

# Chain & Flight Conveyors



Chain & Flight Conveyors are an essential part of many conveying and storage systems dealing with powdered, granular, flaked or pelletised materials. Being simple and robust in design and easily maintained, they provide low cost efficient handling equipment with many applications in manufacturing and processing factories.

In general most free flowing materials and many materials with poor flow characteristics can be successfully handled with a chain conveyor. The specifications of the standard range can also be tailored to suit friable, abrasive, damp or sticky materials and certain aggressive environments.

The Guttridge range includes the five most popular configurations - Single Strand, En-Masse, Shrouded, Superflow and Soft flight - that are in common use today. Each type has 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.

Chain & Flight Conveyors are used for general movement around manufacturing and processing plants and can also be used to discharge hoppers and meter material at fairly accurate rates, provided special provision is made at the design and specification stage.

Guttridge Chain & Flight Conveyors are in operation all over the world in many different industry sectors handling a huge variety of bulk materials:-

#### **Foods -**

flour, rice, tea, miscellaneous powders, flakes, granules, pellets

#### **Animal Feeds and Cereals -**

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

#### **Chemicals and Minerals -**

cement, sand, glass cullet, flyash, limestone, ores, coal, fertilisers, miscellaneous powders, flakes, granules, pellets

#### **Biomass and Waste -**

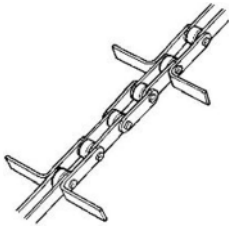
wood pellets, wood chips, RDF, straw pellets, dried sewage sludge, other flakes, pellets and granules

# Guttridge

**Bulk Materials Handling**

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# Chain & Flight Conveyors



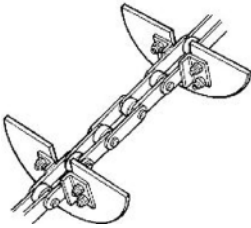
## Standard Chain Conveyor

Steel chain with integral flight bars.



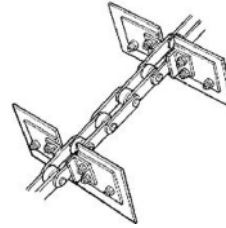
## Shrouded Chain Conveyor

Twin strand chain with interconnecting flight bars.



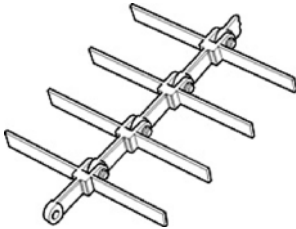
## Superflow Chain Conveyor

Single steel roller chain with bolted crescent shaped polyethylene flights.



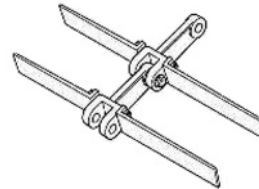
## Soft Flight Conveyor

Single steel roller chain with polyethylene flights.



## Drop Forged Chain

Optional heavy duty chain with welded flight bars.



## Drop Forged Chain

Optional heavy duty chain with bolted plastic flights.

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## 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  
Spouting, Fittings & Slide Valves  
Fountain Blenders/Live Bins  
Silo Sweep Augers  
En-Masse Conveyors  
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.

# Guttridge

## Bulk Materials Handling

# Chain & Flight Conveyors

## Specification

Various types of chain are available in appropriately selected materials and strengths to suit the different configurations and duties. Overflow protection is usually by means of a pressure pad located at the drive end to detect product buildup. The standard drive arrangement comprises an electric motor with a vee belt drive to a shaft mounted speed reducer. The drive size and speed is selected according to the material characteristics, required throughput and conveyor configuration.

Each machine is carefully tailored to suit the client's precise needs and special purpose machines are available to suit unusual requirements.

## 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 chain and flight configurations available today and many design parameters that need to be varied to produce a cost-effective and efficient design of conveyor. We offer an unrivalled approach to design and specification which ensures that our machines are built to perform to the client's precise requirements, are competitively priced and are manufactured to the highest standards of build quality and finish.



## General Options

- intermediate inlets/outlets
- brushgear over outlets
- self cleaning drive and tail ends
- special bearing and seal arrangements
- automatic spring loaded tensioning facility
- internal wear resistant liners
- stainless steel construction
- galvanised or alternative paint colours
- special high or low temperature environments
- specially designed and fabricated conveyors to suit clients' particular requirements

## Notes

1. All dimensions are nominal in mm, full planning in dimensions and capacity information specific to particular product types available on request.
2. Chain Conveyors are available in optional heavy duty construction for arduous applications; chain types and speed will be varied to suit.
3. Capacity is dependent on product 'flowability' as well as density and chain speed.
4. Chain speed is usually selected to suit product flow characteristics, friability and abrasive qualities as well as chain type.
5. Flood fed inlets require special consideration to prevent the conveyor overflowing.
6. The maximum unsupported span should be limited to 6 metres.
7. Please seek technical advice before ordering.

Specifications and dimensions may be altered without prior notice.

## Chain Options (see overleaf for standard types)

- hollow pin steel roller with bolted flight bars
- malleable cast iron and round pin chain
- drop forged chain with bolted nylon or welded flight bars
- stainless steel chain
- non-standard specially fabricated chains

## Drive Options

- standard belt driven shaft mounted gearbox
- geared motor & chain drive
- direct drive with coupling
- shaft mounted right-angle
- geared motor
- variable speed drive

## Outlet Slide Valves

(standard or inline configuration)

- hand operated
- electro-pneumatic
- rack & pinion
- motorised
- Troughform (Superflow only)

# Chain & Flight Conveyors

## Single Strand Chain Conveyor

- Configuration - a single steel chain with integral flightbars running on a steel or UHMW noise reduction strip with cleaning flights at intervals. Optional drop forged chain.
- Applications - for free-flowing products, general purpose use. Single strand chain conveyors are the commonest and most economical type of chain & flight conveyor.

Nominal Size		200	250	300	400	500	600
Capacity @ 0.65m/s	m <sup>3</sup> /hr	80	135	200	330	400	470
Dry product @ 750kg/m <sup>3</sup>	tph	60	100	150	250	300	350
Capacity @ 0.50 m/s	m <sup>3</sup> /hr	61	104	154	254	240	290
Dry product @ 560kg/m <sup>3</sup>	tph	27	46	69	114	135	160
Conveyor width, overall	mm	287	340	387	490	590	690
Conveyor depth, overall	mm	272	340	505	508	508	508

Non-standard machines are available up to 1000 m<sup>3</sup>/hr.

### Specific Options

- mechanical intakes
- trench intakes
- flood feed inlet with expansion box
- flow and return systems
- reversable conveyors

## Shrouded Chain Conveyor

- Configuration - a pair of chains with an interconnecting flight bar running in slots formed in the conveyor side plates. This arrangement ensures minimum contact between product and chains and allows up and/or downward bends to be fitted.
- Applications - for handling free-flowing friable products such as pellets, or where an incline or a bend section is needed.

Nominal Size		8/8	8/12	8/16	8/20	8/24	10/20 HD	10/24 HD
Capacity @ 0.40m/s	m <sup>3</sup> /hr	49	74	98	123	148	164	197
Dry product @ 610kg/m <sup>3</sup>	tph	30	45	60	75	90	100	120
Conveyor width, overall	mm	390	490	590	690	790	710	810
Conveyor depth, overall	mm	255	255	255	255	255	330	330

Capacities will be reduced where bend sections or inclined sections are fitted.



### Specific Options

- up/downward bend sections
- flood feed inlet with expansion box
- flow and return systems

## Soft Flight Chain Conveyor

- Configuration - a single steel roller chain with 'F' type attachment brackets to which polyethylene flights are bolted. The large diameter chain rollers allow upward bends to be fitted.
- Applications - for handling free-flowing products where an upward bend or an inclined conveyor is needed.

Nominal Size		200	250	300	400	500	600
Capacity @ 0.65m/s	m <sup>3</sup> /hr	80	110	200	260	330	400
Dry product @ 750kg/m <sup>3</sup>	tph	60	80	150	190	250	300
Conveyor width, overall	mm	287	340	387	490	590	690
Conveyor depth, overall	mm	272	340	505	508	508	508

Capacities will be reduced where bend sections or inclined sections are fitted.



### Specific Options

- upward bend sections
- mechanical intakes
- trench intakes

## Superflow Chain Conveyors

- Configuration - a single steel roller chain with 'F' type attachment brackets to which crescent shaped polyethylene flights are bolted, running in curved bottom trough.
- Applications - for handling friable products such as pellets, the standard side feed inlet minimises chain/product contact and the conveyor can be inclined.

Nominal Size		200	250	300	350	400
Capacity @ 0.40m/s	m <sup>3</sup> /hr	20	33	46	66	86
Dry product @ 610kg/m <sup>3</sup>	tph	12	20	28	40	52
Conveyor width, overall	mm	312	375	425	476	554
Conveyor depth, overall	mm	308	346	413	476	540

Capacities will be reduced where bend sections or inclined sections are fitted.



### Specific Options

- Troughform outlet valve (patented)

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