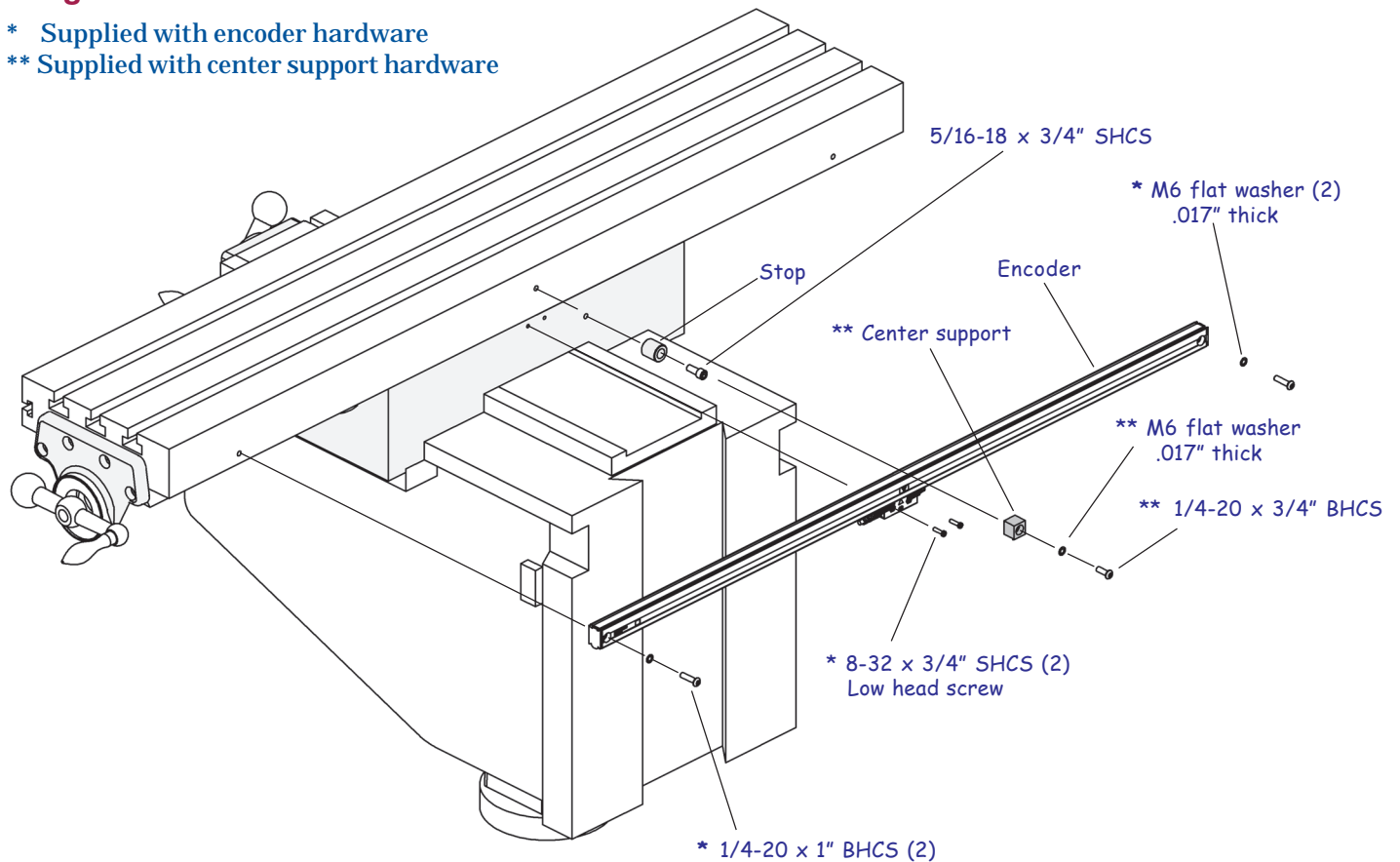


### Longitudinal Installation ...

- \* Supplied with encoder hardware
- \*\* Supplied with center support hardware



### Mounting Information...

These are application instructions for mounting the longitudinal "X" axis SENC 150 encoder.

#### Before proceeding:

- Please read the instructions completely.
- Mount X axis prior to installing the cross feed.
- 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 ...

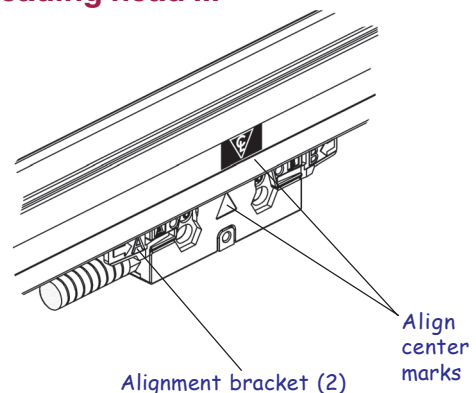
#### Machine

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

#### Encoder

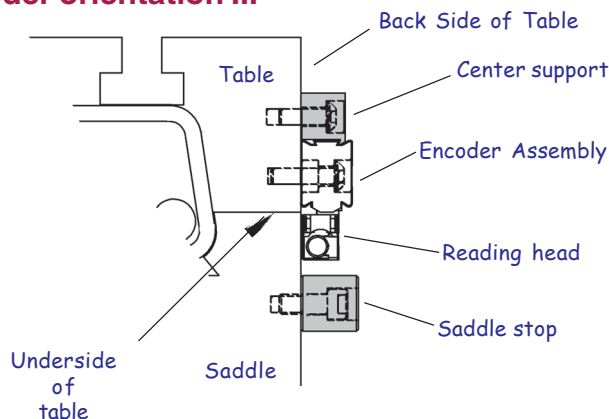
- ✓ Unpack encoder in a safe, convenient location.
- ✓ Do not remove the reading head alignment brackets until instructed.

### Center reading head ...



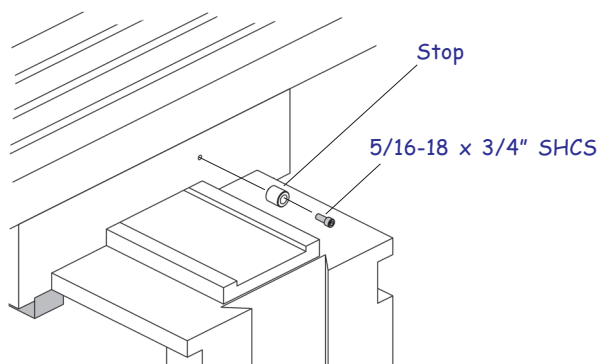
- Slide the reading head and brackets along the scale case until the center marks on the scale case and reading head are aligned.

### Encoder orientation ...



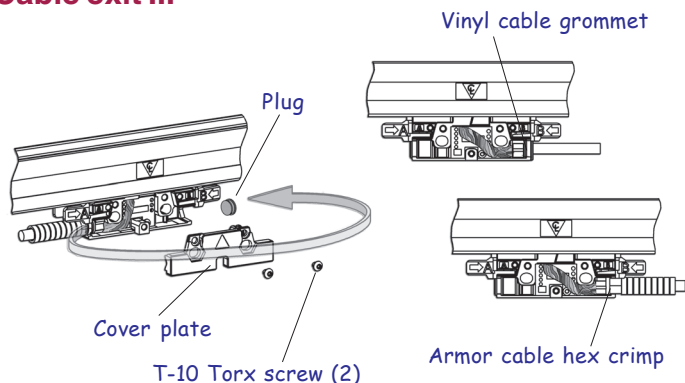
- These instructions will guide you through installing the encoder as shown in this view.

### Saddle stop ...



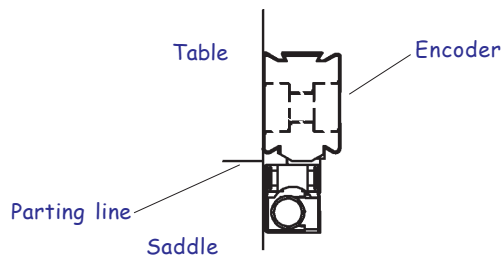
- Locate the stop approximately 1/2" down from the top edge of the saddle, in line with the column way.
- Drill and tap location for 5/16-18 x 1/2" deep.

### Cable exit ...

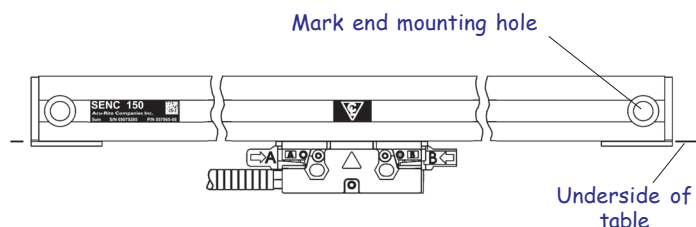


- Determine the cable exit direction before installing the encoder.
- To change the cable exit direction; remove the cover plate and rotate the cable 180°.

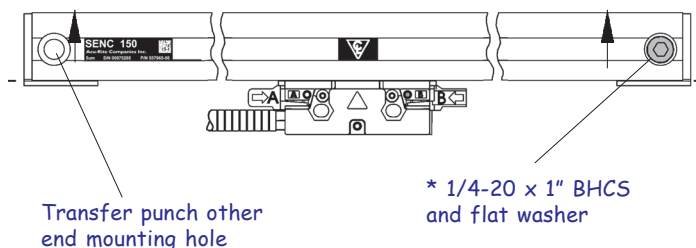
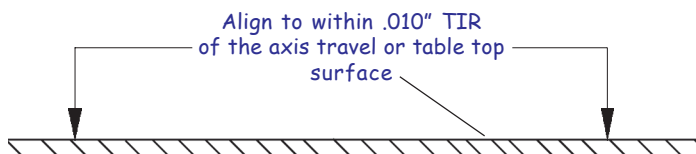
### Encoder Installation ...



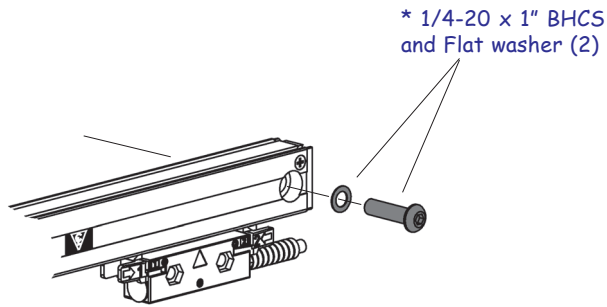
- With the table at its center of travel, set the encoder against the table and the reading head casting against the saddle.



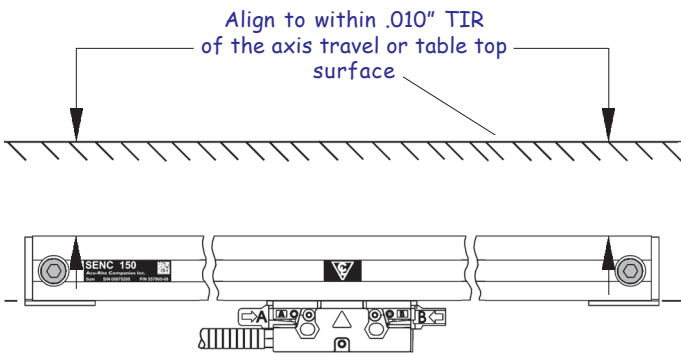
- Center the encoder on the back side of the table. Position the underside of the end caps flush with the underside of the table.
- Mark one end mounting hole location to the table, and remove the assembly.
- Drill and tap hole location for a 1/4-20 x 1/2" deep.



- Fasten the encoder assembly at one end.
- Align the top of the encoder to the axis travel or table top surface.
- Transfer punch the second end mounting hole, and remove the encoder.
- Drill and tap hole location for a 1/4-20 x 1/2" deep.

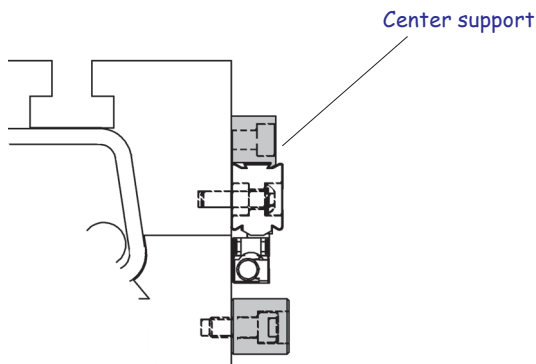


- Attach the encoder to the table.

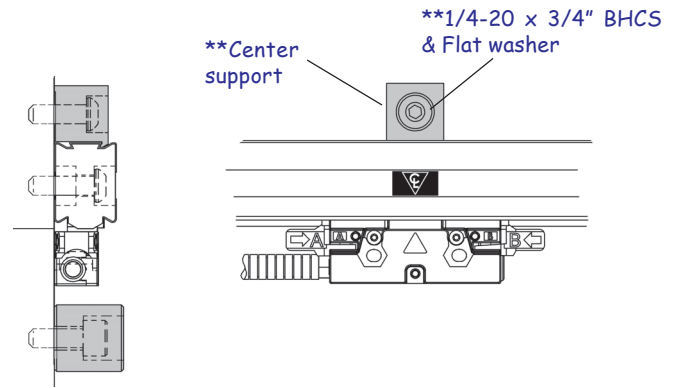


- Align the top of the encoder to within .010" TIR.
- Secure the encoder in place maintaining alignment.

### Center support installation ...

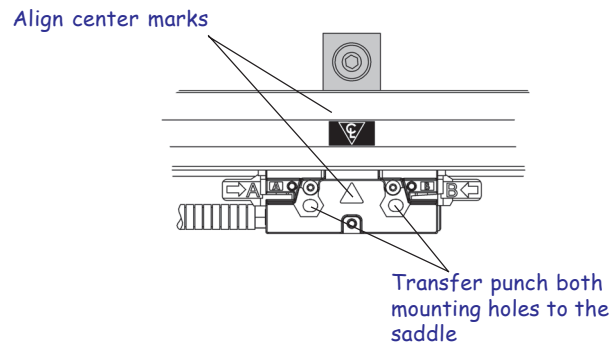


- Insert the center support to the top of the scale case above the center location tag.
- Ensure that the center support interlocks with the scale case.

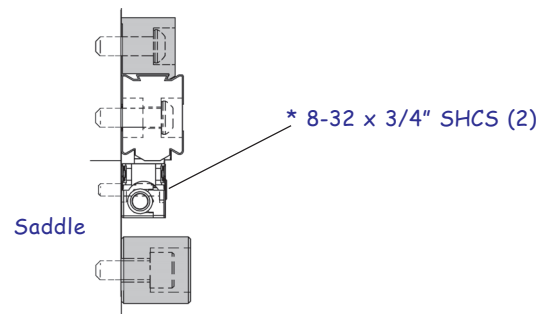


- Align the center of the scale case to within .010" to the ends, and transfer punch the support hole location.
- Remove the center support, drill and tap the hole location for an 8-32 x 1/2" deep.
- Attach the center support to the scale case and table. Align the center of the scale case with each end to within .010" and secure in place.

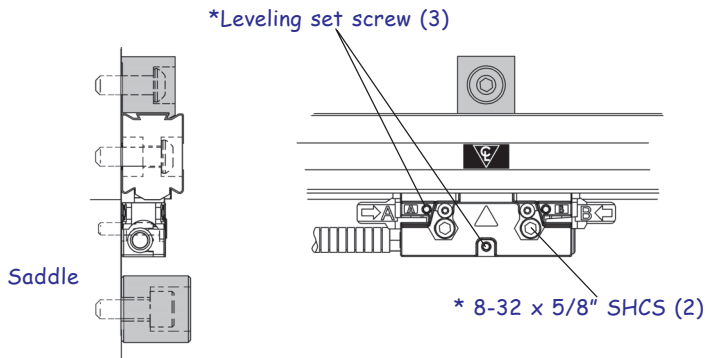
### Reading head installation ...



- Return the table to its center of travel.
- Transfer punch reading head mounting holes to the saddle.
- Slide the reading head to one side.
- Drill and tap hole locations for 8/32 x 1/2" deep.

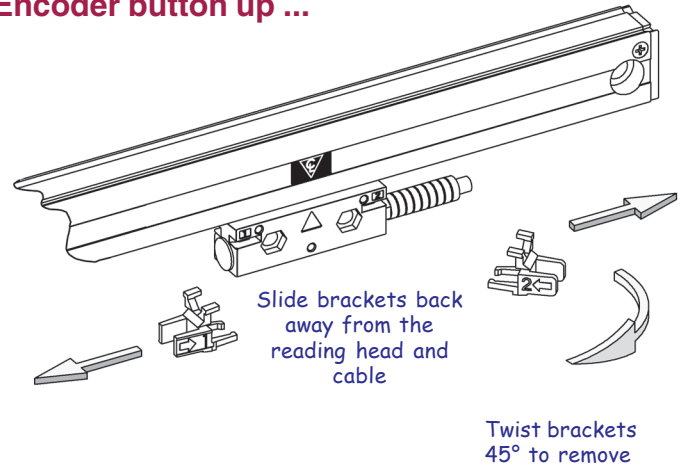


- Move the reading head back, centered over the tapped holes.



- Insert the two \*8-32 x 3/4" SHCS. Insure the reading head is positioned to provide proper screw head clearance. **Do Not Tighten Screws** at this time.
- If a gap of .005" or greater exists between the reading head and the saddle, 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 ...

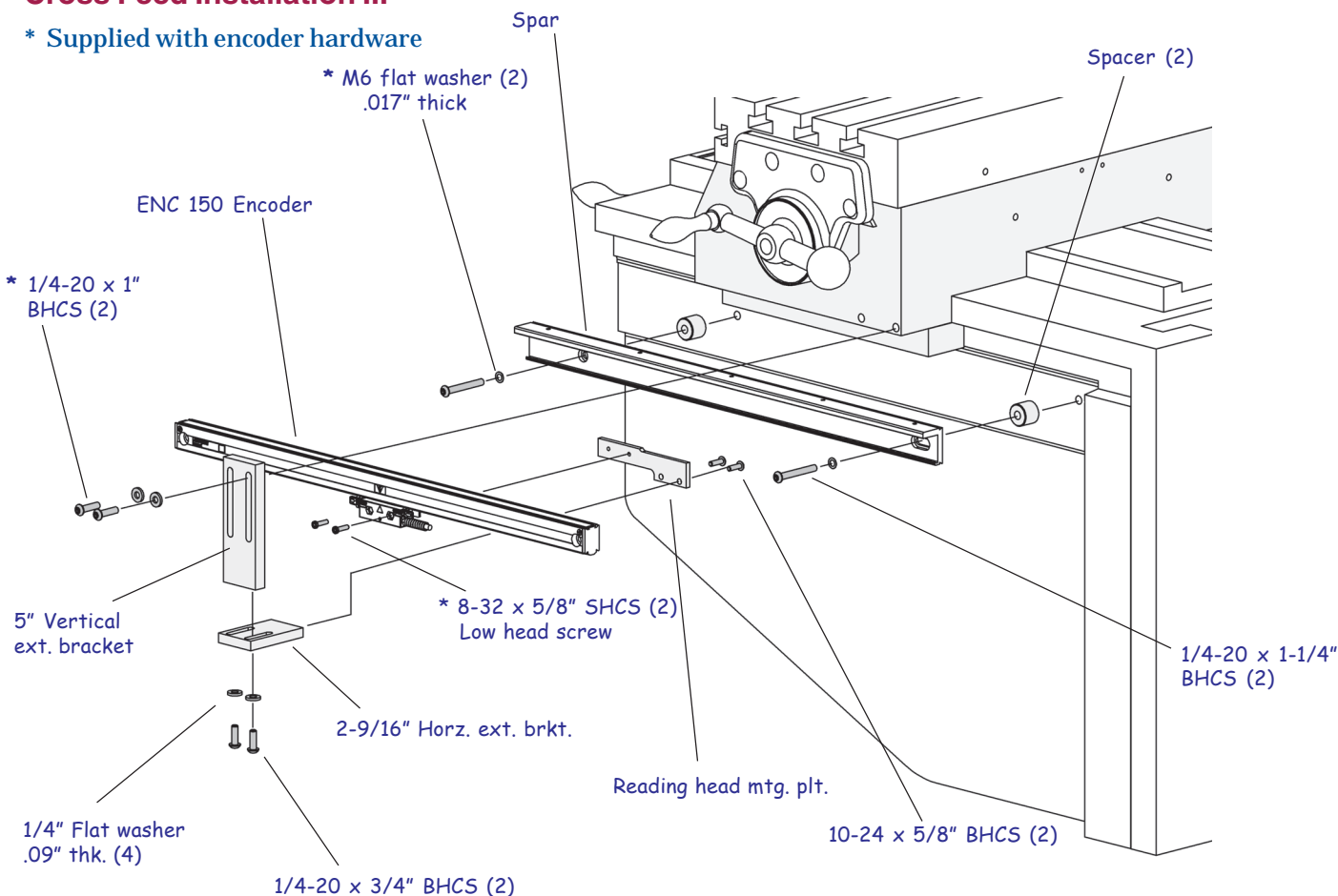


- Use allen wrench from set screw adjustment to slide alignment brackets away from the reading head.
- Remove alignment brackets and save.
- Move the axis through its full travel. Confirm that the assembly does not interfere with the machine movement.

**Proceed with the Cross Feed installation**

## Cross Feed Installation ...

\* Supplied with encoder hardware



## Mounting Information...

These are application instructions for mounting the cross feed "Y" axis SENC 150 encoder. This is a universal kit that includes optional mounting brackets to best address the mill application.

### Before proceeding:

- Please read the Procedure completely.
- Mount X axis prior to installing the cross feed.
- 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 ...

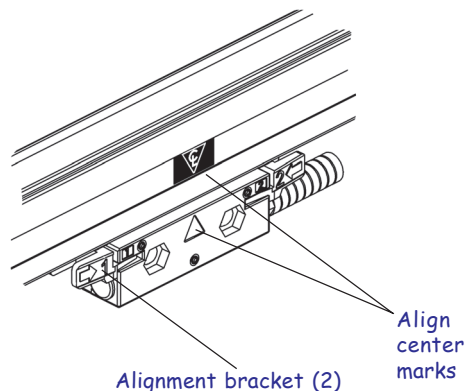
### Machine

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

### Encoder

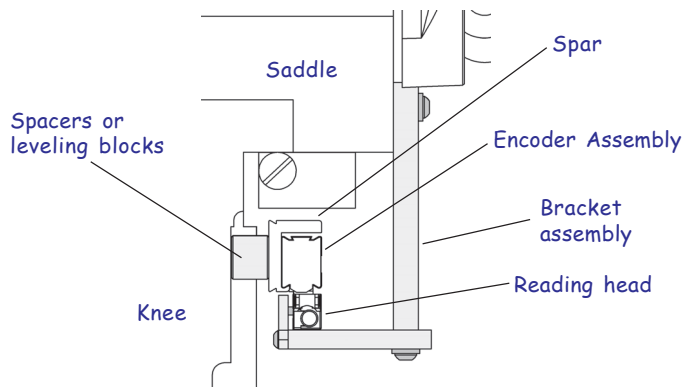
- ✓ Unpack encoder in a safe, convenient location.
- ✓ Do not remove the reading head alignment brackets until instructed.

### Center reading head ...



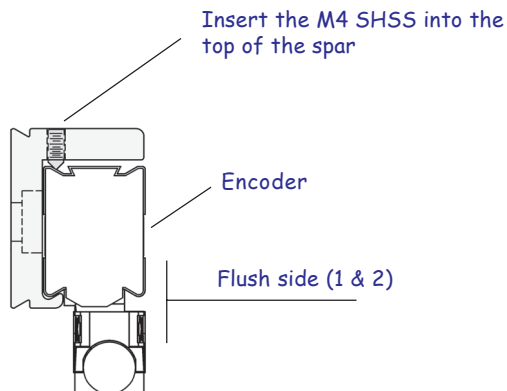
- Slide the reading head and brackets along the scale case until the center marks on the scale case and reading head are aligned.

### Encoder orientation ...



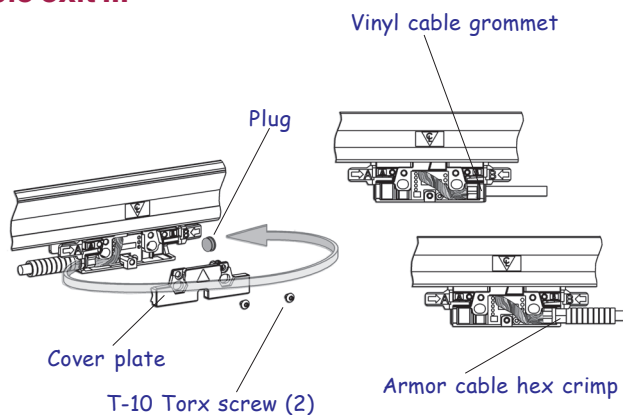
- These instructions will guide you through installing the encoder as shown in this view.

### Encoder/Spar assembly ...



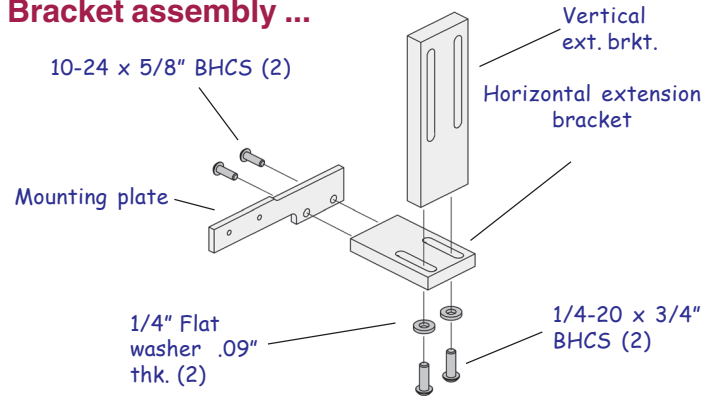
- Insert the encoder into the spar as shown, and center from end to end. Tighten the center set screw only.

### Cable exit ...

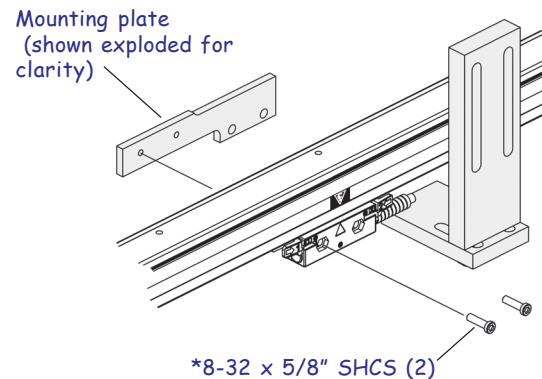


- Determine the cable exit direction before installing the encoder.
- To change the cable exit direction, remove the cover plate and rotate the cable 180°.

### Bracket assembly ...

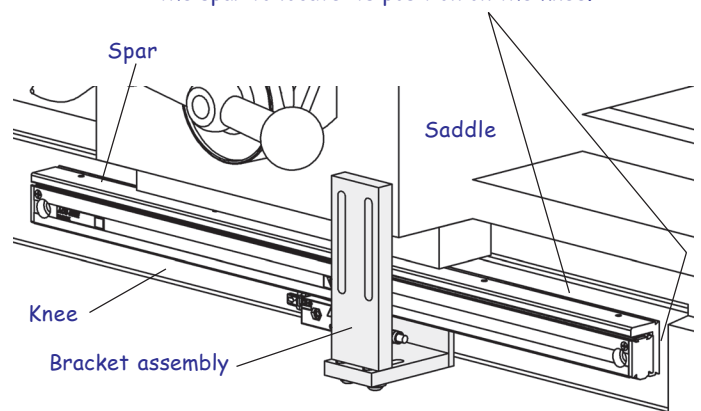


- Assemble the brackets; fully extend the horizontal extension plate.



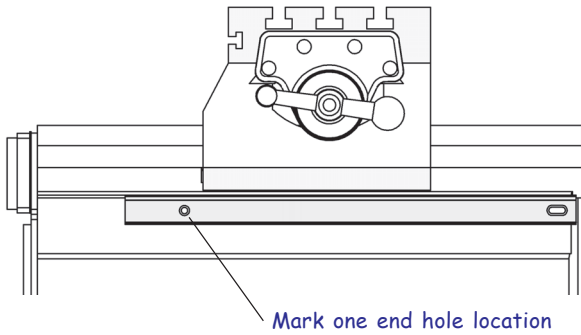
- Temporarily attach the bracket assembly to the reading head.

Scribe lines along the top and one end of the spar to locate its position on the knee.

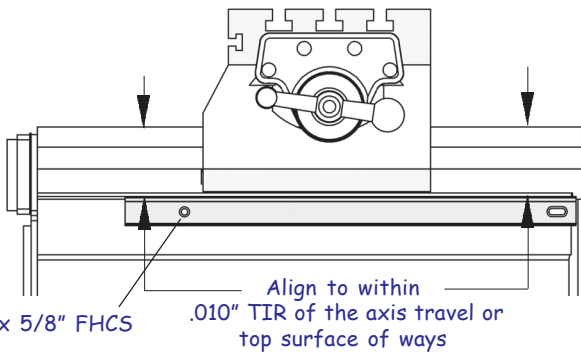


- With the saddle at its center of travel, position the spar on the knee, and the bracket assembly to the saddle.
- Locate the assembly so that a suitable mounting position is provided for both the encoder w/spar to the knee, and the bracket assembly to the saddle.
- With the spar parallel to the top of the knee, scribe spar location reference lines on the knee. Remove the assembly.

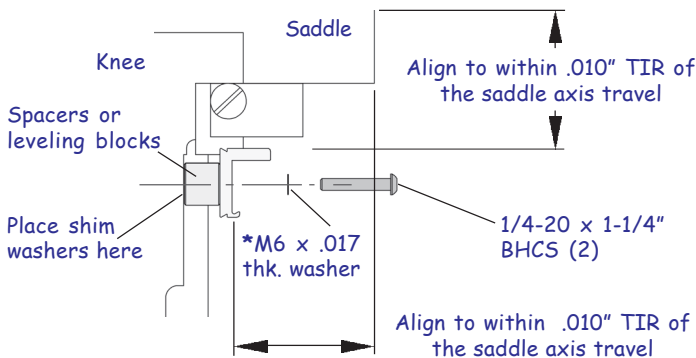
### Spar installation ...



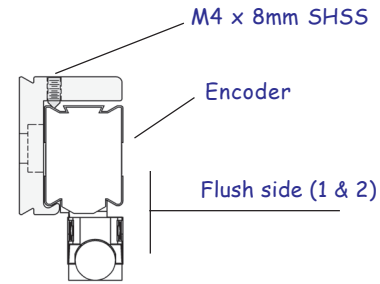
- Remove the bracket assembly from the reading head, and the encoder from the spar.
- Position the spar to the scribed lines and mark one end mounting hole location to the knee.
- Drill and tap location for a 1/4-20 x 1/2" deep.



- Temporarily fasten the spar to the knee at one end with a 1/4-20 x 5/8" FHCS provided.
- Align the top of the spar to the saddle travel.
- Transfer punch the second mounting hole.
- Remove the spar, drill and tap location for a 1/4-20 x 1/2" deep.

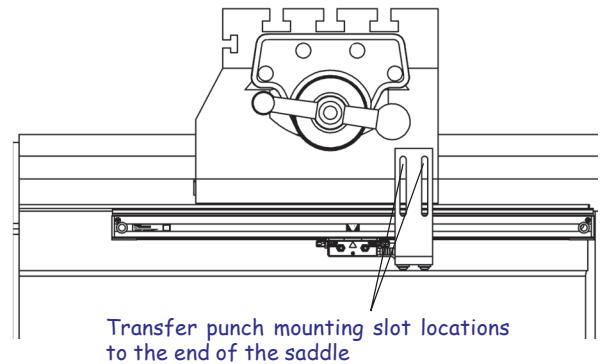


- Attach the spar with spacers to the knee.
- Align the front surface of the spar.
- Use shim washers provided between spar and spacer for front surface alignment as required.
- Align the top surface of the spar and secure in place.

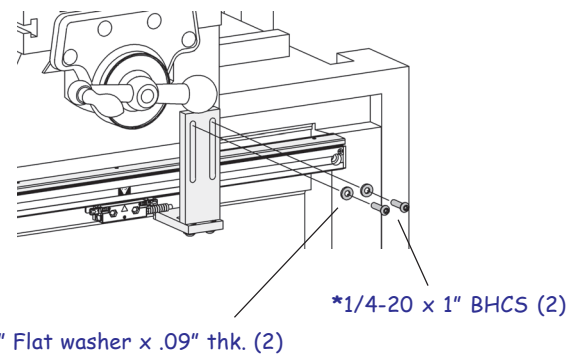


- Insert and center the encoder in the spar from end to end as done previously.
- Tighten set screws to secure in place.

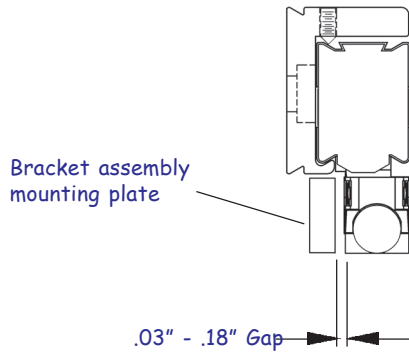
### Reading head installation ...



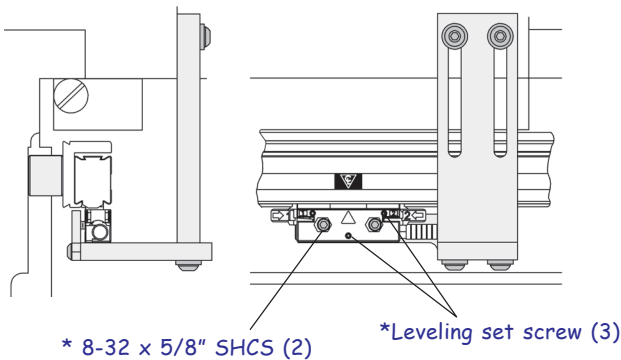
- With the axis at the center of travel, attach the bracket assembly to the reading head.
- Position the assembly to the saddle, and transfer punch the two mounting slot locations.
- Remove the assembly from the reading head, drill and tap the locations for 1/4-20 x 1/2" deep.



- Loosely attach the bracket assembly to the saddle.

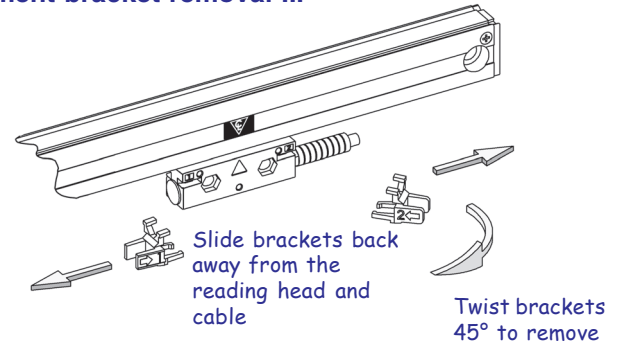


- Adjust the mounting plate clearance so that a gap of .03" - .18" exist.
- Align the reading head mounting holes with the mounting plate tapped holes.
- Secure the bracket assembly in place.

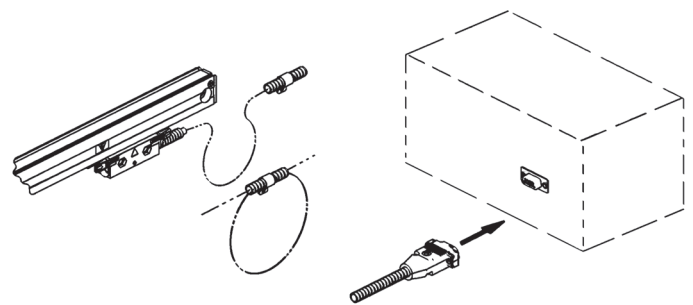


- Insert the two \*8-32 x 5/8" SHCS. Insure the bracket assembly is adjusted to provide proper screw head clearance. **Do Not Tighten Screws** at this time.
- Set each leveling set screw by placing a .001" - .003" feeler gage between the set screw and the bracket.
- Adjust each set screw until a slight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

### Alignment bracket removal ...



- Use allen wrench from set screw adjustment to slide alignment brackets away from the reading head.
- Remove alignment brackets and save for possible future use.
- 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".