OTTAWA DECK & RAIL

WINNIPEG DECK & RAIL

User Installation Guide

Glass Rails

36” Height

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Preface

The objective of this report is to simplify the installation process for new and inexperienced aluminum railing installers. The step wise procedure can be applied to all sorts of home installation projects which include stair rail and top handrail. Please refer to the Appendix section to learn about materials and equipment used throughout the installation process.

The step wise procedure may vary depending on each project and may sometimes be modified based on the needs of the customer. These instructions are meant to be guidelines, as proper judgement should always be used. Safety gloves and earmuffs should be worn when using the mitre saw.

Installation of Flat Handrails

This section presents the stepwise procedure to install 36-inch glass handrails, which is shown in Figure 1.

Figure 1 Flat Handrail with Glass

The following construction steps are presented in order, and all tool and material descriptions are provided in Appendix A and Appendix B.

1. Use the following materials to construct a 4-foot section of flat handrail:
    a. 2 stair posts
    b. A section of top and bottom rail
    c. Rubber gaskets
    d. Glass blocks
2. Begin by cutting a stair post to 36.5 inches. Fasten the brackets to the side of stair posts using the 12x3/4 screws. The top rail brackets should be at the very top of the posts, and the bottom bracket should be attached such that the bottom rail will be sitting 4 inches from the ground.
3. Place the stair post on the edge of the deck or patio, a safe distance such that there is enough support underneath for a lag bolt to go through. Use the square the ensure that the post is at a 90-degree angle with the edge of the deck. Mark the holes using a pencil.

4. Place the level on the edge of the end post to see if the post is perfectly vertical. If not, insert composite shims underneath the post to make it level.
5. Once the shims are in place, remove the post from its location.
6. Use the impact driver with a 3/16 drill bit or the power drill to drill the holes if it is a wood deck. If it is concrete patio, use the concrete drill with a 5/16 drill bit and insert concrete plugs after the hole is drilled
7. Return the post to its location and use the 3x14 lags screws to fasten the post into place. (Use 14x2 for concrete). Screw slowly and under control, to avoid scratching the bolts or the post.
8. Next, cut the top and bottom rail using the mitre saw to exactly 4 feet.
9. Remove the plastic liner inside the aluminum post (Unscrew the smaller screw holding the plastic in place if necessary).
10. Slide the top rail into the brackets at the top of the end post. Take the other end post and slide the top rail in at the other side. Repeat for the bottom rail. Careful, the structure may be slightly unstable, make sure to hold the end post in place. Use the measuring tape to ensure that this new end post is 4 feet from the other end post.
11. Use the impact driver to fasten a 12x3/4 screw to connect the bracket to the top rail, as shown in Figure 2.

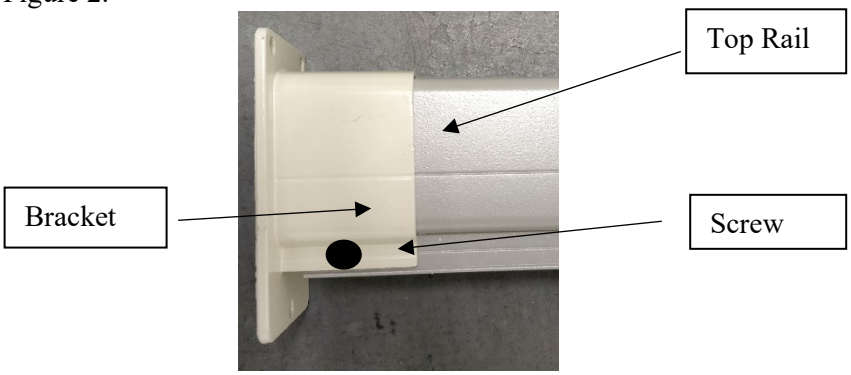


Figure 2 Screw location for top rail and end post

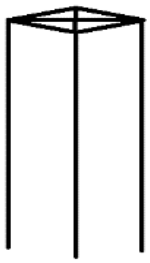
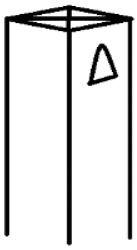
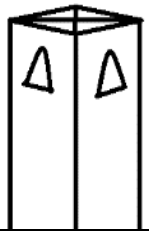
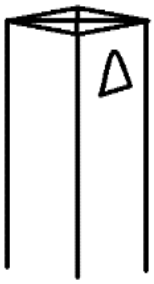
12. Repeat steps 2,3,4,6,7, then repeat step 11, ensuring that the post is snug when attaching the screw. The project should now look like Figure 3. The bottom rail may still be a little loose, however this will be resolved later.

Figure 3 End posts with top and bottom rail

13. Cut 2 sections of rubber gasket and place them in the top and bottom rail. Make sure they are cut precisely to ensure that the bottom rail will not slide. Place glass blocks on the inside of the gasket for the bottom rail.
14. Glass measurements should then be taken as follows:
    a. Measure from the inside of one end post to the other at both the top and bottom (check to see if they are the same, if not, one of the posts is not level). Subtract 3 inches.
    b. For standard 36” rails, the height of the glass will be 29 ¼”
15. Gently insert the glass by pushing the glass up in to the top rail and pushing into the bottom rail.

- For longer sections of rail, use corner posts and line posts to extend the section. For corner posts, cut the rail to be 45 degrees such that both ends of the rail may fit in the post.

Appendix A Building Materials

Material	Photo	Description
Stair post		Used for stairs, has no holes.
End Post		Used to end a section of railing, has one hole
Corner post		Used to continue railing around a corner, 2 holes on perpendicular edges
Line post		Used to continue railing, 2 holes on parallel edges
Spacer		Used to space out pickets
Picket		Metal rod that sits in between top and bottom rail

14x2 Screw		Used to fasten posts on concrete steps
14x3 Screw		Used to fasten posts on wood decks
12x1 1/2 Screw		Used to fasten pickets on to stair posts
12/3/4 Screw		Used to fasten top and bottom rail to pickets and fasten top rail to posts for flat handrails
Concrete plug		Inserted into concrete hole after drilling
Top Rail		
Bottom Rail		
Handrail Bracket		Secures 36-inch handrail to end posts

Appendix B Tools

Tool	Photo	Description
Impact Driver		Used for high torque applications such as fastening lags
Standard Power Drill		Used for drilling wood, lower torque applications
Concrete Drill		Used to drill into concrete

Mitre Saw (with non-ferrous blade)		Used to make cuts on aluminum (MUST HAVE NON-FERROUS BLADE)
Clamps		Used to clamp rails to posts for measurement
Shims		Used to level posts
Level		Used to determine if posts are level

Measuring tape		Used to measure cuts
Square		Used to ensure the post is square with the edge of the deck