

# LEVEL INSTALLATION GUIDE

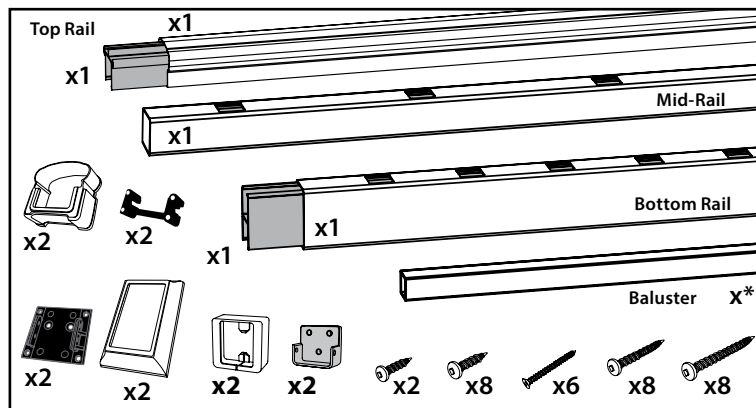
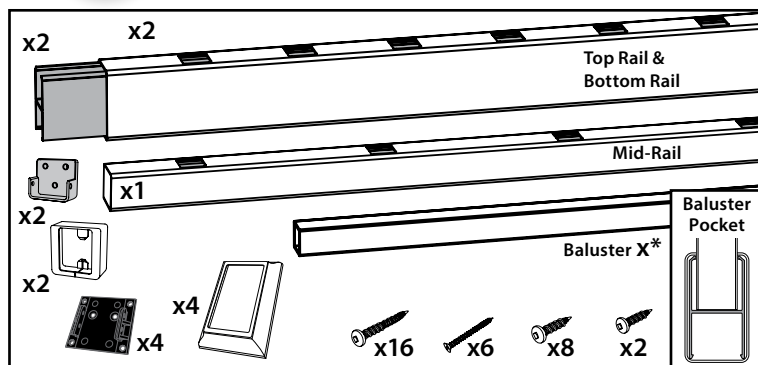
## 3 - RAIL V210 & V220 VINYL RAILING

# FAIRWAY RAILING™

BY **Envision**  
OUTDOOR LIVING PRODUCTS



**NOTE:** If V210 Rail bracket trim ring will not snap on black mounting bracket, make sure bracket to post mounting screws are not over-tightened.



### LEVEL V210 Vinyl 3-Rail Kits Include:

- 2 ea. - 2" x 3-1/2" V210 Vinyl Rail
- 1 ea. - 1-3/4" x 2-1/4" Mid-Rail
- 2 ea. - V210 Rail Aluminum Insert
- 4 ea. - V210 Rail Mounting Bracket (Bracket and Trim Ring)
- 2 ea. - Mid-Rail Mounting Bracket (Bracket and Trim Ring)
- Stainless Steel #2 Square Drive Mounting Screws
- \*Vinyl Balusters - 6' Level Kit - 13 • 8' Level Kit - 19 • 10' Level Kit - 23

### LEVEL V220 Vinyl 3-Rail Kits Include:

- 1 ea. - V220 Vinyl Top Rail
- 1 ea. - 1-3/4" x 2-1/4" Mid-Rail
- 1 ea. - 2" x 3-1/2" V210 Vinyl Bottom Rail
- 1 ea. - V220 Rail Aluminum Insert (Top Rail)
- 2 ea. - Mid-Rail Mounting Bracket (Bracket and Trim Ring)
- 1 ea. - V210 Rail Aluminum Insert (Bottom Rail)
- 2 ea. - V220 Mounting Bracket (Bracket and Trim Ring)
- 2 ea. - V210 Rail Mounting Bracket (Bracket and Trim Ring)
- Stainless Steel #2 Square Drive Mounting Screws
- \*Vinyl Balusters - 6' Level Kit - 13 • 8' Level Kit - 19 • 10' Level Kit - 23



## STEP 1 • POST/MOUNTING SURFACE PREPARATION

Plumb post/mounting surface. Slide vinyl post sleeves and post trim ring over posts.

## STEP 2 • BOTTOM RAIL & TOP RAIL BRACKET INSTALLATION

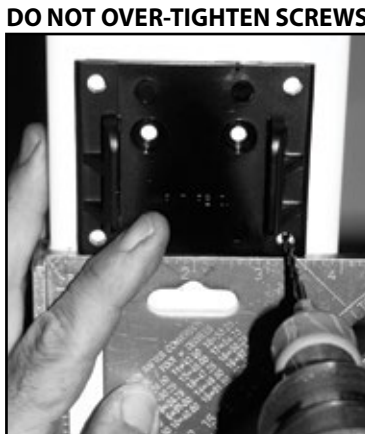
**A) Bottom Rail Mounting Bracket** - Determine height of bottom rail (2" for 42" Railing Height). Make a pencil mark at bottom of the bottom rail on the post. Measure up 3/8" above previous mark, then square and center the bottom of the black mounting bracket. Mark screw holes in the four (4) corners of the bracket and then pre-drill four (4) 5/32" holes. Screw the bracket base into place with four (4) #12 x 1-1/4" pan head screws. Repeat on opposite post.

### B) Top Rail Mounting Bracket -

Measure from **bottom of black mounting bracket** up and mark with pencil. Please use the following measurement in accordance with product style and height: **42" V210 Rail = 38-1/4"**. This will be the mounting mark for the **bottom of the top black mounting bracket**. Square and center the top black mounting bracket on mark and pre-drill four (4) 5/32" holes. Screw into place using four (4) #10 x 1-1/4" for V210 Railing or four (4) #10 x 2" pan head screws for V220 Railing. Repeat on opposite post.



STEP 2A



STEP 2A



STEP 2B



STEP 2B

**DO NOT OVER-TIGHTEN SCREWS**

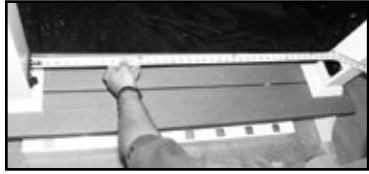
### STEP 3 • INSTALL BOTTOM RAIL

**A)** Measure the inside span between black mounting brackets for bottom rail. (Make sure you have equal and maximum amount of spacing between baluster pocket and post on each end.) Cut bottom rail to length squarely with a power miter box or hacksaw. You may cut vinyl and aluminum insert at same time.\*

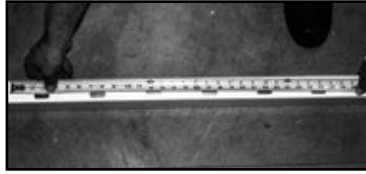
**B)** With bottom rail cut to length, slide bracket trim ring onto each end of bottom rail, flat side towards end, facing post. (TIP: You may want to cut blocks to proper height for rail to rest on) Set bottom rail into place and align bottom rail with bottom rail height bottom mark from **Step 2A**.

**C)** With the bottom rail in place, insert one (1) #10 x 1" self-tapping pan head screw through one of the holes along the side of the black mounting bracket, through vinyl rail and into aluminum insert. **Only one (1) screw per side is needed.** Snap bracket trim ring onto black mounting bracket. Repeat on opposite post.

**NOTE: If V210 Rail bracket trim ring will not snap on black mounting bracket, make sure mounting screws (bracket to post connection) are not over-tightened.**



STEP 3A



STEP 3A



STEP 2B



STEP 2C



MID-RAIL INSTALLATION

### STEP 4 • MID-RAIL INSTALLATION

**A) Cut mid-rail to length** - Measure distance between posts. Deduct 3/4" from total length to allow for mounting brackets and mark mid-rail. Ensure there is equal & maximum distance from baluster holes on both ends. Cut mid-rail to length.

**B) Mid-rail bracket installation** - Install 2 short balusters per rail end and install mid-rail. Place mid-rail brackets on end of rail and mark bracket position on post. Remove mid-rail and Install bracket with three (3) #8 x 1-1/2" screws. Repeat on opposite post.

**C) Install balusters and mid-rail** - Insert all balusters into routed pockets, place mid-rail into brackets and install two (2) #10 x 3/4" self-drilling screws through holes in both sides of each bracket, securing mid-rail in place. Carefully snap mid-rail bracket covers over brackets.



STEP 4B



STEP 4B



STEP 4C



STEP 4C

### STEP 5 • INSTALL BALUSTERS & TOP RAIL

**A) Installing Fairway® V210 Vinyl Railing (2" x 3-1/2")** - Measure the inside span between black mounting brackets for top rail, deduct 1/4" from Step 4C mark on each end of rail to allow for black mounting bracket. **Installing Fairway® V220 Vinyl Railing** - Measure the inside span between posts. Mark top rail with appropriate measurement. Make sure distance from baluster pocket to post on each end is the same for both top and bottom rail. Cut top rail to length (cut both top rail and aluminum insert to length at the same time with a power miter box or hack saw). Slide bracket trim ring on both ends of top rail, flat side towards end, facing post. From one end, begin to insert top of balusters into corresponding pocket holes and be sure rail slides down into black mounting brackets side guides.

**B)** Once all balusters are in place, the top rail will rest in the black mounting bracket. Insert one (1) #10 x 1" self-tapping pan head screw through one of the holes along the side of the black mounting bracket, through vinyl rail and into aluminum insert. **Only one (1) screw per side is needed.** Slide bracket trim ring onto black mounting bracket. Repeat on opposite post.

**You are now ready to install your post cap.**

Apply a small amount of PVC glue or silicone caulk to the inside lip of the post cap and mount in place.

Check all local building codes for design load requirements for your railing application. Fairway Railing is manufactured to the standards outlined in ASTM F964 and has been tested according to AC174-09 criteria and is approved to meet the requirements for Guardrails as outlined for pertaining IRC (Residential) and IBC (Commercial) applications as documented in the Code Compliance Research Report, CCRR-0153.



STEP 5A



STEP 5B



STEP 5

\*See saw blade manufacturer's specs for proper blade

# STAIR INSTALLATION GUIDE

## 3 - RAIL V210 & V220 VINYL RAILING

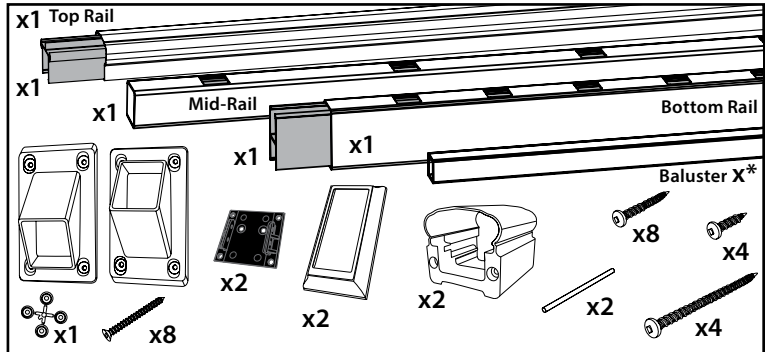
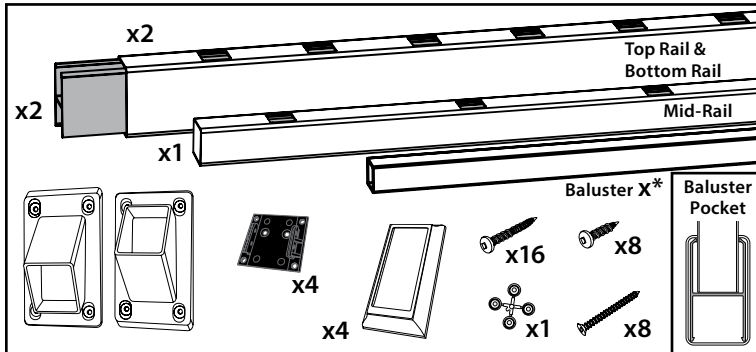
# FAIRWAY RAILING™

BY **Envision™**  
OUTDOOR LIVING PRODUCTS



**NOTE: If V210 Rail bracket trim ring will not snap on black mounting bracket, make sure bracket to post mounting screws are not over-tightened.**

Check all local building codes for design load requirements for your railing application. Fairway Railing is manufactured to the standards outlined in ASTM F964 and has been tested according to AC174-09 criteria and is approved to meet the requirements for Guardrails as outlined for pertaining IRC (Residential) and IBC (Commercial) applications as documented in the Code Compliance Research Report, CCRR-0153.



### STAIR V210 Vinyl 3-Rail Kits Include:

- 2 ea. - 2" x 3-1/2" V210 Vinyl Rail w/Aluminum Insert
- 1 ea. - 1-3/4" x 2-1/4" Mid-Rail
- 2 ea. - Mid-Rail Stair Brackets
- 4 ea. - V210 Rail Stair Mounting Bracket (Bracket and Trim Ring)
- 1 ea. - Pack S.S. Mounting Screws
- \*Vinyl Balusters - 6' Railing Kit - 13 • 8' Railing Kit - 19

### STAIR V220 Vinyl 3-Rail Kits Include:

- 1 ea. - V220 Vinyl Top Rail w/Aluminum Insert
- 1 ea. - 2" x 3-1/2" V210 Vinyl Bottom Rail w/Aluminum Insert
- 1 ea. - 1-3/4" x 2-1/4" Mid-Rail
- 2 ea. - Mid-Rail Stair Brackets
- 2 ea. - V220 Rail Stair Mounting Bracket (3/16" S.S. Pins & Screw Plugs)
- 2 ea. - V210 Rail Stair Mounting Bracket (Bracket and Trim Ring)
- 1 ea. - Pack S.S. Mounting Screws & Pins
- \*Vinyl Balusters - 6' Railing Kit - 13 • 8' Railing Kit - 19



STEP 1



STEP 2



STEP 3A



STEP 3B

### STEP 1 • POST/MOUNTING SURFACE PREPARATION

Be sure post is plumb. Slide vinyl post sleeve and post trim ring over post.

### STEP 2 • BOTTOM RAIL & BRACKET PREPARATION

**A)** Place one end of the bottom rail on deck surface and the other end on the last stair tread nosing. (Baluster pockets up.)

**B)** Measure for maximum and equal distance between baluster pockets at both ends of the bottom rail.

Mark a vertical line on bottom rail where post and rail meet. Repeat on opposite end of rail.

**C)** Deduct 1/4" from each rail end to allow for black V210 Rail mounting bracket.

Cut both bottom rail and aluminum insert to length at the same time with a power miter box or hack saw.\*

### STEP 3 • INSTALL BOTTOM RAIL, BRACKET & TOP RAIL PREPARATION

**A)** Slide black mounting brackets onto the ends of the bottom rail and center on end of rail. Place rail between posts at proper height off deck and bottom tread nosing. Mark the top of black mounting brackets on post. (Check with local building code for height and opening requirements.)

**B)** Remove the black mounting bracket from the ends of bottom rail, square and center brackets with the mark on the posts. Pre-drill four (4) 5/32" holes in the four (4) corners of the black mounting bracket. Install black mounting brackets with four (4) #12 x 1-1/4" pan head screws.

**C)** Slide bracket trim rings on end of rail, flat side towards mounting surface. (TIP: If pitch is greater than 32° cut along marks on inside of all V210 Rail bracket trim rings) Set bottom rail into black mounting brackets with rail centered. Insert one (1) #10 x 1" self-tapping pan head screw through black mounting bracket into bottom rail. Only one (1) screw per side is needed. Snap bracket trim ring onto black mounting bracket. Repeat on opposite post.

### 3- RAIL STAIR INSTALLATION GUIDE CONT'D...

#### STEP 4 • INSTALL SHORT BALUSTERS, INSTALL MID-RAIL & MARK TOP RAIL

**A)** Insert one short baluster into the baluster pocket closest to post at each end of stairs (top and bottom). Set mid-rail in place over balusters. Measure the distance from baluster to post at bottom rail and adjust the mid-rail to match. Mark a vertical line on mid-rail where post and rail meet. Repeat on opposite end of rail. Cut mid-rail to length.

**B)** Install all short balusters into appropriate baluster pockets. Slide mounting brackets on each end of mid-rail. Set mid-rail between posts, center mounting brackets on post. Install four (4) #8 x 1-1/2" screws in mounting brackets. NOTE: in some cases, it may be necessary to cut out some of the mounting bracket flange if covering baluster holes. Snap screw covers over screw holes.

**C)** Insert one long baluster through mid-rail and into bottom rail baluster pocket closest to post at each end of stairs (top and bottom). Set top rail in place over balusters. Mark a vertical line on top rail where post and rail meet. Repeat on opposite end of rail.

#### STEP 5 • INSTALL TOP RAIL FOR V210 VINYL RAILING

**A)** (Skip STEP 5 if using V220 Rail) Deduct 1/4" from Step 4C mark on each end of rail to allow for black mounting bracket. Cut both top rail and aluminum insert to length at the same time with a power miter box or hack saw.\*

**B)** Slide black mounting brackets on each end of top rail. Place top rail between posts and insert two (2) long balusters into top rail. Mark black mounting bracket position on post. Remove top rail and black mounting brackets from end of top rail, square and center brackets with the mark on the posts. Pre-drill four (4) 5/32" holes in the four (4) corners of the black mounting bracket. Install black mounting brackets with four (4) #12 x 1-1/4" pan head screws.

**C)** Insert all long balusters through mid-rail and into bottom rail baluster pockets. Slide bracket trim rings on each end of top rail, flat side towards mounting surface. Set top rail into black mounting brackets with rail centered. Insert one (1) #10 x 1" self-tapping pan head screw through black mounting bracket into top rail. Only one (1) screw per side is needed. Snap bracket trim ring onto black mounting bracket. Repeat on opposite post.

**D)** Make sure all four bracket trim ring rings are snapped over black mounting brackets.

**E)** Skip to STEP 10

#### STEP 6 • CUT V220 TOP RAILS

With both ends of top rail marked from STEP 4C, place the bottom (baluster pocket side) against the back stop of the miter box. Match up miter cut with line marked on top rail and cut top rail to length. Cut both aluminum and vinyl at the same time.\*

#### STEP 7 • CUT V220 STAIR BRACKET

**A)** Measure the distance from the end of rail to the baluster pocket (so V220 Stair Bracket will not cover baluster pocket). Mark bottom of V220 Stair Bracket with this measurement. Make sure mounting screws are facing towards balusters.

**B)** Slide V220 Stair Bracket onto a piece of scrap contour rail and cut at same angle as top rail. (TIP: Use another V220 Stair Bracket to hold railing level in miter box for a correct angle cut.)

#### STEP 8 • INSTALL 3/16" S.S. PINS IN V220 STAIR BRACKET

**A)** 3/16" S.S. Pins keep rail from pulling out of V220 Rail Bracket under load. With both V220 Stair Brackets cut to match top rail, slide V220 Stair Bracket onto top rail and hold flush with end of top rail. Mark both sides of V220 Stair Bracket.

**B)** Remove V220 Stair Bracket. Measure from marks toward the end of the top rail 1/2" and down 1/8" from bottom of bead on the side of top rail. Where the lines intersect, drill a 7/32" hole through the vinyl and aluminum (make sure aluminum is flush with vinyl) on both sides of top rail. Slide V220 Stair Brackets onto top rail, insert 3/16" S.S. pin and engage pin into V220 Stair Brackets.

#### STEP 9 • INSTALL BALUSTERS & V220 TOP RAIL

Install all balusters into bottom rail. Start at the bottom of stair run and one by one insert balusters into top rail. Set rail in place and center on mounting surface. Insert two (2) #10 x 4" pan head screws into V220 Stair Bracket. While keeping V220 Stair Bracket square and centered on mounting surface, start screw enough to mark mounting surface. Push top rail to one side and pre-drill a 5/32" hole at same angle as mounting screw. Set rail in place and install mounting screws. Insert fill plugs, two (2) per V220 Stair Bracket, using PVC glue or silicone caulk to hold in place.

#### STEP 10 • INSTALL POST CAP

Cut post to desired height and apply a small amount of PVC glue or silicone caulk to the inside lip of post cap and install.

### MID-RAIL



STEP 4B



STEP 4B



STEP 7A



STEP 7B



STEP 7B



STEP 8B



STEP 8B



STEP 8B



STEP 9



STEP 10

|                |     | RUN in Inches |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |
|----------------|-----|---------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|----|
|                |     | 6.5           | 7.0 | 7.5 | 8.0 | 8.5 | 9.0 | 9.5 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 | 13.0 | 13.5 | 14.0 | 14.5 | 15.0 |    |
| RISE in Inches | 3.5 | 28            | 27  | 25  | 24  | 22  | 21  | 20  | 19   | 18   | 18   | 17   | 16   | 16   | 15   | 15   | 14   | 14   | 13   |    |
|                | 4.0 | 32            | 30  | 28  | 27  | 25  | 24  | 23  | 22   | 21   | 20   | 19   | 18   | 18   | 17   | 17   | 16   | 15   | 15   |    |
|                | 4.5 | 35            | 33  | 31  | 29  | 28  | 27  | 25  | 24   | 23   | 22   | 21   | 20   | 19   | 18   | 18   | 17   | 17   | 17   |    |
|                | 5.0 | 38            | 36  | 34  | 32  | 30  | 29  | 28  | 27   | 25   | 24   | 23   | 23   | 22   | 21   | 20   | 20   | 19   | 18   |    |
|                | 5.5 | 40            | 38  | 36  | 35  | 33  | 31  | 30  | 29   | 28   | 27   | 26   | 25   | 24   | 23   | 22   | 21   | 21   | 20   |    |
|                | 6.0 | 43            | 41  | 39  | 37  | 35  | 34  | 32  | 31   | 30   | 29   | 28   | 27   | 26   | 25   | 24   | 23   | 22   | 22   |    |
|                | 6.5 | 45            | 43  | 41  | 39  | 37  | 36  | 34  | 33   | 32   | 31   | 29   | 28   | 27   | 26   | 25   | 24   | 23   | 23   |    |
|                | 7.0 | 47            | 45  | 43  | 41  | 39  | 38  | 36  | 35   | 34   | 32   | 31   | 30   | 29   | 28   | 27   | 26   | 25   | 24   | 25 |
|                | 7.5 | 49            | 47  | 45  | 43  | 41  | 40  | 38  | 37   | 36   | 34   | 33   | 32   | 31   | 30   | 29   | 28   | 27   | 27   | 27 |
|                | 8.0 | 51            | 49  | 47  | 45  | 43  | 42  | 40  | 39   | 37   | 36   | 35   | 34   | 33   | 32   | 31   | 30   | 29   | 28   | 28 |
| 8.5            | 53  | 51            | 49  | 47  | 45  | 43  | 42  | 40  | 39   | 38   | 36   | 35   | 34   | 33   | 32   | 31   | 30   | 30   | 30   |    |
| 9.0            | 54  | 52            | 50  | 48  | 47  | 45  | 43  | 42  | 41   | 39   | 38   | 37   | 36   | 35   | 34   | 33   | 32   | 31   | 31   |    |
| 9.5            | 56  | 54            | 52  | 50  | 48  | 47  | 45  | 44  | 42   | 41   | 40   | 38   | 37   | 36   | 35   | 34   | 33   | 32   | 32   |    |
| 10.0           | 57  | 55            | 53  | 51  | 50  | 48  | 46  | 45  | 44   | 42   | 41   | 40   | 39   | 38   | 37   | 36   | 35   | 34   | 34   |    |

Calculated Angle in Degrees