

- KWIKEE STEPS - MAINTENANCE AND REPAIRS

The Kwikiee Step was the most popular electric step to be fitted to American motohomes for many years so there are still some which may be over 30 years old still in service. Providing they have been regularly cleaned and serviced they will continue to work well. Due to the fact most of these steps are not protected from water and dirt as they are nearly always very close to the ground on campsites, fields and the highways regular maintenance is absolutely essential.

The details printed in this article are intended purely as a guide on how to maintain and repair the steps and is not intended as a replacement for the instructions issued by Kwikiee.

Kwikiee Step Motor Problems

Used properly and lubricated these steps will often work for a long, long time. Unfortunately, not all of us are so careful. Some owners never lubricate their electric steps and many more who do lubricate them, but miss a number of critical lubrication points or don't lubricate them often enough.

You'll often hear the recommendation of using WD-40 as a lubricant for the steps. WD-40 is formulated to penetrate and loosen frozen threads and is not suitable as a long term lubricant as it does not last very long and it is messy. A much better choice is an aerosol silicon based grease or similar products in a tube. Aerosol lubricants start as a penetrating liquid but then turn to a long-lasting solid grease. There are also Teflon based lubricants on the market which are excellent for these steps.

The best way to lubricate the step is to move it in and out as you spray (keep your hands well clear of it) and be sure to lube every pivot point and the friction points where the arms cross one another. When you have done spraying, let the grease solidify for a few minutes, then wipe off any excess. Don't forget to lubricate the mounts and ends of the long rotating rod that runs from side to side under the top step. The motor is controlled by an electronic circuit which switches it off when it senses a stiffness in the step and may not retract completely so regular lubrication is very important

Another hard lesson that you can learn about these steps is that you don't want to be stepping on them while they're still moving, wait for it to stop before stepping on it. It's easy to forget this if you get out as the step is extending when you have been parked up with the step retracted, or the engine is running and the step is automatically retracted and you remember that you forgot put the fuel cap back on, close locker doors or you are lining up the RV in a campsite and need to jump out to see just how close you are to that tree. Never put your feet or arms through between the steps as they can bite, do it once and will not do it again.

If you listen closely, you might hear the motor groaning as it tries to move both you and the steps at the same time. Unfortunately, the gears in the motor are fragile and it doesn't take much extra weight to strip them. Once that happens, the motor will make all kinds of weird noises and the steps may only go out part of the way or may move in an out in confusion. At that point, it's time for a new motor. If you're on the road when it happens, the steps may not lock in their retracted position and you'll need to put a bungee around them before going any further.

Diagnosis

First, try opening and closing the door with the RV motor running. If that solves the problem, you may just have old or discharged coach batteries. Make sure that you have 12V power in the coach — if not, you may just have the 12V power in storage mode (turned off). That's usually controlled by a rocker, or rotary, switch somewhere in the coach, it may be above the door or in a nearby cabinet, or it may be near your gauges.

If the steps don't move at all, ever, you have 12V power in the coach, and you hear no noise from the step motor, the first thing



OLD STYLE MOTOR - Note that the electrical connection is on the right



NEW IMGL STYLE MOTOR - Note that the electrical connection is on the left

to check is the door switch, earlier ones had plunger operated switches and later ones have magnets and reed switches. The steps know to open or close because door opens or closes the switch on the door frame. If you have magnet and reed switch type check that the magnet has not fallen off or moved significantly. If that's not it, you may need a new plunger switch, reed switch, a stronger magnet, or a new controller, though these are not common problems. Make sure the power plug at the step motor is plugged in and making good contact, wiggle it a little to see if that makes a difference, but keep your body parts away from the steps when you do this!. If none of that helps, you can pull the plug and check that the plug and socket are clean and free from moisture. Also plug a voltmeter into the plug while opening and closing the door. If there's no power, the problem may be with the reed switch or the step controller.

If steps move, but don't extend fully with the RV motor running, it's probably *not* a low battery. It could be that the gears are stripped on the motor (they are fragile), so it only extends to where the bad spot is on the gears. If you can hear the motor spinning when the steps are stopped, that's likely the problem. You could still have a bad controller, but not always, so check everything carefully before replacing the controller which are expensive to buy.

Before messing with the motor or the controller, the first thing to check is the steps themselves. The motor stops when there's too much strain on it, that is how it knows to stop at full in or out. Try lubricating the steps well (see above) at all the moving joints and see if they move in and out if you help them — if so, they may be binding.

It's not unusual for the steps to hit a curb or some other object and get bent to one side. That makes them bind and stop. Sometimes, with a little muscle, you can bend them back so they're perpendicular to the RV and they work again. Straightening a bent step is not easy and very often they tend to bind up and may need to be replaced, so be careful to ensure that they are always fully retracted when your RV is moving.

Many RVs with Kwikiee steps have a lighted switch near the



NEW STYLE MOTOR CONTROLLER
Note that some have an extra wire for an outside light

door. When the light is off, the steps will open and close with the door. When the light is on (providing it is working) and the RV's engine is off, they will stay open all the time once extended. In theory, they are always in when the RV's engine is running but don't count on it as there have been many reports of steps hitting curbs, cars, rocks, and most often, traffic cones.

On some RVs there is a red light on the dashboard which warn you if the step is extended. If you close the door when the red light is on and the steps are out, and then start the engine, the red light should go out. However it is always best to check the steps before driving off and from time to time whilst driving as some steps have a mind of their own and extend while the RV is in motion.

The next logical move is to check the freedom of movement of the steps. The best way to check is to pull the pin out on the step linkage and see if the steps move freely in and out with the motor isolated by pulling out the power plug at the motor first and watch out when you pull the pin because the steps can move quickly and it's easy to get a finger caught. Make a note of which way the pin goes because it's not symmetrical.

If the steps move freely with the linkage disconnected, you probably need a new motor, though some people have reported success with just rotating the white plastic gear 180 degrees inside the motor so that the bad spot never gets used. One side will have a half-round indentation from being stripped - that's the bad side. If there is any visible wear on the good side, reversing it isn't going to work. Replacement gears are not easy to find so you have to replace the complete motor.

Check the metal gear that contacts the gears inside the linkage. I've seen them with both 9 and 12 teeth. If you get a motor with the wrong number of teeth, don't panic. You can usually move the correct gears from the old motor to the new one.

How The Step Works

It is worth mentioning how the newer steps actually work. The control unit senses, via the resistance, how much work the motor is doing at any given time. When the load increases enough, the unit assumes that the steps are fully in or out and shuts off the motor.

Replacement Motor

The control unit for the steps is a solid-state unit that has no moving parts and seldom fail. Almost all erratic step behavior is caused by a bad motor. The OLD STYLE motors are expensive but the NEW STYLE IMGL motors are cheaper.

On many Kwikkee steps, the motor is the same as the electric window winder on many American cars. The motors on many newer Kwikkee steps are made by AM Equipment.

There is a really handy guide to identify your steps. If your step has an OLD STYLE linkage then you will require the OLD STYLE motor. Also the older steps have a rectangular control box, mostly black but there are white and even orange. Black control boxes require black door switches and white boxes use white switches. If you fit the wrong one the step will extend when it should be retracted and vice versa.

Replacing the Motor

Replacing the motor is a fairly elaborate job but if you follow the instructions usually supplied with it it is not too difficult, dirty and messy possibly. The OLD STYLE motor can be bought as a separate part bolted onto the existing gearbox. Complete assemblies with OLD STYLE motor and gearbox are not now readily available so you may have to update your step with a NEW STYLE IMGL complete assembly. NEW STYLE IMGL motors can only be fitted to the IMGL gearbox and linkage assembly which is available only as a complete assembly with linkage.

Replacing the motor/gear unit is very simple and can usually take less than 20 minutes. There are only a few important things to remember:

1. Pull the power plug out of the motor first (with the steps extended) before doing anything else.
2. With the motor removed, the steps will swing freely, so keep your body parts out of the way.
3. Always keep the motor right-side up (the way it is when in place) because there are some parts that will fall off otherwise.
4. The first step is to remove the plastic wire tie that holds the power wires in place. Sometimes you can just slide them off the end of the motor, but you may have to cut yours and



OLD STYLE STRAIGHT LINKAGE



OLD STYLE BENT LINKAGE



NEW STYLE IMGL STRAIGHT LINKAGE



NEW STYLE IMGL BENT LINKAGE

replace it when the new motor is in.

5. Next, carefully pull out the power cord where it plugs into the motor. Pull only on the plastic connector, not the wires. The plastic connector has a snap that holds it in place, your fingers or a small screwdriver can be used to release it.
6. Take out the three or four bolts that hold the motor in place. When you undo the last one, be careful to keep the motor from falling. Keep it right-side up or parts will fall off.
7. Set the old motor next to the new one. If the new one doesn't have a gear, gear post, and washers, you'll have to move them from the old motor. Be sure to get everything in the same order. Clean everything well before reassembly. The washers go between the motor and the gear.
8. There is a round pin that fits into the Linkage frame. This pin also goes into the gear. At the bottom of the gear goes the connector from the motor (square with rounded ends). Both Washers need to go on this motor connector.
9. Put some white lithium grease on the parts as you put them in the new motor. Also add some grease to all the gears below.
10. Put the new motor back in the hole. You may need to move the steps slightly to get the gears to line up. Then replace the bolts, the power plug (ensure it snaps in), and the plastic wire tie.
11. Some people like to pull the cotter pin and the bushing it holds in place. If you do, make a note of which way the bushing goes in because it's not symmetrical.

Step Linkage

If you need to replace and OLD STYLE linkage you can obtain a straight linkage (single step) and bent linkage (double/treble steps). NEW STYLE linkages, both straight and bent, are supplied complete with a gearbox assembly onto which you can bolt your existing NEW STYLE motor or replace it with a new one. Again, follow the instructions supplied the linkages and fitting will be fairly straightforward albeit a bit dirty and messy so it does pay to clean the step before fitting the new parts, and grease after.