

Stair or Rake Application

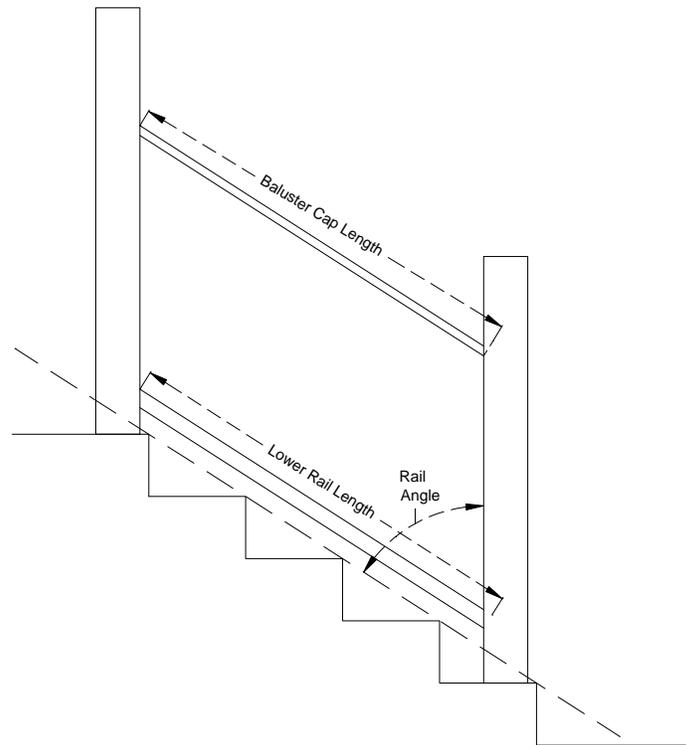
1. Determine angle, measure rail lengths and determine baluster layout/spacing

a. Insure newels or columns to which rail will be mounted are plumb and sturdy enough to support rail. If newel/column covers are used, insure they have blocking at each location where railing will be attached.

b. Determine and mark angle

c. Based upon Baluster spacing determined for the other rails on the job, determine the best end spacing by either locating a baluster directly at the center of the rail section, or the mid-point between two balusters as the center of the rail section. Be sure to take the angle into consideration when determining 'center'. Once Baluster spacing is determined, cut end(s) of Baluster Cap and Bottom Rail to angle and length. (Note: do not cut Rail Top Cap until section is assembled and secured at all four mounting points).

d. If equal spacing between all balusters and newels/columns is desired, disregard section 'c' above and determine spacing based upon width and number of balusters (Note: check local building codes for maximum spacing allowed).



2. Assemble rail/baluster section.

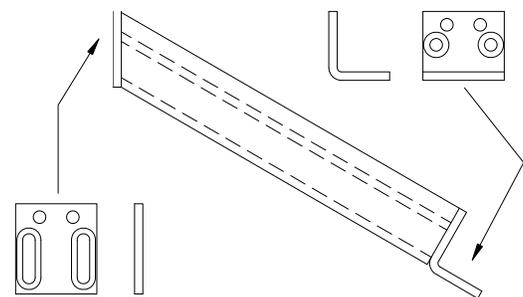
a. Trim Balusters to required length and angle.

b. Using the spacing from 1c or 1d above, at the center of the location for each Baluster, drill a 1/8" hole through the Bottom Rail at the centerline, at the angle of the Baluster attachment. Repeat this for process for the Baluster Cap, using the same spacing. Again remember to take the angle into consideration.

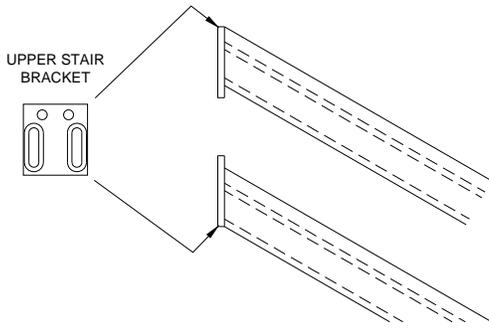
c. Secure each baluster with one #8 x 2-1/2" Square Drive T17 18-8SS screw through the Baluster Cap, and one through the bottom rail. Insure balusters are straight and aligned and secure with one #8 x 2-1/2" Square Drive T17 18-8SS screw through the bottom rail (offset from center) to preclude baluster from rotating after installation. (#8A x 2-1/4" Phillips head stainless steel screws are recommended and available through Intex in bags of 150).

3. Prepare aluminum reinforcements.

a. Attach a lower stair bracket (90 degree bend) using two #8 x 1-1/4" Square Drive T17 18-8SS screws supplied to the lower end of each reinforcement. Lubricate the threads with glycerin or soap to avoid binding or stripping screws Note: Do not cut this end of the reinforcement to the rail angle.



UPPER STAIR BRACKET



b. Measure and cut the upper end of both reinforcements to the rail angle determined in Step 1, **include the protruding portion of the lower bracket as part of the total length**. Attach an upper stair bracket to the angle cut end of the top rail reinforcement, with the bracket flush with the top of the reinforcement, using four #8 x 1-1/4" Square Drive T17 18-8SS screws supplied. Attach an upper stair bracket to the angle cut end of the bottom rail reinforcement, with the bracket flush with the bottom of the reinforcement, using four #8 x 1-1/4" Square Drive T17 18-8SS screws supplied. Lubricate the threads with glycerin or soap to avoid binding or stripping screws.

c. Cut one end of crush block to angle of rail and locate to the bottom aluminum rail reinforcement, with spacing no greater than 32" from the end, or between crush blocks. Insure that crush block(s) will be located on a stair tread.

d. Drill a 3/16" hole through the aluminum rail reinforcement, and secure each crush block using one #8 x 2-1/2" Square Drive T17 18-8SS screw.

4. Install rail

a. Position bottom aluminum rail reinforcement, with crush block(s) attached, between newels or columns, centered in newel or column face, and secure each end with three #10 x 3" Slot Hex Washer Head TA 18-8SS screws supplied.

b. Position vinyl rail/baluster assembly between newels or columns and seat fully down on bottom aluminum rail reinforcement.

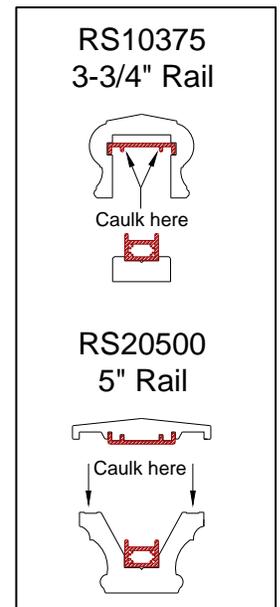
c. Seat remaining aluminum reinforcement into baluster cap.

d. Insure rail is centered on face of newel or column and secure each end with three #10 x 3" Slot Hex Washer Head TA 18-8SS screws supplied.

e. Drill a 3/16" hole through the aluminum reinforcement over every third baluster (note: offset to avoid the screw which is into the top of each baluster) and secure the aluminum reinforcement to the rail/baluster assembly using screws. (#8A x 2-1/4" Phillips head stainless steel screws are recommended and available through Intex in bags of 150).

f. Locate rail cross-section drawing matching the rail type you are installing to determine caulk location for applying rail top cap.

g. Apply an exterior grade caulk as indicated and seat the top cap onto the lower section of the top rail.



Please see rail installation instructions included with rail kit for parts list and other information