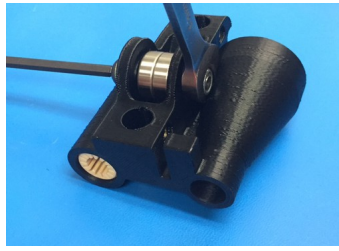
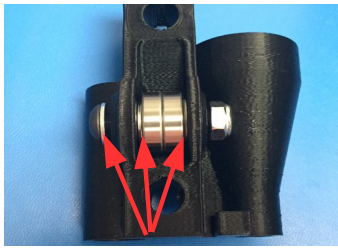


LulzBot TAZ 6.0 Z axis assembly		Gather Tools and parts
Step Pictures		Parts: 1x- Ninjaflex damper 2x- X End Left with 608 bearing and threaded inserts installed 1x- X End Right with 608 bearing and threaded inserts installed 1x- Z Lower Left with 608 bearing installed and threaded inserts installed 1x- Z Lower Right with 608 bearing installed and threaded inserts installed 2x- Lead screw 2x- 10mm OD, 500mm long smooth rod 2x- 12mm OD, 515mm long smooth rod 2x- Z nut 1x- 6mm pulley with M3 set screw 1x- Coupling GSASL16-5-5-NAB with 4x set screws 2x- M3 set screws 7x- M5 T-Nut 18x- M5x10 BHCS 18x- M5 black washer 4x- M5x10 SHCS 2x- M3x6 BHCS 2x- M3 black washer 4x- M3x8 BHCS 4x- M3 Black washer 4x- M3x10 BHCS 4x- M3 Black washer 2x- M2.5x6 SHCS 2x- M2.5 washer 1x- 6mm synchronous belt 1x- SPDT Roll switch 1x- NEMA42 17 step motor 4x- 3/4" wide, 1/4" high rubber bumper Loctite 220
Required Tools	13mm Open End Wrench Ratchet driver with 5mm Allen bit 4mm Allen driver 1.5mm Allen driver 2mm Allen driver 3mm Allen driver 1.3mm Allen driver	

LulzBot TAZ 6.0 Z axis assembly		Z Axis Left
Step Pictures		1x- Z nut 1x- Ninjaflex damper 1x- X End Left with 608 bearing and threaded inserts installed 1x- Lead screw 2x- M5x10 SHCS 1x- 10mm OD, 500mm long smooth rod 1x- Z Left with 608 bearing installed and threaded inserts installed 1x- SPDT Roll switch 2x- M2.5x6 SHCS 2x- M2.5 washer 1x- NEMA42 17 step motor 1x- 6mm pulley with M3 set screws 4x- M3x10 BHCS 4x- M3 Black washer Thread the Z nut Flange side down onto the Z axis Lead screw about 120mm from the top end of the screw. Slide the X End Left (motor side) assembly onto the lead screw along with a Ninja flex gasket. Then use the M5X10 SHCS to secure the motor assembly to the Z nut. Tighten finger tight. Insert the 500mm guide rod into the left Z motor mount so that it protrudes from the motor flange side about 37mm. Install but do not secure the M2 set screw Slide the X End Left assembly onto the 500mm guide rod so that the lead screw shoulder slides into the support bearing in the Z motor mount. Install two (2) switches, noting proper switch orientation, to the X End Right with two (2) M2.5x6 SHCS and two (2) M2.5 washers; tighten to finger tight Install a pulley onto the shaft of a motor; align one of the two set screws with the flat section of the motor shaft; set the height of the coupler to 7mm; tighten the two (2) set screws to finger tight; Attach the X End Left (Motor side) motor to the mount using four (4) M3x8 BHCS and four (4) M3 Black washers; tightened to hand tight
		
Z Nut threaded onto the Lead Screw	X End Right installed and attached to the Z Nut	
		
Z Motor Mount installed, 500mm guide rod installed	Z carriage installed onto the motor mount	
		
Install Switches onto the X Carriage left (top switch)	Install Switches onto the X Carriage left (Bottom switch)	
		
Install Pulley onto Motor	Install motor onto X Carriage Left, note White connector location	
		
Completed X End Left assembly		

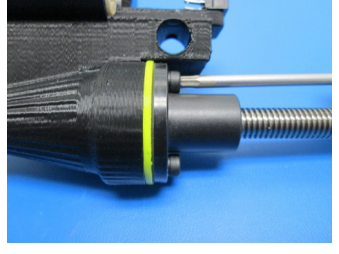
LulzBot TAZ 6.0 Z axis assembly

Step Pictures



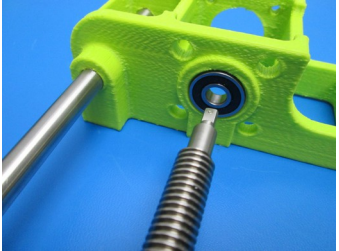
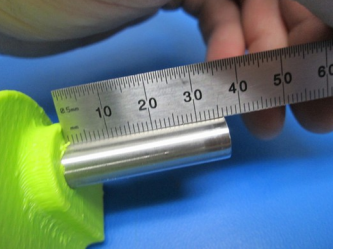
Install bearings, washers, M5 BHCS, M5 Nyloc on X End Right

Secure bearings with M5 Nyloc nut (locate in recesses area)



Install Z nut onto lead screw

Secure Z nut onto the X End Right and Ninja flex washer



X End Right mount installed, 500mm guide rod installed

X End Right installed onto the motor mount

Z Axis Right

- 1x- Z nut
- 1x- Ninja flex damper
- 1x- X End Right
- 1x- Lead screw
- 2x- M5x10 SHCS
- 1x- 10mm OD, 500mm long smooth rod
- 3x- M5 SS washer
- 1x- M5x25 BHCS
- 1x- M5 Nyloc nut
- 2x- 608 precision bearing

Place two bearings against each other, position the bearings in between the two flanges of the X End Right; place a M5 washer between the bearing stack and each of the flanges; Place a 5M washer under the M5 BHCS, run the M5 BHCS through the flanges, washers, and bearings; Install the M5 Nyloc and secure. 1-2 threads of the M5 BHCS should extend beyond the end of the Nyloc nut, the bearings should spin but not too freely

Thread the Z nut Flange side down onto the Z axis Lead screw about 120mm from the top end of the screw.

Slide the X axis idler side of the Z carriage assembly onto the screw along with a Ninja flex gasket. Then use the M5X10 SHCS to secure the motor assembly to the Z nut. Tighten finger tight.

Insert the 500mm guide rod into the right motor mount so that it protrudes from the motor flange side about 37mm. Tighten the set screw finger tight.

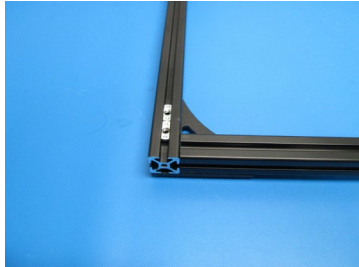
Slide the X End Right assembly onto the 500mm guide rod so that the lead screw shoulder slides into the support bearing in the Z motor mount.

LulzBot TAZ 6.0 Z axis assembly

Step Pictures



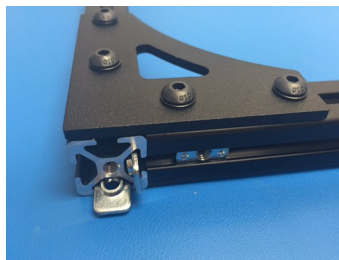
Position the back frame assembly, threaded extrusion toward you



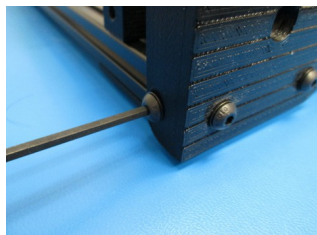
Position T-Nuts near the ends of the extrusions



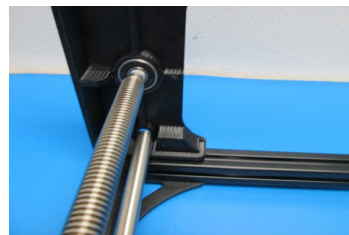
Two T nuts each added to the bottom and inside slots of the extrusion (left and Right)



Two T nuts each added to the bottom and inside slots of the extrusion (left and Right)



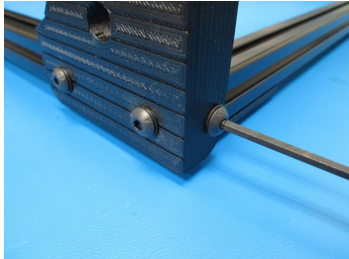
Z top right installed



Install the X end Right assembly to the Z top



Install the X end left assembly to the Z top



Z top Left installed

Z Axis attachment to the Back frame assembly

- 10x- M5x10 BHCS
- 10x- M5 black washer
- 4x- M5 T-Nut

Place the **Front** frame assembly gussets down with the frame top side (top side has the threads in the extrusion center holes) oriented toward you


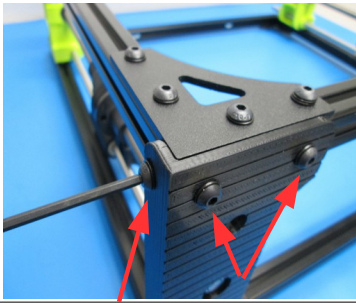
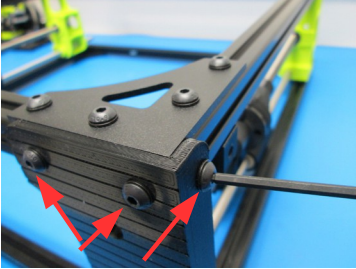

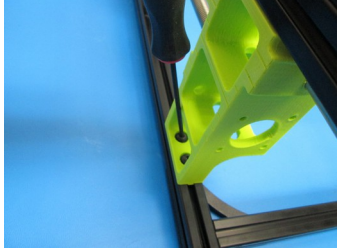
Install the Z top drive **Left** onto to the frame side near your right; using one (1) M5X10 BHCS and one (1) M5 Black washer for each side. Snug the screws down for now.

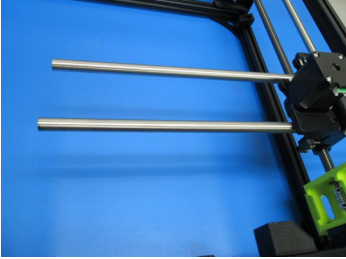
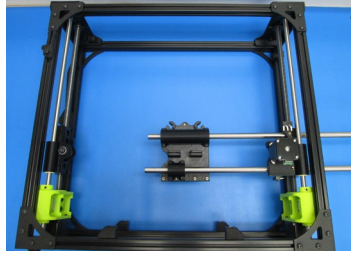
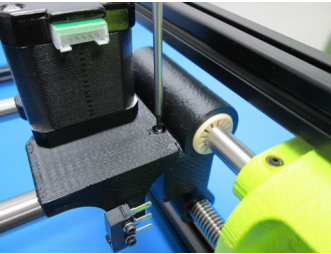

Install the Z top drive **Right** onto the frame side near your left using one (1) M5X10 BHCS and one (1) M5 Black washer for each side. Snug the screws down for now.

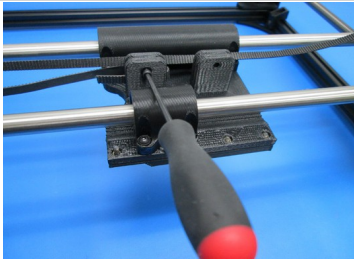
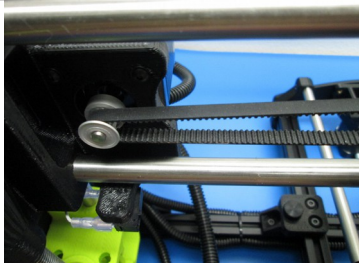
Rotate the frame 180 degrees; Insert two (2) T-nuts to each the bottom slot and inside slot in the top side of each of the **Left and Right** extrusions

Install the X End Right assembly on the left side of the frame; use two (2) M5X10 BHCS and two (2) M5 Black washer to secure the Z motor mount in place.

Install the X End Left assembly on the right side of the frame; Use two (2) M5X10 BHCS and two (2) M5 Black washers to secure the Z motor mount in place.

LulzBot TAZ 6.0 Z axis assembly		Z Axis attachment to the Front frame assembly
Step Pictures		<p>8x- M5x10 BHCS 8x- M5 black washer 3x- M5 T-Nut</p> <p>Rotate the work in progress 180 degrees; place the Front frame assembly on top of the Z tops and motor mounts. Make sure the threaded side of the frame is facing toward you.</p> <p>Slide one (1) T-nut into each side of the front frame assembly top extrusions (bottom slot shown) ; <u>Make sure the third T-nut is captured between the top drive and the Z motor mount.</u></p> <p>Secure the frame to the Z top drive using three (3) M5X10 BHCS and three (3) M5 Black washers</p> <p>Carefully flip the frame assembly onto its front, and rotate 180 degrees and install one (1) T-nut in the top side of the X end Left extrusion; Align T-Nuts with the mount holes in the motor mount.</p> <p>Use two (2) M5X10 BHCS and two (2) M5 Black washers <u>per side</u> with the T-nuts to secure the Z motor mount in place.</p> <p>Carefully take the frame to a flat surface and use a square to ensure the frame is perpendicular to the flat surface.</p>
		
Install additional T-Nuts on the bottom slot	Secure frame to the Z top Left	
		
Secure frame to the Z top Right	Secure Z lower Left to the back frame	
		
Secure Z lower Right to the back frame		

LulzBot TAZ 6.0 Z axis assembly		X Carriage attachment
Step Pictures		<p>2x- 12mm OD, 515mm long smooth rod 2x- M3 set screws</p> <p>Carefully take the frame to a flat surface and use a square to ensure the frame is perpendicular to the flat surface.</p> <p>Slide two 12mmX 515mm smooth rods from the X End Left halfway into the frame assembly through the X End Left assembly.</p> <p>Slide the X carriage assembly onto the guide rails, and slide the guide rods into the motor side carriage.</p> <p>Make sure to flush up the smooth rods on the X End Right side.</p> <p>Using two (2) M3 set screw (one each on the Right End and Left End) tighten the guide rod set screws on both the X End Left and Right to finger tight.</p>
		
Install smooth rods partially installed in X End Left	X carriage installed on smooth rods	
		
Secure X End Right set screw	Screw X End Left set screw	

LulzBot TAZ 6.0 Z axis assembly		
Step Pictures		X Carriage belt attachment
		<p>1x- 6mm synchronous belt 2x- M3x6 BHCS 2x- M3 black washer</p> <p>Snip one location on the drive belt to create an approximately 1m long non-continuous drive belt; Set one end of the drive belt with the smooth side oriented toward the single bearing holder into the belt clamp closest to the single bearing holder; secure the belt in the clamp with one (1) M3x6 BHCS and one (1) M3 black washer, tightened to hand tight</p> <p>Without twisting the belt route the belt around the X axis pulley so the belt teeth engage the pulley teeth then around the Z axis idler</p>
Install belt, teeth toward	Route X axis drive belt around the pulley	<p>Set the remaining end of the drive belt into the second belt clamp; align the belt with the step feature in the clamp; Tension the belt to approximately 23 to 27 Newtons; secure the belt in the clamp with one (1) M3x6 BHCS and one (1) M3 black washer, tightened to hand tight; Trim excess belt back to no more than 10mm from the belt clamps</p>
		
Route X axis drive belt around the Idler	Set free end of the belt into the clamp, tension the belt, secure the clamp	
LulzBot TAZ 6.0 Z axis assembly		
Step Pictures		Z Motor and Frame foot attachments
		<p>4x- 3/4" wide, 1/4" high rubber bumper 1x- Coupling GSASL16-5-5-NAB with 4x set screws 4x- M3x8 BHCS 4x- M3 Black washer Loctite 220 4x 3/4"x3/4"x1/4" adhesive backed rubber feet.</p> <p>Clean all oils and debris that might be present from the two bottom extrusions; install one (1) rubber foot pad at the end of each bottom extrusion by pressing and holding the foot pad in place (with adhesive protector removed) against the extrusion for at least 7 seconds.</p> <p>Stand the assembly up so that it is standing on the rubber feet.</p>
Install rubber foot pads on bottom extrusion ends	Install and set coupler height for Left and Right Z assemblies	<p>Install a coupler onto the shaft of a motor; align one of the two lower set screws with the flat section of the motor shaft; set the height of the coupler to 16mm tighten each of the two (2) lower set screws to finger tight. Repeat this for a second motor- together they are the Z Left and Z Right motors</p> <p>Install the motor/ coupling assembly onto the end of the drive rods (left and right sides) making sure to align the motors so the white motor connectors are oriented toward each other.</p> <p>Secure each motor to its mount with four (4) M3x8 BHCS and four (4) M3 Black washers, tighten to hand tight</p> <p>Secure the coupler to the drive rod shaft; align one of the two lower set screws with the flat section of the drive rod shaft; tighten each of the two (2) upper set screws to finger tight. Repeat this for a second motor/ drive shaft connection</p> <p>Apply Loctite 220 to each of the coupler set screws, ensure no residue leaks onto the coupler, clean away any excess material immediately with a clean dry cloth.</p>
		
Secure Motors to the Left and Right mounts	Install coupling onto the end of the drive rods (left and right)	
LulzBot TAZ 6.0 Z axis assembly		