



PRODUCT TECHNICAL BULLETIN

CONTROL SYSTEMS

For Friction Driven Belts

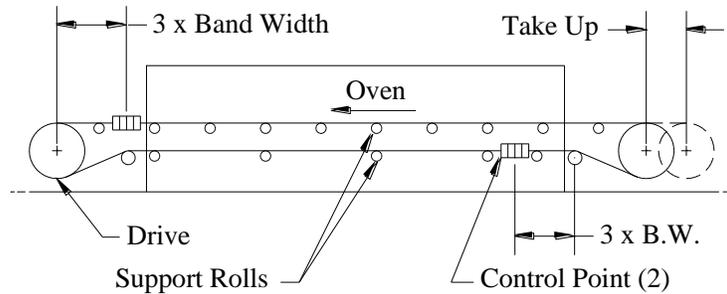
Control units used when precision-tracking performance is required.

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Band controls are not intended as guides to force the belt into position. Although they do limit band side movement at the terminals, the controls function primarily as sensing devices to indicate problems as they occur. During normal operation, controls should exert zero or minimal force to maintain a straight belt path.

LOCATION

Once a band gets onto a terminal drum, the force to move the band laterally becomes very high, but this force is minimal about three bandwidths prior to the terminal. Locate controls three (3) bandwidths prior to the terminal drums. If the system utilizes a snub roll with a significant arc of band contact (> 45°), locate control system three bands width prior to that roll.



On conveyors with a length to width ratio less than nine (9), but greater than six (6) band widths, divide the conveyor length by three (3) to determine the best control locations.

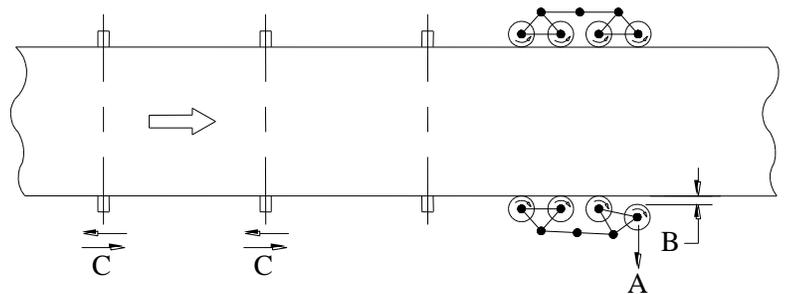
Avoid locating controls closer than two (2) bands widths from a terminal drum. The force to move the band becomes high, reducing life of the controls. A higher force to move the band results in high pressure on the band edge leading to weld failure. Locating control system too far from the terminal roll results in reduction of band control precision.

CONTROL CLEARANCE

A well-tracked band will have only light contact with the controls, alternating in a slow cycle from one side to the other.

Set control clearance as follows:

- A. Gently pull on one end of the frame containing four vertical rolls so that one roll is pulled away from the belt edge and the belt is in contact with the remaining seven rolls.
- B. Adjust the controls so that the gap between the belt edge and the roll is 3/8 to 5/8 inch [10 to 16 mm].
- C. Skew upstream support rolls to balance contact between both controls.

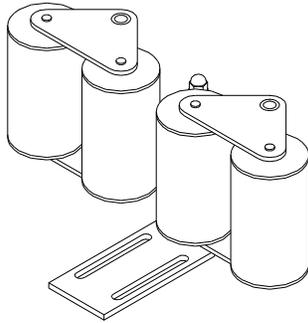
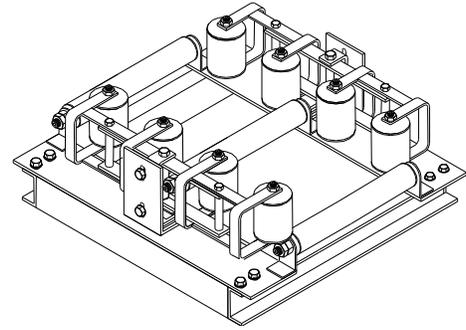


CAUTION:

The rolls on Ashworth control systems are hollow. Do not replace with solid rolls. Solid rolls are heavier and require higher contact force to rotate them. The higher contact force will have two detrimental effects:
 damaged band edges
 delayed rotation allows tracking problem to go undetected until situation worsens

Model No. 1 Controls - Recommended

- System includes base frame and three horizontal rolls.
- Four vertical rolls contacting 18 inches [457 mm] of band edge.
- Band width limited to 60 inches [1525 mm] or less.
- Suitable for all spiral meshes.
- Guide rolls adjust vertically to move roll to new wear point.
- Available with either ball bearings or ZW (zero wear) carbide bearings.
- Two control units required per system.



Model No. 2 Controls

- Same vertical roll diameter (3 in [76 mm]) as Model No. 1 Controls.
- No horizontal band support rolls.
- The recommendation for support rolls is to locate them before and after controls.
- Four vertical rolls with a belt contact length of 10-1/2 inches [266 mm].
- Suitable for all spiral meshes.
- Available with either, ball bearings or ZW (zero wear) carbide bearings.
- Four control units required per system.

Choice of Bearings

Carbon Steel

- temperatures up to 350 °F [177 °C]
- dry, non-corrosive environment

Carbide Zero Wear (ZW)

- very hard material
- temperatures up to 1000 °F [538 °C]
- provide minimal wear at elevated temperatures
- does not require lubrication

CAUTION: Carbide bearings are very brittle. Do not drop, rough handle, or strike the controls with a sharp blow.

LUBRICATION

Bearings

Ball bearings used are open type allowing direct lubrication by a spray lubricant suitable for the environment. Vertical roll faces are provided with a hole at the lower end for access to the top of the bottom bearing. ZW (Zero Wear) Bearings do not require lubrication.

Pivot Points

Seized pivot points will not allow the control unit to properly divide any lateral band thrust among the four rolls. All pivot points should be lubricated periodically with a suitable oil. Select lubricant with product in mind especially when handling food to avoid contamination.

Optimum Control System performance requires that the belt be tracked straight throughout the belt path.

Refer to: Ashworth’s Technical Bulletins “Baking Band Assembly Instructions, Baking Band Tracking and Maintenance”.



**MODEL 2 CONTROL ROLLS
with Baking Band**

Ashworth recommends the use of Ashworth Model #1 or Model #2 'Control Systems' to prevent the belt from contacting framework and keep the belt centered on the terminal drums. Other manufacturers' systems have been used successfully, but they must be monitored to prevent belt damage due to excessive side loading on the belt. Ashworth recommends that belt guides be located a distance 2-3 times the belt width from the terminal rollers. Ashworth will not warrant belts against edge damage caused by systems of other manufacturers; and can not make recommendations on their installation, use and maintenance.



MODEL 2 CONTROL ROLLS

Reference: Product Technical Bulletin "021 Conveyor Design Guidelines".

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