

# **SPIROFLOW**

CONVEYING & BIG BAG HANDLING SOLUTIONS



Flexible Screw Conveyors  
for dry bulk solids  
and ingredients

# Conveying solutions for dry bulk solids

The ability to fully understand customer requirements, and provide the best technical resources and back-up possible with which to fulfil them, have been the overriding factors in Spiroflow's success for more than 30 years.

## Design simplicity

Sheer simplicity of operation is the key element in the Spiroflow conveying system. The electric motor driven spiral, which is the only moving part, rotates within a sealed tube, moving the materials along by its archimedean screw action.



This design simplicity eliminates the need for any additional operating equipment such as filters or bearings - all adding up to a system that's low on installation and maintenance costs and high on efficiency and performance.

During this time, Spiroflow has been serving many industries, handling the widest range of dry bulk solids and ingredients and is today internationally recognised as the leading name in the design and manufacture of spiral conveying systems.

## Dust free

During the materials conveying process, even the most harmless ingredients can become a hazard when they appear as dust in the atmosphere. In addition to the resulting downtime spent cleaning the equipment, the presence of dust can cause not only airborne contamination of other products, but can also pose a threat to the working environment.

The Spiroflow conveying system is totally sealed during operation, and because air is not used as the conveying medium, there is no risk of dust contamination escaping in to the atmosphere - critical for applications involving active pharmaceuticals and hazardous chemicals.



# and ingredients

## Easy to clean

The simplicity of the Spiroflow conveying system makes cleaning a simple operation. Conveyors can be emptied of residual material by reversing the motor and then flushed through with water or cleaning solution. Optional, interlocked, quick release connectors facilitate rapid dismantling and reassembly where dry cleaning of the spiral, tube and end connections is essential.



## Gentle handling

The rotating tube is centralised in the tube by the product and as a result there is little to no product degradation. Spiral type and speed are carefully chosen to ensure your product is conveyed in the optimum manner. We have over 30 years of experience logged in our database - backed by comprehensive test facilities where customers can see just how gentle our conveyors are for themselves.



## Constant remixing

The unique action of the flexible spiral conveyor eliminates the risk of the product separation that can take place in conventional pneumatic conveying systems where mixed materials have components of differing densities and/or particle size. In fact, the Spiroflow system ensures constant remixing; restoring every part of the mix to its desired proportions many times a second. This is essential when feeding pre-mixed ingredients to packaging and tableting machines..



## Low maintenance

As the only moving part of a Spiroflow conveyor is its robust inner spiral, trouble-free operation is ensured.



# Flexibility by design



## Materials testing

Spiroflow's in-plant testing facility can quickly evaluate the flow characteristics of any kind of material from samples supplied by the customer.

To back up this service, Spiroflow has, over many years, built a large database of the flow properties of hundreds of materials, giving ready information on the solutions to many conveying problems. Just a small sample can help us to take the

guesswork out of predicting conveyor performance.

Where products have poor flow properties, such as light, high fat or cohesive powders, these can be overcome with the addition of agitators, or other flow aids at the conveyor inlet. If hygroscopic products such as sugar, could be affected by moisture ingress, fast acting valves at the outlet ensure minimum atmospheric exposure.



## Easy installation, minimum disruption

The flexibility of Spiroflow conveying systems is unlimited. They can be configured to convey in any direction and in any elevation between horizontal and vertical. They can be installed over, under and around existing plant and equipment. And they can easily be manoeuvred round obstacles and through small openings in walls to maximise valuable factory space. Linked conveyors with multiple intake and discharge units can also be fitted enabling materials to be conveyed over greater distances. Multiple discharge points can be placed along a horizontal distance which, when combined with elevating conveyors, can lift ingredients from storage bins and convey at ceiling height to feed a line of processing or packing machines.



## Heavy duty conveyors

We offer a range of heavy duty conveyors with traditional Ultra High Molecular Weight Polyethylene (UHMWPE) tubes for abrasive or high bulk density materials. For the most abrasive of metals, aggregates and for materials such as glass cullet, we offer our RHINOVEYOR Flexible Screw Conveyor which has an abrasion resistant rubber conveying tube in addition to a heavy duty spiral. Tests and operational experience have confirmed that our RHINOVEYOR conveying tubes have a significantly longer life than standard UHMWPE plastic tubes in aggressive applications.



Heavy duty conveyors are available and recommended for handling abrasive, aggressive or high bulk density materials.



Our range of RHINOVEYOR Flexible Screw Conveyors are for very abrasive materials such as sand, cement and aggregates.

# Applications in many industries

Spiroflow conveyors are installed world-wide in a multitude of industries because of their versatility and ability to take a wide range of particle size, bulk density and flow properties in their stride.



## Food

Hygienic ingredients handling is the fundamental benefit of Spiroflow equipment, designed to satisfy the stringent demands of the food and allied industries.



## Plastics and rubber

Spiroflow solids handling equipment is widely chosen to ensure efficient feeding of moulding, extrusion and mixing machinery in the volume manufacturing sectors.

## Water treatment

Spiroflow assists in the protection of the environment by supplying efficient dosing equipment for hydrated lime, activated carbon and other chemicals used in water treatment..



## Pharmaceuticals

Accuracy, hygiene and consistent feeding are prime requirements in the pharmaceutical field.



## Chemicals

Spiroflow's long experience within the chemicals industry ensures the safe handling and accurate metering of these often hazardous materials.



## Minerals and ceramics

No bulk handling tasks are more arduous than in minerals and ceramics. Spiroflow equipment is robustly built to meet the most exacting demands.

# Integrated handling equipment

Spiroflow offers a comprehensive range of related bulk solids and ingredients handling equipment which is usually integrated with our flexible screw conveyors.



## Mobile conveyors

For added versatility, mobile conveyors are available mounted on robust, moveable frames with integral feed hopper. Easy to move and simple to operate, they are ideal for the intermittent feeding of several process machines.



## Bulk Bag dischargers

Spiroflow provides a full range of equipment for the discharge of materials from Bulk Bags. Many different models are available to meet the majority of industrial applications, including discharging by weight or volume, and with a host of optional features to satisfy individual requirements.



## Rigid bin emptiers

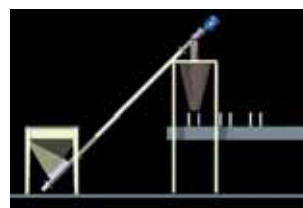
Spiroflow designs vibrating discharge frames for all kinds of rigid metal and plastic IBCs and Octabins to ensure complete emptying of product into the integral flexible screw conveyor. Systems are fully sealed, dust-free and allow discharge of bins either by volume or by weight.



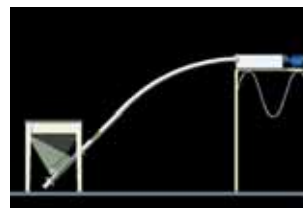
## Sack emptiers

Spiroflow manufactures dustless sack emptiers with bag disposal facility if required, allowing sack contents to be discharged and transferred directly by Spiroflow conveyors to processing machines.

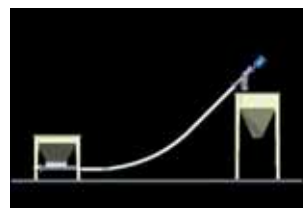
## Typical applications



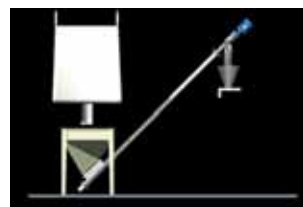
Conveying from hopper to process



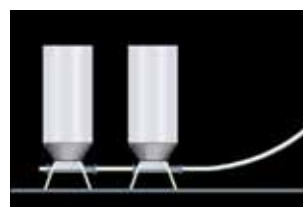
Horizontal outlet for restricted headroom



Feeding filling machinery



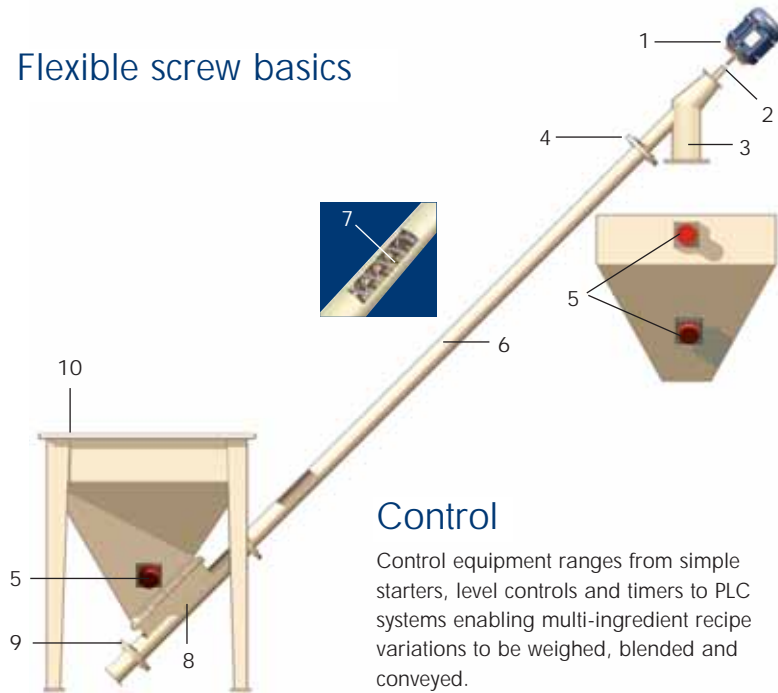
Feeding from Big Bags



Multi-infeed conveyor

# Technical Data

## Flexible screw basics



### Control

Control equipment ranges from simple starters, level controls and timers to PLC systems enabling multi-ingredient recipe variations to be weighed, blended and conveyed.

- 1** Electric motor: 3 phase, 50/60hz, voltage as specified. Special motors also available to your specification. Fixed or variable speed.
- 2** Motor adaptor and spiral connector in mild steel or stainless steel.
- 3** 45 degree or horizontal outlet assembly in mild steel/painted, or stainless steel.
- 4** Dust-tight tube fitting.
- 5** High and low level control.
- 6** Abrasion resistant food grade polymer or, tough rubber conveying tube.
- 7** Flexible spiral in spring steel or stainless steel.
- 8** Inlet assembly in mild steel/painted, or stainless steel.
- 9** Feed restrictor to regulate material flow.
- 10** Feed hopper in standard size or to customer's specifications.

## Model specifications

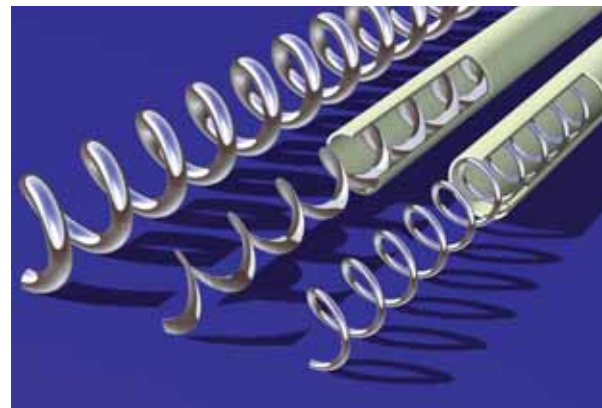
Model	Capacity kg/hour (approx)	Minimum Radius (metres)	Inlet Flange (inside)	Outlet Flange dia. (inside)	Tube dia. (mm)
37	100	2.0	300x80	120	37x43
44	400	2.5	300x80	120	44x51
55	800	3.0	300x80	120	55x63
67	2000	4.0	450x120	160	67x80
80	5000	5.5	450x120	160	80x90
90	7000	7.0	450x120	160	90x100
120	12000	rigid	450x220	240	120x136
146	22000	rigid	508x254	-	146x158
196	40000	rigid	508x254	-	196x222

Throughput rates vary depending on bulk density, material flow characteristics and length and elevation of conveyor. We recommend material testing to determine correct model.

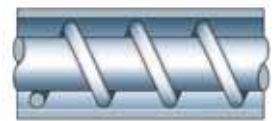
## Spiral profiles

For most applications, the standard round spiral is suitable, combining strength and flexibility. Flat section spirals are recommended for certain light or aereated products.

The Pro Screw bevelled profile is used for conveying difficult materials such as iron oxide. Semi-rigid construction enables steep conveying angles to be achieved without bends.

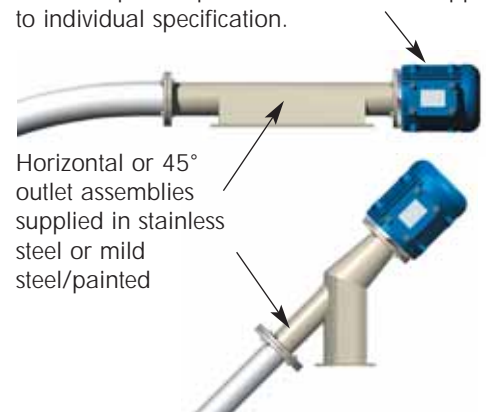


The centre core is used for very light materials that fluidise readily and for conveyors inclined more than 60°. They are also used to prevent flooding/overfeeding of certain solids in short or horizontal conveyors.



*All spirals are heat treated to provide strength and long life. Heavy duty spirals are also available for certain high density or aggressive materials.*

Standard 3 phase electric motor, fixed or variable speed. Special motors can be supplied to individual specification.



Horizontal or 45° outlet assemblies supplied in stainless steel or mild steel/painted

Abrasion resistant polymer outer tube. Steel tube 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

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.

## Manufacturing

We actively encourage customers to visit our modern manufacturing facility at any time. Here, we are able to process orders efficiently and to our high quality standards. We have a similar manufacturing facility in the USA too. Our systems and procedures have ISO9001:2000 accreditation.

## 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.

## Other equipment in the Spiroflow range:

- Vacuum conveyors
- Aero mechanical conveyors
- Bulk bag dischargers
- Sack, drum and IBC emptiers
- Bulk bag filling and weighing machines
- Batch and continuous weighing systems
- Sack packing systems
- Silo and hopper discharge aids
- Continuous mixing systems

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**Spiroflow Limited**  
Lincoln Way, Clitheroe,  
Lancashire BB7 1QG,  
England

Tel: (44) 01200 422525  
Fax: (44) 01200 429165  
email: sales@spiroflow.com  
Website: www.spiroflow.com

**Spiroflow Systems, Inc**  
2806 Gray Fox Road,  
Monroe, NC 28110,  
USA

Tel: (1) 704 291 9595  
Fax: (1) 704 291 9594  
email: info@spiroflowsystems.com  
Website: www.spiroflowsystems.com