

3.4.3 Electronic Tests

For checking the rotational speed sensor and the rotor detection. The rotor can be rotated by hand (with open lid). The speed sensor LED must light-up six times per revolution. The rotor detection LED must light up according to the rotor code, where one coding magnet switches it off again. Spin the rotor by hand and confirm the LED lights up.

3.4.4 Speed Sensor

The speed sensor consists of a bistable Hall sensor which is placed on a small circuit board attached to the bottom of the motor. This unit can not be repaired but must be replaced as a whole.

A magnet segment with 6 pairs of poles rotates $1 \pm 0.5 \text{ mm}$ away from the sensor. A north pole in front of the Hall sensor switches the output to $H = 5 \text{ V}$, whereas a south pole switches to $L = 0 \text{ V}$. Therefore 6 H/L transfers must occur per rotor revolution. This is 3 highs and 3 lows.

For removal proceed as follows:

Tilt the centrifuge to the right side in such a way that the bottom is accessible from the outside.

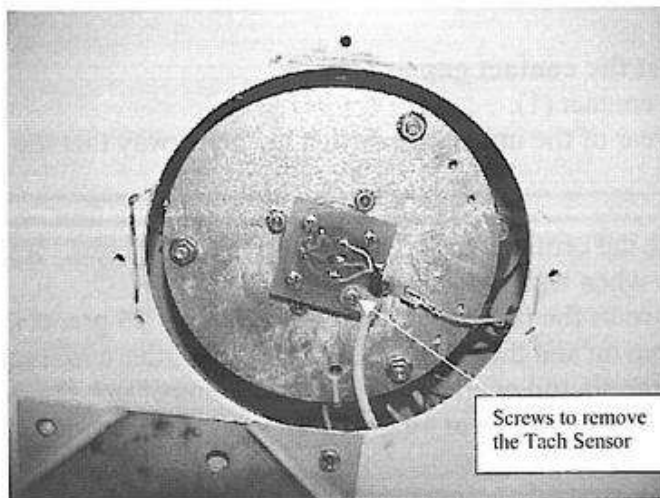
Remove bottom plate.

Unplug cables.

Unscrew 4 phillips screws from the board .

Remove board and replace it if required.

Reinstallation proceeds in reverse order.



Speed Sensor - Exchange

3.4.5 Rotor Identification

The same Hall sensor as described previously is used. It is mounted on the motor cover - inside the rotor chamber. A 4-pin cable leads alongside the motor down to the speed sensor board.

Small bar magnets of changing polarity are located in the rotor at a distance of 0.8...2mm in front of the Hall sensor. Between 2 and 12 magnets are located on a circle divided in 30° sectors. The number is always even. Angular position and number of magnets form the rotor code.

For removal proceed as follows:

Unscrew the 4 fixing screws of the rotor cover (1).

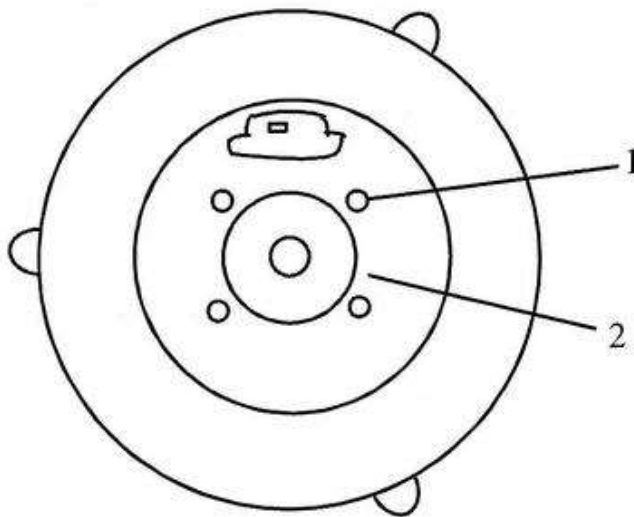
Lift cover with mounted sensor carefully approx. 10 cm .4 inch (2).

Unscrew 2 fixing screws beneath the cover.

Unplug the connection plug on the speed sensor board.

Exchange sensor.

For reinstallation proceed in reverse order.



Rotor Code Sensor - Exchange