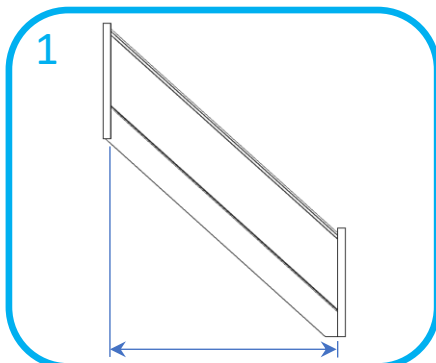
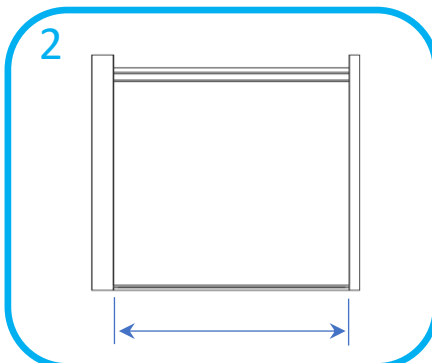


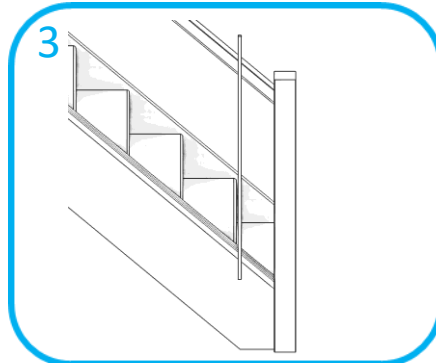
FITTING INSTRUCTIONS – Installing Metal Stair Spindles



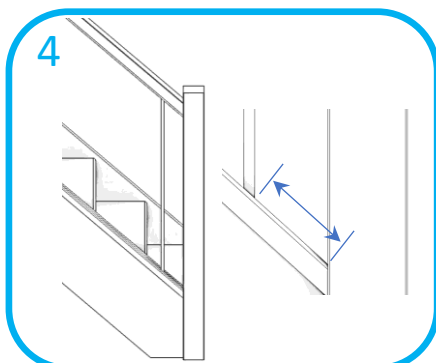
To work out how many spindles are needed for the stairs, measure the horizontal distance between the newel posts. For 13mm metal spindles, divide this by 105 and round up to next whole number for number of spindles. To get spindle spacing, multiply number of spindles by 13mm. Subtract this number from horizontal measurement then divide by No of spindles plus 1.



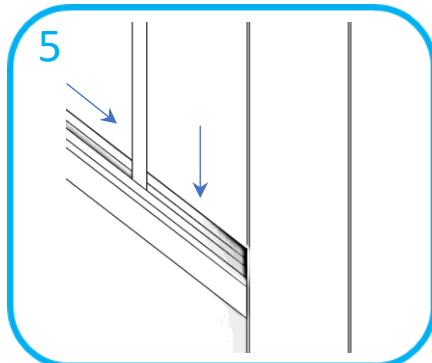
To work out how many spindles are needed for the landing, measure distance between newel post then follow same procedure used on the stairs



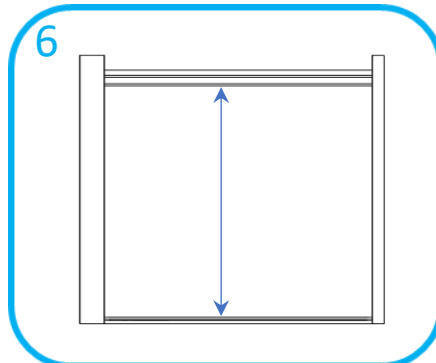
To cut the stair spindles to length, offer spindle against top and bottom rails. Use a spirit level to ensure vertical. Strike a line along top of base rail onto the spindle. Repeat for underside of handrail. Measure depth of rail grooves and add this to the previous marks. Cut spindle to length and offer into grooves. Check vertical then check fit all the way up the stairs. If ok, this can then be used as a template to cut remaining spindles



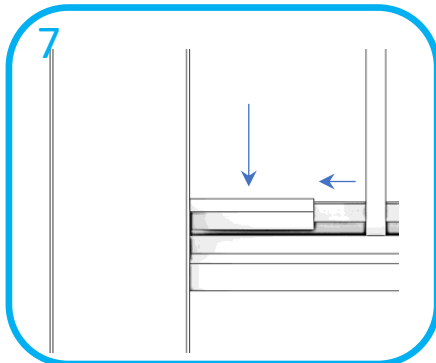
Offer bottom spindle into position and set it to the gap size established in Fig 1. Cutting a block of wood to the gap size is a good idea so it can be used to set the spindles. Once spindle is correctly spaced, measure diagonal distance from inside face of newel to inside face of spindle to confirm fillet length. Cut fillets to same angle as spindles



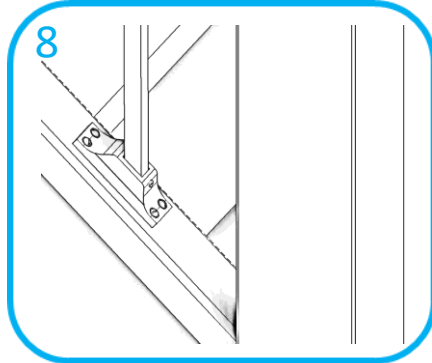
Apply pva adhesive to fillets and offer into rail grooves. Secure with 25mm panel pins for the baserail and 50mm for the handrail fillets. To secure spindle apply gap filling adhesive or clear silicon into the rail grooves and offer metal spindle into top and bottom rail grooves and up against fillet ends. Repeat until all stair spindles and fillets have been fitted. Wipe any excess adhesive/clear silicon away with damp cloth



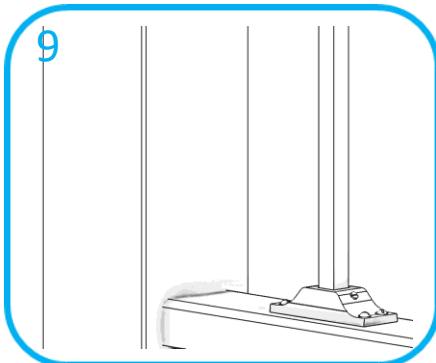
To cut landing spindles to length, measure distance between top of base rail and bottom of handrail. Measure depth of both rail grooves and add to length. Cut a spindle to length and check height fit in grooves along entire length of landing run. If OK, the spindle can then be used as a template to mark and cut remaining spindles



The fillets can be cut to the gap size which was established in Fig 2. Apply pva adhesive to underside face of the fillets and offer into rail grooves. Secure with 25mm panel pins for the base rail and 50mm panel pins for the handrail fillets. Apply a proprietary gap filling adhesive or clear silicon into the rail grooves/spindle ends and offer into rail grooves and up against fillet ends. Repeat until all landing spindles and fillets have been fitted



If using spindle brackets with un grooved rails on stairs, follow steps above to confirm spindle qty's and spacings. Follow step 3 above to cut spindle to length – no need to measure groove depths. Offer rake brackets over spindle ends and position spindle to correct spacing using a timber block. With brackets central to rail, drill pilot holes through bracket holes and fix using screws supplied. Tighten slotted grub screw with to secure spindle. Repeat up the stairs



If using brackets to fix spindles on un grooved rails on landing, follow steps above to confirm spindle qty's and spacings. Follow step 6 above to cut spindle to length – no need to measure depth grooves. Offer landing brackets over spindle ends and position spindle to correct spacing using a timber block. With bracket central to rail face, drill pilot holes through bracket holes and fix using screws supplied. Tighten slotted grub screw to secure spindle. Repeat along landing