Qty	Item	Qty	Item	Qty	Item
2	Motor Piece	2	5V power supply - also one for Ard	1	Atmega328p-pu / bootloader
5	Carriage Piece	6"x6"	spring steel	1	28 Pin DIL Socket
5	Idler Piece	1	bed plate, 6"x6"	1	16MHz crystal
1	Z to X axis Connector	6"x6"	Buildtak surface	1	stripboard
2	Z axis Base	4 feet	split wire loom	2	100uF 25V electrolytic capacitors
1	Y Axis Raised Idler	25	zip ties for wire management	2	100uF 50V ceramic disk capacitor
1	Y Axis Raised Motor Piece	0.5 [1]	heat shrink [2]	2	22pF ceramic disc capacitors
1	main extruder piece	1	solder	1	tactile switch
1	secondary extruder piece	15	ferrules	2	LED - one for power electronics
1	extruder idler piece	1 [3]	wood base, 11.25"x12.5"	1	220ohm resistor
1	Control Panel	7 [4]	skate bearings	1	jumper wire for breadboard
1	Spool Holder	1	0.5"x1"x2" 6061 aluminum for hea	1	jumper wire spools
6	Belt Pegs	1	spring for extruder	1	6 pin female header right-angle
2	Wire Loom Clip	1	mk7 drive gear	1	40 pin female headers
2	Endstops	2	m3x30 cap head screw, heat sink	1	Serial to USB converter
2 [5]	m6x30 for attaching extruder	1	m3x18 cap head screw, idler	1	arduino uno
1	m6x25 for tool attach	3	m3x8 cap head screw, main + side	2	copper clad boards
35 [6]	m6x18 zinc plated socket screw [7	1	height sensor- 5V PNP - LJ18A3-8-	1	muriatic acid + hydrogen peroxide
36 [8]	m6 zinc plated nut	2	2.9x13mm self tapping screws for	1	555 motor
12	m3x25 SS socket head screw	1	24V 4040 fan	1	motor coupler for 1/8" mill bit
6 [9]	8 mm rods	1	24V 5015 blower	2	1 mm mill bit
19	1-1/4" screws [10]	2 [11]	fan heat sink	1	hacksaw blade
4 [12]	nema 17, 72 oz in stepper motors [	1	heater block	1	box cutter blade
12	8 mm linear bearing [14]	set [15]	0.4, 0.8, and 1.2 mm nozzle set	1	safety glasses - for spindle
7 feet [16]	GT2 belt, 6mm wide	1	heater sock		Soldering iron
3	GT2 pulley, 5mm bore, 6mm wide,	1	heat break	1	screen - includes HDMI cable
6	m6x12x4 flanged bearing	1	thin m6 nut	1	pi 4B 4GB RAM
12	3x12mm N52 magnets [17]	1	thermistor	1	pi cooling fan [18]
3 feet	22 ga wire	1	40W 24V heater	1	pi power cable - for wall power + c
2	end stops + wires	1	5 mm hex key - main tool	1	battery pack
4 [19]	stepper motor wires	1	2 mm hex key	1	pi 2 camera module
1	GFCI outlet	1	2.5 mm hex hey [20]	1	usb c cable for power supply
1	12/24V power supply	1	small philips head screwdriver		
1	plug	1	small flathead screwdriver		
1	power cord	1	philips driver bit		
1	RAMPS + MEGA + drivers + LCD	1	crazy glue		
2	USB A to B cords (printer + Arduin	1	black contact paper		
1	SD card, 8 GB	1	1 spool filament		

[1] 6" per printer

[2] for connecting probe to plug, fan to plug, and extending wires if needed

[3] 2x12 lumber

[4] 1 for extruder, 2 for spool holder, 2 for grinder/spindle, 2 for camera stabilizer

[5] One for tool attach

2 for Wire Loom holder

[6] 11 per axis = 4+4+3

1 more for plotter attachment

1 more for sensor attachment

[7] Add one for the plotter
Add one for hacksaw
Add one for

[8] one more for extruder

[9]
12" each, so 6' total

[10] 1 lb Box. Size 6x1-1/4" Quantity per box 256

[11] One is for the 10W LED.

[12] including extruder

[13] .5 Nm = 71 oz in

[14] Use plastic for abrasion resistance with non-hardened steel rods.

You can use cheaper metal bearing on the Z axis, which moves slowly. Need plastic for high speed abrasion resistance or wherever large forces are present.

[15] 1.2 mm is installed stock

[16] 26 x 3 = 78 inches

[17] 2 end stops - 4 ea => 8
4 for spool holder

[18] https://www.raspberryconnect.com/projects/42-hardware-addons/175-testing-the-ice-tower-cooling-fan-for-the-raspberry-pi-3-4

[19] 5 if extruder comes with stepper motor and wires

[20] for extruder screws + stepper motor holding screws