



CASE STUDY

DIGGING & RIGGING MAKES THE SWITCH: WIRE TO SYNTHETIC

Samson's K-100™ improves worksite
safety and efficiency



*K-100 replaces wire hoist ropes with no equipment alterations,
saving 80% of the weight of the wire.*



The best crane operators pride themselves on solving difficult lift problems with efficient and, most importantly, safe solutions.

THE DECISION

Digging & Rigging, Inc. is a 36-year-old crane and rigging company with six locations in Maryland, West Virginia, and Pennsylvania. The family-owned company takes great pride in their reputation as one of the most dependable, qualified, and professional crane and rigging companies in the region. Their equipment is meticulously maintained, and their employees are well trained, highly skilled, and fully certified. They also take great pride in maintaining a safe work environment. With this critical focus on safety at the forefront, the decision was made to retrofit a Grove crane with *K-100*, the first high-performance synthetic hoist line available for mobile cranes.

Mr. James Gregory, President of Digging & Rigging, sums it up this way, "Our people are critical to our operations. Anything we can do to enhance our strong safety culture and make the job easier and more efficient for the riggers and crews is valuable. Cable (wire rope) has a mind of its own when you're handling it."



“Our people are critical to our operations. Anything we can do to improve safety and make the job easier and more efficient for the riggers and crews is valuable. Cable (wire rope) has a mind of its own when you’re handling it.”



Lightweight *K-100* synthetic hoist ropes are safer and easier to handle than wire

THE INNOVATION

K-100 replaces steel-wire hoist ropes with high-performance, high-modulus fiber synthetic ropes. It’s designed with a proprietary construction that enables robust spooling performance with strength equivalent to the wire rope it replaces at similar diameters. The result is that the crane’s load chart and load pull at a 5:1 safety factor remain virtually unchanged, while saving 80% of the weight of wire rope.

Significantly lighter weight means easier handling without the danger of injury from broken strands, aiding Digging & Rigging in their quest for safety improvement. It also resulted in quicker, safer reeving operations, while the torque-neutral braided construction reduced load spin and cabling. Kinking and birdcaging were eliminated, and, while rare, diving on the drum is easily remedied with no adverse effect on the rope. With no lubing requirement, *K-100* also eliminated environmental concerns at the worksite, while resulting in quicker, cleaner reeving changes. Another important benefit realized by Digging & Rigging: rope inspection is simple—both externally and internally. Add it all together and *K-100* on a mobile crane makes for more efficient and safer lifting operations compared to the wire rope it replaces.

THE SWITCH

Prem Swaminathan, Business Development Manager for Samson, called on Mr. Gregory to introduce *K-100*. While Digging & Rigging was impressed with the apparent benefits of *K-100*, their lack of familiarity with high-performance synthetics as replacements for wire ropes in this critical application made the switch a tough decision for both the owner and his crane operators. Samson suggested they get acquainted with the benefits of high-performance synthetics by using HMPE rope slings in their lifting operations. A set of slings was fabricated from Samson’s AmSteel®Blue (made with Dyneema® fiber) and delivered to the Digging & Rigging crew.

The slings have properties similar to Samson’s *K-100* in terms of light weight, high strength and ease of handling. Once the operators and crew realized that there was no sacrifice in performance characteristics between synthetics and their usual wire counterparts—with the added advantages of ease of handling, increased safety, and simple, straight-forward inspection procedures—their confidence level in HMPE ropes significantly increased, and *K-100* was ordered for the first Digging & Rigging crane.

K-100 HIGH-PERFORMANCE SYNTHETIC HOIST LINES

Digging & Rigging ordered Samson *K-100* 22 mm hoist lines to retrofit a Grove TMS 9000 E Model mobile crane. The Samson installation team and technical representatives from crane manufacturer Manitowoc, who partnered with Samson in developing *K-100*, were present for the installation. The support of Manitowoc's Sammy Munuswamy—a long-time innovator and champion of synthetic rope for crane hoists—increased Digging & Rigging's comfort level, and was important to them, being an early adopter.

As an integral part of the installation process, Samson and Manitowoc provided guidance and trained the crews and operators on proper handling and maintenance of synthetic ropes, to ensure they got the longest, safest possible service life.

"Samson has done very well — everyone has done all that they can do to make it an easy process...the relationship between Samson and Manitowoc has made a very good fit," says James Gregory.

THE FOLLOW-UP

On the day we spoke to them, Digging & Rigging had *K-100* on the crane for almost eight months. Samson and Manitowoc conducted an inspection of the rope during this time, to ensure the *K-100* was performing to everyone's satisfaction. We were pleased to see that the rope showed very little abrasion and only slight wear consistent with its length of service.

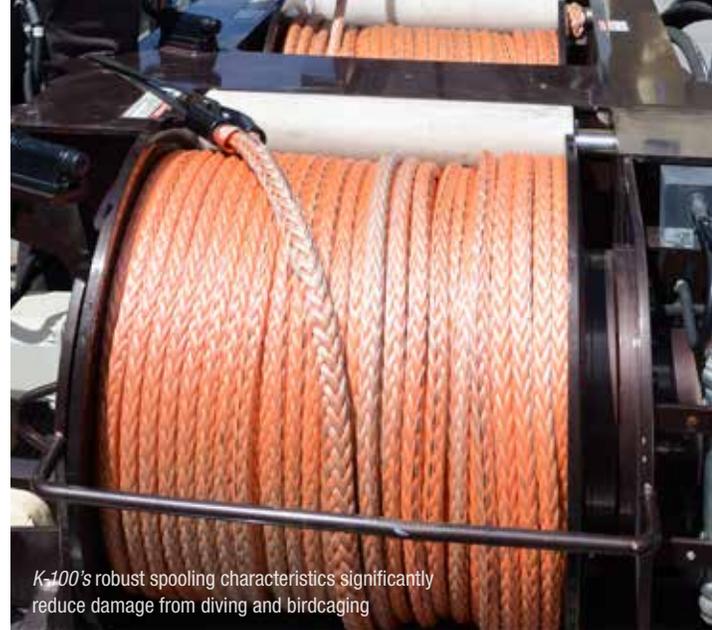
We asked Mr. Gregory for his thoughts on the decision to switch to new synthetic hoist line, "I hope and feel that synthetics are here to stay. Getting and keeping good employees is critical to our operation...we do whatever we can as a user to improve safety and efficiency. The life of the rope is up to the operator... the rope is meeting our expectations."

...and on the future of synthetic hoist lines at Digging & Rigging:

"We have plans in place for three new Grove cranes, with factory-installed *K-100*. From what we've seen, the larger the crane, the greater the potential benefits in both safety and ease of rigging."

With their experience thus far, and with an eye toward future installations, Samson and Digging & Rigging are looking forward to a long and rewarding partnership.

With a fleet of 89 mobile cranes, Digging & Rigging is poised to be a prime beneficiary of the advantages of retrofitting with Samson's high-performance synthetic hoist line, *K-100* — designed and developed specifically for this application. *K-100* is the first synthetic crane hoist line that is OEM-approved for use on Grove mobile cranes. It replaces steel wire hoist lines, bringing safer, cleaner operations, quicker reeving, better load control, and reduced axle weight to this critical application.



K-100's robust spooling characteristics significantly reduce damage from diving and birdcaging

"...synthetics are here to stay. Getting and keeping good employees is critical to our operation...we do whatever we can as a user to improve safety and efficiency. The life of the rope is up to the operator...the rope is meeting our expectations."

*JAMES GREGORY, OWNER AND PRESIDENT,
DIGGING & RIGGING.*



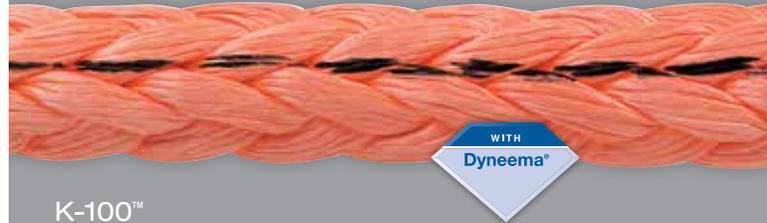
SAMSON CASE STUDY **DIGGING & RIGGING** **MAKES THE SWITCH: WIRE TO SYNTHETIC**



Samson, Manitowoc and Digging & Rigging crew at the install of their first K-100 hoist line.

"We have plans in place for three new Grove cranes, with factory-installed K-100. From what we've seen, the larger the crane, the greater the potential benefits in both safety and ease of rigging."

*JAMES GREGORY, OWNER AND PRESIDENT,
DIGGING & RIGGING.*



K-100™

FOR ADDITIONAL INFORMATION: **SamsonRope.com**

We've put all our information here for easy downloading for anyone with access to the web. We think it is the best resource for information on high-performance synthetic ropes available anywhere.

- > Rope specifications
- > Product breakdowns by application and industry
- > Technical bulletins
- > Case studies
- > Splicing instructions



CORPORATE HEADQUARTERS
2090 Thornton Street, Ferndale, Washington 98248 USA
Tel +1.360.384.4669 | Fax +1.360.384.0572
SamsonRope.com

AmSteel® is a registered trademark of Samson Rope Technologies, Inc.
K-100™ is a trademark of Samson Rope Technologies, Inc.
Dyneema® is a registered trademark of Royal DSM N.V. Dyneema is
DSM's high-performance polyethylene product.

© 2017 Samson Rope Technologies, Inc. All rights reserved 8/2017 (YGS109444)