

## TITLE: Sabre™ 404 Y Axis Lead Screw Replacement Procedure

Gerber FastFact #: 2014

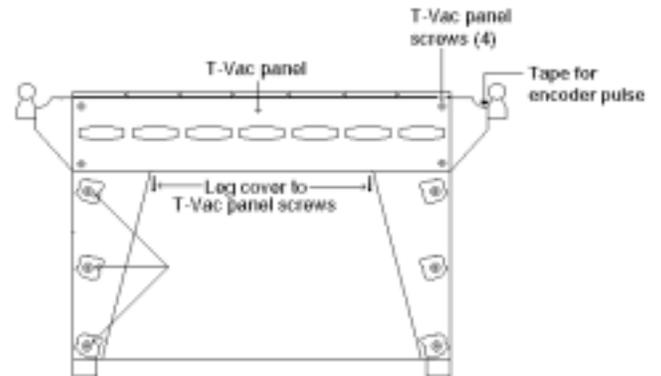
Supplied by: Technical Hardware Support

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Summary: The following procedure explains how to replace the Y-axis lead screw in a Sabre 404 router.

### Removing the front cover

1. Remove the T-Vac™ T handles from the front of the router by pulling them off the valves.
2. Support the front panel and remove the 4 screws attaching the T-Vac panel to the end covers and the 2 screws attaching the T-Vac panel to the leg covers.
3. Remove the 4-center ball valve mounting screws and rotate the ball valve toward you and out of the way of the lead screw block.



### Removing the motor belt, outside bearing, and pulley

1. At the back of the router, remove the outside motor cover.
2. Loosen the 5 motor plate screws, and then remove the belt tensioning spring.
3. Remove the belt between the lead screw pulley and the motor pulley. The belt cannot be removed from the upper pulley.
4. At the front of the router, put a wrench on the flats of the lead screw.
5. At the back of the router, remove the M6 screw in the end of the lead screw.
6. Remove the outside bearing from the lead screw.
7. Remove the 3 screws in the counter-bored holes of the pulley shaft clamp.
8. Screw one of the screws in the pulley shaft clamp (not one of the holes you just removed the screws from) and tighten the screw until the clamp separates from the pulley. Pulley should rotate freely on the lead screw journal now.

## Removing the Y axis lead screw from the router

1. At the front of the router, take the wrench off the flats of the lead screw.
2. Make a pencil mark on each side of the lead screw block.
3. Manually move the beam back approximately 6" to 9".
4. Remove the M8 screw in the front end of the lead screw.
5. Remove the 4 M8 screws attaching the lead screw block to the bottom of the table, and then slide the block off the lead screw journal.
6. At the back of the router, hold the lead screw in one hand and the pulley in the other. Push the lead screw toward the front of the router and remove the pulley, belt, spring, and inner bearing from the lead screw.
7. At the front of the router, remove the 3 M4 screws attaching the lead screw nut to the beam.
8. Slide the lead screw out the front of the router.

## Installing the Y axis lead screw

1. Slide the new lead screw and the lead screw nut in the front of the router through the beam. (The end with the flat spots goes toward the rear of the router.)
2. At the rear of the router, put the inner bearing, spring, and pulley (with belt) in place, then slide the lead screw journal through this assembly.
3. Attach the pulley shaft clamp to the pulley with 3 screws in the counter-bored holes. Do not tighten the screws.
4. Put the belt over the motor pulley. Install the tensioning spring and allow the spring to establish the correct tension of the belt, and then tighten the 5 motor plate screws. Align the lead screw pulley to the motor pulley and tighten the 3 pulley shaft clamp screws in the counter-bored holes.
5. Put the outside bearing on the lead screw journal.
6. Screw the M6 screw in the end of the lead screw and tighten.
7. At the front of the router, attach the lead screw block to the bottom of the table with 4 M8 screws. Position the lead screw block between the pencil lines and tighten the screws (finger tight.)
8. Screw the M8 screw in the end of the lead screw and tighten.
9. Move the beam against the lead screw nut and attach the nut to the beam with 3 screws. Tighten the screws (finger tight.)
10. Manually push the beam all the way to the rear of the table, then loosen the 3 M4 screws that mount the lead screw nut to the beam, and then retighten the screws to secure the nut to the beam.
11. Push the beam all the way to the front of the table, and then loosen the 4 screws attaching the lead screw block to the bottom of the table.
12. Push the block against the shoulder on the mounting surface and tighten the 4 screws. Do not worry if the lead screw block is no longer located between the pencil lines.
13. Tighten the 3 nut block screws.

## Verifying the encoder pulse position

1. Plug in and turn on the router.
2. Put a piece of paper tape in the trough between the right Y-axis way and the tabletop. The tape should be from the front edge of the trough and extend toward the back approximately 6".
3. Move the carriage to the center of the beam and move the beam to approximately 3" from the front end of the Y-axis way.
4. Push the A key on the keypad to orient the router.
5. The beam comes forward and stops and the carriage starts to move to the left. While the beam is stopped, hold a pen vertically and firmly against the front Y-axis bearing block and mark the tape.
6. When the carriage completes its travel to the left, the beam moves slightly to the rear of the router and stops. After the beam stops, hold a pen vertically and firmly against the front Y-axis bearing block and mark the tape again.
7. Measure the distance between the two marks on the tape. The distance should be approximately 3/16". If the measurement is approximately 3/16", the job is complete. Reattach the center t-vac valve, replace the front skirt and snap on the valve handles. If it is not, continue the procedure.
8. Make a third mark on the tape that is approximately 3/16" away from the first mark.
9. At the rear of the router, remove the motor cover and loosen the motor pulley clamp.
10. Hold a pen vertical and firmly against the Y-axis front bearing block and rotate the lead screw to move the beam forward or backward until the pen is aligned with the third mark.
11. Retighten the motor pulley clamp and repeat procedure. Don't forget to replace the motor cover once the encoder pulse is set.

**Run a test job to check performance before resuming production**