

Pinning

Purpose of pinning

Pinning is a method used to secure small to medium sized objects to backboards, slopes or baseboards for display. It can display objects in a visually pleasing manner while holding them securely and safely.

Benefits

Versatile

Cheap materials

Can be used to stabilise objects on baseboards or secure objects to backboards

Can be discreet, showing objects to their best advantage

Risks/drawbacks

Can take a long time

The object is put at risk of damage while being worked with

Can be complicated to install/deinstall, particularly for a non-pinner

Has to be redone every time

Must usually be done during installation, cannot often be done in advance



Principles of pinning – things to consider

There are a few basic requirements that your pinning should satisfy, think about these while you are planning, doing and checking your pinning.

SECURE – the pins should be appropriate to the weight of the object, held firmly in the backboard and be able to withstand knocks and vibration from a variety of sources - visitor footfall, knocks to the case, loose pins, building works, earthquakes.

SAFE – the pins should not scratch or squeeze the object, they should not put pressure on fragile areas and the object should be fully supported where needed.

SIMPLE – try to find the most straightforward way possible to pin the object. It should be easily apparent how to remove and replace the object.

SUBTLE – the pins should be as discreet as you can safely make them so as not to distract the eye from the object. Be careful not to obscure details or inscriptions.

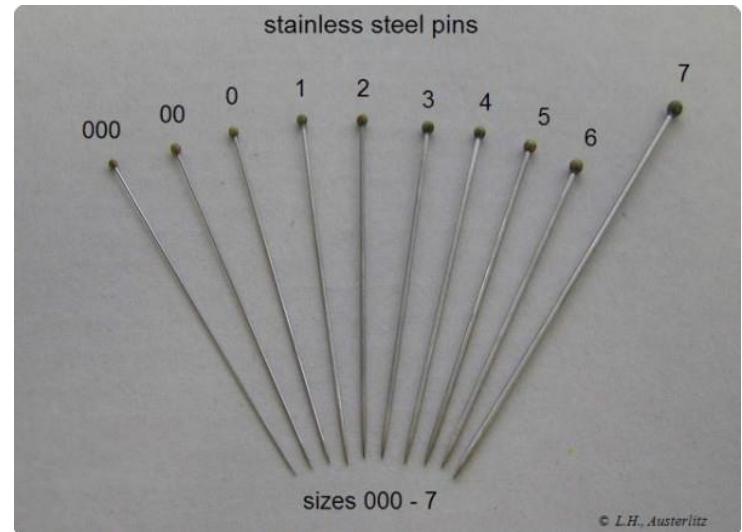


Pins

We mainly use stainless steel insect pins from <http://entomoravia.eu/>. They come in a range of thicknesses, are easy to bend without snapping and are quite strong for their size. We use sizes 1, 4 and 7 and find that to be a good spread of sizes for our smaller objects.

Tubing

To cover the pins to prevent scratching or otherwise damaging the objects we use Portex fine bore polyethylene tubing, which is sold as catheter tubing. It has passed Oddy testing at the BM. It is soft and flexible for sliding onto pins, comes in a wide variety of sizes (the larger you go the less flexible/useful it gets as the walls get thicker) and doesn't reflect light like some tubing can so can be fairly unobtrusive. It's manufactured by Smiths Medical <http://www.smiths-medical.com/industrialproducts/8/39/> but we order it from <http://consumables.com/Products/Fine-Bore-Polyethylene-Tubing/Fine-Bore-Polyethylene-Polythene-Tubing.html> as there is no minimum spend. Please see the table below for the tubing we have found to best fit the pins.



PIN SIZE	TUBING REF.
1	800/100/140 (size 0.4mm)
4	800/100/200 (size 0.58mm)
7	800/100/260 (size 0.86mm)

Other Equipment

- Tissue paper
- Masking tape
- Plastic ruler
- Tape measure
- Mechanical pencil
- Pins
- Tubing
- Pliers
- Snips
- Scissors
- Plastozote
- Scalpel
- Sharps bin

Although we use a variety of pliers for pinning, the most useful are the pinning pliers from Benchmark <http://www.benchmarkcatalog.com/main-tools.htm> Unfortunately they are quite expensive and will need shipping and customs from America paid, but they make pushing pins in a lot easier. And are easier on your hands when pushing into dense wood! A pair of round nose pliers and a pair of flat nose pliers are also useful for getting tight bends and neat curves.

We use Bahco side cutters (2101G-160) for snipping pins, they seem to cut through quite thick metal relatively easily.

<http://www.amazon.co.uk/Bahco-2101G-160-Ergo-Cutting-Pliers/dp/B0001IX99A>



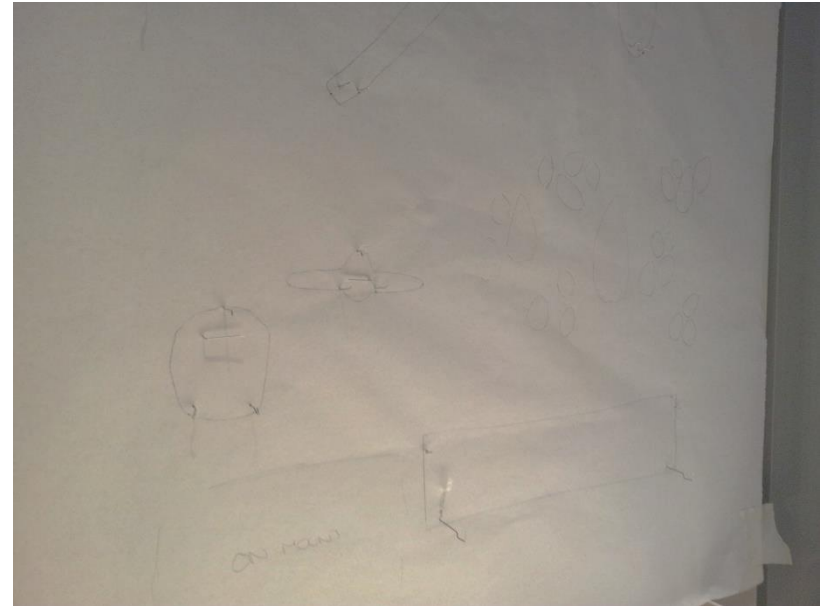
Clockwise from top: side cutters, flat pliers, round nose pliers, pinning pliers



Close up of pinning pliers

In Figure 1, you can see each object is referred to by its exhibition reference number and has a small silhouette to represent it. The designer has marked precise measurements on this layout but you can see that the objects marked in red have not had their dimensions confirmed, meaning this layout may need to be reconsidered if the objects' dimensions are very different to what was expected.

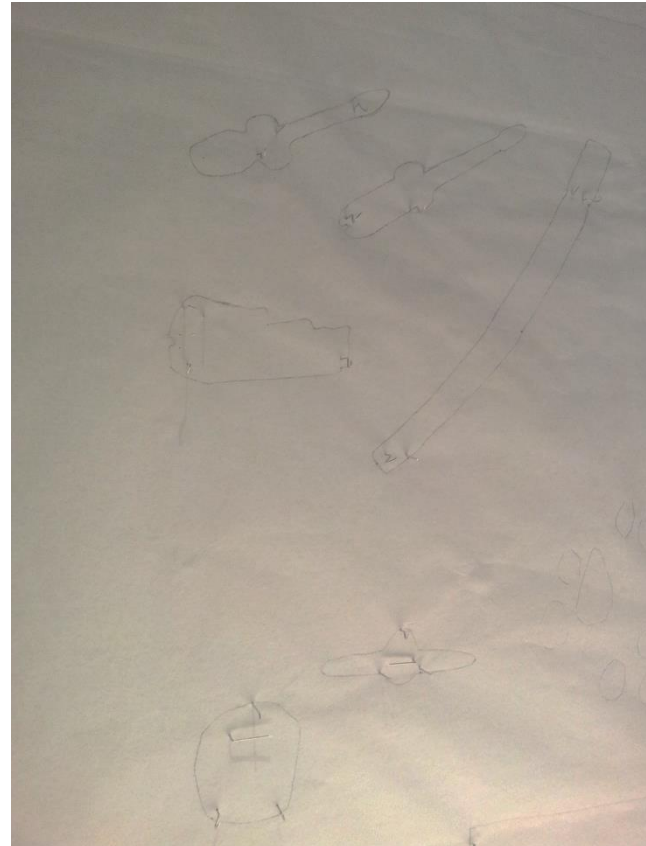
Before you start, **check which way up your panel will be installed.** It may have brackets on the back which denote its orientation. Make sure you pin it the correct way up! **Cover your board with tissue paper**, so you can draw round objects easily and mark dimensions and pin positions. It's easier than marking up with masking tape, doesn't leave sticky marks on the fabric and will protect the panel from dirt while you work. There will usually be a standard eyeline level throughout the exhibition which you can use to judge placement if you don't have precise plans to work from. It is usually around 155cm from the ground. You might like to **mark the standard eyeline** on your board.



Lay the objects onto the board as shown in the layout, and consult with the curator and designer as necessary to make any changes. They will be concerned not only with how the objects look, but also if the order corresponds correctly to the labelling. Bear in mind that some cases require small numbers to be positioned next to the objects, you must make sure there is enough space for these.

Questions to ask of the curator and designer are things like if an object should be shown in a particular orientation, which side would they like to be shown, and if they have any other particular input. These things are not always obvious, and this may be your only chance to check for a while!

Once the layout is decided you need to **record the positions of the objects**. You can carefully draw round them using a mechanical pencil (use a plastic tipped one to avoid scratching the object), or just put small pencil marks to show where corners or other obvious features go. You might also like to take a photo for reference. Make sure objects are straight and in the correct orientation at this point!



Pinning

Selecting your pins

You should select your pins based on the size, shape and weight of your object. Pins come from a variety of suppliers in a variety of sizes but we mainly use stainless steel insect pins. They come in a range of thicknesses, are easy to bend without snapping and are quite strong for their size. We use sizes 1, 4 and 7 and find that to be a good spread of sizes for our smaller objects.

When choosing your pin **consider how heavy your object is** – the thinner the pin the springier it is and the less weight it will support. Pins will support less weight the further you get from the backboard. Size 7s are quite strong as they are less flexible. Also **think about the depth of your object from the board**. You need to have a pin long enough to be secured into the board, reach to the edge of the object and take a small bend over the front of it.



Figure 2 Austerlitz stainless steel insect pins

Positioning your pins

There are three main 'types' of pin you can employ for basic pinning.

- Weight bearing pins are normally placed at the bottom of the object (or wherever you decide to support the weight) and have a bend over the front of the object to stop it from slipping off the pins.
- Retaining pins are used against the sides or tops of objects to stop them from tipping forwards. They also have a bend over the front of the object to 'retain' it.
- Support pins can be placed against the object to take additional weight alongside the weight bearing pins or to stop an object from moving side to side on a backboard or when it is sitting on the base of the case. They do not have to bend over the objects.

When deciding which parts of your object should have pins placed against them, you should **examine the object for any fragile or vulnerable areas**. Avoid placing stress or taking weight on areas with damage, very thin or friable parts or areas which have been repaired by conservation (sometimes these can be hard to spot!). Also try not to obscure any decoration or inscriptions. You might also like to try and consider where you can place pins to make them least obtrusive.

Think about how the object will be placed on and removed from the pins. It should be easily done without turning or otherwise having to move any pins. If this is unavoidable then you can use turning retaining pins. Make sure they come out of the board straight or they will not turn properly!

Use as many pins as you require but try to **keep it simple**. You can use a mixture of different sizes, for example two size 7s on the bottom to take the weight and thinner size 4s as retaining pins.

Securing your pins

When pinning into soft board such as Forex or Sundeala board, pliers and a small bit of effort are usually enough to push a pin in. Use ridged bent nose pliers or pliers with a notch in the nose such as the yellow handled ones from Benchmark. These make it easier to grip the pin and keep it upright while you push it into the board.

Start by gripping the pin very close to the point and pushing in a couple of millimetres to start. Push the pin in using small movements, little by little. Don't be tempted to hold it further up and try to push the whole thing in, it will bend! Try to keep the pin going in straight in case you need to turn it later on.

Aim for at least a centimetre of the pin to go into the board. You can check how far the pin has gone in by holding up another pin by its side. This gives enough grip to keep the pin securely in place.

You can also use a small hammer to tap the pins in, particularly larger headed pins. Be careful to tap them in slowly and straight!



Marking and making your bends

Once you have secured your pins into the backboard you will need to mark any bends you want to make. There are several ways to do this. Carefully place your object next to the pins and use one of the following methods.

Very carefully mark the pin using a mechanical pencil.

Place a small plastic ruler next to the pin and note the length at which you need to make the bend.

Use a small strip of masking tape to wrap around the pin.

Never use your tools near an object or bend a pin with the object in position!

Look at the shape of your object to decide whether you will need to make sharp bends or smooth curves. It is best to fit the pin as closely to the contours of the object as you can to give it good support and keep your pinning discreet.



Figure 3 This is bad! Don't do this!!

Pinning

Securing your pins

There are a variety of different shaped pliers to help you make bends. Select the pair you think will best suit the job. Grip the pin just under your mark and push the pin into the shape you desire. You can push it with your fingers but if this is difficult you can hold it with another pair of pliers or use a steel ruler or something similar to push it down (this method also has the benefit of getting a sharp bend if needed).



Figure 4 The difference made by pin positioning and shaping.

Pinning

Cutting & covering your pins

Cutting and covering your pins

When you have made all the required bends in your pin, you need to cut the end off. You may need to do this before all your bends are complete in order to get the right contours and fit the object, just make sure you leave yourself enough excess – don't forget you can always trim it but you can't add any on! Use a good pair of snips to cut through the pin, holding onto (or covering with your hand) the pinhead in case it flies up and hits a person or an object. Put any cut-offs into a sharps bin for disposal.

After your pin is cut to the required length, with all its bends in place, you need to **cover it with tubing**. We use Portex polyethylene tubing as it is soft, non-reflective and fairly malleable for getting over bends. It has passed Oddy tests so is safe to use against the surface of objects.

Select the correct size and push it over your pin, all the way down to the backboard. You can use your fingernails to encourage it around bends, it shouldn't be too difficult unless they are very sharp bends!



Pinning

Cutting & covering your pins

A note on protruding pins – the tubing must completely cover the tip of the pin in order to fully protect the object. If the pin protrudes at all it can come into contact with the surface of the object and scratch it. There are a couple of ways in which this usually occurs.

- The tubing is put onto the pin and cut at the same time. Some people do this to save cutting twice or because it is too difficult to get the tubing over the bends, so they find it easier to tube the pin then bend it. However this means that both the pin and the tubing are the same length, increasing the risk of the sharp point scratching the object.
- Not covering the entire pin. Sometimes only the area of a pin which actually rests against an object will be tubed, allowing the tubing over time to slip back down over the pin leaving the tip exposed. Even a small gap at the base of the pin can let this happen.

Try to get into the habit of putting your final tubing on last, pushing it all the way down the pin until it touches the backboard and cutting it off at least a millimetre longer than the pin.



Figure 5 A scratch on a Bronze Age lunula caused by inadequate covering of a pin.

Checking your pinning

You might like to do a few checks on your pinning before installing it in its final location. It is sensible to put your board in its intended orientation and check that your pinning still holds the object straight and securely. If it is a loaned in object the courier might also like to have a look at your pinning at this point. Put your object onto the pins and take it off again to check if it is simple and safe enough. If you are unsure if it will be easily interpreted by a fresh pair of eyes, you can always get someone else to test it. You might like to take a photo to help with installation, particularly if the pinning is unavoidably complex or someone else is going to install the object.

Installing your object

Carefully remove the tissue paper from your board and install the backboard. Check that no tubing has been pulled off, particularly from any straight pins. Place your object onto the pins, checking that you are still happy with its security. Never install a board with the objects in place.

