

QuickGuide Gravity Roller Conveyor

1. Load Characteristics

Determine the size, weight and bottom conveying surface of the load. Unit loads should have a smooth, firm surface for conveying. Watch for irregular, ribbed, broken boards and protruding nails. Smaller and irregular items can be conveyed in tote boxes or on slave boards or pallets.

2. Roller Spacing

A minimum of three rollers must support the smallest unit load. To determine the maximum roller centers, divide the shortest load length by three (3). Typical roller spacing is 1.5" to 9" center to center.

3. Roller Capacity

To determine the minimum roller capacity, divide the weight of the heaviest load by the minimum number of rollers that will be under the bottom surface of the load. For drop or impact loading of the conveyor, a higher load rating will be required.

4. Frame Capacity

To determine the minimum frame capacity, calculate the maximum weight per foot of the unit loads, multiply by ten (10) to get the total weight per standard 10' section (Live Load). Add the weight of the conveyor section to the Live Load to get the total frame load.

5. Curve Selection

Three types of curve are usually available. Straight roll curves are the least expensive. They usually require an outside edge guard, because product does not track well and will be skewed when it exits the curve. Double rollers provide a differential action to reduce the skewing of loads. Tapered roller curves are the most expensive, but provide accurate tracking so the product exits the curve with the same orientation it entered the curve.

6. Conveyor Width

Conveyor width is usually specified as a back-to-back or Between Frames (BF) dimension. For unit loads to be inside the frame or if side guards are used, allow 1" clearance on each side of the product ($BF = \text{Product Width} + 2"$). For loads that can overhang the sides, with rollers set high above the frame, rigid unit loads can be up to 25% wider than the BF dimension ($BF = \text{Product width}/1.25$). For boxes longer than they are wide, going around a curve, consult with your dealer for a chart to determine the minimum curve width.

7. Conveyor Pitch

For products to roll on a gravity feed conveyor line, the conveyor must be pitched downward. Pitch recommendations vary from 2" to 8" in each 10' section. The amount of pitch depends on the type of unit load (carton, case, tote, drum, bag), the style and number of rollers under the product and the type of lubrication on the rollers. The actual pitch is often determined by experimentation. Powered Booster Belts may be required to reset the product height in long gravity runs.

8. Conveyor Supports

Selection of supports is determined by the specific conveyor application. Supports can be portable Tripod Floor Supports, Permanent "H" Stands, or Ceiling Hung Pipe & Rod Supports.

9. Operating Conditions

For clean & dry environments, a plain bearing is sufficient. Excessive heat bleeds grease and requires a greaseable bearing. Extremely dusty locations require a dust-tight bearing. High humidity environments require a dust-tight grease packed or greaseable bearing. High humidity or wash-down environments may require galvanized or stainless steel frames and rollers.

For questions or help with Conveyor Applications:

***Call Preferred Equipment Resource at 800-711-8698,
e-mail us at: info@prefEQ.com, or visit our website: www.prefEQ.com.***