



**THE EXPERIENCE  
TO HANDLE IT RIGHT!®**

**Screw Conveyor Corporation®**

*Since 1932*

## **Material Handling Expertise**

**Screw Conveyors, Drag Conveyors & Bucket Elevators**

Screw Conveyor Corporation

700 Hoffman Street

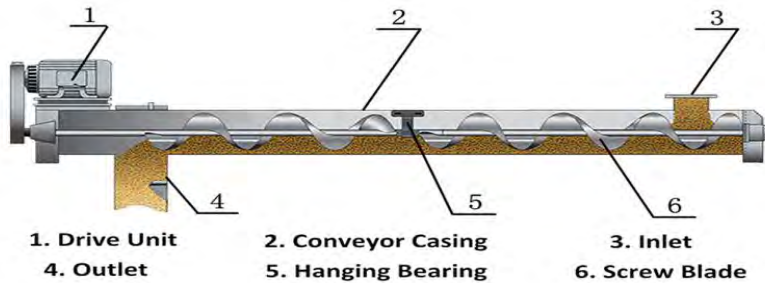
Hammond, IN 46327

[www.screwconveyor.com](http://www.screwconveyor.com)

(219) 931-1450

# Screw Conveyor Corporation Material Handling Solutions

## Horizontal Conveying



## Inclined Conveying



## Vertical Handling

### Bucket Elevators: Centrifugal and Continuous Designs

Bucket Elevators provide an economical and efficient method to vertically elevate a wide range of dry, free-flowing materials. Material data and complete application information are critical in the proper sizing and selection of bucket elevators. (See Bucket Elevator Data Sheet found on [www.screwconveyor.com](http://www.screwconveyor.com))

#### Centrifugal Design



Typical Capacities: 300 to 3,500 cu ft/hour  
10 to 160 Tons/hour

Elevator Heights: 12 to 200 feet

Applications: Non-abrasive to highly abrasive products

Elevators are sized based on a specific volume of material uniformly and continuously fed to the inlet of the elevator. Material characteristics and material classification are required to properly design the elevator. The operating environment and service duty (i.e. 24/7/365 days per year) are also important.



#### Continuous Design



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# Bulk Material Handling Solutions

**General Definition:** The use of Material Handling Equipment to move a “controlled or metered amount of material” from one point to another

## Examples of Materials Handled in Bulk:

Grain (e.g. Corn, Oats, Barley, Wheat, Rye, Soybeans, etc.)

Nuts ( Almonds, Walnuts, Peanuts, Pecans, Cashews, etc.)

Minerals ( Sand, Salt, Coal, Iron-Ore, Alumina, Gypsum, Copper, etc.)

Miscellaneous ( Fish Scrap, Bone meal, Bagasse, Crushed Asphalt, Charcoal, Coffee, Corn Cobs, Cottonseed, Glass Cullet, Sugar, Detergent, Ice, Lime, Malt, Oyster Shells, Paper Pulp, Sludge, Walnut Shells, Wood Shavings, etc.)



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# Bulk Material Handling Solutions

**Provide essential application information for proper selection and sizing of your Material Handling Solution** (See Data Sheets at [www.screwconveyor.com](http://www.screwconveyor.com) )

- Clearly identify what materials are handled at the site
- Determine if the product needs to be handled on the horizontal, on an incline, or conveyed vertically
- Make sure to confirm that the Bulk Material Handling Process is a **control fed/metered environment** (i.e. the material handling solution we propose will have a controlled flow of material coming into and out of our equipment)
- Material Handling Solutions are available for applications where material is not metered or control fed (i.e. Choke-fed or Hopper-fed applications)
- Use the appropriate SCC Data Sheet to record the **application data** and **material characteristics** associated with this material handling process



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# Bulk Material Handling Solutions

## The importance of the Data Sheet Information

- First we need to know if there is a controlled/constant flow of material
- If it is a controlled-flow application, we need to know the volume of material processed, i.e. 1,250 cubic feet/hour
- Material information and characteristics are needed to select the optimum material handling solution (material density in pounds/cu ft, particle size, % of lumps, moisture content, abrasive, corrosive, temperature, etc.)
- It must be determined if the equipment is to convey the material horizontally, on an incline, or vertically
- Dimensional requirements must be provided (i.e. length of conveyor needed, existing plant layout that our equipment must fit, other environmental conditions we need to consider, etc.)

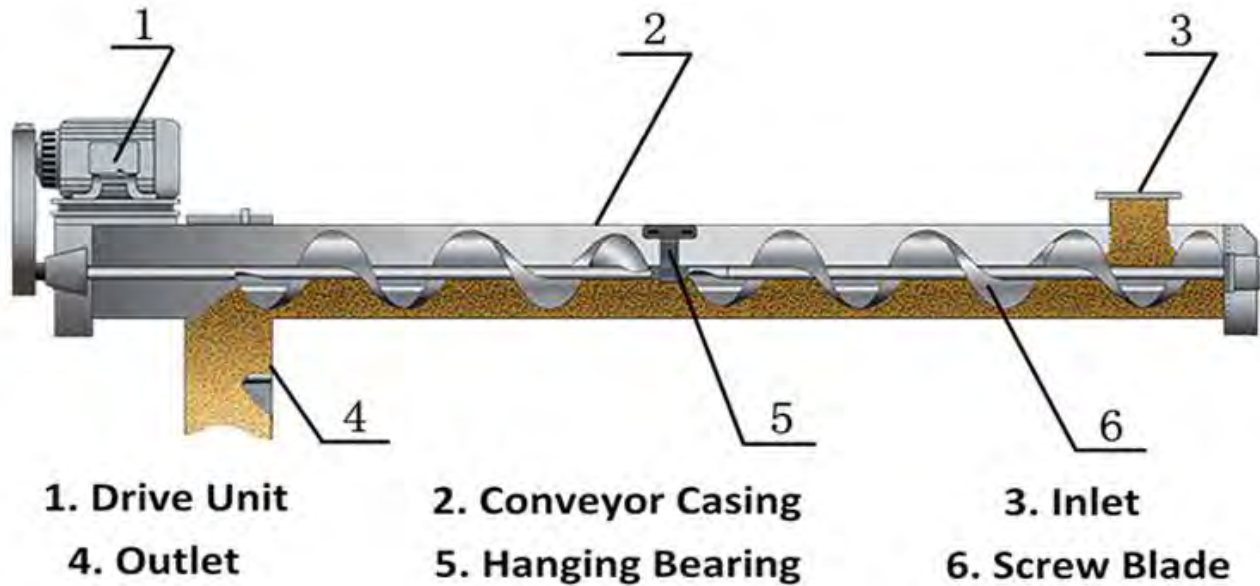


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# Basic Screw Conveyor



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# Screw Conveyor

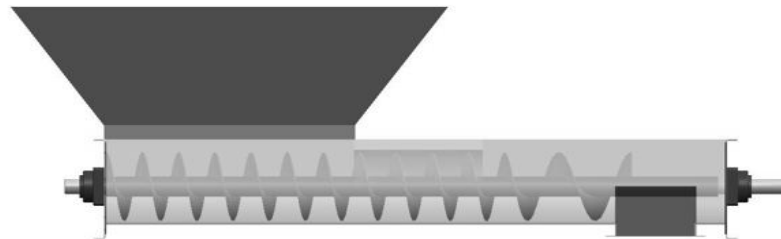
**Screw Conveyor:** Used to convey a **regulated** volume of material from trough inlet to trough discharge. Material flow into the conveyor must enter at a uniform, metered rate. Conveyed material bed depth is typically at 15%, 30% or 45% of the trough. 45% trough loading is considered maximum for Screw Conveyors.



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## Screw Feeder

Used to meter/regulate material as it is withdrawn from a bin or hopper. The screw feeder is choke fed/flooded, i.e. **not regulated**. Selection of screw diameter and calculation of required speed are based on 95% trough loading.



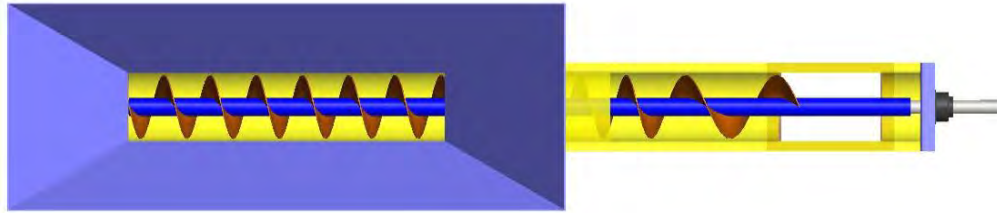
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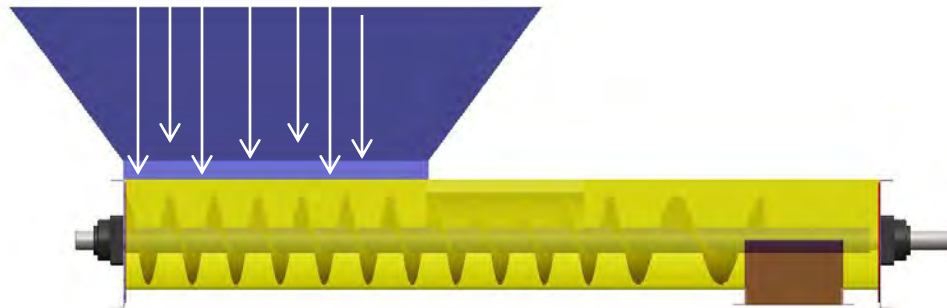
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## Screw Feeders

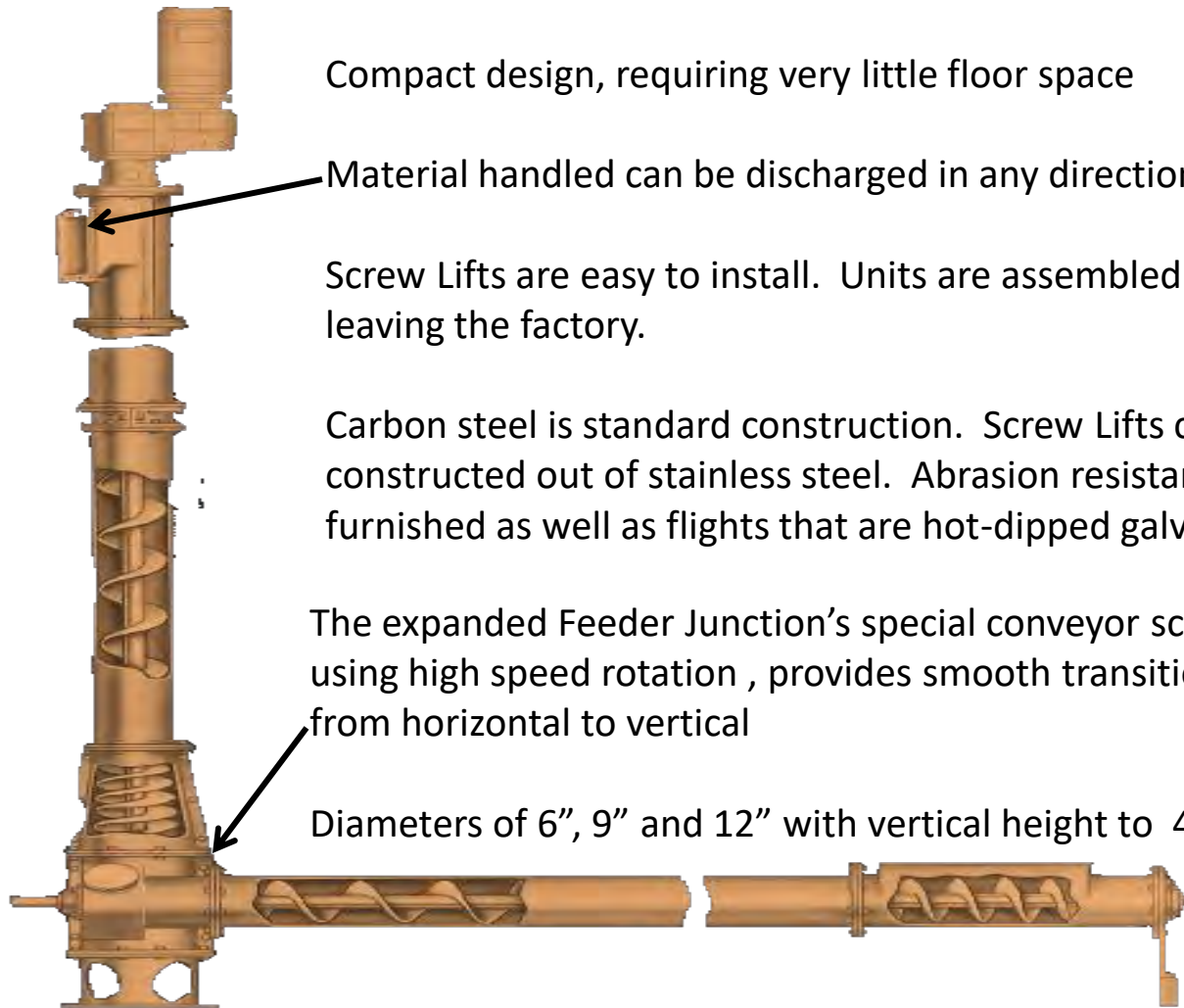
Regulates/Meters material from hopper to discharge



Choke Fed, material head load condition



# Screw Lifts



Compact design, requiring very little floor space

Material handled can be discharged in any direction

Screw Lifts are easy to install. Units are assembled and tested prior to leaving the factory.

Carbon steel is standard construction. Screw Lifts can also be constructed out of stainless steel. Abrasion resistant steel flights can be furnished as well as flights that are hot-dipped galvanized

The expanded Feeder Junction's special conveyor screw flighting, using high speed rotation , provides smooth transition of material from horizontal to vertical

Diameters of 6", 9" and 12" with vertical height to 40+ feet.

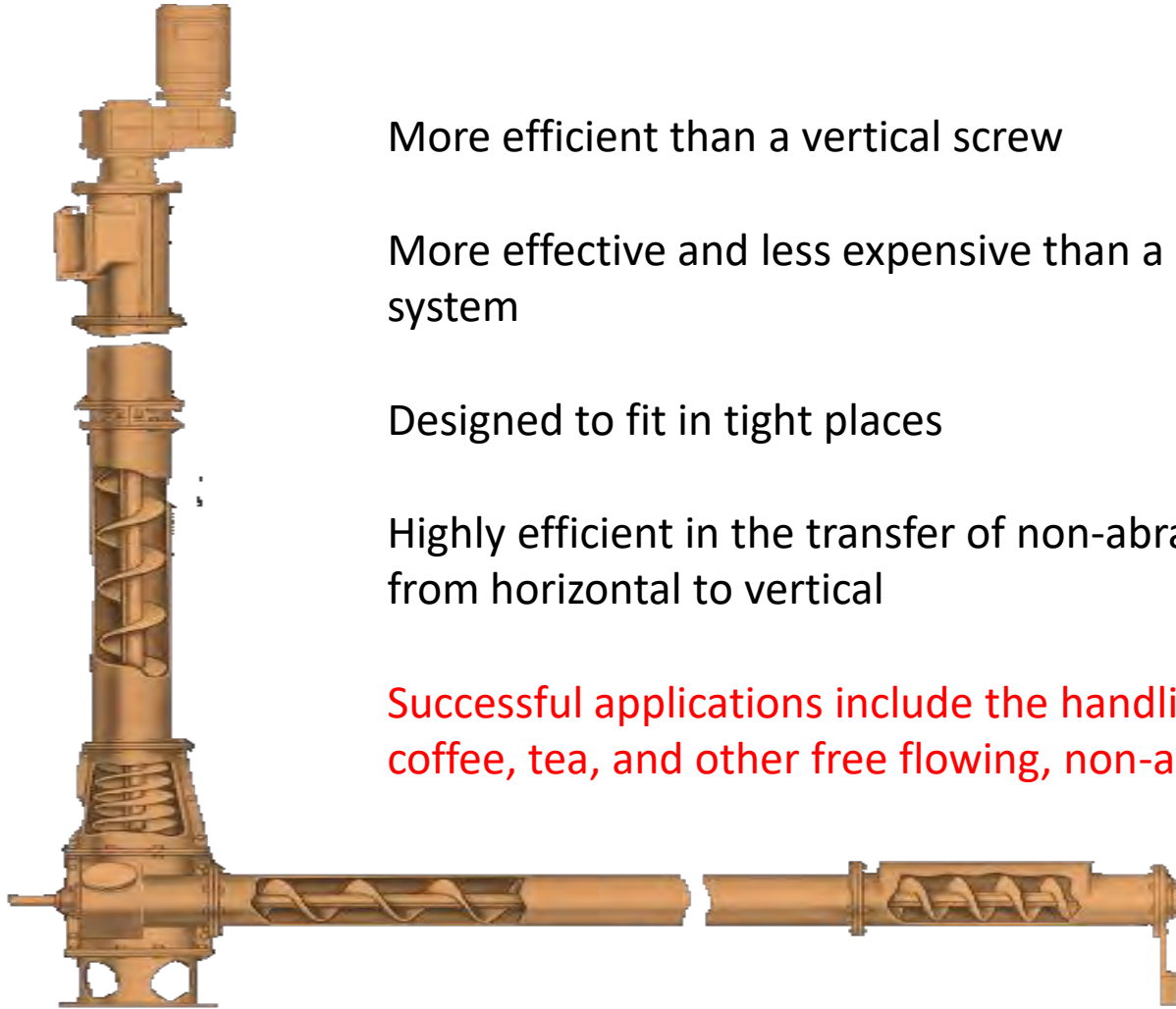


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# Screw Lifts



More efficient than a vertical screw

More effective and less expensive than a pneumatic system

Designed to fit in tight places

Highly efficient in the transfer of non-abrasive material from horizontal to vertical

Successful applications include the handling of ice, grain, coffee, tea, and other free flowing, non-abrasive products



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# Drag Conveyors

**Round Bottom Super-Flo**



**Flat Bottom Enduro-Flo**



# Reasons to Consider Drag Conveyors vs. Screw Conveyors

- When conveying capacities for a screw conveyor reach their peak (plus 18,000 cu ft/hour)
- When gentle handling of the material is required (material is pulled along, not tumbled or agitated as it is when conveyed in a screw conveyor)
- When trough cleanout is required, round bottom drags are used. Screw conveyors are not self cleaning.
- When conveying lengths go beyond 100 to 150 feet, drag conveyors are typically more economical and can come in lengths well over 225 feet.
- Motor horsepower is generally higher when comparing a screw conveyor to a drag conveyor, especially when you reach longer lengths such as 75 feet plus.
- When the material travel path is not on a straight line over the length of the conveyor (drag conveyors can start-off conveying horizontally, then transition up an incline, and then back to the flat).
- Drag conveyors can accommodate and convey larger particle sizes versus the space limitations found between screw conveyor flights.
- Drag conveyors and screw conveyors offer dust containment and the ability to keep the conveyed product free from atmospheric contamination.
- Drag conveyors and screw conveyors offer multiple inlet and discharge points if required.
- Drag conveyors and screw conveyors can be manufactured from mild, abrasion resistant and stainless steel construction and can operate in low and high temperature applications.



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# Super-Flo Round Bottom Drag Conveyor

- 10 Sizes: 6" through 24"
- Capacities from 1890 cu ft/hour to 25,765 cu ft/hour
- Materials are carried as a whole without tumbling
- Self-Cleaning
- Completely enclosed
- Low initial cost
- Low power requirements
- Horizontal to inclined conveying
- Able to handle sensitive materials such as pigments, edible beans, malt, seed grains, tea and coffee



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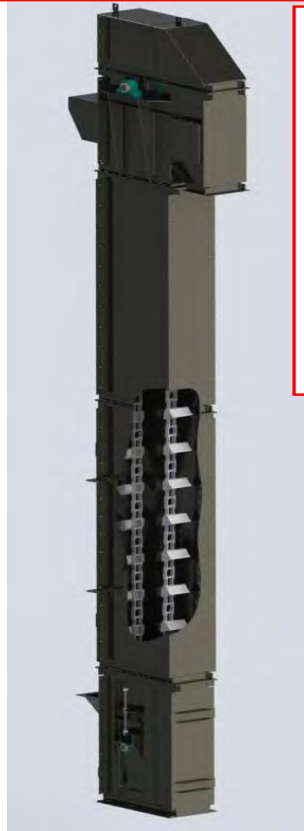
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# Bucket Elevators

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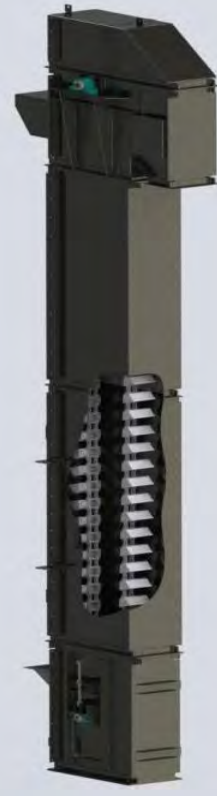
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### Continuous Design



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## Centrifugal and Continuous Bucket Elevators

- Used to elevate a wide variety of dry, free-flowing bulk materials
- Centrifugal Bucket Elevators dig the material from the boot section and utilize centrifugal force to discharge material in the head section
- Continuous Bucket Elevators have closely spaced buckets that receive the material directly from the loading leg or inlet chute. The material discharges via gravity, off the back of the preceding bucket and into the discharge chute.
- Both Centrifugal and Continuous Bucket Elevators can use either chain or belting



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# Bucket Elevators

## Industrial Centrifugal Bucket Elevators

- Recommended for handling fine, free flowing materials
- Buckets dig the material from the boot section
- Buckets discharge the material through centrifugal force in the head section
- Chain or Belt Elevators available
- Capacities up to 5,500 cubic feet/hour
- 40,000 cubic feet/hour using multiple rows of buckets (Belt)
- 15,000 cubic feet/hour using multiple rows of buckets (Chain)



# Bucket Elevators

## Industrial Continuous Bucket Elevators

- Recommended for handling sluggish, aerated and friable materials with a large percentage of lumps
- Closely spaced buckets are fed directly from a loading leg or inlet chute
- Buckets unload in the head section via gravity, off the back of the preceding bucket to the discharge chute
- Chain or Belt Elevators available
- Capacities up to 5,500 cubic feet/hour
- 40,000 cubic feet/hour using multiple rows of buckets (Belt)
- 15,000 cubic feet/hour using multiple rows of buckets (Chain)



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