

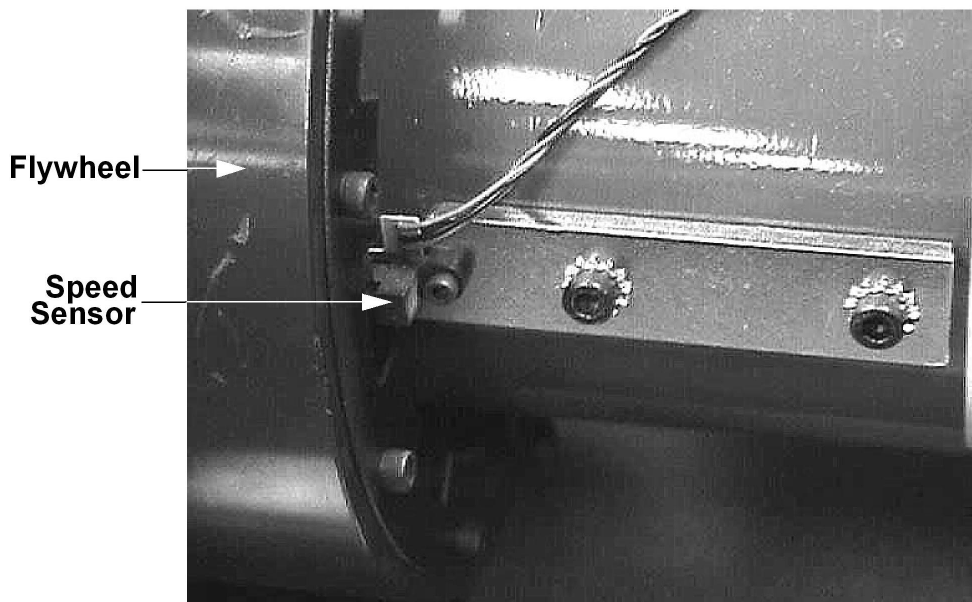
## Procedure 5.3 ó Troubleshooting the Speed Sensor

### Note:

The speed sensor is a hall effect sensor that emits a pulse when a flywheel lobe passes between its transmitter and receiver. The speed control circuit processes the pulse train emitted by the speed sensor. The speed sensor signal is a real time representation of the operating speed of the treadmill. The speed control circuit compares the real time speed (speed sensor output) with the speed that it expects the treadmill to be operating at and acts accordingly to control treadmill speed or initiate an error code sequence, if necessary. Typically, if a problem exists with the speed sensor the drive motor will operate (perhaps only briefly) before a speed related error occurs (errors 20-26).

1. **Set the treadmill circuit breaker in the *on* position. Using a DC voltmeter, measure the voltage between terminal 3 of J2 (green wire) and terminal 4 of J2 (black wire) on the lower PCA. Slowly, rotate the drive motor flywheel. The voltage should read approximately 5 Vdc when a flywheel lobe is between the speed sensor *legs* and approximately 0.25 Vdc when a flywheel lobe is not between the speed sensor *legs*.**

### Diagram 5.3 ó Speed Sensor Mounting



2. If the voltages in step 1 are correct, go to step 5. If the voltage in step 1 is 0 Vdc or significantly low when a flywheel lobe is between the speed sensor *legs*, continue with step 3.
3. Measure the voltage between terminal 1 of J2 (red wire) and terminal 4 of J2 (black wire) on the lower PCA. The voltage should read approximately 5 Vdc.

4. If the voltage is missing or significantly low, disconnect the speed sensor plug from the lower PCA. Measure the voltage between pins 1 & 4 of the J2 plug on the lower PCA. If the voltage is approximately 5 Vdc, replace the speed sensor. If the voltage is missing or significantly low, replace the lower PCA.
5. At this point the speed sensor output is good, but a speed error occurs. There are two potential causes for this condition. They are upper PCA or lower PCA. There are no good means of troubleshooting these components other than substituting known good components. Replace only one component at a time. If the component that you replaced does not correct the problem, replace the original component. Try substituting the lower PCA first then the upper PCA, if necessary.
6. If you have performed all of the above procedures and have been unable to correct the problem, call Precor Customer Support.