

TITLE: How to Replace and Calibrate the Carriage on the enVision plotter

Gerber FastFact #: 2022

Supplied by: Technical Hardware Support

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Summary: This document contains instructions on how to replace and calibrate the carriage assembly on enVision plotters.

Replace Carriage

The carriage/tool holder is the mechanism responsible for the tool up and down motion. The carriage connects to a backer plate, which attaches to the Y axis belt. A small motor in the carriage applies downward (Z axis) motion to the tool. The amount of downward pressure, is dependent on the tool force setting.

Note: To verify that the plotter provides the correct force, calibrate the Z axis after a carriage is installed. (This procedures should also be run if the electrical control board is replaced.) (Plotter must be at Rev. F or higher.)

To remove a carriage

1. Turn off power to the plotter.
2. Remove the two screws (2.5 mm) and washers that secure the carriage cover.
3. Remove the carriage cover
4. Disconnect both carriage ribbon cables at the circuit board. Pull the locking tab on each connector forward and slide the ribbon cable out
5. Loosen the bottom two screws (2.5 mm) that attach the carriage to the backer plate and remove the metal strain relief.
6. Remove the two screws (2.5 mm), flat washers, and lock washers that attach the carriage to the top of the backer plate. Lift the carriage to remove it

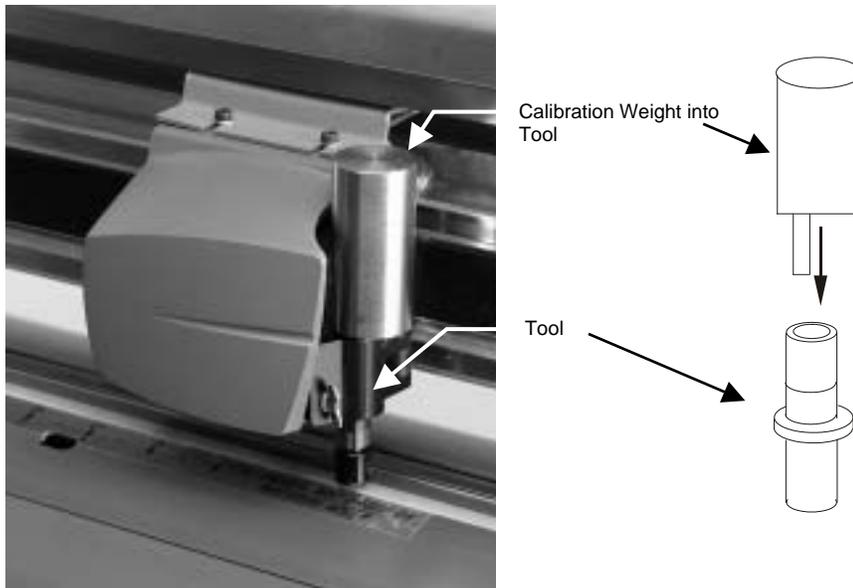
To install a carriage

1. Install the new carriage onto the backer plate.
 - ◆ Fit the ridge on the carriage into the slot of the backer plate.
 - ◆ Slide the slots on the lower part of the carriage over the two screws.
 - ◆ Reinstall the metal strain relief
 - ◆ Make sure the lock washers are next to the screw heads.
 - ◆ Make sure the bottom of the carriage is flush with the bottom of the backer plate.
2. Install the top two screws, flat washers, and lock washers that attach the carriage to the backer plate. Tighten the top and bottom screws.
3. Connect the two ribbon cables from the new carriage to the circuit board.
 - ◆ The 4-wire cable is on left. The 3-wire cable is on the right. Do not twist the cables
 - ◆ Slide the ribbon cable into the connector and snap the locking tab on the connector back in place.
 - ◆ Carefully pull each ribbon cable SLIGHTLY to make sure it is secure.

4. Install the carriage cover. When reinstalling the covers, ensure that the cables are not pinched or damaged by the covers.
5. Insert the screws that secure the cover. Make sure the washers are outside the cover.
6. Carefully tighten the screws.
7. Calibrate the Z axis. (See the next page.)

To calibrate the Z axis (carriage calibration)

1. From the Main Menu, press F3 while holding down the Enter key.
2. Press F2 (Test)
3. Press F2 (Calibrate)
4. Press F3 (Z Cal). The display shows the current Z axis values.
5. Press Enter, then follow the instructions that appear on the display.
6. Remove the blade from a knife tool, and then replace the cap.
7. Install this empty knife tool in the tool holder, and then press Enter.
8. Wait approximately one minute while the carriage performs a series of “no weight” measurements.
9. Press Enter.
10. When the display indicates to load the weight, insert the Gerber calibrated weight in the knife tool (T69380B). Make sure the weight is not touching carriage cover.



11. Press Enter, and then wait approximately one minute while the carriage performs a series of “full weight” measurements.
12. Press Enter when done, then remove the weight and knife tool.