Operating Instructions

for round slings based on EN 1492-2 Annex B /
EN 13414-2 Annex A and EN 13414-3

Practical instructions for the use and maintenance of round slings with wire rope insert

Safety instructions:
During use in the event sector, only half the load-carrying capacity values may be applied according to BGV C1.

These operating instructions have to be read carefully by every operator before initial commissioning. They are intended to make it easier for you to familiarise yourself with the slinging equipment and to use it in the intended fields of application. The operating instructions contain important information for the safe, proper and economical operation of the slinging equipment. Observance helps you to avoid risks, to reduce repair costs and downtimes and to increase the reliability and to extend the useful life of the slinging equipment. The operating instructions always have to be kept available at the operating site of the slinging equipment. They have to be read and applied by every person instructed to perform work with the slinging equipment, e.g.

Operation, including setting up, rectification of defects in the work process and servicing
Repairs (maintenance, inspection, repair) and/or
Storage

In addition to the operating instructions and the binding regulations for accident prevention applicable in the operator's country and at the operating site, the recognised rules for safe and technically correct working have to be observed as well.

Correct lifting

At the beginning, the weight has to be determined based on delivery notes, inscriptions on the load or on the packaging, weight tables (e.g. sectional steel), or by means of crane scales.
The load on the slinging equipment must not exceed the one indicated on the load-carrying capacity tag for the inclination angle used. The greater the inclination angle with multi-leg slinging equipment, the greater the tensioning force between the individual legs that has to be absorbed in addition to the weight. The resulting reductions in load-carrying capacity are already considered on the load-carrying capacity tag for the inclination angles up to 45° and from 45° to 60°. Inclination angles exceeding 60° are not allowed!
In order to lift the load without its twisting or falling over, the following requirements have to be fulfilled:
For single-leg slinging equipment and continuous chains, round slings and continuous lifting slings, the anchorage point should be vertically above the load centre; for two-leg slinging equipment, the anchorage points should be on both sides of and above the load centre; for three- and four-leg slinging equipment, the anchorage points should be evenly distributed on a plane around the load centre.
Preferably this distribution should be equal and the anchorage points should be above the load centre. When the individual strange have different inclination angles in the case of multi-leg slinging equipment, the greatest stress will occur in the individual leg with the smallest inclination angle.
In the extreme case, a vertically suspended individual leg will carry the entire load.
In case of an asymmetric load distribution, only half the values indicated on the load-carrying capacity tag may be applied for working!

Louis Reyners Zaandam
Tel. 0031 75 6504750 – – E-Mail: info@lr.nl

Operating instructions for round slings with wire rope insert

- Before use, the suitable round sling has to be selected based on its designated method of lift, the required load-carrying capacity and the surface structure of the load (observe marking on the label).
- The serviceability of the round sling has to be checked (round slings that have not been repaired properly or round slings with illegible labels have to be excluded from further use).
- The admissible load-carrying capacity of the round slings must not be exceeded (load-carrying capacity according to the method of lift according to EN 1492 Parts 1 and 2).
- Round slings must not be knotted.
- Round slings have to be protected from loads with sharp edges or rough surfaces by means of protective hoses or edge protectors.
- The smallest edge radius must not be less than 6 mm.
- Loads may only be put down on round slings when damage is excluded.
- Round slings have to be used in such a way that the load is protected from falling down (shifting of the centre of gravity of the load has to be avoided).
- When round slings are to be used in combination with chemicals, the appropriate information has to be obtained from the manufacturer beforehand. Use in liquid, aqueous chemicals, such as acids and caustic solutions is not allowed!
- When loads are lifted in the method of lift “laced” or “direct”, the round sling should be fitted in such a way that is can form the natural laced angle of 60° and heat generation due to friction is avoided. Never try to tighten the lacing point forcefully!
- Avoid yanking or jerky movements!
- Never drag the load in the round sling, never pull the round sling across the floor or rough surfaces.

Inspection of round slings with wire rope insert

- Round slings have to be inspected for obvious defects before every use and have to be discarded as required.
- At least once a year, an inspection by an expert has to be carried out according to the criteria specified in “Replacement state of wear of round slings with wire rope insert” (in the case of exacting requirements for the round slings, this period of time will be correspondingly shorter).
- For the inspection of the wire rope insert, there is an inspection slot underneath the hand guard and label guard, through which the wire rope insert can be inspected (see also “Replacement state of wear of round slings with wire rope insert").

Maintenance and repair of round slings with wire rope insert

- Round slings have to be stored in a dry and ventilated place and protected from exposure to weather effects and aggressive substances.
- Round slings must not be dried near a fire or other hot spots (avoid hot temperature range > 150° C).
- Repairs of round slings may only be performed by the manufacturer.

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Replacement state of wear of round slings with wire rope insert

Round slings with wire rope insert have to be replaced:

- In the case of damage due to exposure to aggressive substances.
- A round sling with a sheath or seams that is/are damaged to such a degree that the core is exposed should be put out of operation for inspection by an expert and/or only continue to be used if the expert confirms that no damage will impair safe use after the repair.
- Melting or shininess of the fibres of the protective hose indicate that the round sling was exposed to strong heat due to friction, e.g. during laced operation, and can also indicate a decrease in strength of the core.
- In the case of damaged or deformed fittings.
- In the case of corrosion of the wire rope insert.
- Pitting corrosion on the wires or reduced flexibility of the rope due to pronounced inner corrosion.
- In the case of six randomly distributed wire breaks over a length of 6 x diameter (= 12 mm), but not more than 14 randomly distributed wire breaks over a length of 30 x diameter (= 60 mm).
- Kinks, flattened spots or other damage resulting in deformation of the complete insert.
- Rope wear and tear of 10% of the rope nominal diameter d (= 2 mm)
- Damage caused by heat that becomes noticeable due to tarnishing of the wires or pitting of the wires due to electric arc.

Further information

DIN EN 1492-1, edition: 05.2009
Flat woven webbing slings made of manmade fibres for general purpose use

DIN EN 1492-2, edition: 05.2009
Round slings made of manmade fibres for general purpose use

DIN EN 13414-1, edition: 02.2009
Steel wire rope slings: Slings for general lifting service

DIN EN 13414-2, edition: 02.2009
Steel wire rope slings: Specification for information for use and maintenance to be provided by the manufacturer

DIN EN 13414-3, edition: 02.2009
Steel wire rope slings - Safety - Part 3: Grommets and cable-laid slings

EC Declaration of Conformity
in accordance with the EC Machinery Directive 2006/42/EC

Herewith we,
Louis Reyners B.V.
Symon Spiersweg 13A
1506 RZ Zaandam
Netherlands

declare that the design and construction of the below-mentioned machine put on the market by us comply with the applicable fundamental safety and health requirements of the EC Machinery Directive.
In the event of a modification of/addition to the machine that was not agreed upon with us, this EC declaration of conformity will cease to be valid. In addition, this EC declaration of conformity will cease to be valid if the machine is not used in compliance with the intended cases of application described in the operating instructions and the inspections to be performed at regular intervals are not carried out.

Machine designation:	Stage rigging sling model ELLERSLING
Load-carrying capacity:	1,000 – 4,000 kg with SF 5:1
Type of machine:	Steel wire rope with loose polyester sheath
Serial number:	from construction year 10/2009 (Serial number ranges for the individual load-carrying capacities and series are recorded in the production ledger)
Applicable EC directives:	EC Machinery Directive 2006/42/EC
Applied harmonised standards in particular:	EN 1492-2 Round slings made of manmade fibres for general purpose use EN 13414-1 Steel wire rope slings: Slings for general lifting service EN 13414-2 Steel wire rope slings: Specification for information for use and maintenance to be provided by the manufacturer EN 13414-3, Steel wire rope slings - Safety - Part 3: Grommets and cable-laid slings
Specifications in particular:	BG ZH 1/324 BGV C1
Date/ signature:	19 february 2016
Undersigned's data:	H. Gitsels Director Louis Reyners