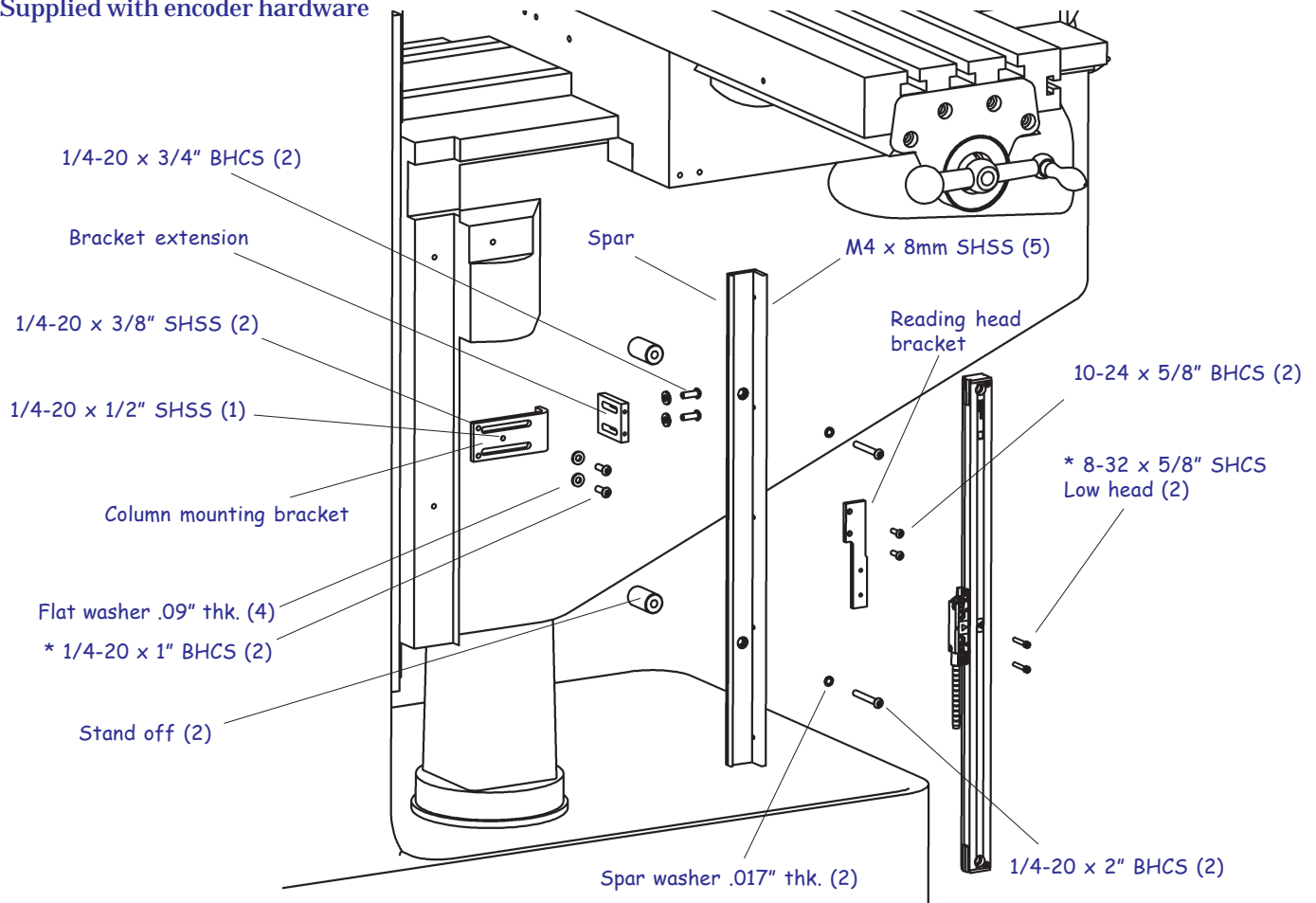


## Knee Installation ...

\* 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 ...

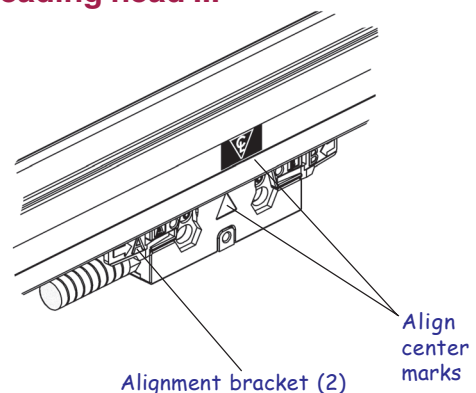
### Machine

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

### Encoder

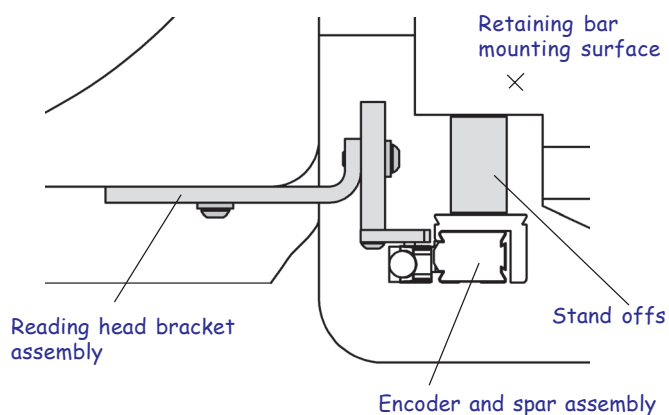
- ✓ Unpack encoder in a safe, convenient location.
- ✓ Do not remove the reading head alignment brackets until instructed.

## Center reading head ...



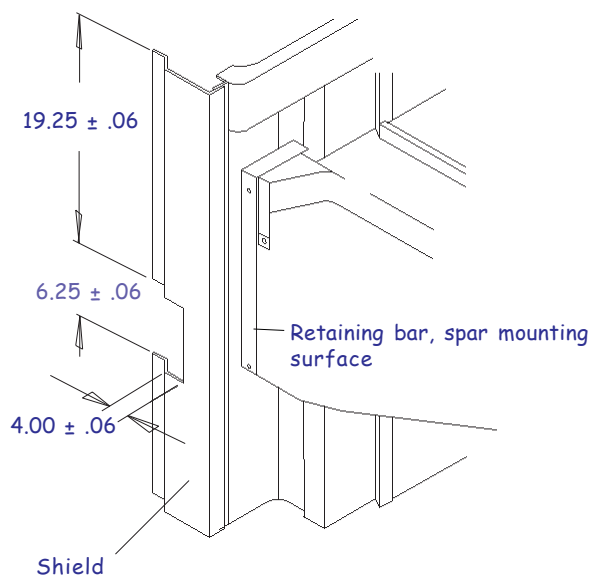
- Slide the reading head and brackets along the scale case until the center marks on the scale case and reading head are aligned.

### Encoder Orientation ...



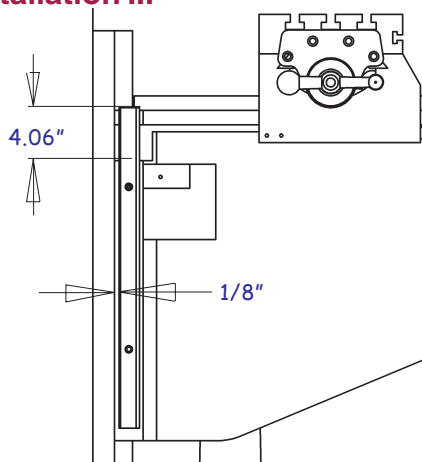
- These instructions will guide you through installing the encoder as shown in this view.

### Shield cut out ...

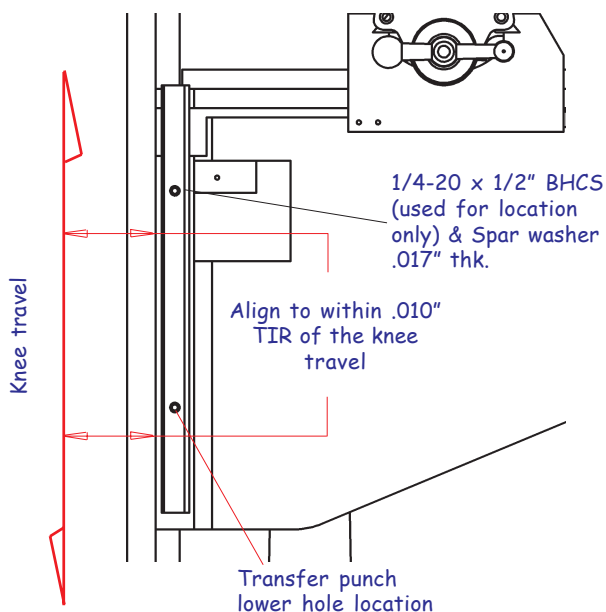


- Remove the shield, and cut out as shown. Reinstall the shield **following the scale installation.**

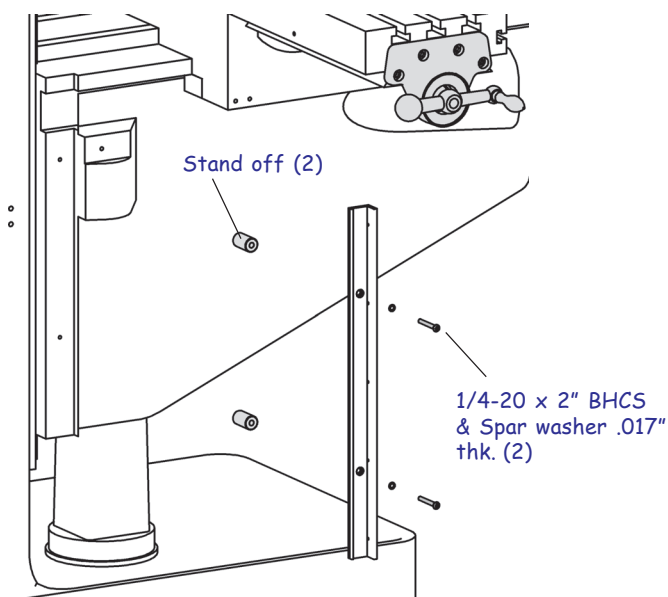
### Spar installation ...



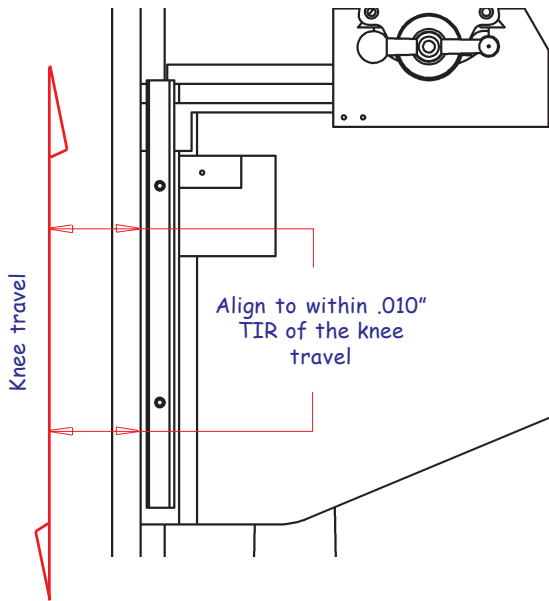
- Locate the spar to the knee retaining bar. The top of the spar extends past the top of the retaining bar 4-1/16" and 1/8" back from the front edge. This allows a gap between the cross feed scale for the shield.
- Transfer punch the top mounting hole location to the retainer bar.
- Drill and tap location for 1/4-20 x 1/2" deep.



- Attach the spar to the retaining bar. Align the spar to the knee travel. Transfer punch the lower mounting hole location.
- Drill and tap the location for 1/4-20 x 1/2" deep.

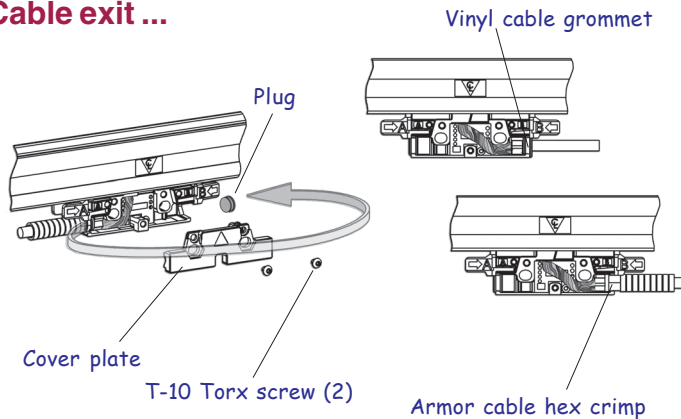


- Attach the spar with the stand offs to the knee.



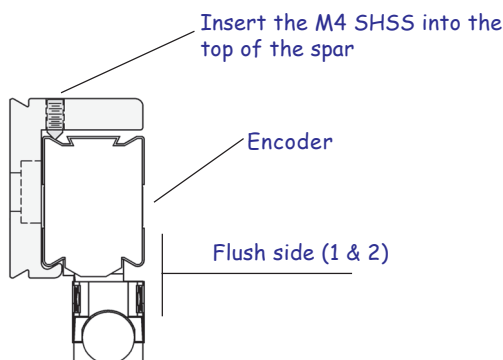
- Align the spar to within .010" to the knee travel and secure the knee in place.

### Cable exit ...

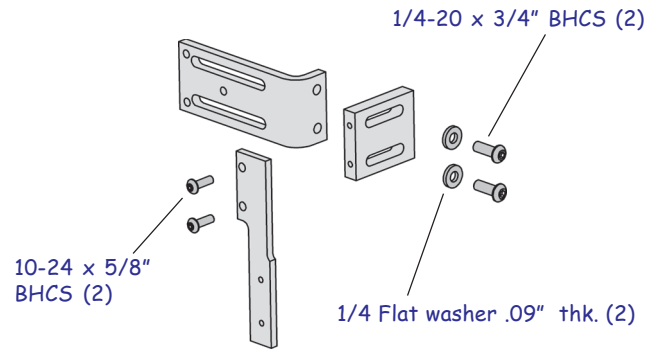


- Determine the cable exit direction before installing the encoder.
- To change the cable exit direction; remove the cover plate and rotate the cable 180°.

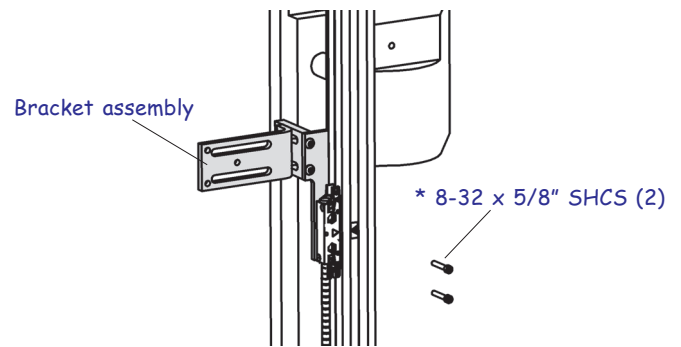
### Encoder/Spar assembly ...



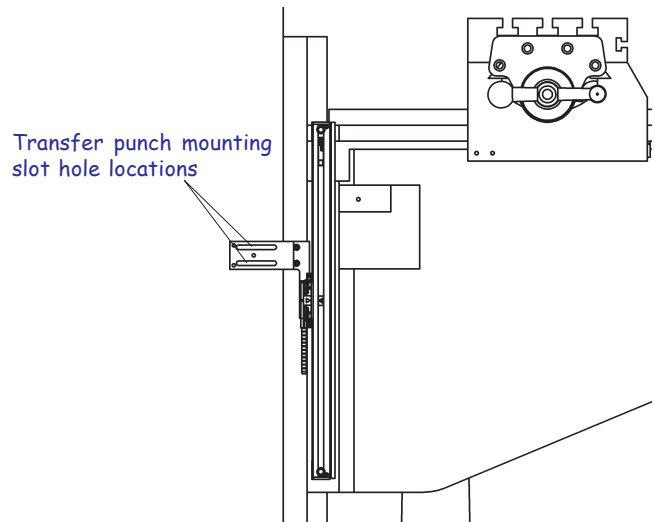
- Insert the encoder into the spar as shown, and center from end to end. Tighten the center set screw only.



- Assemble the reading head brackets, leave the extension plate loose enough for adjustment.

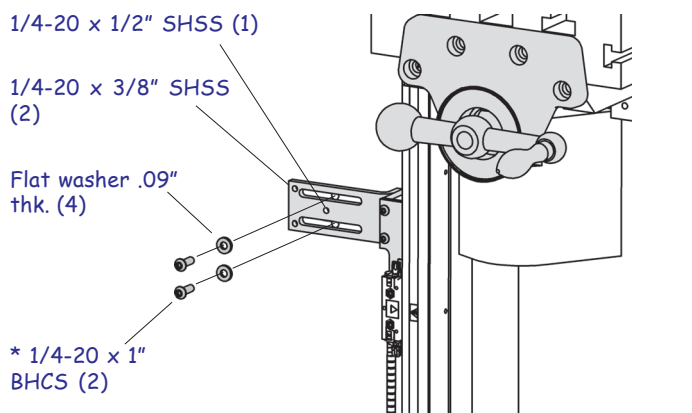


- With the knee at its center of travel, attach the reading head bracket assembly to the reading head.
- Position the bracket assembly on the knee.

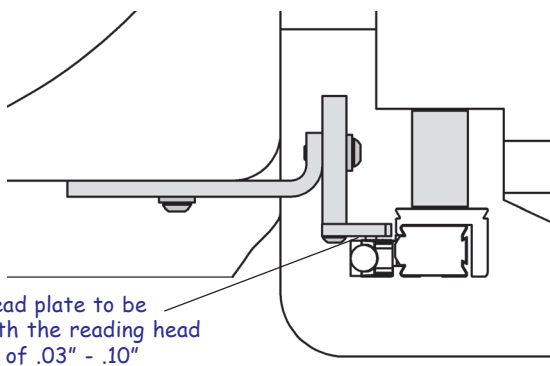


- Adjust the bracket assembly to the side of the knee.
- Transfer punch the mounting location to the knee. Remove the bracket from the reading head.
- Drill and tap bracket mounting hole locations for 1/4-20 x 1/2" deep.

### Reading head attachment ...

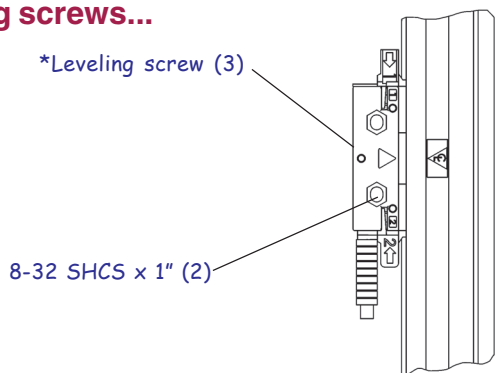


- Attach the bracket assembly to the knee.



- Using the leveling screws, adjust the bracket assembly so that the reading head mounting plate is parallel with the reading head.
- Set the assembly so that there is .03-.18" gap between the reading head and the bracket mounting plate.
- Align the reading head mounting holes and the bracket mounting holes, and secure in place.
- Attach the reading head with the 8-32 SHCS, but do not tighten.

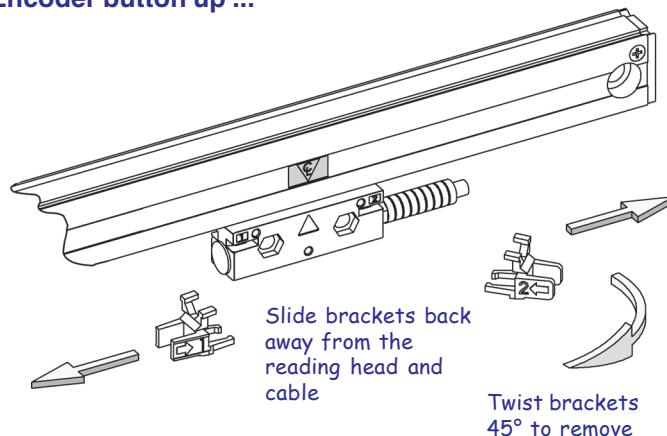
### Leveling screws...



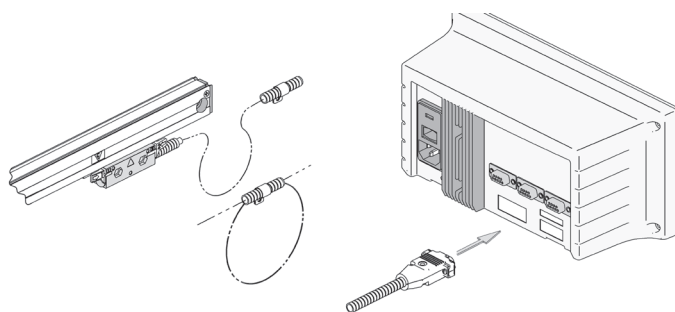
- Set each leveling set screw by placing a .001"-.003" feeler gage between the set screw and the bracket.

- Adjust each set screw until a slight drag is felt on the feeler gage.
- **Evenly tighten** the two 8-32 x 1" 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".
- Reattach the shield removed previously.