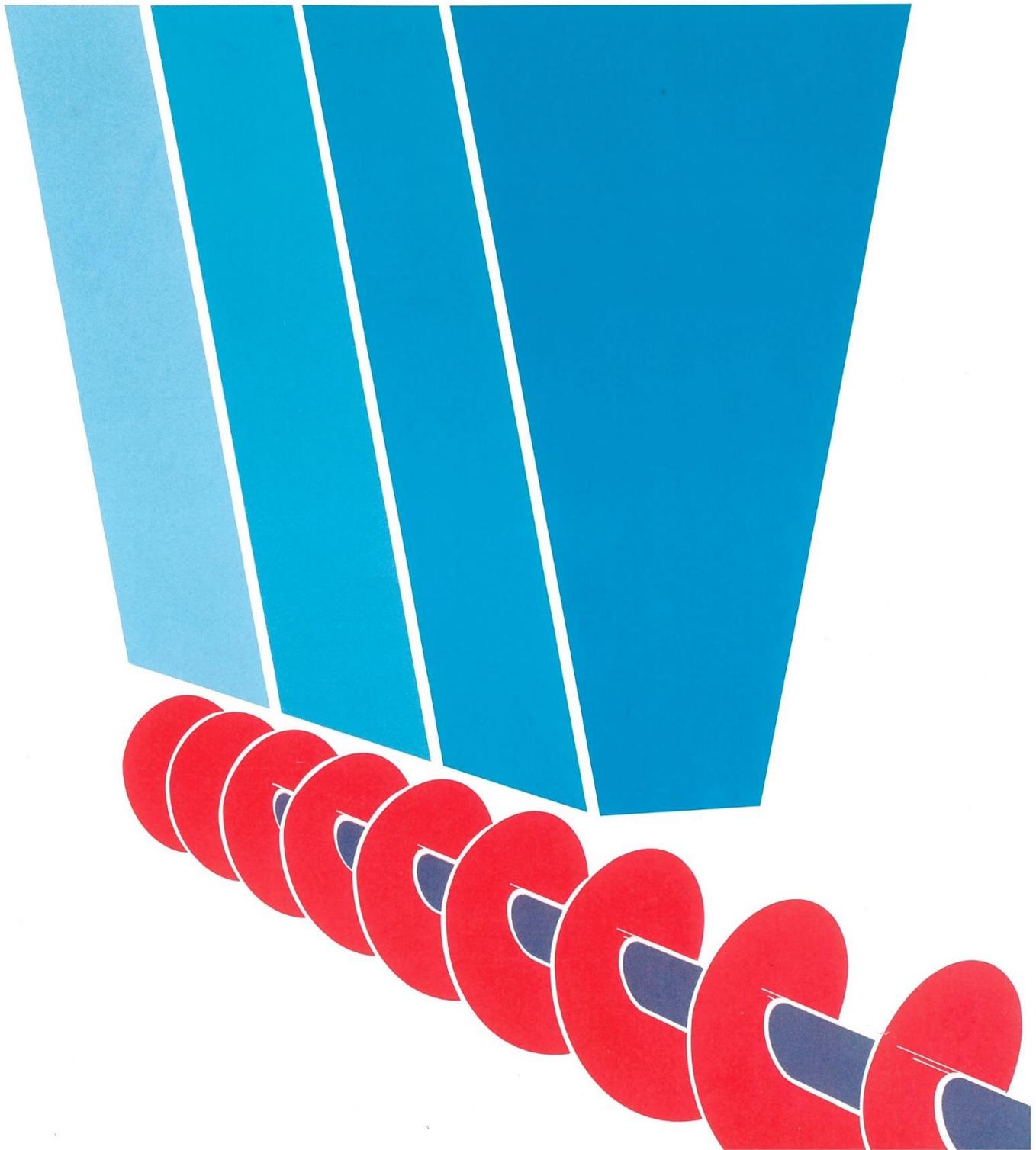


# GRAIN TECH LTD

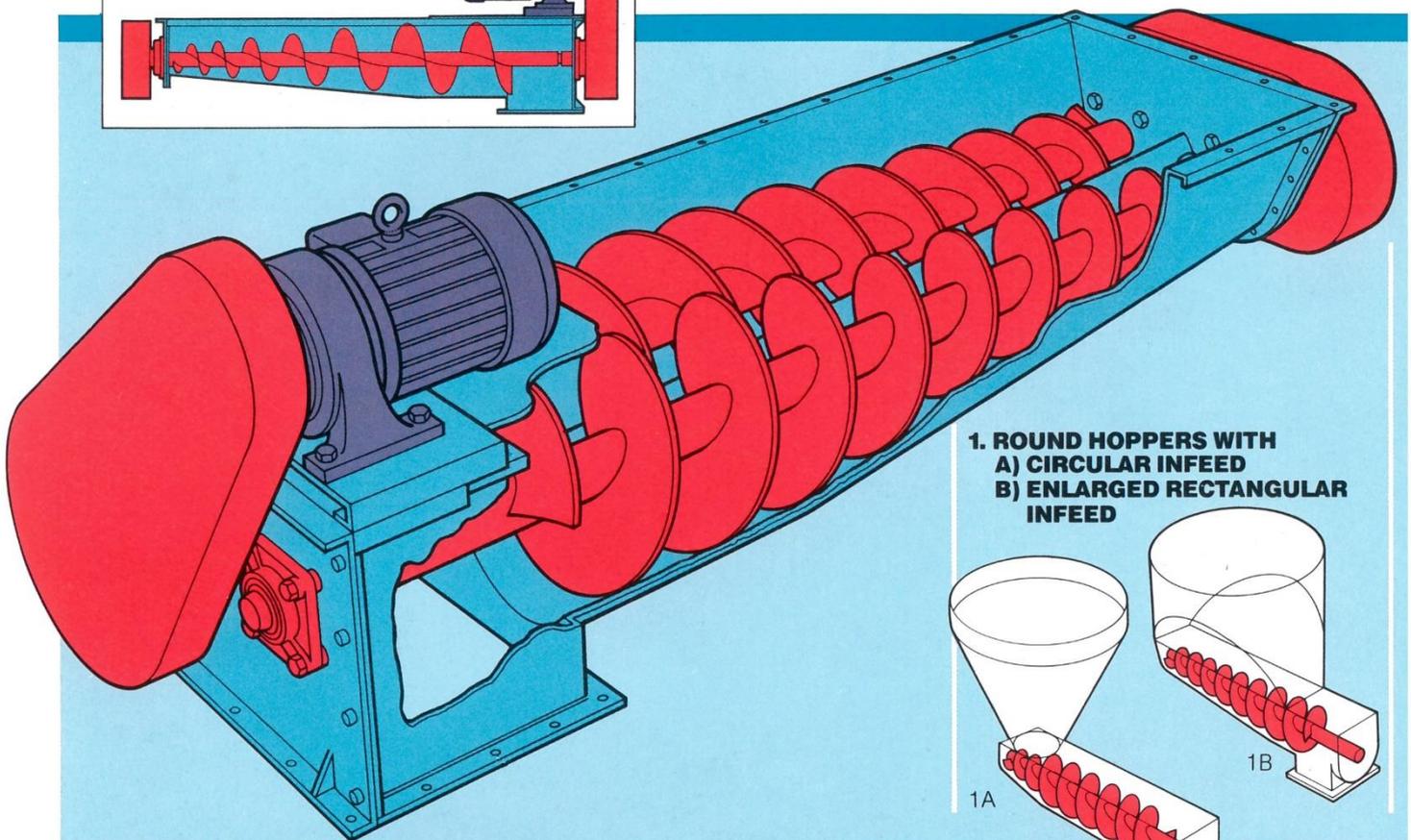
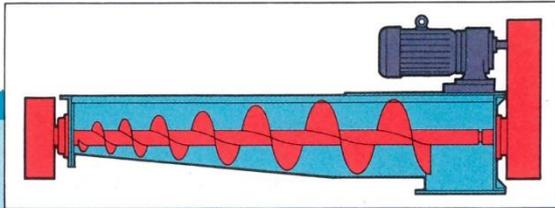
## Screw Bin Discharger



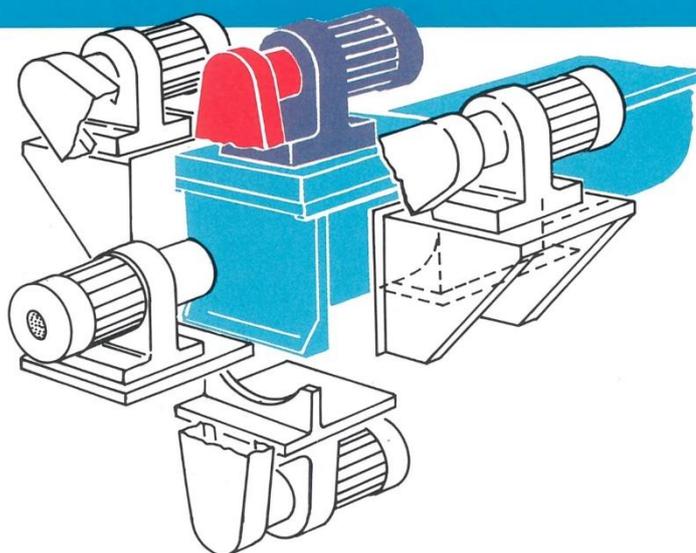
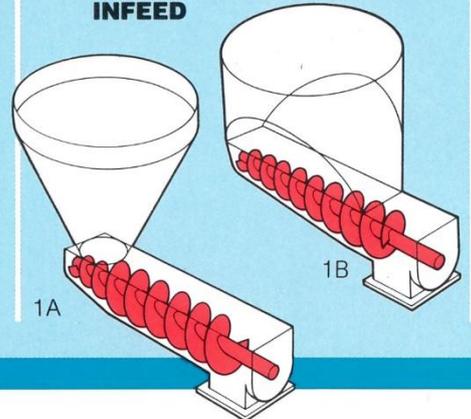
# SCREW BIN DISCHARGER

Grain Tech Screw Bin Dischargers are an efficient and effective discharge aid used extensively in assorted industrial applications handling basic raw materials or additives in food, animal feed, chemicals, plastics, rubber, detergents, etc.

Many of the problems encountered in process plant are generally associated with flow rates from bins, hoppers and silos. The Grain Tech Screw Bin Discharger is ideal where extraction and feeding of powders and granular materials are required in an infinitely variable mode or regulated to predetermined levels. This discharger incorporates outstanding design features gained from many years of bulk materials handling experience.



**1. ROUND HOPPERS WITH  
A) CIRCULAR INFEEED  
B) ENLARGED RECTANGULAR  
INFEEED**



## Drives

- Fixed or Variable speed drives offered.
- Geared motor via chain and sprocket is standard.
- Directly coupled drives available.
- Choice of AC or DC for most electrical supply specifications.
- Motors supplied to suit any IP index for protection against liquids, impact, fire risk, etc.
- All drives supplied with securely fixed safety guards.
- Drives orientated to suit site conditions. (Top mounted is standard.)

Apart from six different standard trough diameters the range includes single, twin or multi-worm machines. Furthermore, each size is offered in mild steel or stainless steel construction. Normal Duty and Heavy Duty models are available as standard. This assortment offers clients a combination to satisfy any material characteristic in conjunction with a wide throughput spectrum. Single, Twin or Multi-Worm machines can be selected for specific applications where smooth feed or discharge are required and to combat such conditions as bridging, rat-holing, flushing and segregation of materials in hoppers.

All standard machines conform to the "Health and Safety at Work Act".

## Troughs

- Standard Diameters of 160, 200, 250, 315, 355, 400 mm.
- Other sizes are available for quotation as specials.
- Trough lengths tailored to individual requirements.
- Safety Flap at discharge end fitted with microswitch for overflow indication.

## Outlets

- May be fitted as required along length of trough, with or without slides.
- Choice of slides includes motorised, pneumatic, rack-and-pinion, hand operated.

## Inlets

- Shaped to suit clients' applications.

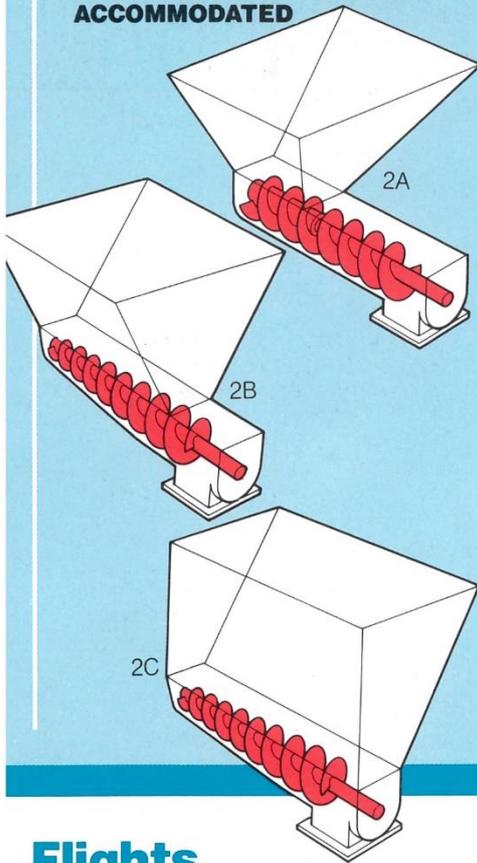
## Weatherproof

- Galvanised or special finishes available if required.

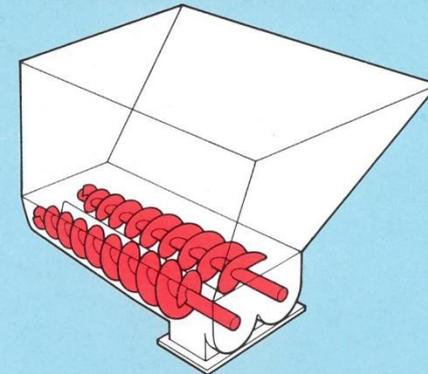
## Dischargers for all applications

There is a Screw Bin Discharger suitable for all types of bins and hoppers as depicted in the illustrations below.

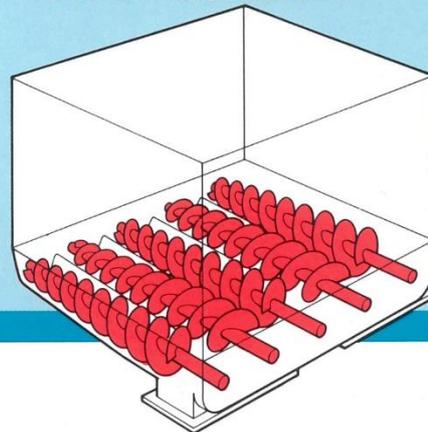
### 2. RECTANGULAR HOPPERS OF ALL TYPES AND SIZES EASILY ACCOMMODATED



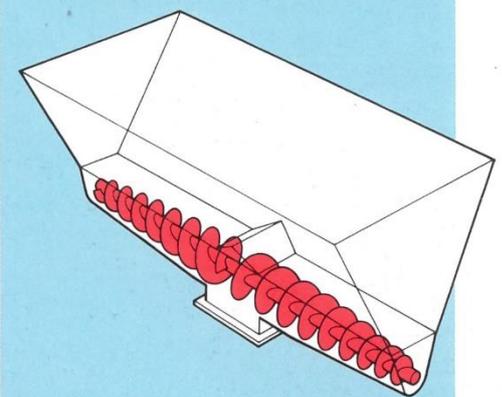
### 3. TWIN WORM DISCHARGER ON RECTANGULAR HOPPER



### 4. MULTI-WORM DISCHARGER USED AS THE ENTIRE BOTTOM OF A RECTANGULAR BIN.



### 5. RECTANGULAR HOPPER DESIGNED FOR CENTRAL DISCHARGE



## Flights

- Normal duty blading continuously rolled from high quality grade steel.
- Continuous right hand worm on pipe supplied as standard.
- Half pitch, double start, left hand or continuously welded blading readily available.

## Bearings

- All joints positively sealed with gaskets.
- Dust or pressure tight arrangements available.
- Wide choice of sealing materials, e.g. natural rubber, food quality rubber etc.

## Selecting Screw Bin Dischargers

Several factors need to be established before selecting a Screw Bin Discharger, these being:-

1. Material characteristics — a) Density  
b) Particle Size  
c) Type and Condition (free flowing, moisture content etc.)

2. Maximum rate at which material has to be handled.
3. Overall length of discharger (or discharger with extended conveyor).
4. Width and length of inlet opening.

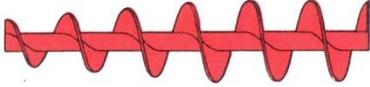
Single screw dischargers are commonly used. However, if the inlet opening is very wide, multiple screw dischargers are more practical.

For advice on selection and sizing consult our engineers.

# Standard and Optional Screw Flight Profiles

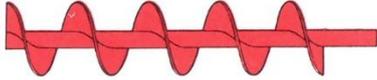
## 1. TAPERING FLIGHTSCREW

Equal pitch available as standard. Draws feed material uniformly from the entire length of the feed opening.



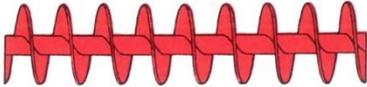
## 2. CONTINUOUS FLIGHT SCREW

Pitch equal to diameter. Most commonly used for general purpose applications.



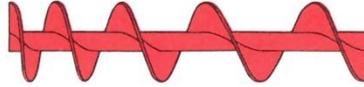
## 3. HALF PITCH CONTINUOUS SCREW

Used in flood feed conditions for controlled cross sectional loading of screw. Also recommended in applications where screw has to be inclined.



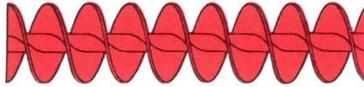
## 4. VARIABLE PITCH SCREW

Used to draw free flowing materials uniformly from the entire length of the feed opening.



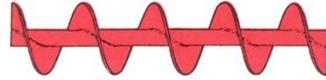
## 5. DOUBLE START CONVEYOR SCREW

Assure more accurate regulation of feed and flow in screw feeders/dischargers and effectively deter the flushing action of materials that have become fluidised. Sometimes used to promote smooth gentle flow and discharge of certain materials.



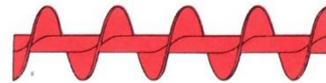
## 6. CONTINUOUSLY WELDED FLIGHT SCREW

Flights may be continuously welded to the pipe shaft on one or both flight sides to prevent ripping the flight under extremely heavy loads. Also used in conditions where non-contamination is imperative.

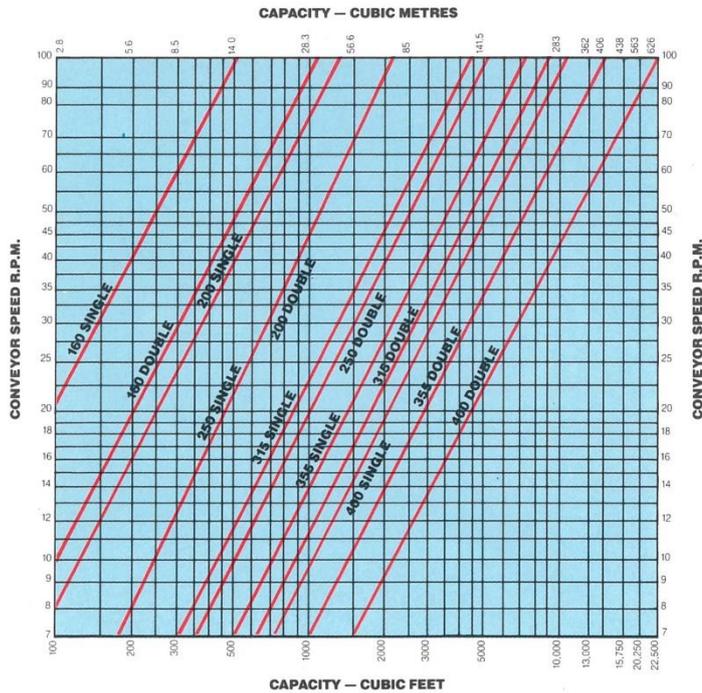


## 7. LEFT-HAND FLIGHT SCREW

Left-hand flight screws are offered as an optional item. Once a screw discharger is built and installed with a certain hand the direction of rotation is fixed for the desired direction of material transport.



## Capacity of Twin and Single Worm-Bin Dischargers



- Grain Tech specialise in Solids, Handling and Processing Technology.
- A comprehensive range of equipment and plant systems is offered, embracing: Storage; Discharging; Conveying; Elevating; Feeding; Screening; Mixing; Drying; Weighing; General Processing.
- An elaborately equipped Test Plant facility is available to conduct proving tests and trials for clients.
- Please consult us at the address below for your bulk handling machines or plant systems.

## Screw Bin Discharger – Installation Examples



Triple variable screw discharger delivering from a dump hopper



Transfer screw feeders and dischargers in an integrated processing arrangement



**Triple screw dischargers transferring from storage silos**



**Metering dischargers with variable speed control feeding packing machine**



**Multi metering dischargers within product blending installation**



**GRAIN TECH LTD**

55B Druces Road, Manukau, Auckland 2104, New Zealand  
PO Box 97420, Manukau, Auckland 2241, New Zealand  
Tel: 0064 9 263 6926 Fax: 0064 9 262 1335  
Email: [admin@graintech.co.nz](mailto:admin@graintech.co.nz) Website: [www.graintech.co.nz](http://www.graintech.co.nz)

**OFFERS TOTAL CAPABILITY IN  
EQUIPMENT SYSTEMS & PROCESSORS FOR**  
Particle Size Reduction, Milling, Crushing, Sifting  
Classifying, Pelleting, Agglomeration, Extruding,  
Bulk Material Handling, Drying, Cooling,  
Conveying & Packaging