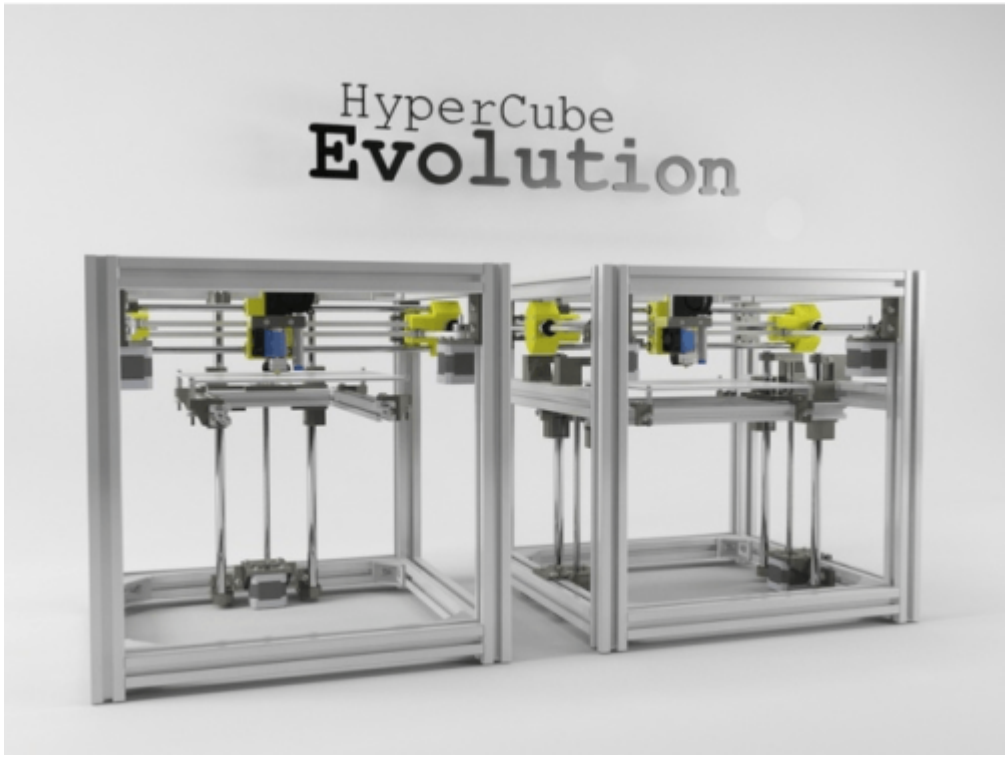
Hypercube Evolution



https://www.thingiverse.com/thing:2254103 Hypercube Evolution Configuration v1.4を使用

リンク

https://hevo.wiki/index.php/Incremental_Build_Instructions 購入先が記載されている。

My HyperCube Evolution by DaHai8 - Thingiverse

フレーム検索
https://www.aliexpress.com/wholesale?catId=0&initiative_id=SB_20190227193250&SearchText=3d+printer+hypercube

作成案（決定）

Compornent Explorerで購入したパーツの条件に揃えた。 Hypercube Evolution Configurator 1.4 設定値

オプションの指定（その他規定値 Min, Build Volume /Travel X=300,Y=300,Z=300mm Shafts Xaxis Diam 8, Yaxis Diam 10, Zaxis Diam 12 Z Axis Double Mk2A 300×00 Bed Bracket 25

あとTMC2208を購入する必要があるはずだけど、基板がMKS Baseだったかもしれない。 その場合はMKS Genが必要になる。 TMC2208 3D Printer

PEIシート購入済み。再度ここを確認する。 3Dプリンタープリントベッドシーツとしての PEIシート - ガイド| All3DP

Excel計算で算出した必要な部品一覧

BOM - Extrusions and linear guides

Item		Length	Unit	Qty	Note
3030 Extrusion		420	mm	4	Frame X extrusion
		410	mm	6	Frame Y extrusion
		500	mm	4	Frame Z extrusion
2020 Extrusion		415	mm	2	Bed frame X extrusion
		235	mm	2	Bed frame Y extrusion
Diam 8	Shaft	450	mm	2	X axis linear guide
Diam 10	Shaft	410	mm	2	Y axis linear guide
Diam 12	Shaft	400	mm	4	Z axis linear guide

Hypercube Evolution Printed part quantities	All versions	X Axis Versions	Y Axis Versions	Z Axis Versions	Notes
Printed Part Name		**Diam 8**	**Diam 10**	**Double**	
X-Carriage	1				
Belt_Clamp	2				
Belt_Tensioner	4				
Duct	1				
Extruder_Mount	1				
Retainer	1				
T_Slot_Cover	As needed				
X_End_Stop_Flag	2				
XY_Idler_Mount_Left			1		
XY_Idler_Mount_Left_yDia8					
XY_Idler_Mount_Right			1		
XY_Idler_Mount_Right_yDia8					
XY_Stepper_Mount Left			1		
XY_Stepper_Mount Left_yDia8					
XY_Stepper_Mount Right			1		
XY_Stepper_Mount Right_yDia8					
Y_Carriage_Clamp_LM8UU					
Y_Carriage_Clamp_LM10UU			2		
Y_Carriage_xDia8_LM8UU					
Y_Carriage_xDia8_LM10UU		2			
Y_Carriage_xDia10_LM8UU					
Y_Carriage_xDia10_LM10UU					
Y_End_Stop_Bracket	2				
Y_End_Stop_Flag	1				
Z_Axis_Bearing_Holder				4	
Z_Axis_Linear_Rail_Bracket_-_Left				2	
Z_Axis_Linear_Rail_Bracket_-_Right				2	
Z_Axis_Linear_Rail_Bracket_-_Double_Z_-_Left				2	
Z_Axis_Linear_Rail_Bracket_-_Double_Z_-_Right				2	

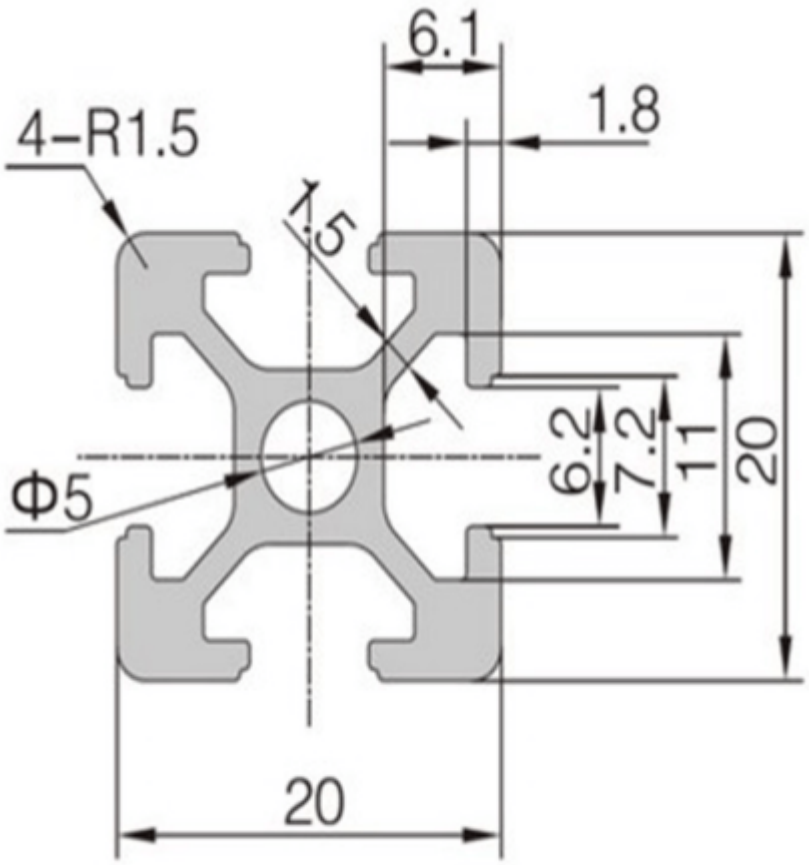
Hypercube Evolution Printed part quantities	All versions	X Axis Versions	Y Axis Versions	Z Axis Versions	Notes
Printed Part Name		**Diam 8**	**Diam 10**	**Double**	
Z_Motor_Mount				2	
Z_Nut_Braket				2	

ここからあるものを削除していく。

最終的なリスト

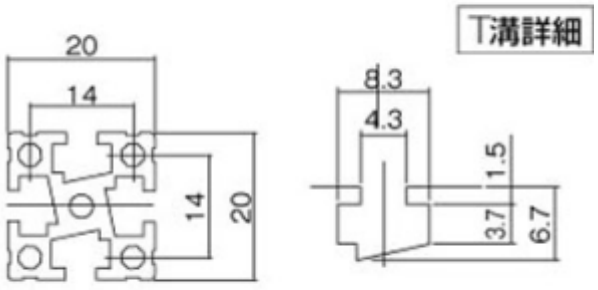
BOM for HyperCube Evolution Black 300*300*300 Edited				
Description	**Quantity**	**Price($) - Total($)**	**Note**	**Original Qty**
420mm 3030 Black Al profiles	4	2.2	8.8	
410mm 3030 Black Al profiles	6	2.1	12.6	
500mm 3030 Black Al profiles	4	2.5	10	
415mm 2020 Black Al profiles	2	1.2	2.4	
235mm 2020 Black Al profiles	2	1	2	
Dia 8mm linear rods 450mm	2	2.1	4.2	
Dia 10mm linear rods 410mm	2	2.3	4.6	
Dia 12mm linear rods 400mm	4	2.5	10	
LM8UU linear bearings	0	0.9	0	https://www.aliexpress.com/item/32853909929.html?spm=2114.12010615.8148356.7.20df47002B32Z5 4
LM10UU linear bearings	0	1	0	https://www.aliexpress.com/item/32856898236.html?spm=a2g0o.productlist.0.0.5c8e4aa5Tsw2gn&algo_pvid=59640c3e-1d98-4ca8-b2b6-fa60ead70a16&algo_expid=59640c3e-1d98-4ca8-b2b6-fa60ead70a16-19&btsid=c8cd0b13-f05a-4f54-8e20-5044eb97505b&ws_ab_test=searchweb0_0,searchweb201602_4,searchweb201603_52 4
LM10LUU linear bearings	0	1.5	0	https://www.aliexpress.com/item/32858761675.html?spm=2114.12010615.8148356.1.2bb81edcaECV0c 2
LM12UU linear bearings	0	1	0	https://www.aliexpress.com/item/32858115295.html?spm=a2g0o.productlist.0.0.240f347bLYn4Rs&algo_pvid=4fbcd93a-90e1-4a23-adf2-070303358367&algo_expid=4fbcd93a-90e1-4a23-adf2-070303358367-9&btsid=f61342790-11c5-4a80-bb08-d08c677dbb11&ws_ab_test=searchweb0_0,searchweb201602_4,searchweb201603_52 8
L type bracket for 3030 extrusion	30	0.4	12	
L type bracket for 2020 extrusion	20	0.3	6	
Black 3030 corner brackets	20	0.3	6	
100 pcs Black M5*10 Button Head Socket Bolts	1	3	3	
Black M6*10 Button Head Socket Bolts with 30-M6 Hummer nuts	20	0.05	1	
Black M3 Socket head screws	1	5	5	
100pcs M5 T Hammer Nuts for 3030 extrusion	1	5	5	
100pcs M5 T Hammer Nuts for 2020 extrusion	0	4.5	0	在庫確認 3
3mm dowel pins	10	0.2	2	
100pcs M3 5×5 Brass knurled insert	1	5	5	
10cps 3030 end Caps	1	2	2	
D50 8*50 Levelling feet	4	1	4	
Nema17 350mm T8*8 leadscrew linaer steppper with Anti-backlash nuts	2	30	60	
NEMA 17 40mm Stepper Motors	0	6.5	0	在庫確認 3
GT2 Timing Pulley (20 teeth) 5mm bore for 6mm belt	2	1.75	3.5	
GT2 Idler Pulley (20 teeth) 3mm bore	6	2	12	
GT2 Idler Pulley without teeth (20 teeth) 3mm bore	2	2	4	
5m Polyurethane GT2 6mm belt	0	6	0	
MK2A Heated Bed 300×300*3mm with Glass 300*300*3mm	0	35	0	
6pcs Levelling screws	0	2	0	1
Insulation Pad 300*300*0.5mm	0	5	0	1
100kohm NTC3950 thermistor	0	0.8	0	1
24V 500W power supply	0	24	0	https://www.aliexpress.com/item/32908478289.html?spm=a2g0o.productlist.0.0.4d5f40fBMfVaIA&algo_pvid=95a0620a-902a-4497-a425-472abbad1f5e&algo_expid=95a0620a-902a-4497-a425-472abbad1f5e-0&btsid=919b4e4d-8c3b-4872-a3f6-7fa9a5fff6f1&ws_ab_test=searchweb0_0,searchweb201602_4,searchweb201603_52 1
RAMPS 1.4 with stepper drivers and display	0	20	0	1
RAMPS 1.4 fan extender module	0	6.5	0	1
DC-DC 24V-12V step down module	0	1.5	0	1
Arduino MEGA 2560	0	7	0	1
Power expansion module	0	1	0	1
5V NPN M12 inductive sensor	0	3	0	1
Optical end stops	4	1.6	6.4	
AC rocker switch power inlet socket w/ fuse	0	1	0	1
5m x 24AWG 4 core UL2464 cable	0	6.6	0	1
5m x 24AWG 2 core UL2464 cable	0	4	0	1
2m x 14AWG Silicone cable	0	3	0	1
5m x 24AWG 3core UL2464 cable	0	5	0	1
Titain Extruder with motor+E3D V6 hotend with Nozzels	0	30	0	
8pcs Metric Wrenches	0	2	0	1
110V/220V 40W Welding Kits	0	10	0	1
10pcs Black and 10pcs Red Y Type Termimals	0	2	0	1
Total			191.5	

アルミフレーム

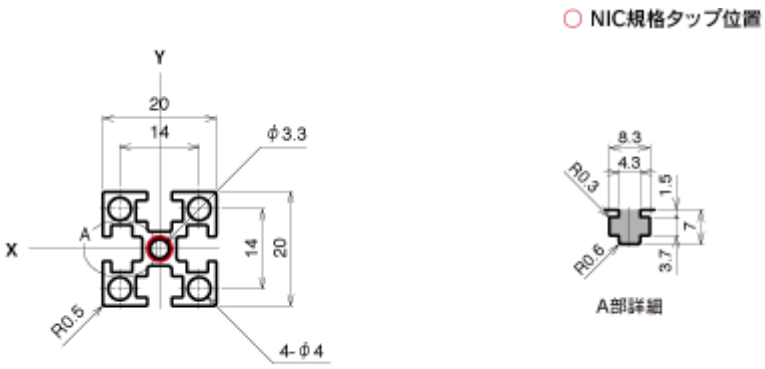


海外の

国内の（ヤマト）

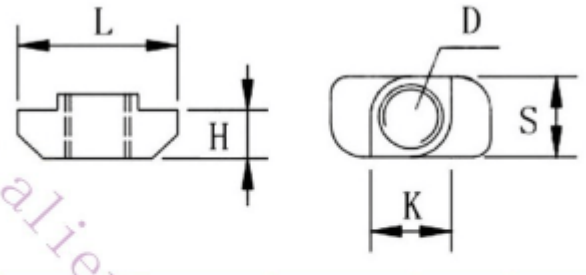


国内の（NIC Direct)



→国内だとミスミ（個人取引不可）か、エスユウエスしかユーロピアンプロファイルを取り扱っていない。 エスユウエスはモノタロウでも買えるが、長さ指定ができない。 WEB SUS 専用ソフトを使って計算すれば3%引きだそう

アルミフレーム用のストッパの仕様（ユーロピアンプロファイル用） Aliexpress.com : Buy 60pcs/lot 2020 aluminum profiles T Slot nuts m3, m4 or m5 Hamer head nuts for 3D Printer from Reliable for 3d printer suppliers on REPRAP Official Store



www.aliexpress.com/store/1051583

型材号	规格（D）	宽度（S）	下高（H）	长度(L)	台宽（K）
20型材	M4	6	3.5	10	6.2
20型材	M5	6	3.5	10	6.2
30型材	M4	8	5	16	8.2
30型材	M5	8	5	16	8.2
30型材	M6	8	5	16	8.2
40型材	M4	8	5	19.5	8.2
40型材	M5	8	5	19.5	8.2
40型材	M6	8	5	19.5	8.2
45型材	M4	10	5.5	19.5	10.2
45型材	M5	10	5.5	19.5	10.2
45型材	M6	10	5.5	19.5	10.2
45型材	M8	10	5.5	19.5	10.2

手配リスト

BOM for HyperCube Evolution Dual Z Axises Black 300*300*300

下図の部品表のうち、数量が0のものはすでに在庫があるか、別途手配するもの。 別途手配するもの

はNoteにURLをつけた。 hypercubeevolution_edit_ht.xls — *root 2019/08/08 14:11*

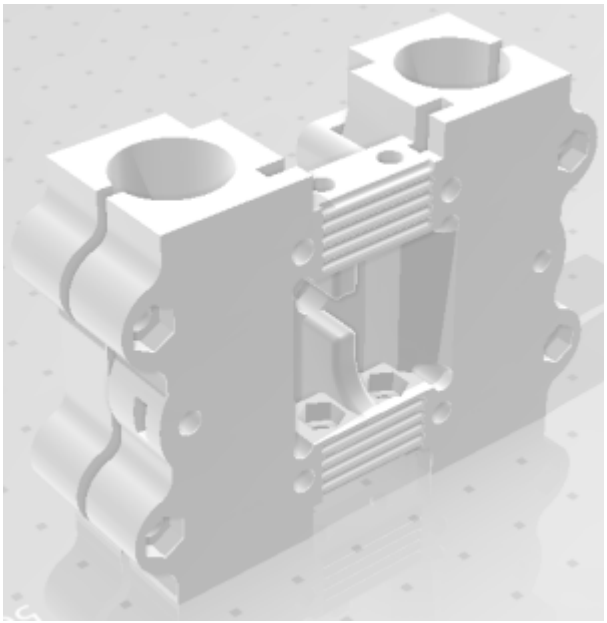
部品表

トータル□191.5 USD

Description	Quantity	Price($) - Total($)	Note	Original Qty	
420mm 3030 Black Al profiles	4	2.2	8.8		
410mm 3030 Black Al profiles	6	2.1	12.6		
500mm 3030 Black Al profiles	4	2.5	10		
415mm 2020 Black Al profiles	2	1.2	2.4		
235mm 2020 Black Al profiles	2	1	2		
Dia 8mm linear rods 450mm	2	2.1	4.2		
Dia 10mm linear rods 410mm	2	2.3	4.6		
Dia 12mm linear rods 400mm	4	2.5	10		
LM8UU linear bearings	0	0.9	0	https://www.aliexpress.com/item/32853909929.html?spm=2114.12010615.8148356.7.20df4700ZB3ZZ5	4
LM10UU linear bearings	0	1	0	https://www.aliexpress.com/item/32856898236.html?spm=a2g0o.productlist.0.0.5c8e4aa5Tsw2gn&algo_pvid=59640c3e-1d98-4ca8-b2b6-fa60ead70a16&algo_expid=59640c3e-1d98-4ca8-b2b6-fa60ead70a16-19&btsid=c8cd0b13-f05a-4f54-8e20-5044eb97505b&ws_ab_test=searchweb0_0,searchweb201602_4,searchweb201603_52	4
LM10LUU linear bearings	0	1.5	0	https://www.aliexpress.com/item/32858761675.html?spm=2114.12010615.8148356.1.2bb81edcaECV0c	2
LM12UU linear bearings	0	1	0	https://www.aliexpress.com/item/32858115295.html?spm=a2g0o.productlist.0.0.240f347bLYn4Rs&algo_pvid=4fbcd93a-90e1-4a23-adf2-07030358367&algo_expid=4fbcd93a-90e1-4a23-adf2-07030358367-9&btsid=f61342790-11c5-4a80-bb08-d08c677dbb11&ws_ab_test=searchweb0_0,searchweb201602_4,searchweb201603_52	8
L type bracket for 3030 extrusion	30	0.4	12		
L type bracket for 2020 extrusion	20	0.3	6		
Black 3030 corner brackets	20	0.3	6		
100 pcs Black M5*10 Button Head Socket Bolts	1	3	3		
Black M6*10 Button Head Socket Bolts with 3D-M6 Hummer nuts	20	0.05	1		
Black M3 Socket head screws	1	5	5		
100pcs M5 T Hammer Nuts for 3030 extrusion	1	5	5		
100pcs M5 T Hammer Nuts for 2020 extrusion	0	4.5	0	在庫確認	3
3mm dowel pins	10	0.2	2		
100pcs M3 5×5 Brass knurled insert	1	5	5		
10cps 3030 end Caps	1	2	2		
D50 8*50 Levelling feet	4	1	4		
Nema17 350mm Tr8*8 leadscrew linaer steppper with Anti-backlash nuts	2	30	60		
NEMA 17 40mm Stepper Motors	0	6.5	0	在庫確認	4
GT2 Timing Pulley (20 teeth) 5mm bore for 6mm belt	2	1.75	3.5		
GT2 Idler Pulley (20 teeth) 3mm bore	6	2	12		
GT2 Idler Pulley without teeth (20 teeth) 3mm bore	2	2	4		
5m Polyurethane GT2 6mm belt	0	6	0		
MK2A Heated Bed 300×300*3mm with Glass 300*300*3mm	0	35	0		
6pcs Levelling screws	0	2	0		1
Insulation Pad 300*300*0.5mm	0	5	0		1
100kohm NTC3950 thermistor	0	0.8	0		1
24V 500W power supply	0	24	0	https://www.aliexpress.com/item/32908478289.html?spm=a2g0o.productlist.0.0.4d5f40F8MlVaIA&algo_pvid=95a0620a-902a-4497-a425-472abbad1f5e&algo_expid=95a0620a-902a-4497-a425-472abbad1f5e-0&btsid=919b4e4d-8c3b-4872-a3f6-7fa9a5fff6f1&ws_ab_test=searchweb0_0,searchweb201602_4,searchweb201603_52	1
RAMPS 1.4 with stepper drivers and display	0	20	0		1
RAMPS 1.4 fan extender module	0	6.5	0		1
DC-DC 24V-12V step down module	0	1.5	0		1
Arduino MEGA 2560	0	7	0		1
Power expansion module	0	1	0		1
5V NPN M12 inductive sensor	0	3	0		1
Optical end stops	4	1.6	6.4		
AC rocker switch power inlet socket w/ fuse	0	1	0		1
5m x 24AWG 4 core UL2464 cable	0	6.6	0		1
5m x 24AWG 2 core UL2464 cable	0	4	0		1
2m x 14AWG Silicone cable	0	3	0		1
5m x 24AWG 3core UL2464 cable	0	5	0		1
Titain Extruder with motor+E3D V6 hotend with Nozzels	0	30	0		
8pcs Metric Wrenches	0	2	0		1
110V/220V 40W Welding Kits	0	10	0		1
10pcs Black and 10pcs Red Y Type Termimals	0	2	0		1

-

標準仕様のhypercube evolutionより、印刷パーツを変更した。

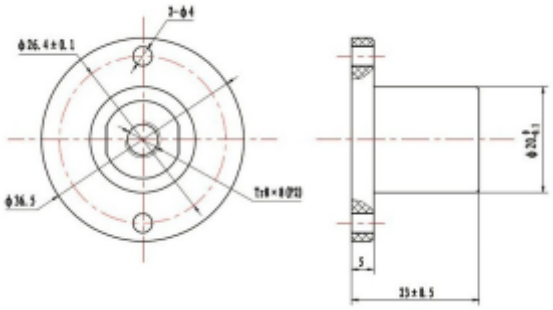


X軸のLM8UUが簡単に抜けるので、ネジ締結式に変更。
x_carriage_hcevo_v2.1c_lm8luu.zip

Z軸のブレ防止 Hypercube Evolution Lead Screw Bracket 8mm with 608ZZ bearing by chanders - Thingiverse

Z軸のバックラッシュナットはこれが届いた□→Z軸の押さえは自作すること。

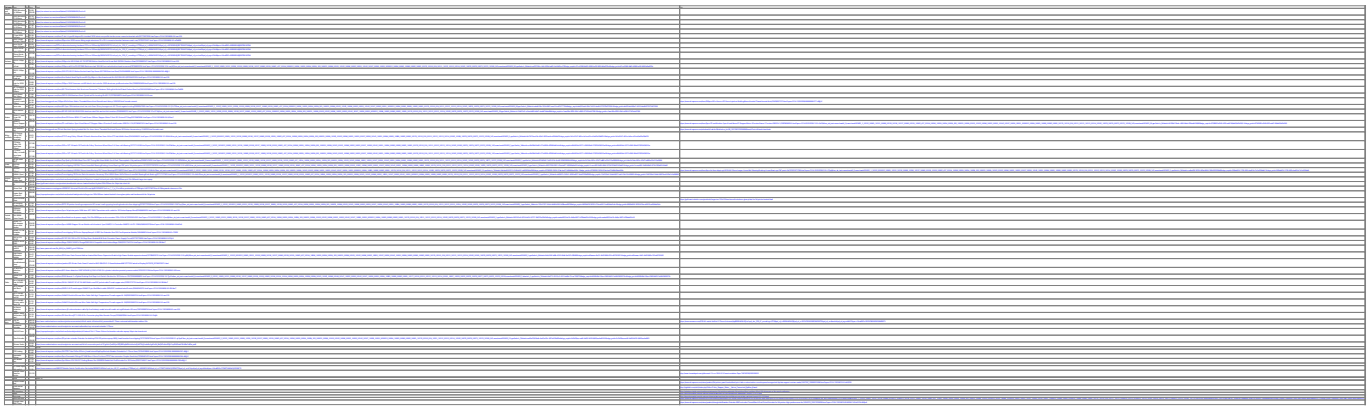
T8 eliminate clearance nut anti backlash nut POM nut trapezoidal screw nut lead 1mm 2mm 4mm 8mm 10mm 12mm 14mm-in 3D Printer Parts & Accessories from Computer & Office on AliExpress -



11.11_Double 11_Singles' Day

ボツになったメモ

先人が作った参考部品表（未使用）



ボード種類

Board	Manufacturer / Link	Type	Processor	Hardware	Firmware	Drivers Fixed / Exchangable	Number of Drivers	Expandable	Network	Remarks	Notes / Opinion
Duet Wifi / Ethernet	Duet3D.com	32-Bit	Atmel SAM4E8E	Open Source	RepRap Open Source	TMC 2660 Fixed	5, XYZ2 E0 E1	Yes, 2/5 drivers	Wifi / Ethernet	Integrated Webserver	Great community support, lots of features.
Duet Maestro	Duet3D.com	32-Bit	Atmel SAM4S8C	Open Source	RepRap Open Source	TMC 2224 Fixed	5, XYZ E0 E1	Yes, 2 drivers	Ethernet	Integrated Webserver	Great community, same as Duet WiFi / Ethernet
Re-Arm	Panucatt.com	32-Bit	LPC1768 ARM	Open Source	Smoothieware Open Source	Any driver, requires RAMPS shield	5. XYZ2 E0 E1	Yes	With Expansion Board	Replaces Arduino, needs RAMPS Shield	Cheap 32-Bit solution, you can keep your RAMPS if you had one
Azteeg X5 GT / Mini	Panucatt.com	32-Bit	LPC1769 ARM	Open Source	Smoothieware Open Source	Any driver with Polulu Socket	GT 5 / Mini 4 XYZ E0 (E1)	Yes	Ethernet (GT with expansion)		Good Smoothieware boards, flexible drivers.
Radds / Due	RADDS.ORG	32-Bit	Atmel SAM3X8E	Open Source	Repetier Open Source	Any driver with Polulu Socket	6, XYZ2 E0 E1 E2	Yes	No		32-Bit Successor of RAMPS/Arduino great community
Replicape	https://www.thing-printer.com/product/replicape/	32-Bit	AM335x1 from Beaglebone	Open Source	Propr. Firmware, Open Source	TMC 2100 Fixed	5, XYZ2 E0 E1	No Information	Ethernet	Needs Beaglebone Black	
Smoothieboard	http://smoothieware.org/smoothieboard	32-Bit	LPC1769 ARM	Open Source	Smoothieware Open Source	A5984 Fixed	5, XYZ E0 E1	No Information	Ethernet	V2 in development	Great community
MKS SBASE	https://www.aliexpress.com/store/1047297	32-Bit	LPC1768 ARM	Closed Source	Smoothieware Open Source	TI 8825 Fixed	5, XYZ E0 E1	No	Ethernet		
Lerdge Board	https://www.aliexpress.com/store/product/3DSWAY-3D-Printer-Motherboard-Lerdge-Board-with-Thermistor-ARM-32-bit-Controller-DIY-Kit-with-3/1948493_32763089756.html?spm=2114.12010612.0.0.6a73e34apWoMv2	32-Bit	STM32F4	Closed Source	Propr. Firmware, Closed Source	Several Drivers available	4, XYZ E0	Yes	WiFi	Includes Display	Great all in one solution, if you dont mind Closed Source Hard- / Software
GEN 7	http://reprap.org/wiki/Generation_7_Electronics	32-Bit	LPC1114 ARM	Open Source	Propr. Firmware, Open Source	Any driver with Polulu Socket	4, XYZ E0	No Information	No	DYI board	Community supported, you need soldering skills
RAMPS / Arduino	http://reprap.org/wiki/RAMPS_1.4	8-Bit	ATmega 2560	Open Source	Marlin, Repetier Open Source	Any driver with Polulu Socket	5. XYZ2 E0 E1	Limited	No	Cheapest and very common solution	Still a very nice working solution. limited processor power though
Rumba Board	http://www.reprap.org/wiki/RUMBA	8-Bit	ATmega 2560	Open Source	Marlin, Repetier Open Source	Any driver with Polulu Socket	6. XYZ E0 E1 E2	No Information	No		Nice all in one solution
MKS GEN	http://reprap.org/wiki/MKS_GEN	8-Bit	ATmega 2560	Closed Source	Marlin, Repetier Open Source	Any driver with Polulu Socket	5. XYZ2 E0 E1	No Information	No	All in one solution for RAMPS	
MKS BASE	http://reprap.org/wiki/MKS_BASE_1.0	8-Bit	ATmega 2560	Closed Source	Marlin, Repetier Open Source	A4988 Fixed	5. XYZ E0 E1	No Information	No		
GT2560	https://www.geeetech.com/wiki/index.php/GT2560	8-Bit	ATmega 2560	Open Source	Marlin, Repetier Open Source	Any driver with Polulu Socket	5. XYZ E0 E1	No Information	No	Geeetech all in one board.	

From:
http://deepsky.jp/wiki/ - **うごくといいな**

Permanent link:
http://deepsky.jp/wiki/doku.php?id=memo:3dp:hevo

Last update: **2025/10/18 21:56**