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## D200 Z-Axis Carriage Replacement Procedure

**Gerber FastFact #** 5039

**Supplied by:** Gerber Service

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**Summary:** This document provides the procedure for replacing the D200 Z-Axis Carriage.

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***Please read this guide in its entirety before replacement. When re-installing screws & nuts a medium strength thread locking compound is recommended.***

- 1) Slew the beam to the front of the table and the carriage to the right travel limit. Turn off the main power switch and disconnect the power cord from the a/c outlet.
- 2) Disconnect the cables from the z-motor and mill motor (router, spindle, or engraver). Unplug the x-axis limit switch cable if so equipped. Disconnect any mist coolant devices, vacuum shroud devices, etc. Unbolt the cable bracket from the top of the carriage and lay it and the cables back across the left side of the beam. Remove the mill motor.
- 3) Remove the four (4) cap screws attaching the z-motor to the carriage.
- 4) *Note: The entire Z lead screw assembly is "spring loaded". As the screws are removed the Z motor will rise. Apply downward pressure on the Z motor to prevent stripping of threads as the screws turn out of the mounting holes.* Remove the z-motor and its mounting block from the carriage. The z-motor transmits torque to the lead screw via a 3-piece coupler. One piece clamps to the z-motor, one to the lead screw and a "centering pad" is positioned between. If the centering pad did not come out with the Z motor, transfer it from the lead screw at this time.
- 5) Remove the three (3) cap screws attaching the lower Z lead screw bearing plate. Set the bearing & plate assembly, cap screws, compression spring and cup washers aside for later re-assembly.
- 6) Remove the x-axis lead screw from the base of the x-carriage by disconnecting the four (4) cap screws that attach it to the carriage. Remove the travel stops from the right end of the x-axis ways, remove the four (4) screws from the right side beam end cover and place the cover out of the way. Carefully slide the x/z-axis carriage assembly off the ways and place on a stable work surface.
- 7) Remove the four (4) cap screws that attach the left (short side) Z bearing block to the z-carriage then, from the back of the x-carriage, remove the lock nuts from the set screws on the long (right side) z-axis way. Remove the z-axis carriage from the x-axis carriage and transfer the long Z way to the replacement carriage.
- 8) Install the replacement z-carriage onto the x-carriage, reattach the cap screws to the left bearing block and replace the lock nuts onto the long Z way set screws. *Hint: Take this opportunity to clean & inspect all the linear bearings exposed by this procedure. Use lithium grease such as Lubriplate™ to lubricate the bearings.*

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- 9) Carefully slide the x/z-carriage assembly back onto the x-axis ways. Keep the assembly as level as possible to prevent any damage to the x-axis linear bearings. Reinstall the x-axis travel stops, the right beam end cover and transfer the coupler from the old Z lead screw to the replacement lead screw.
  - 10) Align the x-axis carriage to the X lead screw nut block and re-install the cap screws. Install the lower Z lead screw compression spring and cup washers and bearing & plate assembly. Do not fully tighten the three (3) cap screws that hold the bearing plate in place at this time.
  - 11) Install the z-motor mounting block and z-motor to the top of the replacement carriage. Align the z-motor coupler to the Z lead screw, insert the four (4) cap screws, push down on the z-motor to compress the lead screw spring. Start threading the cap screws. When the screws are almost tight, manually raise the z-carriage to the top of its travel. This brings the top of the lead screw parallel with the z-axis ways. Finish tightening the z-motor screws in a diagonal pattern. Now, lower the z-carriage to the bottom of its travel and finish tightening the three (3) lower bearing plate cap screws in the same manner.
  - 12) Reattach all cables, brackets, motors and devices removed from the carriage at the start of this procedure. Reattach the main power cord to the a/c outlet and turn the unit on. Repeatedly toggle the Z-Init key until the z-carriage reaches the top of its travel checking for any sync-out of the z-motor or mechanical binding as it rises. If either occur, repeat the instructions for bringing the Z lead screw parallel in step 11 above then recheck.
  - 13) Mount a piece of scrap stock to the table and rout a small test job with multiple depths to check operation before resuming production jobs.

*Contact Gerber Service at 800-828-5406 or 860-644-6971 should any questions or problems arise during this procedure and for important information regarding the return of the old z-axis carriage assembly.*