

Screw Conveyors



Screw Conveyors are an essential part of many conveying and storage systems dealing with powdered or granular materials. Being simple and robust in design and easily maintained, they provide low cost versatile handling equipment with many applications in manufacturing and processing factories. The most popular configurations, 'U' trough and tubular, have been continuously developed over many years to provide customers with a wide range of options to suit every requirement and a design that ensures easy assembly, installation and maintenance. The modular design allows any configuration to be easily and quickly built up to suit a customer's exact requirements.

In general most free flowing materials and many materials with poor flow characteristics can be successfully handled with a screw conveyor. The specification standard is also easily tailored to suit:-

- **abrasive materials**
- **materials which fluidise**
- **damp, wet or sticky materials**
- **oily materials and their products**
- **hot, cold, wet or aggressive environments**

The rate at which material is conveyed can be fairly accurately controlled by varying the screw design, speed and trough loading - useful for feeding process machinery at a predetermined rate for example. Guttridge Screw Conveyors are in operation in many different industry sectors handling a huge variety of bulk materials:-

Foods -

flour, rice, tea, sugar, milk powder, herbs, spices, miscellaneous powders, flakes, granules

Animal Feeds and Cereals -

wheat, barley, corn, oil seeds, miscellaneous feed ingredients and products, meals, pellets, flakes

Chemicals and Minerals -

cement, sand, glass cullet, flyash, limestone, ores, coal, salt, fertilisers, acetate, sewerage, fine and course powders, flakes, granules

Biomass and Waste -

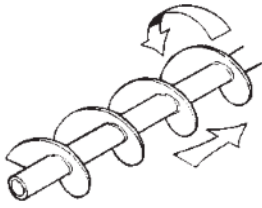
wood pellets, chips, RDF, straw pellets, rubber, plastics, livestock waste, sewage pellets, other flakes, pellets and granules

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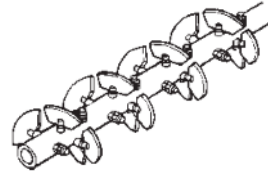
Bulk Materials Handling

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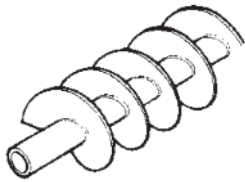
Flight Options



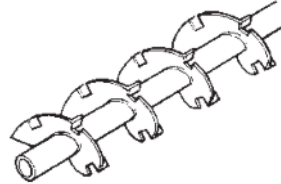
Continuous flighting, full pitch, right hand - the standard configuration for most applications.



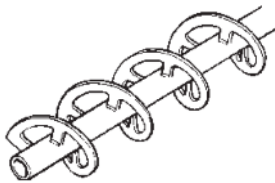
Paddle blades - used in applications where a mixing action is required, the angle of incidence can be varied.



Continuous flighting, reduced pitch - used in flood feed conditions.



Cut & Folded flighting - used in applications where a light mixing/aerating action is required.



Ribbon flighting - used with sticky materials and those which exhibit poor flow characteristics.

Specialist Manufacturers of Materials Handling Machinery

We serve a wide range of industry sectors with our comprehensive range of materials handling machinery. A full description of our complete range of products is beyond the scope of this brochure, but we list brief details below -

Feeds, Cereals, Chemicals, Minerals

Screw Conveyors & Bin Dischargers
Chain & Flight Conveyors
Hiload Bucket Elevators, Belt Conveyors
Silo Sweep Augers
Dust Suppression Hoppers
Spouting, Fittings & Slide Valves
Fountain Blenders/Live Bins
Special Fabrications

Foods, Chemicals, Pharmaceuticals

Easyflo Mobile Screw Elevator
Sieveflo Screw Elevator/Check Sieve
Multiflo & Augaflo Screw Conveyors
Bulkflo Mobile Loading Hopper with integral Screw Elevator
A range of machines designed to be easily dismantled for cleaning

Our machinery is in regular use all over the world and we have Agency and Distribution Agreements with companies in many different countries. Please contact us for further details.

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Bulk Materials Handling

Screw Conveyors

Design

Our technical staff draw on a wealth of technical and operational experience to provide high quality advice and assistance to clients. There are many screw configurations available today and many design parameters that need to be varied to produce a cost-effective and efficient design of screw conveyor. We offer an unrivalled approach to design and specification which ensures that our machines are built to perform to the client's requirements, are competitively priced and are manufactured to the highest standards of build quality and specification.



Two examples of bespoke screw dischargers, custom-built to suit customers' unique requirements.

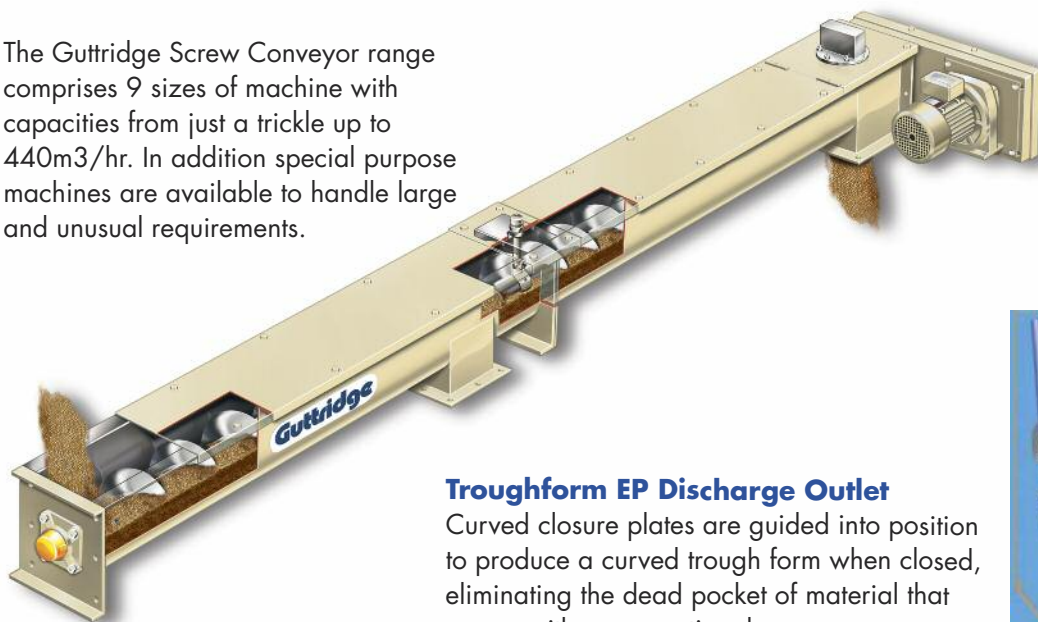
Specification

The standard specification includes continuously rolled or segmented flighting (depending on required size and duty) running in a pressed trough with a bolted cover or a heavy duty tubular casing. Flighting is available in many different configurations and duties and is tailored to suit the client's precise needs. The standard drive arrangement comprises an inline geared motor with chain drive to the conveyor input shaft. The drive size and speed is selected according to the material characteristics and required throughput. The standard drive mounting (up to certain gearbox sizes) is of a unique 4-position design which allows the drive position to be changed when on-site conditions unexpectedly alter. Overflow protection is usually by means of a pressure pad located over the outlet to detect material buildup. Other options are available to suit particular requirements.



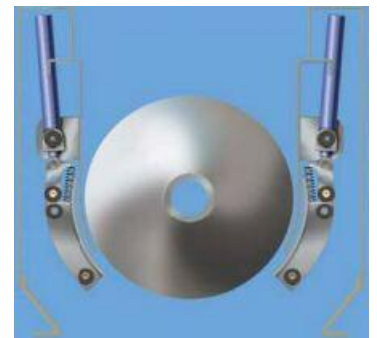
A large heavy duty screw conveyor for handling sugar.

The Guttridge Screw Conveyor range comprises 9 sizes of machine with capacities from just a trickle up to 440m³/hr. In addition special purpose machines are available to handle large and unusual requirements.



Troughform EP Discharge Outlet

Curved closure plates are guided into position to produce a curved trough form when closed, eliminating the dead pocket of material that occurs with a conventional screw conveyor.



Screw Conveyors

Drive Options

- standard geared motor & chain
- direct drive with coupling
- shaft-mounted gearbox
- variable speed drive



Intermediate Support Bearings

- standard phosphor bronze
- cast iron or stainless steel housing with ferroform, ceramic, nylon or morganite inserts
- cooper split roller bearings

Outlet Slide Valves

- hand operated
- electro-pneumatic
- rack & pinion
- motorised
- trough form

'U' Trough Conveyors

Nominal Size		150	200	250	300	350	400	450	500	600
Capacity & Speed	m ³ /hr	11	26	47	79	116	150	190	230	340
45% box loading	rpm	170	160	150	140	130	115	100	90	75
Capacity & Speed	m ³ /hr	5	12	21	34	45	67	96	105	180
30% box loading	rpm	120	110	100	90	75	75	75	60	60
Capacity & Speed	m ³ /hr	1.6	3.8	7	11	13	20	26	31	46
15% box loading	rpm	75	70	65	60	45	45	40	35	30
End Plate, top to shaft		114	149	162	197	235	270	308	343	406
End Plate, shaft to outlet/foot		127	159	184	216	241	270	308	343	406
End Plate Width		248	298	362	413	464	540	590	640	745
Trough Inside Width		165	216	267	318	368	419	470	520	622

Tubular Conveyors - Heavy Duty Range

Nominal Size	150	200	250	300	350
Tube Outside diameter	178	219	273	324	406
Tube Thickness typical	6	6	6	6	6

All dimensions are nominal in mm, full planning in dimensions and capacity information specific to particular product types available on request.

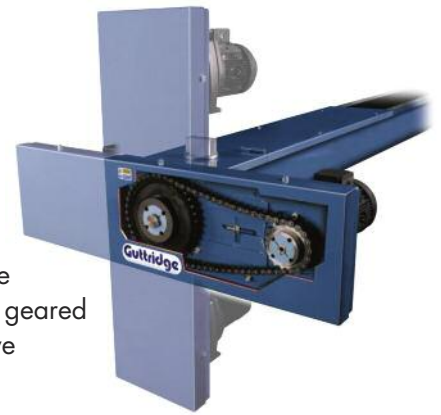
Notes

1. 'U' Trough Screw Conveyors available in optional heavy duty construction for arduous applications.
2. Capacity is dependent on box loading and screw speed, these parameters must be selected to suit the material characteristics. Product 'flowability' and density will also affect throughput.
3. Inlets that are flood fed will require reduced pitch flighting and a carefully selected screw speed to ensure the correct flow rate and prevent overfilling.
4. Each intermediate trough joint has a support foot as standard, additional loose saddles are available to support the trough at intermediate positions if required.
5. Inlets may be cut in the covers as required, outlets are usually factory fitted as required.
6. Please seek technical advice before ordering.

Specifications and dimensions may be altered without prior notice.

Guttridge

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The unique
4-position geared
motor drive
mounting

Outlet Slide Valves

- special flighting (see overleaf)
- intermediate inlets/outlets
- rotation sensor
- packing gland seals
- special bearing arrangements
- drop bottom doors for easy cleanout
- intermediate support wear strips
- stainless steel construction
- galvanised or alternative paint colours
- air flap for grinder discharge applications
- jacketed trough or tubes
- special high or low temperature environments
- specially designed and fabricated machines to
- suit clients' particular requirements