

Dynaflow Tubular Chain Drag Conveyors

The Dynaflow Tubular Chain Drag Conveyor is also a mechanical tubular drag conveyor operating within the confines of a pipe.

In this conveyor, the discs that move material along the pipe are connected by articulated metal links (chains) meaning that they are well suited to the most arduous of applications. The discs can be made from a variety of materials including steel and cast iron. This enables them to operate at temperatures up to 482° F (250° C).

What can they convey?

- Activated Carbon
- Adipic Acid
- Alum
- Ammonium Nitrate
- Antimony Oxide
- Artificial Sweetener
- Aspirin Powder
- Asbestos
- Baghouse Dust
- Baking Powder
- Black Oxide
- Benzoic Acid
- Bentonite Clay
- Bisphenol
- Bone Meal
- Calcium Carbonate
- Calcium Hypochlorite
- Carbon Black
- Carbon Chips
- Caustic Soda
- Cellulose
- Cement Powder
- Ceramic Clay
- Cereal Fines
- Chlorendic Anhydride
- Coal Fines
- Coffee Beans
- Coffee Chaff
- Copper Powder
- Copper Chromate
- Copper Sulphate
- Corn Meal
- Crushed Pineapple
- Diatomaceous Earth
- Digested Wood Knots
- Epsom Salts
- Ferrous Sulfate
- Fertiliser Powder
- Filter Cake Flock
- Fumaric Acid
- Grain
- Graphite
- Green Salts
- Grinding Sludge
- Ground Coffee
- Ground Graham
- Herbicide
- Hydrated Lime
- Insecticide Powder
- Instant Coffee
- Irganox
- Iron Oxide
- Iron Sulfate
- Isophthalic Acid
- Kaolin Clay
- Lead Oxide
- Lime
- Magnesium Fluoride
- Magnesium Chips
- Magnetic Oxide
- Manganese Oxide
- Malt
- Mercuric Oxide
- Metal Chips
- Metallurgical Coke
- Mica
- Mill Scale
- Molybdenum
- Monosodium phosphate
- Mustard
- Mylar Flake
- Paint Flake
- Paint Sludge
- Paper Pulp
- Paraformaldehyde Flake
- Paunch Manure
- Penicillin Powder
- Pentaerythritol
- Pesticide
- Petroleum Coke
- Phenolic Resin
- Phthalic Acid
- Phthalic Anhydride
- Phosphate Sludge
- Phosphorus Pentasulfide
- Phosphate Ore
- Plastisol Sludge
- Powdered Metal
- Powdered Sugar
- Powdered Grass Killer
- PVC Powder
- Raven Black
- Red Lead
- Resin
- Rice
- Rice Hulls
- Sawdust
- Sewage Grit
- Sewage Sludge
- Shelled Peanuts
- Soda Ash
- Sodium bicarbonate
- Sodium Tripolyphosphate
- Sodium Phosphate
- Sodium Hydroxide
- Sodium Bisulphate
- Spent Grain
- Spent Hops
- Spices
- Starch
- Stearic Acid
- Sulphur
- Talc
- Tea
- Terephthalic Acid
- Titanium Dioxide
- Titanox
- Tile clay
- Uranium Oxide
- Uranium Salts
- Uranium Tetrafluoride
- Urea
- Vinsol Resin



Conveyor Selection

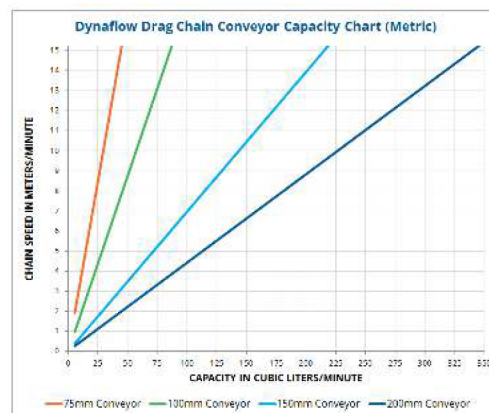
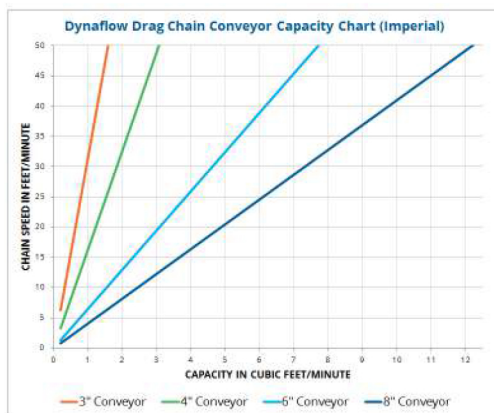
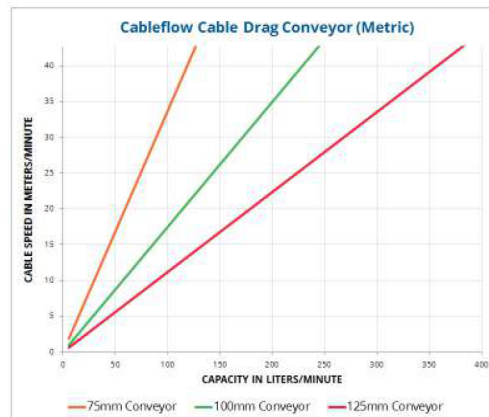
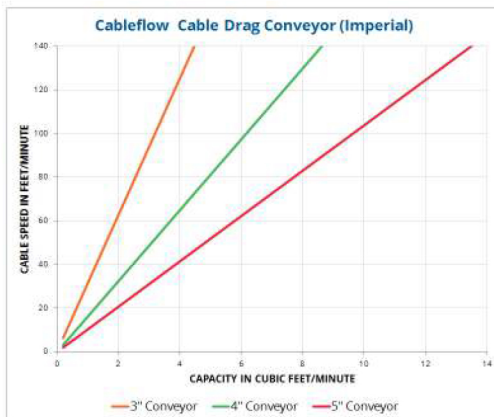
Conveyor Size and Cable/Chain Speed

The capacity chart below will allow you to estimate the size of conveyor and the chain speed needed based on the throughput requirements in litres per minute. The horizontal lines represent the velocity at which your product will pass through the conveyor. The vertical lines indicate the volumetric throughput rate in litres per minute. The diagonal lines are the sizes of the conveyors available.

How to Use the Capacity Charts

1. Based on your material's bulk density, calculate the required conveying rate in cubic feet or litres per minute. Locate the amount required on the horizontal scale.
2. Move up the vertical line and note where it intersects with one or more diagonal lines. Each intersection point indicates a possible conveyor size.
3. From each intersection point, move left horizontally all the way to the vertical axis, indicating the conveyor cable/chain speed.

There are many factors that enter into the tubular conveyor selection process. Beyond the mechanical selection described above, consideration must be given to the physical characteristics of the material to be conveyed and the equipment duty cycle.



Tubular Conveyor Selection Guidelines

1. Cableflow cable drag conveyors can run up to 140 ft/min (43m/min) and Dynaflow chain drag conveyors can run up to 50 ft/min (15m/min) depending, of course, on the application.
2. It is generally advisable to apply a larger conveyor at a slower cable/chain speed if your material possess sluggish flow characteristics, is sticky, abrasive or if the equipment operational duty cycle is extensive.
3. Smaller conveyor sizes and faster cable/chain speeds are usually selected when the material is free flowing and non-abrasive and/or the equipment duty cycle is low.
4. Future capacity requirements should be considered. It may be prudent to install a larger conveyor now, at a lower cable/chain speed, then increase the cable/chain speed later to accommodate a higher capacity. This can be done with a simple change of pulleys and v-belts.
5. Surges and uneven feed conditions should be considered. Surge hoppers may provide for more constant feeding and may allow use of a smaller conveyor. Tubular Drag Conveyors can be operated partially charged or, with no material being fed into them, to ensure they are empty.
6. Many forms of sludge do not flow well into or out of tubular conveyors. In applications involving sludge, it is generally advisable to oversize the conveyor by a factor of four or more and to never run the chain at a speed above 20 ft/min (6m/min). It is also important to determine the characteristics of the sludge when it dries on the conveyor wall and chain linkage. If it becomes too hard to be easily removed, another type of conveyor may be better suited.

Final equipment selection should be made by a Spiroflow engineer, who will consider the above as well as other factors and make a recommendation on a conveyor that will provide reliable service.

The System Components

Drive Assemblies

Conveyor drive assemblies are available for 90° or 180° locations. They are always located at a high point in the conveyor circuit, after product discharge or can be used as a discharge point. Drive components are selected as required by the conveyor circuit and are mounted on a drive plate which serves as a take-up unit. All drives are complete with overload protection and drive guards. Constant or variable speed units available. All drives are designed for full load start up.



Chain Vibrator

Where a conveyed product resists complete discharge, a special chain vibrator can be incorporated. The vibrator mechanism penetrates the conveyor housing to make direct contact with the chain.



Inspection Openings

Inspection and access openings are located along straight casing sections.



Idler Sprocket Turns

Sprocket turns are placed in a circuit in place of a bend to reduce frictional drag. They are available in any angle from 90° to 180°. They are most commonly placed in the return circuit.

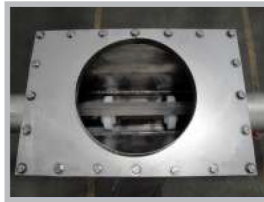


Conveying product through an idler box is not recommended, although idler turns are often used as a product discharge point in a system.



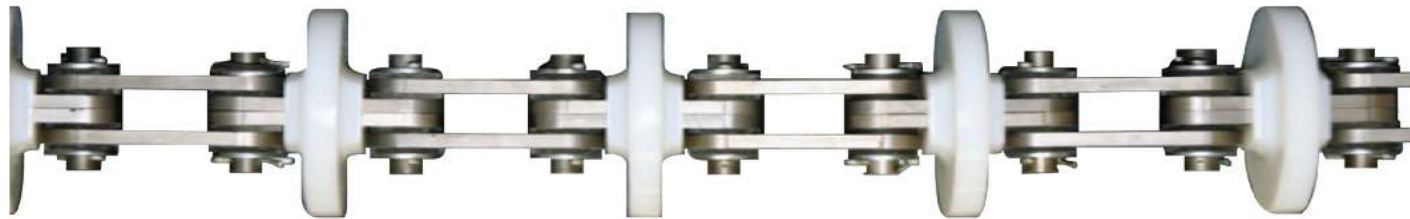
Inlet & Discharge Hoppers

Hoppers are located where required along the straight sections of the conveyor circuit. The actual length and height of the hopper are determined by the flow characteristics of the conveyed product and the dimensions of interfacing equipment. It is quite common to provide a large surge hopper at the inlet for bag dump operations.



Discharge Gates

Manual or air-operated discharge gates allow the operator to choose which of a multiple of discharge points is to be used at a specific time. Commercially available knife or butterfly style valves, located below a standard discharge hopper, are also available.



Powder Handling Systems



Design

We have an experienced team of mechanical and electrical engineers with a vast collective knowledge of solids handling, geared to handle your project quickly and efficiently, whether you need a single conveyor or a complete powder handling system.

Testing

Engineers at our fully equipped test facilities in the US & UK are at your disposal to assess performance of our machinery on your particular material. On-site trials can also be arranged if preferred.



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- Aero Mechanical Conveyors
- Pneumatic & Vacuum Conveyors
- Bulk Bag Fillers
- Bulk Bag Dischargers
- Bag, Drum & IBC Emptiers
- Ingredients Handling Systems
- Batch & Continuous Weighing Systems
- Silo & Hopper Discharge Aids
- Continuous Mixing Systems



Flexible Screw Conveyors



Aero Mechanical Conveyors



Vacuum Conveyors



Bulk Bag Fillers



Bulk Bag Dischargers

Contact us today to discuss your applications

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