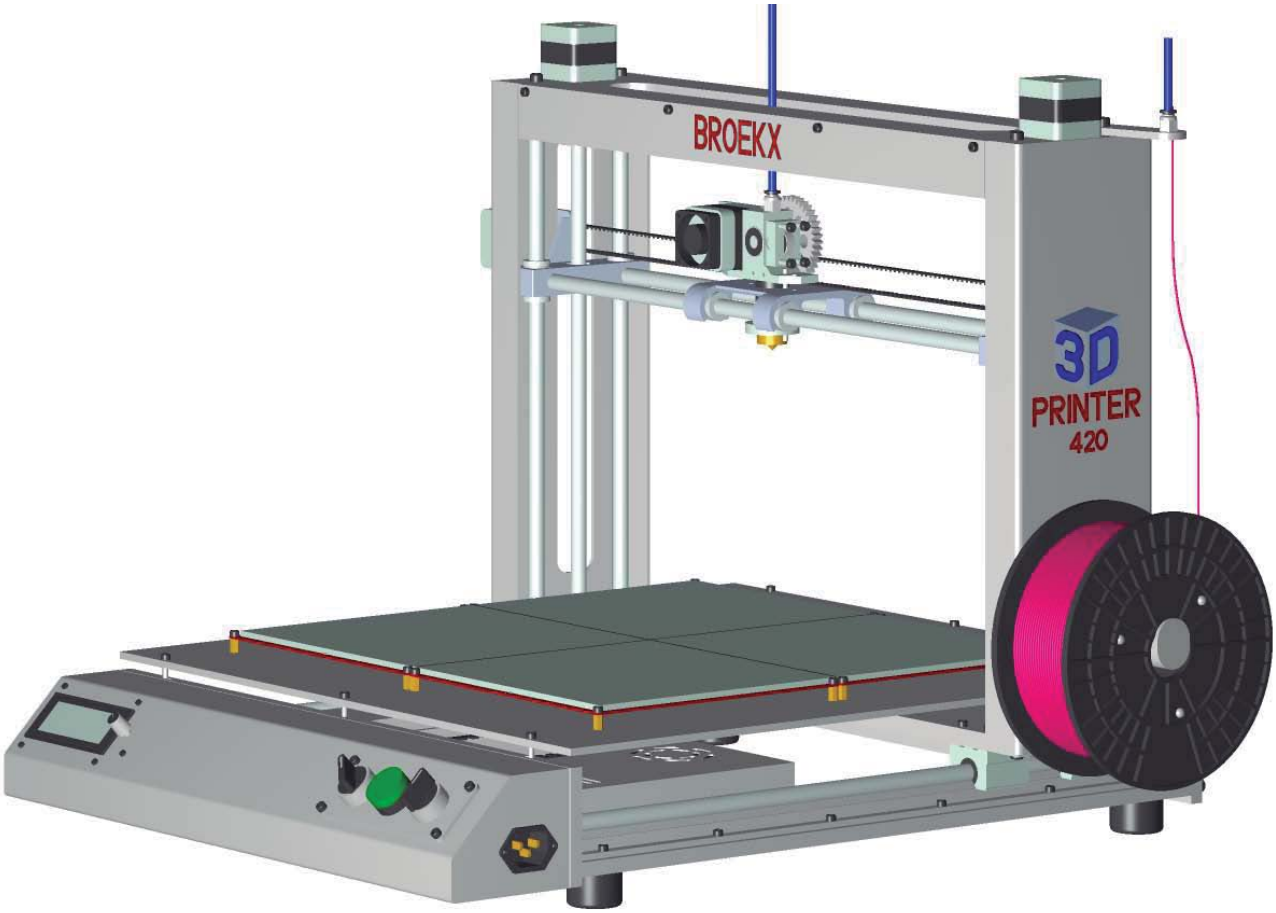
Broekx D.I.Y. Project

3D Printer 420



3D PRINTER 420

Material List

Quantity	Description	Size
	Base Assembly	
1	Front - Flat Aluminium	530x80x12mm
1	Back - Flat Aluminium	530x80x12mm
2	Linear Rail Support - Flat Aluminium	550x60x12mm
1	Work Top - Aluminium Plate	574x530x3mm
2	Power Supply Support - Flat Aluminium	500x25x3mm
1	Mounting Bracket - Flat Aluminium	78x42x3mm
1	Front Panel - Flat Aluminium	530x400x1.5mm
2	SBR12mm Linear Rail	550mm
4	Linear Bearings - SBR12UU	
1	T5 Timing Belt	1300x5mm
2	T5 Timing Pulley 12T	
6	Compression springs	16x6.5x1
4	Rubber Door Stops	
1	Cable Drag Chain 20x10	1m
2	Bearing 602RS	
	X Axis Assembly	
2	Bearing Housing - Aluminium Bar	110x30x20
2	Bearing Housing - Aluminium Bar	100x30x20
2	12mm Linear Shaft	528mm
4	Linear Bearings - LM12UU	
1	Extruder Mounting Plate - Flat Aluminium	110x70x3mm
1	Motor Mounting Bracket - Flat Aluminium	97x62x3mm
2	T5 Timing Pulley 12T	
1	T5 Timing Belt	1300x5mm
1	Cable Drag Chain 7x7	1m
2	Bearing 602RS	
	Y Axis Assembly	
1	Top Plate Flat Plate Aluminium	600x130x12mm
1	Bottom Plate - Aluminium	600x120x12mm
2	M12mm S/Steel Threaded rod	393mm
4	12mm Linear Shaft	400mm
4	Linear Bearings - LM12UU	
2	Cable Duct - Aluminium Chanel	424-25x10x1.5mm
1	Cable Drag Chain 7x7	1m
2	Bearing 608RS	
1	Cover LHS - Sheet Aluminium	424x204x1.5mm
1	Cover RHS - Sheet Aluminium	424x204x1.5mm
1	Cover Top Front - Sheet Aluminium	535x50x1.5
1	Filament Reel Shaft - 20mm Rod	110x20mm
1	Filament Reel Holder - Nylon	85x50mm
1	Bearing - 6002RS	
1	Bearing - 6201RS	

3D PRINTER 420

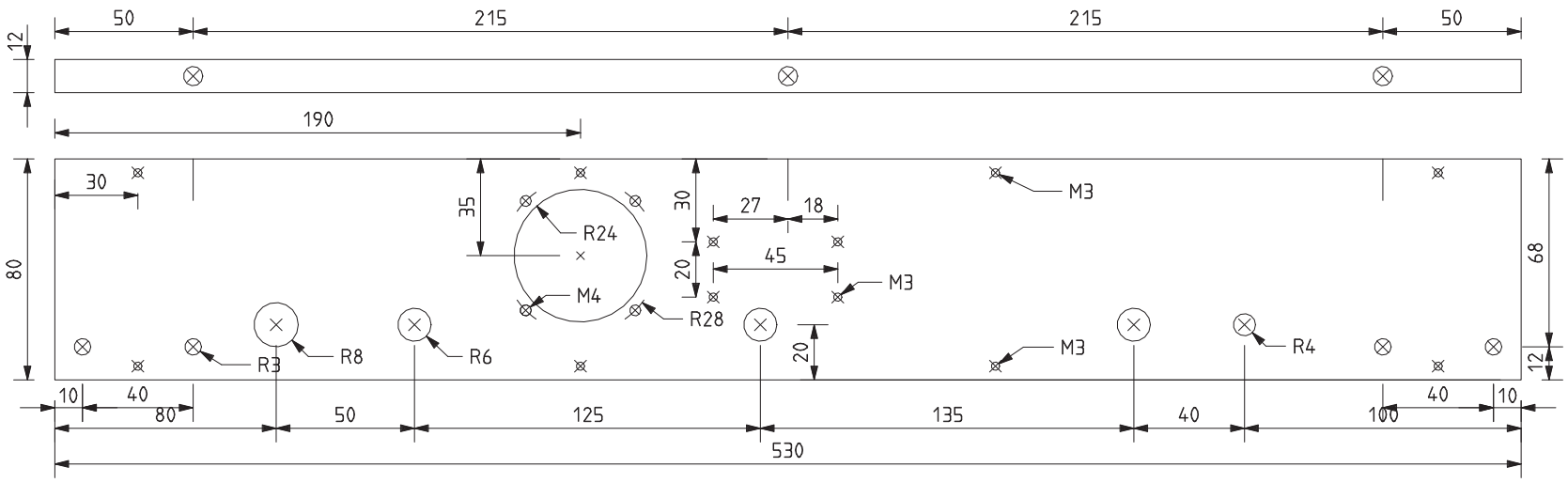
Material List

Quantity	Description	Size
5	Stepper Motors Nema 17 42BYGHW609	
1	Heat sink	40x40x10
1	Computer fan 12V	50x50
1	Computer fan 12V	40x40
1	Ramps 1.4 electronics with LSD and SD Card reader	
2	Flexible Couplers 6x8	
8	Socket Head Screws	M3x8
12	Socket Head Screws	M3x15
1	Hot End	
1	Extruder	
1	Borosilicate Glass	420x420x3.3
1	11 Pin Relay & Socket	
1	8 Pin Relay & Socket	
2	Power Supply - 12v 360W 30A	

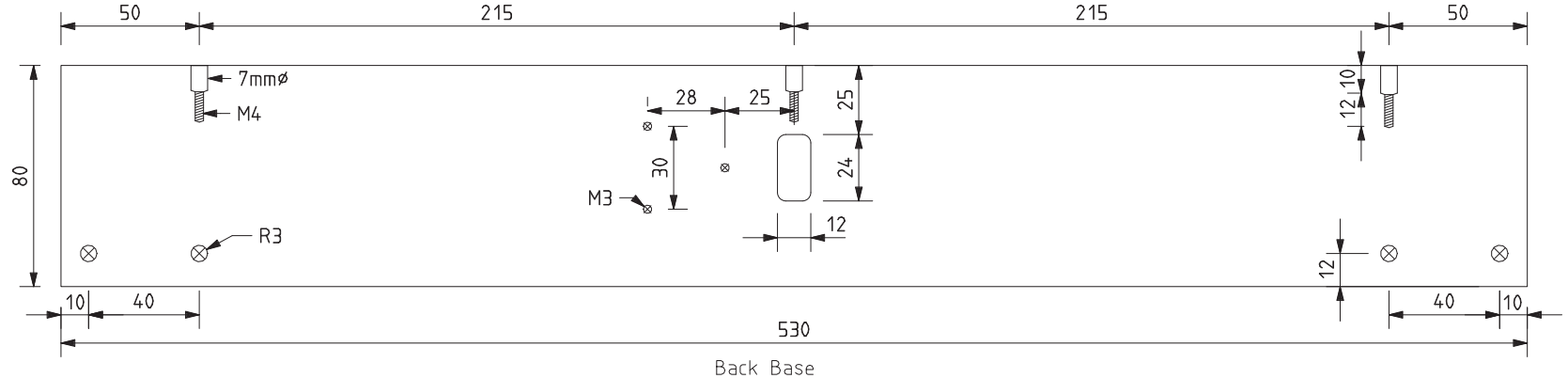
Specification's

Work Piece Si:	X Axis	390mm
	Y Axis	400mm
	Z Axis	250mm

Table size	530mm x 574mm
Width	660mm
Depth	730mm

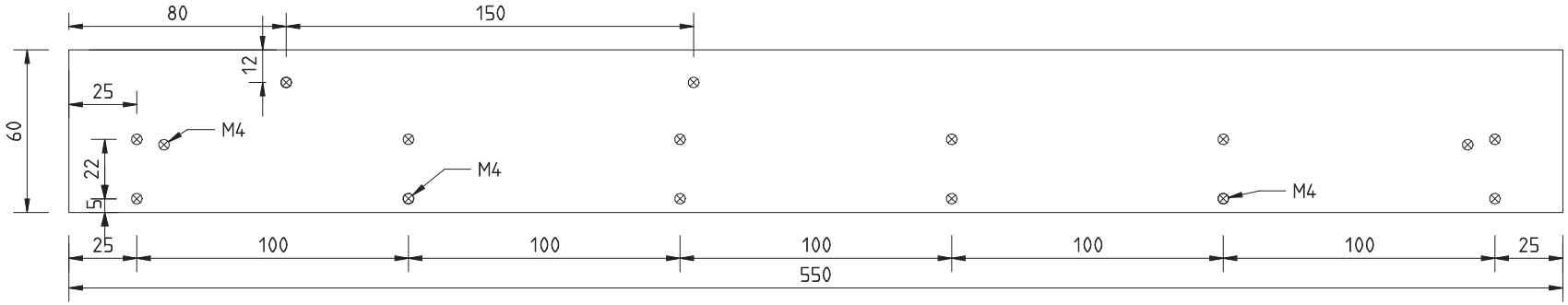


Front Base
12mm Aluminium

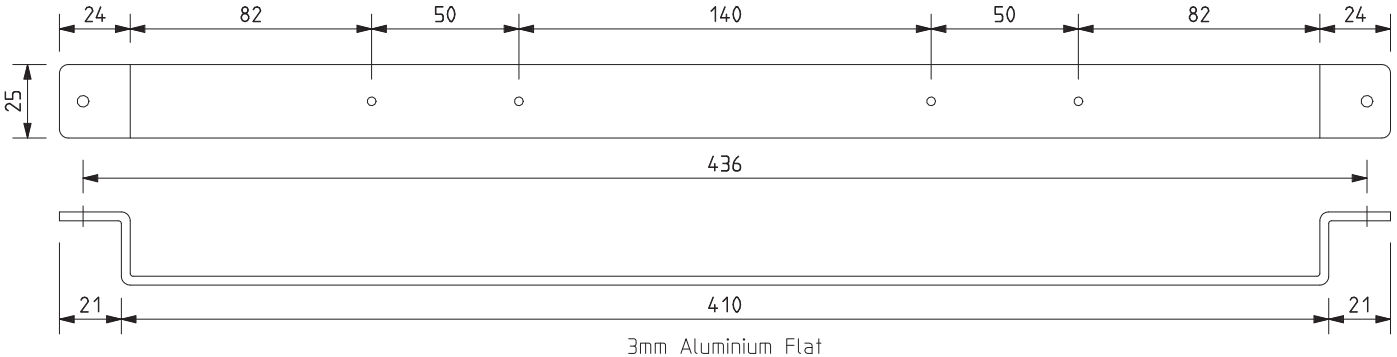


Back Base
12mm Aluminium

BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Base Front & Back
DRAWN 15-11-2012		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 15-11-2012	SCALE 1: 2.5	SHEET 1 OF 21

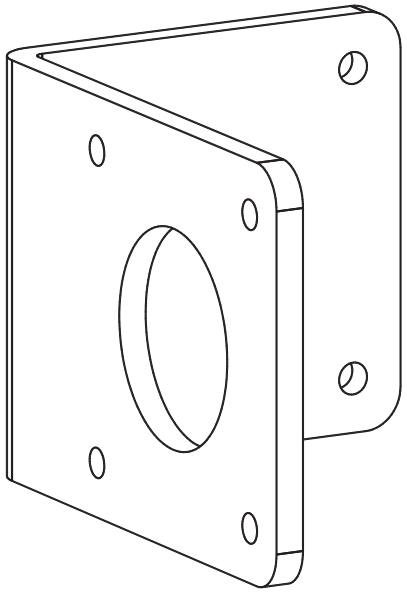


Y Axis Rail Support
12mm Aluminum
2 Reqd

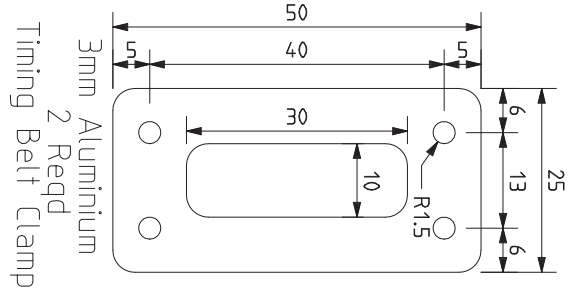


3mm Aluminium Flat
2 Reqd

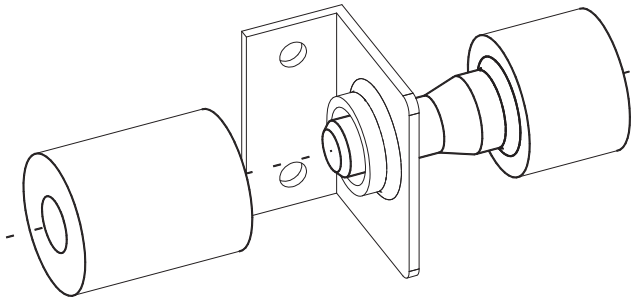
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 X Axis Rail Support
DRAWN 19-11-2012		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 21-11-2012	SCALE 1: 2.5	SHEET 2 OF 21

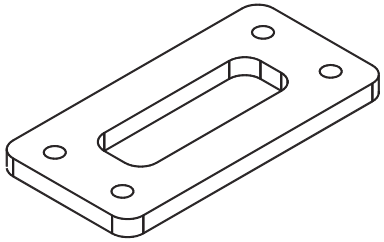


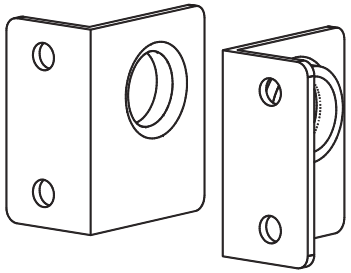
Stepper Motor Mount

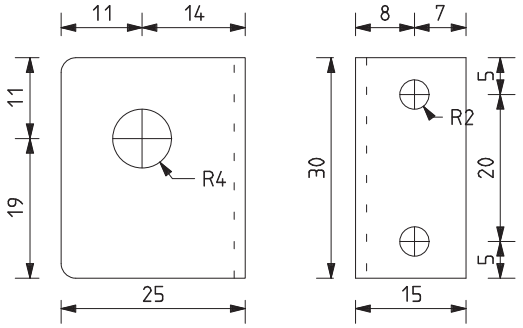


3mm Aluminium
2 Reqd
Timing Belt Clamp

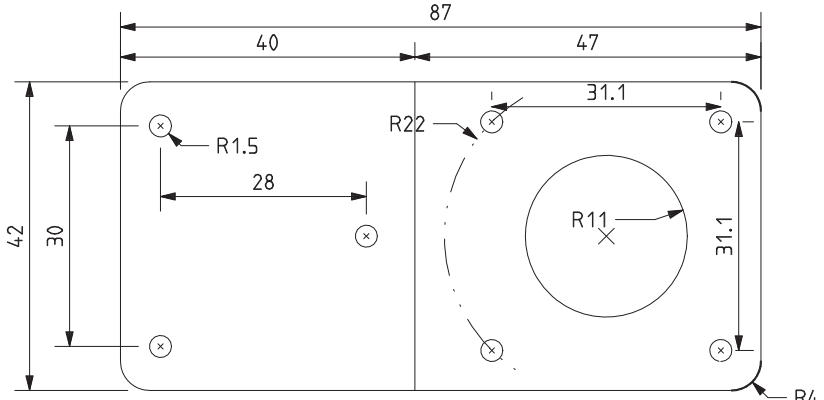




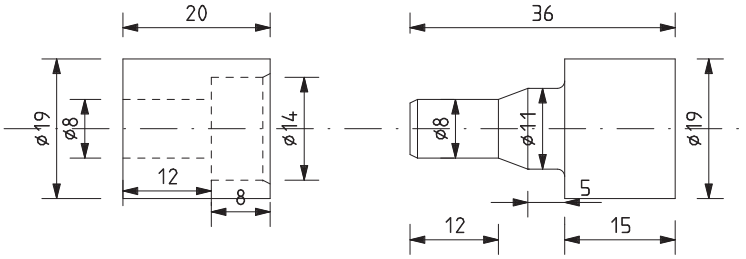




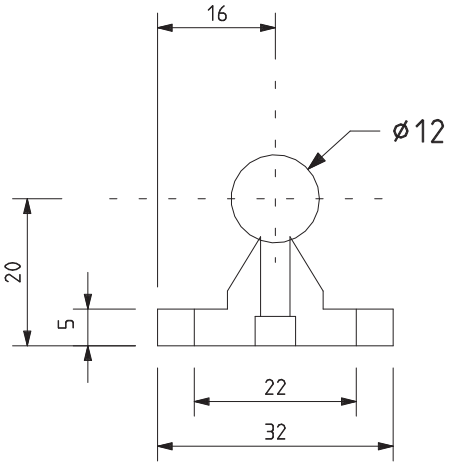
Aluminium Angel
25x15x1.5



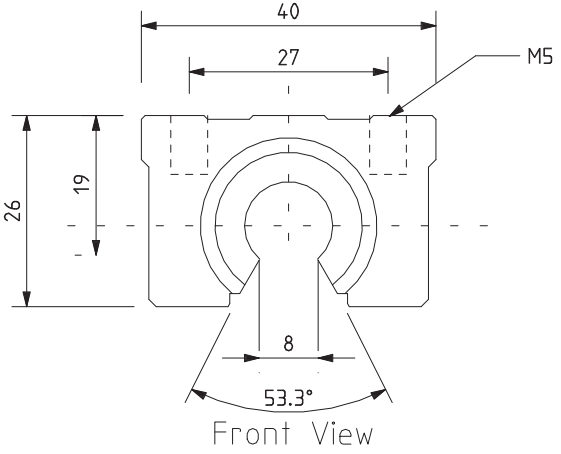
3mm Alluminium



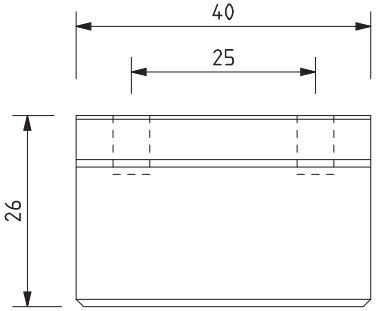
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Base Assembly
DRAWN 24-11-2012		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 24-11-2012	SCALE 1:1	SHEET 3 OF 21



Front View

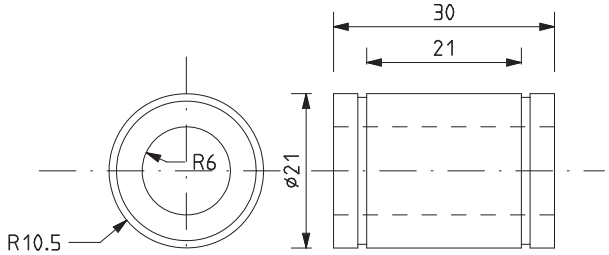


Front View

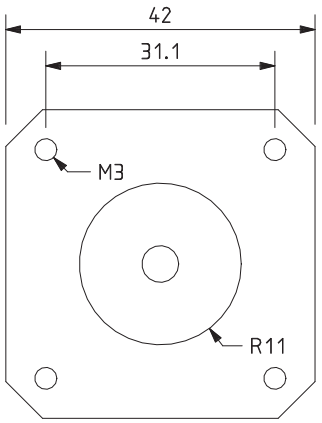


Side View

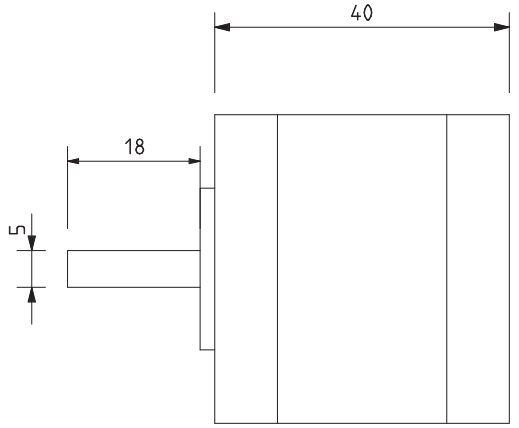
SBR12UU Linear Bearing



Linear Bearing
LM12UU



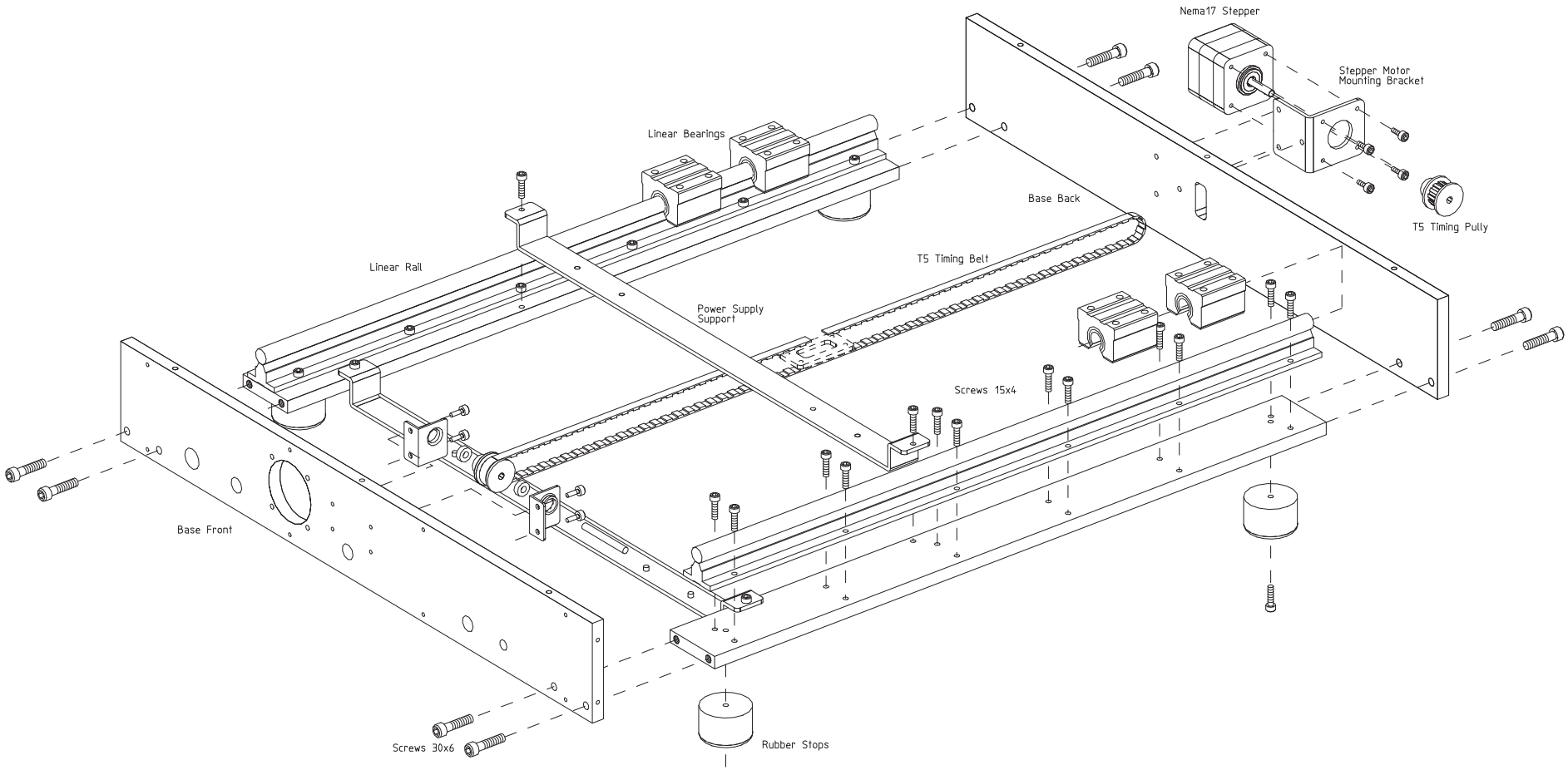
Front View



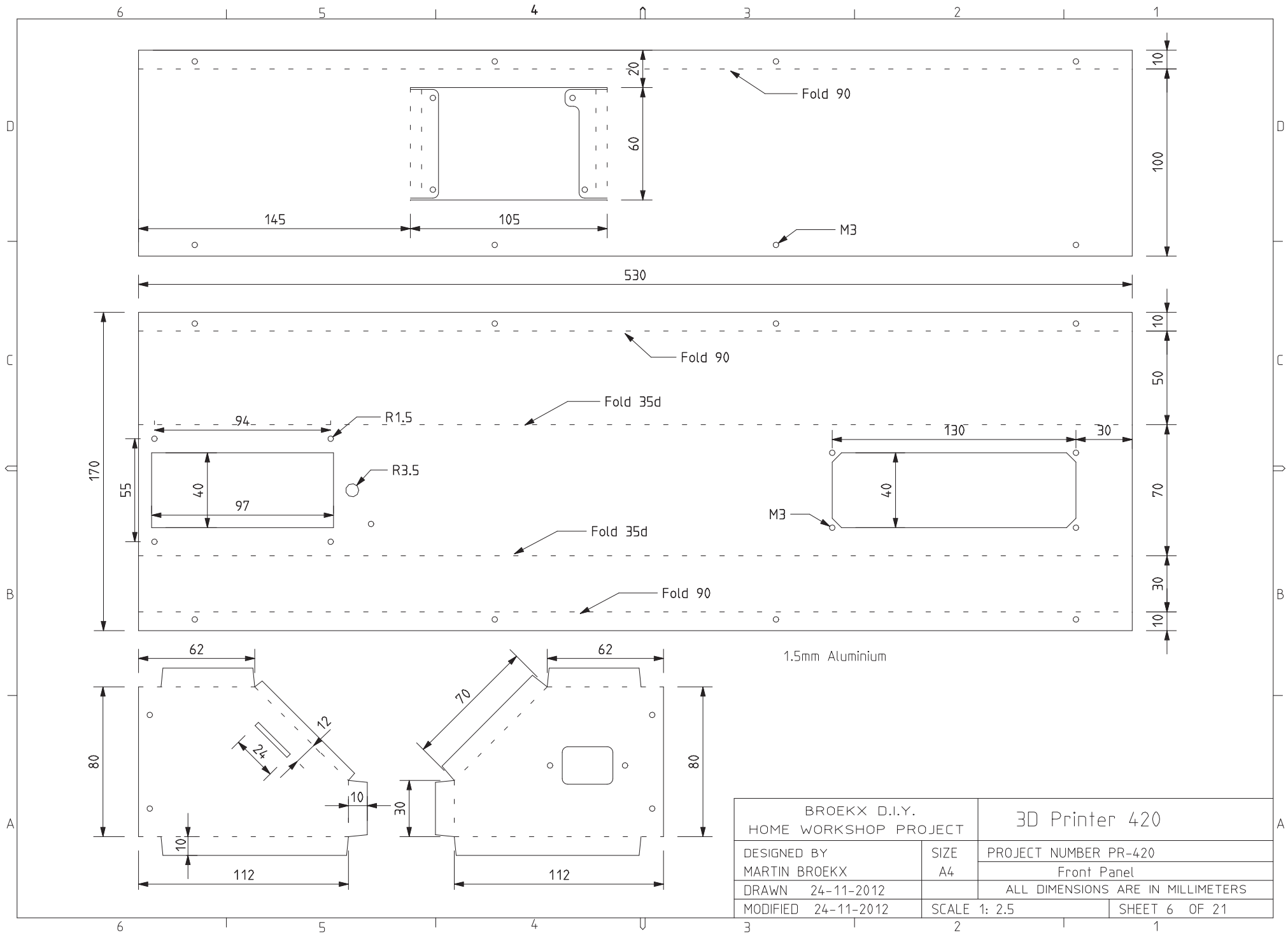
Side View

Nema 17 Stepper Motor

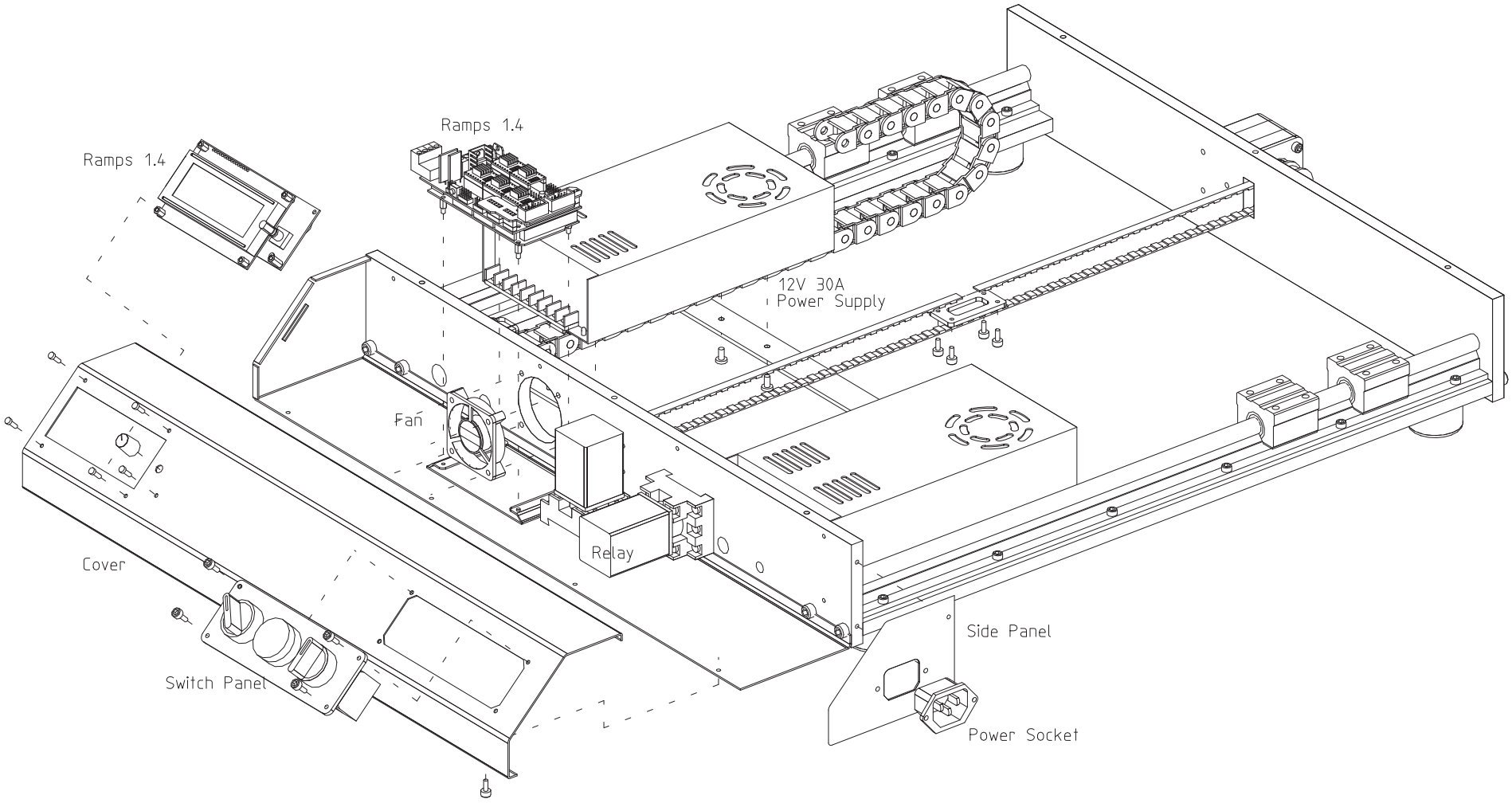
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Linear Bearing & Stepper Motor
DRAWN 24-11-2012		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 28-11-2012	SCALE 1:1	SHEET 4 OF 21



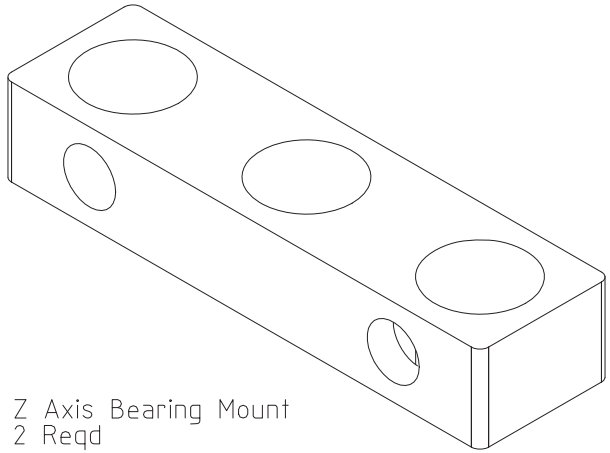
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Base Assembly
DRAWN 24-11-2012		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 28-11-2012	NOT TO SCALE	SHEET 5 OF 21



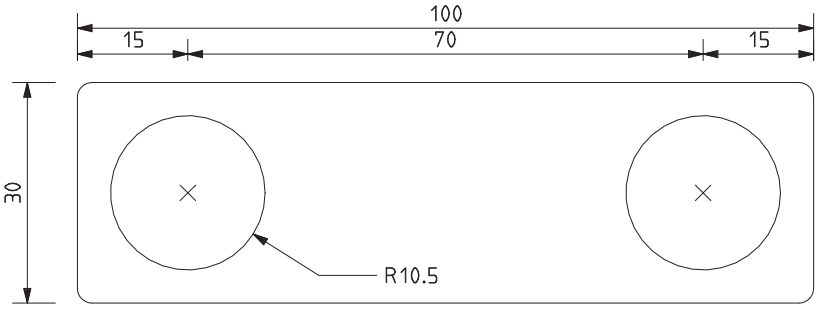
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420
		Front Panel
DRAWN 24-11-2012		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 24-11-2012	SCALE 1: 2.5	SHEET 6 OF 21



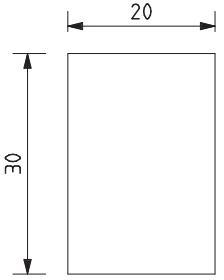
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Front Panel Assembly
DRAWN 1-12-2012		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 1-12-2012	NOT TO SCALE	SHEET 7 OF 21



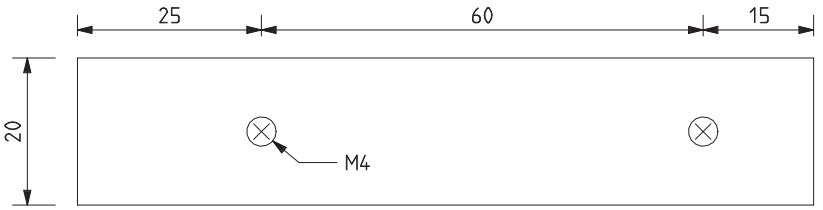
Z Axis Bearing Mount
2 Reqd



Side View

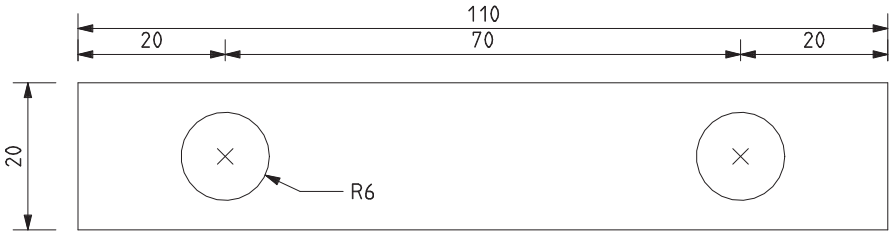


Front View

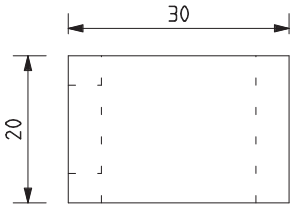


Top View

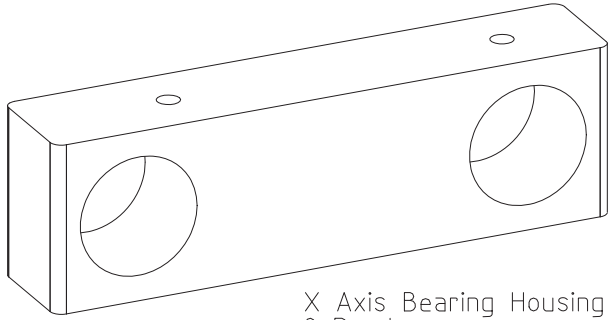
X Axis Bearing Housing



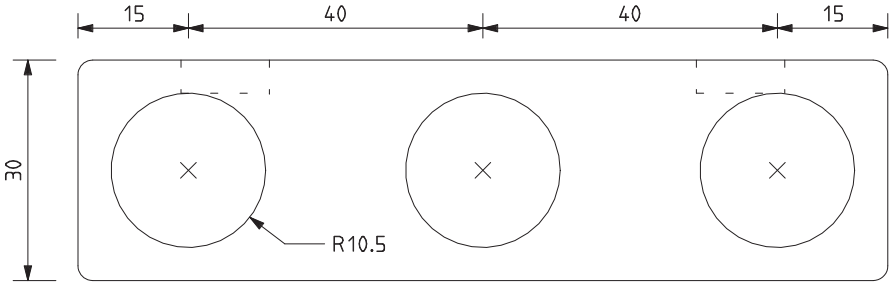
Side View



Front View



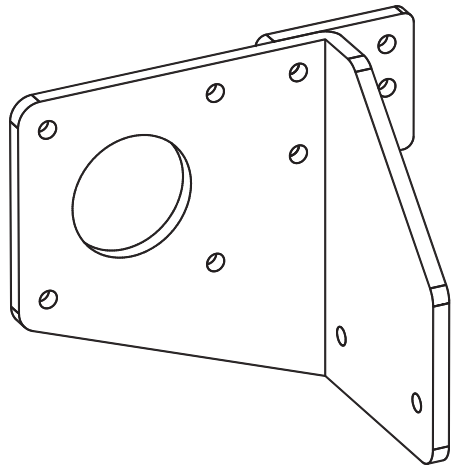
X Axis Bearing Housing
2 Reqd

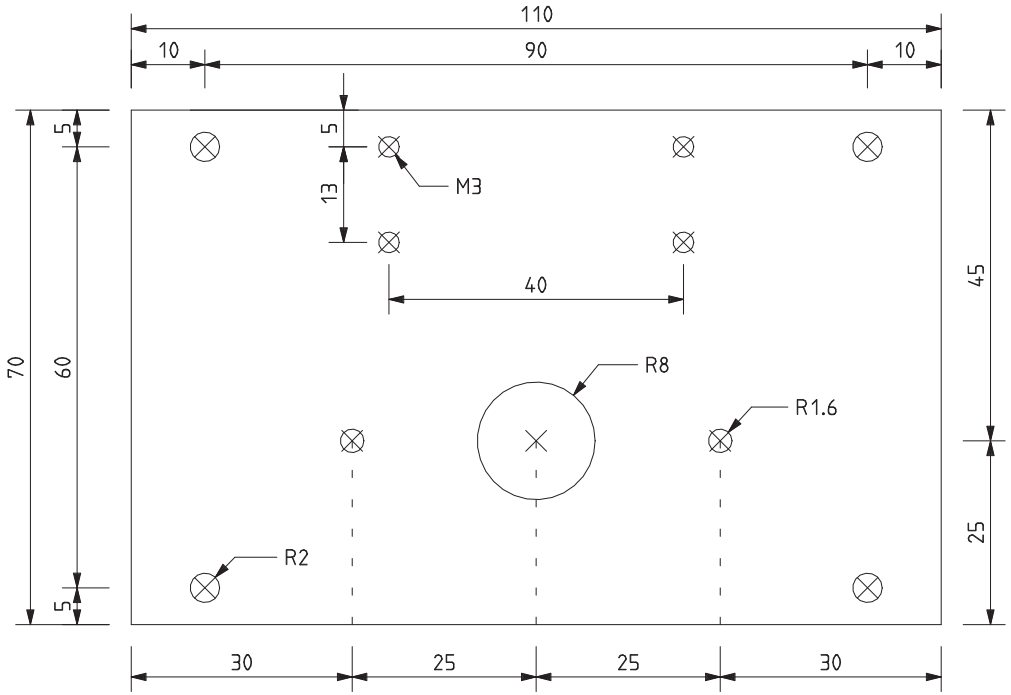


Top View

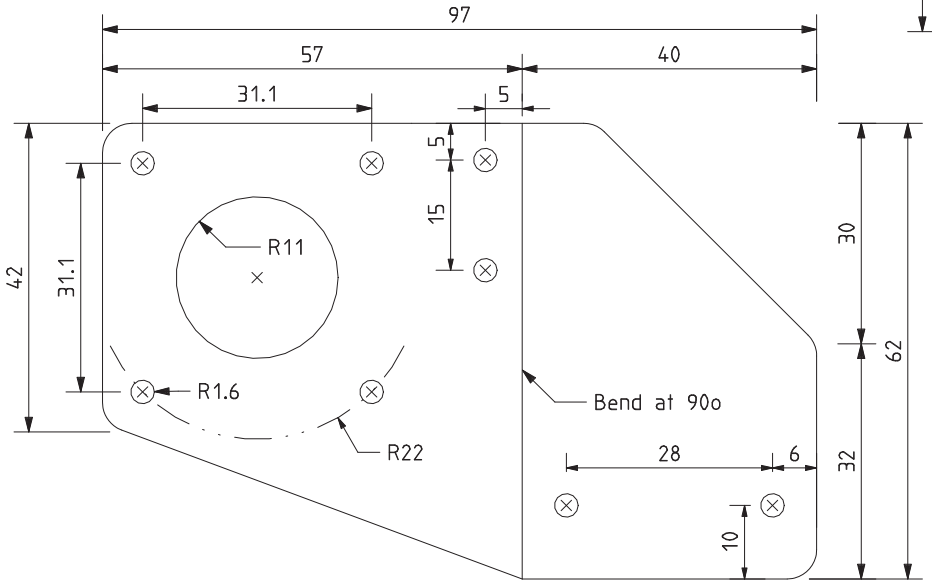
Z Axis Bearing Housing

BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420
		X and Z Bearing Housing
DRAWN 5-12-2012		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 5-12-2012	SCALE 1: 1	SHEET 8 OF 21

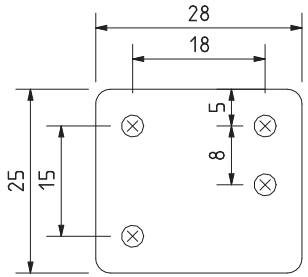




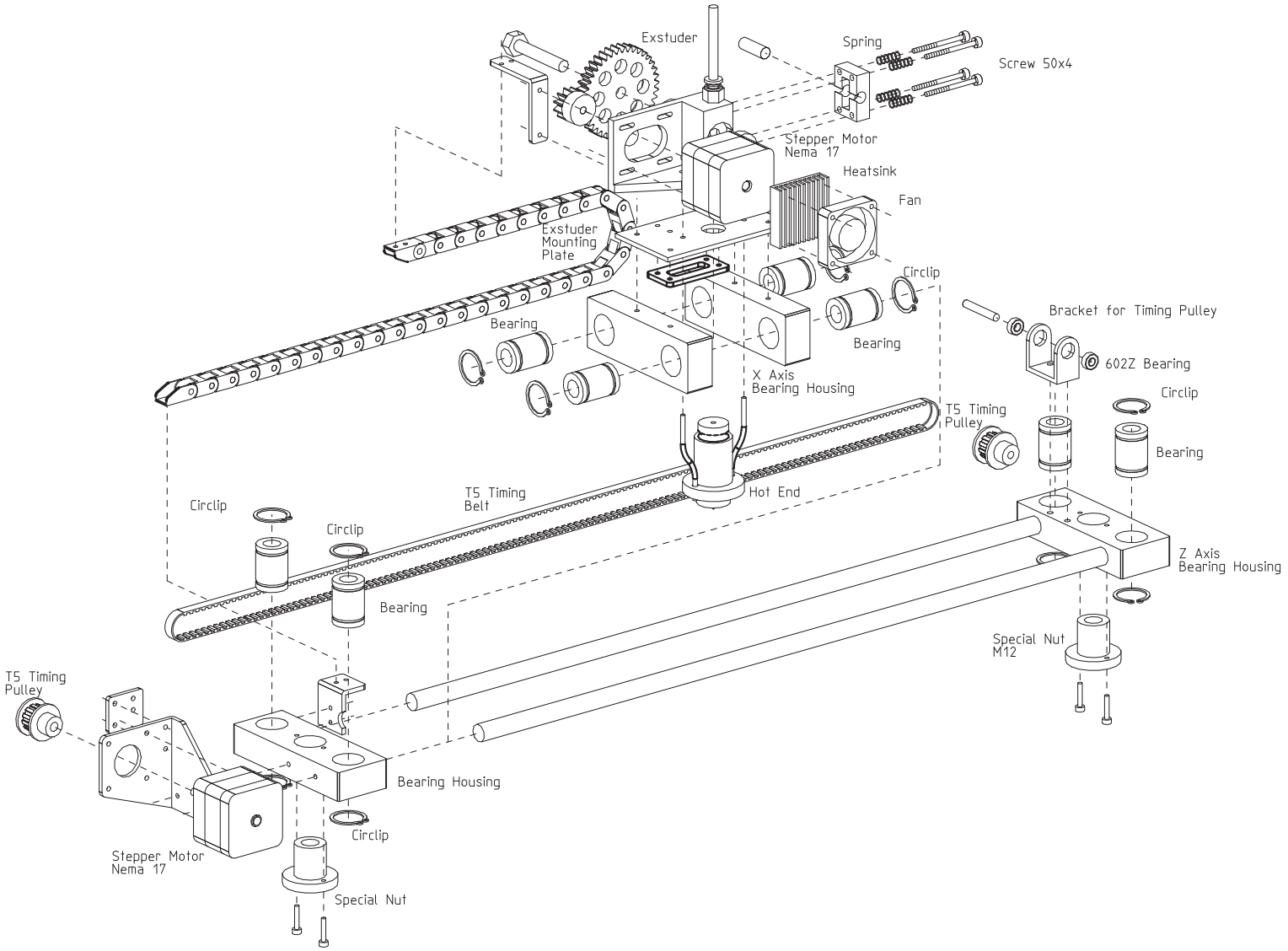
3mm Aluminium



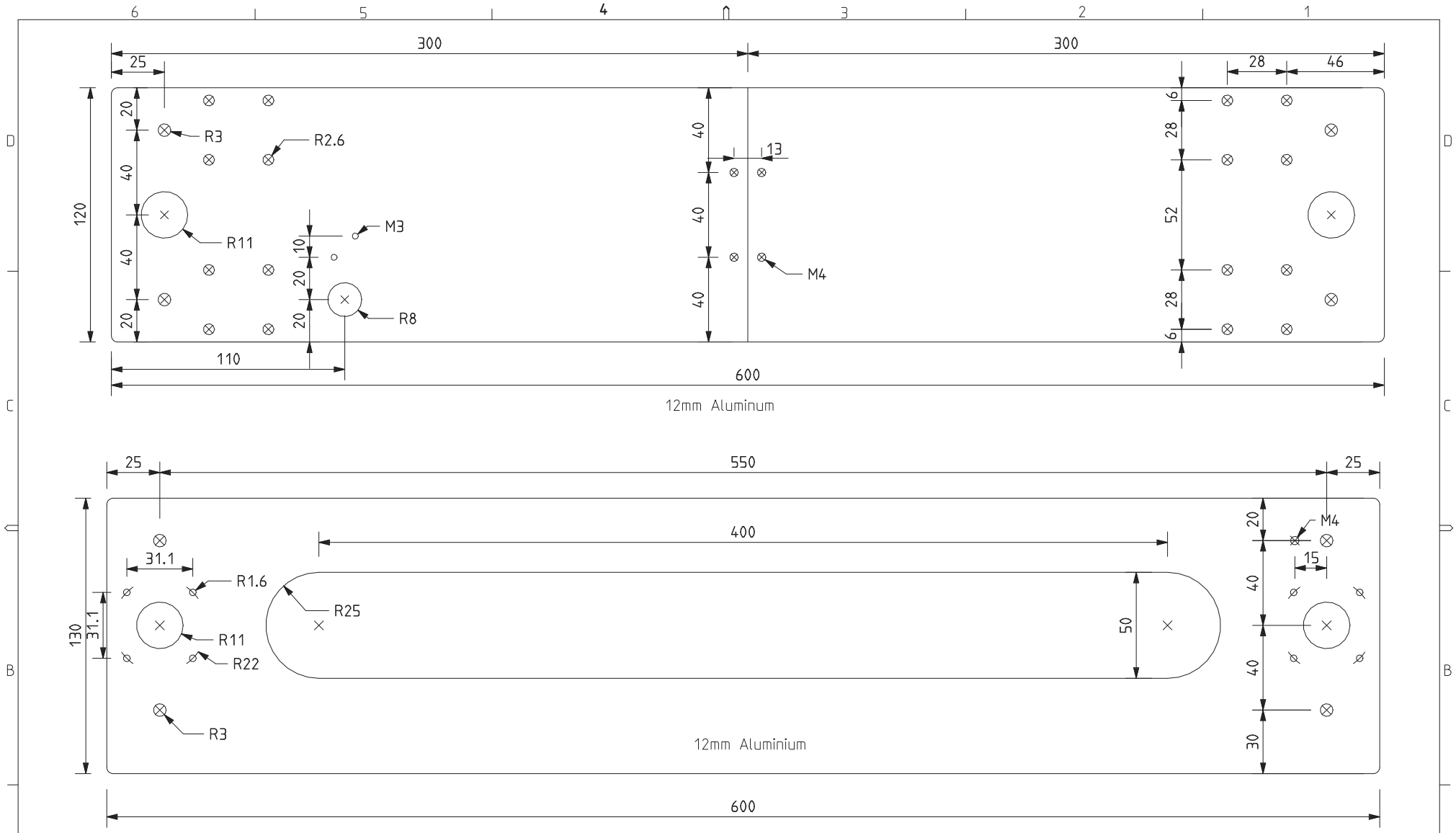
X Axis Motor Mount
3mm flat Aluminium



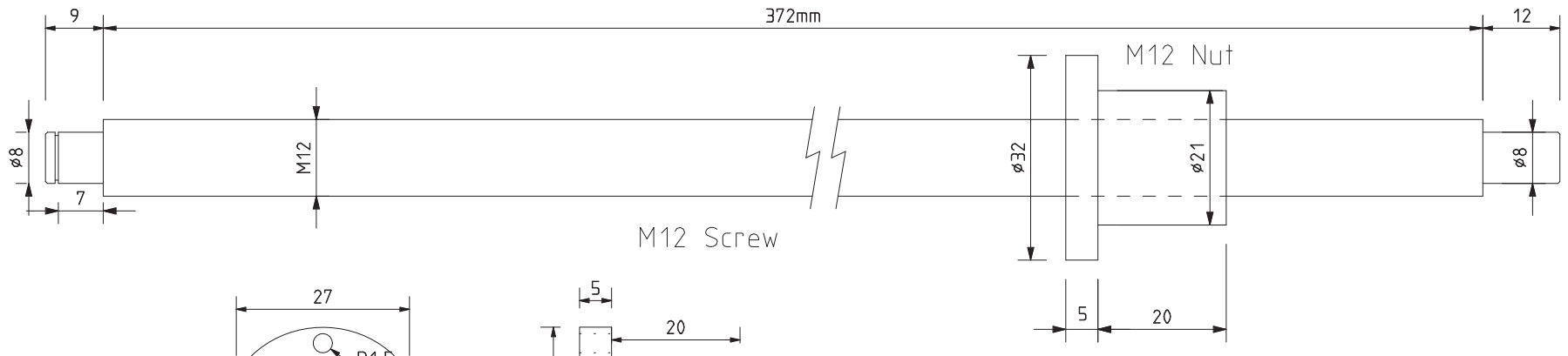
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 X Axis Motor Mount
DRAWN 5-12-2012		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 5-12-2012	SCALE 1: 1	SHEET 9 OF 21

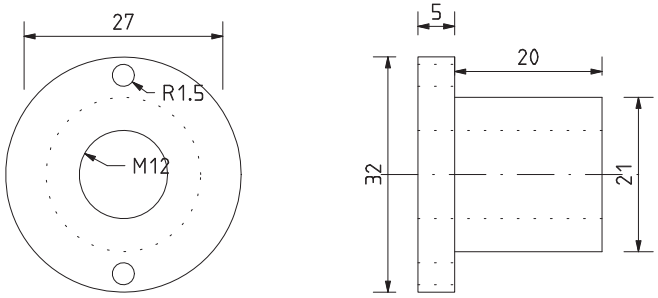


BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Gantry Assembly
DRAWN 4-1-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 4-1-2013	NOT TO SCALE	SHEET 10 OF 21



BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Y Axis top and Base
DRAWN 6-1-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 6-1-2013	SCALE 1:2.5	SHEET 11 OF 21

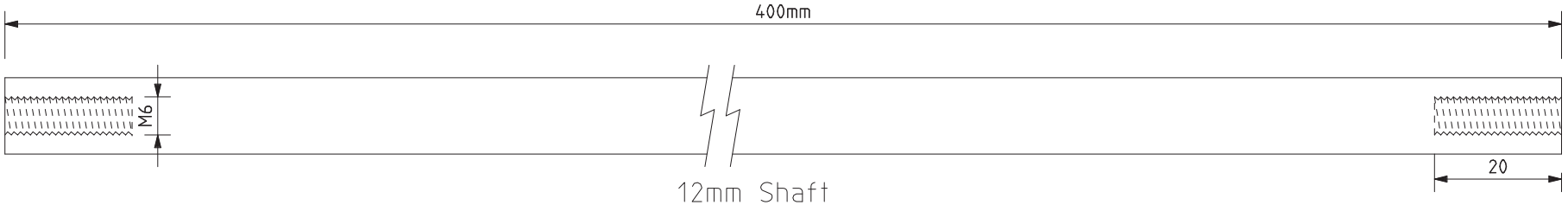




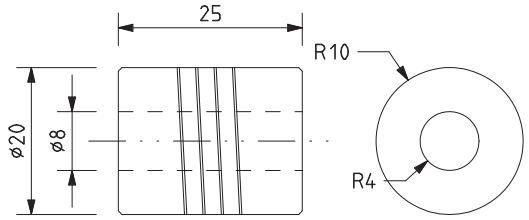
Top View

Side View

M12 Nut

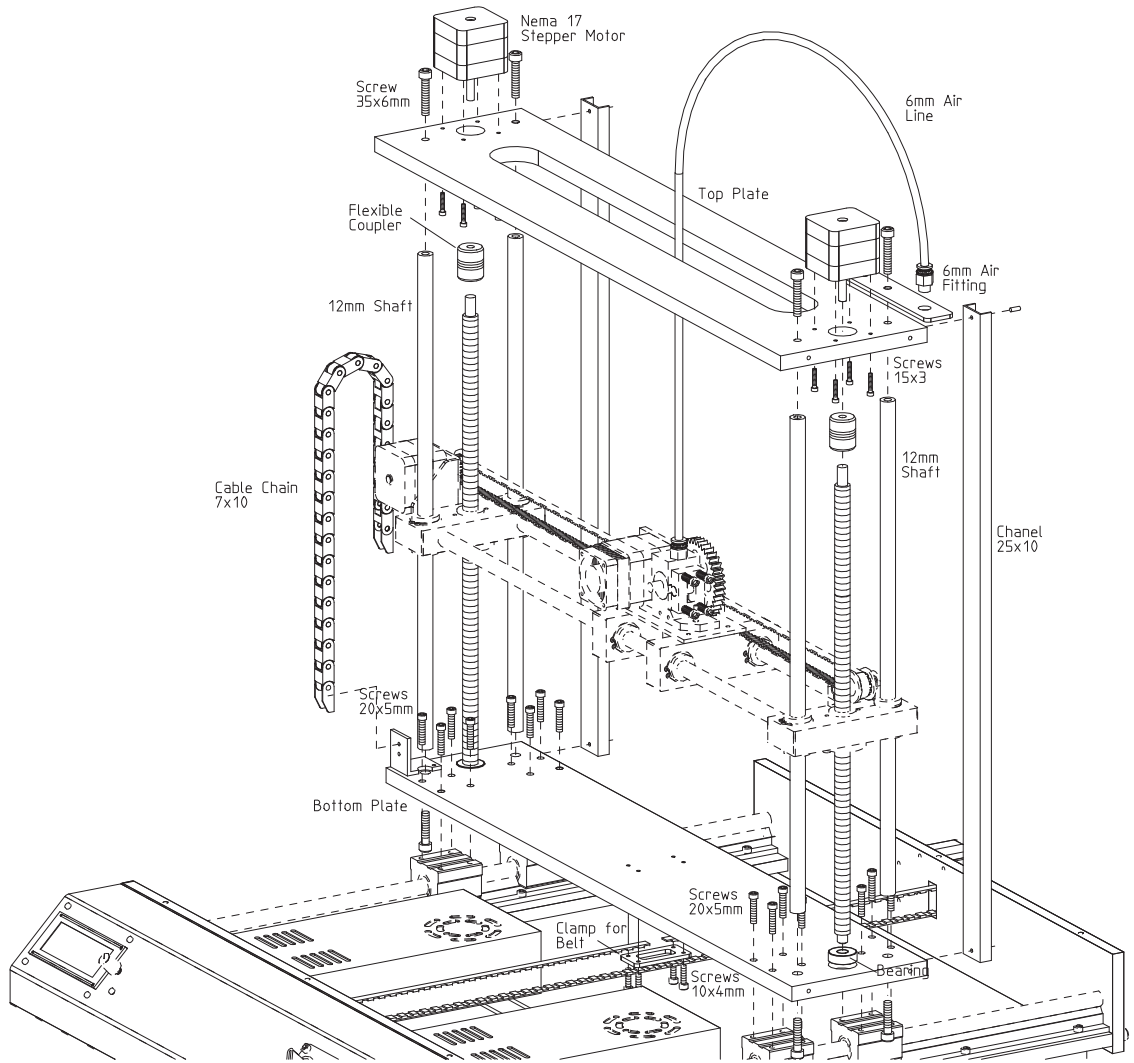


12mm Shaft
4 Reqd

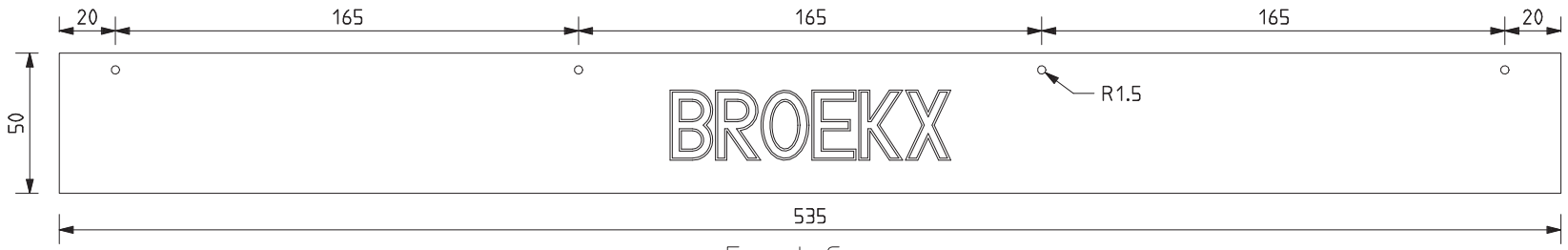


Flexible Coupler 8x8

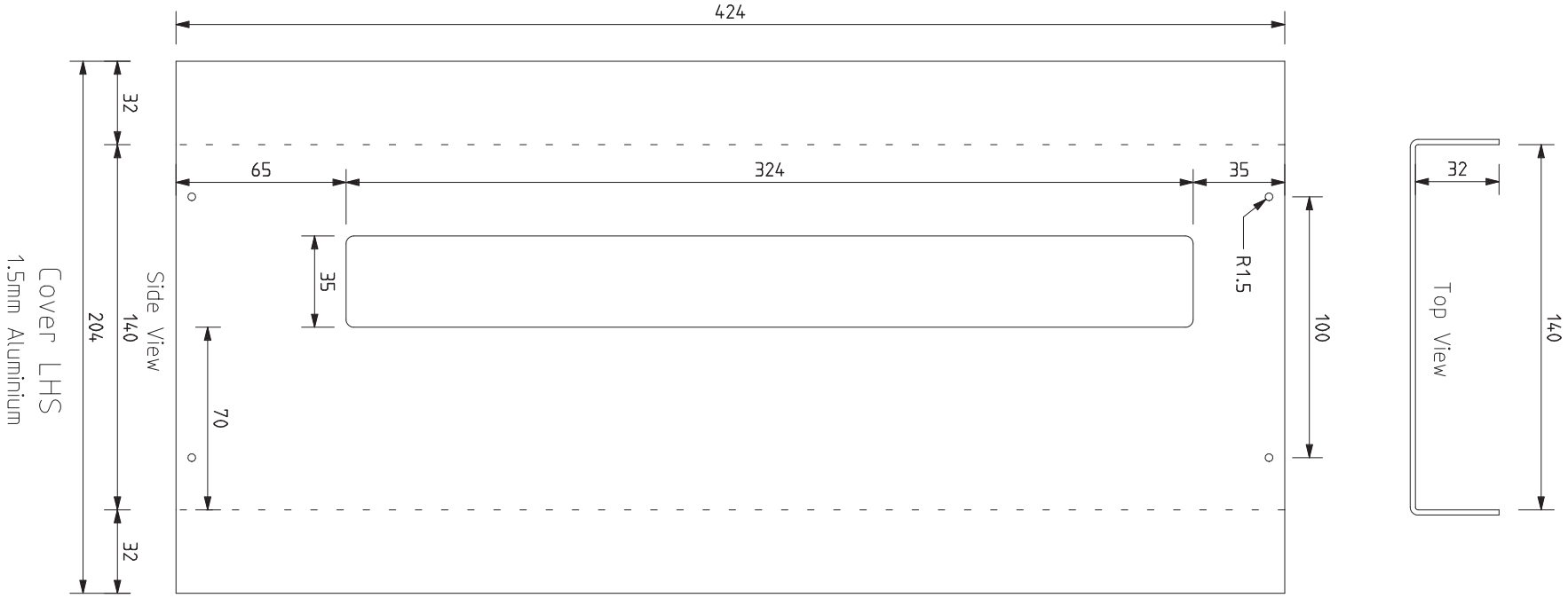
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Screw Drive
DRAWN 13-1-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 13-1-2013	SCALE 1:1	SHEET 12 OF 21



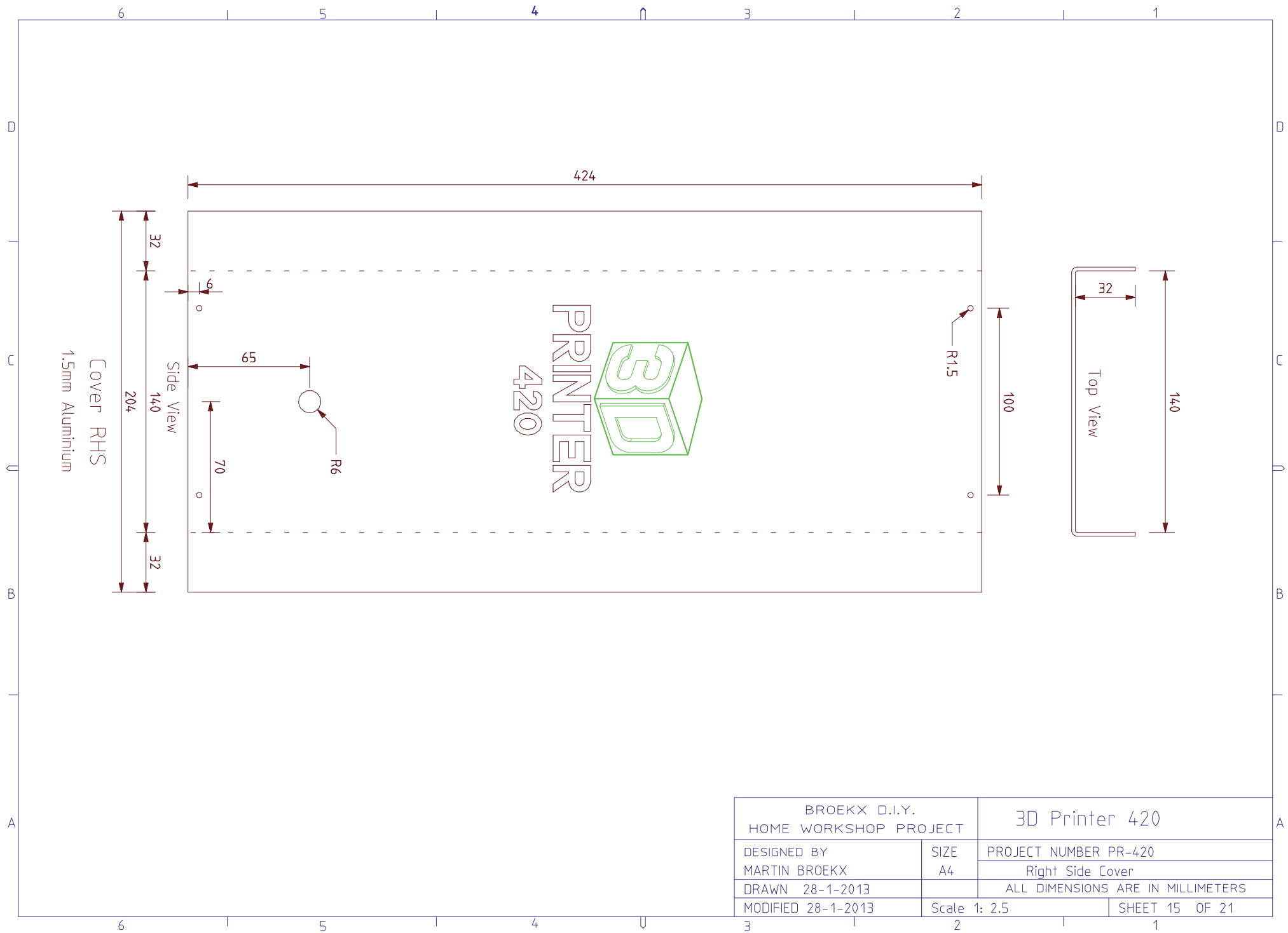
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420	
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Y Axis Assembly	
DRAWN 21-1-2013		ALL DIMENSIONS ARE IN MILLIMETERS	
MODIFIED 21-1-2013	NOT TO SCALE		SHEET 13 OF 21



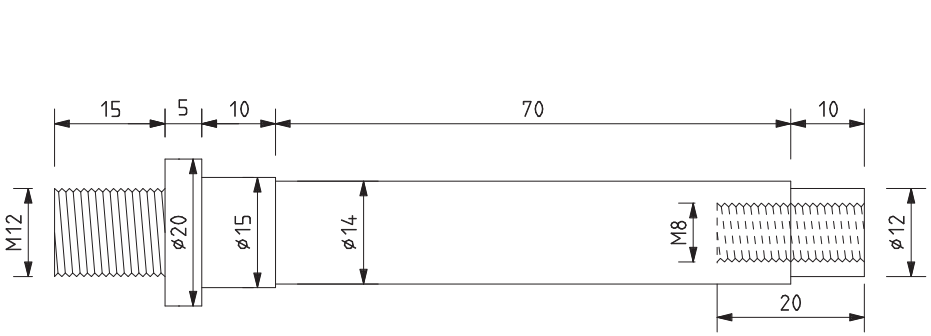
Front Cover
1.5mm Aluminium

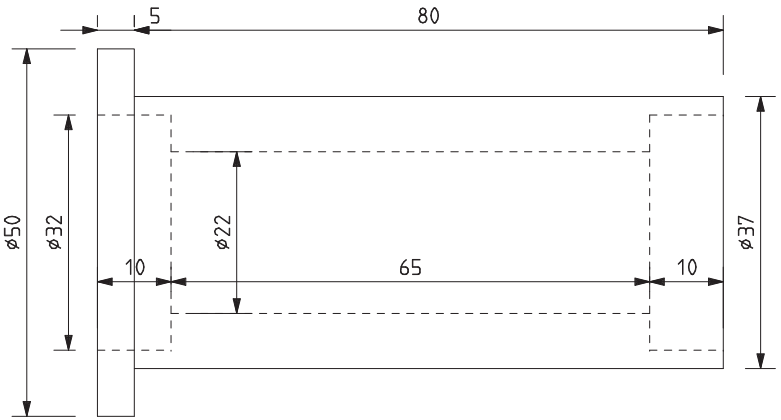


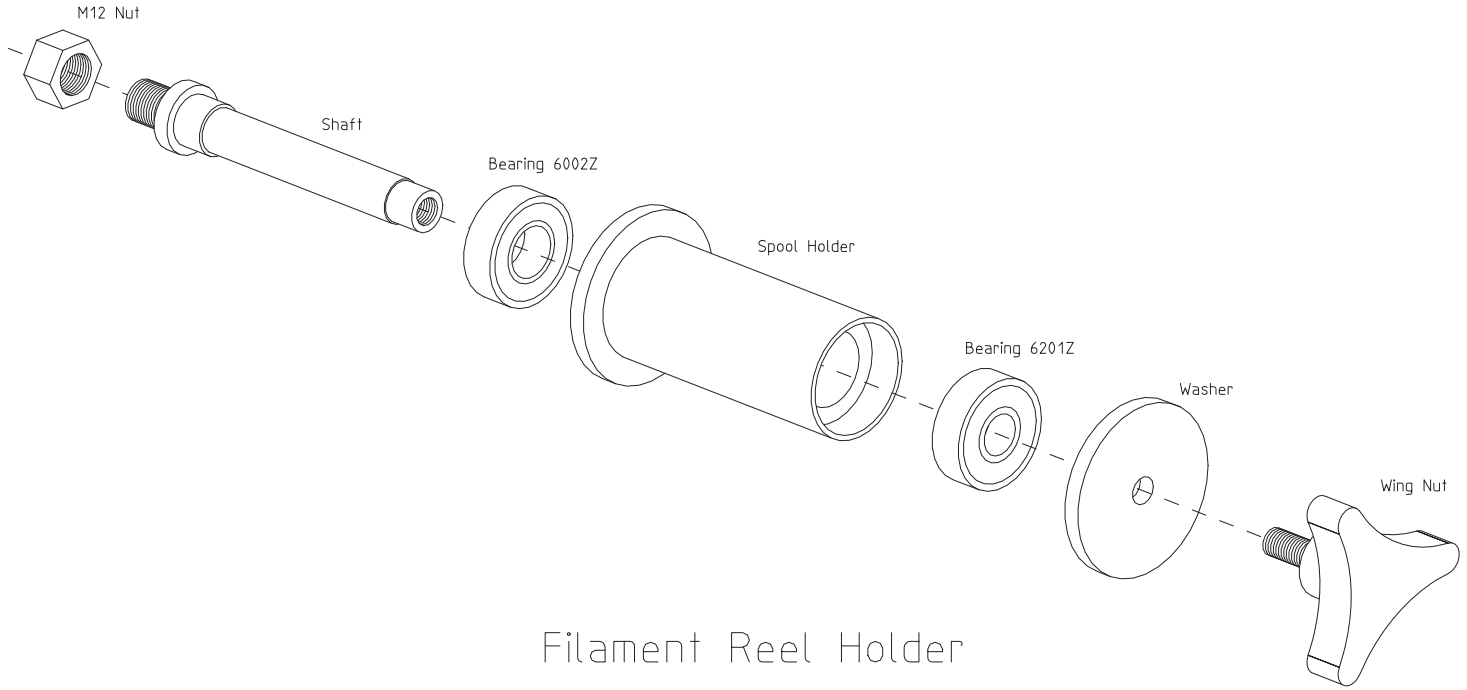
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Left Side Cover & Rront Cover
DRAWN 28-1-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 28-1-2013	Scale 1: 2.5	SHEET 14 OF 21



BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Right Side Cover
DRAWN 28-1-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 28-1-2013	Scale 1: 2.5	SHEET 15 OF 21

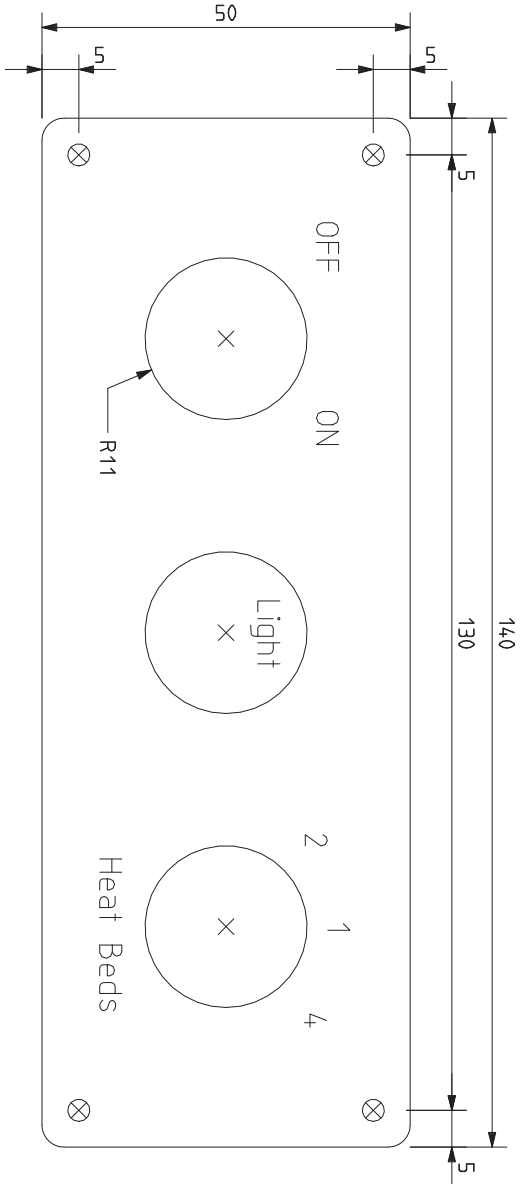


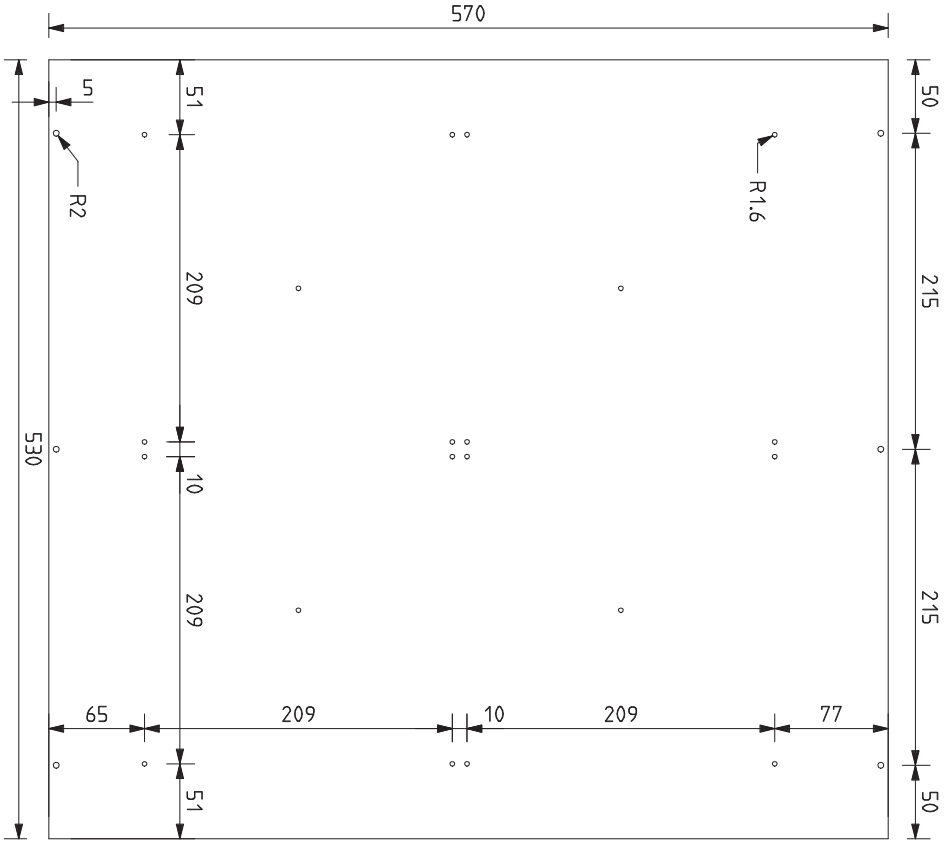




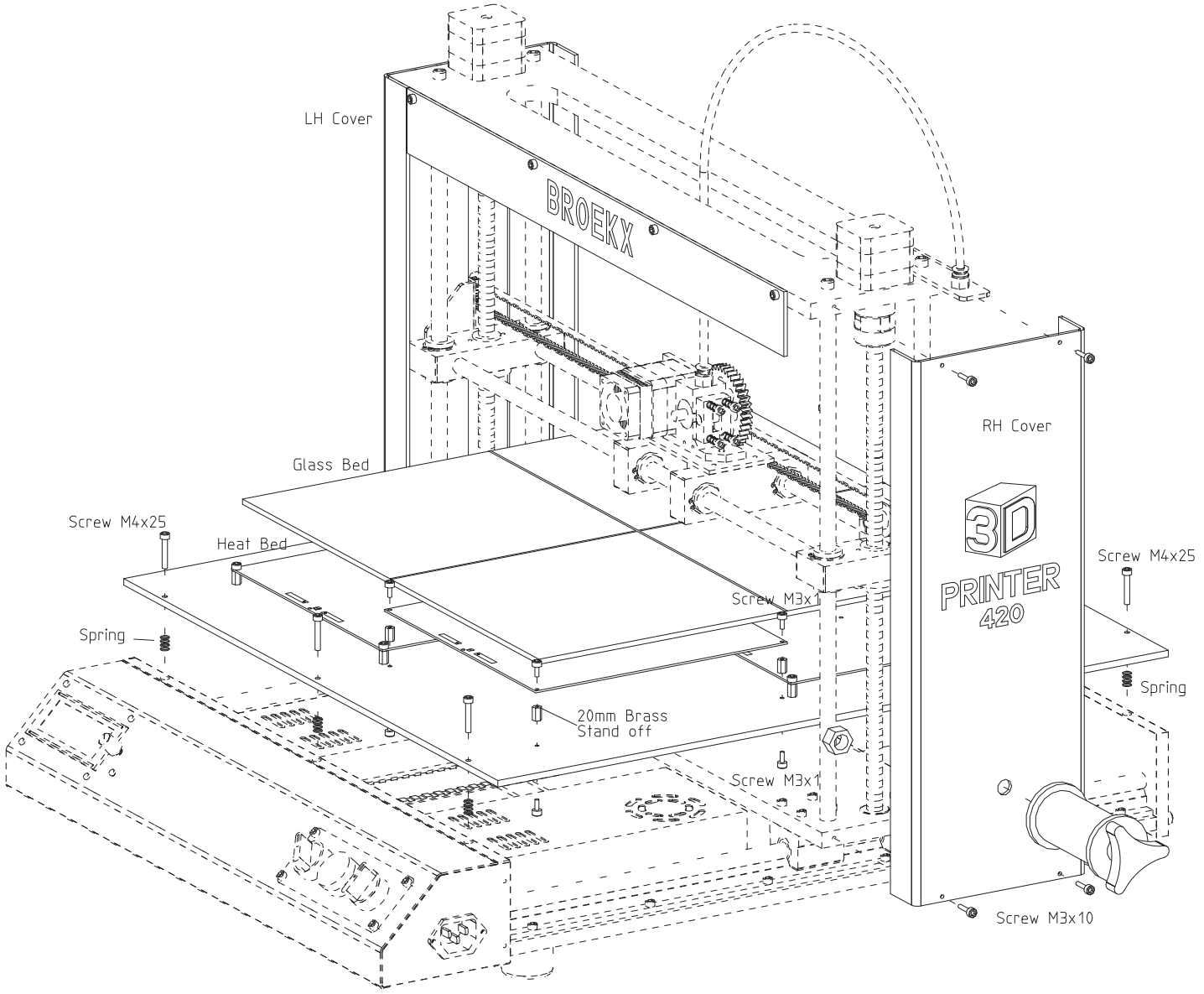
Filament Reel Holder

BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 ABS Reel Holder
DRAWN 2-2-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 2-2-2013	Scale 1:1	SHEET 16 OF 21

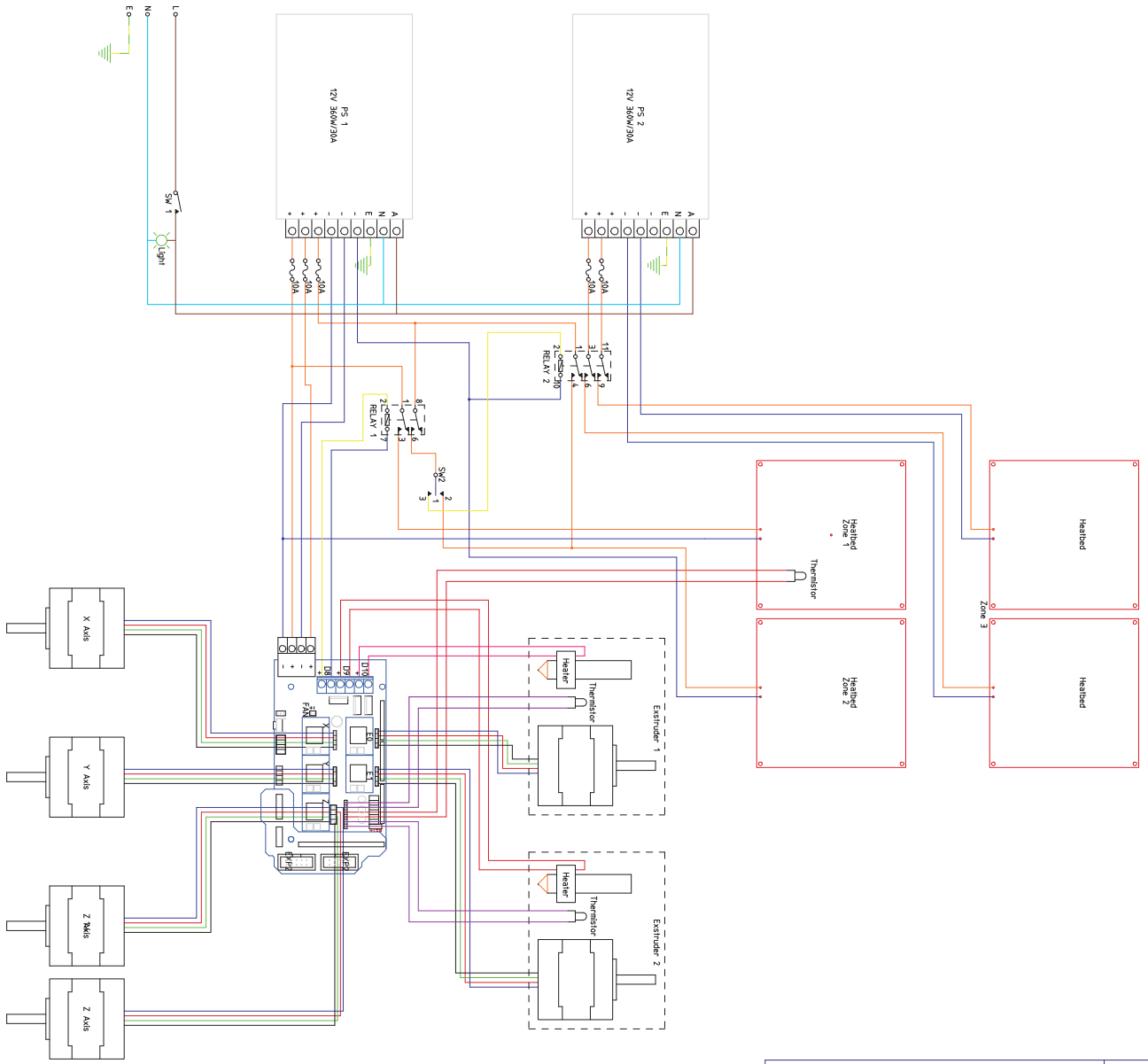




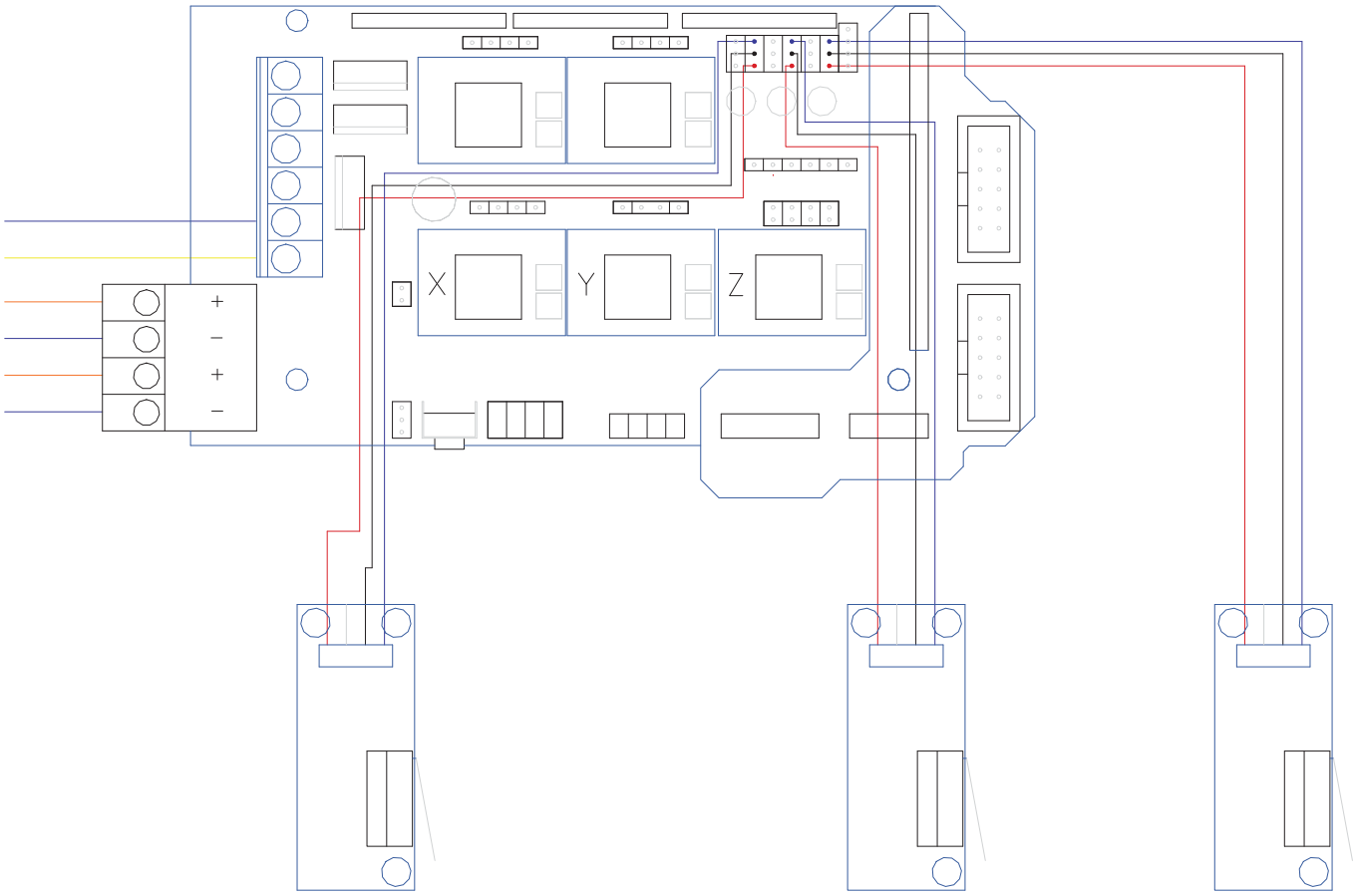
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Work Top
DRAWN 7-2-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 7-2-2013	SCALE 1: 5	SHEET 17 OF 21



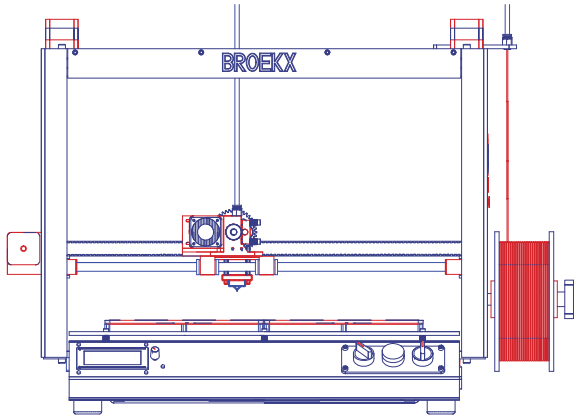
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Heat Bead & Cover Assembly
DRAWN 9-2-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 10-2-2013	NOT TO SCALE	SHEET 18 OF 21

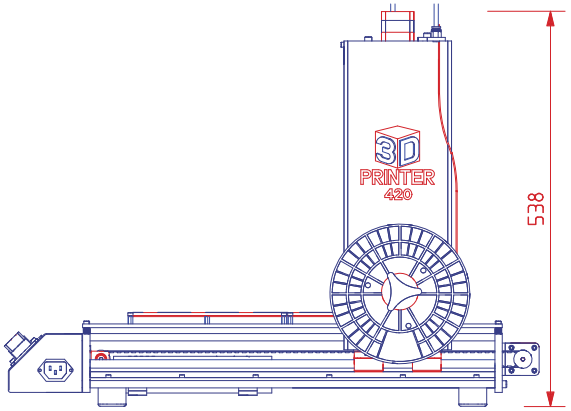


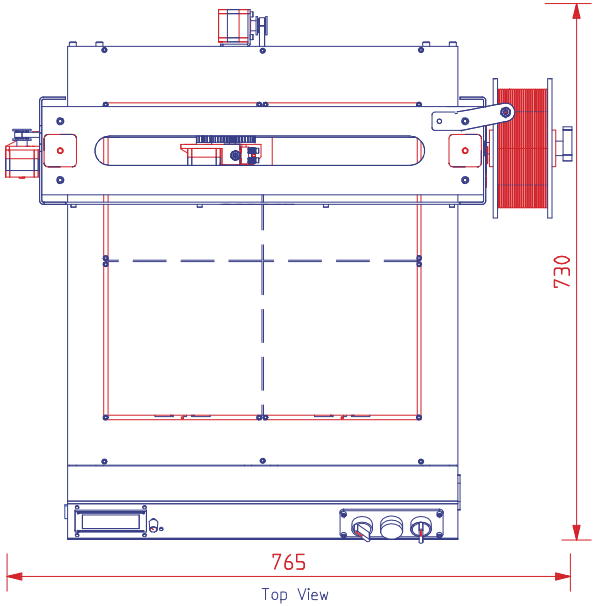
BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Electrical Schematic
DRAWN 10-2-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 16-2-2013	NOT TO SCALE	SHEET 19 OF 21

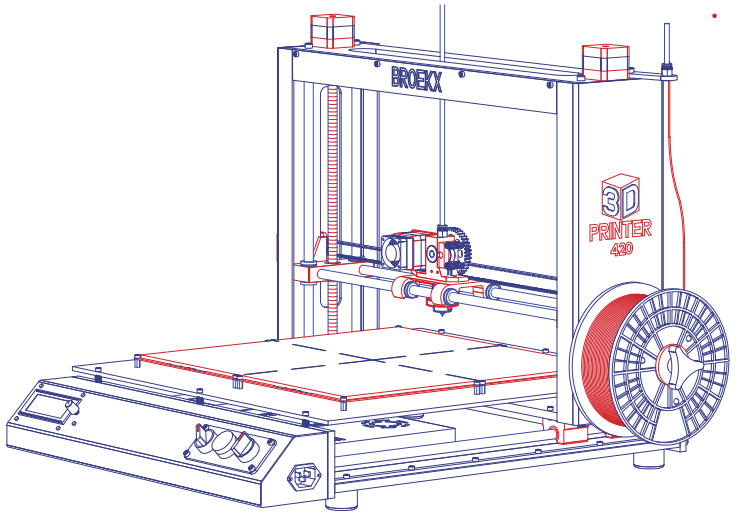


BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Electrical Schematic
DRAWN 10-2-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 15-2-2013	NOT TO SCALE	SHEET 20 OF 21









BROEKX D.I.Y. HOME WORKSHOP PROJECT		3D Printer 420
DESIGNED BY MARTIN BROEKX	SIZE A4	PROJECT NUMBER PR-420 Elevated Views
DRAWN 10-2-2013		ALL DIMENSIONS ARE IN MILLIMETERS
MODIFIED 20-2-2013	Scale 1: 10	SHEET 21 OF 21

Tap Chart - Metric Threads

Tap size	Dia (mm)	Threads	Tap Drill (mm)	Clearance (mm)
M1.6 x 0.35	1.6	0.35	1.25	1.8
M2 x 0.4	2.0	0.40	1.60	2.4
M2.5 x 0.45	2.5	0.45	2.05	2.9
M3 x 0.5	3.0	0.50	2.50	3.4
M3.5 x 0.6	3.5	0.60	2.90	3.9
M4 x 0.7	4.0	0.70	3.30	4.5
M5 x 0.8	5.0	0.80	4.20	5.5
M6 x 1.0	6.0	1.00	5.00	6.6
M8 x 1.25	8.0	1.25	6.80	9.0
M8 x 1.0	8.0	1.00	7.00	9.0
M10 x 1.5	10.0	1.50	8.50	12.0
M10 x 1.25	10.0	1.25	8.80	12.0
M12 x 1.75	12.0	1.75	10.20	14.0
M12 x 1.25	12.0	1.25	10.80	14.0
M14 x 2.0	14.0	2.00	12.00	16.0
M14 x 1.5	14.0	1.50	12.50	16.0
M16 x 2.0	16.0	2.00	14.00	18.0
M16 x 1.5	16.0	1.50	14.50	18.0
M18 x 2.5	18.0	2.50	15.50	20.0
M18 x 1.5	18.0	1.50	16.50	20.0
M20 x 2.5	20.0	2.50	17.50	22.0
M20 x 1.5	20.0	1.50	18.50	22.0
M22 x 2.5	22.0	2.50	19.50	25.0
M22 X 1.5	22.0	1.50	20.50	25.0
M24 x 3.0	24.0	3.00	21.00	27.0
M24 x 2.0	24.0	2.00	22.00	27.0
M27 x 3.0	27.0	3.00	24.00	30.0
M27 x 2.0	27.0	2.00	25.00	30.0