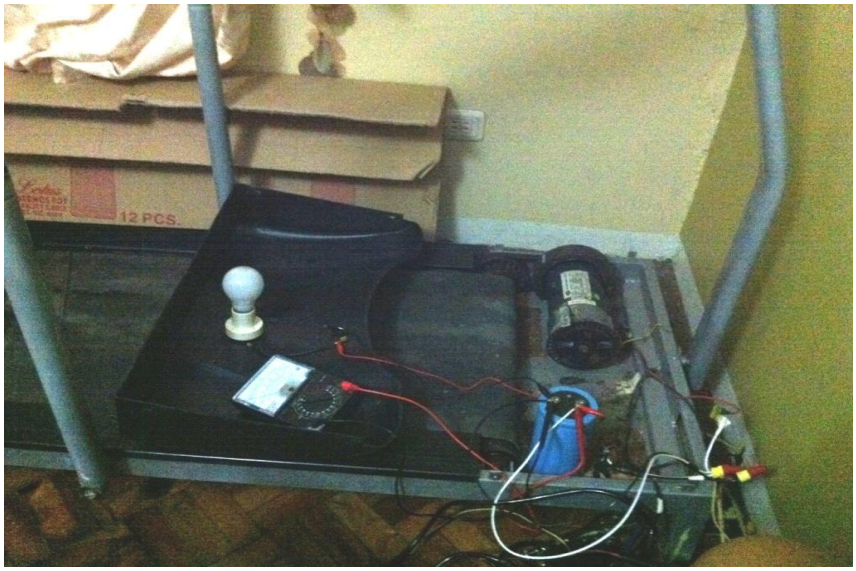
THE TREADMILL

Two years ago, the treadmill stopped working after all the abuse of our 2 grandkids. The original supplier couldn't repair it. And neither could I detach the digital control box (left photo below) for possible repair by the local techies. This box controlled the treadmill speed, displays, sensors, etc. Except for a speed control mechanism, I really didn't need all those goodies. The specs showed a 1.5 HP electric motor being fed by a variable 0-160 volt direct current (vdc) source drawing a max of six amperes. Supply was normal house power of 220 volts alternating current (vac).

I decided to build up my own controller. After consulting with my cousin in Manila, turns out the solution was simple. A light-dimmer rotary switch can vary the voltage. A bridge rectifier can convert the varying vac to vdc. The rectifier is a metal encased device (bolted to a frame, to dissipate heat) with four diodes inside it. See middle photo below. Trouble is, the rectifiers I could find were good only for 200 volts. But I found smaller 400 volt diodes, so I made my own bridge rectifier by ganging 8 diodes. See right photo below.



Finally, yesterday, I managed to chisel out the digital box which is now at the techie nearby to try to fix. I went ahead and bench-tested the two home-made controllers. See both photos above. Note the instrumentation: voltmeter, ampere meter, light bulb, etc. The black cylinder is the motor, the blue can is a large capacitor. The speed rotary switch (white dial) is seen on the far left photo, taped to the grab bar


Final design was with the metal bridge rectifier, but input voltage was downsized to 110 volts via transformer. See left photo.

I still prefer to do my walking outside around the park, but the treadmill is again an option in times of inclement weather, especially for Lisa.

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