

SWOFFER INSTRUMENTS, INC

MODEL 2100 SERIES CURRENT METERS - USE OF SPECIAL PROPELLERS

Occasionally propellers other than the standard "Octura®" brand #1250 propeller, which is normally supplied with the Model 2100 instrument, are used. Because of pitch and diameter differences among the available propellers, each different propeller must be user-calibrated before reliable results can be obtained. This calibration procedure is outlined in detail in the *Model 2100 Indicator Instructions* and should be done at or very near to the velocities you will be measuring with the special propeller.

With propellers smaller than the standard 2" (50 mm) version it will be necessary to use a shim (spacer) under the propeller to obtain a proper fit between the back of the Rotor and the Thrust Bearing Nut. See diagram below...

If low-velocity, shallow flows are to be measured use the biggest propeller you have. It can be an advantage to reverse the propeller on the Fiber-Optic Rotor, with the largest diameter of the propeller blades presenting itself to the stream flow. This *may* improve the startup threshold and help to overcome inertial friction. It is cautioned however, that this reverse prop orientation may not produce a linear output signal over a wider range of velocities.

Establish the calibration number for a specific propeller / rotor combination and then only use it at the velocities at which it was calibrated and tested.

The Rotor Shaft and the Thrust Bearing nut must be kept very, very clean for accuracy at these shallow, slow flows and the 3" (70 mm) propeller is the only one recommended for low velocities at this time.

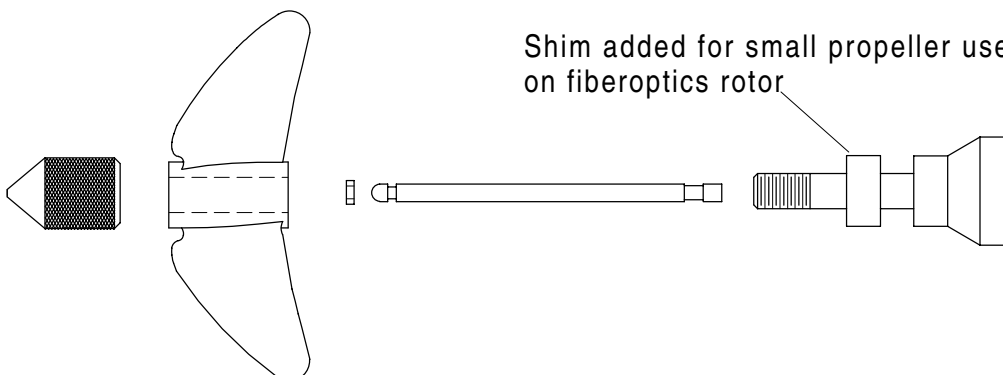
CAUTION: The smaller the propeller, the less responsive it will be in low velocities due to smaller blade surface area. Friction of the rotor assembly is hard to overcome with small props and it is therefore advised to be very careful in attempting to read shallow, slow velocities accurately with small propellers. CALIBRATE CAREFULLY !

Octura® propeller #1435, 1³/₈" dia. (35 mm)
use for shallow, very high velocities only

Feet Cal No. is *approximately* 217
Meters Cal No. is *approximately* 711

Octura® propeller #1270, 3" dia. (70 mm)

Feet Cal No. is *approximately* 130
Meters Cal No. is *approximately* 426



Note: References above to the 2100 can be used for all Model 3000 instruments since both use the same sensor and propellers.