

SECTION A-A  
SCALE 1 : 1.3

Sht 1 of 12 Shts	<b>A3</b>	Law Wooden Clock 19- All Plastic Clock	
Not to Scale Unless otherwise stated		All dimensions in mm and (inches) 3rd Angle projection	January 2014 Designed by: Brian law www.woodenclocks.co.uk

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Clock 19 Back Plate	Acrylic 6mm Thk	1
2	Clock 19 Front Plate	Acrylic 6mm Thk	1
3	Clock 19-Escapement	Acrylic 6mm Thk	1
4	Clock 19-Yoke	Acrylic 6mm Thk	1
5	Clock 19-Shaft 4	Silver Steel Ø4x73.5	1
6	Sleeve 1	Acrylic Ø6.0 x Ø4 bore	1
7	Sleeve 2	Acrylic Ø6.0 x Ø4 bore	1
8	Yoke connector	Stainless Steel Ø3X25	2
9	Clock 19-Pallet Clamp	Acrylic 3mm Thk	2
10	Clock 19-Pallet	Plastic 1mm Thk	2
11	Clock 19-Gear spacer	Acrylic 6mm Thk	2
12	Clock 19-Gears-15 Teeth	Acrylic 3mm Thk	2
13	Clock 19-Gears-60 Teeth	Acrylic 3mm Thk	2
14	Clock 19-Shaft 1	Silver Steel Ø4x65mm	1
15	Sleeve 6	Acrylic Ø6.0 x Ø4 bore	1
16	Sleeve 7	Acrylic Ø6.0 x Ø4 bore	1
17	Clock 19-Gear alignment pin	Stainless Steel Ø2	6
18	Clock 19-Gears-16 Teeth	Acrylic 3mm Thk	1
19	Clock 19-Escapement wheel	Acrylic 3mm Thk	1
20	Clock 19-Shaft 1	Silver Steel Ø4x65mm	1
21	Sleeve 3	Acrylic Ø6.0 x Ø4 bore	1
22	Sleeve 4	Acrylic Ø6.0 x Ø4 bore	1
23	Spacer Tube-Square	Acrylic 9.5Square x 1.55	2
24	Clock 19-Gear spacer	Acrylic 6.0mm Thk	1
25	Clock 19-Gear spacer-2	Acrylic 6.0mm Thk	1
26	Clock 19-Gears-60 Teeth	Acrylic 3mm Thk	1
27	Clock 19-Gears-22 Teeth	Acrylic 3mm Thk	1
28	HF0406	See note below	3
29	Clock 19-Shaft 2	Silver Steel Ø4x88mm	1
30	Sleeve 5	Acrylic Ø6.0 x Ø4 bore	1
31	Clock 19-Weight Cord	Ø1.2mm cord x 2mtrs	1
32	Clock 19-Gear alignment pin-2	Stainless Steel Ø2x9mm	2
33	Clock 19-Gear alignment pin-3	Stainless Steel Ø2x17mm	2
34	Clock 19-Pendulum Rod	Ø4 Carbon Fibre tube x1070mm	1
35	Clock 19-Gears-20 Teeth	Acrylic 3mm Thk	1
36	Clock 19-Gears-8 Teeth	Acrylic 3mm Thk	1
37	Clock 19-Gears-10 Teeth	Acrylic 3mm Thk	1
38	Clock 19-Gears-30 Teeth	Acrylic 3mm Thk	1
39	Clock 19-Gears-32 Teeth	Acrylic 3mm Thk	1
40	Clock 19 Dial	Acrylic 3mm Thk	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
41	Clock 19 Brace	Acrylic 6mm Thk	1
42	Clock 19-Threaded Rod	Stainless Steel M6	2
43	nut_din_1587-m6x1-6	Brass Domed Nut M6	2
44	Lock Nut M6	Stainless Steel M6	3
45	Clock 19 Dial Dial spacer	Acrylic 3mm Thk	2
46	Clock 19 Bearing 4-8-3	See note below	9
47	Clock 19 Back Plate Pillar	AcrylicTubeØ12x2mmx30mm	3
48	Clock 19-Hour Sleeve	Acrylic Ø6.0 x Ø4 bore x 12mm	1
49	Clock 19-Shaft 3	Stainless steel Ø3 x 12.5	1
50	Clock 19-Hour Hand	Plastic - ABS 2mm thk	1
51	Clock 19-Minute Hand	Plastic - ABS 2mm thk	1
52	Clock 19 Winder Stub	Acrylic Fabrication	1
53	Clock 19 Winder	Acrylic fabrication	1
54	Clock 19 Weight Sleeve	Acrylic Tube Ø40x2mm x 80mm	1
55	Clock 19 Weight Spine	Acrylic Ø6mm x 80mm	1
56	Woodscrew_No4_5x60	Brass	3
57	Clock 19 Bearing Cover	Acrylic 3mm thk	5
58	Clock 19-Shaft 5	Stainless Steel Ø3 x 10mm	2
60	Clock 19-Pendulum Bob-inner	Acrylic 3mm thick	4
62	Clock 19-Pendulum Bob-grooved	Acrylic 3mm thick	1
62	Clock 19-Pendulum Bob-outer	Acrylic 3mm thick	1
63	Clock 19 Pendulum Bob Pin	S/S 3mm dia x 12mm	4
63	Clock 19 Weight End Plug	Acrylic Fabrication	2
64	Bearing Cover-Cropped	Acrylic 2mm thick	1
65	Washer 8mm 0.5mm	Plastic	1
69	Clock 19 Pendulum Head	Acrylic Fabrication	1
67	Clock 19 Pendulum Pivot	S/S Ø4 x 25mm	1
68	Clock 19-Drum	Acrylic Fabrication	1
69	M2 screw	Tapitite screw M2	2
70	Nut M2		2

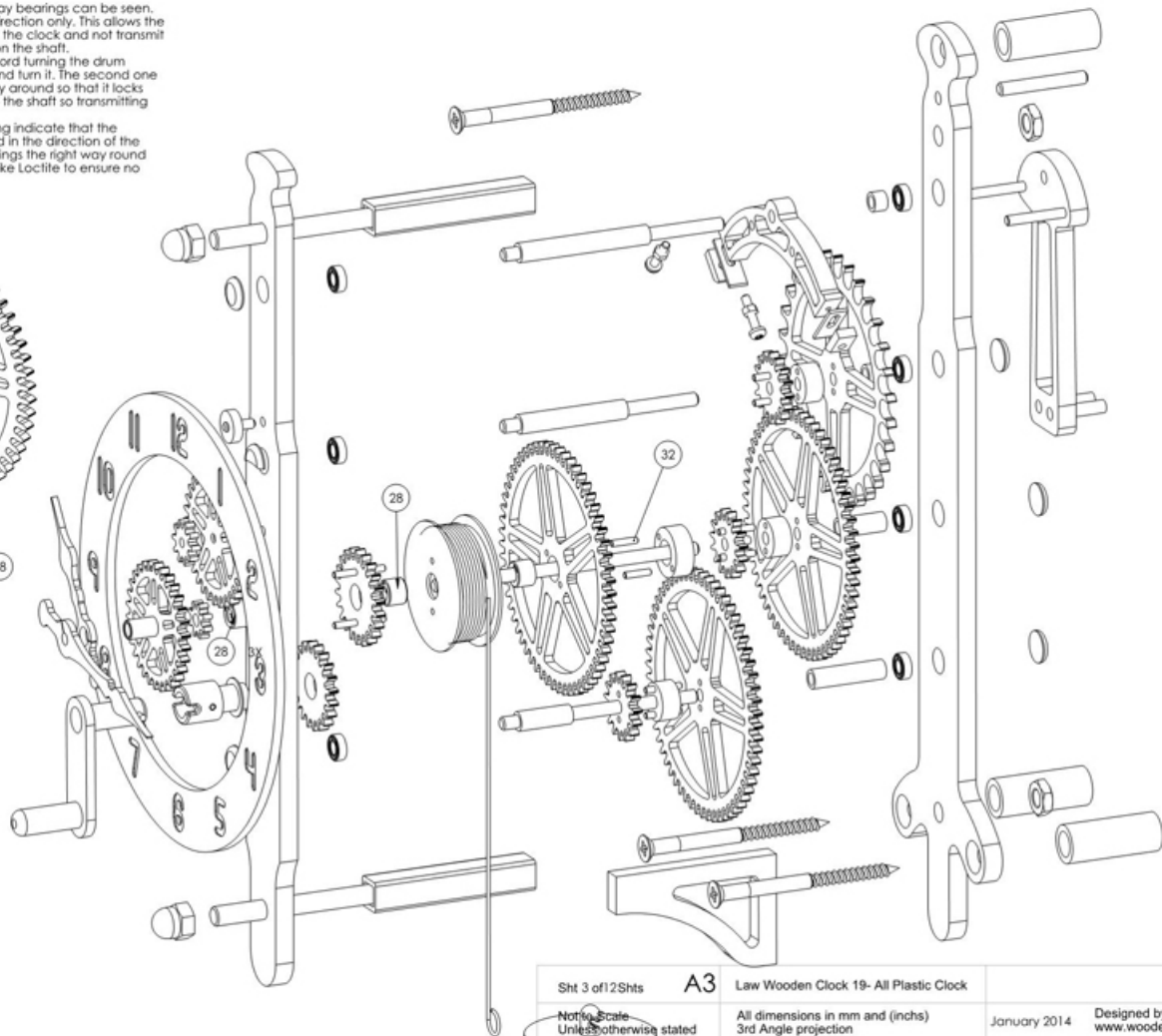
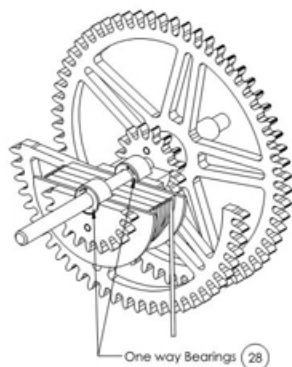
Notes!

One way bearing is a standard part from any bearing supplier Part number HF 0406  
The main bearings used for all the shafts is a standard bearing Ø4xØ8x3wide Part Number MR84ZZ  
The Ø4 Carbon fibre tube is used because of its stiffness and lightness, but you can if preferred use a similar sized dowel rod. The Carbon fibre rod can be obtained from suppliers of Kite building materials.

Sht 2 of 12 Shts	<b>A3</b>	Law Wooden Clock 19- All Plastic Clock	
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In this part sectioned view the two one way bearings can be seen. These bearings allow movement in one direction only. This allows the drum to be turned backwards to wind up the clock and not transmit that winding action into the other gears on the shaft. When the weight is pulling down on the cord turning the drum clockwise this bearing will grip the shaft and turn it. The second one way bearing is mounted the opposite way around so that it locks onto the shaft whilst the drum is locked to the shaft so transmitting the torque to the rest of the gear train.

The arrows you see on the oneway bearing indicate that the bearing will lock when the casing is turned in the direction of the arrow. It is important to mount these bearings the right way round and also to use a bearing locking agent like Loctite to ensure no slipping of the gears under load.



Sht 3 of 12 Shts

A3

Law Wooden Clock 19- All Plastic Clock

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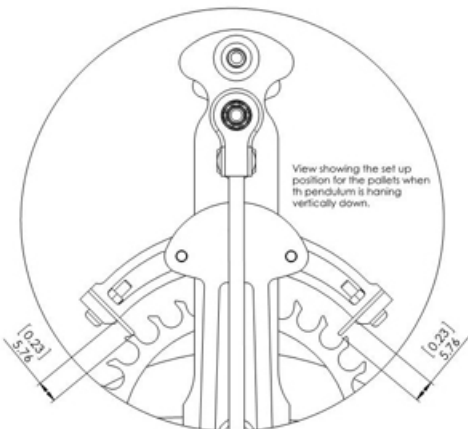
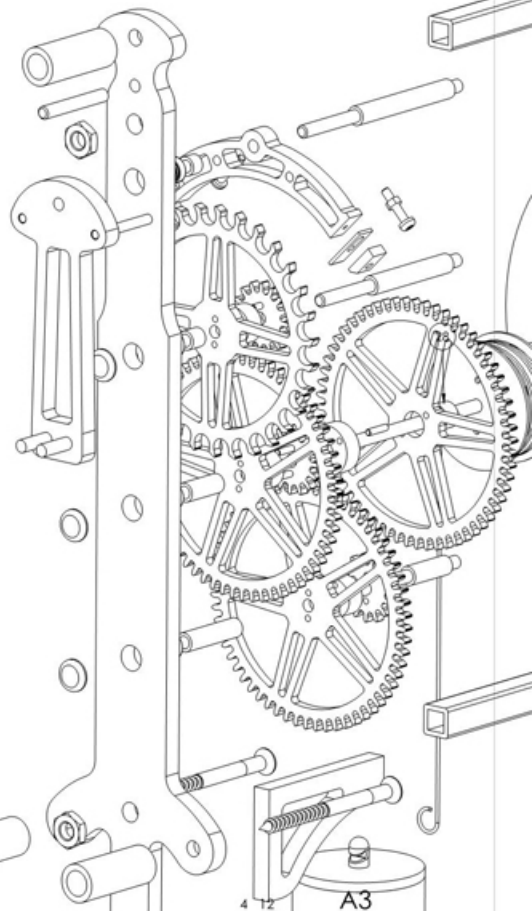
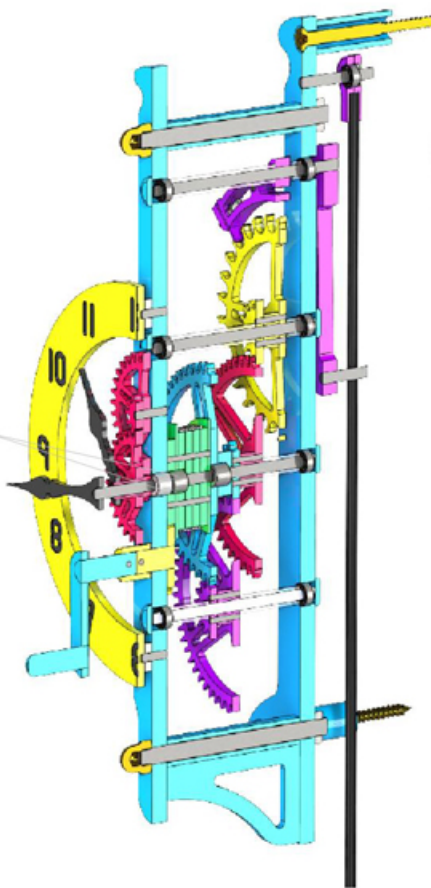
All dimensions in mm and (inches)  
3rd Angle projection

January 2014

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These 2 bearings to lock  
in the same direction



View showing the set up  
position for the pallets when  
the pendulum is hanging  
vertically down.

Sht of Shts  
Not to Scale  
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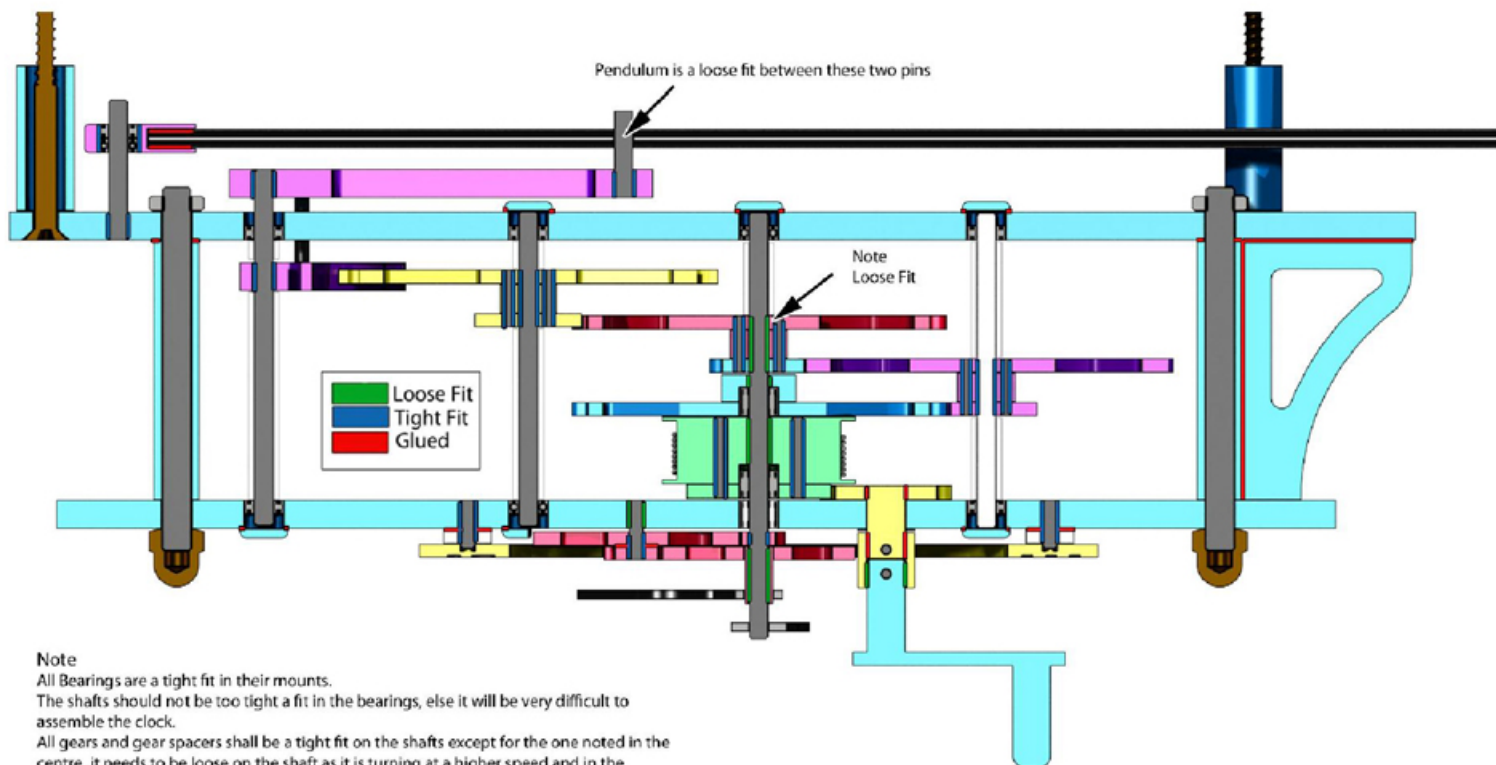
Law Wooden Clock 19- All Elastic Clock  
All dimensions in mm and (inches)  
3rd Angle projection

January 2014

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4 12

A3



**Note**

All Bearings are a tight fit in their mounts.

The shafts should not be too tight a fit in the bearings, else it will be very difficult to assemble the clock.

All gears and gear spacers shall be a tight fit on the shafts except for the one noted in the centre, it needs to be loose on the shaft as it is turning at a higher speed and in the opposite direction to the other gear mounted on the shaft.

Sht 5 of 12Shts **A3**

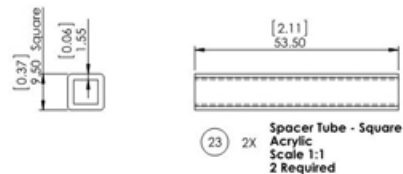
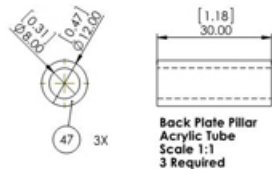
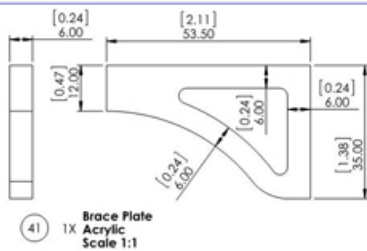
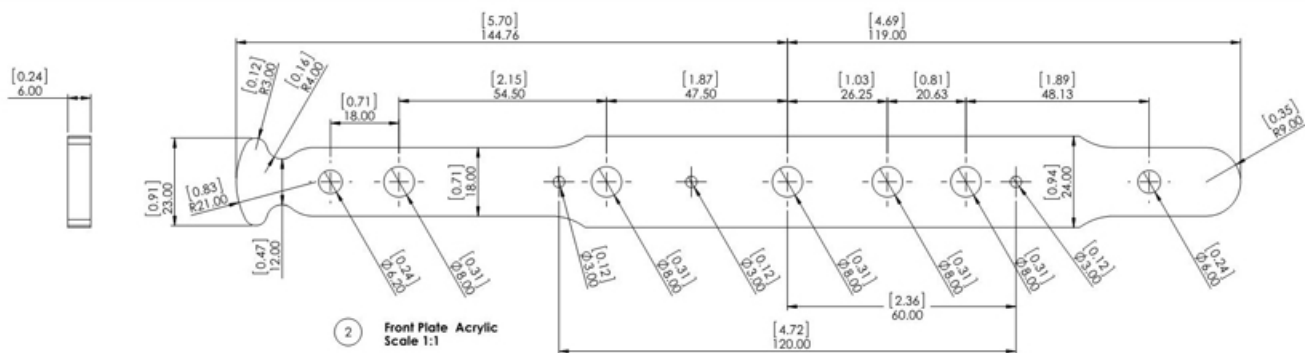
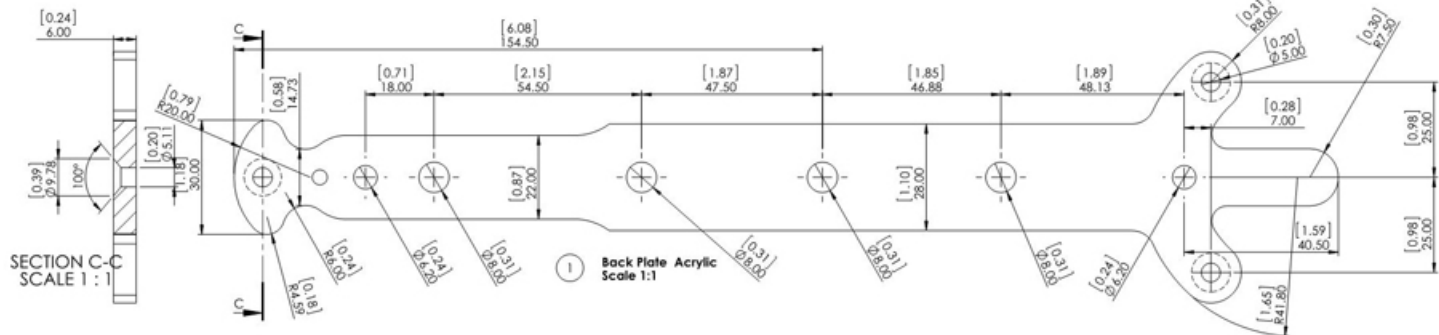
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Sht 6 of 12Shts **A3**

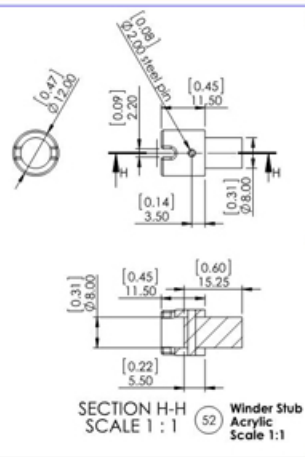
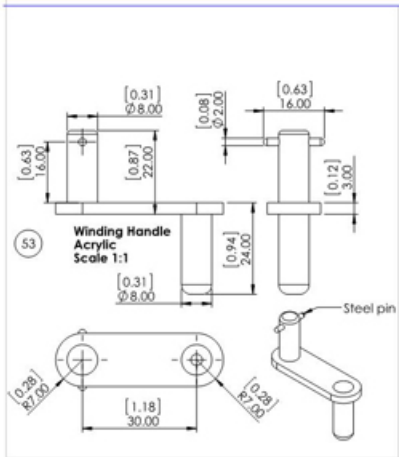
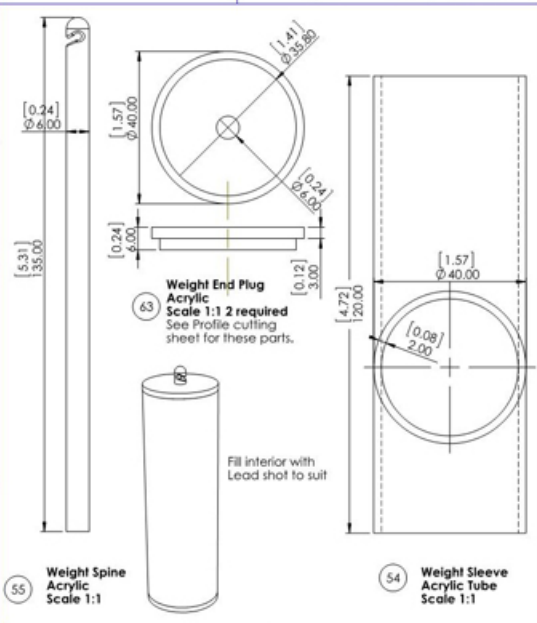
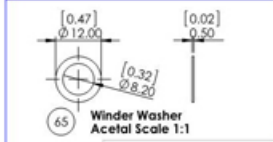
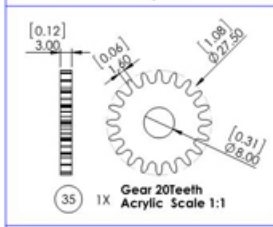
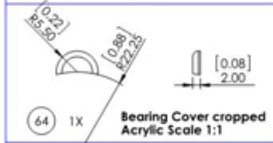
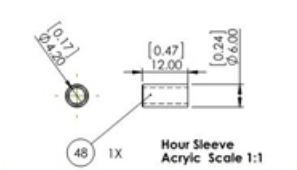
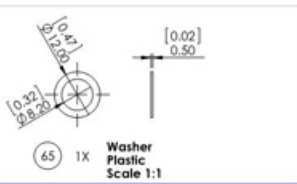
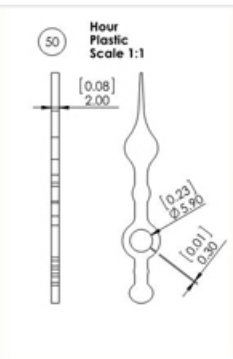
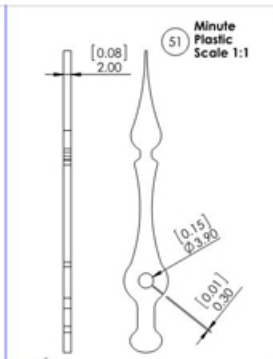
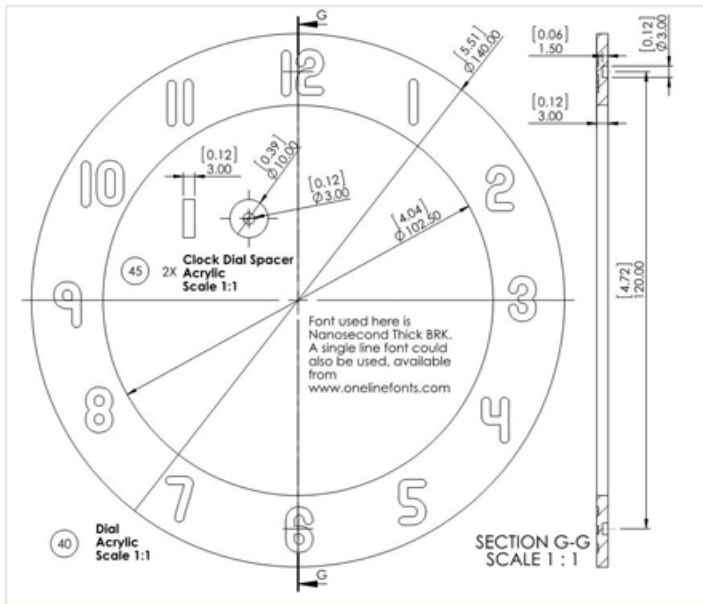
Law Wooden Clock 19- All Plastic Clock

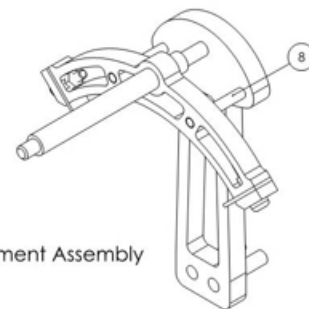
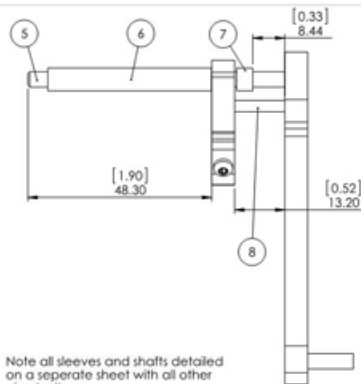
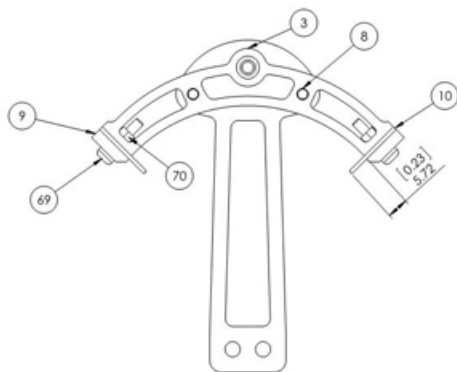
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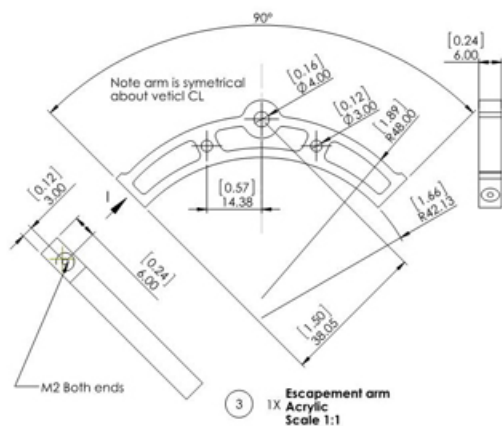
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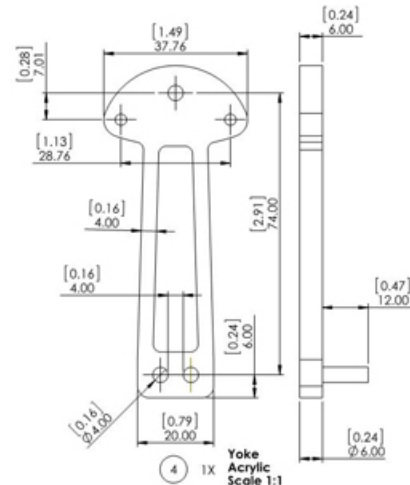
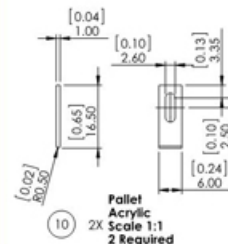
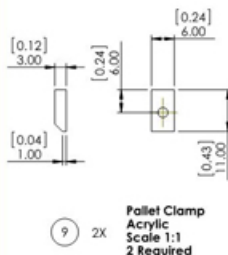


Escapement Assembly

Note all sleeves and shafts detailed on a separate sheet with all other circular items



VIEW I  
SCALE 1:1



Sht 6 of 12Shts **A3**

Law Wooden Clock 19- All Plastic Clock

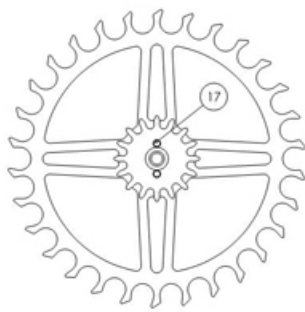
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All dimensions in mm and (inches)  
3rd Angle projection

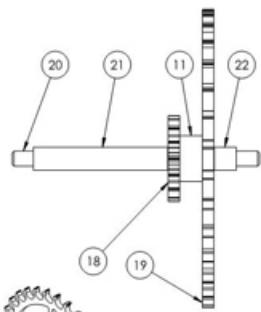
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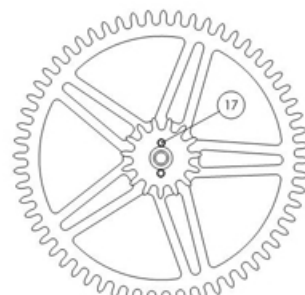


Escape Wheel Assembly

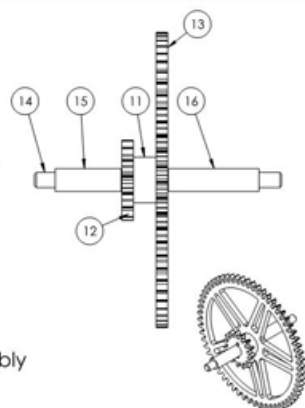


SCALE 1 : 2

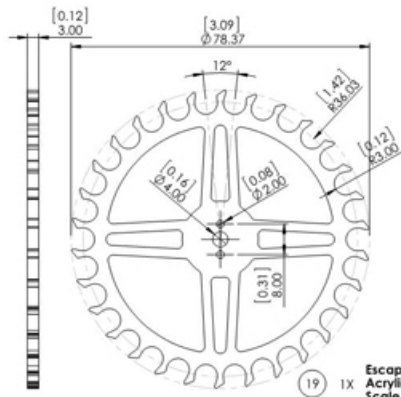
Note all sleeves and shafts detailed on a separate sheet with all the other circular items



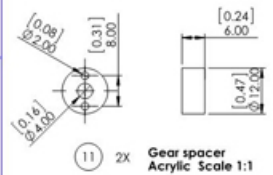
Intermediate Gear Assembly



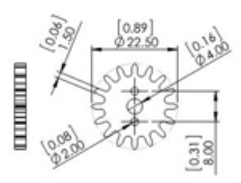
SCALE 1 : 2



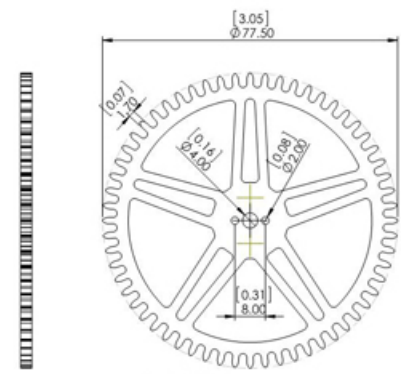
Escapement Wheel Acrylic Scale 1:1



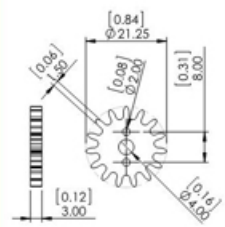
11 2X Gear spacer Acrylic Scale 1:1



18 1X Gear 16 Teeth Acrylic Scale 1:1



13 2X Gear 60 Teeth Acrylic Scale 1:1



12 2X Gear 15 Teeth Acrylic Scale 1:1

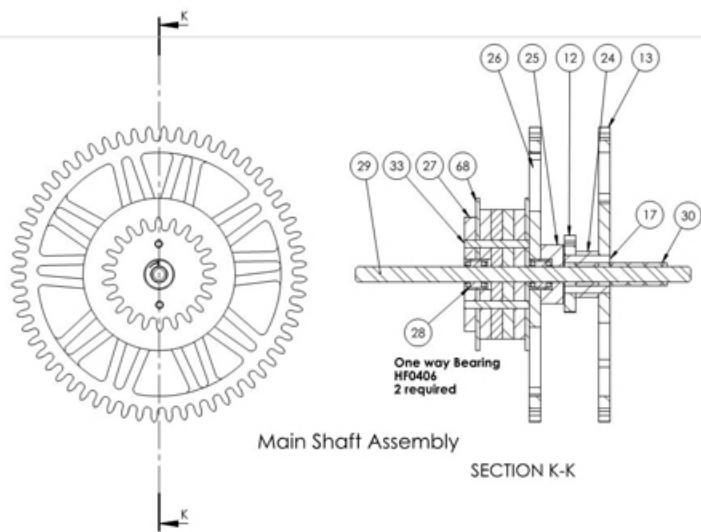
Sht 9 of 12Shts  
Not to Scale  
Unless otherwise stated

A3

Law Wooden Clock 19- All Plastic Clock  
All dimensions in mm and (inches)  
3rd Angle projection

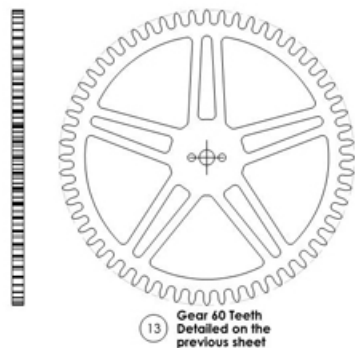
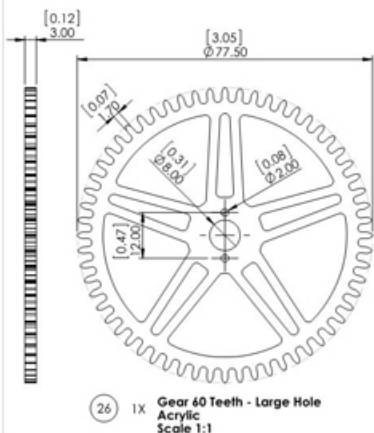
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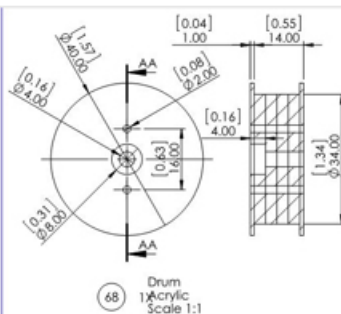


Main Shaft Assembly

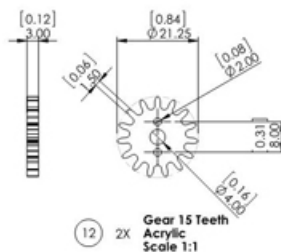
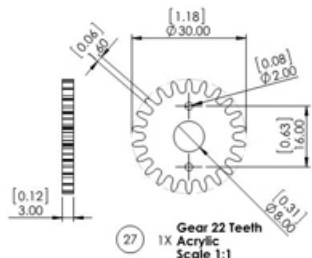
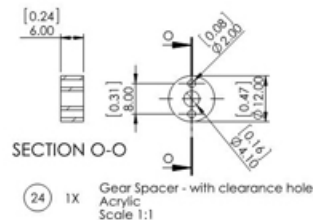
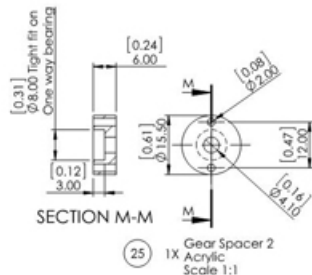
SECTION K-K



SCALE 1 : 1.5



Note a CNC version of this Drum can be found on the Profile cutting sheet



Sht1Oof12Shts

A3

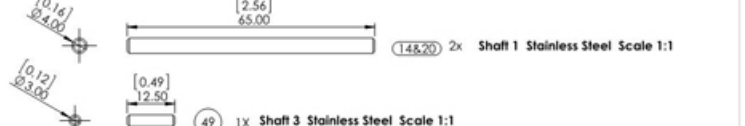
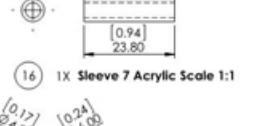
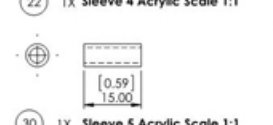
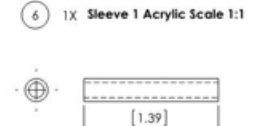
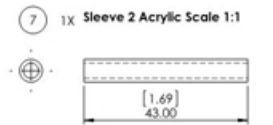
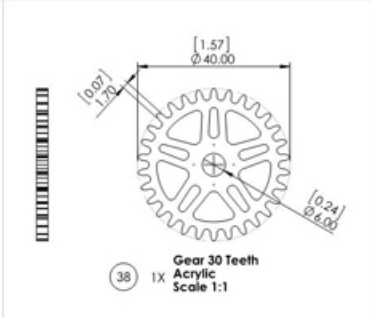
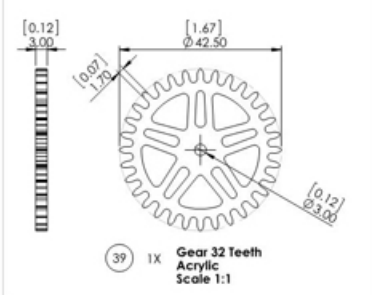
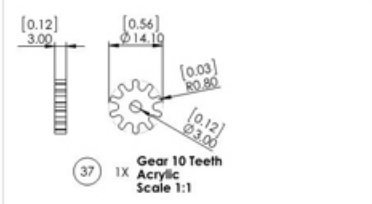
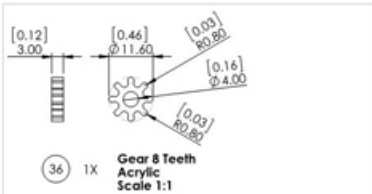
Law Wooden Clock 19- All Plastic Clock

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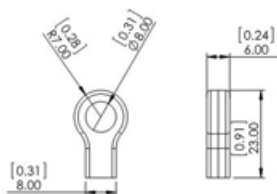
All dimensions in mm and (inches) 3rd Angle projection

January 2014

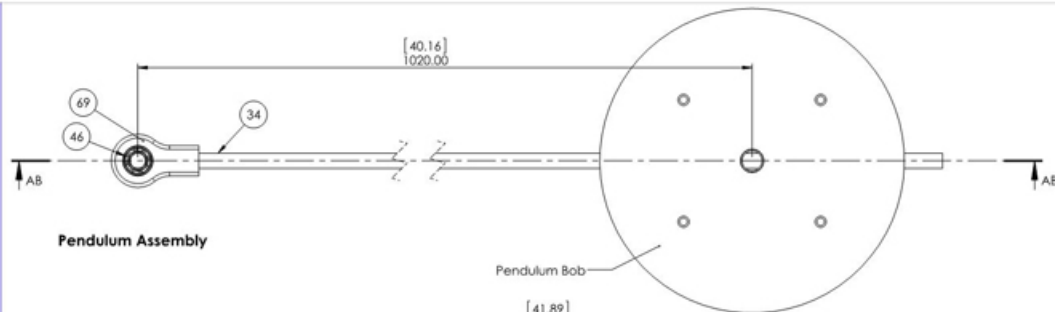
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Shtl 1 of 12Shts	A3	Law Wooden Clock 19- All Plastic Clock	
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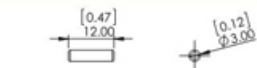
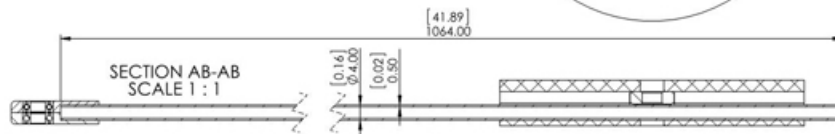


69 1X **Pendulum Head**  
Acrylic  
Scale 1:1  
Pendulum Head comprises 2 parts as shown.  
Profiles shown on Profile cutting sheets.

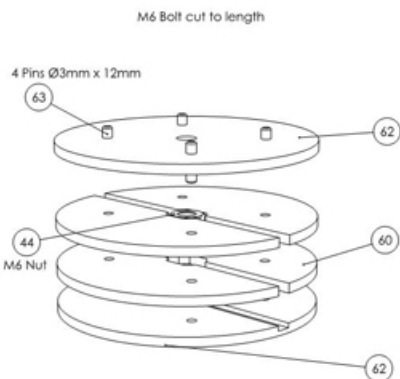


**Pendulum Assembly**

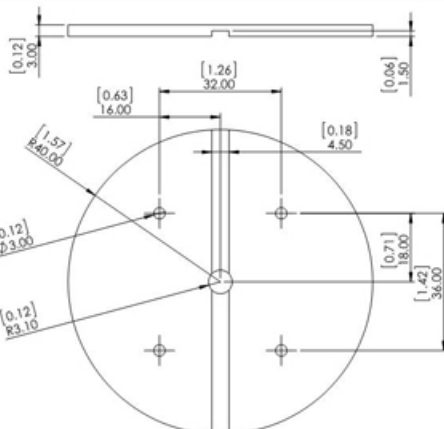
Pendulum Bob



63 4X **Pendulum Bob Pin**  
Stainless steel  
Scale 1:1

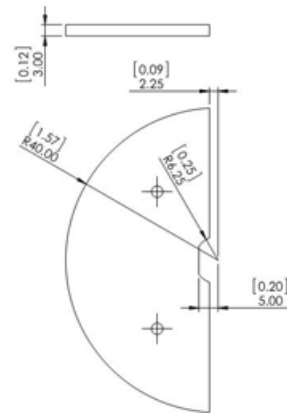


**Pendulum Bob Assembly**



62 1X **Pendulum Bob Outer - Grooved**  
Acrylic  
Scale 1:1

62 1X **Pendulum Bob Outer**  
Same as above but  
without the groove



60 4X **Pendulum Bob Inner**  
Acrylic  
Scale 1:1

Sht1 2of1 2Shts **A3**

Law Wooden Clock 19- All Plastic Clock

Not to Scale  
Unless otherwise stated

All dimensions in mm and (inches)  
3rd Angle projection

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