

Care and Maintenance of a Steel Wire Rope

In the interests of both personnel and equipment the advisability of regular and thorough inspection of wire ropes cannot be over emphasised.

Regular lubrication can make a considerable improvement in rope life before evidence of fatigue appears. The lubricant used should be suitable for the purpose; if in doubt check with the wire rope manufacturer that the lubricant you plan to use is compatible with the dressing applied at the time of manufacture. Do not use solvents to clean a rope before applying lubrication. Paraffin is not recommended.

The recommendations given regarding the running in of anti-spinning types of wire ropes (see right hand side) apply equally to round strand ropes.

If broken wires are found in a wire rope these should not be cut off. Grip the broken ends with pliers and bend backwards and forwards until the wire breaks in the gusset between the strands. Loose broken wires out of position can cause rapid break up of adjacent wires.

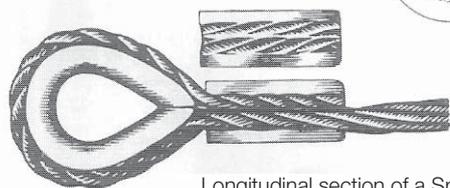
Faulty sheaves are the most common cause of permanent wire rope damage. Make certain all sheaves rotate freely and the treads are in good condition. Check that all sheaves are properly aligned to the path of the wire rope. Misaligned sheaves cause abrasion due to flange scrubbing, also rolling of the rope as it settles into the sheave grooves can result in torsional fatigue.

When there are two or more layers of wire rope on a drum, the areas of maximum wear are usually where the rope climbs to the next layer and at the crossover point when it scrubs hard against the previous turn. Where terminal attachment permit, a length of wire rope equal to half the drum circumference can be cut from the drum anchorage end to change the position of the wearing sections on the drum. Care must be taken to ensure that there are always two and a half dead turns remaining on a drum with the maximum amount of wire in use.

Pressed Aluminium Alloy Ferrule Terminations

DM Standen can splice up to 38mm diameter wire rope slings of all constructions using pressed aluminium alloy ferrules.

Cross-section of a Splice showing how rope and ferrule form one strong, homogenous mass.



Longitudinal section of a Splice showing how the metal of the ferrule "flows" round the strands of the rope.

Handling of Anti-Spin Ropes

When being reeved on to a machine an anti-spin rope must be handled with care. Unless by prior agreement, anti-spin ropes will always be supplied on reels, and it is recommended they be stored on reels if for any reason they have to be removed from a machine.

The most common problem encountered in anti-spin ropes is "bird caging", which is caused by:

1. Kinking during fitting
2. Turn being taken out of over cover of strands (leaving the lay looser) allowing the inner layers to "pop"
3. Incorrect hand splicing - anti-spin ropes should only be spliced by an experienced and competent splicer trained to splice this type of wire rope
4. Tight or badly maintained sheaves
5. Inadequate or incorrect "running-in" before normal duty

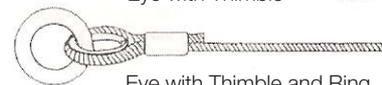
The running in procedure is:

1. Run the rope in and out six times over its maximum working length with a load approximately 25% of the Safe Working Load.
2. Repeat this procedure with the load a 50% of the Safe Working Load, and
3. Continue the same procedure with the load at 100% of the Safe Working Load.

Pressed Aluminium Alloy Ferrule Splice Applications



Eye with Thimble



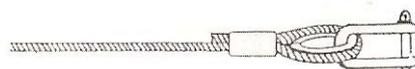
Eye with Thimble and Ring



Eye with Thimble and Link



Soft Eyes



Eye with Thimble and Shackle



Eye with Thimble and Hook