



Model 595ML Vertical Sortation Unit

The Model 595ML Vertical Sortation Unit is made up of three moving belt conveyors mounted within a support frame. The conveyors can pitch up and down to change the conveyor route through the VSU. This enables it to split the baggage flow from one conveyor line into two separate conveyor lines. The switching action is precise and fast enough to reliably remove a single bag from a continuous stream of bags.

It can also be used in reverse to combine the baggage flow from two separate conveyor lines into one.

The Vertical Sortation Unit has been designed to handle a wide range of products and will operate without disrupting the baggage flow. As the VSU does not exert any external force on the bag as it is being diverted the risk of damage to that bag is minimised.

Two different variants of VSU are available:

Model 595ML (long) where the shallow conveyor angles throughout the VSU allow bags to be tracked on both the upper and lower conveyor routes

And.

Model 595MS (short) where bag 'tracking' is only possible through the upper conveyor route. (See separate data sheet)

Typical applications:

- Separating an individual bag from a stream of bags.
- Dividing a stream of bags from one conveyor line onto two separate conveyor lines.
- Merging two conveyor lines into one.

Working examples include:

- Diverting a single 'suspect' bag within a screening system.
- Sorting bags to different make-up carousels.
- Load sharing bags between different x-ray screening machines.
- Re-routing the flow of bags in a fall back scenario.

Features	Application Benefits
Application Benefits	Absorbs shock loading to drive when plough diverts baggage
Shaft Mounted Gear Box on Conveyor Drives	Drive reliability and ease of maintenance
Inverter Controlled Switching Drive	Gives smooth operation and longevity of mechanical components
High Sort Rate	Unit capable of singulating upto 2700 sorts per hour
Integral Jam Detection	Anti-jam PEC fitted to prevent damage to bags
Sorting Drive Removal 'slide plate'	The motor mounting plate doubles as a slide plate to aid drive motor removal
Integral Maintenance Beam / Struts	Allows conveyors to be securely supported during routine maintenance
Standard Conveyor Width	1000mm wide belt, 1025mm between sidewalls
2 Pulley Conveyor Configuration	Reduces conveyor inertia, improves motor/gearbox life
Short Faced End Pulleys	Eliminates trap points
Lagged Drive Pulleys	Minimises belt tensions
Crowned Tail Pulleys	Assists with belt tracking
External Bearings on Pulleys	Ease of maintenance
Long Bearing Life	Unit designed to 50,000 hour bearing life
Head and Tail Snubber Roller	Eliminates tracking problems on short conveyors
Fire Retardant Belting to ISO 340	Reduces the spread of fire.
Quiet Running	Noise level below 70dBa
Integral electrically interlocked sliding door guards.	Reduces overall VSU footprint and provides a safe clean line appearance.
Offered with two controls options	1) Includes all sensors. C/W with remote I/O interface on an industrial Field Bus mounted in a control panel. 2) C/W all sensors wired to a local junction box for control by external controls system



Design Features:

Unit Length
Belt Speeds
Conveyor Drive Size
Main Actuation Drive Size
Incline / Decline
Incline / Decline
Sidewall Height
Guarding

Belt Joint

Comments:

Nom. 4.0m long.
0.5, 0.6, 0.8, 1.0 or 1.2 m/s
0.75 kw
2.2kw
7o (Upper Conveyor Line)
7o (Lower Conveyor Line)
200 mm
Main access via Integral Sliding mesh doors. Electrically interlocked
Clipper type or vulcanised endless

Additional Design Options:

- Alternative Geared Motor Manufacturer.
- Alternative Belt Manufacturer.

Controls Options:

- Supplied with all sensors. C/W with remote I/O interface on an industrial Field Bus mounted in a control panel.

OR

- Supplied with all sensors and a junction box instead of an I/O control panel, so device can be operated by external controls system.

General Description



Vertical Sortation Unit – Conveyor Bed Sections

The fabrication is press formed in 2.5mm thick painted mild steel or galvanised and comprises a formed bed plate bolted between two flanged sideframes. The bed plate is reinforced by stiffeners across the width of the conveyor. Both the head and tail pulleys are of a fully welded construction and are machine turned for concentricity. All pulleys are mounted between external bearings which can be suitably adjusted to align the pulleys and provide easy access for routine maintenance. Snubber Rollers with less than 45o of belt wrap are fitted with internal “sealed for life” bearings. Typical pulley diameters are:-

Head / Tail and Central Drive Pulley
Snubber Roller

100mm O/D
76mm O/D

40mm Bearing Dia
30mm Internal Bearing



Drive is imparted to the head/tail pulleys via shaft mounted helical geared motors. The geared motors are supplied with integral brakes for rapid stop/start functionality.

Vertical Sortation Unit – Main Drive

The pivoting motion is imparted to the conveyors via “connecting rods and rocker arms”. The connecting rods are positioned close to vertical and are fixed to the conveyor bed sections and rocker arms with “sealed for life” rose type bearings. The rocker arm shaft is supported at both ends by plummer block bearings and is connected to the main drive motor via a crank arm which is fixed to the helical bevel geared motor output shaft using a shrink disc adaptor.

The movement and positioning of the pivoting conveyors is controlled by a cam attached to the geared motor output shaft and proximity sensors.

