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Mooring winch brake drums are designed to work effectively in only one direction and it is essential that lines are reeled on drums in a manner that takes due account of the brake’s properties.

For many years, advice on the correct reeling of lines on winch drums has been based on the fixed end of the brake band being in tension. This guidance has been promulgated in publications such as ‘Mooring Equipment Guidelines’ and ‘Effective Mooring’ and assumes a brake band arrangement similar to that depicted below.

In the above diagram, the line under tension pulls against the fixed end of the brake band, thereby forcing the free end of the band toward the fixed end and causing the two halves of the band to be clamped or closed together around the winch drum. This is the ‘standard’ arrangement upon which previous guidance has been based.

Recently, a number of winch manufacturers have designed winches that have brake band arrangements that result in the fixed end on the band being under compression, rather than tension, when operating with lines correctly reeled. These arrangements are often associated with designs that incorporate hydraulically spring applied brakes, an example of which follows:
In the example, the force exerted by the mooring line when properly reeled results in a reaction force being applied to the deck structure. This force is in an opposite direction to that in the 'standard' brake arrangements that have previously been referenced. However, it is important to note that in both cases the effect of the line tensioning is similar in that the two halves of the band are being clamped or closed together. This is further illustrated in the following arrangement:

In the above example, with the line correctly reeled, the resulting force acts to compress the fixed end of the brake band against the deck plating. However, as in all the previous arrangements, the two halves of the brake band are being clamped or closed together by the line’s tension.

Because of design changes by winch manufacturers, previous guidance used to assess the correct reeling direction of mooring lines on winch drums, namely that the fixed end of the brake band being in tension, is not valid in all cases.

Each arrangement should be assessed on a case-by-case basis. With lines correctly reeled, tension on the line should be in a direction that causes the free end of the band to be forced towards the fixed end, thereby forcing the two halves of the band to close together.

The above guidance will be reflected in the new edition of ‘Mooring Equipment Guidelines’ currently under revision for publication in 2007.