



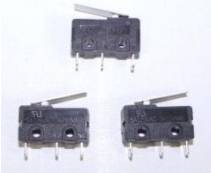









## DELTA CERAMIC/PASTE 3D PRINTER RIG PARTS






(This is only considered as a helpful guide and no responsibility is taken for this information so please check all items before ordering for your suitability)







	<p>SY42STH47-1684A High Torque Hybrid Stepper Motors (Note: 1.8 step angle, 2 phase, rated voltage 2.8, rated current 1.68, 4.4 kg.cm holding torque, 42 x 42 x 47 mm body, 4 wires - also known as Nema 17 steppers. Go for high torque)  3 @ £12.00/\$21.00  UK - Zapp Automation <a href="http://www.zappautomation.co.uk/en/">http://www.zappautomation.co.uk/en/</a>  US - <a href="http://www.applied-motion.com/products/stepper-motors/ts2170n3001e120">http://www.applied-motion.com/products/stepper-motors/ts2170n3001e120</a></p>
	<p>SFC12 Precision ground round shaft (12 mm) - Length: 700MM or more (Note: The length of these rods does not seriously alter the settings of the printer)  6 @ £8.40/\$17.60  UK - Zapp Automation <a href="http://www.zappautomation.co.uk/en/">http://www.zappautomation.co.uk/en/</a>  US - <a href="http://www.amazon.com/Polished-Finish-Precision-Annealed-Diameter/dp/B00CNM6RFA/ref=sr_1_1?ie=UTF8&amp;qid=1401593521&amp;sr=8-1&amp;keywords=precision+ground+rod">http://www.amazon.com/Polished-Finish-Precision-Annealed-Diameter/dp/B00CNM6RFA/ref=sr_1_1?ie=UTF8&amp;qid=1401593521&amp;sr=8-1&amp;keywords=precision+ground+rod</a></p>
	<p>LM12UU Linear bearing LM12UU (Note: must fit shafts above)  6 @ £2.00/\$19.90 for 10  UK - Zapp Automation <a href="http://www.zappautomation.co.uk/en/">http://www.zappautomation.co.uk/en/</a>  US - <a href="http://www.amazon.com/LM12UU-Linear-Bearing-Bushing-linear/dp/B00AGCRBL8">http://www.amazon.com/LM12UU-Linear-Bearing-Bushing-linear/dp/B00AGCRBL8</a></p>
	<p>RAMPS 1.4 with mega 2560, LCD Screen</p> <ul style="list-style-type: none"> <li>* Mega 2560 core microcontroller (Arduino base)</li> <li>* RAMPS 1.4 electronics board that sits over the Mega</li> <li>* You want Stepper motor drivers mounted into the RAMPS board</li> <li>* LCD display screen with SD card slot and connector cables</li> </ul> <p>(Note: Different LCD screens have different settings in the Marlin firmware)</p> <p>- <a href="http://e3d-online.com/Electrical/Electronics-Boards">http://e3d-online.com/Electrical/Electronics-Boards</a>  - <a href="http://www.amazon.co.uk/Sintron-Printer-Controller-Stepper-Heatsink/dp/B00K7P9Y46/ref=sr_1_fkmr0_2?ie=UTF8&amp;qid=1448464086&amp;sr=8-2-fkmr0&amp;keywords=RAMPS+1.4+with+mega+2560+LCD+Screen">http://www.amazon.co.uk/Sintron-Printer-Controller-Stepper-Heatsink/dp/B00K7P9Y46/ref=sr_1_fkmr0_2?ie=UTF8&amp;qid=1448464086&amp;sr=8-2-fkmr0&amp;keywords=RAMPS+1.4+with+mega+2560+LCD+Screen</a>  - <a href="http://www.ebay.co.uk/itm/Reprap-RAMPS-1-4-Mega-2560-R3-5pcs-A4988-with-stiker-2004-LCD-For-3D-Printer-/131638989955?hash=item1ea64b9483:g:3BIAAOSwHnFVjzqY">http://www.ebay.co.uk/itm/Reprap-RAMPS-1-4-Mega-2560-R3-5pcs-A4988-with-stiker-2004-LCD-For-3D-Printer-/131638989955?hash=item1ea64b9483:g:3BIAAOSwHnFVjzqY</a></p>
	<p>3 x End stops – there are two types and both work but you need to sort out the wiring.</p> <p>UK - <a href="https://www.think3dprint3d.com/Hardware/Deltaprinter-hardware/endstop-microswitches">https://www.think3dprint3d.com/Hardware/Deltaprinter-hardware/endstop-microswitches</a>  UK - <a href="http://www.amazon.co.uk/SctechFeb-Mechanical-Switch-EndStop-Printer/dp/B00KWA0EIQ/ref=sr_1_12?ie=UTF8&amp;qid=1448460640&amp;sr=8-12&amp;keywords=end+stops+3D+printer">http://www.amazon.co.uk/SctechFeb-Mechanical-Switch-EndStop-Printer/dp/B00KWA0EIQ/ref=sr_1_12?ie=UTF8&amp;qid=1448460640&amp;sr=8-12&amp;keywords=end+stops+3D+printer</a></p>

	<p>Wiring cables for endstops (2 or 3 pin) and for motor wires (4 pin)  'Search for DuPont Connector' there is the plastic outer housing and then the male pin that connects to the wire, to make up your own wires. They plug into the ramps board.</p> <p>UK - <a href="http://www.ebay.co.uk/itm/DuPont-Cable-wire-Housing-5-or-10-Pack-Choose-from-1-8-pin-X2-UK-Free-P-P-/231489416755?var=530745159946&amp;hash=item35e5d82e33:m:mYriz_iaRz_E6ek1Hi1yxAA">http://www.ebay.co.uk/itm/DuPont-Cable-wire-Housing-5-or-10-Pack-Choose-from-1-8-pin-X2-UK-Free-P-P-/231489416755?var=530745159946&amp;hash=item35e5d82e33:m:mYriz_iaRz_E6ek1Hi1yxAA</a></p>
	<p>1 x 100k thermostat to override temperature code in firmware</p> <p>- <a href="http://www.ebay.co.uk/itm/100K-ohm-EPCOS-B57560G104F-NTC-Thermistor-RepRap-Prusa-3D-Printers-/321191109538?hash=item4ac87b63a2:g:8IEAAMXQPW5SFitl">http://www.ebay.co.uk/itm/100K-ohm-EPCOS-B57560G104F-NTC-Thermistor-RepRap-Prusa-3D-Printers-/321191109538?hash=item4ac87b63a2:g:8IEAAMXQPW5SFitl</a>  - <a href="http://www.amazon.com/dp/B00C7EV5GK?psc=1">http://www.amazon.com/dp/B00C7EV5GK?psc=1</a></p>
	<p>GT2 belts for various 3d printers. (Must get three belts at least 1200 mm long / total around 4Meters)  Or 3 x GT2 UNITTA belt 1164mm length 6mm wide.</p> <p>UK - <a href="https://www.think3dprint3d.com/Hardware/Belts-and-pulleys/GT2-Timing-Belt">https://www.think3dprint3d.com/Hardware/Belts-and-pulleys/GT2-Timing-Belt</a>  UK - <a href="http://www.amazon.co.uk/Timing-Pulleys-meters-Printing-Printer/dp/B00WR9KAC0/ref=sr_1_1?ie=UTF8&amp;qid=1448459344&amp;sr=8-1&amp;keywords=GT2+belts+3d+printers">http://www.amazon.co.uk/Timing-Pulleys-meters-Printing-Printer/dp/B00WR9KAC0/ref=sr_1_1?ie=UTF8&amp;qid=1448459344&amp;sr=8-1&amp;keywords=GT2+belts+3d+printers</a>  US - <a href="http://www.amazon.com/Meters-pitch-wide-Timing-printer/dp/B00F2IQNX8/ref=pd_sim_328_1/180-2607374-6939419?ie=UTF8&amp;dpID=51IDPVegt8L&amp;dpSrc=sims&amp;preST=AC_UL160_SR160%2C160_&amp;refRID=14MSDTR3Y70E6PHG6YXK">http://www.amazon.com/Meters-pitch-wide-Timing-printer/dp/B00F2IQNX8/ref=pd_sim_328_1/180-2607374-6939419?ie=UTF8&amp;dpID=51IDPVegt8L&amp;dpSrc=sims&amp;preST=AC_UL160_SR160%2C160_&amp;refRID=14MSDTR3Y70E6PHG6YXK</a></p>
	<p>GT2 20 tooth Timing Pulleys x 3 (One for each stepper motor)  Note – Search around you can probably find belts (above) and pulleys together for a good price.</p> <p>UK - <a href="https://www.think3dprint3d.com/Hardware/Belts-and-pulleys/GT2-20-ToothTimingPulley-M4GrubScrews">https://www.think3dprint3d.com/Hardware/Belts-and-pulleys/GT2-20-ToothTimingPulley-M4GrubScrews</a>  UK - <a href="http://e3d-online.com/Mechanical/Motion/GT2-Pulley-20-tooth">http://e3d-online.com/Mechanical/Motion/GT2-Pulley-20-tooth</a></p>
	<p>traxxas 5347 Traxxas Rod Ends (Large) with Hollow Balls  12 in pack - £7.59/\$7.09</p> <p>UK - Modelsport UK  <a href="http://www.modelsport.co.uk/index.php?search=1&amp;search_string=traxxas+5347">http://www.modelsport.co.uk/index.php?search=1&amp;search_string=traxxas+5347</a>  US - <a href="http://www.amazon.com/Traxxas-5347-Hollow-Balls-Large/dp/B000BOLVJY">http://www.amazon.com/Traxxas-5347-Hollow-Balls-Large/dp/B000BOLVJY</a></p>
	<p>1m Brass Tube - 8mm (Note: You need to find a tube that the Traxxas Rod Ends above fit snugly into – see  <a href="https://www.youtube.com/watch?v=Q7ucXlnLLis&amp;list=UUvFXo_8dqYWhdq7bQJLh5A">https://www.youtube.com/watch?v=Q7ucXlnLLis&amp;list=UUvFXo_8dqYWhdq7bQJLh5A</a> )  2 lengths @ £9.49 each (or such like)  Sainsbury Homebase</p>

	<p>XBOX 360 203W Power Brick 220V (Note: Other power bricks could be used but while being over powered the Xbox brick are relatively cheap and readily available) £14.00 / \$25.00 UK – Amazon <a href="http://www.amazon.co.uk/OFFICIAL-MICROSOFT-REPLACEMENT-POWER-SUPPLY/dp/B00AUYDF6M/ref=sr_1_2?ie=UTF8&amp;qid=1393778450&amp;sr=8-2&amp;keywords=microsoft+xbox+360+power+supply">http://www.amazon.co.uk/OFFICIAL-MICROSOFT-REPLACEMENT-POWER-SUPPLY/dp/B00AUYDF6M/ref=sr_1_2?ie=UTF8&amp;qid=1393778450&amp;sr=8-2&amp;keywords=microsoft+xbox+360+power+supply</a> US – Amazon <a href="http://www.amazon.com/Fosmon-Power-Supply-Microsoft-XBox/dp/B008OJQV3E/ref=sr_1_1?s=industrial&amp;ie=UTF8&amp;qid=1401594101&amp;sr=1-1&amp;keywords=xbox+360+power+supply">http://www.amazon.com/Fosmon-Power-Supply-Microsoft-XBox/dp/B008OJQV3E/ref=sr_1_1?s=industrial&amp;ie=UTF8&amp;qid=1401594101&amp;sr=1-1&amp;keywords=xbox+360+power+supply</a></p>
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## DELTA CERAMIC/PASTE 3D PRINTER EXTRUDER PARTS

	<p>8oz Techcon 918-034-000 TS Series Aluminium Cartridge Retainer with slot 1 Each 20.58/\$35.71 UK - Ellsworth Adhesives <a href="http://www.ellsworthadhesives.co.uk/">http://www.ellsworthadhesives.co.uk/</a> US – OKInternational, Techcon Systems <a href="https://www.okinternational.com/us-web-store/english/globalnavigation/us-webstore-product-detail?productId=ff11148a-61a2-4d02-b508-3589237f4c69">https://www.okinternational.com/us-web-store/english/globalnavigation/us-webstore-product-detail?productId=ff11148a-61a2-4d02-b508-3589237f4c69</a></p>
	<p>Techcon 918-001-004 TS Series Guns - Retainer Cap with Gasket 1 Each 18.38/\$19.38 UK - Ellsworth Adhesives <a href="http://www.ellsworthadhesives.co.uk/">http://www.ellsworthadhesives.co.uk/</a> US – OKInternational, Techcon Systems <a href="https://www.okinternational.com/us-web-store/english/globalnavigation/us-webstore-product-detail?productId=1d73c389-0a27-4449-813c-28d523ff4e67">https://www.okinternational.com/us-web-store/english/globalnavigation/us-webstore-product-detail?productId=1d73c389-0a27-4449-813c-28d523ff4e67</a></p>
	<p>8oz (230ml) Techcon TS80C HD Cartridge – Natural 10 Each £2.50/\$0.92 UK - Ellsworth Adhesives <a href="http://www.ellsworthadhesives.co.uk/">http://www.ellsworthadhesives.co.uk/</a> Or from Adhesive Dispensing <a href="http://www.adhesivedispensers.co.uk/TS80C.htm">http://www.adhesivedispensers.co.uk/TS80C.htm</a> US – Chemical Concepts <a href="http://www.chemical-concepts.com/techcon-8-oz-hd-cartridge-natural.html">http://www.chemical-concepts.com/techcon-8-oz-hd-cartridge-natural.html</a></p>
	<p>Techcon TSD931-7 Male Luer Lock to 1/4" NPT PP – White (Note: The 1/4" end screws into the cartridge above and then luer lock tip ends below twist into the small end) Each 0.77 Or from UK - Adhesive Dispensing <a href="http://www.adhesivedispensers.co.uk/TSD931-7.htm">http://www.adhesivedispensers.co.uk/TSD931-7.htm</a></p>
	<p>TTN14 Smooth Flow Tapered Tips - 50 for £12.00 UK - Adhesive Dispensing - <a href="http://www.adhesivedispensers.co.uk/tapertips.htm">http://www.adhesivedispensers.co.uk/tapertips.htm</a> or Amazon - 100 for £4.55 <a href="http://www.amazon.co.uk/gp/product/B008MLUPAY/ref=oh_details_o02_s00_i00?ie=UTF8&amp;psc=1">http://www.amazon.co.uk/gp/product/B008MLUPAY/ref=oh_details_o02_s00_i00?ie=UTF8&amp;psc=1</a> US – Amazon 50 for \$21.65 <a href="http://www.amazon.com/Metcal-914125-DHUV-Density-Polyethylene-Dispensing/dp/B00F4BBL7G/ref=pd_sim_sbs_indust_1?ie=UTF8&amp;refRID=16536ABQO4311R49W0VV">http://www.amazon.com/Metcal-914125-DHUV-Density-Polyethylene-Dispensing/dp/B00F4BBL7G/ref=pd_sim_sbs_indust_1?ie=UTF8&amp;refRID=16536ABQO4311R49W0VV</a></p>

	<p>TE714025PK Precision Tips  50 for £11.50  UK - Adhesive Dispensing  <a href="http://www.adhesivedispensers.co.uk/TE714025PK.htm">http://www.adhesivedispensers.co.uk/TE714025PK.htm</a>  US - Amazon <a href="http://www.amazon.com/s/ref=bl_sr_industrial?ie=UTF8&amp;field-brandtextbin=CML+Supply&amp;node=16310091">http://www.amazon.com/s/ref=bl_sr_industrial?ie=UTF8&amp;field-brandtextbin=CML+Supply&amp;node=16310091</a></p>
	<p>Ball Valve 1/4 bsp Male Female Air Compressor to hose  £2.19/\$5.00  UK – Amazon  <a href="http://www.amazon.co.uk/dp/B00B859D7M/ref=pe_385721_37038051_TE_3p_dp_1">http://www.amazon.co.uk/dp/B00B859D7M/ref=pe_385721_37038051_TE_3p_dp_1</a>  US Amazon - <a href="http://www.amazon.com/Kingston-KMBVM-Series-Brass-Female/dp/B006U4E9F2/ref=sr_1_2?s=industrial&amp;ie=UTF8&amp;qid=1401588061&amp;sr=1-2&amp;keywords=1+4+ball+valve">http://www.amazon.com/Kingston-KMBVM-Series-Brass-Female/dp/B006U4E9F2/ref=sr_1_2?s=industrial&amp;ie=UTF8&amp;qid=1401588061&amp;sr=1-2&amp;keywords=1+4+ball+valve</a></p>
	<p>1/4" PT Male Thread 6mm Push In Joint Pneumatic Connector Quick Fittings  10 for £4.30 / 5 for \$6.82  UK - Amazon  <a href="http://www.amazon.co.uk/Thread-Joint-Pneumatic-Connector-Fittings/dp/B0091TF6QC/ref=sr_1_7?s=diy&amp;ie=UTF8&amp;qid=1393777304&amp;sr=1-7&amp;keywords=push+in+6mm">http://www.amazon.co.uk/Thread-Joint-Pneumatic-Connector-Fittings/dp/B0091TF6QC/ref=sr_1_7?s=diy&amp;ie=UTF8&amp;qid=1393777304&amp;sr=1-7&amp;keywords=push+in+6mm</a>  US – Amazon <a href="http://www.amazon.com/Thread-Joint-Pneumatic-Connector-Fittings/dp/B00A150R3O">http://www.amazon.com/Thread-Joint-Pneumatic-Connector-Fittings/dp/B00A150R3O</a></p>
	<p>6mm Plastic pipe – good thickness for pressure.  4M \$6.70  UK – I get it from my local hardware shop  US – Amazon <a href="http://www.amazon.com/13-1Ft-Pneumatic-Hose-Pipe-Clear/dp/B0087WHNPS/ref=pd_sim_indust_1?ie=UTF8&amp;refRID=0FKNW0SKRX1FF7X4AX8H">http://www.amazon.com/13-1Ft-Pneumatic-Hose-Pipe-Clear/dp/B0087WHNPS/ref=pd_sim_indust_1?ie=UTF8&amp;refRID=0FKNW0SKRX1FF7X4AX8H</a></p>
	<p>AR2000-02 Adjustable Pressure Gauge Metal Pneumatic Regulator 1/4"PT £10.30 (or such like) \$12.24  UK – Amazon <a href="http://www.amazon.co.uk/AR2000-02-Adjustable-Pressure-Pneumatic-Regulator/dp/B00AFXL63M/ref=sr_1_fkmr1_1?s=diy&amp;ie=UTF8&amp;qid=1393237524&amp;sr=1-1-fkmr1&amp;keywords=compressed+air+regulator+AR2000-02">http://www.amazon.co.uk/AR2000-02-Adjustable-Pressure-Pneumatic-Regulator/dp/B00AFXL63M/ref=sr_1_fkmr1_1?s=diy&amp;ie=UTF8&amp;qid=1393237524&amp;sr=1-1-fkmr1&amp;keywords=compressed+air+regulator+AR2000-02</a>  US – Amazon <a href="http://www.amazon.com/Amico-AR2000-02-Adjustable-Pneumatic-Regulator/dp/B00AFXL63M/ref=sr_1_1?ie=UTF8&amp;qid=1401593350&amp;sr=8-1&amp;keywords=ar2000-02">http://www.amazon.com/Amico-AR2000-02-Adjustable-Pneumatic-Regulator/dp/B00AFXL63M/ref=sr_1_1?ie=UTF8&amp;qid=1401593350&amp;sr=8-1&amp;keywords=ar2000-02</a></p>
	<p>(A cheaper alternative to the Techcon parts extruder above top)  Glue Liquid Cartridge Dispenser Syringe Barrel 300CC Clear Black  £8.13 / \$11.89  UK – Amazon <a href="http://www.amazon.co.uk/Liquid-Cartridge-Dispenser-Syringe-Barrel/dp/B00GMW4EBG">http://www.amazon.co.uk/Liquid-Cartridge-Dispenser-Syringe-Barrel/dp/B00GMW4EBG</a>  US - Amazon <a href="http://www.amazon.com/Liquid-Cartridge-Dispenser-Syringe-Barrel/dp/B00GMW4EBG">http://www.amazon.com/Liquid-Cartridge-Dispenser-Syringe-Barrel/dp/B00GMW4EBG</a></p>



1/4 Turn Lever Blue White Plastic 6mm Hose Pipe Fitting Coupler Ball Valve  
(Inline tap for dispenser above)

£2.65 / \$5.31

UK – Amazon

[http://www.amazon.co.uk/dp/B00C971AWC/ref=pe\\_385721\\_37038051\\_TE\\_3p\\_dp\\_3](http://www.amazon.co.uk/dp/B00C971AWC/ref=pe_385721_37038051_TE_3p_dp_3)

US – Amazon <http://www.amazon.com/Lever-White-Plastic-Fitting-Coupler/dp/B00C971AWC>