

Model 656A

Fast Acting Belt Plough

Application

The Fast Acting Belt Plough has two main functions within a baggage handling system: Sortation and Route Diverting.

Sortation

The Fast Acting Belt Plough can be used for outsourcing single bags from a stream of bags. In this mode, the action is similar to that of a pusher with the blade arm moving in and out, completing one full cycle for each bag diverted. Typical examples of Fast Acting Belt Ploughs being used for sorting are in the outsourcing of bags on screening lines, diverting bags to make-up carousels or laterals, as part of sortation systems or to send individual bags to manual coding lines.

Route Diverting

Alternatively, the belt plough can be used to divert a whole stream of bags off-line. In this instance the plough arm will remain in the 'divert' position for a duration of time, until all bags for divert have cleared. This mode will usually be used for fall-back conditions or to divert streams of bags during route selection within a baggage handling system.



Features	Application Benefits
V-Belt Pulley Drive For Plough Belt	Absorbs shock loading to drive when plough diverts baggage
Inverter Controlled Plough Action (Sortation Only)	Ensures smooth cycle action of diverter arm during high cyclic periods
High Sort Rate	Up to 1500 sorts per hour
Simple Linkage Mechanism for Plough Actuation	Reduces shock loads in plough structure by use of T.D.C. mechanics
360o Motor Rotation for One Complete Cycle	Eliminates risk of plough arm over-run
Short Faced End Pulleys	Eliminates trap points
Sealed For Life Bearings	Reduces maintenance requirements
Belt Sweep Plate on underside of Plough Arm	Eliminates trap point for bag straps etc. between plough arm and conveyor belt
Design Flexibility	Accommodates variations such as bed width, belt height, drive components etc.
State of the Art PLC Controls	Use of standard PLC technology enables clients' handling / screening schemes to be complemented

Design Options	Standard Variations
Conveyor Bed Width	1000mm or 1200mm
Plough Mounting	Independent floor mounted or direct to conveyor
Guarding	Security fencing or localised guards
Belt Joint	Clipper type or vulcanised endless
Material Finish	Painted mild steel or galvanised steel

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The Model 656A Fast Acting Belt Plough has been designed to handle and sort a wide range of products, with minimum impact to the bag during the plough divert operation. The unit has been design to be used in conjunction with the Daifuku Logan range of Model 570 Belt and Queue Conveyors and with Model 688 Horizontal Claim Conveyors.

The Model 656A Belt Plough is of modular design enabling the unit to be supplied to suit the customer's specific needs. These include variations in conveyor width, mounting method and various types of outfeed e.g. sort chute, gravity roller, petty wheel chute, powered belt conveyor etc.

General Construction

The motorised belt plough can be an independently floor mounted unit adjacent to the line conveyor for maximum stability. Alternatively it can be fixed direct to the conveyor frame.

The arm of the plough is of steel box section construction with a slider bed surface over which the plough belt runs. The diverter belt runs between vertically orientated drive and end pulleys. Belt tensioning is achieved by adjusting the end pulley.

The drive and end pulleys are fitted with grease packed precision bearings. The drive pulley is mounted on an extended drive shaft, which is driven by a geared motor, through a V belt drive arrangement.

The drive for the diverting motion is an integral geared motor mounted to the underside of the support frame. The motor is a 0.75 kW T.E.F.C., 1440 rpm. In certain applications the divert action may be controlled through AC Inverter.

A machined drive flange is fixed to the output shaft of the gearbox, which in turn is connected through a link bar mechanism to the main pivoting shaft of the plough arm. In this way the rotary action of the drive gearbox is transferred into the linear motion of the plough arm. The drive flange completes 3600 of travel for one full plough cycle.

A proximity type electrical sensor will detect when the plough arm has reached the out position. When diverting multiple bags, this will be used to stop the plough in the 'out' position. A second sensor will also indicate when the arm has returned to the 'home' position, causing the arm to stop.

TYPICAL ISOMETRIC VIEW OF
FAST ACTING BELT PLOUGH

