

OPERATIONAL EXCELLENCE

INSTRUCTIONS FOR THE SAFE USE OF: WIRE ROPE SLINGS

This document is issued in accordance with the requirements of EN 13414-1, DNV 2.7-1 and EN 12079 or ISO 10855. It outlines the care and safe use of **Wire Rope Slings** and is based on the Oil & Gas UK "Best Practice for the Safe Packing & Handling of Cargo to & from Offshore Locations" it should be read in conjunction with the instructions for the safe use of Shackles.

ALWAYS

- Always store and handle wire rope slings correctly. To prevent damage, maintain lifting capacity, & ensure safe lifting operations.
- Always inspect wire rope slings and accessories before use and before placing into storage.
- Always follow safe slinging practices, as given overleaf.
- Always fit slings carefully, protect them from sharp edges.
- Always attach slings to the OFFSHORE CONTAINER by means of bow safety pin shackles.
- Always plan the lift, establish the weight of the load and prepare the landing area ensuring that it will support the weight.
- Always check slings and equipment are free of damage, use slings/slinging methods suitable for the load and protect slings from sharp edges and corners.
- Always ensure the load is balanced and will not tilt or fall.
- Always ensure that the load is free to be lifted.

NEVER

- Never attempt to shorten, knot or tie wire rope slings.
- Never force, hammer or wedge slings or their fittings into position.
- Never lift on the point of the hook.
- Never use wire rope slings in acidic conditions without consulting the supplier.
- Never use wire rope slings at temperatures above 100°C or below minus 40°C without consulting the supplier.
- Never shock load wire rope slings.
- Never use damaged slings or accessories.
- Never overload slings due to the weight of the load or the mode of use.
- Never trap slings when landing the load.

SELECTING THE CORRECT SLING

Wire rope slings are available in a range of sizes & assemblies, select the slings to be used and plan the lift taking the following into account:

- Type of sling to be used - endless, single, two, three or four legs.
- Capacity - the sling must be both long enough and strong enough for the load and the slinging method.
- Apply the mode factor for the slinging method.

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- Where slings may come into contact with acids or chemicals consult the supplier.
- In the case of multi-leg slings the angle between the legs should not be less than 30° or exceed the maximum marked.
- Multi-leg slings exert a gripping force on the load which must be considered, this increases as the angle between the legs increases.
- Due to the possibility of sparking, the use of aluminium is restricted in certain classified atmospheres, so ensure the ferrule is suitable for such conditions.

STORING AND HANDLING SLINGS

- Never return damaged or contaminated slings to storage. They should be dry, clean and protected from corrosion.
- Store wire rope slings on a rack and not lying on the ground. The storage area should be dry and free of any contaminants which may harm the sling.
- Do not alter, modify or repair a wire rope sling but refer such matters to a competent person.

INSPECTION & MAINTENANCE

Maintenance requirements are minimal. Keep wire rope slings clean & protect from corrosion. Use non-acidic lubricants.

Regularly inspect wire rope slings & in the event of the following defects, refer the sling to a competent person for thorough examination: illegible markings; distorted, worn or damaged fittings; broken or cut wires; kinks; protrusion of core; corrosion; heat damage or discolouration; signs of movement at splices and ferrules; any other visible defect to the wire rope, thimbles or fittings. Slings shall be subjected to as a minimum:

- Visual examination of wire rope legs at intervals not exceeding 6 months.

SLING CONFIGURATIONS & RATINGS

The following three simple rules will ensure that the sling is not overloaded. In some cases, this will mean that the sling will be underutilised although this is unlikely to hinder the user unduly. Where the maximum utilisation is required, reference should be made to a competent person who understands the factors involved and who can perform the necessary calculations.

1. For straight lift never exceed the marked SWL & in the case of multi-leg slings the specified angle or range of angles.
2. When using slings in choke hitch multiply the marked SWL by 0.8 to obtain the reduced maximum load the sling may lift, ie. reduce the safe working load by 20%.
3. With multi-leg slings, when using less than the full number of legs, reduce the maximum load in proportion to the number of legs in use. Simply multiply the marked SWL by the number of legs in use expressed as a fraction of the total thus: one leg of a two-leg sling = $\frac{1}{2}$ marked SWL, three legs of a four-leg sling = $\frac{3}{4}$ marked SWL and so on.

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SAFE USE OF SLINGS

- Do not attempt lifting operations unless you understand the use of the equipment, the slinging procedures and the mode factors to be applied.
- Do not use defective slings or accessories.
- Do not force, hammer or wedge slings or fittings into position. They must fit freely. Check to ensure correct engagement of fittings and appliances.
- Position hooks of multi-leg slings facing outward from the load. Do not lift on the point of a hook.
- Ensure that the wire rope is not twisted or knotted.
- Ensure the effective diameter of pins, hooks, etc, upon which soft eyes fit is at least 2 x the wire rope diameter.
- Position the splices of endless slings in the standing part of the sling away from hooks & fittings.
- Never join wire rope slings made from different lays of rope together as this will cause them to un-lay thus seriously affecting their capacity.
- Back hook free legs to the master link to avoid lashing legs which might accidentally become engaged or otherwise become a hazard.
- Take the load steadily & avoid shock loads.
- Do not leave suspended loads unattended. In an emergency cordon off the area.
- Good slinging practice must ensure that the load is as safe and secure in the air as it was on the ground and that no harm is done to the load, lifting equipment, other property or persons.
- Establish the weight of the load, ensure the lifting method is suitable and inspect the sling and attachments for obvious defects. Prepare the landing area making sure the floor is strong enough to take the load. Follow any specific instructions from the supplier.
- Ensure the lifting point is over the centre of gravity. Any loose parts of the load should be removed or secured. Secure the sling firmly to the load by hooks onto lifting points or shackles, etc. The sling must not be twisted, knotted or kinked in any way.
- Use packing to prevent damage to the sling from corners or edges and to protect the load.
- Do not exceed the SWL or rated angle. Any choke angle must not exceed 120° and any basket 90°.
- Do not hammer, force or wedge slings or accessories into position; they must fit freely.
- When attaching more than one sling to the hook of the appliance use a shackle to join the slings and avoid overcrowding the hook.
- Use an established code of signals to instruct the crane driver. Ensure the load is free to be lifted and not, for example, bolted down.
- Check that there are no overhead obstacles such as power lines.
- Make a trial lift by raising the load a little to ensure it is balanced, stable and secure and if not lower it and adjust the slinging arrangement.
- Where appropriate use tag lines to control the load.

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- Except where special provision is made, do not allow anyone to pass under or ride upon the load. The area should be kept clear.
- Make a trial set down, ensure the sling will not become trapped and the load will not tip when the slings are released. Use supports which are strong enough to sustain the load without crushing.
- Never drag slings over floors, etc. or attempt to drag a trapped sling from under a load.
- Never use a sling to drag a load.
- Never use damaged or contaminated slings.
- Place the hooks of free legs back onto the master link and take care to ensure that empty hooks do not become accidentally engaged.
- Never use slings in contact with chemicals or heat without the manufacturer's approval.
- On completion of the lift return all equipment to proper storage.

DIAGRAM

