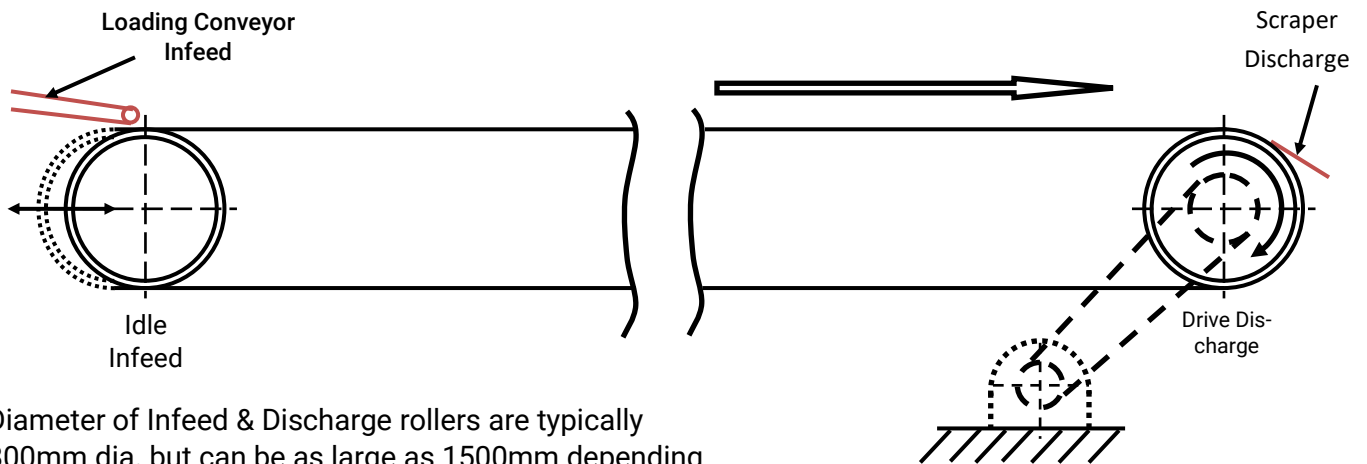


Rolled Baking Band

Conveyor Circuit Design Guidelines - Friction Driven

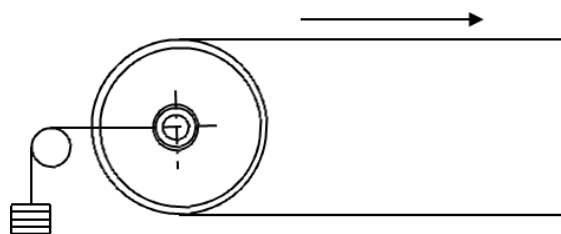
Typical Belt Circuit

Plain Roller Infeed & Discharge

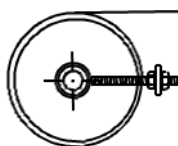


Diameter of Infeed & Discharge rollers are typically 800mm dia. but can be as large as 1500mm depending upon the application. Contact Wire Belt Technical Sales for advice.

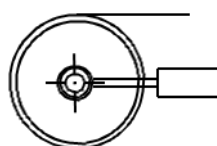
Free Rotating Plain Roller at Infeed (Gravity Weight Actuated Tensioning)



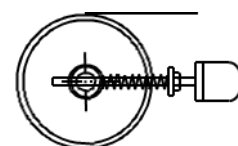
Options:



(Screw Adjustable)



(Pneumatically Adjustable)

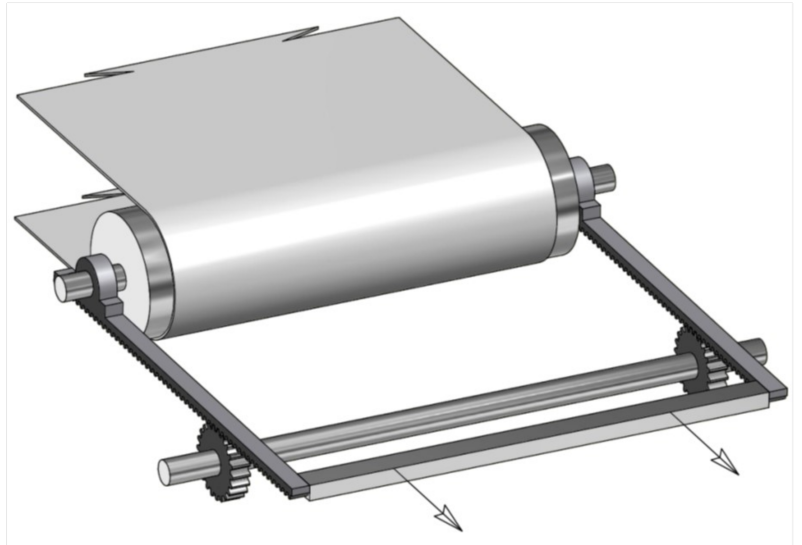


(Spring Adjustable)

NOTE: If you wish to use an alternative belt circuit then please contact Wire Belt Technical Sales to discuss your options.

Suggested Infeed Roller Take-up Systems

Note: Where the belt take-up operates automatically (gravity/pneumatic/spring operated) you should ensure that the amount of take-up roller adjustment is the same on each belt edge. This can be designed into the system by using a rack & pinion or chain & sprocket arrangement (see below) that act evenly at the take-up roller position, or similar.



Gravity weighted chain sprocket arrangement (sprockets keyed to shaft).

Note: If using independent manual screw adjustment then ensure that adjustment is the same on each side.

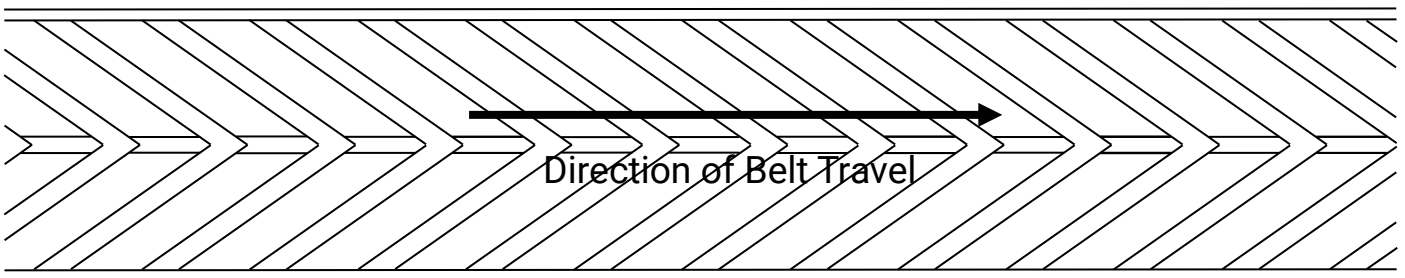
Belt Support - Carry Way

Multiple Free Rotating Roller Belt Support

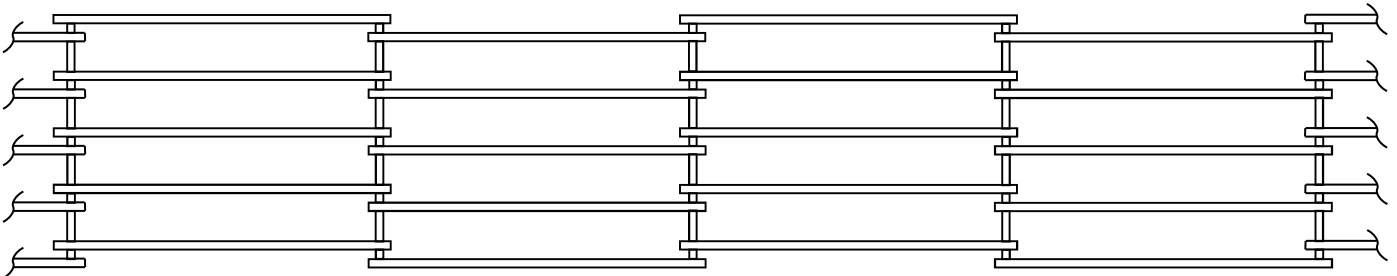


Note: All support rollers should be free to rotate and set horizontally and perpendicular to the centre line of the conveyor / belt. The roller spacing should be sufficiently close to ensure that the belt lies flat without the need for increased belt tension. The roller diameters normally vary between 75mm and 150mm dependent upon on the width of the belt and the mesh size. They should have sufficient diameter to suit the width of the belt and application without deflection.

Chevron Pattern Wear Strips



Straight In-line Staggered Wear Strips



Notes:-

1) Ensure adequate clearance between the belt edge and any frame construction to prevent belt edge contact during use.

2) It is recommended that all wear strip surfaces are faced with low friction material where possible.

Belt Support - Return Way



All support rollers should be free to rotate and set horizontally and perpendicular to the centre line of the conveyor / belt. The spacing can vary between 900mm and 3mtrs, however to limit the catenary belt sag between rollers and belt tension minimise the spacing. The catenary belt sag between rollers also acts as a natural belt take-up mechanism.

Suggested roller mounting: One end to have a pillow block bearing placed on vertical plane with the other end placed in a horizontal plane – both to be adjustable using slots in the conveyor frame structure. This allows the rollers to be adjustable in both vertical and horizontal planes to ensure true alignment of the rollers and the ability to adjust the rollers as necessary to track the belt. For belt tracking procedure refer to the “[Tracking of Friction Driven Mesh Belts](#)” within the Support Info tab.

It is also possible to use a combination of chevron/straight wear strips & free to rotate rollers however you should ensure that there is enough length at the infeed underside and carry way discharge to accommodate the tracking adjustment rollers.

Roller Guidelines

Drive & Idle Infeed Roller

These should be of plain parallel design without edge flanges and have an overall minimum width of:-

Belt width +200mm

The diameter of these rollers are typically 800mm but can be as large as 1500mm depending upon the application. Contact Wire Belt Technical Sales for advice.

These rollers should be as large as practically possible which will maximise the belt contact with the rollers. This in turn will minimise the necessary belt tension to maintain a non-slip drive. Low belt tension will prolong belt life. This will also create a more positive belt tracking arrangement.

Belt Support Rollers

These should be of plain parallel design without edge flanges and have an overall minimum width as follows:-

Belt width +200mm

In general diameters vary between 75mm and 150mm. However they should have sufficient diameter to suit the width of the belt and application without deflection.

With the exception of the drive and Infeed roller the minimum suggested diameter of rollers under tension with at least 30° of contact wrap is 300 mm

Roller Limitations

- The roller diameters above are suggested only to prevent damage to the belt and do not necessarily indicate the diameter for proper belt drive in terms of the application. Contact Wire Belt Technical Sales for a full assessment of your proposed conveyor application.
- Always maximise the roller diameters where possible to ensure the best performance from the belt.
- Do not use flanged rollers in any part of the belt circuit as a means of belt tracking. The belt will climb the flanges and cause permanent belt edge damage.
- Do not use crowned rollers as this will stretch the belt centre causing permanent damage.
- Please contact Wire Belt Technical Sales to confirm the appropriate roller sizes to suit your application.

Roller Material

- Steel
- Steel with high friction material – brake lining materials or similar.
- Steel with rubber, neoprene or similar lagging material having a shore hardness of ≈ 60 and to suit maximum operating temperature of system.

Conveyor Frame Construction

- Do not allow sharp framework parts to come into contact with the edges of the belt.
- Ensure adequate clearance between the edges of the belt and any near framework parts. As a general rule the longer the conveyor the greater the clearance needs to be.
- Ensure all rollers are horizontally set and at 90° to the line of travel prior to tracking the belt.
- Do not track the belt with static edge guides. Tracking is achieved by adjustment of the belt support rollers – see [“Tracking of Friction Driven Mesh Belts”](#) within the Support Info tab of the website.
- Any bed support for the belt should also be horizontally set with the surface aligning with the surface of the adjacent roller(s), or lower.
- Always taper down the leading edges of any belt support wear strips/bed.

If in any doubt please contact Wire Belt Technical Sales Team