**CR-30 NAK 3D/LDO stepper upgrade instructions**

**\*\*\*\*\*\*NOTE\*\*\*\*\*\*\*\***

**Before beginning make note of how belts are routed.. Take pictures if necessary.**

1. Power off and unplug printer.
2. Unplug X & Y axis steppers.
3. Remove old steppers by loosening the 2 screws on bottom of stepper bracket and remove one screw from top of main crossbar.

A picture containing metalware, blue

Description automatically generated

1. Disassemble 1 LDO stepper and set pulley height for top left stepper (as seen from back of printer looking down on hotend, or the one with the short shaft)

![A picture containing indoor, blue

Description automatically generated]()

1. Place pulley on shaft with set screws at the top and there should be 7mm from top of stepper casing to bottom of pulley (as shown below)

![A picture containing sky, person, blue, caliper

Description automatically generated]()

1. Reassemble stepper as shown below.

![A picture containing blue

Description automatically generated]()

1. Disassemble 1 LDO stepper and set pulley height for top right stepper (as seen from back of printer looking down on hotend, or the one with the long shaft)

![A picture containing microscope, blue, device

Description automatically generated]()

1. Place pulley on shaft with set screws at the bottom and there should be 15mm from top of stepper casing to bottom of pulley (as shown below)

![A picture containing caliper, device, blue

Description automatically generated]()

1. Reassemble stepper as shown below.

![A picture containing sky, blue

Description automatically generated]()

1. Install new steppers using provided T-nut and M5 screw, and original long M5 screws.
2. Short shaft aka top left stepper should be installed with t-nut and M5 screw in the top left side slot (as pictured below)

![A picture containing blue

Description automatically generated]()

1. Long shaft aka top right stepper should be installed with t-nut and M5 screw in the bottom right side slot (as pictured below)

![A picture containing microscope, blue

Description automatically generated]()

1. Leave side and bottom screws loose and install top adjustment screw through main frame crossbar.
2. Re-install belts.
3. Use top adjustment screws to tighten belts (try to keep them equally tensioned) Belts are properly tightened when X-axis assembly does not slide down y-axis under its own weight.
4. Tighten all 4 mounting screws.

**Firmware changes**

1. Plug in and power up printer
2. Press scroll wheel, select “Configuration”, “Advanced settings”, “Steps/mm”
3. Select “X Steps/mm:” and change value from 80 to 160
4. Select “Y Steps/mm:” and change value from 80 to 160
5. Return to “Configuration” menu and select “Store Settings”
6. Enjoy your new LDO .9 low temp supported shaft stepper kit.