

RCM21 Mounting Instructions

Verify that you received the following items:

- Encoder
- Snap-on Cover
- .050" Ball End Wrench

CAUTION ---- ESD Precautions Apply ---- CAUTION

RCM21 Preparation

Remove encoder from anti-static package.

Rotate hub until setscrew aligns with reference dot or arrow on PC Board. Slide lock mechanism may need to be pushed in slightly to allow hub to rotate freely. Pull slide lock mechanism out to full extended position. Push down on hub to verify that it is fully seated in encoder base. Install servo cleats and screws in mounting holes and turn flats on cleats toward motor shaft so that RCM21 encoder base will clear the cleats. When setscrew is aligned with reference dot, S1 will be at the transition point on the encoder disk. Energize motor for S1 track transitions by applying a voltage to the appropriate windings.

Step 1

Align hub with shaft and gently push hub onto shaft until encoder is resting on mounting surface.

Do not push down on encoder, push on hub only!

Step 2


Press down on hub to insure it is seated in centering mechanism and secure hub to shaft by rotating setscrew clockwise until setscrew makes contact to shaft. Observe the short leg of Allen wrench and rotate an additional 1/4" clockwise to apply 20 oz-in torque. Over tightening the setscrew will cause Brinelling of the shaft, which will make it difficult to remove the encoder, if necessary.

Step 3

Rotate cleats and tighten cleat screws until contact is made with RCM21 base. Base should still be able to rotate slightly. Plug in prepared cable with Hirose connector into C1 on RCM21 PC board. Supply power to commutation channel power inputs. On single supply units, data channels will also be energized. Care must be taken to prevent shorting out encoder outputs.

With the motor energized, the encoder commutation tracks can now be aligned with the motor windings. Rotate encoder base until S1 output state transitions. The commutation tracks are aligned properly when a slight twisting of the motor shaft in one direction causes S1 to transition high and a slight twist of the motor shaft in the opposite direction causes S1 to transition low. Repeat motor shaft twisting to verify S1 track alignment. The encoder may be rotated on the motor shaft if repositioning is required for alignment. No more than 10 degrees of rotation should be required.

Change: General Update

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Step 4

Tighten the servo cleats to hold the encoder in place and push slide lock mechanism in completely. Once installed, encoder signal S1 will be in transition, S2 will be low and S3 will be high. Encoder commutation track S1 is now aligned with the motor windings. Tracks S2 and S3 may be checked by energizing the motor for shaft angles 60 and 120 degrees and repeating the twisting procedure in step 3.


Step 5

Remove cable assembly.
 Install snap-on cover.
 Reinstall cable assembly.
 If desired, bond hub to shaft using an approved method. (Consult factory).

Encoder Removal

Remove cover.
 Loosen mounting hardware but do not remove. If hub was bonded to shaft, debond using recommended method. (Consult factory for details.)
 Loosen setscrew in hub.
 Pull slide-lock mechanism to extended position. Encoder base may need to be moved slightly to allow centering ring to engage with bottom of hub.
 Remove mounting hardware.
 Remove encoder.

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