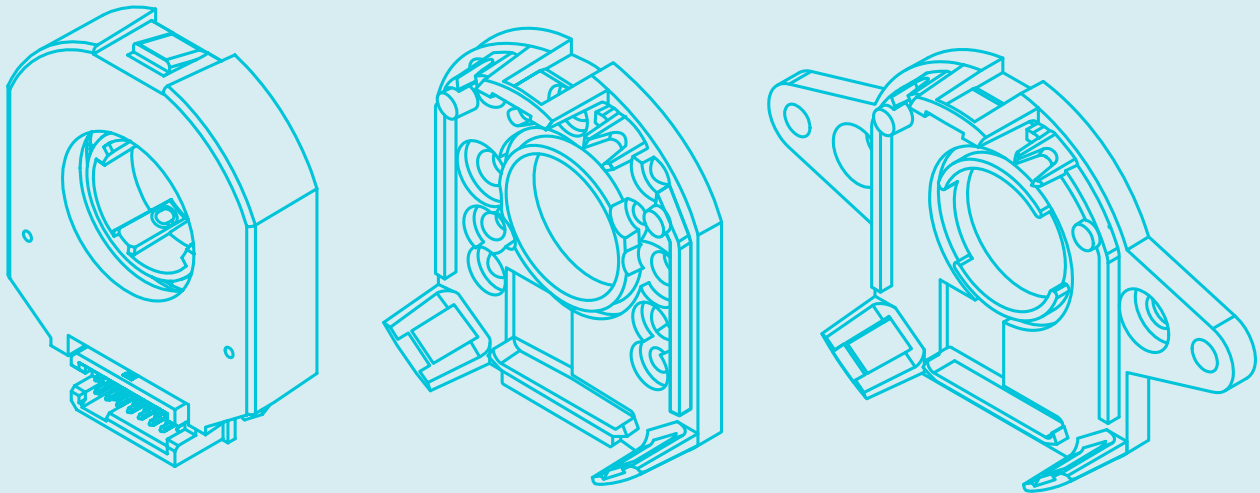


AMT Encoder Mounting Troubleshooting Guide

Applicable series: AMT11, AMT11A, AMT20, AMT21, AMT22, AMT23, AMT31





This guide aims to address common issues found when mounting Same Sky's AMT encoders. If you are experiencing any performance issues or unexpected encoder behavior, please reference the images and instructions below. For additional information and tutorials on AMT encoder mounting, please visit our AMT mounting instructions page at: sameskydevices.com/amt-mounting

For additional questions or support, please contact us at: sameskydevices.com/contact

DAMAGE TO ENCODER PCB DUE TO IMPROPER MOUNTING

The below images show what can occur if encoder installation is not followed and the encoder's rotor was not seated properly onto the shaft adapter and motor shaft. During rotation, friction between the rotor PCB and receiver PCB can cause wear on the receiver PCB, destroying metal traces that can lead to catastrophic failure. Note, that during proper installation an air gap inside the device is established and physical contact of rotating and non-rotating parts inside the encoder does not occur.

As shown in the sections beginning on page 4, encoder mounting issues are most often caused by improper mounting of the shaft adapter and sleeve or improper alignment of the internal rotor PCB.

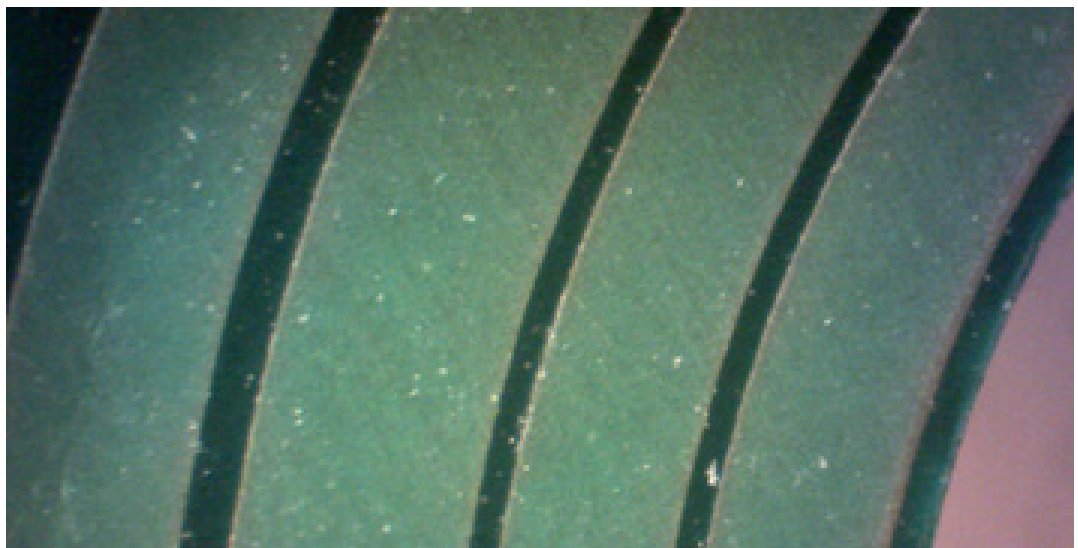


Figure 1
Microscopic image
of new, undamaged
receiver PCB

Figure 2

This image shows physical wear on the receiver PCB caused by improper mounting. The wear is also in a radial pattern, indicating that damage was caused by the rotor PCB rotating while in contact with the receiver PCB.

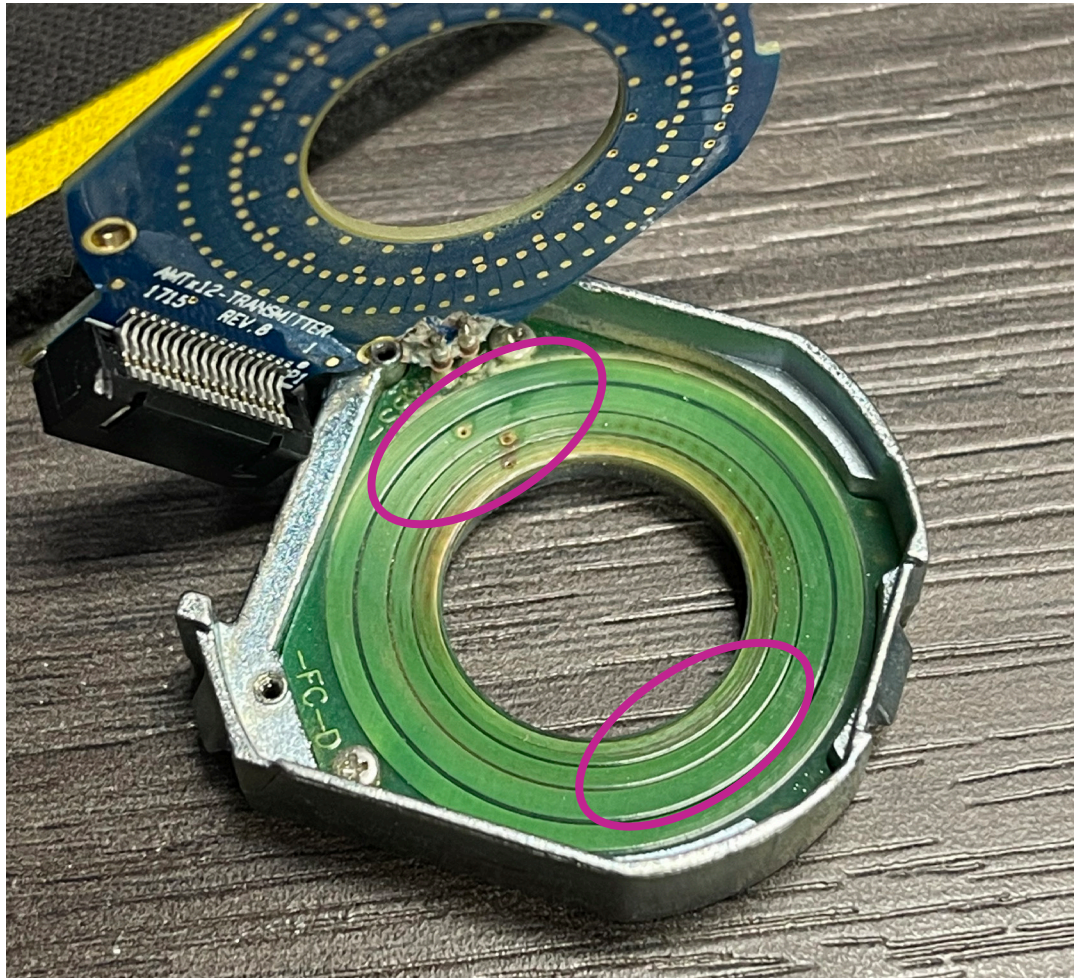
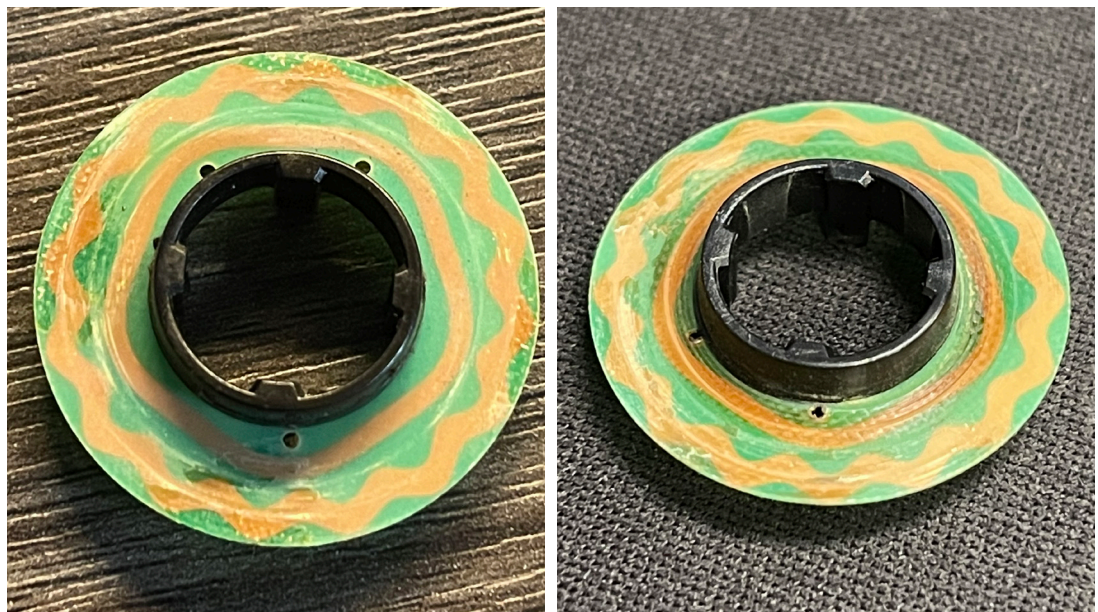


Figure 3

Here is the rotor PCB also showing significant signs of wear from rotation while improperly mounted. Heat damage is also visible due to prolonged use with significant friction.



IMPROPER MOUNTING OF SHAFT ADAPTER AND SLEEVE

Not following the details outlined in step 1 of the mounting process can lead to a variety of encoder performance issues. Here is what to look out for:

Figure 4

Improperly mounted shaft adapter and sleeve. The green shaft sleeve and black shaft adapter should be completely flush when properly mounted.



Figure 5

When mounting the shaft sleeve and shaft adapter, ensure that Tool A is utilized as a spacer that defines the proper distance to the mounting surface. Next, use Tool C to press the shaft adapter over the sleeve until the shaft adapter is completely flush with Tool A.

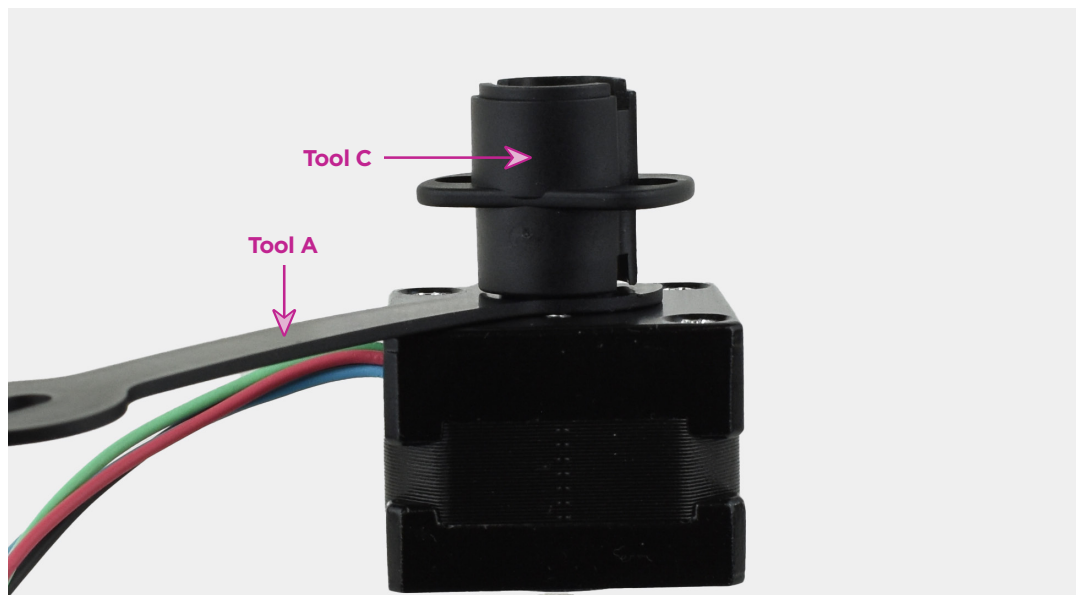


Figure 6

Properly installed shaft adapter and sleeve that are flush and properly spaced from the mounting surface



IMPROPER ALIGNMENT OF INTERNAL ROTOR PCB

Not following the details outlined in step 6 of the mounting process can lead to a variety of encoder performance issues. Here is what to look out for:

Figure 7

Improperly mounted encoder shows the way that this encoder was likely mounted with the internal rotor PCB not pushed down into place. This is consistent with the wear marks on the encoder.

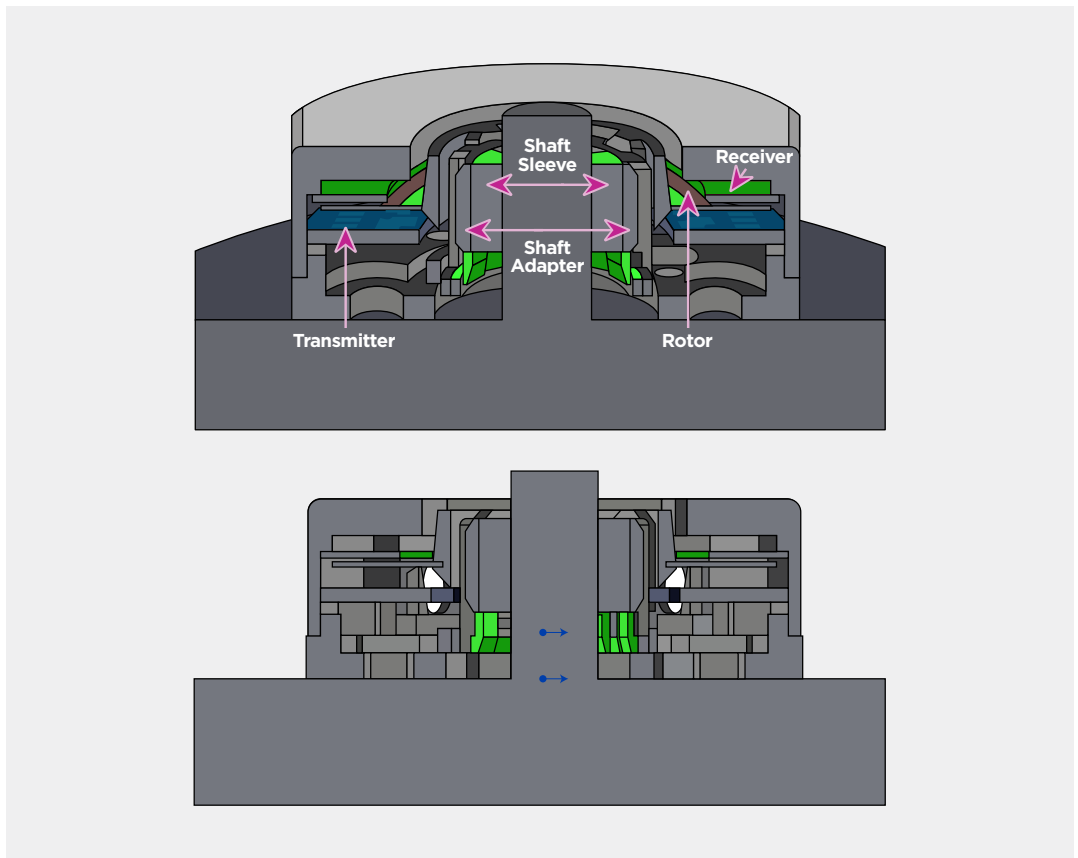


Figure 8

This shows the front view of the encoder rotor sitting too high and not flush with the shaft adapter. This is caused when Tool C is not utilized as outlined in step 6 of the mounting process shown below.

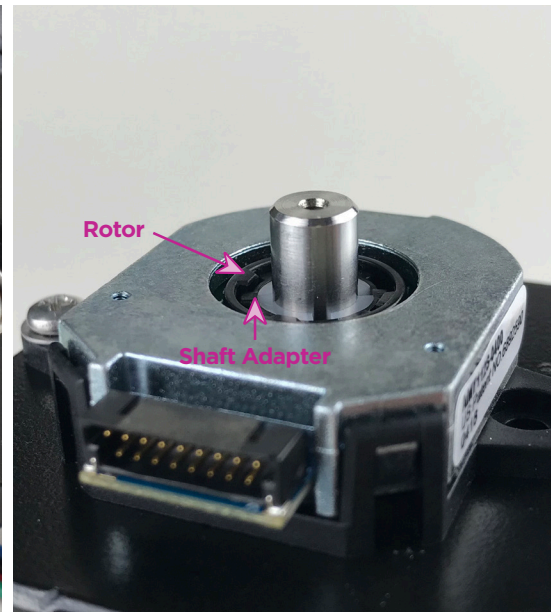
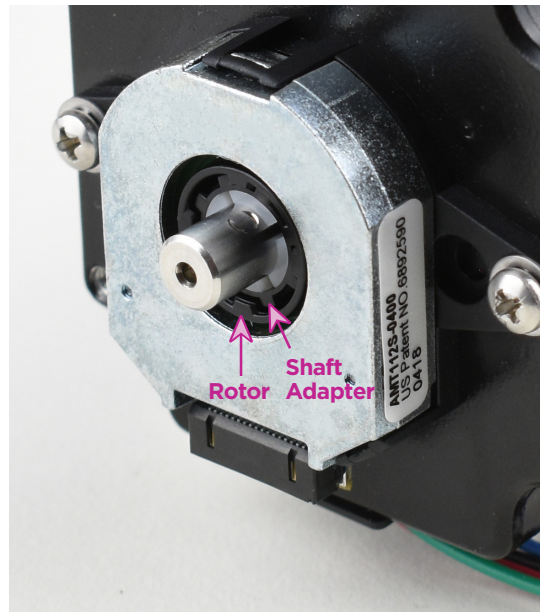


Figure 9

The final step of the mounting process utilizes Tool C to seat the internal rotor PCB into the proper position within the hub assembly.

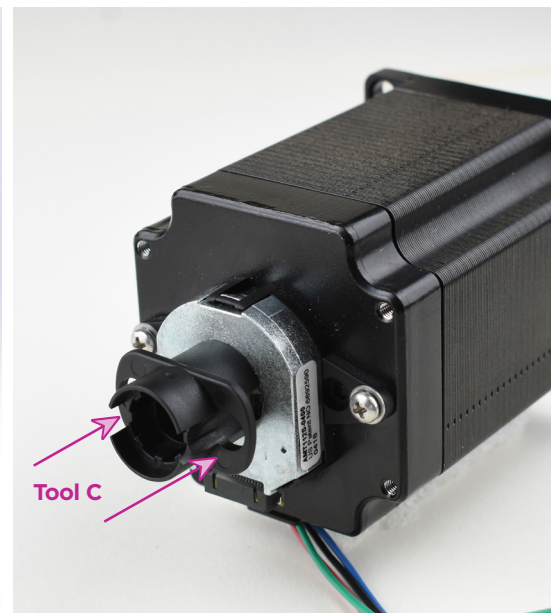
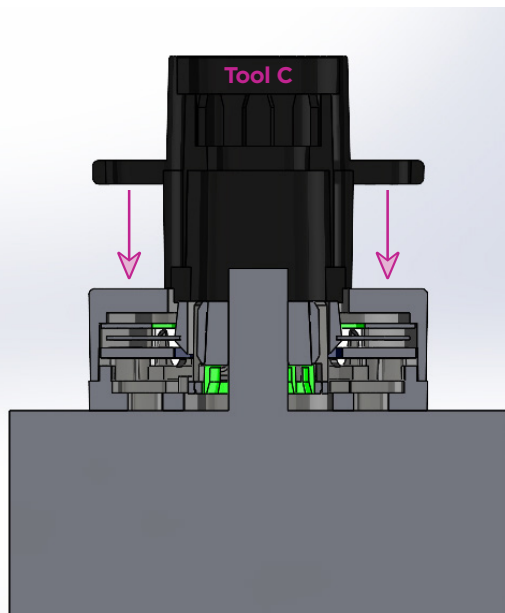


Figure 10

Properly installed encoder with internal rotor and shaft adapter now flush and properly seated within the encoder assembly. Once Tool C is used, the rotor PCB should be properly seated between the transmitter and receiver PCBs. The image on the right further shows the proper air gap and that there should be no physical contact within the encoder.

