
NeoTimber[®]

COMPOSITE BALUSTRADES



HYBRID COMPOSITE RAILING INSTALLATION GUIDE

CONTENTS

Pre-Installation Notes	3-4
Straight Railing and Post Parts	5
Straight Railing Installation	6-10
Stair Railing and Post Parts	11
Stair Railing Installation	12-17
Installing the Post Mount on a Deck	18-20
Installing the Post Mount on a Concrete Surface	21-22
Maintenance Guidelines	23

Please consult local zoning laws in regards to the load requirements and bottom space requirements for rails. All supporting structures must be in accordance with applicable building codes. Neighborhood associations and/or historic districts may regulate size, type, placement and ability of railing. Apply for permits if required by local authorities and codes. Ensure compliance prior to installation. Local building code requirements will always supersede any and all suggested procedures and measurements in the following installation. The following installation instructions are intended as a general guideline based on common building practices used in railing installations.

Important Pre-Installation Notes:

Read All Sections Before You Start.

Prior to installing any composite balustrade it is recommended that you check with local building codes for any special requirements or restrictions. The diagrams and instructions outlined in this guide are for illustration purposes only and are not meant or implied to replace a licensed professional. Any construction or use of this railing must be in accordance with all local zoning and/or building codes. The consumer assumes all risks and liability associated with the construction and use of this product.

Safety

When dealing with any type of construction project it is necessary to wear appropriate safety equipment to avoid any injuries. We recommend the following safety equipment when handling, cutting, and installing NeoTimber® balustrade products: gloves, a dust mask, long sleeves and safety glasses.

Tools

Standard woodworking tools may be used. It is recommended that all blades have a carbide tip. Standard stainless steel or acceptable coated deck screws are recommended.

Environment

A clean, smooth, flat, and strong surface is needed to install this product correctly. Please always check with local building codes before installing any type of railing. If installation does not occur immediately, this product will need to be put on a flat surface at all times. It should never be put on an uneven surface.

Planning

Plan a layout for your railing before installation to ensure the best possible results for your project. Building codes and zoning ordinances generally apply to permanent structures, meaning anything that is anchored to the ground or attached to the house, so nearly every kind of railing requires permits and inspections from a local building department. We recommend drawing out a site plan of your proposed project that you intend to do to minimise errors.

Construction

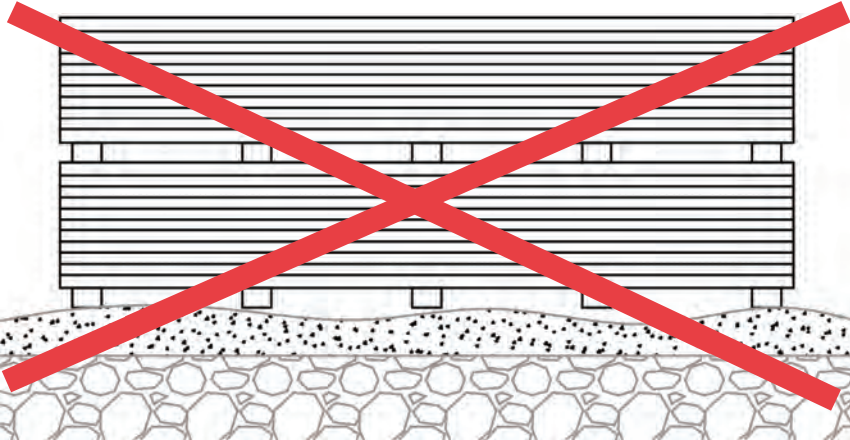
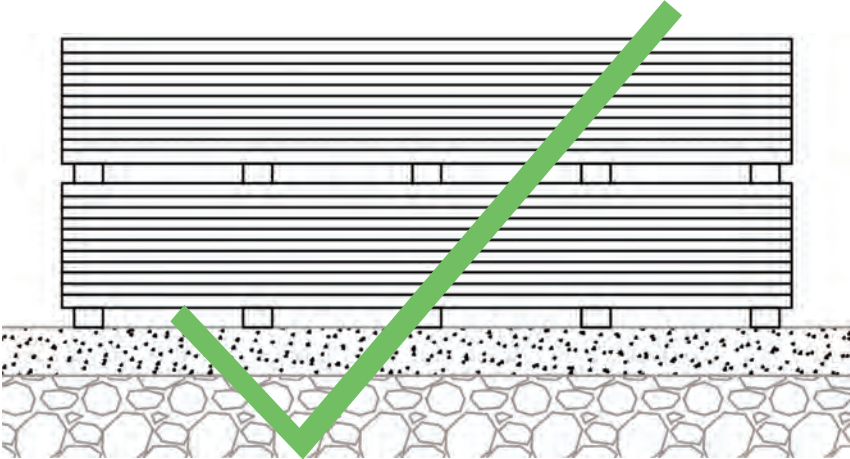
This product is NOT intended for use as columns, support posts, beams, joist stringers, or other primary load bearing members. This product must be supported by a code-compliant substructure.

Static

Static build-up is a natural occurring phenomenon that can occur with many plastic products. Dry and windy environments may make this even more apparent. The amount of static build up varies depending on the climate and age of the railing.

Product Handling And Storage

This product always needs to be stored on flat solid surfaces. Surfaces such as dirt and grass are not sufficient as they can move over time.

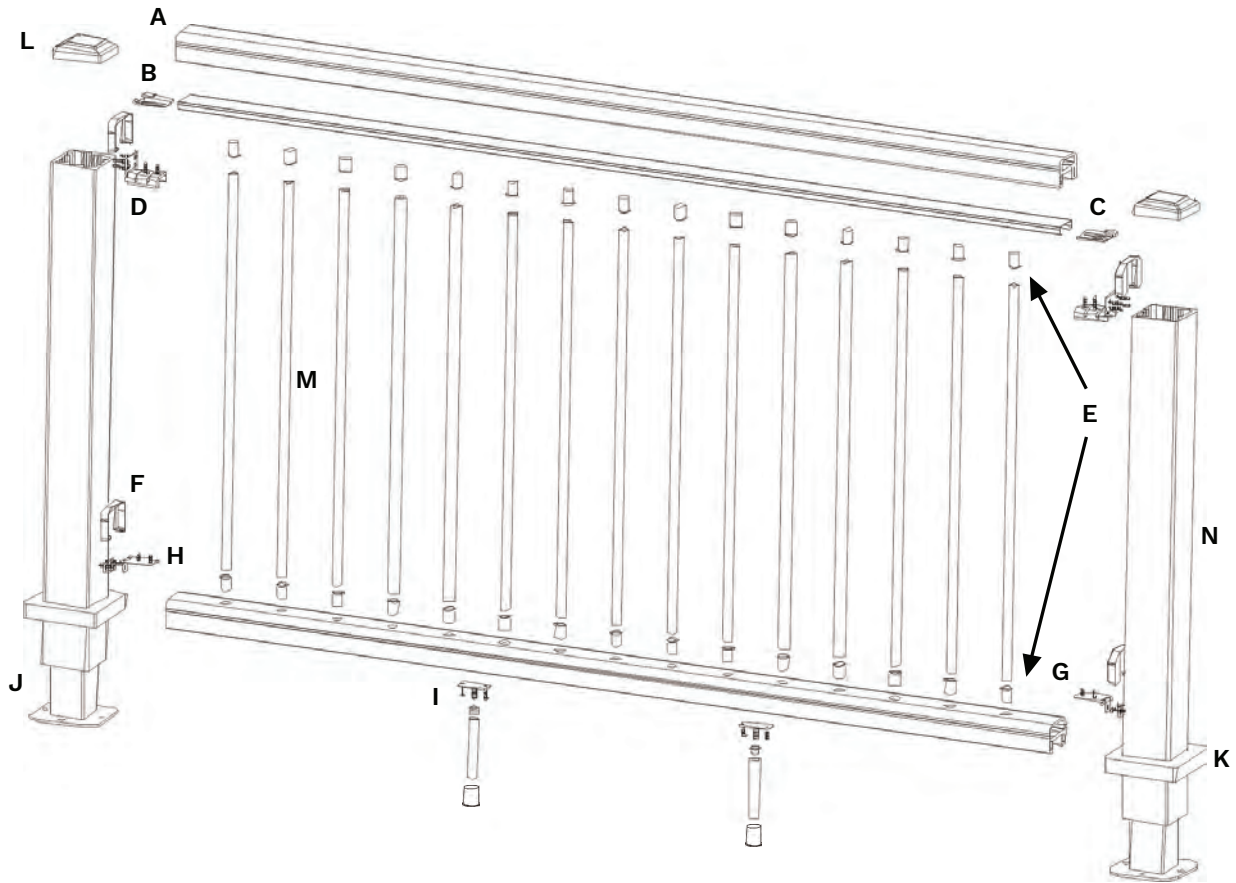













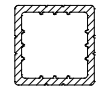


This product shown above is on an uneven surface which will make the products prone to warping and distortion.

Straight Railing And Post Parts:

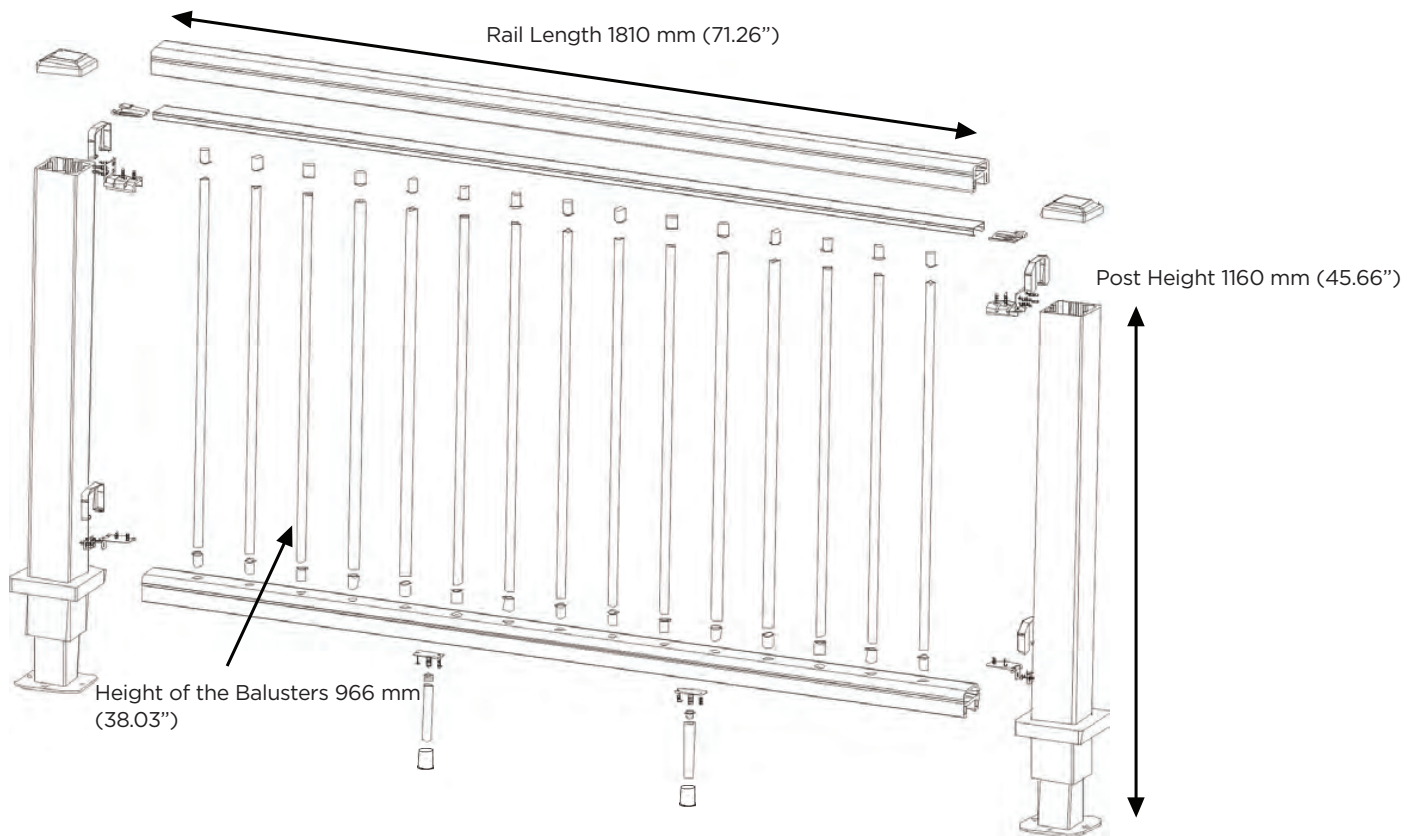
IMPORTANT POINTS:

- Parts D, E, and F will be different from those displayed in the stair railing and post parts.
- All other parts are the same for straight and stair railings and posts.
- This is a hybrid balustrade system which requires cutting of the hand rail, bottom rail and posts for a straight railing installation.



A - JM087 (X2)		E - LV-0218-B (X30)		I - LV-0216 (X2)		L - LV-0120 (X2)	
B - LV-0209 (X1)		F - R0102 (X4)		J - LV-0215-36 (X2)		M - LV-0218-A-36 (X15)	
C - LV-0210 (X2)		G - R0205 (X2)		K - LV-0119 (X2)		N - JM088 (X2)	
D - R0211 (X2)		H - R0204 (X2)					

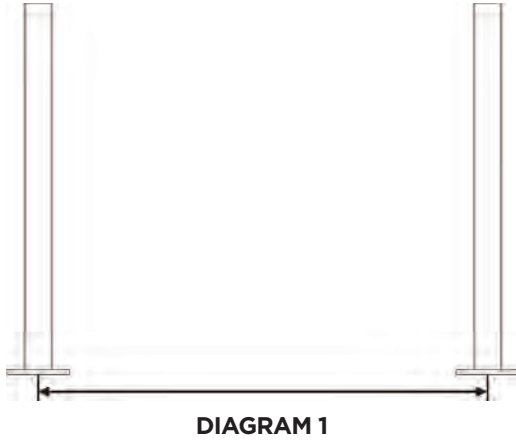
Straight Railing Installation:



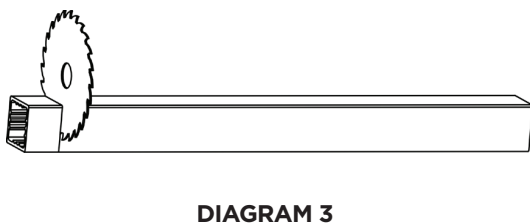
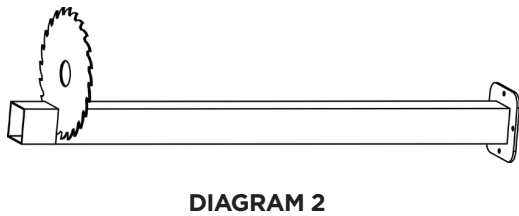
IMPORTANT POINTS:

- This railing is designed for a maximum of 1810 mm (71.26") internal rail length.
- Aluminium balusters (M-LV-0218=A-36) DO NOT need be cut for the straight railing 966mm (38.03").
- Cut the handrail, the bottom rail and the galvanised insert on each side to comply with local building codes, which requires a maximum width of 100 mm (3.94") between the balusters.
- Posts need to be cut to the proper design height of 1160 mm (45.66") for the composite sleeve and 1130 mm (44.49") for the steel post.
- Foot blocks should be evenly spaced out depending on the length of the final rail.
- Foot blocks cannot be installed underneath a pre-drilled baluster hole.

- 1 Mark where the post mount (J-LV-0215-36) will be installed. The maximum distance of the post mount is 1910 mm (75.2") from centre to centre as shown in diagram 1.



- 2 Cut post mount (J-LV-0215-36) to the length of 1130mm (44.49") as shown in diagram 2.
Cut post sleeve (N-JM088) to the length of 1160 mm (45.66") as shown in diagram 3.



- 3 Install the post mount as shown in diagram 4, and fix with screw WJ0133.
Then, install the post sleeve (N-JM088) as shown in diagram 5.

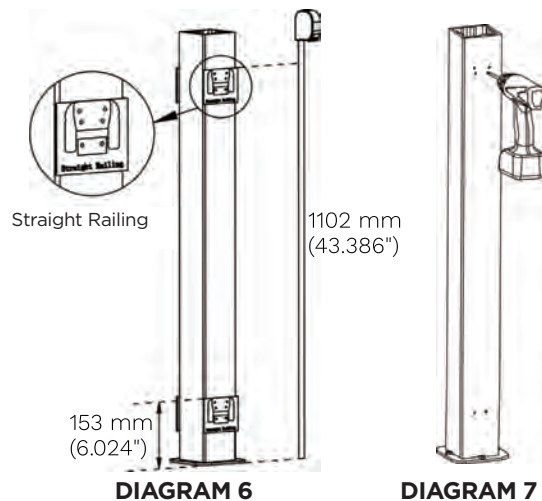


- 4 Mark where the post brackets will be installed with the "Straight Railing cardboard template" as shown in diagram 6. Use the top 4 holes for the top post brackets and use the bottom 2 holes for the bottom brackets as shown in diagram 7.

Note: The cardboard template location should be measured from the bottom.

Use the cardboard template to leave a mark to outline where you will need to pre-drill. Remove the cardboard template before pre-drilling.

Pre-drill post bracket holes with a 4 mm (5/32 inch) bit.



- 5 Lower the post skirt (K-LV-0119) over the post sleeve (N-JM088) as shown in diagram 8.

Drill in the top post brackets (D-R0211) with screw WJ0130 as shown in diagram 9.

Drill in the bottom post brackets (G-R0205) with screw WJ0131 as shown in diagram 10.

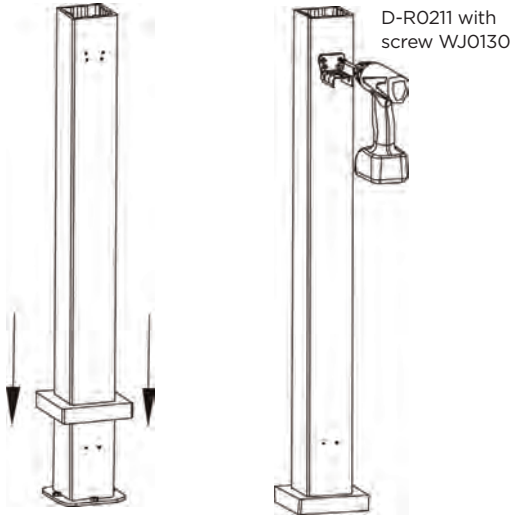


DIAGRAM 8

DIAGRAM 9



DIAGRAM 10

- 6 Cut rail (A-JM087) to the length between the post sleeve (N-JM088) minus 3mm (0.118") on each side for inserting the gaskets (FR0102) as shown in diagram 11.

Remember to take out the galvanised insert (B-LV-0209) before cutting rail (A-JM087).

The galvanised insert (B-LV-0209) should be cut 6mm shorter than the rail (A-JM087).

Note: You must leave at least 75mm (2.953") between the ends of the rail and the first hole of each end as shown in diagram 12.

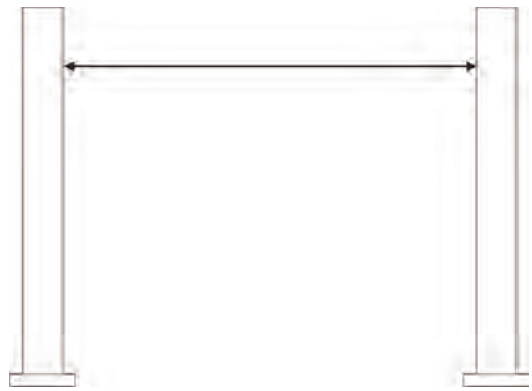


DIAGRAM 11

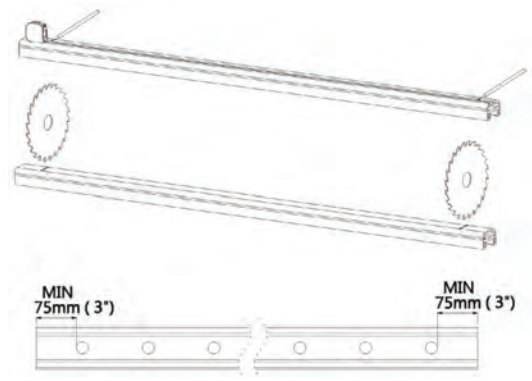
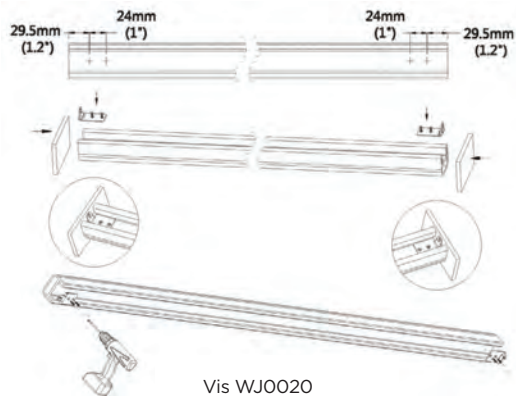


DIAGRAM 12

- 7 The bottom bracket (H-R0204) should be installed with screw WJ0020.

A flat board can be used to press the bracket up against the end of the rail to line up the correct distance.



Vis WJ0020

DIAGRAM 13

- 8 Pre-drill and install the foot blocks (I-LV-0216) with screw WJ0020 on the bottom rail as shown in diagram 14. Foot blocks should be evenly spaced out depending on the length of the final rail and cannot be installed underneath a pre-drilled baluster hole.

Note: The holes in the top rail (A) in diagram 15 should be facing downwards. The holes in the bottom rail (B) should be facing upwards.

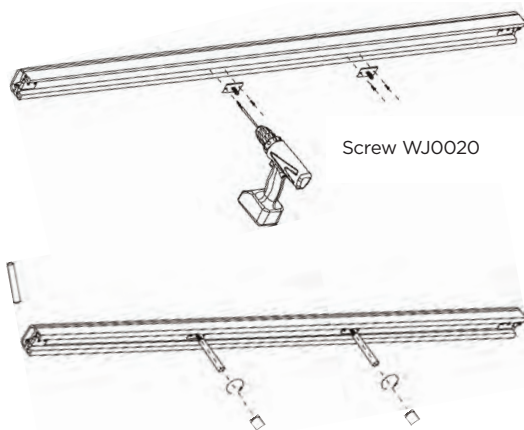


DIAGRAM 14



DIAGRAM 15

- 9 Attach the bottom rail (A-JM087) onto the bottom post brackets (G-R0205) as shown in diagram 16.

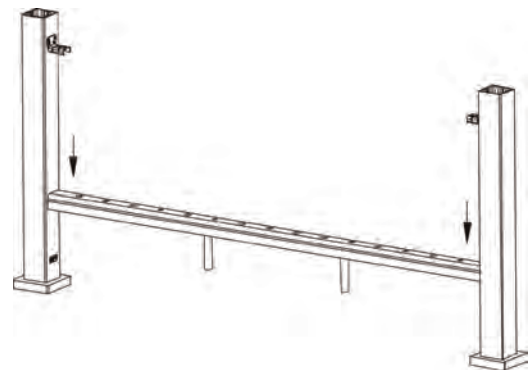


DIAGRAM 16

- 10 Install the baluster plugs (E-LV-0218-B) and aluminum balusters (M-LV-0218-A-36) as shown in diagram 17.

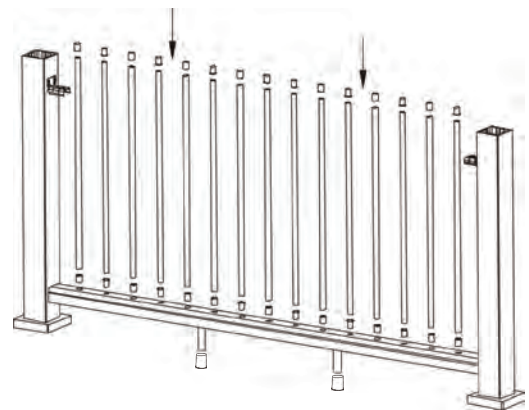


DIAGRAM 17

- 11 Attach the galvanised adaptors (C-LV-0210) on both ends of the galvanised inserts (B-LV-0209) as shown in diagram 18.



DIAGRAM 18

- 12 Slide the galvanised insert (B-LV-0209) into the top rail (A-JM087) as shown in diagram 19.



DIAGRAM 19

- 13 Attach the top rail (A-JM087) onto the top of the post brackets (D-R0211) as shown in diagram 20.

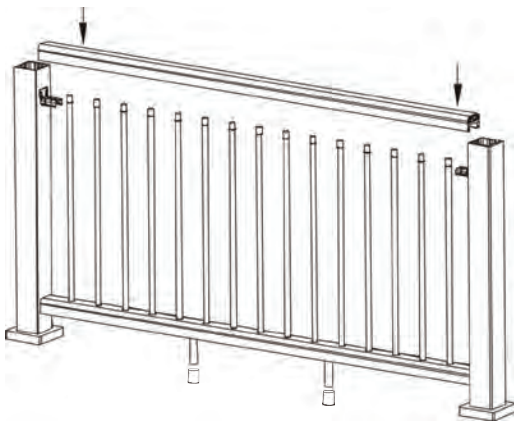
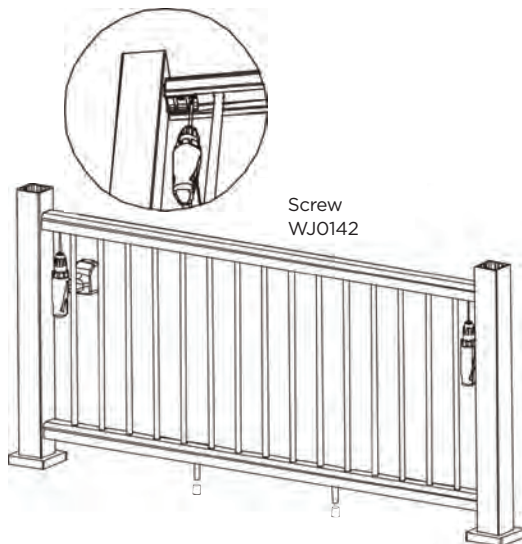


DIAGRAM 20

- 14 Pre-drill and install with screw WJ0142 as shown in diagram 21. Note: WJ0142 does not need to be completely fixed through the (C-LV-0210).



Screw
WJ0142

DIAGRAM 21

- 15 Fix post caps (L-LV-0120) with WJ2020 and gaskets (F-R0102) as shown in diagram 22.

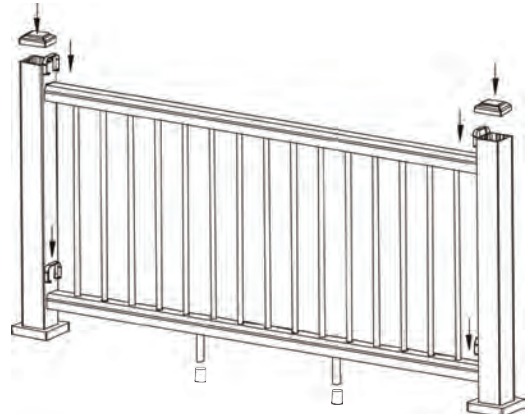


DIAGRAM 22

- 16 If needed, adjust the foot blocks (I-LV-0216) to the correct height as shown in diagram 23.

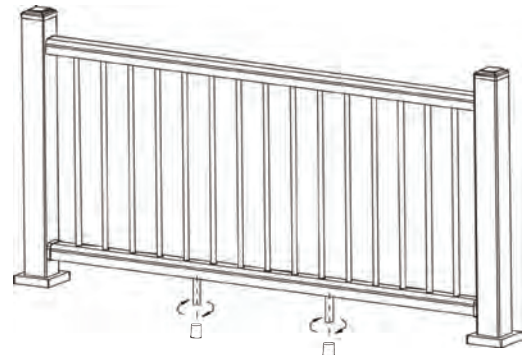
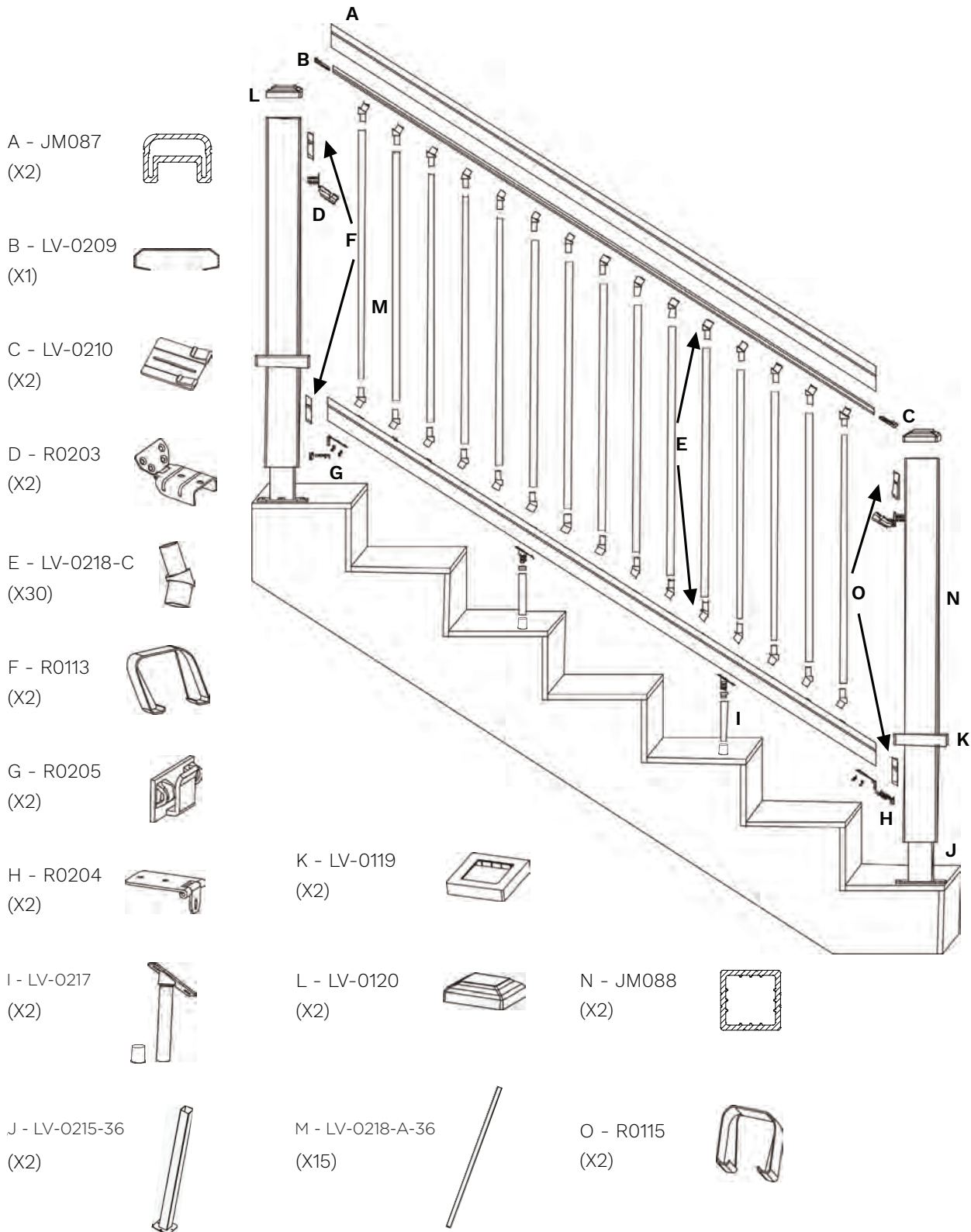


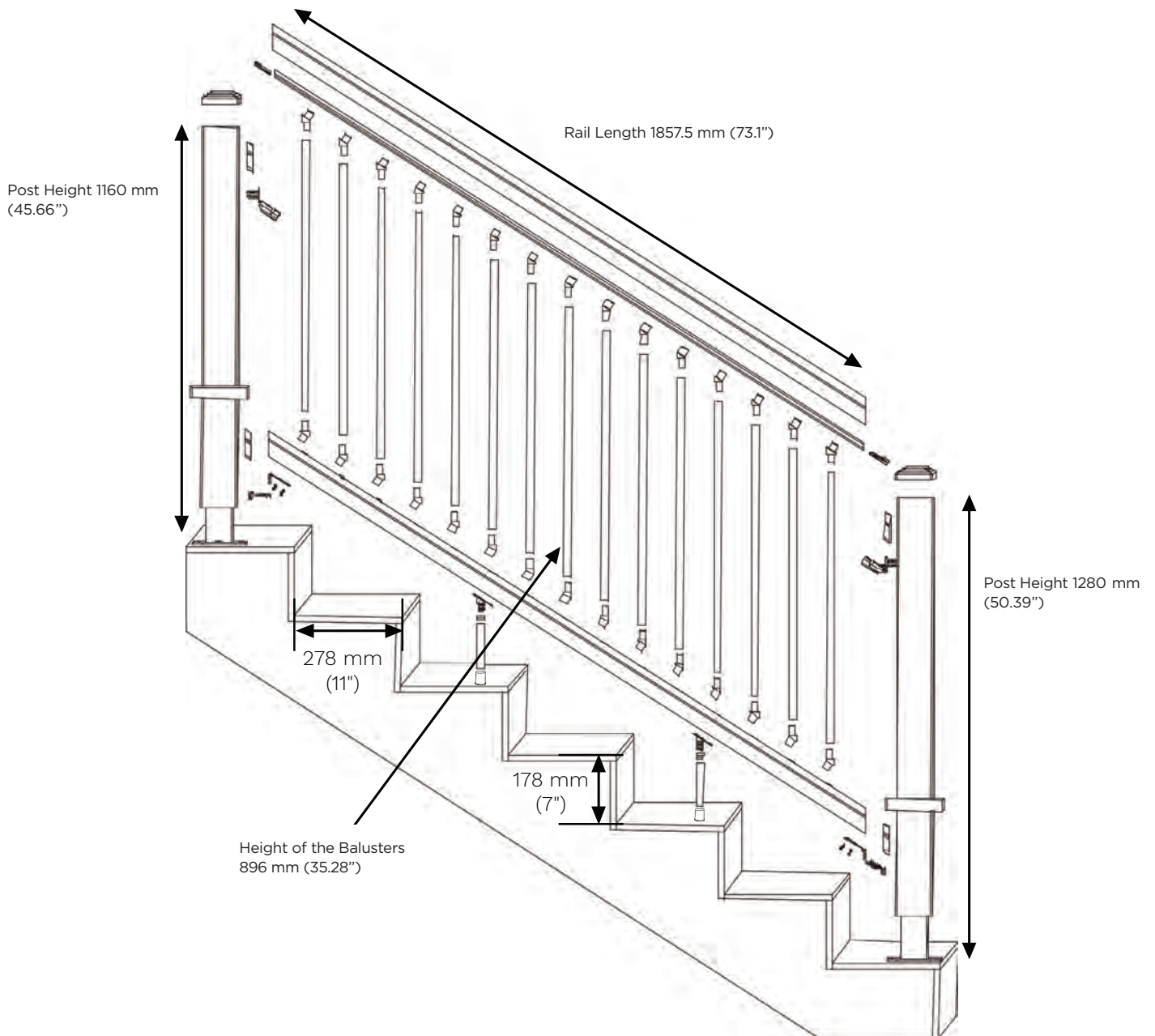
DIAGRAM 23

Stair Railing And Post Parts:

- Parts D, E, F, and O will be different from those displayed in the stair railing and post parts.
- All other parts are the same for straight and stair railings and posts.



Stair Railing And Post Installation:



IMPORTANT POINTS:

- The stair railing is designed for a 32 degree angle with stair treads at 278 mm (11") and stair risers 178 mm (7").
- The stair railing is designed for a 1857.5 mm (73.1") rail length.
- Aluminum balusters for the stair rail need to be cut to the height of 896 mm (35.28").

- 1 Mark where the post mount (J-LV-0215-36) will be installed. The maximum distance between the post mounts should be 1646mm (64.803") as shown in diagram 1.

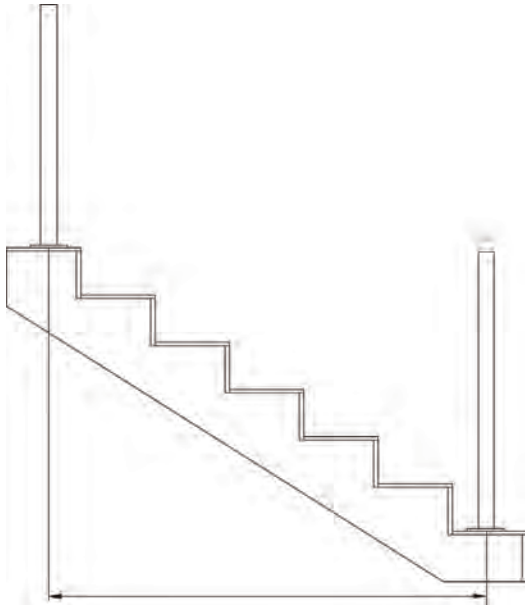


DIAGRAM 1

- 2 Cut the top post mount (J-LV-0215-36) to the length of 1130 mm (44.49") as show in diagram 2. The lower post mount does not need to be cut

Cut the top post sleeve (N-JM088) to the length of 1160 mm (45.66") as show in diagram 3. The lower post sleeve does not need to be cut.

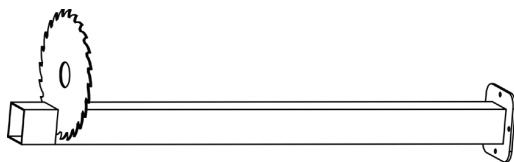


DIAGRAM 2



DIAGRAM 3

- 3 Install the post mount (JOLV-0215-36) and fix with screws WJ0133, as shown in diagram 4.

Install the post sleeve (N-JM088) as show in diagram 5



DIAGRAM 4

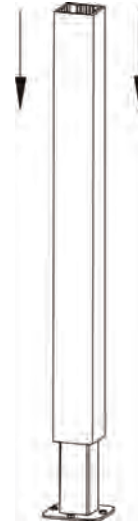


DIAGRAM 5

- 4 Mark the post at the top of the stairs using the "Stairs - Top Post" cardboard template. Use the top 4 holes for the top post brackets, and the bottom 2 holes for the bottom post brackets.

To accurately mark the angle of the banister, pull a string from both the top and bottom marks from your cardboard template at a 32 degree angle as shown in diagram 6.

Note: The cardboard template location should be measured from the bottom.

Use the cardboard template to leave a mark to outline where you will need to pre-drill. Remove the cardboard template before pre-drilling.

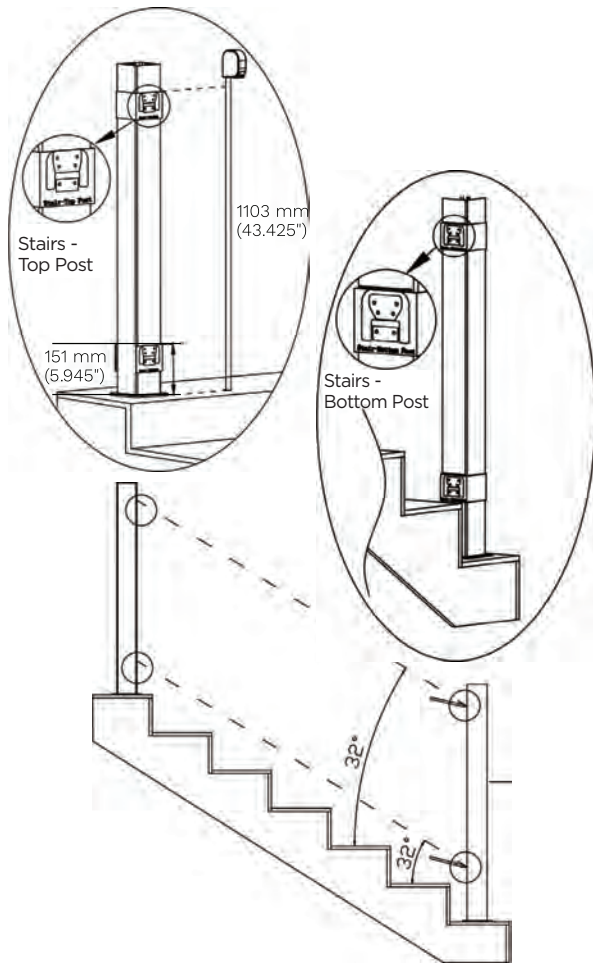


DIAGRAM 6

- 5** Pre-drill post bracket holes with a 4 mm (5/32 inch) bit as shown in diagram 7.

Lower the post skirt (K-LV-0119) over the post sleeve (N-JM088) as shown in diagram 8.



DIAGRAM 7



DIAGRAM 8

- 6** Drill in the top post brackets with (D-R0203) with screw WJ0130 as shown in diagram 9. Drill in the bottom post brackets (G-R0205) with screw WJ0131 as shown in diagram 10.

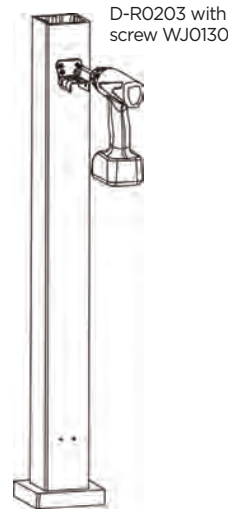


DIAGRAM 9



DIAGRAM 10

- 7** Cut rails (AJM087) to the length (L1 in diagram 11) between the post sleeve (N-JM088) minus 3 mm (0.118 inches) on each side for inserting gaskets (F-R0102) at a 32 degree angle. L1 can be measured like L minus 3 mm (0.118 inches) on each side.

Remember to take out galvanised insert (B-LV-0209) before cutting rail (A-UR02). The galvanised insert (B-LV-0209) should be cut 6mm shorter than the rail (A-JM087).

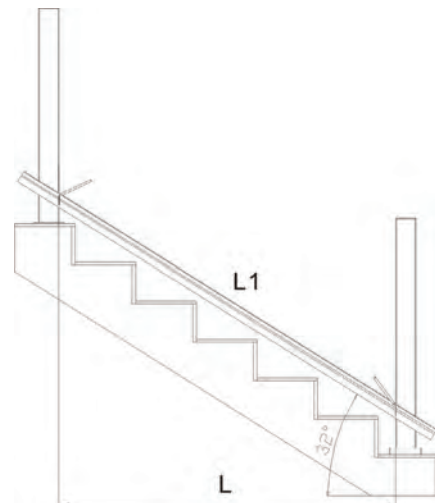


DIAGRAM 11

Note: You need to leave at least 83mm (3.3") between the ends of the rail and the first hole of each end as shown in diagram 12.

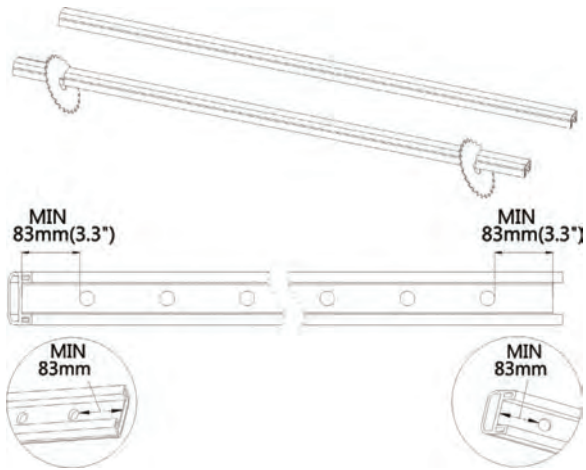


DIAGRAM 12

The galvanised insert (B-LV-0209) is designed for a maximum of 1825.7 mm (71.9") as shown in diagram 13.

The railing is designed for a maximum of 1857.5 mm (73.1") as in diagram 14.

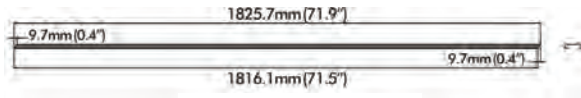


DIAGRAM 13

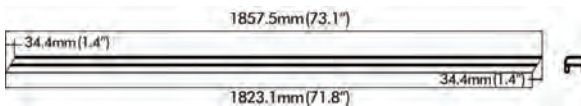


DIAGRAM 14

- 8** The bottom bracket (H-R0204) should be installed with screw WJ0020 at 32.5 mm (1.28") and 24 mm (1") from the end of the rail which will be placed on the higher side of the stairs as shown in diagram 15.

The bottom bracket (H-R0204) should be installed with screw WJ0020 at 28 mm (1.1") and 24 mm (1") from the end of the rail which will be placed on the lower side of the stairs. A flat board can be used to press the bracket up against the end of the rail to line up the correct distance.

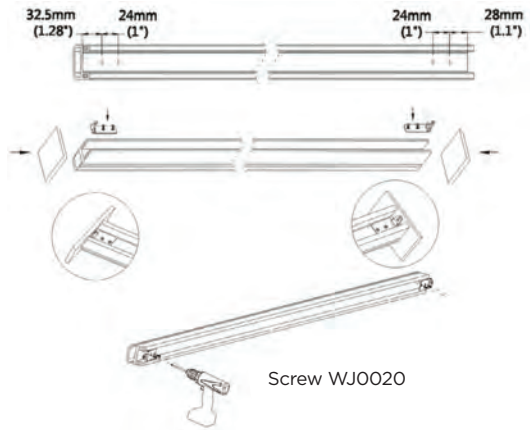


DIAGRAM 15

- 9** Pre-drill and install the foot blocks (I-LV-0217) with screw WJ0020 on the bottom rail as shown in diagram 16. Foot blocks should be evenly spaced out depending on the length of the final rail and cannot be installed underneath a pre-drilled baluster hole

Note: The holes in the top rail (A) in diagram 15 should be facing downwards. The holes in the bottom rail (B) should be facing upwards.

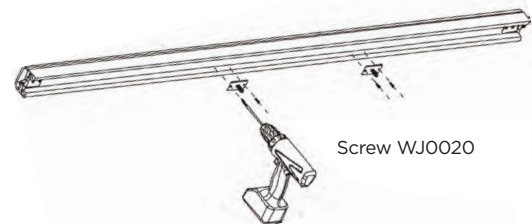


DIAGRAM 16

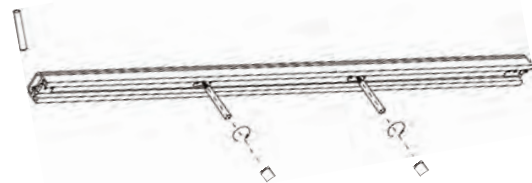


DIAGRAM 17

- 10 Attach the galvanised adaptors (C-LV-0210) on both ends of the galvanised insert (B-LV-0209) as shown in diagram 18.



DIAGRAM 18

- 11 Slide the galvanised insert (B-LV-0209) into the top rail (A-JM087) as shown in diagram 19



DIAGRAM 19

- 12 Cut aluminum balusters (M-LV-0218-A-36) to the length of 896 mm (35.28") as shown in diagram 20.



DIAGRAM 20

- 13 Attach the bottom rail (A-JM087) onto the bottom post brackets (G-R0205) as shown in diagram 21.

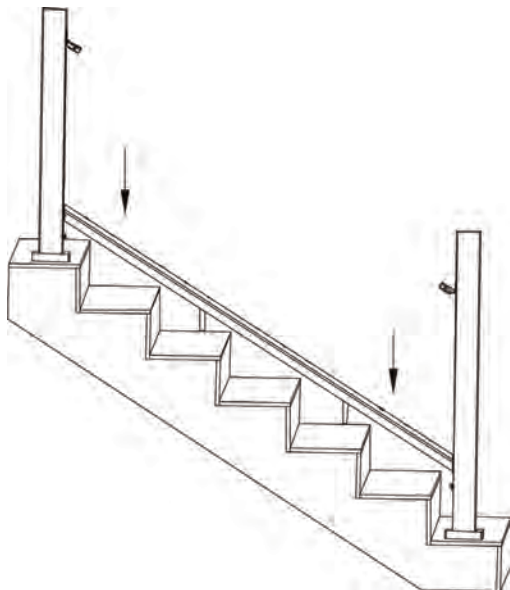


DIAGRAM 21

- 14 Install the baluster plugs (E-LV-0218-C) and aluminum balusters (M-LV-0218-A-36) as shown in diagram 22.

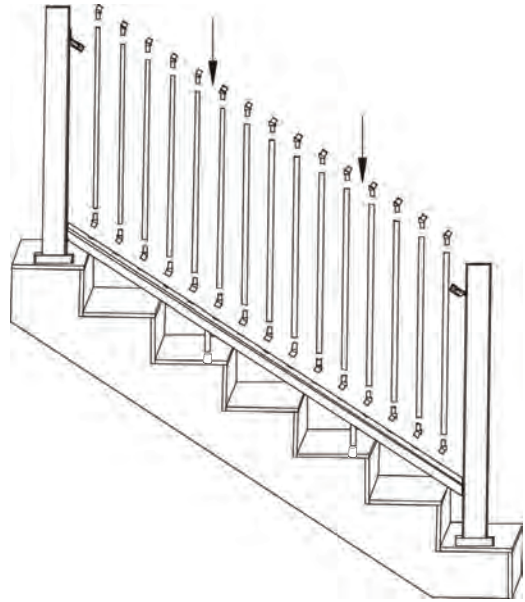


DIAGRAM 22

- 15 Attach the top rail (A-JM087) to the top brackets (D-R0203) as shown in diagram 23.

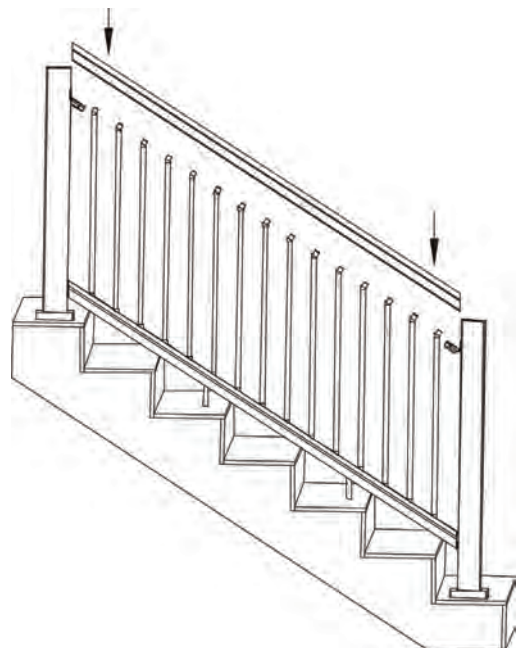
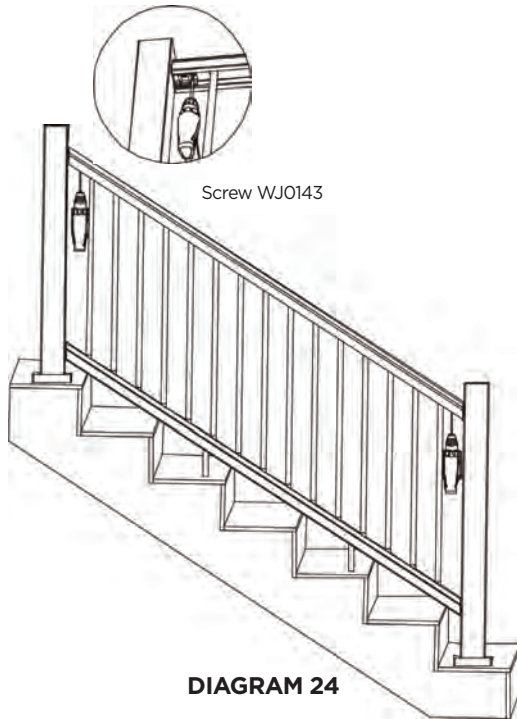
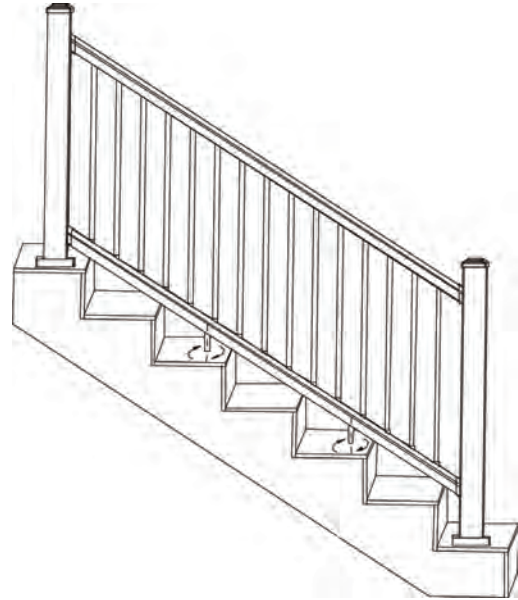


DIAGRAM 23

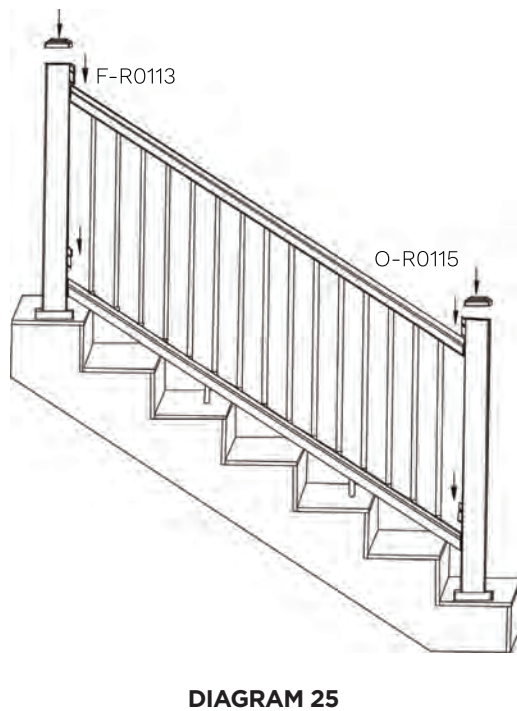
- 16** Pre-drill and install with screw WJ0143 as shown in diagram 24.
Note: WJ0143 does not need to be completely fixed through the C-LV-0210.



- 18** If needed, adjust the foot blocks (I-LV-0217) to the correct height as shown in diagram 26.



- 17** Fix the post cap (L-LV0120) with WJ2020 and gaskets (F-R0113, O-R0115) as shown in diagram 25.



Installing the Post Mount on a Deck

- 1 Following diagram 35 and 36, position the post (J-LV-0215-36) correctly.

Note: Installing directly onto a solid deck board requires a substrate underneath in order for the screws to fully secure the post mount (J-LV-0215-36).

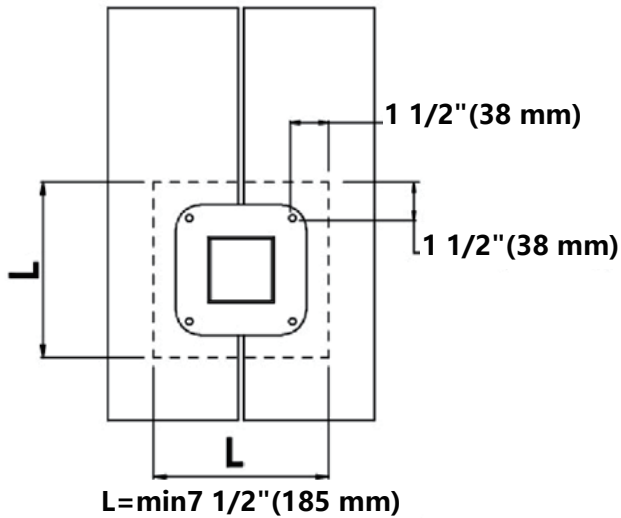
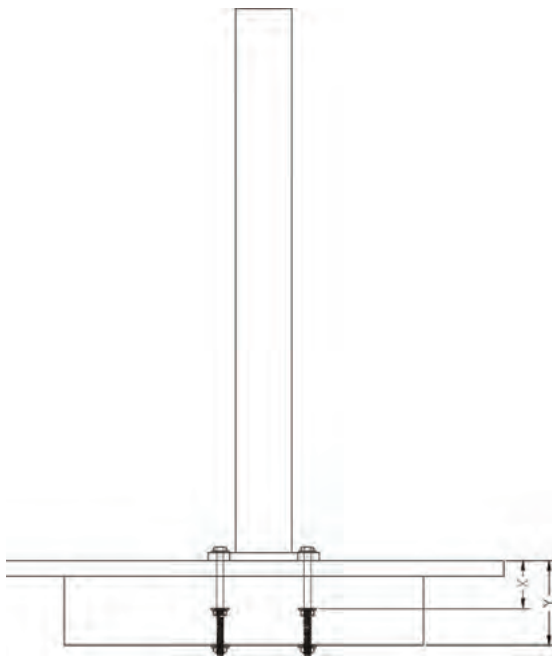


DIAGRAM 35



$$X \geq 2 \frac{11}{20}'' \text{ (65 mm)}$$

$$Y \leq 4 \frac{1}{2}'' \text{ (115 mm)}$$

DIAGRAM 36

Note: The substrate underneath has to fit in between the range shown in diagram 36.

- 2 Once the post is in the correct position, mark the holes with a marker or pencil as shown in diagram 37.

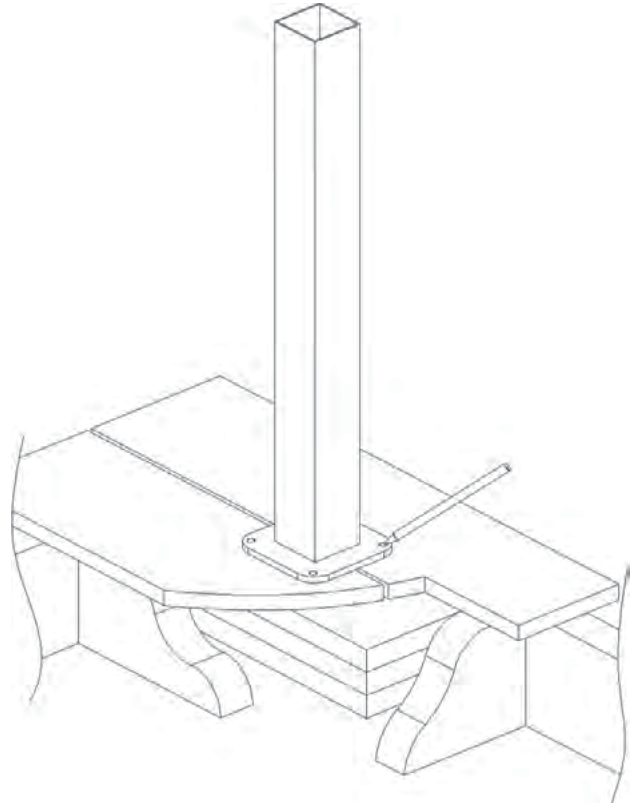


DIAGRAM 37

- 3 Next, drill into the floor where you have placed your marks as shown in diagram 38.

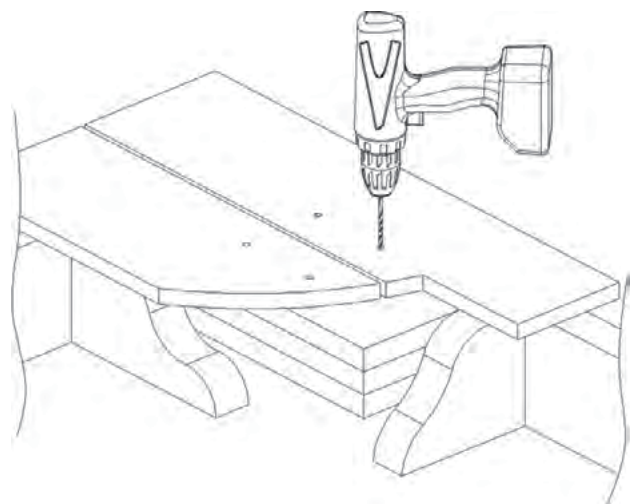


DIAGRAM 38

- 4 Place the post back over the pre-drilled holes, and drill the screws into place as shown in diagram 39.

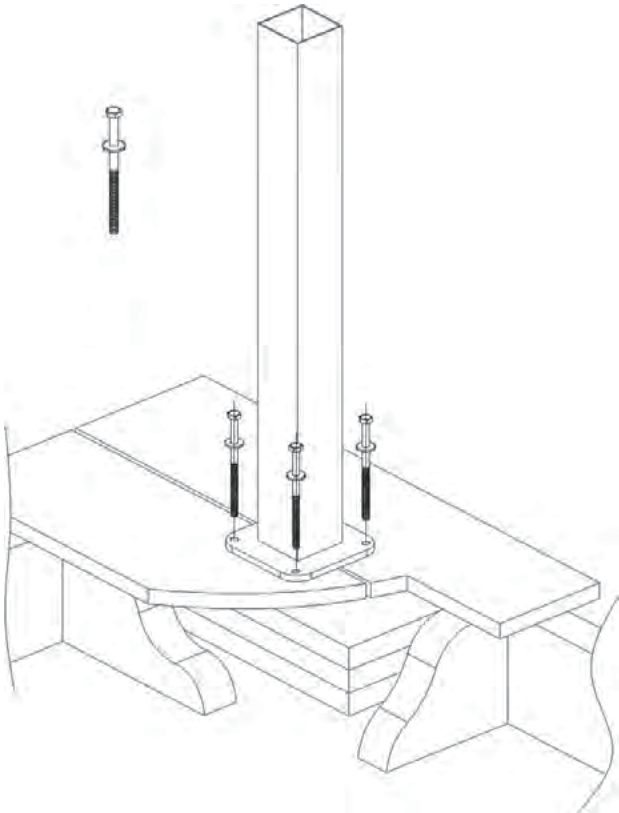


DIAGRAM 39

- 5 Tighten the lag bolts with washers underneath the substrate, as shown in diagram 40.

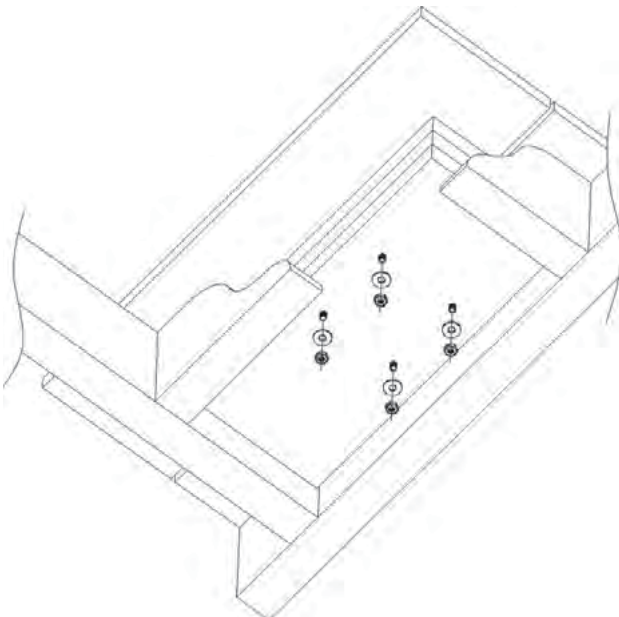


DIAGRAM 40

- 6 The composite post can now be put over the metal insert (N-JM-088), as shown in diagram 41.

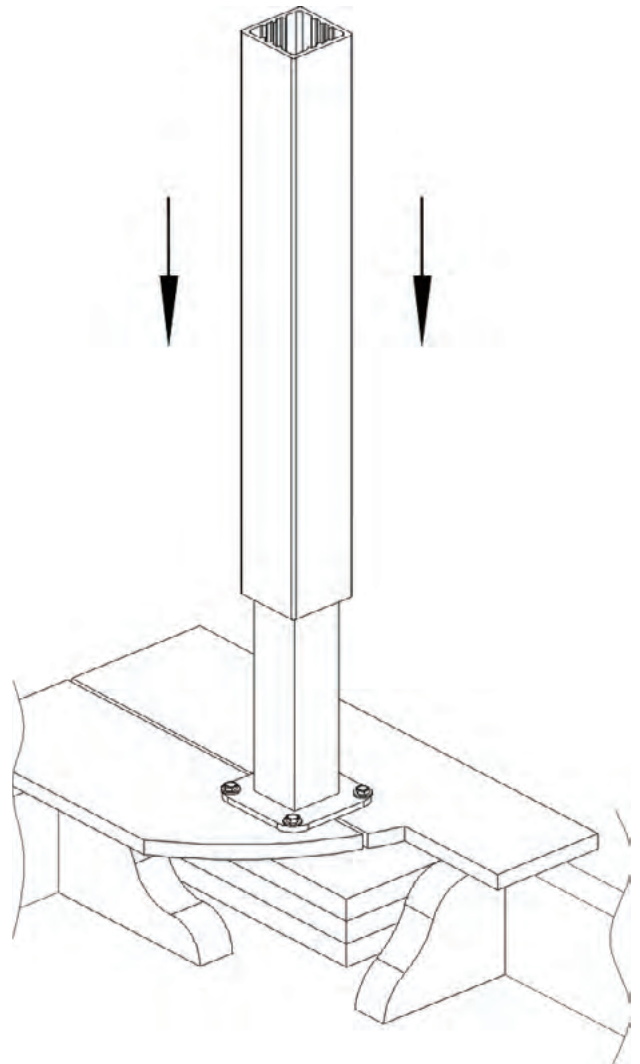


DIAGRAM 41

- 7 Take the post skirt (K-LV-0119) and put it over the post, covering the bottom of the metal insert, as shown in diagram 42. Next, take the post cap (L-LV-0119) and cover the top of the post as shown in diagram 43.

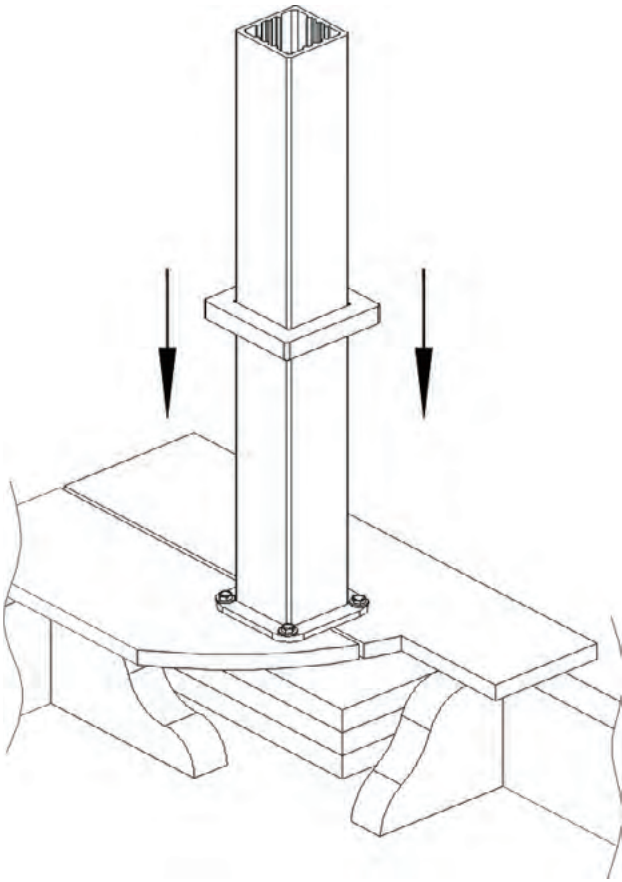


DIAGRAM 42

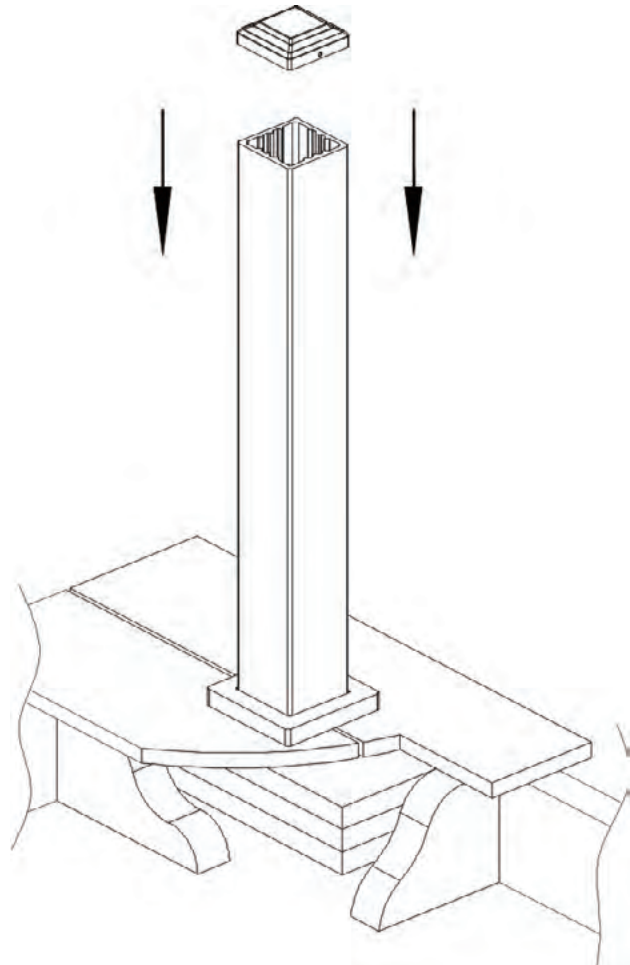


DIAGRAM 43

Installing the Post Mount on a Concrete Surface

- 1 First, position the post with the metal base (J-LV-0215-36) where you want to install your railing. Next, use a marker or pencil to mark the drilling hole positions as shown in diagram 27.

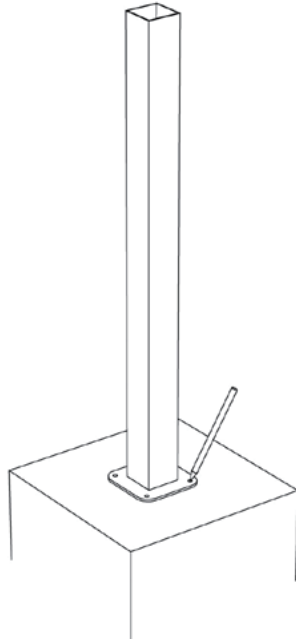


DIAGRAM 27

- 2 Next, drill into the floor where you have placed your marks as shown in diagram 28.

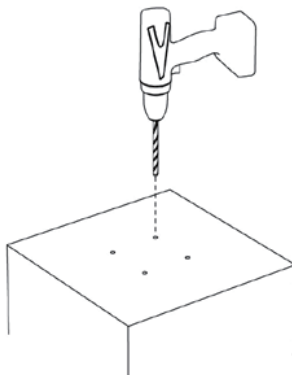


DIAGRAM 28

- 3 Insert the plastic anchors into the drilled holes as shown in diagram 29.

4

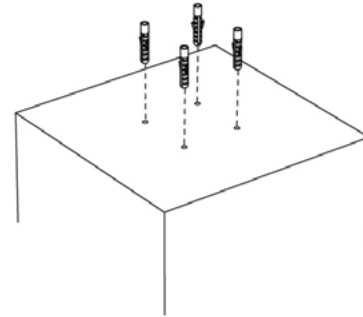


DIAGRAM 29

- 5 Position the metal base of the post mount (J-LV-0215-36) over the pre-drilled holes. Insert the screws as shown in diagram 30.

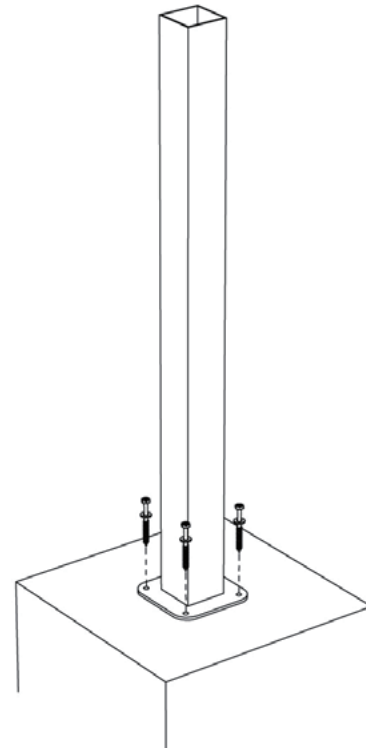


DIAGRAM 30

- 6 Fix and tighten each screw. Once complete, your post should look like diagram 31.

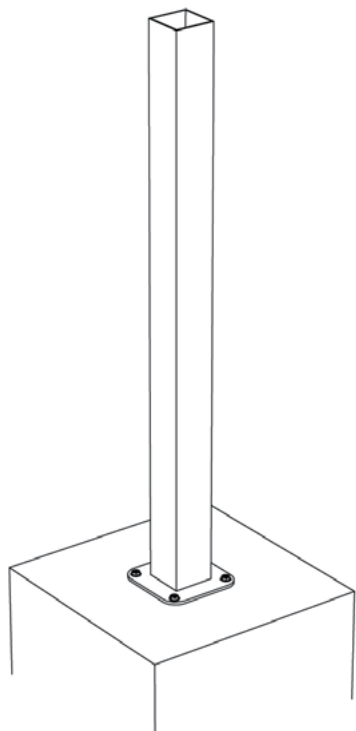


DIAGRAM 31

- 7 Install the post sleeve (N-JM088) over the post as shown in diagram 32.

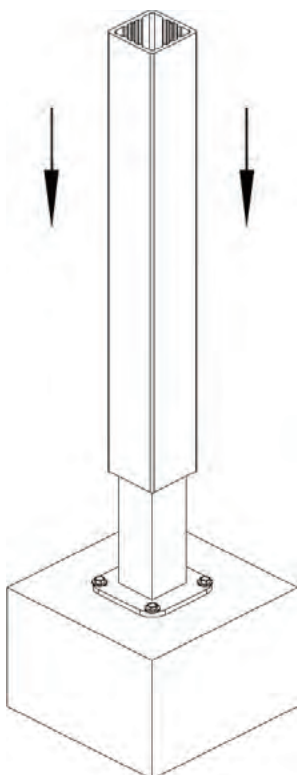


DIAGRAM 32

- 8 Place the post skirt (K-LV-0119) over the post sleeve as shown in diagram 33.

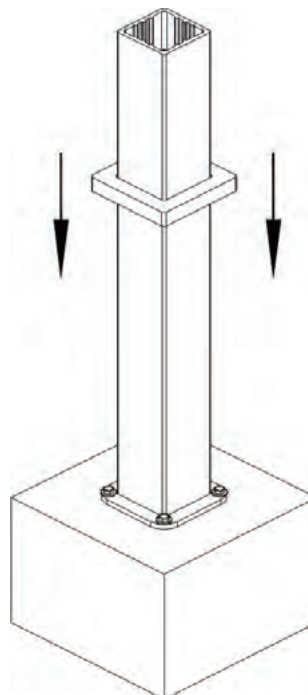


DIAGRAM 33

- 9 Next, place the post cap (L-LV-0120) on top of the post sleeve as shown in diagram 34.

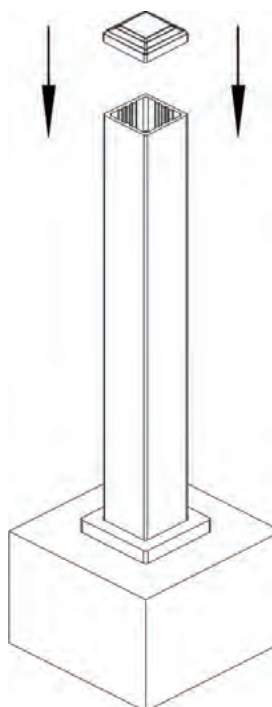


DIAGRAM 34

Maintenance Guidelines

Problem	Solution
Dirt and Debris	<p>Use warm soapy water for the surface of your balustrades, cleaning with a soft bristled brush.</p> <p>For a deeper clean, use a jet wash with the fan attachment no greater than 3100 PSI to clear away the surface debris.</p>
Ice and Snow	<p>Avoid using metal objects to clear snow or ice off your balustrades. We recommend using a salt-free, non-corrosive ice melt designed not to leave any residue on the surface of the railing, as these are generally more effective than salt-based alternatives.</p>
Oil / Grease / Food	<p>All oil/grease/food spills must be removed promptly. To clean, use warm soapy water and a soft non-metal scrub brush.</p> <p>Grease and oil stains may require an all purpose cleaner if the initial warm soapy water does not work.</p>
Mould and Mildew	<p>Whilst composite material is resistant to the damaging effects of both mould and mildew growth, this type of growth can occur on almost every outdoor surface.</p> <p>If you do see mould and mildew build up, remove it as quickly as possible. Use warm soapy water and a soft non-metal scrub brush to clean.</p>
Irregular Heat Sources	<p>Composite products have the tendency to retain heat. Proper precautions should be taken to avoid your balustrades being exposed to any fires or irregular heat sources to ensure no damage occurs.</p>



Visit www.neotimber.com or email
enquiries@neotimber.com for more information