

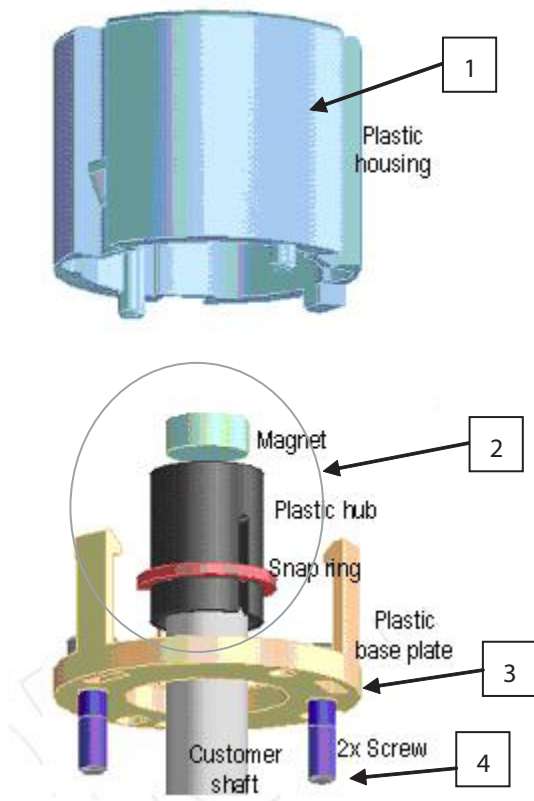
## Application Note 5317

### Description

The objective of this note is to provide a step by step manual assembly guideline in the alignment and installation of this magnetic encoder to a motor shaft.

In this first initial release only 6mm shaft is supported. Other shaft diameter size of 2, 4, 8 and 10mm may be introduced in any future product release.

### Components exploded view



### What forms the magnetic encoder components kit?

There are altogether, 4 components supplied as described below. (refer exploded view and numbered in square box)

1. Plastic housing - with pre-assembled PCB and glue to the housing.
2. Magnet, plastic hub and snap ring - supplied pre-assembled as one unit.
3. Plastic base plate
4. 2pcs x Screws of M2 x 0.4 x 8 ( socket head cap screw, head  $\varnothing 3.8 \pm 0.18$  mm )

### Alignment tool set

(ordered separately – Part number HEDS-8934)

This alignment tool set consist of a gap plate and a centering jig as listed below:-

1. A gap plate with a “U” shaped end – for setting the magnet height to the IC (on the PCB)



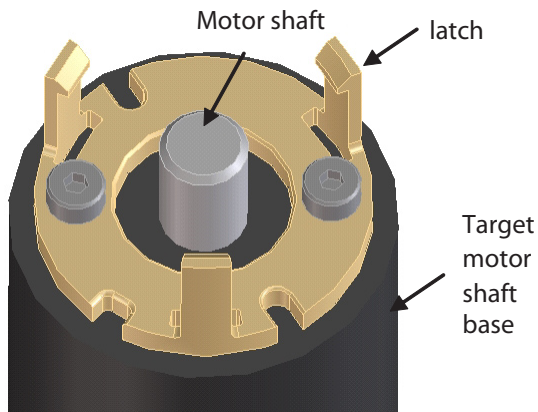
2. The plastic base plate centering jig.- for centering the plastic base plate to customer shaft.



## Encoder to motor installation procedure

### Step 1:

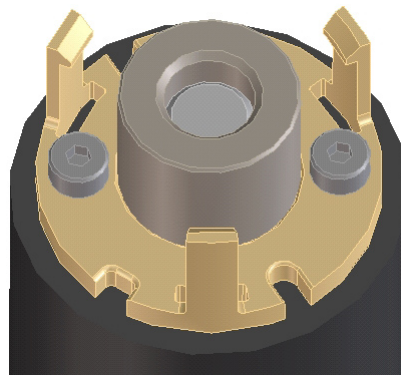
1. Insert the 2pcs x screw into the plastic base plate.
2. Place plastic base plate over the intended target motor shaft and do an initial partial screw down to the target motor.(do not tightened the screw yet and the base plate must be still loose on the motor, to accommodate the centering jig in the next step).



**CAUTION:** For optimal performance, all the 3 sets of latches should not be subjected to more than 1.5mm outward bending. Excessive outward bending will affect the subsequent, latch to plastic housing grip effectiveness.

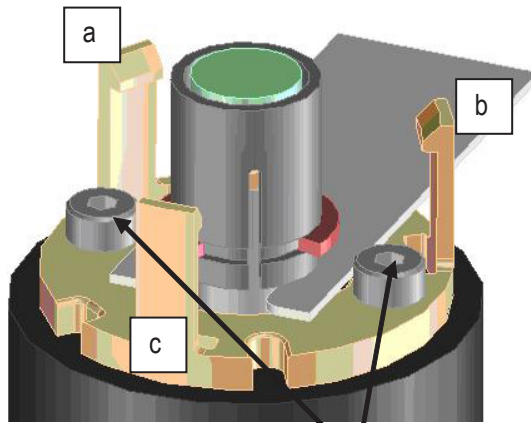
### Step 2:

- a) Place the centering jig into the target shaft and ensure that centering jig outer diameter is "sitting" inside the plastic base plate inner hole.
- b) Tightened both screws once the centering jig is sitting inside the plastic base plate hole. The recommended screws tightening torque should be 0.6 in.lb(0.7 kgf. cm)
- c) The centering jig can then be removed once both screws are tightened accordingly.



### Step 3

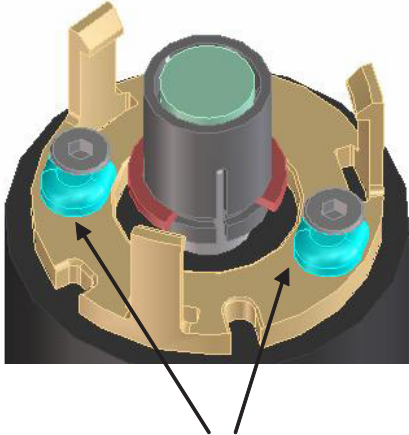
- a) Place the gap setting plate "U" end onto the motor shaft between the latches of "a" and "b" (with latch "c" in front). Plate must be sitting flatly on the plastic base plate.
- b) With the plate still pressed onto the shaft; press fit the magnet and hub assembly; all the way down into the shaft till the hub touches the gap setting plate.
- c) Removed the gap plate



**CAUTION:** For optimal performance, magnet and hub assembly are recommended for a ONE time assembly process only. Removal and re-assembly should be avoided.

#### Step 4

Due to the properties of plastic softness at high temperature, gluing should be applied at least; to the screw-plastic interface to prevent screw loosening. Glue may be applied to the underside of this plastic baseplate where deemed appropriate by end user. For optimal result, the gluing surface has to be free from contamination (i.e grease).

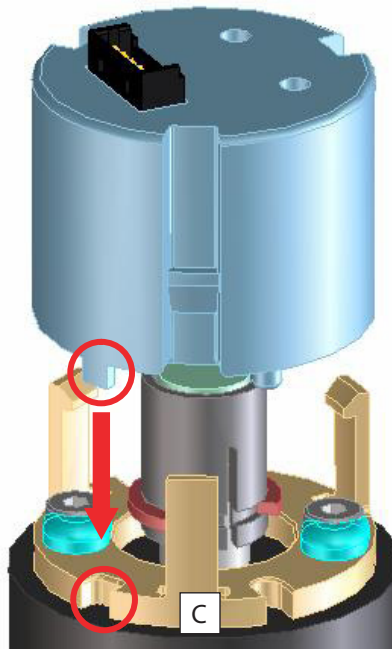


Highly recommended to apply glue to this area to prevent screw loosening, due to the effect of high temperature on plastic.

**Note :** High temperature rated adhesive such as HERNON Ultra 317 ([www.hernon.com](http://www.hernon.com)) is recommended

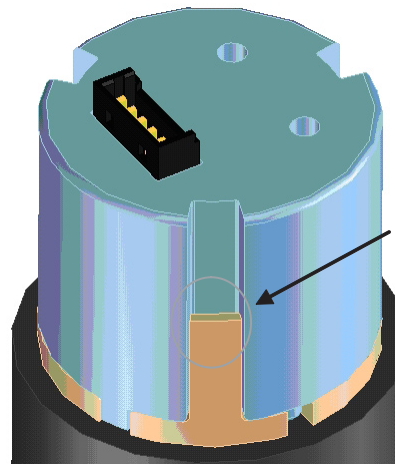
#### Step 5

Similarly, with latch (marked "c" positioned in front) and both screws on the left and right respectively; assemble the plastic housing to the base plate; guided by the rectangular protrusion on the plastic housing and the matching slot in the base plate (see circled region and arrow indication in following drawings). Press fit the combination with a force of about 4kgf.



#### Step 6

Check that all the 3 "latch – catch" combinations are well secured as seen below.



Ensure that all the latch-catch interfaces are well secured (no bulging seen)

**CAUTION:** For optimal performance, base plate and plastic housing assembly are recommended for a ONE time assembly process only. Removal and re-assembly process should be avoided due to the potential weakness of the latch after re-assembly.

For product information and a complete list of distributors, please go to our web site: [www.avagotech.com](http://www.avagotech.com)

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