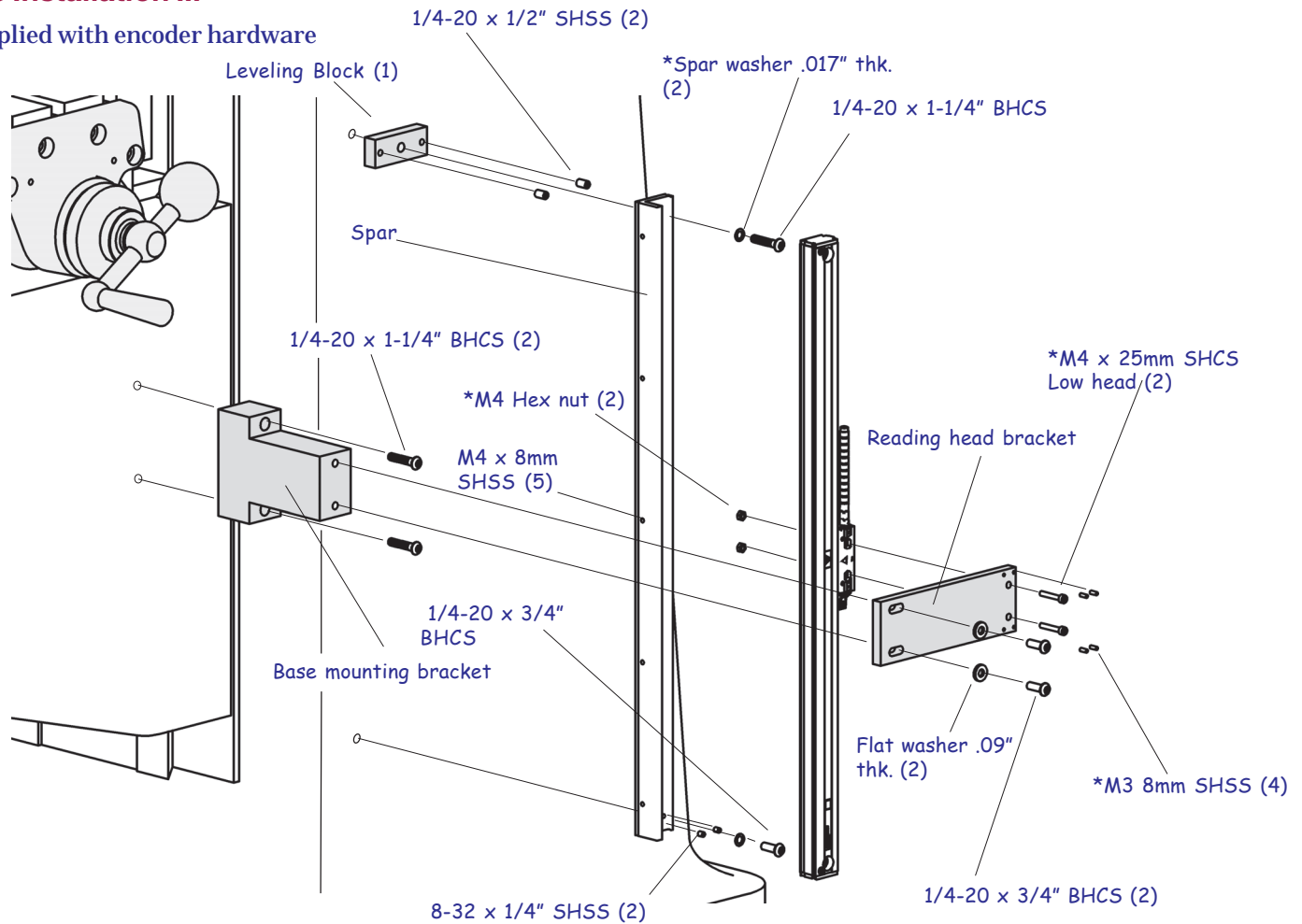


Knee Installation ...

* Supplied with encoder hardware



Mounting Information...

These are application instructions for mounting the knee "Z" axis SENC 150 encoder.

Before proceeding:

- Please read the instructions completely.
- The 16" encoder is used for this application and a special spar is provided for the encoder
- 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 ...

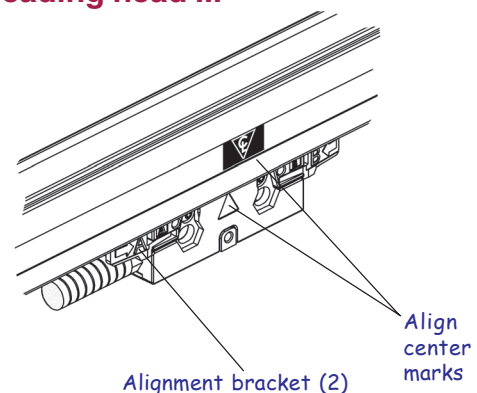
Machine

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

Encoder

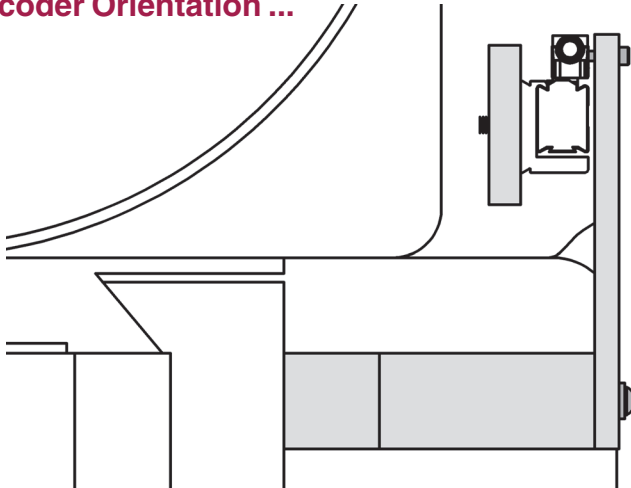
- ✓ Unpack encoder in a safe, convenient location.
- ✓ Do not remove the reading head alignment brackets until instructed.

Center reading head ...



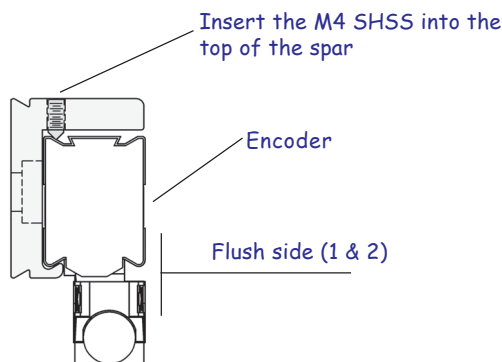
- Slide the reading head and brackets along the scale case until the center marks on the scale case and reading head are aligned.

Encoder Orientation ...



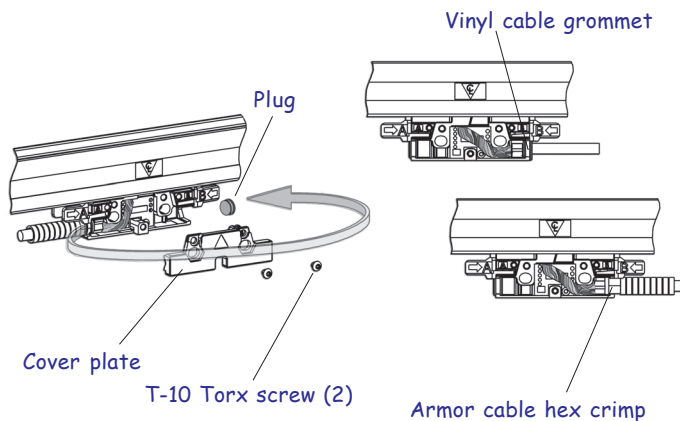
- These instructions will guide you through installing the encoder as shown in this view.

Encoder/Spar assembly ...



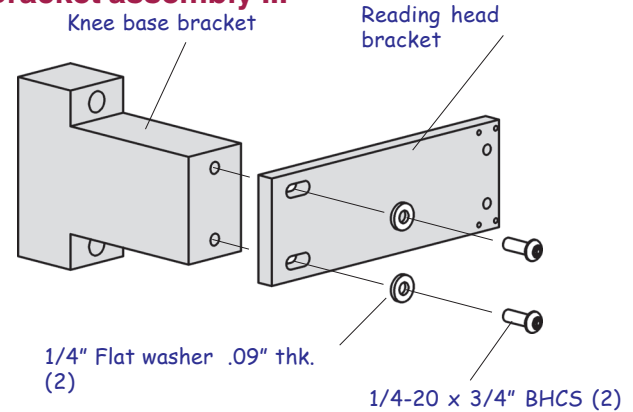
- Insert the encoder into the spar as shown, and center from end to end. Tighten the center set screw only.

Cable exit ...



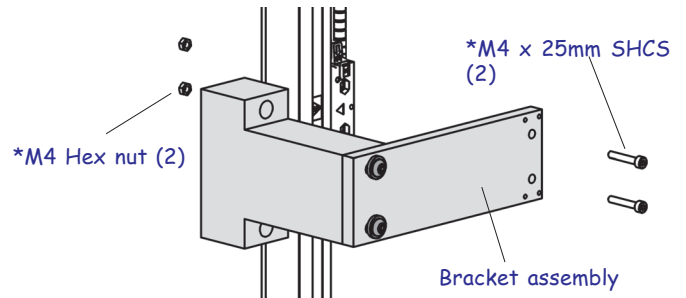
- Determine the cable exit direction before installing the encoder.
- To change the cable exit direction; remove the cover plate and rotate the cable 180°.

Bracket assembly ...

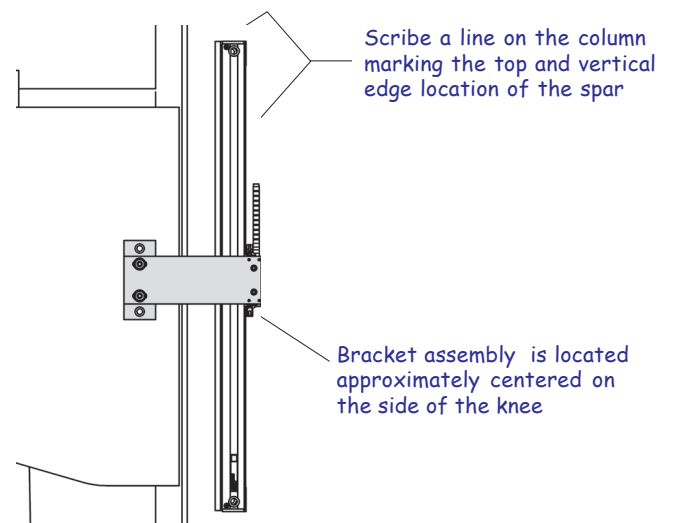


- Assemble the brackets loosely for future adjustment.

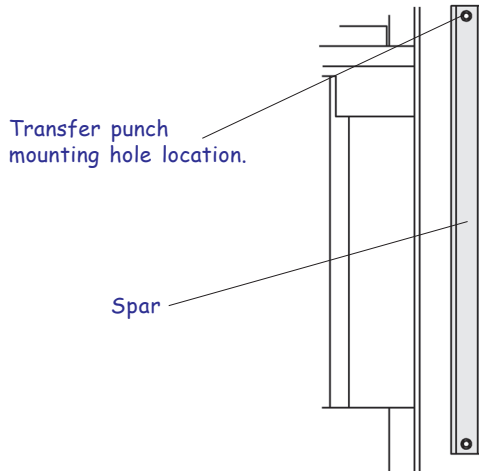
Locating the spar ...



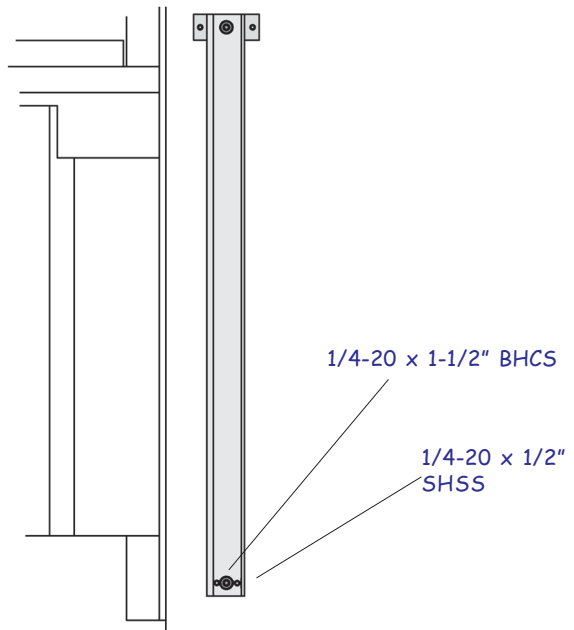
- Attach the reading head bracket assembly to the reading head.



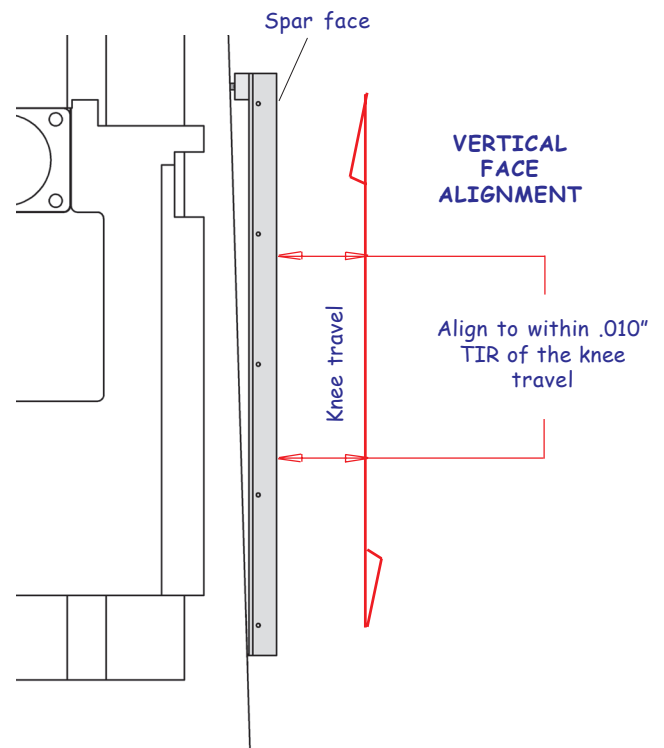
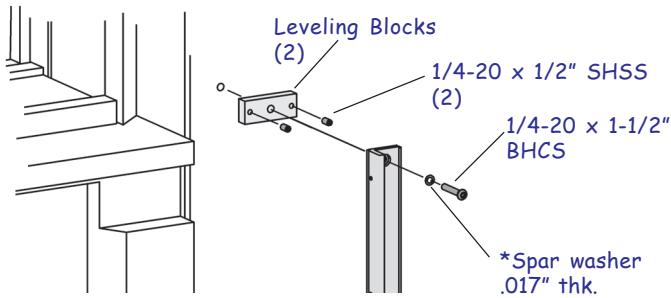
- With the knee at its center of travel, set the assembly to the side of the column.
- Position the bracket assembly on the knee. Bracket must have proper clearance over column radius edge (refer to encoder orientation).
- Scribe lines on the column marking the top and one vertical edge of the spar.



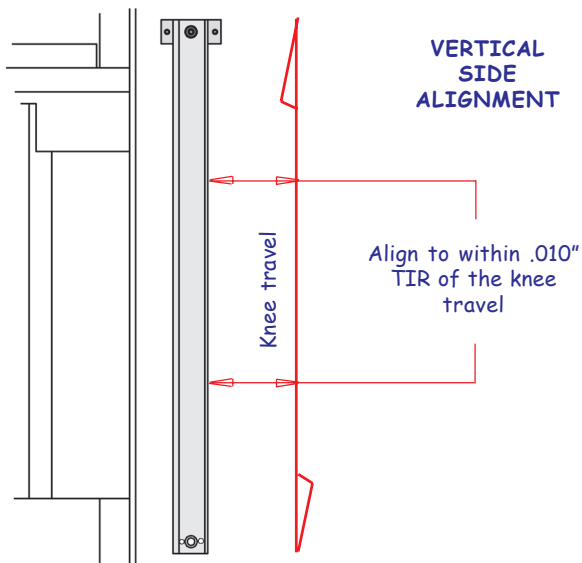
- Remove the bracket assembly from the reading head, and the encoder from the spar.
- Position the spar to the scribed lines and mark one end mounting hole location to the knee.
- Drill and tap location for a 1/4-20 x 1/2" deep.



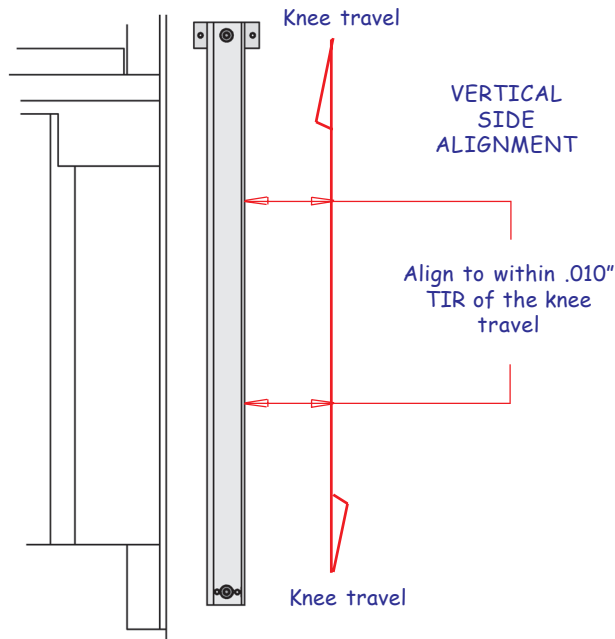
- Insert the 8-32 leveling set screws into the spar at the lower hole location.
- Attach the spar to the column with one leveling block, but do not tighten.



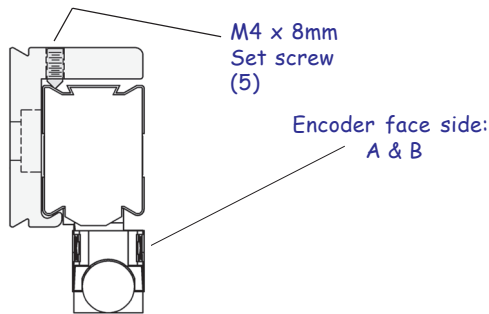
- Align the spar face to the knee travel.
- Use the leveling screws to aid with this alignment.
- Continue with vertical side alignment.



- Insert the 1/4-20 leveling set screws into the upper leveling block and fasten the spar to the column.
- Align the spar to the knee travel and transfer punch the lower mounting hole.
- Move spar away, drill and tap mounting hole location for 1/4-20 x 1/2" deep.

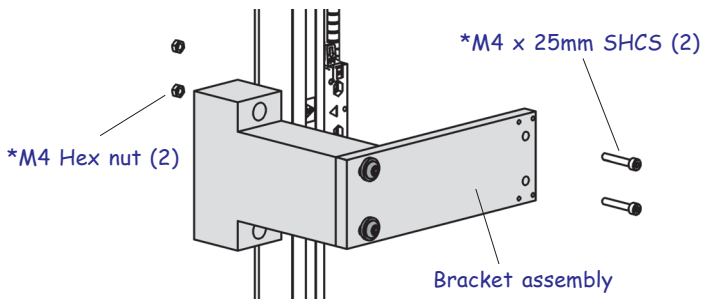


- Align the vertical side to the knee travel.
- Fully secure the spar in place maintaining both alignments.

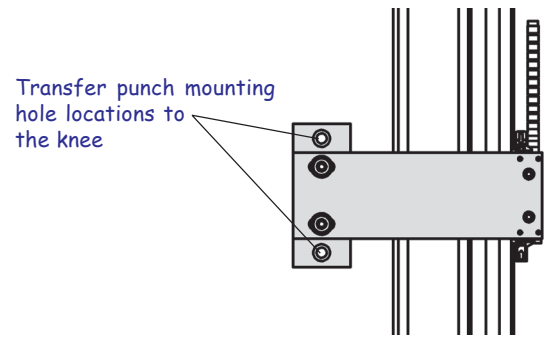


- Attach the encoder into the spar. Center from end to end, and tighten the set screws.

Bracket installation ...

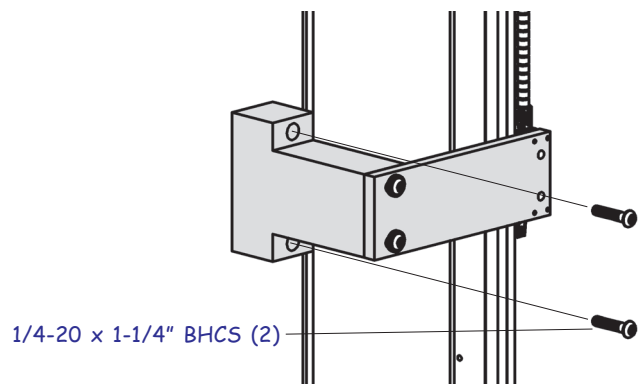


- With the knee and the reading head at the center of travel, attach the reading head bracket assembly to the reading head.



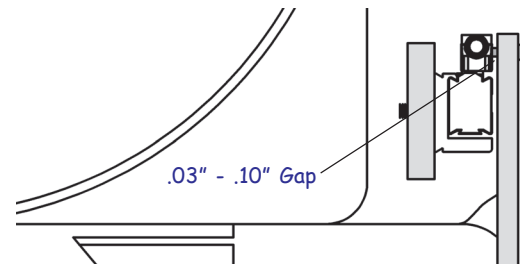
- Adjust the bracket assembly to the side of the knee.
- Transfer punch the mounting location to the knee. Remove the bracket from the reading head.
- Drill and tap bracket mounting hole locations for 1/4-20 x 1/2" deep.

Reading head attachment ...



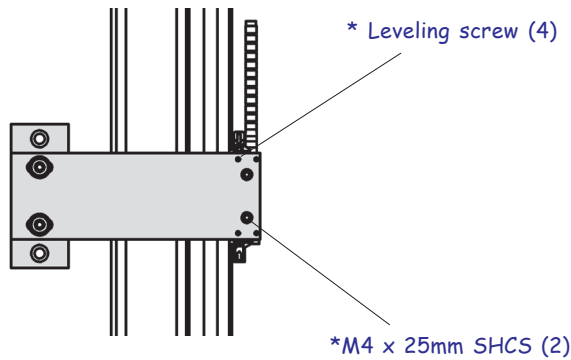
- Attach the bracket assembly to the knee and align the bracket and reading head mounting holes. Secure the bracket in place.

Leveling screws ...



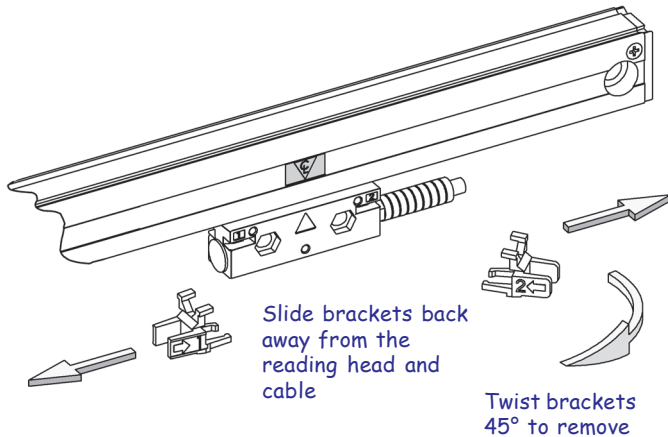
- Adjust the assembly to insure a gap of .03-.18" exists between the reading head and the assembly with the spacer.
- Align the reading head mounting holes with the bracket mounting holes, and secure the bracket assembly in place.
- Attach the reading head with the 8-32 SHCS, **but do not tighten.**

Leveling screws ...

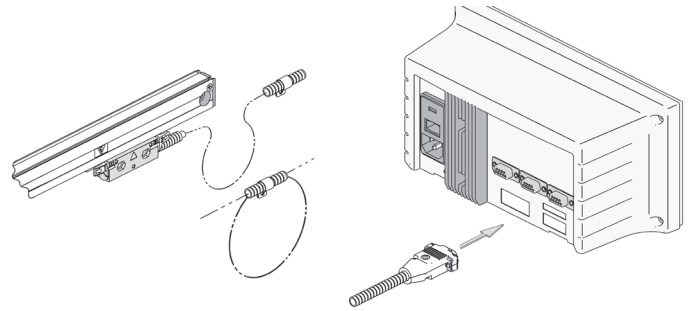


- Set each leveling set screw by placing a .001"-.003" feeler gage between the set screw and the bracket.
- Adjust each set screw until a slight drag is felt on the feeler gage.
- **Evenly tighten** the two 8-32 x 5/8" SHCS.

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".