



Aqua-Cycle International, Inc.

Ride a Tricycle on Water

Bearing Replacement Kit for all models

These instructions are for the replacement of all bearings (pillow blocks), which hold the pedal crank and rear axle on one Aqua-Cycle, models AC3, AC3HD, AC4, AC4HD, AC5 and AC5HD. Note that HD refers to the Heavy Duty Rear Axle model having a rear axle with a diameter of 2-1/4" as compared to a standard rear axle with a diameter of 1-5/16" diameter.

IMPORTANT: If you have an AC3 standard Aqua-Cycle, replace all bearings every 100 hours of use. If you have an AC4, an AC5 or a heavy-duty rear axle for any model, replace all bearings every 200 hours of use.

Replacement on this schedule is necessary to protect the rear axle and pedal crank from fatigue, reverse stress, and eventual breakage. Wear to the bearings and accumulative damage to the rear axle and pedal crank cannot be detected by physical inspection.

If you fail to replace these bearings as suggested, the accumulated fatigue and stress will eventually cause the pedal crank and rear axle to break in half.

If this kit is for an AC3 or AC3HD, it consists of 12 pieces:

- 3 pedal crank (small) bearing halves with grease fittings
- 3 pedal crank (small) bearing halves without grease fittings
- 3 rear axle (large) bearing halves with grease fittings
- 3 rear axle (large) bearing halves without grease fittings

If this kit is for an AC4, AC4HD AC5 or AC5HD, it consists of 16 pieces:

- 4 pedal crank (small) bearing halves with grease fittings
- 4 pedal crank (small) bearing halves without grease fittings
- 4 rear axle (large) bearing halves with grease fittings
- 4 rear axle (large) bearing halves without grease fittings

Installation: Turn the Aqua-Cycle upside down so it is resting on the fork handle and the top edge of the seat back with the wheels in the air. Remove the plastic belt guard, noting how it came off for easy re-assembly.

Remove the bolts and nuts from the pedal crank and rear axle bearings and replace the top and bottom bearing halves with new ones.

Before bolting the new ones into place, it is wise to perform two tests on the 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 mounting point(s) in the center. If the center points are lower than the sides, you will need to use a shim of some type under the center bearing(s) 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, stainless steel washers or most anything that will not rust, to make all bearings the same height. Even a single washer thickness of shim can be necessary 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: Put bolts with washers into the side bearings. The center bolts should drop into place. If you have to bend (pull or push) the pedal crank forward or backward in order to insert the center bolts, then these need to be drilled to match the side holes. It is important that the holes for the center bearing(s) align with the holes for the side bearings. If in proper alignment then the pedal crank will not be forced into a bowed position when the nuts are installed.

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When everything seems to be in alignment and shimmed if necessary, bolt the center bearings first pulling the center of the pedal crank tight by hand.

Put on the nuts, and tighten.

Insert the bolts and washers into the rear axle center bearing(s). By hand pull the rear axle and center bearing(s) away from the pedal crank as far as possible. Do not use a lever or other tools to stretch the belt tight. Tighten the nuts for the center bearing(s). Once the nuts are tight, carefully align the axle so it is parallel with the pedal crank. Insert the bolts into the side bearings and tighten the nuts for the side bearings. If the boltholes do not match the correct position of the side bearings, then re-drill or elongate the holes so they can be used.

Parallel alignment between the rear axle and pedal crank is important, just like alignment of the wheels on a car. If the axle is at a slight angle to the frame and pedal crank, the rear wheels will be aimed slightly to the side and the rear axle gear will not be aimed exactly at the pedal crank gear. This misalignment will cause the belt to have a slight turn as it enters and leaves the gears making it harder to pedal and damaging the belt.

If you cannot tighten the belt by the above process, the frame has become damaged and the boltholes in the rear axle bearing mounts must be re-drilled or elongated to permit the rear axle to be moved farther away from the pedal crank.

When the belt and bearing bolts are tight and when you are confident that the rear axle and pedal crank are parallel to each other, carefully align the gears of the pedal crank and rear axle (side to side movement) so they are in an exact line with each other. The belt must move freely between the front and rear gears without being pulled slightly to one side or the other.

The two gears are held in proper alignment by lock collars on each side of the pedal crank and rear axle. The lock collars should both be positioned to the outside or inside of the side bearings to hold the alignment.

When you reinstall the plastic belt guard, be sure the grease fittings of the center bearings located under it are accessible through the belt guard access holes. If not, drill or cut new holes in the belt guard directly above the grease fittings.

Be sure to lubricate all bearings with high quality marine grease, which is not damaged by contact with water. Use enough that you can see grease coming out the side of the bearings.

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