

**Skateboard Speedometer**  
**Introduction**  
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A few years ago, I became interested in knowing how fast I was travelling while “bombing” some of the hills on my skateboard. A radar gun was cost-prohibitive for me, as was a GPS. I decided to try to find a bicycle speedometer that could be adapted to my skateboard.

At first I was unsuccessful. The speedometers I researched could not be calibrated for wheel sizes that are typical of skateboards. They were, after all, designed for bicycles. Once I did find a unit that could be calibrated for my wheel size, but it wouldn't read speeds over about 11 MPH. I found out that this unit utilized a reed switch that had a frequency limitation. What I needed was an electronic unit that could be calibrated for my wheels, and could read frequencies over 100 Hz.

I struck gold when I located a speedometer that was designed for inline skates. Inline skate wheels are relatively the same size as skateboard wheels, and the unit is free of the limitations I found with the bicycle speedometers. This particular unit can display the time, current speed, average speed, maximum speed, distance travelled, and has a trip odometer. I can zero the maximum speed, shoot the hill, and then check it to see how fast I went. This way, I can keep my eyes on the road and my attention where it should be.

**Skateboard Speedometer Installation Instructions**

Cut Opening in Skateboard Deck

Remove the front truck from the skateboard. Place the speedometer head unit on the top of the deck, centered between the four truck mounting holes. Trace around the speedometer with a pencil, to mark where the cutout will be. Make sure that the cutout doesn't interfere with mounting of the truck. Drill a hole in the cutout area that is large enough to pass a saber saw blade. Once the hole is drilled, cut out the opening with a saber saw.

Fabricate Cover Plate

The cover plate is made with a 3/16" x 2-1/4" x 3-1/8" piece of aluminum. Use the truck base plate to mark the mounting hole locations and drill the four mounting holes. Cut the openings to allow access to the speedometer buttons and the display. I used a Bridgeport milling center, but with care, a hand drill and a file could be used to achieve the same result.

Install Magnet in Wheel



The magnet specified is best used for skateboard wheels having a plastic core similar to the one pictured. The holes in the core allow for mounting of the magnet once drilled to the correct diameter. Drill out one of the existing holes in the wheel core using a 0.1" drill bit. Install the magnet with a good epoxy such that the face of the magnet is flush with the back of the wheel.

Install Speedometer Head Unit

Place the truck mounting bolts through the holes in the cover plate you made, and through the top of the skateboard deck. The speedometer head unit will reside in the cutout of the deck, sandwiched between the cover plate and the truck riser (plastic block used under truck to provide wheel clearance). In order to provide clearance, you may have to cut away some material from either the truck riser or the underside of the cover plate. You will have to cut away some material from the riser in order to bring the pickup wire out from the deck cutout. Install the speedometer head unit such that the buttons are accessible and the display can be seen from

the top of the board. The wire shall come out from the bottom of the board at the riser. Install the truck, riser, speedometer head unit, and cover plate to the skateboard deck. Tighten the truck mounting bolts.

#### Install Speedometer Pickup

Once the head unit is installed, the pickup will need to be attached to the truck hangar. The hangar is the portion of the truck that the axle passes through. Determine which side of the truck the wheel with the magnet will be installed. Locate a spot on the hangar that the pickup can be mounted such that it will be as close as possible to the magnet as the wheel spins. Attach the pickup using the double-sided foam tape and the cable tie. Make sure you route the pickup wire such that it is not loose and does not interfere with the truck turning action.

#### Calibration of the Speedometer

Once the speedometer is installed, it will have to be calibrated in order to display the correct speed. Follow the directions that came with the speedometer to properly calibrate the unit for your wheel size. The calibration procedure basically involves inputting the wheel circumference. In my case, I have 65 mm diameter wheels. The circumference (rounded to the nearest millimeter) is then 204 mm.