

Triple/S Dynamics



Slipstick® Industrial Horizontal Motion Conveyor



Basics

Innovation distinguishes between a leader and a follower.

– *Steve Jobs*



The Slipstick horizontal motion conveyor is a true self-balancing forced-vibration system free of vertical pitching forces and rocking couples, and requires no springs for running. A Slipstick conveyor moves anything it can hold up. That is because it is a non-resonant forced vibrating system that doesn't use load-sensitive spring force magnification to make the pan vibrate. And it doesn't have to lift material to make it move. Relative movement between the Slipstick pan and the material is pure sliding. Differential, not absolute, friction supplies the motive power. That is why the travel rate is not dependent on surface roughness, or even area in contact. This unique feature of the Slipstick conveyor permits lighter, more economic construction. Or extra heavy duty construction for more load capacity. With fewer working parts, and no springs at all, it is the closest approach to a zero-maintenance vibrating conveyor on the market.



Flexibility of design

Built in lengths from 4 ft. to more than 200 ft., the Slipstick offers a variable rate of product delivery depending upon the application, and is adjustable to suit most any requirement. Base mounted on the floor or suspended overhead, horizontal motion conveyors provide the level of versatility required for difficult installation applications. Conveyor drives may be positioned at either end of the conveyor, or mounted above or below. In addition, these conveyors can be operated at variable speeds, and their conveying direction is reversible.



Can handle abrasives

Less susceptible to abrasive wear than screw conveyors and cleaner than belt conveyors, a Slipstick is excellent for many applications in the handling of industrial minerals and chemicals, ranging from large lump sizes down to fine powders. Materials can be fed and discharged anywhere along its length. Abrasive wear is significantly less in a Slipstick than in a conventional pitching motion conveyor. The complete absence of vertical impacts against the conveyor surface, as on a conventional vibrating conveyor, explains the difference in wear rates.



Wide variety of materials

A Slipstick will start up under heavy material loading. With the Slipstick's zero-pitch conveying motion, heavy pieces don't clatter as they slide along, so it's quieter. Light, fluffy materials and powders aren't fluidized or stratified by the conveying motion, so there's no limit on the depth of these materials in the conveyor pan. Light, friable materials move gently, with less risk of attrition. Solids in a liquid are no problem because the Slipstick doesn't try to make the liquid bounce. Solid particles will move through the liquid with the same action.

Design Facts



- Structural design governed only by strength required. No excess steel for stabilizing.
- Insensitive to load variations. Can convey loads many times its weight. Drive forces constant regardless of load. Will not stall under load.
- Travel rate can be controlled directly by varying RPM.
- Direction can be reversible.



- No vertical component. Motion is pure sliding in a horizontal plane. Easy on delicate thin-walled castings, pellets, crystals or potato chips. Quiet material motion.
- Self-balancing without extra weight due to integrally mounted inertia drive applying straight-line resultant force horizontally through CG of cross section.
- Can be floor supported or suspended from an overhead structure.



- No seismic deadloading or dynamic counter-balance required.
- Motion is generated by gear-coupled rotating unbalances. No eccentrics. No power springs.
- Nothing to tune; amplitude is independent of RPM in an operating range of 40-70 Hz.



- Less maintenance. Nothing to adjust. No critical rubber parts. Replacement parts are bearings, seals and timing gears.
- Doesn't overstroke at normal operating speeds.
- Runs indefinitely without special attention.
- Discourages build-up of materials on the surface – typically scours the pan clean so there's less time required between production cycles for cleaning.
- Exterior surfaces of the conveyor can be easily accessed for wipe down cleaning – cleaning under the conveyor is easier because there are no support frames or springs.
- Mechanical simplicity over screws, belt or drag conveyors.
- Safer conveying with no chains, screws, sprockets, rollers, idlers, or other moving parts located outside of the sealed and guarded drive unit.
- Minimal conveyor cross section fits neatly into installations where there is limited space.



Applications

Excellent firms don't believe in excellence – only in constant improvement and constant change.

– Tom Peters



The versatility of the Slipstick Conveyor has given way to solving many different processing applications including scalping oversize, length separations, heating, cooling, drying, de-shingling, singulating, aligning, de-watering, washing, metal detection, magnetic separations, distributing through gates, dust containment, in-line accumulation/storage, surge feeding, impact loading, metered flow from hopper, sorting and more. The number of industrial products that currently move on Slipstick conveyors is long, here is a sampling.



- Ash
- Activated Carbon
- Barium Sulfate
- Calcium Carbonate
- Calcium Oxide
- Carbon Black
- Catalyst
- Cement Clinker
- Ceramics
- Detergents
- Dextrose
- Granite
- Limestone, Pebble Lime
- Paper
- Pesticides
- Primary Metals
- Resins
- Phenolics
- Plastic Pellets
- Salt
- Scrap Steel
- Silica Sand
- Solid Waste
- Soybeans
- Wood and paper rejects
- Zinc

Options



- Materials of Construction – Corrosion resistance, wear resistance (AR plate) and other types of high carbon or alloy steel including 304, 316, 2205; UHMW

- Low profile pans – and narrow high profile pans

- Dual direction

- Impact liners – and slope sheets at impact zone



- Sealed environment – covers and flexible connectors at inlet and outlet; providing near dust-free conveying

- Distribution options

- Gates – Slide, pivot, plug or tool-less – remove from the side of the conveyor or swing down for easy cleaning



- Heating/Cooling – Air or water for indirect heat exchange applications; air injection and water mist are also available for direct application

- Supports and suspension rods – additional supports to attach to structure above or below



- Product dams/flow inhibitors – retains material in the pan for a quickshot surge or inventory of material as conditions warrant

- Multi-lane – product segregation or conveying multiple products in one conveyor

- Textured pans – high-adhesion product moves easier; allows for slight inclined conveying



- Non-metallic sections – for use with metal detectors, typically UHMW

- Non-ferrous sections – typically stainless steel for use around magnets

- Grizzly Sections – or scalping section to remove oversize from a smaller product; not a true screening conveyor



- Metering – ability to hold product in-line and then meter out

- De-watering

Relationship

Profit in business comes from repeat customers, customers that boast about your product or service, and that bring friends with them.

– W. Edwards Deming



The key to success for our company has long been the ability to turn customers' needs into solutions. Whether you need to convey it, screen it or separate it, we can help you meet your objectives. Our primary goal is to offer the best processing equipment, engineered and manufactured to be rugged, reliable, and safe.

Family



Sanitary Slipstick

Some of the benefits of the Slipstick in industrial applications include the conveyors ability to handle massive impact loads and carrying capacities, conveys bulk materials of many type and sizes, can be choke fed and can have widths and depths to match surge requirements – with lengths over 200’.



Texas Shaker Vibrating Screens

The Texas Shaker is designed for precision screening and sizing of dry granular materials in aperture ranges from approximately 1-1/2” to 300 microns. Its long stroke, slow-speed horizontal reciprocating motion promotes rapid stratification and constantly changing velocities yield the highest throughput of undersize per cycle. Available in arrangements of 1-4 cutpoints in one machine.



Density Separators and Stoners

The Sutton line of Density Separators and Stoners use mechanical vibration and air fluidization to separate materials based on product density. Some applications include cleaning grains, nuts and legumes, material reclaim from scrap waste, seed and oil seed processing, cleaning of leafy spices and peppercorns and reclamation of copper wire from chopped scrap wire.

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