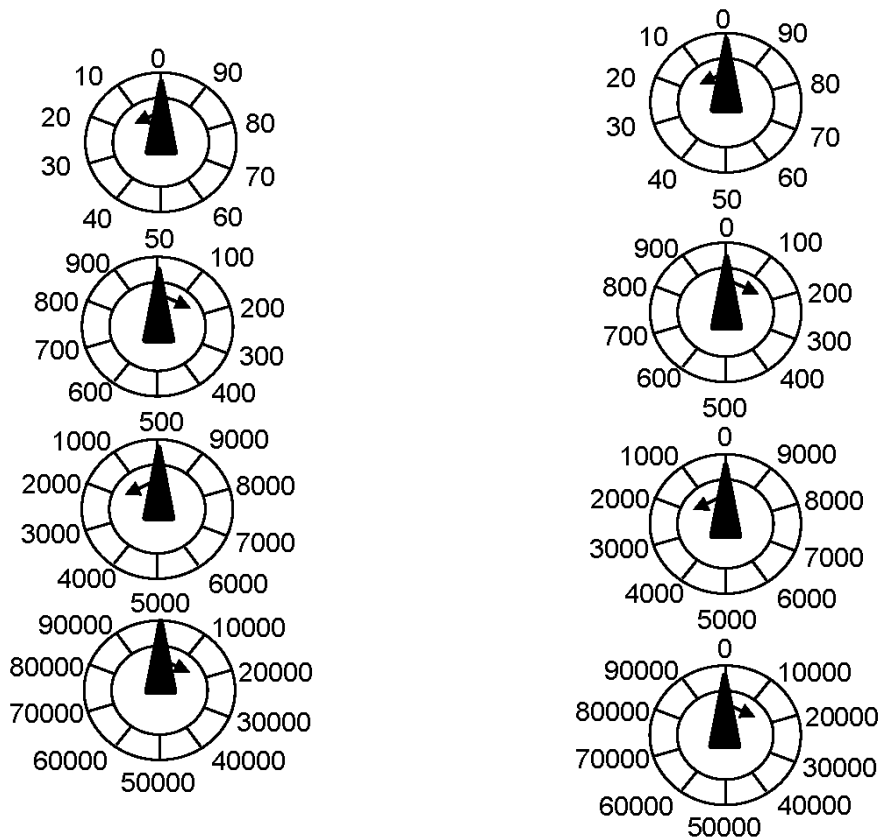


Reading a TSK flow meter:

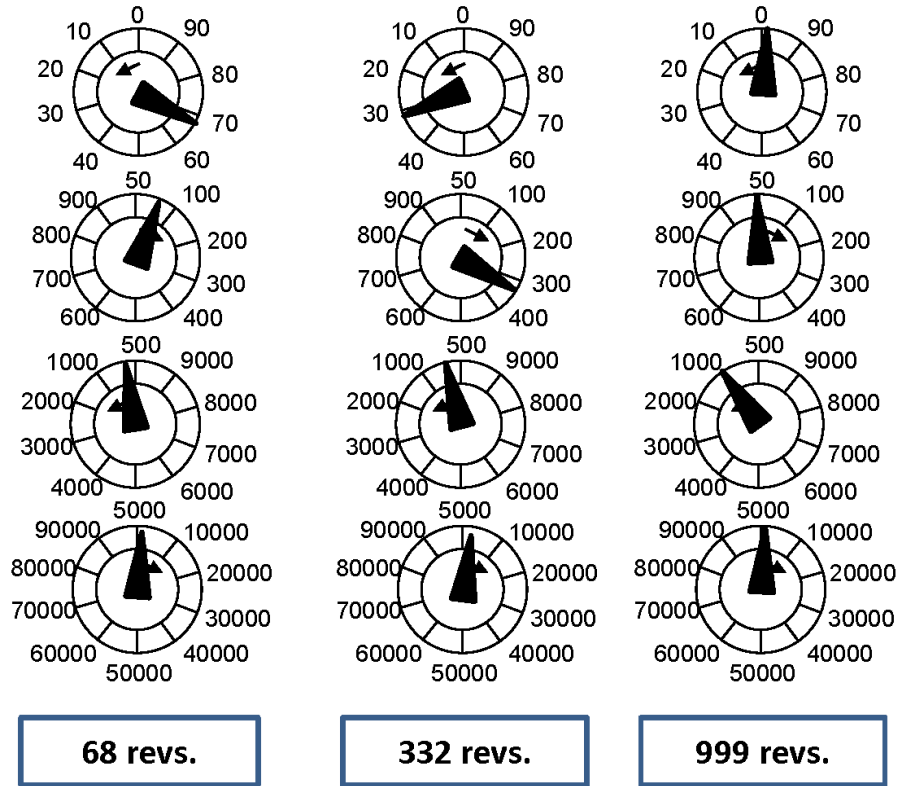
Before using the flow meter, please study these instructions carefully. Misread flow readings are remarkably common and result in big errors in abundance and biomass calculations.

The TSK flow meter uses opposing gears that all rotate continuously when the propeller spins. There are several points to know to read them accurately.

- 1) The flow meter should be reset PERFECTLY to zero on all dials before each deployment as shown below (rotate dials up to 0 by hand).
- 2) Although the meter shows the dial numbering on the LEFT below, they should show the numbering as on the RIGHT (note the added 0s at the zero position of each dial). I.e., each dial starts at 0 and rotates continuously toward higher numbers.
- 3) Start by reading the bottom dial and work up. See examples on next page. Because dials rotate continuously, every dial will show some reading after a tow, but a dial doesn't "count" until it's gone at least *past* its first tick (past 10 on the first dial, past 100, etc.). You will rarely if ever get a reading from the bottom dial: most readings for vertical tows will be between 100-1500 revolutions.
- 4) Procedurally, the net must be lifted at a fast enough rate for the flow to depress the backstop. If you get anomalously low readings compared to normal, then try to watch for a spinning propeller when retrieving. Always record the serial number (on outer flap) once per trip to match with the calibration.



Some examples:



IMPORTANT -- Note these two slightly different readings.

The one on the *left* is **1682**.

But the reading on the *right* is not possible and means that the dials were not all perfectly zeroed before deployment.

What's wrong with it? The top two dials are inconsistent – for a reading of 82 on the top dial to be correct, the reading on the 2nd dial should either be *almost* to the 600 or *almost* to the 700, not just past 600.

So what's the correct reading? That's very hard to tell, and emphasizes the importance of zeroing perfectly to begin with. In this case, the higher-order dial is probably the one that's off because it would be caused by a smaller mistake when zeroing i.e., the actual reading is probably **1582**. You will have to use some judgment when there's an error like this, so it's best to draw the dial positions on the log sheet and interpret in whichever way is *most likely* given other readings for similar tow depths and the smallest probably zeroing error.

