

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
1.1	Bottom Frame	8	Bracket 30	1	Square	Mark the front with the dot sticker.
		16	C-screw M6-14	1	Allen Key 5.0	Insert 8x T-nuts in each end of the profiles, 4x in each slot of the top surface of the profile.
		83	T-nut M6	1	Allen Key 4.0	
		2	Profile 60-145			
		2	Profile 60-133			
		4	Wheels			
		3	Wire Fixer			
		1	Dot sticker			
		4	B-screw M6-16			
1.2	Preparing 30 profile	2	Profile 30-133	1	Allen Key 5.0	Don't tighten the screws yet for later adjustments.
		7	T-nut M6			
		6	C-screw M6-35			
		30	Washer M6			
		12	Washer M6 Large			
		18	Bearing			
		1	C-screw M6-12			
1.3	Attaching Profile 30 to Bottom Frame	4	Bracket 60	1	Allen Key 5.0	Align it to the Bottom Frame.
		16	T-nut M6			
		16	C-screw M6-14			
2.1	Fix Linear Guides Y	2	Linear Guide Y	1	Allen Key 3.0	
		2	Profile 60-133			
		42	T-nut M4			
		42	C-screw M4-16			
2.2	Fix X-axis Holders	1	X-axis Holder Right	1	Allen Key 5.0	
		1	X-axis Holder Left	1	Wrench 7	
		4	C-screw M4-16			
		4	C.screw M4-30			

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
		4	Lock Nut M4			
2.3	Top Frame	2	Profile 60-145	1	Allen Key 5.0	Insert 8x T-nuts in each end of the profiles, 4x in each slot.
		1	Red Dot			
		4	Bracket 60			
		2	Bracket 30			
		24	C-screw M6-14			
		88	T-nut M6			
3	Vertical Profiles	4	Profile 60-133	1	Allen Key 3.0	Use clamps to align the profiles
		1	Prepared Bottom Frame (Step 1)	2	Clamp	Make sure the frame is precise
		1	Prepared Top Frame (Step 2)			
		32	Bracket 60			
		64	T-nut M6			
		128	C-screw M4-16			
4.1	Fix the Y-bearing support	2	Y-bearing Holder	1	Allen Key 5.0	
		2	Support Bearing Holder			
		6	C-screw M6-20			
		6	Washer M6			
		4	C-screw M6-16			
		10	T-nut M6			
4.2	Insert the Y-shafts	1	Y-shaft Right	1	Rubber Hammer	Insert each shaft into each the bearing holder, starting with the left.
		1	Y-shaft Left	1	Lubricant	Insert the Pulleys with the set screws turned inward.
		2	Pulley			Use a rubber hammer to insert the shafts into the Bearing Holder. The shafts should not protrude.
4.3	Fix the Y-motor	1	Y-motor	1	Allen Key 5.0	
		2	Coupler	1	Allen Key 4.0	

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		Quantity	Part name [1]	Quantity	Tool name	
		4	C-screw M6-16	1	Wrench 8	
		1	Y-motor Holder			
		4	T-nut M6			
		4	C-screw M5-20			
		4	Lock Nut M5			
5.1	Y-pulleys Front	2	B-screw M6-12	1	Allen Key 4.0	Don't tighten the pulley. They should rotate freely.
		2	T-nut M6	1	Wrench 10	Don't tighten the brackets to the profile yet.
		2	Y Front Bracket			
		2	Y-pulley Front			
		6	Pulley Bearing			
		4	Washer M8 Big			
		4	Lock Nut M6			
5.2	Y-belt	2	Y-belt	1	Cutter	Tighten the screw of the front pulley bracket to tension the belt.
		8	Cable Tie			
6.1	Prepare Z-axis 1					
		4	Ball screw Z	1	Allen Key 5.0	First fix the Bolt Screw nut and the Bearing Block to the Middle Support.
		4	Linear Shaft	1	Allen Key 4.0	
		4	Middle Support	1	Wrench 8	
		4	Bearing Block			
		24	C-screw M6-50			
		24	Lock Nut M6			
		24	Washer M6			
		16	C-screw M5-35			
		16	Lock Nut M5			
		16	Washer M5			

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
6.2	Prepare Z-axis 2	4	Bottom Support	1	Rubber Hammer	Insert the Top Support into the Bolt screw and the shaft with a rubber hammer.
		4	Top Support	1	Lubricant	Insert the Bolt Screw and the shaft in the Bottom Support bearing with a rubber hammer.
		4	Z-pulley			Fix the Z-pulley in the lower end of the Bolt Screw.
7.1	Fix Z-axis	32	C-screw M6-35	1	Rubber Hammer	Fix the Bottom Suport to the frame first, then use a rubber hammer to insert the Top Support.
		32	C-screw M6-50	1	Lubricant	
				1	Allen Key 5.0	
7.2	Attach Z-motor	1	Z-motor support	1	Allen Key 4.0	
		1	Z-motor	1	Allen Key 5.0	
		1	Z-motor Pulley	1	Wrench 8	
		4	C-screw M5-20			
		4	Lock Nut M5			
		2	C-screw M6-16			
		2	T-nut M6			
7.3	Align the Middle Support	1	Z-belt	4	Template Block	Very critical step. If the Bed is skewed the Z-axis will lock.
				1	Rubber band	Use the Template Block in the 4 corners to align the distance between the Middle Support and the Bottom Support. Turn the Bolt Screw using big pliers with rubber inbetween to not damage the screw.
				1	water pump plier	Insert the belt and tension it by pushing the right-lower bearing with a key. Tighten the screw once the belt is tensioned.
8.1	Prepare the X-axis 1 - Back Fan	1	Back Fan	1	Allen Key 3.0	
		2	C-screw M4-25	1	Wrench 7	

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
		2	Lock Nut M4			
		1	Back Fan Holder			
8.2	Prepare the X-axis 2 - Linear Guide	1	Linear Guide X	1	Allen Key 3.0	Fix the T-nut to the linear guide loosely and slide them into the profile.
		1	Profile 30-1200			The arrows of the linear guide should point down.
		19	C-screw M4-16			
		19	T-nut M4			
8.3	Prepare the X-axis 3 - Head Holder	1	Bed Leveling Sensor Holder	1	Allen Key 3.0	
		1	Bed Leveling Sensor	1	Allen Key 2.5	
		1	Head Holder	1	Wrench 5.5	
		4	C-screw M4-12			
		2	C-screw M3-10			
		2	Lock Nut M3			
		1	X-chain End Holder			
		2	C-screw M3-10			
8.4	Prepare the X-axis 4 - Extruder	1	Extruder Set			
		1	Heating Block			
		1	Filament Channel			
		1	Filament Tube			
		1	Fit Connector			
		1	E-motor			
8.5	Prepare the X-axis 5 - Right Pulley	1	X-pulley Right Holder	1	Allen Key 5.0	Don't tighten the pulley. They should rotate freely.
		1	X-pulley Right	1	Wrench 13	

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
		1	B-screw M8-70			
		6	Pulley Bearing			
		1	Washer M8 Big			
		1	Washer M8			
		1	Lock Nut M8			
		3	C-screw M6-14			
		3	T-nut M6			
8.6	Prepare the X-axis 6 - Chain Support	1	X-chain support	1	Allen Key 4.0	Don't tighten the screw for further adjustment.
		5	Countersunk Screw M6-12			Insert 2 T-nuts on the front slot of the profile, in the left side.
		7	T-nut M6			
9	Attach X-axis	1	Prepared X-axis (Step 8)		Allen Key 5.0	
		4	C-screw M6-16			
		4	T-nut M6			
10	Fix the X-chain	1	X-chain	1	Allen Key 2.5	Insert in the chain the E-motor Cable, Heating Block Cable, Heat Sensor Cable, Bed Leveling sensor, Fan
		2	C-screw M3-14	1	Allen Key 2.0	Connect the cables to their respective elements.
		1	B-screw M3-12	1	Wrench 5.5	
		3	Lock Nut M3			
		1	E-motor Cable			
		1	Heating Block Cable			
		1	Heat Sensor Cable			
		1	Bed Leveling Sensor Cable			
		1	Fan Cable			
11.1	Prepare the X-motor	1	X-motor	1	Allen Key 2.0	

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
		1	X-motor Holder	1	Allen Key 5.0	
		1	X-pulley Left	1	Wrench 8	
		1	X-endstop Sensor Holder			
		3	C-screw M2.5-5			
		4	C-screw M5-20			
		4	Lock Nut M5			
11.2	Fix the X-motor	2	C-screw M6-16	1	Allen Key 5.0	
		1	X-endstop Sensor			
11.3	Fix X-belt	1	X-belt	1	Cutter	Use the extra screw on the right as a lever to tension the belt.
		4	Cable Tie	1	Allen Key 5.0	
12	Fix the Y-chain					Insert in the chain the cables from the X-chain, plus the motor and endstop sensor.
		1	Y-chain	1	Allen Key 4.0	
		1	Y-chain side support	1	Allen Key 3.0	The chains can be opened to insert the cables easily.
		5	T-nut M6	1	Wrench 7	
		4	B-screw M6-10			
		1	Wire Inserter			
		1	B-screw M6-12			
		1	B-screw M5-8			
		1	T-nut M5			
		3	C-screw M4-8			
		3	Lock Nut M4			
		1	X-endstop Cable			
13	Attach Y-endstop Sensor	1	Y-endstop Sensor	1	Allen Key 3.0	
		1	Y-endstop Sensor Holder			
		2	B-screw M5-12			
		2	T-nut M5			

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
14.1	Cable management 1 - front					Fix 2x Wire inserters on the back of the top front profiles and 2x on the back of right profile to hold the Display Cable in the profile slot.
		1	Display Cable	1	Allen Key 4.0	
		6	Wire Inserter			
		6	B-screw M6-12			
		6	T-nut M6			
14.2	Cable management 2 - back top-left	2	Wire Inserter	1	Allen Key 4.0	
		5	Wire Fixer	1	Cutter	
		7	T-nut M6			
		2	B-screw M6-12			
		3	B-screw M6-16			
		1	Cable Wrapper			
		6	Cable ties			
14.3	Cable management 3 - back bottom-right	4	Wire Inserter	1	Allen Key 4.0	
		3	Wire Fixer	1	Cutter	
		7	T-nut M6			
		3	B-screw M6-16			
		4	B-screw M6-12			
		3	Cable Tie			
15	Align X-axis			2	Template or 2x identical objects	Use the templates or two identical objects as a reference to align the X-axis.
16.1	Prepare the Back Lower Panel 1	1	Back Lower Panel	1	Allen Key 3.0	Remove the foil from the panel.
		3	Motor Driver	1	Wrench 7	
		1	Extruder Motor Driver	1	Allen Key 4.0	
		8	C-screw M4-12	1	Wrench 8	
		1	Power Supply			
		4	C-screw M4-10			
		12	Lock Nut M4			
		1	Relay			

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
		2	C-screw M5-12			
		2	Lock Nut M5			
16.2	Prepare the Back Lower Panel 2	1	Power Switch	1	Allen key 2.5	Attach the Power Switch Cable to the Power Switch before fixing it.
		1	Power Plug	1	Screwdriver Phillips	Screw the body of the Power Switch first and then the knob.
		1	Power Switch Cable			
		2	B-screw M3-8			
16.3	Prepare the Back Lower Panel 3	3	Wire Duct 345	1	Allen Key 4.0	
		1	Wire Duct 520	1	Wrench 10	
		18	B-screw M6-12			
		18	Lock Nut M6			
		4	Cable Gland Small			
		4	Cable Gland Big			
16.4	Prepare the Back Lower Panel 4	1	Controller PCB	1	Allen Key 2.5	
		1	Converter PCB	1	Wrench 5.5	
		4	Standoff M-F M3 10+6			
		4	Standoff M-F M3 20+6			
		8	Lock Nut M3			
		8	Plastic Screw M3-8			
17	Fix the Back Lower Panel	1	Prepared Back Lower Panel (Step 16)	1	Square	
		10	T-nut M6	1	Allen Key 4.0	
		10	Countersunk Screw M6-12			
18.1	Prepare the Bed 1	3	Profile 3060-1220	1	Allen Key 5.0	Mark the front with the dot sticker (longer profile).
		2	Profile 3060-1140			Don't tighten the screws yet for further adjustment.
		2	Profile 3060-525			
		1	Dot Sticker			

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
		32	Bracket 60			
		128	C-screw M6-14			
		128	T-nut M6			
18.2	Prepare the Bed 2	4	Corner Support	1	Allen Key 5.0	The longer side of the corner support should be on the front and back profiles.
		1	Center Support			
		77	C-screw M6-20			
		77	Washer M6			
		77	T-nut M6			
		77	T-nut M6			
18.3	Prepare the Bed 3	1	Bed Plate	1	Allen Key 5.0	
		20	B-screw M8-20			
		20	Washer M8			
		20	T-nut M8			
18.4	Prepare the Bed 4	4	Heating Pad	1	Allen Key 4.0	The cables of the heating pads should be fixed in the middle profile and guided to the back of the machine.
		2	Cable Connector 3 Slots	1	Cutter	
		4	Wire Inserter			
		4	B-screw M6-12			
		7	Wire Fixer			
		7	B-screw M6-16			
		11	T-nut M6			
		7	Cable Tie			

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
		1	Bed Heating Cable			
		1	Cable Wrapper			
19	Fix the Bed	1	Prepared Bed (Step 18)	1	Allen Key 10.0	
		4	C-screw M12-70	1	Wrench 19	
		4	Lock Nut M12			
		4	Washer M12			
20.1	Wiring 1	1	X-motor Logic Cable	1	Screwdriver slotted small	Some teeth of the wire duct can be removed to fit the cables.
		1	Y-motor Logic Cable	1	Screwdriver Phillips	Pass the cables through the correct cable glands.
		1	Z-motor Logic Cable			
		1	E-motor Logic Cable			
		1	Driver Power Cable			
20.2	Wiring 2	3	Endstop Jumper	1	Screwdriver slotted small	For the display cable, the lose wire is the reset, which should be pointing down
		1	Controller Power Cable	1	Screwdriver Phillips	
		1	Converter PCB Power Cable			
		1	Relay Power Cable			
20.3	Wiring 3 - AC	1	Relay AC Cable	1	Screwdriver Phillips	Fix the Earth on the frame
		1	Mains Cable	1	Screwdriver slotted small	
				1	Allen Key 5.0	
21	Fix Back Upper Panels	1	Back Top-right Panel	1	Allen Key 4.0	
		1	Back Top-left Panel			
		12	Countersunk Screw M6-8			
		12	T-nut M6			
22	Fix Side Panels	1	Right Side Right-Top Panel	1	Allen Key 5.0	
		1	Right Side Right-Bottom Panel			

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
		1	Left Side Left-Top Panel			
		1	Left Side Left-Bottom Panel			
		24	T-nut M6			
		24	Countersunk Screw M6-8			
23.1	Fix Front Panels [2]	1	Front Right-top Panel	1	Allen Key 4.0	
		1	Front Right-bottom Panel			
		1	Front Left-top Panel			
		1	Front Left-bottom Panel			
		40	Countersunk Screw M6-8			
		40	T-nut M6			
23.2	Fix Front Panels Connectors	2	Front Panels Connector	1	Allen Key 4.0	
		4	Countersunk Screw M6-8			
24	Install Display and USB Plug	1	Display with knob	1	Allen Key 2.0	Pull the knob cap out to attach the display.
		4	B-screw M3-8			
		4	Standoff M-F M3 6+6			
		4	Standoff F-F M3-6			
		1	USB Cable Inside			
		2	Pan Screw M2.5-6			
25	Fix Back Window	1	Back Window	1	Allen Key 4.0	Remove the foil from the panels.
		7	Lock Nut M6			
		7	Countersunk M6-6			
26	Fix Side Windows	2	Side Window	1	Allen Key 4.0	Remove the foil from the panels.
		24	Countersunk M6-6	1	Wrench 10	
		24	Lock Nut M6			
27	Install Electronics Cover	6	B-screw M5-8	1	Allen Key 3.0	Fix the window on the panel with double-sided tape.

Step Number	Step Title	Parts list		Tools list		Remarks
		Quantity	Part name [1]	Quantity	Tool name	
		1	Electronic Cover Panel	1	Cutter	
		1	Electronic Cover Window			
		1	Double-sided Tape			
28	Prepare the door	2	Door	1	Wrench 13	
		12	Lock Nut M8	1	Allen Key 5.0	
		8	Countersunk M8-12			
		4	Hinge			
		2	Handle			
		4	C-screw M8-20			
29	Fix the window / doors	2	Prepared Doors (step 28)	1	Wrench 13	
		8	Lock Nut M8	1	Allen Key 5.0	
		8	Countersunk M8-12			
		4	Door Magnet			
		2	Angle Profile			
30	Attach the spool holder	4	B-screw M5-12	1	Allen Key 3.0	
		10	T-nut M5			
		2	Bracket 20			
		2	Profile 30-150			
		1	Spool Axis			
		2	Spool Axis Stopper			
		2	Spool Axis Holder			
		6	B-screw M5-12			