SPIROFLOW

POWDER HANDLING & PROCESSING SYSTEMS

Equipment
to handle
Dry Bulk Solids, Additives and Ingredients
across all industries

Mechanical Conveying

Pneumatic Conveying

Bulk Bag (FIBC) Filling

Bulk Bag (FIBC) Discharging

Systems Engineering

Superior by design,
outstanding in performance

Spiroflow

SUPERIOR BY DESIGN, OUTSTANDING IN PERFORMANCE

Spiroflow conveying, weighing, blending, emptying and filling equipment is used in every corner of the world where bulk materials, ranging from the finest of powders to granules and even lumps, are processed.

For over 35 years, we have designed, engineered and continuously developed our line of equipment and systems to effectively handle the enormous diversity of products to be found within today's process industries. Time and again, in food and pharmaceuticals, cosmetics and chemicals, minerals and plastics, our proven experience has enabled us to provide solutions to meet every handling need.

Founded on the Flexible Screw Conveyor with which our name is synonymous, today our product portfolio not only includes four types of totally enclosed, hygienic conveyor systems, but also state of the art machines for the dust-free filling and controlled emptying of bulk bags (FIBCs). Furthermore, because of our resources and experience, we are well placed to offer complete conveying and handling systems incorporating weighing equipment for a variety of applications. We have particular expertise in the handling of ingredients whether in batches or continuously. Our dust-free conveying and weighing systems are designed with a minimum number of working parts for maximum reliability. Also, as a result, they are simple to operate, easy to clean and low on maintenance.

Equipment and systems for the dust-free handling of powders and dry bulk solids

Flexible Screw Conveyors

Aero Mechanical Conveyors

Tubular Drag Conveyors

Vacuum Conveyors

Bulk Bag Fillers

Bulk Bag Dischargers

Testing

Our fully equipped test facility, which is at your disposal, assesses performance of our machinery on your particular material. On-site trials can also be arranged if preferred.

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 filling station or a complete powder handling system.

After sales

At Spiroflow, we firmly believe that after sales service forms an integral part of the product. Over 70% of our business comes from existing customers, whom we work with as partners from the moment of placing an order and throughout the equipment's operational life.

Systems Engineering

Rarely does anyone want an off the shelf conveyor, bulk bag filler or bulk bag discharger.

By far and away the majority of our customers require some degree of customised design. At Spiroflow our skills and experience make us well placed to respond to such needs. Whether it is just the addition of a simple feed hopper or the integration of our equipment into a fully operational turn-key system with controls to meet the highest level of the ATEX requirements, we can meet the challenge. Our team of mechanical and electrical engineers are ready to discuss your specific needs. Our service extends to installation, commissioning, after sales service, service contracts, spares and much more to ensure you the lowest cost of ownership.

- **Ingredients Handling Systems**
- **Batch & Continuous Weighing Systems**
- **Continuous Mixing Systems**

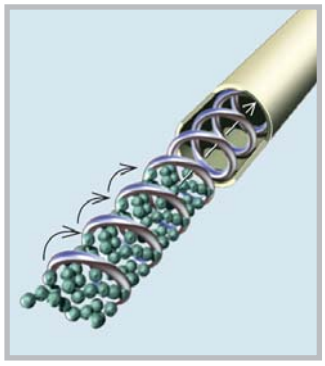
Flexible Screw Conveyors

FOR THE DUST-FREE HANDLING OF DRY BULK SOLIDS AND INGREDIENTS

'Spiroflow' Flexible Screw Conveyors are just that: flexible!

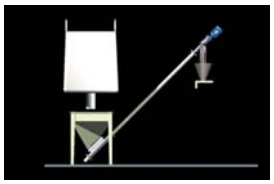
They can be made to convey in any direction from horizontal to vertical, they can be routed around fixed obstacles and equipment, and from one room to another through small wall openings. They are ideal for lifting materials from sack tip stations or storage bins and conveying products at ceiling height to feed a line of processing or packaging machines - as multiple discharge points can be placed along horizontal sections. The 'Spiroflow' conveying system inherently ensures material is constantly being re-mixed by action of the rotating spiral - effectively eliminating the risk of product segregation.

The range of applications for 'Spiroflow' Flexible Screw Conveyors is as diverse, and as extreme, as the number of materials handled. Applications in the food industry, where countless thousands of different ingredients are handled, require the most stringent levels of hygiene. Whereas those associated with chemicals and minerals are built to endure the most abrasive and corrosive materials in the most demanding operating environments. Our conveyors are equally at home in either extreme.

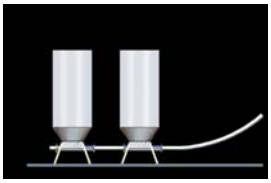


'Spiroflow' Flexible Screw Conveyors require little maintenance as there is just one moving part - the spiral. This eliminates the need for bearing and seals and the ease in which they can be dismantled makes cleaning a quick and simple routine. Furthermore because no additional air is introduced during conveying there is no need for filtration equipment at the point of discharge – another significant saving in capital cost and maintenance. Spiral profiles and speed of rotation are carefully chosen to give the optimum performance for your product.

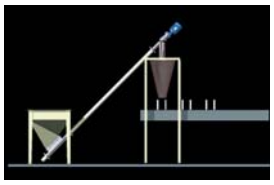
Typical applications



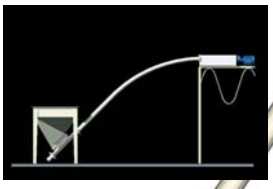
Feeding from Bulk Bags.



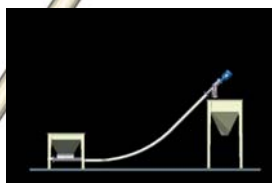
Multi-infeed conveyor.



Conveying from hopper to process.



Feeding filling machinery.



Horizontal outlet for restricted headroom.

A single 'Spiroflow' mobile conveyor can be used to feed several items of equipment and/or can be removed to a dedicated wash-down area. Models are available with tilting booms for even easier cleaning or to negotiate areas of low headroom.

Our range of 'Rhinoveyor' Flexible Screw Conveyors are for very abrasive applications such as sand, cement, minerals and aggregates.

Multiple inlets and/or outlets.

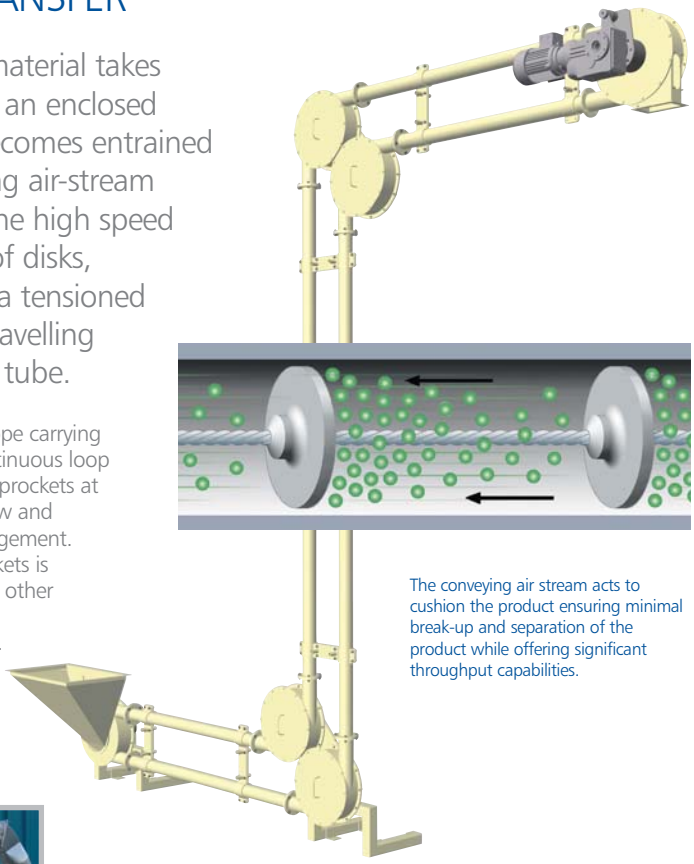
Aero Mechanical Conveyors

HIGH THROUGHPUT, TOTAL BATCH TRANSFER

Aero mechanical conveyors are ideal for difficult products such as titanium oxide and other products which have tendency to smear or are cohesive.

Transfer of material takes place within an enclosed tube as it becomes entrained in the moving air-stream created by the high speed movement of disks, attached to a tensioned wire rope, travelling through the tube.

In practice, the rope carrying the disks is a continuous loop running around sprockets at each end of a flow and return tube arrangement. One of the sprockets is motor-driven, the other acts as the rope tensioning device.

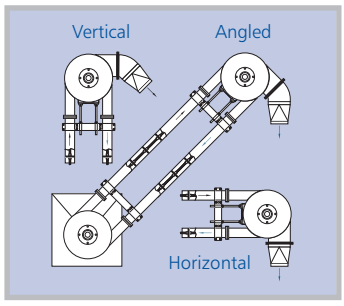


The conveying air stream acts to cushion the product ensuring minimal break-up and separation of the product while offering significant throughput capabilities.

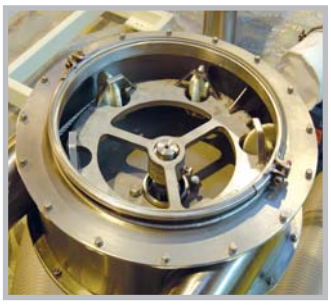
Aero mechanical conveyor elevating chemicals. Discharge heights can be specified for individual requirements.

Mobile AMCs are used extensively both in and out of the factory environment.

Aero mechanical conveyor mounted on a mobile frame loading road tankers.



Aero mechanical conveyors can convey materials at any angle between 0° and 90° without loss in throughput capacity. In addition, they offer total batch transfer.



Construction can be of epoxy painted carbon steel or grades of stainless steel to suit the application. The discs are made from food grade PU and are without rivets.

Options

Optional patented devices are available to ensure the smooth and trouble-free operation of 'Spiroflow' Aero Mechanical Conveyors. Extensive trials have shown that rope life can be increased by up to 40% by use of these devices. The choice of unit depends on length of conveyor, usage and type of product being conveyed.

- Rope tension monitor - alerts user of the need for rope tensioning
- Automatic monitoring and tensioning device

Tubular Cable & Chain Drag Conveyors

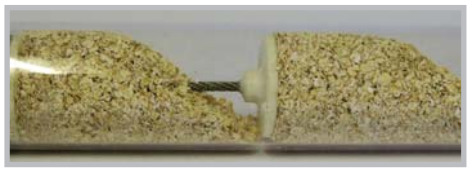
PROBLEM SOLVERS IN A PIPELINE

We aim to offer our customers the best solution, we have never believed in the 'one size fits all' philosophy. Accordingly, as we have expanded our horizons, we have developed our conveying ranges to meet the new challenges.

A cable, chain or series of pinned links with discs spaced along its length and its ends connected to each other to form an endless loop is pulled by a motor driven sprocket within an enclosed tube. Changes in direction are facilitated by bends in the tubing or by corner housings for tighter radii. Discharge of the product is through 'outlet boxes'.

'Cableflow' Cable Driven Tubular Drag Conveyors

These are in fact a development of our tried and tested Aero Mechanical Conveyors operating with reduced clearances and at reduced running speeds. 'Cableflow' conveyors are designed with gentle handling and installations requiring conveying in multiple planes in mind. They can transfer friable bulk products from single or multiple in-feed points to single or multiple discharge points over long distances with little or no damage.



'Dynaflow' Link & Pin Driven Tubular Drag Conveyors

The 'Dynaflow' Link & Pin Driven Tubular Drag Conveyor is also a mechanical drag conveyor system operating within the confines of a pipe. However, the discs that move material along the pipe are mounted on robust articulated metal links making them 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 250˚C.

'Chainflow' Chain Driven Tubular Drag Conveyors

Our 'Chainflow' Tubular Drag Conveyors are the ideal solution where both gentle conveying and hygiene are essential. The food grade polyurethane discs are moulded directly on to the chain and the stainless steel long link chain is inherently hygienic and easy to clean.

Pneumatic Conveying

DUST-FREE, TOTAL TRANSFER OVER LONG AND TORTUOUS ROUTES

Although Spiroflow was founded on and has spent many years developing mechanical conveyors for a whole host of applications, we have long recognised that there are many applications where the optimum solution is either Vacuum or Positive Pressure Pneumatic Conveying. As a result, these conveying methods have been included in our portfolio for several years now. Moving forward, we have now established a new range of 'Spiroflow' Vacuum and Positive Pressure Pneumatic Conveyors for the European market.

Vacuum Conveyors

Vacuum Conveyors are the obvious choice where products have to be conveyed longer distances and over torturous routes. Throughput rates of around 10 tonnes/hr over distances upto 100 m are typical but can be exceeded according to the material being conveyed.

A vacuum conveyor uses air to convey materials through an enclosed pipeline. It provides a solution for users requiring a system that is easy to route, has few moving parts, is dust tight in operation and empties of product leaving minimum residue. Vacuum conveyors are the preferred choice for toxic or otherwise hazardous materials because air is sucked-in and, in the event of accidental damage to the conveying tubes, this prevents the escape of product to atmosphere.

The motive force is provided by either a positive displacement blower or a high efficiency side channel fan sited at the receiving end of the system. Air powered 'Venturi' systems are ideal for low capacity conveying, they offer low capital cost and are not as expensive to run as many may have been led to believe.

Vacuum systems are usually the only way to suck material out of tubs or other open top containers such as kegs and drums. They are ideal for applications with multiple inlets too.

Reverse jet, self-cleaning, filters that clean the conveying air (which has to be returned to the atmosphere after use), reduce maintenance and minimise product loss.

Positive Pressure Conveyors

They are probably the most versatile of all conveying systems given that other than for cost considerations there is virtually no limitation on capacity, product type, distance or routing. Lean phase systems (where the ratio of product to air is low) can move mountains of product. Dense phase or plug flow systems move 'slugs' of product at lower speeds with minimal degradation.

Positive pressure pneumatic conveying is generally used to convey materials from a single source to one or multiple destinations. Pneumatic conveying systems are normally the preserve of 'big league' applications such as the rapid discharging of road and rail tankers in to silos and the transfer of product from silos to large-scale production processes. For products with a bulk density exceeding 550 Kg/m^3, capacities of up to 50 tonnes/hr are not unusual utilising a 200 mm diameter conveying line.

Bulk Bag Dischargers

FOR THE SAFE, DUST FREE DISCHARGE OF POWDERS AND DRY BULK SOLIDS

The worldwide acceptance of Bulk Bags has brought about big changes in bulk materials handling practices to the point where even the pharmaceutical industry are using them to replace rigid IBCs.

This is because Bulk Bags and, equally important, their associated filling and discharge systems offer proven advances in hygiene and "high containment" operation. At Spiroflow, we specialise in "high containment" Bulk Bag filling and discharge systems.

T1 Simple Frame

Good H&S practice requires, as a minimum, that the weight of a bulk bag be supported as it is unacceptable to support bags from their loops for any length of time where operatives are present. Our Simple Support Frames are robust and can be constructed from epoxy painted carbon steel or stainless steel as the environment dictates. Bulk bag loading can be by fork lift truck or hoist.

T2 Universal

The Universal T2 discharger provides controllable discharge of product via an integral 'Spiroflow' conveyor coupled to the base of the discharger. The conveyor accurately meters the bag contents into a process vessel or packaging machine at a variable rate and in a totally enclosed manner.

T3 Loss-in-Weight

Total control of product dispensed from the bag is achieved by our T3 loss-in-weight discharger. The amount can be varied for individually selected batch amounts or interfaced with existing plant process control for continuous batch production requirements.

T5 Low Loader

Our T5 low loading discharger empties bulk bags in process areas with restricted headroom where only a low lift fork truck is available. The top section of the discharger is a removable frame on to which bags are loaded at ground level. The frame has fork channels at its base and needs only to be lifted a metre or so on to the discharger base.

T6 Integral Hoist

The T6 discharger is a self-contained unloading station for dust-free, controllable bulk bag emptying. It has an integral 'I' beam and hoist for loading bags into the discharger and is directly connected to an enclosed conveyor for direct transfer of product to process machinery. No forklift is necessary as the bulk bags can be brought to the discharger by pallet truck and stored adjacent to it ready for lifting into position.

T11 Quick Disassembly

The T11 discharger is designed with pharmaceutical and dairy industry applications in mind. In operation it offers the highest levels of containment and can be furnished with a variety of options including glove boxes and integral HEPA filters. For cleaning, this discharger can be stripped down in safety and without tools. There are no dead pockets and no hollow sections. All surfaces are exposed for easy cleaning and sterilisation.

Key Options

- Bag Massagers
- Pinch Bars
- Neck Seal

It is our comprehensive range of options that make our discharges so effective when it comes to difficult materials and 'total containment'.

Neck Seal

Mobile Bulk Bag Dischargers

The heavy duty frame of our mobile big bag discharger, with optional towing facility and integral conveyor, offers the flexibility of materials discharging at several locations.
(Not available on Type 6 with hoist beam).

Bulk Bag Filling Stations

FOR THE DUST FREE FILLING AND WEIGHING OF BULK BAGS FROM 100-2000 kgs

Our range of weigh/fill equipment, for bag capacities of up to 2000 kgs, offers a choice of basic models designed to meet the needs of the majority of applications. These machines are modular in construction, enabling the user to specify a number of options to meet their individual production requirements – current and future.

At one end of the scale, we produce Simple Support Frame Fillers for the most basic of applications where the product is non-hazardous, free flowing and dust-free. At the other end, we manufacture semi-automated Fillers capable of handling difficult materials whilst offering high levels of containment, rapid filling and high accuracy weighing with Weights and Measures / OIML approval. Any of our fillers can be supplied in multiples complete with storage silos, feed chutes, control valves, electronic controls, etc to meet any capacity requirement.

Twin Bulk Bag Filler for up to 40 bags/hr.

C Series

C series fillers are for applications where bags are filled on pallets and removed by a forklift truck. The base is mounted on load cells when weighing is required. These fillers are ideal to meet low, medium and high filling rates whether by weight or by volume.

Optional automatic bag loop release.

They are competitively priced whilst still offering many of the features found on higher cost units. Options include powered height adjustment to accommodate varying bag sizes, automatic bag loop release, bag content consolidation and powered roller bases for bag removal when full. We offer a comprehensive range of electronic controllers that can incorporate data management. Models are available for use with pallet trucks instead of forklift trucks.

Series C fillers for handling bags on pallets.

Comprehensive range of electronic control packages available.

Optional roller base.

LC Series

Our LC Series fillers are designed for applications where bags are handled by their loops, without the use of a pallet – such as in cement and mineral plants. Rise and fall loop support arms with channels for fork lift truck access take various bag sizes, allow the quick and easy removal of the bags by the loops.

Optional equipment includes attachments for rigid bin and drum filling and a weight controller with data management.

LC Series machines are for processors who prefer not to use pallets and need a filler which allows easy removal of the filled bulk bags by their loops.

Special Purpose Weigh Fillers

Our automated big bag filling system feeds pallets to the filling rig and the bags are looped onto pneumatically operated hooks. Once filling is completed, the bag is then moved along the line by a powered roller conveyor.

Using the same basic filling platform, special adaptors can be supplied to fill product in to other types of containers such as rigid IBCs, drums and tubs.

Contact us today to discuss your applications

SPIROFLOW

POWDER HANDLING & PROCESSING SYSTEMS

ISO9001 WCS UKAS QUALITY MANAGEMENT

Certificate No. 6553

Use your Smartphone to see our website

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SHAPA PPMA

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