

railcore

J) X/Y Steppers and Idlers

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TOOLS:

- [Set of Allen Keys](#) (1)



PARTS:

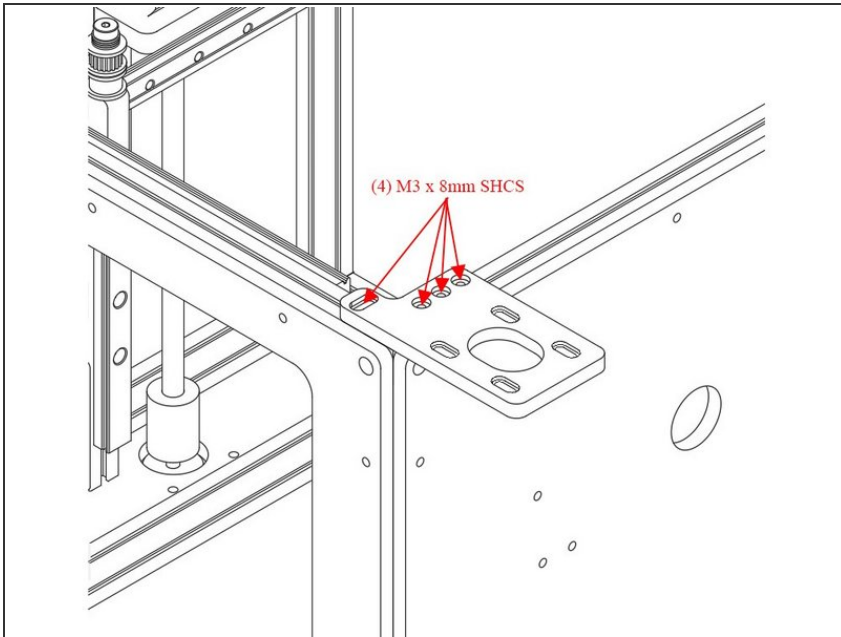
- [M3 x 8mm Button Head Bolt](#) (24)
- [16t Pulley](#) (2)
- [Nema17 Stepper Motor \(0.9 Degrees\)](#) (2)
- [Front Motor Mount](#) (1)
- [Rear Motor Mount](#) (1)
- [25mm Shoulder Bolt](#) (2)
- [15mm Shoulder Bolt](#) (2)
- [Front Idler Mount](#) (1)
- [Back Idler Mount](#) (1)
- [M5 Washer](#) (10)
- [5mm Shim](#) (12)
- [Printed Idler Spacer](#) (2)
- [2GT 20T x 5mm Bore Toothed Idler](#) (4)

Step 1 — J) X/Y Steppers and Idlers



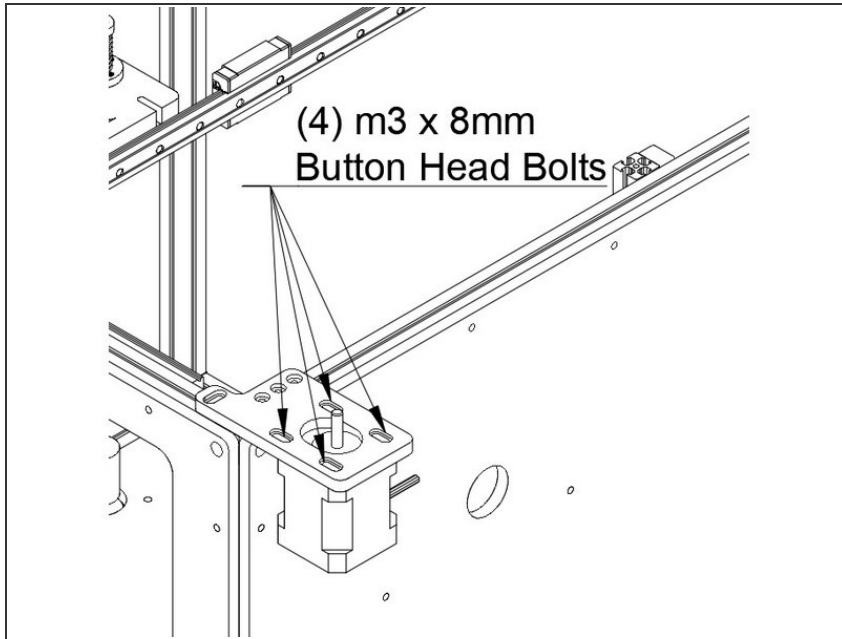
- Newer Filastruder kits use Socket Cap Head Screws, use them in place of all button head screws in this section.

Step 2 — Front Stepper Mount



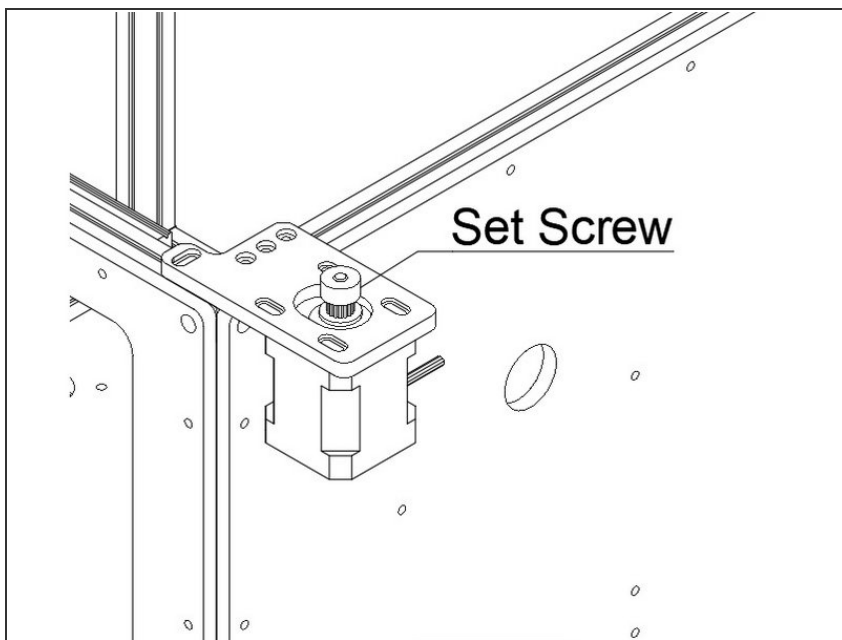
- Attach the front stepper mount to the top of the frame using (4) m3 x 8mm button head bolts.
- ⓘ Don't overtighten them - you'll need to be able to adjust the position of the idler mount to align the belts later.

Step 3 — Install Front Stepper



- Attach one of the 0.9 degree NEMA 17 steppers to the front idler mount using (4) m3 x 8mm Button Head Bolts.
- The wiring connector should point towards the rear of the machine.

Step 4 — Install Front Pulley



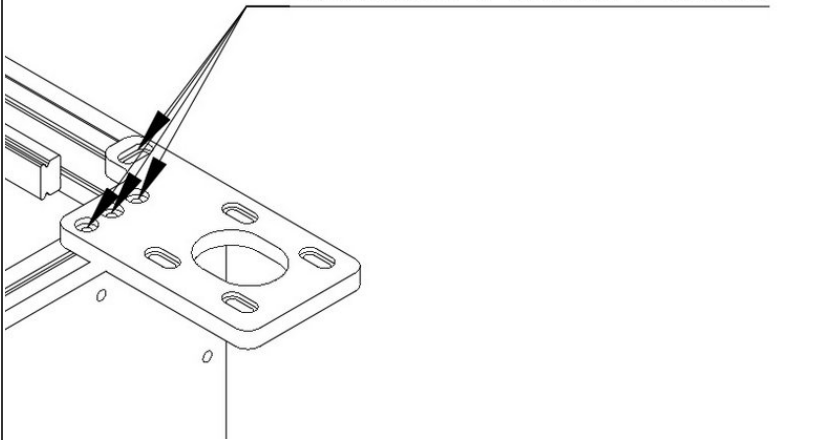
- Install one of the 16t pulleys onto the stepper shaft with the teeth facing down. There are two set screws, be

sure one of them is against the flat of the stepper shaft.

- ⓘ Don't overtighten the set screws, you'll need to adjust the pulley height to align the belt later

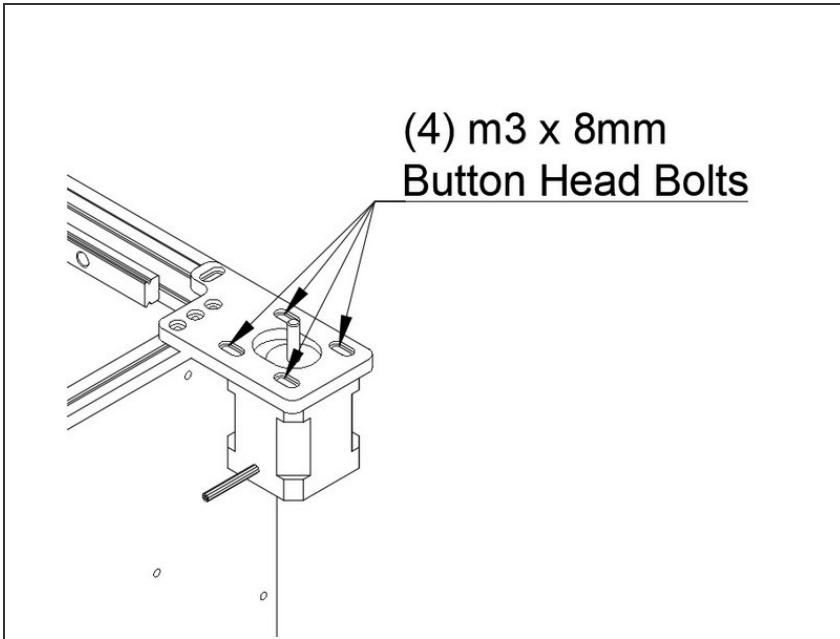
Step 5 — Rear Stepper Mount

(4) m3 x 8mm
Button Head Bolts



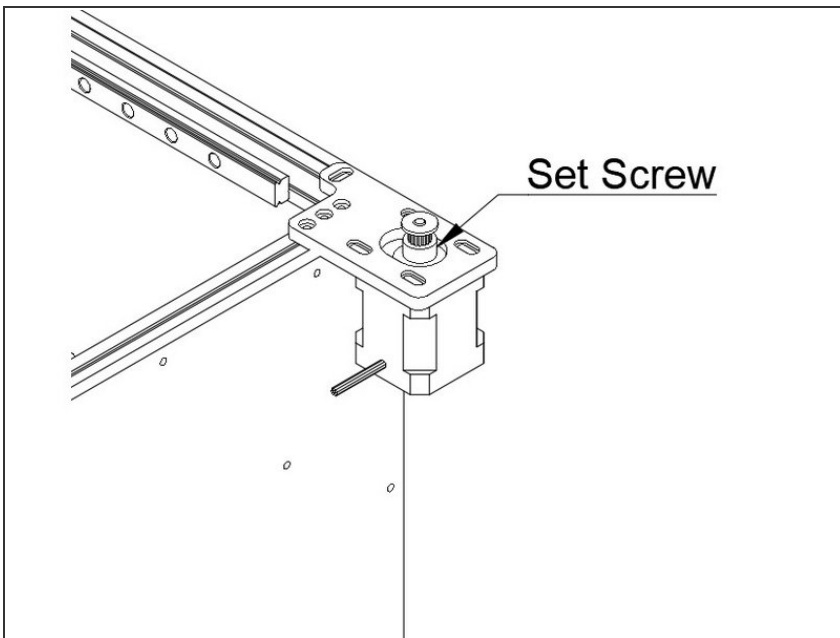
- Attach the rear stepper mount to the top of the frame using (4) m3 x 8mm button head bolts.
- ⓘ Don't overtighten them - you'll need to be able to adjust the position of the idler mount to align the belts later.

Step 6 — Install Rear Stepper



- Attach one of the 0.9 degree NEMA 17 steppers to the front idler mount using (4) m3 x 8mm Button Head Bolts.

Step 7 — Install Rear Pulley

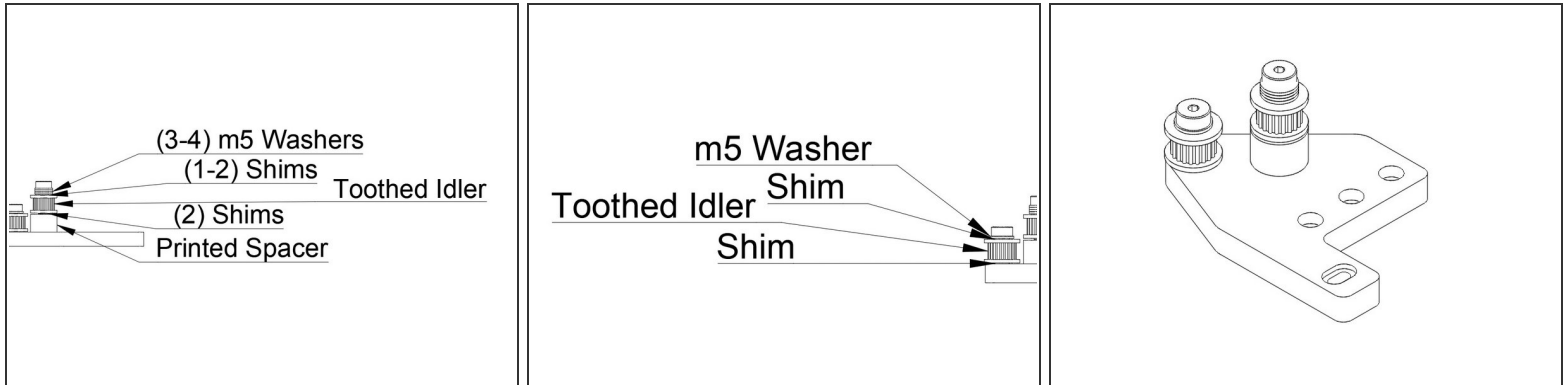


- Install one of the 16t pulleys onto the stepper shaft with the teeth facing up. There are two set screws, be

sure one of them is against the flat of the stepper shaft.

- ❗ Don't overtighten the set screws, you'll need to adjust the pulley height to align the belt later

Step 8 — Install Idlers on Front Idler Mount (Diagrams)



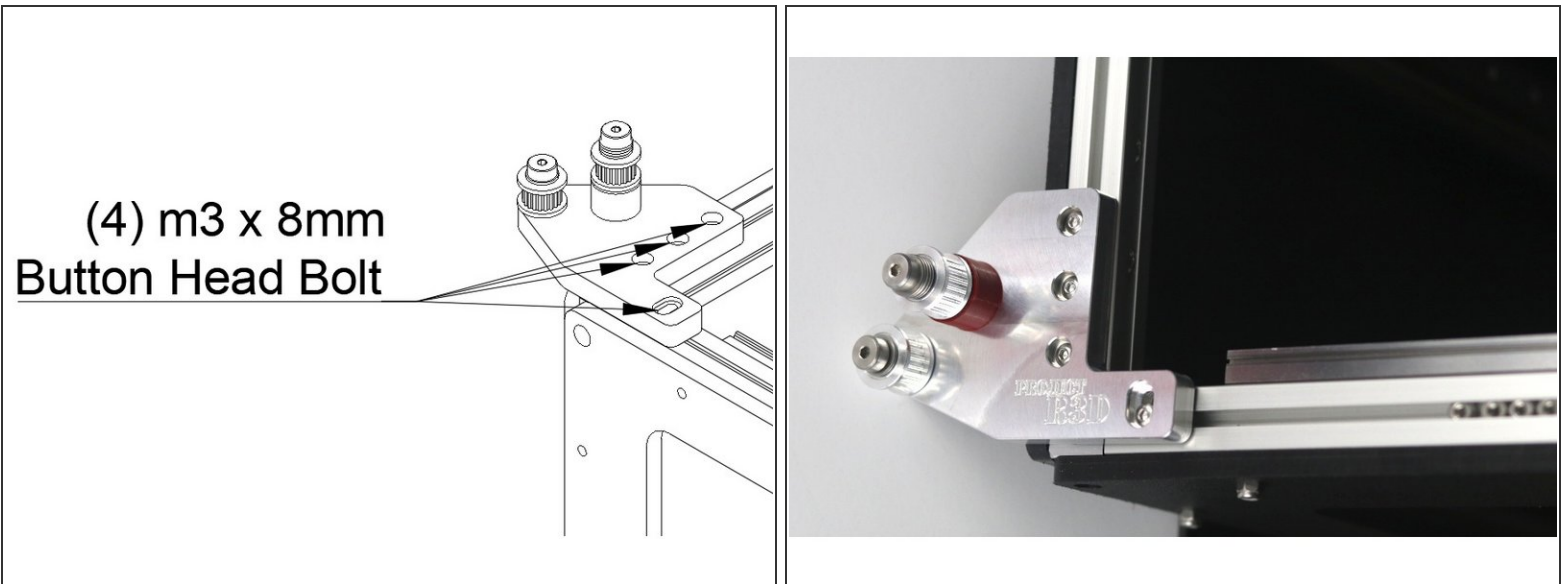
- Building the idler stacks is very similar to how the stacks were built for the Y carriage stacks.
- ❗ There are photos to accompany this step in the next step.
- For the front idler, the stack for the outside bolt is the short stack. Turn a 12mm shoulder bolt upside down and install (1) M5 washer, then (1) M5 shim. Next add the 20T idler, then lastly (1) M5 shim.
- ❗ You want to be sure the total stack is just slightly below the shoulder on the shoulder bolt. If there is room for another shim, take the last shim and pulley off, and put the extra shim on before the pulley.
- Install the shorter idler stack in the outside hole on the idler mount.
- For the front idler, the stack for the inside bolt is the tall stack. Turn a bolt upside down and install (3) M5 washers, then (1) M5 shim. Next add the 20T idler, then lastly (1) M5 shim.
- ❗ You want to be sure the total stack is just slightly below the shoulder on the shoulder bolt. If there is room for another shim or washer, take the last shim and pulley off, and put the extra shim on before the pulley. If you can fit an extra washer, be sure to put it on before the first shim.
- Install the taller idler stack in the inside hole on the idler mount.

Step 9 — Install Idlers on Front Idler Mount (Pictures)



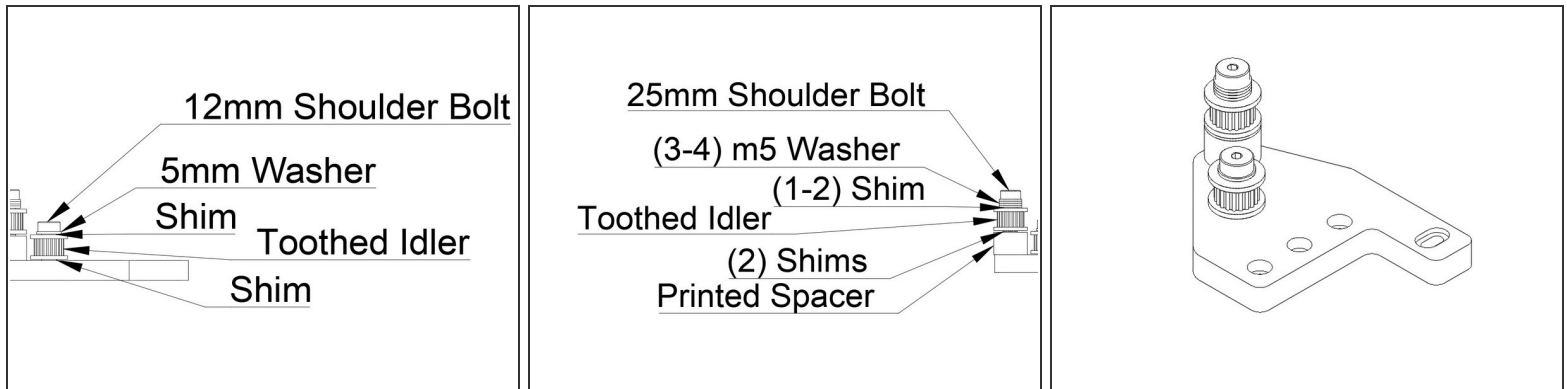
- These photos can be used to validate the correct installation of the idler stacks on the front idler mount.

Step 10 — Install Front Idler Mount



- Attach the front idler mount to the left side of the top of the frame using (4) m3 x 8mm button head bolts. Don't overtighten them - you'll need to be able to adjust the position of the idler mount to align the belts later.

Step 11 — Install Idlers on Rear Idler Mount (Diagrams)



- There are photos to accompany this step in the next step.
- For the rear idler, the stack for the inside bolt is the short stack. Turn a 12mm shoulder bolt upside down and install (1) M5 washer, then (1) M5 shim. Next add the 20T idler, then lastly (1) M5 shim.
- You want to be sure the total stack is just slightly below the shoulder on the shoulder bolt. If there is room for another shim, take the last shim and pulley off, and put the extra shim on before the pulley.
- Install the shorter idler stack in the inside hole on the idler mount.
- For the rear idler, the stack for the inside bolt is the tall stack. Turn a bolt upside down and install (3) M5 washers, then (1) M5 shim. Next add the 20T idler, then lastly (1) M5 shim.
- You want to be sure the total stack is just slightly below the shoulder on the shoulder bolt. If there is room for another shim or washer, take the last shim and pulley off, and put the extra shim on before the pulley. If you can fit an extra washer, be sure to put it on before the first shim.
- Install the taller idler stack in the outside hole on the idler mount.

- These photos can be used to validate the correct installation of the idler stacks on the front idler mount.

(4) m3 x 8mm
Button Head Bolt

- Attach the rear idler mount to the rear left top of the frame using (4) m3 x 8mm button head bolts. Don't overtighten them - you'll need to be able to adjust the position of the idler mount to align the belts later.