

# Guidelines for installation and maintenance



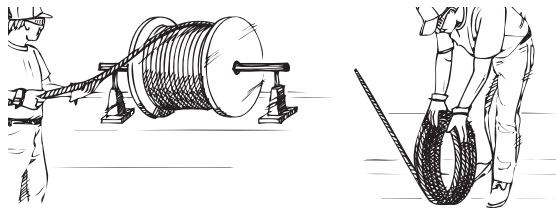
## WHEN YOU'RE INSTALLING WIRE ROPE, THERE'S A PRIMARY CONCERN:

Getting the rope on the equipment without trapping any twist that may have been induced during handling or installation.

## THE PREFERRED TECHNIQUE FOR INSTALLING ROPE ONTO A CRANE.

### 1. UNLOAD ROPE PROPERLY AND RELIEVE ANY TWIST.

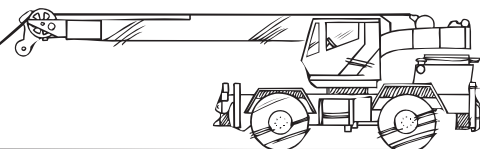
Pull the rope off the shipping reel or unroll it from a shipping coil as shown. (If done improperly, you may kink the rope, which will result in permanent damage to the rope.) Then lay the rope on the ground in a direct line with the boom. This helps release any twist in the rope.



Unreel rope from a shaft supported by two jacks. Uncoil rope by rolling it along ground like a hoop.

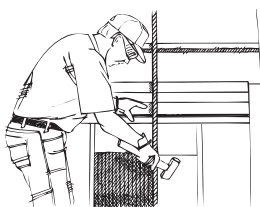
**2. ATTACH ROPE'S END TO DRUM.** Pull the rope over the point sheave and attach the end to the drum. Before making any end attachment, be sure the rope strands are free to adjust. (In other words, make sure the end of the rope is not welded together.)

**3. WIND ROPE ONTO DRUM SLOWLY AND CAREFULLY.** At this point, it isn't necessary to provide additional load other than the weight of the rope being pulled across the ground.



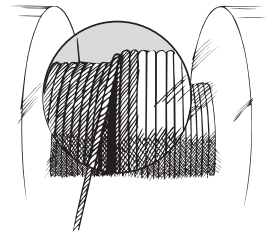
### 4. SPOOL FIRST LAYER TIGHTLY.

It's essential on smooth-faced drums that the first layer is spooled with wraps tight and close together since the first layer forms the foundation for succeeding layers. If need be, use a rubber, lead or brass mallet (but never a steel hammer) to tap the rope in place.



### 5. SPOOL MULTIPLE LAYERS WITH SUFFICIENT TENSION.

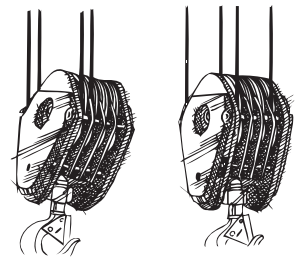
It's very important to apply a tensioning load to the ropes during the rope breaking-in process. (If not, the lower layers may be loose enough that the upper layers become wedged into the lower layers under load, which can seriously damage the rope.) The tensioning load should range from 2 to 3% of the rope's minimum breaking force.



The result of improper tensioning is a "pulling in" of the rope.

### 6. FOR ROPES IN MULTI-PART SYSTEMS:

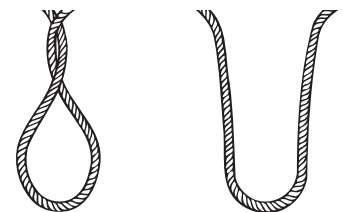
Reeve the traveling block and boomtip sheaves so the rope spacing is maximized and the traveling (hook) block hangs straight and level to help assure block stability. Avoid dead-ending the rope at the traveling block if possible.



Incorrect

Correct

**7. CHECK ROPE FOR TWIST.** With the rope slack, pull enough rope out to allow it to hang in a loop (right). If the rope hangs without twisting together, there is no twist in the rope. If the rope twists together (left), the rope has twist in it. Follow steps shown on next page to relieve twist from the rope.



Twist in rope

No twist

### BREAKING IN YOUR NEW WIRE ROPE.

After installation, you should properly break in your rope, which allows the rope's component parts to adjust themselves to your operating conditions.

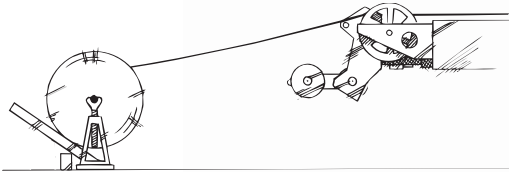
With the boom fully raised – and fully extended if you're using a hydraulic boom – attach a light load at the hook and raise it a few inches off the ground. Allow to stand for several minutes. Then cycle the load between the full “up” and “down” positions several times. Stand back and watch the drum winding and rope travel for any potential problems.

After making the lifts with a light load, increase the load and cycle it up and down a few times. This procedure will train the rope and help assure smooth operation during its useful life.

Ideally, you should run these loads with reeving that lets you place the loads on the block with all rope off the drum except the last three wraps. If this isn't possible, alternate methods must be used to assure proper tensioning of the rope on the drum.

### RIGGING IN TIGHT QUARTERS.

If you can't lay the new rope out on the ground before rigging – and you need to pull it directly from the reel – further steps are necessary. First, you should mount the reel on a shaft through flange holes and on jack stands, making sure you spool as illustrated below. While unspooling, do not allow the reel to “free-wheel.” Brake the reel by applying pressure to a flange. Never apply braking pressure to the rope on the reel – or pass the rope between blocks of wood or other material.



Install from reel top over the point sheave.

### RELIEVING TWIST.

To relieve twist that may be trapped in a rope spooled directly off a reel to the drum, raise the boom to its highest position while letting out the rope until the rope almost touches the ground. Let the rope hang free without added load while standing clear. When twist is fully relieved, proceed with rigging the crane.

### LUBRICATE ROPES OFTEN FOR LONG LIFE.

To properly maintain your rope, the first place to check is for obvious signs of abuse from other parts of the rope system. But the biggest part of maintenance involves regular lubrication to prevent corrosion and to reduce friction between the rope's components as well as the friction between rope and sheaves or drums.

Your rope receives internal lubricant at the factory, but it's not enough to last the rope's entire life due to constant bending over sheaves and drums. The need to keep ropes properly lubricated can't be overemphasized.

### CLEAN ROPES FIRST.

Remove excess dirt, rock dust or other materials that can prevent field-applied lubricants from properly penetrating into the ropes.

### LUBRICATE USING ONE OF TWO METHODS.

One is called manual lubrication such as spray or drip systems that apply lubricant when you want. You can also swab or paint lube into your moving rope by hand, or pour lube onto your rope as it passes a certain point.

The other is called automatic lubrication that drips or sprays lube onto your rope as it passes over a sheave at preselected intervals.

### WHAT LUBRICANT SHOULD YOU USE?

There are two lubricants you should not use. Never apply heavy grease to the rope because it can trap excessive grit and dust, which can externally damage the rope or be forced inside, causing hidden damage. Nor should you apply used “engine oil” because it contains materials that can damage your rope.

The kind and amount of lubricant will vary according to the type and use of your wire rope. But the lubricant should have these traits:

- > Penetrate to the rope core. The best way is to apply at a place where the rope bends, such as over a sheave, exposing the wires and strands to provide a better opening to the core.
- > Contain enough adhesive and film strength to stick to wires in the rope and the spaces around the wires.
- > Be free of acids and alkalis.
- > Resist corrosion.
- > Stay put without being easily washed away.