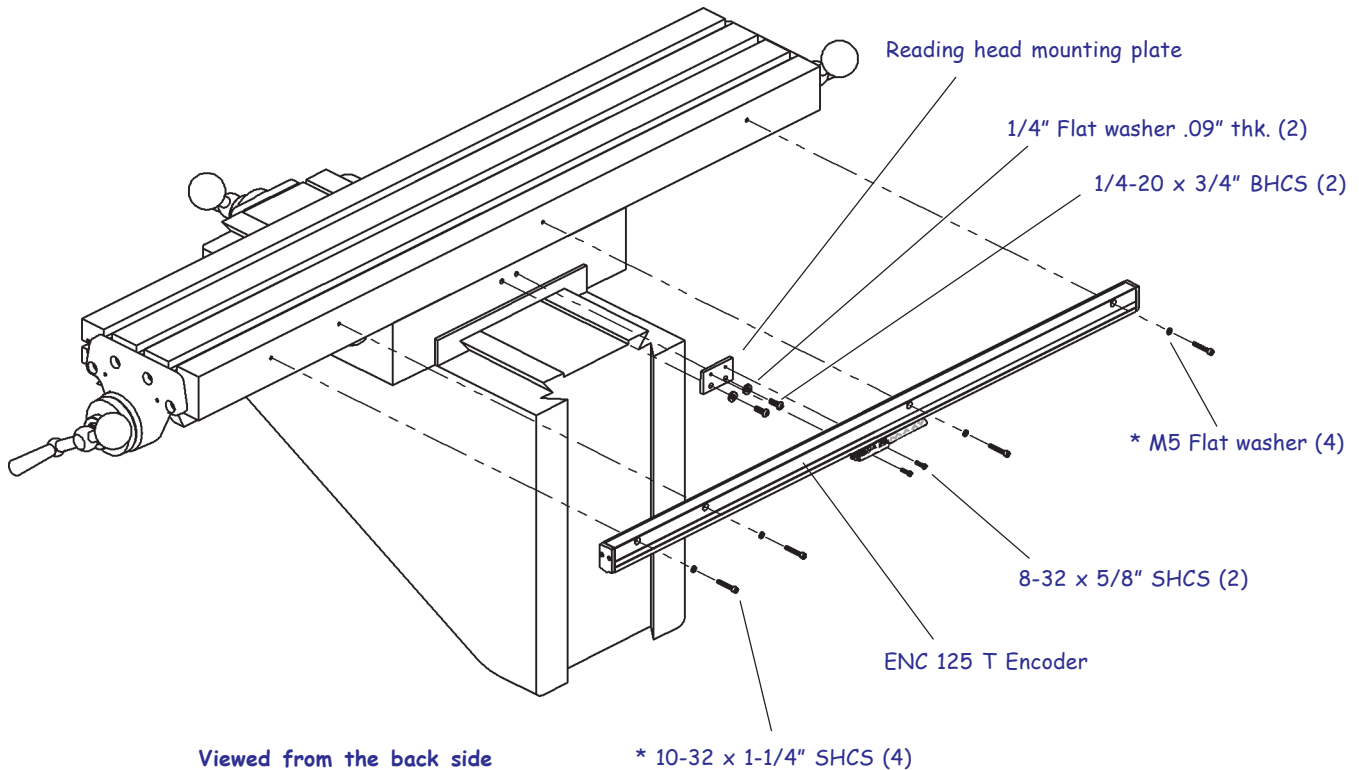


Longitudinal Installation ...

* Supplied with encoder hardware



Mounting Information...

These instructions are for mounting the ENC 125 T/E encoder to a vertical knee mill with dovetail saddle ways.

Before proceeding:

- Please read the Procedure completely.
- Mount X axis prior to installing the cross feed.
- Clean the mounting surfaces.
- Save the alignment brackets with the Encoder Reference Manual after installation is completed.

First Steps ...

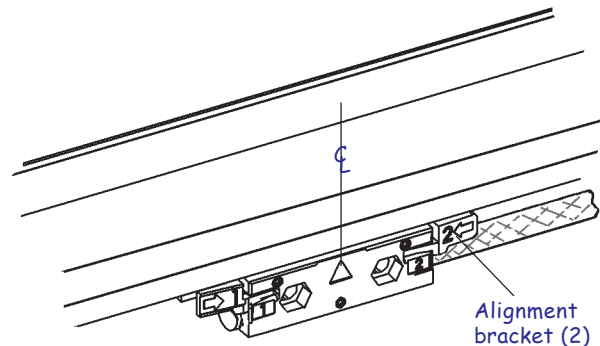
Machine

- ✓ 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

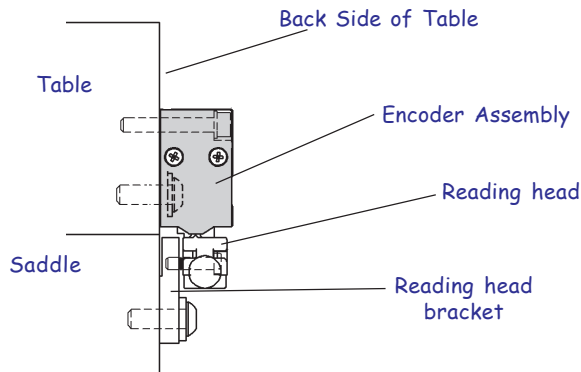
- ✓ Unpack encoder in a safe, convenient location.
- ✓ Do not remove the reading head alignment brackets until instructed.

Center reading head ...



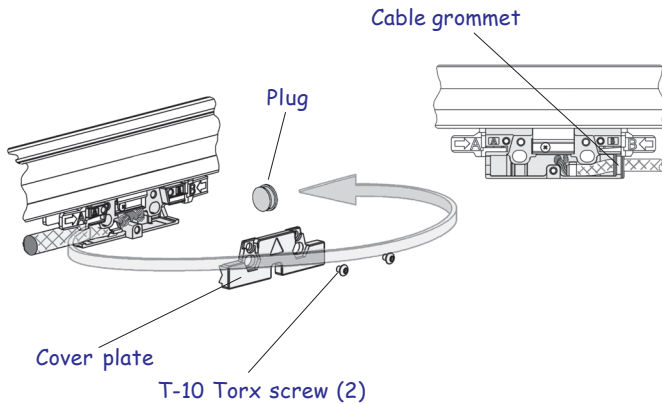
- Mark the center location on the scale case. Slide the reading head and brackets along the scale case until the center marks on the scale case and reading head are aligned.

Encoder orientation ...



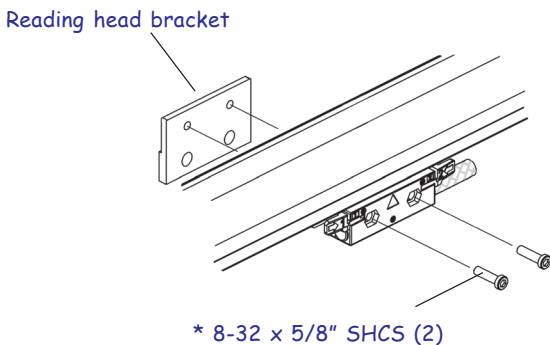
- These instructions will guide you through installing the encoder as shown in this view.

Cable exit ...

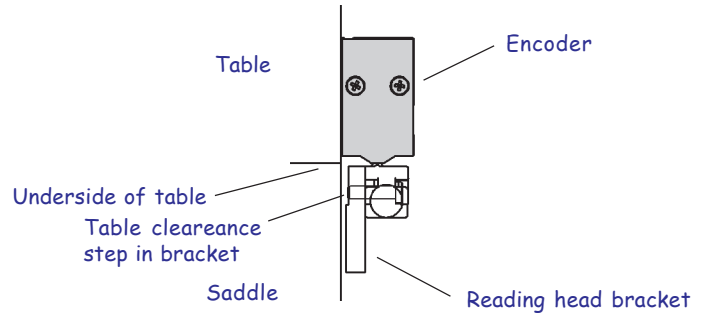


- Determine the cable exit direction before installing the encoder.
- To change the cable exit direction; remove the cover plate and rotate the cable 180°.

Encoder Installation ...

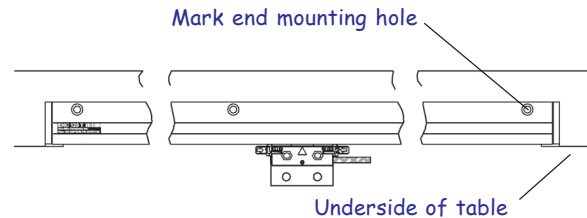


- Temporarily attach the reading head bracket to the reading head.

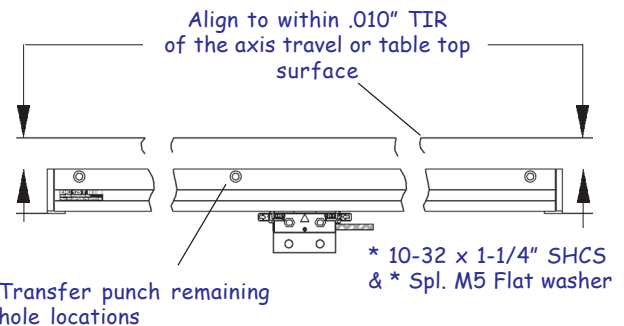


- With the table at its center of travel, set the encoder against the table and the reading head bracket against the saddle.

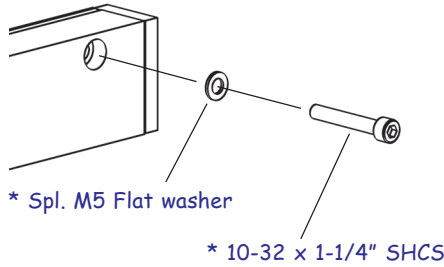
Note: Raise the assembly above the way cover plate if the bracket interferes with it. The step in the bracket can not be above the underside of the table.



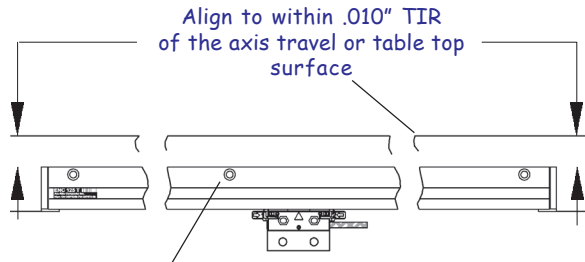
- Center the encoder on the back side of the table. Position the underside of the end caps flush with the underside of the table (see note above) or parallel with the table top.
- Mark one end mounting hole location to the back side of the table and remove the assembly.
- Drill and tap hole location for a 10-32 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 remaining mounting holes, and remove the encoder.
- Drill and tap hole locations for a 10-32 x 1/2" deep.



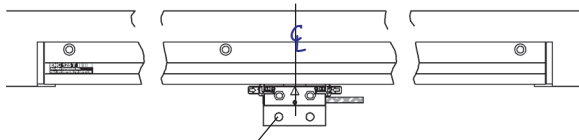
- Attach the encoder to the table.



* 10-32 x 1-1/4" SHCS
& * Spl. M5 Flat washer

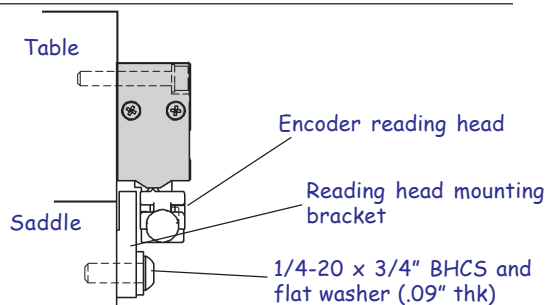
- Align the top of the encoder to within .010" TIR.
- Secure the encoder in place maintaining alignment.

Reading head installation ...

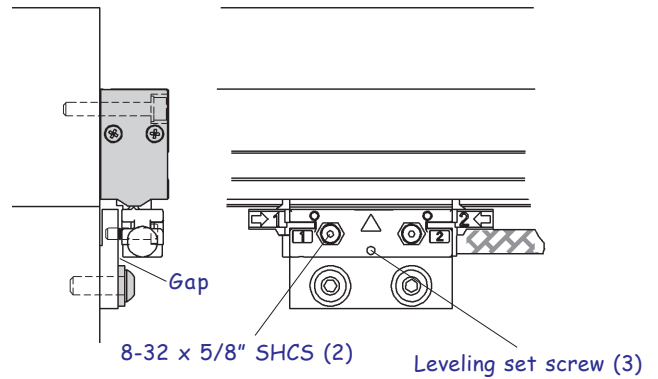


Transfer punch mounting hole locations

- Return the table to the center of travel. Move the reading head to the center of the scale case.
- Transfer punch the two reading head bracket mounting holes to the saddle.
- Remove the bracket from the reading head.
- Drill and tap the hole locations for 1/4-20 x 1/2" deep.

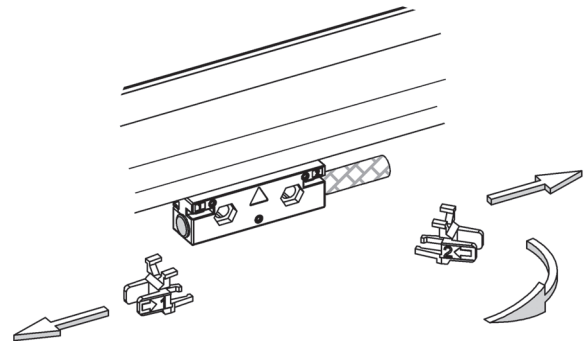


- Attach the reading head bracket to the saddle, and align the bracket tapped holes to the reading head mounting holes.
- Secure the bracket in place to the saddle.



- A gap will exist between the reading head and the bracket.
- 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.

Alignment bracket removal ...

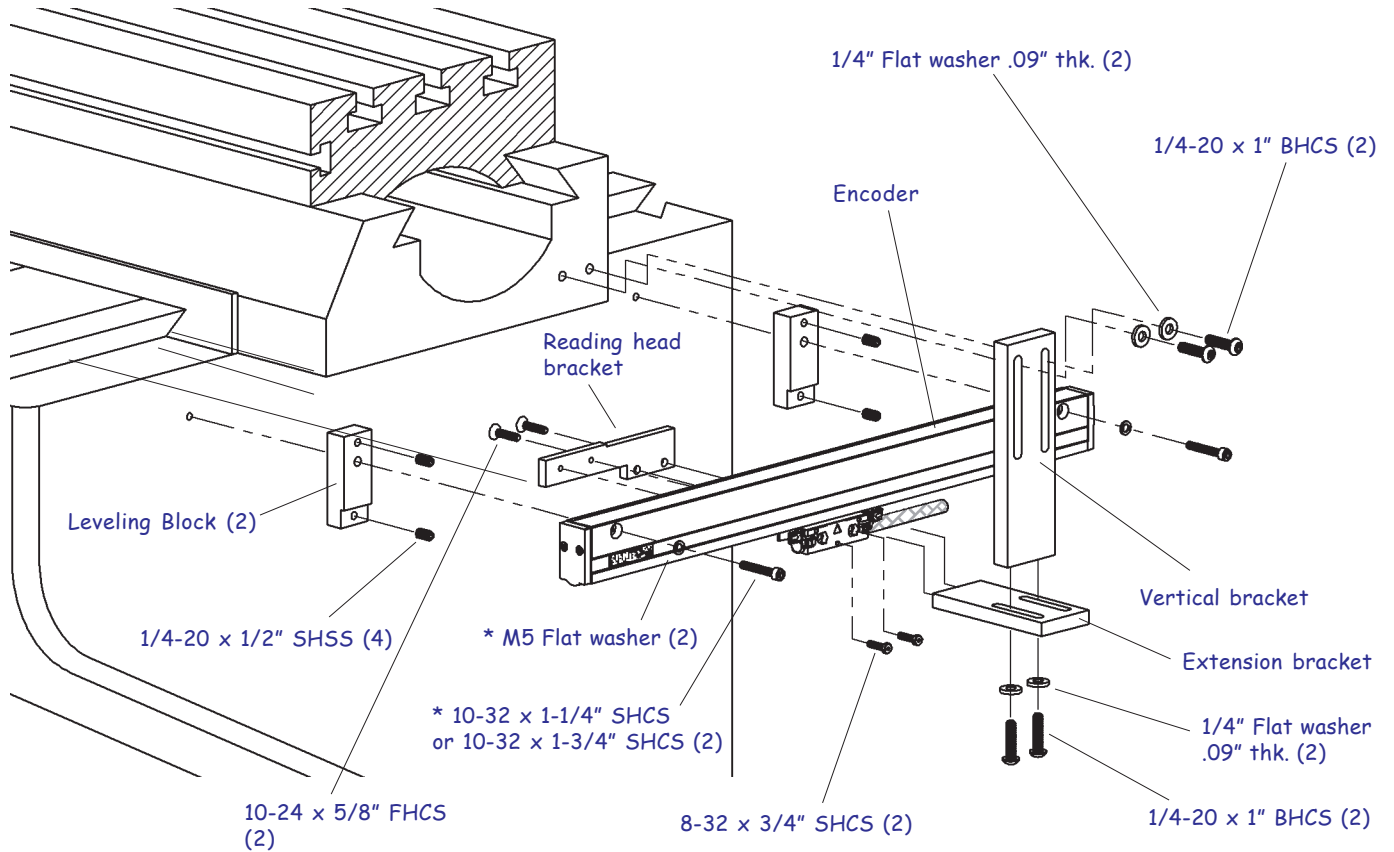


- Use allen wrench from set screw adjustment to slide alignment brackets away from the reading head.
- Remove alignment brackets and save.
- Move the axis through its full travel. Confirm that the assembly does not interfere with the machine movement.

**Proceed with the Cross
Feed installation**

Cross Feed Installation ...

* Supplied with encoder hardware



Mounting Information...

These instructions are for mounting the ENC 125 T/E encoder to a vertical knee mill with dovetail saddle ways.

Before proceeding:

- Please read the Procedure completely.
- Mount X axis prior to installing the cross feed.
- Clean the mounting surfaces.
- Save the alignment brackets with the Encoder Reference Manual after installation is completed.

First Steps ...

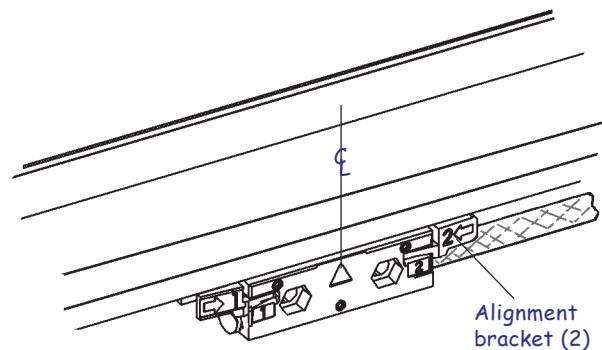
Machine

- ✓ Move the table to it's far left travel.
- ✓ Move the saddle to it's center of travel, include the longitudinal scale thickness.
- ✓ Mark the axis so that it can be re-centered easily.

Encoder

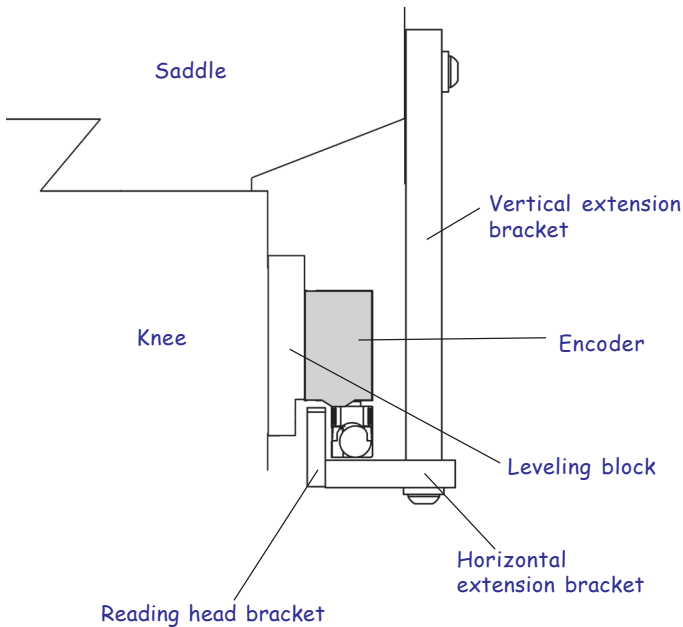
- ✓ Unpack encoder in a safe, convenient location.
- ✓ Do not remove the reading head alignment brackets until instructed.

Center reading head ...



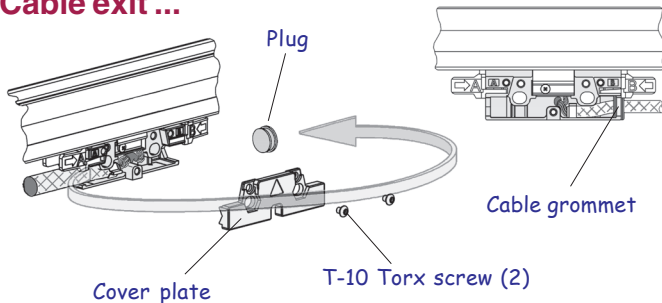
- Mark the center location on the scale case. Slide the reading head and brackets along the scale until the center marks on the scale case and reading head are aligned.

Encoder orientation ...



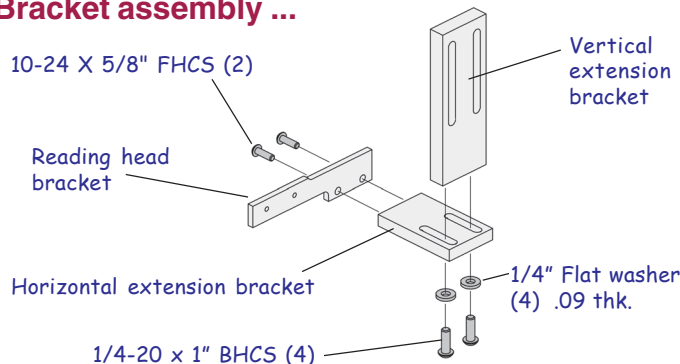
- These instructions will position the encoder assembly to the side of knee as shown, and the bracket assembly to the end of the saddle.

Cable exit ...

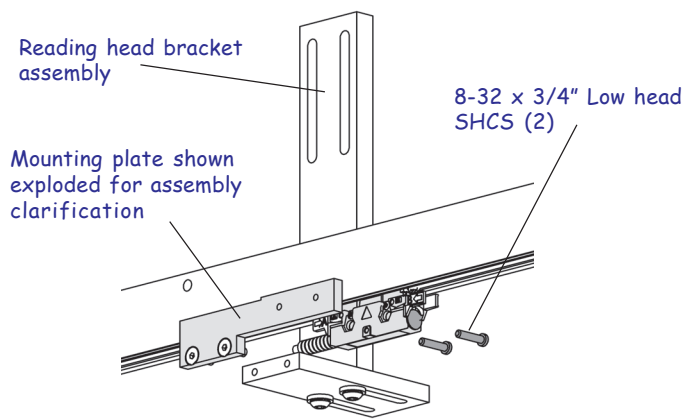


- Determine the cable exit direction before installing the encoder.
- To change the cable exit direction; remove the cover plate and rotate the cable 180°.

Bracket assembly ...

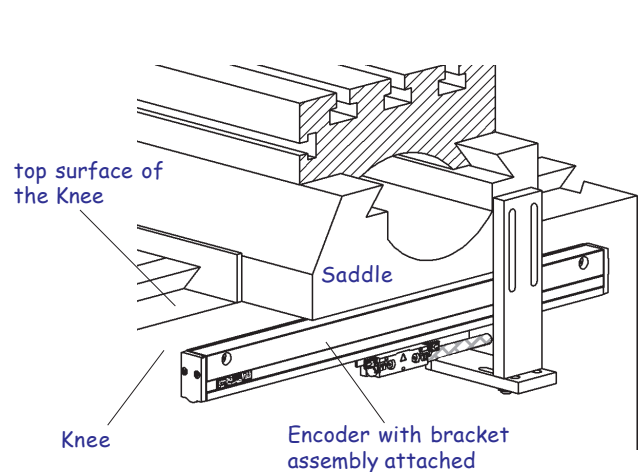


- Assemble the reading head brackets, leave extension plates loose enough for adjustment.

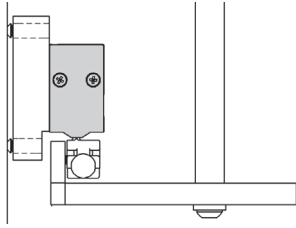


- Temporarily attach the bracket assembly to the reading head.
- Ensure that the reading head is centered on the scale case.

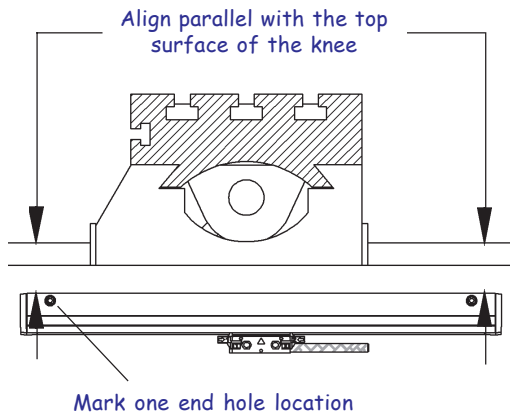
Encoder installation ...



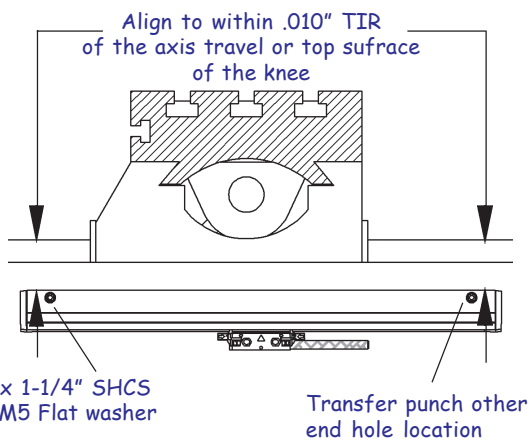
- With the saddle at its center of travel, position the scale on the knee, and the bracket assembly to the saddle.
- Locate the assembly so that a suitable mounting position is provided for both the encoder to the knee, and the bracket assembly to the saddle. If leveling blocks will be used, allow space for the leveling blocks.
- With the encoder parallel to the top of the knee, scribe encoder location reference lines on the knee, and remove the assembly.



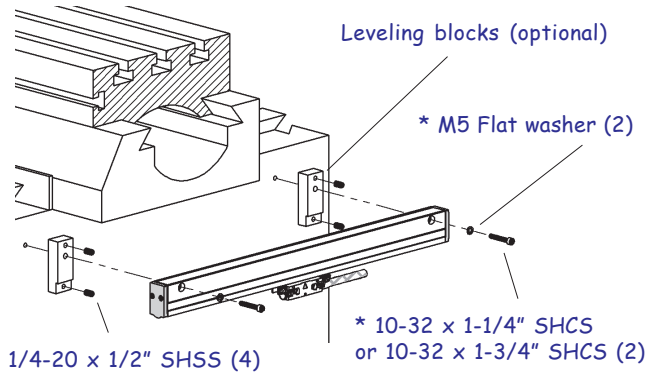
- Two encoder leveling blocks are provided to space the encoder out from the side of the knee, and aid with the scale case face alignment.



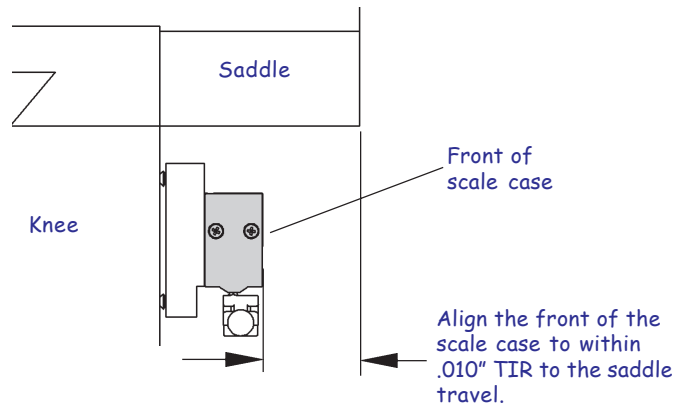
- Remove the bracket assembly from the reading head.
- Position the scale case to the scribed lines, aligning parallel with the top surface of the knee.
- Mark one end hole location to the knee.
- Remove the encoder, drill and tap the location for a 10-32 x 1/2" deep.



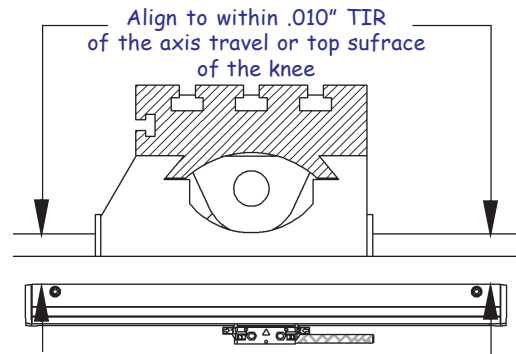
- Fasten the encoder assembly at one end.
- Align the top of the encoder to the axis travel or top surface of the knee.
- Transfer punch the other end mounting hole, and remove the encoder.
- Drill and tap the hole location for a 10-32 x 1/2" deep.



- Attach the encoder assembly to the knee using the 10-32 x 1-1/4" SHCS and flat washers provided.
- When using leveling blocks, attach the encoder assembly to the knee using the 10-32 x 1-3/4" SHCS and flat washers.
- Insert the four leveling set screws in the leveling blocks prior to attaching the blocks. Insert the screws so that they are flush with the back side of the leveling block.

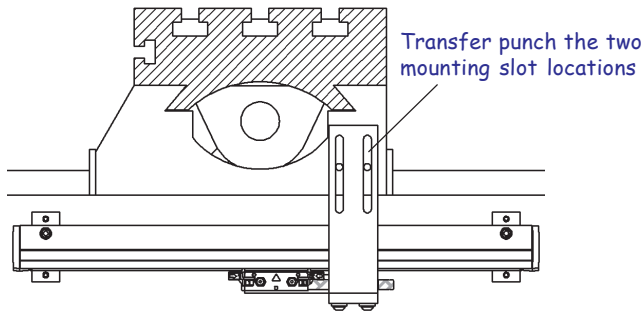


- Align the front of the scale case. When using leveling blocks, adjust the leveling screws for this alignment.

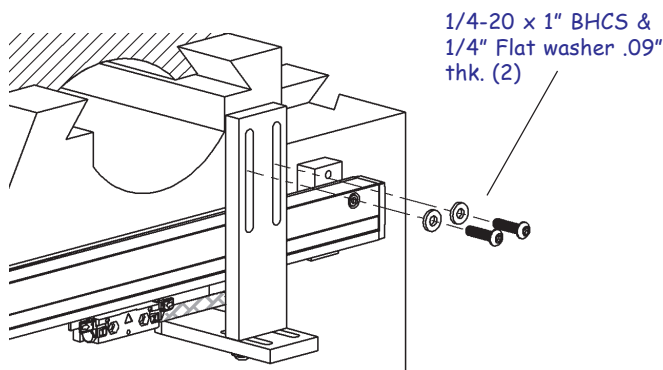


- Align the top of the scale case to the axis travel or top surface of the knee.
- Secure encoder in place maintaining the alignment.

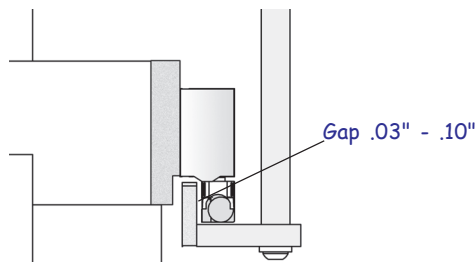
Bracket installation...



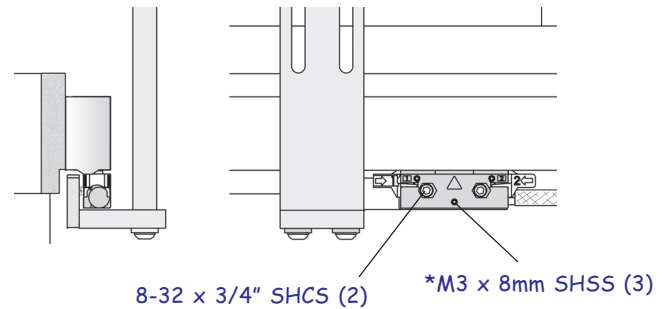
- With the axis at the center of travel, attach the bracket assembly to the reading head.
- Position the assembly to the saddle, and transfer punch the two mounting slot locations.
- Remove the assembly from the reading head, drill and tap the locations for 1/4-20 x 1/2" deep.



- Loosely attach the bracket assembly to the saddle.

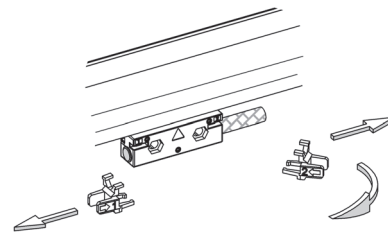


- Adjust the reading head bracket assembly so that a gap of .03" - .10" exist between the bracket and the reading head.
- Align the reading head mounting holes with the reading head.
- Secure the bracket assembly in place.

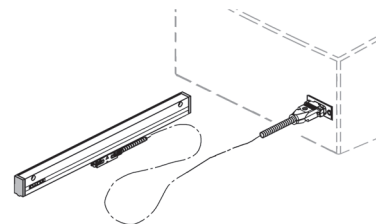


- Insert the two 8-32 x 5/8" SHCS. Insure the bracket is adjusted to provide proper screw head clearance. **Do Not Tighten Screws** at this time.
- Set each leveling set screw by placing a .001" - .003" feeler gage between the set screw and the bracket.
- Adjust each set screw until a slight drag is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

Alignment bracket removal ...



- 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".