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Based on their almost limitless configurations and versatility, rollers are the most commonly used rolling unit in gravity conveyor. Roller conveyor generally come as straight, curve or spur sections. Based on the object being conveyed, the roller can be sized and modified to best suit the application. Rollers commonly range from 1" to 8" diameter.

**Common Gravity Roller Options:**

**Bearings**
- Oiled
- Greased
- Sealed
- ABEC-1 Rated

**Tubes**
- Mild Steel
- Galvanized
- Aluminum
- PVC
- Stainless Steel
- Tapered Tubes
- Coatings & Platings

**Axles**
- Round
- Hex

**Retention**
- Cotter Pin
- Spring

For a more comprehensive and detailed list of roller options, see *The Omni Metalcraft Roller Manual*
Skatewheel conveyor sections are mainly used in light duty applications and can be used in both permanent and portable applications. Skatewheel conveyor generally come as straight, curve or spur sections. When multiple skatewheels are mounted into a conveyor, the independent rotation of each wheel allows the product being conveyed to hold its’ orientation around curves. Based on the product being conveyed, the skatewheel pattern can be modified to best suit the application.

Flow rail sections are mainly used in light duty permanent racking applications. Multiple sections will be mounted in the same direction to support and convey the product.

**Common Skatewheel Options:**
- Galvanized
- 1-15/16” Diameter
- For 1/4” Diameter Axle
- Oiled

**Other Common Options Include:**

**Wheel Types**
- Multi-Directional
- Small & large diameters
- High capacity

**Wheel Materials**
- Galvanized
- Aluminum
- Nylon
- Stainless Steel

**Covers**
- Urethane
- Neoprene

**Lubrication**
- Oiled
- Greased
- Dry
Ball transfer tables are mainly used as workstations or transition points where multi-directional movement is necessary. Based on the product being conveyed, ball tables and their ball pattern can be designed to handle light to heavy duty applications. As with all other gravity conveyors, ball transfer tables can come in both bolted or welded construction, depending on the application.

**Common Ball Transfer Options:**
- 1” Dia. Steel Main Ball
- Zinc Plated Housing
- Stud Mounted

**Other Common Options Include:**

<table>
<thead>
<tr>
<th>Ball Transfer Types</th>
<th>Main Ball Materials</th>
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<tbody>
<tr>
<td>Drop-in mount</td>
<td>Carbon Steel</td>
</tr>
<tr>
<td>Flange mount</td>
<td>Nylon</td>
</tr>
<tr>
<td>Small and large diameters</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>50 to 1325 lb. capacity</td>
<td></td>
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<table>
<thead>
<tr>
<th>Ball Housing Material</th>
<th>Lubrication</th>
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<tbody>
<tr>
<td>Zinc Plated</td>
<td>Sealed and oiled</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>Dry</td>
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<tr>
<td>Black Oxide Finish</td>
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**Less Then Ideal Products:**
- “Picture Frame” bottom
- Cardboard and soft bottom
- Protrusions on bottom surface
- Narrow bottom runners
Supports

**Tripod Stands** - Used as a portable conveyor support mainly for skatewheel and light roller conveyor

**Leg Supports** - Used as permanently attached conveyor support
- Welded or bolted construction
- "H"-Style or Independent

**Knee Braces** - Used with leg supports to stabilize support structure

**Portable Castered Legs** - Permanently attached leg support for a portable conveyor

**Multi-Tier Supports** - Permanent leg support for multiple conveyor levels

**Ceiling Hangers** - Used as a permanent conveyor support for high elevations
**Flow Control**

**Fixed End Stops** – Permanent mounted product stop

**Blade Stops** – Blade can rise and lower between rollers to stop and release product
- Manual Operated
- Pneumatic Operated

**Roller Stops** – Roller can rise above rest of the rollers to stop and release product
- Manual Operated
- Pneumatic Operated

**Roller Brakes** – Mounted below rollers to raise and lock roller movement. Used to stop and release product.
- Manual Operated
- Pneumatic Operated

**Brake Rollers** – Speed controlling device mounted below rollers to limit product speed

**Other Accessories**

**Side Guides** – Mounted to conveyor side frames to guide product
- Fixed
- Adjustable

**Conveyor Gates** – Used to provide passageway through conveyor runs
- Manual Lift
- Spring Assisted Lift
- Gas Spring Assisted Lift
Frame Options

Side Frame Styles

**Structural Channel**
- Channel heights available from 3x4.1# to 12x20.7#
- Available in Mild Steel

**Formed Channel**
- Channel heights and flanges built to specification
- Common thicknesses range from 12 ga. to 1/4", others available
- Most common size is 3-1/2 x 1-1/2 x 10 ga.
- Available in Mild Steel, Galvanized Steel, Aluminum, Stainless Steel

**Structural Angle**
- Angle heights available up to 9"
- Thicknesses range from 1/8" to 1/2"
- Available in Mild Steel

**Formed Angle**
- Angle heights and flange built to specification
- Common thicknesses range from 12 ga. to 1/4", others available
- Available in Mild Steel, Galvanized Steel, Aluminum, Stainless Steel

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Construction Types
There are two types of construction for a gravity conveyor

- "Bolt Together" or Bolted Construction (as shown)
  - Refers to the spreaders and end couplers (see below) being bolted to the side frames
  - Used mainly for light to medium duty applications

- Welded Construction
  - Refers to the spreaders and end couplers being welded to the side frames
  - Used mainly for heavy duty applications and in abusive environments
FRAME OPTIONS

“Bolt Together” Coupler Styles

Hook & Rod
- For portable, quick disconnect applications

End Couplers
- For permanent installation applications

Bridge Plate
- For permanent installation applications

Aesthetic Options
Gravity conveyor frames are available in a wide variety of material and finish options:

Materials
- Galvanized
- Mild Steel
- Aluminum
- Stainless Steel
  - Multiple grades and polishes available

Finishes
- Wet Spray Paint
  - Choose from standard paint colors, choose a RAL number, or have any color matched in an enamel paint
  - Any color is available in an industrial enamel for quick delivery
  - Hi-Temp, Epoxies, and other specialty coating available
- Powder Coat
  - Choose from standard colors, choose a RAL number, or have any color matched in a powder coat
  - Color matches may require extra delivery time
- Galvanealed
- Chrome Plated
- Unfinished
  - Can be shipped raw or primed only
**BF (Between Frame)** – The distance between the side frames of a conveyor
- Commonly used for bolted roller conveyor with 1.9" dia. rollers or greater, welded roller conveyor, and ball transfer tables are sized by BF, a.k.a. BF Critical

**OAW (Over All Width)** – The total width of a conveyor
- OAW = BF + 2 x FLANGE WIDTH
- Commonly used for bolted roller conveyor with 1-3/8" dia. rollers and skatewheel conveyors are sized by OAW, a.k.a. OAW Critical

**Roller Height** – The height the top of a roller is above or below the side frame

**Frame Height** – Height of the side frame

**Length** – The length of a conveyor from end of frame to end of frame

**C/C** – The center-to-center distance between rollers

**TOR (Top Of Roller)** – The height of the rollers above the floor, usually with some +/- adjustment

**TOL (Top Of Leg)** – The height of leg support, usually with some +/- adjustment

**Support C/C** – The center-to-center distance between supports
COMMON TERMS

Degree
- The amount of curve a conveyor covers

IR (Inside Radius)
- BF Critical Conveyors
  - The distance from the center of the curve to the BF of the inside rail (as shown)
- OAW Critical Conveyors
  - The distance from the center of the curve to the flange of the inside rail

Spur Hand – The orientation of the spur in relation to the main line regardless of product flow. Either left or right hand.

WPF (Wheels Per Foot) – The number of wheels per foot of a skatewheel conveyor.
The more information that can be gathered from the customer about the application, the better Omni can help provide a gravity conveyor that will meet the customer’s needs. Below are some example questions that might be asked of the customer in order to help gather as much information as possible. Example responses and reasons for each question are below each.

**What is the product being conveyed?**
- **Example:** Wooden pallets carrying bricks
- **Reason:** Is gravity conveyor a viable option?

**What are the product dimensions, weight, and bottom type?**
- **Example:** 48" long, 48" wide, 24" tall, 1000 lbs., (3) 4" wide runners
- **Reason:** To help determine roller, wheel, or ball type and size. To determine rolling unit spacing.

**How many products will be on the conveyor at once?**
- **Example:** Fully loaded conveyor run, products back to back
- **Reason:** To help determine frame size and leg support centers.

**How is the product loaded and unloaded?**
- **Example:** The product is end loaded by a fork truck and unloaded from the side by a fork truck
- **Reason:** To help determine frame modifications, roller options, stops and guides, etc.

**What are the surrounding environment conditions?**
- **Example:** Dusty
- **Reason:** To help determine material type, roller options, construction, etc.

**Is the conveyor mounted to other equipment?**
- **Example:** No, mounted to floor
- **Reason:** To help determine mounting hole size and location considerations, leg support requirements, etc.