A Cheap Speedometer for Touring

by Tony Cimorelli

How many times have you been out touring and wanted to know the distance between point A and B? Maybe you want to know the distance that a tour takes or when to make the next turn? What's the total mileage on your T?

To purchase an original setup using a Stewart 160, cables, all the hardware for the front wheel and driven gear assemblies would cost in excess of $600.00, if you can find a decent combination. Then you have to keep the gears meshed.

Here is a "how to" article on making and installing one for less than $40.

First, go to your local bicycle shop and purchase a Sigma Sport 600 bicycle digital speedometer (or one with the same magnetic pickup principles) for $20. This is about an inch square digital speedometer that uses a magnet and pickup on the wheel to generate signals which are picked up by the computer display.

Now off to Lowe's (which gets a large portion of my check) or Home Depot to pickup some 1/8" flat-stock metal. I used the galvanized 2x4 supports. Cheap and plentiful. About $1.00.

I then stopped at Walmart in the sewing department and picked up a set of magnets used for sewing in material. (12 - ½" magnets for $1.25).

You also need some JB Weld which you can get at any auto parts store (or Lowe's).

I made a cardboard template for the magnet bracket and traced it onto the flat stock.

Figure 1 – Starting Piece of Flat-stock

The hole is the correct diameter to fit on the front hub bolts. Cut the piece as in the Figure 1 and epoxy in place as in Figure 2.

Figure 2 – Epoxy Magnet to Bracket

Figure 3 – Attaching Finished Bracket to Front Hub

Figure 3 shows how the finished magnet and bracket should look.

Now, take the rest of the flat stock and make the pickup bracket (Figure 4).

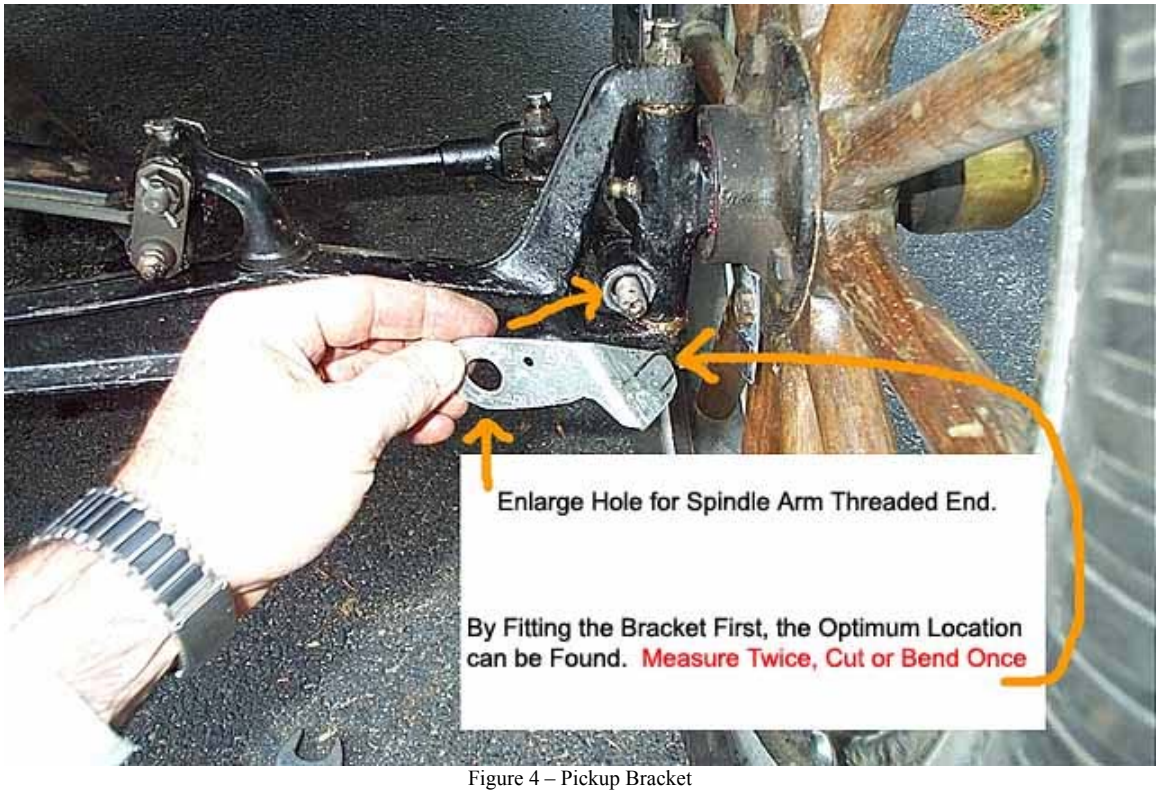


Figure 4 – Pickup Bracket

I opened the hole up to slide over the front spindle arm threaded end. I then bent the flat-stock so the flat spot with 2 black lines on it met with the magnet bracket on the wheel hub. Between the two black lines was the optimum location for the pickup.

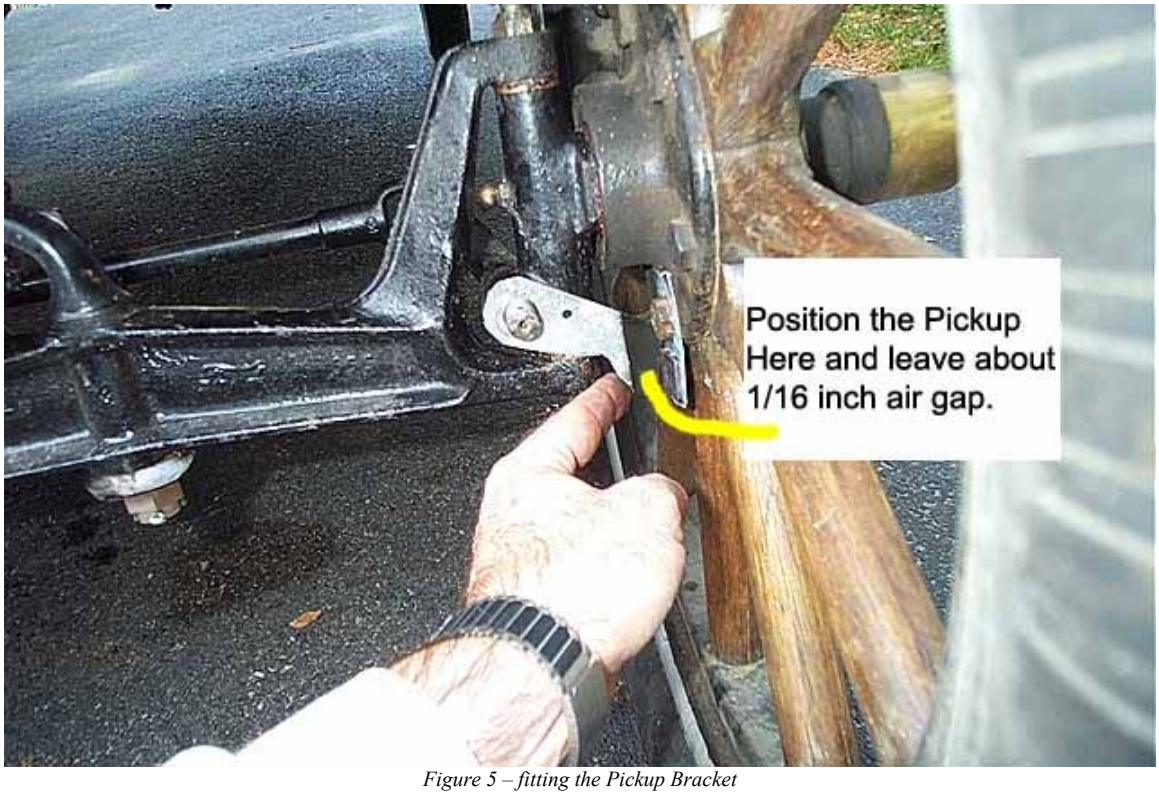


Figure 5 – fitting the Pickup Bracket

JB Weld the pickup to the bracket as in Figure 6.

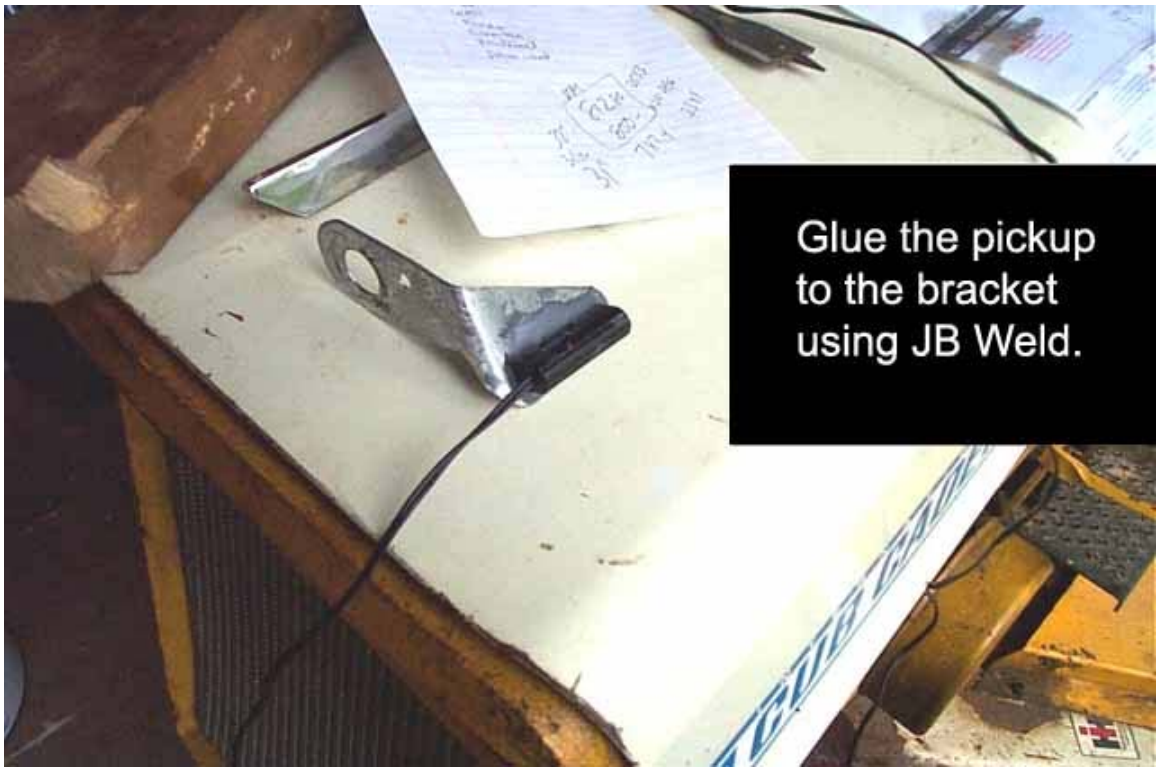


Figure 6 – Gluing the Pickup to the Bracket

Start with about 1/16” air gap between the magnet and pickup. Plug in the speedometer body and spin the wheel to see if the pickup is working. If so, cut the wires 1 inch from each end.

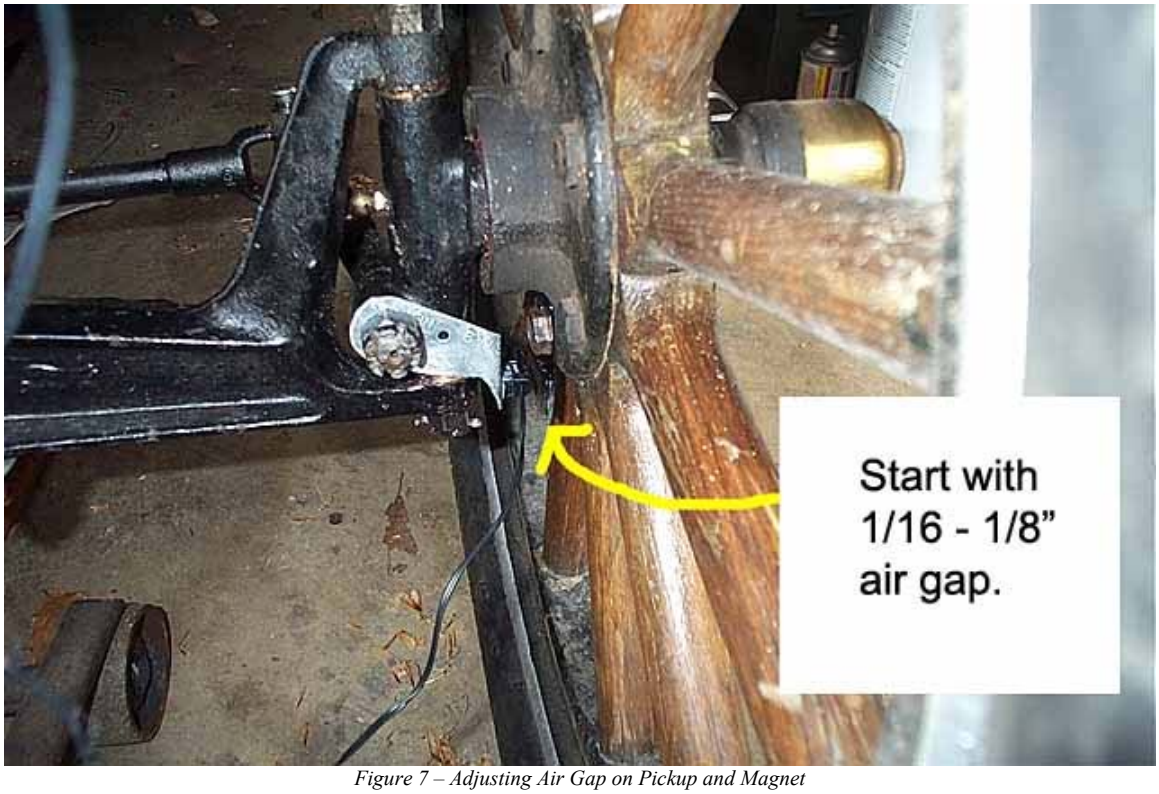


Figure 7 – Adjusting Air Gap on Pickup and Magnet

Before permanently mounting the pickup bracket to the spindle, cut the pickup wires from the pickup, leaving about a one-inch stub. Strip the ends and solder to the ends of the shielded wire. Route your wires through the inside of the motor compartment and through the firewall, up to the computer. The shielded wire keeps interference from the coils away.

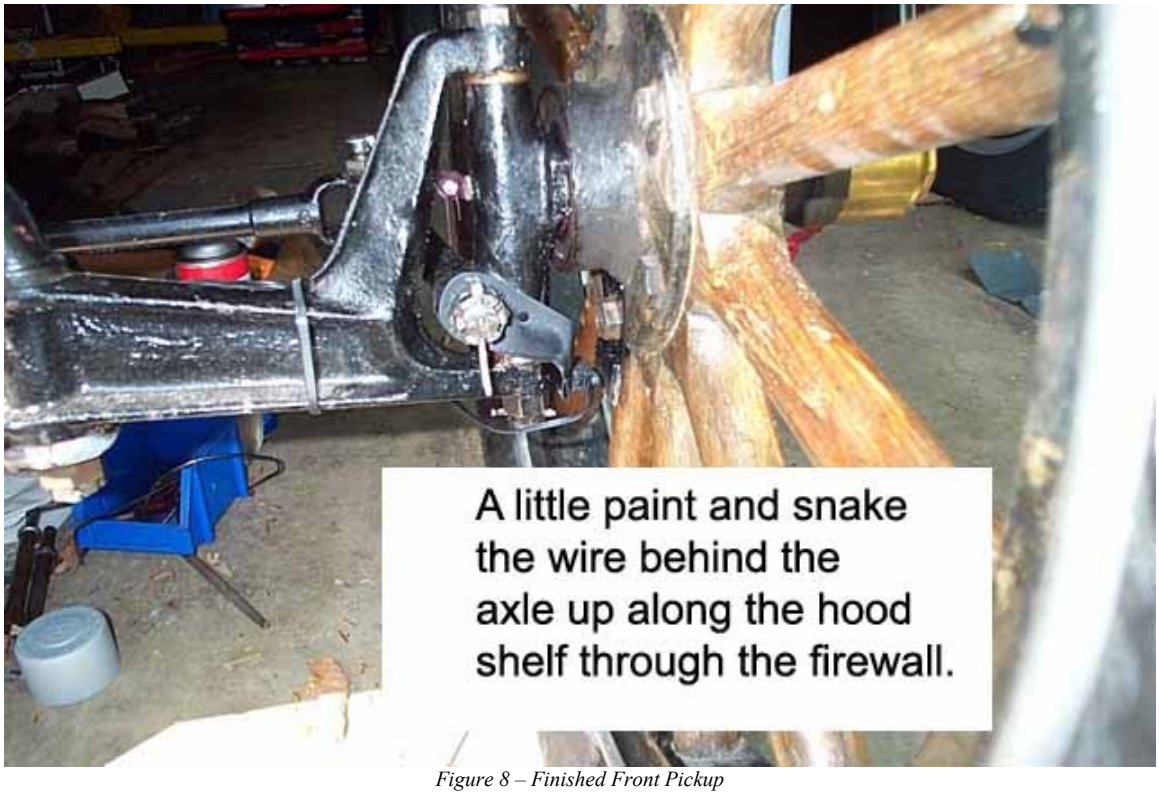


Figure 8 – Finished Front Pickup

Figure 8 shows a painted bracket installed and ready to go. Let's go on to the computer display.

Figure 8a - Snaking the wires along the shelf and through the firewall

Take the remaining flat-stock you used for the magnet bracket and create a base for the computer. Nothing fancy, but it needs a curve for the back of the computer display to attach to. The 2x4 bracket is flexible and I bent mine around a ratchet socket.

Figure 9 – Computer Display Bracket

The speedometer comes with double-side tape to hold it to the bracket. I found this works well when used in conjunction with the rubber bands in the kit. Loop one end of the rubber band around the rubber band notch of the display. Continue stretching the band around the bracket and hook to the other notch in the display. See Figure 10.

Figure 10 – Finished Display Bracket

Slip on some heat shrink tubing over the shielded wire. Solder the other ends to the one inch stubs from the computer display housing and pickup. Use a hose clamp to mount the bracket to the steering column.

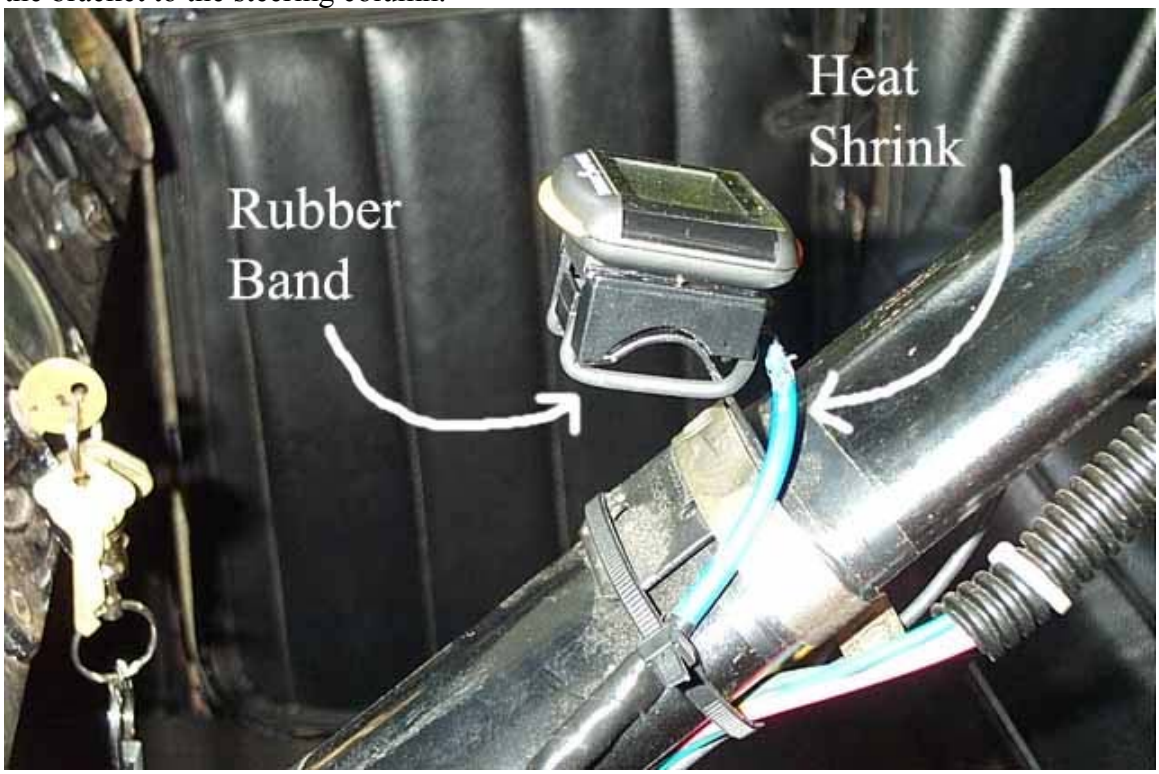
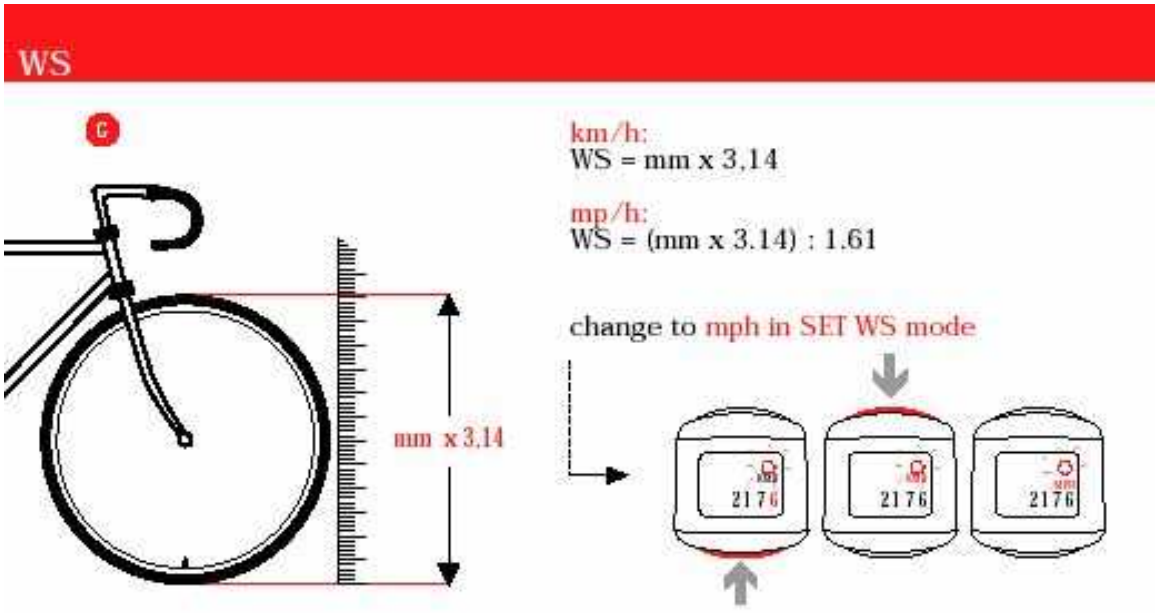


Figure 10a – Close-up of Digital Display

The finished product is cheap, visible, and works well.

Figure 11 – Finished Installed Speedometer

Now for the part the technically challenged dislike – setting the computer. Set the computer for the wheel diameter (30") multiplied by 3.14 (94.2) and converted to millimeters (762mm) giving 2392 and dividing by 1.61 (1485). If you are unsure of the diameter, get a piece of chalk. Park your car on a flat part of a parking lot. Set the front wheel with the valve stem centered on the downside of the wheel. Mark this location on the ground with the chalk. Back the car up until the front wheel makes one complete revolution and the valve stem is in the same location. Mark the point on the ground. It should be about 94-95 inches for 30" wheels. Multiply by 24.5 for millimeters and divide by 1.61. Input this into the computer using the instructions in the speedometer package for MPH. Instructions online at http://www.branfordbike.com/pdf/sig600.pdf



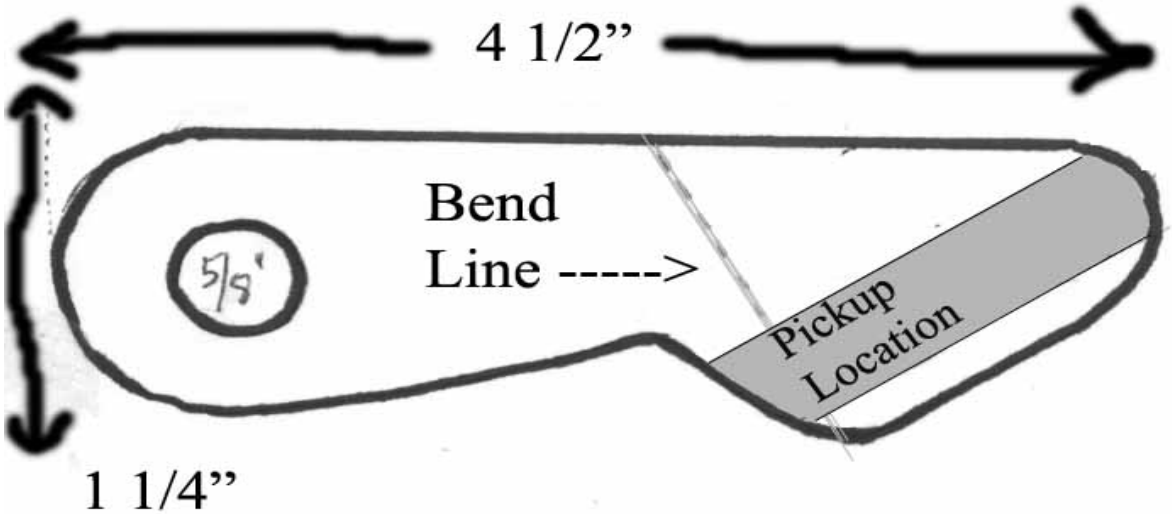
Formula

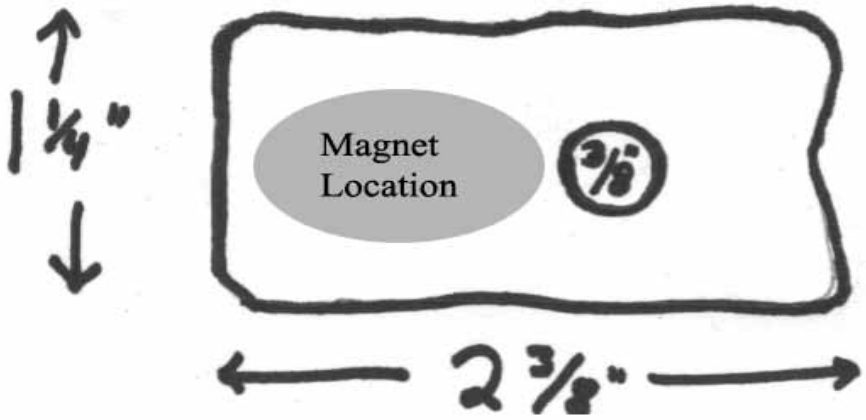
$$\text{MPH Input Number} = \frac{\text{WD x PI (3.14) x 25.4 = mm}}{1.61}$$

$$\text{MPH Input Number} = \frac{30 \times 3.14 \times 25.4}{1.61} = \frac{2392}{1.61} = 1485$$

Test ride time. Follow with modern car to check the speedometer accuracy.

Parts Needed	**Tools Needed**
2x4 Bracket Shielded Wire – Radio Shack Black Zip Ties 3-4 inch hose clamp Primer and Black Paint Sandpaper JB Weld Sigma Sport 600 Bicycle Speedometer	Soldering Gun and Solder Flat screwdriver 3/4” wrench for spindle nut 11/16” wrench for hub nuts Dremel tool or drill and drill bits Chalk Tape Measure


4 1/2”
Bend
Line ----->
5/8"
Pickup
Location
1 1/4”


1 1/4"
Magnet
Location
3/8"
2 3/8"

Template for mounting brackets.

More Model T projects can be found at http://www.modelt.org under the Tech Corner.