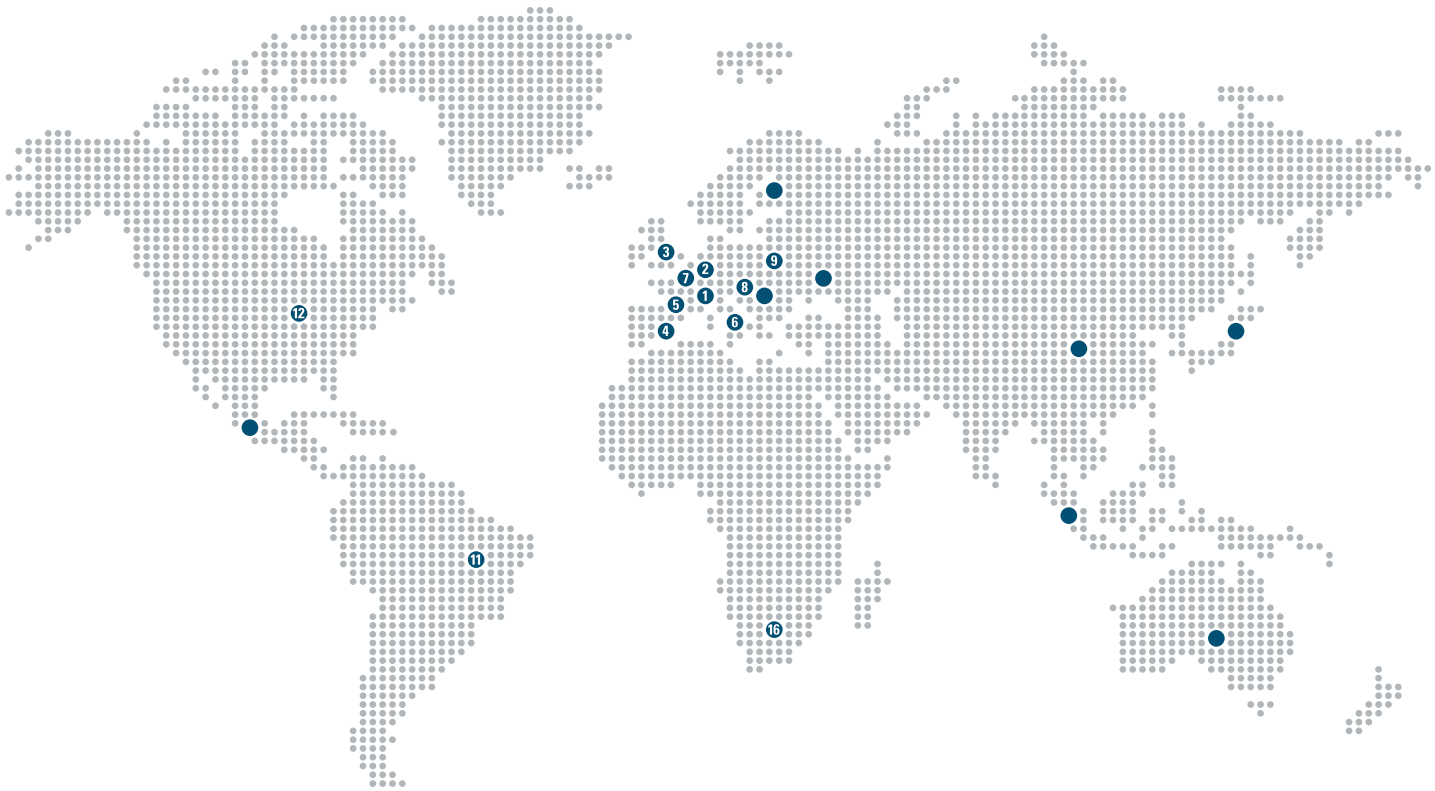
SpanSet®

Fall Protection
Lifting
Cargo Control
Safety Management

Wind

SpanSet GROUP

SpanSet Group



SpanSet is a global company with locations around the world.

1 Switzerland	2 Germany	3 England	4 Spain
5 France	6 Italy	7 Netherlands	8 Hungary
9 Poland	10 Australia	11 Brazil	12 United States
13 Indonesia	14 Taiwan	15 China	16 South Africa

Table of Contents

CATALOGS AND BROCHURES

Scan QR Code to conveniently access catalogs online and download to your computer, tablet or phone!

www.spanset-usa.com

01 Fall Protection

02 Lifting

03 Cargo Control

Perfect Solutions for the On-shore and Off-shore Wind Industries

A Preferred Wind Energy Industry Partner

The demands of lifting technology, cargo control and fall protection are particularly high within the on-shore and off-shore wind industries. Erected structures and installations are subject to stringent monitoring in order to meet quality control standards. Dynamic forces generated by wind and waves can be immense, particularly in the off-shore industry, which makes working on the open sea very dangerous. As a global manufacturer in the areas of lifting and cargo control, the SpanSet Group is recognized as a preferred supplier to the wind energy industry with subsidiaries in all key industrial countries and an international network of dealerships.

Global SpanSet Group

As part of the Global SpanSet Group, **SpanSet, Inc.** specializes in heavy lifting products and solutions, such as roundslings with a load-bearing capacity of up to 450 metric tonnes, innovative cargo control and fall protection equipment. In addition, SpanSet also offers fall protection safety training courses. **SpanSet Axzion** develops and produces lifting and load handling equipment and is amongst the leading providers of grippers and beams within the off-shore industry, and that's not just because of the upending tool – the world's largest gripper. **SpanSet secutex** is dedicated to innovative coatings as the leading manufacturer of plastic parts to preserve and protect materials. Custom solutions can be produced quickly and cost-efficiently thanks to high-performance, in-house mould making. For instance, secutex buffer pads have been integrated into SpanSet lifting and load control equipment.

SpanSet – Certified Safety

As a pioneer in the safety industry, SpanSet is constantly developing and engineering high quality products from start to finish with the user in mind. SpanSet listens to customers and is dedicated to finding the right solution to meet their needs. SpanSet products are manufactured using cutting-edge production methods.
From research and development phase, all the way until the final product is released, you can always count on SpanSet to provide top-quality safety products. SpanSet is a leader in the lifting technology and load control industry with several developments that have revolutionized the market. After many decades, SpanSet continues to develop new and innovative products that increase safety, make work easier, reduce the number of accidents and cut operating costs all over the world.

The drive to make products even safer and more cost-efficient continuously puts SpanSet at the forefront of manufacturing some the latest and most innovative products on the market today. Using only top-quality materials, along with a team of in-house product development experts, optimum functionality is guaranteed. In addition to our own testing laboratories and facilities, testing institutes have repeatedly confirmed that the highest quality standards have been applied to our innovative products when they leave our factory gates.

These are just a few of the factors that contribute to the success of SpanSet. Continuously setting trends in the industry when it comes to lifting technology and load control. Over many decades, SpanSet has gained the reputation of a company that is the perfect partner for the on-shore and off-shore industry.

SpanSet Group
Global Expertise – Positioned for Excellence

Load Handling

SpanSet Axzion is one of the world's leading manufacturers of lifting and heavy load handling equipment. The wind energy industry, more specifically, the off-shore sector, has benefited from custom solutions provided by SpanSet for many years. Over 80% of all hoisting equipment is custom-made. SpanSet is able to meet these needs by developing individualized solutions for special tasks in hoisting, gripping and rotating. Load handling and lifting equipment developed and manufactured by SpanSet meets the maximum quality standards in terms of the materials used, associated processing, testing procedures and servicing.

- **Global Engineering and Local Technical Services**
- **Developer of Beams, Hooks and Grippers**
- **Specialized Provider to the Wind Energy Industry**
- **Primary Supplier within the Off-shore Wind Industry**

Lifting

At SpanSet, Inc., customer safety is paramount when it comes to protecting human life, lifting heavy loads or safely transporting goods. Thanks to high-grade products, cutting-edge technologies and a comprehensive range of services, SpanSet is proud to offer customers professional and innovative lifting products using the latest technology and cargo control solutions that guarantee safety for those working at heights. Additionally, SpanSet offers a wide range of training courses and workshops in order to protect human life and materials while also cutting operating costs.

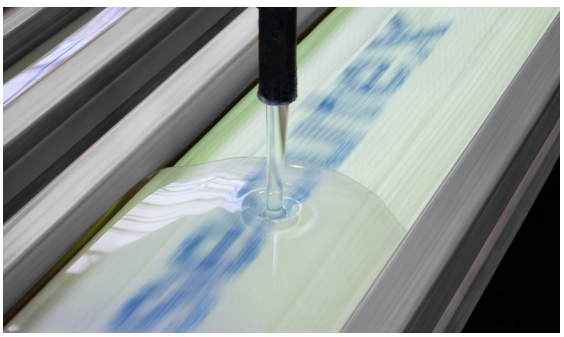
- **Leader in Lifting Innovations for More than 50 Years**
- **Manufacturer Heavy-Duty Roundslings for Loads up to 450 Metric Tonnes**
- **Developer of Top-Quality Fall Protection Products**
- **Certified Instructor and Safety Expert Led Training Courses and Workshops**

Load Protection

SpanSet secutex was established in 1979 – a coating for hoisting straps and slings made from a particularly cut and wear resistant polyurethane elastomer. The new coating was able to protect elements including lifting tackle against penetrating foreign matter. Today, SpanSet secutex is the market leader in coated hoisting straps and protective tubes. The range of applications is constantly expanding on the basis of creativity and expertise. Impact and surface protection and acoustic insulation, including pulley coating, protective tubes, solid coatings and edge protectors are part of what the company does on a daily basis.

- **Inventors of Lifting Strap Coating**
- **Extensive Product Range Ranging from Standard to Custom Solutions**
- **Impact and Surface Protection Applications**
- **Acoustic Insulation Applications**

Made in the USA and Germany SpanSet Production Facilities



SpanSet produces everything from thread to lifting straps, ratchets to lashing straps, steel to load control equipment. Therefore, we can provide custom products and solutions for the challenges encountered during the transport and installation of wind energy systems or other large scale components.

Sanford, NC

"Made in the USA". That stands for something. It means quality, safety and gives you confidence that your equipment will stand the rigors of your job. It also means your purchase supports American jobs. That's why SpanSet, Inc. strives to keep as much of our manufacturing, whether it be fall protection, cargo control or our lifting slings, right here in North Carolina.

For over thirty years, SpanSet, Inc. has strived to produce quality equipment at a fair price while offering hard working North Carolinians a job they can be proud of. SpanSet has always taken great pride in this. Every purchase helps keep your employees safe, your cargo secure and Americans employed. You have our word on that.

Germany - Lashing Straps, Roundslings and More

52 power looms produce 2 million feet of webbing and hose straps each month. A power loom for wide straps makes it possible to produce polyester fabric with a width of up to 2 feet in-house and Europe's largest sewing robot implements the CNC-controlled production of load safety nets. A fully automatic lashing strap robot produces small-scale series of lashing straps. An in-house testing laboratory contributes to quality assurance as early as thedevelopment phase.

Custom Solutions for the On-shore and Off-shore Industry

SpanSet develops and produces around 1,200 hoisting equipment units per year for customers around the globe. At our in-house development and production facilities, we manufacture products under stringent monitoring to meet quality control standards, from steel to complete load handling equipment. Our Germany facility has a testing tower that is the only one of its kind in the world: it enables the testing of load-handling and hoisting equipment up to 1,800 metric tonnes.

Unique Coatings

As part of the global group, SpanSet secutex specializes in innovative coatings, including castor coating, protective tubes, solid coatings and edge protectors. The company-owned facility in Germany employs 70 staff members to ensure that secutex products are available worldwide.

Development Technology for the Wind Energy Industry

Certified According to Global Standards

Our products for the wind energy industry are produced and certified according to country-specific standards. We can optionally manufacture products for companies in countries subject to special demands and specifications according to the standards in that country.

Expert Consultation in Development

In an effort to guarantee that our technology is always reliable and suitable for practical application, we develop our products in close cooperation with renowned experts, testing institutes, higher education institutions and universities, as well as the users of our products. Therefore, creating the ideal solution for any application field.

LEEA Membership

SpanSet is a member of LEEA - the Lifting Equipment Engineers Association. This international specialist association sets benchmarks in safe hoisting technology and defines stringent demands for the ability and expertise of its members.

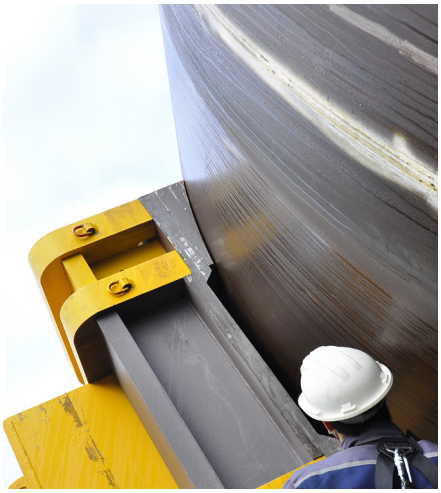
For more information visit: www.leeaint.com


MPI ADVENTURE
BRESKENS

Load Handling

Grippers

Upending Tool



The World's Largest Gripper

- Gripper Range: 4.5 m - 6.5 m
- Load-bearing Capacity: 1,500 Metric Tonnes
- Mechanically Self-locking Gripper
- Gripper with Hydraulic Drive
- Wi-Fi Panel, Feedback from All Sensors and Interventions on Board
- CNC Control
- Hydraulic Swivelling Cylinder
- Dual Drive and Dual Diesel Generator
- Remote Control with Safety Key System Catch the Pile Available
- 4 Cameras with Split-Screen Functionality to Monitor Operation
- Adapted Gripper Jaws
- 3 Arm Gripper to Eliminate Pile Deformation
- Hydraulical Moving Gripper Jaw

Video Clip: Upending Tool in Action

Upending Tool – Developed for Monopiles Weighing Up To 1,500 Metric Tonnes

Wind energy system monopiles are getting larger and heavier. In the future, they will have to be installed in areas with deeper water. The Upending Tool has the world's largest gripper; it has been developed for these extremely heavy monopiles. Thanks to cutting-edge control technology and variable functionality, it is possible to safely grip and upend even the largest monopiles. The three large grippers on the attachment tool each feature four toothed gripper jaws that have been adapted in diameter to firmly and securly grip monopiles, which can weigh up to 1,500 metric tonnes each.

The monopile walls are thin in relation to their maximum diameter of up to 6 meters, making it necessary to carefully grip the steel tubes as simple hook designs may deform the pile. The Upending Tool features three arms, reliably preventing any pile deformation. The rotor star can be hydraulically pivoted to enable both horizontally and vertically positioned piles to be gripped and easily upended using a tilting mechanism.

Each arm features two hydraulically powered gripper tongs. The grippers are mechanically self-locking; this ensures in the event of a drive failing, the unit components would remain secure. The top pair of tongs can be moved hydraulically, which makes adapting to different load gripping strategies possible. This also allows the component the capability of gripping deformed tubes. The Upending Tool is adjustable to pile diameters of between 4.5 to 6.5 meters.

Cutting-edge control systems suitable for off-shore applications are a necessity in the wind industry. With the upending tool, individual movements are synchronised using a PLC control unit. Operating the remote control is simple – incorrect operation can be avoided thanks to intelligent locking systems. The gripper can optionally send all functions and sensor messages to a Wi-Fi panel, which also makes external control emergency interventions possible. Four high-performance cameras with powerful LED spotlights wirelessly transmit crisp images to the split-screen monitor so that crane drivers can identify the exact position of the individual gripper tongs.

All drives have been installed with backups – safe and reliable functionality is a must. The Upending Tool features a dual hydraulic drive and two powerful, marine diesel generators. In the event that one unit fails, the second system guarantees unrestricted operational readiness.

Additional Options:

- Protective Gripper Jaws for the Flange End
- Additional Cameras
- Frame for Storage on Deck
- Off-shore Service
- Hinge with All Around Gripper for No Deformation


IHC

Complete Solution for Safely Upending Steel Towers

Tower Tool Kit System Components

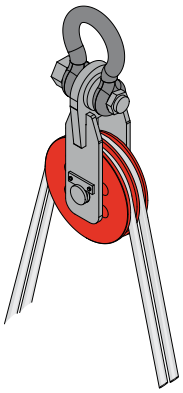
- **Magnum® and Magnum-X® Heavy-Duty Roundslings**
  See Page 40–41
- **Pulley with Rotation**
  See Page 16–17
- **Vario-TAP Tower Attachment Point**
  See Page 18–19
- **Vario-J-Hook, 60 t Load-bearing Capacity**
  See Page 20–21

Tower Tool Kit – All Components Required Perfectly Geared Towards Eachother

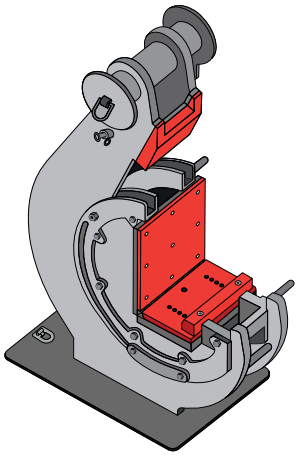
Load handling equipment for the wind energy industry must be safe and easy to operate. Many successfully completed off-shore and on-shore projects are a testament to the accuracy of the Tower Tool Kit.

All the individual parts required for the hoisting process and for upending steel towers are geared towards each other and adapted, tested and certified. All Tower Tool Kit components are developed and produce in-house by the SpanSet Group. SpanSet also creates operating manuals and initiates the required calculations for corresponding projects. This represents a genuine added value as customers are no longer forced to compile individual components from different manufacturers. SpanSet offers this unique tool kit featuring all of the individual parts that have been perfectly created to work together as a complete overall system.

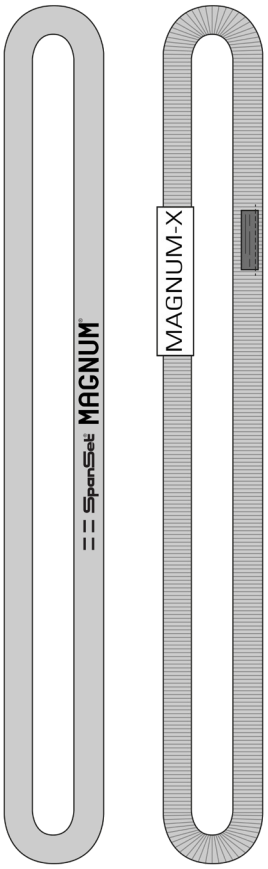
Pulley



Vario J-Hook



Magnum® or Magnum-X® Roundsling



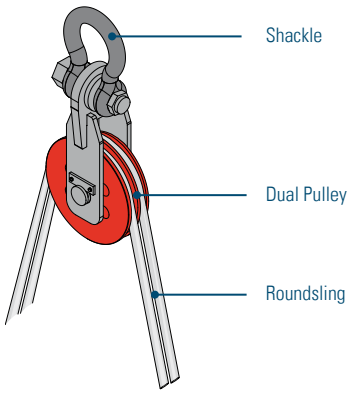
Vario TAP


RENTAL
& SALES

Pulleys

Rotation Pulleys for Lifting and Rotating

- Rotation Pulleys Feature Durable Magnum® Roundslings on the Crane Side
- Compatible with 10 to 60 Metric Tonne Magnum® and Magnum-X® Roundslings
- Dual Pulley for Roundsling Deflection



SpanSet Roundslings for Managing Heavy Loads with Ease

Pulleys can be used to hoist and rotate complete steel tower segments. Attaching a high-strength SpanSet roundsling to the load makes the pulleys particularly easy to use. The rotation pulleys have been developed with self-lubricating bearings that are maintenance-free. Lug reinforcements featuring steel cables make them suitable for permanent operation with shackles. On the crane side, the rotation pulleys feature durable Magnum® and Magnum-X® roundslings. When used in pairs, the nominal lifting capacity increases up to 200 metric tonnes. Pulleys are available with transport and storage shelving on request and are also suitable for use with chains or wire mesh straps when necessary.

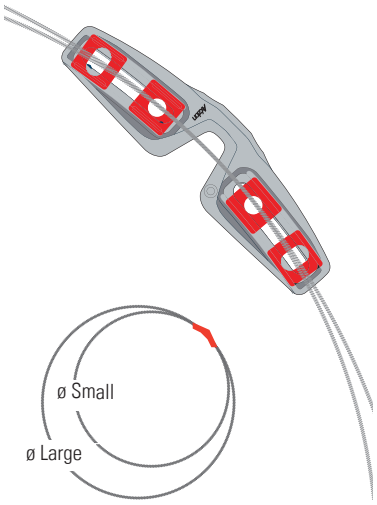
For part numbers and ordering information, please see SpanSet Lifting Catalog or visit us online at: www.spanset-usa.com

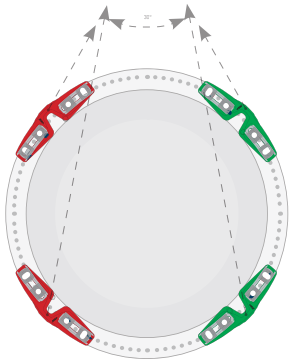
LOAD HANDLING

Attachment Points

Vario-TAP

Tower Attachment Points for Any Diameter





Vario-TAP attachment points for all system types

M56 or M20, diameters from 2 to 6 meters: wind energy system installation teams must hoist and rotate the various tower segments. Conventional tower attachment points are much too heavy and not flexible enough for on-site installation. In many cases, it takes several attachment points in different sizes for various tower sizes.

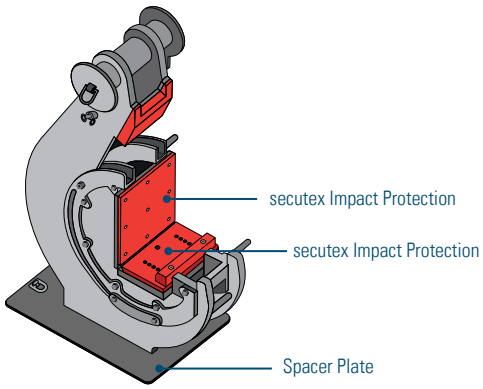
The new Vario-TAP fits all system types. The extra-wide slots in combination with sliding pressure plates feature cross holes making it possible to recreate different pitch circle dimensions. It is no longer necessary to employ an auxiliary crane or fork-lift truck for assembly as the Vario-TAP only weighs 66 pounds. Available in variants from 17 to 60 metric tonnes, the load-bearing capacity of the new Vario-TAPs is only restricted by the maximum capacity of the screws. The application side is color-coded and labeled to provide clarity: RED = LEFT and GREEN = RIGHT. The extra-strong, variable pressure plates are available for all screw dimensions from M20 to M56.

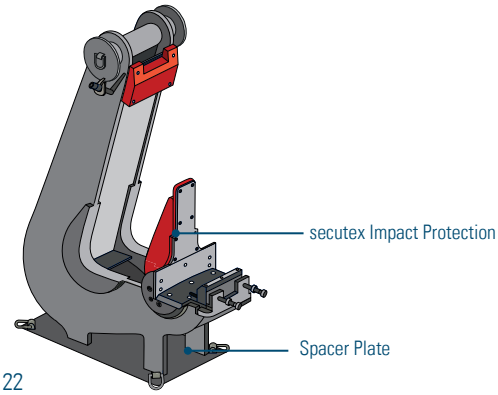
LOAD HANDLING

Vario J-Hook
Vario J-Hook XL

Safely Lifting and Rotating Tower Segments

- Patented Inner Shell on Sliding Bearings Rotates with the Tower Flange During Rotation
- Lifting Posts for Slings
- Rotary Joint with Adjustable Counter Support For Any Tower Flange
- Attachment Points For Tag Lines





Patented Inner Shell For Safe Rotation
The new J-shaped hook was developed for lifting and rotating tower segments. During rotation, the durable locking tab engages behind the flange. The patented inner shell on sliding bearings represents the core innovation which rotates together with the tower flange during rotation. Consequently, deflection forces are not transferred to the flange. All contact surfaces have been protected by durable secutex impact protection keeping the flange safe and protected. The externally positioned pivot point makes it possible to use the J-Hook with tower flange thicknesses of between 2 and 7 inches and tower flange heights of between 7 and 23 inches.

J-Hooks Save Time
After the hoisting and rotating process, the J-Hook can simply be removed by a crane. There is no need for time-consuming installation work. In contrast, permanently fixed attachment points must be removed after the rotation, requiring users to work underneath the suspended load, however, this work is very dangerous, therefore, the load must be supported on stands which significantly slows down the process. The J-Hook eleminates this step and not only saves time, but is a much safer option.

Optional Guy Cable System
The guy cable system enables very soft towers to be hoisted and rotated without deformation.

Grippers

Tower Gripper

Vertically Transport Towers Ready for Installation

- Gripper Forces of 300, 450 and 650 Tonnes
- Gripper Jaws with secutex Impact Protection to Prevent Damage
- Large Working Platform with Camera System
- Manual or Remote Controlled Operation
- PPE Attachment Points

Reducing Off-shore Construction Time

Time is money – this is particularly true in the off-shore wind industry. The cost of installation is extremely high and weather can change at any moment. Installing pre-assembled towers can significantly reduce the time spent at sea constructing off-shore systems.

The Tower Gripper is the perfect solution. Because of the powerful gripper, pre-assembled towers can be carefully and securely lifted onto a vessel before they are placed on the foundation in the wind park. The gripper jaws have been protected with secutex impact protection, ensuring that the quality flanges are not scratched or damaged when the towers are suspended.

The grippers are fully mechanically operated and do not require an external power supply. The Complete Tower Gripper is available in variants of 300, 450 and 650 metric tonnes of hoisting force, making it the perfect choice in harsh off-shore conditions. In problematic situations, the gripper can be locked manually or by using the remote control.


5696
Aztion
Aztion
Aztion

LOAD HANDLING

Nacelle Spreader Beam

Perfect Center of Gravity with the Nacelle Spreader Beam

- Attachment Points For Retaining Cable Systems
- With Hydraulic Cylinder or Spindle Drive
- Lifting Posts For Slings
- Can Be Controlled Using a Remote Control

Controlled Hoisting Even When Subject To Strong Forces

The nacelle is the largest and heaviest part of the wind turbine to be lifted. On or off-shore, loads are huge and assembly cranes often reach their limits. It is almost impossible for cranes to control the large nacelles, and manual forces or retaining cables are no longer appropriate for the task at hand. As a result of the different configurations, the nacelle's center of gravity may not always be directly below the crane hook, which can cause heavy loads to tilt.

The Nacelle Spreader Beam features an adjustable hook on the crane side which can be engaged on the load. Whether it is with a hydraulic cylinder or spindle drive, with or without an installed main unit, the Nacelle Spreader Beam is suitable for any application. The attachment points on the load can be adapted to the corresponding nacelle to correctly adjust the slings. This prevents the potential for expensive damage.

Safely in Control with Remote Control

When the spreader is being used off-shore, the potential frequency interference on deck can be measured and adjusted accordingly with the supplied remote control. Key systems block safety-critical functions. These functions can only be used once the safely stored second key is available. It is possible to send functional messages by Wi-Fi, which makes conducting an analysis via remote servicing possible.


Aztion
Aztion
FIRE DAMPER

LOAD HANDLING

Rotor Tilting Beam

Tilting beam for complete rotor stars

- Tilting Beam with 90° Range of Movement While Suspended
- Suitable for Installation and Removal
- Maximum Load Capacity: 374,000 lbs
- Can Be Operated Using a Remote Control

Fast and Safe Installation and Removal of the Rotor Star

Rotor stars no longer need to be installed in several stages. While laying on the jack-up vessel, the rotor star is initially picked up while horizontal. After it is lifted, it is then rotated to a vertical position. Once it is in the correct position, the vertically suspended rotor star is then slowly and carefully installed on the nacelle. Removal is also carried out slowly and carefully; the vertically installed rotor star on the nacelle is attached to the beam and picked up before it is rotated back to a horizontal position. Lastly, it is horizontally repositioned on the jack-up vessel as a complete unit.

Patented Inner Shell Makes Safe Rotation Possible

Rotor Tilting Beams for the off-shore installation of wind energy systems have been designed for use on jack-up vessels. They are intended for the installation and removal of complete rotor stars, which include the rotor hub and three installed rotor blades at sea. Due to the huge tilting beam, the rotor can simply be rotated 90° while suspended, even with pre-installed rotor blades. Heavy loads are no problem and it only takes an astonishing ten minutes to rotate the rotor weighing over 330,000 lbs. The rotation process is handled by the hydraulic cylinders that have been permanently installed in the tilting beam. Electrical and hydraulic units have also been permanently installed on the tilting beam, which is controlled and operated by remote control. Load bearing tests for this patented system were carried out and have been certified and approved.

LOAD HANDLING

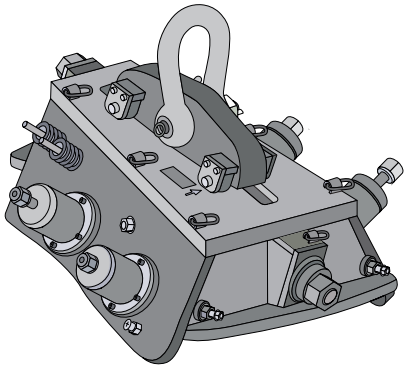
Rotor Lifting Device (RLD)

Lifting and Rotating the Rotor 90° With or Without Blades

- Maximum Load Bearing Capacity: 198,000 lbs
- Shackles and Lugs on the Crane Side
- Screws Connected to the Attachment Plates on the Load Side

Options:

- Attachment Points for Retaining Cables
- Extra Wide Rotor Blade Sling for Auxiliary Cranes



Load Handling Equipment to Lift and Rotate Rotors

Rotor Lifting Devices (RLD) are securely connected to the attachment plates with four screws. The pivoting lugs and shackles make it is possible to rotate the rotor 90°, either on its own or with pre-installed blades. The main crane carries the load of the rotor, the auxiliary crane lifts from the bottom rotor blade and then releases it. An intuitive COG control is included with the RLD.

LOAD HANDLING

20t SBI Rotor Blade Beam

Adjustable Beam for Confined Spaces

- Simple Assembly
- Electrically Driven with a Battery
- Extremely Lightweight (8 metric tonnes)
- ASME and CE Certified
- Small Amount of Space Required on the Construction Site
- Fast Beam Installation - Ready for Use Within 2-3 Hours

Options:

- Available for Delivery with Transport Frame
- Camera System
- Chain Shorteners for Different Rotor Blades

Smooth Assembly in High Winds

Usually wind energy system rotors are assembled in a horizontal position before they are hoisted and attached as a complete unit. However, this method is possible only in situations with low wind force as gusts may overload the crane. For this reason, the assembly phase is frequently a waiting game.

SpanSet® has teamed up with a wind energy system manufacturer to develop the Variobeam. It is 65 feet long and only 8 metric tonnes in weight. The Variobeam is designed for individual horizontal rotor blade assembly work in high wind conditions. The beam can also be used if the available space is insufficient to assemble the rotor horizontally. The Variobeam can be disassembled and features plug-in connections with additional flange mountings. The individual beam elements have a maximum length of 9.8 feet. The pin is inserted into the matching counterpart before it is permanently secured using flange bolts. The remotely controlled, automatic hook has the added benefit of the ability to simply drop the hoisting strap sling on to the root side at the push of a button.

LOAD HANDLING

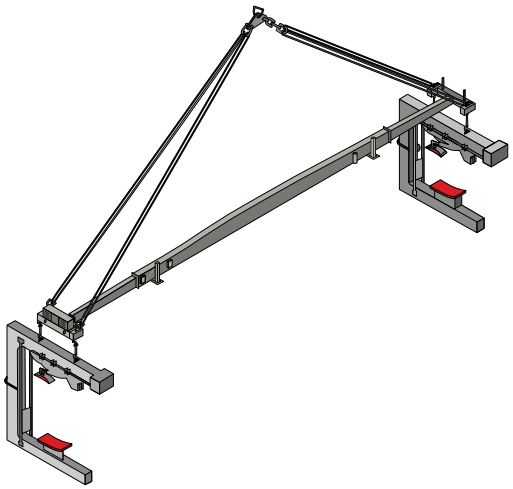
25t SBI Rotor Blade Beam Lite

Adaptable Beam to Safely Secure Rotor Blades

- Frame Beam Smultaneously Acts as a Transport Frame
- Quick and Easy assembly (Approx. 1–2 Hours)
- Hydraulic Rotor Blade Attachment
- CE and ASME Certification
- Telescopic from 40- 60 Feet

Options:

- Equipped with a Camera System
- Adjusts to Center of Gravity of Load



Telescopic SBI Rotor Blade Beam for Load Bearing Capacities Up To 25 Metric Tonnes

The 25t SBI Rotor Blade Beam Lite can be quickly and easily assembled for the installation and removal of rotor blades and can be adapted to virtually any of the various rotor blade dimensions. Hydraulic pressure plates grip the center of gravity on the rotor blade ensuring that the blade is safely secured. The durable beam boasts a maximum load-bearing capacity of 25 metric tonnes and is operated using a PLC control and a battery case. The clamps can be opened and closed by remote control.

The C-frames on the beam are telescopic, making them very small and manageable, offering many benefits in terms of transporting. It requires just one 40-foot container which also makes it easy to transport by ship.


LIEBHERR

LOAD HANDLING

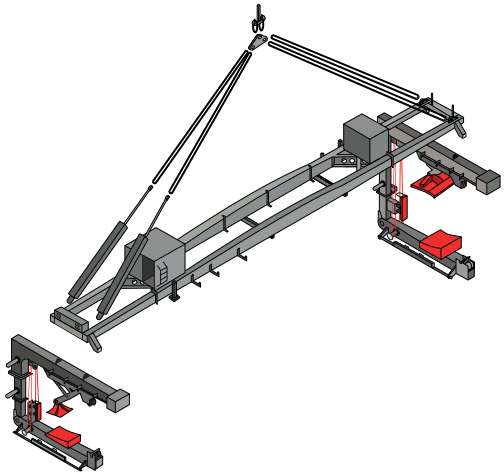
Custom SBI Rotor Blade Beam

Customized and Adapted for Different Applications

- Braces Simultaneously Act as a Transport Frame
- Fast Assembly Time (1-2 hours)
- Hydraulic Rotor Blade Attachment
- CE, ASME and DEKRA Certified
- Telescopic from 40 to 60 Feet

Options:

- Equipped with a Camera System



Video Clip: SBI Rotor Blade Beam

Rotor Blade Beam For Almost Any Rotor Blade

The individually customizable SBI rotor blade beam is adaptable for different applications and features telescopic C-frame grips around the blades center of gravity. It is perfectly suitable for assembling and disassembling a host of rotor blades with almost any dimensions. Tilting range of plus or minus 5° is possible because of the hydraulic cylinder. Installing blades individually rather than installing the complete star also takes up significantly less space. The SBI beam boasts a maximum load bearing capacity of 30 metric tonnes and is operated using a remotely controlled PLC and a battery case. It also has two large LED spotlights, making it possible to work in conditions with poor visibility.

Full Service for Smooth Operation

Because of the variable length, it is possible to transport the component to where it is needed by standard heavy goods vehicle, making it more cost-efficient. The open design guarantees good accessibility to all components, which makes handling the beam significantly easier. The integrated emergency power supply cuts downtime during assembly.

SpanSet® not only provides top-quality load handling equipment for any job, with each purchase, you will receive full access to a world-wide support network with optional 24/7 service and remote servicing. Any spare parts that may be required are also available with short notice and a fast turn around.

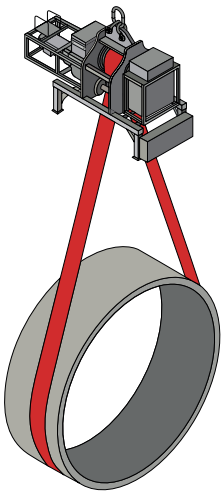
Rotor Blade Rotation Beam

Flexible Rotation Beam Suitable for Heavy Loads

- Features Electric Motors to Adjust the Vario Support and Configure the System Tilt
- Two Continuously Adjustable Rotation Pulleys Installed on Travel Gears Featuring Automatic Cable Compensation
- Individually Driven Rotation Pulleys Separate Operations
- Rotation Straps Featuring secuwave Coating and C-Clamp Lock
- Electrically Operated Using Buttons

Options:

- Equipment for Outdoor Use
- Remote Control
- Chains or Wire Mesh Straps



Safe Rotation and a Perfect Center of Gravity for the Load

Costly crane systems are frequently used for hours on end to carry out challenging rotations, thus forcing a large part of the production facilities into extensive downtime during these rotations. SpanSet® has developed Turnmaster rotation beams to safely and cost-efficiently rotate heavy and challenging loads. Due to easy operation and the ability to eliminate extensive downtime, the investment pays off within a very short period of time. With matching hoisting straps, some of which feature a special coating, the torque is reliably transferred to the load to protect it. When equipped with secuwave hoisting straps, the coating has teeth that engage with the toothed rotation pulleys of the rotation beam. The load can also hook onto the coating recesses at the edges, making it virtually impossible for the load to slip through.

LOAD HANDLING

Off-shore TP Beam

Safely Hoist Up To 600 Tonnes from the Shore to Vessels

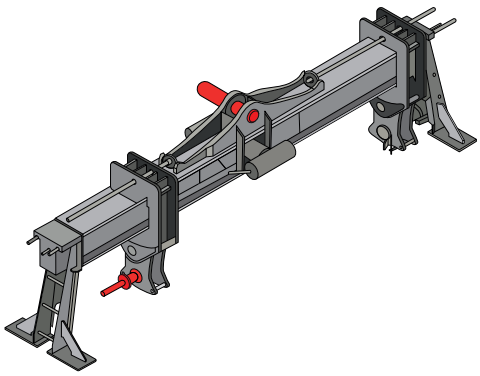
- 600 Tonnes Lifting Capacity
- Continuously Adjustable Attachment Points to Transition Pieces
- DNVGL Certified Design
- Deadweight Approx. 23t Including Feet

Off-shore TP Beam for Lifting Transition Pieces

Transition piece monopiles are important components in the foundations of off-shore wind energy systems. The TP beam is used when monopiles must be safely transferred from the production site on-shore to a vessel for transport to the installation site. Because of the installed joints, the beam can absorb the up and down movements of the vessel during loading, which prevents damage and makes it easier to separate the beam from the transition piece, leading to lower operating costs and saving time.

The TP beam boasts a load-bearing capacity of up to 600 metric tonnes and is capable of handling monopiles with diameters of between 14 and 26 feet, making the beam flexible in the application. The hydraulic cylinders are operated by manual or battery-powered pumps for load handling.

DNVGL certification guarantees the suitability of the beam for use in the off-shore industry. The beam can also be easily customized.




SWL 1000 t
NMF
N
W
N
W


SpanSet Lifting

Heavy Duty Roundslings

Magnum® High Performance

Superior Strength - 8x Stronger than Steel Wire Rope

- Up to 50% Slimmer and Lighter than Conventional Roundslings
- Variable Load Bearing Point for More Even Wear
- Ideal for Choke Lifting Cylindrical Objects Without Creasing
- Lifts Smooth Objects Without Damage
- High Strength to Weight Ratio
- Double Wall High Performance Polyester Cover
- Wide Range of Capacities from 10,000 to 250,000 lbs
- Available in Lengths up to 98 Feet
- Repairable Upon Manufacturers Inspection

Resilient

The Magnum® Roundsling is constructed with UHMPE fiber, which has a tenacity that is four times greater than polyester and nylon; it's also highly cut resistant and more durable than other synthetic solutions.

Versatile

Magnum® is hydrophobic, it floats in water and is resistant to UV, chemicals and salt, exhibiting the greatest reliability and longest durability, even under the harshest operating conditions – an economic factor you can count on. Magnum® is easy to maintain, increasing uptime and reducing costs.

Compact

The innovative construction of the Magnum® Roundsling uses less material than comparable roundslings with the same load bearing capacity and will perform with a narrow width at load. Consequently, less material is needed in the fabric, which makes the Magnum® Roundsling up to 50% lighter than conventional roundslings. Magnum® is lightweight, soft and flexible, ensuring safer work with increased efficiency. This has resulted in an Approval of Manufacturing Certificate by DNV GL and Type Approvals by Bureau Veritas and ABS.

Compliant

The inner load bearing core of Magnum® is made from UHMPE fiber, which is renowned for its quality, consistency and performance.

Sustainable

The internal fiber core delivers the lowest carbon footprint per unit of strength, making it a more environmentally friendly option.

Part#	Vertical WLL (LBS)	Choker WLL (LBS)	90° Basket WLL (LBS)	60° Basket WLL (LBS)	45° Basket WLL (LBS)	Min Length (ft.)	Weight (per ft) Approx	Width at Load (in.) Approx	Min. Bow Diameter (in.)
M10	10,000	8,000	20,000	17,320	14,140	3	.20	.63	1
M30	30,000	24,000	60,000.	51,960	42,420	3	.42	.98	1.35
M50	50,000	40,000	100,000	86,600	70,700	3	.65	1.43	1.8
M100	100,000	80,000	200,000	173,200	141,400	4	1.36	2.13	2.5
M125	125,000	100,000	250,000	216,500	176,750	8	1.74	2.50	3
M150	150,000	120,000	300,000	259,800	212,100	10	2.22	2.75	3.75
M200	200,000	160,000	400,000	346,400	282,800	10	2.86	2.85	4.2
M250	250,000	200,000	500,000	433,000	353,500	10	3.53	3.00	4.25

SPANSET LIFTING

Heavy Duty Roundslings

Magnum-X®

The New Dimension in Lifting Technology

- 50% More Narrow Than Conventional Polyester Roundslings
- Extremely Compact, with a High Performance Protective Cover
- Will Not Bunch in Smaller Crane Hooks and Attachment Points Making it Easier to Suspend Overhead
- Extra Sleeve with a Raised, Woven-in Load Capacity Indicator

Always One Step Ahead

For over forty years, SpanSet has been at the forefront of the development of extremely high performance synthetic fiber lifting slings. With constant innovation and a consistent focus on quality, we have continuously improved our products. Our goal is to make your job lifting the heaviest loads as safe and efficient as possible.

Our latest milestone is Magnum-X®. The design makes it unique. Unlike the protective sleeve on conventional roundslings, the Magnum-X® has an extremely compact outer cover. The incorporation of high performance polyester makes the outer cover extremely robust and therefore more tear and abrasion resistant than a conventional polyester protective sleeve. The fabric is also made entirely of this innovative high performance fiber. This completely new structure makes the Magnum-X much more compact, lighter and easier to handle. Also, the special structure reduces the formation of wrinkles in the sleeve cover both at the crane hook and around the load, which is effective in preventing premature wear.

Consequently, you will see a noticeable increase in work efficiency. Additionally, you will benefit from the SpanSet® safety and quality standards, which set trends in the industry. Your safety is our driving force.

Heavy Duty Roundslings

MagnumForce®

Heavy Duty High Capacity Performance

- 60% Lighter than Conventional Polyester Slings
- 50% Less Contact Thickness Under Load
- High Resistance Leads to Longer Service Life and Higher Cost-efficiency
- Will Not Compress in Smaller Crane Hooks

Compact

The innovative construction with a high performance polyester fiber and a compact protective cover partially woven with the same material make the MagnumForce® Roundsling up to 50% slimmer than comparable roundslings with the same load bearing capacity. At the same time, it produces greater stiffness within the sling along both axis. The roundsling is not bunched even in smaller crane hooks and attachment points and it is easy to suspend the sling overhead.

Wear Resistant

The outer protective cover is reinforced with an extremely abrasion and tear resistant high performance polyester. In addition, the special design reduces the formation of bunching at the attachment point, which again significantly improves the wear behavior. MagnumForce® Roundsling exhibits the greatest reliability and longest durability even under the harshest operating conditions – an economic factor you can count on.

Resilient

The new, high performance fiber has a significantly greater capacity. Consequently, less material is needed in the fabric, which makes the MagnumForce® Roundsling up to 50% lighter than conventional roundslings. With the same load capacity, this high performance roundsling can be laid against tighter edge radii than conventional polyester slings. Work becomes more efficient, quicker and safer.

Compliant

The MagnumForce® inner load bearing core is made from the same material as the outer sleeve. This is to ensure any chemical damage indications are consistent with both inner and outer materials.

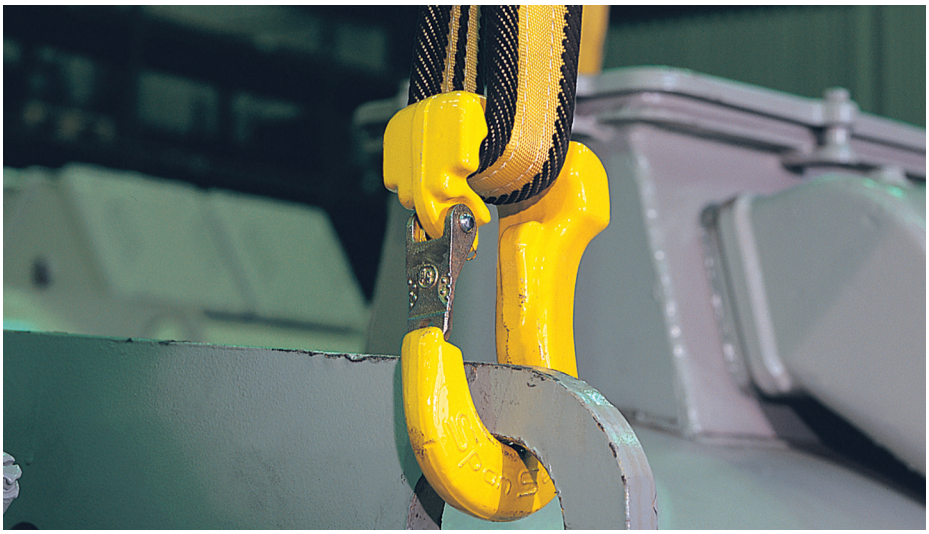
Identifiable

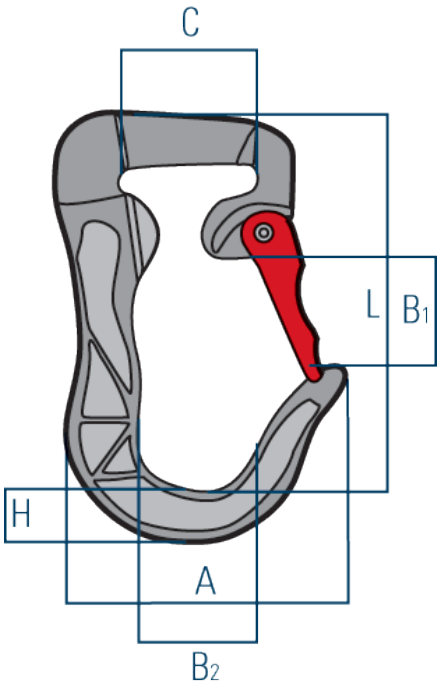
The MagnumForce® has an extra sleeve with a raised, woven-in load capacity indicator- a safety feature that has proved to be a success. The load capacity is clearly identifiable even from a distance in the dirtiest conditions. Confusing the roundslings is therefore effectively avoided, protecting people and materials from accidents.

Part#	Vertical WLL (LBS)	Choker WLL (LBS)	90° Basket WLL (LBS)	60° Basket WLL (LBS)	45° Basket WLL (LBS)	Min Length (ft.)	Weight (per ft) Approx.	Width at Load (in.) Approx.	Min. Bow Diam. (in.)
RCHPE20	20,000	16,000	40,000	34,640	28,280	3	.6	1.85	1.20
RCHPE30	30,000	24,000	60,000	51,960	42,420	3	.85	2.2	1.35
RCHPE40	40,000	32,000	80,000	69,280	56,560	3	1	2.70	1.50
RCHPE50	50,000	40,000	100,000	86,600	70,700	4	1.15	2.80	1.80
RCHPE60	60,000	48,000	120,000	103,920	84,840	4	1.3	3	2
RCHPE80	80,000	64,000	160,000	138,560	113,120	4	1.6	3.70	2.20
RCHPE100	100,000	80,000	200,000	173,200	141,400	4	1.8	4	2.50
RCHPE125	125,000	100,000	250,000	216,500	176,750	4	3	5.10	3
RCHPE150	150,000	120,000	300,000	259,800	212,100	4	3.3	6.80	3
RCHPE200	200,000	160,000	400,000	346,400	282,800	4	5.25	8	3.75
RCHPE250	250,000	200,000	500,000	433,000	353,500	8	5.85	9.10	4.20
RCHPE300	300,000	240,000	600,000	519,600	424,200	8	7	10.55	4.20


LIEBHERR

Joker™ Hooks





- Enlarged Shoulder Areas to Protect Slings from Chaffing
- Throat Opening for Both Roundslings and Webslings
- Forged Hook and Safety Catch
- Color Coded to the Lifting Slings

The Flexibility you Need and the Rugged Performance you Expect from SpanSet

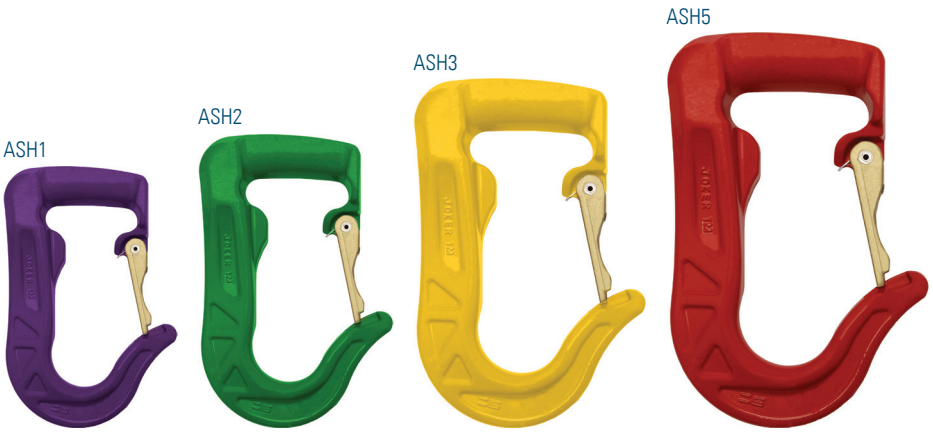
Joker™ Hooks are an ideal complement to SpanSet roundslings and webslings. Simple, safe and extremely versatile, Joker™ Hooks give you the ability to get connected in seconds. Simply thread the roundsling to the Joker™, it does not require any tools. Next, attach the Joker™ to the lifting point of the load. Finally, place the sling over the crane hook and you're ready to lift.

Joker™ Hooks can be used to extend the length of slings. They also can be used as terminal hooks, creating secure anchor point connections. Combined with one or more roundslings, multi-leg suspension gear can be created on the spot.

Joker™ Hooks have been designed so that their characteristics make them an ideal solution to use in combination with lifting slings. They are easy to handle and reliable in use. Intelligent details, such as the specially shaped tip of the hook make it easier to insert in fixed lifting points. The raised side cheeks on the hook allow lifting gear to be easily guided into the groove. This prevents abrasion on the edges. Joker™ Hooks are constructed using high quality forged steel that is highly robust, yet lightweight for easy handling.

Color Coded Load Capacity

To clearly indicate the load capacity, Joker™ Hooks are color coded to match lifting slings with the same capacity. This makes it very easy to identify the correct hook to use at a glance, eliminating the possibility of attaching the wrong capacity sling. Match a yellow hook to a yellow sling, green to green, etc. A foolproof solution for safe and efficient operation.



Protective Sleeving

XCut™

Protective Sleeve for Increased Sling Protection

- High Performance Fibers Are Resistant to Cuts and Abrasion
- Lightweight Construction for Simple and Ergonomic Handling
- High Level of Operational Safety Based on Defined Edge Radii
- Flexible Construction Can Be Positioned Easily and Bends to the Form of the Edge

Ideal Protection from Sharp Edges

The XCut™ sleeve is a woven protective sleeve made from UHMPE (Ultra High Molecular Polyethylene) for lifting slings and roundslings, offering the best protection for your textile lifting gear against cuts made by loads with sharp edges. The flexible sleeve construction can be easily positioned on the sharp edge in confined spaces. During the lifting process, the protective sleeve is placed firmly on the edge of the load, while the lifting equipment within the sleeve continues to move freely. A basic prerequisite for lifting and rotating sharp-edged steel.

Cut Protection Made with High Performance Fibers

The high levels of cut and abrasion resistance of UHMPE is what led to the development of XCut™. A special testing system has been developed for this purpose that can determine the cut resistance of the fabric. In this process, the protection of XCut™ is determined on edges with varying degrees of sharpness. The corresponding value is certified by the DEKRA testing institute. XCut™ has been adapted to the different widths of SpanSet lifting slings and performs outstandingly to protect components including hoisting straps and roundslings as a result. XCut™ cut protection boasts a very lightweight and compact design for ergonomic handling, which requires less strength and power.

XCut™ Sleeve

The XCut™ sleeve is a woven protective tube for hoisting straps and slings. The protective tube is merely slipped onto the lifting equipment before it is positioned on the sharp edge of the load for protection during the lift. XCut™ has been designed with fabric ribs on both sides. The ribbed design increases cut resistance, making it easier for the lifting tackle to slide into the tube. This makes it possible to position loads with sharp edges vertically. Even in confined spaces, the XCut™ sleeve can be easily positioned on the load. The tube design has the same degree of cut resistance all around and is suitable for use on both sides which lengthens the service life and offers maximum operational safety, also eliminating the concern of applying it incorrectly. The label sewn into the XCut™ sleeve contains information on use and unique identification data. The protective tube is supplied in tailored dimensions and with trimmed ends.


MULLEN
146003

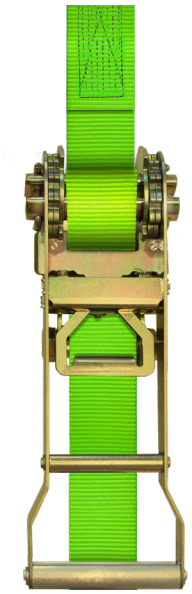
Cargo Control

Heavy Duty Lashing

MaXafe

The Ideal Lashing for Heavy Vehicles and Machines

- Extremely Low Elongation of Under 2%
- Lower Dead Weight
- Durable Belt Strap Design
- Quality Label with Foil Sleeve
- Accurate Automatically Sewn Seam
- High Performance Fiber Belt Strap



A SFH – Snap Hook

B LS – ExoSet Triangle Hook

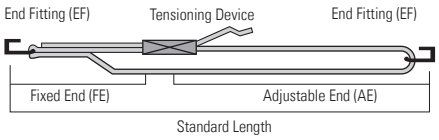
MaXafe is Available to the User in Two Systems

The one-piece lashing belt designed according to the Carlash system principle is equipped with triangle and **A** snap hooks and has a rated lashing capacity of 15,000 lbs. The two-piece version, with either **A** snap hook (SFH) or **B** ExoSet triangle hook (LS) at the loose and fixed ends, has a rated lashing capacity of 7,500 lbs. Both lashing systems are ideal for transverse/diagonal lashing.

MaXafe Applications

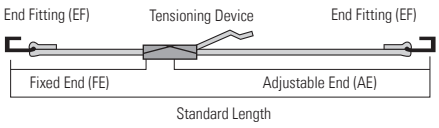
MaXafe was specifically developed for the specialized transportation industry to safely haul oversized loads exceeding 7,500 lbs.

One-Piece (Carlash System)



Part#	EF	Design	WLL (LBS)	l_G (ft.)	Belt Width (in.)	Belt Thickness (in.)	Expansion (%)	Ca. System Weight (LBS)
MAX1001	LS	One Piece	15,000	10	2	1/8	<2	22.7
MAX1002	LS	One Piece	15,000	13	2	1/8	<2	23.3

Two-Piece



Part#	EF	Design	WLL (LBS)	l_G (ft.)	Belt Width (in.)	Belt Thickness (in.)	Expansion (%)	Ca. System Weight (LBS)
MAX2001	2 x SFH	Two Piece	7,500	10	2	1/8	<2	9.9
MAX2002	2 x LS	Two Piece	7,500	10	2	1/8	<2	14.3
MAX2003	2 x SFH	Two Piece	7,500	13	2	1/8	<2	10.3
MAX2004	2 x LS	Two Piece	7,500	13	2	1/8	<2	14.7

Ratchet Strap Assemblies

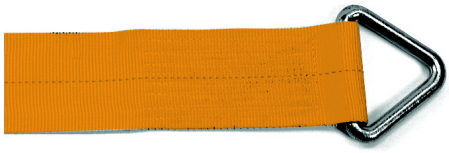
WearGard™ Premium Orange
PVC Impregnated Webbing

End Fitting	Width	Length	WLL*	Part #
2" with Flat Hook (FH)	2"	27 ft	2,000 lbs	6R27FH
	2"	30 ft	2,000 lbs	6R30FH
	2"	27 ft	3,335 lbs	10R27FH
	2"	30 ft	3,335 lbs	10R30FH
	2"	27 ft	4,000 lbs	12R27FH
	2"	30 ft	4,000 lbs	12R30FH
3" with Flat Hook (FH)	3"	27 ft	5,000 lbs	15R27FH
	3"	30 ft	5,000 lbs	15R30FH
4" with Flat Hook (FH)	4"	27 ft	5,400 lbs	16R27FH
	4"	30 ft.	5,400 lbs	16R30FH
2" with Delta Ring (DR)	2"	27 ft	2,000 lbs	6R27DR
	2"	30 ft	2,000 lbs	6R30DR
	2"	27 ft	3,335 lbs	10R27DR
	2"	30 ft	3,335 lbs	10R30DR
	2"	27 ft	4,000 lbs	12R27DR
	2"	30 ft	4,000 lbs	12R30DR
3" with Delta Ring (DR)	3"	27 ft	5,000 lbs	15R27DR
	3"	30 ft	5,000 lbs	15R30DR
4" with Delta Ring (DR)	4"	27 ft	5,400 lbs	16R27DR
	4"	30 ft	5,400 lbs	16R30DR
2" with Chain& Grab Hook (CG)	2"	27 ft	2,000 lbs	6R27CG
	2"	30 ft	2,000 lbs	6R27CG
	2"	27 ft	3,335 lbs	10R27CG
	2"	30 ft	3,335 lbs	10R30CG
3" with Chain & Grab Hook (CG)	3"	27 ft	5,000 lbs	15R27CG
	3"	30 ft	5,000 lbs	15R30CG
4" with Chain & Grab Hook (CG)	4"	27 ft	5,400 lbs	16R27CG
	4"	30 ft	5,400 lbs	16R30CG
2" Triangle & Grab Hook (TH)	2"	27 ft	3,335 lbs	10R27TH
	2"	30 ft	3,335 lbs	10R30TH
3" Triangle & Grab Hook (TH)	3"	27 ft	5,000 lbs	15R27TH
	3"	30 ft	5,000 lbs	15R30TH
4" Triangle & Grab Hook (TH)	4"	27 ft	5,400 lbs	16R27TH
	4"	30 ft	5,400 lbs	16R30TH
2" with J Hook (J)	2"	27 ft	2,000 lbs	6R27J
	2"	30 ft	2,000 lbs	6R30J
	2"	27 ft	3,335 lbs	10R27J
	2"	30 ft	3,335 lbs	10R30J
	2"	27 ft	4,000 lbs	12R27J
	2"	30 ft	4,000 lbs	12R30J
3" with J Hook (J)	3"	27 ft	5,000 lbs	15R27J
	3"	30 ft	5,000 lbs	15R30J
4" with J Hook (J)	4"	27 ft	5,400 lbs	16R27J
	4"	30 ft	5,400 lbs	16R30J

*WLL=Working Load Limit

End Fittings

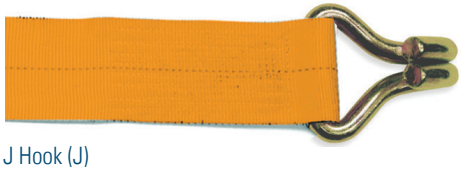
Flat Hook (FH)



Delta Ring (DR)

Chain & Grab Hook (CG)

Triangle & Grab Hook (TH)

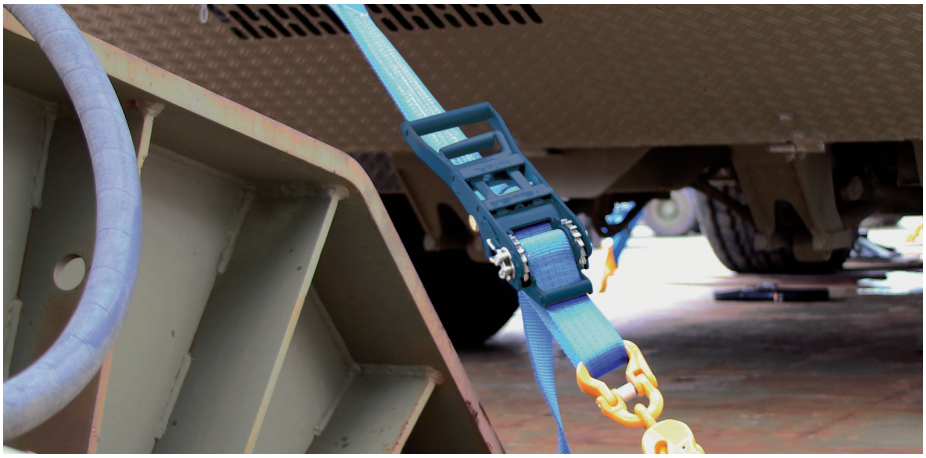


J Hook (J)


SpanSet®
LOAD CONTROL SYSTEMS
SANFORD, N.C. 27332-6068
SpanSet® WearGard™ PVC Made in USA
SpanSet® WearGard™ PVC Made in USA

Ratchet Strap Assemblies

2" ABS™ Controlled Release
Ratchet Tie Down System



Gives the Operator Total Control During Load Securing and Release

LoadGard™ Blue Standard Treated Webbing

The ABS™ Controlled Release Ratchet Tie Down System gives the operator total control of the load during both load securing and release. The double latch ratchet system allows a much higher pre-tension to be applied during the initial load securing, allowing finer adjustment for greater pre-tension.

The Dual control release system allows release of the pre-tension step by step, one notch at a time, to ensure the stability of the load prior to final release. The SpanSet patented ABS™ Ratchet Tie Down System features a distinguished blue epoxy finish for surface protection and a double locking mechanism for load transport security.

System Components

- ABS™ Ratchet Part# 1860
- TFI at Adjustable and Ratchet Ends
- Anti-slip Matting

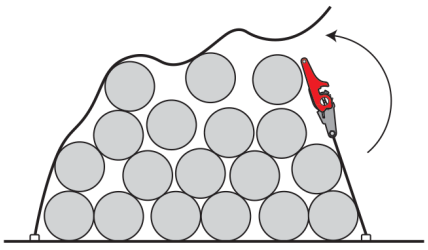
End Fitting	Length	WLL*	Part #
Flat Hook (FH)	27 ft.	2,000 lbs.	6RA27FHB
	27 ft.	3,335 lbs.	10RA27FHB
Delta Ring (DR)	27 ft.	2,000 lbs.	6RA27DRB
	27 ft.	3,335 lbs.	10RA27DRB
Chain & Grab Hook (CG)	27 ft.	3,335 lbs.	10RA27CGB
Triangle & Grab Hook (TH)	27 ft.	3,335 lbs.	10RA27THB

*WLL=Working Load Limit

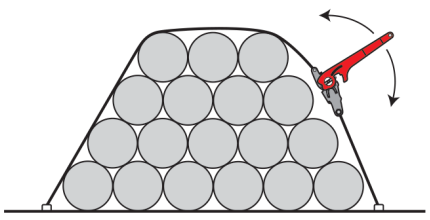
1. Total pre-tensioning force necessary: 2,626 daN
2. TFI-Displays at ratchet and adjustable ends read 2 x "750" = 1,500 daN
3. You need: 2 x ABS with a pre-tensioning force of 1,500 daN = 3,000 daN

"Anti-Belt-Slip" Ratchet Procedure (ABS)

ABS means complete control even during release. The ABS Ratchet system lets you release the pre-tension force in small steps helping prevent damage and accidents.



Without ABS



With ABS

Tension Force Indicator

TFI

TFI – Tension Force Indicator

SpanSet offers a unique aid that quickly and reliably shows you the pre-tensioning force applied to a lashing strap system. The patented Tension Force Indicator (TFI) confirms the pre-tensioning force achieved directly at the ratchet and the adjustable end. Under optimum pre-tensioning, you will achieve load security that can easily be inspected and reduce the number of lashings required, saving you equipment costs and time.

The TFI reliably shows the pre-tensioning force that has been achieved directly on the tensioning device. Well-protected and extremely easy to use, the TFI replaces expensive electronic measurements, making them a thing of the past.

Achieve the Right Maximum Pre-Tensioning Force in a Verifiable Manner with the TFI

The TFI helps you to make the best possible use of your lashing straps, achieving maximum performance. The pre-tensioning force display makes it simple for you to measure the pre-tensioning force applied and to provide evidence for inspection. The two jaws of the TFI close when tension is added.

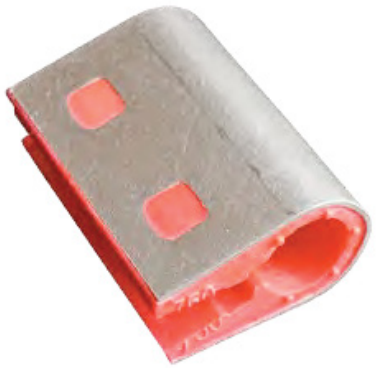
Once the full pre-tensioning force has been reached, the jaws press together and become form fitting. The pre-tensioning force is applied to the system quickly and directly. If the lashing strap loses tension during transportation, the jaws of the TFI separate, indicating that pre-tensioning is necessary. The TFI is designed for 2-inch lashing straps. The 750 daN STF pre-tensioning display is tailored for relevant lashing systems. The TFI is color-coded, making it easier to read the pre-tensioning force in poor light conditions.

Additional Use of TFI at Adjustable End

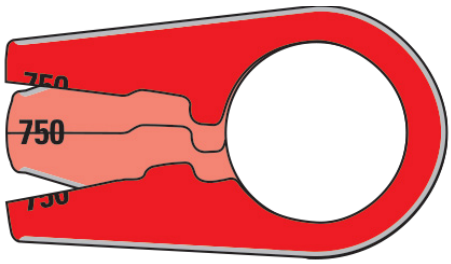
In addition to the TFI at the fixed end, the TFI can also be used at the adjustable end. For this, there is an adapter available for the TFI which can be integrated into the current end fittings. In addition, SpanSet has specially designed a delta hook to which the TFI can easily be attached. This results in an additional cost saving, as no adapter is then required. Alongside the even higher verifiable pre-tensioning force, the K-factor (1.5) is no longer significant, as a lashing force can also be proven at the adjustable end.

Not only does the Tension Force Indicator from SpanSet ensure greater cost-effectiveness, it also guarantees greater safety when using lashing systems.

Achieve the Right Maximum Pre-tensioning Force in a Cost-effective and Precise Manner



- Verify Secure Loads with Up to 60% Fewer Lashing Straps
- Used on Both Fixed and Adjustable Ends of the Lashing System
- Color-Coding Makes it Easy to Manage Pre-tension
- Designed for 2-inch Ratchet Straps
- Adjustable End Compatible with Several End Fittings



Tension Force Indicator

SpanSet, Inc.
3125 Industrial Drive
Sanford, NC 27332
Phone: 800-334-7505
Fax: 919-774-7589
www.spanset-usa.com

www.spanset-usa.com