

Eight ways to increase conveyor chain life

Producers of glass bottles and jars can often achieve significant gains in production by improving the operation of conveying chains on IS machines and cross conveyors. William Hall discusses eight simple, low cost steps for improving ware handling, reducing downtime and costs.

For many years, Ramsey technicians and field sales personnel have worked with glass producers to optimise conveyor performance and troubleshoot conveying problems. This experience in the field has shown that a few conveyor installation and operation details are the source of most conveying chain problems. Fortunately, many of these problems are easy to correct.

ALIGN CHAIN SPROCKETS AND GUIDES

In order for a conveying chain to run true and straight, with uniform load distribution, sprockets must be aligned with one another and the shafts they rotate on must be parallel. Misalignment of sprockets creates non-uniform, higher loading in one side of the chain and forces the chain to track to one side of the conveyor. Lateral guides may constrain the chain but this type of non-uniform chain loading accelerates wear and reduces life. When sprockets are correctly aligned, the chain will tend to run naturally in a straight line.

Lateral guides should be aligned with one another and with the chain. Misaligned guides can create edges where the chain will snag or pinch points where chain motion is restricted.

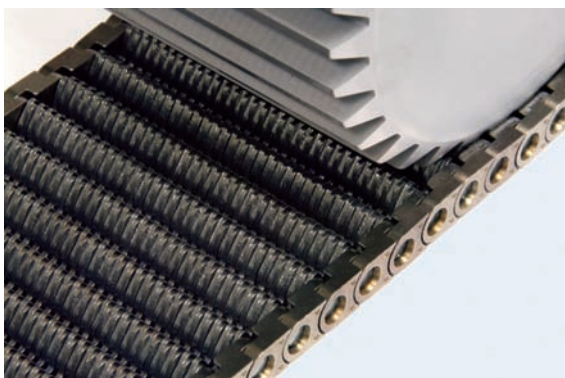
CHECK FOR GROOVES AND EXCESSIVE WEAR

The wear plates that support conveying chains are expensive and they are often one of the last maintenance items to be replaced. However, over time, wear plates can develop grooves and other surface irregularities that cause incorrect chain tracking and non-uniform chain wear.

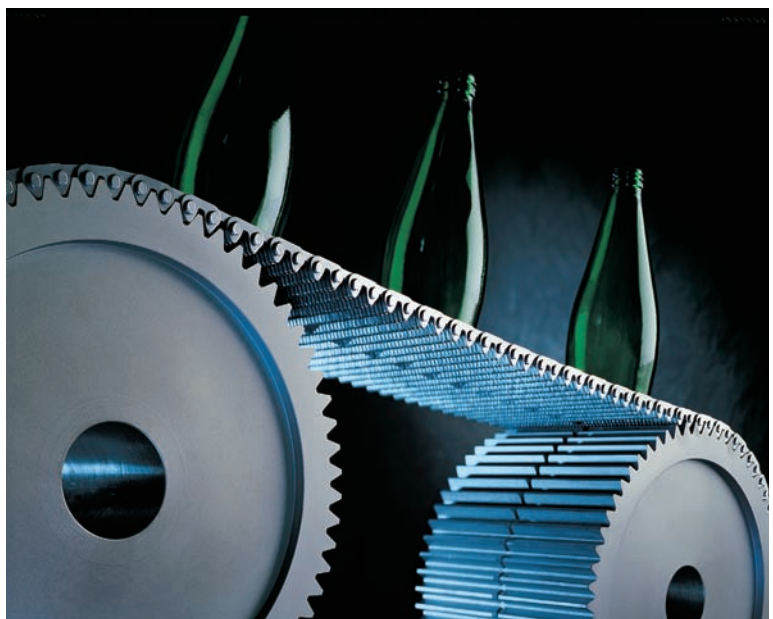
It is a good idea to inspect wear plates carefully before installing a new conveying chain.

CHECK FOR FLATNESS AND GAPS

Large gaps between adjacent wear plates can create edges where the conveying chain may snag or hang up.



Ramsey conveyor chains are made to run with little or no lubrication.



With correct installation and simple maintenance, Ramsey chain will typically provide years of problem-free service.

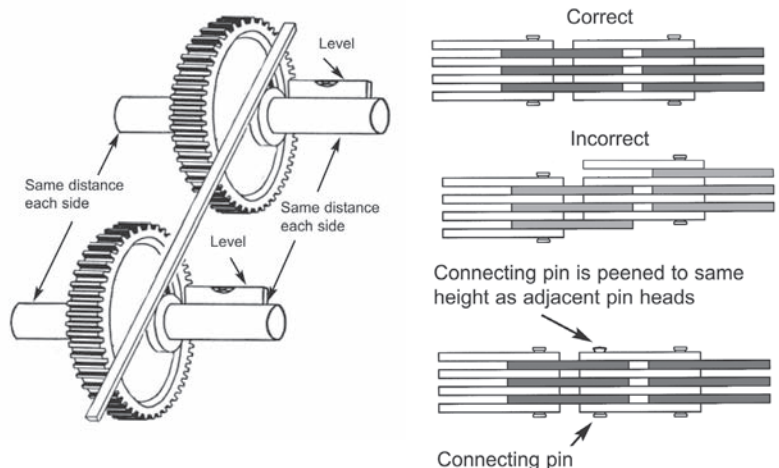
This can produce chain jerking and surging, as well as chain failure.

Avoid this problem by minimising the gap between adjacent wear plates and making sure that all wear plates are flat and level.

DO NOT OVER TENSION CHAINS

Care should be taken to avoid over tensioning chains. This is one of the most common causes of accelerated chain wear and reduced life.

As a rule of thumb, Ramsey >



When sprockets are correctly aligned, the chain will tend to run naturally in a straight line and chain life is increased.

Correct chain connection is essential for optimum conveyor chain life.

recommends as little tension as is needed to produce satisfactory chain operation. The exact amount of tension required will vary between different machines and production set ups. Typically, a correctly tensioned chain will have a good deal of sag, or slack, in the return span. If the return span is straight with no sag, it is often a sign of excessive tension.

Rapid chain elongation is also a sign of excess tension. So, if users find they must frequently re-adjust chain tension or remove elongated sections of chain, check to see if the conveyor is over tensioned.

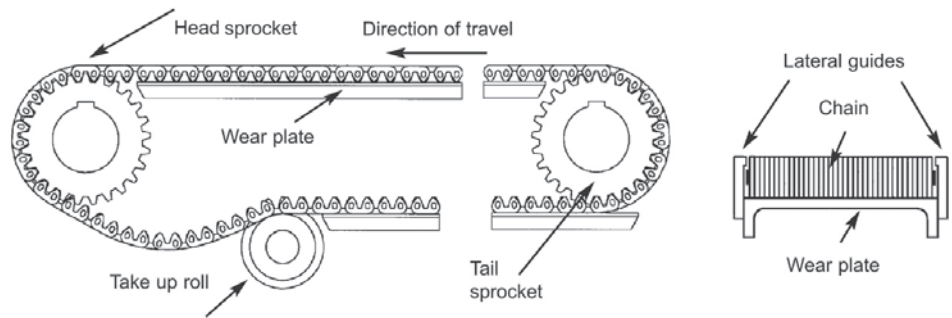
VERIFY CHAINS ARE CONNECTED CORRECTLY

Conveying chains are typically supplied in 10ft lengths, which must be joined, or connected, at the time of chain installation. At each chain connection point, it is essential that chain links are correctly laced together, with the guide links in each section aligned. It is also important that the connecting pin is secured in such a way that it will not come out and that it does not project beyond the end of adjacent pins.

Connecting pins are most often secured by peening a head on the end of the connecting pin. The peened head should be large enough to keep the pin in the chain, yet not so large that the chain becomes stiff or inflexible. Check for proper connection by manually flexing the chain at the connection; it should move freely and not bind.

AVOID SHARP EDGES OR CORNERS ON GUIDE STRIPS

Sharp corners on guides will often snag on a conveyor chain's pins or outer links. When this happens, ware



Ramsey conveying chain can eliminate many ware handling problems, especially when operated with flat, level wear plates and the correct amount of chain tension.

handling problems can be expected, as well as chain damage. Eliminate this problem by making sure that the leading edge of guides are tapered or rounded to remove any sharp corners. Also, as mentioned in step (1), align all guides.

AVOID LENGTHY STOPPAGES

Many glass conveying chains operate with little or no lubrication. Links in these chains will experience some surface rusting but as long as the chain stays in motion, the rusting will not usually interfere with chain operation. However, when such chains are stopped for too long, adjacent links may fuse together, making the chain inflexible and rendering it useless. Minimising chain downtime is the best way to avoid this problem. Alternatively, if a line must be down for an extended time, remove the chain and leave it soaking in mineral spirits.

AVOID EXCESSIVE COATINGS

Over the years, we have seen many instances where chains become stiff and inflexible as a result of excessive coatings of grease, mould release compound and other additives. These substances embed in chain joints and will often cause the chain to lock

up. Once this happens it is very difficult to restore the chain's flexibility. It is much easier to avoid the problem altogether, by keeping chain coatings to a minimum. ■



Ramsey sprockets are precision machined and will run most smoothly and efficiently when properly aligned.

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