

# Wilson II X-axis assembly notes

Step by step notes	Parts needed:																																																						
<p>1. insert the linear bearings into the X ends and X carriage</p> <p>2. Attach the lead screw nuts to each x end using two M3 x 14mm screws and nuts on each.</p> <p>3. Assemble the 624 bearing with the printed belt guides and the X tensioner (or use a preassembled idler pulley with the alternate x tensioner) using a M4x20mm screw and hex nut. Insert a M3 nut into the X tensioner and thread M3x30mm screw in just until through nut. Install the X tensioner in the X idler end, using a M4 x 20mm screw to secure the tensioner.</p> <p>4. Wire each endstop (if not prewired). Z endstop will need about 70cm of wire, the X axis only needs about half that.</p> <p>5. attach one endstop switch to the X motor end using a miniature zip tie (or two M2 screws and nuts). Secure with a zip tie through the slot provided on the X motor end.</p> <p>6. Attach one endstop to the Z pinion using a miniaturej zip tie. Secure wires using another zip tie through the small loop provided on the Z pinion to prevent strain on the wire.</p> <p>7. Slide the Z rack through the slot on the bottom of the X carriage, align the Z pinion, and secure pinion using a M3x20mm screw and hex nut.</p> <p>8. Attach the extension springs to the Z pinion. On each side of the X carriage, attach an extension spring with a M3x10mm screw into the holes provided. Tighten M3x10mm screws just until bottomed out. Thread a M3x40mm screw through one extension spring, then through the Z pinion, and attach the other extension spring to the other side of the M3x40mm screw. Attach a M3 locknut and tighten just until the screw is through the locknut.</p> <p>9. Install GT2 pulley onto the stepper motor and attach the stepper motor to the X motor end using three M3x14mm screws.</p> <p>10. Slide each 10mm smooth rod into one of the X ends, then slide X carriage onto rods, followed by the other X end.</p> <p>Do not attach the timing belt yet (wait until you've mounted the X axis to the frame).</p>	<table border="1"> <thead> <tr> <th data-bbox="932 254 1276 306">Description</th> <th data-bbox="1276 254 1442 306">Quantity</th> </tr> </thead> <tbody> <tr><td>X Idler end</td><td>1</td></tr> <tr><td>X Motor end</td><td>1</td></tr> <tr><td>X tensioner</td><td>1</td></tr> <tr><td>X Carriage</td><td>1</td></tr> <tr><td>Z Rack</td><td>1</td></tr> <tr><td>Z Pinion</td><td>1</td></tr> <tr><td>624 bearing belt guide (2 pieces)</td><td>1</td></tr> <tr><td>NEMA17 stepper motor</td><td>1</td></tr> <tr><td>GT2 timing pulley</td><td>1</td></tr> <tr><td>624 bearing</td><td>1</td></tr> <tr><td>Lead screw nut</td><td>2</td></tr> <tr><td>Endstop switch</td><td>2</td></tr> <tr><td>LM10UU linear bearing</td><td>8</td></tr> <tr><td>370mm 10mm smooth rod</td><td>2</td></tr> <tr><td>Miniature nylon zip ties (2mm width)</td><td>6</td></tr> <tr><td>M3 x 14mm screw</td><td>7</td></tr> <tr><td>M3 x 40mm screw</td><td>1</td></tr> <tr><td>M3 x 30mm screw</td><td>1</td></tr> <tr><td>M3 x 20mm screw</td><td>1</td></tr> <tr><td>M3 x 10mm screw</td><td>2</td></tr> <tr><td>M4 x 20mm screw</td><td>2</td></tr> <tr><td>M3 nex nut</td><td>5</td></tr> <tr><td>M3 locknut</td><td>1</td></tr> <tr><td>M4 locknut</td><td>1</td></tr> <tr><td>M4 hex nut</td><td>1</td></tr> <tr><td>0.625" extension spring</td><td>2</td></tr> </tbody> </table> <p>Tools needed Phillips screwdriver Allen keys Plier</p>	Description	Quantity	X Idler end	1	X Motor end	1	X tensioner	1	X Carriage	1	Z Rack	1	Z Pinion	1	624 bearing belt guide (2 pieces)	1	NEMA17 stepper motor	1	GT2 timing pulley	1	624 bearing	1	Lead screw nut	2	Endstop switch	2	LM10UU linear bearing	8	370mm 10mm smooth rod	2	Miniature nylon zip ties (2mm width)	6	M3 x 14mm screw	7	M3 x 40mm screw	1	M3 x 30mm screw	1	M3 x 20mm screw	1	M3 x 10mm screw	2	M4 x 20mm screw	2	M3 nex nut	5	M3 locknut	1	M4 locknut	1	M4 hex nut	1	0.625" extension spring	2
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