

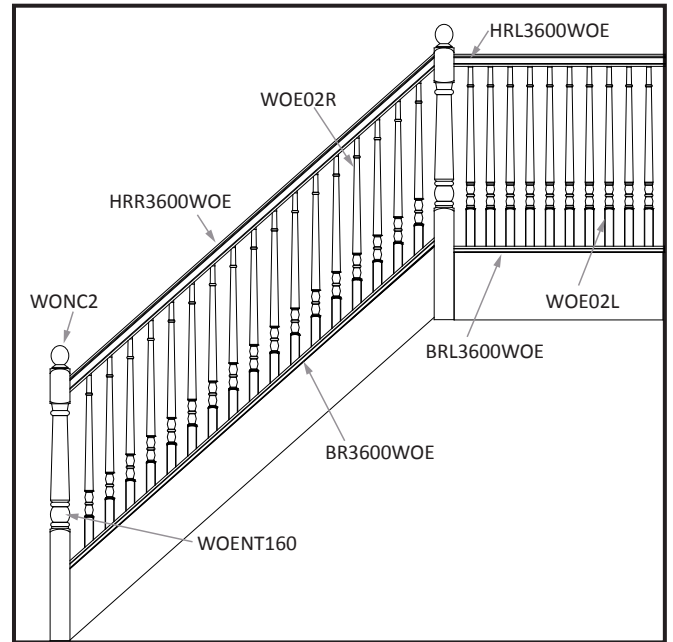
The following instructions are for installing Richard Burbidge Tapered baluster pre-drilled handrail Stair Balustrading.
If you have any queries please contact our Technical Helpline on 01691 678212.

Richard Burbidge tapered baluster stair balustrading has been designed to suit staircase pitches between 40° & 43°. Components have been independently tested to guarantee conformity to UK building regulations.

Note –

Please check all components carefully PRIOR to installation for any damage to the surface, as Richard Burbidge cannot be held responsible for any damage once installation has commenced.

The Tapered Baluster and Twist Bracket has been independently tested by FIRA and when installed in accordance with these instructions conforms with Building Regulations for balustrades at 900mm high and 0.36kN/m domestic loadings. (FIRA Structural testing reports and Richard Burbidge balustrades are safety approved by TRADA (BM TRADA Approved Timber Balustrading Scheme certificate number 022/001).



Installation -

Before commencing your installation of the Tapered Baluster using the twist bracket please read these instructions carefully.

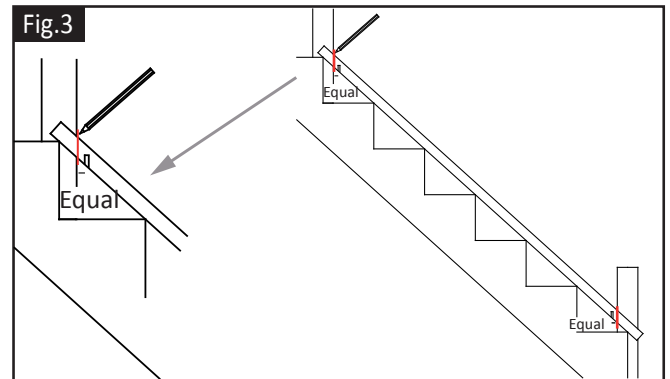
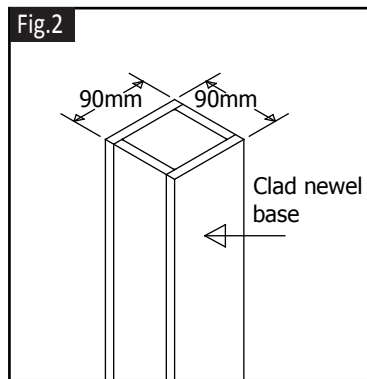
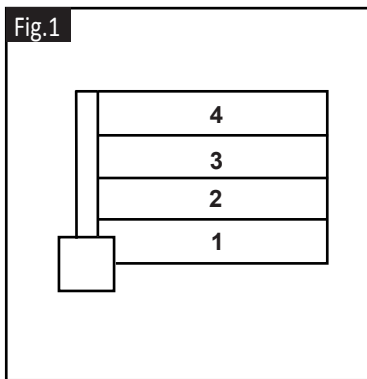
This system is designed to suit 40° - 43° pitches only.

Tools required - 11.5mm & a 16mm diameter drill bit, crosshead No. 2 screwdriver and a 6mm hexagon drive bit, PU adhesive, together with electric/battery drill, spirit level, tape measure, square, handsaw, 50mm No. 8 crosshead countersunk screws for fixing the baserail, and an adjustable bevel (to work out the correct angle of your stairs, and marking out).

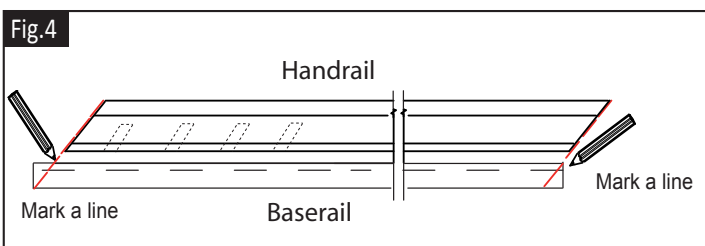
USING EXISTING NEWEL BASES -

Existing bases need to be 90mm x 90mm square and installed central to riser and string (Fig.1). If the section size of the newel base is smaller, they will have to be built up by cladding each side equally to the required size. Use glue and pins to fix (Fig.2).

Place the handrail on top of the stair nosing and offer up against the side face of the newel bases, making sure that the 1st and last hole in the rail is equally spaced between each newel base. Using a pencil mark a line on the top and bottom of the handrail (this is easier done with 2 people). Cut the handrail to length, and check the fit between inside newel faces (Fig.3).



Place the grooved baserail on top of the previously cut handrail, Strike a line from the handrail cut lines onto the baserail on both ends and then cut the baserail (Fig.4).



The baserail can now be fixed using the No8 x 50mm screws.

The Tapered baluster system uses pre-cut balusters, and all cut-off points are referenced from the top of the baserail upwards.

Bottom Newel Base

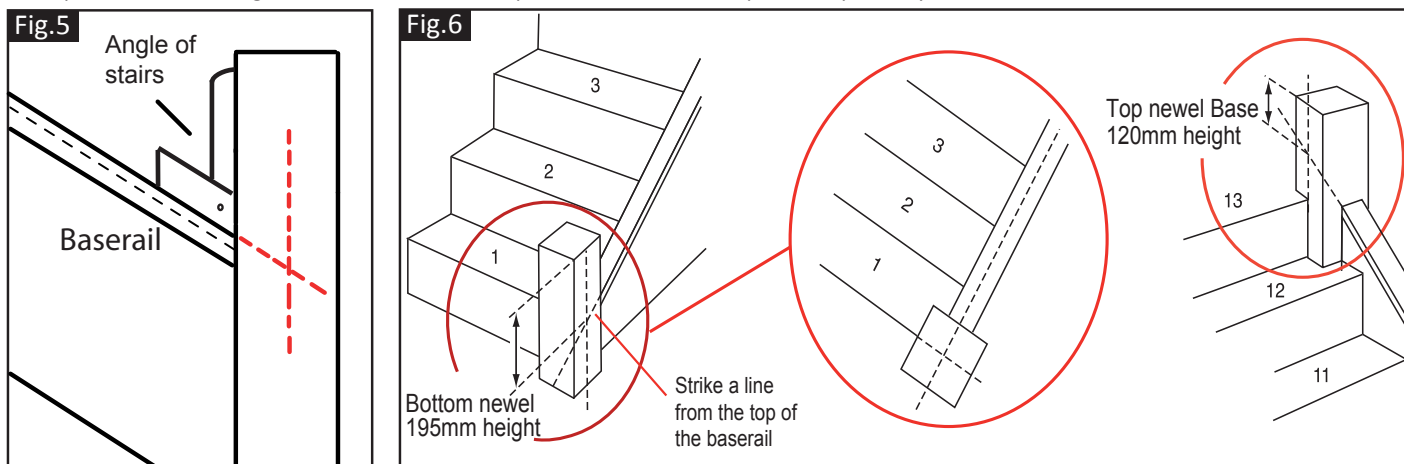
Set the adjustable bevel to the pitch of your stairs by positioning on the top of the baserail and against the newel base (**Fig.5**).

Using the set adjustable bevel strike a line across the newel base face representing the angle of stairs from the top of the baserail, from this line mark a line downwards through the centre point of the newel base, and where the 2 lines intersect measure up 195mm (**Fig.6**).

Top Newel Bases

The top newel base should be marked out in the same way as the bottom, but the height should be set at 120mm (**Fig.6**).

It is important that existing newel bases are cut off square so that the newel posts are perfectly vertical.

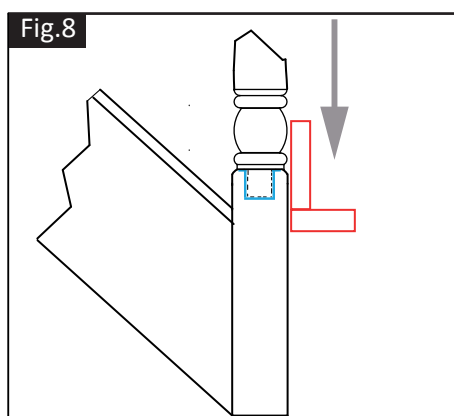
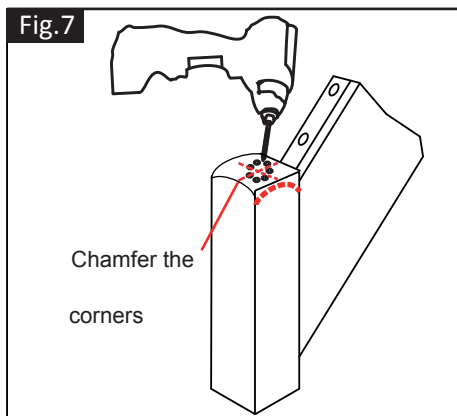


FITTING NEWEL TURNINGS TO THE NEWEL BASES

Once you have established the top and bottom newel base heights you can cut them down to the correct height, it will be necessary to drill a hole to accept the spigot of the newel turning (this will not be necessary if using newel turnings with a new Richard Burbidge newel base as these are pre-drilled to accommodate the spigot.)

When using existing newel bases, first find the centre, then scribe a circle to the newel spigot diameter (50mm) and bore out a hole to take a spigot. The best method is to use the Richard Burbidge hole saw which will drill a hole to the required size to take the newel spigot. Mark a radius on each of the newel base faces and then sand and chamfer the top face and corners of the existing newel base, alternatively the newel turning can be fitted by chain drilling the newel base using a 10-12mm twist drill bit and removing surplus with a flat/spade bit and chisel (**Fig.7**).

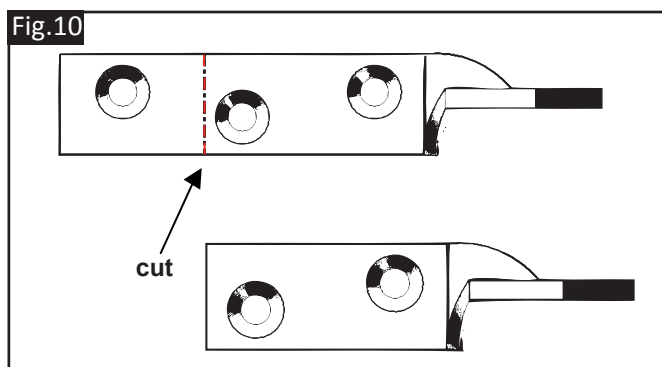
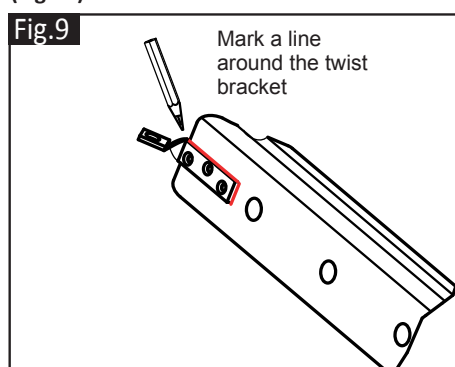
When the hole has been drilled in the newel base, insert the newel turning and check for a good fit and that the newel is plumb with the base (**Fig.8**), do not secure the newel turning at this stage.



FITTING THE HANDRAILS USING THE TWIST BRACKET

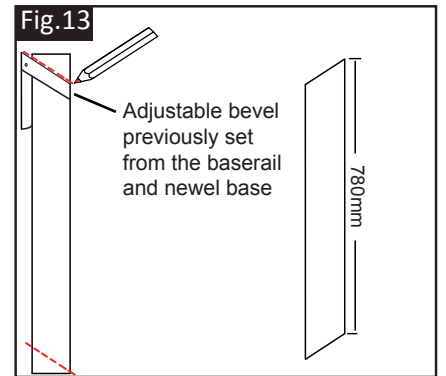
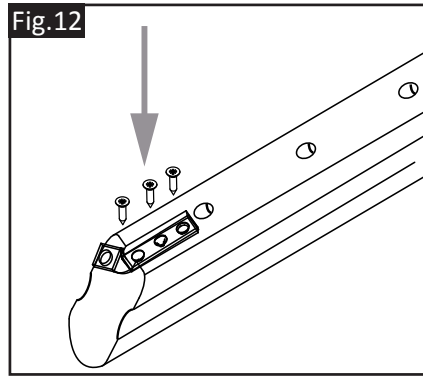
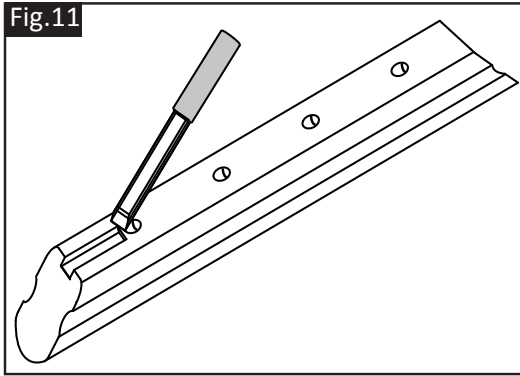
Locate the raking twist brackets central to the underside of the handrail and using a pencil mark out the slot on both ends of the rail (**Fig.9**).

Note: If the twist bracket is too long and is too close to the 1st drilled hole, trim the bracket to suit leaving 2 screw holes remaining for fixing (**Fig.10**).



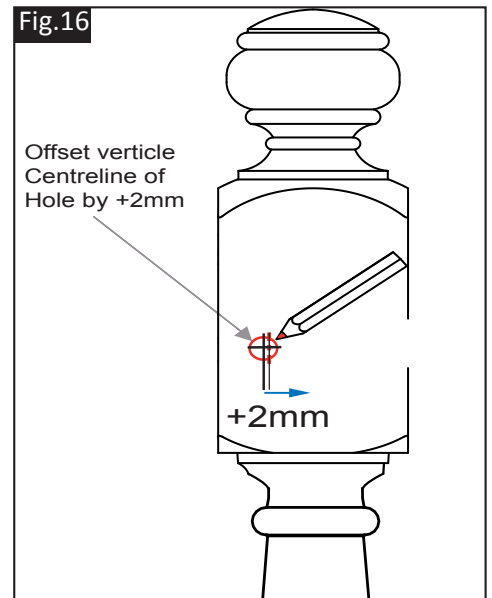
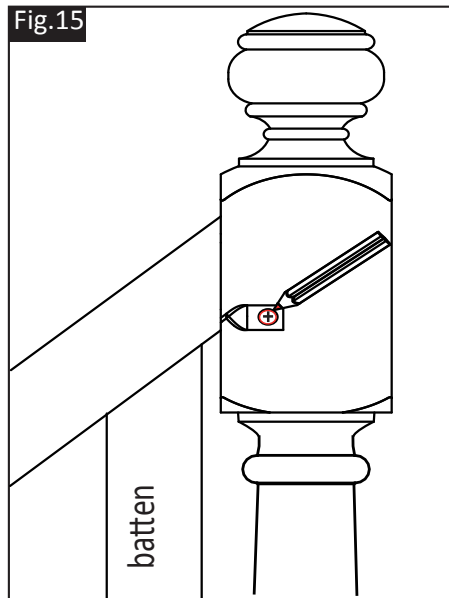
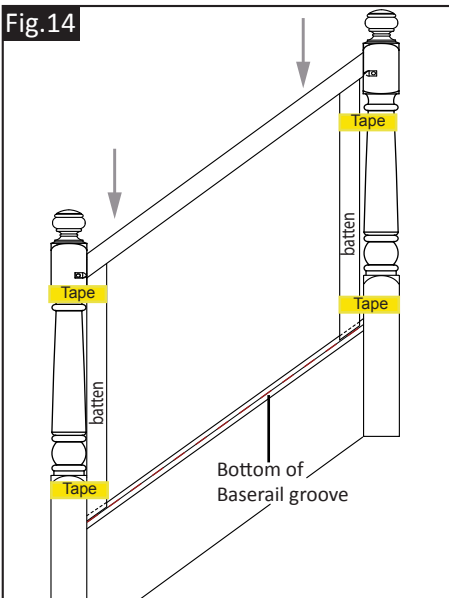
Chisel out the previously marked out slots for the twist bracket to a depth of 6mm (**Fig.11**), and fix the rake twist bracket using the 3 screws provided (**Fig.12**).

To set the correct height of the handrail you will need to cut 2 battens at 780mm long, use the previously set adjustable bevel (as in **fig.6** page 2) and mark 2 lines at a length of 780mm (**Fig.13**).



lower the battens into the baserail groove place 1 against the inside face of the bottom newel base and 1 against the top newel base face, (**Note:** to make this easier if its a 1 person installation, use masking tape to hold the battens in place against the newels), lower the handrail on top of the battens so the twist bracket hole is on the outside of the newel face (**Fig.14**).

Using a pencil mark the centre of the twist bracket hole (top and bottom bracket) onto the newel face (**Fig.15**). Remove the handrail and mark a hole position off-set +2mm from the previously marked centre line, (this will ensure the handrail is tight to the newel face when the tapered screw is tightened) repeat for all other newels (**Fig.16**).

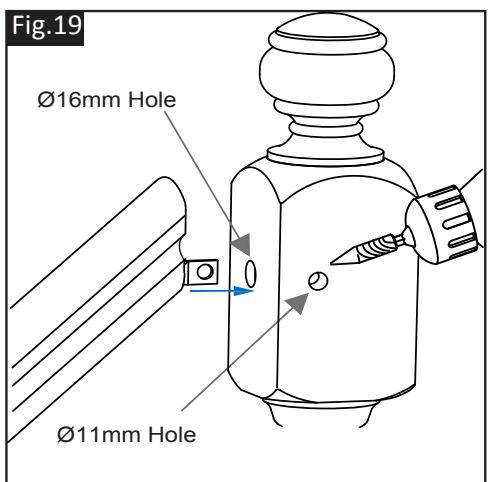
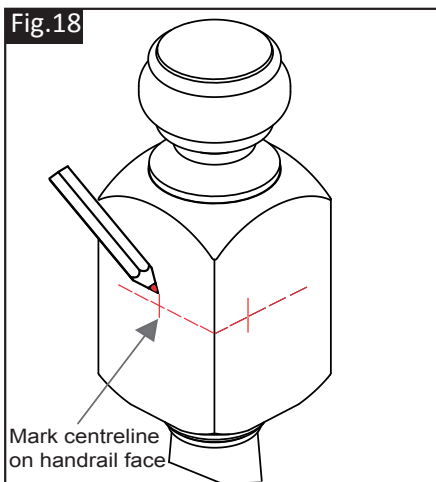
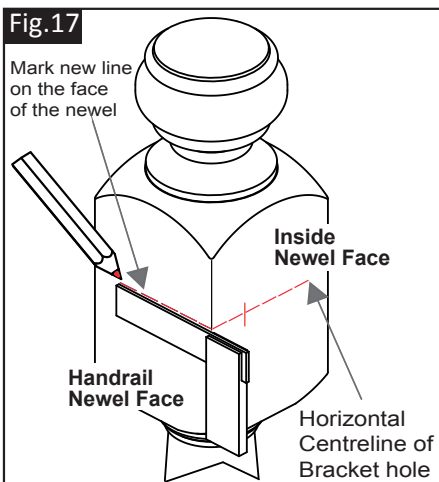


Using a square, mark a line on the inside of the newel face from the centre of the twist bracket holes and across the faces of the newel, follow the centre line with the square and draw a line across the face of the newel where the handrail will be attached (**Fig.17**).

Draw a vertical line through the previously drawn line down the centre of the newel face (**Fig.18**).

Drill the newels using an 11.5mm diameter drill bit on the inside faces of the newels (facing inside the stairs) to a depth of 60mm to accommodate the tapered screw and a 16mm diameter drill bit to a depth of 40mm on the inside faces of newels to accommodate the ends of the Twist Bracket.

Place a small amount of PU adhesive on each end of the handrail and offer up to the newel, position the ends of the twist brackets into the 16mm diameter holes in the newel and insert the tapered screw so it starts to pull the rail in, **do not fully tighten at this stage** (**Fig.19**).



Once the handrail is in position in the newel turnings and secure, lift the newels out and ensure that both the spigot and the hole are clean and free of saw dust.

Apply a large bead of a proprietary 'Fast Grab' PU adhesive to the inside circumference of the newel base and a small bead to the flat surface on the top of the newel base.

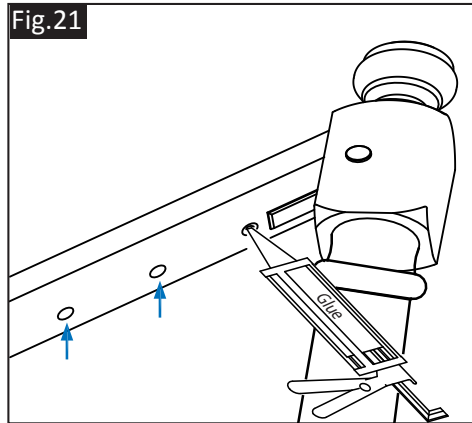
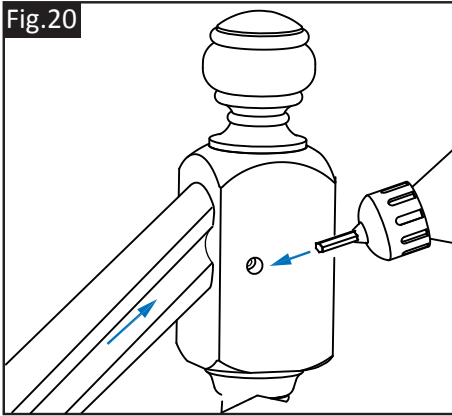
Note: Do not use any other type of adhesive.

Insert the spigot of the newel turning into the hole in the newel base and leave for 30 minutes minimum.

The tapered screws can now be fully tightened into the 11.5mm diameter holes in the top and bottom newels using a 6mm hexagonal drive/allen key until the shoulders on the handrail are flush against the newel faces (**Fig.20**).

FITTING THE BALUSTERS

Using a multi-purpose adhesive in a mastic gun (No-nails, Stixall etc) place a bead into the pre-drilled holes in the handrail, taking care not to put too much in each hole (**Fig.21**).

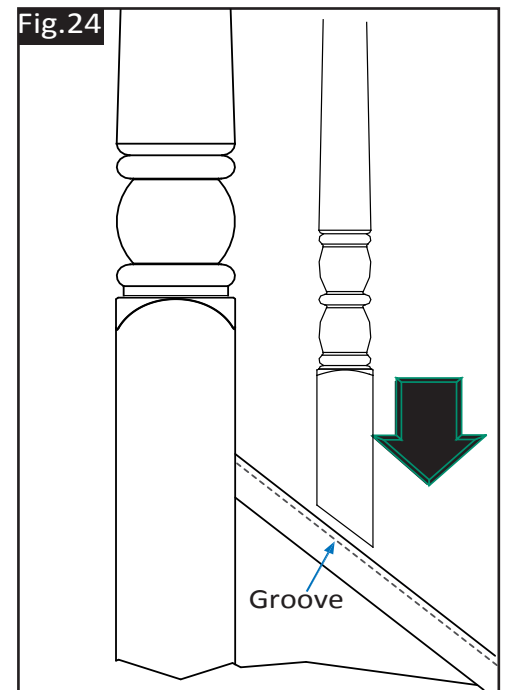
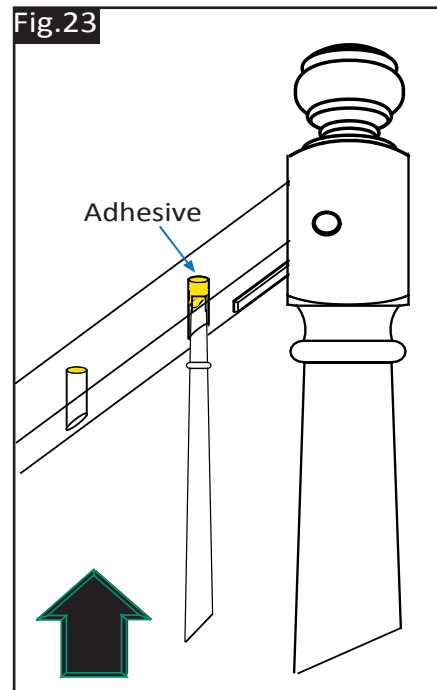
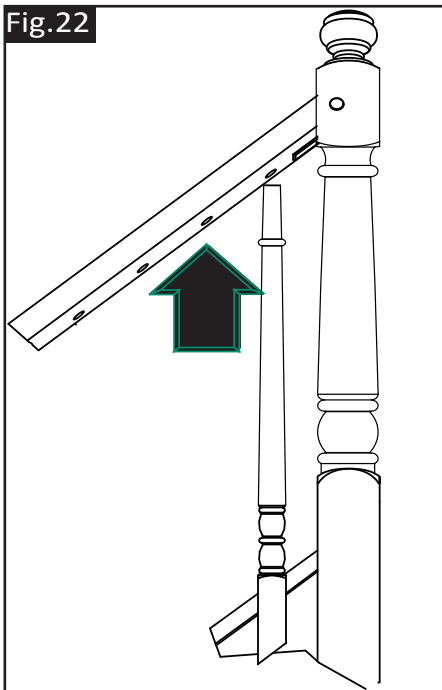


Place the baluster at an angle and slide it into the pre-drilled hole in the handrail so it makes contact with the adhesive and has cleared the top of the baserail (**Fig.22 & Fig.23**),

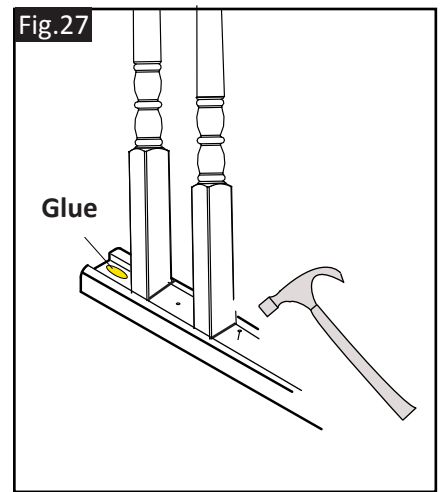
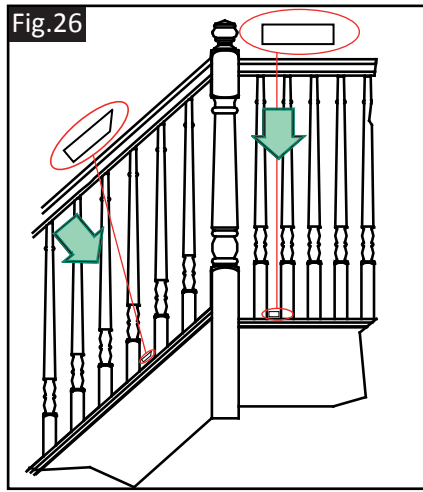
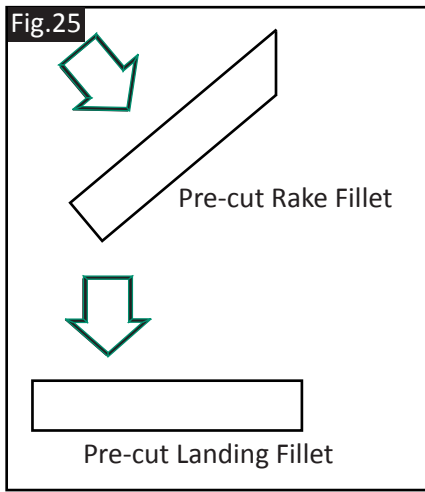
Straighten up the baluster so the pre-cut end lines up over with the baserail groove, slide the baluster downwards so it is placed in the groove of the baserail (**Fig.24**).

Repeat this for the rest of the balusters.

Note: Wipe off any excess adhesive from the rails and balusters immediately.



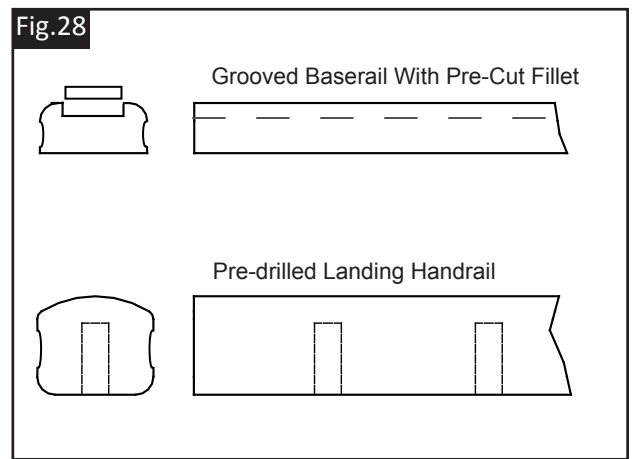
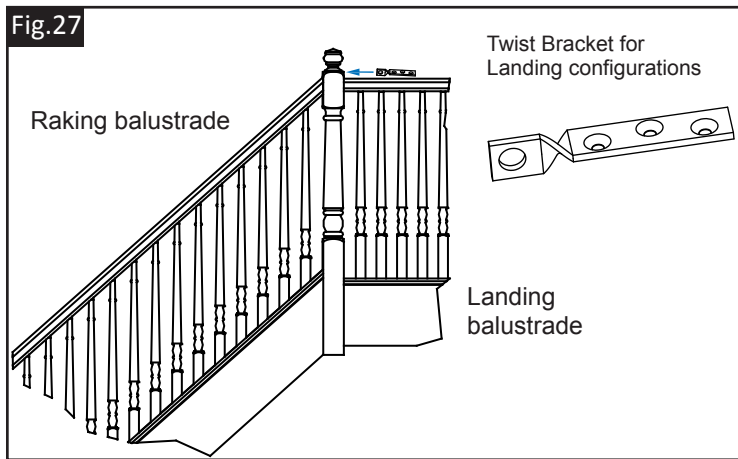
Now all the balusters are in place you can start fitting the fillets. All fillets for rake and landing configurations are supplied pre-cut (**Fig.25**), except the first and last fillet between the newel base, these will need to be cut to suit. To do this, measure between the newel base and the square face of the spindle and cut the 1st and last fillets to suit, the distance between the spindles is determined by the pre-drilled holes in the handrail, apply glue to the groove in the baserail and then place the fillet between each spindle in to the groove (**Fig.26**), cross pin the fillet to secure to the baserail (**Fig.27**). Repeat this instruction for the landing fillets.



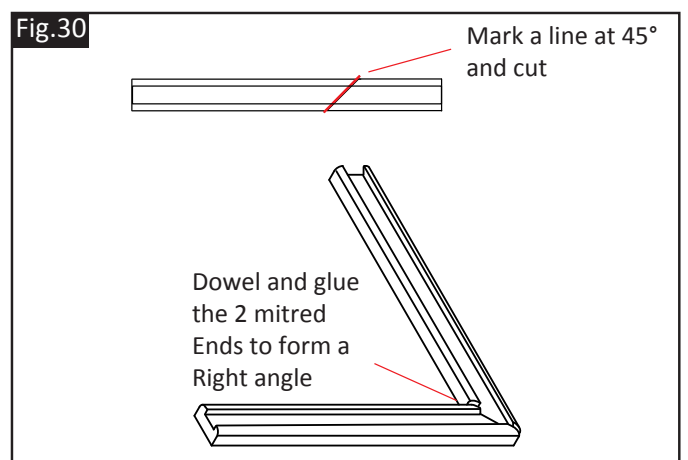
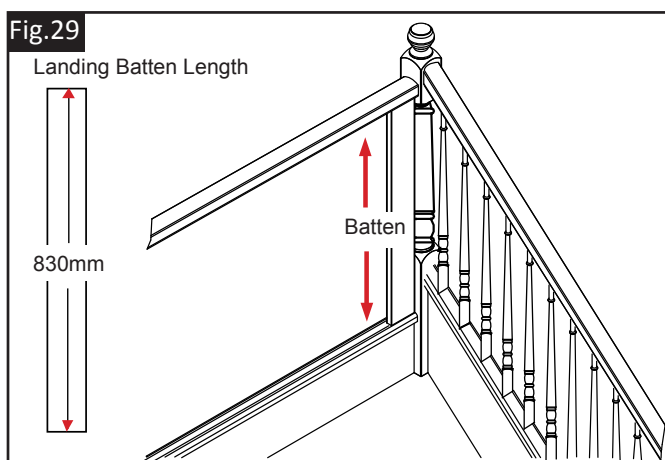
Apply adhesive to the cover caps and place over the previously drilled 11.5mm diameter holes. Use the same adhesive to secure the the twist bracket cover caps under each end of the handrail into the chiseled slot so that it covers the twist bracket.
For raking Handrails you may need to trim the timber covers slightly to fit up against the newel face.

LANDING BALUSTRADE

The Twist brackets for landing configurations are straight (Fig.27). Handrails for landing configurations are supplied pre-drilled with grooved baserail (Fig.28), the Landing balusters are pre-cut to the correct length.

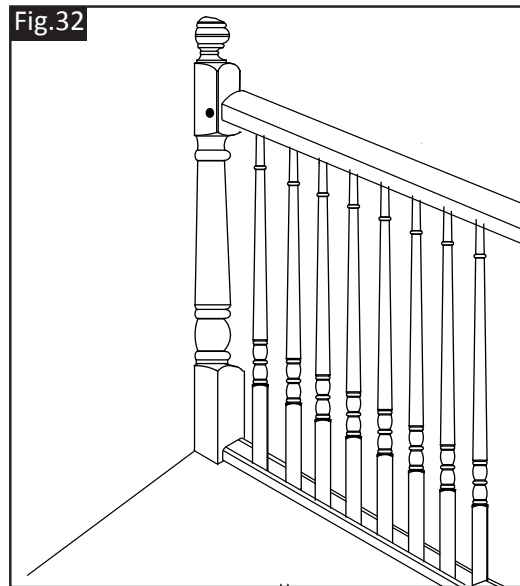
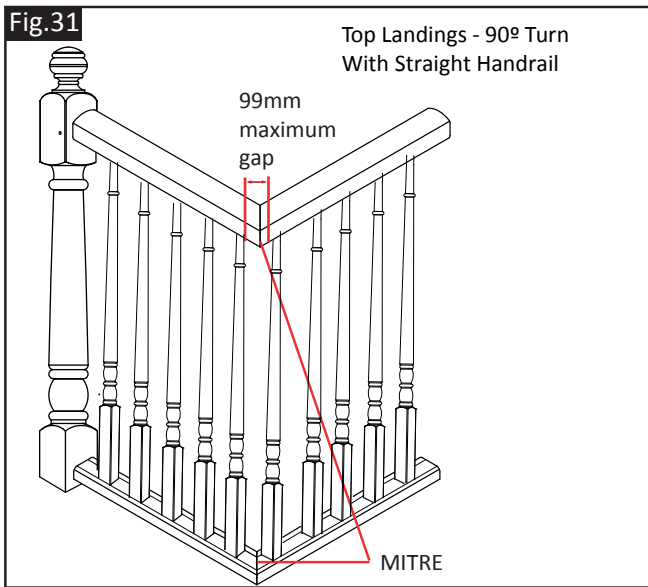


Installing the landing balustrade using the twist bracket and tapered screw is done the same way as described in the rake balustrade section. To install the handrail at the correct height for landing configurations you will need to cut a straight batten at 830mm long (Fig. 29), this will maintain the 900mm handrail height conforming to building regulations, apply as described in the instructions. The configuration shown in (Fig.30) shows a mitred HT, this can easily be achieved by marking a 45° line across the rail and then cutting the angle, Mark a line at 45° across the rail in the opposite direction to the first rail and cut, to create a right angle, Join the two rails together and fix using dowels and glue.

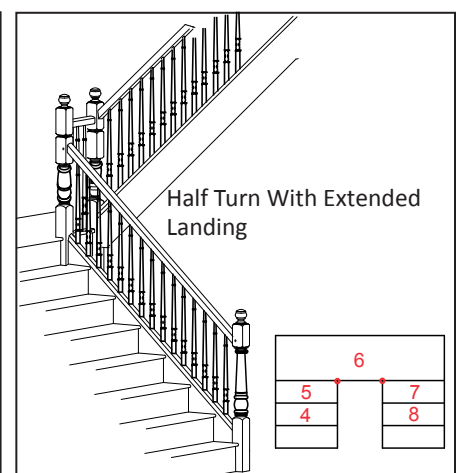
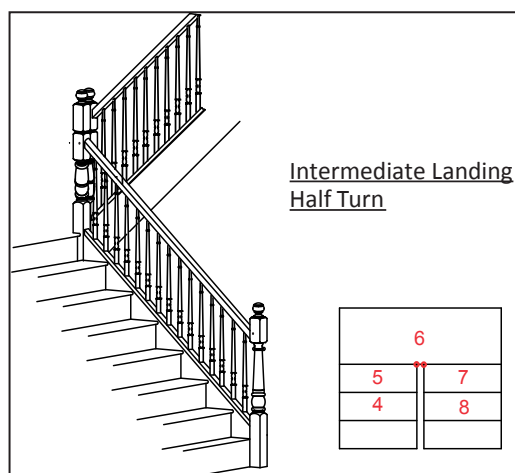
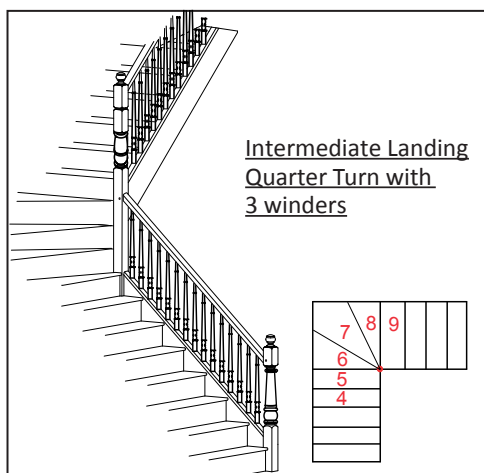


Note: As part of the building regulations requirements, no openings in any balustrade should allow the passage of a 100mm sphere. When joining the two mitred rails make sure the gap between each baluster does not exceed 99mm (Fig.31).

When the landing balustrade ends at a wall (Fig.32), use a half newel turn and base, fixing the twist bracket as described in the raking instructions (page 3) making sure the newel base height is the same as the top newel base.



EXAMPLES OF OTHER CONFIGURATIONS



Finishing Advice

Rails - Varnish is available in clear matt, satin and gloss finishes and also tinted/coloured, varnish gives a tough, durable and hardwearing finish which requires minimal maintenance and is heat and water resistant. Coloured varnishes have the advantage of being suitable for application on previously varnished surfaces. when applying coloured varnishes you should note that as they do not penetrate like a true wood stain/dye it is a good idea to finish with a couple of coats of clear varnish which will prevent colour loss due to wear and tear.

As well as polyurethane varnishes there are a number of acrylic/water-based varnishes which are solvent free, have a low odour and are extremely quick drying. They also have the advantage of easy brush maintenance and require only a quick rinse with water after use.

Balusters (primed only) - There is no need to apply a coat of primer as the Richard Burbidge balusters are primed already. Before you fit the primed balusters they will need painting to your chosen colour.

Method - Using a good quality paint brush, Paint the baluster using a paint formulated for use on timber. Apply the paint with thin, even strokes. Use enough paint to avoid brush strokes but not so much that the paint puddles on the baluster.

Use an artist's brush to reach into the small corners and crevices. Allow the first coat to dry, before applying a second coat of paint.

Multiple thin coats will be more durable than one thick coat. Allow each coat to dry according to the manufacturer's directions before applying the next.

Once the balusters are dry, fit them as described in these instructions.



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