't worry, daiwa is not alone.

i have posted photos of every brand of fishing reel in various states of failure. if that was all i did, i would be no better than a restaurant critic that had never cooked a meal in his life. but all of you have seen me cook. so if harry and sarkis called and asked my opinion, my recommendations would be grease on all the non-exposed metal surfaces, pack grease into the pressure plate, right main side plate and drive shaft bearings, leave the spool bearings open and lightly oiled, add oversized handle grips as options to all of the models, grease the drag washers and include detailed instructions on how to field strip the reel and service the bearings. to take full advantage of the new spectras and monofilaments, i would redesign the sx, mx, jx and lx to double the strike drag range. the larger avet reels already have plenty of drag. i would also pray that avet did not go broke instituting my "pie in the sky" suggestions.

right now, the avet sx and mx languish at 9 pounds of drag at strike. the avet jx and lx wallow at 15 pounds of drag at strike. the equivalent sized accurates deliver double the drag range, but at nearly double the price. penn has entered the "\$500 premium reel" race as well. the star drag torque 100, 200 and 300 deliver drag ranges similar to the accurates. penn will soon have single speed AND two speed lever drag torques. penn recognizes the value of spectra and will position themselves accordingly. sadly for penn, they will be 5 years behind accurate. just like \$4 a gallon gas, you should enjoy the prices while you can. they are only going up.

and what about avet? without change, the avet sx, mx, jx and lx will become the jigmasters of the future. they will be excellent quality jigmasters, but jigmasters none the less. i have always wondered if avet did not grease the drag washers of their smaller reel for fear of losing drag range in a reel that already had a limited drag range. drags in larger avet reels might then go ungreased to keep the genie in the bottle. who knows for sure?

certainly not me.....

wet versus dry. seems like i've been fighting this battle for the last 10 years. what's the big deal? i still get asked once in a while, so i'd like to go through some points that i think are important and then i think you'll have a better idea of where i'm coming from.

just so we're all on the same page, i'd like to define a few terms i use. the first is "start up." when you first pull on the line, some drags tend to stick a little, so you have to pull a little harder. once the line starts moving, it may take, say, 5 pounds of drag to keep the line moving. that initial pull may take 6 pounds to get it started. that extra pound (or 20%) is what i refer to as "start up." with a horribly sticky drag, the start up might be as high as 100%. my personal preference is zero.

the next is your drag setting. simple enough. it's the number of pounds needed to keep the line peeling off the spool once it starts moving. that number will increase as the spool height decreases. it actually doubles when the spool height decreases by half. for spinning, star and lever drag reels, i will quote a drag setting but always add "at the top of the spool, " even if i do not.

then there is "acceleration" or "high speed runout." this is the nasty tendency for a greased drag to become more slippery. a gentleman named cal sheets has done work some on this. imagine a situation with a large shimano tiagra 80, a 50# drag setting, and a 500# tuna. such a fish might take a 100 yard run in 10 seconds. cal sheets had found that the functional drag would decrease as much as 40% during these hard runs. it was not necessarily a function of temperature, it was interestingly more a function of speed.

the shimano star drag grease is a pure teflon product that has a melting temperature of 300 degrees fahrenheit. when applied in excess, this problem with acceleration was noted. when the excess was removed, it became less of a problem, but i do not know how much less. cal sheets also now sells a pure teflon grease. it has a melting temperature of 500 degrees fahrenheit. it is applied liberally to the drag washer of a large lever drag reel, then the excess is vigorously wiped off. cal sheets says that this has eliminated the problem of acceleration. i have no reason do doubt his work, but i have not seen the data.

and lastly, my definition of a properly functioning drag system. try this with your own rod and reel. spool the reel with a desired line weight. let's say 20 pound monofilament, just to pick a number. place the reel on the rod. run the line through the guides. tie with line off to a 5 pound weight, which is 25% of your line weight. clamp down on the drag star. reel down to the weight. lift the rod up until the grip is at a 45 degree angle. now adjust the drag until the weight drops one foot every 5 seconds. if your reel can perform to this level, then you have near zero start up. this is my definition of a properly functioning drag system.

regarding greased carbon fiber drag upgrades in top drag spinning reels, bait casters and small to medium conventional star drag reels, i simply find a carbon fiber drag washer that gives me a "best fit." i can cut them



down to size pretty easily if needed. i slap a thick coat of grease on the drag washers, install them and let the grease squeeze out the sides. when i first started doing this, my friends were amazed at the smoothness and level of performance and reliability. many tackle pros, shop owners, repair personel and industry were adamant that i was totally wrong. sometimes, it got personal. so what i did was to slap in more grease, and then take pictures. i just used the excess grease in non-lever drag reels just to annoy the non-believers. and one fisherman, after another, after another, would say "yes, i own this reel," and "yes, it is as smooth as he says." oh, and "yes, these drags last forever!" and for the most part, the harassment stopped. it is true that you get no respect on the internet without pictures.

what about lever drag reels? i always wipe off the excess, but that is because it allows me to get a higher strike drag setting before losing freespool. i am also concerned about acceleration, but i believe it will only be an issue with one fisherman out of 10,000. the start up remains zero and that's my main concern. the grease also prevents water damage to the drag washer and aluminum underneath. and when i say that i've almost won, here's what i mean. shimano started out with greased carbon fiber. they get credit for that original innovation. you will now see greased carbon fiber drag washer in all of the flagship two speed lever drag reels, including penn, daiwa, okuma, accurate and tiburon. only avet and alutecnos have dry systems. someday, that too may change. and then i will call my victory complete.

why no grease star drag reels from the major manufacturers? only progear has a greased carbon fiber drag system. i can only guess, but perhaps other manufacturers consider this system to be too expensive. and why make a reel with a drag system that will last forever, when they would rather have you buy another reel. as for spinners? they WANT you to buy a new one each year. otherwise, why would they introduce a new model every year? basically, start up is the main issue here. acceleration will never be. but this is a battle i know i will never win. it is simple frustration on my part, but i wonder sometimes if companies deliberately make a reel that they know will fail, just so that they can sell another one.

and that, gentlemen, is the history of alan tani and greased carbon fiber drag washers. i'm actually just a pharmacist. this is a hobby that got very badly out of control. somedays, it just drives me crazy, seeing reels being promoted when i know the drag systems will fail miserably. i do try to avoid arguing over the internet. like wrestling with pigs, the pigs like it and you both get dirty. other days, i feel like changing over all the reels to this system, even if i have to do it one reel at a time. personally, i would ask that you all keep an open mind, and report your findings candidly, whether good or bad.

## Quote

This is a very technical site and some of the people on here have these reels down to a science. So, I've got a question or two concerning drag. I've heard that the drag on a 6/0 through 9/0 is basically the same. How close?

What sort of drag rating on the

1. Squidder
2. Jigmaster
3. Beachmaster (155)
4. 4/0

All with new HT-100's. Dealing with this based on a full spool. I realize the you get slightly more drag as you approach the bottom of the spool. Also, there is a rating for getting the drag to slip and a continuous rating, right? What is the general percentage relationship of the two? How much drag is lost between greased drags and dry drags? If the answers are not here, where might I find them? The Penn site that I visited was absolutely no help. Thanks

ok, the numbers are going to be ballpark only. i've never taken the time to check this out in any kind of systematic way. it would not be hard to do, just time consuming. some of these i will be guessing at, but i should be close.

penn 114h (and 115L) - 5 stack of #6-115 drags, working drag range to 20#'s, max drag range to 30#'s or more, damage to the brass gear sleeve at probably 25#'s. the 114H and 115L (6/0 and 9/0) have the same gears and drag washers.

penn 113h (and 320/330gti!) - 5 stack of #6-113h/320 drags, working drag range to 15#'s, max drag 25#'s, damage to the brass gear sleeve at probably 20#'s.

jigmaster 500 (and 309, 112h, and 113) - 3 stack of #6-309 drags, working drag range to 10#'s, max drag 15#'s, damage to the brass gear sleeve at greater than 8#'s.

squidder 140L - 3 stack of #6-60 drags, working drag range to 8#'s, max drag range 12#'s, damage to the brass gear sleeve at 8#'s.

beachmaster155 - 3 stack of #6-155 drags, working drag range to 6#'s, max drag range 8#'s, damage to the brass gear sleeve at 8#'s.

now, when you talk about "there is a rating for getting the drag to slip and a continuous rating," your're taking about something i would call "start up," right? that's the amount of pull need to get the spool moving. as opposed the "drag setting" that is the amount of pull needed to keep it

moving. well, start up can be zero, or it could be double. fouled drags have a very high "start up," greased drags have virtually no "start up" at all. i would want the "start up" to not exceed 10% of the drag setting. too much "start up" and you lose fish.

as for the amount of drag lost when you grease a drag, that would only be a factor if the travel of the "drag star" was limited. you can always crank down on the star a little more, or push the lever a little farther forward. if you lose 20% of drag pressure because of grease, but can turn the star down 20% more, it's a wash.

that being the case, let's look at the issue of "lock up." this is the point at which you tighten the star down so much that the drag washer locks and will not slip anymore. read drag failure. drag grease will help prevent "lock up" in the same way that it helps to prevent "start up." this is usually an issue when the drags are fouled and "lock up" at a low setting.

here is the take home message.....

drag grease extends your drag range by allowing the drags to function under greater pressure before they "lock up." more importantly, it reduces "start up" and risk of losing fish as a result.

dr. rob can more eloquently address the issue of "high speed run out." i consider this to be an issue that applies only to the most extreme situations. don't worry about the squidder!

and just out of curiosity, why do you ask?

### **let's argue about which reel is better.....**

not you guys, but almost everyone else! i thought i'd do a little write up on the limits of various fishing reels, to help people organize in their own minds which reels perform to what levels. here goes .....

i see alot of broken reels. i'm now at a pace of a little over 100 a month. I see three common issues that will bring a reel to me. first, the drag starts to stick, which is the most common cause of structural damage to a reel that i see. this could easily be avoided if the manufacturer would use a greased carbon fiber drag washer. second is corrosion, which could easily be avoided if the manufacturer would use grease and oil in certain key spots, like all of the screw holes and all of the non-exposed metal surfaces! and the third common cause of damage to a reel is the result of user error, pushing a reel beyond it's intended limits. yes, this is one that all of you guys are responsible for.



any stock reel can be tweaked a little to bring out a little more performance. once done, there is still a limit in terms of drag pressure that you should not exceed. simple in concept, but what's happening is that newer spectras allow you to use heavier line than most reel designers had predicted. in short, fishing reel technology has not kept up with fishing line technology. a jigmaster holds 350 yards of 30# mono. pack it full of 30# spectra and you'll break the bank! that's why i think it's important to know the limits of a reel. some are worthy of spectra and i'll call them third generation reels. some are worthy of mono only, so let's call them second generation. and a few old dinosaurs are worthy only of dacron, so first generation it is! with that backdrop, i'm going to start listing off some reels, and what i think is the maximum drag that you can safely use to not mangle up your reel, and why...

\*\*\*\*\*

avet sx and mx - 9#'s at strike or full. you only have one drag washer and one right main side plate bearing. at drag pressures in excess of 9#'s, there is so much load on the bearing that it becomes increasingly difficult to crank the handle and will quickly damage the right main side plate bearing. i would call these second generation reels.

avet jx and lx - 15#'s at strike or full. you only have one drag washer and one right main side plate bearing. at drag pressures in excess of 15#'s, there is so much load on the bearing that it becomes increasingly difficult to crank the handle and will quickly damage the right main side plate bearing. more second generation reels.

avet ex - 17-18#'s at strike before losing freespool in the stock configuration, 30-35#'s at strike before losing freespool if modified. this is a righteous 80# reel. load it with 100-130# spectra, topshot it with 60, 80, 100 or 130# mono, set the drag to 25#'s at strike and kill anything that swims. third generation.

avet pro - more drag than you'll know what to do with. third generation.

\*\*\*\*\*

daiwa sl graphite - with carbon fiber drag washers, these reels can easily deliver up to 15#'s of drag. i have never seen a broken graphite sl frame, but i would be concerned about this with drag settings in excess of 15#'s. go with straight mono and a 30% drag setting. use any weight spectra for deep water jigging, but do not exceed these drag settings. second generation.

daiwa saltist and saltiga - 15#'s. at drag settings any higher than this, you can pretty reliably see the anti-reverse roller bearing start to slip. if the back up ambassaduer-style dog fails as well, the handle can fly

backwards on you. pity, because carbontex drag washers can easily get you up to 20#'s of drag. second generation.

\*\*\*\*\*

penn 500 jigmaster, 3/0 senator 112h and 4/0 senator 113 - 7-8#'s with a brass gear sleeve (drive shaft), 10-12#'s with stainless steel. the absolute maximum drag delivered by the stack of three jigmaster drags in the jigmaster and 112h is 15#'s. the black side plate 4/0 senator 113 can be converted from a stack of three #6-113 drags to a stack of five #6-60 drag washers to also deliver 15#'s of drag. for all three of these reels, stick with straight 30# mono and a 20-33% drag setting in a modified reel. second generation.

penn 4/0 senator 113h - the red side plate high speed 4/0 senator is very happy at 15#'s of drag, but stressed at 20#'s of drag. at 25#'s of drag, you will start to shred the brass main gear and also round off the top of the brass gear sleeve (drive shaft). grease the drags, lube the bearings and load it with straight 40-50# mono with 15#'s of drag. second generation.

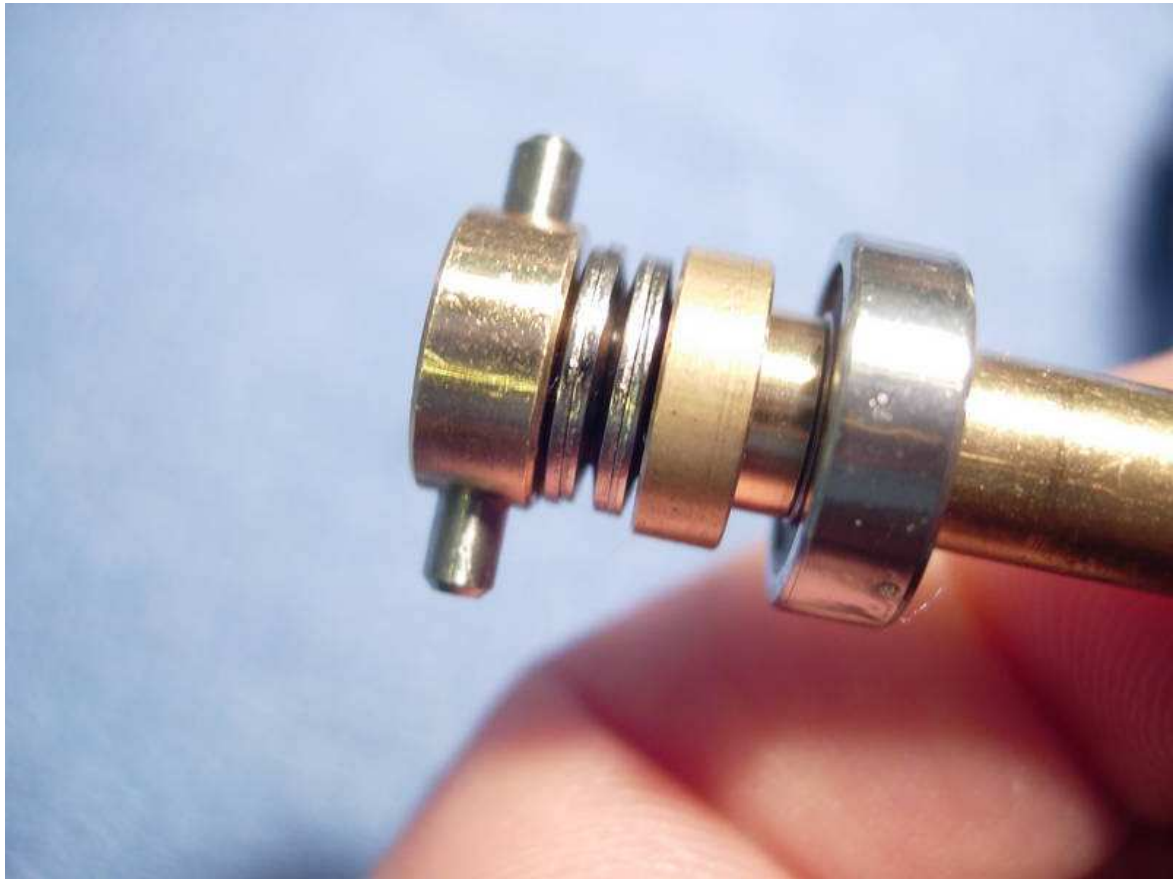
**Quote from: mrmoni;19866**

Hi there, can you please give some more theoretical explanation of these two:

"heavy duty belleville spring washers (key #50) are the reason for that. an increased drag range is easy to accomplish in ANY lever drag reel just by stiffening up the bellevilles." What is the role of these washers ? Can't the reel do with a standard shimming washers ?

and "i'm going to shim the bearing sleeve to see if i can get more freespool." Can you please try to explain the tuning process ? Thank you in advance, Moni

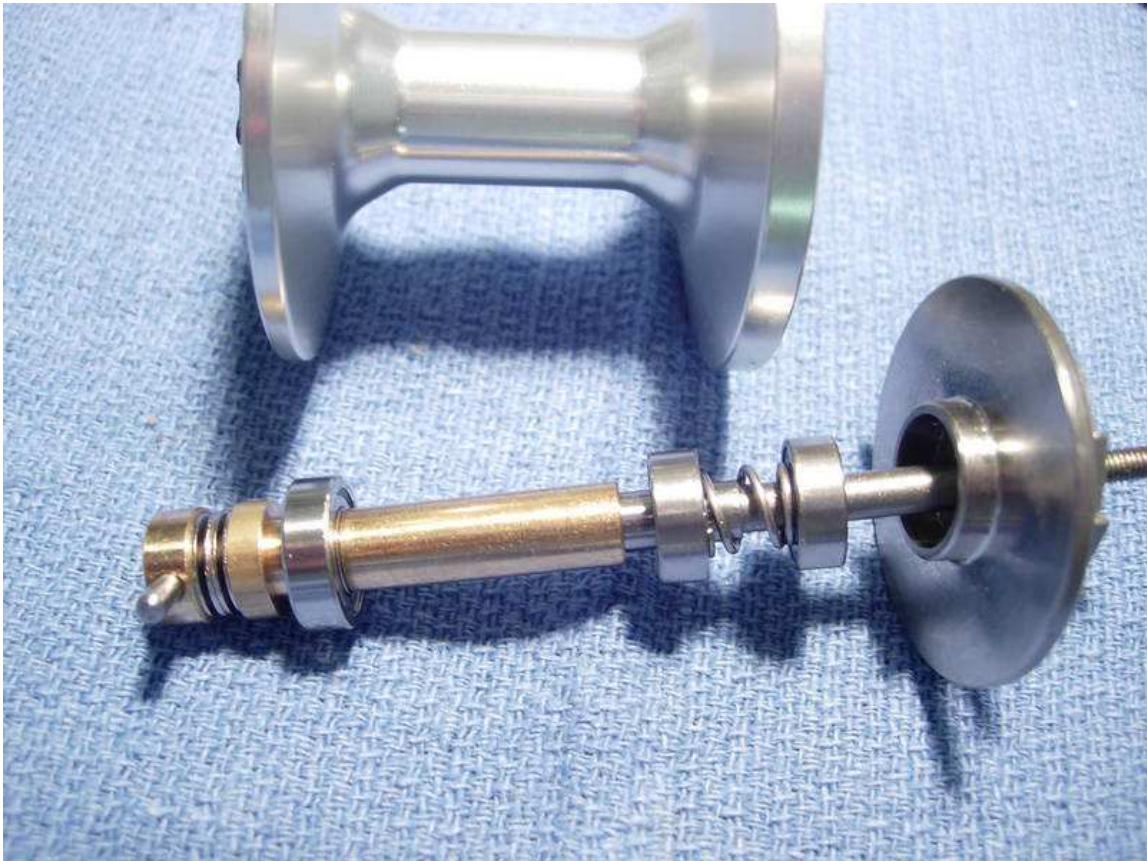
the stiffer the bellevilles, the more drag pressure get. imagine a coil spring in this spot. you would barely get any drag at all. on the flip side, a set of plain flat washers would not give at all. you drag would go from off to full with no give at all (much like the accurates). the bellevilles allow for settings in between. the softest setting is "()", medium is "()", and the stiffest is "((((".



the bearing sleeve is also called a freespool sleeve. when the drag is engaged, there is inward pressure on the two spool bearings. it is an axial or lateral load on the spool bearings that will dramatically decrease the spin time of a spool. these bearings are designed to carry a dynamic load perpendicular to the axis, and are typically rated in the hundreds of pounds. think of the vertical weight of a truck resting on the axle bearings. these bearings are not designed to carry an axial or lateral load. to do that, you need a very expensive roller bearing or you need a larger ball bearing. that is the only solution for the right main side plate bearing.

for the spool bearings, there is another solution. it is called a bearing sleeve. it has to be accurate to within several thousandths of an inch. it will allow for "zero load and zero freeplay" on the two spool bearings and will allow for the maximum spin time when the spool is in the "free" position.





you guys have all heard the mantra before.....

greased carbon fiber drag washers.

spool bearings that are cleaned, oiled and installed open.

side plate and handle bearings that are packed with grease.

side plate screws, reel foot screws and rod clamp bolts that are greased.

a light coat of grease on all the non-exposed metal surfaces.

oversized handle grips.

do these things, and even the lowliest reel would suddenly give you superior performance and reliability. this is not rocket science. this is a box filled with fishing line that has a handle sticking out. there are no magic circuits. the connections are all mechanical. "the ankle bones connected to the knee bone, etc.,." being able to service your own gear should be as basic a skill as being able to field strip an m-16.

you may have seen it on the other board, but there's a guy that i THINK is

saying that we are all too stupid to do this kind of work, and fools for even attempting it. stick with me, fellas! we'll show him!!!!!!

I had a gentleman on another board tell me that i should not grease things that were not intended to be grease by the manufacturer. well, here's what happens when you fail to maintain your gear. doesn't matter what brand of reel we're looking at, the end result is the same. i fixed this one a couple of evenings ago. the drag and all of the bearings were toast.











to your bearing god, these bearings were probably crying out, "my god,  
my god, why hast thou forsaken me?"

here's the reel foot from an accurate foot. note the beginnings of  
corrosion. i installed longer phillips head screws and tightened them down  
until they were firmly seated. the grease will insure that this reel foot can  
be serviced if needed. the owner has been instructed to check it  
periodically.









**corrosion x** - i pretty much use it exclusively. it was recommended years ago by the guys at my local shop. the claim being that it would not turn to varnish the same way common oils, even wd-40, would. i use in on fishing reel handles, level wind assemblies and in spool bearings. i have also started adding a drop or two to side plate screws when i'm worried about the frame cracking, like the frame of the daiwa saltiga. been pretty happy with the product over the years and i've got no plans on switching. rarely, i will use metaloil, rocket sauce, or hot sauce on bearings for some of the tournament bass guys that are never getting near salt water. i've never systematically investigated anything else, and don't really see a need to.

yamaha all purpose grease - this stuff was recommended by the guys at my local grady dealership. it's salt water resistant, never hardens and stays blue forever. i can open up a reel 20 years from now and know that it's been service before. and if i open up a reel and i don't see blue grease, i know that it has not. honestly, that (and the \$5 a pound price tag) is the reason i use yamaha blue grease. i grease all of the non-exposed metal surfaces with this stuff using just my greasy fingers or a ratty old toothbrush. i also pack all the non-spool bearings with it. it is another product that i have been very happy with.

cal's grease - at \$25 a pound, it's a little pricy. i go through 6 pounds a year and i am only applying it to drag washers. there are still guys that do not believe in greased carbon fiber drag washers and for a while they were giving me constant grief. just to pee them off, i started slopping tons of grease on the the drag washers of star drag reels, then let the excess ooze out the sides. that saves you the trouble of wiping off the excess.

for smaller avet drag reels, i slop a little less grease on both sides of the drag washer and the matching surface of the spool, install the drag washer, and then wipe off all of the excess. i don't want the stainless steel drag pressure plate to stick because of the excess grease. that would decrease freespool. for drag systems that have a drag washer glued to an aluminum pressure plate (or to the spoon in the case of the new avets), i slop a bunch of grease all over the drag washer, particularly, the edges, and then carefully wipe off all of the excess. the goal here is to prevent water intrusion. if salt water gets inbetween the carbon fiber washer and the aluminum, the aluminum will bubble and the drag washer will stick. seen that plenty of times with older penn international drag pressure plates.

when i get an old lever drag reel with a carbon fiber drag washer, i grab an old blue rag and rub the surface of the drag washer. that will remove half of the old "crap" out of the drag washer and onto the rag. it will also drive the rest into the fiber material and out of play. the important point is to "raise the grain" of the carbon fiber material so you do not have a "glazed" surface. this prevents sticking of the carbon fiber to the stainless steel pressure plate.

you don't need any kind of fancy cleaners or solvents for this process. if the surface is glazed or corroded with salt, toss it. if it's just gummed up with oil or grease, it can often be cleaned with your trusty old rag. you will know that you are successful when you reassemble the reel, set the drag on your reel, yank on it and see no stickiness or "start up." if you're still having problems, get a new washer. the purpose of the teflon drag grease is to prevent water intrusion. if i recall the story correctly, penn's ht-100 carbon fiber drag washer got it's name because the penn engineers saw no wear on their carbon fiber material after 100 hours of constant full speed pressure. most reels would never see that level of performance in 100 years.

#### **Quote**

Hi Alan, I just wanted your advice on the frequency of reel maintenance. I fish the reels about twice a month, two weeks apart, and will usually average 3 days of non-stop fishing. I haven't opened up the reels this year to grease yet, should I do it now that it's winter time? What are some items I'll need to do this? Thanks for the help!

the trick is to get it right the first time.....

what i do is go through a reel top to bottom. do this once and then you can slack off a little. initial maintenance involves greasing the drag washers, packing all non-spool bearings with grease, greasing all screws, and brushing on a light coat of grease on all of the non-exposed metal surfaces. once this is done, you should never have to address these again. that leaves only the spool bearings.

for spool bearings, i recommend opening them up, cleaning out the grease, lubing them with corrosion x and installing them open. for maintenance thereafter, rinse the reel, towel dry it, pop it open, add a few drops of corrosion x to the bearings, and close it back up again. that's it! hope this helps. Alan