



# Aqua-Cycle International, Inc.

*Ride a Tricycle on Water*

## Belt Replacement for all models

These instructions are to serve as a guide when replacing the Aqua-Cycle belt.

If you have not recently replaced the bearings this would be a good time to do so since you must disassemble the pedal crank and rear axle in the process of replacing the belt.

Replacement of all bearings is very important to protect the rear axle and pedal crank from fatigue, reverse stress, and eventual breakage. AC3 model bearings should be replaced every 100 hours of use. AC4 and AC5 model bearings should be replaced every 200 hours of use. 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 damage will eventually cause the pedal crank and rear axle to break in half.

Flip the Aqua-Cycle over (upside down) and let it rest on the handle bar and rear of the seat. Remove the plastic belt guard, noting how it came off to make replacement easier when you are finished.

Remove both rear wheels from the axle and loosen the pedal crank and rear axle lock collars. Remove all rear axle and pedal crank bearing nuts and bolts and the old belt.

Lift the top bearing half off each bearing position, leaving only the lower halves cradling the pedal crank and rear axle. All lower bearing halves must be free, setting on the bearing mounts with the pedal crank and rear axle cradled loosely in them to insure a proper installation.

Carefully inspect the pedal crank and rear axle gears for any damage or fatigue. Be sure that the nuts and bolts are all in place and tight. The slightest rough edge, missing teeth, or broken sides will cause excessive wear to the belt and contribute to it's eventual failure.

Replacement pedal crank and rear axle gears are not expensive and are much easier to replace now, while doing this belt replacement, than when they again damage the belt and you must repeat the process.

Slip the new belt over the rear axle and pedal crank. Put the top center bearing(s) half on the pedal crank. Insert the bolts and washers and put on the nuts, but do not tighten them yet. Slide the pedal crank and center bearing(s) as far forward (toward the front of the Aqua-Cycle) as possible and tighten the nuts.

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Be sure the pedal crank is exactly parallel with where the rear axle will be mounted, put on the two top side bearing halves, bolts and washers, and tighten the nuts. Don't let one pedal crank bearing be tightened slightly forward of the other two. All bearings must be in an exact line with each other and that line must be perpendicular to the sides of the frame. A 1/8th inch difference is significant so be careful.

Put on the top center rear axle bearing half, bolts and nuts, but do not tighten. Slide the rear axle and center bearing(s) away from the pedal crank as far as possible. When the belt is tight, tighten the nuts. Once tightened, carefully align the axle to be parallel with the pedal crank, put on the top side bearing halves, bolts, and washers and tighten the nuts.

Parallel alignment between the rear axle and pedal crank are as important as perfect alignment of the wheels on a car to the frame. If the axle is at a slight angle the rear wheels will be aimed slightly to the side. Most importantly, the rear axle gear will not be aimed exactly at the pedal crank gear, causing the belt to have a slight turn as it enters and leaves the gear.

Do not attempt to tighten the belt or align the rear axle with the pedal crank without loosening all three rear axle bearings. Do not loosen only the center bearing and attempt to tighten the belt by moving only that bearing. All three bearing positions must be adjusted at the same time. And do not attempt to tighten the belt with wheels attached to the rear axle.

If the belt cannot be tightened by the above process, the frame has become damaged and the bolt holes in the rear axle bearing mounts must be enlarged to permit the rear axle, bearings and bolts to be slid slightly farther away from the pedal crank.

Be sure the belt is tight, the bearing bolts are tightened and you are confident that the rear axle and pedal crank are parallel to each other. Now carefully align the pedal crank gear and rear axle gear (side to side movement) so that they are in an exact line with each other. The belt must move freely from front to back without being pulled slightly to one side or the other.

The pedal crank gear and rear axle gear are held in proper alignment by lock collars on each side of the pedal crank and rear axle. Each lock collar should be positioned to the outside of the side bearings and should be tightened when both gears are properly aligned.

Reinstall the rear wheels being careful to not over-tighten the wheel bolts and nuts. Only tighten them until one or two threads protrude beyond the end of the nuts. Over-tightening will cause cracks in the wheels and therefore leaks.

Once all of the above is completed, grease the bearings with a high quality marine grease, reinstall the belt guard, and continue to enjoy your Aqua-Cycle.

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