

USER MANUAL **CHAIN SLINGS**



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User manual chain slings:

General cautions and warnings

The working load limit (WLL) should be applied in a straight position and overloads should be avoided at all times. In case of chain slings, side loads should be avoided as well. As these materials are not designed for this application, side loads may significantly affect life time in this matter. The working load limit for the product refers to static use. In case of dynamic use (ea breaking, accelerations and / or shock loads), the effective stress on the materials increases significantly which may lead to product failure.

Thorough examination of these materials is required. As these materials in use may be affected by wear, misuse, overloading etc. possibly resulting in deformation and a change in chemical values. If defects are found during this inspection, the materials should be withdrawn from service and additional actions should be determined by a competent person.

If the tag identifying the chain sling and its working load limit is disconnected and the required information is not marked on the sling, the chain sling should be withdrawn from service.

Chain slings and components must be visually inspected every year and be tested before the recommended date on the certificate by an expert body.

Verification before use

Before use of the chain sling it should be ensured that:

- the chain sling is precisely as requested and ordered
- the valid certificates are at hand
- the identification and the WLL mentioned on the sling correspond to the information given on the certificate
- the users of the sling have received appropriate instruction and training

Chain slings should be thoroughly cleaned to remove any oil, dirt, rust prior to inspection.

Methods for cleaning to avoid are those using acids, overheating, removal of metal or movement of metal which may cover cracks or surface defects.

In case of lifting chain with multiple legs it is required to replace all chain legs when one of the slings has been disapproved. Components showing any defect should be discarded and replaced in consent. Repair of a lifting item will require a re-inspection.

Handling of the load

Lifting equipment should be inspected before taken in use at all times. Prior to the lift, it should be ensured that the load is suitable for the scheduled lift. The area must be cleared and connection of the slings must be checked prior to lifting. Persons who are not involved in the lifting operation should be noticed and aware. The weight of the load must be known in order to select the proper lifting equipment. Position of the Centre of Gravity of the load should be determined in relation to the possible points of attachment and length of the chain sling.

To prevent any tilting or toppling, the following conditions should be met:

- for single leg and endless chain slings the attachment points should be directly above the centre of gravity.
- for two leg chain slings the attachment points should be on either side of , and above the centre of gravity.
- for three and four leg chain slings the attachment points should be distributed in a plane around the centre of gravity.

It is preferable that the weight distribution should be equal and that the attachment points are above the centre of gravity.

When using two-, three- and four-leg chain slings the attachment points and chain sling configuration should be selected to achieve angles between the chain sling legs and the vertical within the range marked on the chain sling. In any case the angle β , which is the angle between the chain sling leg and the vertical, should not exceed 60°. More details concerning load reductions at certain angles can be found in the relevant tables corresponding to the grade.

Ensure that the load to be lifted is able to resist both the vertical and horizontal impact forces. The hook connected to the masterlink should be directly above the Centre of Gravity. When shortening hooks are mounted / being used, the safe working load is het same as by asymmetrical load.

A suspended load should not be left unattended.

If a multi leg chain sling is not fully used for the purpose for which it has been designed, for example a lift with less legs than the number of legs of the chain assembly, the WLL should be reduced / reviced in relation to themarkings on the chain sling by applying the relevant factor given hereunder:



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Types of chain sling	Number of legs used	Factor to apply to marked WLL
Two-leg	1	1/2
Three- and four-leg	2	2/3
Three- and four-leg	1	1/3

In any case, the chain sling should have a WLL equal to or greater than the weight to be lifted.

Riggers should be aware of the risks and dangers of shock loading which may break the chain. Lifting operations should always be performed slowly and controlled to the maximum.

(plaatjes toevoegen)

Method of connection

A chain sling is usually attached to the load with end fittings such as hooks and/or links. The components should be used for straight in line loading only, this in order to avoid side loads and bending. Suitability of the lifting eyes in relation to the hooks / shackles should be checked prior to lifting. Side- and point loading should be prevented at all times!.

Symmetry of loading

The loading can be assumed to be symmetric if all of the following conditions are met:

- the load is less than 80% of marked WLL and
- chain sling leg angles to the vertical are all more than 15° and
- chain sling leg angles to the vertical are all within 15° to each other and
- in the case of three- and four- leg chain slings, the plane angles are within 15° of each other.

If one of above parameters is not met than the loading should be considered as asymmetric and the lift should be checked by a competent person to establish the safe rating for the chain sling. Alternatively, in the case of asymmetric loading, the chain sling should be rated at half the marked WLL.

If the load tends to tilt, it should be lowered in order to adjust the rigging set up (by repositioning the attachment points or by using compatible shortening devices).

Despite the safety factor of 4, never exceed the given working load limit (WLL).

Safe lifting

Hands and other body parts should be kept away from the chain to prevent injury. The load should be lifted slowly until the chain is taut. As soon as the load is slightly raised, a check should be performed to be assured that the load is secured and lifting operations may never be performed when persons are beneath.

Lowering the load

The designated position of the load should be prepared and should be adapted to the weight and the dimensions of the load. The area must be clear of any unnecessary obstacles and people who are involved. The load should be lowered carefully. The lifting slings should be free and accessible. Before releasing the chain from tension, the load should be checked to ensure that it is properly supported and stable. When finalized, the chain sling should be removed by hand and not with the lifting device. The load should not be rolled off the chain as this may damage the chain sling.

Storage of chain slings

When not in use, chain slings should be stored properly. Chain slings and/or assemblies hanging in the main hook should be hanged off in the masterlink (assembly) for safety purposes. Chain slings which will not be in use for a longer period of time should be cleaned and stored dry.



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Limitations in use

Chain and components may never be affected by welding, heat treating, grinding or any other process which will affect the chemical composition and therefore the strength.

Consult the manufacturer of the chain and components in case exposing to highly concentrated chemicals is applicable.

The rating of lifting accessories in European Standards assumes the absence of exceptionally hazardous conditions. This concerns offshore activities, lifting of persons and lifting of potentially dangerous loads. In such cases the degree of hazard should be assessed by a competent person and the WLL adjusted accordingly.

By excessive temperatures we advise you to contact us.

In case the hereafter mentioned components do not meet your requirements you are kindly advised to contact us at all times, we will be pleased to consult you to the best of our capabilities.