

## Make Flat-Flex endless – with joining-tubes

*Application – To join a new belt or to repair a damaged belt.*

**Please note:** Before undertaking any other method of belt joining, including the tube method described here, it is important that a risk assessment is undertaken and that all applicable regulations are complied with.

### Selection of Tube Length

The tube length should be a few millimeters less than 2/3rds of the belt space. If this joining tube length is not available then choose the nearest shorter available tube.

### Which tools do you need?

- Safety Glasses
- Needle Nose and /or Flat End pliers
- Wire Straightening tool (optional).
- Side-cutting pliers – Knippex Compact Bolt Cutters are ideal for both cutting of wire and crimping the tubes.

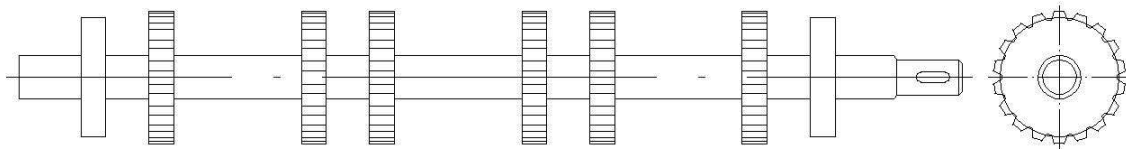


You can order the wire straightener and pliers from our sales department.

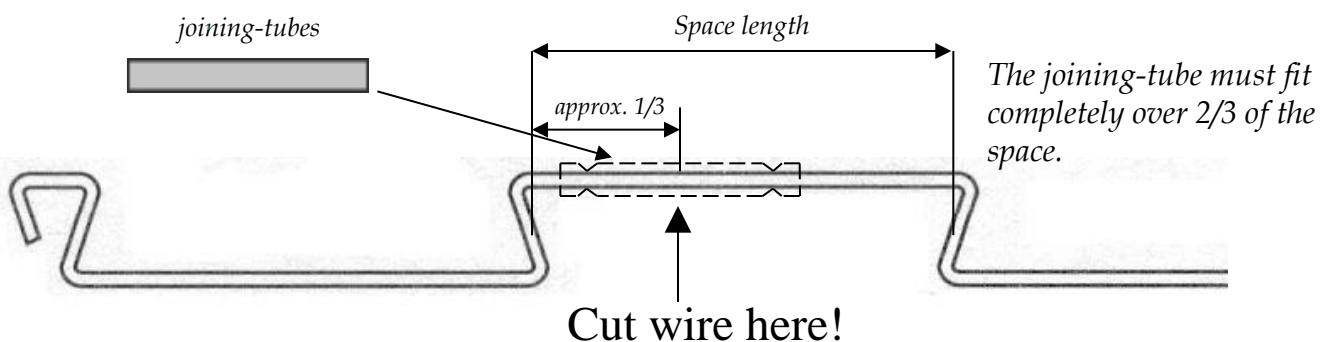
### Where should the space wire be cut?

The first cut is made at one third of the length of the space, exclusively in those spaces that are not driven – the odd numbered spaces.

**CAREFUL:** The cut must ALWAYS be set so that the joining-tube can be pulled completely over the longer part of the cut wire section.



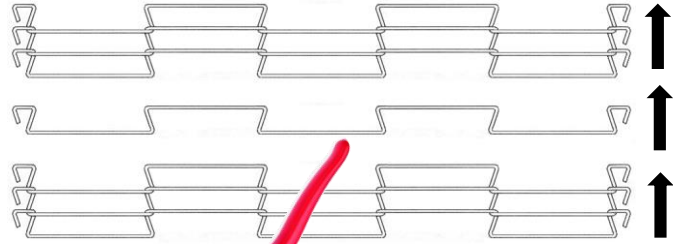
These spaces are cut through and later put together again with the joining-tubes.  
To avoid confusion later, only cut off the part you need to use next.



**Procedure:**

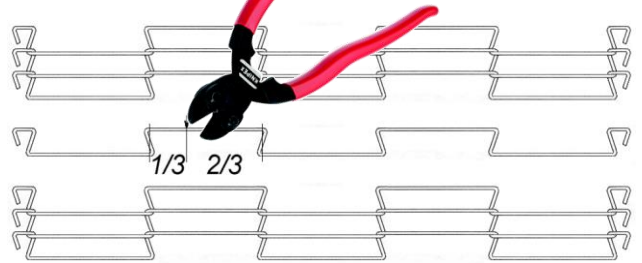
First relax off belt tension adjuster.

Then carefully unzip from the upper end of the belt a single strand to be used for joining.

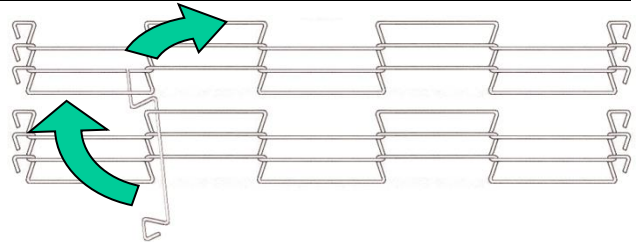


Make the first cut as shown.

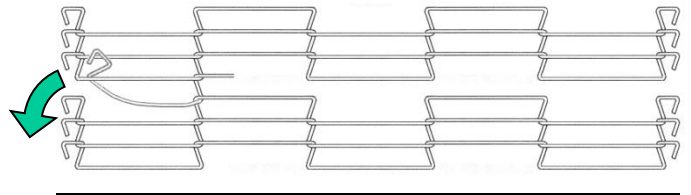
Please only cut the part that you would like to weave next, to avoid later confusion of parts.



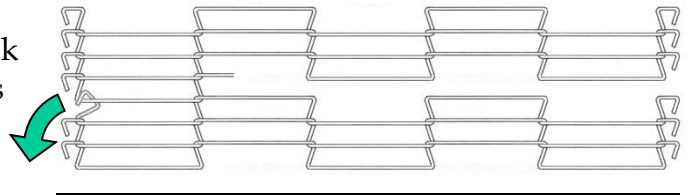
Now push the short piece of the cut space through the second space of the lower belt and up through the first space of the upper belt end. Turn the parts clockwise, so that the Z-form joins both belt ends.



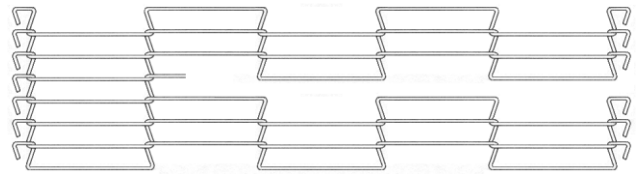
Now push the join strand edge-loop up into the upper loop edge through the first space.



With pliers take the lower edge loop and hook it up through the first space to loop the edges together.

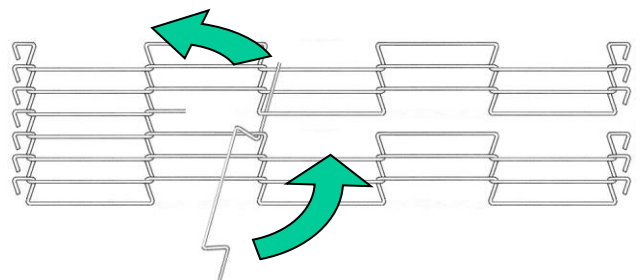


Straighten wire with pliers or wire straightener. The first stage is completed.

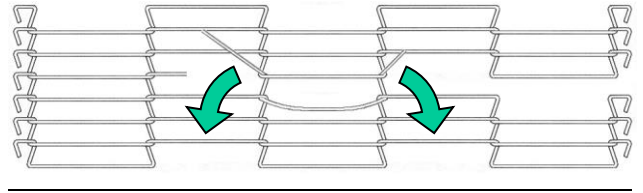


Now cut through the second part as shown above.

As shown place the longer space wire length down into the second space on the lower belt end and up into the third space on the upper end. Turn the part anti-clockwise into the spaces.

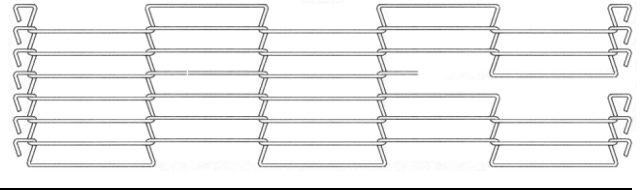


Now insert the short end down through the 4<sup>th</sup> space on the lower end of the belt and up through the 3<sup>rd</sup> space in the upper belt end (use pliers if necessary). Then straighten the strand section.

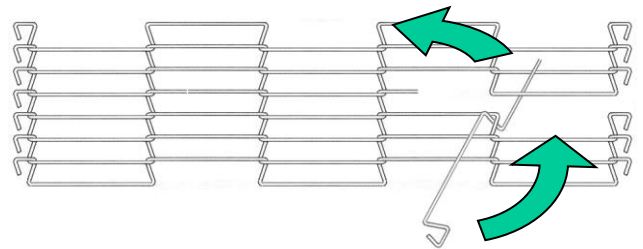


Step 2 is now complete.

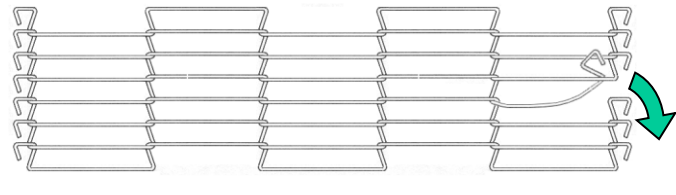
**With belts that have more than 5 spaces please repeat these steps until the last space.**



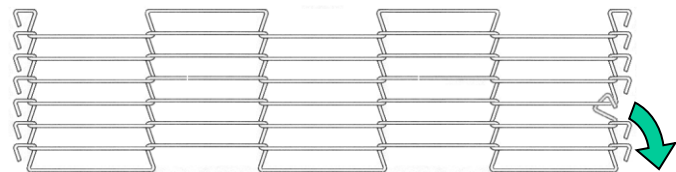
With the last space place the long end of the cut wire section down through the 4<sup>th</sup> space on the lower belt end and up through the last (5<sup>th</sup>) space on the upper belt end. Turn the wire section anti-clockwise into the spaces to lock in the Z-bend link assembly.



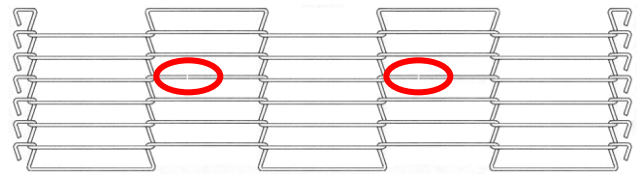
Now push the join strand edge-loop up into the upper loop edge through the last space.



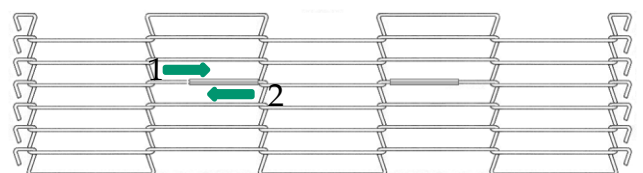
With pliers take the lower edge loop and hook it up through the last space to loop the edges together. Again straighten the bent strand.



The last step is to join the cut wires using the joining-tubes.



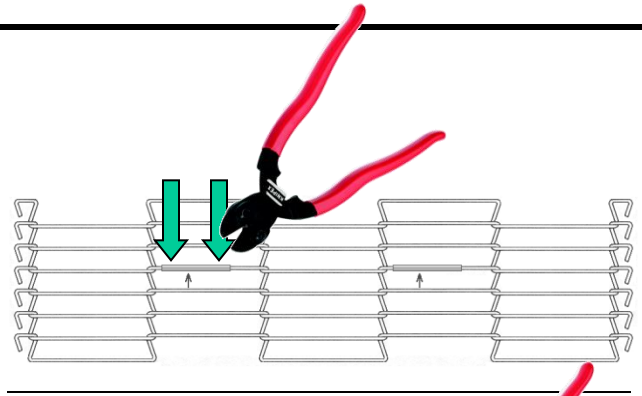
First push the joining-tube over the 2/3 part of the second space. Then pull the tube back over the 1/3 part. Repeat across width.



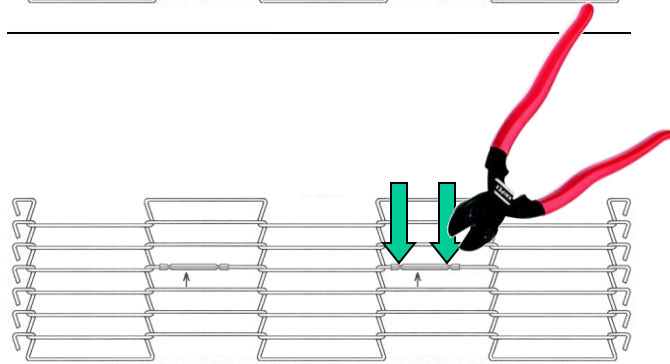
**ATTENTION: Do not push the tube right up to the Z-form of the space. Leave a minimum space of 5 mm.**

Now with the bolt cutters squeeze, with care, the joining-tube onto each end of the cut wires to firmly fix the tube in place.

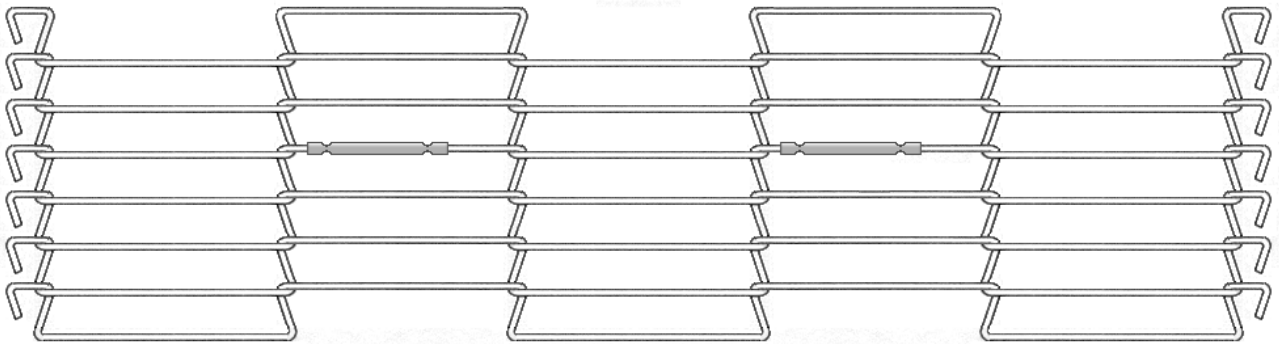
Be careful not to squeeze at the cut wire position (marked by the black arrow in the drawing). See notes below.



Repeat these steps with the remaining tube join sections.



That was it! Now you have finished and your belt is endless.

**Notes:**

- For added security of the tube you can crimp the tube twice on each side of the cut wire position. Also, with some care, you can gently squeeze the tube at the cut wire position to prevent any sideways movement of the tube. Take care not to cut through the tube.
- For wider belts it may be necessary to tie the two ends of the belt together with cable ties – removing them as you work across the belt.

Tube joins are available from Wire Belt Company to suit all belt wire diameters. Please contact Customer Services.