Keiran Ryan MODELS

PRESENTS

The NSW S008 Silo Kit in “N” Scale .

This is a complete kit of a NSW Concrete Grain Silo in N Scale, based on drawings from the Grain Handling Authority of NSW.

Read on to understand the instruction for construction of this kit

Introduction

Welcome, and I hope you enjoy this instructional presentation.

The S008 silos were constructed from 1928 until 1934 and along with their hybrid siblings, the S016 and S024 silos. They are scattered all around New South Wales. Details can be found at https://www.krmodels.com.au/s008.html.

This group of concrete silos is the smallest style of concrete silo in the NSW system and lend themselves well to small or larger layouts and can be serviced by small country trains that ran from 1928 onward.

The kit is based on the original drawings obtained from the GHA, back in the 1980's. Unlike the HO models of the same kit, this kit comes complete apart from paint and glue. (and you also need to provide a little bit of your own labour.)

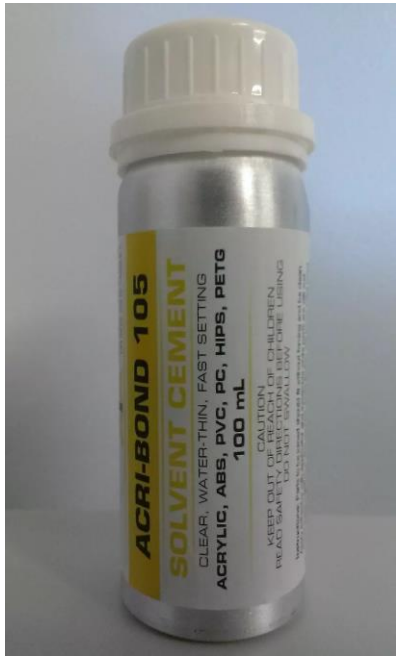
Most of this kit was produced on an FDM 3D printer, and many many models were produced to "Get It Right", I am very happy with the outcome, and I hope you are as well.

As well as 3D components, there are also etched nickel silver/brass parts, brass wire, brass "H" pattern, various small screws, a craft wood base, brass tube, and some Resin 3D parts for doors, windows and vents and 3D printed "corrugated iron cladding". And if you follow the instructions, you should have a beautifully constructed silo sitting proudly on your layout, on completion.

So "LET'S GET READY TO MODEL" ---------- Enjoy and learn.

What you will need (Tools and things)

As for as tools are concerned, the following would be handy to have:



- **Soldering iron**
- **Small Screwdriver set (with a long thin bladed Phillips head (approx. 3 mm thick shaft)**
- **Cutting blade**
- **Engineers' squares**
- **Hobby work mat**
- **Small Engineers ruler**
- **Sanding Blocks available from Keiran Ryan Models**
- **Small file set**
- **Pin vices**
- **Glue - supa glue, 2-part epoxy. My preferred Glue, is a product that goes by the name of Acri Bond 105, which is an Acrylic Glue, and is available on eBay in a 100 mm container. It works extremely well with PLA Plastic.**
- **Time, Patience, and a good work ethic.**
- **Other stuff that I have probably forgotten ---- Sh.t happens.**

Parts List

- **Silo Timber Base (with “T Nuts”)**
- **Silo Timber Base Drilling Template**
- **Silo Base – 3D Print**
- **Silo Workhouse – 3D Print**
- **Silo Cupola – 3D Print**
- **Silo Cupola Base Stiffener Plate - 3D Print**
- **Silo Cupola Roof Plates - 3D Print**
- **Silo Cupola Side Bin Roof Plates – 3D Print**
- **Silo Annex, Roof Plate, Channel, Wire & Cable.**
- **Silo Out Loading Platform With Steps – 3D Print**
- **Silo Spoil Bin – 3D Print**
- **Silo Etched Parts – (Ladder Stiles, Ladder Guard, Rear Door/Grill and Weighbridge)**
- **Silo Printed Doors, Windows, Vents and Winches – Resin 3D Print**
- **Silo Wagon Shed Trusses and Side Purlins – 3D print**
- **Silo Wagon Shed Frame Jig**
- **Silo Wagon Shed Trusses and Roof Purlins – 3D Print**
- **Silo Wagon Shed Frame Brass “H” Pattern Material**
- **Silo Outloading Chute Kit**
- **Metric Drills – 0.3 mm, 0.5 mm, 1.1 mm 1.3 mm, 1.7 mm, 1.9 mm**
- **1.7 mm x 6 mm Self Tapping Screws**
- **1.4 mm x 5 mm Self Tapping Screws**
- **Silo Cupola Side and End Panel Corrugated Iron Panels**
- **Silo Cupola Roof and Bin Roof Corrugated Iron Cladding Panels**
- **Silo Annex and Roof Corrugated Iron Cladding Panels**
- **Silo Wagon Shed Corrugated Iron Cladding Panels**
- **Silo Steps and Rear Road Edge Strips.**
- **Styrene Thin Plastic Rod for Ridge Capping - 2 Lengths**
- **2 Peg Clams**
- **Instruction SD Card**

N Scale S008 Silo Kit Parts Indicator

Silo Timber Base

Silo Annex and parts

Silo Workhouse Stiffener

Silo Cupola

Silo Wagon Shed Frame Jig

Silo Outloading Chute

Silo Bin Roof

Silo Wagon Shed Frame Material

Silo Cupola Roof

Silo Wagon Shed Trusses & Purlins and Roof Purlins

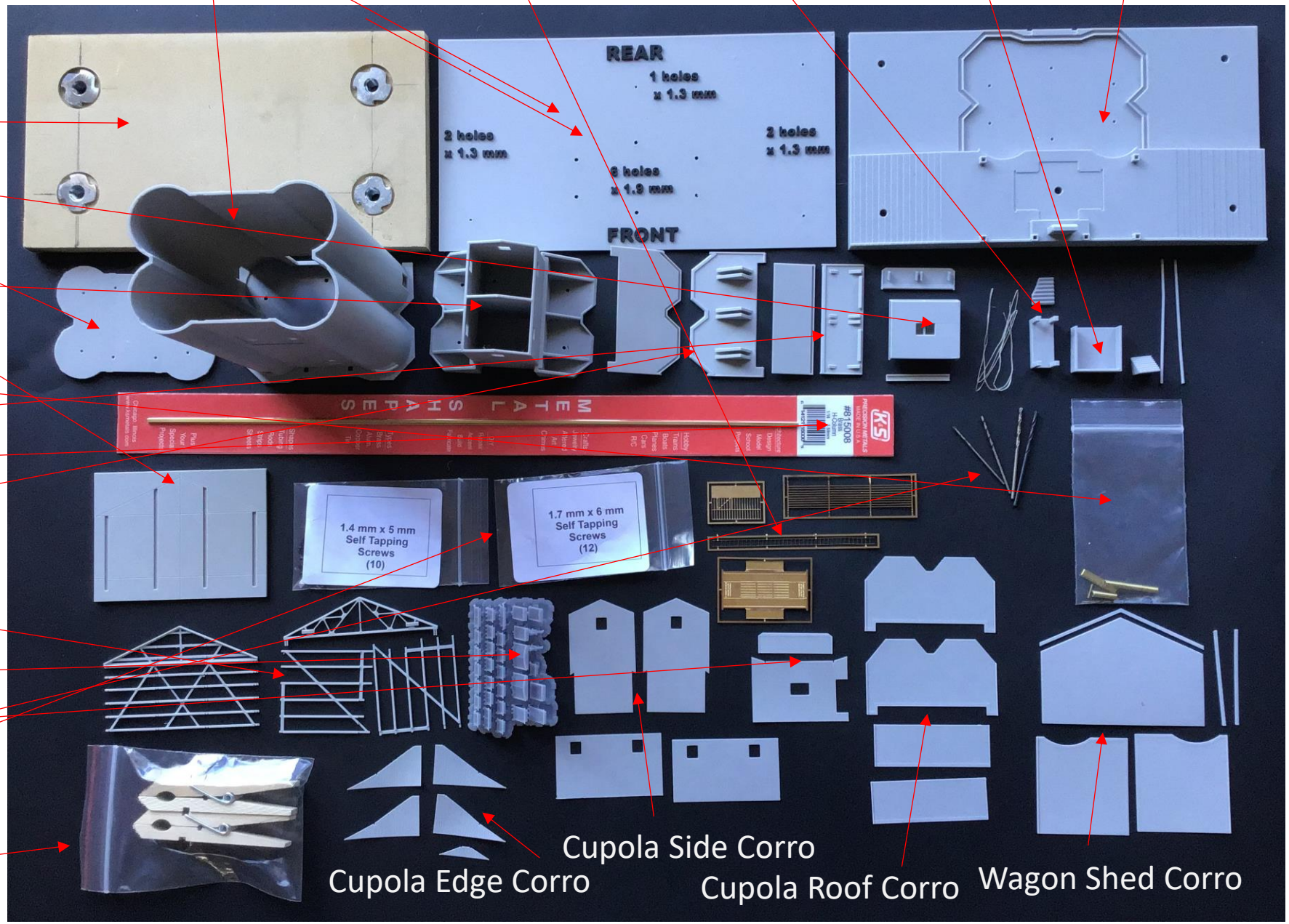
Silo Doors and Windows

Silo Annex Corro

Small Drills

Silo Screws

Clamping Pegs



Things you should know!!

It is very important to remove any flash on the 3d parts to ensure a good fit of these parts and to wipe the back of all 3D plastic parts with a damp cloth and allow to dry before glueing. This is due to the printing process, where stick glue is used to hold the parts on the printing bed. These parts can be fragile and need to be handled carefully.

Keiran Ryan Models has a “onetime” replacement policy on parts, and that is if the part is damaged whilst taking care to clean the part, it will be replaced, but this will only occur once, and any postage will be the responsibility of the kit purchaser.

The 3D parts come as printed and will need to be cleaned up so that any printed flash (very minimal) can be removed, especially around the base of parts. The holes may also need to be cleaned out with a drill and any burrs removed with a sanding block. Parts and hole sizes are indicated with the parts in the next couple of slides, please use the correct size drill, when cleaning out the holes.

You will need small metric drills to complete this task, (included in the kit) or the appropriate number drills can be used.

Remember that in real life, these structures are built from concrete, and that concrete can be a rough finish at times and then weathered. So, the final finish is up to the modeller, much like the finish of a model loco, whether or not the model is weathered.

Enjoy the build.

Things you should know!!

IMPORTANT

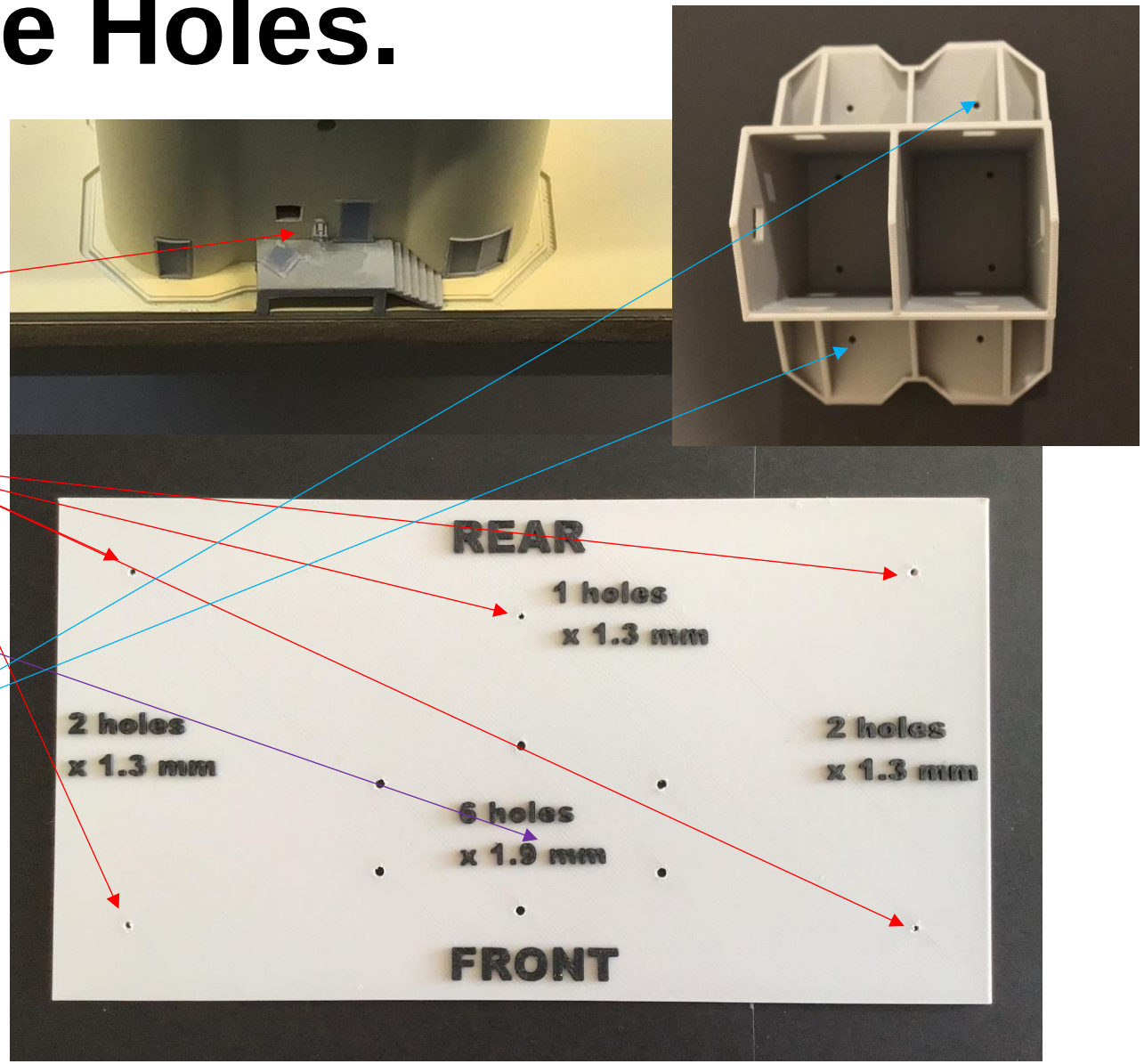
My advice is to keep this kit in a cool environment, and at your earliest opportunity, give all the parts a primer coat of paint.

These parts can be affected by direct sunlight and heat. Once painted they should be fine, however direct sunlight can still affect their shape.

This goes with any plastic kits that are out in the marketplace, not just 3D products. So just be careful. And DONOT leave them in your Motor Vehicle.

Drilling Some Holes.

There are 6 drills included in the kit, 0.3 mm, 0.5mm, 1.1 mm, 1.3 mm, 1.7 mm and 1.9 mm
The sole purpose of the 1.1 drill is to drill a hole for the small winch that fits between the small vent and the door at the front of the workhouse.
The 1.3 drill can be used to open up the holes on the Timber Drilling Jig. Do this with a handheld pin vice. The 1.9 mm drill is used to drill larger holes in the Timber Base Drilling Jig, that are clearance holes for the outer holes on the silo base. The 1.7 mm drill is used to provide clearance holes in the Cupola for the screws that locate the cupola to the cupola base stiffener.



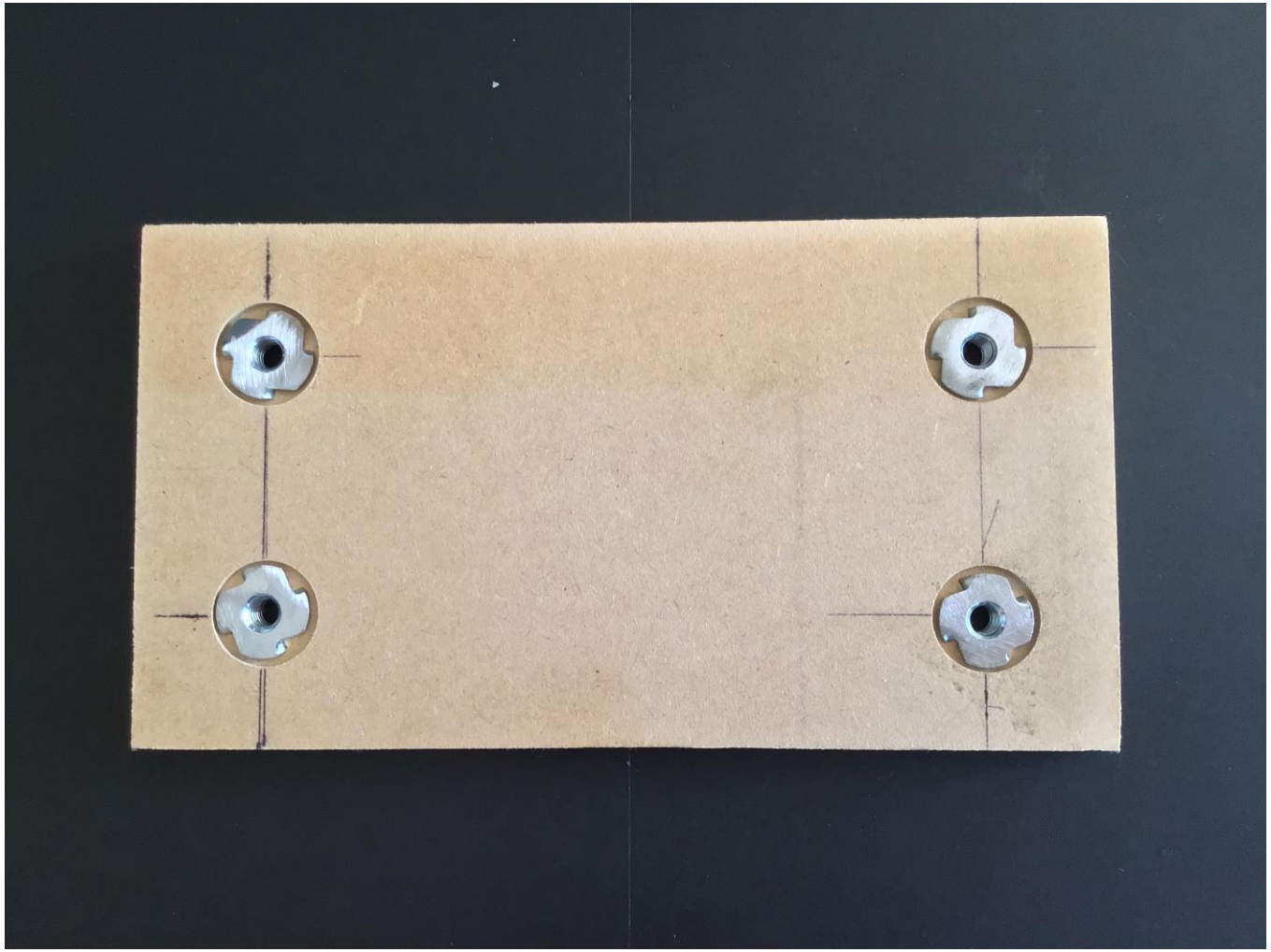
Step 1

Please read the instructions all the way through, no exceptions, and then read them again, so that you understand them. Understanding makes for a better model.

This kit can be built in numerous ways. By reading the instructions a couple of times you will get a better idea as to the best way for you to build the kit. Test fit all parts prior to glueing them together.

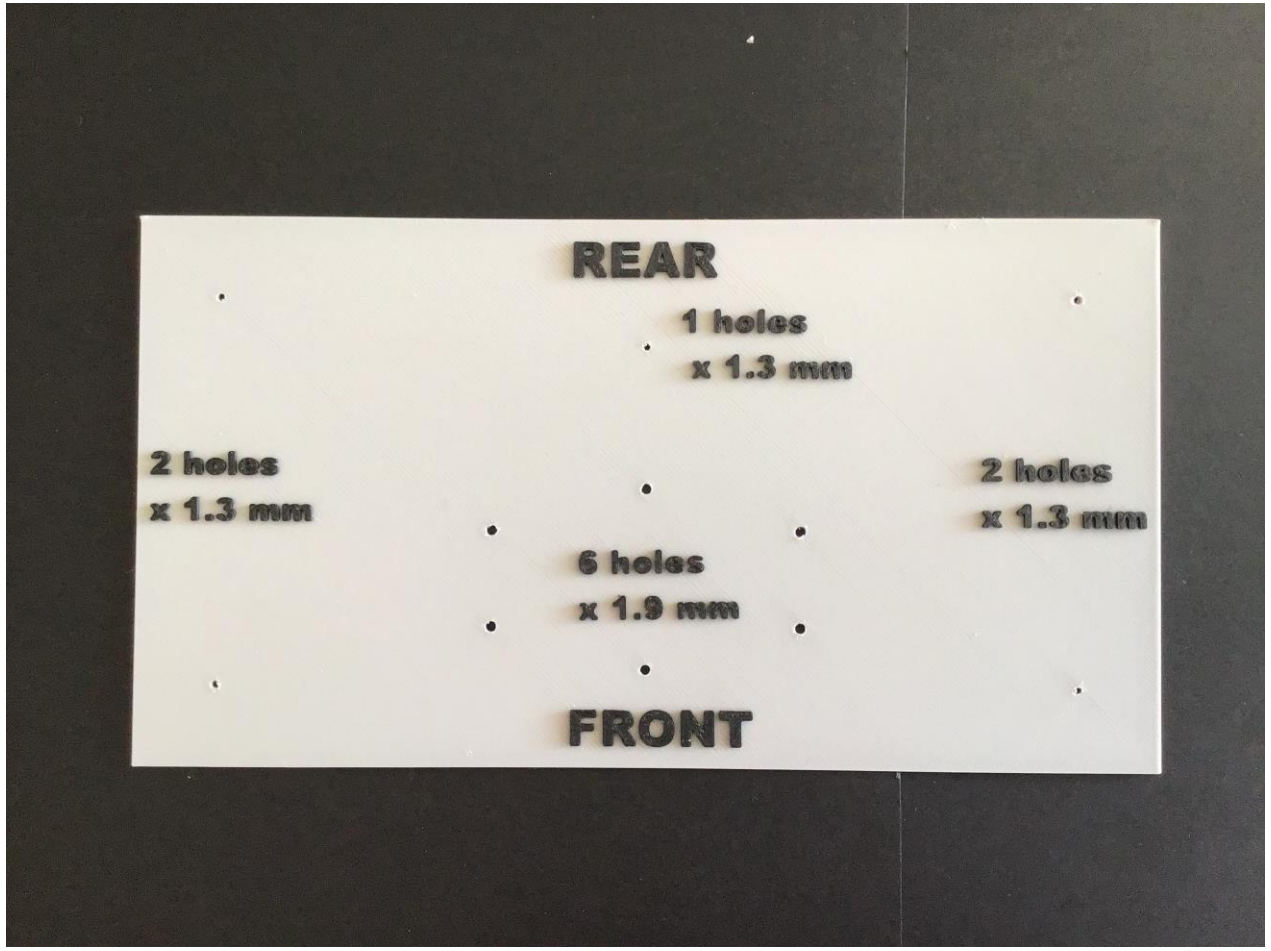
Step 2

This is the base to which the silo is attached.
The base has 4 x ¼ inch “T Nuts” located in such a way so that they do not interfere with the screws securing the silo base.
The “T Nuts” are mounted flush with the top of the timber and ¼ Inch screws and washers (not supplied) are located through your layout, to hold the silo in place. This can be a permanent or temporary mounting if you need to repair the structure at any time in the future.



Step 3

This is the base template drilling jig. The instructions clearly displayed on the printed part. Using the correct size drills open the holes to the correct size. The 6 x 1.9 mm holes are clearance holes for the screws on the base of the Workhouse, and the other 5 holes are to secure the silo base to the timber base.



-HINT-

If you don’t want to drill the 6 holes that allow the screws to fit into the base (1.9 mm) You can simply file down the screws so that they do not protrude past the plastic base.

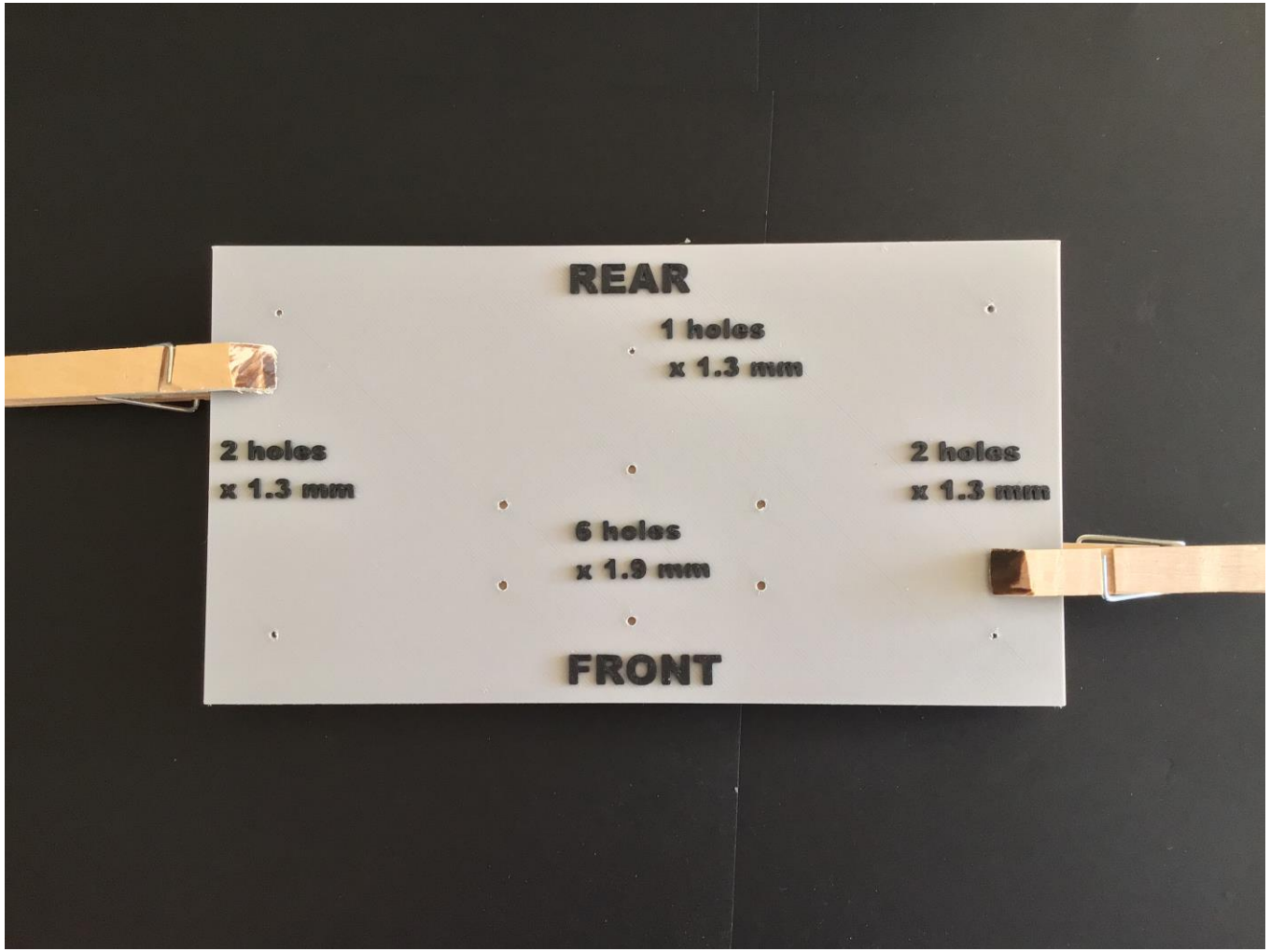
Step 4

Clamp the base Drilling Template to the timber base and drill the holes according to the sizes shown on the template. (The drills are included in the kit).

The 1.3 mm holes are for securing the silo base and workhouse to the timber base using 1.4 mm x 6 mm screws.

The 1.9 mm holes are for clearance holes that accept the 1.7mm x 6 mm screws. These screws secure the workhouse to the silo base and can be filed off after they have been used to locate the two parts together. By doing this you may not need to drill the larger holes.

I would suggest that you place a light spray of Kwik Grip contact cement on the timber base and the underside of the silo base, before securing the base with the screws.



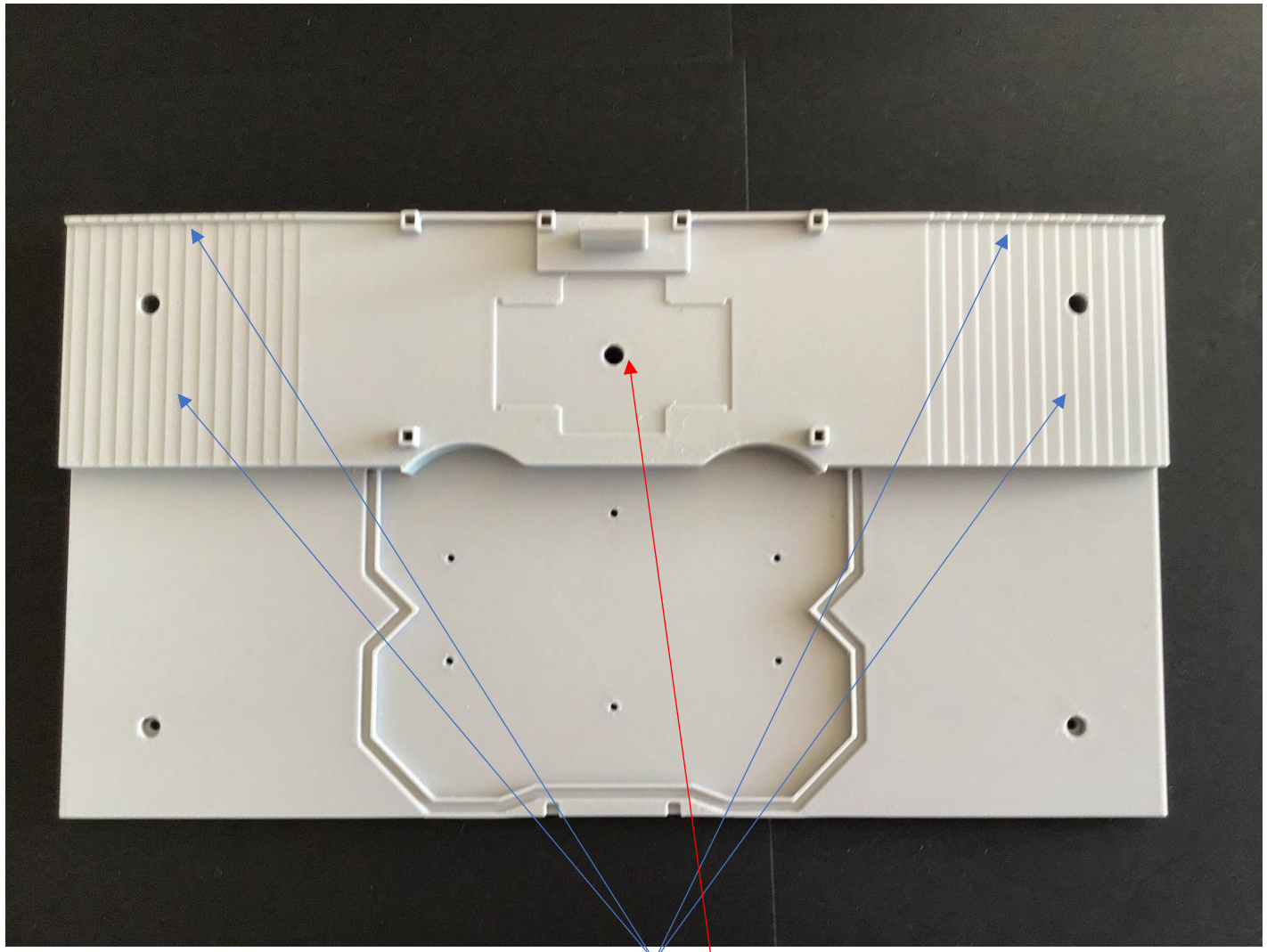
Step 5

The silo base is 3D printed, and the holes should be the correct size for screwing to the timber base.
The 6 wagon shed foundations should be suitable to accept the 6 brass “H” pattern brass frame pieces.

I have already made sure that the frame sections fit the footing holes to about a 10 mm depth, when packing the kits

You can test this if you wish. But do make sure that the Brass “H” section has the edges cleaned up and it also helps to give the brass a quick sand, with fine wet and dry paper, if they are tight, sand them again on all 4 sides.

4 of the 5 screw holes that secure the base to the timber are filled with putty after securing the base to the timber. The 1 under the weighbridge, is covered by the weighbridge.



The approach ramps will need to be filled with putty, as do the thin back edges of the approach ramps. This can be done now and allowed to dry before sanding smooth. The center hole can be left as it is, as the weighbridge covers this hole when fitted. The outer strip can be sanded smooth, to remove the stepping.

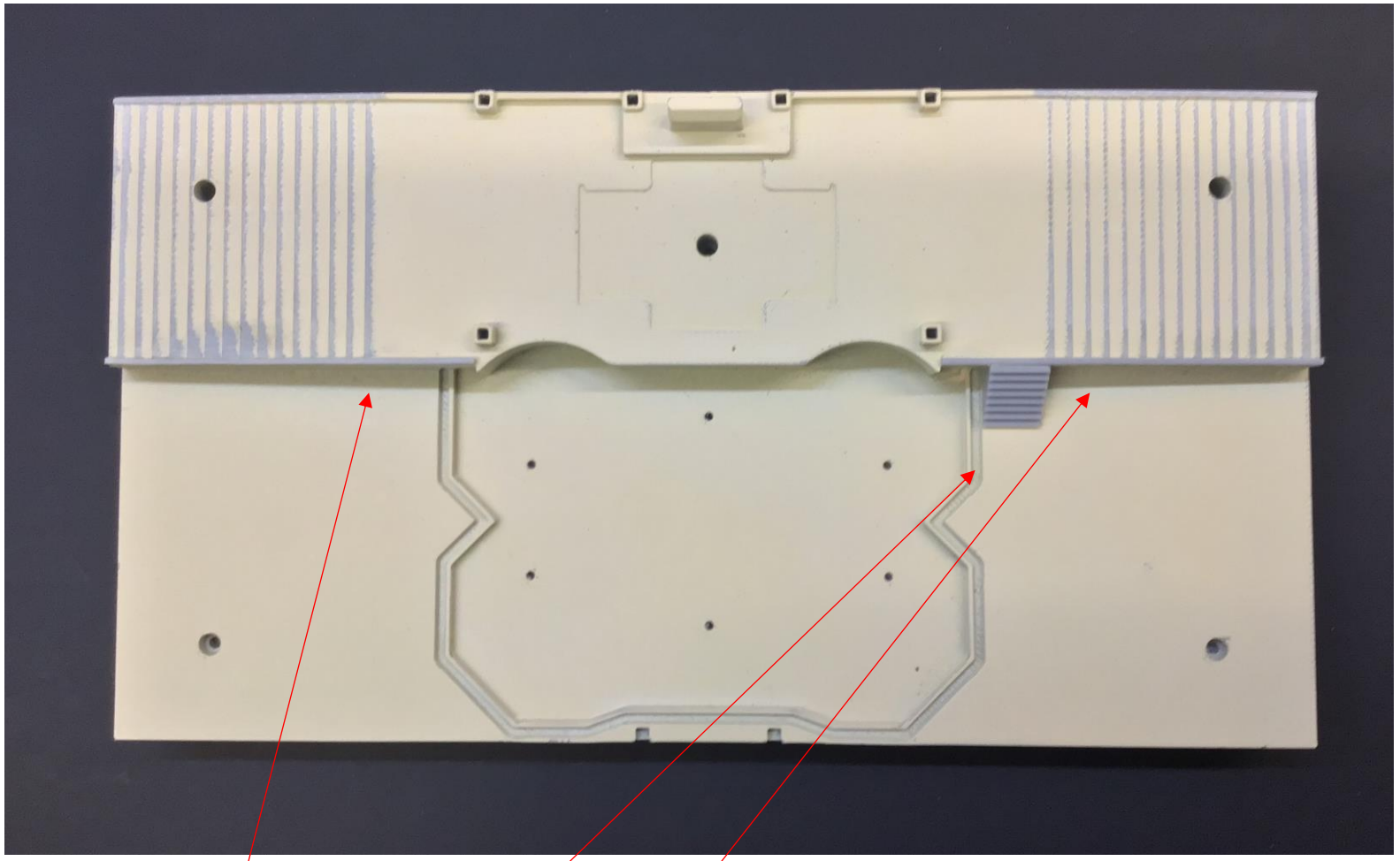
Step 6

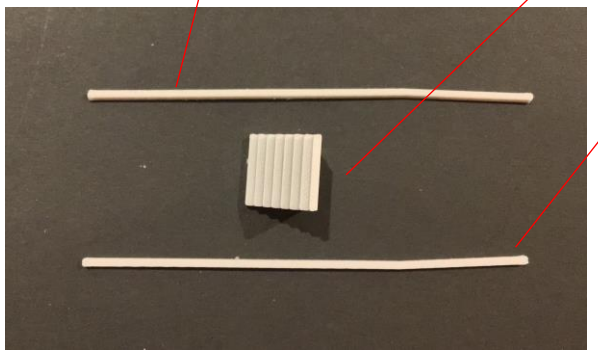
This silo base has been sprayed with this Stop Putty and lightly sanded. The steps and the rear road edge strips are fitted. On the prototype these direct any water from rain away from the silo base.

The strips are slightly shaped to align with the flat of the rear road and the slope at both ends.

The steps are simply glued into position on the edge of the silo drainage.

The slopes on each end do not need to be filled as they are usually covered by dirt. They can be concreted if that is what you wish to do, in which case, you would need to fill in the layering effects of the 3D printing.



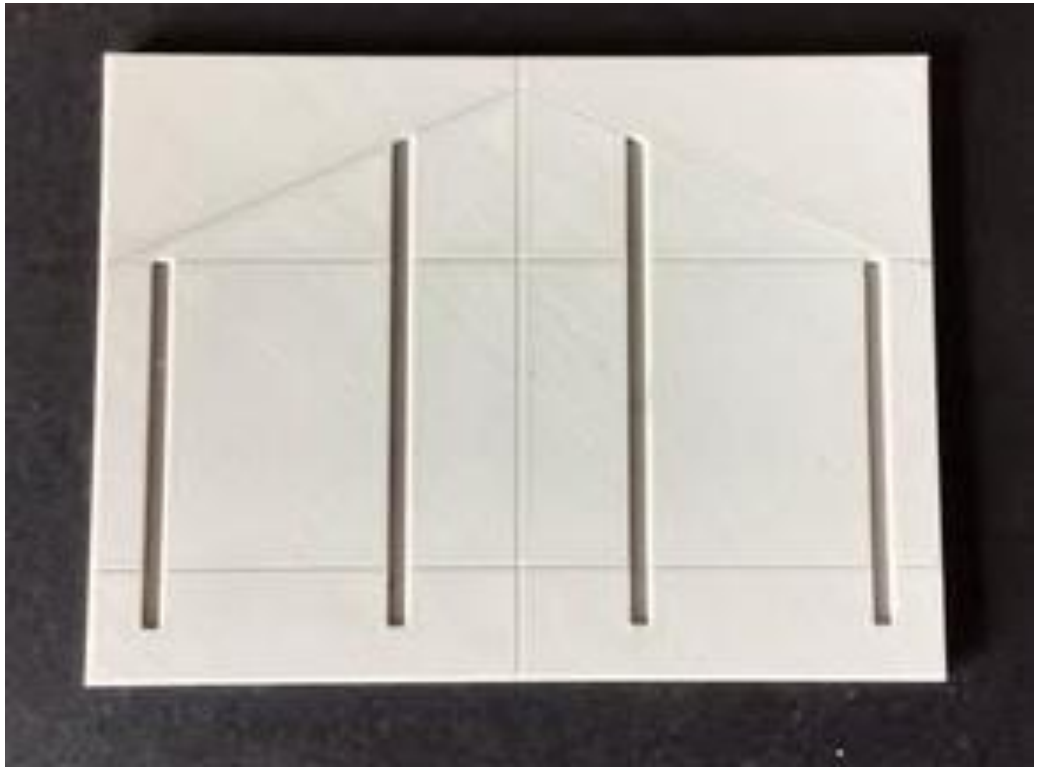


Step 7

This is the Wagon Shed Frame Jig. Its purpose is to check the heights of the “H” pattern frame sections that make up the wagon shed frame.

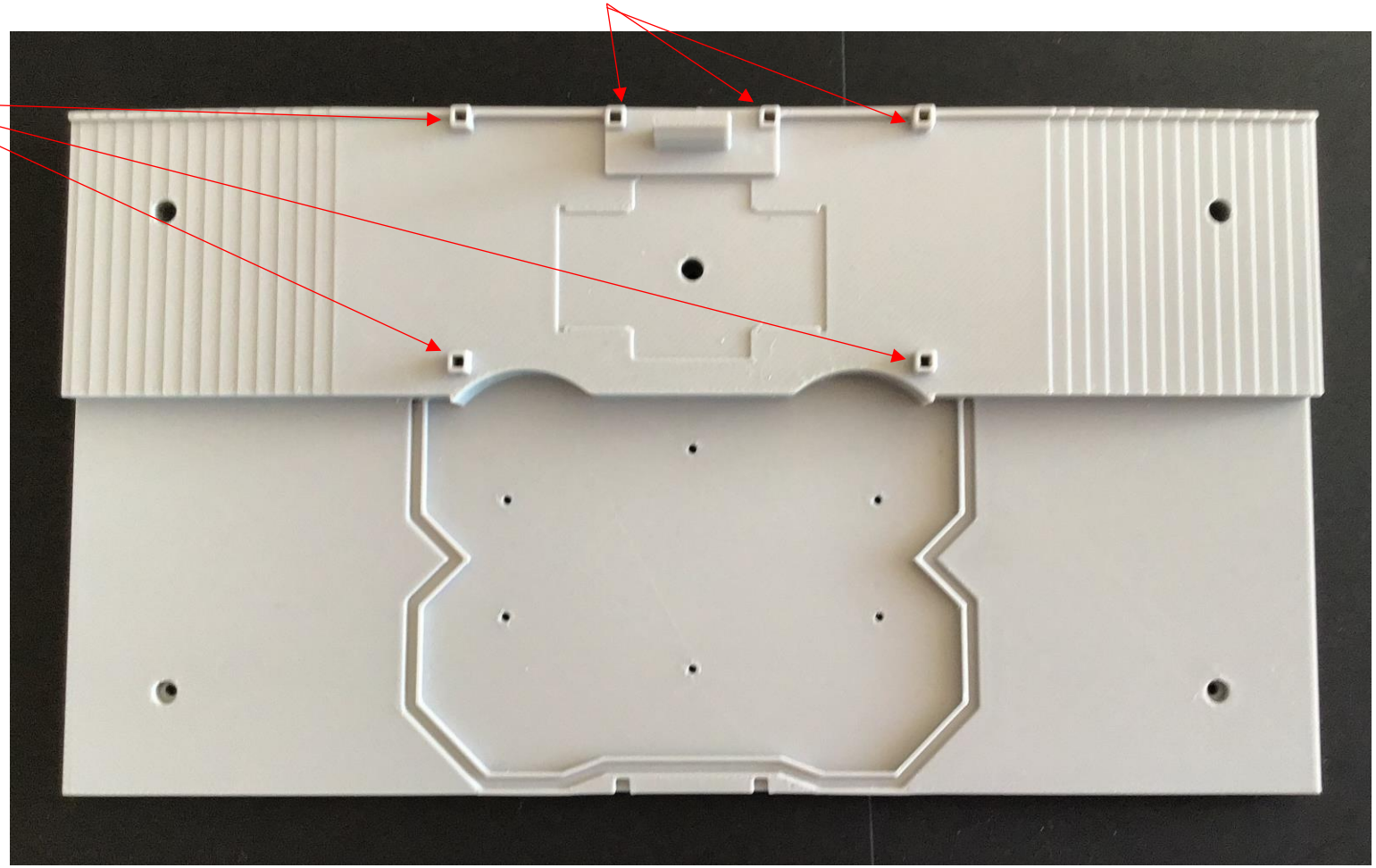
It is also used for the alignment of the 3D printed parts that fit onto the brass sections.

The image below the jig, is of the material used for the frame sections (included in the kit). There is more material than you require. I would still be advisable to cut the material just over size and filed down to fit.



Step 8

This is the Silo Base. The 6 footings of the wagon shed are indicated here.



The footings have been purged of any excess plastic, before the base was placed into the kit. This was done by using a small piece of the “H” pattern material to basically ream out the footings. You can check them for a good fit, however, to do so just using a small section of the material.

The brass sections should go about 10mm into the base, and again this has been checked before packing.

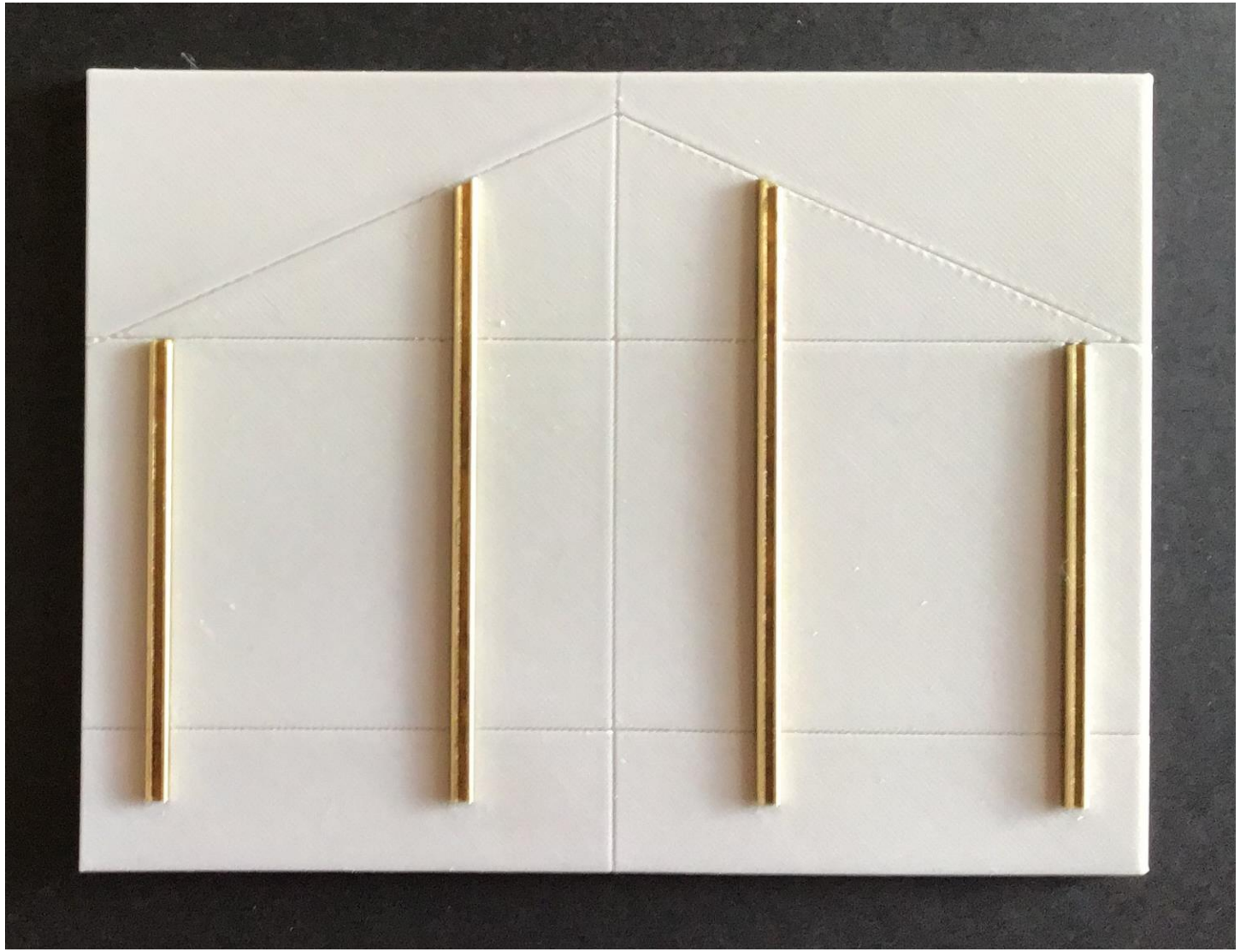
Do be careful when working with the footings as that can easily break off when manipulated. They can be glued back into position.

Step 9

Cut the Brass “H” pattern material, just a little bit longer than the jig measurement. The two longer centre pieces are on the same angle as the roof line of the Wagon Shed.

The inside two frame sections are the same dimension as the outer frames opposite.

Give the base of each section of brass a light sanding with some 400 wet and dry paper, on the outside and on the inside of the H so that there are not burrs. Then carefully test fit the frames into the footings.



Step 10

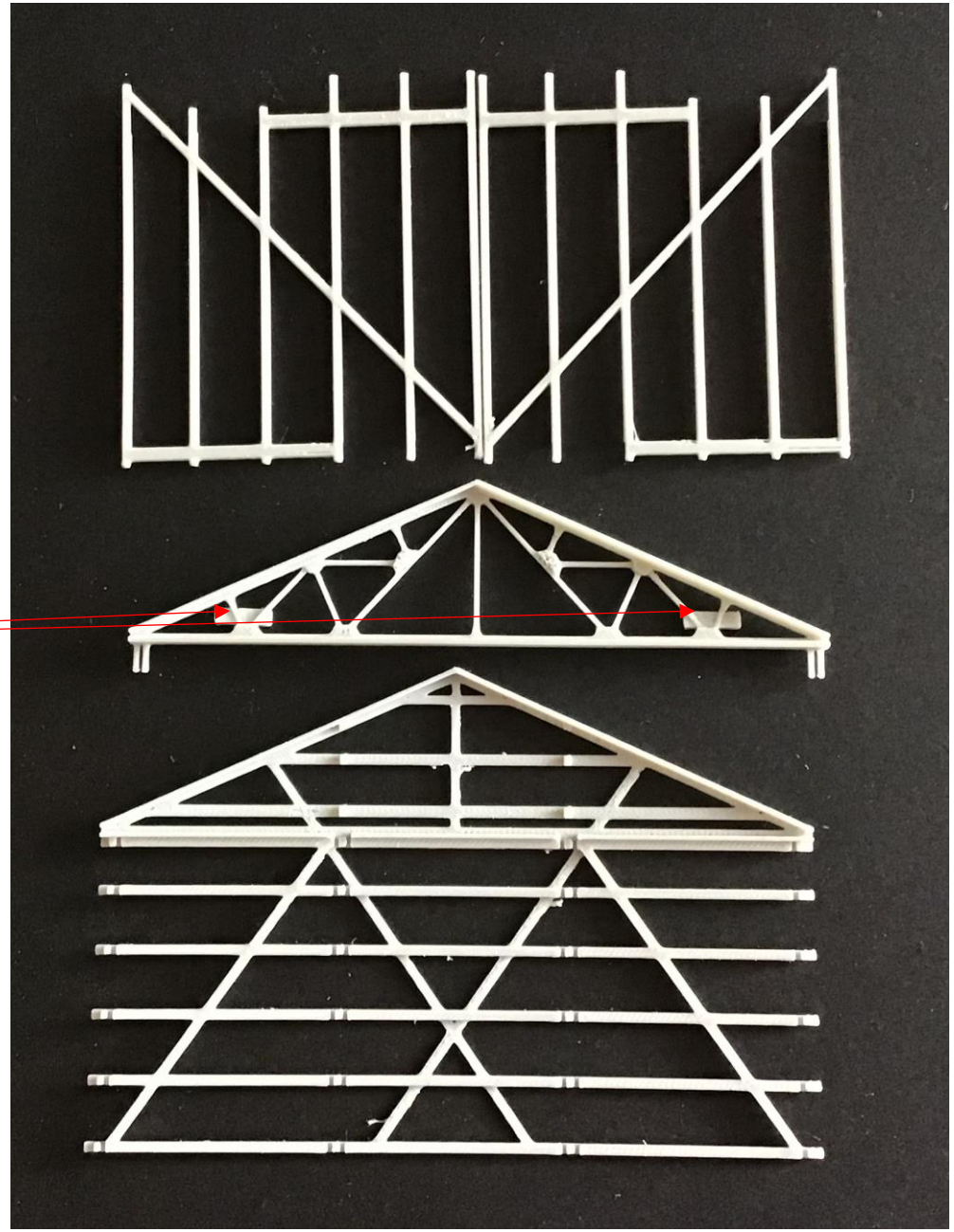
These are the 3D printed components, that fit onto the brass section to make up the full wagon shed frame.

From the top down, the two purlins that fit against the silo wall.

Next in the middle, the inner truss. Just a word on this. The orientation of the truss should be as seen opposite, the 2 rectangular pieces indicated sit up against the silo wall and ensure that the truss sits square.

The bottom part is the outer wall truss and purlins. The brass sections fit into the frame and will be explained in the next couple of slides.

There will be small strings of plastic that can be removed using a snap off knife. Be very careful that you don’t take off too much material.

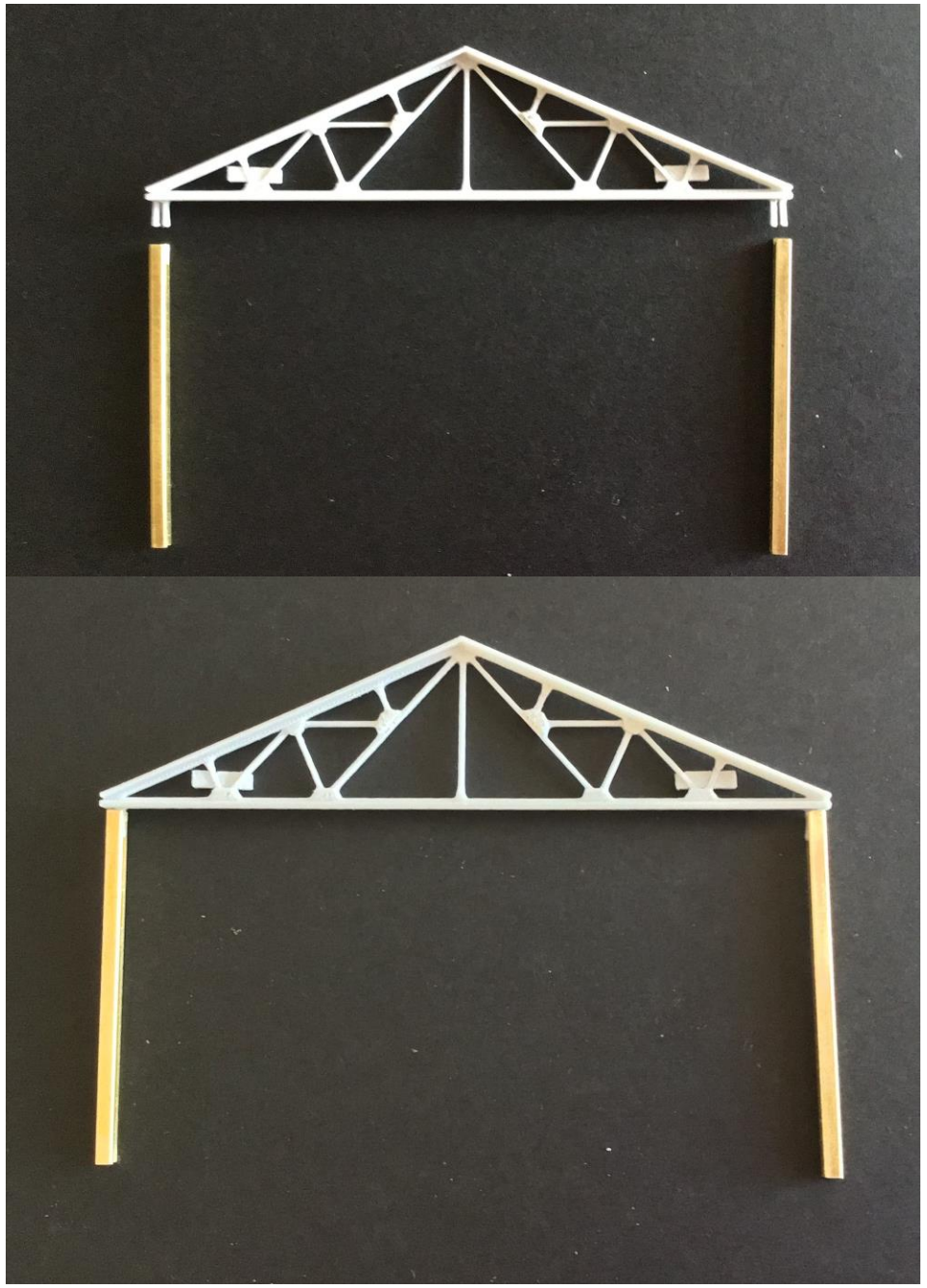


Step 11

The inner truss is fitted into the brass frames. And then glued with supa glue.

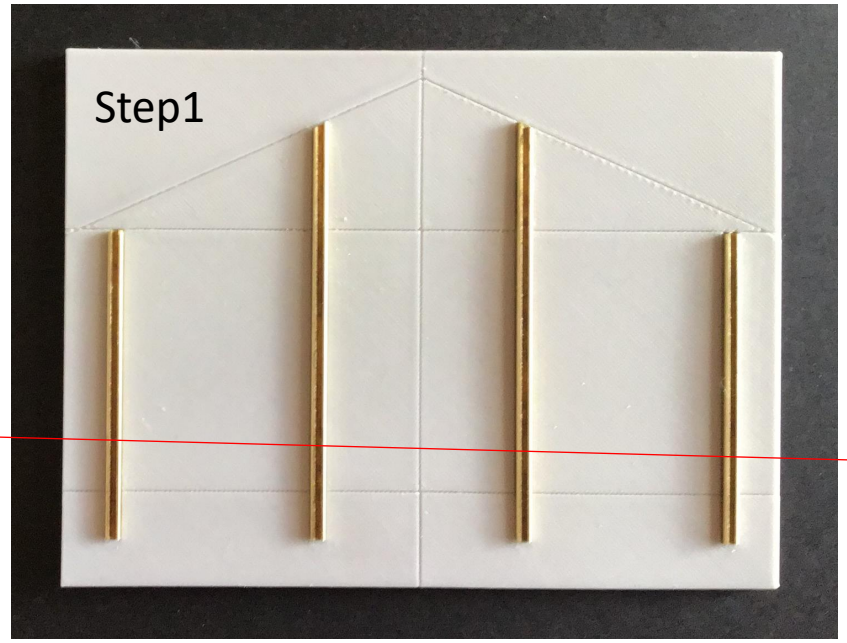
There may be a little cleaning up for both the plastic and the brass. Test fit the parts to ensure that the parts fit slightly tight, but not tight enough to deform the protrusions.

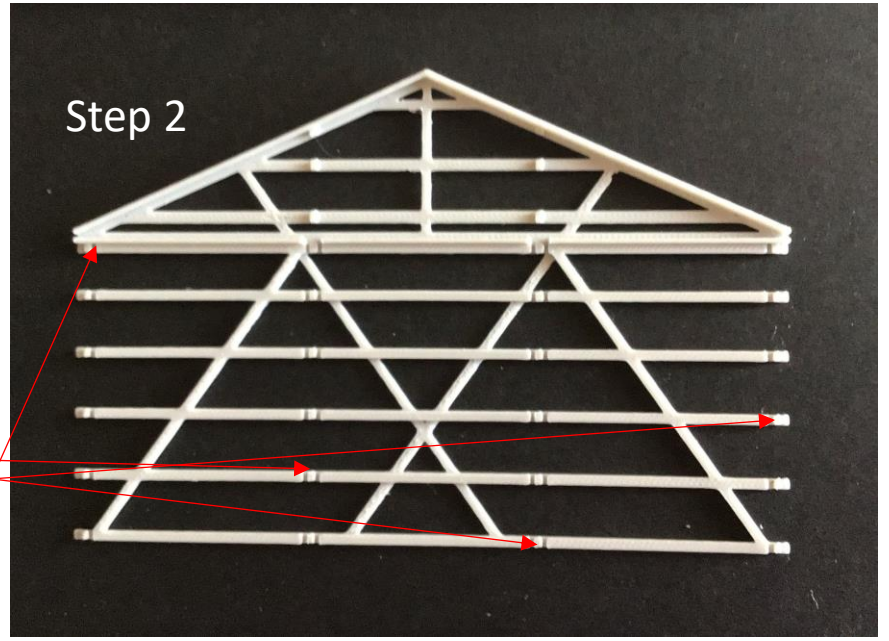
Clean off any stray strings of plastic that can be found, but again be careful when doing this, that you do not cut into the main parts of the truss.

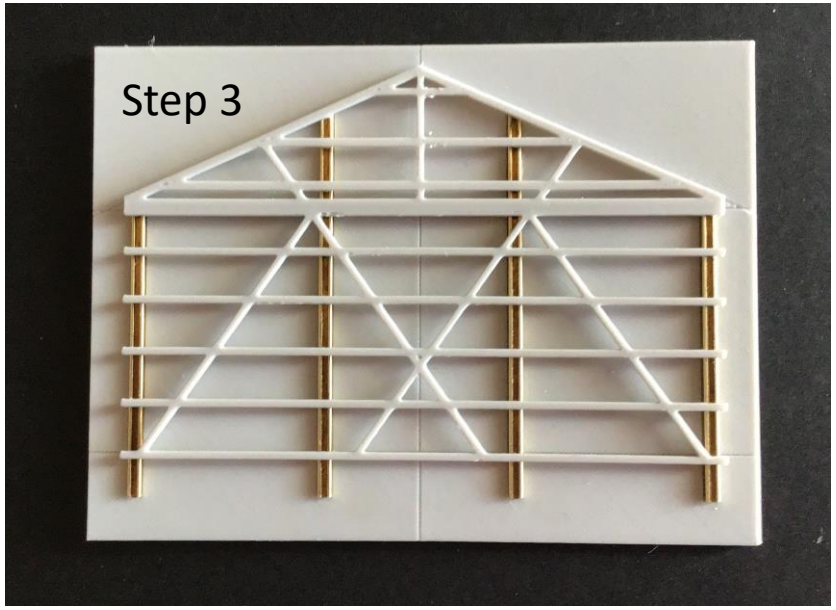


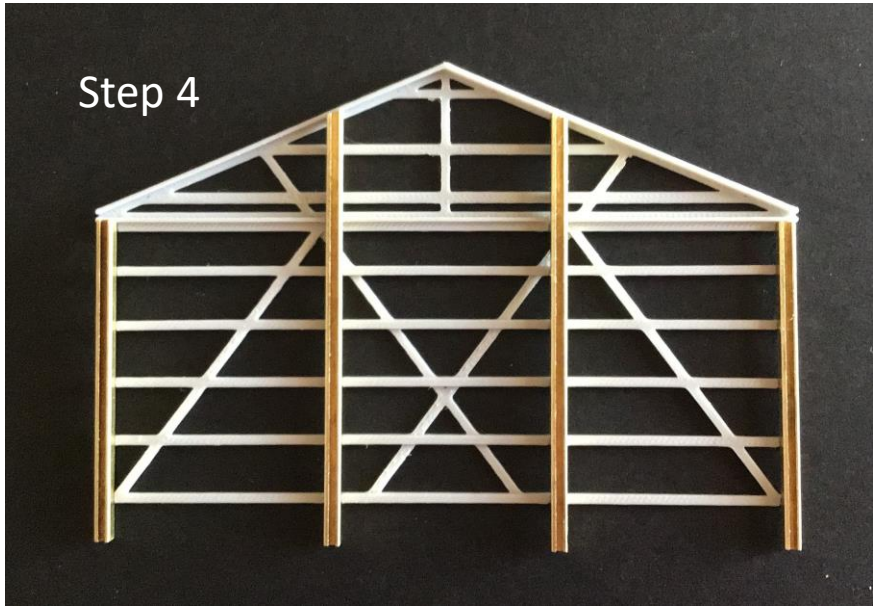
Step 12

The 4-step process is shown opposite.
Step One – Brass frames in the jig
Step Two – The plastic frame showing the ribs that the brass “H” pattern fits into. The brass should be a nice fit. Then glue it in with supa glue. Ensure that the parts are located well into the top truss.
Step Three – When glueing the plastic to the brass, it is important that the completed frame is NOT glued to the jig. If you are not sure about being able to do this, Glue it together in the next step.
Step Four – The finished frame ready to place into the footings.







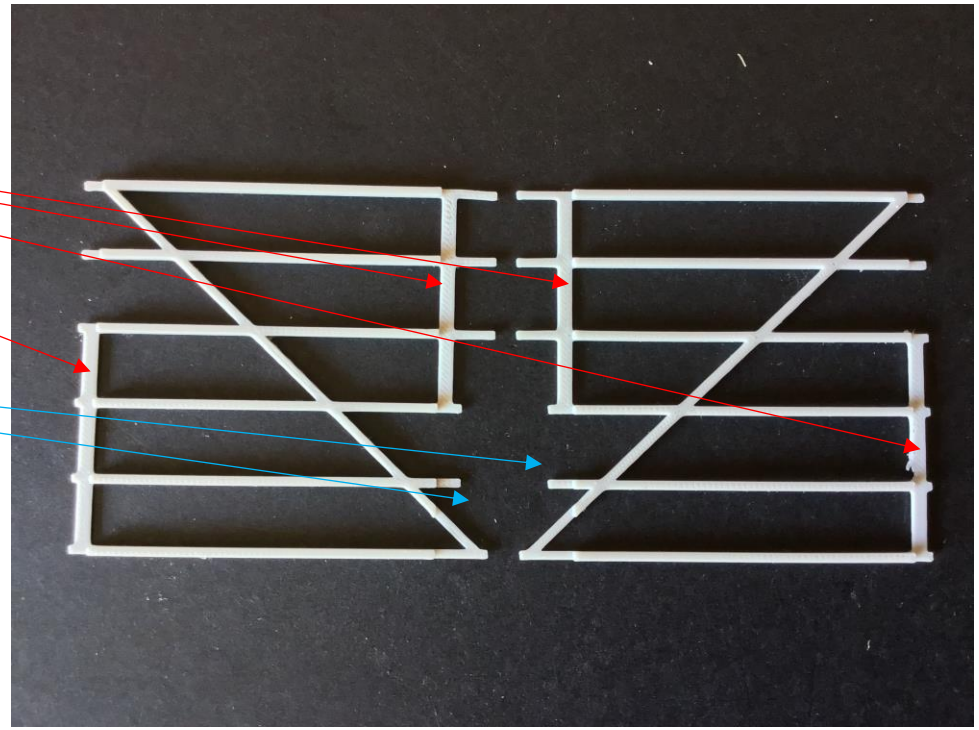


Step 13

The frames are located into the 6 footings. Be very careful when fitting them, and if they are a tight fit, work out which footing is tight and try and relieve that footing. The roof purlins are shown in the lower image. And you can just see the depressions in the edges of the 3d print.

Not depressions in the plastic, they fit onto the fit onto the top of the trusses and assist in making the truss square with each other.

These voids accommodate the profile of the bin walls and allow for a nice fit for the roof purlins against the bin walls.



Step 15

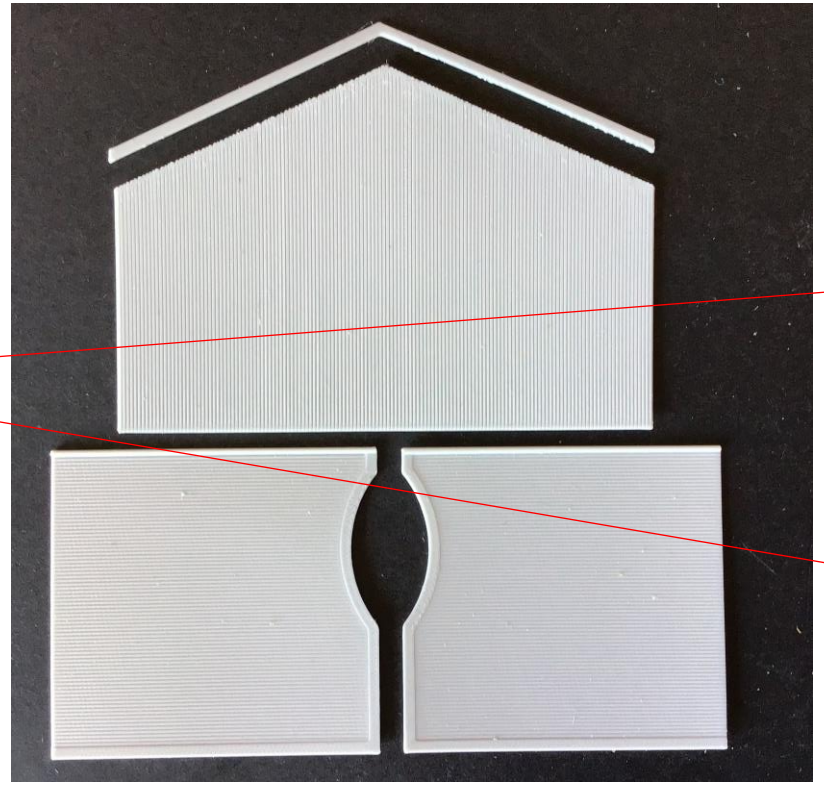
The frames are now all together and are all square.

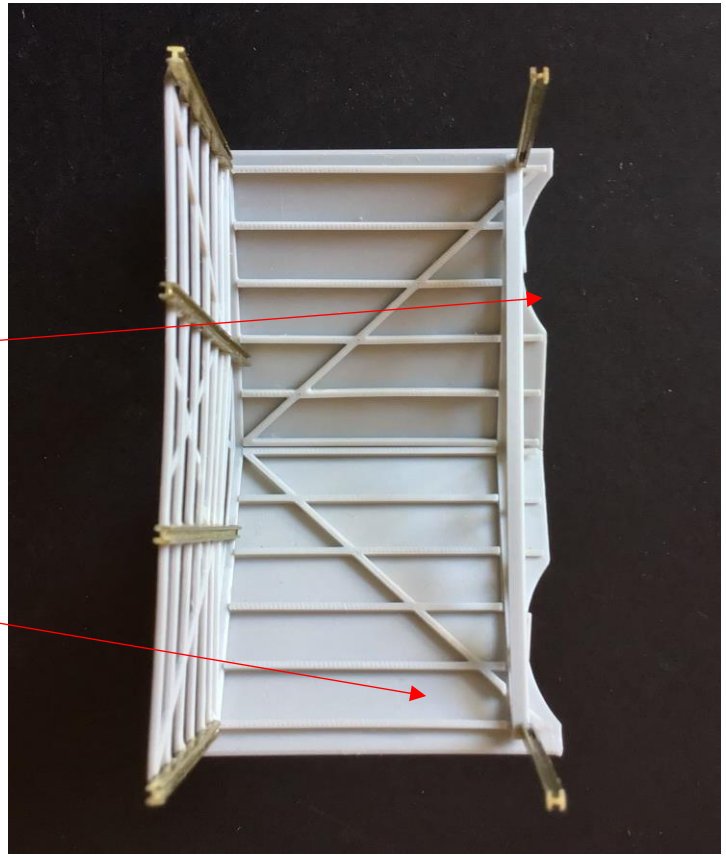
The notches for the Workhouse Bin Walls, can now be seen.

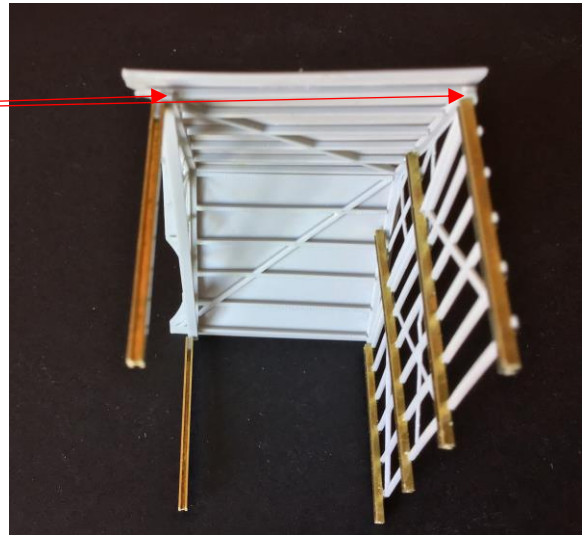
The lower image is of the Wagon Shed Corrugated Cladding and the outer barge board.

There are also 2 barge boards that are glued onto the end of the trusses, that are not shown here and are included in the kit.

The barge board goes here





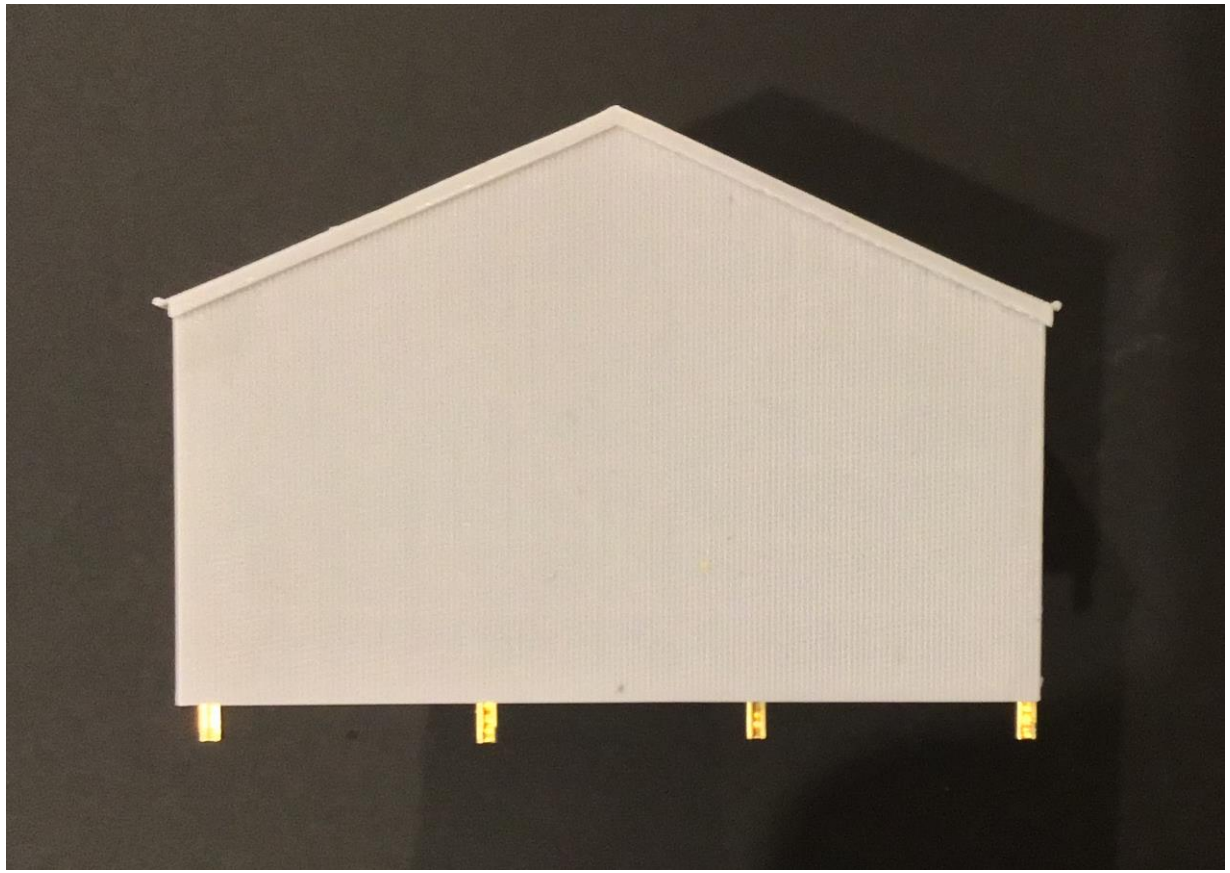


Step 16

The plastic strip is glued to the top of the corrugated rear panel of the wagon shed.

The idea is that the barge board cover the ends of the roof purlins, leaving a neat finish to the rear of the wagon shed.

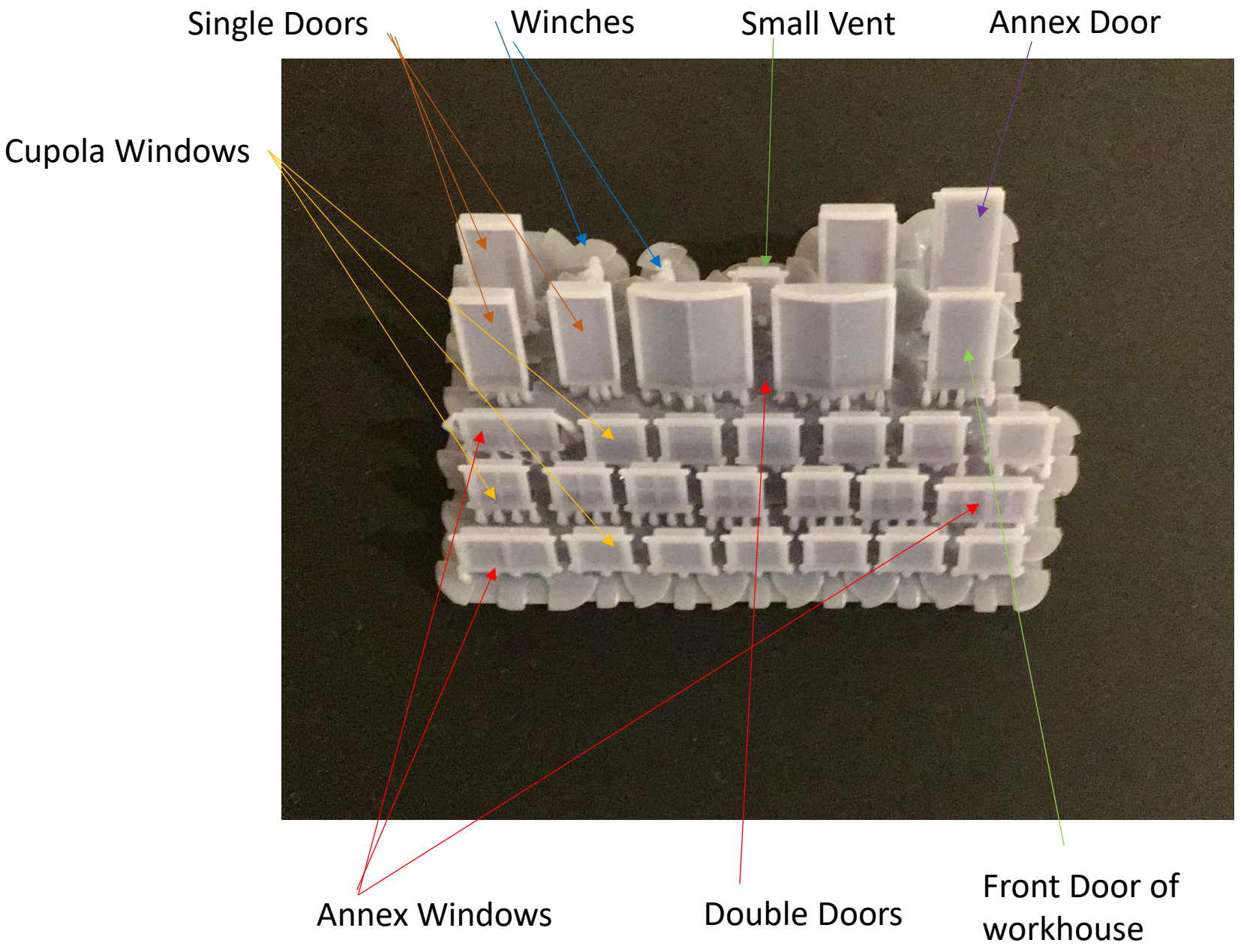
The final touch to the wagon shed is to place a thin rod in the centre of the ridge, to finish the ridge capping.



Step 17

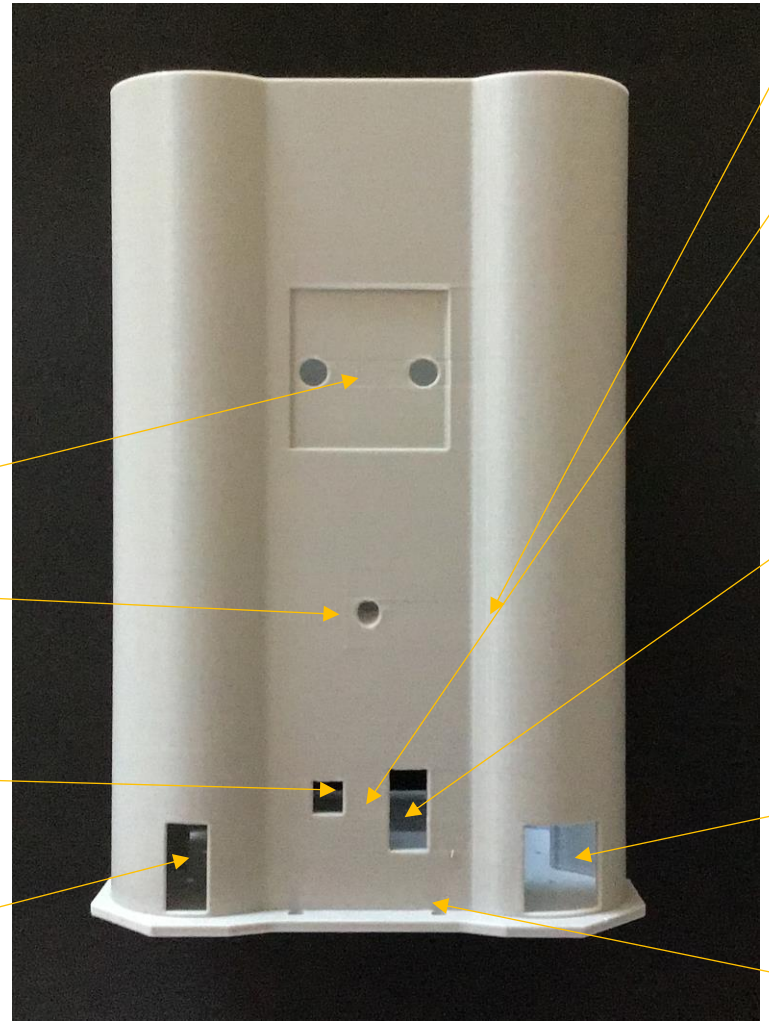
The image to the right shows the 3D printed resin of the doors, windows, vents and winches. Take the time to test fit the parts into the silo at this stage, adjust them to fit and mark their location by using a number system on the back of the parts. Secure the parts in a small container or bag for fitting latter in the build. You have a choice of 3 styles of windows --- plain, framed or louvered.

Do not allow the parts to be in direct sunlight. Give them a coat of primer to ensure that they are protected.



Step 18

This is the workhouse of the silo. It is the main body of the kit, and everything revolves around this part. Window and door parts will require sanding to fit. Be very careful not to remove excessive material. When all parts are cleaned up ready for fitting, prime (undercoat) them and place them in a safe location.



Annex Fits Here

Outloading Chute Fits Here

Small Louvered Vent Fits Here

Small Door Fits Here

Ladder And Ladder Guard Fitted Here

Drill 1.2 mm Hole Here For Winch, be careful with the winch handle on the front, as it is very fragile, there are 2 of them in the kit.

Front Door Fits Here

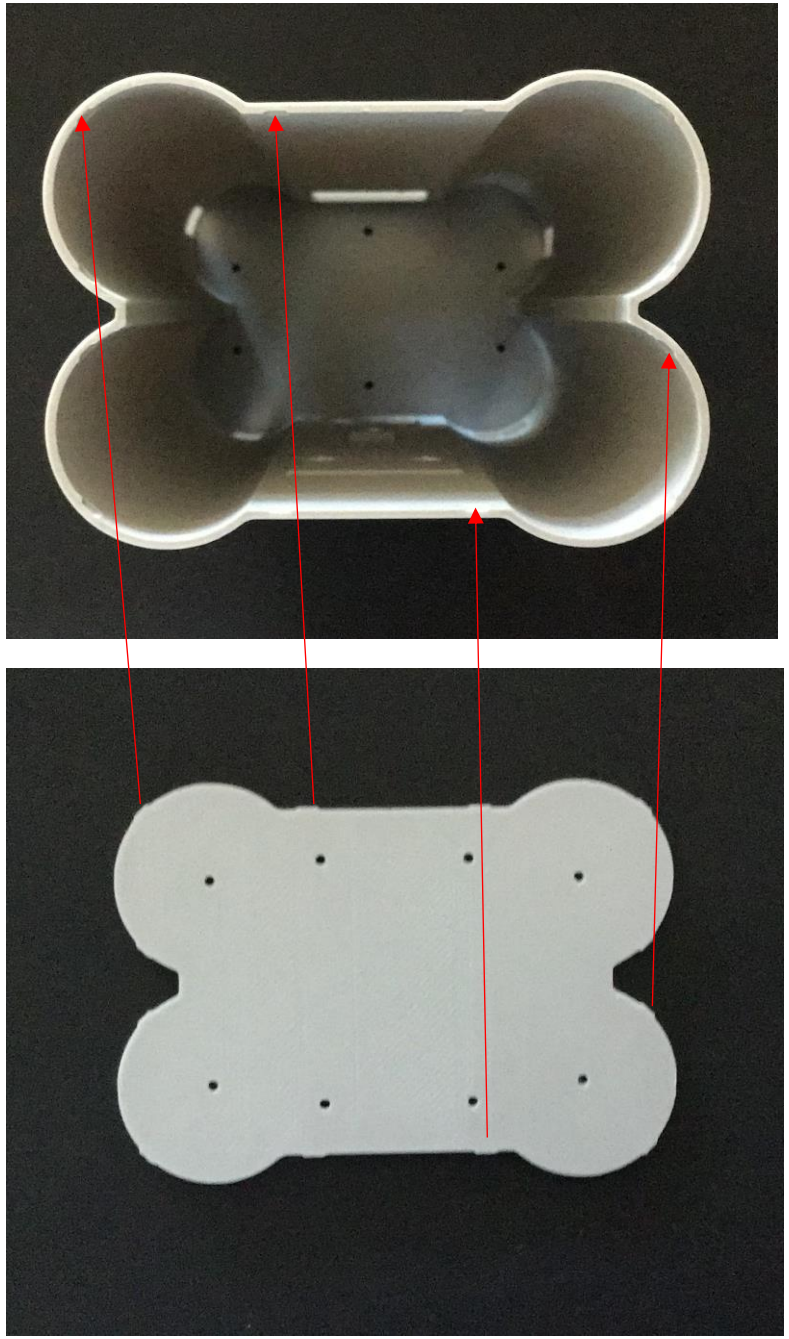
Double Door Fits Here

Outloading Platform Inner Legs Fits Here - Sand edges of rear legs before fitting so that they are not tight.

Step 19

This view of the workhouse shows how the stiffener plate fits into the top of the workhouse. The 12 tabs fit into the 12 depressions on the top of the workhouse and as both are 2 mm deep, the plate fits flush with the top of the workhouse.

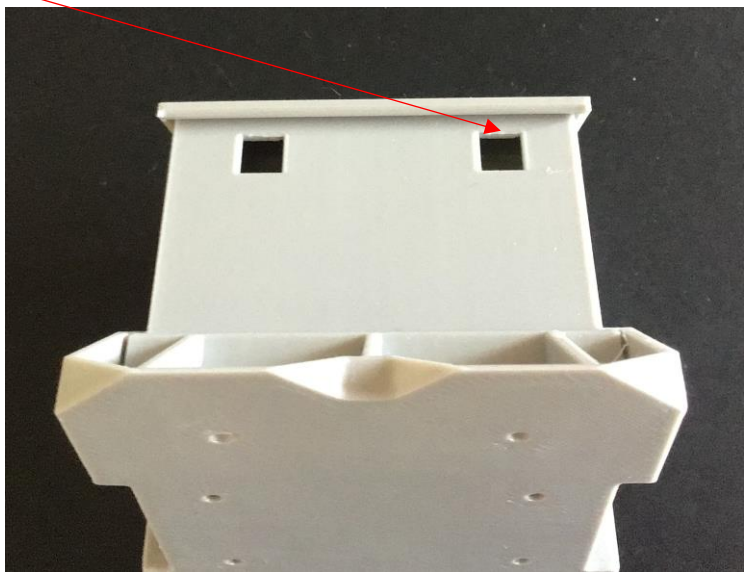
The plate is attached to the base of the cupola with 1.4 mm x 5 mm screws. (It can also be glued; however, it is not all that necessary) This should allow the cupola to also sit flush on the front and rear sides of the workhouse. Any gap that may be there when the cupola is fitted to the workhouse is covered with the corrugated panels sitting about 1 mm lower than the top of the workhouse.

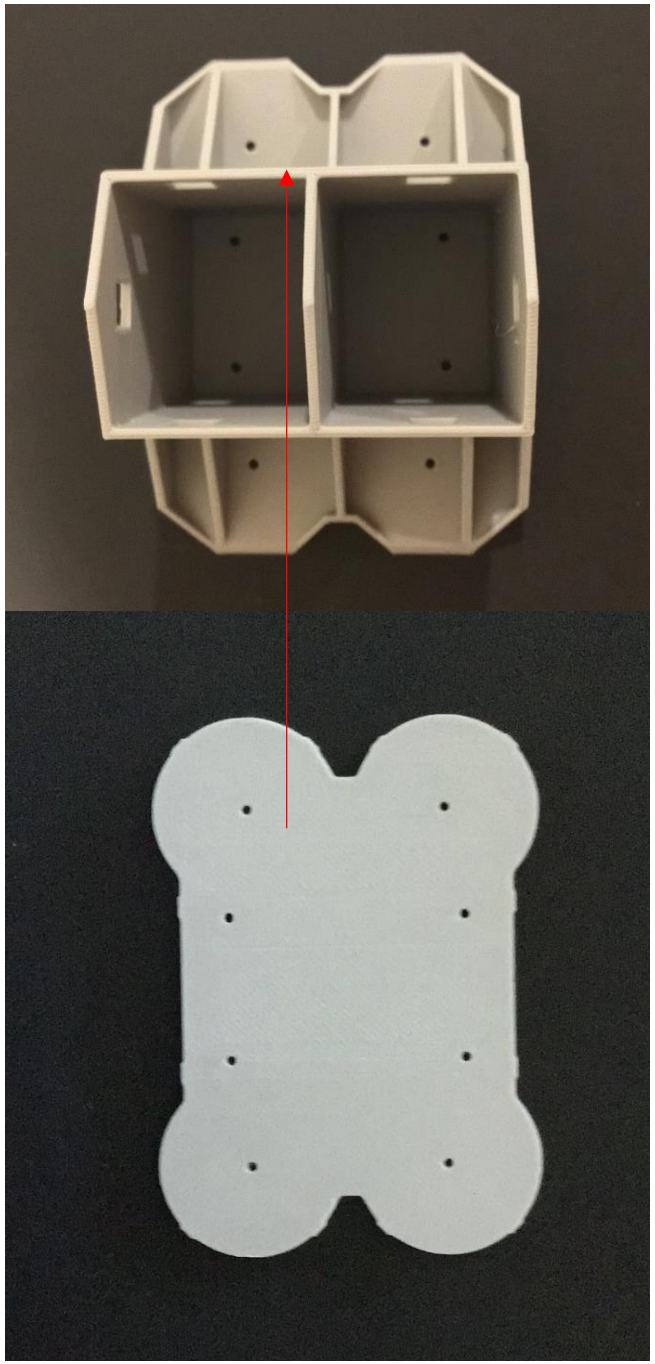


Step 20

The Cupola does have a special orientation. You will notice that the 2 window holes on the side of the cupola, are not equidistant from the edge, the one closer to the edge is located to the rail side of the silo

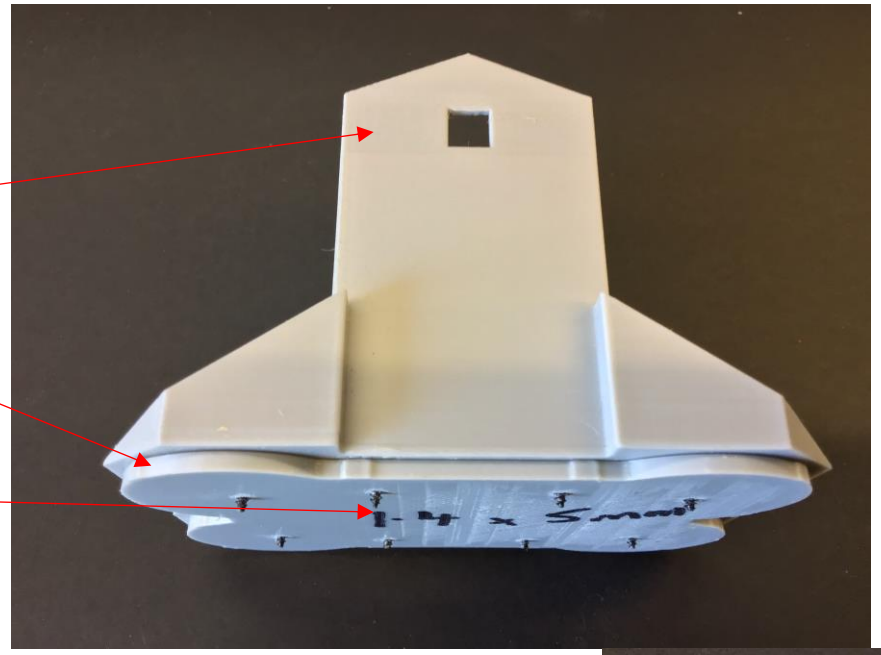
1.4 mm x 5 mm (8) are used to secure the stiffener plate to the base of the cupola. Make them tight but not excessively tight, as the heads can shear off easily





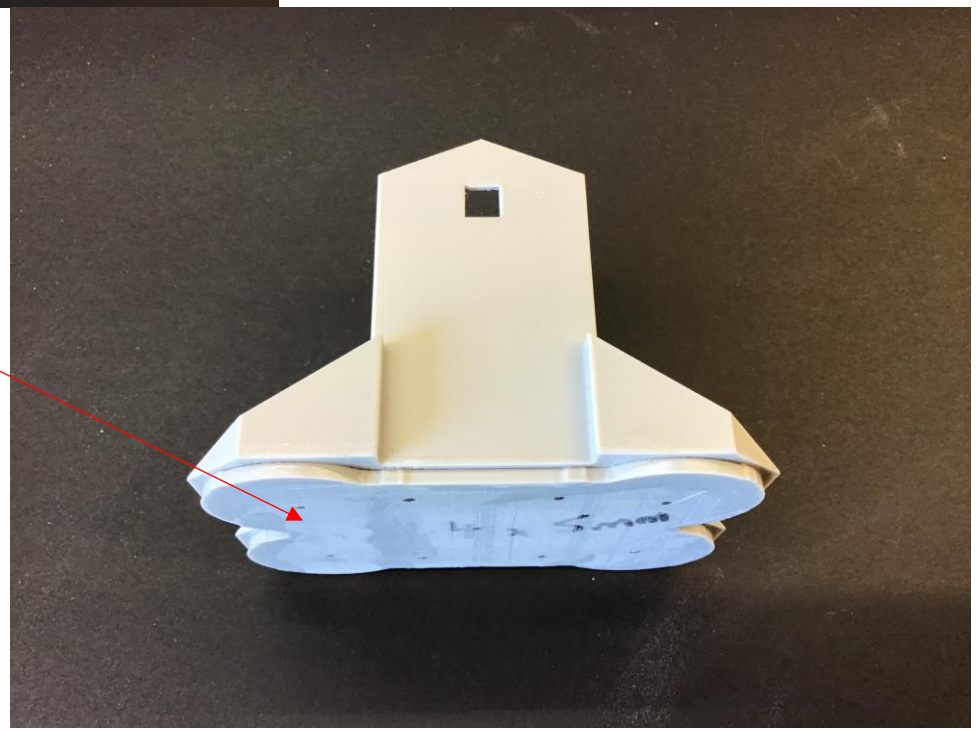
Step 21

The cupola is a one-piece print and to link it to the Workhouse we use the Workhouse Stiffener Plate. This is screwed to the cupola with 8 x 1.4 mm x 5 mm self-tapping screws.



These screws protrude through the plate and can be left in place or cut and file flat to the base of the plate. Just to make the base safe from sharp edges.

The plate can also be clamped and glued as well just to re-enforce the whole structure.



The cupola is now ready for corrugated iron cladding. This can be very fiddly, but also very rewarding.

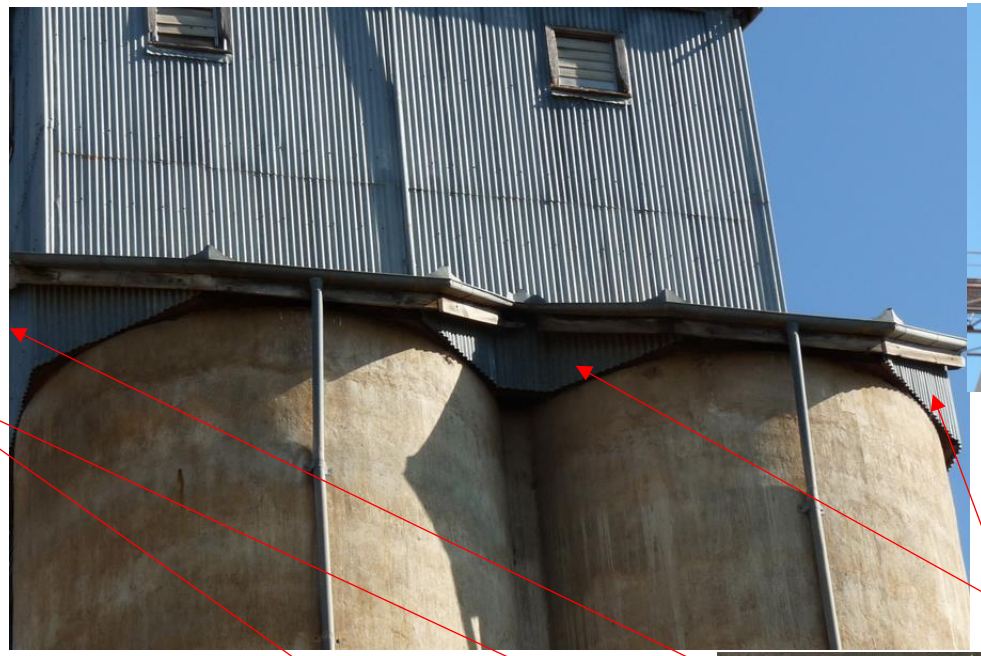
Step 22

The photo at the right show the pieces that need to be folded and then glued in place. These are handed (L/R) have folding indicators cut into them.

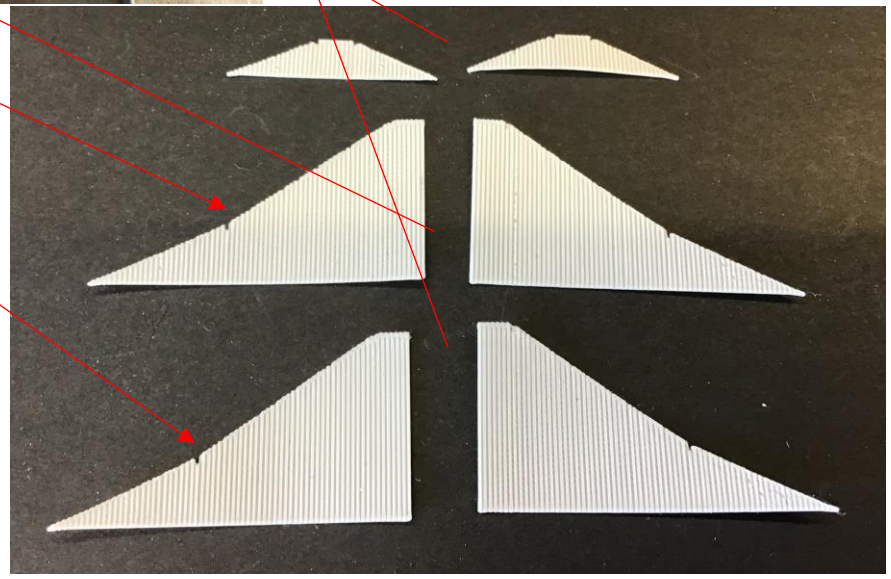
The images of the parts show small notches printed into the parts at the top only. This is done due to the notch not being seen when placed under the Cupola Bin Roof.

On the small parts in the centre of the silo, you can see that the parts require folding. The best way to do this is to place the part square, so that the base of the part is on one of the line marks of a 12” ruler, so that it is square, and fold it on the ruler's edge.

The large side part has 2-fold lines as the long edge is folded 90 degrees,



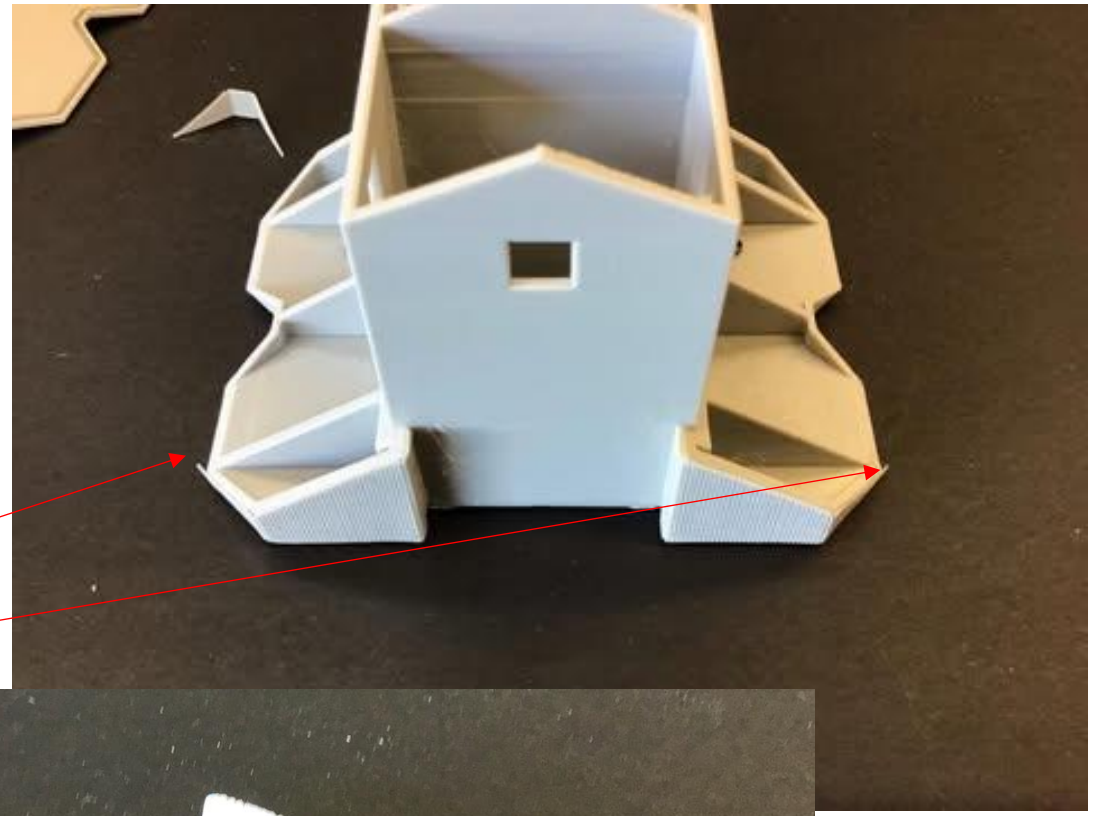
These prototype photo will assist, in the placement of the corrugated panels

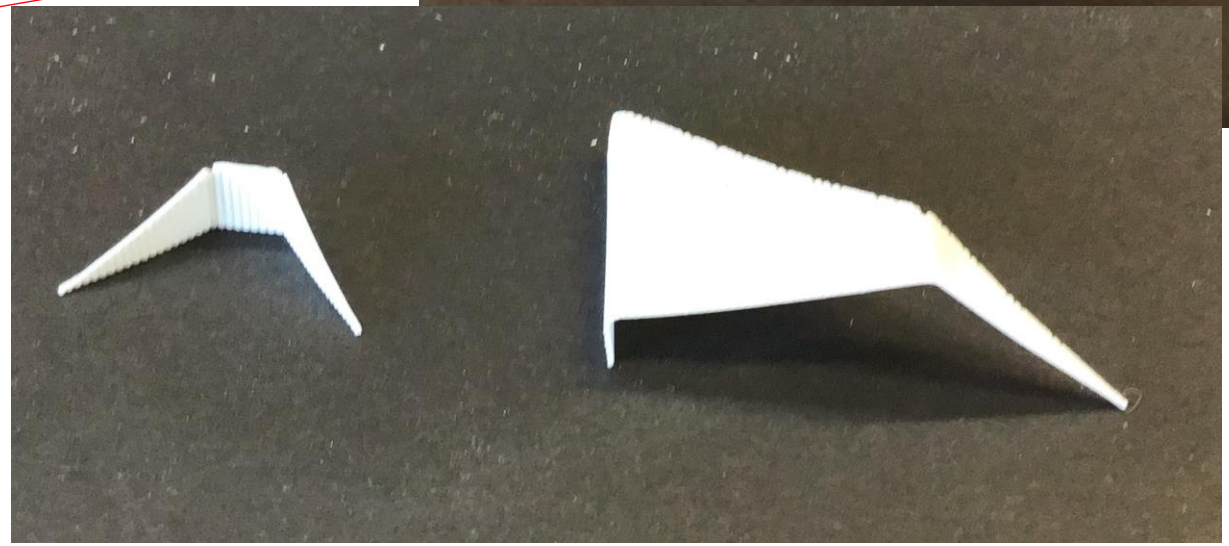


Step 23

The next few slides show the fitting of the Corrugated Panels to all the parts of the silo. At this stage you can start slowly and carefully gluing the pieces to the Cupola. The base of the parts should be all 1 mm below the base of the cupola. The acrylic glue I suggest that you use, dries very quickly, so avoid leaving fingerprints on the corrugated plastic.

It is advisable to cut of the small points of each part that hangs over the edge, as they get in the way and can be caught and torn off. The small ends cannot be seen once the Bin Roof is fitted to the cupola.





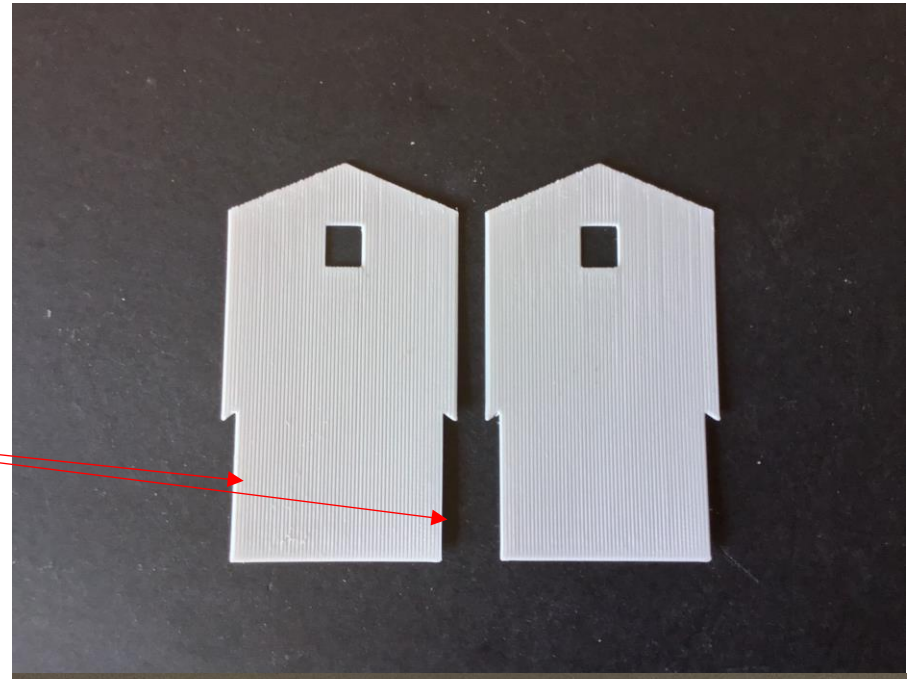
Step 24

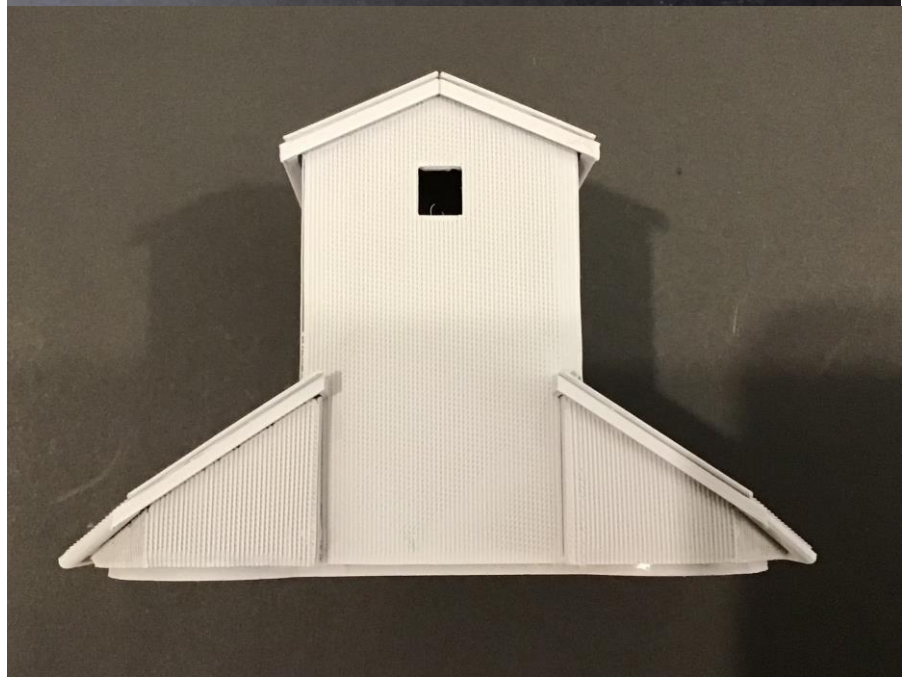
The next panels fitted are the end panels of the cupola, test fit the panel to ensure that it will fit properly. You may need to remove a small strip of plastic from both lower side edges as indicator. Test fit after doing this to ensure that the fit is great.

To fit the panel, locate the window that will be used to hold the panel in place. Run glue in behind the panel and slowly work your way up the panel holding the panel tightly against the cupola as you go, (the glue dries very quickly). The base of the panel should be aligned with the bottom of the angles panels previously fitted, approximately 1 mm below the cupola.

Ensure the edges are secure and flush with the next panel.

Tip. These silos were built in the 1920's, and over the years, panels would have been damaged, and or replaced and as the silos get older, the panels sometimes stay in a damaged state.





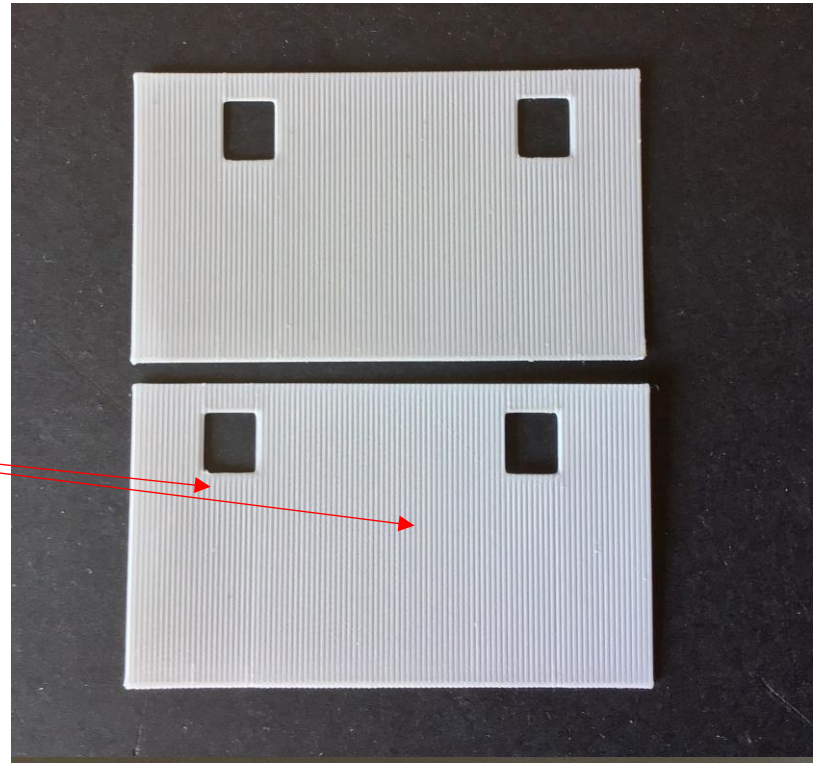
Step 25

The other sides of the cupola are now clad in a similar way to the previous sides. These panels have been enlarged by a small amount so that they give better coverage to the side of the cupola.

Place 2 windows into the panels to locate the panel (remember that the panels are sided).

Start glueing at the top and sides, hold the panel firm until the glue dries remove the windows and work your way down the side until the panel is fully glued (try not to get any fingerprints on the panels)

Do the same for both sides and that job is now done.



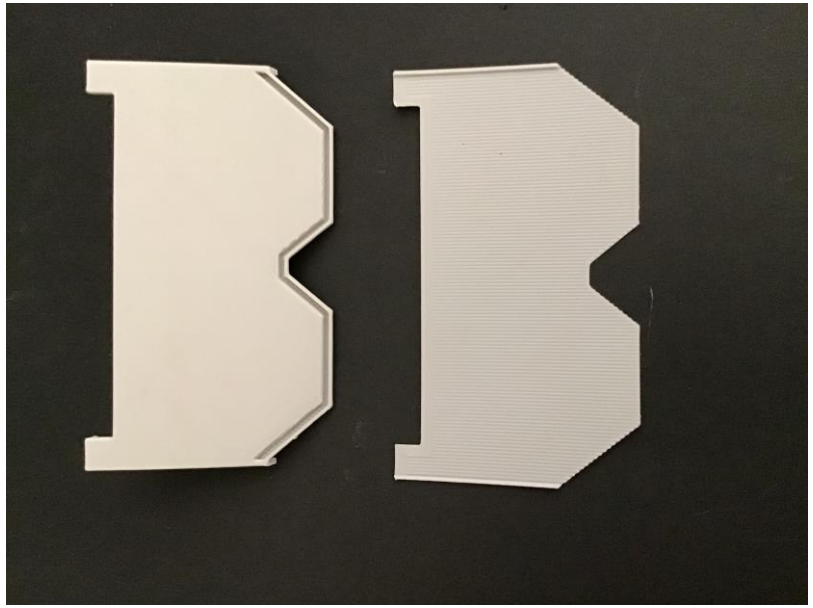
Step 26

The sloped bin roof is next, and the best way to do this is to locate the roof into position and then glue the corrugated panel into place.

The roof panel should have a small gap when fitted to allow for the previously fitted side panel.

Be careful that the corrugated panel is centred, in relation to the gutter, before gluing in place.

When you are happy with the fit of the corrugated panel on the roof. The roof can be finally glued into place, ensuring a nice gap free fit.

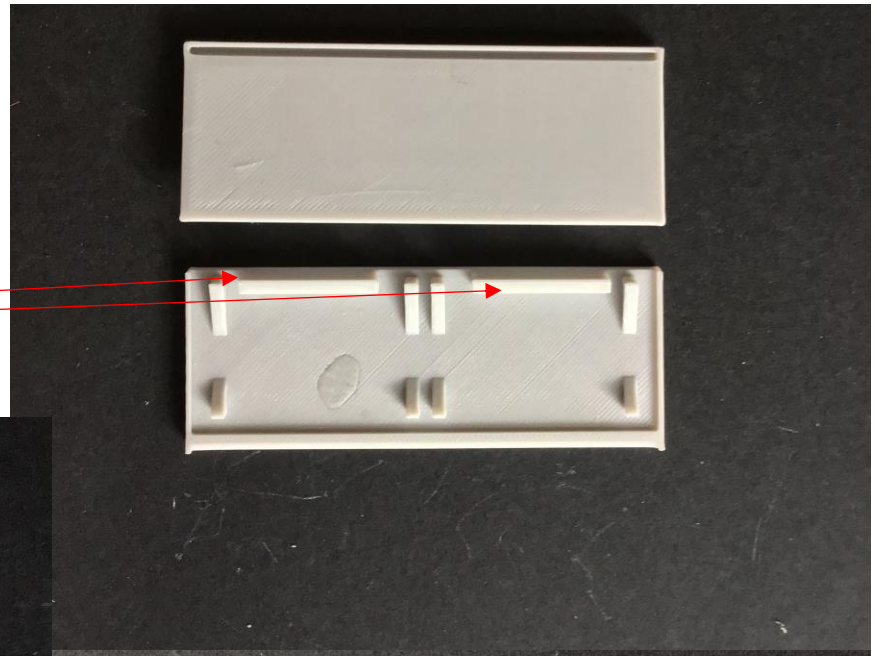


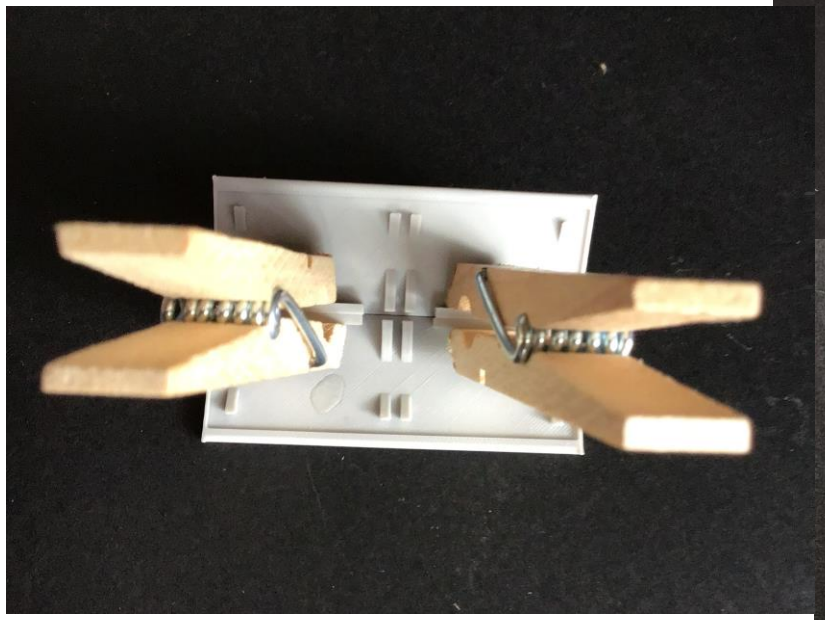
Step 27

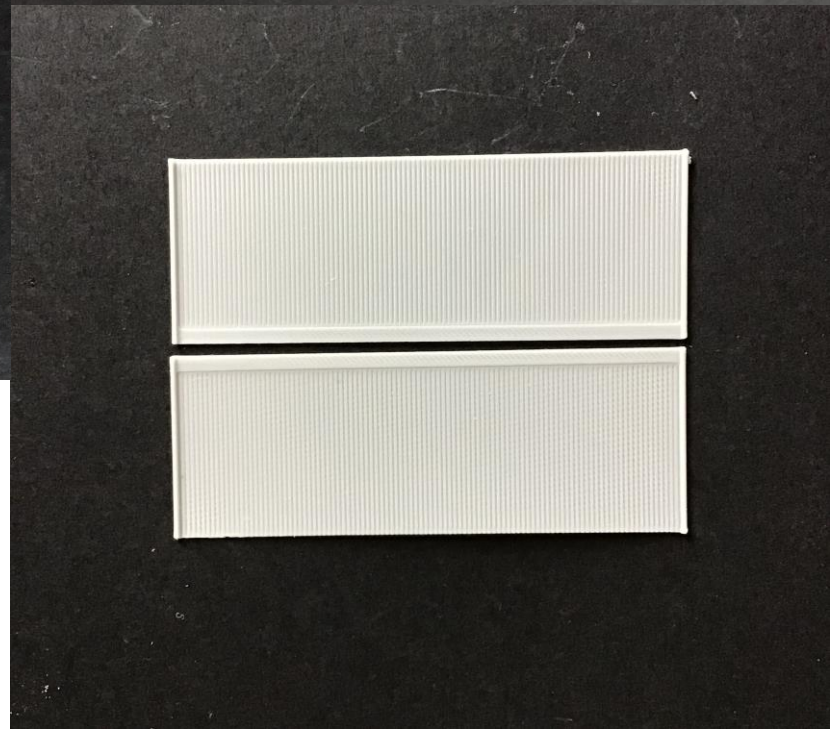
The cupola roof is in 2 pieces. It was designed so that there are 2 verticals that allow the 2 sections to be clamped and glued together, forming a complete roof, that can only fit to the cupola one way.

Using the 2 clamps, clamp the parts together, and adjust the peak of the roof and the ends to line perfectly. Glue the roof together and allow to dry, before removing the clamps.

When gluing the corrugated panels to the roof, make sure that the panels are square with each other and the gutter. When finished glue a small rod the length of the roof in the centre of the two panels, to finish the ridge capping on the roof.





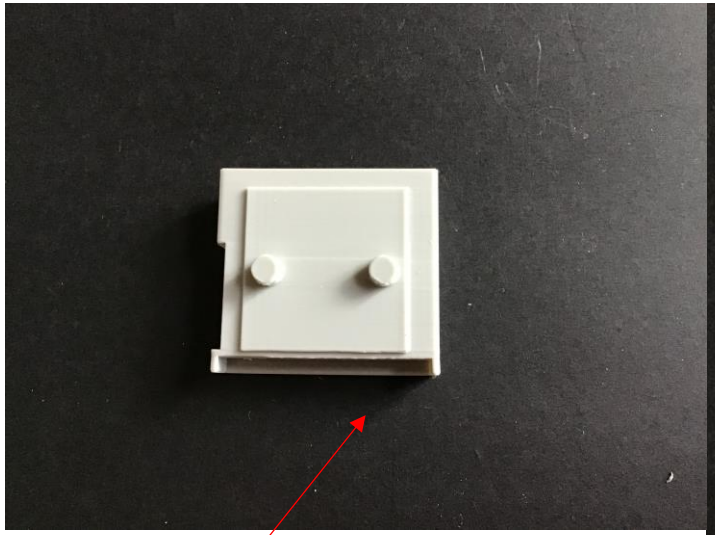


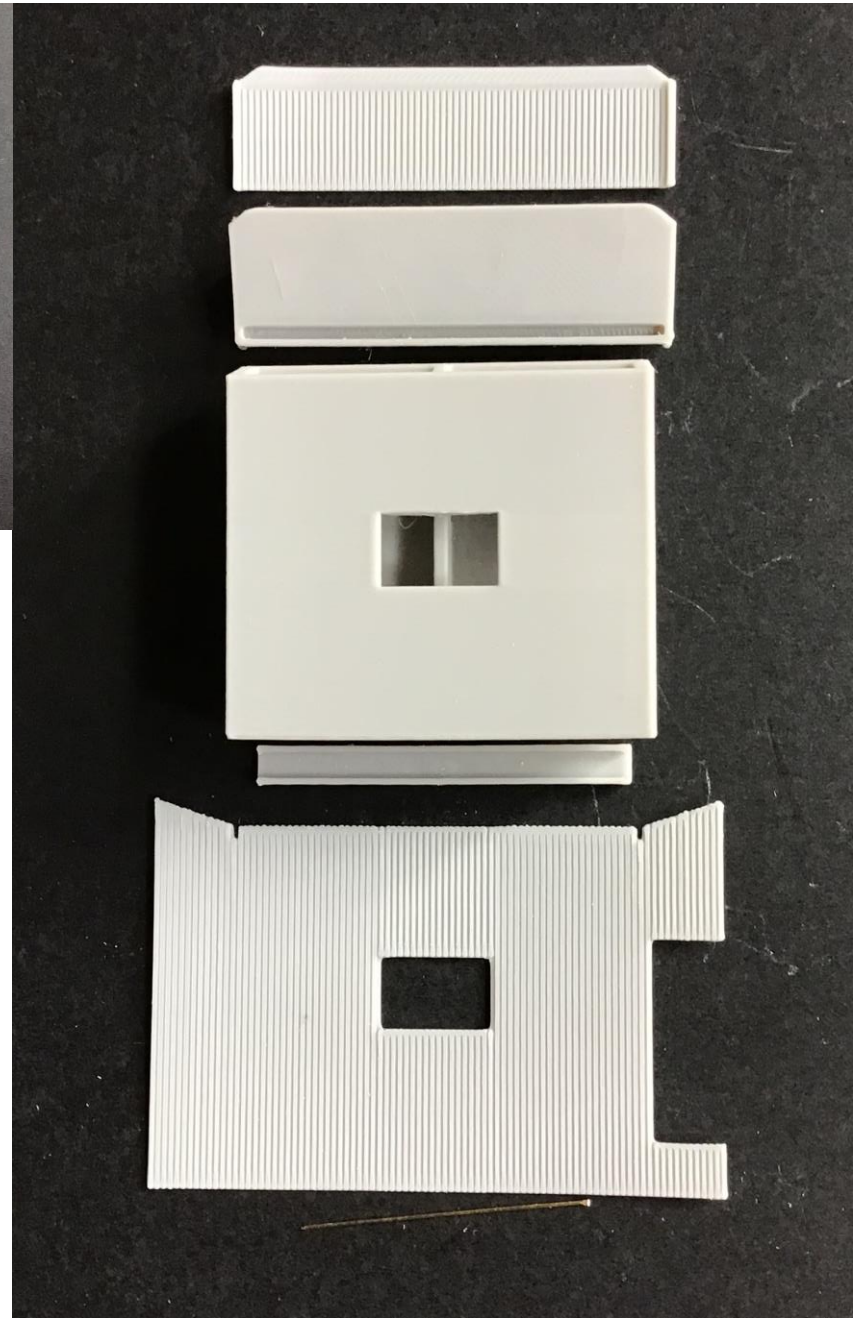
Step 28

The next part to be clad is the annex. The annex is the small building in the middle of the front wall of the workhouse. And needs to be clad in corrugated paneling.
The image to the right shows the main components of the annex.

The roof corrugated panel
The roof panel
The Annex body
The under channel
The wrap around body corrugated panel
The 0.3 mm brass wire for the hook
The part not shown here is the cable that goes from the winch, to the hook to the out-loader chute.

The other image is the rear of the annex, and the only thing to be done with this is to clean off the rough edges around the pins, to ensure a good fit into the workhouse.





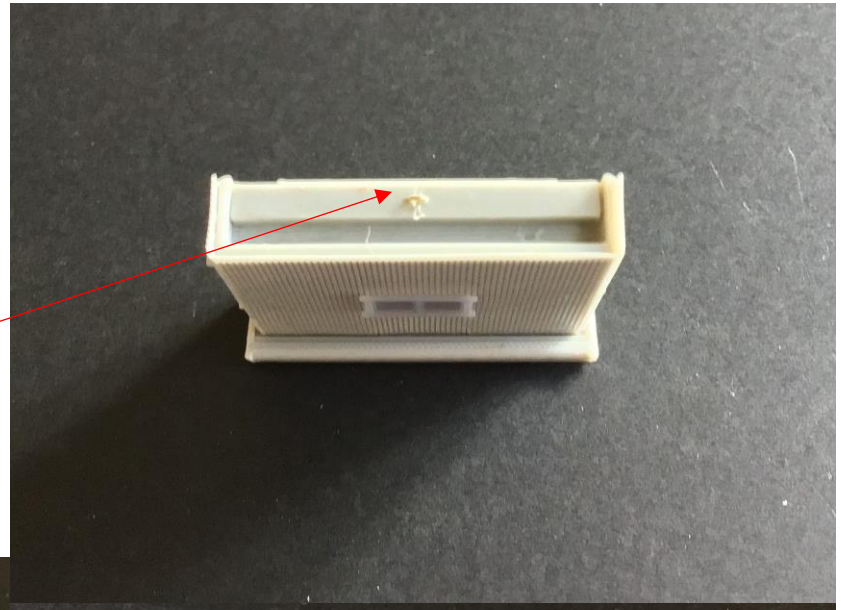
Step 29

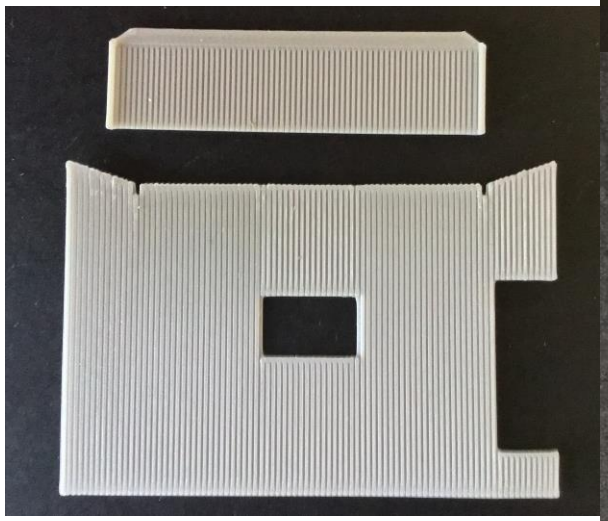
There are 2 very small depressions in the middle of the channel. These need to be drilled with a 0.3 mm drill (included in the kit). The 0.3 mm wire is bent to form a 180 deg bend. The wire is then fed through the 2 holes to form a hook.

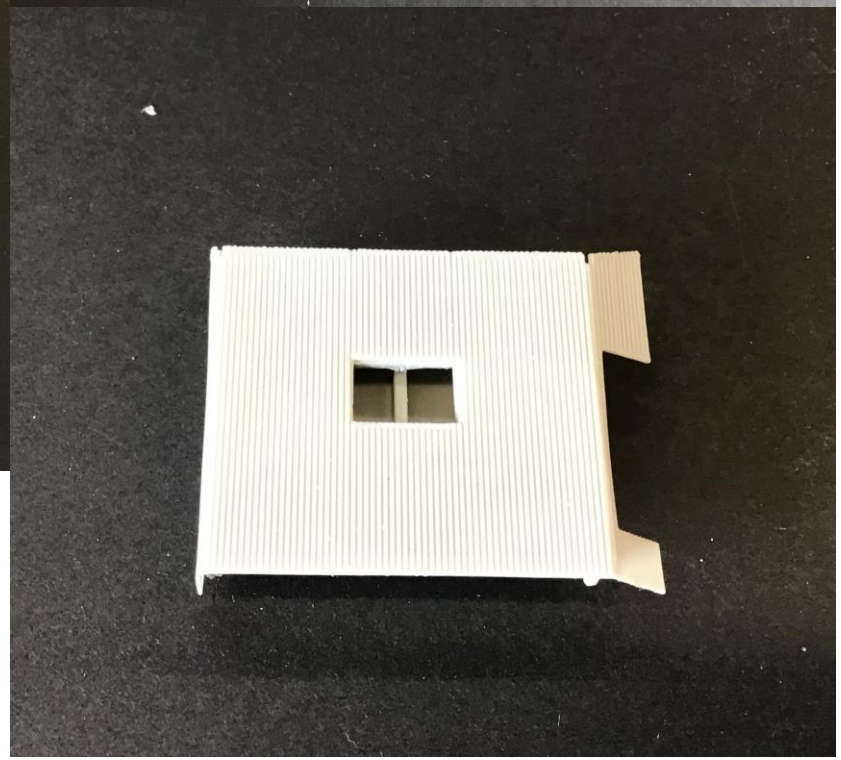
The channel with the hook glued in place is glued to the rear and under the annex.

The large corrugated panel needs to folded at the slots 90 degrees down the corro, use a steel rule to keep the bend square, on both sides.

The same trick applies with the annex as was used on the cupola. Use the window to keep the cladding in place whilst the glue dries. There should be a small overhang at the bottom of the annex. Glue the main body of the panel to the annex, then you can use the annex body to fold the panel around the side walls and then glue them into place.



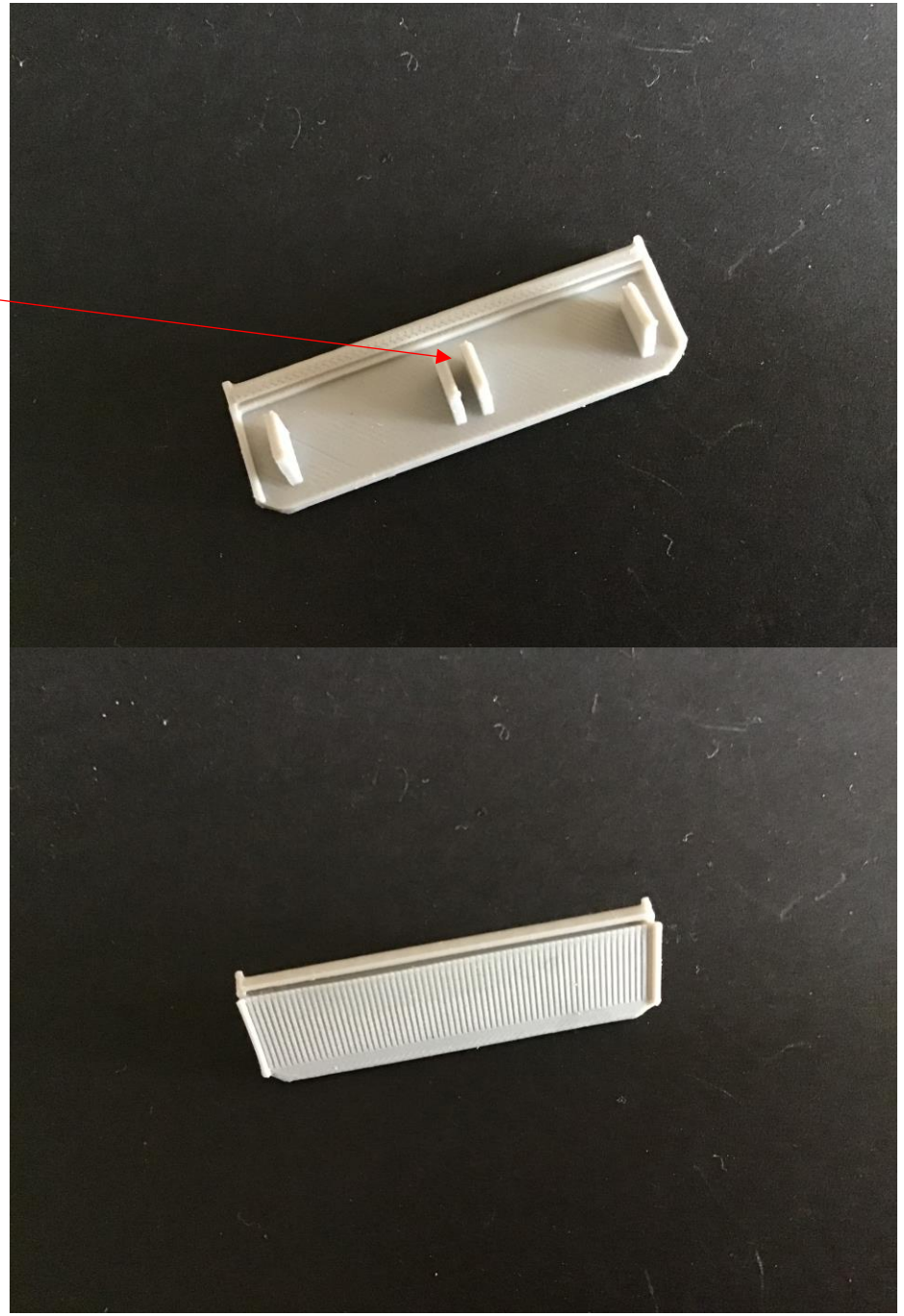




Step 30

The roof of the annex sits inside the annex, the corners of the roof accommodates the profile of the workhouse and fits nicely when the annex is fitted to the workhouse.

Please ensure that the corro on the roof is glued in squarely in relation to the gutter. The roof can be glued in place later after the annex has been painted.



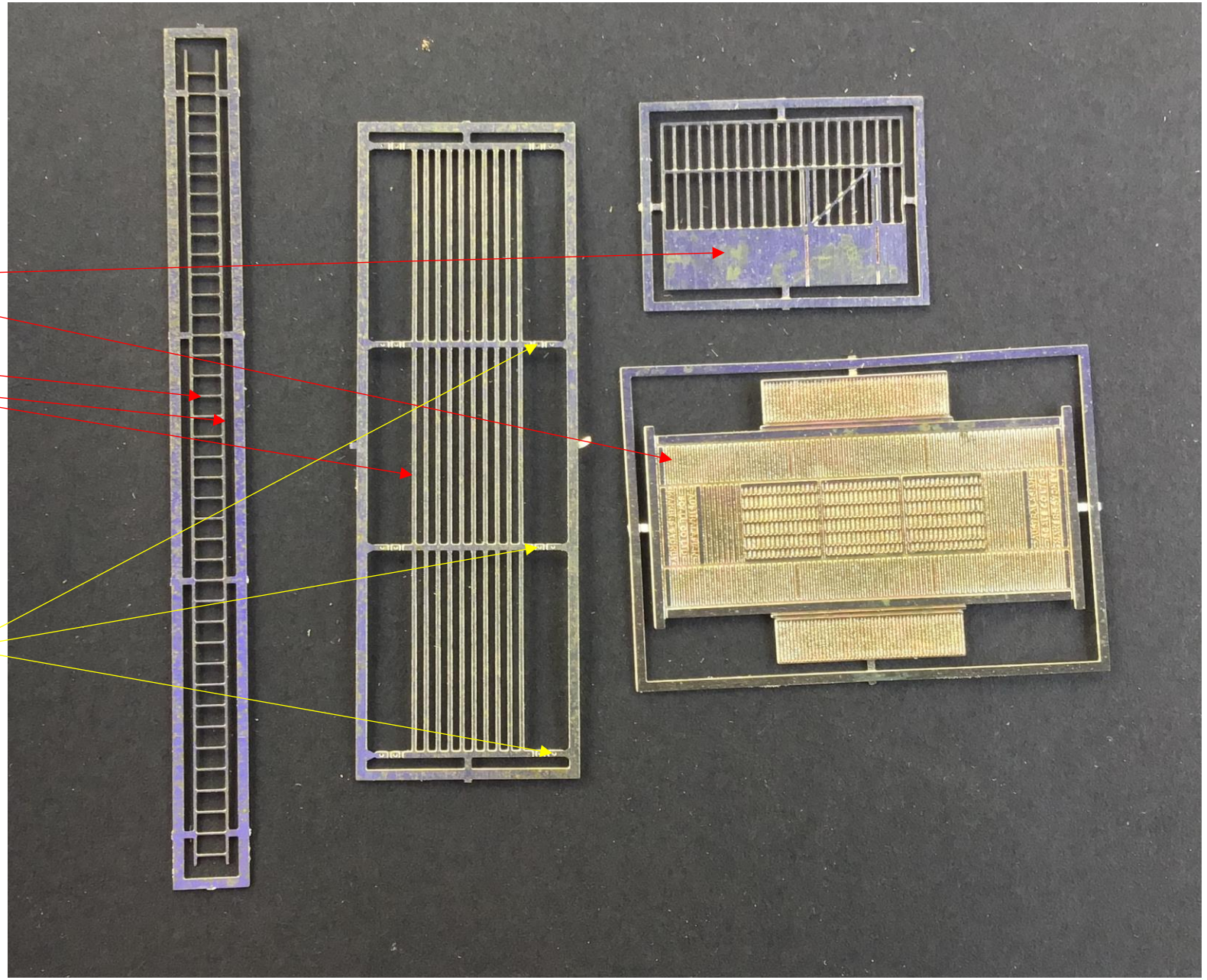
Step 31

The next parts to look at are the Nickle Silver/Brass etches.
the parts are:

1. Rear Silo Door and Grill
2. Wagon Shed Weighbridge
3. Front Ladder
4. Front Ladder Guard

Remove the parts from the frets only when the parts are to be used.

The ladder guard needs to have the holes drilled out before removal from its fret. There are 16 holes that need a 0.3 mm hole drilled into them. The etch depression are in the etch.

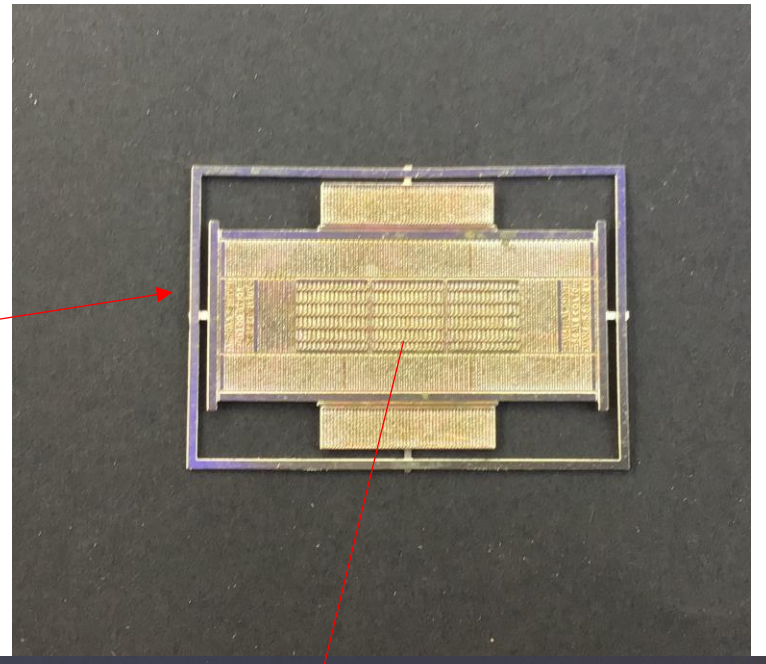


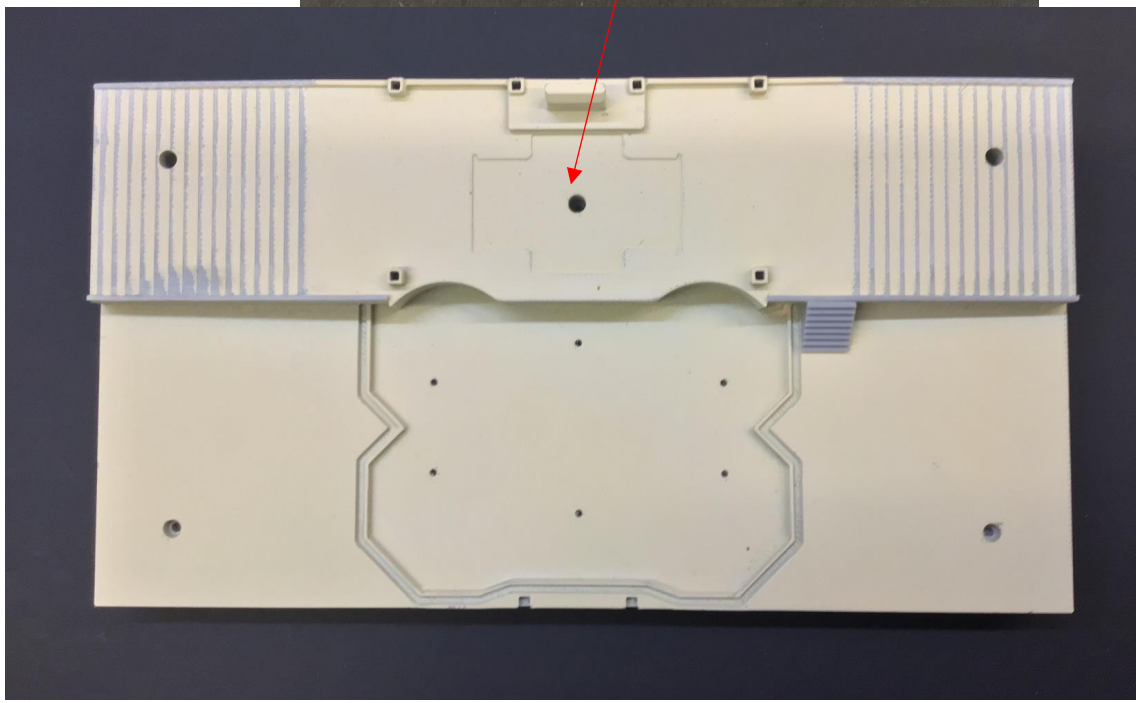
Step 32

The weighbridge fits into the void on the silo rear road, it can be glued in as one of the last jobs to do, and after painting. Remove it from the fret, and sand down the tabs so that the side of the part is clear of any excess flash.

The screw hole in the middle of the wagon shed road does not require filling as the weighbridge fits on top of it.

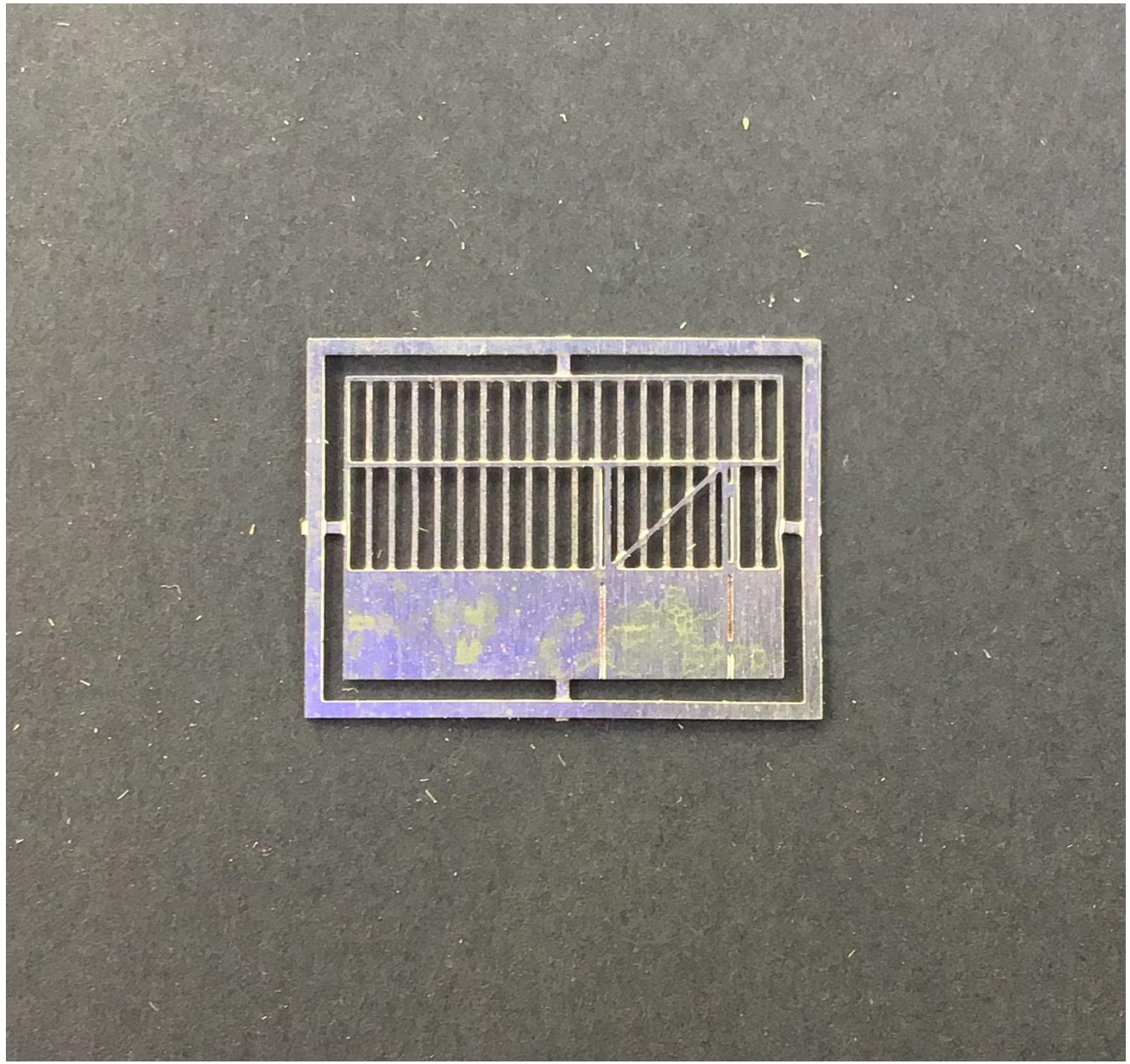
I would suggest that you use tacky glue, to secure the weighbridge to the wagon shed road. It can be applied thinly and hold well after a very short time. The other advantage is that the parts can be removed very easily, later down the track.





Step 33

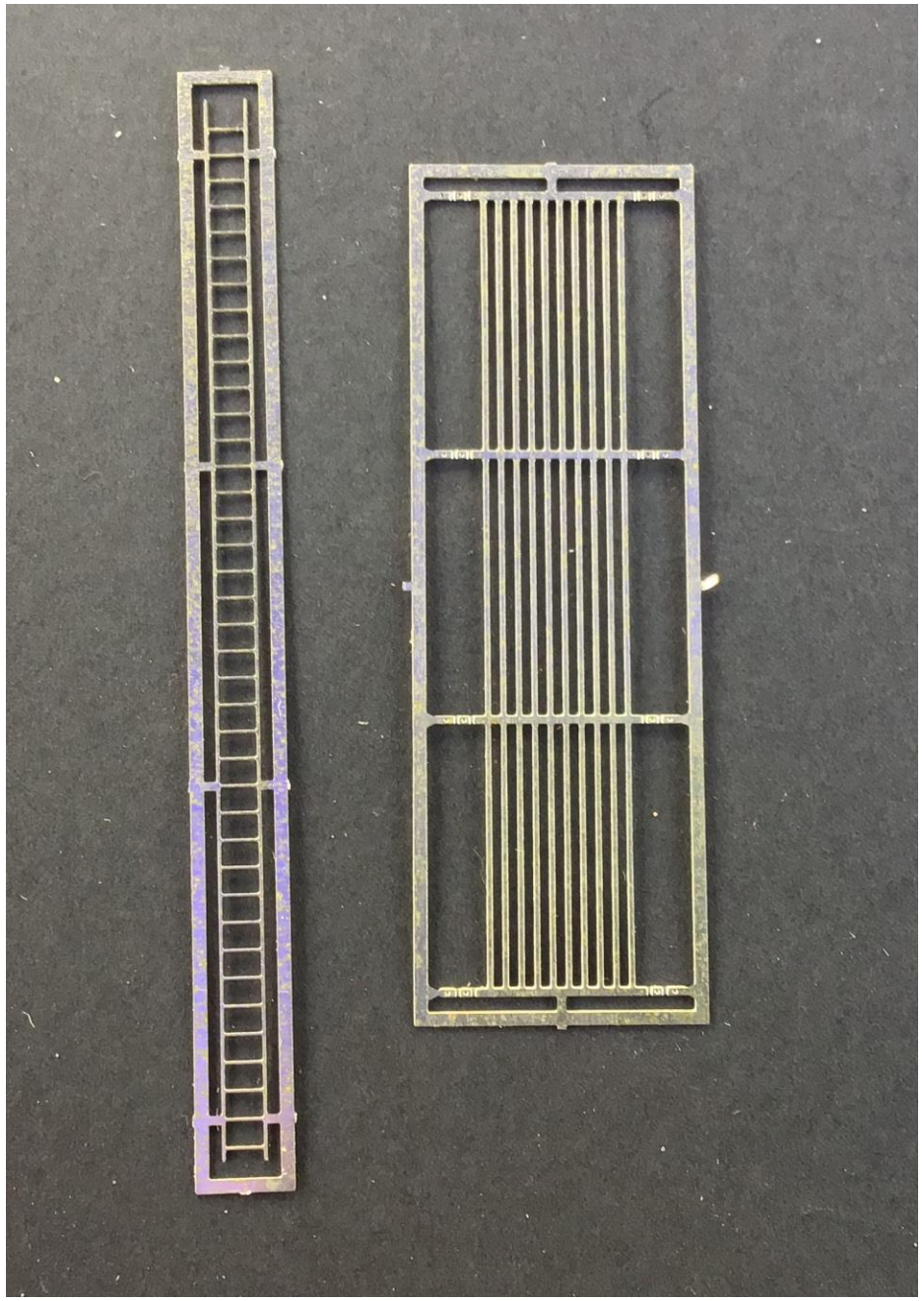
The silo rear door is fitted into the large hole as the rear of the silo. If you find that the fit is a little sloppy, a small amount of strip styrene can be located at the base of the hole, so that the door has more contact area to attach to. Remove the etch from the frame and clean of the tabs before fitting. The etch is required to be painted before fitting. CCA or Tacky glue can be used to glue the door in place, after the part has been painted.



Step 34

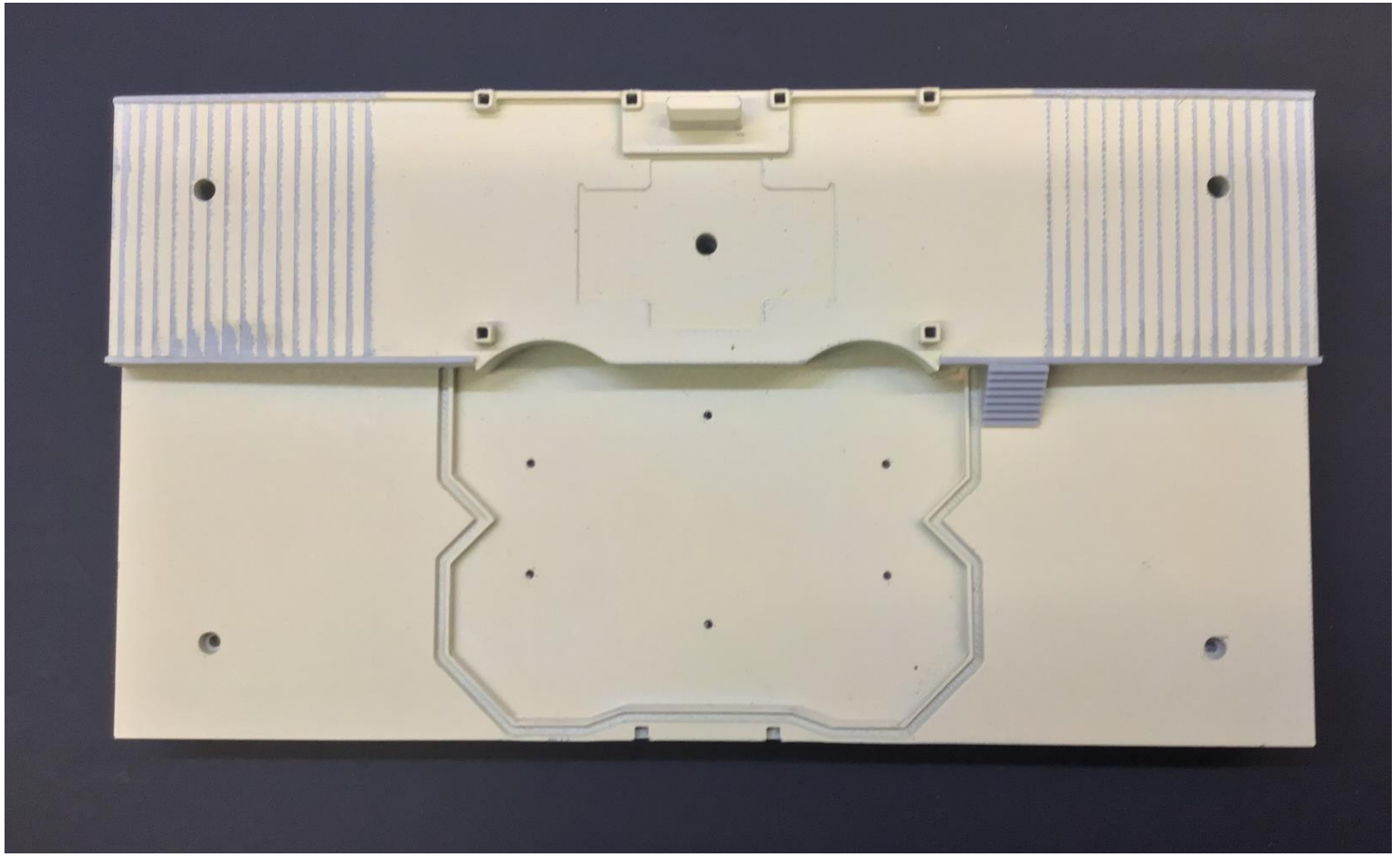
The ladder and ladder guard go together. They are attached to the front of the silo on the curve of the right front bin to allow access from the ground to the Annex.
Tip. Use photos to give an indication of the exact location of these components.

The dimensions for the ladder guard in the prototype are 26 inches between the sides and 33 inches from the wall to the outer curve of the guard.



Step 35

Work needs to be done on the base of the silo. The base requires filling on both ends of the road, due to the stepping created by the printing process. This area can be sanded, filled with a good stop putty, and sanded again, this needs to be applied to both the roads and the edges of the slopped roads. The hole in the middle of the weighbridge, does not need to be filled as the etch goes over the top. The holes in the lower part of the base where the screws go through, also need to be filled and sanded. Prime the base first, before applying a coat of concrete colour.



Step 36

The out-loading chute:

Included in this kit there is:

A length of 3 mm brass tube X 19 mm

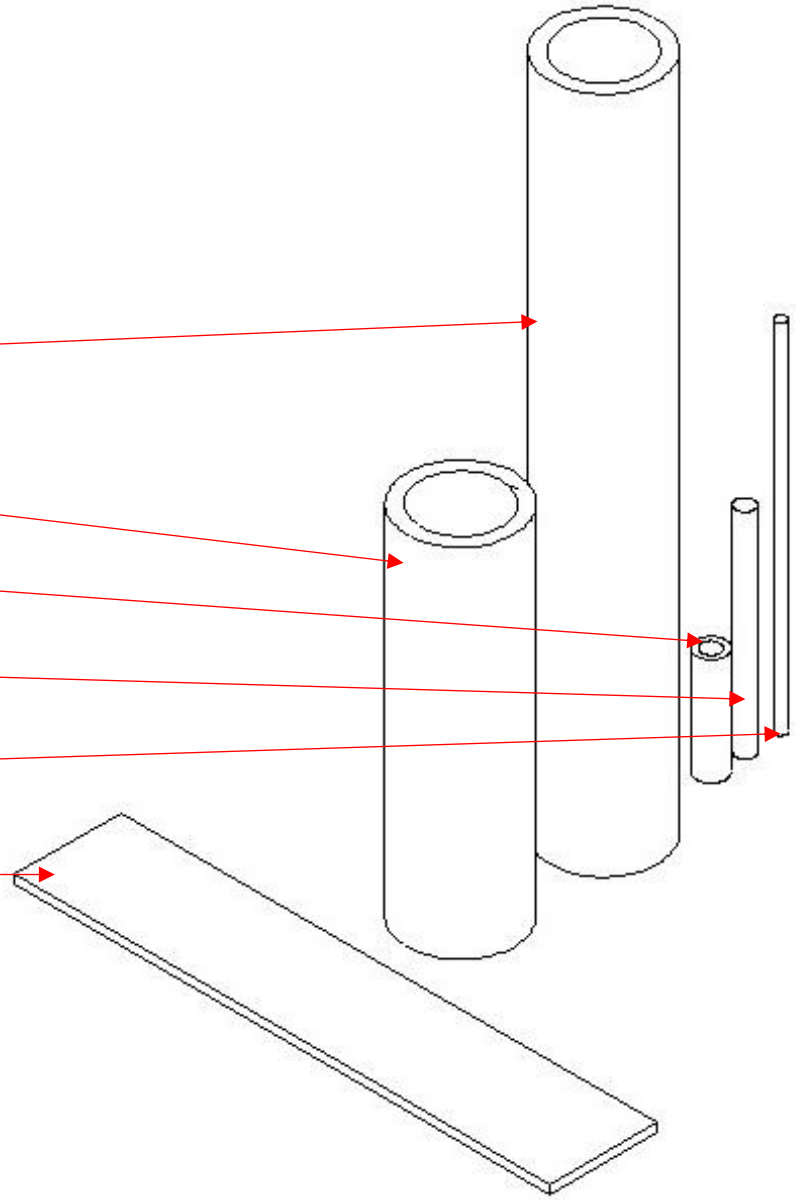
A length of 3 mm brass tube x 10 mm

A length of 0.8 mm brass tube x 5 mm

A length of 0.5 mm brass wire x 6 mm

A length of 0.3 mm brass wire x 10 mm

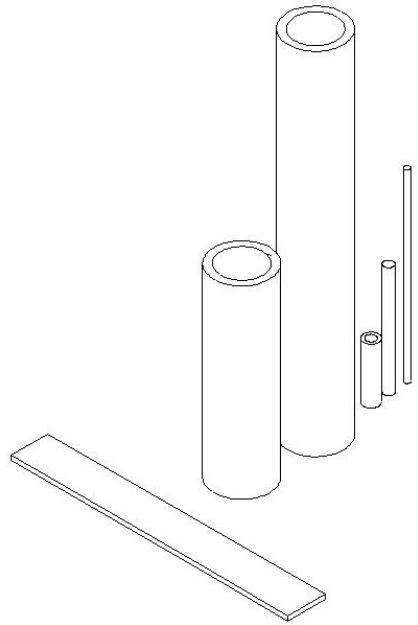
A length of 3 mm x .25 mm flat brass strip x 15 mm



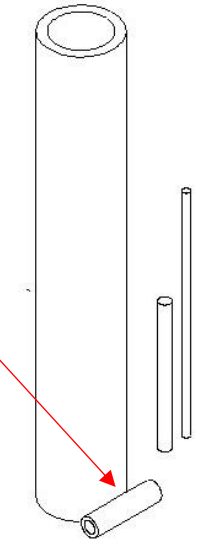
Step 37

The out-loading chute:

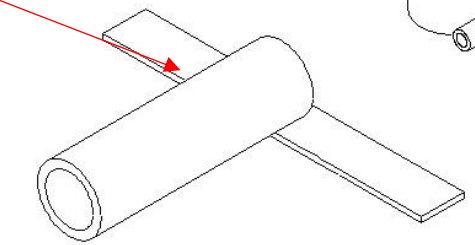
Trim the 3 mm strip down to 2 mm

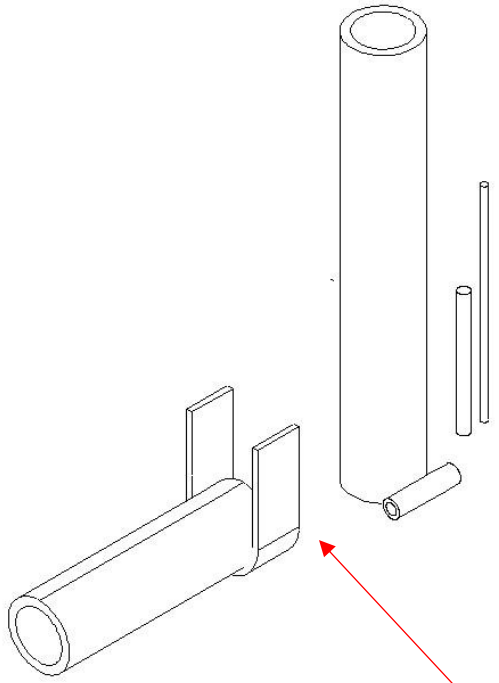


Solder the 0.8 mm tube square to the long 3 mm tube
And file the small tube so that it is flush with the 3 mm tube sides



Locate the short tube 0.9 mm from the edge of the brass strip



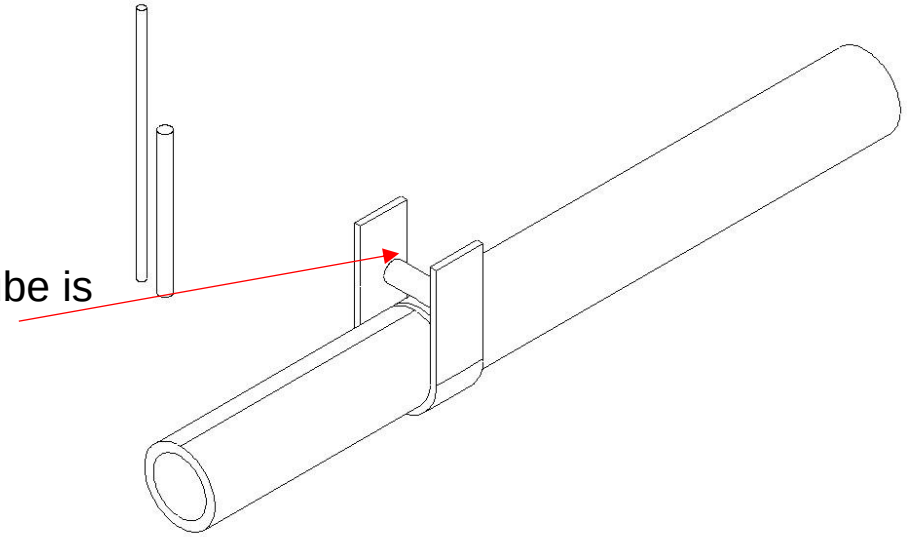


Fold the strip around the short Tube so that it is square and horizontal, and solder the tube to the brass strip.

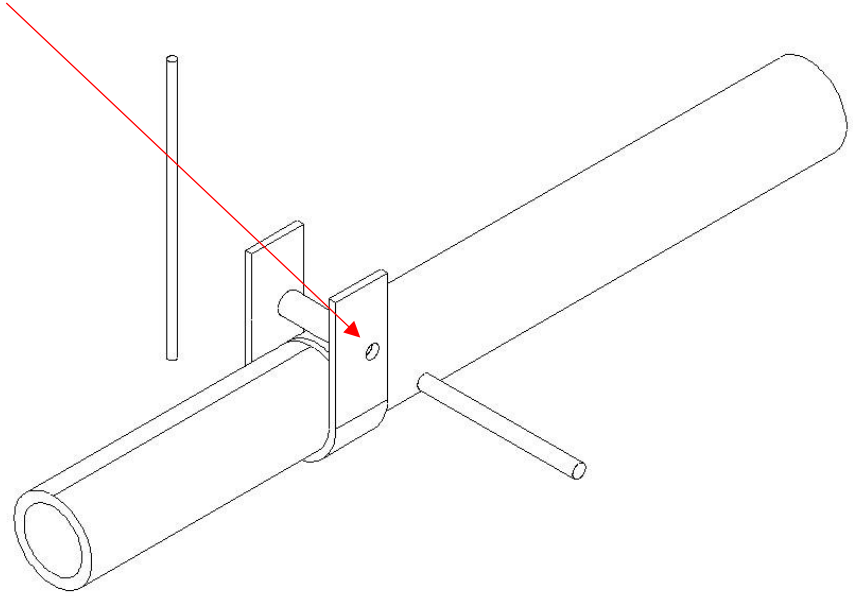
Step 38

The out-loading chute:

Locate the long 3 mm tube so that the small tube is 0.6 mm from the front edge of the brass strip



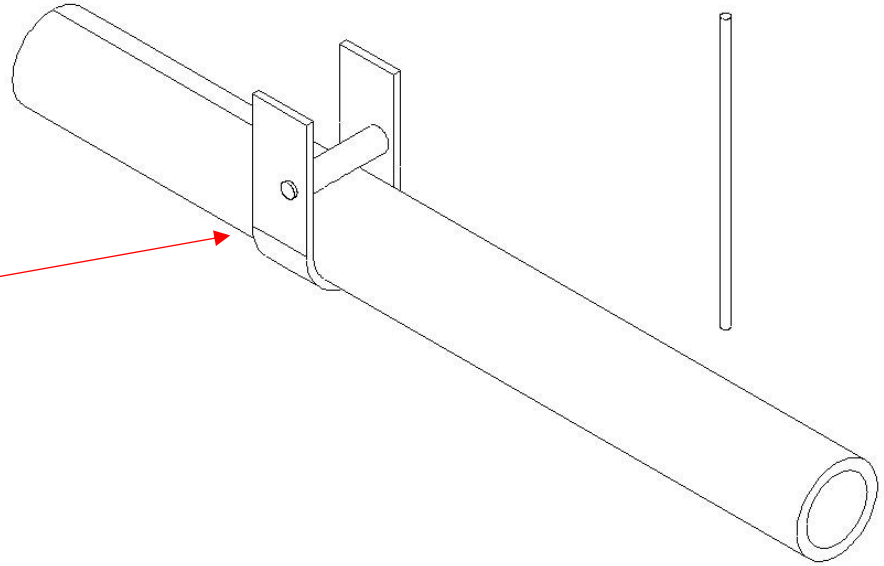
Make a mark on the side of the strip that lines up with the centre of the 0.8 mm tube. Drill a 0.5 mm hole through the strip and through the tube to the other side of the strip. This will form the pivot of the out loader chute.



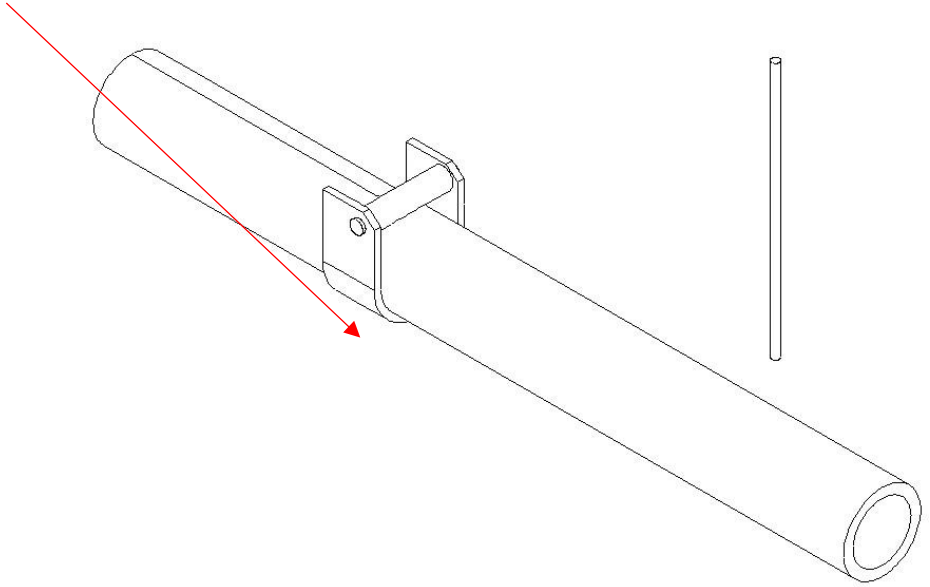
Step 39

The out-loading chute:

Locate the 0.5 mm wire into the hole and solder the wire to the brass strip only. Avoid soldering the wire to the tube, as it will stop any chance of pivoting.



Cut the brass strip to a shape similar to the image to the right.



Step 40

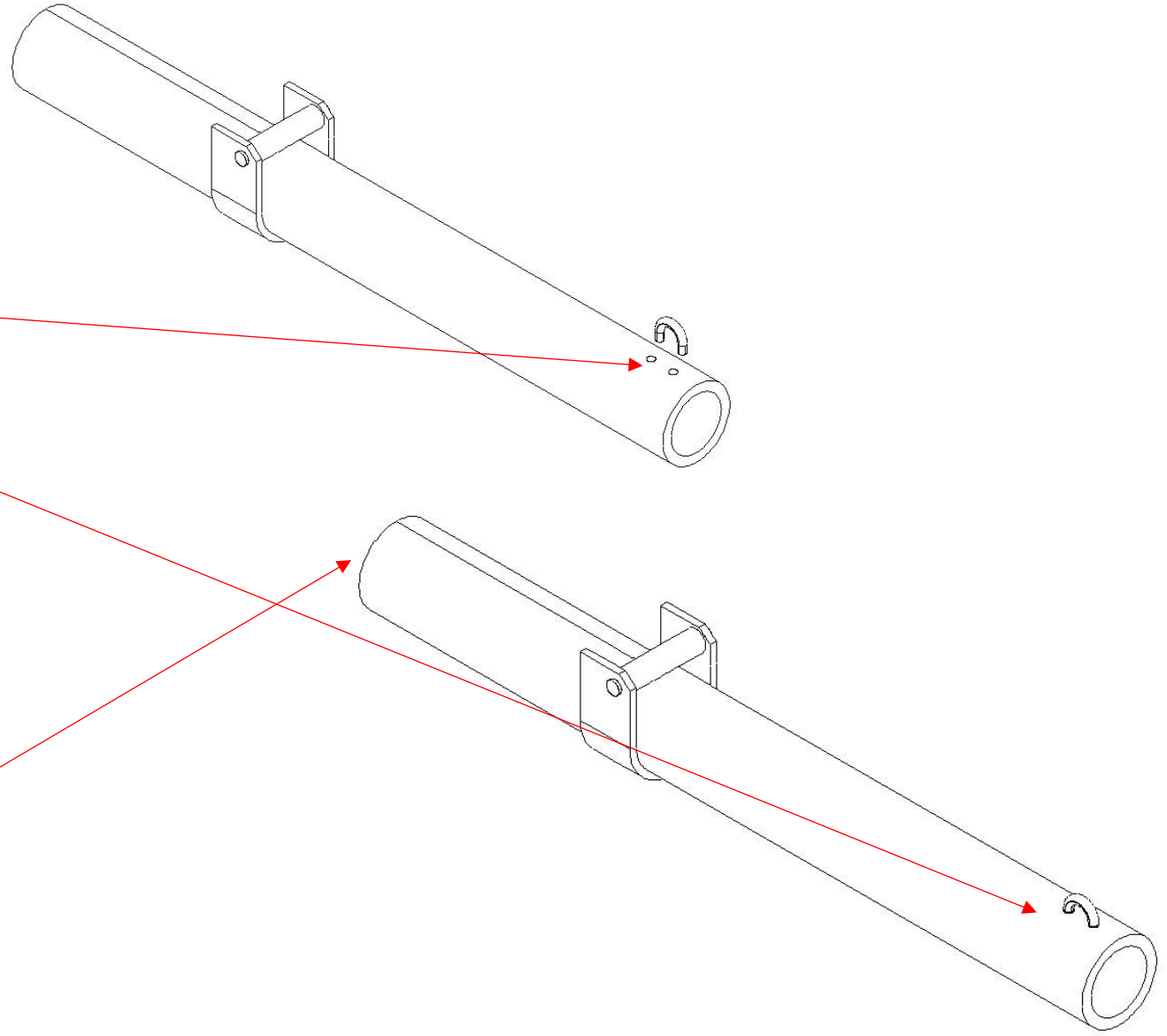
The out-loading chute:

Drill a 0.3 mm holes 1 mm in from the end of the long tube, then another 1 mm hole 1 mm in again. Bend a piece of 0.3 mm wire to form a loop.

Fit and solder the bent wire into the holes, this is where the cable runs from the winch through the hook under the Annex.

To fit the Out-loading chute to the silo, use a 3 mm drill to clean out the hole in the front of the workhouse under the annex. This will allow you to place the small end of the chute into the hole. Ensure that the chute is square to the wall and vertical before gluing in place.

If the chute is a tight fit, glue may not be required.

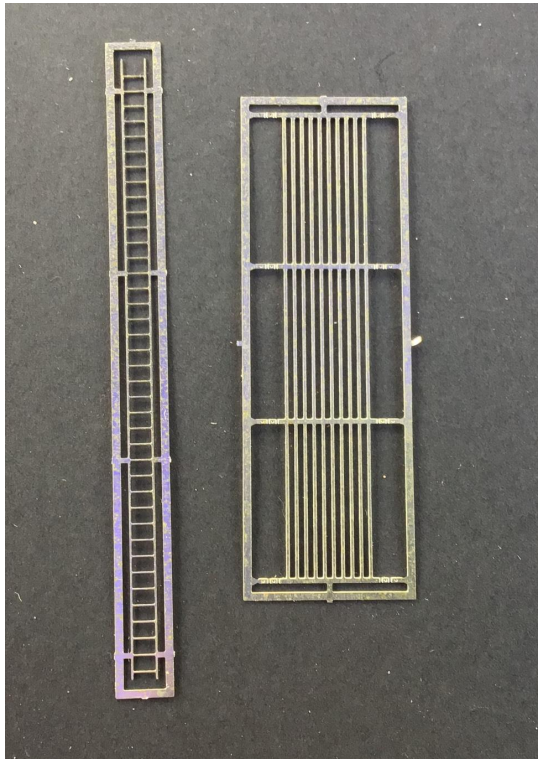


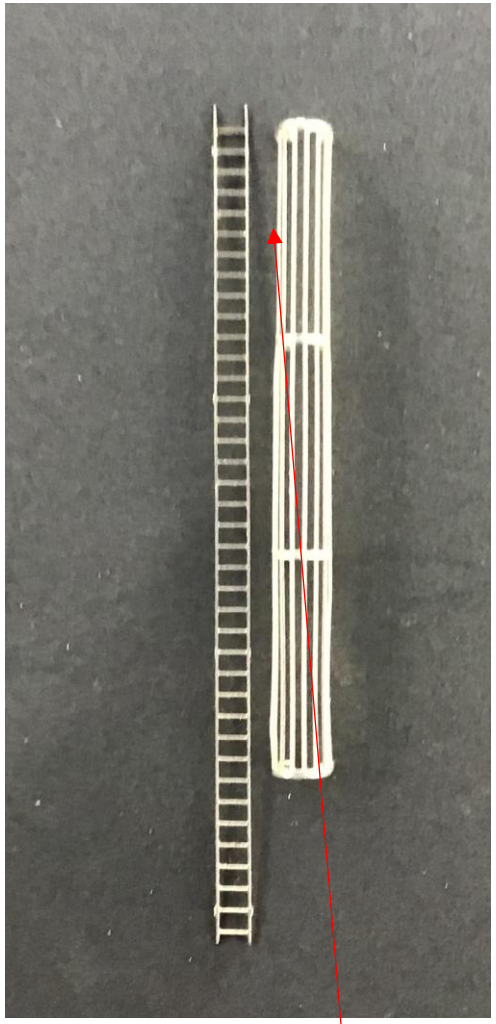
Step 41

Ladder and ladder guard

The ladder and ladder guard are next.
Some work will need to be done with the ladder guard before it can be located into its correct position. The 16 holes will need to be drilled using a 0.3 mm drill. Please do this before removing the ladder guard from the fret, the guard also needs to be folded around a 5 mm drill and the ends with the holes folded and soldered to locate the ladder and to also locate the ladder guard against the front of the silo. The ladder guard needs to folded so that the folding tabs are on the inside of the ladder guard. It will also need to locate so that it is square to the silo.

This etch is very fragile, and needs to be handled very carefully. You have an option as to how it is secured to the silo wall, you locate small sections of 3 mm wire through the holes and drill holes into the silo wall, or you can glue the ladder guard onto the silo wall. This is all dependant on you skill levels with soldering, and handling fine etches.



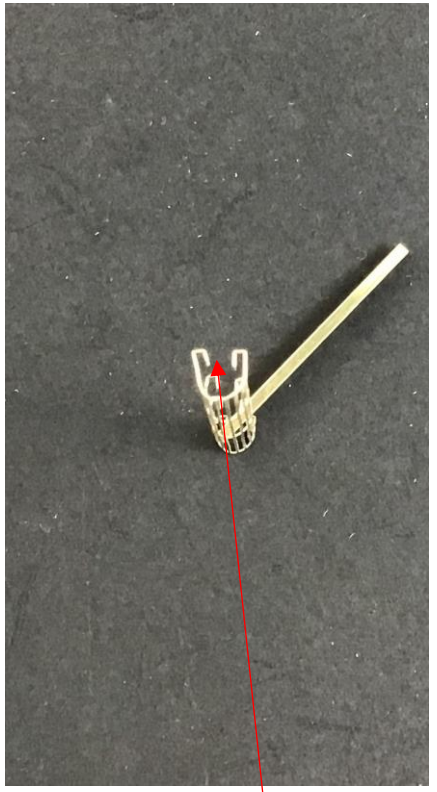


This image shows the position of the ladder in relation to the ladder guard. The top rung of the ladder is level with the top of the ladder guard. The 2 vertical pieces in the top section (only) of the ladder guard need to be removed to gain access to the annex.

Step 42

Ladder and ladder guard

The ladder and ladder guard are located with the 2nd top horizontal bar just under the annex . When locating the annex to the silo wall, please ensure that the ladder and guard are square to the silo.

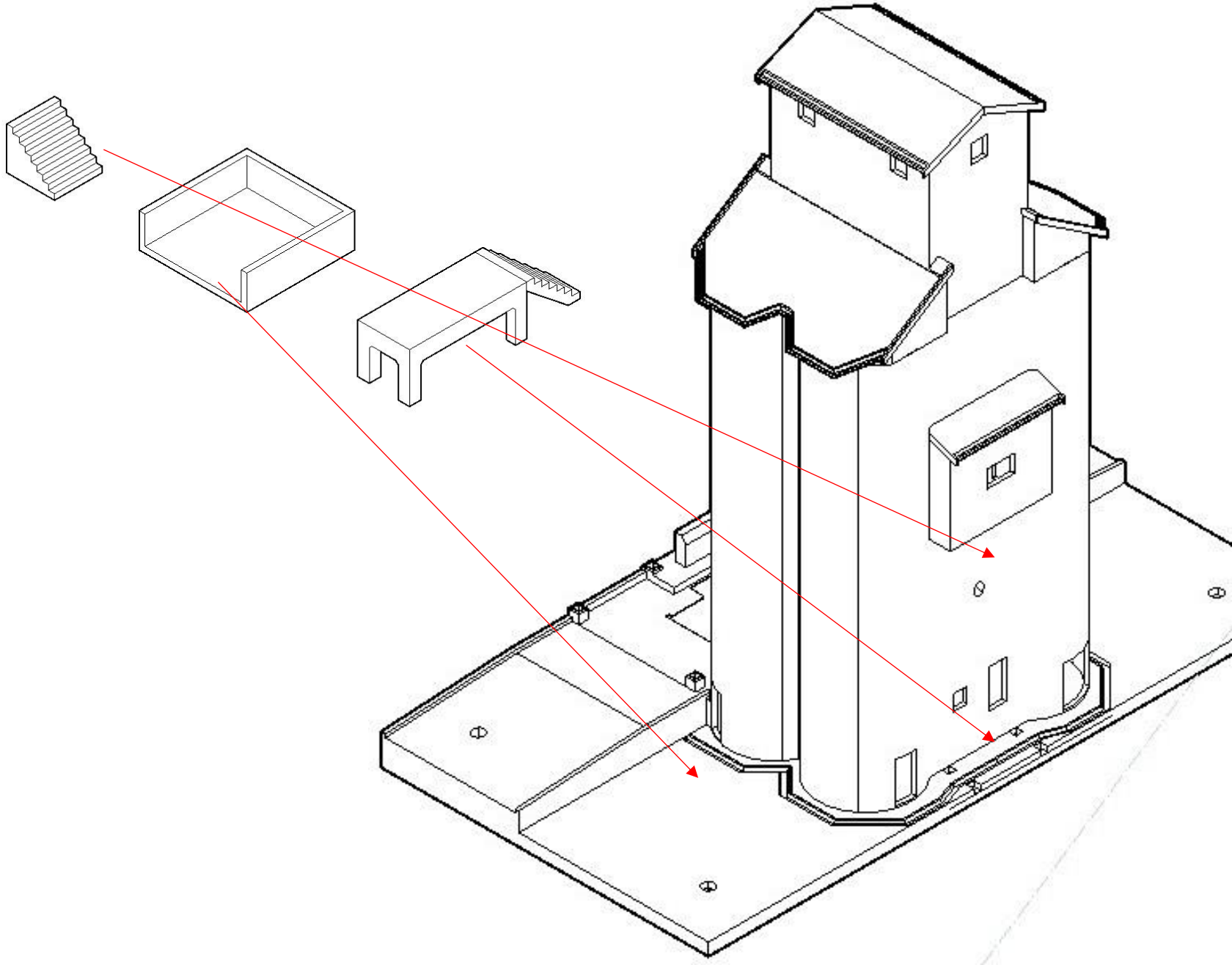


The image to the left, shows how the etch is folded to allow the ladder guard to attach to the silo wall.

The 2 vertical pieces in the top section (only) of the ladder guard need to be removed to gain access to the annex.

Step 43

Some of the other details are next with the out-loading platform, the rear steps and the spoil bin.
The out-loading platform fits into the 4 square holes at the front base of the silo. Using some fine sandpaper, file the inner legs on a slight taper, so that they fit the square holes on the workhouse base section.
The front steps are them glued to the out-loading platform and the silo front wall, they come as two pieces and sit flush to the inside top of the steps.
The spoil bin can them be located on the base of the silo, and can be fitted basically anywhere, but it is suggested to fit it here.
The spoil bin is used to store grain that has become damaged, wet or otherwise unsuitable for use.
The rear steps, fit flush with the back road and adjacent to the drain on the right side.

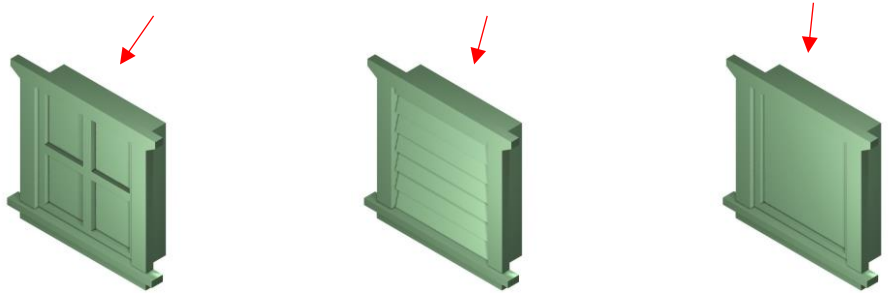


Step 44

The windows and doors come in a pack, and this slide, will show the parts and the options that the modeller has.

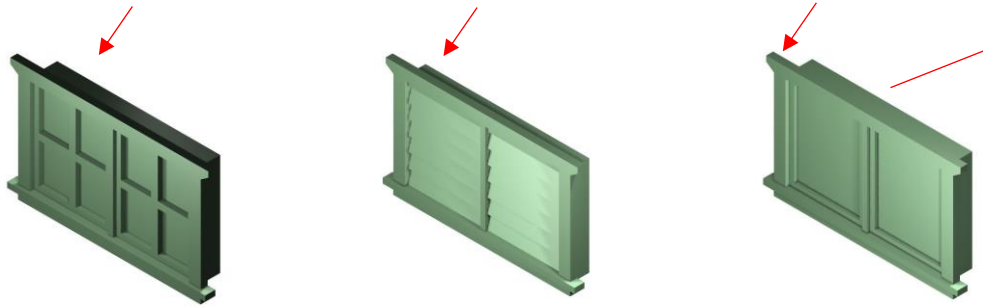
There are 3 types of window for the cupola, and you have the option on which to use.

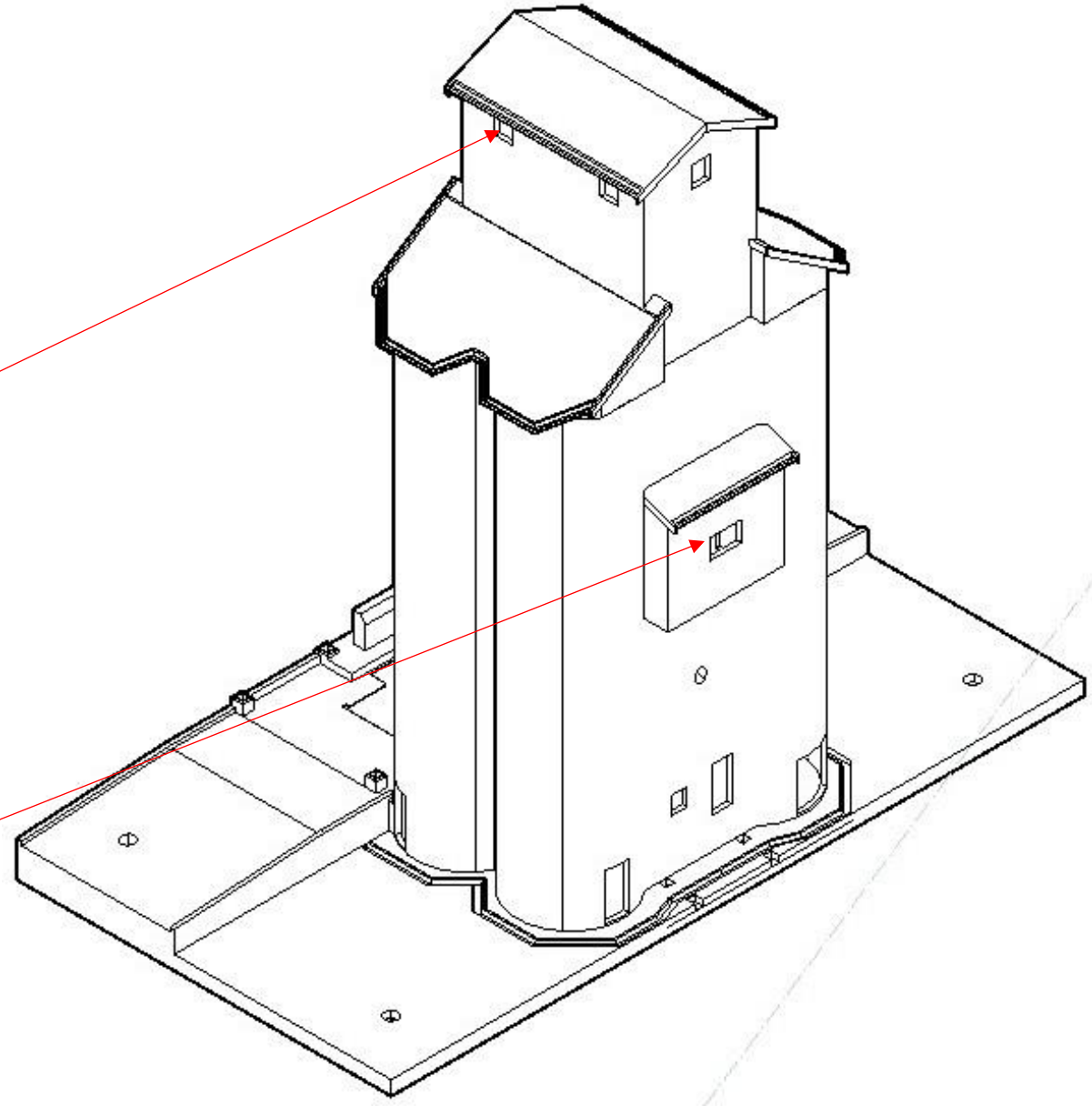
Mullions Louvered Plated



There are 3 types of window for the Annex, and you have the option on which to use.

Mullions Louvered Plated





Step 45

The windows and doors come packed in a bag, and this slide, will show the parts and the options that the modeller has.

There are 4 types of Doors: Front Door x 1, Annex Door x 1, Double Door x 1, Single Steel Door x 3 , as well as a Louvered Vent x 1

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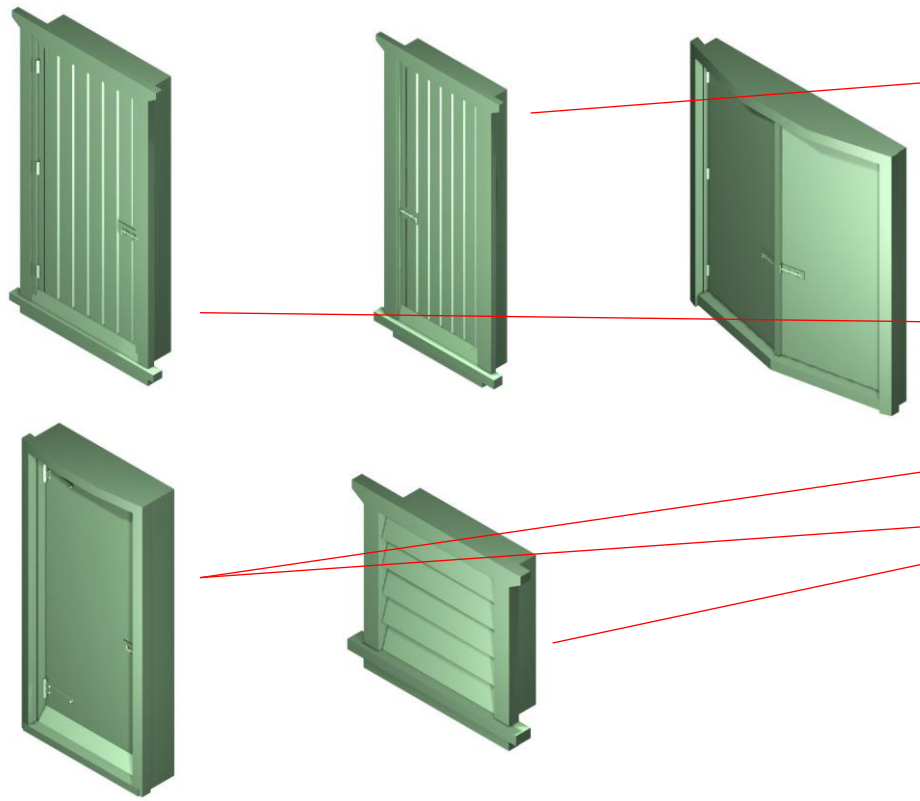
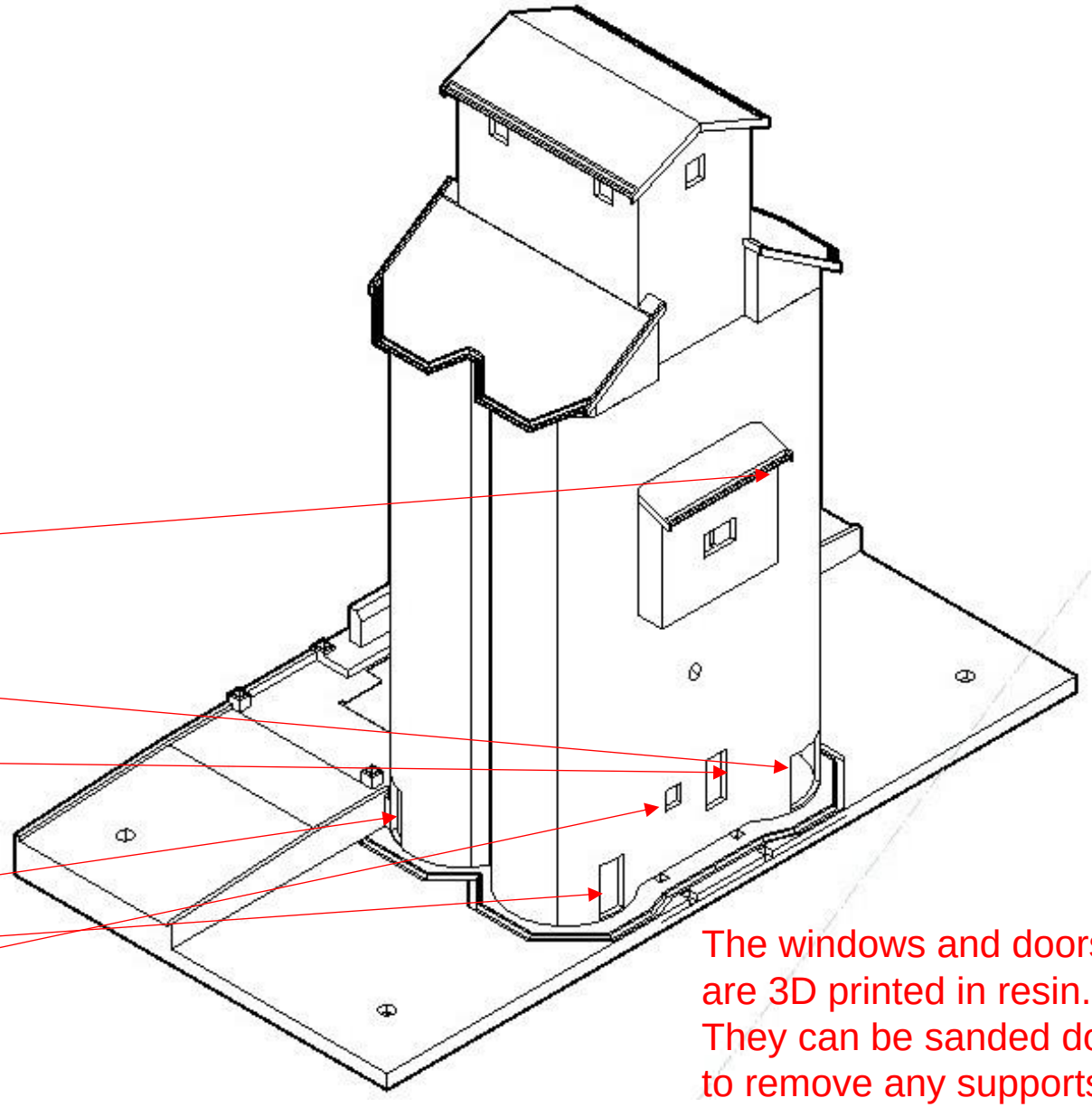




The windows and doors are 3D printed in resin. They can be sanded down to remove any supports and thinned down by sanding until they fit neatly into their own recess.

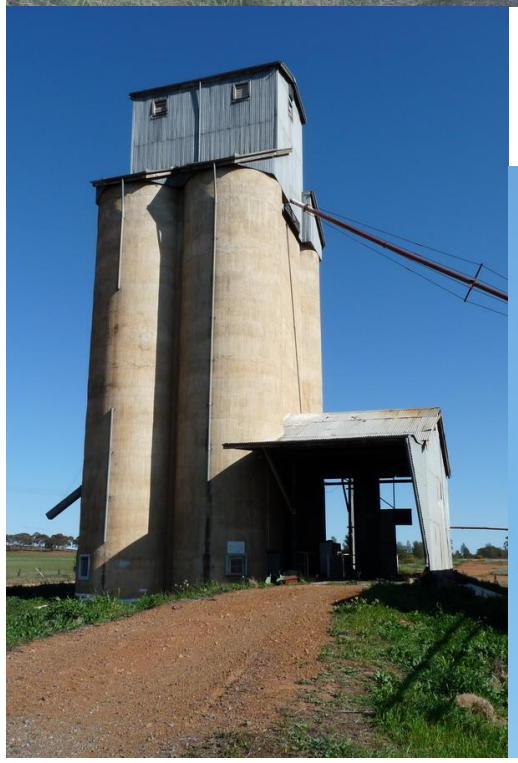
Step 46

Painting the silo is best done by looking at photos of silos. There is a huge number of options when it comes to painting. The basic colour is concrete, but it depends on where the silo is located as to what weathering is applied.

Out west the first couple of feet would have a slightly red hue, due to the red soil and the splashback when the rain falls. I have provided photos in the Memory Stick provided with the instructions, feel free to use these photos to make you decision on the basic colour of the main silo.

Other colours, such as windows doors, corrugated iron, can again be made through the use of photos.

I have placed a couple of photos here for you browse, to get some idea of the colours involved.



Step 47

After painting of the basic structure, we will be fitting the wagon shed permanently.

The wagon shed is fragile to start with but becomes strong as the cladding is added.

Place the outer beams, onto the outer footings. Locate the inner beams into the inner footings, they should go down about 10 mm or to the bottom of the outer cladding.

Tip and Hints

1. Take your time with small parts as they can be very fiddley.
2. Plan you painting to minimise repainting joints.
3. Test paint a section of similar materials before final painting to ensure that the paint you are using is compatible.
4. Spend some time with a small file/cutting blade and/or fine wet and dry, cleaning up the windows, doors and other 3D printed parts of any flash or extruded plastic.
5. You may need to test fit windows to the cupola and annex, to ensure accurate placement. Either the window or hole cut in the styrene can be adjusted as needed.
6. When screwing the 3D silo parts together, ensure that the surfaces are clean and free from plastic dags. Do not over tighten the screws as they are only screwing into plastic, and over tightening can strip the screw holes.
7. If any screw holes are stripped, you can glue the parts together as an alternative.
8. You can sand any of the surfaces that you wish, to whatever level you are happy with, as it is you're silo, and the surface detail is totally within your hands.

Conclusion

Your feedback regarding this kit is very welcome and will be acted upon. Especially if the issue is of a serious nature. No doubt, there will be small glitches with any kit, and I had attempted to solve some of these problems within the instructions.
The instructions are located in 2 places, firstly they can be found as a PDF file on line at Keiran Ryan Models.
www.krmodels.com.au
They are also available as a PDF in the Flash Card that is included with the kit.
There is also a Power Point copy of the instruction on the Flash Card as well.

Also included on the Flash Card, are many silo photos which are there to assist in the finish of you silo kit. Feel free to use the photos in obtaining any information that will make the construction of this kit a better experience.

Contact details. Keiran Ryan Models ---------- www.krmodels.com.au

Keiran Ryan 0409952874
krmodels@gmail.com

Thanks you for you're ongoing support,

Happy Modelling Regards Keiran Ryan