

<b>Document:</b> [1]	Curta Type I - 3x FDM						<a href="#">Open in Onshape</a>
<b>Workspace:</b> [2]	Main [3]						
<b>BOM of Assembly:</b> [4]	Curta Assembly					<b>BOM Type:</b>	Workspace
<b>Description</b>						<b>Created:</b>	12/2/2016 [5]
<b>Part number:</b>							
<b>Revision:</b>							
<b>State:</b>	IN_PROGRESS						

  

ITEM	QTY	NAME	FILE NAME	DESCRIPTION	PART NUMBER	REVISION	STATE
1	8	selector shaft bottom	Selector_shaft_-_selector_shaft_bottom.stl	Print upright with 0.1mm layer height if you can at 100% infill	10061		PENDING
2	8	selector shaft top	selector_shaft_top.stl	Print upright with 0.1mm layer height if you can at 100% infill. Support needed. I used 25% support infill percentage with no dense support layers in Simplify3D	10061 10029		PENDING
3	1	crank handle pin screw	crank_handle_pin_screw_-_crank_handle_pin_screw.stl	100% infill, 0.1mm layer height. File sides relatively smooth and thread with M4 die. May need to reverse the die to get full thread coverage.	10109		PENDING
4	8	selector shaft bearing	selector_shaft_bearing_-_selector_shaft_bearing.stl	100% infill at 0.1mm layer height	10135		PENDING
5	1	crank handle	crank_handle_-_crank_handle.stl	30% infill at 0.1mm layer height	10012		PENDING
6	1	double transmission gear	10219_-_410002.stl	80% infill at 0.1mm layer height.	10219		PENDING
7	15	standard transmission gear	10230_-_410008.stl	80% infill at 0.1mm layer height.	10230		PENDING
8	1	lockout	10221.stl	80% infill at 0.1mm layer height.	10221		PENDING
9	1	triple transmission gear	10218.stl	80% infill at 0.1mm layer height.	10218		PENDING
10	1	tall lockout	10222.stl	80% infill at 0.1mm layer height.	10222		PENDING
11	15	lockout with transmission gear	10220_-_410003.stl	80% infill at 0.1mm layer height.	10220		PENDING
12	1	counter sleeve nut	counter_sleeve_nut_-_counter_sleeve_nut.stl	30% infill at 0.1mm layer height	10026		PENDING
13	1	main shaft bottom or step drum lower	One of main_shaft_-_main_shaft_bottom.stl or Step_Drum_lower.stl	20% infill at 0.2mm layer height	10003		PENDING
14	1	counter body	counter_body_-_counter_body.stl	30% infill at 0.1mm layer height	10040		PENDING
15	1	counter body stop pin	counter_body_pin_-_counter_body_stop_pin.stl	Printed horizontally. 100% infill at 0.1mm layer height	10150		PENDING
16	2	counter body spider spring pin	counter_body_pin_-_counter_body_pin.stl	Printed horizontally with support. 100% infill at 0.1mm layer height	10149		PENDING
17	1	spider spring	spider_spring_-_spider_spring.stl	100% infill at 0.1mm layer height	10004		PENDING
18	1	crank collar	crank_collar_-_crank_collar.stl	30% infill at 0.1mm layer height	10025		PENDING
19	2	setting axle holding plate	setting_axle_holding_plate_-_setting_axle_holding_plate.stl	100% infill at 0.2mm layer height	10136		PENDING
20	1	upper reversing lever spacer	reversing_lever_spacers_-_upper_reversing_lever_spacer.stl	20% infill at 0.2mm layer height	10138		PENDING
21	1	lower reversing lever spacer	reversing_lever_spacers_-_lower_reversing_lever_spacer.stl	20% infill at 0.2mm layer height	10137		PENDING
22	1	reversing lever	Reversing_Lever.stl	20% infill at 0.1mm layer height with support. I used 25% support infill percentage with no dense support layers in Simplify3D	10211		PENDING
23	1	reversing shaft	reversing_shaft_-_reversing_shaft.stl	100% infill at 0.1mm layer height	10065		PENDING
24	1	clearing ring	clearing_ring_-_clearing_ring.stl	40% infill at 0.1mm layer height	10034		PENDING
25	1	zero positioning disc roller	zero_positioning_disc_-_zero_positioning_disc_roller.stl	20% infill at 0.2mm layer height	10112		PENDING
26	3	frame support	frame_support_-_frame_support.stl	40% infill at 0.1mm layer height. I printed these horizontally with support in order to make them stronger. If you can't get these done horizontally, I recommend 100% infill. Also, the ends need to be threaded with an M5 die. If you print vertically, you will still need support and you will need to file down the parts that need to be threaded to avoid them splitting / delaminating at the layers.	10064		IN_PROGRESS
27	1	zero positioning disc	zero_positioning_disc_-_zero_positioning_disc.stl	20% infill at 0.2mm layer height with lots of support.	10111		PENDING
28	1	ones results transmission shaft	10208.stl	80% at 0.2mm layer height. support at 27% infill.	10208		PENDING
29	1	ones turns transmission shaft	10216.stl	80% at 0.2mm layer height. support at 27% infill.	10216		PENDING
30	12	transmission shaft	10207.stl	80% at 0.2mm layer height. support at 27% infill.	10207		PENDING
31	3	9,10,11 digits transmission shaft	10209.stl	80% at 0.2mm layer height. support at 27% infill.	10209		PENDING
32	1	main crank thrust collar	main_crank_thrust_collar_-_main_crank_thrust_collar.stl	40% infill at 0.1mm layer height	10129		PENDING

					10009 10100 10101 10102 10103 10104 10105 10106 10107 10120		
33	1	tens bell	tens_bell.stl		30% infill at 0.2mm layer height. support at 20% infill. Support will be difficult to remove from inside the tens bell. Don't worry too much about that -- the outside edges matter the most.		PENDING
34	1	crank collar spacer ring	crank_collar_spacer_ring.stl		40% infill at 0.1mm layer height	10099	PENDING
35	1	main crank spring sleeve	main_crank_spring_sleeve_-_main_crank_spring_sleeve.stl		40% infill at 0.1mm layer height	10035	PENDING
36	1	upper housing	upper_housing_-_upper_housing.stl		40% infill at 0.1mm layer height. Support at 25% infill	10088	PENDING
37	10	tens slider for results	tens_carry_levers_-_tens_slider_for_results.stl		100% infill at 0.1mm layer height. Support at 80% infill. Print upright. If your bed travels on the y-axis, orient them so their long edge is along the y-axis	10005	PENDING
38	5	tens slider for turns counter	tens_carry_levers_-_tens_slider_for_turns_counter.stl		100% infill at 0.1mm layer height. Support at 80% infill. Print upright. If your bed travels on the y-axis, orient them so their long edge is along the y-axis	10006	IN_PROGRESS
39	1	tens bell c-clip	tens_bell_c-clip_-_tens_bell_c-clip.stl		40% infill at 0.2mm layer height	10133	PENDING
40	1	tens bell spring	tens_bell_spring_-_tens_bell_spring.stl		100% infill at 0.1mm layer height and 30% support infill	10070	PENDING
41	1	clearing cap tooth segment spacer	clearing_cap_teeth_-_clearing_cap_tooth_segment_spacer.stl		30% infill at 0.1mm layer height	10143	PENDING
42	2	clearing cap teeth	clearing_cap_teeth_-_clearing_cap_teeth.stl		30% infill at 0.1mm layer height	10142	PENDING
43	13	results dial type 2	results_dial_-_results_dial_type_2.stl		40% infill at 0.1mm layer height and 18% support infill	10045	PENDING
44	4	results dial type 1	results_dial_-_results_dial_type_1.stl		40% infill at 0.1mm layer height and 18% support infill	10043	PENDING
						10001 10003 10072 10076 10078 10079 10080 10081 10082 10083 10084 10087 10090 10091 10096 10119	
45	1	step drum or step drum upper	One of Main_Axle_and_Step_Drum.stl or Step_Drum_upper.stl		30% infill at 0.2mm layer height until 80.88mm for step drum or 16mm for step drum upper and then 100% infill from there on up. 30% support infill		PENDING
46	1	counter ring washer	counter_ring_washer_-_counter_ring_washer.stl		20% infill at 0.2mm layer height	10098	PENDING
47	1	clearing cover	clearing_cover_-_clearing_cover.stl		40% infill at 0.1mm layer height and 25% support infill.	10030	PENDING
48	1	retaining ring for tens bell	retaining_ring_for_tens_bell_-_retaining_ring_for_tens_bell.stl		20% infill at 0.2mm layer height	10031	PENDING
49	1	antireversal plate	antireversal_plate_-_antireversal_plate.stl		20% infill at 0.2mm layer height	10010	PENDING
50	1	base plate	base_plate_-_base_plate.stl		20% infill at 0.2mm layer height	10160	IN_PROGRESS
51	1	spring sleeve clip	spring_sleeve_clip_-_spring_sleeve_clip.stl		40% infill at 0.1mm layer height	10036	PENDING
52	1	lower housing	Lower_Housing.stl		30% infill at 0.1mm layer height and 30% support infill	10062	PENDING
53	1	clearing stop pin sleeve	clearing_stop_pin_sleeve_-_clearing_stop_pin_sleeve.stl		100% infill at 0.1mm layer height	10095	PENDING
54	9	Spring clip for transmission axle	Spring_clip_for_transmission_axle_-_Spring_clip_for_transmission_axle.stl		Don't print this -- Use clear fingernail polish to hold fixed transmission gears in place 100% infill at 0.1mm layer height	10097	PENDING
55	1	digits cover	digits_cover_-_digits_cover.stl		30% infill at 0.1mm layer height and 25% support infill	10089	PENDING
56	1	main body	main_body_-_main_body.stl		30% infill at 0.2mm layer height and 25% support infill	10011	PENDING
57	1	bearing plate	bearing_plate_-_bearing_plate.stl		20% infill at 0.2mm layer height and 18% support infill	10077	PENDING
58	2	clearing ring rivet	clearing_ring_rivet_-_clearing_ring_rivet.stl		30% infill at 0.1mm layer height and 30% support infill	10093	PENDING
59	1	cover ring	cover_ring_-_cover_ring.stl		30% infill at 0.2mm layer height	10071	PENDING
60	8	number roll carry pin half	number_roll_carry_pins_-_number_roll_carry_pin_half.stl		100% infill at 0.1mm layer height printed horizontally	10021	PENDING
61	7	number roll carry pin full	number_roll_carry_pins_-_number_roll_carry_pin_full.stl		100% infill at 0.1mm layer height printed horizontally	10019	PENDING
62	1	main crank	main_crank_-_main_crank.stl		30% infill at 0.1mm layer height and 18% support infill	10242 with 10022	PENDING

63	8	digit selector screw	digit_selector_screw_-_digit_selector_screw.stl	100% infill at 0.1mm layer height and threaded with an M4 die. File the part that will be threaded before threading to prevent splitting along layers	10075		PENDING
64	1	upper outer sleeve	upper_outer_sleeve_-_upper_outer_sleeve.stl	30% infill at 0.1mm layer height	10085		PENDING
65	8	selector knob	selector_knob_-_selector_knob.stl	30% infill at 0.1mm layer height and 28% support infill	10057		PENDING
66	1	reverse rotation prevention pawl	zero_positioning_disc_parts_-_reverse_rotation_prevention_pawl.stl	20% infill at 0.2mm layer height	10113		PENDING
67	1	zero positioning lever	zero_positioning_disc_parts_-_zero_positioning_lever.stl	20% infill at 0.2mm layer height	10114		PENDING
68	15	tens slide bearing	tens_slide_bearing_-_tens_slide_bearing.stl	100% infill at 0.1mm layer height and support	10018		PENDING
69	10	position marker	position_marker_-_position_marker.stl	100% infill at 0.1mm layer height	10046		PENDING
70	17	digits axle	digits_axle_-_digits_axle.stl	100% infill at 0.1mm layer height and 25% support infill	10008		IN_PROGRESS
71	1	main axle pin for zero positioning disc	main_axle_pin_for_zero_positioning_disc.stl	100% infill at 0.1mm layer height printed horizontally			PENDING
72	1	main axle pin for crank handle	main_axle_pin_for_crank_handle.stl	100% infill at 0.1mm layer height printed horizontally			PENDING
73	1	carriage pin	carriage_pin.stl	same as number roll carry pin full -- drilled hole through knurled upper carriage and digits cover at the appropriate size to place this.			PENDING
74	1	zero positioning plate securing spring	zero_positioning_plate_securing_spring.stl	100% infill at 0.1mm layer height	10118		PENDING
75	1	crank pin	crank_pin_-_crank_pin.stl	Print horizontally at 100% infill at 0.1mm layer height with support	10022		PENDING
76	1	zero positioning lever bolt sleeve	zero_positioning_lever_bolt_sleeve.stl	30% infill at 0.2mm layer height			PENDING
77	1	anti-reversal pawl bolt sleeve	anti-reversal_pawl_bolt_sleeve.stl	30% infill at 0.2mm layer height			PENDING
78	3	step drum pin	step_drum_joining_pin.stl	Print if printing step drum upper and lower. 100% infill at 0.2 mm layer height			PENDING

[illegible]

<b>Document:</b>	Curta 3x FDM assembly tools				
<b>Description</b>					
<b>State:</b>	IN_PROGRESS			<b>BOM Type:</b>	Workspace
				<b>Created:</b>	12/4/2016 [7]
<b>ITEM</b>	<b>NAME</b>	<b>DESCRIPTION</b>	<b>LINK</b>		
1	3D Printer	0.4mm nozzle, min 160x160x170mm build volume			
2	Set of needle files		<a href="#">Amazon.com</a>		
3	Sandpaper	80, 120, 220, 320, 400, 600 grit based on finish desired	<a href="#">Amazon.com</a>		
4	Drill	optional -- metric bits would be helpful (I didn't have them)			
5	Screwdriver	Philips	<a href="#">Amazon.com</a>		
6	Plastic safe lubricant	I used a Teflon (PTFE) dry lubricant -- easy application; no mess	<a href="#">Amazon.com</a>		
7	Cyanoacrylate glue		<a href="#">Amazon.com</a>		
8	Blue thread lock	optional	<a href="#">Amazon.com</a>		
9	Needle-nose pliers		<a href="#">Amazon.com</a>		
10	Hobby knife		<a href="#">Amazon.com</a>		
11	Metric tap & die set		<a href="#">Amazon.com</a>		
12	Digital calipers		<a href="#">Amazon.com</a>		

Document: [8]	3D Printed Tools					<a href="#">Open in Onshape</a>
Workspace: [9]	Main [10]					
BOM of Assembly: [1	Assembly 1				BOM Type:	Workspace
Description					Created:	12/4/2016 [12]
Part number:						
Revision:						
State:	IN_PROGRESS					
ITEM	QTY	NAME	DESCRIPTION	PART NUMBER	REVISION	STATE
1	1	carry lever spring tool				IN_PROGRESS

[1] 57e3f5c529d2af11276b1529

[2] eafe4a700fe87f2b71bc3d31

[3] Description:

Created by: Marcus Wu

Created at: Sep 22, 2016 at 10:16:41 PM UTC

Modified by: Marcus Wu

Modified at: Dec 02, 2016 at 09:23:55 PM UTC

[4] b65fd0687ae7649ead2f8927

[5] Dec 02, 2016 at 02:25:42 PM UTC

[6] Dec 04, 2016 at 01:42:04 PM UTC

[7] Dec 04, 2016 at 01:42:04 PM UTC

[8] 284343ba7fa12e797ade2e9a

[9] 8aa21473fbd1e721e7abe465

[10] Description:

Created by: Marcus Wu

Created at: Feb 07, 2016 at 11:20:20 PM UTC

Modified by: Marcus Wu

Modified at: Dec 04, 2016 at 08:41:50 PM UTC

[11] 1d36b0900aa36e2fa23783b6

[12] Dec 04, 2016 at 01:42:04 PM UTC