K-100™ SYNTHETIC CRANE HOIST LINE

Retrofitting Procedure

REVISION 02 (04.08.2016)
**IMPORTANT**

BECAUSE OF THE WIDE RANGE OF FACTORS POTENTIALLY AFFECTING PRODUCT PERFORMANCE, IT IS STRONGLY RECOMMENDED THAT YOU READ AND IMPLEMENT THE GUIDELINES AND INSTRUCTIONS SET FORTH HEREIN AND IN THE ACCOMPANYING POCKET GUIDE REGARDING PRODUCT USE, HANDLING, INSTALLATION, INSPECTION, AND RETIREMENT.

**CRANE INFORMATION**

When performing a retrofit, it is important to collect the following information for record keeping.

- **Crane Model:** 
- **Crane Serial Number:** 
- **Date of Report:** 
- **Date of Rework:** 
- **Hoist Serial Number:** 
- **Synthetic Rope Certificate of Compliance No.:** 
- **Crane Hours:**
K-100™ SYNTHETIC CRANE HOIST LINE
Retrofitting Procedure

<table>
<thead>
<tr>
<th>CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEMS NEEDED</td>
</tr>
<tr>
<td>To Properly Perform a Retrofit ........................................... 4</td>
</tr>
</tbody>
</table>

| PRE-INSTALLATION INSPECTION |
| Hoist (Drum, Flanges, Drum Pockets, etc.) .................. 4 |
| Sheaves ........................................................................... 5 |
| Boom Contact Points .................................................. 5 |

| SURFACE PREPARATION |
| Surface Roughness Scale ............................................ 6 |
| Sharp Edges .................................................................... 6 |
| Blast Cleaning Standards ............................................ 7 |

| NEW FINISH COATING |
| Acceptable Coatings / Paints ........................................ 8 |
| Loose or Peeling Paint ................................................ 8 |
| Proper Preparation ..................................................... 9 |
| Paint Application ....................................................... 10 |
| Final Inspection ......................................................... 10 |
RETOFITTING PROCEDURE

ITEMS NEEDED TO PROPERLY PERFORM A RETROFIT:

- Small side grinder with:
  - Sanding discs (flap wheel/pads)
  - Wire brush wheel or cup
- Die grinder with:
  - De-burring stones or bits
  - Small sanding discs and flap wheels
- Dual-action sander with sanding pads (will leave a smooth surface on the hoist flanges)
- Cleaning solutions
- Primer and touch-up paint
- Extra spool to store removed cable on
- Jack stands with pipe to hold spool of rope
- Soft dead-blow/rubber hammer (rope installation requirement)

PRE-INSTALLATION INSPECTION:

1) Disconnect the cable from the hook block and carefully unspool all of the wire rope from the hoist. Dispose of the wire cable or salvage properly.

2) After the wire cable is removed, the hoist must be conditioned to receive a new coating of paint. Proper surface preparation of the hoist is essential.

3) Any surface which may contact the rope during operation must be inspected prior to installation. Inspect for rough surfaces, loose paint, pocking, gouges, or sharp edges. Special attention should be given to the following areas (with particular focus on the flange surfaces, as these contact areas will be more frequent and severe):
   a. Hoist (drum, flanges, drum pockets, under the lip of the drum pocket, wedge, cable packer)
PRE-INSTALLATION INSPECTION: (CONTINUED)

b. Sheaves (boom nose, hook block) – groove condition, sharp edges, freely rotating

c. Boom contact points (wear pads, sharp edges)

d. Boom nose and hook block pins, anti-two-block weight(s)

**BOOM NOSE, HOOK BLOCK PINS, AND WEAR PADS:** Rough corners damaged by the steel-wire rope (rope should not yet be in operation on this machine)

**SHEAVES:** Potential sharp edges on the corner and wire damage marks in the grooving

**ANTI-TWO-BLOCK WEIGHTS:** Potential rough edges at the entry and exit points, as well as where the rope runs through the block
RETROFITTING PROCEDURE

SURFACE ROUGHNESS

4) Surface roughness must be equivalent to a finish of 300 micro inches RMS or smoother. Surfaces rougher than 300 micro inches RMS should be ground down and repainted to reduce rusting. **Achieving lower roughness will further reduce wear rate of the synthetic rope due to contact with these surfaces.** If the sheave wheels are made of steel and rusty, they will also need to be cleaned, deburred, and prepped.

SHARP EDGES

5) Sharp edges that may come into contact with the rope are not permissible. Any sharp areas which may cause cutting should be rounded off. Geometries with a radius lower than 2 mm are considered as sharp edges.
BLAST CLEANING STANDARDS

6) The minimum surface requirement is a commercial finish of 300 micro inch (7.6µm) RMS value. There are several standards for surface preparation. Proper surface preparation is essential for good performance and longevity of K-100:

a. SSPC-SP7 / NACE 4 Brush-Off Blast Cleaning. When viewed without magnification, the surface shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating. Tightly adherent mill scale, rust, and coating may remain on the surface. Mill scale, rust, and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife.

b. SSPC-SP6 / NACE 3 Commercial Blast Cleaning. When viewed without magnification, the surface shall be free of all visible oil, grease, dust, mill scale, rust, coating, oxides, corrosion products and other foreign matter of at least 66-2/3% of unit area, which shall be a square 3 in. x 3 in. (9 sq. in.). Light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coating in less than 33-1/3% of the unit area is acceptable.

c. SSPC-SP10 / NACE 2 Near-White Blast Cleaning. When viewed without magnification, the surface shall be free of all visible oil, grease, dust, mill scale, rust, coating, oxides, corrosion products and other foreign matter of at least 95% of each unit area. Staining shall be limited to no more than 5 percent of each unit area, and may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coatings. Unit area shall be approximately 3 in. x 3 in. (9 sq. in.).

d. SSPC-SP5 / NACE 1 White Metal Blast Cleaning. When viewed without magnification, the surface shall be free of all visible oil, grease, dust, mill scale, rust, coating, oxides, corrosion products and other foreign matter.
ACCEPTABLE COATINGS / PAINTS

7) The hoist areas must be prepared to receive a new finish coating. One or two coats of oil-based enamel paints, high-solids urethanes, epoxies coating, or powder coating may be used. Other paint alternatives are acceptable as well, as long as they are not thick and brittle, as they are capable of causing damage to the rope.

a. There are many potential paint options. The following are acceptable paints available from Grove Crane Care to serve as an example:
   • A033671 Black Enamel
   • 8878707432 Gray Enamel
   • 8878707437 Yellow Enamel
   • 8878700085 Gray Enamel, National
   • 8878707395 Black Enamel, National

b. Coatings may peel off due to the high force exerted by the rope on the hoist drum. Thick coatings that may result in sharp debris when delaminated are not acceptable, as these may damage the rope.

c. No loose or peeling paint is permissible. Any mill scale should be removed. The smoothness and roundness of the hoist drum pocket are critical.

d. All previous paint coatings should be removed. A good, clean surface with no sharp edges or gouges is required for painting.

e. A good solvent such as acetone or alcohol should be used to thoroughly clean the hoist for good paint adhesion.

LOOSE OR PEELING PAINT

8) Carefully remove any dust, grindings, or debris from the drum and flange areas in preparation for the new paint coating. Examine the entire hoist drum and flanges to ensure that all paint and debris have been removed.
**PROPER PREPARATION**

9) The cleaned surfaces should closely resemble this example.

10) Thoroughly clean the prepared hoist first with acetone, then isopropyl alcohol (or other paint manufacturer-recommended degrease method).
You are now ready to install K-100. See Samson’s K-100™ Synthetic Crane Hoist Line Rope Handling, Installation, Inspection, and Retirement Guidelines for additional information and guidance on installation procedures.