HEDR-5xxx High Resolution Series
Three Channel Quick Assembly Encoders

Application Note 5560

Introduction

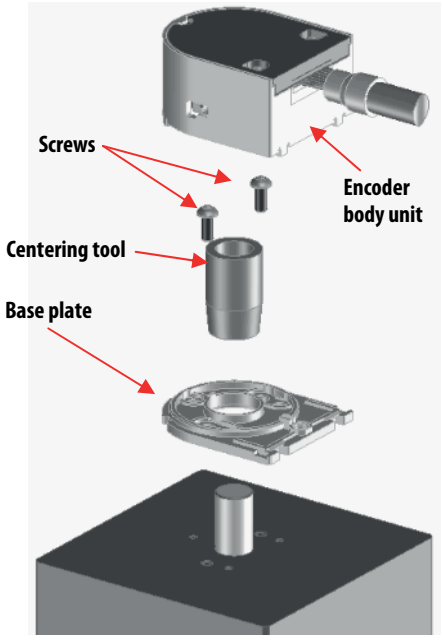
This application note provides step by step instructions for mounting the new Avago HEDR-5xxx series encoders onto a motor.

The Avago HEDR-5xxx series encoders are designed to cater for existing HEDS-5xxx series users who wish to upgrade due to higher CPR requirements. Therefore the base plate and outer diameter of these encoders are compatible with the legacy HEDS-5xxx series.

The Avago HEDR-5xxx series have been specially designed for easy installation while ensuring that the chance of finger contact with the internal code wheel is eliminated.

Encoder Mounting and Assembly Instruction

The HEDR-5xxx comes in the form of 3 parts; namely the base plate, centering tool and encoder body unit. See figure 1.



Note: Screws are not included

Figure 1. HEDR-5xxx exploded assembly view

Step 1. Centering the base plate

Place the base plate over the motor shaft as shown in figure 2. Slide the centering tool over the motor shaft, and ensure that it is aligned to the hole in the center of the base plate.

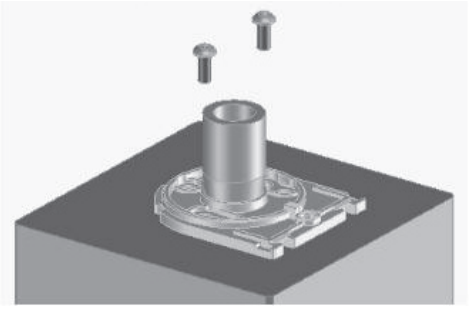


Figure 2. Base plate to motor shaft assembly

Align and install the screws* through the encoder base plate and into the motor. See figure 3. Refer to Table 1 for recommended torque.

* Depending on the motor type, two or three screws will be required.

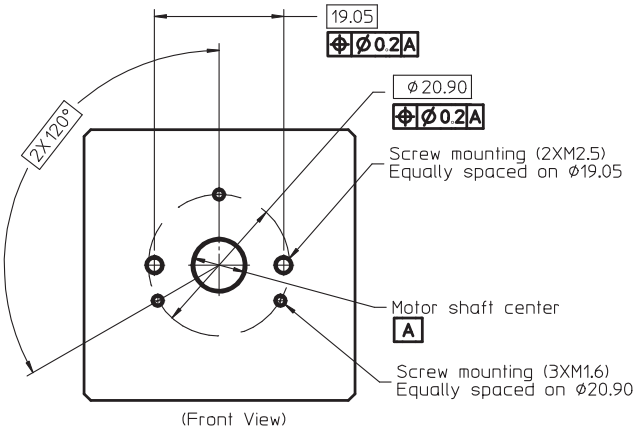


Figure 3. Recommended motor mounting dimension

Table 1. Recommended screw torque settings

Screw Size	Torque Range (in-lbs)
#0-80 or M1.6	0.4 to 0.8
#2-56 or M2.5	0.9 to 2.0

NOTE: It is recommended that adhesives be applied to the screw-base plate interface to prevent the screws loosening during operation.

Step 2. Remove the centering tool

Step 3. Encoder body unit assembly

With the base plate centered to the shaft as seen in Figure 4, mount the encoder body unit to the motor's shaft. See figure 5.

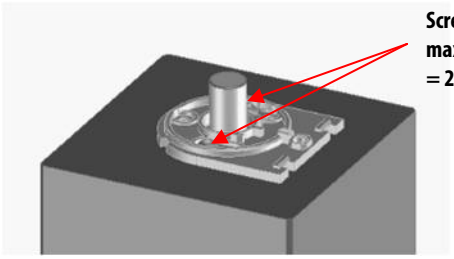


Figure 4. Base plate after screw tightening and centering tool removed

Press fit the encoder body unit to the base plate, ensuring that all four snap points are well locked.

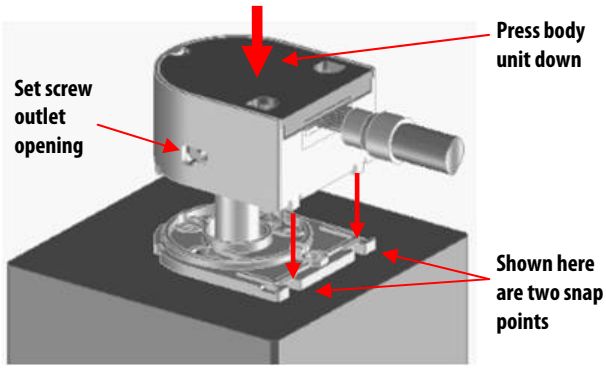


Figure 5. Mounting encoder body unit to the base plate

Step 4. Lock codewheel onto the motor shaft

Insert the hex wrench into the set-screw opening of the encoder body unit and apply a downward force (as indicated by arrow), then tighten the set screw. See Figure 6. The recommended torque is 15-18 oz-in (0.9-1.2 in-lbs).

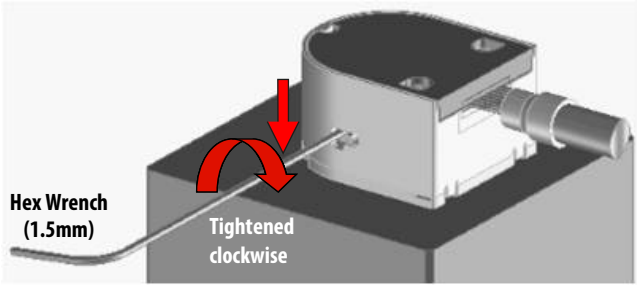


Figure 6. Tightening encoder body unit set-screw to the motor's shaft

* 1.5mm Hex wrench should be used to fasten M3 set screw in Figure 6

The set screw tightening process will:

1. Lock the code wheel's hub to the motor shaft
2. Physically align the code wheel's index position to that of the detector IC (index channel may not necessarily be triggered electrically).

Step 5. Release codewheel and close set-screw outlet

Using the hex wrench, pull the "L-shape" protrusion down and to the left. See figure 7 (BEFORE). This action releases the internal codewheel holding mechanism and also serves to close the set-screw opening.

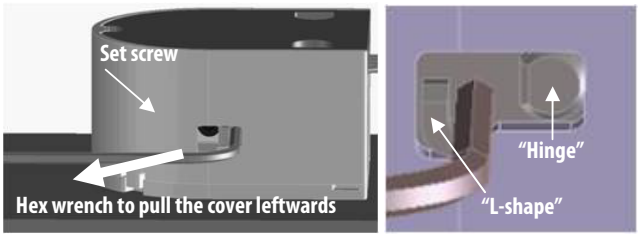


Figure 7. Closing up the set screw outlet

Perform the same action on the opposite side of the encoder. Note that you will need to pull the "L-shape" mechanism down and to the right instead.

The closure is considered complete when the "hinge" is clearly visible through the set-screw openings on both sides of the encoder body unit. See figure 7 (AFTER)

The completed encoder assembly is now ready for operation. See figure 8.

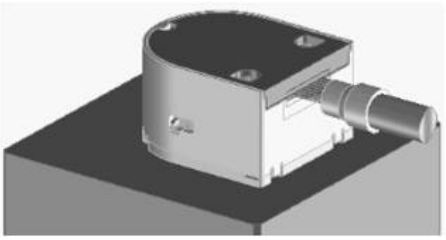


Figure 8. Completed assembly

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