



# Benchmark

Fitting Instructions



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# Benchmark fitting instructions

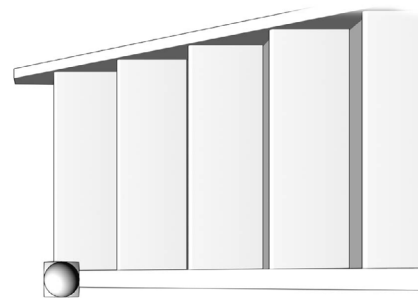
The following instructions are for installing the Cheshire Mouldings Benchmark Range.

If you have any queries please contact our technical helpline on (0800) 085 3475.

Please Check, All components should be inspected BEFORE installation commences for any damage, as Cheshire Mouldings cannot be held responsible for any damage caused during installation.

Whilst every care has been taken to ensure the information contained within these fitting instructions are correct, they are only a general guide, every situation is different. Please read through the fitting instructions fully before commencing

any fitting, Cheshire Mouldings will not be held responsible for any mistakes made through incorrect fitting. Cheshire Mouldings reserve the right to amend the fitting instructions at any time.



If you are finishing your own stair balustrade, then we strongly recommend you complete this task prior to installation. The spindles in particular are easier to finish when loose. You will need to take extra care when installing pre-finished components and some touching up will undoubtedly be necessary around the cut areas. However this will result in a much quicker completion of your project.

Once the balustrade is installed then we recommend that a final coat of paint or varnish will help seal the joints and provide a better looking finish.

## Regulations & Standards

Timber stairparts from Cheshire Mouldings have been independently tested.

This means that they conform fully to the domestic requirements laid down by UK Building Regulations Part K, relating to guarding and resistance to horizontal force.

Relevant British Standards for compliance are BS585 Part 1 1989 and AMD 6510, concerning wooden stairs and their fixings; BS5395 Part 1 2010 about straight stairs; and BS6180 2011 with its code of practice for protective barriers.

## Domestic

As stated, the Cheshire Mouldings balustrade systems conform to domestic standards as set out in Building Regulations Part K. This asserts that "The guarding should be able to resist a horizontal force of 0.36kN for each metre of length if it guards a private stairs". Cheshire Mouldings spindles have also been tested in accordance with BS610.

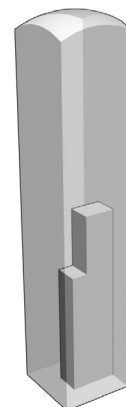
Tools and fixings needed Battery drill, Saw, Spirit Level, Tape Measure, Drill Bits  $\varnothing$ 6.5mm for Softwood,  $\varnothing$ 7.5mm for Hardwood,  $\varnothing$ 8mm,  $\varnothing$ 12mm,  $\varnothing$ 25mm,  $\varnothing$ 50mm

## Removing Old Balustrade

Removing the old balustrade is generally a quick and easy job. The only area to pay particular attention to is the newel bases. Please note: You should never remove any newel bases from a staircase that are structural i.e. a winder box, a quarter landing or top newel, the base of the newels in these situations holds the treads in this area in place as well as being part of the secure structure.

In these circumstances the existing newel can be cut off to fashion a new newel base. This option is open in all areas of the staircase, although a more professional finish will be achieved by installing new bases wherever possible by a professional joiner. To cut down the newel post to form a base, check the correct height to cut off the newel post from the next section "Existing Newel Bases".

(We suggest that you take your new products and align it up to your existing newel posts to ensure that they are correct and will fit just like your existing ones, and also to measure twice before cutting)



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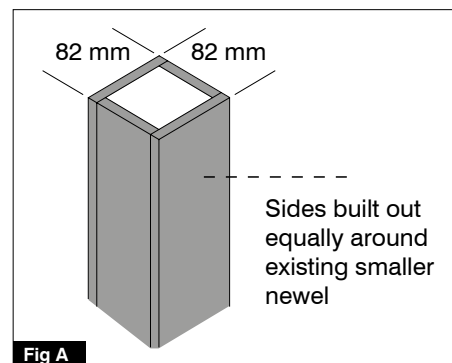
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## Existing Newel Bases

If you are using your existing staircase newel posts which will be cut down to become your newel base you must make sure they are positioned central to the stair string and must be a minimum of 82mm x 82mm square, if they measure less than your newel post build up using suitable material, they should ideally measure your newel post section.

(See Fig A)



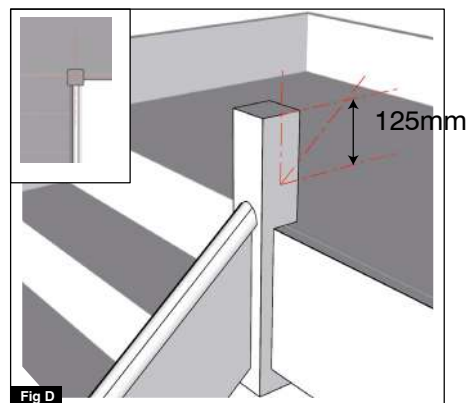
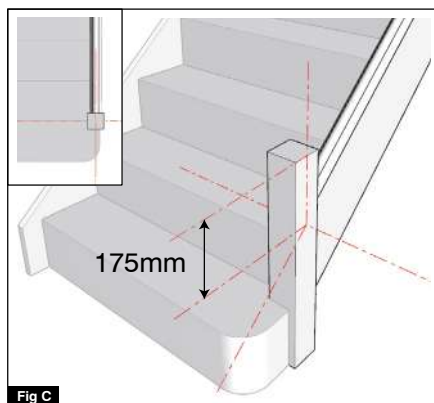
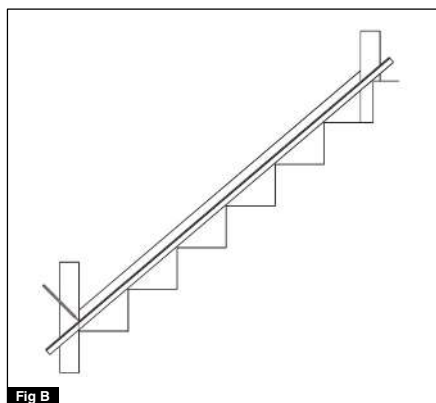
To get the correct height for your newel bases draw a line continuing on from the top of your baserail through the bottom and top newel base.

Find the centre point of your newel on the side facing into the stairs and measure the following dimensions up from this point. (See Fig B)

• The bottom newel base height is set at 175mm from the top of the baserail at the centre point of the newel. (See Fig C)

• If you are using an intermediate newel base on your stairs set the intermediate newel base height to 150mm from the top of the baserail at the centre point of the newel.

• The top newel base is set at 125mm (from the top of the baserail at the centre point of the newel (See Fig D)



## Installing a new Newel Base or a One Piece Newel post

With all your old balustrade removed the next stage is to install either the new newel base or one piece newel.

It is important that the new post/base is correctly positioned on the staircase string. It must be fitted central to the string and exactly perpendicular. In addition it must be set to the correct height to ensure that the handrail height meets the relevant legislation.

The height is measured above a line called the pitch line. This is a theoretical line connecting the nosing of the treads. The easiest way to find this line is to lay a straight edge, such as the handrail, on the nosing.

Each newel post/base is fitted at a specific distance above the pitch line.

1. Bottom newel base is fitted with its top 260mm above the pitch line
2. Top newel base is fitted with its top 200mm above the pitch line
3. On a winder flight the newel base should be cut off 260mm above the pitch line of the second flight. As before do not attempt to replace this newel base.
4. On a half landing where two bases are used side by side, the newel base at the bottom of the second flight should be fitted at 260mm, the newel base at the top of the first flight should then be fitted to match.

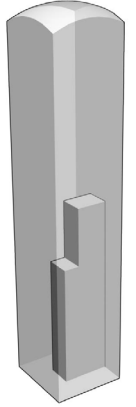


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The newel post/base should be housed out to fit over the string although it is often easier to cut away a piece of the nosing than try to perfectly fit the newel post/base over it. Once in place and with all measurements checked, the newel bases should be glued and screwed into position. Once the newel post/base are in position the newel turnings can now be glued into place.



If you have opted to use a half newel to finish the balustrade against the landing wall, then this should also be fitted now.

Trim the half newel post/base so that the newel assembly is at the same height as the newel at the top of the staircase/landing.

## Installing a pre drilled spigot newel to a pre drilled newel base

The benefit of using a pre drilled new base is that it is easier to install your pre drilled newel.

All you need to do is simply choose the appropriate pre drilled newel post for the required position (make sure the holes are in the correct position for the situation, i.e. bottom, intermediate, top and corner all have pre drilled holes placed in different positions).

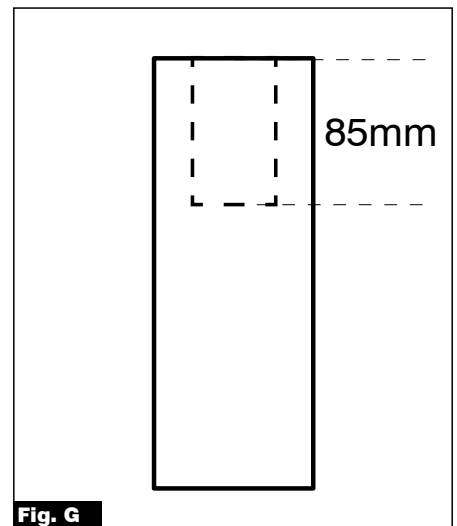
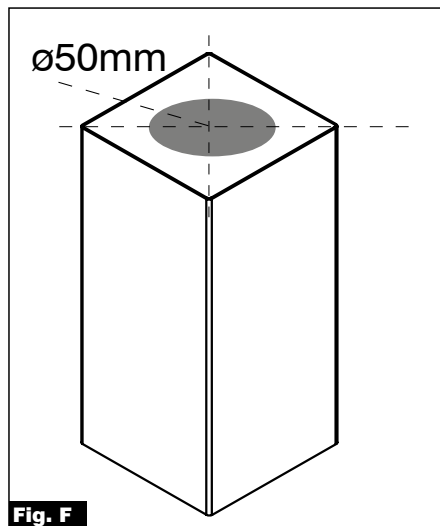
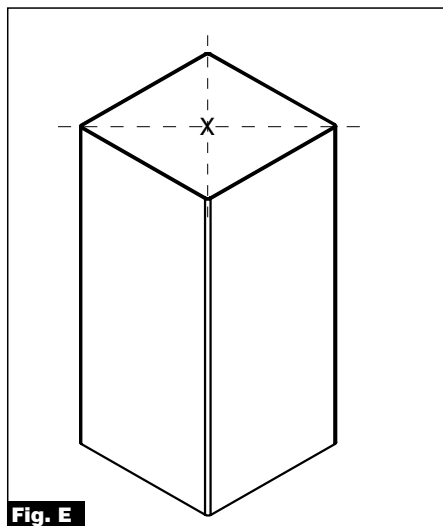
Apply some suitable PU wood adhesive to the spigot part of your newel post and insert it into the hole of the new base make sure that the holes are in the correct position for the handrails to join (ensure the glue is dried before installing any handrails).

## Installing a pre drilled spigot newel to an existing newel base.

When you are using your pre existing newel base you will need to drill a hole to house the spigot newel.

Firstly on your newel base you will need to find the centre point, draw two diagonal lines from corner to corner which will intersect this is your centre point. (See Fig E)

With a  $\varnothing 50\text{mm}$  drill piece, on your centre point drill a hole 85mm deep. This will allow for the spigot newel to sit inside dry fit your spigot new in the hole to ensure an accurate fit. (S)



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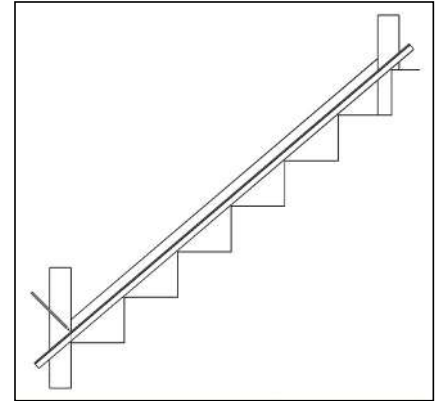
# Benchmark fitting instructions

## Handrails and Baserails

The first step is to fit the baserail to the staircase. The easiest method is to lay the rail on the staircase and mark the cuts where it meets the newel bases.

Cut the baserail then glue and screw into position on top of the string.

The handrail for the staircase can be fitted in a similar manner by offering it up to the heads of the newels and marking the cut lines. Once cut use the appropriate fixing kit for the situation to securely fix the handrails to the head of the newels.



## Installing the handrail to the newel post

Once the handrail has been cut to the required length and at the desired angle, measure and mark the centre of the handrail. It is critical these measurements are correct to ensure an accurate fit.

Make a note of the 1/2 measurement of **B**. **See Fig 1**

On your mark drill a  $\varnothing 6.5\text{mm}$  (if drilling into softwood) or a  $\varnothing 7.5\text{mm}$  (if drilling into hardwood) pilot hole at 65mm deep followed by a  $\varnothing 12\text{mm}$  hole 10mm deep (mark your drill piece with a piece of masking tape as before). **See Fig 2**

Using a 7mm Spanner, insert the threaded end into the hole you have just drilled ensuring the hinge section can move freely. **See Fig 3**

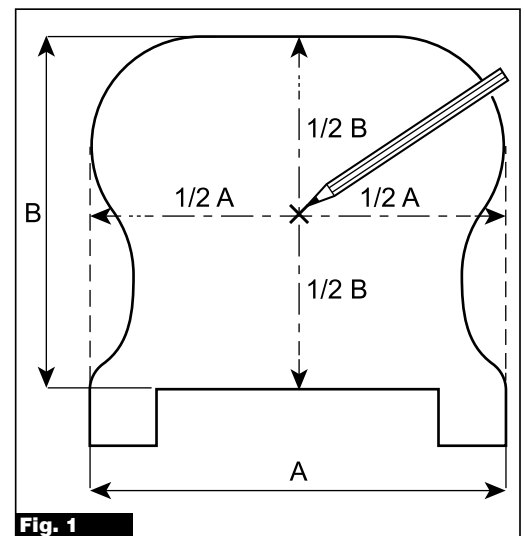


Fig. 1

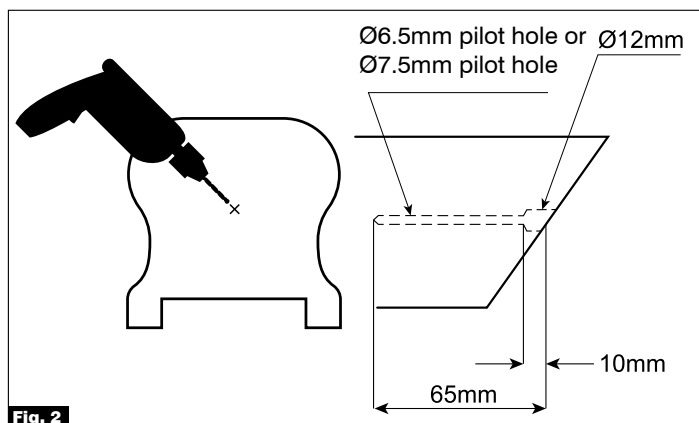


Fig. 2

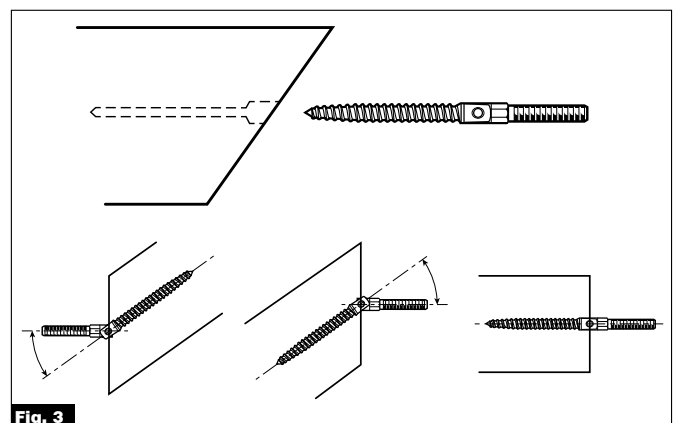


Fig. 3



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Next you will need to measure and mark the points in which to drill into your newel post to allow your handrail to fit in place. **See Fig 4**

Firstly you will need to find measurement D on the front face on the newel (side of the newel joining to the handrail) to do this take your measurement from before (your handrail height (1/2 of B from Fig 1) and measure down your newel post (from the mark where the top of your handrail will sit) to the same length and mark, continue this mark horizontally around your newel post onto the side facing into the stairs.

Now to find measurement C (this is the centre of the width of the newel) Mark this along the horizontal line just drawn.

Move to the side of the newel post facing into the stairs along your horizontal line measure 25mm from the edge of the newel (this is the edge that is joining to the handrail) and mark.

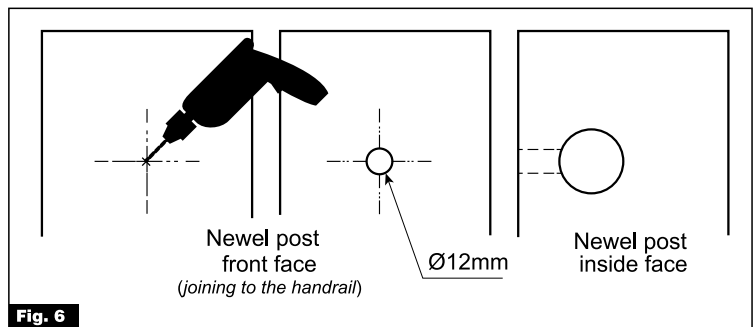
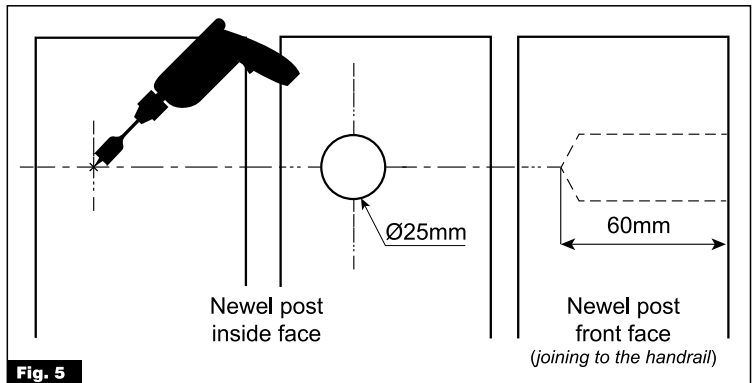
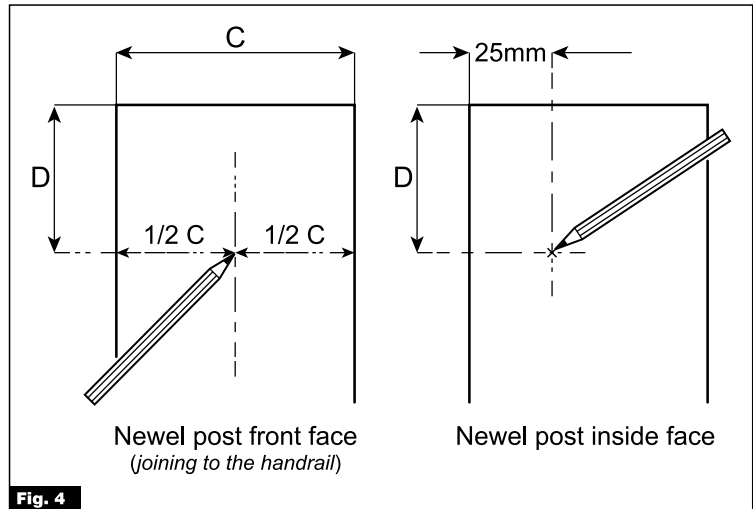
## **DRILLING NOTE: Take all Safety Precautions when drilling**

First on your newel post on the side facing into the stairs on your mark take a  $\varnothing 25\text{mm}$  drill piece and drill a 60mm hole ensuring a straight level hole. (mark your drill piece with a piece of masking tape as before).

## **See Fig 5**

Next on the front face joining the handrail on your mark drill a  $\varnothing 12\text{mm}$  hole which will intersect the larger hole you have just drilled. **See Fig 6** (ensure holes are clear of debris).

*Repeat for the other end of your hand rail*

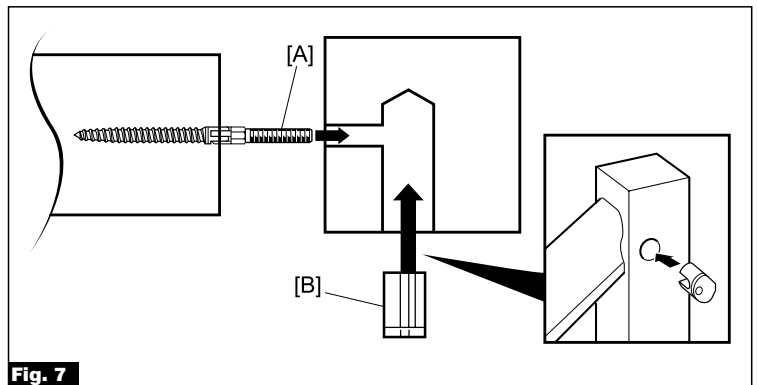


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Once both ends have been fitted with the universal fixing brackets you are ready to fix it to your newel post.

First of all take your hand rail with one of you at the top and one at the bottom, slot the pivoting brackets in to the hole on both ends.

Once the handrail is in place take your locking nuts and place into the hole facing into the stairs and hand tighten using a 5mm hex key. **See Fig 7** (Remember to re-tighten your newel posts.)



Finish off by gluing in your cover buttons in all sections of your newel posts and glue on your newel cap.

## You are now ready to install the spindles.

Spindles need to be cut to lengthened spaced to ensure a gap of no more than 99mm exists between the balusters. This is to ensure the finished balustrade meets UK Building regulations.

A horizontal gap of around 80mm between the squares of the spindle is usually correct to ensure no greater than a 99mm gap between the turned areas.

Start by cutting the staircase spindles to length. Hold a spindle against the handrail and baserail and mark where the cuts should be.

Once cut ensure that the spindle fits at all points of the staircase.

You can then use this spindle to mark all the other spindles and cut them to suit. Do the same with the landing spindles.

You will need to centre the spindles within the gap between the newels.

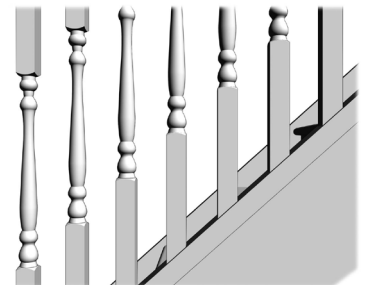
Equalise the gap between the first and last spindle and the newels.

An easy way to visualize this is to use the spindle offcuts and your fillets.

Place them in the baserail and it will be easy to work out the lengths of the gaps at either end.

With the fillets and spindles cut to length you can now begin installing them.

Starting at the bottom of the staircase (don't forget to use your shorter fillet to start with), begin installing fillets and then spindles up the flight. Constantly check that each spindle is perfectly vertical. It's much easier if you pin the fillets in place as otherwise you will find that they can be pushed out of the rails as you add more spindles.



When finishing off the run you will need to fit the final 2 or 3 spindles at the same time before adding the fillets. Otherwise you will not be able to get the last spindle into the grooves of the rails. Please note all spindles and fillets must be pinned and glued.

Repeat the process for the landing balustrade, add any cover caps to cover screw holes, and the installation is complete.

# Benchmark fitting instructions

## 90° Level Quarter turn.

Firstly take your Level quarter turn measure and mark the centre of the handrail. It is critical these measurements are correct to ensure an accurate fit. (see fig 8)

Using a  $\varnothing 7\text{mm}$  drill piece, drill a pilot hole into the centre of the level quarter turn to a depth 40mm (mark your drill piece with a piece of masking tape at 40mm). (see fig 9)

Using the bolt and screw fixing supplied attach the nut to the end with the bolt thread (position the nut to the middle where the threads meet) and tighten the screw thread end into the level quarter until tight, remove the nut from the thread. (see fig 10)

Measure and mark the centre of the handrail. It is critical these measurements are correct to ensure an accurate fit. (see fig 11)

On your centre mark drill a  $\varnothing 8\text{mm}$  pilot hole at 55mm deep (mark your drill piece with a piece of masking tape as before). (see fig 12)

Measure and mark 40mm inwards from the end of the handrail, using a  $\varnothing 25\text{mm}$  forstner bit drill a hole into the underside of the handrail making sure you intersect the previous hole (be careful not to go through the top side of the handrail) (see fig 13)

Place a bead of glue onto the level quarter turn and insert the fixing of the quarter landing turn into the handrail.

Place the D shape plastic washer onto the thread of the bolt using a 13mm spanner tighten the nut until secure.

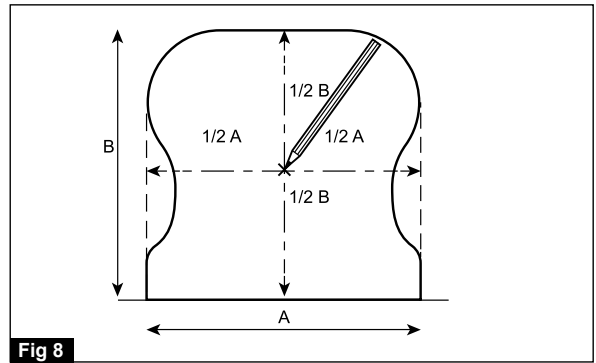


Fig 8

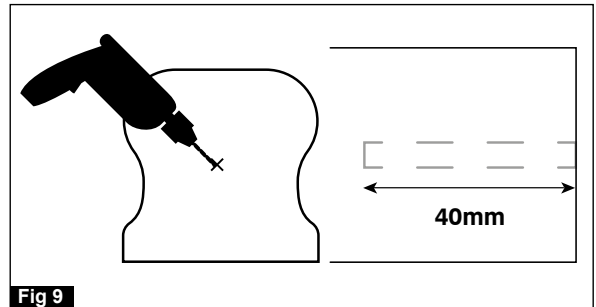


Fig 9

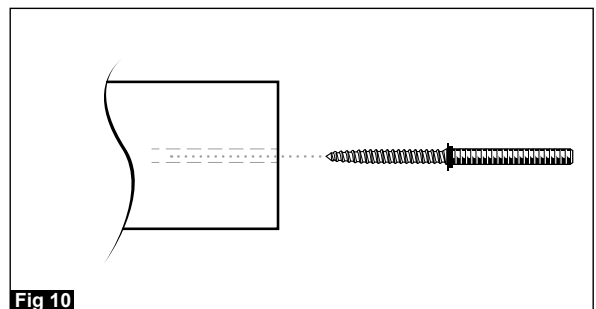


Fig 10

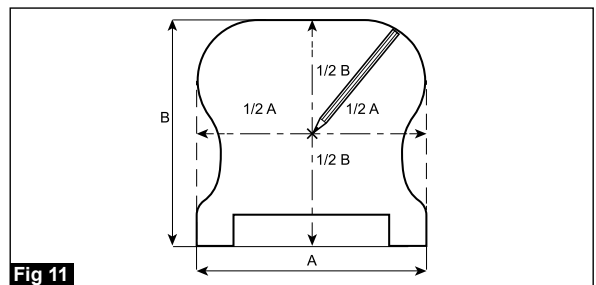


Fig 11

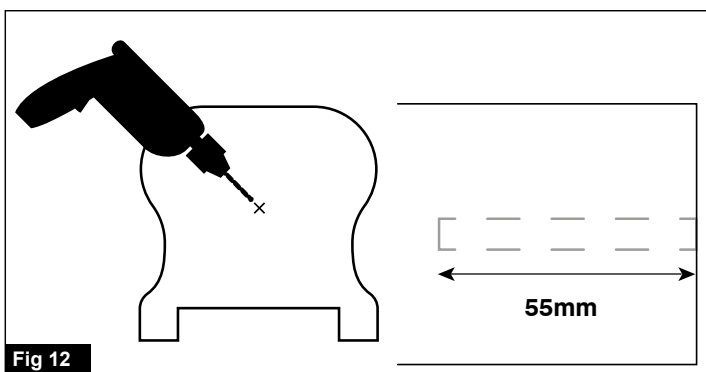


Fig 12

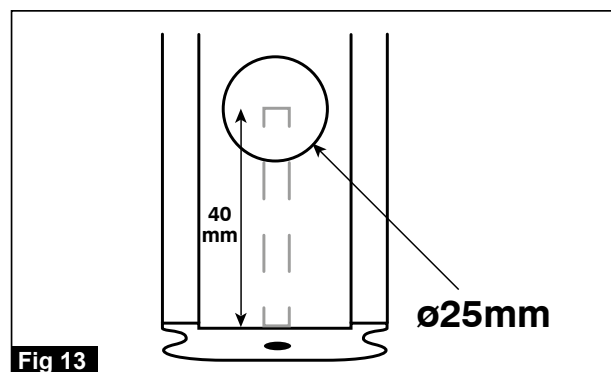


Fig 13



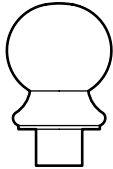
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## Installing your Newel Cap

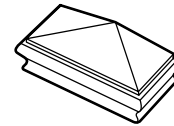
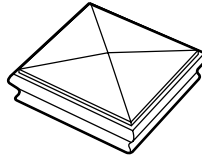
Depending on your newel cap will depend on how to fix it to your newel post if your newel cap is a ball cap you will need to apply PU glue to the spigot and insert it into your newel post.

If you are using a flat cap or a pyramid cap apply a small continuous bead of glue within the groove on the bottom and fix this to the top of your post.

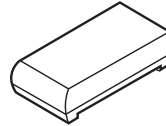
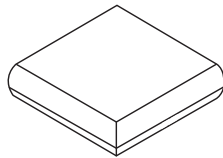
*Pre dowelled Ball Cap & Half Ball Cap*



*90mm Pyramid Cap & Half Pyramid Cap*



*82mm Flat Square Newel Cap & Half Flat Square Cap*



## Finishing your Stair Balustrade

Finishing your stair balustrade can take as long as the installation.

The range of finishes available is extensive and you should always follow the manufacturer's recommendations when using them.

In terms of what finish to use, we recommend one that will seal the product, particularly the handrail, as it will be subjected to constant use. Products such as wax will not work well as the timber will quickly become soiled.



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We have a team of dedicated technical and expert advisors that will offer you the support you need with any planning and technical advice through your project from start to finish.

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