

Bill of materials (BOM)

Belt Driven Ender 3

(and all other V-Slot i3 Printer)

Made by

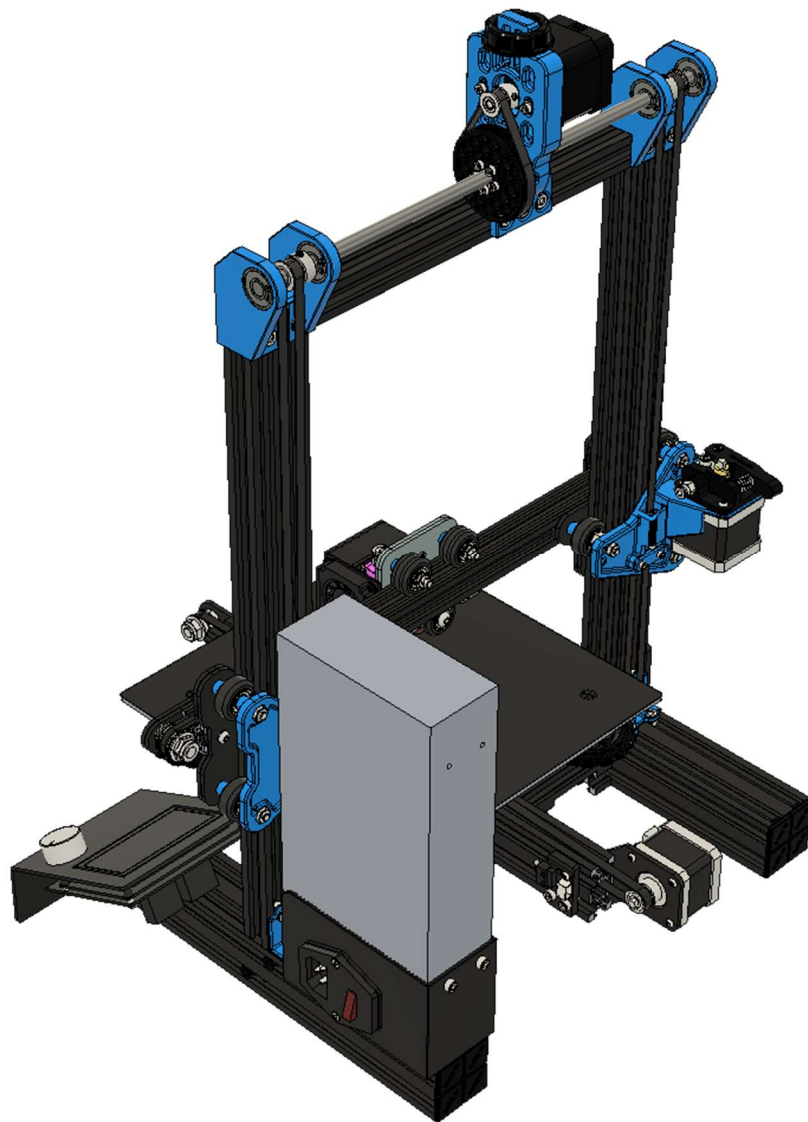
KevinAkaSam

Version 1

Unrotated

+

V-Rollers



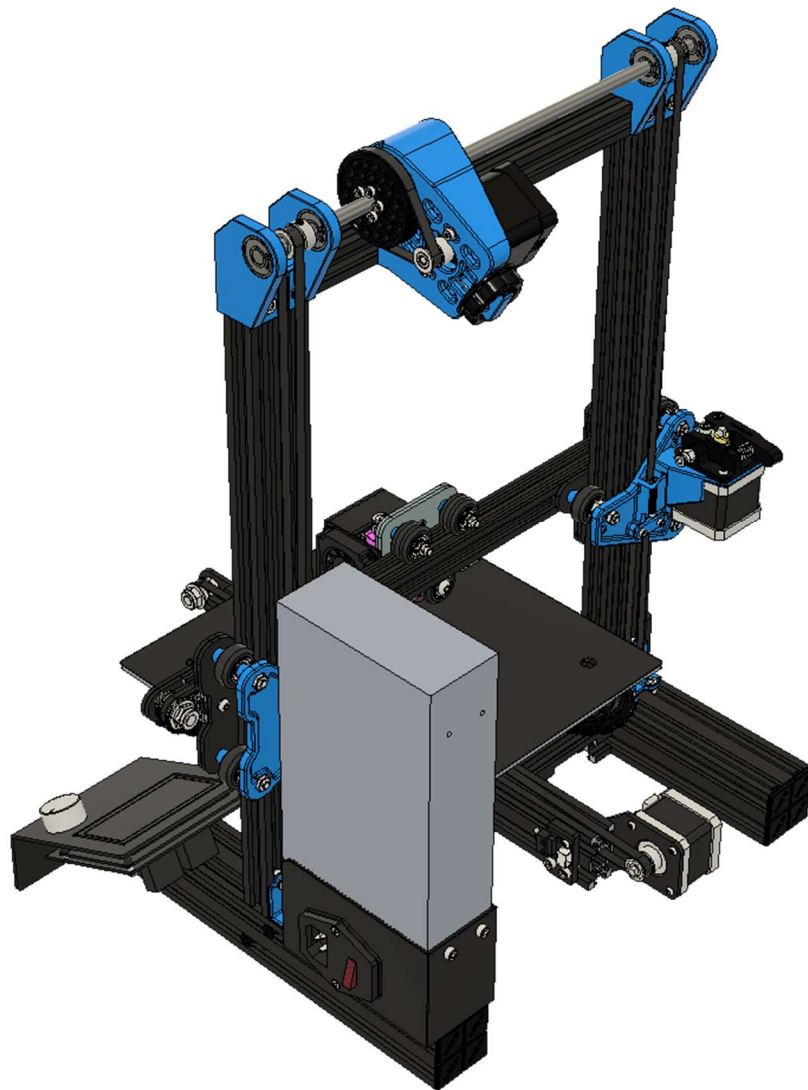
| Version: Unrotated + V-Rollers | | | | | | |
|--------------------------------|------------------------|----------|---------------------|---|--------------------------------|--|
| Category | Component | Quantity | Reuse from Printer? | Notes | My Source | Alternative Source |
| Motion | 20T Pulley - 8mm Bore | 3 | no | One for each side on the Rod, one for the printed 80T Gear. | Aliexpress | Aliexpress |
| | 16T Pulley - 5mm Bore | 1 | no | Motorshaft | Aliexpress | Aliexpress |
| | Gt2 Belt | 2 Meter | no | Don't buy the cheapest. You should go for belts with glassfiber. Width: 6mm | Amazon Germany | Aliexpress |
| | 188mm Looped Belt | 1 | no | Width: 6mm | Aliexpress | Aliexpress Affiliate Link Voron Guys |
| | F623ZZ 3*10*4 bearing | 4 | no | 2 Pieces per side | Aliexpress | |
| | 608ZZ Bearing | 4 (5) | no | Do you have an old skateboard? You can steal the bearings from the wheels;) (5 for extra bearing in transmission body) | Aliexpress | Aliexpress |
| | 8mm Rod | 330 mm | yes/no | Theres no link, just go to your local hardware store and take a cheap 8mm (aluminium) rod. You don't have to buy a hardened steel one. (to expensive and hard to cut). You also could use your leadscrew. | | |
| Fasteners | M5x8mm | 27 | no | Any type of M5x8mm screw can be used. I really like the openbuilds one | Aliexpress | |
| | M5x40mm | 6 | yes (3 x) | Screwhead must fit under the extrusion from the X-Axis. (Take a look at 5:20 of my video) You also could use a stock 40mm screw from the left side of the printer and place this on the inside of the right side. This way you can use any type of screwhead for the remaining holes. | Aliexpress | Aliexpress (cheaper) |
| | M5x30mm | 4 | no | | Aliexpress | |
| | M5 T-nuts | 27 | no | | Aliexpress | |
| | M3x30mm | 2 | no | | | |
| | M3x25mm | 2 | no | | | |
| | M3x16mm | 10 | no | | | |
| | M3x12mm | 8 | no | If you have no screws, you should buy a kit. Especially for the tensioner a longer screw can be good. | Aliexpress | |
| | M3x10mm | 2 | no | | | |
| | M3x6mm | 5 | no | | | |
| | M3 nuts | 10 | no | | | |
| Electronics | Motor extension cable | 1 | no | The original Cable is obviously too short^^ Check if the middle cables are crossed!!! | Aliexpress | |
| Printed Parts | RightV3 | 1 | / | Thingiverse (Bowden-Version available) | | |
| | LeftV3 | 1 | / | Thingiverse (Bowden-Version available) | | |
| | RightTop | 1 | / | Thingiverse | | |
| | LeftTop | 1 | / | Thingiverse | | |
| | RightBottom | 1 | / | Thingiverse | | |
| | LeftBottom | 1 | / | Thingiverse | | |
| | Spacer | 3 | / | Thingiverse | | |
| | Tensioner Block | 2 | / | Thingiverse | | |
| | TensionerClamp | 2 | / | Thingiverse | | |
| | Power_Supply_Holder | 1 | / | Thingiverse | | |
| | Transmission | 1 | / | Github | | |
| | MotorMountTensionerArm | 1 | / | Github | | |
| | ZDriveTensioningRing | 1 | / | Github | | |
| | 80TRingGear | 1 | / | Github | | |
| Filament | Petg or ABS (+) | ??kg | no | Yes you can use PLA, but you shouldn't ;) | | |
| | | | | | | |

Version 2

Rotated

+

V-Rollers



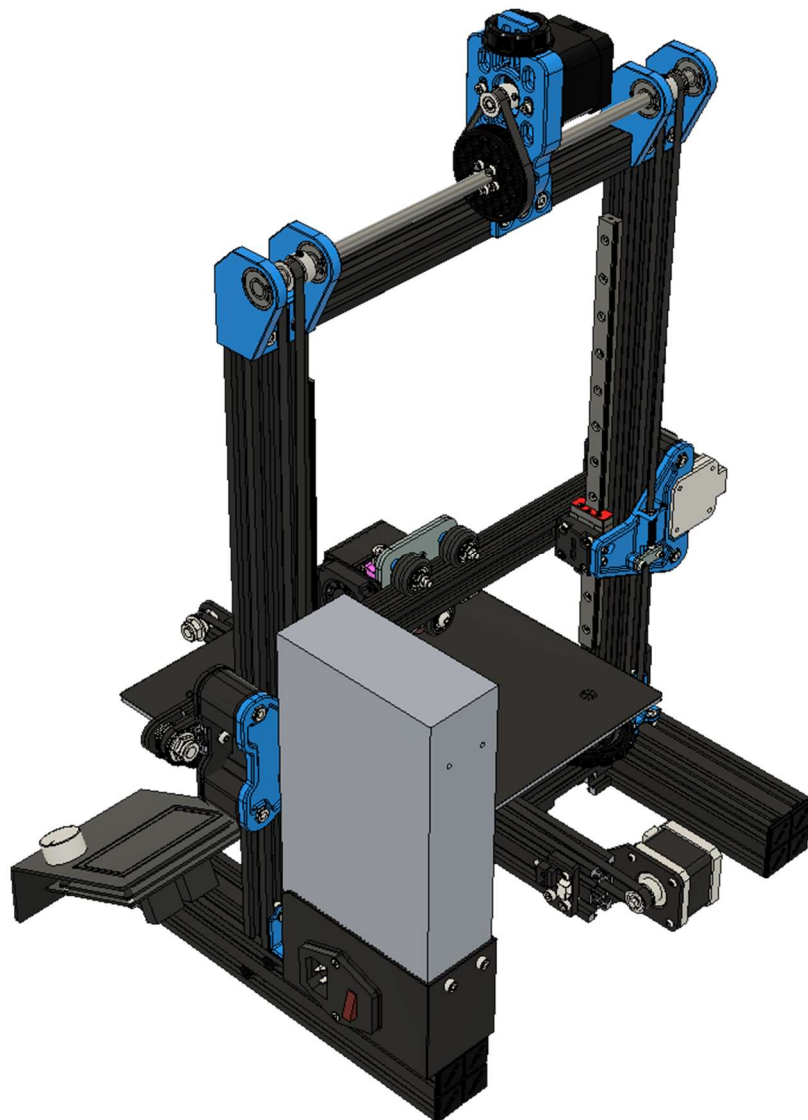
| Version: Rotated + V-Rollers | | | | | | |
|------------------------------|------------------------|----------|---------------------|---|--------------------------------|--|
| Category | Component | Quantity | Reuse from Printer? | Notes | My Source | Alternative Source |
| Motion | 20T Pulley - 8mm Bore | 3 | no | One for each side on the Rod, one for the printed 80T Gear. | Aliexpress | Aliexpress |
| | 16T Pulley - 5mm Bore | 1 | no | Motorshaft | Aliexpress | Aliexpress |
| | Gt2 Belt | 2 Meter | no | Don't buy the cheapest. You should go for belts with glassfiber. Width: 6mm | Amazon Germany | Aliexpress |
| | 188mm Looped Belt | 1 | no | Width: 6mm | Aliexpress | Aliexpress Affiliate Link Voron Guys |
| | F623ZZ 3*10*4 bearing | 4 | no | 2 Pieces per side | Aliexpress | |
| | 608ZZ Bearing | 4 (5) | no | Do you have an old skateboard? You can steal the bearings from the wheels;) (5 for extra bearing in transmission body) | Aliexpress | Aliexpress |
| | 8mm Rod | 330 mm | yes/no | Theres no link, just go to your local hardware store and take a cheap 8mm (aluminium) rod. You don't have to buy a hardened steel one. (to expensive and hard to cut). You also could use your leadscrew. | | |
| Fasteners | M5x8mm | 29 | no | Any type of M5x8mm screw can be used. I really like the openbuilds one | Aliexpress | |
| | M5x40mm | 6 | yes (3 x) | Screwhead must fit under the extrusion from the X-Axis. (Take a look at 5:20 of my video) You also could use a stock 40mm screw from the left side of the printer and place this on the inside of the right side. This way you can use any type of screwhead for the remaining holes. | Aliexpress | Aliexpress (cheaper) |
| | M5x30mm | 4 | no | | Aliexpress | |
| | M5 T-nuts | 29 | no | | Aliexpress | |
| | M3x30mm | 2 | no | | | |
| | M3x25mm | 2 | no | | | |
| | M3x16mm | 10 | no | | | |
| | M3x12mm | 8 | no | If you have no screws, you should buy a kit. Especially for the tensioner a longer screw can be good. | Aliexpress | |
| | M3x10mm | 2 | no | | | |
| | M3x6mm | 5 | no | | | |
| | M3 nuts | 10 | no | | | |
| Electronics | Motor extension cable | 1 | no | The original Cable is obviously too short^^ Check if the middle cables are crossed!!! | Aliexpress | |
| Printed Parts | RightV3 | 1 | / | Thingiverse (Bowden-Version available) | | |
| | LeftV3 | 1 | / | Thingiverse (Bowden-Version available) | | |
| | RightTop | 1 | / | Thingiverse | | |
| | LeftTop | 1 | / | Thingiverse | | |
| | RightBottom | 1 | / | Thingiverse | | |
| | LeftBottom | 1 | / | Thingiverse | | |
| | Spacer | 3 | / | Thingiverse | | |
| | Tensioner Block | 1 | / | Thingiverse | | |
| | TensionerClamp | 2 | / | Thingiverse | | |
| | Power_Supply_Holder | 1 | / | Thingiverse | | |
| | Transmission | 2 | / | Github | | |
| | MotorMountTensionerArm | 1 | / | Github | | |
| | ZDriveTensioningRing | 1 | / | Github | | |
| | 80TRingGear | 1 | / | Github | | |
| Filament | Petg or ABS (+) | ??kg | no | Yes you can use PLA, but you shouldn't ;) | | |
| | | | | | | |

Version 3

Unrotated

+

MGN-12H



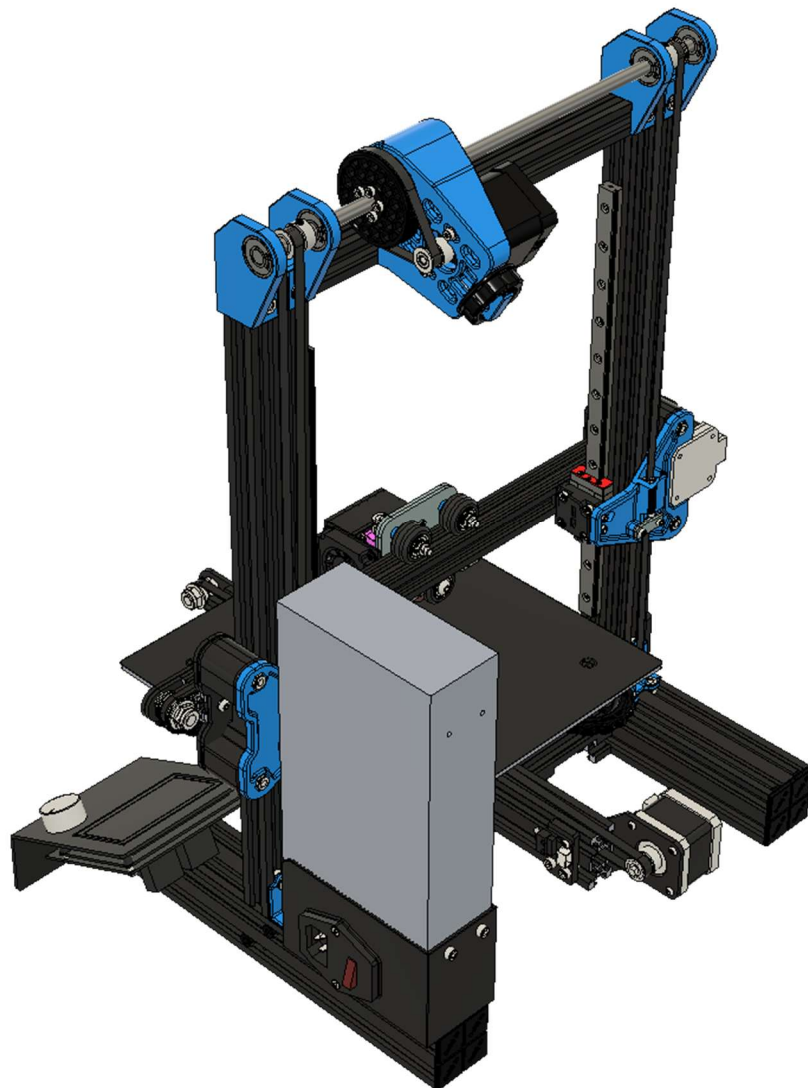
| Version: Unrotated + MGN | | | | | | |
|--------------------------|---------------------------|----------|---------------------|---|--------------------------------|--|
| Category | Component | Quantity | Reuse from Printer? | Notes | My Source | Alternative Source |
| Motion | 20T Pulley - 8mm Bore | 3 | no | One for each side on the Rod, one for the printed 80T Gear. | Aliexpress | Aliexpress |
| | 16T Pulley - 5mm Bore | 1 | no | Motorshaft | Aliexpress | Aliexpress |
| | Gt2 Belt | 2 Meter | no | Don't buy the cheapest. You should go for belts with glassfiber. Width: 6mm | Amazon Germany | Aliexpress |
| | 188mm Looped Belt | 1 | no | Width: 6mm | Aliexpress | Aliexpress Affiliate Link Voron Guys |
| | F623ZZ 3*10*4 bearing | 4 | no | 2 Pieces per side | Aliexpress | |
| | 608ZZ Bearing | 4 (5) | no | Do you have an old skateboard? You can steal the bearings from the wheels;) (5 for extra bearing in transmission body) | Aliexpress | Aliexpress |
| | 8mm Rod | 330 mm | yes/no | Theres no link, just go to your local hardware store and take a cheap 8mm (aluminium) rod. You don't have to buy a hardened steel one. (to expensive and hard to cut). You also could use your leadscrew. | | |
| | 300mm MGN Rail | 2 | no | Don't buy the cheapest. | | |
| Fasteners | M5x8mm | 27 | no | Any type of M5x8mm screw can be used. I really like the openbuilds one | Aliexpress | |
| | M5x40mm | 4 | yes (3x) | | Aliexpress | Aliexpress (cheaper) |
| | M5x30mm | 4 | no | | Aliexpress | |
| | M5 T-nuts | 27 | no | | Aliexpress | |
| | M3x30mm | 2 | no | | | |
| | M3x25mm | 2 | no | | | |
| | M3x20mm | 4 | no | | | |
| | M3x16mm | 10 | no | | | |
| | M3x12mm | 8 | no | If you have no screws, you should buy a kit. Especially for the tensioner a longer screw can be good. | Aliexpress | |
| | M3x10mm | 10 | no | | | |
| | M3x8mm | 24 | no | You will need these to mount the rails. All holes: 12 per rail. You can use less, minimum 4 per rail. | | |
| | M3x6mm | 5 | no | | | |
| | M3 nuts | 14 | no | | | |
| | M3 T-nuts | 24 | no | You will need these to mount the rails. All holes: 12 per rail. You can use less, minimum 4 per rail. | | |
| Electronics | Motor extension cable | 1 | no | The original Cable is obviously too short^^ Check if the middle cables are crossed!!! | Aliexpress | |
| Printed Parts | RightV3 | 1 | / | Thingiverse (Bowden-Version available) | | |
| | LeftV3 | 1 | / | Thingiverse (Bowden-Version available) | | |
| | RightTop | 1 | / | Thingiverse | | |
| | LeftTop | 1 | / | Thingiverse | | |
| | RightBottom | 1 | / | Thingiverse | | |
| | LeftBottom | 1 | / | Thingiverse | | |
| | Spacer_Right (MGN folder) | 1 | / | Thingiverse | | |
| | Spacer_Left (MGN folder) | 1 | / | Thingiverse | | |
| | Right (MGN folder) | 1 | / | Thingiverse | | |
| | Left (MGN folder) | 1 | / | Thingiverse | | |
| | DistanceBracket | 2 | / | Thingiverse - you will need this to align the rails. Just take a look at my video. | | |
| | Tensioner Block | 2 | / | Thingiverse | | |
| | TensionerClamp | 2 | / | Thingiverse | | |
| | Power_Supply_Holder | 1 | / | Thingiverse | | |
| | Transmission | 1 | / | Github | | |
| | MotorMountTensionerArm | 1 | / | Github | | |
| | ZDriveTensioningRing | 1 | / | Github | | |
| | 80TRingGear | 1 | / | Github | | |
| | | | | | | |
| | | | | | | |
| Filament | Petg or ABS (+) | ??kg | no | Yes you can use PLA, but you shouldn't ;) | | |
| | | | | | | |

Version 4

Rotated

+

MGN-12H



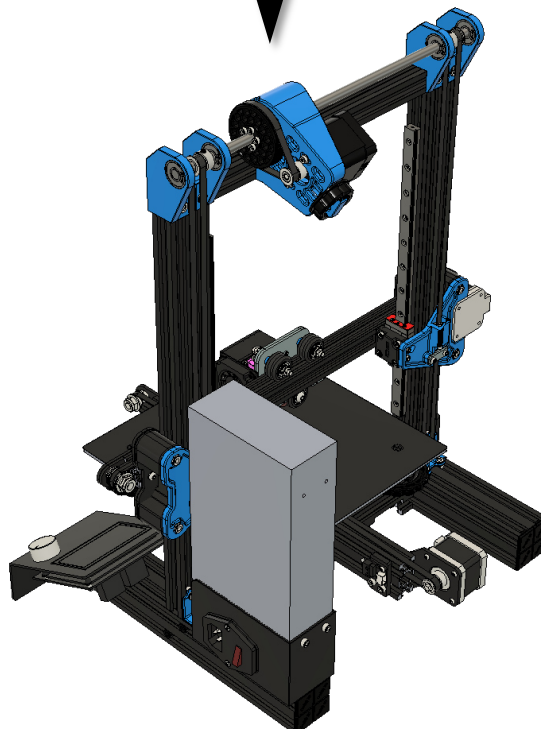
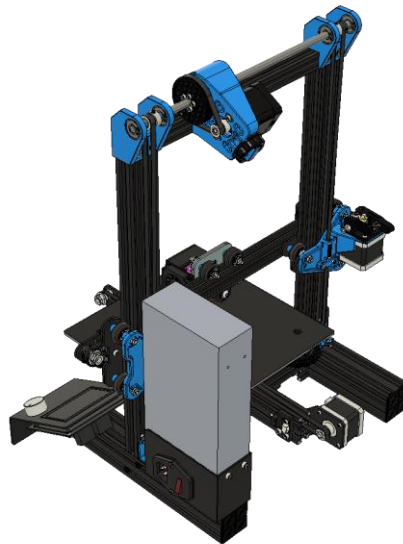
| Version: Rotated + MGN | | | | | | |
|------------------------|---------------------------|----------|---------------------|---|--------------------------------|--|
| Category | Component | Quantity | Reuse from Printer? | Notes | My Source | Alternative Source |
| Motion | 20T Pulley - 8mm Bore | 3 | no | One for each side on the Rod, one for the printed 80T Gear. | Aliexpress | Aliexpress |
| | 16T Pulley - 5mm Bore | 1 | no | Motorshaft | Aliexpress | Aliexpress |
| | Gt2 Belt | 2 Meter | no | Don't buy the cheapest. You should go for belts with glassfiber. Width: 6mm | Amazon Germany | Aliexpress |
| | 188mm Looped Belt | 1 | no | Width: 6mm | Aliexpress | Aliexpress Affiliate Link Voron Guys |
| | F623ZZ 3*10*4 bearing | 4 | no | 2 Pieces per side | Aliexpress | |
| | 608ZZ Bearing | 4 (5) | no | Do you have an old skateboard? You can steal the bearings from the wheels;) (5 for extra bearing in transmission body) | Aliexpress | Aliexpress |
| | 8mm Rod | 330 mm | yes/no | Theres no link, just go to your local hardware store and take a cheap 8mm (aluminium) rod. You don't have to buy a hardened steel one. (to expensive and hard to cut). You also could use your leadscrew. | | |
| | 300mm MGN Rail | 2 | no | Don't buy the cheapest. | | |
| Fasteners | M5x8mm | 29 | no | Any type of M5x8mm screw can be used. I really like the openbuilds one | Aliexpress | |
| | M5x40mm | 4 | yes(3x) | | Aliexpress | Aliexpress (cheaper) |
| | M5x30mm | 4 | no | | Aliexpress | |
| | M5 T-nuts | 29 | no | | Aliexpress | |
| | M3x30mm | 2 | no | | | |
| | M3x25mm | 2 | no | | | |
| | M3x20mm | 4 | no | | | |
| | M3x16mm | 10 | no | | | |
| | M3x12mm | 8 | no | If you have no screws, you should buy a kit. Especially for the tensioner a longer screw can be good. | Aliexpress | |
| | M3x10mm | 10 | no | | | |
| | M3x8mm | 24 | no | You will need these to mount the rails. All holes: 12 per rail. You can use less, minimum 4 per rail. | | |
| | M3x6mm | 5 | no | | | |
| | M3 nuts | 14 | no | | | |
| | M3 T-nuts | 24 | no | You will need these to mount the rails. All holes: 12 per rail. You can use less, minimum 4 per rail. | | |
| | Motor extension cable | 1 | no | The original Cable is obviously too short^^ Check if the middle cables are crossed!!! | Aliexpress | |
| Printed Parts | RightV3 | 1 | / | Thingiverse (Bowden-Version available) | | |
| | LeftV3 | 1 | / | Thingiverse (Bowden-Version available) | | |
| | RightTop | 1 | / | Thingiverse | | |
| | LeftTop | 1 | / | Thingiverse | | |
| | RightBottom | 1 | / | Thingiverse | | |
| | LeftBottom | 1 | / | Thingiverse | | |
| | Spacer_Right (MGN folder) | 1 | / | Thingiverse | | |
| | Spacer_Left (MGN folder) | 1 | / | Thingiverse | | |
| | Right (MGN folder) | 1 | / | Thingiverse | | |
| | Left (MGN folder) | 1 | / | Thingiverse | | |
| | DistanceBracket | 2 | / | Thingiverse - you will need this to align the rails. Just take a look at my video. | | |
| | Tensioner Block | 2 | / | Thingiverse | | |
| | TensionerClamp | 2 | / | Thingiverse | | |
| | Power_Supply_Holder | 1 | / | Thingiverse | | |
| | Transmission | 1 | / | Github | | |
| | MotorMountTensionerArm | 1 | / | Github | | |
| | ZDriveTensioningRing | 1 | / | Github | | |
| | 80TRingGear | 1 | / | Github | | |
| | | | | | | |
| | | | | | | |
| Filament | Petg or ABS (+) | ??kg | no | Yes you can use PLA, but you shouldn't ;) | | |
| | | | | | | |

Upgrade from V-Rollers to MGN

Rotated

+

Unrotated



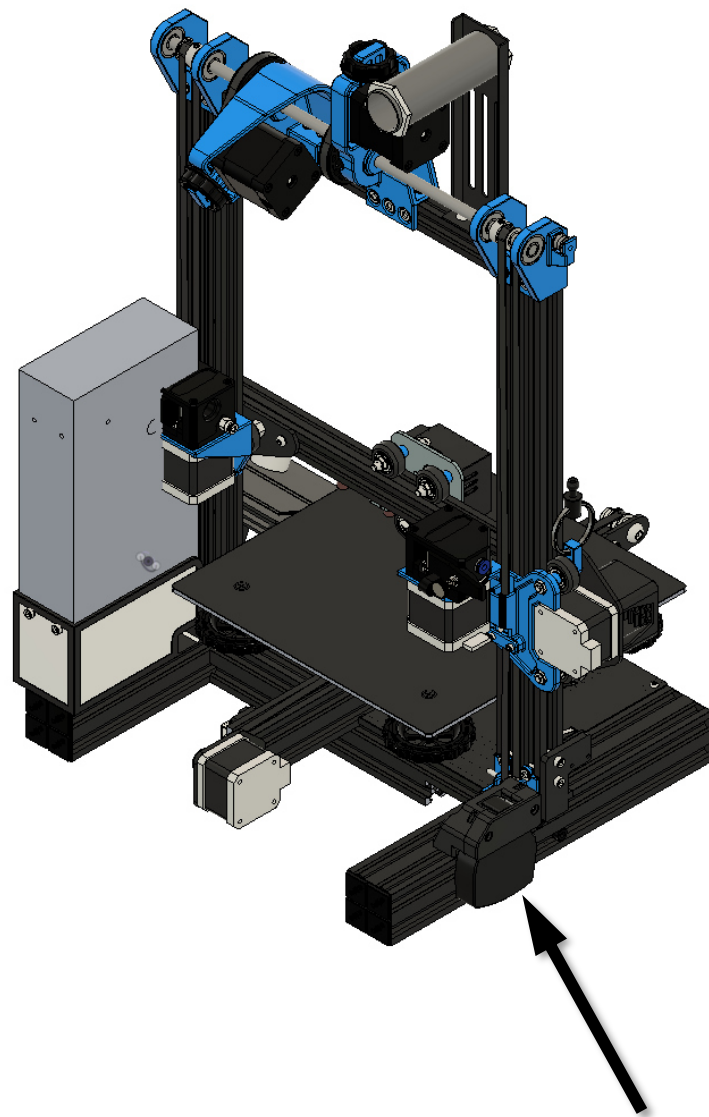
| Version: Upgrade from V-Rollers to MGN | | | | | | |
|--|---------------------------|----------|---------------------|---|-----------|--------------------|
| Category | Component | Quantity | Reuse from Printer? | Notes | My Source | Alternative Source |
| | 300mm MGN Rail | 2 | no | Don't buy the cheapest. | | |
| Fasteners | M3x20mm | 4 | no | | | |
| | M3x10mm | 8 | no | | | |
| | M3x8mm | 24 | no | You will need these to mount the rails. All holes: 12 per rail. You can use less, minimum 4 per rail. | | |
| | M3 nuts | 4 | no | | | |
| | M3 T-nuts | 24 | no | You will need these to mount the rails. All holes: 12 per rail. You can use less, minimum 4 per rail. | | |
| Printed Parts | Spacer_Right (MGN folder) | 1 | / | Thingiverse | | |
| | Spacer_Left (MGN folder) | 1 | / | Thingiverse | | |
| | Right (MGN folder) | 1 | / | Thingiverse | | |
| | Left (MGN folder) | 1 | / | Thingiverse | | |
| | DistanceBracket | 2 | / | Thingiverse - you will need this to align the rails. Just take a look at my video. | | |
| Filament | Petg or ABS (+) | ??kg | no | Yes you can use PLA, but you shouldn't ;) | | |
| | | | | | | |

Upgrade with Keybak

Rotated

+

Unrotated



| Version: Upgrade with Keybak | | | | | | |
|------------------------------|-----------------------|----------|---------------------|---|----------------------------|--------------------|
| Category | Component | Quantity | Reuse from Printer? | Notes | My Source | Alternative Source |
| | Key-bak Super48 13oz | 1 | no | | Amazon | |
| | F623ZZ 3*10*4 bearing | 2 | no | | Aliexpress | |
| Fasteners | M3x25mm | 1 | no | | | |
| | M3x12mm | 2 | no | | | |
| | M3 nuts | 2 | no | | | |
| | M5x8mm | 2 | no | | | |
| | M5 T-nuts | 2 | no | | | |
| Printed Parts | Bearing_Holder | 1 | / | GitHub | | |
| | Keyback_mount | 1 | / | GitHub | | |
| | Keybak_mount_plate | 1 | / | GitHub | | |
| | Keybak_Spacer | 1 | / | GitHub | | |
| | Left_Top_A_Keybak | 2 | / | GitHub | | |
| Filament | Petg or ABS (+) | ??kg | no | Yes you can use PLA, but you shouldn't ;) | | |
| | | | | | | |