



Before using any lifting slings, shackles or lashing equipment please read these Directions for Use and Safety Instructions very carefully!

Dear SpanSet Customer,

We congratulate you on the purchase of SpanSet lifting slings. You have selected a high-quality product which, if properly used in accordance with its intended purpose, will guarantee a long and dependable service life. These Directions for Use will give you general information on the correct use and will refer you to all the applicable standards and legislation. Please read these Directions for Use very carefully before using any lifting slings. Please do not hesitate to contact your SpanSet dealer from whom you purchased your SpanSet lifting sling. In addition to a wide assortment of lifting slings, SpanSet also supplies a full range of accessories for all lifting operations as well as load securing products and personal protective equipment.

Your SpanSet Group Company

General Directions for Use

1. Configurations
2. General directions for use
3. Using flat and round slings
4. Inspection and maintenance
5. Storage
6. Training

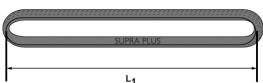
1. Configuration

1.1 Flat lifting slings according to DIN EN 1492-1

Form	A - Endless flat sling
Load-carrying part (two-fold)	simplex Type A2
Load-carrying part (four-fold)	duplex Type A4
Form	B - Flat webbing with reinforced eyes
Load-carrying part (single)	simplex Type B1
Load-carrying part (two-fold)	duplex Type B2
Load-carrying part (four-fold)	double duplex Type B4
Form	C - Flat webbing with D rings
Shackle Load-carrying	C Cr
Load-carrying parts (single)	simplex C1 Type CR1
Load-carrying parts (two-fold)	duplex C2 Type CR2
Load-carrying	double duplex C4 Type CR4

Note: This table does not cover all types of flat lifting slings.

1.2 Roundslings according to DIN EN 1492-2



1.3 Various connectors and hooks



Area of validity

These Directions for Use apply to SpanSet flat and round lifting slings made of synthetic fibres for ready-to-use load lifting facilities. They comply with all requirements of UVV VBG 9a, DIN EN 1492-1 and 1492-2, the EC Machine Guideline 98/37/EC (CE-conform), ZH 1/324 and BGI 556; manufacture is DIN EN ISO 9001 certified. The sources for the individual standards are listed at the end of these Directions for Use. We wish to point out that the standards and regulations are listed as examples with no claim to completeness. Please note that special safety rules are applicable in certain sectors of industry and fields of application which must be observed!

Safety instructions

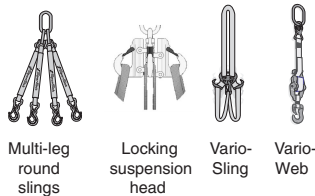
When selecting slings, shackles or lashing equipment it is essential to take the load and lifting mode into account (see 3). The weight, shape, size and constructional peculiarities of the load all affect the correct selection of the type of sling. The rated load capacity of a sling changes with the mode of use. The change in the load capacity is indicated by the mode factor. The indicated load capacity of a sling is rated according to the single straight lift mode of use. The mode factors for the remaining modes of use are listed in the SpanSet Load Capacity Table.

Slings beyond an inclined angle of more than 60 degrees is prohibited! This is because the forces arising beyond this angle are excessive.

Important:

Riggers should plan their lifting operations well in advance and remain in constant contact with all those involved in the lift. Inappropriate slinging can lead to possible load damage or endanger the safety of personnel. It is therefore essential that your personnel are trained to a competent level in the use of SpanSet lifting slings. SpanSet conducts regular training courses (see 6) on the safe and correct use of lifting slings. In addition, SpanSet supplies a number of aids to simplify safe slinging operations. The Load Capacity Table and the Load Capacity Controller show at a glance which SpanSet sling is suitable for each type of slinging arrangement and load capacity.

1.4 Combined lifting slings and connectors



2. General directions for use

2.1 Ensure that load slinging is only carried out by competently trained personnel!

2.2 Slings must only be used for their intended purpose; any other use is prohibited!

2.3 Check the following prior to first-time use:

- a) That the lifting sling is absolutely identical with the one ordered.
- b) That the manufacturer's certificate has been received.
- c) That the manufacturer's details and WLL, as labelled on the flat and roundslings, must be identical with the information on the certificate.



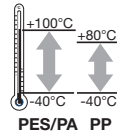
2.4 Avoid use in areas that are subject to chemical attack, e.g. acids or alkalis. The use of lifting slings in conjunction with chemicals is only permitted following consultation with the manufacturer and indication of the duration of use and operating conditions. The following details will be required:

- Chemicals
- Concentration
- Temperature
- Exposure time

Lifting slings that have come into contact with acids, alkalis or other aggressive substances must be cleaned and rinsed thoroughly with water before they are stored and re-used. Contact your SpanSet dealer or SpanSet directly for information concerning other cleaning methods. Slings with metal components must not be used under acidic conditions as this is associated with a loss of ductility.

2.5 Ice can form on moist round/flat slings at low temperatures. This can result in a cutting action and abrasion which can impair the use of the lifting slings. Consequently, if round/flat slings have become wet during use, they should be dried in a well ventilated room.

2.6 Contact the manufacture for additional information if the lifting slings are to be used under extreme temperature conditions. Polyester or polyamide slings (PES/PA), identified with a blue or green label, can be safely used within a temperature range of -40°C to +100°C. Polypropylene slings (PP, with brown label) can only be safely used in temperatures of up to +80°C.



2.7 Lifting slings with illegible or missing labels must be withdrawn from use because missing safety instructions can result in faulty operation. To ensure that the product identifiers (labels, transponders etc.) are not damaged or torn out, the attachment loop must not be formed in the load area and the identifier must not be allowed to come into contact with the load or crane hook.



3. Using flat and roundslings

Carefully plan the load slinging, lifting and lowering operations prior to the actual load handling procedure. Proceed with the utmost care to ensure the complete safety of personnel during the lifting operations. **Snatch or shock loading must be avoided otherwise excessive forces can result which may endanger personnel or cause damage to the load.**

People standing within the vicinity must be warned that a lifting operation is about to be carried out and, if necessary, they should be moved out of the danger area. Never stand under suspended loads. Hands and other limbs must be kept well away from the lifting slings to avoid injuries as the slings become taut.

3.1 The following factors are to be considered when selecting an appropriate lifting sling:

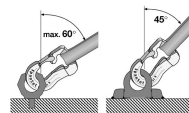
■ Weight of the Lift

The weight of the load to be lifted can be established by weighing or by calculation. **Important:** Lifting slings must not be loaded beyond their rated lifting capacity!



■ Lifting points on the load

The lifting points must be suitably rated taking into account the angle of the lift.



WARNING! Failure to observe the following important instructions can mean that the proper performance of the slinging facility is no longer assured! This could even result in serious accidents with the immediate danger of serious injury and even death!

■ Do not overload the lifting sling as overloading could break or damage the sling.

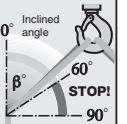
■ Lifting slings must not be used knotted or twisted as this will result in a considerable reduction in the slings' strength.



■ Do not crush lifting slings as this will result in a considerable reduction of their strength.

■ Damaged, overloaded or worn-out slings must be immediately withdrawn from use. The load carrying capacity of the sling is no longer guaranteed!

■ Lifting slings must not be attached at an angle to the vertical of more than 60° because the resultant forces can be excessive and may endanger personnel or the load.



■ Loads should not be suspended using two slings from a single hook above and angled apart at the bottom as this will result in the slings slipping together and the load falling.



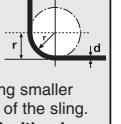
■ Never loop a sling over the crane hook as the sling can shift, causing the load to fall.



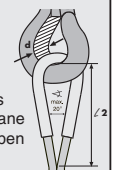
■ Round slings must not be wrapped several times around the hook merely to shorten the leg of the slings.



■ Slings must not be used around sharp edges, nor drawn over sharp edges, due to the risk of cutting the webbing. A sharp edge is defined as the edge radius "r" equaling, or being smaller than, the thickness/diameter "d" of the sling. **Sharp edges must be covered with edge protectors.**



■ A flat eye opening angle of more than 20° is prohibited. Ensure that the eye length is a minimum three and a half times the contact surface "d" of the crane hook; otherwise this may tear open the eye seam.



■ Load hooks must not be loaded at the hook tip, nor must they be able to inadvertently become unhooked.



■ Slings which are laterally stiff, e.g. coated flat webslings, must not be choked during lifting operations.



■ Ensure that full control is always maintained over the load, i.e. the load must not rotate or collide with other objects, nor objects fall off, as this will risk serious injuries occurring.

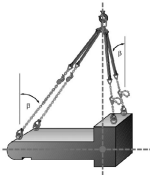


■ Always observe other accompanying documentation and manufacturer's instructions because this will ensure the avoidance of accidents.



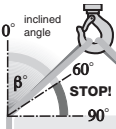
Centre-of-gravity position of the load

This determines the position of the crane hook over the load, and thus the length and inclined angle of the lifting sling.



Inclined angle of the lifting sling

The maximum inclined angle to vertical is 60°. Wider angles are prohibited.



Customary forms of attaching lifting slings:

Round slings		Flat slings	
Straight lift	Choke lift	Straight lift	Basket lift
Mode factor M			
1,0	0,8	2,0	2,0

Customary forms of attaching lifting slings with an inclined angle:

Round slings		Flat slings	
Straight lift	Basket lift	Straight lift	Basket lift
Mode factor M			
0,7	0,5	1,4	1,0

Customary forms of paired attachment of lifting slings

Round slings		Flat slings	
Straight	Choke	Straight	Choke
Mode factor M			
1,4	1,12	1,0	0,8

When more than one sling is used for a given lifting operation, then the slings must be identical.

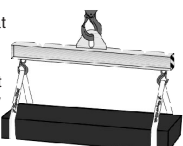
WARNING: Unequal sling leg lengths will tilt the load!
For symmetrical load distribution with equal weight distribution, identical leg length and an identical inclined angle, VBG 9a stipulates that for a four-leg sling only three slings can be assumed to be carrying the load.

1-sling		2-sling		3-sling		4-sling	
Inclined angle β		Inclined angle β		Inclined angle β		Inclined angle β	
Mode factor M							
1	1,4	1	2,1	1,5	2,1	1,5	1,5

With asymmetrical load distribution when the sling length and angle are not identical, then a 2-leg sling must be considered as a 1-leg sling for a lifting operation, and 3- and 4-leg slings as a 2-leg sling.

Inclined angle β	
0° to 45°	over 45° to 60°
Mode factor M	
1,4	1,0

For paired use of flat lifting slings it is advisable to use a spreader bar so that the load is uniformly distributed between the slings.

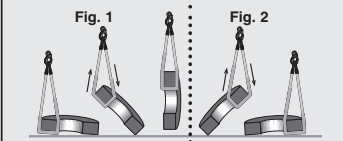


3.2 Lifting and turning sharp-edged loads

SpanSet simplex and duplex flat lifting slings protected with secutex sleeves can be used to lift and turn sharp-edged loads. The protective sleeve must be firmly positioned against the load edge when the load is lifted, and the flat lifting sling must be free to slide inside the sleeve.

For 90° turns the length of the protective sleeve must only be maximum two-thirds (see fig. 1), and for 180° turns only half the actual flat sling length between the eyes. (see fig. 2).

WARNING: Armoured protective sleeves are required for an edge radius of < 2 mm. The coil must not be allowed to roll or slip transversely in relation to the lifting sling. Never "drag" the coil in a sloping position. Contact our applications technician to deal with all questions relating to coil handling.



3.3 Safety hooks

- Safety catch open, insert the sling
- Pull the sling into the hook bowl ...
- ... slide into the hook head
- The lifting equipment is ready for use.

3.4 VarioSling to shorten roundslings

With the VarioSling device the length of roundslings can be infinitely varied within 95% and 55% of its useful length.

- Pass the round-sling through the top opening
 - Reeve the slings over the right and left open hooks
 - Insert the free end roundsling into the safety the locking hook
 - Adjust the slings to the required length
- A safety hook is used for each sling used for lifting.

3.5 VarioWeb to shorten flat lifting slings

With the VarioWeb the length of flat lifting slings can be infinitely varied. Combine the VarioWeb into the individual legs of the lifting sling. The length of the individual slings can then be flexibly adjusted to suit the given load.

- Fold the clutch over to the right, thereby releasing the friction catch.
- Adjust the length of the flat lifting webbing.
- Fold the clutch back to the left.
- Pass the flat lifting sling through the guide slot – Finished!

4. Inspection and maintenance

Lifting slings must always be visually checked for faults before and during use. **The lifting sling must be withdrawn from use if faults are found that could impair safety!**

An inspection by a competent person must be carried out according to the company's inspection procedures, but at least 6 months. Operating conditions may make it necessary to carry out interim inspections by a competent person.

Lifting slings may be repaired under the following circumstances, eg ...

- ... The identification label is missing, but the manufacturer is known;
- ... Less than 10% of the webbing belt cross-section is damaged;
- ... Only one eye reinforcement is damaged.

Lifting slings must be withdrawn from use under the following circumstances, e.g. ...

- ... The identification label is missing and the manufacturer is unknown;
- ... More than 10% of the webbing belt cross-section is damaged;
- ... The eye is damaged;
- ... The flat sling has been damaged by acid or alkali;
- ... The outer sleeve of the roundsling is damaged;
- ... The sling has been damaged by heat.

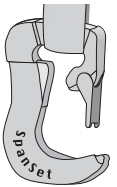
General Directions for Use

Directions for Use for SpanSet Flat Lifting Slings and Roundslings in conformity with DIN EN 1492-1 and 1492-2

Verhemat. 122 - A0310210 - GB - TOP-AFT

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Connecting devices (D-rings, hooks, etc.) are deformed or damaged.



The lifting sling must be withdrawn from use in the event of cuts, transverse tears, notches, breakages or corroded fittings.

Lifting slings that have reached their disposal date must be withdrawn from use. Do not take any risks!

Repairs

Repairs must re-establish the original condition and properties of the given lifting sling.

WARNING: Repairs may only be carried out by the manufacturer or persons authorised by the manufacturer!

Documentation

The results of inspections must be recorded. It is advisable to maintain inspection records or logbooks for this purpose (or an EDP table).

5. Storage

Correct care and storage of the lifting slings will ensure that the high standard of quality and functionality of your SpanSet products is maintained for a long period. After each use always check the lifting slings for possible damage and dirt ingress and return to storage in a clean and serviceable condition. Store the lifting slings in a clean, dry and well ventilated place, and avoid direct exposure to sunlight and chemicals. Thoroughly check the lifting slings after storage for an extended period.

6. Training

The awareness of sound and safe lifting slings is growing continuously, and the statutory requirements as well as the knowledge associated with safe lifting and movement of loads are changing continuously. It is therefore imperative that your personnel are competently trained and undergo regular re-training. SpanSet hold regular training and advanced training courses in the field of **Safe Lifting, Load Security and Height Safety Technology.**

We can also hold such courses on your premises. Be sure to inquire!



Please also note the range of SpanSet accessories for lifting slings:

- Load capacity table
- Load capacity controller
- secutex protective sleeves
- SpanSet abrasion protection
- Crane weigher

Source for supply for EN and VDI standards and specifications:

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