

Woven Mesh Belts

Trouble Shooting Guide for Friction Drive

Problem	Possible Cause(s)	Solution(s)
Belt not tracking properly	<ul style="list-style-type: none"> Product debris build up on rollers or support wear strips 	<ul style="list-style-type: none"> Check all rollers and belt support surfaces for debris build up and remove
	<ul style="list-style-type: none"> Drive & Idle Infeed rollers not set parallel to each other and 90° to conveyor centre line 	<ul style="list-style-type: none"> Adjust Infeed and drive roller so that they are at 90° to conveyor centre line. Do not track belt by adjusting end rollers. These must be set parallel to each other. See <i>"Tracking of Friction Driven Meshes"</i> guidelines
	<ul style="list-style-type: none"> Belt support rollers not set level and at 90° to conveyor centre line 	<ul style="list-style-type: none"> Adjust belt support rollers to be level and at 90° to the conveyor centre line. Return side tracking rollers can then be adjusted horizontally to track belt as per <i>"Tracking of Friction Driven Meshes"</i> guidelines
	<ul style="list-style-type: none"> Belt tension/length adjustment rollers are not set to be equal on both sides (must be at 90° to conveyor centre line) 	<ul style="list-style-type: none"> Ensure all belt length adjustment rollers are adjusted equally both sides of the conveyor
	<ul style="list-style-type: none"> Uneven loading of product 	<ul style="list-style-type: none"> Check pattern of loading across width and adjust to give uniform loading
	<ul style="list-style-type: none"> Uneven temperature across belt in hot process 	<ul style="list-style-type: none"> Uneven temperature across width will cause uneven belt expansion. This will impact on the drive tension across the width of the belt. Adjust heaters to give even temperature pattern
	<ul style="list-style-type: none"> Belt stretched on edge 	<ul style="list-style-type: none"> If belt is stretched on one edge then the belt should be replaced. As a short-term measure (to continue production) consider flipping over every metre of belting to help balance out the stretch on one side. Please remember this is only temporary as the belt has been damaged
	Note: It is normal to expect that each belt supplied will track differently to the previous belt. Refer to the <i>"Tracking of Friction Driven Meshes"</i> guidelines when fitting a new belt	Note: Wide belts operating on short conveyors can be difficult to track
Belt runs to one side	<ul style="list-style-type: none"> Belt join has been made with the same coil handing 	<ul style="list-style-type: none"> Check join – remove one of the same handing coils from the belt and then re-join
	<ul style="list-style-type: none"> Belt is of <i>"Chain Link"</i> style with all coils of the same handing 	<ul style="list-style-type: none"> Where <i>"Chain Link"</i> belting is installed without chain edges then it is recommended that the belt be manufactured in panel lengths of left hand and right-hand sections to balance out the action of the coil handing over the drive & idle rollers
	<ul style="list-style-type: none"> Drive & Idle rollers not set parallel to each other and 90° to conveyor centre line Belt support rollers not set level and at 90° to conveyor centre line 	<ul style="list-style-type: none"> Track belt according to the <i>"Tracking of Friction Driven Meshes"</i>

Belt Runout	<p>Note: There will be some natural wander of the belt over both the drive & idle infeed roller which is due to the slight manufacturing variations in wire formation and tensile. This is normal and should not exceed 20mm of total travel across the roller. Therefore, ensure that all rollers & supports are in the order of 50mm to 100mm wider than the belt</p>	
Belt slips on drive roller	<ul style="list-style-type: none"> Conveyor too long for belt specification Load too heavy for belt specification Operating temperature too high for belt specification 	<ul style="list-style-type: none"> Check with Wire Belt Company Technical Sales with full description of application
	<ul style="list-style-type: none"> Drive roller too small for application Increased friction between belt and wear strips/support rollers 	<ul style="list-style-type: none"> Consider increasing friction contact with drive roller by means of increasing the diameter or increasing the friction of the drive roller surface. Also consider reducing the friction between wear strips and the belt by using an alternative wear strip material
	<ul style="list-style-type: none"> Low or inconsistent belt tension 	<ul style="list-style-type: none"> Check operation of tension/belt length adjustment roller mechanism and correct any operational defects
	<ul style="list-style-type: none"> Drive press roller (if fitted) does not exert enough pressure trapping the belt to the drive roller to maintain smooth drive operation 	<ul style="list-style-type: none"> Increase press roller pressure against belt until smooth belt drive is achieved Ensure press roller operates parallel to the drive roller it is working against
	<ul style="list-style-type: none"> Automatic belt take-up is stuck and failing to exert constant tension to belt 	<ul style="list-style-type: none"> Check the operation of belt take-up unit and ensure it is free to operate equally on both sides of the conveyor
	<ul style="list-style-type: none"> Belt take-up roller is at the end of its travel creating slack in the belt 	<ul style="list-style-type: none"> Remove a section of belt, adjust take-up and reconnect the belt ends. Refer to <i>"Installation Guidelines"</i> for correct procedure
Curve to wire strands across width or Convex/Concave belt camber	<ul style="list-style-type: none"> Belt drag on one edge or position across belt width 	<ul style="list-style-type: none"> Check for uneven friction across width. It could be a rough wear strip, catching edge, product build up on rollers, uneven temperature across width, etc. There are many causes so a thorough investigation of the belt circuit and process is necessary. Contact Wire Belt Company Technical Sales if you are unable to locate and clear the problem. <p>Note: Belt can be taken off periodically and refitted in the reverse providing camber is not excessive. Camber will try to straighten and form a new camber as per previous installation. Do not attempt this procedure if the wire has work hardened and become liable to fracture.</p>
	<ul style="list-style-type: none"> Belt spirals worn 	<ul style="list-style-type: none"> Inspect belt thoroughly particularly on its underside and replace belt if wear is excessive. Belt can be turned over if wear is not too excessive
	<ul style="list-style-type: none"> Uneven pressure of belt on drive roller if conveyor is fitted with a drive press roller 	<ul style="list-style-type: none"> Check and adjust drive pressure roller so that it is acting parallel and with even pressure across the width of mesh on the drive roller
	<ul style="list-style-type: none"> Temperature difference across belt is greater than 12°C 	<ul style="list-style-type: none"> Reset heat distribution pattern and check for ingress of cool air into the operating environment

Rapid belt wear	<ul style="list-style-type: none"> Belt slips on drive roller – see above. Support wear strips have sharp edges in contact with belt 	<ul style="list-style-type: none"> Remove all wear strip sharp edges to present a smooth surface for belt to run over. There should be no abrupt corners or edges of the support structure to impede smooth belt operation
	<ul style="list-style-type: none"> Surface level of carry way belt support wear strips are set too high in relation to the belt underside level as it exits the infeed roller or discharges to the outfeed roller 	<ul style="list-style-type: none"> The surface level of the carry way wear strips should be adjusted to the level of the infeed & discharge belt support rollers
Distortion of belt	<ul style="list-style-type: none"> Wear to rollers 	<ul style="list-style-type: none"> Check and replace any rollers that are worn and uneven across width
	<ul style="list-style-type: none"> Product debris build up on rollers or belt support members 	<ul style="list-style-type: none"> Remove all debris and fit constantly operating scraper to any driven roller if debris build up persists
	<ul style="list-style-type: none"> Rollers are crowned 	<ul style="list-style-type: none"> Drive and end transfer rollers must be straight & parallel (not crowned). This also applies to any other roller in circuit with belt wrap under tension
Damage to belt mesh coils	<ul style="list-style-type: none"> Incorrect installation of belt. Balanced spiral belt coils locked in vertical manner when installed. Support wear strips have sharp edges 	<ul style="list-style-type: none"> Relax belt tension and smooth out by hand the locked coils. See <i>"Balanced Spiral Installation Guidelines"</i> Remove all wear strip sharp edges to present a smooth surface for belt to run over
Belt corroding prematurely	<ul style="list-style-type: none"> Operating atmosphere or temperature not suited to belt specification. May lead to <i>"Stress Corrosion Cracking"</i> 	<ul style="list-style-type: none"> Consult with Wire Belt Company Technical Sales with full details of process application
Belt edge damage	<ul style="list-style-type: none"> Belt has wandered to one edge and is contacting the conveyor frame 	<ul style="list-style-type: none"> See above for "Belt not tracking properly" & "Belt runs to one side"
	<ul style="list-style-type: none"> Belt may have come into contact with edge tracking rollers, or guide frame, with excessive force 	<ul style="list-style-type: none"> It is recommended that belt guides do not interfere with the smooth operation. Where it is necessary the force exerted should be no greater than 5 newtons
Belt vibration	<ul style="list-style-type: none"> Belt passing over either rough or uneven surfaces or obstructions such as an angle, wear strip edge, etc 	<ul style="list-style-type: none"> Check complete belt circuit and remove any rough or uneven surfaces or obstructions
	<ul style="list-style-type: none"> Belt passing over rollers that are set at a distance which is a multiplication of the cross-wire pitch down the length 	<ul style="list-style-type: none"> Check position of rollers in relation to the cross-wire pitch multiplicity and alter position if necessary
	<ul style="list-style-type: none"> Oval coil spirals passing over small end/drive rollers 	<ul style="list-style-type: none"> Check system for vibration at rollers and if present consider increasing the roller size and/or changing the belt specification for a belt with an increased longitudinal coil wire dimension. Longer lengths of the coil will be flatter. Also consider a <i>"Flat Spiral"</i> belt alternative
	<ul style="list-style-type: none"> Incorrect belt tension 	<ul style="list-style-type: none"> Adjust belt take-up to either increase or reduce belt tension and note any change in vibration

Belt surging on carry way infeed	<ul style="list-style-type: none"> Belt speed is slow in relation to working friction between belt and rollers/wear strips. This surging action is known as the "Slip-Stick" effect where the belt overdrives when moving forward. It then momentarily stops to allow the belt coils to expand and then moves forward again 	<ul style="list-style-type: none"> Change the nature of wear strip belt supports to raise or lower friction. If friction is increased this may have a detrimental effect on the belt and should only be considered after full consultation with Wire Belt Company Technical Sales
	<ul style="list-style-type: none"> Belt tension too high or too low 	<ul style="list-style-type: none"> Trial the increase or decrease of belt tension and note if belt surging stops
	<ul style="list-style-type: none"> Bearing failure of any of the rollers within the belt circuit that are in contact with the belt 	<ul style="list-style-type: none"> Check all bearings are free rotating and not damaged. Replace as necessary
Excessive belt stretch	<ul style="list-style-type: none"> Product load too heavy for belt specification Friction between belt and support rollers & wear strips too high Operating temperature too high for belt specification and/or belt material. 	<ul style="list-style-type: none"> Consult with Wire Belt Company Technical Sales to reassess application and belt details.
Black debris build up on belt and conveyor frame structure	<ul style="list-style-type: none"> Normally occurs in the belt "Break In" phase of installation 	<ul style="list-style-type: none"> As new all wire of the belt mesh and wear support surfaces have microscopic peaks at the surfaces. This black debris is caused by the peaks of these surfaces rubbing against each other in operation until they become polished and "seat in". After the "Break In" phase of the belt the system should be thoroughly cleaned. This process may have to be repeated before this black debris is reduced to an acceptable minimum