

stair **BUILD**

Do-it-yourself
installation guide

Prepare your tools
Ready to install

Moulding to your lifestyle

ALEXANDRIA
Moulding



Your StairBuild

Do-it-yourself Installation Guide

Your stairway is both a functional and focal point in your home, so keeping it in good shape and looking great is important. This user-friendly guide is full of tips and tricks to make the renovation or repair safe and easy.

For a full staircase replacement or for more complex staircase configurations, we recommend that you contact an industry professional. In all cases, please check your local building code prior to begin your project.



Staircase Anatomy

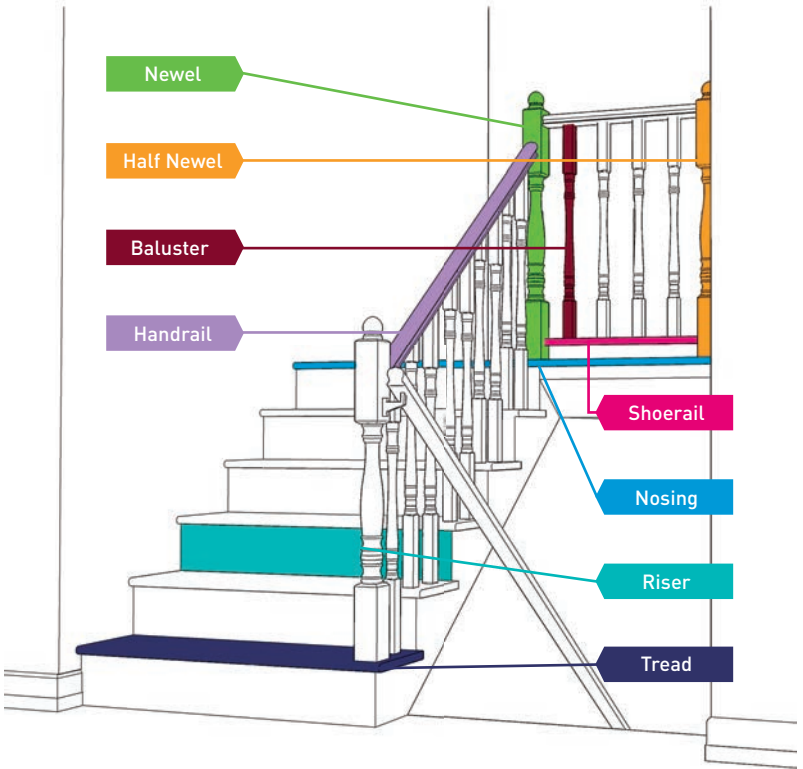
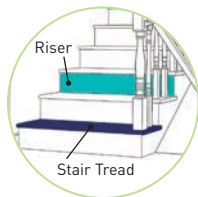


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Stair Tread and Riser Installation

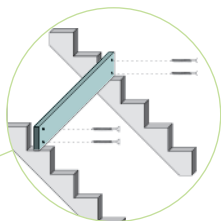
There are two options for replacing or repairing your staircase. The Stair tread and riser installation will walk you through replacing your entire staircase with all new components. If you are just wanting to update your staircase by repairing your treads and riser then follow the installation of our false tread and riser installations.



Starting with Riser

Step 1 – Cut riser to the proper width and height to fit onto the stringer.

Step 2 – Spread adhesive on both end of riser then add finishing nails $\frac{1}{2}$ " up from bottom and $\frac{1}{4}$ " down from top to secure the riser.



Step 3 – Repeat steps 1 and 2 for all the remaining risers in the stair case.

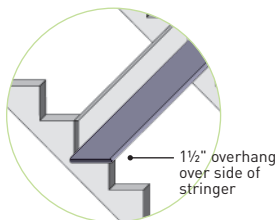
Step 4 – Determine which, if any, of the ends of the treads will be overhanging the stringers.

Stair Tread

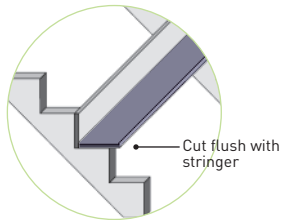
Step 1 – Determine the necessary width and length of the stair tread by using the following illustrations. Closed ended stair treads are cut flush with the stringer.

Step 2 – Cut stair tread to proper dimensions.

Open end Stair tread installation
(Bullnose required)

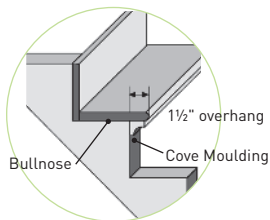


Closed end Stair tread installation
(NO Bullnose required)



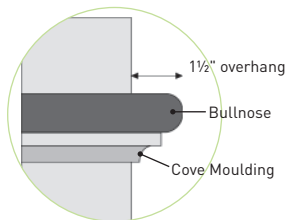
Step 3 – If installing an open end stair tread, attach a bullnose to each end of the stair tread that overhangs the stringer.

Open end Stair tread installation



Side View

Open end Stair tread installation



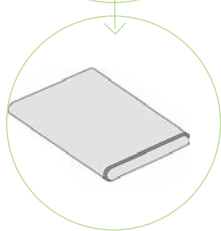
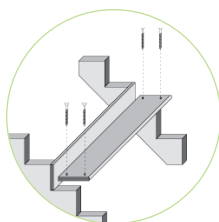
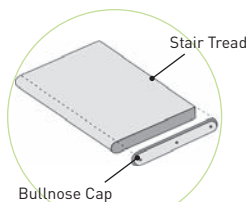
Front View

Stair Tread (continued)

Step 4 – Attach stair tread using construction adhesive and 4 2-1/2" wood screws countersunk into the surface.

Step 5 – Apply adhesive to suitable size plugs, insert into the screw holes and sand smooth when dry.

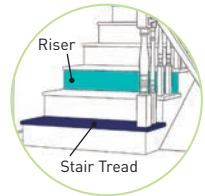
Step 6 – Repeat process for all further stair treads requiring installation.



Note – In more advanced installations, the stair treads can be secured from underneath eliminating the need for plugs.

False Stair Tread and Riser Installation

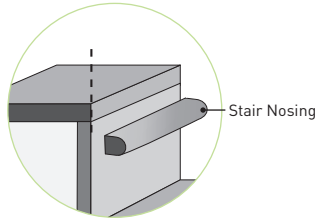
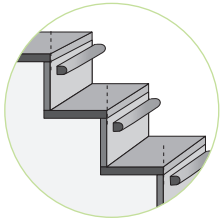
False stair treads and risers are a perfect do-it-yourself product that is quick and easy to install that apply over your existing treads and risers.



Applying False Stair Treads and risers over carpeted staircase.

Step 1 – Prepare staircase by removing existing carpet (if applicable), all nails and staples.

Step 2 – Cut off the front of each stair nosing ensuring tread is flush to the face of the riser. A circular saw can be used for the majority of the cut and a handsaw for the remaining.



Important – Verify your tread cut is flush with existing riser.

False Stair Tread and Riser (continued)

Step 3 – Option 1: Installing a new riser. Measure and cut riser. Use a bevel square and transfer measurement to your riser and cut accordingly. Apply construction adhesive to back of riser and fasten with finishing nails.

Step 3 – Option 2: Keeping existing riser. An oak veneer can be applied over existing riser by applying construction adhesive to the back of the veneer or existing riser can be painted to match trim colour.

Step 4 – Measure and cut tread. Use a bevel square and transfer measurement to your tread and cut accordingly.

Tip: Use a spare piece of wood when hammering tread into place to prevent damage.

Step 5 – Apply construction adhesive, predrill holes, fasten with nails or screws and make sure tread is level.

Step 6 – Install remaining risers and treads and finish to your taste.

False Tread and Riser
Open staircase



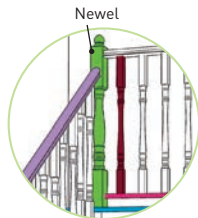
False Tread and Riser
Closed staircase



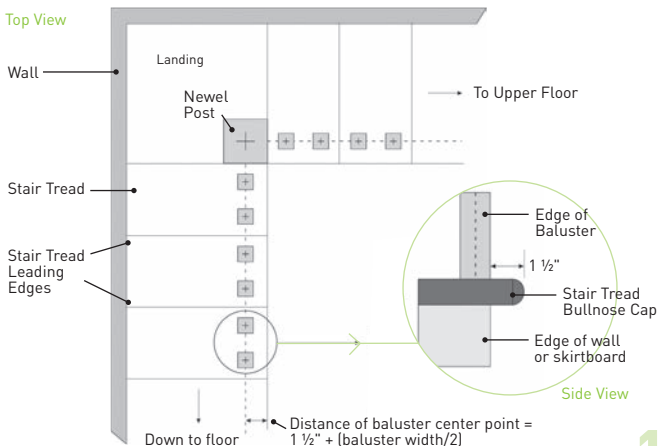
Newel Post Installation

Step 1 – Construct a baluster line.

Balusters and newel posts are all centered along the same baluster line. This is calculated by determining the exact location of all the balusters on the stair tread. The edge of each baluster should be be 1.5" from the front edge of the stair tread. The center point of the balusters can be determined by calculating the width of the baluster, dividing by 2, and adding 1.5. For example the center point of a 1.5" baluster would be 2.25" from the edge of the stair tread ($1.5" \text{ baluster} / 2 = .75" + 1.5" \text{ edge room} = 2.25"$). The center points of the newel posts lie along the same baluster line.



Top View



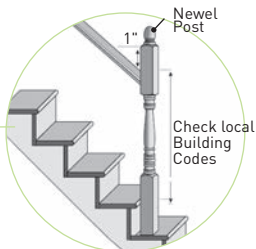
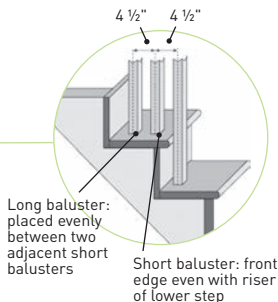
Side View

Newel Post (continued)

Step 2 – Determine the length between the starting newel Post and the landing newel Posts. The height of the handrail measured from the leading edge of every tread must meet the local building code. Account for 1" above the handrail on the top square block of the newel Post.

Step 3 – Cut newel posts to appropriate size.

Step 4 – Install the starting newel post, landing newel post, and/or half-newel posts with **Newel Post Mounting Kit A** (p. 28) or **Newel Post Mounting Plate E** (p. 28)



Note –

- 1 A modern staircase installation does not require newel posts.
- 2 For hallway installation, an extra newel post is recommended to be installed for long sections.

Handrail Installation

Stairway

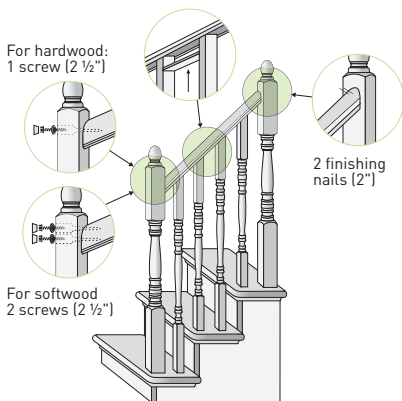
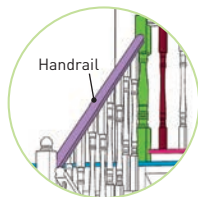
Step 1 – Lay a section of the handrail across the tread nosing and secure with a clamp.

Step 2 – Mark the handrail cuts where the newel and handrail intersect.

Step 3 – Make the appropriate cut ensuring the handrail is at the correct angle and length.

Step 4 – Dry fit the handrail to ensure a proper fit.

Step 5 – Install handrail at the appropriate height with **Handrail Bolt Connector D** (p. 28) on each side.



Handrail (continued)

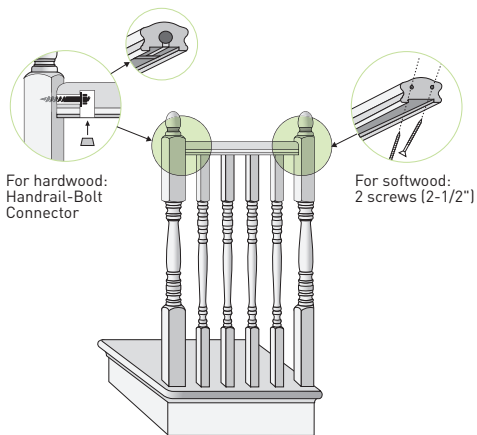
Hallway

Add a raised (off the floor) shoerail on the bottom of the hallway staircase. Shoerails extend from Newel Post to Newel Post.

Step 1 – Measure distance between newel posts and cut handrail to the proper length.

Step 2 – Dry fit the handrail to ensure a proper fit.

Step 3 – Install handrail at the appropriate height with a **Handrail-Bolt Connector D** (p.28) on each side.



Tips

To make a proper angled cut

- 1 Cut handrail to about ¼" oversize to make sure angles are correct.
- 2 Make a final precision cut to finished size.

It is better to cut the handrail initially too long than too short.

Canada building Code requirements

Stairway Handrail

Handrails cannot exceed 38" from front edge of each tread to top of handrail.

Hallway Handrail

Handrail required on landings shall not exceed 42" in height.

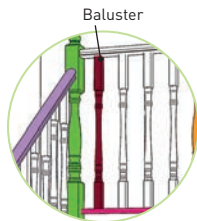
Baluster Installation

Balusters can be attached to floor using any of 3 methods:

1- Dowel pin: A $\frac{3}{4}$ " x 1" deep hole is drilled in each baluster location and baluster is inserted into hole.

2- Shoerail: The dowel pin is cut off.

3- Baluster Mounting Kit B: The dowel pin is cut off.



Note – The maximum space between the center of balusters cannot exceed 4".

Square Top Baluster Installation

Stairway

Step 1 – Balusters are installed so the distance between each does not exceed 4" center to center. There are typically two balusters per tread. A long baluster is used for the back of each tread and a short baluster is used for the front of each tread.

Step 2 – Mark the location of the centre of each baluster on the stair treads. Refer to Newel Post Installation section for details on constructing a baluster line. Found on page 11.

Step 3 – If using dowel pin to secure baluster to the tread, drill a ¾" by 1" deep hole for each baluster center.

Step 4 – Cut each baluster top to proper height and angle. Use the same angle degree used to cut your handrail.

Note – Do not forget to add the depth of the groove on the handrail.

Step 5 – Install the balusters beginning at the bottom of the stairway. Insert each baluster into the dowel hole or shoerail and the top into the plow of the handrail. Use a level to ensure they are plum. For flat bottom baluster installation, use **Baluster Mounting Kit B** (p. 28).

Step 6 – Pre-drill and attach baluster into the plow under the handrail with appropriate finishing nails.

Step 7 – Cut the handrail fillets to fit in between the tops of each baluster.

Step 8 – Secure fillets using construction adhesive and finishing nails.

Square Top Baluster (continued)

Hallway

Step 1 – The maximum spacing between centers of balusters is 4". In order for the balusters to be evenly spaced, the following formulas are used to determine the number of balusters required and the distance between each baluster.

D = Distance between newel posts or walls

of balusters = $(D/4)$ rounded up

Distance between balusters = $D/\#$ of balusters

Example

If $D = 50"$

of balusters = $(50/4) = 12.5 = 13$

Distance between balusters = $50"/13 = 3.846"$

Step 2 – Mark centre point of each baluster using the calculated "Distance between balusters".

Step 3 – If using dowel pin to secure baluster to floor, drill a $\frac{3}{4}"$ by 1" deep hole for each baluster centre. If using a shoerail to secure balusters to floor, lay shoerail on floor between 2 newel posts and secure by applying adhesive to the underside of shoerail and secure with screws every 4'. If shoerail is raised 1" off your floor, secure with adhesive and 2 nails on either end. When using a raised shoerail for a hallway, a newel post must be secured every 8'. Check with your local building code when using a raised shoerail.

Step 4 – Cut the top of each baluster to proper height.

Note – Do not forget to add the depth of the groove on the handrail.

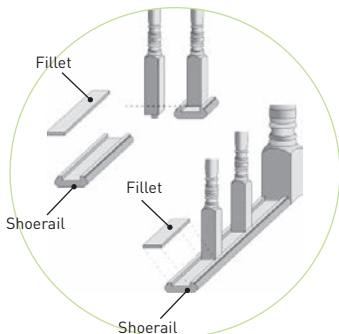
Step 5 – Insert each baluster into the dowel hole or shoerail and the top into the plow of the handrail. Use a level to ensure they are plum.

Step 6 – Pre-drill and attach baluster into the plow under the handrail with appropriate finishing nails.

Step 7 – Cut the handrail fillets to fit in between the tops of each baluster. If using a shoerail cut the shoerail fillets to fit between the bottom of each baluster.

Step 8 – Secure balusters and fillets using construction adhesive and finishing nails.

Shoerail and fillet



Wrought Iron Balusters Installation

Step 1 – Balusters are installed so the distance between each does not exceed 4". There are typically two balusters per tread. A long baluster is used for the back of each tread and a short baluster is used for the front of each tread.

Step 2 – Mark the location of the centre of each baluster on the stair treads. Refer to Newel Post Installation section for details on constructing a baluster line (p. 11-12).

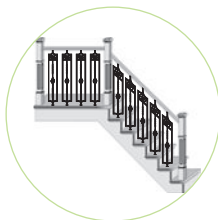
Step 3 – Beginning at the bottom of the staircase, install the balusters by securing them to the handrail and treads with the screws provided in the wrought iron package, using a level to ensure they are plum.

Note – Wrought iron balusters are sold in styles for either Stairway or Hallway installations. Stairway balusters have an angled top and hallway balusters have a flat top for ease of installation.

Stairway and Hallway
Wrought Iron Baluster Set



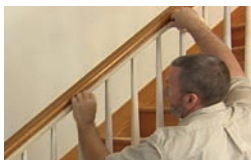
Stairway and Hallway
Panel Baluster Set



Adjustable Wrought Iron Balusters Installation

Adjustable wrought iron balusters are the perfect do-it yourself install. Easy transforms your staircase by just replacing the balusters.

Step 1 – Apply masking tape to side of handrail and treads to help mark existing balusters center.



Step 2 – Use a level to mark existing balusters center at the top and the bottom.



Step 3 – To keep the handrail supported cut out and remove only 4 or 5 balusters at one time then replace them with the adjustable wrought iron balusters.



Step 4 – Once existing balusters are removed mark the centers on masking tape.



Adjustable Wrought Iron Balusters (continued)

Step 5 – With the help of your Allen key, loosen the base set screws and remove the base from the baluster. Apply adhesive underneath the base before aligning with the existing hole on the tread. Run screw through the baluster base into tread. Once the baluster base is set, place the baluster shaft into base.



Step 6 – Apply adhesive on the flat surface of the baluster swivel top. Loosen the telescopic shaft set screw with Allen key and extend baluster to reach underside of the handrail. Adjust swivel top to handrail angle and secure into position using two screws.



Step 7 – Once the baluster is installed, tighten and lock the baluster base, telescopic shaft and swivel top with the set screw. It is suggested to apply thread locking liquid on the set screws. Do not apply thread lock liquid on the swivel top until it is securely screwed into the handrail.



NEW

Adjustable Wrought Iron Balusters

EASY INSTALL! ONE BALUSTER FITS ALL

SWIVEL TOP

Adjusts to any
stair angle –
90 degrees both
directions



TELESCOPIC SHAFT

Extends from
30-1/4" to 38"
in height



PERFECT DO-IT-YOURSELF INSTALL!

- Easy transition from traditional wood stair case to wrought iron by replacing the balusters
- Install with 3 screws
- Already painted – No finish required
- 4 designs to choose from
- Available in 2 different finishes

Ole' Iron Slides

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Modern Balusters Installation

The modern railing system requires 2 short and one long baluster be installed on the first tread.

Stairway

Step 1 – Mark the location of the centre of the first short baluster $\frac{1}{2}$ " from the front of the riser and $\frac{1}{2}$ " from the edge of the false stringer.

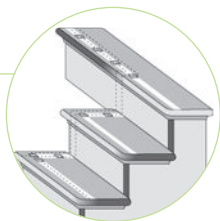
Step 2 – Mark the location of the centre of the second short baluster 2-1/8" to the side of the first center point.

Step 3 – Using the same measurements as in step 1, mark the location of the center point of the short balusters on each tread for all remaining treads.

Step 4 – To determine the location of the center point of the long baluster, calculate the horizontal distance between the center points of the 2 short balusters (as determined in steps 1 & 3), and divide by 2. Mark the location of the center point of the long balusters on each tread for all remaining treads.

Step 5 – If using dowel pin to secure baluster to the tread, drill a $\frac{3}{4}$ " by 1" deep hole for each baluster centre.

Step 6 – Mark the location of the center point of the first baluster on the landing.



Note – Landing or Hallway balusters are all long, ensuring it is ½" from the front of the top riser and aligns with the midpoint between the 2 short balusters on the first tread (calculated in steps 1 and 2).

Step 7 – Dry fit the first 2 short balusters on the first tread and the one long baluster on the landing and ensure they are plum.

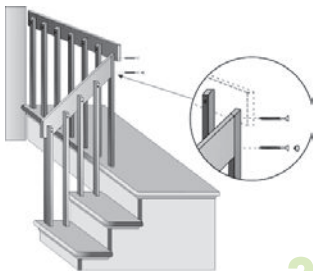
Step 8 – Lay handrail on the treads between 2 short balusters and against the top long baluster. Cut the handrail at the appropriate angle and length.

Step 9 – Permanently affix all of the stairway balusters, ensuring they are plum.

Step 10 – Using glue and screws, affix the handrail to the balusters ensuring that the top of the handrail is a minimum of 2" above the top of the balusters.

Step 11 – Butt the handrail to the face of the long baluster on the landing, ensuring that the top of the handrail is flush with the bevel of the baluster.

Step 12 – Screw the handrail to the baluster as shown.



Modern Baluster (continued)

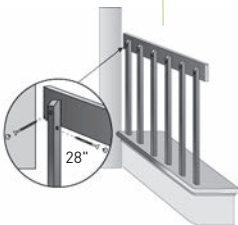
Hallway

Step 1 – Mark centre point of each baluster using the calculated “Distance between balusters”.

Step 2 – If using dowel pin to secure baluster to floor, drill a $\frac{3}{4}$ " by 1" deep hole for each baluster centre.

Step 3 – Measure and cut the handrail to the appropriate length.

Step 4 – The last baluster must be secured to the wall using glue and a screw by drilling a hole through the baluster into the wall at a height of between 28-29" from the floor.



Step 5 – Install the remainder of the balusters with glue and ensure they are plumb.

Step 6 – Using glue and screws, secure the handrail to the balusters ensuring that the top of the handrail is a minimum of 2" above the top of the balusters.

Tools Required

- Hand Drill
- Hammer
- Putty Stick - to match colour of stain (If applicable)
- Miter Box or Mitre Saw
- Ratchet Wrench
- Level
- Measuring Tape
- Sandpaper
- Handsaw
- Carpenter Glue
- Construction Adhesive
- Plumb Bob

Finishing Tips

- Dry fit all components before adhering.
- Pay special attention to measuring and cutting components to proper size.
- Countersink finishing nails and putty nail head holes.
- Sand the surface before finishing.
- Allow adhesive to cure for 24 hrs.
- Use your favorite stain or varnish to protect and embellish your staircase.

Hardware and Accessories

Hardware

A Newel Post Mounting Kit

Used to safely and firmly connect newel posts to your floor surfaces.



B Baluster Mounting Kit

Connects balusters to floors and stairs.



C Handrail & Newel Post Connection Kit

Connects handrail to newel post, newel post to stair riser.



D Handrail-Bolt Connector

Connects handrail to newel post, handrail to wall, handrail to handrail.



E Newel Post Mounting Plate

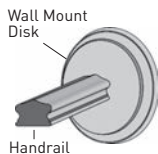
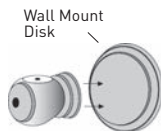
Securely fastens newel post to floor.



Accessories

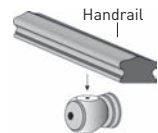
Wall Mount Disk

Decorative addition for handrail ending at a wall as well for the handrail bracket.



Handrail Bracket

Used when installing a handrail to a wall.



Bullnose Cap

Used to finish off an end of a stair tread that is visible.

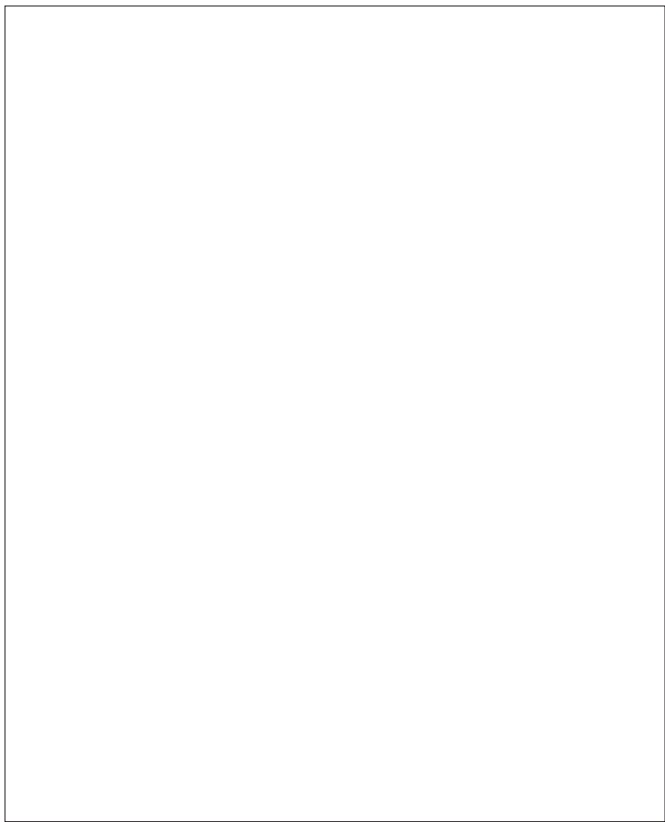


Tread Bracket

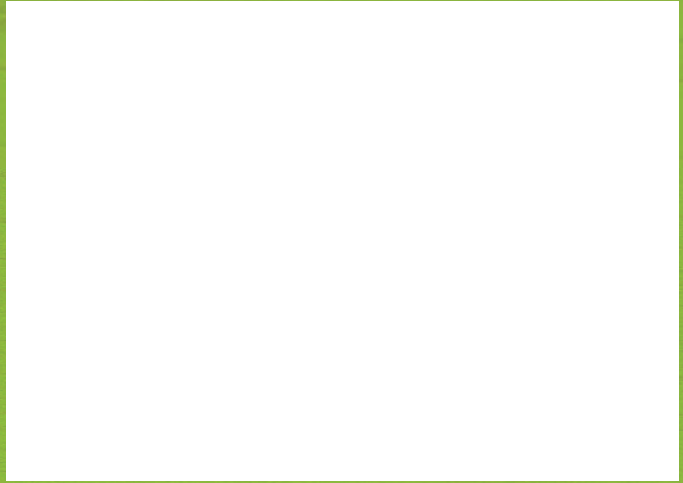
Decorative addition to add embellishment to your stair stringer.



Sketch



Notes



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