

# **Slingmax® Tech Talk Webinar: The Future of Rigging**

- **Introduction – Scott St. Germain, CEO**
- **Power Industry – Jeff Susman, President**
- **Sales App Intro. & Twin-Path® Sling Comparison Tool – Greg D’Elia, Engineering Manager**
- **Check-Fast® System Video and Overview – John Ketchum, Technical Director**
- **Rifled Cover® Technology Video and Overview – Greg D’Elia Engineering Manager**
- **Sharing Features of Slingmax® Sales App – Dan Ross, Marketing Coordinator**

**March 16, 2016 1:00 – 2:00 EDT**

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Slingmax® Rigging Solutions for use by  
its licensed authorized dealers.**

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to keep all information confidential.**

Please type all questions into the question box  
The answers to all questions will be emailed to  
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# We are SLINGMAX



## Team Slingmax




# The power industry

Are you selling to the most consistently  
lucrative market for Twin-Path® slings?

What do I mean?

Are you selling Twin-Path® slings for lifting all of the heavy equipment used for power generation?



# Turbine/rotor installation, maintenance, replacement



# Steam generator - installation and replacement



**Steam generators – about 500 tons – transport to plant -  
installation in reactor building**



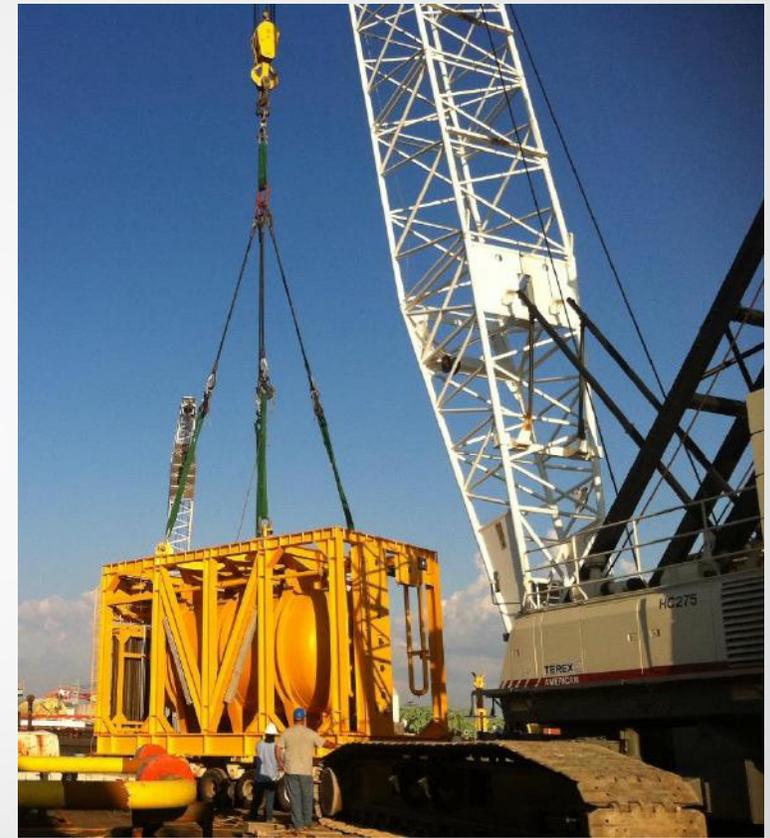
# Nuclear plant equipment - installation, maintenance and removal



Inside and outside the reactor building



**...and lots of other heavy equipment**



# Fossil plants (oil & coal), wind, hydro and industrial cogeneration power plants



# More heavy lifting: Transmission & Distribution



**NEW projects - energy storage –  
20 ton power units ganged together on-site**



# Multiple opportunities at every plant, multiple departments, multiple projects

- Not just turbines
- Not just steam generators
- Not just reactors
- Not just energy storage
- All of the above



# What can this market mean to you?

To date...

Single lifts of 1400 tons with TPXC

Single orders of \$600,000 for TPXC



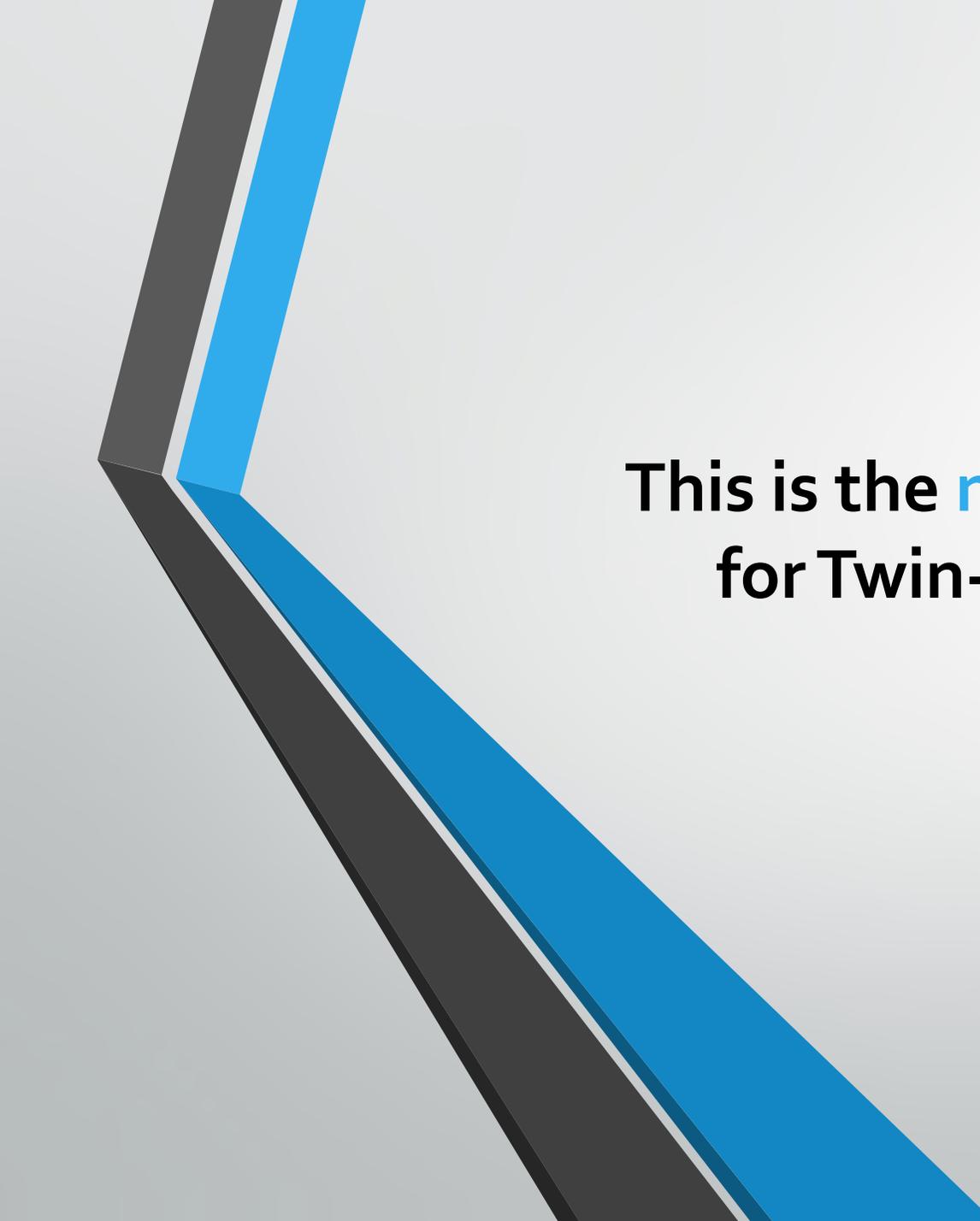
# Power industry customers for Twin-Path® slings:

## *Manufacturers*

- ABB
- Alstom
- Ansaldo
- Babcock & Wilcox
- BHEL
- Dongfang Electric
- Foster Wheeler
- Gamesa
- GE
- Iberdrola
- Larsen & Toubro
- Mitsubishi
- Siemens
- Toshiba
- Vestas
- Voith Hydro
- Westinghouse

## *Contractors*

- AMECO
- Bechtel
- Black & Veatch
- CB&I
- Duke Energy
- Fluor
- Jacobs
- KBR
- Kiewit
- Mammoet
- McDermott
- Parsons
- Shaw Gp
- Skanska
- Stone & Webster
- Technip
- Washington Gp

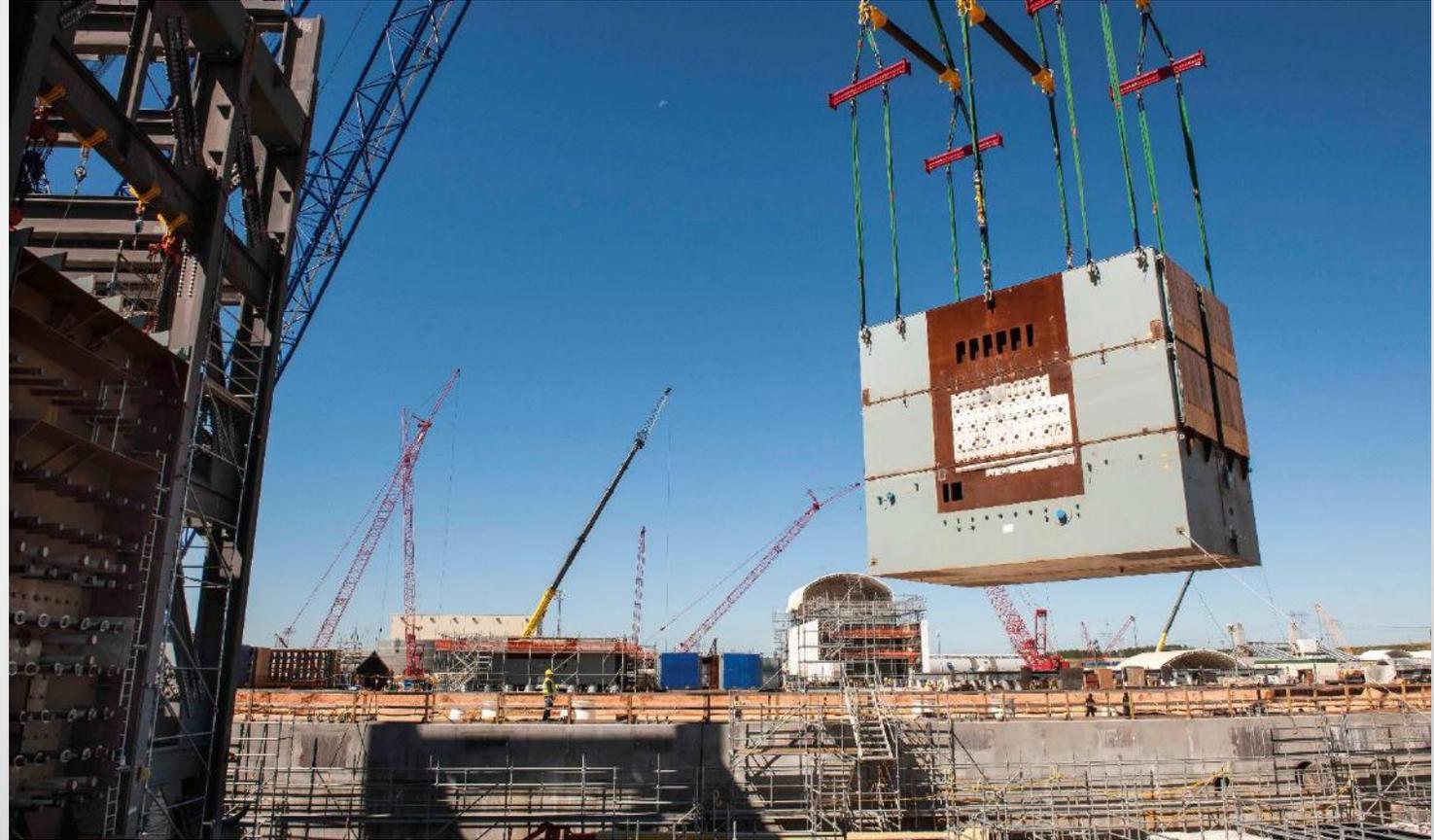


## FINAL THOUGHT

This is the **most consistently lucrative** market for Twin-Path® slings and it will remain so.  
**What's your market share?**

## POWER GENERATION

**POLL QUESTION:  
What Twin-Path® sling  
features are the most  
important for your success  
in selling to the power  
generation market?**



# 2016 Slingmax® Dealer Conference

Philadelphia

September 14-16, 2016

Including new Train the Trainer



# Technical talk #5

- ▶ January 2016
- ▶ Twin-Path® High Performance Roundslings vs. Rope Slings
- ▶ How to sign up
  - [Engineering@Slingmax.com](mailto:Engineering@Slingmax.com)


Published: January, 2016

**Example – Lifting a Transformer**

To better illustrate the benefits of using Twin-Path® Roundslings rather than rope slings for lifting, consider the example of lifting a transformer. In this case, a 120



*Figure 1 - Lifting a Transformer*

met	Type	Twin-Path®	Eye-and-Eye Rope	Grommet Rope
n	Size	TPXCF 8500	2-1/4 in	1-11/16 in
	Length	11 ft 6 in	16 ft	11 ft 6 in
(d)	Min Pin	1.8 in	6-3/4 in (3:1D/d)	13.5 in (8:1 D/d)

Rope	Difference
	+247%
	+25%
	+155%
pection	


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Published: January, 2016

**Technical Talk 5: Twin-Path® High Performance Roundslings vs. Rope Slings**

There is often a question about what is the better product for lifting, a roundsling such as a Twin-Path® High Performance Roundsling, or a rope sling? Both will get the job done, so what difference does it make which one is used? The difference is Twin-Path® Slings are designed specifically for lifting, while ropes are a general purpose product that are sometimes used as lifting slings.

The main difference is the versatility of a Twin-Path® roundsling compared to a rope sling. A Twin-Path® sling can be used on lifting points with very small diameters, be made in very short lengths, down to 1 meter, and can be made in any size from the same core yarn.

*Table 1 - Twin-Path® vs Rope Slings*

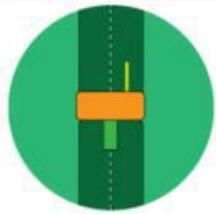
Twin-Path®	Rope Slings
One size K-Spec® core yarn to make any size sling	30+ separate rope sizes to match Slingmax® catalog
Short lead time – any size within days	Long lead time if rope size isn't inventoried
As short as 1 meter	Can only be as short as splices allow
Covermax® protects from abrasion, dirt, and UV	Mostly unjacketed – jacketing complicates splicing
Two independent paths give redundancy in the case of a cut in one path	Single rope can experience catastrophic damage if cut
Small D/d – can be simply matched with compatible rated shackles or other hardware	3:1 D/d – need thimbles or wide body shackle
Check-Fast® gives objective retirement criteria	Visual subjective inspection
Repairable in over 49 locations	Rarely repairable – only jacketed rope usually
No strength loss with twisting up to 1 turn / meter & twisting is easy to see	10% strength loss at 1 turn / ft & twisting can be difficult to see especially on used ropes
Easy to store – can be rolled into small coils	Can be unwieldy to store, especially on large sizes
Negligible internal abrasion	Strength loss due to internal abrasion during normal use
No splices – strength is derived from number of wraps of K-Spec®	Strength depends on splices, can be complicated or subject to backing out / slipping


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# Slingmax<sup>®</sup> Dealer App

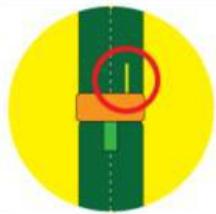




**TWINPATH**<sup>®</sup>  
Roundslings

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Inspection System

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# Slingmax® Dealer App

- ▶ For use by Slingmax® dealers sales force
- ▶ Videos and technical information available
- ▶ All content is downloaded to the app so videos are available offline.
- ▶ Puts information at your fingertips



# Slingmax<sup>®</sup> Dealer App





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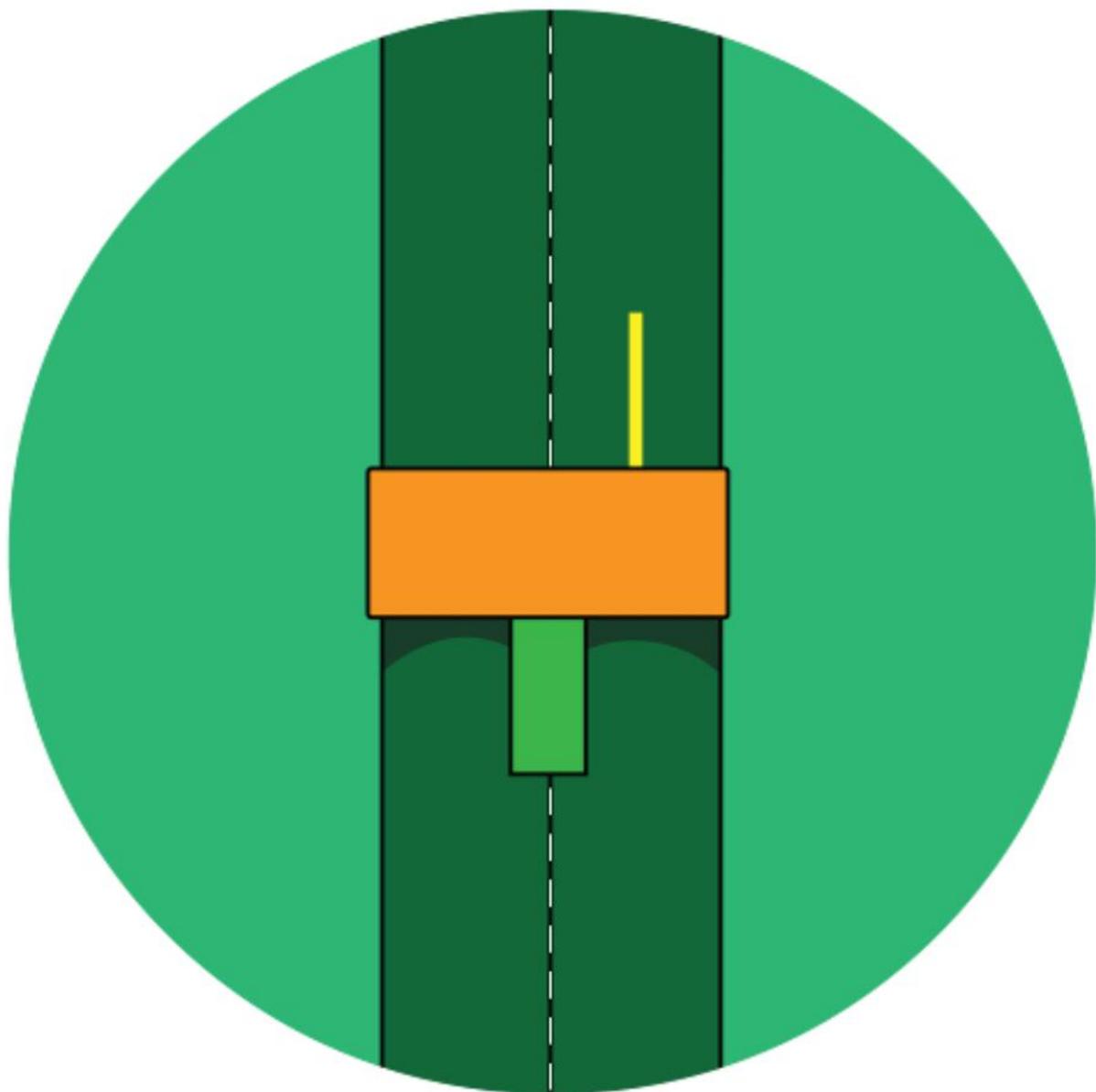
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## **TWINPATH**<sup>®</sup> Roundslings

- 90% repairable
- 50 Worldwide service centers
- 10% the weight of steel slings
- 100% proof tested
- Impervious to most chemicals
- Most trusted sling since 1986

---

 **COMPARE**

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**TWINPATH**<sup>®</sup>  
Roundslings



Compare 

<b>Attribute</b>	<b>Twin-Path<sup>®</sup></b>	<b>Wire Rope</b>
Weight	Best strength to weight ratio on the market	10x Heavier than Twin-Path <sup>®</sup>
Length Tolerance	± 1 in (25 mm)	± diameter of rope
Repairable	Yes	No
Inspectability	Check-Fast <sup>®</sup> System	Counting broken wires
Abrasion Resistance	Best Synthetic	Excellent

**Wire Rope**

Chain

Webslings

High Performance Fiber Rope Slings

Polyester Roundslings

Other High Performance Fiber Roundslings



**TWINPATH**<sup>®</sup>  
Roundslings



Compare 

<b>Attribute</b>	<b>Twin-Path<sup>®</sup></b>	<b>High Performance Fiber Rope Slings</b>
UV Resistance	Excellent	Poor if unjacketed Moderate if jacketed
Corrosion	No	No
Flexibility	Excellent	Excellent
D:d in Eye	Any comparably rated fitting	3:1 (3.5x Larger)
D:d in Body	Any comparably rated fitting	8:1 (10x Larger)



**TWINPATH**<sup>®</sup>  
Roundslings



## Wire Rope

<b>Weight</b>	Best strength to weight ratio on the market	10x Heavier than Twin-Path <sup>®</sup>
<b>D:d in eye</b>	Any comparably rated fitting	5:1 (6x Larger)
<b>D:d in body</b>	Any comparably rated fitting	25:1 (31x Larger)
<b>Length Tolerance</b>	± 1 in (25 mm)	± diameter of rope
<b>Repairable</b>	Yes	No
<b>Inspectability</b>	Check-Fast <sup>®</sup> System	Counting broken wires
<b>Abrasion Resistance</b>	Best synthetic	Excellent
<b>Elongation @ WLL</b>	<1%	<1%
<b>Chemical Resistance</b>	Resistant to most acids and bases	Moderate
<b>UV Resistance</b>	Excellent	Excellent
<b>Corrosion</b>	No	Yes
<b>Flexibility</b>	Excellent	Moderate
<b>100% Proof Loading</b>	Yes	No



**TWINPATH**<sup>®</sup>  
Roundslings



**Chain**

<b>Weight</b>	Best strength to weight ratio on the market	10x Heavier than Twin-Path <sup>®</sup>
<b>D:d in eye</b>	Any comparably rated fitting	N/A
<b>D:d in body</b>	Any comparably rated fitting	10:1 (5x Larger)
<b>Length Tolerance</b>	± 1 in (25 mm)	± length of one link
<b>Repairable</b>	Yes	Yes
<b>Inspectability</b>	Check-Fast <sup>®</sup> System	Visual / measurements
<b>Abrasion Resistance</b>	Best synthetic	Excellent
<b>Elongation @ WLL</b>	<1%	<1%
<b>Chemical Resistance</b>	Resistant to most acids and bases	Moderate
<b>UV Resistance</b>	Excellent	Excellent
<b>Corrosion</b>	No	Yes
<b>Flexibility</b>	Excellent	Excellent
<b>100% Proof Loading</b>	Yes	Welded only



**TWINPATH**<sup>®</sup>  
Roundslings



## Webslings

<b>Weight</b>	Best strength to weight ratio on the market	3x Heavier than Twin-Path <sup>®</sup>
<b>D:d in eye</b>	Any comparably rated fitting	Any comparably rated fitting
<b>D:d in body</b>	Any comparably rated fitting	Any comparably rated fitting
<b>Length Tolerance</b>	± 1 in (25 mm)	1-3% of sling length
<b>Repairable</b>	Yes	No
<b>Inspectability</b>	Check-Fast <sup>®</sup> System	Subjective Visual
<b>Abrasion Resistance</b>	Best synthetic	Poor
<b>Elongation @ WLL</b>	<1%	3 - 10%
<b>Chemical Resistance</b>	Resistant to most acids and bases	Nylon susceptible to acid / phenol
<b>UV Resistance</b>	Excellent	Poor
<b>Corrosion</b>	No	No
<b>Flexibility</b>	Excellent	Multi-ply stiff
<b>100% Proof Loading</b>	Yes	No



**TWINPATH**<sup>®</sup>  
Roundslings



## High Performance Fiber Rope Slings

<b>Weight</b>	Best strength to weight ratio on the market	Comparable
<b>D:d in eye</b>	Any comparably rated fitting	3:1 (3.5x Larger)
<b>D:d in body</b>	Any comparably rated fitting	8:1 (10x Larger)
<b>Length Tolerance</b>	± 1 in (25 mm)	2% of total length
<b>Repairable</b>	Yes	Situational
<b>Inspectability</b>	Check-Fast <sup>®</sup> System	Subjective Visual / Tactile
<b>Abrasion Resistance</b>	Best synthetic	Poor if unjacketed Good if jacketed
<b>Elongation @ WLL</b>	<1%	2%
<b>Chemical Resistance</b>	Resistant to most acids and bases	Moderate
<b>UV Resistance</b>	Excellent	Moderate
<b>Corrosion</b>	No	No
<b>Flexibility</b>	Excellent	Excellent
<b>100% Proof Loading</b>	Yes	No



**TWINPATH**<sup>®</sup>  
Roundslings



**Polyester  
Roundslings**

<b>Weight</b>	Best strength to weight ratio on the market	3x Heavier than Twin-Path <sup>®</sup>
<b>D:d in eye</b>	Any comparably rated fitting	1.5x Larger
<b>D:d in body</b>	Any comparably rated fitting	1.5x Larger
<b>Length Tolerance</b>	± 1 in (25 mm)	± 1" + 1% of total length
<b>Repairable</b>	Yes	No
<b>Inspectability</b>	Check-Fast <sup>®</sup> System	Subjective Visual / Tactile
<b>Abrasion Resistance</b>	Best synthetic	Poor - Moderate
<b>Elongation @ WLL</b>	<1%	3%
<b>Chemical Resistance</b>	Resistant to most acids and bases	Susceptible to bases
<b>UV Resistance</b>	Excellent	Moderate
<b>Corrosion</b>	No	No
<b>Flexibility</b>	Excellent	Excellent
<b>100% Proof Loading</b>	Yes	No



**TWINPATH**<sup>®</sup>  
Roundslings



**Other HPF  
Roundslings**

<b>Weight</b>	Best strength to weight ratio on the market	10 - 15% Heavier than Twin-Path®
<b>D:d in eye</b>	Any comparably rated fitting	1.5x Larger
<b>D:d in body</b>	Any comparably rated fitting	1.5x Larger
<b>Length Tolerance</b>	± 1 in (25 mm)	± 1" + 1% of total length
<b>Repairable</b>	Yes	Situational
<b>Inspectability</b>	Check-Fast® System	Subjective Visual / Tactile
<b>Abrasion Resistance</b>	Best synthetic	Poor - Moderate
<b>Elongation @ WLL</b>	<1%	<1%
<b>Chemical Resistance</b>	Resistant to most acids and bases	Moderate
<b>UV Resistance</b>	Excellent	Moderate
<b>Corrosion</b>	No	No
<b>Flexibility</b>	Excellent	Excellent
<b>100% Proof Loading</b>	Yes	No



**TWINPATH**<sup>®</sup>  
Roundslings



**Wire Rope**

**Chain**

**Webslings**

**High Performance Fiber Rope Slings**

**Polyester Roundslings**

**Other HPF Roundslings**

<b>Weight</b>	Best strength to weight ratio on the market	10x Heavier than Twin-Path <sup>®</sup>	10x Heavier than Twin-Path <sup>®</sup>	3x Heavier than Twin-Path <sup>®</sup>	Comparable	3x Heavier than Twin-Path <sup>®</sup>	10 - 15% Heavier than Twin-Path <sup>®</sup>
<b>D:d in eye</b>	Any comparably rated fitting	5:1 (6x Larger)	N/A	Any comparably rated fitting	3:1 (3.5x Larger)	1.5x Larger	1.5x Larger
<b>D:d in body</b>	Any comparably rated fitting	25:1 (31x Larger)	10:1 (5x Larger)	Any comparably rated fitting	8:1 (10x Larger)	1.5x Larger	1.5x Larger
<b>Length Tolerance</b>	± 1 in (25 mm)	± diameter of rope	± length of one link	1-3% of sling length	2% of total length	± 1" + 1% of total length	± 1" + 1% of total length
<b>Repairable</b>	Yes	No	Yes	No	Situational	No	Situational
<b>Inspectability</b>	Check-Fast <sup>®</sup> System	Counting broken wires	Visual / measurements	Subjective Visual	Subjective Visual / Tactile	Subjective Visual / Tactile	Subjective Visual / Tactile
<b>Abrasion Resistance</b>	Best synthetic	Excellent	Excellent	Poor	Poor if unjacketed Good if jacketed	Poor - Moderate	Poor - Moderate
<b>Elongation @ WLL</b>	<1%	<1%	<1%	3 - 10%	2%	3%	<1%
<b>Chemical Resistance</b>	Resistant to most acids and bases	Moderate	Moderate	Nylon susceptible to acid / phenol	Moderate	Susceptible to bases	Moderate
<b>UV Resistance</b>	Excellent	Excellent	Excellent	Poor	Moderate	Moderate	Moderate
<b>Corrosion</b>	No	Yes	Yes	No	No	No	No
<b>Flexibility</b>	Excellent	Moderate	Excellent	Multi-ply stiff	Excellent	Excellent	Excellent
<b>100% Proof Loading</b>	Yes	No	Welded only	No	No	No	No



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Roundslings

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Inspection System

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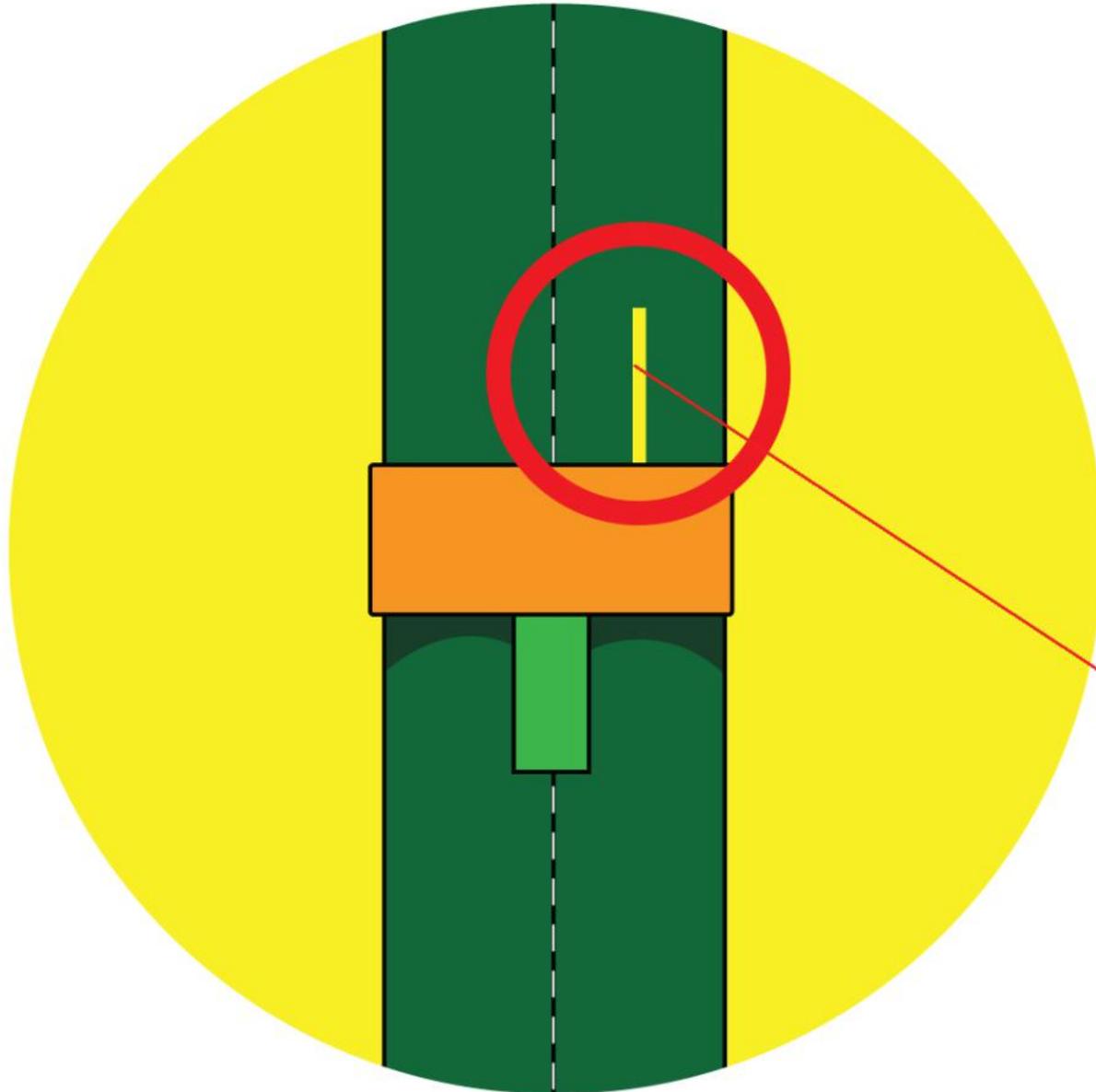
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Technology

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# CHECKFAST<sup>®</sup>

## Inspection System

- Objective **GO/NO-GO** indication of severe overload
- Most reliable and tested overload indicator available
- Patented technology available only from Slingmax<sup>®</sup> Rigging Solutions

External warning indicator (EWI) retracts upon severe overload



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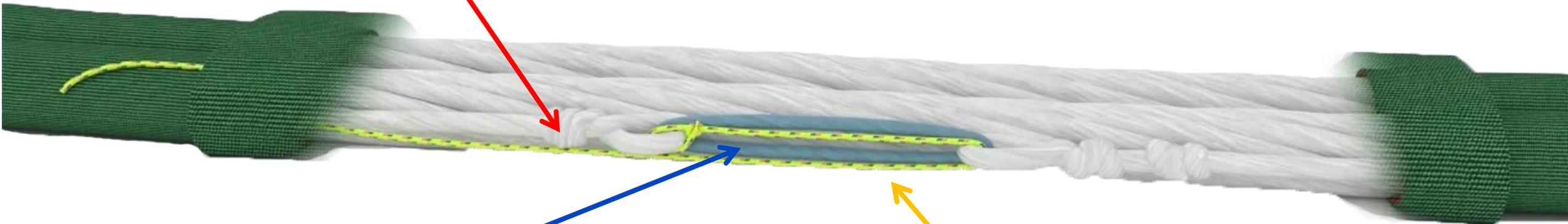


# Check-Fast<sup>®</sup> Inspection System



# Check-Fast<sup>®</sup> Inspection System

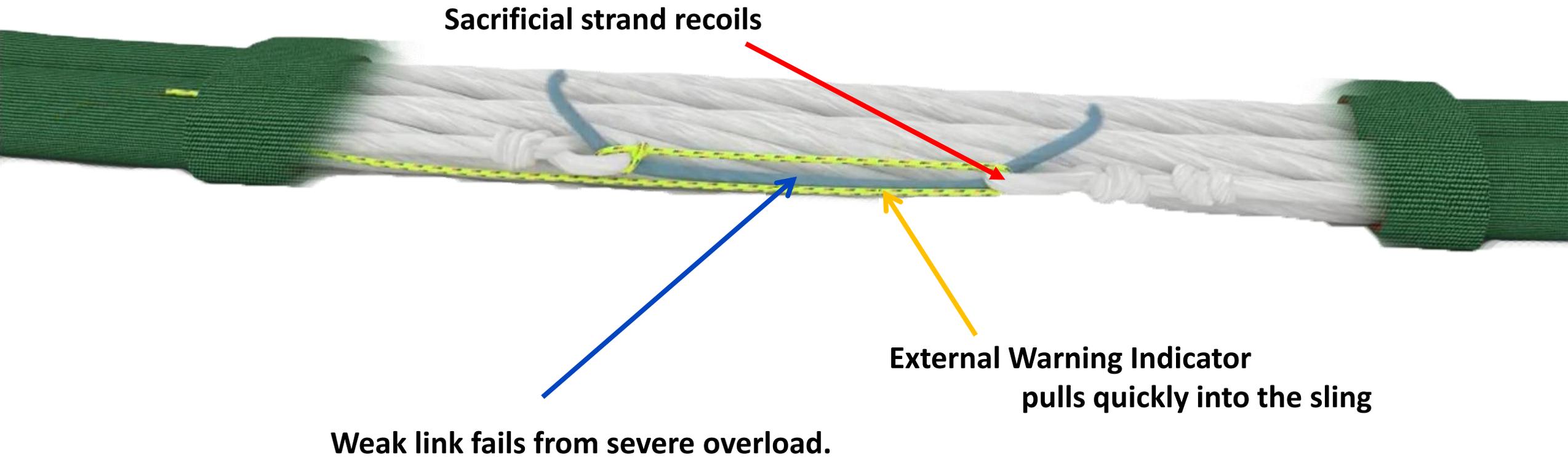
Sacrificial strand (same material as sling core yarns)



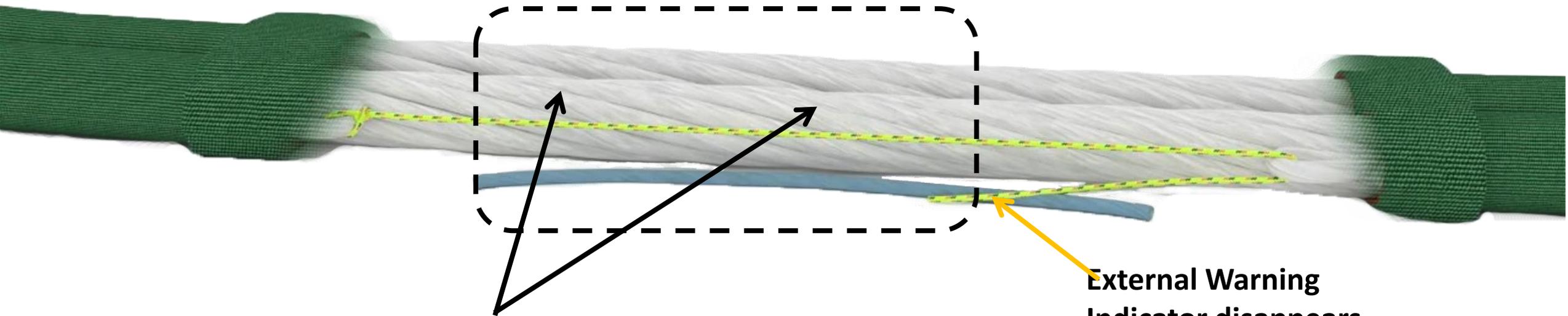
“Weak Link” +/- 65% breaking strength vs. sling core yarns.

External Warning Indicator  
(E.W.I.)

# Check-Fast<sup>®</sup> Inspection System



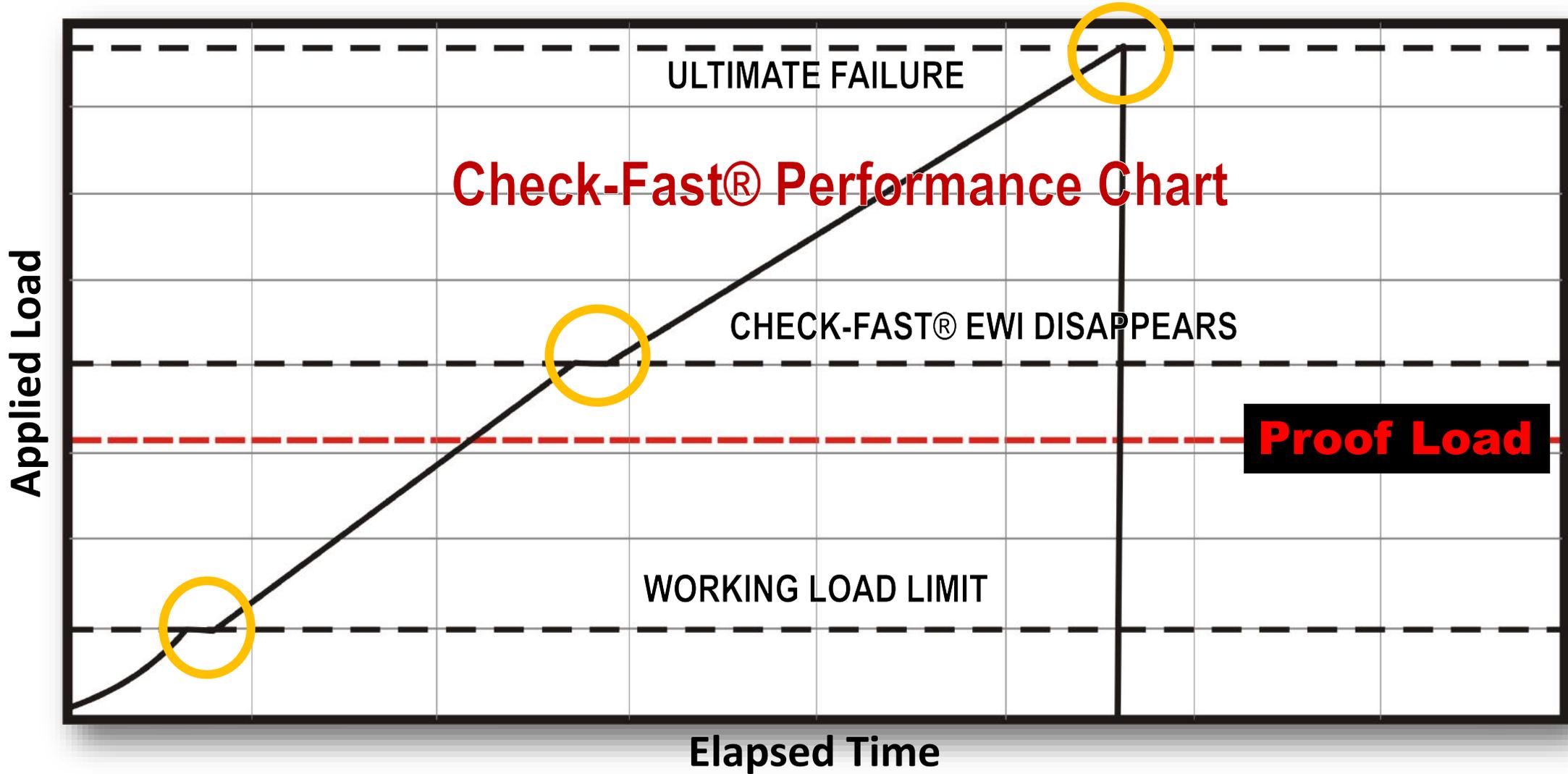
# Check-Fast<sup>®</sup> Inspection System



- If sling core yarns remain undamaged then the sling can be repaired by installing a new weak link into the Check-Fast<sup>®</sup> system.

External Warning Indicator disappears into the sling

# Check-Fast<sup>®</sup> Inspection System



# Check-Fast® Testing



# Check-Fast<sup>®</sup> Testing



# Check-Fast<sup>®</sup> Testing



# Check-Fast<sup>®</sup> Inspection System







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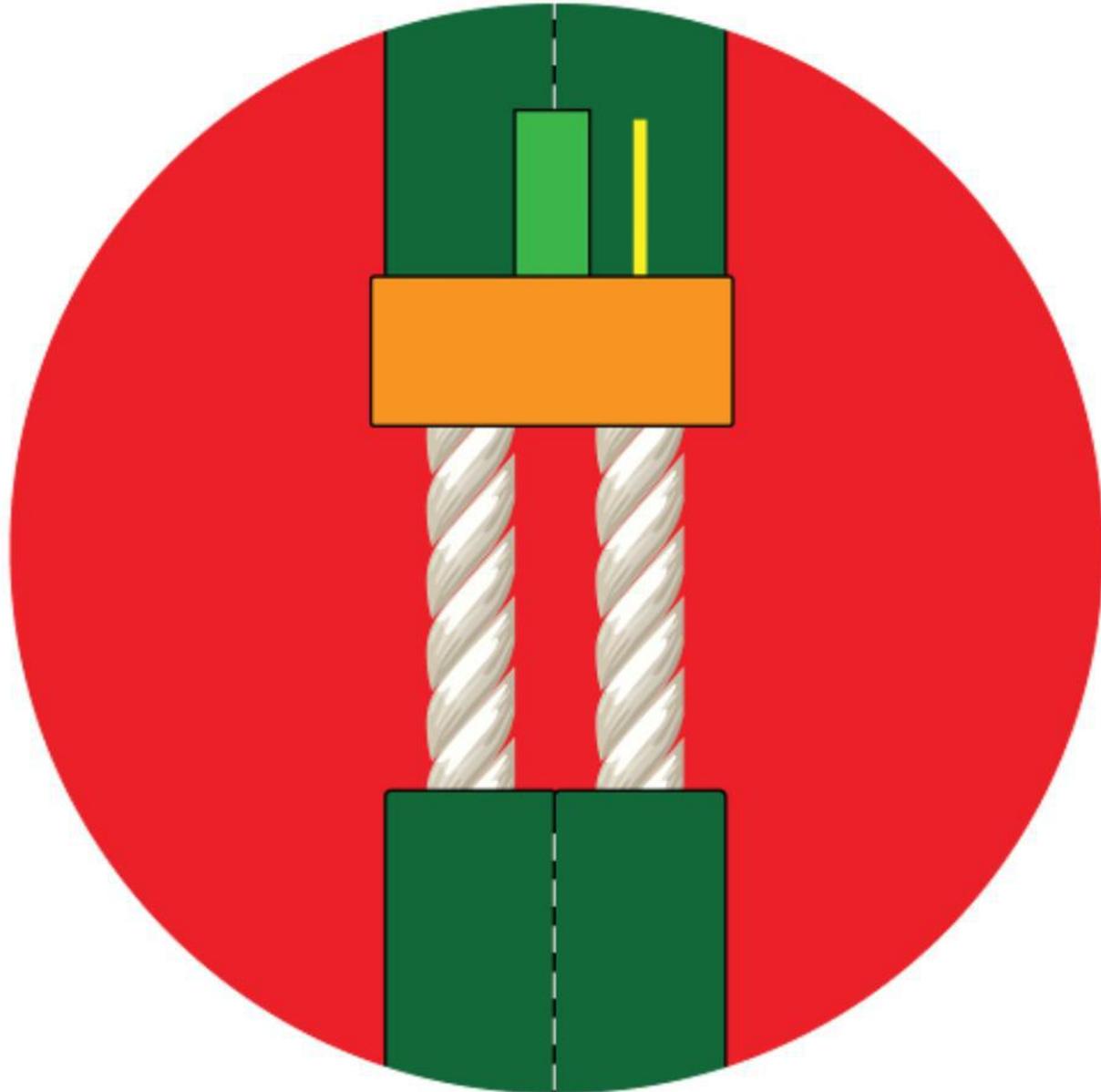
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Technology

- Increase breaking strength by 17% for same size sling
- Repeatability in the manufacturing process
- Consistency in breaking strengths from sling to sling
- Patented technology available only from Slingmax<sup>®</sup> Rigging Solutions

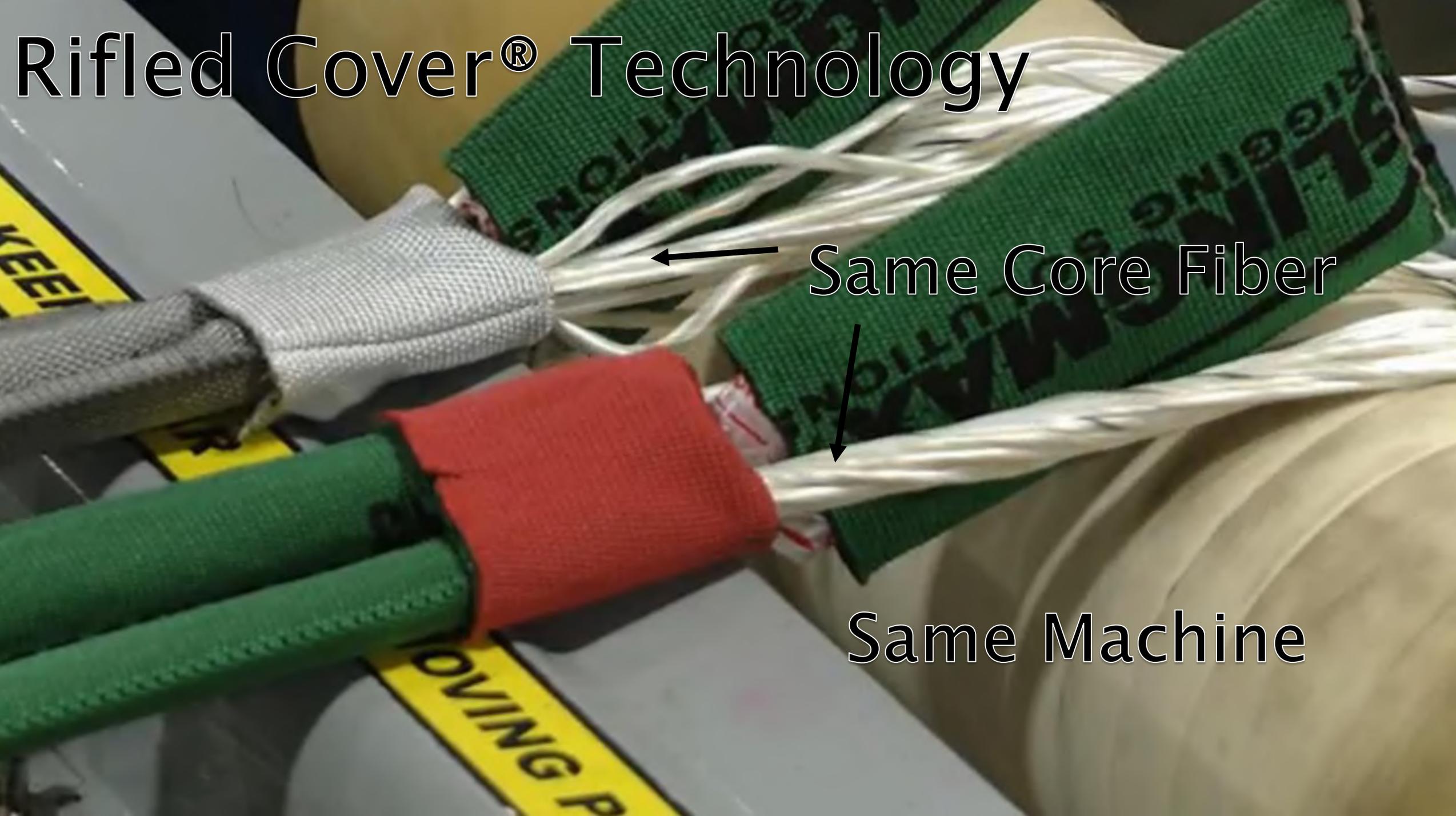


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**Ri**

# Rifled Cover® Technology



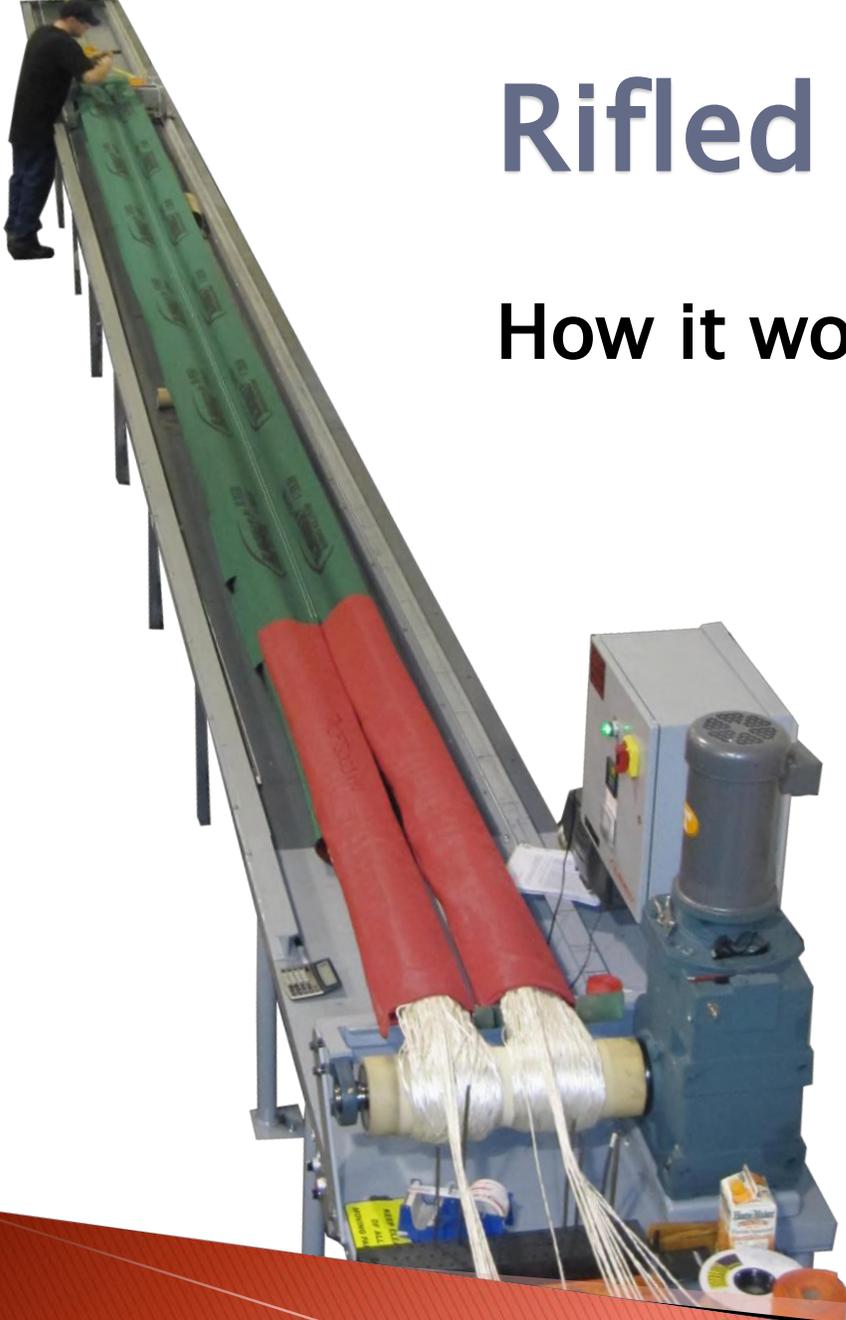
Same Core Fiber

Same Machine

# Rifled Cover® Technology

How it works:

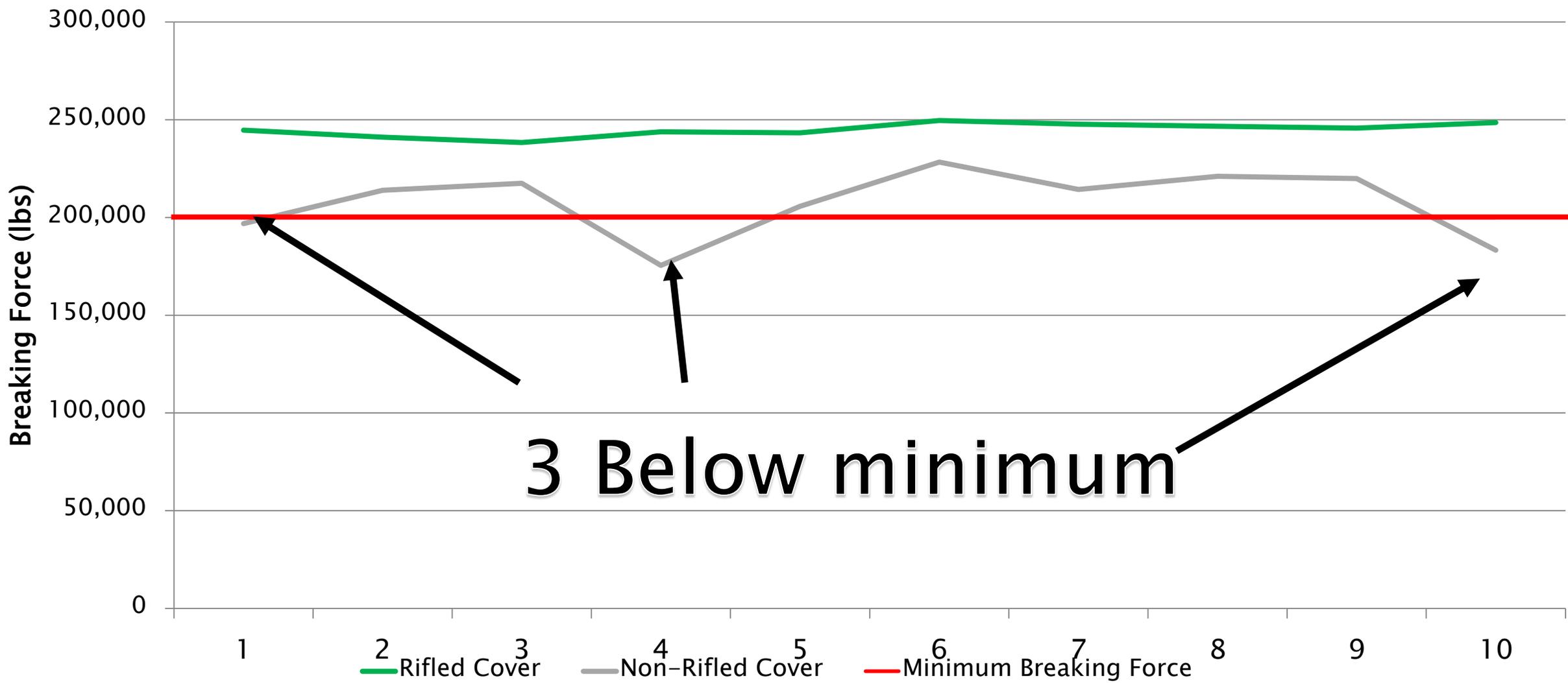
- The interaction between the K-Spec® core yarn and Covermax® cover creates a twisting force
- Slingmax® Roundsling machine is also key to the process working.



# Rifled Cover<sup>®</sup> Technology

Rifled Cover<sup>®</sup> Technology yields three advantages:

1. Increased strength to weight ratio.  
17% higher breaking strength.
2. More consistent predictable breaking strengths.
3. Repeatability in manufacturing no matter how large the capacity.



# Sharing Features





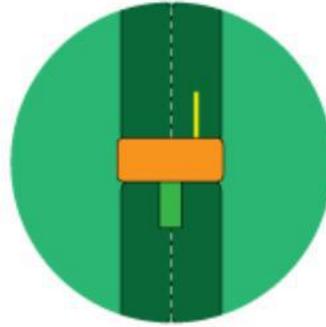
Full Name

Email Address

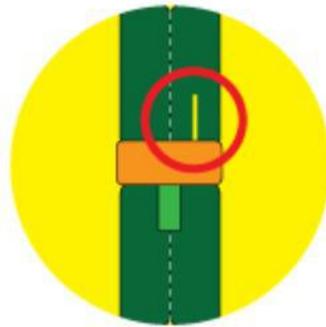
Salesperson

Notes

SEND



**TWINPATH**<sup>®</sup>  
Roundslings



**CHECKFAST**<sup>®</sup>  
Inspection System



**NEW**  
**RIFLED COVER**<sup>®</sup>  
Technology



Thank You!



Your SlingMax information has been sent.

For Fabrication & Sales Support

Contact:

John Ketchum

[johnketchum@Slingmax.com](mailto:johnketchum@Slingmax.com)



Technical & Engineering  
Greg D'Elia  
greg@Slingmax.com



For App Questions &  
Marketing Support  
Contact:  
Dan Ross  
[dross@Slingmax.com](mailto:dross@Slingmax.com)



Next Webinar Date:  
June 15, 2016

