Aqua-Cycle International, Inc.

Ride a Tricycle on Water

AC4 & AC5 PEDAL CRANK REPLACEMENT KIT

These instructions are for the replacement of a model AC4 or AC5 pedal crank and gear. You must replace all pedal crank bearings and the gear at the same time. Do not use your old ones.

Installation: Turn the Aqua-Cycle upside down so it is resting on the fork handlebar and the top of the seat back. Remove the plastic belt guard, the bearings (pillow blocks) holding the pedal crank onto the frame, the locking collars on the sides of the pedal crank and the old pedal crank.

Carefully inspect the following before installing the replacement pedal crank:

Belt - Check for frays, missing or worn teeth, or broken places in the rubber. The belt must be in good shape to keep your Aqua-Cycle operating properly and not damage the pedal crank.

Locking collars - Be sure the locking collars will slip onto the ends of the new pedal crank. If not, it will be necessary to file or grind the new pedal crank ends until they fit. Never attempt to operate the Aqua-Cycle without locking collars.

Slide the new plastic gear plate onto the new pedal crank so the square pattern mates with the steel mounting plate. If the gear plate does seat around the mounting plate, file or grind the mounting plate until it fits. Be sure to do a little on all four sides otherwise your gear will be slightly off-center causing the belt to be tight then lose as the pedal crank turns.

If the holes in the gear and plate do not perfectly match the holes in the mounting plate, use a 5/16" bit and drill through the mounting plate holes to enlarge the holes in the gear and gear plate to match the mounting plate.

Install the gear so the round offset mates with the round inset on the gear plate.

Bolt the gear and end plate onto the mounting plate. Assemble with the head of the bolt against the mounting plate and the washer and nut on the inner part of the plastic gear. Tighten firmly, but do not over tighten which can warp or crack the gear.

Two tests need to be performed on the four pedal crank mounts (points where the pedal crank bearings mount to the frame).

Test #1: Use a string, pipe or any other reference that is or can be pulled straight. Stretch the string or lay the pipe across the two side mounting plates and inspect the two points on the center channel. If the center points are lower that the sides, you will need to use a shim or spacer of some type under the two center bearings to raise them up to match the sides. If the center points are higher than the sides, shim up the side points to match the center. A shim can be a strip of aluminum, several stainless steel washers or most anything that will not rust to make all four bearings the same height. Even a single washer thickness of shim is of value to keep the pedal crank from being bowed down (in the center or on the sides) when the bearings are bolted in place.

Test #2: Inspect the boltholes in the frame to which the pedal crank bearings mount. Using the string or something straight inspect the alignment of the holes. The two holes for the center bear-

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ings need to be in a straight line with the holes for the side bearings. If not in alignment, the pedal crank may be installed in a bowed or bent position, slowly damaging it with each rotation.

Slip the pedal crank into the belt, place the gear into the center of the aluminum channel and be sure the ends equally reach the sides of the frame. Most often the mounting plate is on the right side of the center channel as you stand in the front looking to the back of the upside down frame.

Bolt the center bearings first, by hand pulling the center of the pedal crank tight. IMPORTANT: If the existing boltholes cause the belt to be very tight or loose, drill new holes or elongate the existing ones. Do not force the belt tight or leave the belt loose just to continue using the existing holes.

Leave the center bolts untightened at this time.

Mount the side bearings as you did the center, making sure the pedal crank is perfectly straight from side to side. Do not force either end of the pedal crank back or forward in order to use existing holes. If necessary, re-drill or elongate the existing holes so the pedal crank mounts perfectly straight (not bowed forward or backward).

Tighten all bolts, starting with those in the center and then those on the sides.

Slide a locking collar onto each end of the new pedal crank and, when the pedal crank gear is aligned (from side to side) with the rear axle gear, tighten the locking collars.

Once everything is assembled with all nuts, bolts, and locking collars tight, rotate the pedal crank to be sure it turns easily and does not rub.

Be sure the belt is “hand tight”. If loose, then the bearings need to be adjusted, moving them away from the rear axle. The belt must be “hand tight” for proper and safe operation of the Aqua-Cycle. Do not tighten the belt by only adjusting the center bearings. Loosen all bearings, adjust (or redrill) the center, adjust (or redrill) the sides and then tighten the center and finally the sides.

If you find that the belt gets loose and then tight as you rotate the pedal crank, the two most common points to check are: 1) wear to the belt or gears, or 2) the rear axle gear is not perfectly centered on the mounting plate.

Concerning the rear gear, the two gear halves may not be perfectly mated together when bolted onto the mounting plate or the bolts may not be holding the gear centered. In the case of the former, carefully disassemble and then reassemble the two halves together and carefully tighten the bolts and nuts, noticing any change in alignment of the gear halves when tightening. If that is not the problem then try replacing the bolts, nuts and washers with 3/8” instead of 5/16”. You may have to drill out the holes slightly with a 3/8” drill bit, but it will force the gear to center with the axle plate.

We have a belt tensioner for AC4 & AC5 Aqua-Cycles if you cannot find any other way to keep the belt moderately tight as the pedal crank and rear axle rotate. The best fixes are those mentioned above, but the belt tensioner is your next-best solution.

Replace the plastic belt guard for the safety of your riders. Never operate the Aqua-Cycle without the plastic belt guard installed. Again, rotate the pedal crank to be sure no parts rub with the belt guard installed.

Grease all bearings and flip your Aqua-Cycle right side up. You are ready to pedal. If you have any questions please call our office.