

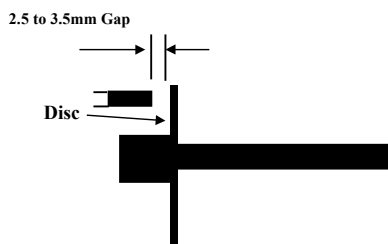
NOTES ON MOUNTING THE SPEEDOMETER TRANSDUCER

There are 3 common methods of setting up a magnetic induction transducer to supply an electronic speedometer with a pulsed signal. With any of these set-ups, it is most important that the sensor is mounted in a location that ensures the gap between the sensor head and disc, bolt head or magnets remains constant. For example, if you are intending to mount magnets on the differential flange, the sensor is best located on the differential itself to ensure that the sensor and magnets move in unison, maintaining a constant gap.

A. Setting up an ETB Speedometer Disc and Heavy-Duty Sensor Combination

Once the speedometer disc is mounted between the differential flange and the propeller shaft flange, a suitable mounting point for the transducer must be found.

The transducer works by sensing the magnetic change between a “hole” (or gap in a toothed wheel) and continuous steel as the disc rotates. Therefore, to achieve a good signal, the centre point of the transducer must be pointed at the centre point of one of the disc holes located in a ring near the outer perimeter of the disc. The sensor or transducer should be mounted between 2.5 to 3.5mm from the disk to achieve a good signal, taking care that the sensor does not foul the disc.



B. Setting up the sensor to read Prop-shaft Bolt Heads

The above applies to mounting the Heavy Duty (340 011) magnetic induction sensor to read from rotating bolt heads. The bolt head must protrude at least 6mm from the metal surface they are mounted on, such as a prop-shaft flange. The sensor must point at the centre of each bolt-head as the shaft rotates. The bolt head must be ferrous (i.e. have an Iron content and attract magnets), and be a clean, flat surface. Allen-key bolts are not suitable as the hexagonal hole in the bolt head will weaken the signal.

C. Light Duty Magnetic Induction Sensor and Magnets

By positioning the magnets 180° apart (i.e. opposite each other on a circular shaft), the sensor must be positioned such that each magnet passes in front of the sensor head, as the part on which the magnets are mounted, rotates with vehicle speed (e.g. a prop-shaft). The magnets are extremely strong and hence stick to a ferrous surface well, however we strongly recommend using an adhesive (e.g. Araldite) around the edge and on top of each magnet in order to ensure they remain in place. For added insurance against losing magnets, you can wrap adhesive tape (e.g. Duck tape) over the magnets and around the entire shaft. *The recommended gap between sensor head and each magnet is 3-5mm. Note – The dimple on each magnet denotes the North magnetic pole, and this dimple should be mounted towards the sensor.*

Finally, and most importantly, ensure that the sensor is mounted such that vibration and movement of the differential will not cause the two parts to conflict.

Note - Pilgrim Sumo Owners - The toothed disc supplied by Pilgrim Cars has 30 teeth. If using this disc, then the number of pulses that the speedometer should be programmed to is dependent on the driven wheel / tyre size, and the differential ratio.

If you are in doubt as to the number of pulses required, please telephone ETB Instruments Limited on (01702) 711127, with your tyre / wheel size and differential ratio and we will be happy to calculate the number of pulses you require. If you do not know the differential ratio, the “AutoCal” feature on the speedometer can be used - See separate instruction sheet. In addition the recommended starting gap for Pilgrim disc is between 2 and 2.5mm.

Note – If the Speedometer increases to a certain speed and then either will not increase any further or returns to zero, then either:-

- Check that the speedometer is programmed to the correct number of pulses / mile.
- Increase sensor gap by 1mm.