Installation of Wire Rope

Winding the rope on to the drum
Winding on smooth or flat faced drums

Start winding the rope in a straight helix angle. To assist with this, some drums have a tapered steel part attached to one flange which ‘fills’ the gap between the first turn and the flange (see picture 7).

The first layer must be wound tight and under tension. Take a mallet or a piece of wood and tap the wraps tightly against each other (see picture 1); but not so tight that the rope strands interlock (see picture 2), but tight enough that the rope can’t be shifted on the drum. If the first layer is wound too loose, the next layer will wedge a gap into the first layer causing that layer to ‘pull in’ (see picture 3). A too tightly wrapped first layer will not allow the next layers enough space between wraps (see picture 2).

In any case, the first layer, as well as all of the layers, must be wound on to the drum with sufficient pre-tension (5-10% of the rope’s WLL is a good measure). If wound with no tension at all, the rope is subjected to premature crushing and flattening caused by the ‘under load’ top layers (see pictures 4).

Even if wound on properly during installation, the first layer will loosen somewhat during service. When the first layer becomes slack (the pre-tension is gone), this initial procedure MUST be repeated in regular intervals.

Otherwise, the tensioned ‘hard’ wraps will severely crush the bottom layers (picture 5).

Winding on grooved drums

Basically, follow the same procedure as for smooth drums. Also here, pre-tension is of utmost importance.

If the first layer, or layers, are only used from time to time, they will loose their tension on the drum and start to flatten out due to the high pressures of the loaded layers. Repeat this pre-tensioning procedure regularly.

As with tower cranes, for example, which have a long rope length installed and rise as the building goes up, pre-tensioning will not be possible. In these cases it may be advisable to install a shorter rope length first.

Otherwise, you may have to replace the entire rope length because of crushing and flattening of the bottom layers. If this not possible, extra care must be taken to pre-tension the rope on the drum during installation.

CAUTION

Whatever you do, **DO NOT** run the rope through a ‘tightening’ device (see picture 6), e.g. two wooden blocks clamped together. **YOU WILL DESTROY THE ROPE!**