

# WIRE ROPE LUBRICATION SYSTEM



## Revision

Date: 9/1/2001

## Process

Code: Navy/Marines: ID-02-06; Air Force: CL01; Army: CLD

Usage: Navy - Low; Marines - Low; Army - Low; Air Force - Low

## Compliance

Impact: Low

Alternative for: Manual and Pressurized Spray Lubricant Application

Applicable EPCRA Targeted Constituents:

N/A

## Overview:

The Wire Rope Lubrication System has been designed as an alternative for the manual cleaning and lubrication of wire ropes. Using the Wire Rope Lubrication System, old lubricant and grit are mechanically scraped from the grooves and surfaces of the wire ropes. Simultaneously, new lubricant is uniformly applied to the cleaned wire ropes surface and injected into the inner core of wires. The new lubricant will reduce wear between individual strands of wire and displace trapped moisture in the wire rope, which is a major cause of corrosion. These two actions help to maintain a high level of confidence in the safety of the wire rope and extend its working life.

Currently, most wire rope maintenance is performed by hand. Shipboard or shore based personnel clean the rope using wire brushes and manually apply new lubricant using mops, rags and brushes. Manual application often means using a low viscosity lubricant that is designed to penetrate to the core by gravity. It is also tedious and requires an inordinate amount of time and labor.

The Wire Rope Lubrication System can clean, scrape and lubricate wire ropes using a higher viscosity lubricant in less time. The benefit of using a higher viscosity lubricant is a longer period of fluid film support protection against internal wire friction and corrosion. The Wire Rope Lubrication System consists of a Groove Cleaner Kit, a Seal and Scraper Plate Kit that fits in the Collar Unit, a Cart/Drum Pump Unit and all the other equipment required to clean and lubricate wire rope. The recommended air pressure settings for various rope travel speeds and lubricant viscosities are provided in the equipment's operating manual.

Each size wire rope requires a correctly sized Seal and Scraper Plate Kit and optional Groove Cleaner Kit. If the user has additional sizes of wire rope that require cleaning and lubrication, the corresponding sized Seal and Scraper Plate Kit and optional Groove Cleaner Kit will need to be ordered. The seal kits slip easily into the lubrication collar and the groovers snap directly onto the wire rope.

## Compliance

### Benefit:

The wire rope lubrication system will prolong the life of metal wire thereby, decreasing the amount of solid waste going to a landfill. The decrease in solid waste helps facilities meet the requirements under **Executive Order 12873** requiring executive agencies (i.e., DOD) to incorporate waste prevention and recycling in their daily operations. In addition, since the system decreases the generation of used oil (the higher viscosity oil last longer) less personnel time is spent managing used oil under **40 CFR 279** or **40 CFR 262**.

The compliance benefits listed here are only meant to be used as a general guideline and are not meant to be strictly interpreted. Actual compliance benefits will vary depending on the factors involved, e.g. the amount of workload involved.

## Materials

### Compatibility:

The Wire Rope Lubrication System is compatible with the wire rope lubricants currently used shipboard and shore-side. The Wire Rope Lubrication System has been added to the US Navy Allowed Equipment List (AEL) and assigned a National Stock Number by the Defense Construction Supply Center.

## Safety and

### Health:

Proper design, operation, and maintenance of the equipment is required for its safe use. Care should be taken when handling lubricants, especially when pressurized. Proper personnel protective equipment is recommended.

Consult your local industrial health specialist, and your local health and safety personnel prior to implementing this technology.

**Benefits:**

- | Increases the working life of wire rope.
- | Reduces maintenance time and labor by as much as 50%.
- | Reduces safety hazards associated with the previous cleaning methods.

**Disadvantages:**

- | Padeye or structural member required as an opposing anchor point.
- | May not be economically effective when cleaning and lubricating shorter runs of wire rope.

**Economic Analysis:**

The economic analysis for the Wire Rope Lubrication System is not complete at this time. The equipment is part of an R&D effort to place pollution prevention equipment shipboard to reduce the quantity of hazardous waste generated and off loaded to the shore facility. Cost benefit data and analysis for this equipment will be made available as it is received from the fleet. Excerpts from customer letters to the vendor indicate that manpower savings of up to 50% may be attainable.

**Approving Authority:**

Approval is controlled locally and should be implemented only after engineering approval has been granted. Major claimant approval is not required.

**NSN/MSDS:**

Product	NSN	Unit Size	Cost	MSDS*
Lube Unit Model JU-120	4930-01-319-0787	ea.	\$6,093.86	
Lube Unit Model JU-120B	4930-01-328-1851	ea.	\$6,712.20	
Lube Unit Model SU-35B	4930-01-424-2197	ea.	\$7,000.00	

*\* There are multiple MSDSs for most NSNs.  
The MSDS (if shown above) is only meant to serve as an example.*

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**Vendors:**

This is not meant to be a complete list, as these are other manufacturers of this type of equipment.

The Kirkpatrick Group, Inc.  
10500 Metric Dr., Suite 124  
Dallas, TX 75243  
Phone: (800) 466-4414  
or (214) 343-4188  
FAX: (214) 343-3288  
URL: <http://www.thekirkpatrickgroup.com>

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URL: <http://www.stottind.com.au/KIRK/KirkIndex.htm>

**Sources:**

*Mr. Daniel Bojorquez, Naval Facilities Engineering Service Center, November 1999.*

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