
Wind Sensor Alignment Procedure for the R. M. Young Wind Monitor

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Wind Sensor Alignment Procedure for the R. M. Young 5103 Wind Monitor

Equipment

1. Handheld GPS (Garmin 76S or Garmin Rino 130)
2. Vertical level (small)
3. String (optional)

GPS Setup

1. Set GPS to display true north.
2. Disable the Electronic Compass.
3. On the compass page of the GPS, set one of the fields for heading.
4. Set the heading for a digital readout. The digital GPS heading is the information that we need for this procedure.

See Appendix A for Garmin 76S and Appendix B for Garmin Rino 130 for above procedures.

Alignment Procedure for Towers with Hinges

1. Loosen bolts to base and lower the wind sensor tower.
2. Cut a piece of string the length of the tower and lay it down parallel to the tower as close as possible. (optional)
3. Using the handheld GPS, walk alongside the tower FROM the BASE of the tower TO the SENSOR (very important) along the string several times until a consistent heading (within a few degrees) from the GPS is achieved. See Appendix C, figure 1.
4. Write down the heading.
5. Point the wind sensor with the propeller towards the ground and fin up toward the sky.
6. Apply a vertical level so the wind sensor fin is exactly perpendicular to the ground.
7. Check the direction of the wind sensor at the DCP and write it down. Make note of the difference between the wind sensor direction and the heading of the GPS in the visit report.
8. If heading of GPS and wind sensor direction differ by more than 2 degrees, loosen clamp on the wind sensor junction box as well as the orientation ring just enough to be able to move them. See Appendix C, figure 2.
9. Adjust the wind sensor junction box until the wind sensor direction reading at the DCP matches the heading determined on the GPS.
10. When the two match, tighten the clamps of the wind sensor junction box and orientation ring.
11. Procedure is complete. Raise the tower and secure.

See Appendix C for alignment photographs.

Alternate Alignment Method for Towers without Hinges

1. Mark a starting point 20 to 30 feet from the tower in which you can walk in a straight line toward the tower.

2. Cut a piece of string 20 to 30 feet and lay it down from the starting point to the tower. (optional)
3. Using the handheld GPS, walk FROM the starting point TOWARDS the tower (very important) in a straight line (walk along string if used). Repeat several times, from the starting point toward the tower until a consistent heading (within a few degrees) from the GPS is achieved.
4. Write down the heading.
5. Climb the tower.
6. Point the wind sensor with the propeller pointing in the same direction that was walked from the starting point to the tower (very important) and hold steady. The wind sensor needs to be parallel to the path walked, pointing in the same direction as was walked.
7. Check the direction of the wind sensor at the DCP and write it down. Make note of the difference between the wind sensor direction and the heading of the GPS in the visit report.
8. If heading of GPS and wind sensor direction differ by more than 2 degrees, loosen clamp on the wind sensor junction box as well as the orientation ring just enough to be able to move them.
9. While holding the wind sensor parallel to the path walked, adjust the wind sensor junction box until the wind sensor direction reading at the DCP matches the heading determined on the GPS.
10. When the two match, tighten the clamps of the wind sensor junction box and orientation ring.
11. Procedure is complete.

Visual Verification Check

Since the GPS is set to true north, by aligning the wind sensor to match the GPS the wind sensor is now aligned to true north. When the wind sensor is aligned to true north, the wind sensor junction box should point in the true south direction. Using the GPS compass display, visually compare the direction of the wind sensor junction box and see that it is pointing in the south direction.

Appendix A – Garmin 76S

Setting Handheld GPS to True North

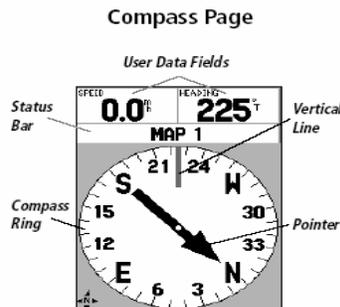
1. From any page press the “Menu” key twice.
2. Highlight “Setup” from the list of choices and hit the “Enter” key.
3. Press the right side of the “Rocker Key” to select the “Location” tab.
4. Press the bottom of the “Rocker Key” to move the cursor down to the “North Reference” option.
5. Hit the “Enter” key to display the “North Reference” options and using “Rocker Key” select “True” and hit the “Enter” key.
6. Press the “Quit” key twice to return to starting page.

Disable Electronic Compass

1. From any page press the “Menu” key twice.
2. Highlight “Setup” from the list of choices and hit the “Enter” key.
3. Press the right side of the “Rocker Key” to select the “Compass” tab.
4. Press the bottom of the “Rocker Key” to move the cursor down to the Compass “On/Off” option.
5. Hit the “Enter” key to display the On/Off option and using “Rocker Key” select “Off” and hit the “Enter” key.
6. Press the “Quit” key twice to return to starting page.

Set up a field for Heading on Compass page

1. Use “Page” button to find “Compass” page.
2. If “Heading” is already one of the fields, this procedure is not necessary, else go to step 3.



3. Press “Menu” key, user “Rocker Key” to select “Change Data Fields” and press the “Enter” key.
4. Use “Rocker Key” to highlight the desired field to change and press “Enter” key.
5. User “Rocker Key” to move up or down the list and select “Heading” and press “Enter” key.
6. Press “Quit” key to get out of setup.
7. “Heading” is now one of the data fields.

Set up Heading for Digital Readout

1. From any page press the “Menu” key twice.
2. Highlight “Setup” from the list of choices and hit the “Enter” key.
3. Press the right side of the “Rocker Key” to select the “Units” tab.
4. Press the bottom of the “Rocker Key” to move the cursor down to the “Direction Display” options.

5. Hit the “Enter” key to display the “Direction Display” options and using “Rocker Key” select “Numeric Degrees” and hit the “Enter” key.
6. Press the “Quit” key twice to return to starting page.

Quick Start

Interface keys



IN The **IN** and **OUT** keys are used on the Map Page and the Plot Page. When pressed, the **IN** key will decrease the map scale (Map Page) or decrease the horizontal scale (Plot Page) allowing you to view a smaller area with greater detail.

When pressed the **OUT** key will increase the map scale (Map Page) or the horizontal scale (Plot Page) allowing you to view a larger area with less detail.

NAV The **NAV/MOB** key is used to begin or stop navigation. If the **NAV/MOB** key is pressed and held down, the GPS stores the current location (a man overboard point) and gives you the opportunity to begin immediate navigation to that point.

PAGE The **PAGE** key will cycle you through the six main display pages in sequence. When held it toggles the compass on and off.

POWER The **POWER** key is used to turn the unit on and off. To turn the unit off press the **POWER** key and hold it. The **POWER** key is also used to display the adjustment window for the backlight and contrast adjustment. To activate the backlight/contrast adjustment window with the unit on, press and release the **POWER** key.

MENU The **MENU** key is used to display page option menus. If pressed twice, the Main Menu will be displayed.

QUIT The **QUIT** key will cycle you through the five main display pages in reverse sequence. The **QUIT** key will end an operation in progress and display the previous page.

ENTER The **ENTER** key is used to activate a data field or confirm a selection. If the **ENTER** key is pressed and held, the GPSMAP 76S will store the current location and display the Mark Waypoint page.

ROCKER The **ROCKER** key, located in the center of the keypad, is used to control the Up/Down and Left/Right movement of the cursor on the display pages and during data entry.

Appendix B – Garmin Rino 130

Setting Handheld GPS to True North

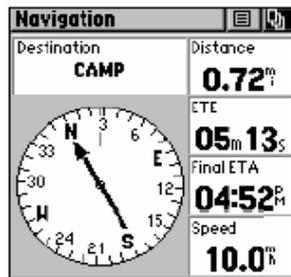
1. From any page press the “Thumb Stick” in to get the menu.
2. Press the “Thumb Stick” in the down direction and highlight “Main Menu” and press the “Thumb Stick” in.
3. Press the “Thumb Stick” down and highlight “Setup” and press the “Thumb Stick” in.
4. Use “Thumb Stick” to highlight “Heading” and press in.
5. Use “Thumb Stick” to move cursor to “North Reference” option and press in.
6. Highlight “True” and press “Thumb Stick” in.
7. Press “Page/Quit” button two times to return to starting page.

Disable Electronic Compass

1. From any page press the “Thumb Stick” in to get the menu.
2. Press the “Thumb Stick” in the down direction and highlight “Main Menu” and press the “Thumb Stick” in.
3. Press the “Thumb Stick” down and highlight “Setup” and press the “Thumb Stick” in.
4. Use “Thumb Stick” to highlight “System” and press in.
5. Use “Thumb Stick” to move cursor to “Compass” option and press in to get “On/Off” options.
6. Highlight “Off” and press “Thumb Stick” in.
7. Press “Page/Quit” button two times to return to starting page.

Set up a field for Heading on Navigation page

1. From any page press the “Thumb Stick” in to get the menu.
2. Press the “Thumb Stick” in the down direction and highlight “Navigation” and press the “Thumb Stick” in.



Navigation Page

3. Use the “Thumb Stick” to move cursor to the field you want to change and press “Thumb Stick” in.
4. Use the “Thumb Stick” to scroll to the “Heading” option and press in to select.

Set up Heading for Digital Readout

8. From any page press the “Thumb Stick” in to get the menu.
9. Press the “Thumb Stick” in the down direction and highlight “Main Menu” and press the “Thumb Stick” in.
10. Press the “Thumb Stick” down and highlight “Setup” and press the “Thumb Stick” in.
11. Use “Thumb Stick” to highlight “Heading” and press in.

12. Use “Thumb Stick” to move cursor to “Display” option and press in.
13. Highlight “Degrees” and press “Thumb Stick” in.
14. Press “Page/Quit” button two times to return to starting page.

Front of the Rino 130



Appendix C – Alignment Procedure Photographs



Figure 1. – Obtain a GPS heading by walking parallel to the sensor tower (using optional string) from the base towards the sensor.



Figure 2. – Make sure wind sensor is vertical and adjust wind sensor junction box until the directional reading at the DCP matches the GPS heading.