

FACT SHEET

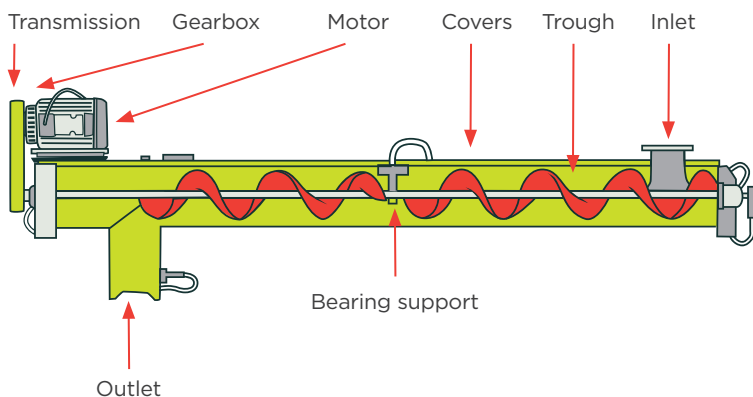
SCREW CONVEYORS

While belt conveyors are open and often used to move discrete items, a screw conveyor is often enclosed in a trough and used to transport loose materials from one place to another, including concrete, dry sand, plaster, chalk, or grain. A feed screw is also used for feeding lumpy materials like gravel, limestone, or ice.

The screw is mainly enclosed for most of its length, however feed (inlet) and delivery (outlet) ends may be exposed where materials enter and exit the conveyor.

Screw conveyor principles apply in appliances, including mincers. In a mincer, material for mincing is carried by the screw with necessary force, towards a grating where it is forced through holes to cut it into smaller pieces.

FIGURE 1: SCREW CONVEYORS



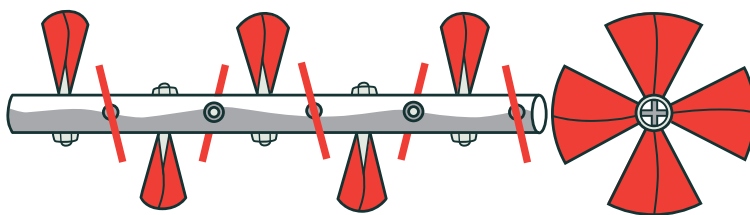
HAZARDS:

- > Entanglement with turning screw
- > Contact, impact or entanglement from moving parts
- > Troughs - reaching or falling
- > Electrical current
- > Slips, trips & falls
- > Entrapment from unexpected movement (during maintenance, cleaning & repairs)

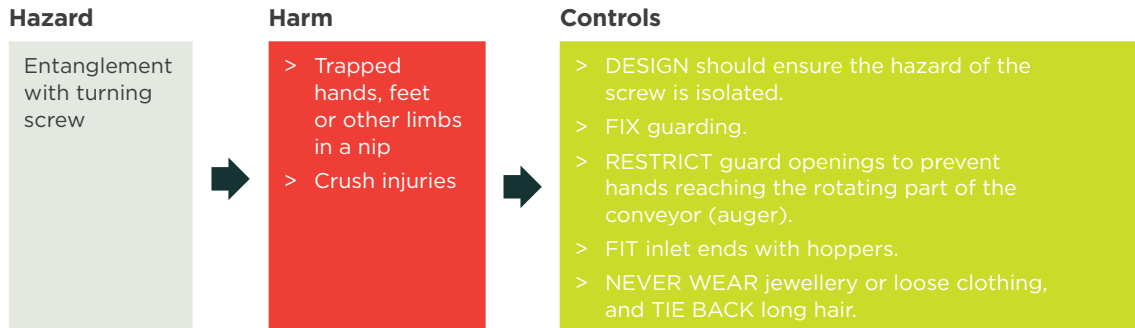
PPE:

The required PPE (personal protective equipment) will depend on the product on the conveyor, but may include:

FIGURE 2: PADDLE TYPE SCREWS MIX MATERIAL WHILE CONVEYING



TASK - FEED THE MATERIALS



The turning screw can trap limbs. It can also trap loose clothing, long hair, and dangling jewellery. Traps at screws are most commonly at the feed or delivery end. However if the screw turns while the guards are off, traps are exposed along its whole length.



FIGURE 3: HOPPER WITH BARS ACROSS OPENING TO ISOLATE THE SCREW

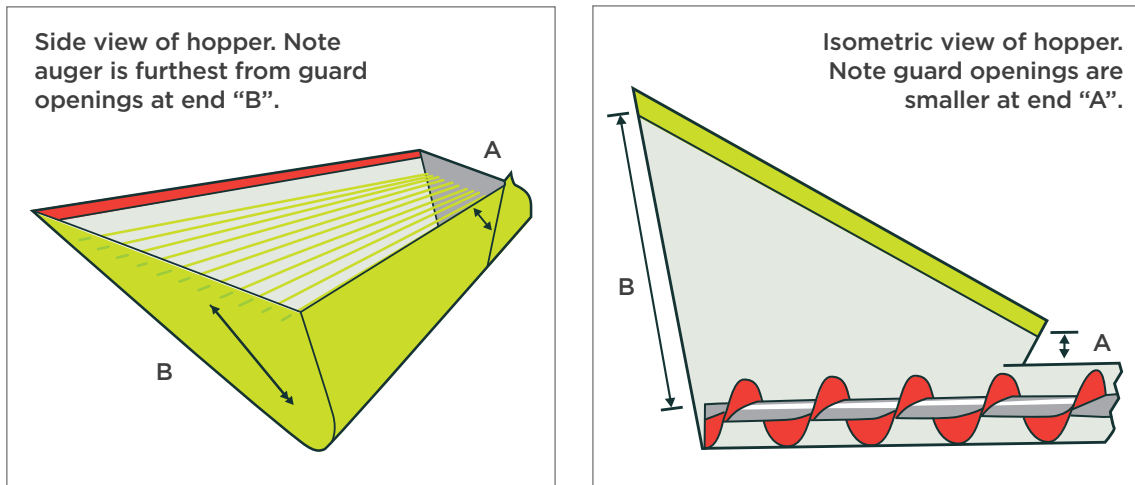
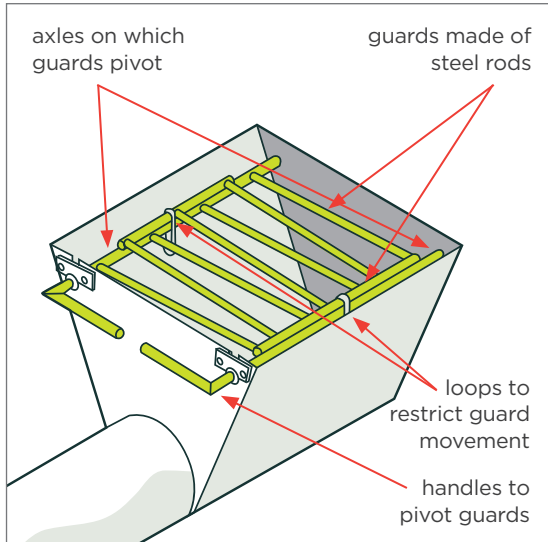


FIGURE 4: HOPPER GUARDS WITH RESTRICTED MOVEMENT



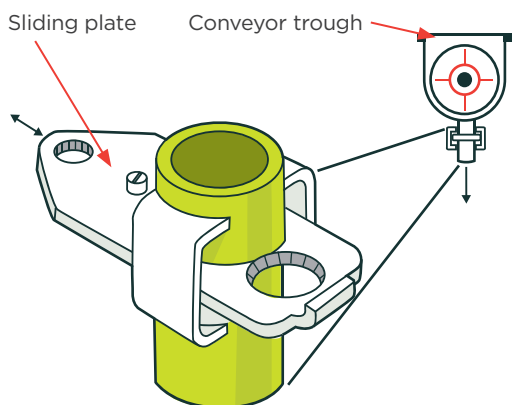
Wheel spacing must ensure stability if product is in the top half only of the raised auger, including when the ground is uneven.

TASK - SAMPLE COLLECTION

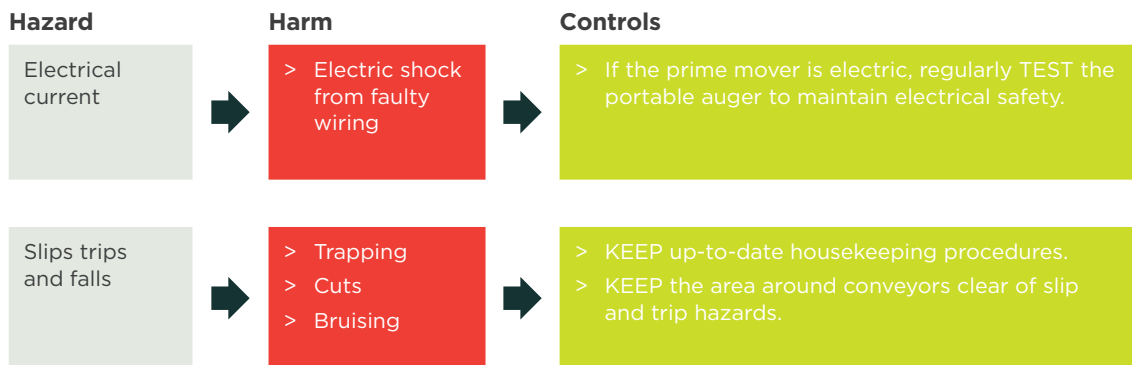
Hazard	Harm	Controls
Troughs - reaching or falling	<ul style="list-style-type: none"> > Impact injury from fall > Amputation or crushing from being caught in a nip 	<ul style="list-style-type: none"> > FIT a bend to the delivery end of the trough, with dimensions to prevent reach. > FIT high walls to prevent reaching or falling into the trough. > FIT secondary safeguarding for open troughs, e.g. railing or fencing. > DESIGN collection points to ensure that hazards remain isolated. > LOCK-OUT power before starting work within the trough.

Delivery ends can be safe by position, ie. too high for reach into the hazards, or the delivery end can be designed to isolate the screw.

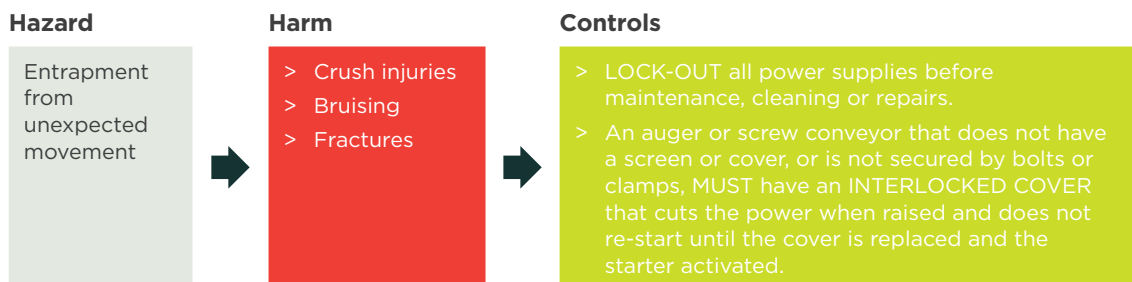
FIGURE 5: EXAMPLE OF SAMPLING DEVICE



OTHER (NON-MECHANICAL) HAZARDS



TASK - MAINTENANCE, CLEANING & REPAIRS



Cleaning and maintenance will almost always require removal of covers or guards. The screw MUST not start until people are clear and guards replaced.

References, current standards and further information can be found on the Safe Use of Machinery project page at: www.worksafe.govt.nz

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