

Fusion3

EDGE 3D Printer

REPAIR:

X/Y MOTOR REPLACEMENT

Revision 7/9/2024

REPLACING X/Y MOTOR

Information on how to replace an X or Y motor on the EDGE.

INTRODUCTION

Occasionally you may encounter a situation that requires the replacement of an X or Y EDGE motor.

SET UP

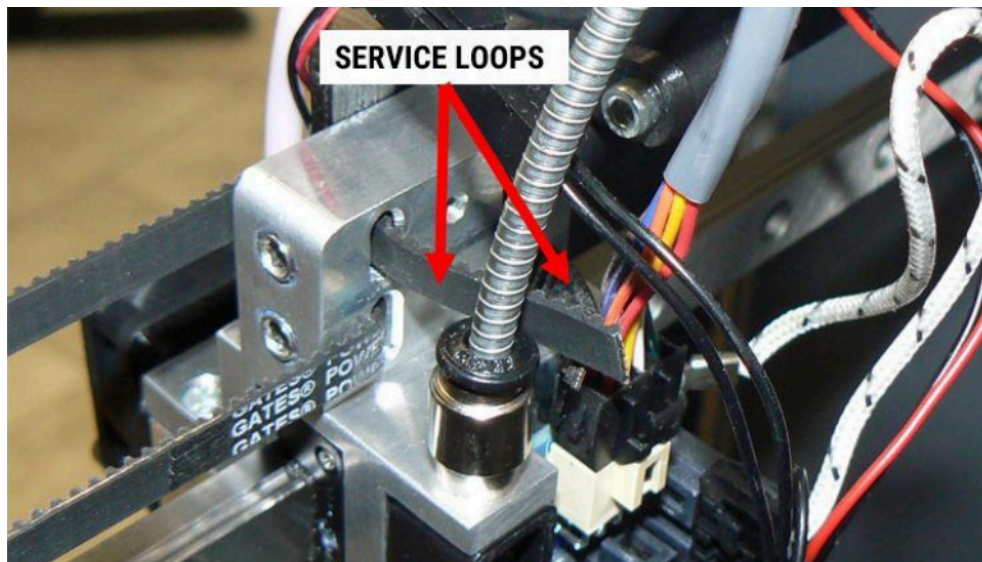
1. Power EDGE off
2. Unplug the power cord
3. Remove the electronics bay service door
4. Take care not to generate static charge while working in EDGE's electronics bay. For example, don't sit in a cloth chair

For more detailed information on this process, see

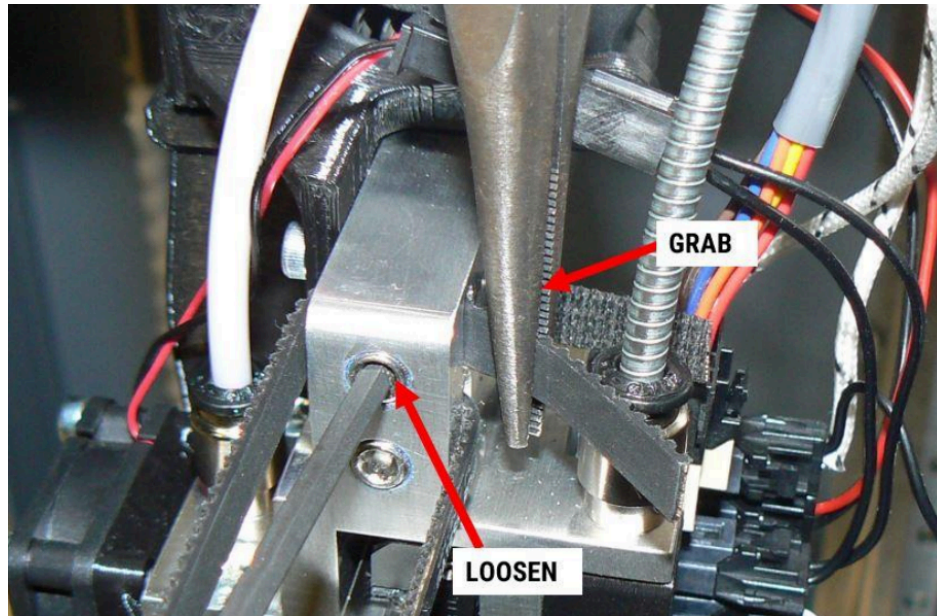
<https://www.fusion3design.com/wp-content/uploads/2022/09/EDGE-MAINTENANCE-GAINING-ACCESS-FOR-MAINTENANCE-AND-REPAIR-5.28.22.pdf>

LOOSEN THE X/Y DRIVE BELT

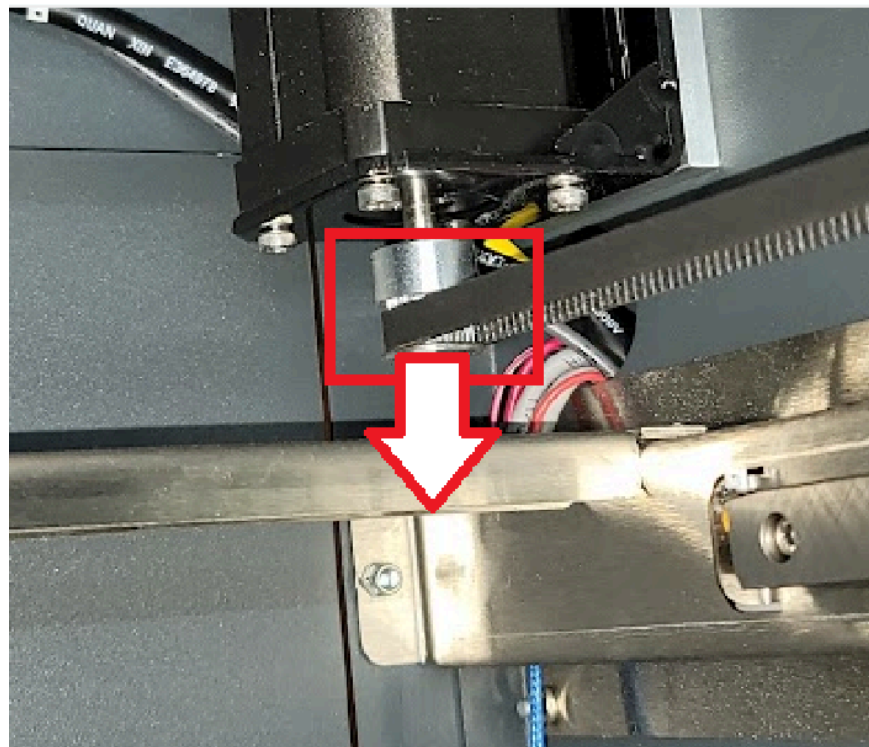
1. Loosen the X or Y axis belt that exits on the back of the print head assembly. The belt will have a 1-2" service loop that is used to adjust tension. Grab this service loop with needle nose pliers or similar.
2. Apply tension to the service loop so that when you loosen the belt set screw the belt doesn't jump and bring the gantry out of square.



3. Loosen the corresponding set screw.



4. Relieve just enough tension on the belt to slip the belt off of the X or Y motor pulley.



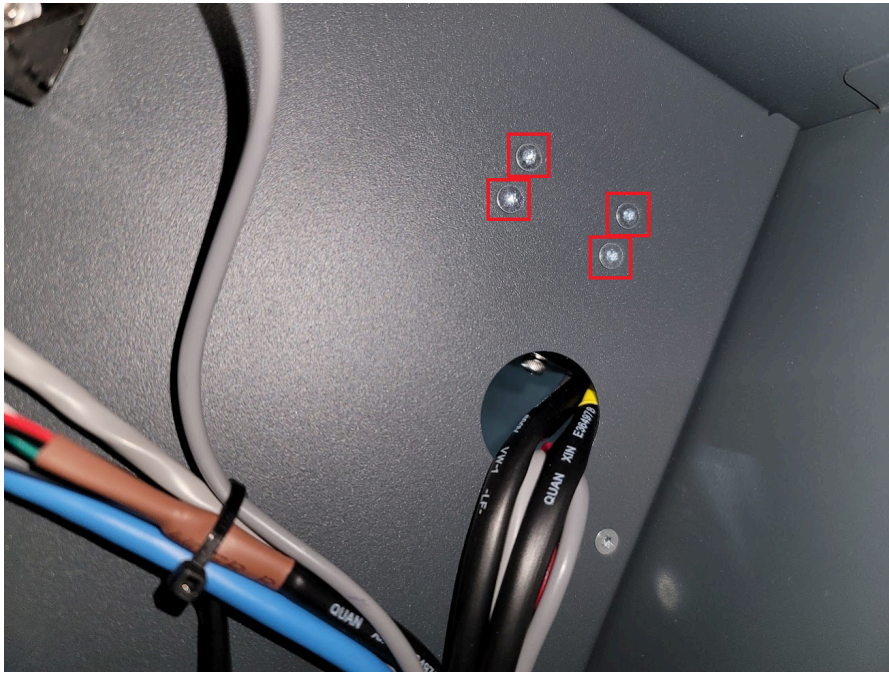
5. Tighten the set screw to keep the belt in place until the new motor is installed.

For more detailed information on this process, see

<https://www.fusion3design.com/wp-content/uploads/2022/12/EDGE-MAINTENANCE-Adjusting-XY-Belts-8.23.22.pdf>

REMOVE THE OLD MOTOR

1. Unscrew the motor plate bolts to detach the motor from the interior wall of the filament bay chamber.



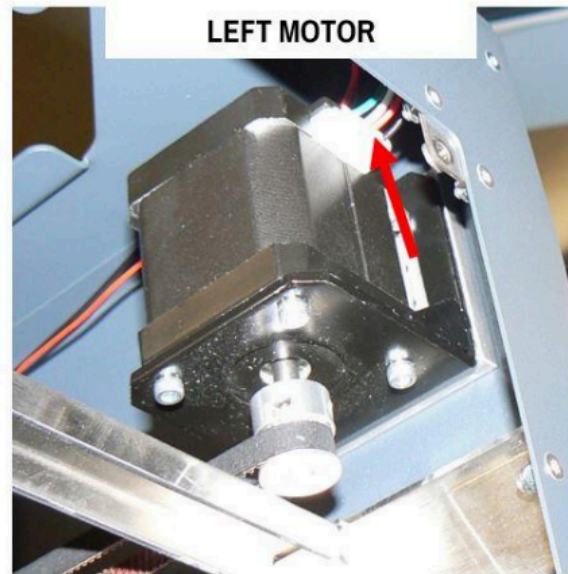
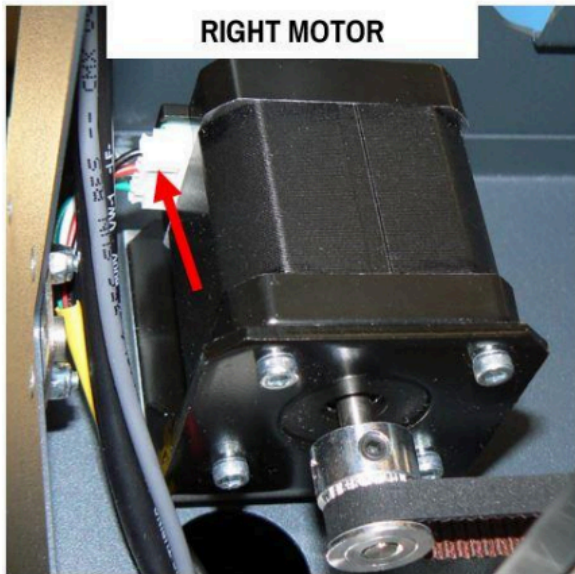
2. Unplug the wiring from the installed motor.
3. Once the plate is detached, loosen the mount screws underneath the motor to release it from its mount.



4. Once the motor is free from the mount, remove the pulley off the motor shaft.

INSTALL THE NEW MOTOR

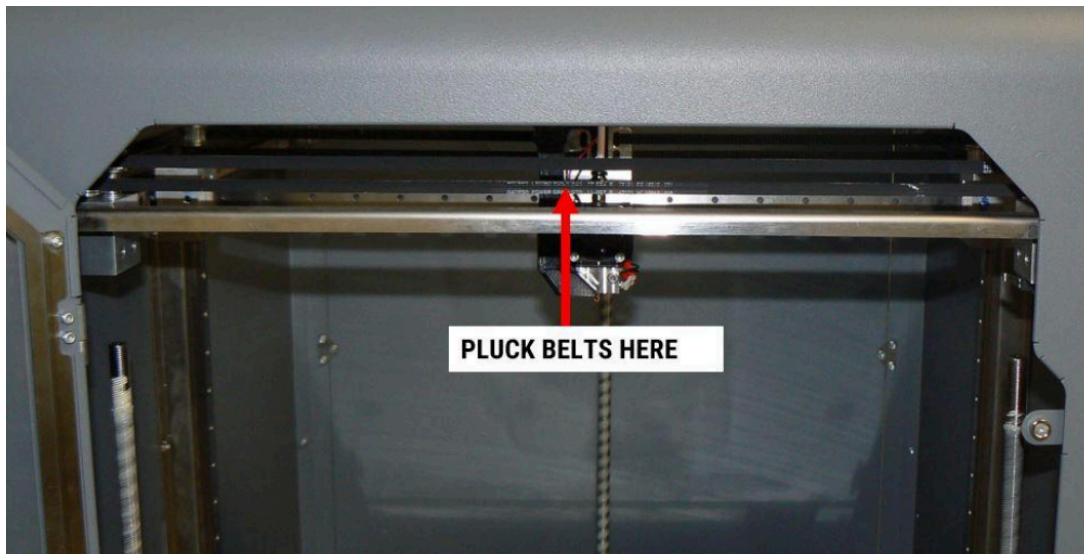
1. Install the previously removed pulley onto the new motor. The pulley should be flush with the top of the motor pin, with one set screw sitting on the flat side of the motor pin.
2. Plug the harness back into the motor.



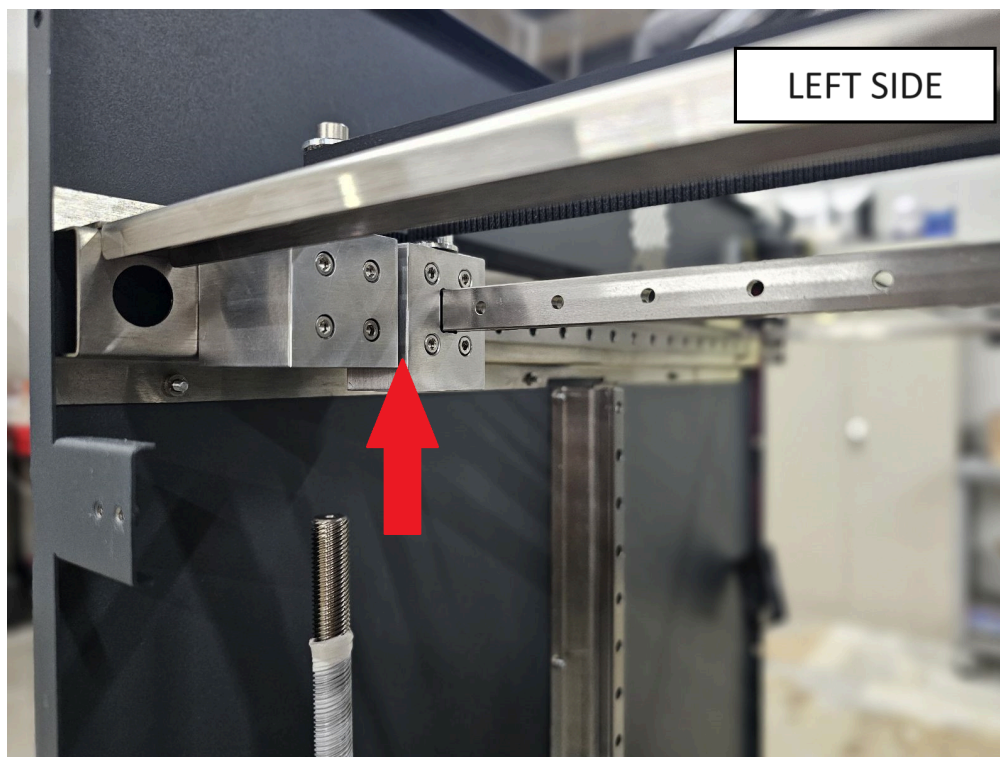
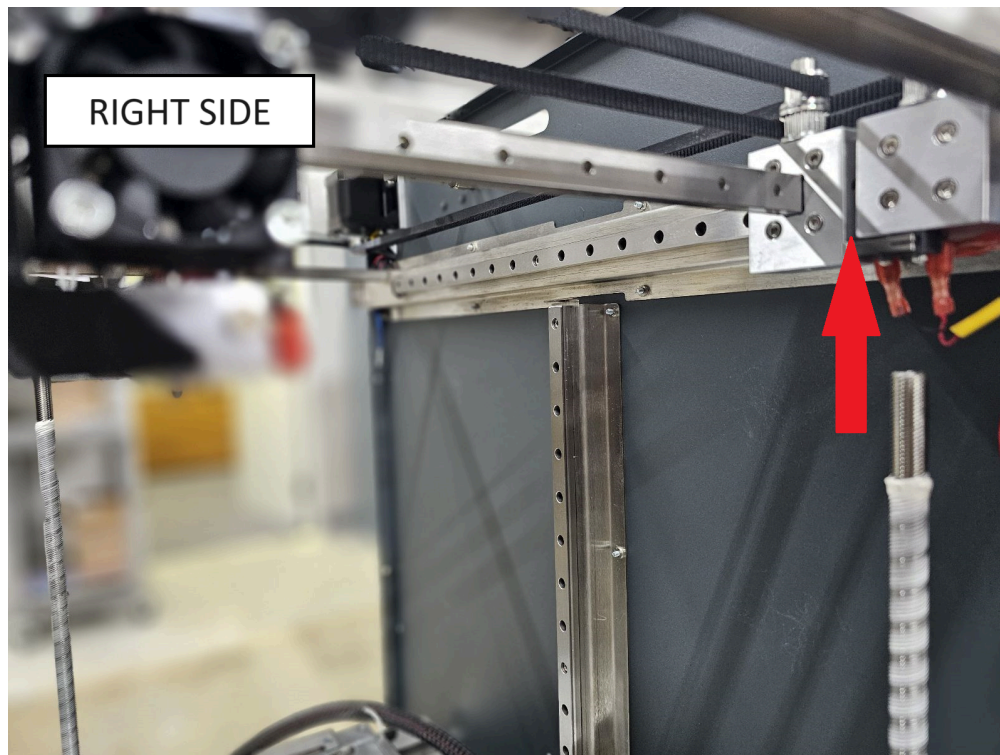
3. Screw the new motor back onto the mount, then reattach the mount and plate back onto the interior wall of the print chamber.
4. Slip the drive belt back onto the pulley, making sure it's centered on the pulley.

TIGHTEN X/Y DRIVE BELT

1. Loosen the set screws and use the belt service loops to regain proper belt tension. The belts should be tight enough that when plucked in the front center spans, they are tight enough to just barely "thrum" like a guitar string.



2. Once proper tension is reached, tighten set screws back into place.
3. Check the gantry square by running the X axis to the front of the machine until it contacts the endstop. Visually check the gap between the X rail end blocks and the stationary idler blocks.



4. Adjusting the square is the same procedure as adjusting belt tension. After every tension adjustment, recheck your square in addition to rechecking the belt tension.
5. Sometimes you will need to reduce tension on a belt instead of only adding tension, in order to bring the gantry into square. This can be helpful if your starting belt tension is already very high and you don't want to add more. As long as the belts don't skip on the motors, this is ok.