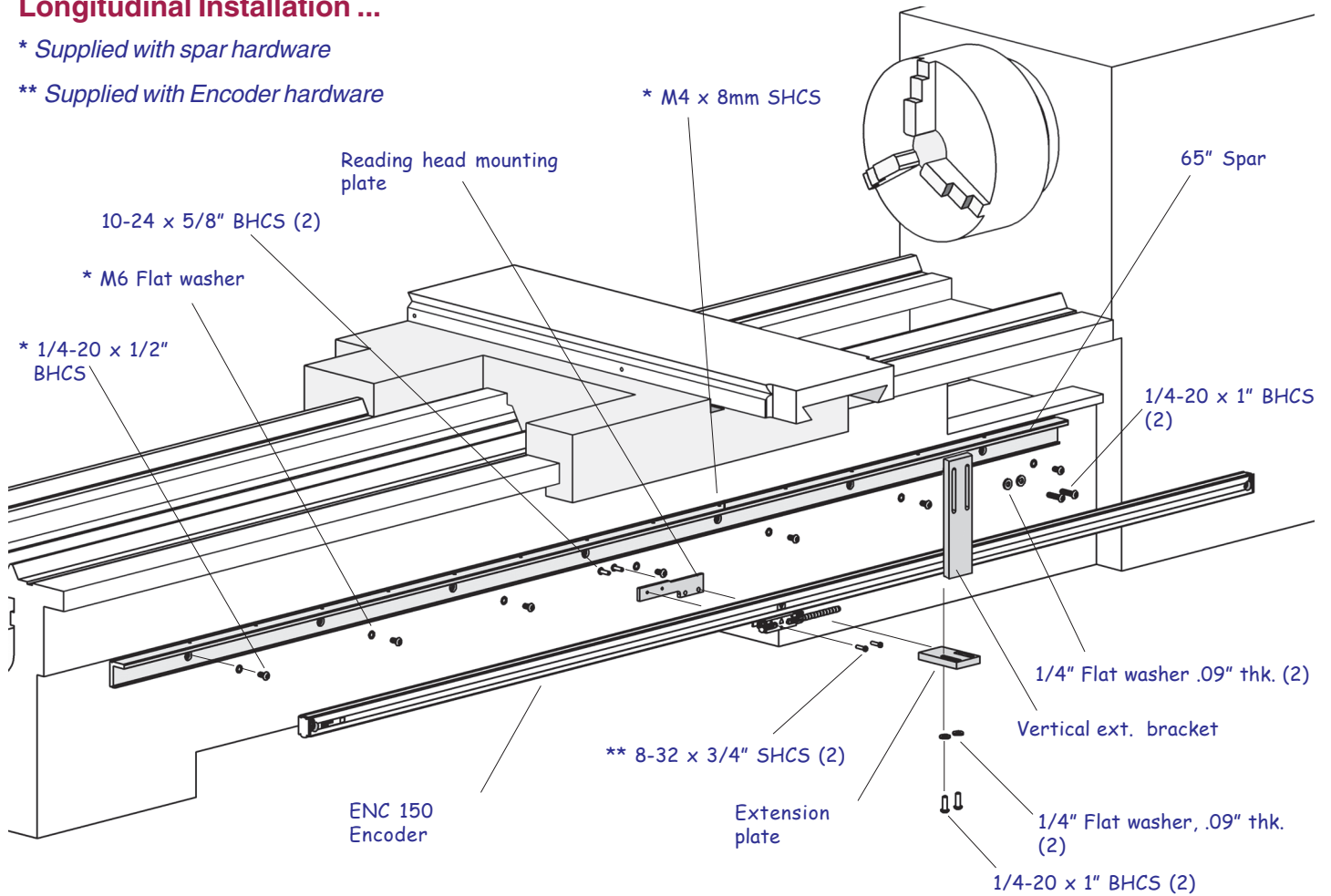


Longitudinal Installation ...

* Supplied with spar hardware

** Supplied with Encoder hardware



Mounting Information...

These are application instructions for mounting the longitudinal "Z" axis SENC 150 encoder, and the Cross feed "X" axis SENC 50 encoder.

Before proceeding:

- Please read the instructions completely.
- Mount Z 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 ...

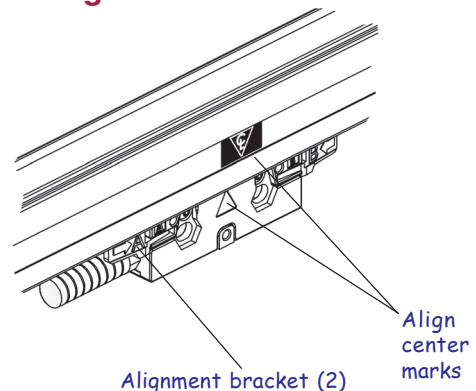
Machine

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

Encoder

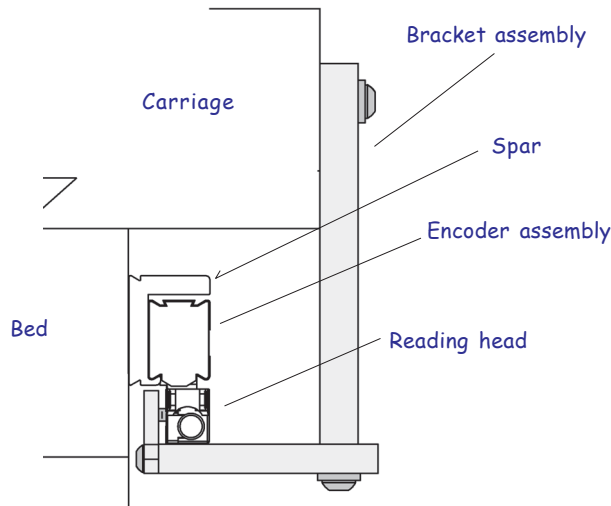
- ✓ Unpack encoder in a safe, convenient location.
- ✓ Do not remove the reading head alignment brackets until instructed.

Center reading head ...



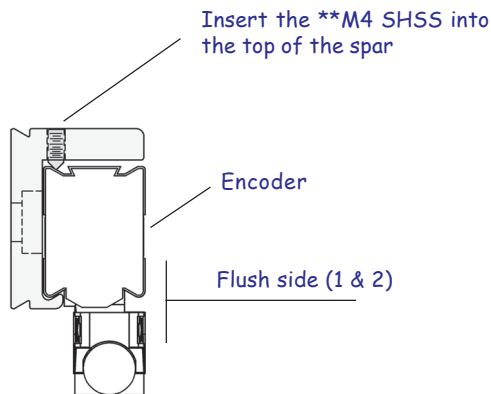
- Slide the reading head and brackets along the scale case until the center marks on the scale case and reading head are aligned.

Encoder orientation ...



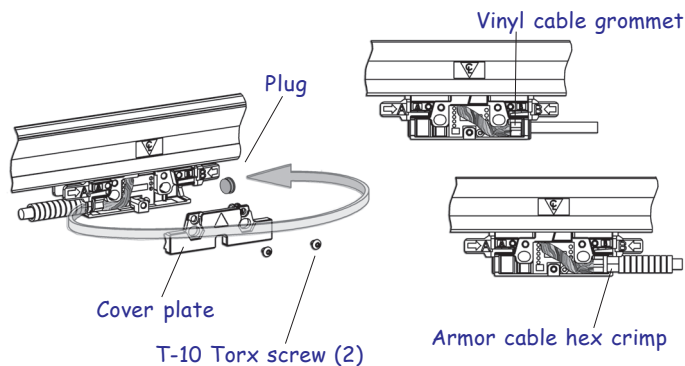
- These instructions will guide you through installing the encoder as shown in this view.

Encoder/Spar assembly ...



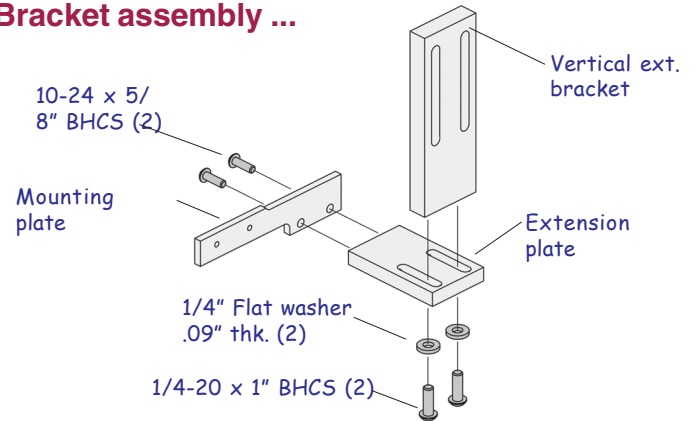
- Insert the encoder into the spar as shown, and center from end to end. Tighten the center set screw only.

Cable exit ...



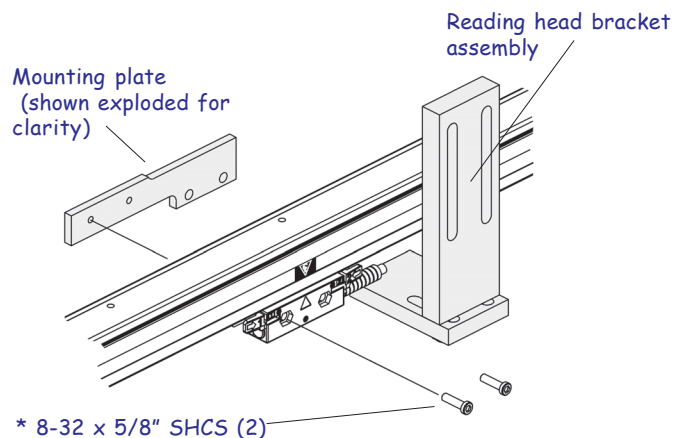
- Determine the cable exit direction before installing the encoder.
- To change the cable exit direction, remove the cover plate and rotate the cable 180°.

Bracket assembly ...



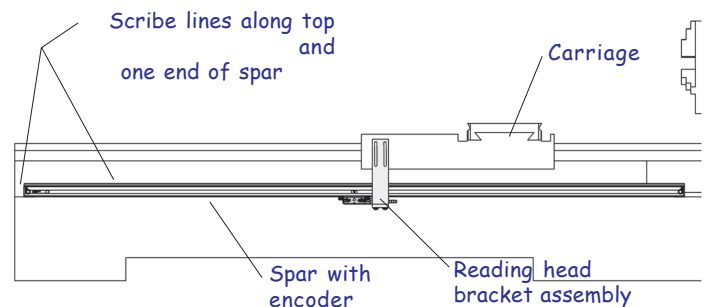
- Assemble the brackets, fully extending the extension plate.

Bracket attachment ...

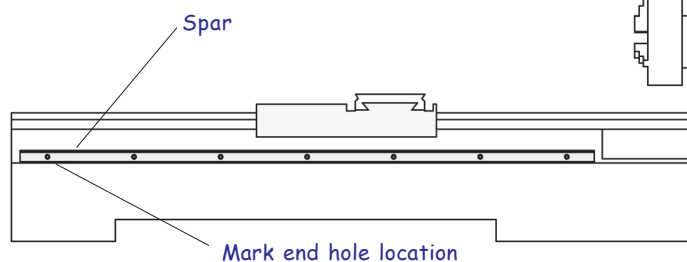


- Temporarily attach the bracket assembly to the reading head for locating purposes.

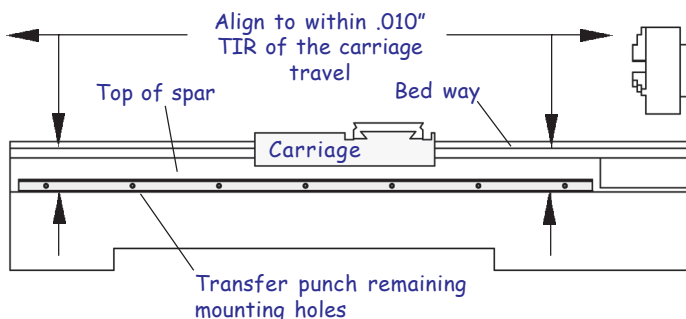
Spar / encoder installation ...



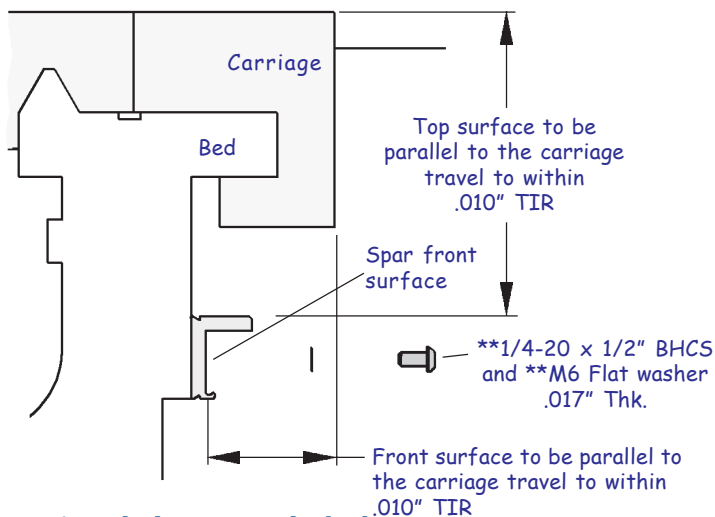
- With the carriage at its center of travel, position the spar to the side of the bed, and the bracket assembly to the carriage.
- Locate the assembly so that a suitable mounting position is provided for both the encoder w/spar to the bed, and the bracket assembly to the carriage.
- With the spar parallel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



- 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 bed.
- Drill and tap location for a 1/4-20 x 1/2" deep.

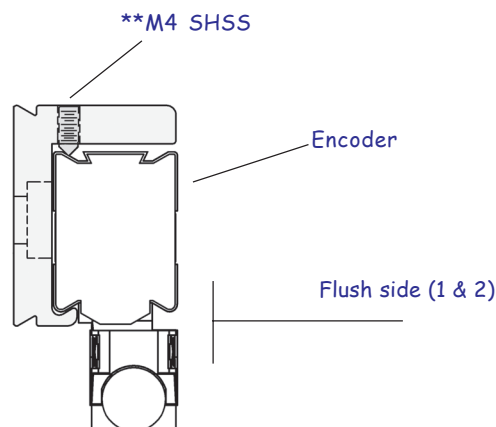


- Fasten the spar to the bed at one end.
- Align the top of the spar to the carriage travel to within .010" TIR.
- Transfer punch the remaining mounting holes.
- Remove spar, drill and tap locations for a 1/4-20 x 1/2" deep.



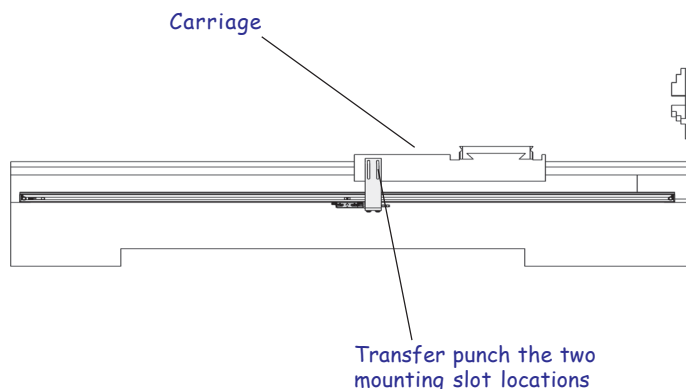
- Attach the spar to the bed.
- Align the front surface of the spar to within .010" TIR of the axis travel (use shim stock if necessary).
- Align the top surface of the spar to within .010" TIR of the carriage travel and secure in place.

Encoder installation ...

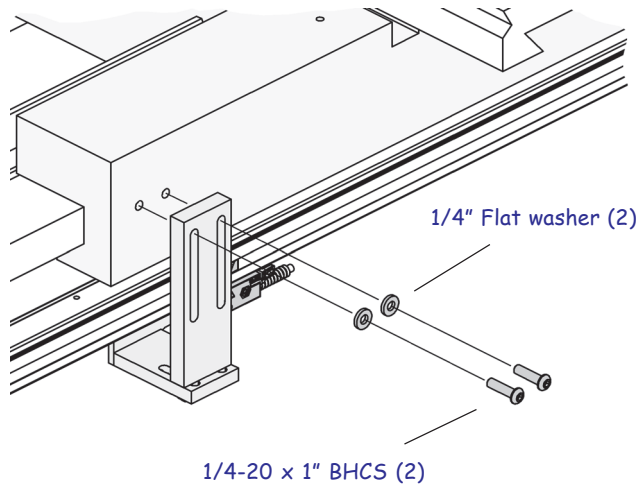


- Insert the encoder into the spar as done previously.
- Tighten the spar set screws starting from the center, working out towards the ends.

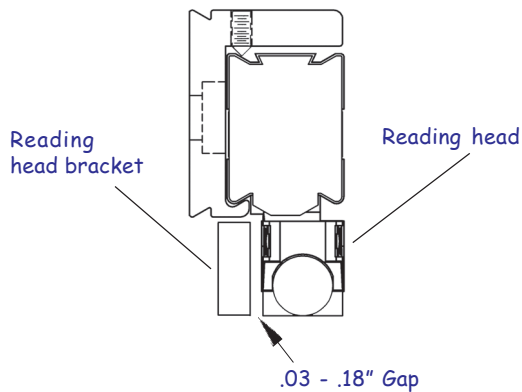
Reading head and bracket installation ...



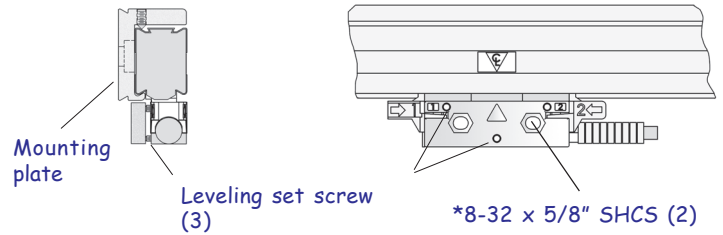
- Move the carriage to its center of travel. Attach the bracket assembly to the reading head.
- Position the assembly to the carriage, and transfer punch the two mounting slot locations.
- Remove the assembly, drill and tap the locations for 1/4-20 x 1/2" deep.



- Attach the bracket assembly to the carriage.

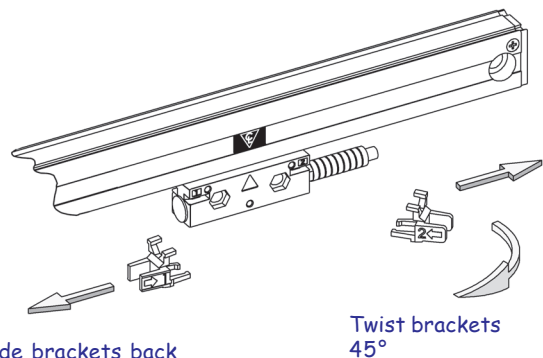


- Adjust the extension plate so that a .03" - .18" gap is between the reading head and bracket.
- Align the bracket and head mounting holes.
- Secure bracket assembly in place.



- Set each leveling screw by placing a .001 - .003" feeler gage between the screw and reading head mounting plate.
- Adjust each screw until a slight drag is felt on the feeler gage.
- **Evenly tighten** the two **8-32 SHCS.

Encoder button up ...

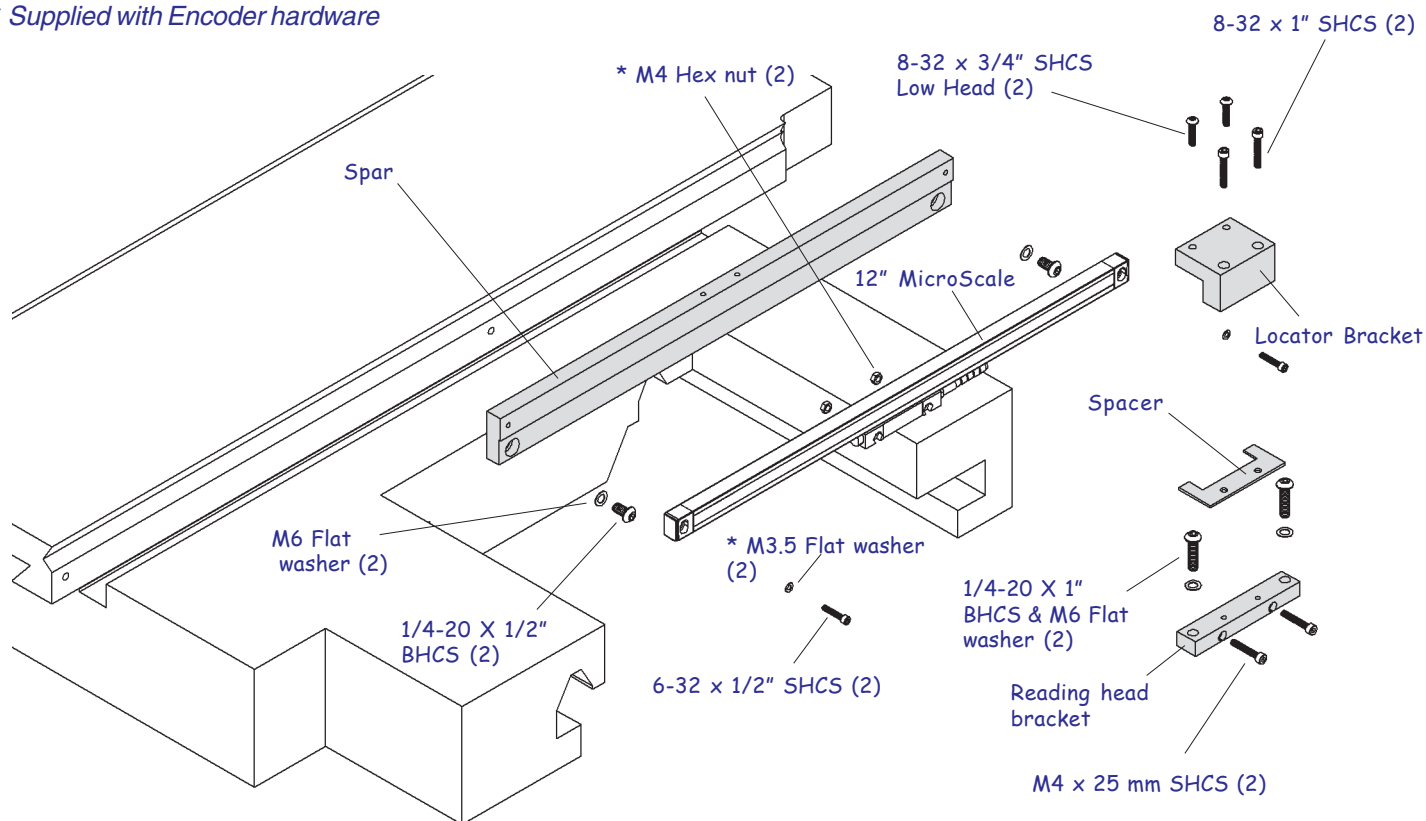


- Use allen wrench from set screw adjustment to slide alignment brackets away from the reading head.
- Remove alignment brackets and save for possible future use.
- Move the axis through its full travel. Confirm that the assembly does not interfere with the machine movement.

Proceed with the Cross Feed installation

Cross Feed Installation ...

* Supplied with Encoder hardware



Mounting Information...

These are application instructions for mounting the Cross feed "X" axis 12" SENC 50 encoder.

Before proceeding:

- Please read the instructions completely.
- Mount Z 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 ...

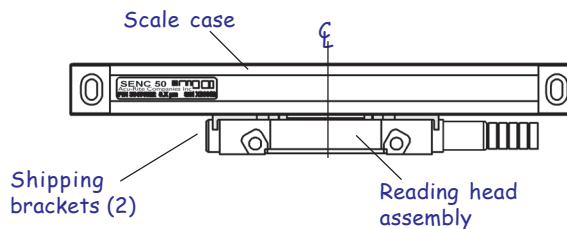
Machine

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

Encoder

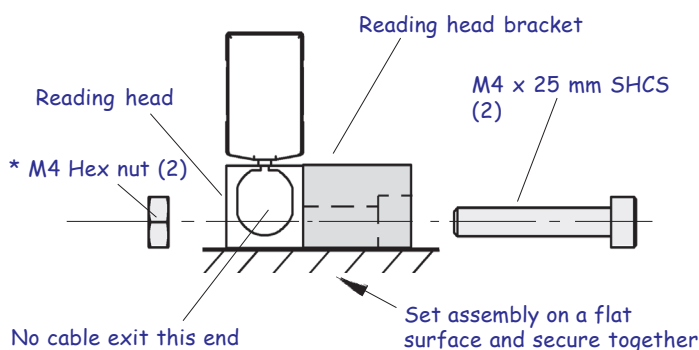
- ✓ Unpack encoder in a safe, convenient location.
- ✓ Do not remove the reading head shipping brackets until instructed.

Center reading head ...

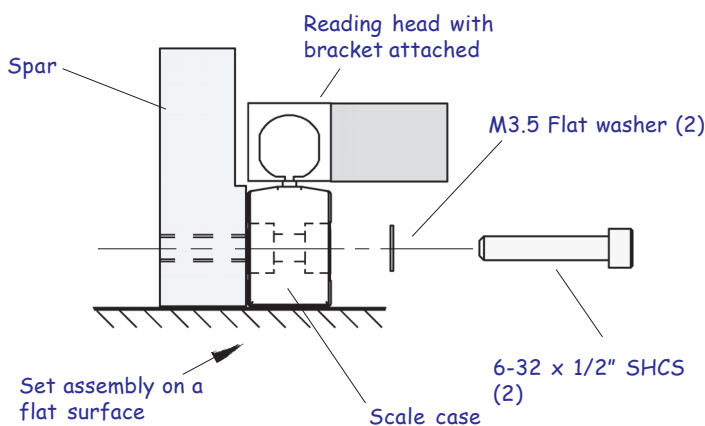


- Center the reading head on the scale case by sliding the reading head and brackets along the scale case to the center of the scale case.

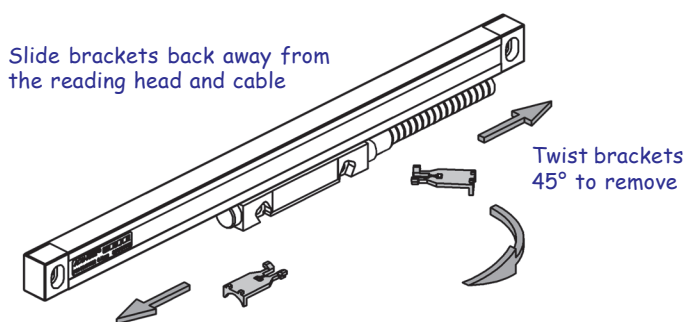
Pre-alignment assembly ...



- Attach the reading head bracket to the reading head.
- Set the reading head and bracket on a flat surface. With the underside surfaces flush; secure in place.

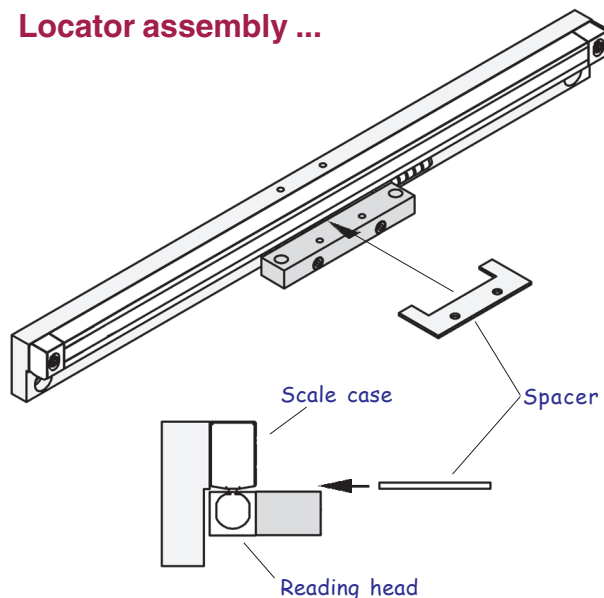


- Attach the scale case to the spar.
- Place the assembly upside down on a flat surface. With the spar and scale case flush, secure in place.
- With the assembly remaining in this position, remove the shipping brackets.

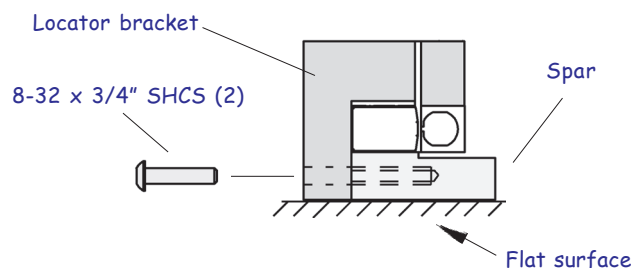


- Support the reading head while sliding the shipping brackets away from the reading head. Gently twist to remove them from the scale case.
- Save the shipping brackets with the Encoder Reference Manual.

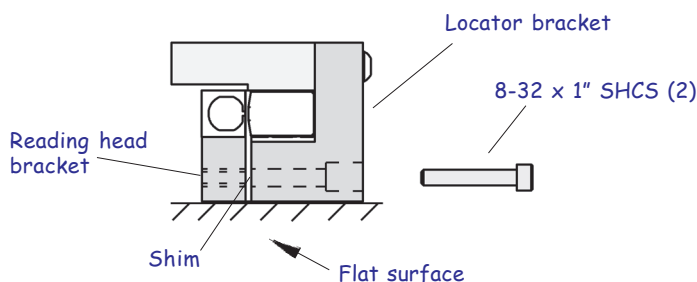
Locator assembly ...



- Slide the spacer between the top of the reading head and the underside of the scale case.

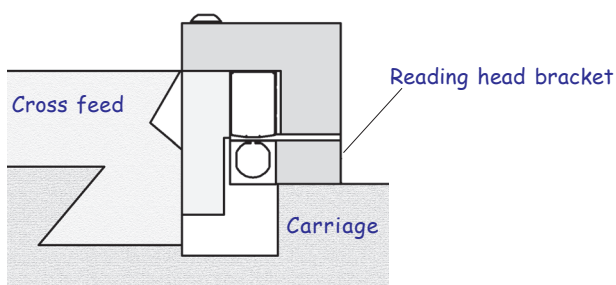
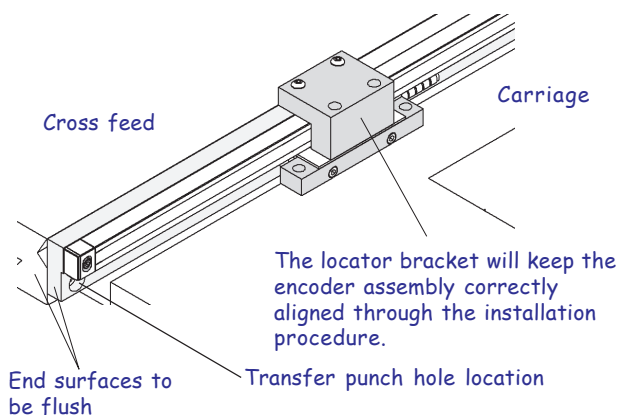


- Set the assembly down on the back side of the spar on a flat surface. Keep the locator bracket flush with the back side of the spar.
- Secure bracket to the top of the spar.

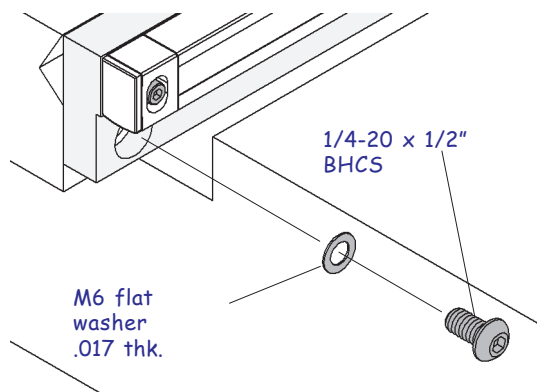


- Turn the assembly over so that the locator bracket and the reading head bracket are lying flush on a flat surface.
- Attach the reading head bracket with the shim to the locator bracket and secure in place.

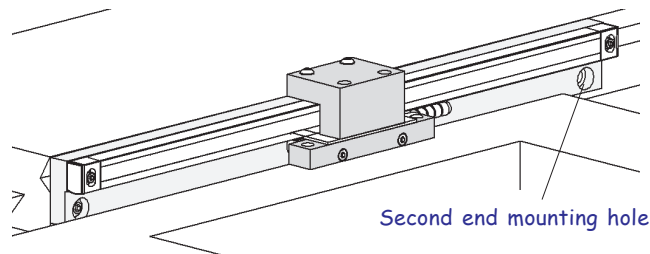
Scale attachment ...



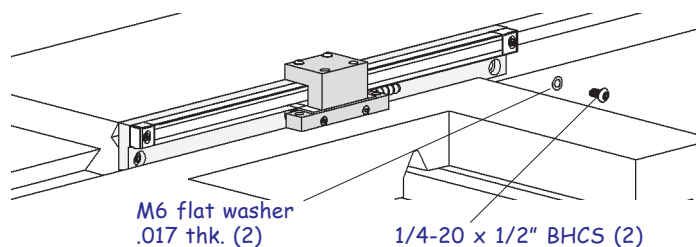
- Move the cross feed completely forward.
- Place the assembly to the side of the cross feed with the reading head bracket setting firmly on the top of the carriage.
- Position spar end flush with the cross feed. Transfer punch the spar end mounting hole to the side of the cross feed.
- Remove the assembly; drill and tap hole location for a 1/4-20 x 1/2" deep.



- Loosely attach the assembly to the cross feed.

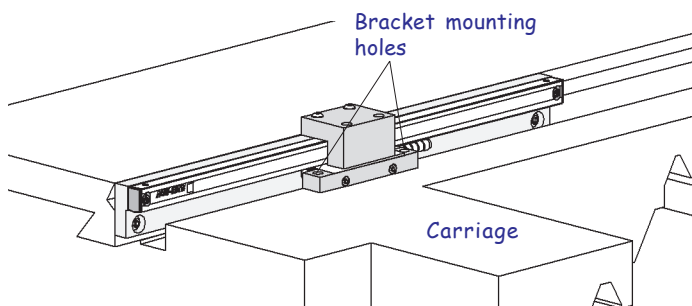


- Move the cross feed towards the rear until the rear spar mounting hole is exposed. **Use caution with bracket assembly sliding along the top of the carriage.**
- With the reading head bracket setting firmly on the top of the carriage, transfer punch the spar end mounting hole.
- Remove the assembly, drill and tap hole location for a 1/4-20 x 1/2" deep.

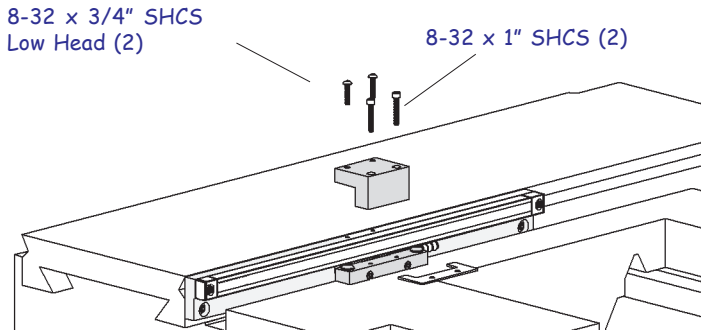


- With the reading head bracket setting firmly on the top of the carriage, attach the spar to the cross feed. Tighten fasteners enough to keep assembly in place.

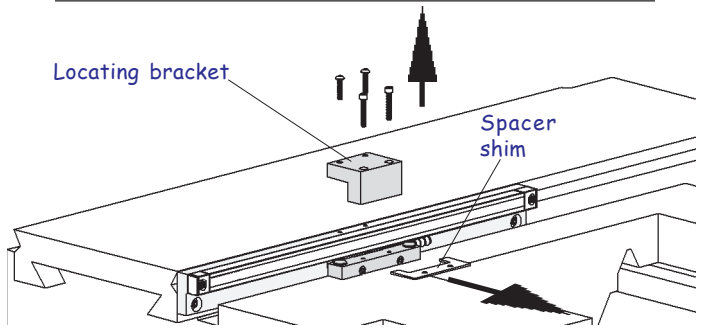
Reading head attachment ...



- Move the cross feed to its center of travel.
- With the reading head bracket setting firmly on the top of the carriage, transfer punch both reading head bracket mounting hole locations to the top of the carriage.
- Move the cross feed to one side exposing the hole locations.
- Drill and Tap locations for a 1/4-20 x 1/2" deep.

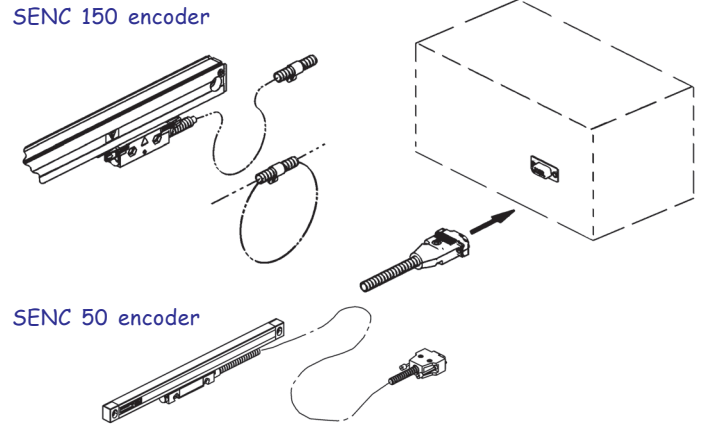


- Move the cross feed back to align the reading head bracket mounting holes with the drilled mounting holes in the top of the carriage.
- Secure the reading head bracket to the carriage, and secure the spar to the cross feed.



- Remove the locating block from the spar and the reading head bracket.
- Remove the spacer shim.
- Move the axis through its full travel. Confirm that the assembly does not interfere with the machine movement.

Encoder button up ...



- 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 encoder connectors to the readout.
- Complete the installation by following the steps in "Checking Your Installation" section in the encoder "Reference Manual".