



EXPERIENCE SUMMARY

- GENERAL - Material Handling equipment sizing and selection – Belt conveyor, Screw conveyor. Preparation of technical specifications and data sheets and engineering calculation sheets.
- INDUSTRIAL - Static Equipment design – Tanks, Pressure vessels, Heating coils, Bins. Design and sizing of Control Valve actuation systems

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Bulk Material Handling Equipment to Cement, Power, Minerals and other process industries. Their product range includes Chain and Belt Bucket Elevators, Chain Conveyors, Chain Feeders, Belt Conveyors.

A top performing engineer professional offering 5+ years progressive experience in project management and engineering design for EPC firms and material handling equipment projects and manufacturing. Combines excellent technical, analytical and engineering qualifications with the ability to lead project development and facilitate cost-effective, on time delivery of projects and products

Bulk Materials Handling Solutions

Sanat Mechanic co . providers of industrial **bulk materials handling** solutions through a wide range of specialist **weighing, feeding and metering** technologies. Using a combination of unique Sanat Mechanic, **conveyor and elevator** systems and strategic partnerships with selected suppliers, they are capable of providing complete solutions for any purpose.

With the increase in domestic requirements for effective waste management, Sanat Mechanic are focused on developing market-leading **bulk materials handling** equipment to assist in effectively managing industrial processes.

Sanat Mechanic are therefore dedicated to providing quality **container loading systems** in order to simplify **shipping container** loading, including **bulk reception units** and mobile **hopper** systems. They also offer **bucket elevators** and **bridge distribution systems** to create manageable **bulk materials handling** processes.

Mass Flow Meters

Mass Flow Meters are designed to induce changes in momentum during material handling. This makes the process smoother and more reliable, as well as more economic by reducing material degradation. Sanat Mechanic, have created an innovative range of mass flow meters.

Belt Conveyor Manufacturer

Belt Conveyors

- Belt Feeders
- Belt Trippers
- Overland Conveyors
- Advantages



Belt Conveyors are the most economical way to transport bulk materials over both short and long distances. Belt Conveyors utilize a belt to transport the material and are control fed in one or numerous inlet areas. The bulk material rides on top of the belt and is contained by the belt trough or side walls. Conveying capacities up to 50,000 cubic feet per hour can easily be handled with our Belt Conveyors. Belt Conveyors are ideal for conveying materials with large and varying particle size.



SMQ Belt Conveyors are used in many industries including aggregate, cement, chemical, mining and wastewater treatment industries for conveying and elevating bulk materials.

Available Features and Options

- Abrasion Resistant Belting – To Reduce Wear and Increase Life
- Heavy-Duty Idlers with Anti-Friction Bearings – To Increase Idler Life and Reduce Horsepower Requirements
- Heavy-Duty Structural Frames and Supports – To Provide System Rigidity
- High Torque Drive Units – To Power Through Upset Conditions
- Dust-Tight Construction – To Eliminate Dust Emissions





Available Configurations

- Troughing Idler Belt Conveyors
- Slider Bed Belt Conveyors
- Flexible Wall Belt Conveyors

Screw Conveyors

- Screw Feeders
- Mixers & Blenders
- Advantages
- Typical Applications
- Engineering Guide
- Live Bottoms
- **Parts Catalog**

Screw Conveyors transport bulk materials while utilizing a screw to transport the material and are control fed in one or numerous inlet areas. The bulk material moves forward with each revolution of the screw. Conveying capacities up to 10,000 cubic feet per hour can easily be handled with **SMQ** Screw Conveyors. Screw Conveyors are ideal for conveying both free-flowing and sticky materials of similar particle size.



SMQ Screw Conveyors are used in many industries including cement, chemical, food, mining and wastewater treatment industries for conveying and elevating bulk materials.



Available Features and Options

- Heavy-Duty Construction – To Increase Life and Reduce Downtime
- Totally Enclosed Design – To Eliminate Dust or Vapor Emissions
- Modular Construction – To Reduce Total Cost of Ownership
- Multiple Discharge Points – To Distribute Materials to Process Equipment
- High Torque Drive Units – To Power Through Upset Conditions

Available Configurations

- Shafted Screw Conveyors
- Shaft less Screw Conveyors
- Vertical Screw Conveyors
- Inclined Screw Conveyors
- Screw Feeders

Gate Manufacturer

Gates

- Slide Gates
- Diverter Gates
- Tipping Gates

Gates are used to control or change the direction of flow of bulk materials **SMQ** designs and manufactures slide gates, diverter gates and tipping gates. Slide Gates are used to shut off the flow of bulk materials **SMQ** Diverter Gates are used to change the direction of flow of bulk materials. Tipping Gates are used to regulate the flow of bulk materials while maintaining a positive or negative pressure seal.

SMQ Gates are used in many industries including mining aggregate, chemical, cement and wastewater treatment industries for controlling the flow of bulk materials.

Available Features and Options

- Wide Range of Construction Materials – To Reduce Corrosion or Abrasion
- Heavy-Duty Construction – To Increase Life and Reduce Downtime
- Totally Enclosed Design – To Eliminate Dust or Vapor Emissions
- Custom Seal Design – To Prevent Material Leakage
- Heavy-Duty Rollers – To Prevent Gate Blade Jamming

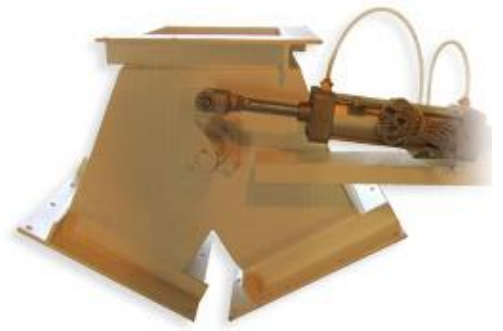


Diverter Gates

Gates

- Slide Gates
- Diverter Gates
- Tipping Gates

SMQ Diverter Gates are used to change the direction of flow of bulk materials as they are discharged from equipment above. Bulk materials can be diverted to another process stream or used to divert off-spec material to a bin. Diverter Gates consist of a pivoting gate blade located inside an inverted Y-shaped housing. The gate blade can be positioned to divert bulk materials to either side of the housing. The gate blade can be moved by manual, pneumatic, electric or hydraulic means.



SMQ Diverter Gates are used in many industries including aggregate, cement, chemical, mining and wastewater treatment industries for controlling the flow of bulk materials.

SMQ has a standard line of industrial diverter gates or can design and manufacture diverter gates to meet specific customer requirements.



Available Features and Options

- Wide Range of Construction Materials – To Reduce Corrosion or Abrasion
- Heavy-Duty Construction – To Increase Life and Reduce Downtime
- Totally Enclosed Design – To Eliminate Dust or Vapor Emissions
- Custom Seal Design – To Prevent Material Leakage
- Removable Maintenance Door – To Access and Maintain Seals and Gate Blade

Available Configurations

- Inverted Y-Diverter Gate
- Offset Diverter Gate
- Dust Tight Diverter Gate
- Slide Actuated Diverter Gate

Bucket Elevator Manufacturer

Bucket Elevators are used to elevate bulk materials vertically. A Bucket Elevator consists of a series of buckets attached to a belt or chain with pulleys or sprockets located at the top and bottom of the unit. The buckets are located in a casing or housing to contain the material. The bulk material is loaded into each bucket as the bucket moves an inlet point. Conveying capacities up to 20,000 cubic feet per hour can easily be handled with Bucket Elevators.

SMQ Bucket Elevators are used in many industries including chemical, aggregate, cement, mining and wastewater treatment industries for elevating bulk materials.





Available Features and Options

- Custom Design – To Meet Specific Customer Requirements
- Wide Range of Construction Materials – To Reduce Corrosion or Abrasion
- Heavy-Duty Construction – To Increase Life and Reduce Downtime
- Totally Enclosed Design – To Eliminate Dust or Vapor Emissions
- Multiple Bucket Styles Available – To Increase Conveying Capacity

Available Configurations

- Centrifugal Bucket Elevator
- Continuous Bucket Elevator
- Mill-Duty Bucket Elevator

• **SMQ Custom Conveyors are used in the following industries**

• **Agriculture – Feed and Grain**

- The growing, harvesting and processing of agriculture products such as corn, rice, soybeans and wheat use many different types of equipment manufactured by SMQ Custom Conveyors. SMQ Belt Conveyors, Screw Conveyors and Bucket Elevators are used throughout the process for the conveying and elevating of these products. SMQ Silos, Slide Gates and Chutes are also very common in this industry. SMQ manufactures very cost-effective equipment specifically designed for the duty cycle of the agriculture industry.

• **Chemicals – Organic, Inorganic and Plastics**

- The production of organic acids and salts, inorganic catalysts and chlorides and plastics require the use of conveying and processing equipment. SMQ Custom Conveyors has built thousands of conveyors for metering and conveying chemicals such as adipic acid, caustic soda, iron oxide, polyethylene and polypropylene. Our conveyors for the chemical industry are highly engineered and very special in design to meet industry requirements. Stainless steel or high-nickel alloy construction is required to withstand the corrosiveness of the chemicals. Vapors and toxic gases are contained with our pressure-tight designs.

• **Food Products – Human and Animal Consumption**

- The manufacturing and processing of food products for human and animal consumption is a huge industry that continues to grow. This industry includes beef, pork and poultry processing, dog and cat food, sugar refining, wet corn milling, coffee processing and the manufacturing of ice. SMQ Custom Conveyors designs and manufactures equipment specially designed for the food industry. Our food grade conveyors are perfect for food products used for human consumption.



The conveyors for the processing of beef, pork and poultry require very heavy-duty construction to handle the by-products.

• **Lumber and Wood Products**

- Bulk materials are created in the process of making lumber and various wood products. Saw dust, wood chips and wood shavings that are by-products of one process are used for making particleboard, flake board and oriented strand board in another process. Also, sawdust is formed into pellets and used as an alternative fuel source in many industries. SMQ Custom Conveyors supplies equipment for storing, elevating, conveying and metering these bulk materials. Process efficiency is critical to the success of the industry. Our mass-flow hopper and feeder designs are very successful in storing and metering bulk materials that arch or bridge. Also, our conveyors are dust-tight to prevent a hazardous condition such as a fire or an explosion.

• **Mining – Metals and Minerals**

- The mining, crushing, washing and drying of many metals and minerals is accomplished by the use of conveyors. Copper, Iron ore, taconite and uranium are metals that are conveyed using SMQ Custom Conveyors. Coal, limestone, sand, kaolin clay, potash and soda ash are minerals that we have conveyed from the mines to the crushers and other areas of the process. Our conveyors are extremely heavy duty to withstand the harsh conditions. We use abrasion-resistant materials to build our conveyors because we know that downtime is not an option.

• **Pulp and Paper**

- Paper products are made from wood pulp, cellulose fibers or recycled newsprint and paper. Wood chips and many different chemicals are used in the paper making process. These bulk materials are conveyed, metered, elevated and stored using equipment made by SMQ Custom Conveyors. Our equipment is ideal for the pulp and paper industry. We regularly manufacture using corrosion-resistant alloys such as 317L and Hast alloy. Tree bark is a by-product from the paper making process and is used as a fuel to fire boilers for the pulping process. The bark is extremely abrasive and requires special design considerations. SMQ Custom Conveyors builds bark bins and feeders using chromium carbide surfaced plate to resist abrasion.

• **Stone, Glass and Concrete Products**

- The minerals mined from the earth must be processed into finished products for consumer use. Glass, cement, concrete, brick, tile, wallboard, hydrated lime, and diatomaceous earth are some of the products we use every day. SMQ Custom Conveyors are used throughout the minerals processing industry to create these products. Our heavy duty, high torque conveyors are designed for the harsh conditions and can power through upset conditions to keep the process running. Our unique dust-tight designs reduce emissions and improve working conditions in the plant.

• **Wastewater Treatment**

- Clean water continues to become a more precious commodity each day. The treatment of water and wastewater requires separation of solids from liquids. These solids are grit, screenings, sludge or bio-solids. SMQ Custom Conveyors can be found at hundreds of municipalities handling these bulk materials. Centrifuges and belt filter presses are most commonly used to dewater the wastewater. The sludge or bio-solids are conveyed with SMQ Custom



Conveyors to drying, load-out or incineration. Our unique designs work great for the wet, sticky products. Also, our vapor-tight construction reduces the odors produced by these products and the chance for explosion

Hoppers, Bins and Silos Manufacturer



Hoppers, bins and silos are used for storing bulk materials. Silos are typically designed for storing large volumes and are cylindrical in shape with a cone or mass-flow bottom. Bins are used for storing smaller volumes of bulk materials and typically handle surge capacities. Hoppers are similar to bins except with an open top. Storage capacities up to 10,000 cubic feet can easily be handled with hoppers, bins and silos.

SMQ hoppers, bins and silos are used in the wastewater treatment, cement, chemical, mining and aggregate industries for storing many bulk materials.

Available Features and Options

- Custom Engineered – To Exceed Customer Requirements
- Heavy-Duty Construction – To Increase Hopper, Bin or Silo Life
- Heavy-Duty Structural Frames and Supports – To Provide System Rigidity
- Positive Material Discharge – To Prevent Bridging or Arching in Hopper, Bin or Silo
- Dust-Tight Construction – To Eliminate Dust Emissions

Available Configurations

- Cylindrical Silo with Cone Bottom
- Cylindrical Silo with Mass-Flow Bottom
- Square Hopper or Bin with Inverted Pyramid Bottom



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SANAT MECHANIC engineering & construction
CREATIVE SOLUTION FOR YOU

Pallet Handling

Conveyors



SANAT MECHANIC™ manufactures a full line of standard Pallet Handling Conveyors and accessories to handle every size, type, and weight of pallet. Even though 40" x 48" pallets with weights up to several thousand pounds are most common, our recent applications included moving 10,000 pound concrete bunkers and 8,000 pound steel coils. There is no configuration or pallet manipulation that Titan has not done in our 30 year history. Titan pallet handling systems are engineered with the understanding that they interact with fork trucks and need to be built tough. Accessories like roller coatings, blade stops, pin stops, crowdors, side rails, positioners, lifts, and walk plates are all available as standard items, so they are proven and cost effective.

Challenge and Solution

Titan launched its Pallet Pro conveyor to solve the growing problem of pallets with irregular surfaces. Plastic and foam pallets have flooded the market, many having unique footprints that are not suited for powered roller conveyors. Old wooden pallets with broken boards and protruding nails are commonplace as well. Pallet Pro eliminates all these concerns by providing a tough solid transfer surface capable of several thousand pound loads.

Typical Conveyors Used in Pallet Handling Systems:



- The **chain driven live roller conveyor** comes in various models capable of moving loads up to 5,000 pounds per foot.
- The motorized roller conveyor in both **chain drive** and **belt drive** has emerged as a popular option for its simplicity, clean design, and quiet operation.
- Our **Zero Pressure Accumulation conveyors** using air clutches, individual drives, or 24v DC motors or motorized rollers. Available with plug and play control systems.
- Our multi strand chain conveyor is often used when the orientation of boards on the pallet are not conducive to using a roller conveyor.
- **Turntable conveyors** and **pop up chain transfer conveyors** are designed for rotation and changes in direction.

Pallet Pro mat top pallet conveyor handles the irregular and heavy loads



Chain Driven Live Roller Conveyors

Chain Driven Live Motorized Roller Conveyors (CDLRs) are great for handling heavy product with smooth bottom or on pallets. CDLR's are used for warehouse operations that handle steel sheet or structural shapes and using pallets or skids.



This is a very versatile conveyor for package handling, accumulation, and automobile tire handling systems. CDLR will handle large castings, forgings, parts with flat or smooth bottoms, and pallet transfer systems.

Titan specializes in custom chain conveyors and powered roller conveyor systems. Titan has designed and build CDLR systems for heavy appliance assembly lines and engine assembly lines. We believe the success of your system lies in understanding the subtle details of your operation. Titan's engineers have the experience and knowledge you require, and they take the time to get it right. We work hard to provide you with years of dependable conveyor operation, increased efficiency, and low maintenance costs.



Roller Bed

Conveyors

SMQ Industries offers roller bed belt conveyors when the loads are heavier than usual or when much longer lengths are required than a standard slider bed belt conveyor can handle.

Two different types of roller conveyors are offered. The Model 105 uses a 1.9" diameter x 16 gauge roller with a 7/16" hex shaft. The rollers can be mounted on 3", 4" or 6" centers depending on the application. A heavier roller and a larger diameter drive pulley can be used when the load or length dictates upgrading the standard unit.



The heavier rollers are a 1-1/2" diameter x 11 gauge roller with an 11/16" hex shaft. The drive is upgraded from a 4" diameter drive pulley to an 8" diameter drive pulley.

Chain Belt

Conveyors

SMQ custom steel belt conveyors are offered in low and full profiles. They are ideal for a variety of light and heavy duty applications, including machine tool and chip-handling environments, die casting operation, stamping operations, whole plant chip and scrap removal systems, inspection, parts handling and package operation. Segmented belts are available for part and scrap handling at the same time. We offer three types of steel belt conveyors:

Drag Flight/Drag Chain Conveyors

Drag Chain Conveyor is the choice for carrying cast iron, fine chips, sludge, and scrap that would normally jam a hinged steel belt unit. The chain has a 2 1/2-inch pitch, with belts available in widths ranging from 4" to 42". The Model 670 is also available with 30, 45, and 60 degree curves and its 1/2 horsepower 230/460/360 drive is mounted to a deep formed 10 gauge steel frame. An exceptional piece of industrial machinery the Model 670 Drag Chain Conveyor features a wide-variety of additional options designed to suit your specific factory requirements.

Multi-Strand Chain Conveyor is designed to move products that a standard roller can't. It's ideal for heavy duty unit loads and is best suited for unloading or transferring products with unusual characteristics, such as pallets or heavy tote pans. A single horsepower 230/460/360 drive delivers a chain speed of 30 feet per minute, with double pitch roller chain equipment options that allow for a load capacity between 2,400 and 4,000 pounds respectively. All these reasons and more make the Model 680 Multi-Strand Chain Conveyor a strong and reliable form of industrial machinery.

Slat Conveyor

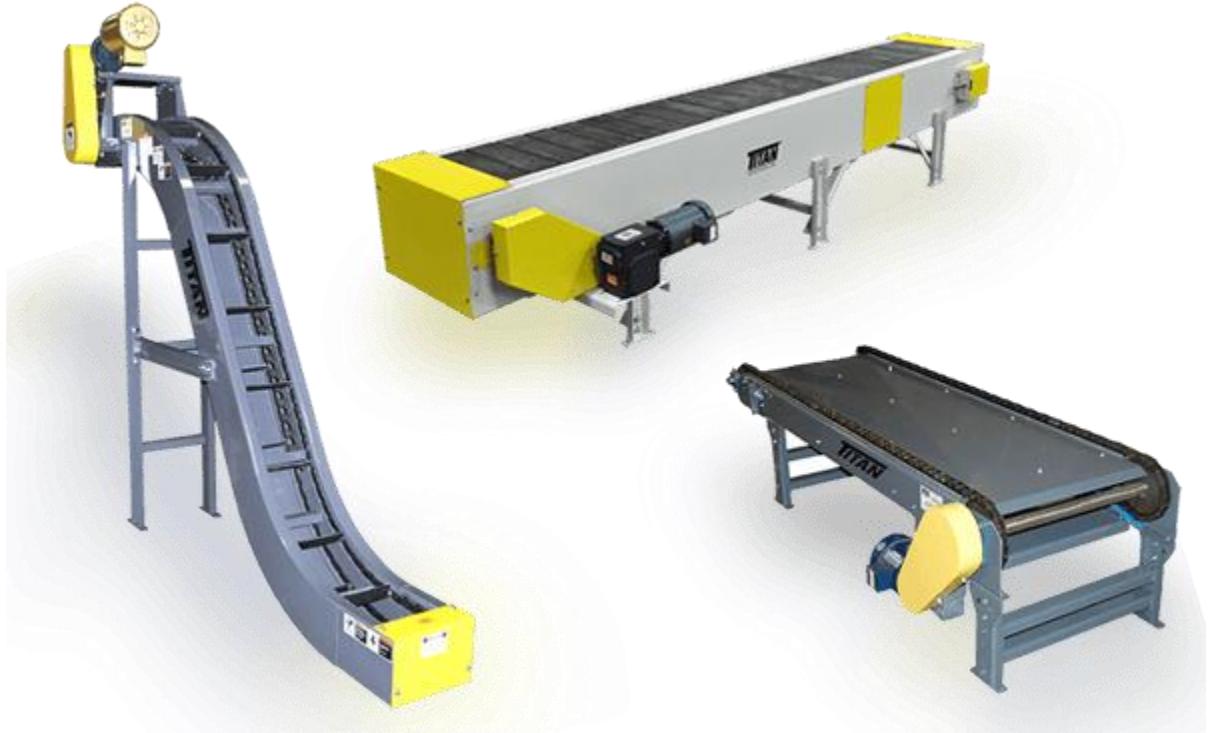
Slat Conveyor features a durable 7 gauge steel frame construction that's extremely heavy duty in order to exceed the most demanding requirements for industrial usage. This type of slat conveyor is engineered for transportation, accumulation, assembly, side loading and unloading, and frequent start/stop applications. Its standard 7 gauge slats can be modified to fit formed V and heavy flat plate configurations.

chain belt conveyors can provide you with the creative solutions you need to successfully accomplish your unique challenges.



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Chain Belt

Conveyors

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