

INSTALLATION INSTRUCTIONS FOR THE NEW SUPER ULTIMATE “A. K. – 19 DELUXE “STEERING SYSTEM”.

Designed for TWIN engine Yamaha 2019 and newer jet boats.



The new SUPER ULTIMATE A K-19 DELUXE SYSTEM is spring loaded, adjustable & selectable. You may choose to keep the fins in the water at a variety of different influence levels –OR- you may set the fins to rise up on plane and deploy for idle speeds and docking when off plane.



Parts breakdown, #1 is the second tie rod that will be added to the left side nozzle. #2 are the outer fins that will be mounted on the nozzles at the reverse gate bolts. #3 are the actuators that interconnect the inner and outer fins the small button cap bolts and nylock nuts attached are used to secure these to the fins , note the nylock nuts are on the outside and the button heads are on the inside , this is how you need to install them when attaching the fins and the actuators. That will provide more clearance between the planing surface and the inside of the actuator.



Number 4 are the planing surface side force stabilizers they are labeled right side and left side and this side up; they must be installed in the correct location to operate properly.

#5 is the inner fins these are specially designed to increase the steering influence only when the boat is operating off plane. They also stay above the tie rods.

#6 is a non-permanent thread locking compound, it must be used on the 8- and 10-mm bolts follow the package directions when using this and follow the proper curing time.

#7 is the longer 10 mm bolt to secure the tie rod ends to the rudder , on 24 foot boats you will need to insert the bolt into the 2 tie rod ends that are going to be attached to the rudder and then slide the ends with the bolt up under the hull before you attach the ends of the tie rods to the nozzles. You need to apply thread lock compound to the end of the bolt when installing it.



#8 is the hardware and spring that attach the fins to the right-hand side of the nozzles.

arrow indicates



the fin 2.18 spacer; this is where the fin mounts in the sequence.

this shows the fin on the hardware

ready to be installed, remember there is also an original factory spacer that the reverse gate pivots on and it must be



reinstalled.

If you forget that original part your reverse gate will not be able to operate properly .



These are the parts first the long 8 mm hex bolt then the large thin washer next the 1-inch long aluminum spacer for the spring to sit on next the spring with the longer arm on closest to the bolt head. Then a washer and then the .218 fin spacer where the fin will be placed: see top picture with arrow.

Next another flat washer followed by a smaller 9/16-inch-long aluminum spacer, another flat washer and finally the original stainless standoff for the reverse gate to pivot on, also add some thread lock compound and install this in the right-hand side hole where the reverse gate bolt originally came out of. Be sure the spring is on properly and do not load the tension on the spring yet.



Next is number 9, this is the hardware for attaching the fins to the left side of each nozzle,



The 8mm button cap bolt has a flat washer then the .218 spacer whee the fin mounts then another flat washer and the 9/16 aluminum spacer and another flat washer, the small round piece at the end is the original reverse bucket standoff that must also be reinstalled just like on the other side so that the reverse can operate properly.

Now we get to number 10 This is the new hardware for attaching the tie rod ends to the nozzles and also lower the tie rods as well as attach the planing surfaces to the nozzle. Number 10 is a longer 10mm Allan cap bolt, with washers and spacers and a 10 mm nut.



attached to the nozzle with tie rod, spacers & washers to lower the rod



flat washer

and 10mm nut holding the planing surface to the nozzle . Thread lock compound must be added to this nut also.

Now we have covered the parts and how they are installed on the nozzles we can discuss more about the actuator #3 that connects the fins together as it also can be set to change the depth of the outerfins to increase or decrease the fin depth in the water at speed thus effecting the steering influence as well as setting it to lift the fins up at speed if you do not desire any high speed influence. The outer fins have several levels you can choose including the number 6 &7 setting that causes the actuator to lift the larger outer fins up out of the water at speed. Remember on this application the small nylock nuts must be



placed on the outside of the fins .

You may choose any of the 1 through 6 settings for more or less full time steering influence.

Note: your actuator ends have a flat side and round side so be sure to mount the actuator with the flat side facing forward as shown in this picture. Using the small button cap bolts with the nuts on the outside to secure it to the fins.



We now need to reposition the anodes located on the left side of each pump. We have provided you with repositioning brackets bolts and nuts to accomplish this.

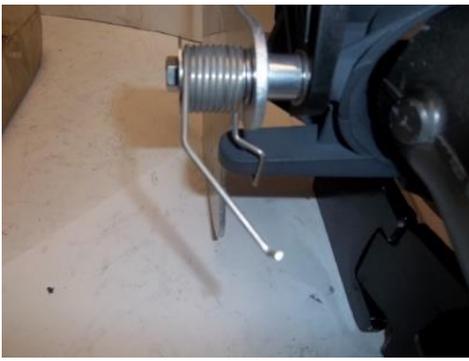
First remove the two original hex bolts that are holding the anode to the side of your pump. "See second picture above,

Now take the anode and place the rough side out just the opposite of how it was originally attached to the pump. Using the new long bolts place them through the brackets and out the rough side of the anode attaching the nuts to the bolts. Now use the shorter bolts and flat washers to secure the brackets to the pump housing exactly where you removed the original bolts from. The anode will now be sitting at an angle and allow the nozzle to turn without obstructing it. Anodes are made to corrode so the pump and other parts don't.

I suggest you also add a ZINC anode if you run in salt water as the original anodes are magnesium and better suited for fresh water.

The size and shape of the anode does not matter just that it is attached to the metal parts you are protecting from corrosion. Also never paint the anodes. Note pictures show the anodes reversed with rough side out.

And finally, we need to load the spring on the right-side fin. This is really simple; there are two arms on the spring.



The first arm is closest to the nozzle and it has numerous bends to allow it to hook on to the nozzle steering arm, see first picture, the second arm is furthest away from the nozzle and has less bends, take that arm, pull it out slightly away from the steering arm of the nozzle while you rotate the spring arm clockwise and bring it up over the top of the fin where it will catch the top of the fin to provide tension on the system. The second picture shows the spring being loaded by hand and the third shows it loaded and operational the arrow shows the proper direction when loading always clockwise!

Some important bits of information regarding this high-performance steering system, you should make sure the nozzles are aligned and the rudder is set at a 90-degree angle from the back of the boat. I always try to send emails with info on how to do this before doing your installation when adding any of the AK or AK-19 steering systems for twin engine boats.

If the nozzles or rudder are not in proper alignment you will usually experience a pull at high speed.

I always recommend removing the surf point settings on your boat if you are adding a full time steering system however you may choose to keep those settings if you set the outer fins up high so as to reduce the high speed influence and avoid conflict with the nozzle settings for surf point. You will continue to benefit from the slow speed and docking improvements. It is my honest opinion that because surf point is not something you can activate when using it and deactivate it when not in use you may be suffering a loss of fuel economy as well as a loss of top speed along with some handling issues if you are run with the surf point settings.

Below are various pictures of this super ultimate ak-19 deluxe steering system.

