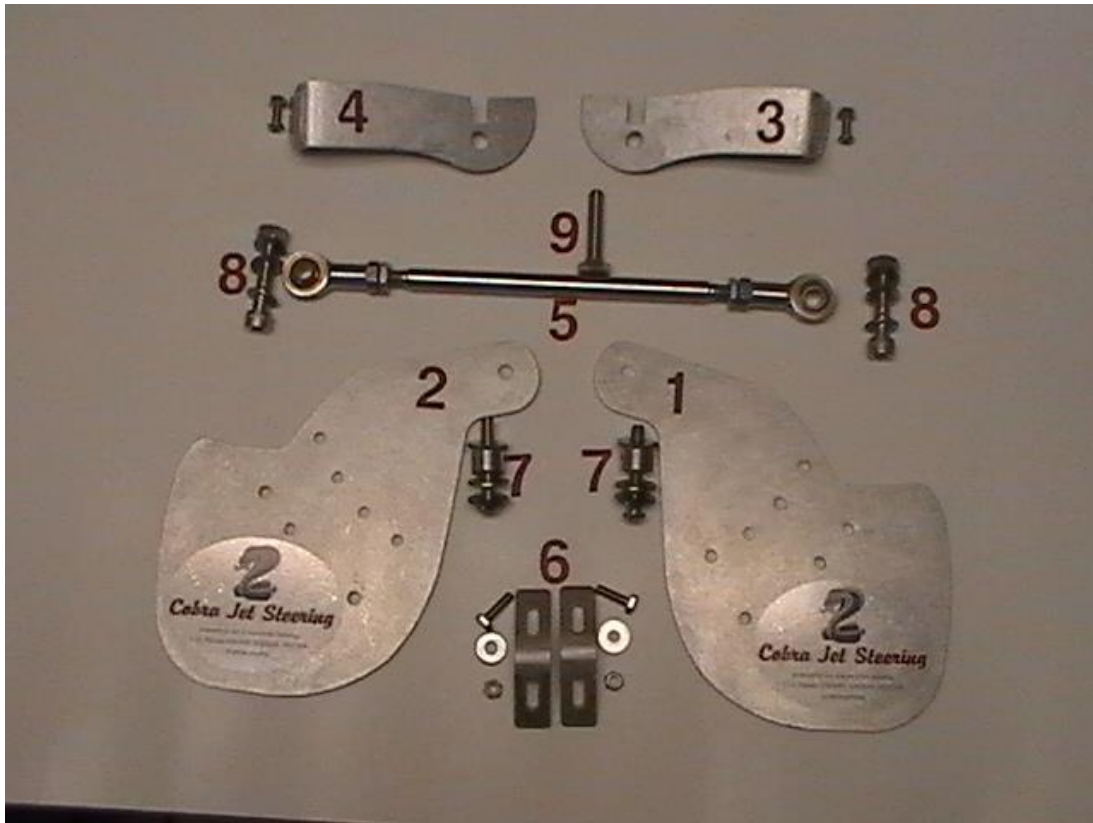


Installation Instructions for COBRA VENOM twin engine Magnum A.K. *19* Series Steering



Parts Reference

- 1= Port "left" side fin. 2= starboard "right" side fin.
3= right stabilizer bracket for fin, 4= left stabilizer bracket for fin,
Note both brackets mount with the outside end facing downward.
5= Additional tie rod to attach the left nozzle to the rudder.
6= Anode brackets for repositioning the anode on the left jet pump for clearance.
7= longer bolts, washers and a spacer for mounting and positioning the front of the
fins to the side of the reverse gates.
8= new 10 mm cap bolts washers and nuts for attaching the tie rod ends and the fin
stabilizer brackets to the end of both nozzles.
9= Longer 10 mm hex bolt to attach both tie rod ends to the rudder.

For best results be sure to follow the sequence in these instructions!

Step 1: Prepare the watercraft

- Place the boats controls in forward to open the reverse gates on the nozzles and center the steering wheel.

Step 2: Add secondary tie rod

- Locate the tie rod (5) and the long hex bolt (9) in your steering kit.
- Remove the factory hex bolt that attaches your original tie rod to the rudder.
- Place the new tie rod on top of the original one with the new bolt placed through both tie rod ends.



NOTE: This will require you to pull the tie rods out from under the hull due to the limited space.

- Slide the tie rod ends and bolt back in place to line up with the bolt hole on top of the rudder.
- With thread locking compound on the end of the bolt, tighten the bolt in the rudder with both tie rod ends stacked on top of each other.



Step 3: Add bracket #4 and tie rod #5 to Left hand nozzle

NOTE: Both tie rods will need to be adjusted. YES even the original one is probably in need of adjustments for this application.

Adjustments must be done before attaching the rod ends and brackets to the nozzles.

Always make even adjustments at both ends of each tie rod to keep everything even and insure that one end is not too far out.

Place a straight edge across the rear openings of the nozzles, make sure the steering wheel is centered. When holding the straight edge “a long level will do fine” against the nozzle openings you will be positioning them evenly.

The new magnum ak-19 fins are designed with a slight tow in for improved high speed tracking.

Failure to adjust the nozzles correctly can result in a high speed pull to either direction.

Note the tie rod ends lock in place with nuts, loosen both nuts to make any necessary adjustments to the ends as evenly as possible then be sure to relock those nuts when you finish. To lock the ends use 2 17mm wrenches, place one on the end and one on the nut, securing the end with the first wrench tighten the nut with the other wrench and place a drop of thread locking compound behind the nut when you are finished with the adjustments.

- Once you have your rod ends adjusted properly, locate the new longer Allen cap bolt, washers and nut labeled # 8 in your steering kit.

- Place 1 washer on the allen cap bolt then the tie rod end followed by another washer, then position the proper bracket with the end pointing down and outward on the nozzle and push the allen cap bolt up through the nozzle and bracket, place another washer on the bolt on top of the bracket and secure the large nut as tight as possible with some thread locking compound as well.

Note in some cases you may encounter excessive thread locking compound placed on the original bolt holding the original tie rod to the right side nozzle. If so you will need to secure the tie rod end using a big deep socket for support and hit the end of the bolt with a small hammer to knock the bolt loose from the tie rod end. Keep in mind the bolt is supposed to just pull out and it is not supposed to be glued in with the compound.



LEFT SIDE setup



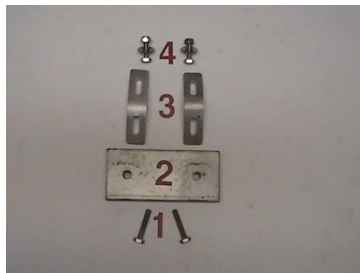
RIGHT SIDE setup

STEP 4: Now repeat this procedure for the right hand nozzle

STEP 5: You will now need to reposition the anode that is located on the left side of the left hand pump. This will only be necessary on the left hand pump to allow for the fin to turn without making contact with the anode.

Locate the anode on the left side of the left hand pump.

Shown in the first picture it is the block of metal just in front of the fin. Second picture shows the parts, The last picture is a mock up for easy recognition of the part and location



First remove the 2 original bolts that secure the anode to the pump. Reference the center picture the original bolts are labeled number 1 Note you will be reusing those bolts.

Now locate the 2 brackets labeled number 3, the new shorter bolts nylock nuts and washers labeled number 4.

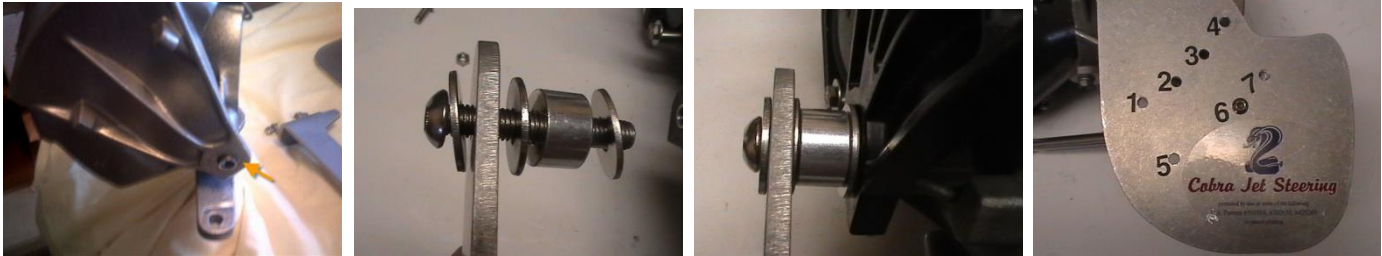
Using the original bolts secure the 2 brackets to the back of the anode #2 and attach the 2 nylock nuts in the front of the anode. This will have the brackets positioned behind the anode and the bottoms of the brackets allowing the anode to be reinstalled on the original bosses of the pump. Use the 2 new bolts and flat washers provided to attach the brackets See mockup picture below, the anode will now be repositioned at an angle you should use thread locking compound on those 2 bolts also.



Step 6: Add fins

NOTE: You have two fins labeled 1 for the left side and 2 for the right side in your steering kit. Both use the same hardware labeled 7 consisting of a long button cap bolt with 3 flat washers and a spacer to move the fin out sufficiently to clear the new reverse hoods.

First remove the pivot bolt from the left side nozzle reverse hood. Taking care not to remove or lose the small stainless standoff located where the bolt goes through the reverse hood. See first picture below.



- Place one flat washer on the button cap bolt, now place the bolt through the top hole of the fin. Once that bolt is on the fin place another flat washer on it followed by the spacer and another flat washer, see second picture above. Then add a drop of thread locking compound to the end of the bolt.
- Now insert the end of the bolt into the reverse making sure it is going through the small standoff previously mentioned.
- Secure the bolt but do not over tighten it, just make it snug, the thread locking compound will prevent it from loosening.
- This way you can change the position of the fins later if you so choose without needing to loosen that bolt.
- The end picture above shows the various positions numbered for easy reference to explain their functions however the actual fins are not numbered. That being explained positions numbered 1 through 4 are the positions for the magnum and magnum AK steering systems, the positions 5,6 &7 are for the new magnum ak-19 system , also position 1 & 2 will allow you to add the A K FANGS to your system if you wish . The new mega fang plus systems are not compatible with the 2019 nozzles therefore we felt it was important to keep the AK fang capabilities and with the fins being further out plus mounting them on the outside of the fins rather than the inside surface you will be providing the system with more exposure to the water and more leverage for even more effect.
- Next we have position 5, this is for people who wish to limit the high speed influence, setting the fins at that position will reduce the high sped effect but not eliminate it totally while still providing plenty of influence at slow off planing speeds.
- Position 6 and 7 are the settings for maximum influence, at all speeds even off power steering control as well as water sport & rough water waves & heavy boat traffic areas. Also faster turning response.
- Setting 6 is where the fin in the picture is set & that would be the one to start with especially if you are adding the A K fangs to the system shown below.

