



# Aqua-Cycle International, Inc.

*Ride a Tricycle on Water*

## Belt Tensioner Kit for AC4 & AC5 models

### TOOLS TO HAVE READY:

- 2      ½" Open end wrenches or Crescent wrenches or ½" socket set
- 1      1/8" Twist drill bit & electric drill

### BELT TENSION

The Aqua-Cycle is assembled and shipped with the belt slightly tighter than it should be for operation. During the first week of operation, it will become easier to pedal as the belt and bearings wear to their normal operating positions.

Due to extreme stress on or bending of the frame, a repaired pedal crank or axle, it sometimes becomes necessary to add a belt tensioner. The tensioner helps keep the belt from slipping (or jumping as some people describe it) as the pedal crank and rear axle are rotated.

A belt tensioner should not be used instead of replacing worn bearings. Bearing wear is normal and their replacement should be performed every 200 hours of use. Failure to properly replace the bearings will result in lack of belt tension and extreme fatigue to the pedal crank and rear axle, thus contributing to their eventual breakage.

If, when the bearings are relatively new, the belt is still loose, then a belt tensioner is recommended.

### BELT TENSIONER DESCRIPTION

This is made up of two roller wheels, one bolt and nut, two washers, and two stainless steel springs. The two roller wheels ride on the smooth (backside) surface of the belt and are pulled against the belt by the springs.

If more tension is needed on the belt, the tensioner assembly is moved back toward the rear gear until the spring is stretched at least ¼" and the belt is tight.

The assembly consists of the 5/16" bolt with two rollers in the middle of the bolt, a flat washer against the outside (larger) end of each roller, a spring on each end of the bolt and a nut against one spring and the bolt head against the other.

The tensioner assembly is placed with the rollers riding against the top of the belt (when the Aqua-Cycle is upside down for installation) and the springs hanging down toward the aluminum belt channel. The assembly is moved toward the pedal crank or the rear axle until a location is

Post Office Box 2129 • Yorba Linda, CA 92885-1329

Voice: 800-970-2688 • Fax: 888-970-0467 • Internet: [www.aqua-cycle.com](http://www.aqua-cycle.com)

determined that when the springs are pulled  $\frac{1}{4}$ " down to reach the belt channel and the belt is tightened.

One  $\frac{1}{8}$ " hole is drilled on each side into the belt channel across from each other at a point where the springs can be stretched  $\frac{1}{4}$ " to the belt channel.

### CYCLE POSITION FOR INSTALLATION

Turn the Aqua-Cycle upside down so it is setting with the fork and seat on the ground and the rear wheels slightly above the ground. In this position you can rotate the pedal crank and rear wheels to check belt tension and you can install the belt tensioner. Remove the plastic belt guard to have access to the belt and aluminum belt channel. Never allow the Aqua-Cycle to be operated with the belt guard removed for the safety of your riders.

### INSTALLATION

1. Insert the two 3" bolts onto the two holes mentioned above from the same side.
2. Slip on one washer per bolt.
3. Slide on a wheel per bolt with the wheel shoulder against the washer.
4. Slide on a second wheel per bolt with the wheel shoulder toward the bolt threads.
5. Slip on a washer against each outside wheel shoulder.
6. Place the belt tensioner arm around the belt with the single unused bolt hole toward the aluminum belt guard so it can be bolted to it in a moment. The wheels should be on the outside of the belt, not on the inside where the teeth are.
7. Put the spring over the threads of one bolt and screw on the nut to hold the spring in place.
8. Put the spring over the other bolt threads so that the belt cannot slip out of the belt tensioner.
9. Tighten both nuts just enough so that the bolt comes through the nut and is even with the end of the nut.
10. Slide the belt tensioner back toward the rear gear until the belt forces the spring to spread and the two bolts are parallel to each other.
11. With the belt tensioner perpendicular to the aluminum belt guard, mark the location on the belt guard of the single unused bolt hole and drill a  $\frac{5}{16}$ " hole for mounting.
12. Use the 1" bolt and nut to mount the belt tensioner to the aluminum belt guard in a perpendicular position. Tighten this bolt and nut very tight so the tensioner arm cannot move.

### INSPECTION

Now with the cycle upside down, rotate the pedal crank as if being pedaled and see if the belt tensioner is keeping the belt tight and yet that it is not too hard to pedal.

Check that the four wheels are free to turn as the belt slides over them. If the nuts are tightened too much, the spring will hold the wheels from turning and excessive wear will take place on the top of the belt.

## ADJUSTMENT

If more tension is needed either move the tensioner arm back further toward the rear gear by drilling a new hole in the belt guard or loosen the mounting bolt and nut, turning the tensioner arm to an angle (away from perpendicular) to increase belt tension.

Reinstall the belt guard. Never allow the Aqua-Cycle to be used with the belt guard removed for the safety of your riders.

If you have any questions about this installation, please call our office. We are available and glad to talk you through this process.