NEW ENGLAND LUMBER SPECIALTIES

RAILING INSTALLATION INSTRUCTIONS

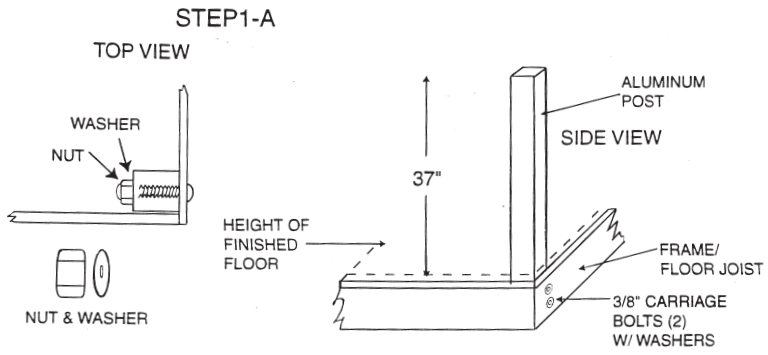
SPECIAL ITEMS REQUIRED: One can spray foam sealant, PL2000 Urethane Adhesive, PVC Cement, Caulking Gun, 1 ⅝" Bi Metal Hole Saw, 550 RPM Drill, 1/4" Drill Bit, #2 Phillips Head Screwdriver, 8 Penny Cut Nails, Level

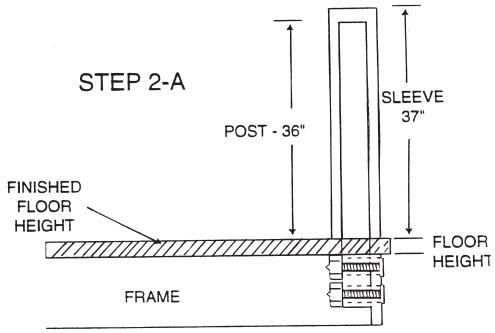
STRAIGHT RAILING INSTALLATION WITH ALUMINUM POST

Step 1 A: Slide PVC sleeve off aluminum post and set aside. Drill and bolt aluminum post as shown in Figure I using two 3/8" carriage bolts. For surface mount where there is no access to the underside of deck, lagbolts may be used. Do not exceed 8' span between newel posts.

NOTE: Aluminum post must extend 36" above finished floor. Once all posts are set, cut sleeves 37" long to allow 1" above post to accept post cap. Slide sleeves over posts until resting on decking.

Step 2 A: At this time remove pipe inserts from top and bottom rails and set them aside. Measure and cut top and bottom rails to fit between all posts.

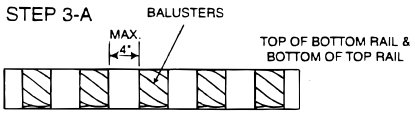


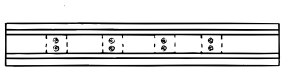


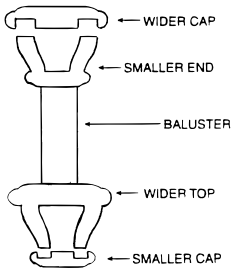
Step 3 A: Lay out top and bottom rails for placement of balusters. Do not exceed 4" spacing between any part of any baluster. Remove unglued parts of top and bottom rail and set aside.

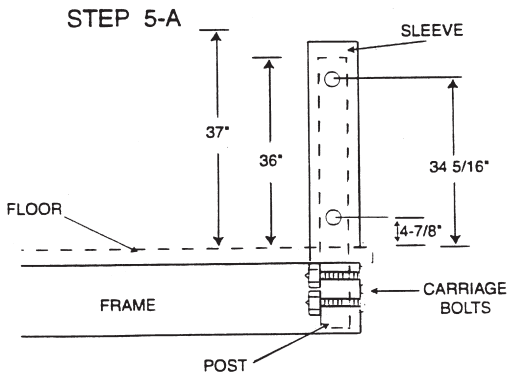
CODE: A 4" sphere must not be able to pass through space between balusters.

Step 4 A: Position balusters on top and bottom rails and install two 2 1/2" screws through rails into each end of each baluster. Once the rails are assembled you are ready to prepare the post and cut the pipe inserts.





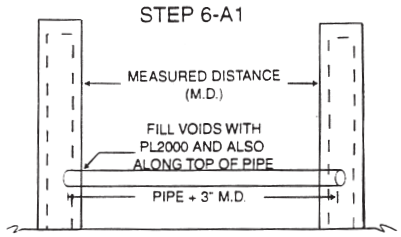


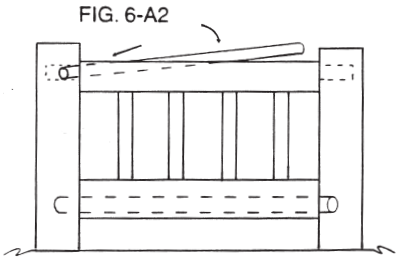


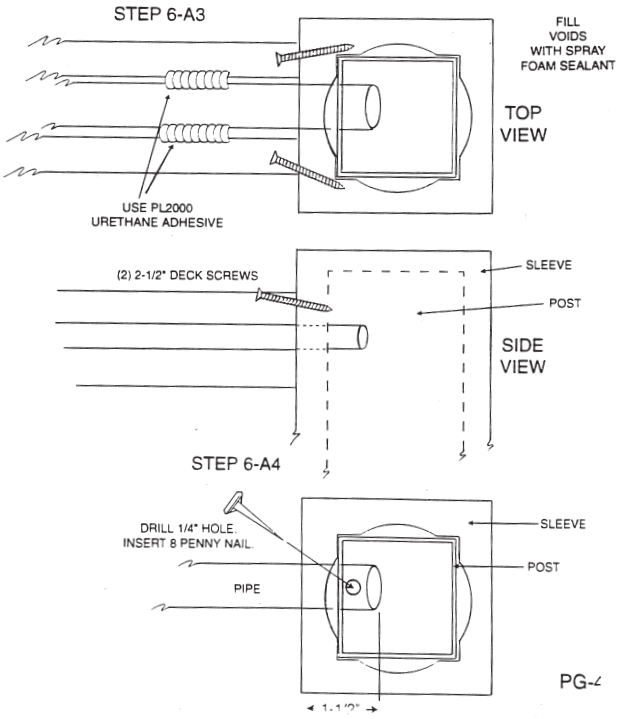
Step 5 A: On post where rails are to be fastened, measure 4 7/8" and 34 5/16" from finished floor level and mark on center of post. Using a 1 5/8" Hole Saw, drill through PVC sleeve and aluminum post.

NOTE: The most common mistake made is using too high a speed drill. Drill with a slow speed drill to prevent overheating of Hole Saw. Once all holes are drilled, you are ready to cut and insert pipe inserts.

Step 6 A: Measure distance between finished post and add 3" to that Measurement. Pipe insert , must be cut 3" longer than rails to allow insertion into Posts. Cut pipe inserts. Slide pipe insert completely into lower rail hole and shift back into opposite rail hole 1 1/2". Position all lower rails and check for fit before proceeding. After positioning lower pipes, fill voids at ends of pipe with PL2000 and also apply a bead along top of pipe one section at a time. Take assembled rail section and set bottom rail between posts and lower over lower pipe insert. Rotate rail into position and slide upper pipe insert completely into post and shift back into opposite post 1 1/2". Be sure pipe insert passes completely into both aluminum posts. Screw top rail in place with two 2 1/2" Deck Screws on each end as shown in Step 6 A3. Drill 1/4" hole through the top Pipe Insert (both ends) against inside wall of aluminum post. Insert one 8 Penny Cut Nail into hole. This will prevent the upper pipe from pulling out of the post. See Step 6 A4.







Step 7 A: Before installing top of rail, apply PL2000 construction adhesive between pipe and rail interior sides every. 12". Install remaining pieces on top and bottom rail using a few dabs of PVC Cement. Once the railing assemblies are completed between posts. fill all voids inside top of newel post with polyurethane Spray Foam Sealant. This will lock and prevent all movement of rail system.

Step 8: Install post caps using PVC cement or trim nails.

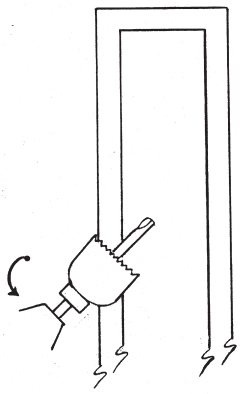
STAIR RAILING INSTALLATION

NOTE: Railings are assembled in the same manner as straight railings. However, balusters must be cut to proper stair pitch and Victorian style balusters must be cut right and left hand. You must recalculate the post height and location of 1 5/8" holes to receive pipe rail inserts.

Step 1 B: Set stair newel post first. To be safe, you should install post as tall as possible until rail height is determined.

Step 2 B: Remove pipe inserts from top and bottom rail and set them aside. Cut top and bottom rails to proper pitch to fit between posts.

Step 3 B: Lay out top and bottom rails for placement of balusters.



TILT DRILL TO APPROXIMATE
PITCH OF RAIL AND COMPLETE HOLE

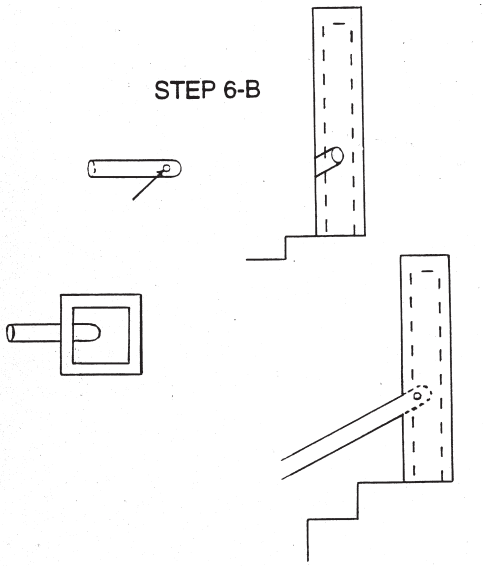
NOTE: Do not exceed 4" spacing between any part of any baluster.
Remove unglued parts of top and bottom rail and set aside.
Step 4 B: Cut appropriate amount of balusters to proper pitch. Position balusters on top and bottom rail and install two 2 1/2" screws through rails into each end of each baluster. Once the stair rails are assembled, use these rails to calculate location of 1 5/8" holes in posts to receive rail pipe inserts.

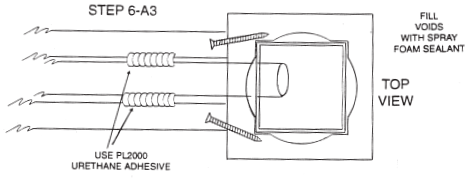
Step 5 B: Drill 1 5/8" holes through PVC sleeve and aluminum post at elevations determined in Step 4.

NOTE: 1 5/8" hole must be drilled at same pitch as stairs.

Step 6 B: Measure distance between finished post and add 3" to that measurement. Pipe inserts must be cut 3" longer than rails to allow insertion into posts. Cut pipe inserts. Slide lower pipe insert completely into lower rail hole and shift back into opposite rail hole. To hold the lower pipe insert in place, drill pilot hole and install 2 1/2" screws through post as shown. See Step 6 B.

Set assembled bottom rail over lower pipe insert and adjust into position. Install two 2 1/2" screws at each end as shown in step 6 A3. Slide upper pipe insert completely into post and shift back into opposite post 1 1/2". Be sure pipe insert passes completely into both aluminum posts. Install 2 1/2" screws through top pipe insert as shown in Step 6 B. Step 7 B: Install top and bottom rail caps using a few dabs of PVC cement. Once these rail assemblies are complete between posts, fill all voids inside top of post with spray polyurethane foam sealant. This will lock and prevent all movement of rail system. Ste 8 B: Install post caps using PVC cement or trim nails.





Finishing, Cleaning, and Painting Recommendations

Prior to cleaning and painting, you may want to fill any holes or blemishes that have been created during installation. Nels Tek™ finishes much like wood, and can be sanded to remove any surface blemishes; gaps and holes can be filled with the same fillers you are using now such as polyurethane and acrylic based filler/caulks.

Nels Tek™ has a wide range of applications where a painted surface may be desired. To insure a lasting finish, it is necessary to properly clean the surface (the same as you would with other material to be painted) to obtain the best paint adhesion. For best results the surface should not only be cleaned, but free of grease and oils. Cleaning can be done with a cloth and a mixtures of warm water and mild detergent. Mild household spray cleaner/degreasers are also suitable.

Nels Tek™ provides an excellent surface for paint adhesion. Primers are not necessary for good adhesion, but most paint manufacturers will not warranty their paint without the application of a primer. Consult your paint supplier for specific paint warranty requirements, and if using a primer, color should match finish coat. Excellent application results will be achieved using a brush. It is important to use a suitable quality paint while exercising care in the selection of paints to insure good adhesion and aesthetically pleasing results. Nels Tek™ has shown outstanding results with a variety of acrylic paints, but the best results will be obtained using quality 100% acrylic latex paints. White or light pastel colors should be used; dark colors may allow the product to overheat due to energy absorption from the sun. Always follow the paint manufacturers and suppliers recommendations for long lasting, low maintenance results.

NOTE: Good paint adhesion and weatherability are effected my many factors. Due to the variables from different paint manufacturers, and in the application, of paints, NELS cannot be liable for applied finishes. Latex enamel paints should be avoided. 100% acrylic latex paints will provide excellent results.