

## Wire Rope: A Few Hints

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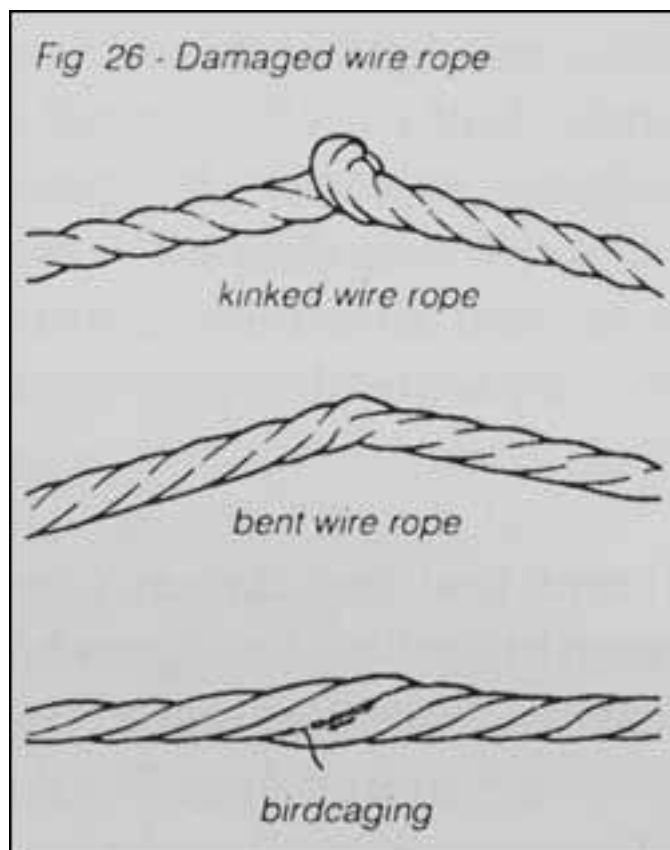
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Wire rope is an integral component of all the Griphoist hand-operated winches used by Trail crews from Maine to Georgia to move heavy rocks and logs while rebuilding or maintaining the Appalachian Trail. These machines require that wire ropes be used properly, so that the hoists will work for many years.

Using Griphoist/Tirfor wire rope in all manual hoists ensures the highest level of performance for these tools. These wire ropes were specially developed and constructed to be used in Griphoists. The unique linear jaw system used by these hoists requires a high-quality, galvanized, stiff wire rope. Substituting a lower quality or more flexible wire rope (*i.e.*, one used on a drum hoist or crane) is likely to result in birdcaging, kinking, or jamming the hoist (see Figure 26).

Often, Griphoist machines are unfairly blamed for malfunctions caused by the substitution of poor-quality wire rope. The Griphoist wire rope sold with a Griphoist machine is an integral part of the hoisting system. Using another brand of wire rope also will void the manufacturer's warranty.

These wire ropes are checked by their suppliers for consistent diameter, rotational resistance, preforming, strength, and over-all quality. This wire-rope selection guide will assist in choosing the correct rope for the hoists being used.



**Figure 26**

<b>Griphoist Products</b>	<b>Wire Rope diameter, in inches (mm)</b>	<b>Wire Rope Construction*</b>
Pull All	3/16 (4.7)	7x7
Super Pull All	1/4 (6.5)	6x19
T-508/TU-17	5/16 (8.3)	4x26
T-516/TU-28	7/16 (11.5)	4x26
T-532/TU-32	5/8 (16.3)	4x26

*This refers to the structure of the rope. For example, a 6x19 wire rope has six strands rotated around themselves, with 19 individual wires making up each strand.*

## Handling, Care, and Inspection

Users of Griphoist equipment can ensure long, efficient operation by using common sense and following these tips:

- Use only Griphoist-specified wire rope (with a 4 x 26 or 6 x 19 wire-rope construction, at least 17 wires per strand, an independent wire rope center, and preformed improved plow steel).
- Always unreel and reel wire rope in a straight line, to prevent kinks (see Figures 24, 25).
- Check that wire rope tip is in good condition and welded round.
- Wire rope should be inspected at least once a month.
- Keep wire rope clean, and lubricate it regularly, using a rag soaked with lightweight motor oil.
- Never let wire rope rub against sharp edges.
- Never use the hoisting wire rope as a sling for lifting or as an anchor line wrapped around a tree.

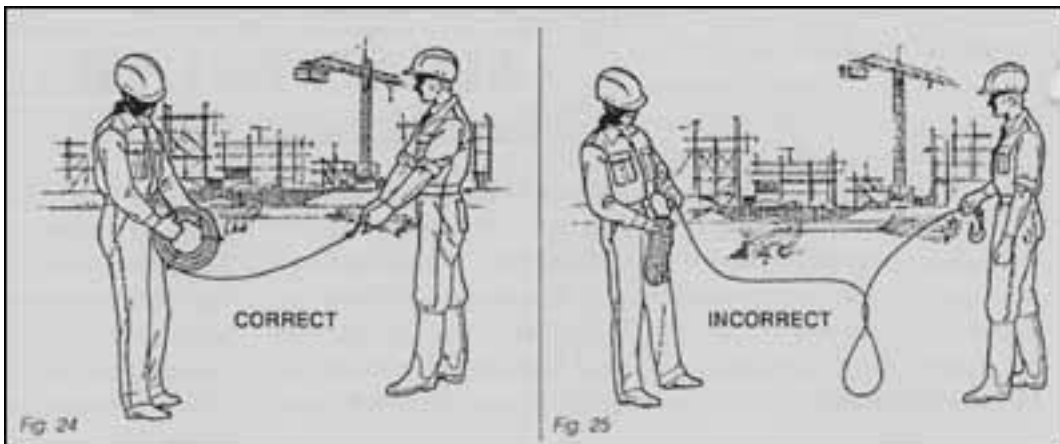


Figure 24

Figure 25

Wire rope should be removed from service and replaced if any of these conditions exist:

- Broken wires or strands
- Excessive corrosion
- Heat damage (indicated by discolored wires)
- The diameter of the wire is reduced by more than 10 percent
- Kinking, crushing, birdcaging, or any other distortion of the structure.

More information on wire-rope care can be found in Griphoist owner manuals or from Griphoist Inc. at (800) 421-0246. Griphoist, a corporate member of the Appalachian Trail Conference since 1992, has donated equipment to ATC's volunteer Trail-crew programs.