SERVO MOTOR REPLACEMENT INSTRUCTIONS
Following pages illustrate servo motor, support unit and motor coupler replacement for both axes

Removal:

Set main disconnect OFF and lock out for safety.

1. Disconnect the cable for the faulty motor at rear of CNC and pull it clear of wireways cable clamps and panel holes. Push the slide away from the motor to access the motor coupling For X-Axis, the slide brake assembly must be removed. Two 6-32 cap screws secure the cylinder to the saddle.

2. Remove the sheet metal covering the slide nearest the motor you wish to change. On X-Axis this cover is held with acorn nuts on 1/4-20 all-thread; on Z-Axis the cover is held by the three phillips head screws through the scale. Remove the motor cover, which is held with one screw.

4. Loosen the cap screw holding the clamp on the coupling on the motor side.

5. Remove two 3/8-16 cap screws that hold the motor mount and motor to the base. You may have to lightly tap the motor mount to remove it from the machine, as it is pinned for alignment.

6. Remove four 10-32 cap screws that hold the motor to the motor mount.

Replacement:

1. Attach the replacement motor to the motor mount with four 10-32 cap screws.

2. Notice the mark on the end of the motor shaft and another on the face of the motor. These marks are aligned when the motor is at “home”. Turn the motor shaft so that the marks are 180° apart; that is 1/2 turn. This provides about 0.100” clearance past home

3. For X-Axis, push the slide all the way down, against the Bellville stack; for Z-Axis, push the slide all the way to the left, against the Bellville stack.

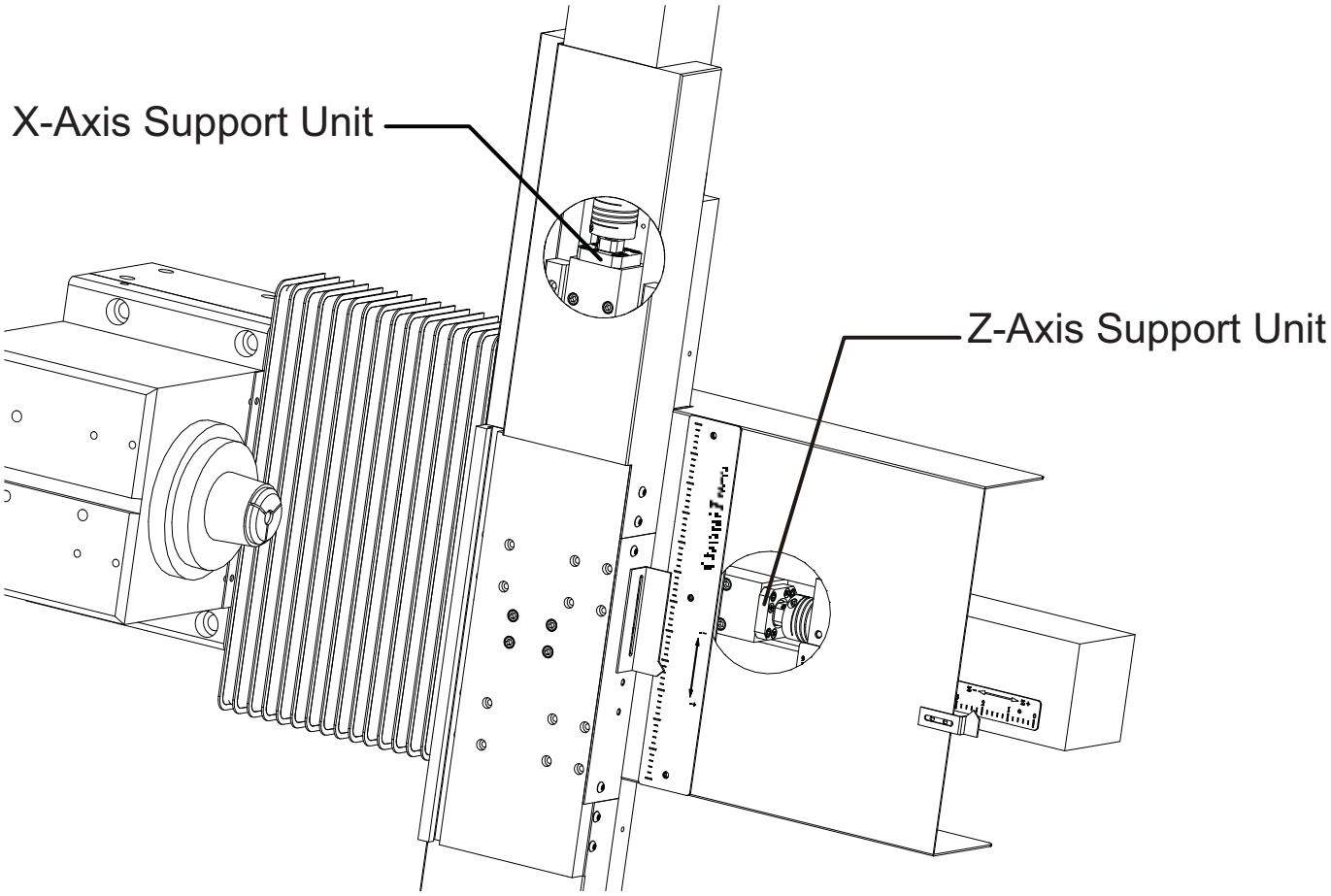
4. Attach the motor mount to the base, slipping the shaft into the coupler. Don’t let the shaft turn much. Tighten the motor mount to the machine before tightening the clamp on the coupler.

5. Replace the sheet metal as required.

6. After re-assembly, jog the axis to both ends and verify that the pointer will go just slightly past “0”; jog back to the other side of “0”, then establish Home as usual. If the pointer does not indicate ”0”, loosen it and move it to zero.

CAUTION - YOUR TOOL OFFSETS HAVE CHANGED. The slide will not home *exactly* where used to: If you are set up on a job you must re-set all offsets.

Servo Motor, Support Unit (Thrust Assy), and/or Coupler Replacement)

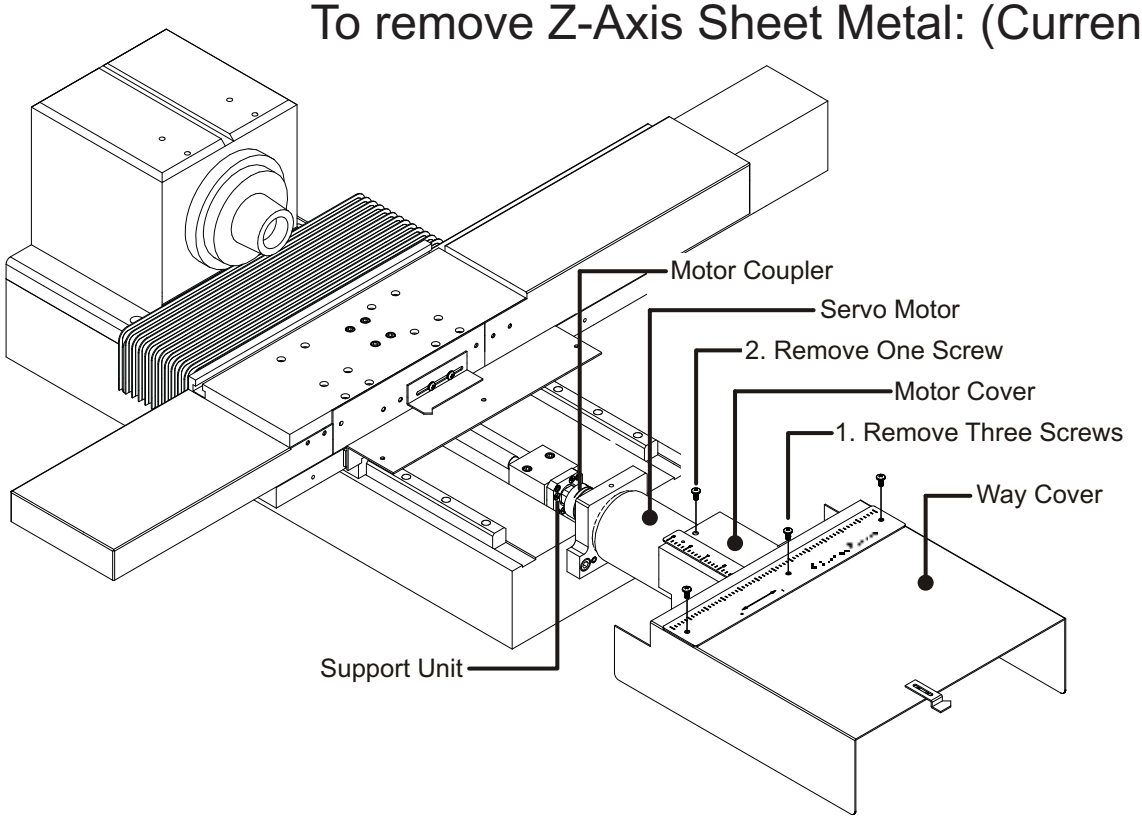


This document describes removal and replacement of the servo motors, flexible couplers and support units (thrust bearings) on the OmniTurn slides.

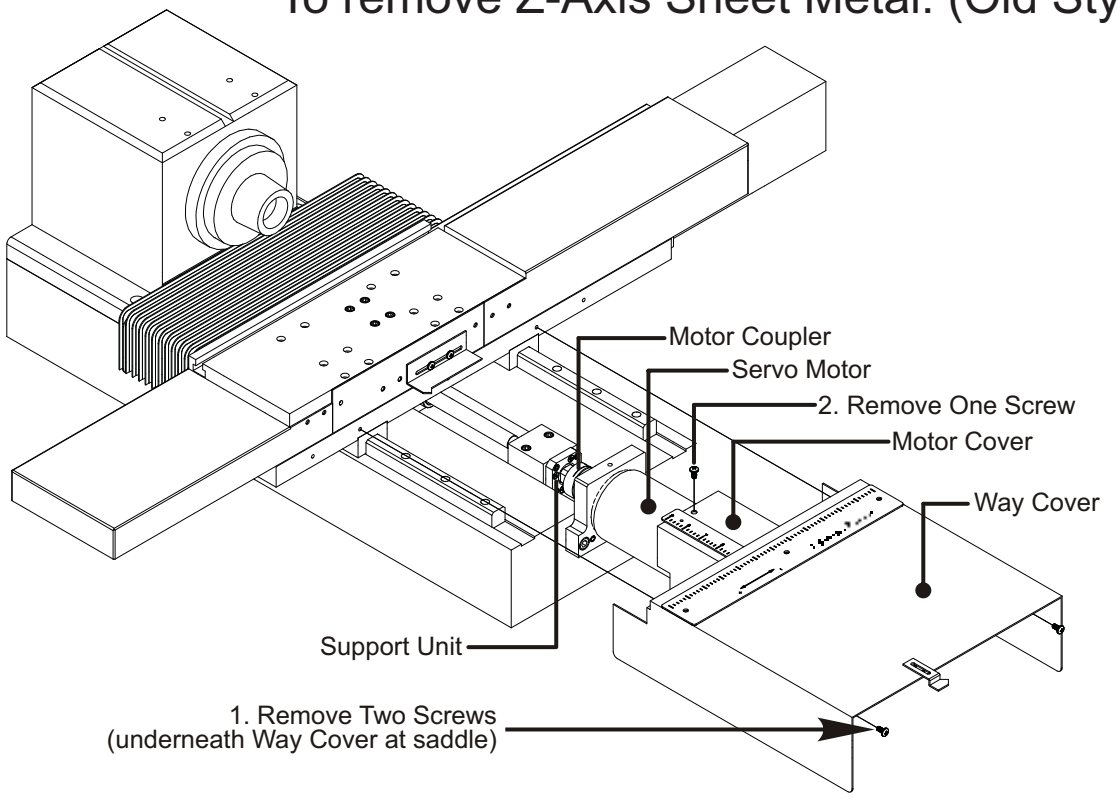
The illustration above shows the location of the components.

Sheet metal removal is illustrated on pages 2 and 3
Coupler removal and replacement: pages 3 and 5
Support unit removal and replacement: pages 4 and 5
Servo motor removal and replacement: pages 3 and 5

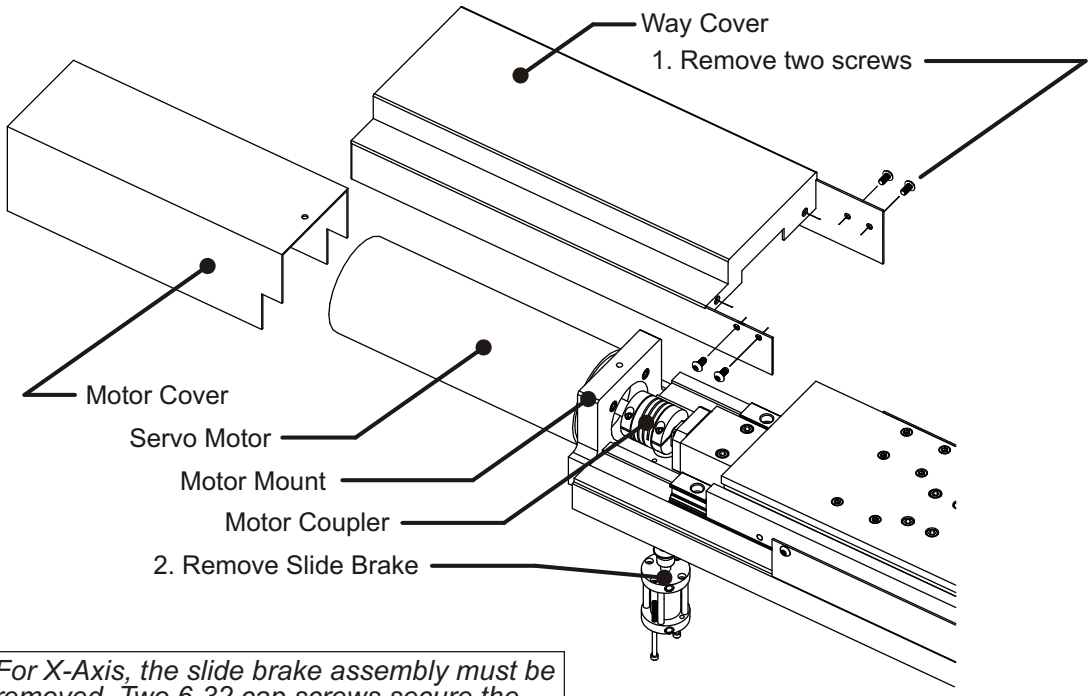
To remove Z-Axis Sheet Metal: (Current)



To remove Z-Axis Sheet Metal: (Old Style)



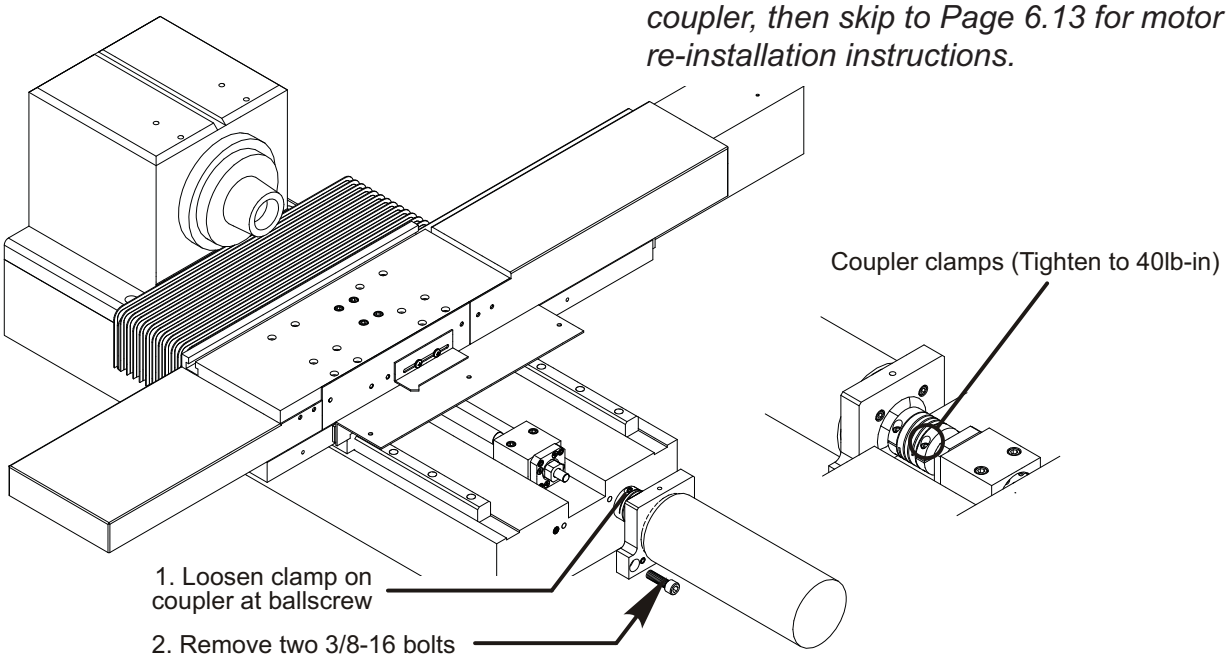
To remove X-Axis Sheet Metal :



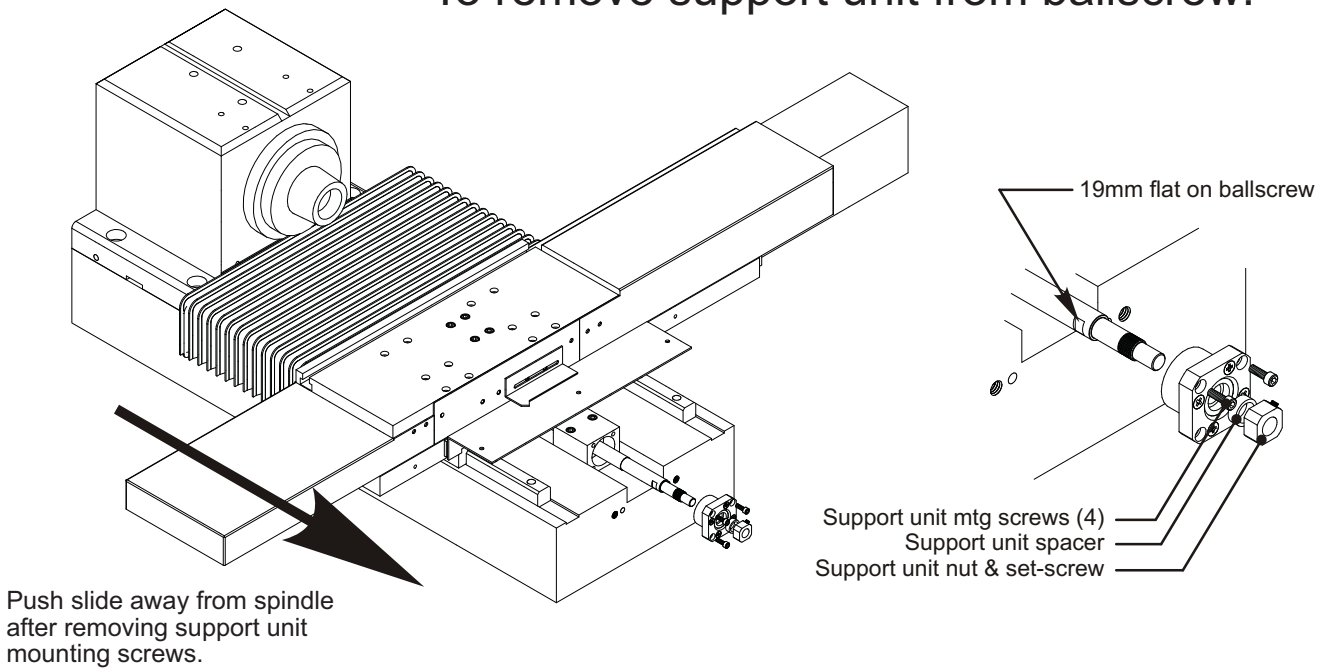
For X-Axis, the slide brake assembly must be removed. Two 6-32 cap screws secure the cylinder to the saddle.

To remove Servo Motor*:*

If only replacing coupler, install new coupler, then skip to Page 6.13 for motor re-installation instructions.

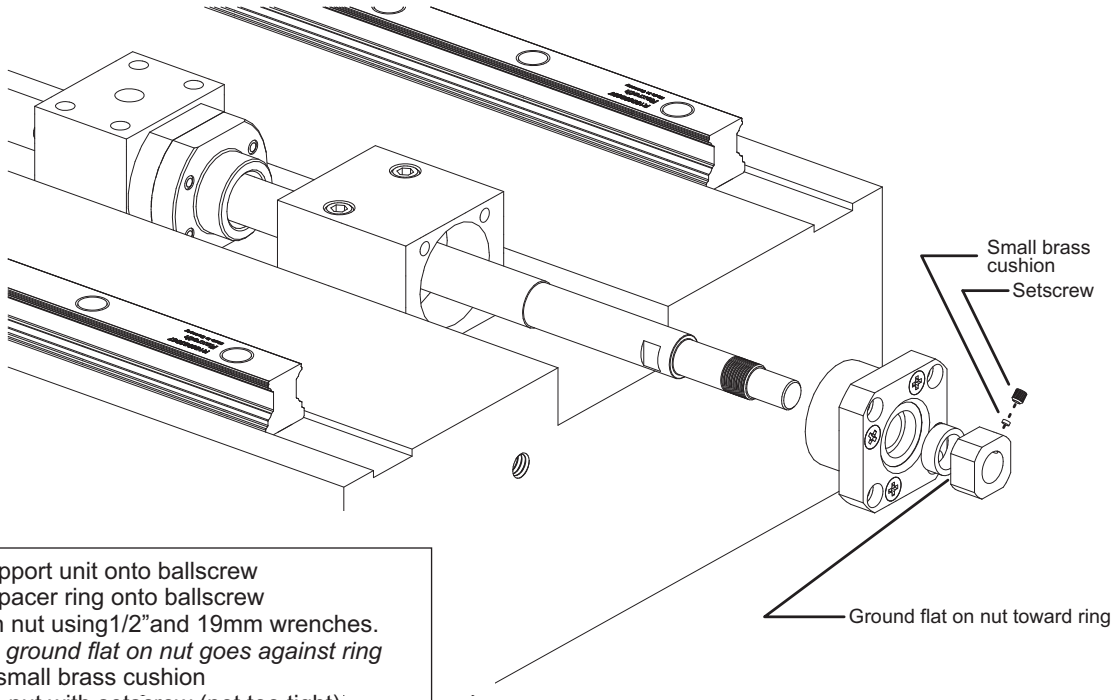


To remove support unit from ballscrew:



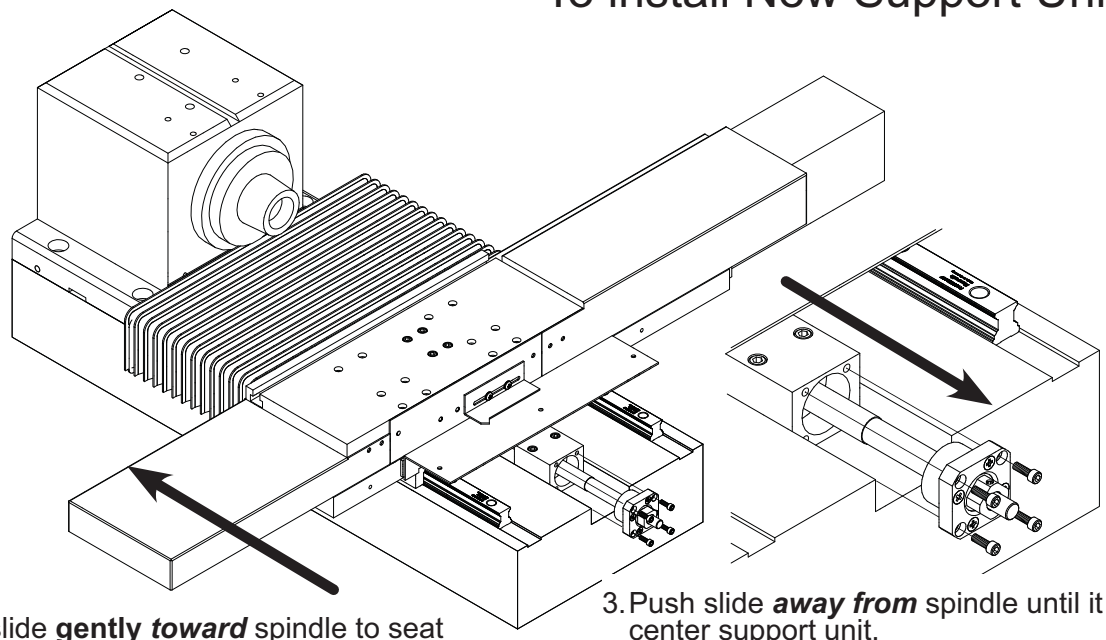
1. Remove four socket screws holding support unit to block.
2. Push slide in z-axis to expose flat on ballscrew.
3. Loosen support unit nut set-screw
4. Loosen support unit nut using1/2”and 19mm wrenches.

To attach new support unit to ballscrew:



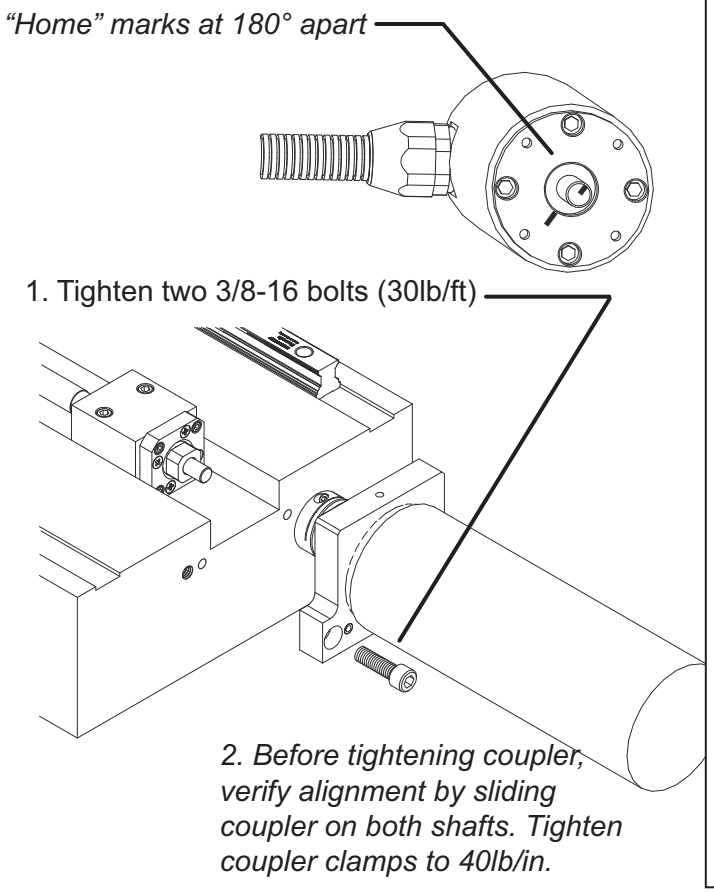
1. Slip support unit onto ballscrew
2. Slide spacer ring onto ballscrew
3. Tighten nut using1/2”and 19mm wrenches.
   NOTE: ground flat on nut goes against ring
4. Install small brass cushion
5. Secure nut with setscrew (not too tight)

To install New Support Unit:



1. Push slide **gently *toward*** spindle to seat support unit in block.
2. Install four mounting screws, but don't tighten yet.
3. Push slide ***away from*** spindle until it stops, to center support unit.
4. Tighten four mounting screws to 30lb/in.

Replace Servo Motor



2. Before tightening coupler, verify alignment by sliding coupler on both shafts. Tighten coupler clamps to 40lb/in.

1. Re-install Servo Motor:

1a. On ***Z-Axis,*** pull the slide all the way away from the spindle, against the Belleville stack; on ***X-Axis,*** push slide all the way down, against Bellevilles.

1b. Notice the mark on the end of the motor shaft and another on the face of the motor. These marks are aligned when the motor is at "home". Turn the motor shaft so that the marks are 180° apart; that is 1/2 turn. This provides about 0.100" clearance past home.

1c. Attach the motor to motor mount, then attach mount to the base, slipping the shaft into the coupler. Don't let the motor shaft turn much off its 180° setting.

1d. Tighten the motor mount to the machine (30lb/ft).

1e. Check alignment by sliding coupler back and forth on motor and ballscrew shafts.

1f. Tighten the coupler clamps to 40lb/inch.

1g. On X-Axis, replace slide brake.

2. Install all sheet metal

2a. After re-assembly, jog the axis to both ends and verify that the scale pointer will go just slightly past "0"; jog back inside of "0", then establish Home as usual. If the pointer is not at "0", loosen it and move it as required.

3. Re-set all tools before running!