

Trouble Shooting Guide for Chain Edge Driven Woven Mesh Belts

Problem	Possible Cause(s)	Solution(s)
Belt slips on chain edge drive sprockets	<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"> Incorrect match of side chain and associated sprockets 	<ul style="list-style-type: none"> Replace sprockets to match chain
	<ul style="list-style-type: none"> Edge drive sprockets too small for application 	<ul style="list-style-type: none"> Increase the size of the drive sprockets and support mesh roller between sprockets. Call Wire Belt Company for the most suitable replacement sprockets
	<ul style="list-style-type: none"> Increased friction between belt and wear strips/support rollers 	<ul style="list-style-type: none"> Consider reducing the friction between wear strips and the belt by using an alternative wear strip material. Check all support rollers are free to rotate
	<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"> 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 "Installation Guidelines" for correct procedure
	<ul style="list-style-type: none"> Belt back pressure tension to low 	<ul style="list-style-type: none"> Increase general belt tension by adjustment of belt take up device. Do not exert excessive tension on belt as Balanced Spiral Chain Edge driven belts should work with the minimum of tension to ensure proper drive
Curve to wire strands and cross rods across width	<ul style="list-style-type: none"> High friction between belt mesh and support wear strips/rollers 	<ul style="list-style-type: none"> Inspect belt circuit to ensure all belt support rollers are free to rotate
	<ul style="list-style-type: none"> Cross rods through mesh are too small for the application 	<ul style="list-style-type: none"> Wider belts should use a high tensile cross rod or increased cross rod diameter
	<ul style="list-style-type: none"> Improper belt support between chain edges on rollers & wear strips 	<ul style="list-style-type: none"> Ensure that the support rollers between chain edge sprockets are of the correct diameter There should be sufficient roller support of the mesh between chain edge sprockets on all rollers to prevent mesh distortion Wear strip supports where fitted should ensure the flat operation of the belt in use

Rapid belt wear	<ul style="list-style-type: none"> Chain edge slips on drive sprockets – 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 drive shaft 	<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
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
Damage to chain edges	<ul style="list-style-type: none"> Sprocket chain centres across width do not match chain centre to centre of belt 	<ul style="list-style-type: none"> Reposition one or both edge sprockets at all positions to match belt chain centres For wider and high temperature operating belts it is normal that only one edge sprocket is fixed in position. The other sprocket is free to float on the keyed shaft to allow for belt expansion and manufacturing tolerances
	<ul style="list-style-type: none"> Edge sprocket teeth not in alignment 	<ul style="list-style-type: none"> This may occur if sprockets are not keyed onto shaft. If there are any inaccuracies of keying both the sprockets and shafts then re-machine or replace to rectify the machining error
	<ul style="list-style-type: none"> Improper support of chain edge throughout belt circuit 	<ul style="list-style-type: none"> Check to ensure that wear strip chain edge support is constant and level where necessary throughout the belt circuit. All wear strips should have an angle or curved lead in to prevent the chain catching
	<ul style="list-style-type: none"> Structure of conveyor catching on belt edge 	<ul style="list-style-type: none"> Conveyor frame clearance should be 50mm to 100mm wider than overall belt width – depending on width and length of conveyor
	<ul style="list-style-type: none"> Centre of belt not in alignment with centre of conveyor throughout belt circuit 	<ul style="list-style-type: none"> Check all roller/shaft positions that they are set up to be centrally aligned to conveyor centre line
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 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-rod pitch down the length 	<ul style="list-style-type: none"> Check position of rollers in relation to the cross-rod pitch multiplicity and alter position if necessary
	<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. Do not over tension as chain edge driven belts operate with a positive drive mechanism. Only apply enough tension to ensure drive of belt
Belt surging on carry way infeed	<ul style="list-style-type: none"> Belt speed is slow in relation to working friction between belt, chain edges 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 and chain to expand and move 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