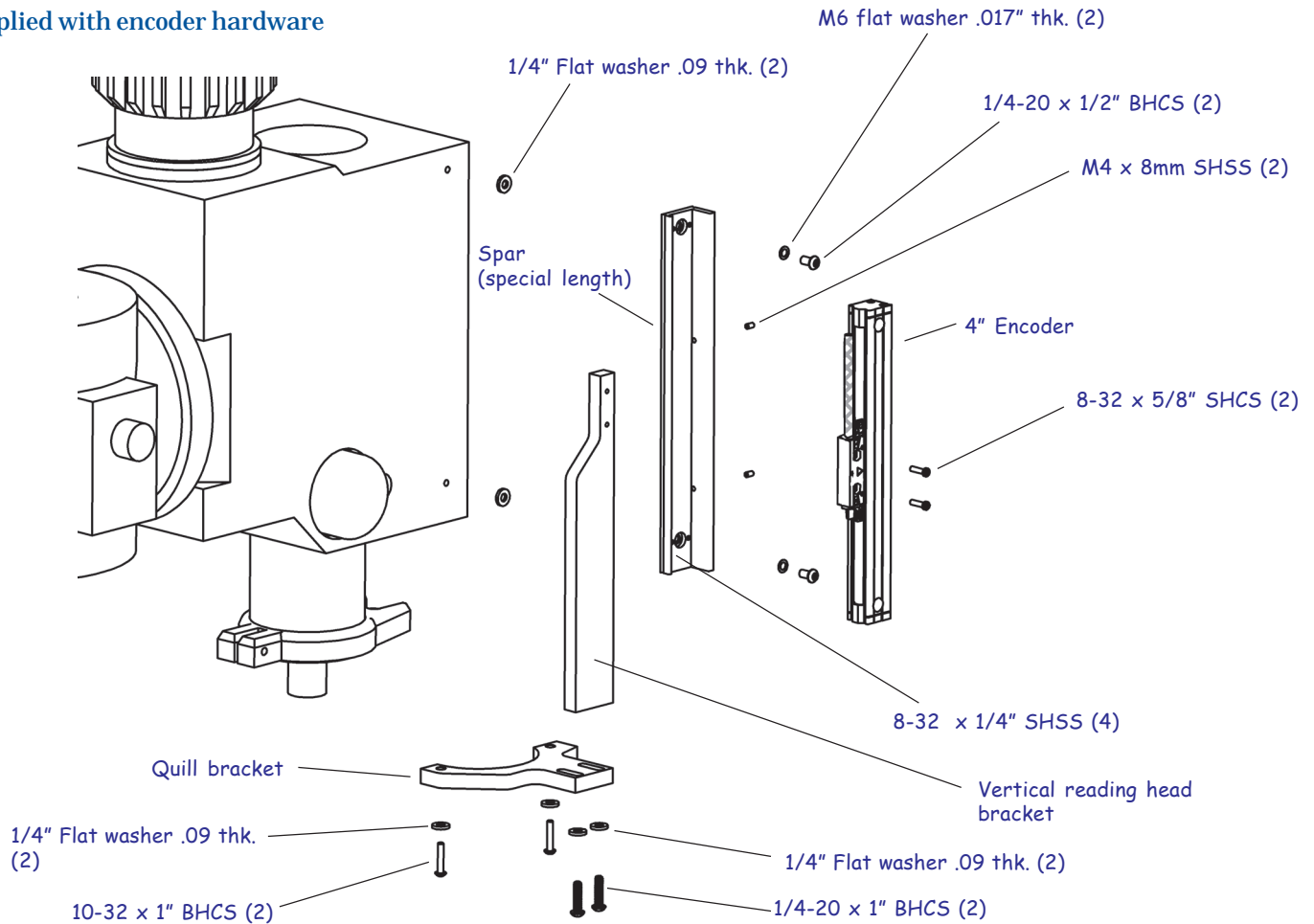


## Quill Installation ...

\* Supplied with encoder hardware



## Mounting Information...

These instructions are for mounting the ENC 125 T/E encoder to the Quill of the Mill / Drill.

### Before proceeding:

- Please read the instructions completely.
- Insure that the correct length encoder is being used for the total axis travel.
- Keep the reading head centered during installation.
- Clean the mounting surfaces.
- Save the alignment brackets with the Encoder Reference Manual after installation is completed.

## First Steps ...

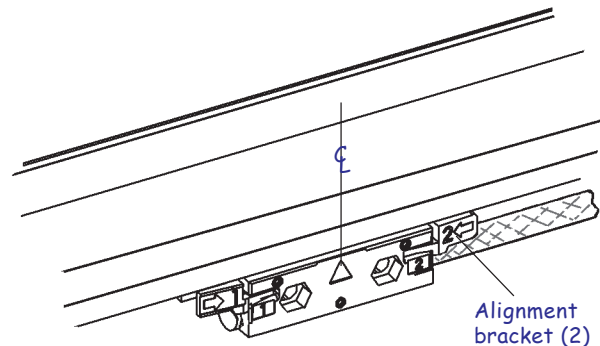
### Machine

- ✓ Move the quill to its center of travel.
- ✓ Mark the axis so that it can be re-centered easily.

### Encoder

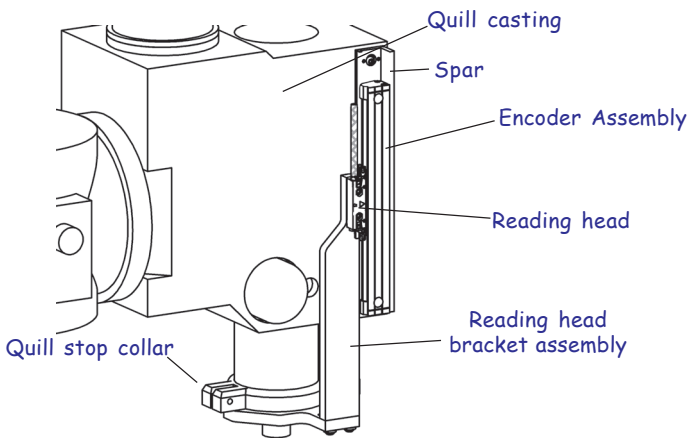
- ✓ Unpack encoder in a safe, convenient location.
- ✓ Do not remove the reading head alignment brackets until instructed.

## Center reading head ...



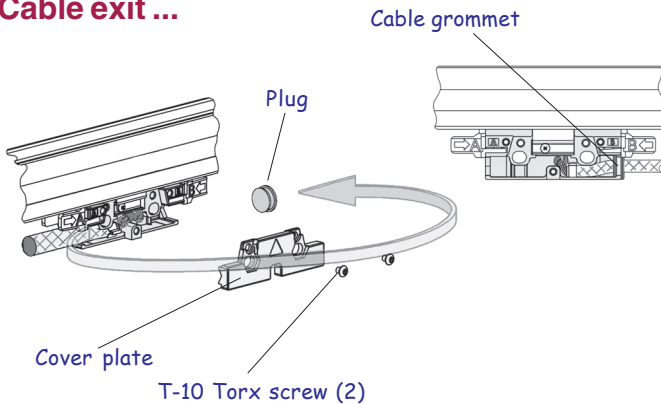
- Mark the center location on the scale case. Slide the reading head and brackets along the scale case until the center marks on the scale case and reading head are aligned.

## Encoder orientation ...



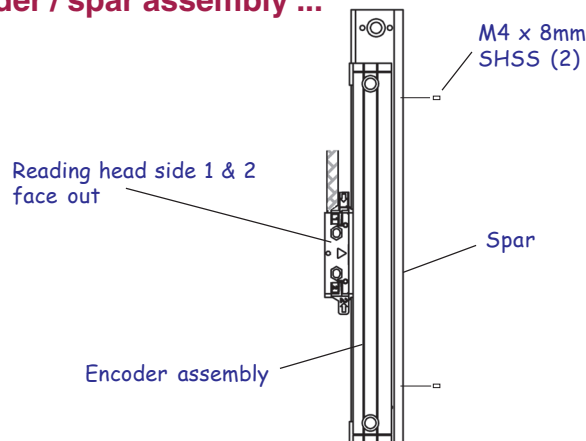
- These instructions will guide you through installing the encoder as shown in this view.

## Cable exit ...



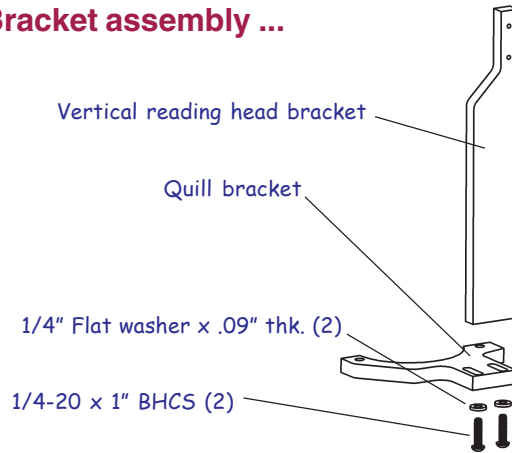
- Determine the cable exit direction before installing the encoder.
- To change the cable exit direction; remove the cover plate and rotate the cable 180°.

## Encoder / spar assembly ...

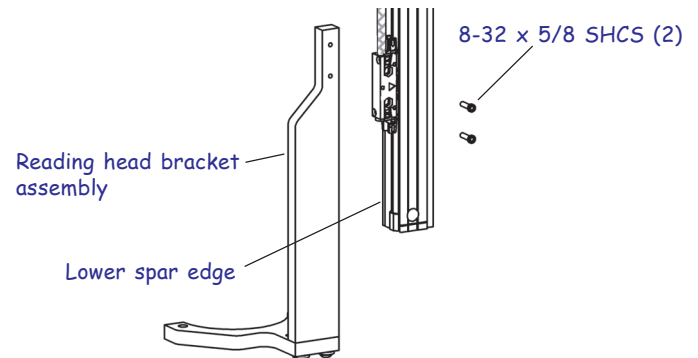


- Insert the encoder into the spar as shown with the lower edges flush.
- Insert two M4 x 8mm SHSS, and secure the encoder in place.

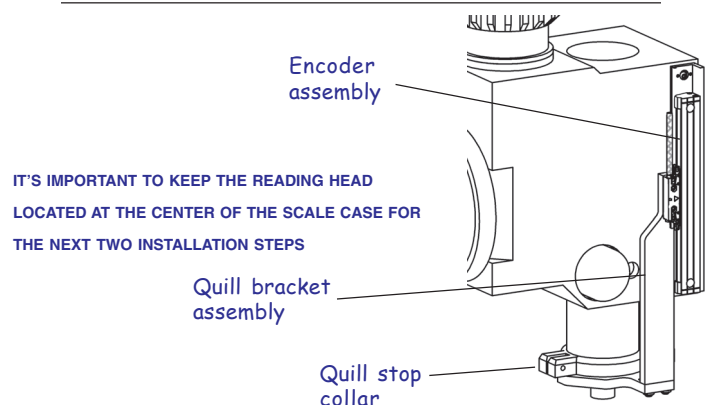
## Bracket assembly ...



- Attach the quill bracket to the vertical reading head bracket.
- Leave assembly loose enough for further assembly adjustment.

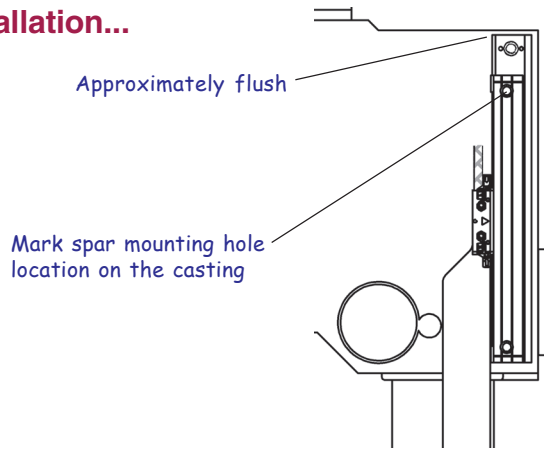


- Attach the reading head bracket assembly to the encoder reading head.
- Align the vertical reading head bracket parallel with the bottom surface of the spar.
- Ensure that the reading head is kept at the center of the scale case.

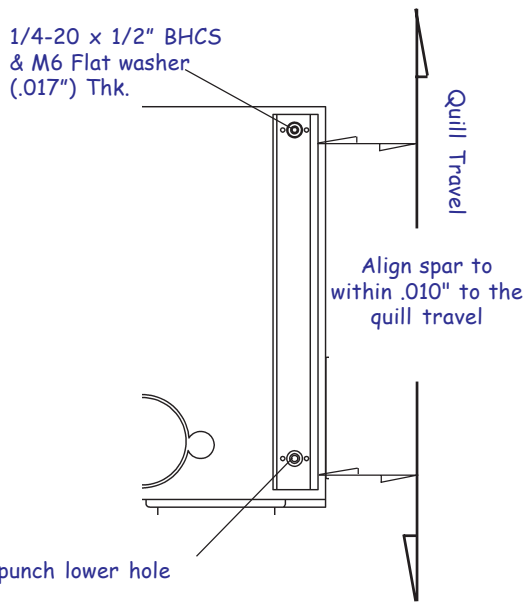


- Move the quill to its center of travel position and lock in place.
- Position the encoder assembly to the machine head casting, fitting the quill bracket to the underside of the quill stop collar.

## Spar installation...

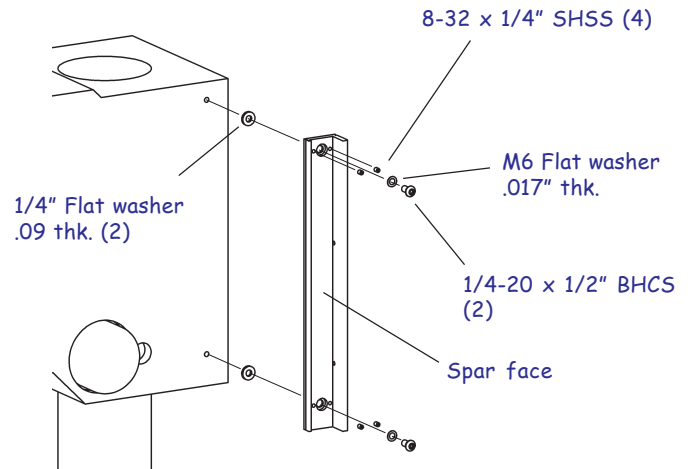


- The top of the spar should be approximately flush with the top of the machine head casting.
- Mark the location of the top spar mounting hole location to the machine.
- Remove assembly from the machine, and drill and tap the upper mounting hole location for a 1/4-20 x 1/2" deep.

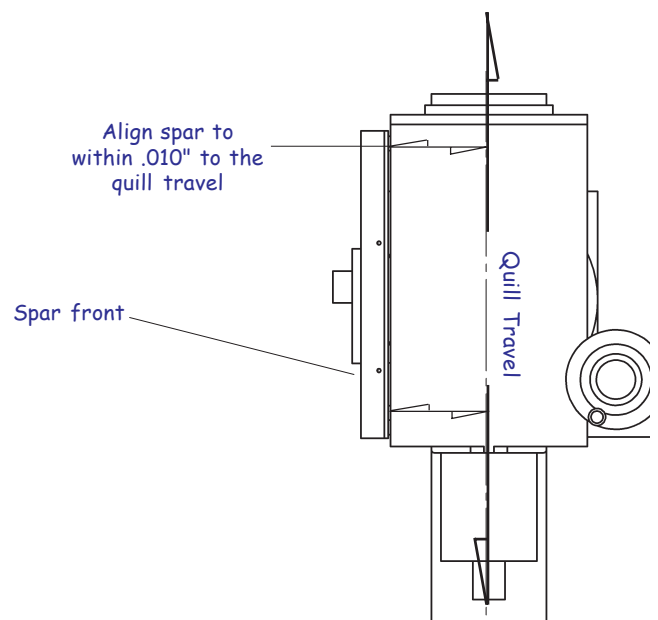


Transfer punch lower hole location

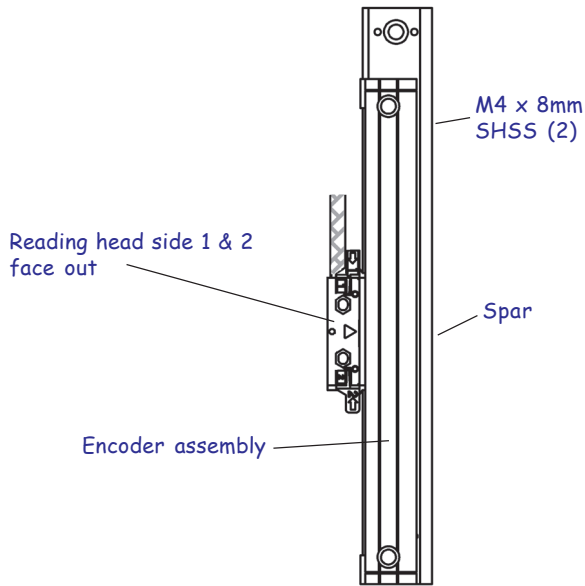
- Remove the spar and bracket assembly from the encoder.
- Attach the spar to the machine casting.
- Align the top of the spar to the quill travel, and transfer punch the lower hole location.
- Remove spar, and drill and tap the mounting hole location for a 1/4-20 x 1/2" deep.



- Insert the four 8-32 x 1/4" SHSS so that the head of the set screw is flush with the front face of the spar.
- Attach the spar to the head casting, placing the shim washers (.09" thick), between the spar and the casting. Do not tighten.

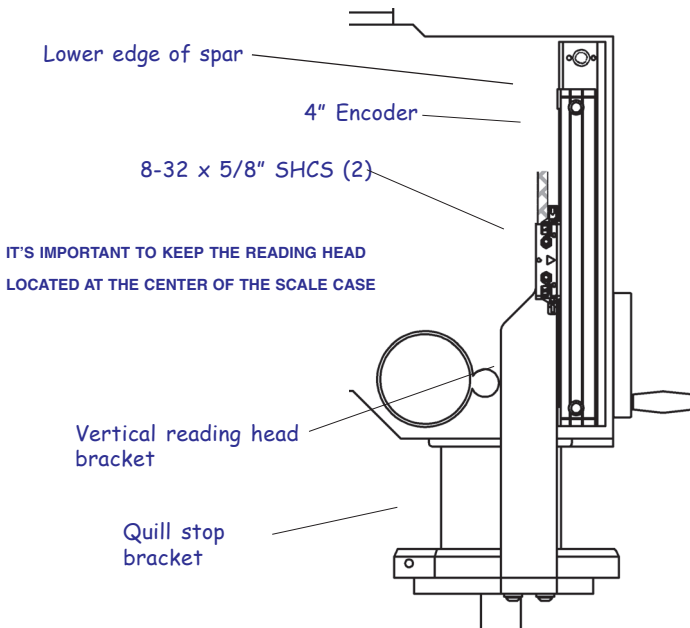


- Align the spar front surface to within .010" TIR of the axis travel, use the leveling set screws in the spar to aid with this alignment.
- Align the spar top surface to within .010" TIR of the axis travel as done previously.
- Secure the spar in place maintaining both alignments.

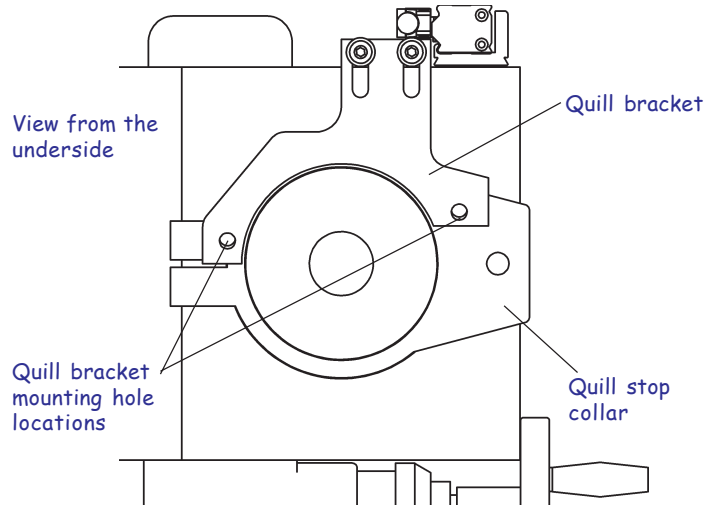


- Insert the encoder into the spar as shown with the lower edges flush.
- Secure the encoder in place by tightening the two M4 x 8mm SHSS.

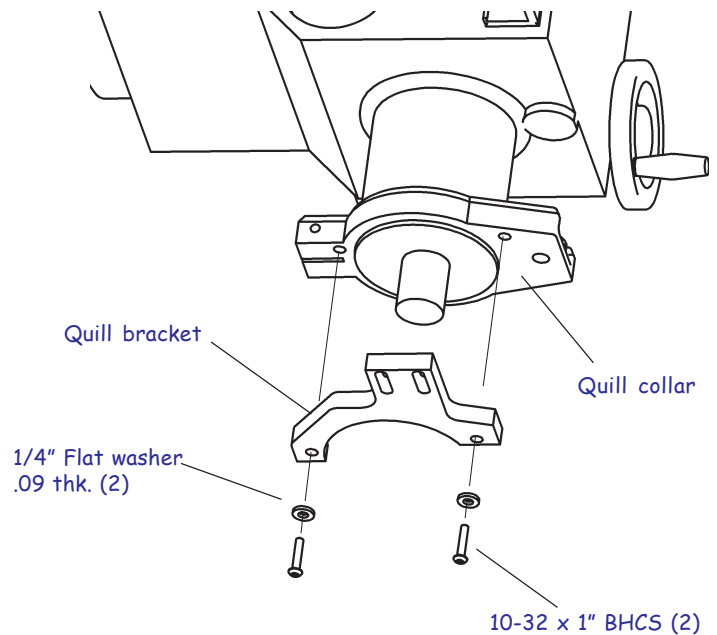
### Reading head installation...



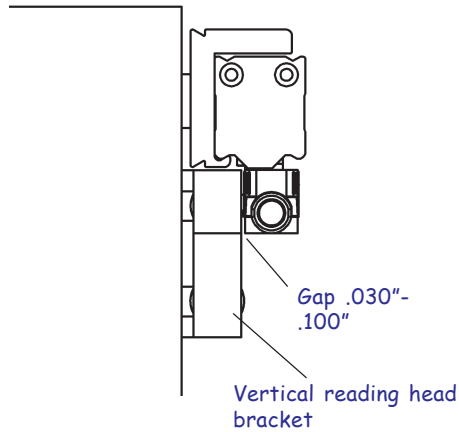
- Return the quill to its center of travel and lock in place.
- Attach the reading head bracket assembly to the encoder reading head and fit the quill bracket to the underside of the quill stop collar.
- Align the vertical reading head bracket parallel with the lower edge of the spar.



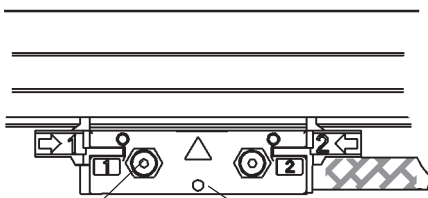
- Mark the mounting hole locations of the quill bracket on the underside of the quill collar.
- Remove the reading head bracket assembly from the encoder reading head. Drill and tap the hole locations in the collar for a 10-32 x 1/2" deep.



- Attach the quill bracket assembly to the underside of the quill stop collar (vertical bracket omitted from view for clarity).
- Position the vertical bracket so that the tapped holes align with the reading head mounting holes. Secure the bracket assembly to the quill stop collar.



- Position the vertical bracket so that a gap of .030" - .100" exist between the reading head and the bracket.
- Secure the vertical bracket to the quill bracket.

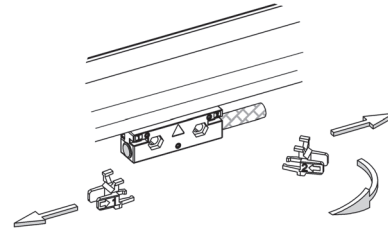


8-32 x 5/8" SHCS (2)

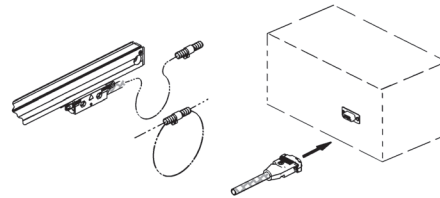
\* Leveling set screws (3)

- Insert the two 8-32 x 5/8" SHCS. Insure the bracket is adjusted to provide proper screw head clearance. **Do Not Tighten Screws** at this time.
- Set each leveling set screw by placing a .001" - .003" feeler gage between the set screw and the bracket.
- Adjust each set screw until a slight drag is felt on the feeler gage.
- **Evenly tighten** the two 8-32 SHCS.

## Encoder button up ...



- Use allen wrench from set screw adjustment to slide alignment brackets away from the reading head.
- Remove alignment brackets and save.
- Move the axis through its full travel. Confirm that the assembly does not interfere with the machine movement.



- With the longitudinal axis installation complete, route the cables providing sufficient slack loops for machine movement to the readout.
- Secure cables by fastening with clips or ties.
- Attach the linear encoder connectors to the readout.
- Complete the installation by following the steps in "Checking Your Installation" section in the encoder "Reference Manual".