

Clock 27 FDM - Equipment

The following equipment is desirable: -

CNC Router or Laser or Waterjet and if not one of these then a Scrollsaw or a Bandsaw. Small Lathe, this is not absolutely essential but it would make making the clock a lot easier for all of the round parts that are needed.

Small Milling machine or **Pedestal Drill** with work holding vice. There are a lot of holes to be drilled and cleaned up after CNC machining and fabrication so the drill is pretty much essential. It may be possible to get away with an ordinary electric drill in a stand but a work holding vice is still necessary.

Drill Bits in the following sizes, Ø2mm, Ø1.9mm, Ø2.1mm, OR if you are working in inches No 49, No 47, NO 45

Hand tools all the normal things that are used in the workshop, Files, screwdrivers, hammer, pliers etc.

Consumables

Sand paper in various grades from rough to fine.

Acetone

Dry Film Lubricant in a spray can for the gears after everything is finished.

Clock 27 FDM - Materials

For all the Plastic Parts I used ABS

For all the other parts

Ø2 mm Silver Steel 100 mm long 3 required for gear train Shafts

Ø2 mm Silver Steel 69 mm long 1 required for drive shaft

Ø2 mm Silver Steel 17 mm long 1 required for Lifting Lever

Ø2 mm Silver Steel 18 mm long 2 required for impulse pin and Hour gear.

Ø2 mm Silver Steel 19 mm long 1 required for Trigger

Ø2 mm Silver Steel 31 mm long 3 required for Pendulum/Gravity arm

The bearings used for this project are Ø2 mm x 6mm O/Dia x 3 mm. The spec used is 692ZZ2X6X3, again the American equivalent is Ø 5/64" bore x Ø 1/4" O/D x 9/64" wide.

11 Bearings are required, better get extra as they are easy to lose.

Ø8 or 9mm Balls approx. 150

M4 screw an washer and nut

WoodscrewsØ4.5x60mm 2 required

Cord 2meter of Ø0.5mm cord or fishing line.

If you can't find the sizes I have used you can easily modify the design to suit what you can find.

Note these are the minimum amounts of material necessary to build the clock I used more in the prototype and you may well be advised to by extra to cover those accidental losses that occur.

If I have missed anything here you will find them in the parts list for the clock anyway.