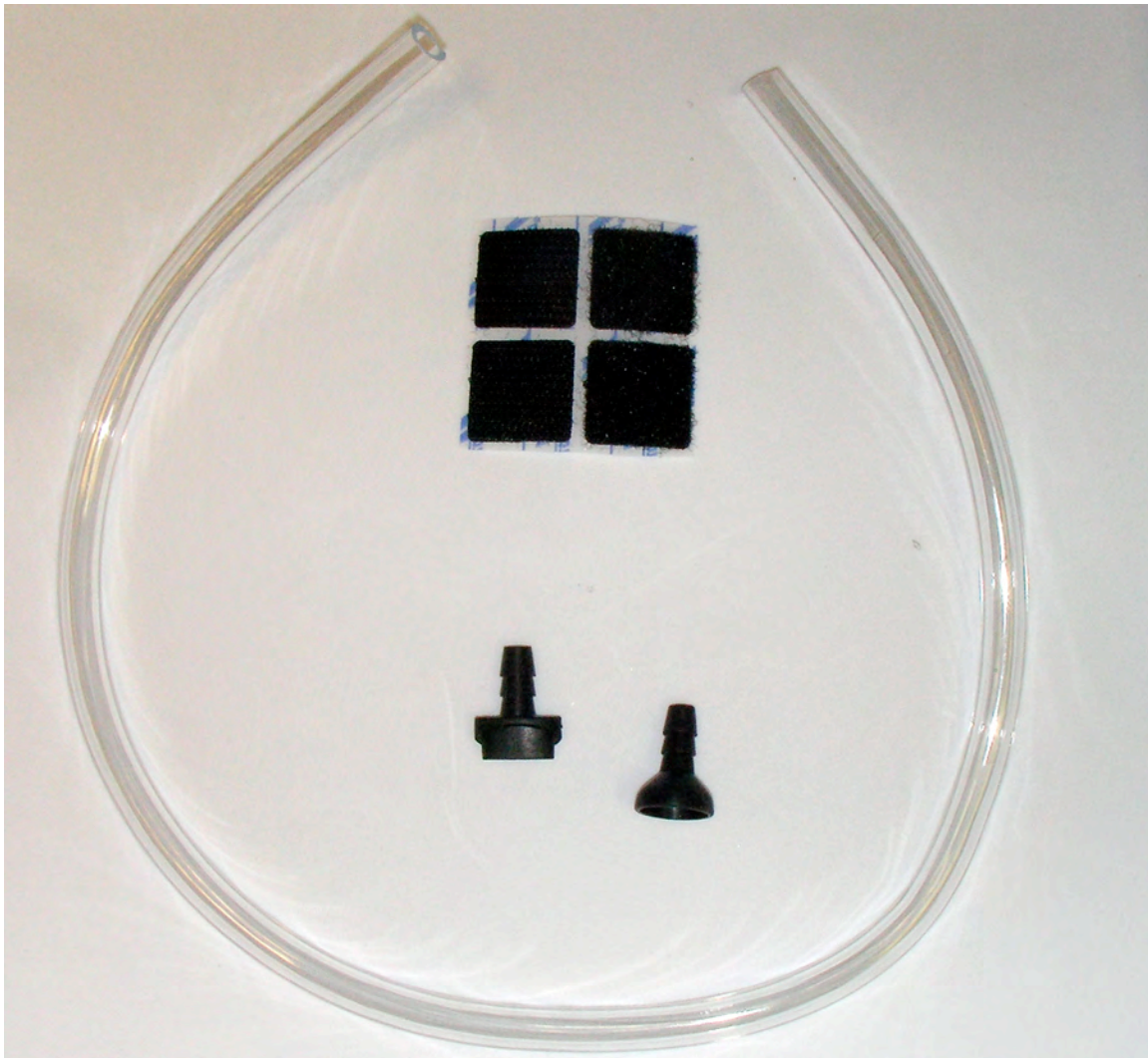


iBike[®] Remote Wind Sensor for all iBike Models

May 2009



What is the Remote Wind Sensor?

The Remote Wind Sensor (RWS) is an optional iBike® accessory that works with any iBike computer head. The RWS consists of a specially-shaped plug that inserts into the iBike's wind port, a length of flexible tube, and a wind port funnel. The plug and the funnel are connected together by the flexible tube that is cut to the appropriate length by the installer. The funnel is located and fastened by the installer at a place on the handlebars so that the funnel sees an unobstructed view of the opposing wind. That's all there is to it!

When is the RWS beneficial?

Below are the situations when the RWS can improve the wind measurement function of the iBike:

- 1) On bikes with aero bars. The RWS allows the opposing air to be measured far away from the turbulence caused by aero bars.
- 2) For TT cyclists who use aero-bar-mounted water bottles, the RWS provides an ideal means to locate the iBike on the stem, directly behind the water bottle, *and* to get great iBike wind measurement performance.
- 3) For TT cyclists who prefer not to use the Topeak Xtender, the RWS provides means to mount the iBike without the Topeak.
- 4) For riders who ride frequently in the rain, the RWS can help prevent water from touching the iBike's wind sensor. Keeping water away from the wind sensor improves the quality of the wind measurement in rainy conditions.
- 5) For cyclists whose iBike has a high Wind Scaling Factor, the RWS will likely lower the Wind Scaling Factor, potentially improving the overall performance of the iBike. High wind scaling factors can sometimes occur when the iBike is installed at particular locations on the handlebars.
- 6) For specialty bikes such as recumbents or tandem bikes, the RWS provides a means to measure wind speed remotely, in front of the recumbent bike's fairings. For tandem bikes, the stoker can obtain total power readings simply by locating the RWS at the front of the bike, then snaking a long piece of flexible hose along the top tube of the bike, allowing its connection to the stoker's iBike.

If any of the above situations apply to you, then the RWS will improve the quality of your iBike's operation.

How to Install the Remote Wind Sensor

Before starting the installation of the RWS there are three things you must determine:

- 1) Decide where you will mount the iBike to your bike
- 2) Decide where you will place the wind port funnel
- 3) Determine the routing of the flexible tube between the funnel and the iBike

In making these three decisions, keep these factors in mind:

- You'll need to have about a 2 inch space between the front of the iBike and any adjacent obstructions (such as a TT water bottle). This space is needed for the RWS tube and flexible tube.
- You'll want to be sure the flexible tube is secured at each end: at the iBike end, so that the plug does not fall out of the iBike while traveling on rough roads, and at the funnel end, so that the funnel remains reasonably stationary and doesn't "flap in the breeze"
- You'll want to locate the flexible tube so that its installation is neat and free of kinks. Also, remember that the shorter the tube, the easier it is to fasten and keep in place.

Sample Installations

Here are photos of three different installations, all of which produce excellent results. These are just suggestions; you'll likely want to customize things some for your own bike:



PHOTO COURTESY OF ANDY SHEN



PHOTO COURTESY OF JAMES LEWIS

NOTE: IF YOU CURRENTLY OWN A WIRELESS HANDLEBAR MOUNT AND WISH TO USE A WIRELESS STEM MOUNT INSTEAD, PLEASE EMAIL US AT JHAMANN@VELOCOMP.COM TO LEARN ABOUT A "SWAP" PROGRAM.

Installation Steps

- 1) Attach *loosely* one end of the flexible hose to the RWS plug. The plug is the piece that fits into the iBike wind port. At a later point in the installation process you may want to remove the tube from the plug, so don't push the hose all the way into the plug!
- 2) Attach your iBike to your mount.
- 3) Insert the plug into the wind port of the iBike. When it is inserted properly the tube will point straight ahead.
- 4) Locate your iBike mount on your bike such that the RWS plug can be removed easily from the iBike, and the tube can bend away gently from the iBike, without kinks or undue stress on the tube. If the angle of the bend is too severe it's likely that the plug will pop-out during riding. Here is an example of a correctly located iBike/plug combination:



PHOTO COURTESY OF ANDY SHEN

- 5) Once you've got your iBike located appropriately, remove the iBike from the mount, then fasten the mount to the bike, making sure the mount is **ROCK SOLID TIGHT**.

- 6) Next, snake your flexible tube along the path to where you've chosen to mount your funnel. Here's an example of one possible path (two other paths are shown in the photos above). Note that there are no severe bends or kinks in the path selected:



PHOTO COURTESY OF ANDY SHEN

- 7) Once you've determined where your funnel will go, cut the flexible tube to the appropriate length.

TIP: IF THE SUPPLIED 24 INCH TUBING IS NOT LONG ENOUGH, YOU CAN PURCHASE 3/8 O.D BY 1/4" I.D. TUBING AT ANY HARDWARE STORE.

- 8) Now, insert the funnel into the other end of the tube.
9) Next, use the enclosed Velcro strips to attach the flexible hose to the handlebars. Wrap the Velcro strip around the flexible hose, then attach the mating strip to the handlebars. (If you wish, you can also use tape or zip ties, not supplied). Here is an example of the funnel attached at the end of TT bars, held in place with yellow zip ties:



PHOTO COURTESY OF ANDY SHEN

11) Now, press the flexible tubing firmly around the plug, making sure the plug is rotated so that the plug will insert easily into the wind port of your iBike.

TIP: THE PLUG FITS PROPERLY INTO THE IBIKE WIND PORT IN ONLY ONE ORIENTATION. MAKE SURE YOU'VE ROTATED THE PLUG ON THE FLEXIBLE TUBING SO THE PLUG INSERTS EASILY, IN THE CORRECT ORIENTATION.

10) Finally, check to make sure your flexible hose is securely fastened, your funnel is reasonably level, and the plug inserts and remains in the the iBike wind port without difficulty.

Your installation is complete!

Calibrating your iBike with the Remote Wind Sensor

Your existing profile will not work with the RWS. So, after you have installed your RWS, YOU MUST DO A NEW SET OF COAST DOWNS AND A NEW CALIBRATION RIDE.

The calibration procedure with the RWS is identical to a “typical” iBike calibration:

- 1) Select the profile number where you want your RWS profile number to be stored (Gen III units only)
- 2) Perform tilt calibration
- 3) Perform wind offset
- 4) Do 3-5 coast downs
- 5) Perform Cal Ride

TIP: THE CAL RIDE PROCEDURE HAS BEEN SIMPLIFIED IN FIRMWARE 309+. ONCE YOU GET TO THE TURN AROUND POINT, SLOW DOWN, TURN AROUND, AND RIDE BACK. AT THE TURNAROUND POINT OF YOUR CAL RIDE YOU DO NOT NEED TO PRESS THE CENTER BUTTON BEFORE RIDING BACK.

Once you’ve done your calibrations, use the iBike software (iPro and iAero only) to download, analyze, and store your new RWS profile.

TIP: MAKE SURE YOU CLEARLY ANNOTATE YOUR NEW PROFILE SO YOU KNOW IT WAS CREATED WITH THE RWS.

Using the Remote Wind Sensor

PRIOR TO EACH RIDE

Your iBike will work just as usual with the RWS. Before starting a ride, make sure to plug in the RWS to the front port of your iBike and make sure it fits snugly into your iBike's wind port.

NOTICE: IF YOU FORGET TO PLUG IN THE RWS PRIOR TO YOUR RIDE, YOUR WATTS DATA LIKELY WILL BE INCORRECT.

RIDING IN THE RAIN

Don't worry if rain enters the flexible tubing. Because of the design of the RWS, you should still get good-quality wind speed readings as long as the rain water does not enter the wind port of the iBike.

DISCONNECTING THE RWS AFTER THE RIDE

Pull the RWS plug straight out from the iBike; don't twist it out or manhandle it unnecessarily.

TROUBLESHOOTING

Problem: *I get significantly different watts readings after installing the RWS.*

Solution: You MUST perform new coast downs and a Cal Ride after installing the RWS. Make sure to do these calibrations, create a new profile, and use your correct RWS profile when you ride with the RWS.

Problem: *My wind speed readings are low and/or jumpy when I use the RWS.*

Solution: Make sure there are no kinks in the flexible tube, where airflow might be restricted. Also, make sure you've routed your flexible tubing in a manner such that you don't pinch the tube when your handlebars rotate, or you pinch the tube when you grab the handlebars.

Problem: *The plug falls out of the iBike.*

Solution: Use the Velcro strips, tape, or zip ties to provide adequate support for the RWS near the place where it plugs in to the iBike. Also, position the tube/plug so that it points "straight-in" where it joins on to the iBike.