

The Kirkpatrick Group, Inc.



Catalog

2023

The Kirkpatrick Group, Inc Corporate Video:

Video Link: <https://youtu.be/CaC6oGSWce0>

Palisades Central II

2435 North Central Expressway, Suite 1150
Richardson, Texas 75080 USA

Tel:(972) 509-2468 - Fax (972) 608-3860

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From the desk of

R.T. Kirkpatrick

President

Subject: Some points to consider as you review our product information:

Thank you for your interest in Kirkpatrick Wire Rope Lubrication Systems and Dynagard™ Wire Rope Lubricants. Today, the Kirkpatrick product line is used worldwide in every application where Wire Rope longevity and safety is a prime concern.

Our continued success revolves around our goal to provide our Customers with the most innovative and well-supported method to maintain Wire Ropes available. The impressive testimonials contained in the materials we provide interested parties should speak for themselves. Suffice it to say that most of this information has been collected from third parties as part of their formal evaluation of the performance of our product since we first introduced it to the world market in 1982. Our company did not solicit the evaluations and the conclusions reached were independent of us.

Equally impressive are the Video Links we provide showing our Systems at Customers' Field Applications as they perform actual Wire Rope Preventative Maintenance. Therefore, a very important consideration as the video footage is viewed, is the understanding that we were at our clients' field locations in the first place to document and understand our System's performance that eventually generated design features to optimize its performance for the broadest range of Preventative Maintenance projects. Our footage has not been generated in a staged setting such as a warehouse, as is the case with our competition, using a professional announcer. Our footage has been collected over the 35 years we have been in business and is edited to leave in the discussions of actual independent non-Kirkpatrick field personnel as they work through the process. There are no scripts or staged discussions among salespersons as we have seen on the internet with our competition. Non-narrative dialog coupled with titling has proven to be of tremendous importance in allowing individuals such as you gain the clearest understanding possible of the effectiveness of our Systems and the understanding of the pressure lubrication process.

As a result, we have been able to design the most efficient Wire Rope Lubrication Systems in the world today. We understand what is required to provide you the right System for your specific application before your purchase and then to maximize your use of that System once it is received. We are as far away as a telephone, e-mail or fax and we can provide the immediate answers you require.

To further support our clients, we also keep a large parts inventory and can ship the same day if it is on the shelf and within two weeks if we are required to manufacture a specific part. Specialized parts made from new tooling required to accommodate a customized requirement may take a little longer. However, even with that, we can beat our competition's delivery standards.

Please feel free to contact us for any clarification you may require and thank you again for your consideration.

Best Regards,

The Kirkpatrick Group, Inc.

Kirkpatrick Wire Rope Lubrication Systems-Dynagard™ Environmental Wire Rope Lubricants

Palisades Central II 2435 North Central Expressway, Suite 1150 Richardson, Texas 75080

(972) 509-2468; Toll Free (800) 466-4414; FAX (972) 608-3860

www.thekirkpatrickgroup.com - sales@thekirkpatrickgroup.com

The Kirkpatrick Group, Inc.

Testimonials

The Old cable cleaning method employed solvents and scraping with a wire brush to remove old grease. Afterward the new grease was applied by hand.

The process was time consuming and dangerous. A Wire Rope Lubrication System is now used that automatically removes the old grease and re-applies new grease simultaneously.

This process has reduced work time from 6 man hours to 30 minutes for 450 Feet of cable, saving a total of 1,080 hours annually at savings of nearly "\$143,000 USD"

**PS AFLOAT Award
Submittal Commander
Naval Base Norfolk**

Secretary of the Navy

"The Manual process required 6 workers and 2 full days to complete the cleaning and lubrication of a set of crane cables. Utilizing the Kirkpatrick Wire Rope Lubrication System, the process required 3 workers and 4 hours. Annual cost savings \$ 366,356. Breakeven point 10.5 Days"

**Chief of Naval Operations
Pilot**

**Ergonomics Program
Evaluation**

We provide your company with the highest level of innovation, safety, and support for the care, and maintenance of your Wire Ropes. This generates longevity for your Wire Rope that no manual method used can achieve.

Since 1982, when we first introduced our products to the world market, we have consistently created the most advanced, safe, and well-supported method for Wire Rope Preventative Maintenance. Over the years since, our continued leadership has proven to make our Customers' job much easier and cost effective on the broadest possible scale. In honor of this three-decade tradition, we will continue to announce further innovations, with several Patent Pending design features on the horizon. We never stop looking for improved design opportunities based on our own as well as our Customers' first hand field experience.

Kirkpatrick Wire Rope Lubrication System's integrated design provides the most efficient way to field dress any configuration of Wire Rope in any Preventative Maintenance Schedule. Our Lubrication Systems accomplish this by scraping a Wire Rope's Groove Pattern and outer circumference clean of debris while simultaneously applying a new coat of Wire Rope Lubricant under pressure to the surface and into the internal strands. This process is all accomplished in one pass, generating tremendous savings in time, labor costs, and Wire Rope Lubricant usage. Scraper Plates and Groove Cleaners used with the Kirkpatrick System are calibrated to fit the specific Diameter and match the number of outer strands and lay pattern of the Wire Rope for which they are used. An accurate fit to the Groove Pattern efficiently removes product build-up and debris within each distinct Groove Pattern. Our revolutionary proprietary laser created tooling makes the finished Groove Cleaners as close to a perfect fit as is possible.

Consequently, Dynagard™ Environmental Wire Rope Lubricants are uniformly applied to the newly cleaned surface, penetrating into any open spaces within the Grooves and inner strands that allow them to do so. The goal in this process is to maintain the structural integrity of the original factory applied lay-up material for as long as possible. Therefore, using a lubricant coating product such as Dynagard™ that marries well to the initial lay-up material substantially increases the working life of the layup material as well as the Wire Rope. Superior Wire Rope Maintenance happens because of the aforementioned and as the Wire Rope passes through a 100% pressurized immersion within the Lubrication Collar's Seal Center Chamber. Surface and internal moisture (trapped within the strands) is displaced as the pressurized Wire Rope Lubricant coating is being applied. Our Wire Rope Lubrication Systems are functional with both low and high viscosity coatings.

What is unique about the impressive testimonials we provide throughout this Catalog and our Website is that they have all come to us through third party evaluations. These formal independent evaluations document how well our Systems perform in the field across multiple industries.



"Diligent use of Pressure Wire Rope Lubrication Systems can increase the service life of Wire Rope. Systems with a proven history of performance include the Kirkpatrick Group, Inc."

United States Coast Guard Naval Engineering Manual

Why Kirkpatrick?

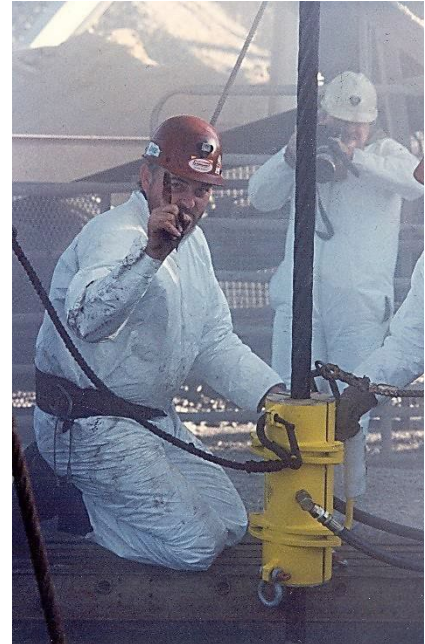
Experience: We were the first to introduce this technology to the world market and have over 36 years of field experience in Wire Rope Pressure Lubrication.

Expertise: We are experts at troubleshooting your applications. This is due to our long term direct onsite field experience coupled with our participation in many different third-party evaluations of our products.

Advanced Design: Our Systems continue to evolve to accommodate the broadest range of field applications in the world.

Proven Customer Support Record: We excel at worldwide Customer service and assure timely Systems, Parts, and Wire Rope Lubricant availability.

Approvals for Use: We have received use approvals of the United States Coast Guard, Navy, Army, Army Corps of Engineers, NATO, Canadian Coast Guard, Canadian Navy and Australian Navy along with many other worldwide organizations.



Why Pressure Lubricate with Kirkpatrick?

100% pressurized and controlled single pass immersion many times faster than manual applications, with better, longer lasting results.

Labor Cost Reduced & Safety Improved - Reduced Waste and Downtime.

Cleans and lubricates a Wire Rope's Outer Circumference and Groove Pattern of penetration blocking debris and moisture / water.

Less Lubricant waste and more fluid film support between the strands preventing advanced friction wear.

1

Section-ONE Standard Model Wire Rope Lubrication Systems

“Navy Public Work Department”

San Diego prevents WMSD’s:

“Increases productivity, and reduces costs with automated cleaning and Wire Rope Lubrication System. (Kirkpatrick Model SU35B Wire Rope Lubricator)”

“Manual Wire Rope Preventative Maintenance of all of the Ship’s wires was taking a week to complete. Now, since receiving the Model SU35B Wire Rope Lubricator, the time to complete the project has been reduced to one day with fewer shipboard personnel involved.”

USS Rushmore (LSD 47), BM1 Irwin



United States Guard Cutter Clamp
Galveston, Texas USA
(WLIC 75302) Construction Tender
Model SU35B
Wire Rope Lubricant: Dynagard Blue



System Shown: Model SU35B



Argent Marine, James River, Virginia USA
38mm Mooring Line Maintenance.
Model SU120
Wire Rope Lubricant: Dynagard Blue

Standard Model Wire Rope Lubrication Systems

Standard Model Wire Rope Lubrication Systems

- Available in four models accommodating Wire Rope, Seal and Scraper Plate Diameters to 1-7/8 Inch (48mm).
- Each Model is provided with one Diameter Seal and Scraper Plate Kit and one Groove Cleaner Kit as part of the Complete System.
- The Customer specifies the Seal Diameter and Groove Cleaner Diameter & Lay Configuration required when placing their order.

Light Weight Hinged Proprietary Formulation Aluminum Lubrication Collar

- Weight 22 Pounds / 9 Kilograms
- Accommodates Wire Rope / Seal Kit Diameters up to 1-7/8 Inch (48mm)
- Hinged design feature provides safe set-up and maneuverability in cramped or elevated worklocations. This feature protects against any parts accidentally falling and causing injury to personnel below.
- High grade specially formulated aluminum provides durable yet flexible protection against over tightening.
- A Discharge Tube acts as a handle for safety reasons as well as allowing excess Lubricant to evacuate into a Catch Container. This feature enables the Operator to verify that the Lubrication Collar has become filled so that Wire Rope Travel can commence.
- A Recycling Valve is attached to the Discharge Tube Nipple allowing the user the capability to redirect Lubricant Flow back to the Wire Rope Entrance Port of the Lubrication Collar for optimized Consumption and Pressurization when the Valve is in the closed position.
- A Clear Discharge Hose is attached to the Recycling Valve Nipple and once Wire Rope Lubricant can be seen exiting out the Hose; the Recycling Valve can either be closed for recycling or left open for evacuation to a receiving Bucket / Container.
- Two 3/8 Inch Shackles.

Standard Seal & Scraper Plate Kit

- Weight 5 Pounds / 2.25 Kilograms
- Customer specifies the Diameter required when ordering.
- Lubrication Collar Seal Halves fit neatly around the Wire Rope allowing optimum penetration.
- Four-Piece Metal Scraper Plate sets create a rotational base for the Groove Cleaner on the Wire Rope inbound end and smooth the newly applied coating on the Wire Rope as it exits the Lubrication Collar. Standard System Seals consist of specially formulated, durable Polyurea Materials, that provide better long-term protection against chemical and friction wear over the less durable Nitrile Material typically used in seals produced by our competition.
- Seal Lubrication Chamber design is sized to accommodate a range of Wire Rope Diameters. This feature provides optimum internal pressure to maintain controlled Lubricant Penetration, Consumption, and Coating Levels.

- Proprietary Seal Interlock Design increases penetration and coating performance by directing Lubricant through and around hard to penetrate Wire Rope as it travels through the Seal Center Lubrication Chamber toward each end of the Lubrication Collar

Stainless Steel Lubricant Flow Control Valve with Brass Quick Coupler Nipple

- The Operator has control over the volume of the Wire Rope Lubricant Flow to the Lubrication Collar and can easily adjust for any increase or decrease in Wire Rope Travel Speed as well as available Air Pressure.

50:1 Ratio Pump: Maximum 128 Ounces 3.8 Kilograms per Minute Lubricant Delivery System. Weight 30/40 Pounds/13.5/18 Kilograms.

- High volume feed keeps consistent pressurization at faster Wire Rope Travel Speeds...
- Stated Flow Specification is based on a maintained 120 PSIAir Pressure setting using an NLGI Grade 1 (one) grease consistency at 80°F/27°C.

Follower Plate

- Prevents Air Pockets as the lubricant level lowers in the pail.

Pail/Drum Cover

- Covers the top of pails and drums and keeps the Pump centered and secure during operation.

Air Components(FRL)

- 150 PSI rated, piggybacked, single piece FRL component regulates available Air Pressure, filters contaminants entering the air motor and lubricates the air supply. This prevents time-consuming air motor icing during longer Wire Rope runs.

10 Feet Length 2,500 PSI Rated Lubricant Supply Hose

- Brass Push to Pull Fittings for time saving and safequick connect and disconnect function.
- Optional lengths are also available.

Durable Storage Case

- Weight 20 Pounds / 9 Kilograms
- Military and Law enforcement approved

Optional Manual Stripper Assembly with Centering Bushing:
See Section 6.

Kirkpatrick Standard Model SU35B

Wire Rope Lubrication System

US/NATO: NSN 4930-01-424-2197 NSN Terminology: Lubricating Unit
Standard System Fit for 35 Pound / 15.75 Kilogram / 5 Gallon Sized Pail

Each Standard System Model Accommodates Wire Rope / Seal Kit Diameters to 1-7/8 Inch (48mm)

1	High Grade, Heavy Duty, Light Weight Aluminum Lubrication Collar Accommodates Seal & Wire Rope Diameters to 1-7/8 Inch (48mm)
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
2	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	50:1 Ratio Pump Package - (Includes One Pump Repair Kit) <ul style="list-style-type: none"> 8 Pound / 3.6 Kilograms per minute Maximum Flow Rate All Standard Systems are supplied with one Pump Repair Kit
1	35 Pound / 15.75 Kilogram / 5 Gallon Sized Follower Plate
1	35 Pound / 15.75 Kilogram / 5 Gallon Sized Pail Cover
1	Air Regulator / Air Filter / Oiler Assembly with Gauge. 150 PSI Rated
1	High Pressure Rated Stainless Steel Lubricant Flow Control Valve
1	2,500 PSI Rated, 10 Foot / 3-Meter Lubricant Supply Hose. <ul style="list-style-type: none"> Complete with Brass Push to Pull Quick Couplers. Custom Lengths Available Upon Request.
1	One Sample Pail of Environmentally Acceptable (EAL) Dynagard Blue™ or Dynagard Blue CSS13™ Wire Rope Lubricant
1	Heavy Duty Storage Case Approved by Military & Law Enforcement

Kirkpatrick Standard Model SU120

Wire Rope Lubrication System

US/NATO: NSN: 4930-01-462-6338 NSN Terminology: Lubricating Unit
Standard System Fit for 120 Pound / 54 Kilogram /16 Gallon Mid-Sized Drums:

Each System Accommodates Wire Rope / Seal Kit Diameters up to 1-7/8 Inch (48mm)

1	High Grade, Heavy Duty, Light Weight Aluminum Lubrication Collar Accommodates Seal & Wire Rope Diameters to 1-7/8 Inch (48mm)
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
2	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	50:1 Ratio Pump Package <ul style="list-style-type: none"> 8 Pounds / 3.6 Kilograms per minute Maximum Flow Rate All Standard Systems are supplied with one Pump Repair Kit
1	120 Pound / 54 Kilogram / 16 Gallon Sized Follower Plate
1	120 Pound / 54 Kilogram / 16 Gallon Sized Pail Cover
1	Air Regulator / Air Filter/Oiler Assembly with Gauge. 150 PSI Rated
2	High Pressure Rated Stainless Steel Lubricant Flow Control Valve <u>An additional Back-Up/Replacement Lubricant Flow Control Valve is provided at no additional charge as added insurance against job delay in the event damage occurs to the component</u>
1	2,500 PSI Rated, 10 Foot / 3-Meter Lubricant Supply Hose. <ul style="list-style-type: none"> Complete with Brass Push to Pull Quick Couplers. Custom Lengths Available upon request.
1	One Sample Pail of Environmentally Acceptable (EAL) Dynagard Blue™ or Dynagard Blue CSS13™ Wire Rope Lubricant
1	Heavy Duty Storage Case Approved by Military & Law Enforcement

Kirkpatrick Standard Model SU400

Wire Rope Lubrication System

Standard System Fit for 400 Pound / 180 Kilogram / 55 Gallon / Sized Drums
Each System Accommodates Wire Rope / Seal Kit Diameters to 1-7/8 Inch (48mm)

1	High Grade, Heavy Duty, Light Weight Aluminum Lubrication Collar Accommodates Seal & Wire Rope Diameters to 1-7/8 Inch (48mm)
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
1	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	50:1 Ratio Pump Package: 8 Pounds / 3.6 Kilograms per minute Maximum Flow Rate All standard Systems are supplied with one Pump Repair Kit
1	400 Pound / 180 Kilogram / 55 Gallon Sized Follower Plate
1	400 Pound / 180 Kilogram / 55 Gallon Sized Drum Cover
1	Air Regulator / Air Filter / Oiler Assembly with Gauge. 150 PSI Rated
1	High Pressure Rated Stainless Steel Lubricant Flow Control Valve
1	2,500 PSI Rated, 10 Foot / 3-Meter Lubricant Supply Hose. <ul style="list-style-type: none"> Complete with Brass Push to Pull Quick Couplers. Custom Lengths Available Upon Request.
1	One Sample Pail of Environmentally Acceptable (EAL) Dynagard Blue™ or Dynagard Blue CSS13™ Wire Rope Lubricant

Kirkpatrick Standard Model SU400C

Wire Rope Lubrication System

High Flow Standard System Fit for 400 Pound / 180 Kilogram / 55 Gallon / Sized Drums
High Grade, Heavy Duty, Light Weight Aluminum Lubrication Collar

- Accommodates Wire Rope and Seal Kit Diameters to 1-7/8 Inch(108mm)

1	Heavy Duty, Light Weight Aluminum Lubrication Collar Wire Rope Diameters to 1-7/8 Inch (48mm)
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
1	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	50:1 Ratio Pump Package 24 Pound / 10.9 Kilograms per minute Maximum Flow Rate
1	400 Pounds / 180 Kilogram / 55 Gallon Drum Sized Follower Plate
1	400 Pounds / 180 Kilogram / 55 Gallon Drum Sized Pail Cover
1	150 PSI Rated Air Regulator/Air Filter/Oiler Assembly with Gauge.
1	High Pressure Rated Stainless Steel Lubricant Flow Control Valve
1	2,500 PSI Rated, 10 Foot / 3-Meter Lubricant Supply Hose. <ul style="list-style-type: none"> • Complete with Brass Push to Pull Quick Couplers. • Custom Lengths Available Upon Request.
1	One Sample Pail of Environmentally Acceptable (EAL) Dynagard Blue™ or Dynagard Blue CSS13™ Wire Rope Lubricant
1	Heavy Duty Storage Case Approved by Military & Law Enforcement



Since 1982:

**Innovating the Wire Rope Maintenance Industry Worldwide
Kirkpatrick Introduces Its Newest Innovation:
Mongoose MINI Wire Rope Lubrication System**

Manufactured of Proprietary, Light Weight Indestructible Composite Material.

- **Lubrication Collar Weight (6 ½ Pounds).**
- **Easy and Safe Maneuverability at Heights.**
- **Accommodates Seal and Wire Rope Diameters to 48MM**
- **Internal Pressurization surpasses any other MINI.**
- **Seal Material Life has achieved 35 Years without Chemical Wear Deterioration**
- **High Volume Pump Package guarantees consistent pressurization**
- **Seal to Wire Rope fit are maximized with a 1.5mm Compression Factor**
- **44 Square Inch sealing area generates up to 750 PSI Pressurization for optimal penetration.**



AVAILABLE MONGOOSE SYSTEM MODELS

Note: All Mongoose Systems are equipped with the same components as our normal System Configuration.

- **MINI MODEL MU35B: Fit for 5-Gallon (35 Pound/16.75Kgs) Pails**
- **MINI MODEL MU120: Fit for 16-Gallon (120 Pound/54Kgs) Mid-Sized Drum (Keg)**
- **MINI MODEL MU400: Fit for 55-Gallon (400Pound/180Kgs) Full-Sized Drum**
- **MINI MODEL MU400C: Fit for 55-Gallon (400 Pound/180Kgs) Full-Sized Drum**



AVAILABLE MONGOOSE SEAL KIT DIAMETERS WITH PART NUMBERS

Seal Kit Part Number	Diameter Range: Inches	Diameter Range: Millimeters
9110-M-18	1/8 Inch	3mm-4mm
9110-M-14	1/4 Inch	5mm-6mm
9110-M-516	5/16 Inch	7mm-8mm
9110-M-38	3/8 Inch	9mm-10mm
9110-M-716	7/16 Inch	11mm-12mm
9110-M-12	1/2 Inch	12mm-13mm
9110-M-916	9/16 Inch	13mm-14mm
9110-M-1932	19/32 Inch	15mm-16mm
9110-M-58	5/8 Inch	16mm-17mm
9110-M-2132	21/32 Inch	17mm-18mm
9110-M-1116	11/16 Inch	18mm-19mm
9110-M-34	3/4 Inch	19mm-20mm
9110-M-1316	13/16 Inch	20mm-21mm
9110-M-2732	27/32 Inch	21mm-22mm
9110-M-78	7/8 Inch	22mm-23mm
9110-M1516	15/16 Inch	24mm
9110-M1	1 Inch	25mm
9110-M1-16	1-1/16 Inch	26mm
9110-M1-18	1-1/8 Inch	28mm-29mm
9110-M1-316	1-3/16"	30mm
9110-1-14	1-1/4 Inch	32mm
9110-1-38	1-3/8 Inch	33mm-34mm
9110-M1-716	1-7/16 Inch	35mm-36mm
9110-M1-12	1-1/2 Inch	38mm
9110-M1-916	1-9/16 Inch	39mm-40mm
9110-M1-58	1-5/8 Inch	41mm
9110-M1-34	1-3/4 Inch	44mm-45mm
9110-M1-78	1-7/8 Inch	48mm

Special Note:

Prior to Reviewing System Information:

All Kirkpatrick Wire Rope Lubrication Systems are provided as an all-inclusive package. There is no itemized charge for each of the components listed in the Main System Package. This includes back-up support components, such as a second Lubricant Flow Control Valve. All Complete Packages include training in the use of all Kirkpatrick System Models at our Dallas, Texas USA Office Training Facility. This is done at no additional charge.



Singapore Distributor/Voss (F.E.) Pte Ltd



Australian Distributor/Stott Industrial Supplier



United States Coast Guard Training in the use of the Kirkpatrick Model SU35B



Explaining Seal Assembly to Our Dutch Distributor: J. Van Der Gaag

2

Section-TWO Jumbo Model Wire Rope Lubrication Systems

Kirkpatrick Jumbo Wire Rope Lubrication Systems are provided in Pail Size, Mid-Size Drum, and Full Size Drum Configurations

Their maximum pumping capacities at 24 Pounds / 10.9 Kilograms per minute can keep up with faster Wire Rope Travel Speeds involving large Diameter Wire Ropes. These high flow capacities generate optimal pressurization inside the internal Seals for the deepest possible penetration and coating of individual Wire Strands. This also provides excellent fluid film support protection against friction wear from strand rubbing.

Testimonials

US NAVY Supervisor of Salvage Evaluation of the Kirkpatrick Model JU120 Wire Rope Lubricator

- Mr. Raymond Beaudreau, a civilian consultant for Military Sealift Command, requested that the USNS Papago's rusty and kinked 2-1/4 Inch (58mm) Tow Wire be used for the cleaning operation. The Tow Wire was re-spoiled at approximately 150 Feet (45 Meters) per minute through the Kirkpatrick Model JU120 Wire Rope Lubrication System.

Results:

"Examined 2-1/4 (58mm) Inch Tow Wire and found it scraped clean of rust and old Lubricant. New Lubricant had penetrated every visible part of the Wire Rope. The System performed well and achieved good results on the substantially degraded 2-1/4 (58mm) Inch Tow Line. A job that took days was completed in a few hours."

- **Teck Corona, Gold Mine**
2 Inch (52mm) Wire Rope used in the up shaft ventilation was being lubricated at 50 feet to 60 feet per minute using a grease funnel installation (Defined: Pouring lubricant on the Wire Rope manually). Since purchasing the Kirkpatrick System, Lubrication has been increased by 100%. Mine personnel estimates that the life of their Wire Rope has increased by 50% to 90%.

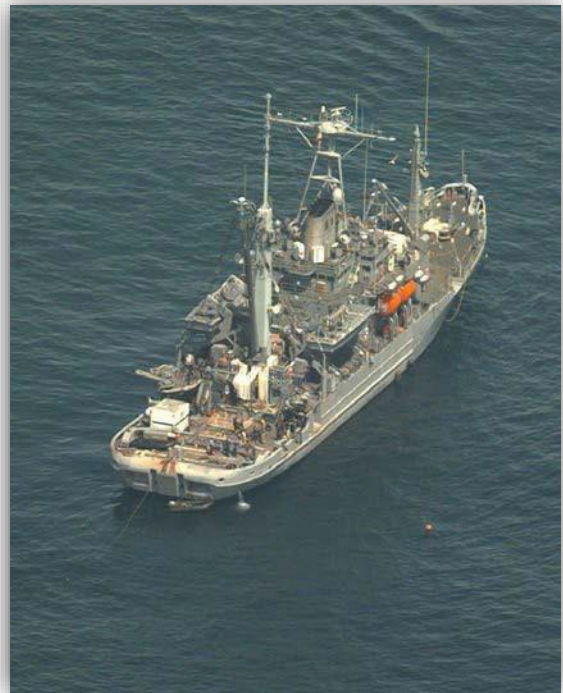


Historical Fact:

The Kirkpatrick Model JU120 System was flown overnight to Martha's Vineyard on July 17, 1999 by the United States Navy to be used on the Salvage Vessel USS Grasp's 2-1/4 Inch (Towline) prior to lifting John F. Kennedy Jr's. Airplane off of the bottom of the ocean. The main concern in the mission was that they could not risk a broken Wire Rope in the middle of the lift. The JU120 Jumbo System gave them that added insurance. Before this project, they had integrated (172) Model JU120 Systems into the fleet.



Model JU120 in Operation Shipboard



USS Grasp (ARS- 51)

Martha's Vineyard, Massachusetts, USA

Complete Jumbo System Model Shown JU120



Jumbo Model Wire Rope Lubrication Systems

- Jumbo Systems allow the user the capability of servicing a broader range of Wire Rope Diameters and Wire Rope Travel Speeds due to a larger Lubrication Collar and the higher flow rate of the Pump.
- Each Jumbo System accommodates Wire Rope, Seal and Scraper Plate Diameters from 3/8 Inch (9.5mm) to 4- 1/4 Inch (108mm).
- Each System is provided with one Diameter Seal and Scraper Plate Kit and one Groove Cleaner Kit and one Manual Stripper Assembly as part of the Complete System Package.
- Customers specify the Diameter, number of Number of Outer Strands and Lay Direction of their Wire Rope when ordering their System.

Light Weight Hinged Proprietary Formulation Aluminum Lubrication Collar

- Weight 40 Pounds / 18 Kilograms
- Accommodates Wire Rope / Seal Kit Diameters up to 4-1/4 Inch (108mm)
- Hinged design feature provides safe set-up and maneuverability in cramped or elevated work locations. This feature protects against any parts accidentally falling and causing injury to personnel below.
- Proprietary High Grade specially formulated aluminum provides durable yet flexible protection against over tightening.
- A Discharge Tube acts as a handle for safety reasons as well as allowing excess Lubricant to evacuate into a Catch Container. This feature enables the Operator to verify that the Lubrication Collar has become filled so that Wire Rope travel can commence.
- A Recycling Valve is attached to the Discharge Tube Nipple allowing the user the capability to redirect Lubricant Flow back to the Wire Rope Entrance Port of the Lubrication Collar for optimized Consumption and Pressurization when Valve is in the closed position.
- A Clear Discharge Hose is attached to the Recycling Valve Nipple and once Wire Rope Lubricant can be seen exiting out the Hose; the Recycling Valve can either be closed for recycling or left open for evacuation to a receiving Bucket / Container.
- Two 5/8 Inch shackles.

Jumbo Seal & Scraper Plate Kit

- Weight 16 Pounds / 8 Kilograms
- The Lubrication Collar Seal Halves fit securely around the Wire Rope generating optimum penetration.
- Four-Piece Metal Scraper Plate Set creates a rotational base for the Groove Cleaner and smooths the newly applied coating on the Wire Rope as it exits the Lubrication Collar.
- Jumbo System Seals consist of specially formulated, durable polyurea materials, which provide better long-term protection against chemical and friction wear over the less durable Nitrile materials typically used in other Wire Rope Servicing applications. A compression factor of 1 to 2 Millimeters also allows for better fit to oversized Wire Ropes.
- Seal Lubrication Chamber design is sized to accommodate several different ranges of Wire Rope Diameters.

This feature provides optimum internal pressure to maintain controlled Lubricant penetration no matter what the Diameter and configuration of the Wire Rope.

- Proprietary Seal interlock design increases penetrating and coating performance by directing Lubricants through and around hard to penetrate Wire Ropes from the Center Lubrication Chamber toward each end of the Lubrication Collar.

Groove Cleaner Kits

- Weight 1 Pounds / .45 Kilograms
- Cleans Wire Rope Groove pattern and the outer circumference of debris for optimal penetration and coating inside the Lubrication Collar. Smooth Bore Groover design can be substituted for non-spin or multi-strand Wire Rope Groove Cleaner Kits.
- Each Kit contains two specially designed cleaners (4 parts total). Customers always specify the Diameter, number of Number of Outer Strands and Lay Direction of their Wire Rope at the time they place their order.

High PSI Rated Stainless Steel Lubricant Flow Control Valve

- The Operator has control over Lubricant Flow to the Lubrication Collar and can adjust for any increase or decrease in Wire Rope travel speed as well as available Air Pressure.

40:1 Ratio Pump Package: (Fit for 35 / 120 / 400 Pound Size Pails or Drums): Produces maximum 24 Pound / 10.9 Kilogram per minute Lubricant Flow Rate at 120 PSI.

- Weight 55/65/75 Pounds / 25/30/34 Kilograms
- High volume feed keeps consistent pressurization at high Wire Rope Travel Speeds utilizing larger Wire Rope Diameters.
- Flow specification is based on a maintained 80 PSI Air Pressure setting utilizing NLGI Grade 1 (one) grease consistency at 80° F / 27° C.

Follower Plate

- Prevents Air Pockets as the Lubricant level lowers in the pail or drum container.

Pail/Drum Cover

- Covers the top of Pails and Drums and keeps the Pump Air Motor centered and secured during operation.

Air Components (FRL)

- Piggybacked 150 PSI rated, single piece FRL component regulates available Air Pressure, filters contaminants entering the Air Motor and lubricates the Air Supply preventing time-consuming Air Motor icing during longer Wire Rope runs

2,500 PSI Rated, 10 Ft. Length Twin Feed Duo-Lube Lubricant Supply Hose

- Feeds Lubricant into both sides of the Lubrication Collar to better accommodate larger Diameter Wire Ropes
- Brass push to pull fittings for time saving and safe quick connect and disconnect function.
- Optional lengths are also available.

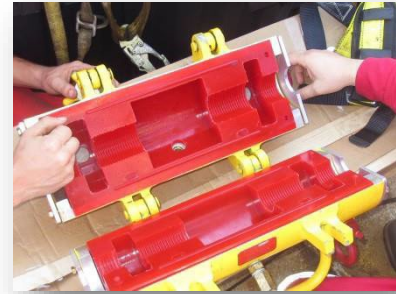
Durable Storage Case:

- Weight 20 Pounds / 9 Kilograms Military and Law Enforcement Approved
- Optional: Manual Stripper Assembly with Bushing

Optional Manual Stripper with Centering Bushing. See Section 6.

Jumbo Seal & Scraper Plate Kits

- Weight 16 Pounds / 7.2 Kilograms
- Customers specify the Diameter of the Wire Rope.
- The Lubrication Collar Seal Halves fit securely around the Wire Rope generating optimum pressurization to maximize penetration.
- Two-piece metal Scraper Plate sets (2 sets provided) create a rotational base for the Groove Cleaners on the Wire Rope Inbound side and smooth the newly applied coating onto the Wire Rope surface as it exits the Lubrication Collar.
- Jumbo System Seals consist of specially formulated, durable polyurea materials, which provide better long-term protection against chemical and friction wear over the less durable Nitrile materials typically used in other Wire Rope servicing applications. A compression factor of 1 to 2 Millimeters also allows for better fit to oversized Wire Ropes.
- Seal Lubrication Chamber design is sized to accommodate several different ranges of Wire Rope Diameters. This feature provides optimum internal pressure to maintain controlled Lubricant penetration no matter what the diameter of the Wire Rope.
- Proprietary Seal interlock design increases penetration and coating performance by directing Lubricants through and around hard to penetrate Wire Ropes from the Centered Lubrication Chamber toward each end.



Kirkpatrick Jumbo Model JU35 Wire Rope Lubrication System

Jumbo System: Fit for 35 Pound / 15.75 Kilogram / 5 Gallon Sized Pails
Accommodates Wire Rope / Seal Diameters up to 4-1/4 Inch (108mm)

1	Heavy Duty, Light Weight Aluminum Lubrication Collar Wire Rope Diameters to 4-1/4Inch (108mm) Twin Sided (Duo lube) Feed Design
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
1	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two, as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	Manual Wire Rope Stripper and Centering Bushing (Optional) Accommodates Wire Rope Diameters up to 52mm (MS-9110) or 108mm (MS-9111) <u>The Centering Bushing should match the Wire Rope / Seal Kit Diameter.</u>
1	40:1 Ratio Pump (Fit for 35 Pound / 5 Gallon Size Drums) 24 Pound / 10.9 Kilograms per minute maximum flow rate at 120 PSI Air Setting.
1	35 Pound / 15.75 Kilogram / 5 Gallon Sized Follower Plate
1	35 Pound / 15.75 Kilogram / 5 Gallon Sized Pail Cover
1	Air Regulator/ Filter/Oiler Assembly with Gauge, 150 PSI Rated
1	High PSI Rated Stainless Steel Lubricant Flow Control Valve
1	2,500 PSI Rated 10 Foot / 3-Meter Lubricant Supply Hose <ul style="list-style-type: none"> • Complete with Brass Push to Pull Quick Couplers • Custom Lengths Available Upon Request.
1	3 foot / .91-meter Duo-Lube Assembly Hose to accommodate the twin feed requirement of the Jumbo Lubrication Collar-2,500 PSI Rated with Brass Push to Pull Quick Coupler Connections
1	One Sample Pail of Environmentally Acceptable (EAL) Dynagard Blue™ or Dynagard Blue CSS13™ Wire Rope Lubricant
1	Heavy Duty Storage Case Approved by Military & Law Enforcement

Kirkpatrick Jumbo Model JU120

Wire Rope Lubrication System

U.S. / NATO National Stock Number Model JU120 Complete System: NSN: 4930-01-319-0787:

U.S. / NATO National Stock Number Model JU120P Replacement Pump: NSN: 4930-01-313-8773

Stock System Terminology for both items: Lubricating Unit

1	Heavy Duty, Light Weight Aluminum Lubrication Collar <ul style="list-style-type: none"> Wire Rope Diameters to 4-1/4 Inch (108mm) Two-sided (Duo lube) Feed Design
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
1	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two, as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	Manual Wire Rope Stripper and Centering Bushing (Optional) Accommodates Wire Rope Diameters up to 52mm (MS-9110) or 108mm (MS-9111) <u>The Centering Bushing should match the Wire Rope / Seal Kit Diameter.</u>
1	40:1 Ratio Pump (Fit for 120 Pound Size Drums) 24 Pound / 10.9 Kilogram per minute maximum flow rate at 120 PSI Air Setting
1	120 Pound / 54 Kilogram / 16 Gallon Sized Follower Plate
1	120 Pound / 54 Kilogram / 16 Gallon Sized Drum Cover
1	Air Regulator/ Filter/Oiler Assembly with Gauge. 150 PSI Rated
1	High PSI Rated Stainless Steel Lubricant Flow Control Valve
1	2,500 PSI Rated 10 Foot / 3-Meter Lubricant Supply Hose <ul style="list-style-type: none"> Complete with Brass Push to Pull Quick Coupler Custom lengths available upon request.
1	3 foot / .91-meter Duo-Lube Assembly Hose to accommodate the twin feed requirement of the Jumbo Lubrication Collar-2,500 PSI Rated with Brass Push to Pull Quick Coupler Connections
1	One Sample Pail of Environmentally Acceptable (EAL) Dynagard Blue™ or Dynagard Blue CSS13™ Wire Rope Lubricant
1	Heavy Duty Storage Case Approved by Military & Law Enforcement

Kirkpatrick Jumbo Model JU400

Wire Rope Lubrication System

Jumbo System: fit for 400 Pound / 180 Kilogram/ 55 Gallon Sized Drums

Note: This System is the same operationally as the JU120 except it is for full-size drums.

1	Heavy Duty, Light Weight Aluminum Lubrication Collar Wire Rope Diameters to 4-1/4 Inch (108mm) Two-sided (Duo lube) Feed Design
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
1	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two, as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	Manual Wire Rope Stripper and Centering Bushing (Optional) Accommodates Wire Rope Diameters up to 52mm (MS-9110) or 108mm (MS-9111) <u>The Centering Bushing should match the Seal/Wire Rope Diameter.</u>
1	40:1 Ratio Pump 24lb / 10.9 Kilograms per minute maximum flow rate at 120 PSI Air Setting.
1	400 Pound / 180 Kilogram / 55 Gallon Sized Follower Plate
1	400 Pound / 180 Kilogram / 55 Gallon Sized Drum Cover
1	Air Regulator/ Filter/Oiler Assembly with Gauge. 150 PSI Rated
1	High PSI Rated Stainless Steel Lubricant Flow Control Valve
1	2,500 PSI Rated 10 Foot / 3-Meter Lubricant Supply Hose <ul style="list-style-type: none"> Complete with Brass Push to Pull Quick Couplers Custom Lengths Available Upon Request.
1	3 foot / .91-meter Duo-Lube Assembly Hose to accommodate the twin feed requirement of the Jumbo Lubrication Collar-2,500 PSI Rated with Brass Push to Pull Quick Coupler Connections
1	One Sample Pail of Environmentally Acceptable (EAL) Dynagard Blue™ or Dynagard Blue CSS13™ Wire Rope Lubricant
1	Heavy Duty Storage Case Approved by Military & Law Enforcement

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Section-Three Jumbo Internal Spray Wire Rope Lubrication Systems

JUL Internal Spray Systems are provided in three different Models:

- JU5L (Pails),
- JU16L (Mid-Size Drums)
- JU55L (Full Size Drums).

The Systems are equipped to apply light weight oil viscosities through four 4,000 PSI pressure rated Spray Nozzles. They are also equipped to apply low flow greases as well depending on the coating product or Wire Rope Preventative Maintenance Program for which they are used.



JUL System being used at Alliance Coal in Indiana, USA. Dynagard LVL™ being applied. Photo shows Lubricated Wire Rope exiting after passing through the Lubrication Collar. Photo Above shows excess Dynagard LVL™ traveling into Catch pail for pos Highland Mining. Kentucky. Dynagard LVL JU16L sible recycling.

Jumbo Internal Spray Wire Rope Lubrication Systems

JUL Internal Spray Groove Cleaner Kit Systems

- JUL Systems are available in 3 models and are designed to apply low viscosity oils through four internal nozzles giving a controlled 360° application within an enclosed lubrication chamber. Greases can be used up to NLGI Grade 000 through NLGI Grade 2 viscosities by closing off the Discharge Port leading out from the Seal Center Chamber allowing it to fill.
- Systems accommodate Wire Rope / Seal and Scraper Plate Diameters through 2-1/4 Inch (58mm) for low viscosity high flow spray applications.
- Systems also accommodate Wire Rope, Seal and Scraper Plate Diameters up to 4-1/3 Inches (110mm) when using Grease viscosities. Each Model is provided with one Seal and Scraper Plate Kit and one Groove Cleaner Kit as part of the Complete System Package.
- The Customer is required to specify the Diameter, the number of Outer Strands and Lay Direction of their Wire Rope when ordering.

Light Weight Hinged Proprietary Formulation Aluminum Lubrication Collar

- Weight: 40 Pounds / 18 Kilograms
- Accommodates Wire Rope and Seal & Scraper Plate Diameters up to 4-1/3 Inches / 110mm (Greases)
- Hinged design feature provides safe set-up and maneuverability in cramped or elevated work locations. This feature protects against any parts accidentally falling and causing injury to personnel below.
- High grade specially formulated Aluminum provides durable yet flexible protection against over tightening.
- The Discharge Port in the Lubrication Collar wall allows excess low viscosity Lubricants (oil) to flow freely from the Central Seal Lubrication Chamber during spray applications. This is so the Internal Spray Nozzles can maintain a consistent spray pattern inside the Seal Lubrication Chamber.
 - It also acts to allow the Central Lubrication Chamber to fill and become pressurized when using high viscosity greases. Both instances enable the Operator to verify that the Lubrication Collar has become filled, and Wire Rope travel can commence.
- A Clear Excess Lubricant Discharge Hose attaches to the Discharge Port Nipple enabling the Operator the ability to see when the Seal Lubrication Chamber has filled when using the Spray Option.
- Two 5/8 Inch Shackles

JUL Seal & Scraper Plate Kit

- Weight 12.5 Pounds / 5.63 Kilograms
- The Customer specifies the Diameter required at the time the order is placed.
- The Seal Halves fit neatly around the Wire Rope for optimum penetration after their placement in the Lubrication Collar.
- Two-piece Metal Scraper Plate Sets (2 sets provided) create rotational base for the Groove Cleaner and smooth the newly applied coating on the Wire Rope as it exits the Lubrication Collar.
- JUL System Seals consist of specially formulated, durable Polyurea materials, which provide better long-term protection against chemical and friction wear over the less durable Nitrile typically used in other Wire Rope servicing applications.

- The Seal Lubrication Chamber design is sized to accommodate a range of Wire Rope Diameters. This special proprietary feature provides optimum internal pressure to maintain controlled Lubricant Penetration, Consumption and Coating levels.
- Proprietary Seal Interlock design increases penetration and coating performance by directing Lubricants through and around hard to penetrate Wire Ropes as they travel from the Seal Center Lubrication Chamber toward each end of the Lubrication Collar.

Optional Manual Stripper Assembly-

See Section Six

Groove Cleaner Kits

- Weight 1 Pound / .45 Kilograms
- Each Kit contains two Groove Cleaners (4 parts total) produced from Laser Manufactured Tooling. Customers specify the Diameter, Number of Outer Strands and Lay Direction of their Wire Rope so the exact Groove Cleaner Groove Cleaner Kit can be supplied.
- Groove Cleaners clean a Wire Rope's Groove Pattern and outer circumference allowing better penetration and coating performance inside the Lubrication Collar. Smooth Bore Cleaner design can be substituted for non-spin or multi-strand Wire due to their lack of fill space between the internal strands.

High PSI Rated Stainless Steel Lubricant Flow Control Valve

(Additional Replacement Flow Control Valve included with each System at no additional charge)

- Provided with Brass Quick Coupler Nipple
- Operator has control over Lubricant Flow to the Lubrication Collar and can adjust for any increase or decrease in Wire Rope Travel Speed and available Air Pressure

Lubricant Delivery System

- 50:1 Ratio Pump
- Weight 30-40 Pounds / 13.5 Kilograms
- Max. Flow Rate (NLGI Grade 1 Grease) 8 Pounds. / 3.6 Kilograms Oils: Average 6 Gallon / 22.71 liters per minute
- High volume feed keeps consistent pressurization at high Wire Rope Travel Speeds.
- Flow specification is based on a maintained 60 PSI Air Pressure setting utilizing 30 weight oil viscosity coating product.
- The System will accommodate greases as well utilizing the Discharge Ball Valve Shutoff.

Follower Plate (Use with Greases only):

- Prevents Air Pockets as the Grease level lowers in the Drum / Pail

Pail / Drum Cover

- Covers the top of pails and drums and keeps the Pump centered and secure during operation.

Air Components (FRL)

- 150 PSI rated, piggybacked, single piece FRL component regulates available Air Pressure, filters contaminants entering the Air Motor and lubricates the Air Supply preventing time-consuming Air Motor icing during longer Wire Rope runs.

10 Foot Length Twin Feed 2,500 PSI Rated Lubricant Supply Hose

- Brass Push to Pull Fittings for time saving and safe quick connect and disconnect function
- Optional lengths are also available

Durable Storage Case

- Weight 20 Pounds. 9 Kilograms - Military and Law Enforcement Approved

Field Application Photos: JUL Systems



American Rock Salt. New York State. JU55L



Highland Mining. Kentucky. Dynagard LVL JU16L



Barrick Gold, Elko, Nevada. Dynagard LVL JU16L

Kirkpatrick Jumbo Model JU5L Wire Rope Lubrication System

Internal Spray System fit for 35 Pound / 15.75 Kilogram / 5 Gallon / 18.92 Liter Sized Pails

Oil Applications: Accommodates Wire Rope Diameters up to 2-1/4 Inch (58mm)

Grease Applications: Wire Rope Diameters up to 4-1/4 Inch (108mm)

1	Heavy Duty, Light Weight Aluminum Lubrication Collar Wire Rope Diameters to 58mm (Oil), to 108mm (Grease) Complete with four 4,000 PSI Rated Spray Nozzles.
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
2	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	Manual Wire Rope Stripper and Centering Bushing (Optional) Accommodates Wire Rope Diameters up to 52mm (MS-9110) or 108mm (MS-9111) The Centering Bushing Diameter should match the Wire Rope / Seal Kit Diameter
1	50:1 Ratio Pump (Includes One Pump Repair Kit) Maximum Flow Rate (Oil): 6 Gallon per minute / 22.71 Liters per minute at 120 PSI Air Pressure Maximum flow Rate (Grease): 8 Pounds / 3.6 Kilograms per minute at 120 PSI Air Pressure
1	35 Pound / 15.75 Kilogram / 5 Gallon Sized Follower Plate
1	35 Pound / 15.75 Kilogram / 5 Gallon Sized Pail Cover
1	Air Regulator / Filter/ Oiler Assembly with Gauge. 150 PSI Rated
1	High PSI Rated Stainless Steel Lubricant Flow Control Valve,
1	2,500 PSI Rated 10 Foot / 3-Meter Lubricant Supply Hose <ul style="list-style-type: none"> Complete with Brass Push to Pull Quick Couplers Custom lengths available upon request.
1	Duo-Lube Assembly for Two-Sided Lubricant Feed, 2,500 PSI Rated
1	Heavy Duty Storage Case Approved by Military & Law Enforcement

Kirkpatrick Jumbo Model JU16L Wire Rope Lubrication System

Internal Spray System fit for 120 Pound / 54 Kilogram / 16 Gallon / 56.78 Liter Sized Drums

Oil Applications: Accommodates Wire Rope Diameters to 2-1/4 Inch (58mm)

Grease Applications: Accommodates Wire Rope Diameters to 4-1/4 Inch (108mm)

1	Heavy Duty, Light Weight Aluminum Lubrication Collar <ul style="list-style-type: none"> Wire Rope Diameters to 58mm (Oil), to 108mm (Grease) Complete with Four 4,000 PSI Rated Spray Nozzles.
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
1	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	Manual Wire Rope Stripper and Centering Bushing (Optional) Accommodates Wire Rope Diameters up to 52mm (MS-9110) or 108mm (MS-9111) The Centering Bushing Should Match the Wire Rope / Seal Kit Diameter.
1	50:1 Ratio Pump (Includes One Pump Repair Kit) <ul style="list-style-type: none"> Maximum Flow Rate (Oil): 6 Gallon per minute / 22.71 Liters per minute at 120 PSI Air Pressure Maximum flow Rate (Grease): 8 Pounds / 3.6 Kilograms per minute at 120 PSI Air Pressure
1	120 Pound / 54 Kilogram / 16 Gallon / 56.78 Liter Sized Follower Plate
1	120 Pound / 54 Kilogram / 16 Gallon / 56.78 Liter Sized Drum Cover
1	Air Regulator/ Filter/Oiler Assembly with Gauge. 150 PSI Rated
1	High PSI Rated Stainless Steel Lubricant Flow Control Valve
1	2,500 PSI Rated 10 Foot / 3-Meter Lubricant Supply Hose <ul style="list-style-type: none"> Complete with Brass Push to Pull Quick Couplers Custom length available upon request
1	Duo-Lube Assembly for Two-Sided Lubricant Feed, 2,500 PSI Rated
1	Heavy Duty Storage Case Approved by Military & Law Enforcement

Kirkpatrick Jumbo ModelJU55L Wire Rope Lubrication System

Internal Spray System: 120 Pound / 54 Kilogram / 16 Gallon / 26.78 Liter Sized Drums

Oil Applications: Accommodates Wire Rope Diameters to 2-1/4 Inch / (58mm)

Grease Applications: Accommodates Wire Rope Diameters to 4-1/4 Inch (108mm)

1	Heavy Duty, Light Weight Aluminum Lubrication Collar- Wire Rope Diameters to 58mm (Oil), 108mm (Grease) Complete with Four 4,000 PSI Rated Spray Nozzles.
1	One Diameter Seal & Scraper Plate Kit: Scraper Plates are part of the Seal and Scraper Kit and are not sold at an additional charge as is the case with competitive brand Wire Rope Lubrication Systems. The Customer specifies the Diameter Seal & Scraper Plate Kit required when placing their order.
1	One Diameter & Lay Wire Rope Groove Cleaner Kit: Includes 2 Individual Groove Cleaners (4 Parts) The Customer specifies Diameter, the Number of Outer Strands and Lay Direction <u>Note: Our Competition Charges this item as an additional component apart from their Complete System and then only provides one individual Groove Cleaner, not two as is the case with Kirkpatrick supplied Groove Cleaner Kits.</u>
1	Manual Wire Rope Stripper and Centering Bushing (Optional) Accommodates Wire Rope Diameters up to 52mm (MS-9110) or 108mm (MS-9111) The Centering Bushing should match the Wire Rope / Seal Kit Diameter.
1	50:1 Ratio Pump (Includes One Pump Repair Ki) <ul style="list-style-type: none"> Maximum Flow Rate (Oil): 6 Gallon per minute / 22.71 Liters per minute at 120 PSI Air Pressure Maximum Flow Rate (Grease): 8 Pounds / 3.6 Kilograms per minute at 120 PSI Air Pressure
1	120 Pound / 54 Kilogram/ 16 Gallon / 56.78 Liter Sized Follower Plate
1	120 Pound / 54 Kilogram / 16 Gallon / 56.78 Liter Sized Pail Cover
1	Air Regulator/ Filter/Oiler Assembly with Gauge. 150 PSI Rated
1	High PSI Rated Stainless Steel Lubricant Flow Control Valve
1	2,500 PSI Rated 10 Foot / 3-Meter Lubricant Supply Hose <ul style="list-style-type: none"> Complete with Brass Push to Pull Quick Couplers Custom Length Available Upon Request
1	Duo-Lube Assembly for Two-Sided Lubricant Feed, 2,500 PSI Rated
1	Heavy Duty Storage Case Approved by Military & Law Enforcement

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Section-Four Seal & Scraper Plate Kits

Kirkpatrick Seal Kits consist of two specially formulated proprietary Polyurea Seal Halves. Seal Halves are engineered to fit neatly into the corresponding configured Lubrication Collar Halves. They also incorporate a 1 to 2-millimeter compression factor for those Wire Ropes that may be marginally larger than their rated Diameter.



Standard System Seal & Scraper Plates Shown

Seal and Scraper Plate Kits work to remove excess corrosion and debris from the outer circumference of the Wire Rope as it enters the Lubrication Collar and then seal around the Wire Rope to allow for better penetration of the Wire Rope coating being applied. Scraper Plates also work to smooth new Lubricant as the Wire Rope travels from the Lubrication Collar.

There is no perfection regarding rated Wire Rope Diameters as opposed to their actual infield / under load Diameter. In most instances, though they can be very close.

However, a Diameter can become a fit factor when it involves larger Diameters such as 2 Inch (51mm) and above. As a matter of fact, there can sometimes be as much as a 1 to 4 mm variation for Wire Rope Diameters in the 80mm and above range.

Another influencing factor is the construction and the age of a particular Wire Rope. We have recently noted that some Wire Rope Manufacturers are now referring to a possible Diameter variance in their rated specifications. Knowing about these variances helps our users to understand that even though variances are not a strong factor in ordering Wire Rope; it is a crucial factor in providing the best fit possible for the components we supply with our Systems.

Testimonial

I am writing this letter to tell you how impressed we are with the longevity and durability of your Seal and Scraper Plates. We used $\frac{3}{4}$ " set in 60,000 ft. of $\frac{3}{4}$ 6x19 Class IWRC that made up the topping purchase and Vang wires of deck mounted cargo booms on the Naval Reserve Ship USS - Comet. We fully expected to replace this $\frac{3}{4}$ " Seal and Scraper Plate Kit after this job. This has not been the case. These Seals and Scraper Plates have given us years and approximately 100,000 ft. of extra service"

Ed Swenson

**Marine Sales Manager
West Coast Wire Rope**

Portland, Oregon

In 2015, Kirkpatrick Wire Rope Lubrication Systems developed a new proprietary laser technology to manufacture Tooling that is used to produce our Groove Cleaners and Seal Kits to a fit that has not been available before and unmatched by our competition. All of our Seal and Groove Cleaner Kits are produced from tooling manufactured using this Laser Technology.

Seal & Scraper Plate Diameters

Seal and Scraper Plate Diameters for the Standard Models, Jumbo Models, and the Jumbo Internal Spray Models are shown in the following charts. We now have tooling to provide Seals at 1mm Increments Up to 4-1/3 Inch (110mm). The Mongoose MINI Systems do not incorporate Scrapers and only the Seals. See separate Chart for the available Mongoose Seal Kit Diameters. Addendum: Mongoose Seals Kits Page

Call us for Part Numbers: Standard Systems 9110-S, Jumbo Systems 9111-J, JUL Internal Spray 9111-L

Seal & Scraper Plate Kit Part Number	NSN: Numbers	Diameter: Inch	Diameter Range: Millimeters
9110-S-18	N/A	1/8 Inch	3mm-4mm
9110-S-14	N/A	1/4 Inch	5mm-6mm
9110-S-516	NSN: 5330-01-461-6205	5/16 Inch	7mm-8mm
9110-S-38	NSN: 5330-01-461-6202	3/8 Inch	9mm-10mm
9111-J-38	N/A	3/8 Inch	9mm-10mm
9111-L-38	N/A	3/8 Inch	9mm-10mm
9110-S-716	NSN: 5330-01-469-9486	7/16 Inch	11mm-12mm
9111-J-716	N/A	7/16 Inch	11mm-12mm
9111-L-716	N/A	7/16 Inch	11mm-12mm
9110-S-12	NSN: 5330-01-419-8319	1/2 Inch	12mm-13mm
9111-J-12	NSN: 5330-01-419-8370	1/2 Inch	12mm-13mm
9111-L-12	N/A	1/2 Inch	12mm- 13mm
9110-S-916	NSN: 5330-01-461-6201	9/16 Inch	13mm-14mm
9111-J-916	N/A	9/16 Inch	13mm-14mm
9111-L-916	N/A	9/16 Inch	13mm-14mm
9110-S-1932	NSN: 5330-01-469-9486	19/32 Inch	15mm-16mm
9111-J-1932	N/A	19/32 Inch	15mm-16mm
9111-L-1932	N/A	19/32 Inch	15mm-16mm
9110-S-58	NSN: 5330-01-461-6200	5/8 Inch	16mm-17mm
9111-J-58	NSN: 5330-01-315-8371	5/8 Inch	16mm-17mm
9111-L-58	N/A	5/8 Inch	16mm-17mm
9110-S-2132	N/A	21/32 Inch	17mm-18mm
9111-J-2132	NSN: 5330-01-469-9484	21/32 Inch	17mm-18mm
9111-L-2132	N/A	21/32 Inch	17mm-18mm
9110-S-1116	NSN: 5330-010-470-0186	11/16 Inch	18mm-19mm
9111-J-1116	N/A	11/16 Inch	18mm-19mm
9111-L-1116	N/A	11/16 Inch	18mm-19mm
9110-S-34	NSN: 5330-01-419-8320	3/4 Inch	19mm-20mm
9111-J-34	NSN: 5330 -01-315-8372	3/4 Inch	19mm-20mm
9111-L-34	N/A	3/4 Inch	19mm-20mm
9110-S-1316	NSN: 5330-01-470-0184	13/16 Inch	20mm-21mm
9111-J-1316	N/A	13/16 Inch	20mm-21mm
9111-L-1316	N/A	13/16 Inch	20mm-21mm
9110-S-2732	NSN: 5330-01-469-9482	27/32 Inch	21mm-22mm
9111-J-2732	N/A	27/32 Inch	21mm-22mm
9111-L-2732	N/A	27/32 Inch	21mm- 22mm
9110-S-78	NSN: 5330-01-419-8321	7/8 Inch	22mm-23mm
9111-J-78	NSN: 5330-01-315-8372	7/8 Inch	22mm-23mm
9111-L-78	N/A	7/8 Inch	22mm-23mm

Seal & Scraper Plate Diameters (Continued)

Seal and Scraper Plate Diameters for the Standard Models, Jumbo Models, and the Jumbo Internal Spray Models are shown in the following charts. We now have tooling to provide Seals at 1mm Increments Up to 4-1/3 Inch (110mm).

Call us for Part Numbers: Standard Systems 9110-S, Jumbo Systems 9111-J, JUL Internal Spray 9111-L

Seal & Scraper Plate Kit Part Number	NSN: Numbers	Diameter: Inch	Diameter Range: Millimeters
9110-S-1516	NSN: 5330-01-470-0185	15/16 Inch	23mm-24mm
9111-J-1516	N/A	15/16 Inch	23mm-24mm
9111-L-1516	N/A	15/16 Inch	23mm-24mm
9110-S1	NSN: 5330-01-461-6199	1 Inch	25mm-26mm
9111-J1	NSN: 5330-01-315-8374	1 Inch	25mm-26mm
9111-L1	N/A	1 Inch	25mm-26mm
9110-S1-116	NSN: 5330-01-469-9478	1-1/16 Inch	26mm-27mm
9111-J1-116	N/A	1-1/16 Inch	26mm-27mm
9111-L1-116	N/A	1-1/16 Inch	26mm-27mm
9110-S1-18	NSN: 5330-01-461-6198	1-1/8 Inch	28mm-29mm
9111-J1-18	NSN: 5330-01-315-8375	1-1/8 Inch	28mm-29mm
9111-L1-18	N/A	1-1/8 Inch	28mm-29mm
9110-S1-316	NSN: 5330-01-469-9472	1-3/16 Inch	30mm-31mm
9111-J1-316	N/A	1-3-16 Inch	30mm-31mm
9111-L1-316	N/A	1-3/16 Inch	30mm-31mm
9110-S1-14	NSN: 5330-01-419-8323	1-1/4 Inch	31mm-32mm
9111-J1-14	NSN: 5330-01-419-8323	1-1/4 Inch	31mm-32mm
9111-L1-14	N/A	1-1/4 Inch	31mm-32mm
9110-S1-516	NSN: 5330-01-469-9473	1-5/16 Inch	33mm-34mm
9111-J1-516	N/A	1-5/16 Inch	33mm-34mm
9111-L1-516	N/A	1-5/16 Inch	33mm-34mm
9110-S1-38	NSN: 5330-01-461-6196	1-3/8 Inch	34mm-35mm
9111-J1-38	N/A	1-3/8 Inch	34mm-35mm
9111-L1-38	N/A	1-3/8 Inch	34mm-35mm
9110-S1-12	NSN: 5330-01-419-8322	1-1/2 Inch	37mm-38mm
9111-J1-12	NSN: 5330-01-315-8377	1-1/2 Inch	37mm-38mm
9111-L1-12	N/A	1-1/2 Inch	37mm-38mm
9110-S1-916	NSN: 5330-01-469-9474	1-9/16 Inch	39mm-40mm
9111-J1-916	N/A	1-9/16 Inch	39mm-40mm
9111-L1-916	N/A	1-9/16 Inch	39mm-40mm
9110-S1-58	NSN: 5330-01-315-8378	1-5/8 Inch	41mm-42mm
9111-J1-58	NSN: 5330-01-469-9481	1-5/8 Inch	41mm-42mm
9111-L1-58	N/A	1-5/8 Inch	41mm-42mm
9110-S1-2132	N/A	1-21/32 Inch	42mm-43mm
9111-J1-2132	N/A	1-21/32 Inch	42mm-43mm
9111-L1-2132	N/A	1-21/32 Inch	42mm-43mm
9110-S1-1116	N/A	1-11/16 Inch	42mm-43mm
9111-J1-1116	N/A	1-11/16 Inch	42mm-43mm
9111-L1-1116	N/A	1-11/16 Inch	42mm-43mm

Seal & Scraper Plate Diameters (Continued)

Seal and Scraper Plate Diameters for the Standard Models, Jumbo Models, and the Jumbo Internal Spray Models are shown in the following charts. We now have tooling to provide Seals at 1mm Increments Up to 4-1/3 Inch (110mm).

Call us for Part Numbers: Standard Systems 9110-S, Jumbo Systems 9111-J, JUL Internal Spray 9111-L

Seal & Scraper Plate Kit Part Number	NSN: Numbers	Diameter: Inch	Diameter Range: Millimeters
9110-S1-34	NSN: 5330-01-315-8379	1-3/4 Inch	44mm-45mm
9111-J1-34	N/A	1-3/4 Inch	44mm-45mm
9111-L1-34	N/A	1-3/4 Inch	44mm-45mm
9110-S1-1316	N/A	1-13/16 Inch	45mm-46mm
9111-J1-1316	N/A	1-13/16 Inch	45mm-46mm
9111-L1-1316	N/A	1-13/16 Inch	45mm-46mm
9110-S1-78	NSN: 5330-01-315-8380	1-7/8 Inch	48mm-49mm
9111-S1-78	N/A	1-7/8 Inch	48mm-49mm
9111-L1-78	N/A	1-7/8 Inch	48mm-49mm
9111-J1-1516	N/A	1-15/16 Inch	49mm-50mm
9111-L1-1516	N/A	1-15/16 Inch	49mm-50mm
9111-J2	N/A	2 Inch	50mm-51mm
9111-L2	N/A	2 Inch	50mm-51mm
9111-J2-116	N/A	2-1/16 Inch	52mm-53mm
9111-L2-116	N/A	2-1/16 Inch	52mm-53mm
9111-J2-18	N/A	2-1/8 Inch	54mm-54mm
9111-L2-18	N/A	2-1/8 Inch	54mm-54mm
9111-J2-14	N/A	2-1/4 Inch	57mm-58mm
9111-L2-14	N/A	2-1/4 Inch	57mm-58mm
9111-J2-38	N/A	2-3/8 Inch	60mm
9111-J2-716	N/A	2-7/16 Inch	62mm
9111-J2-12	N/A	2-1/2 Inch	64mm
9111-J2-916	N/A	2-9/16 Inch	65mm
9111-J2-58	N/A	2-5/8 Inch	66mm
9111-J2-1116	N/A	2-11/16 Inch	68mm
9111-J2-34	N/A	2-3/4 Inch	70mm
9111-J3	N/A	3 Inch	76mm
9111-J3-18	N/A	3-1/8 Inch	80mm
9111-J3-38	N/A	3-3/8 Inch	85mm
9111-J3-12	N/A	3-1/2 Inch	89mm
9111-J3-34	N/A	3-3/4 Inch	95mm
9111-J3-78	N/A	3-7/8 Inch	98mm
9111-J4	N/A	4 Inch	101m.
9111-J4-14	N/A	4-1/4 Inch	108mm

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Section-FIVE Groove Cleaner Kits & Smooth Bore Wire Rope Cleaners



Precision Laser Cut Tooling provide exact Groove Cleaners to match any Wire Rope Configuration

- Right Lay Direction
- Left Lay Direction
- Smooth Bore

Groove Cleaners ensure the outer circumference, and Groove Pattern of your Wire Ropes are free of contaminants and ready to receive the new Wire Rope Lubricants for better penetration and coating. For a proper fit and the best possible results, it is crucial that the end users calibrate the specific Diameters, note the number of outer strands and the lay direction of their Wire Ropes.

Various numbers of outer Strand Right and Left Lay Groove Cleaners are available. Please enquire about our special Laser produced tooling manufacturing program. This program gives us the unique capability to match your exact Wire Rope Groove Cleaner Kit for specialized and superior results.

Some smaller Diameter Multi-Strand Wire Rope and double armor cable have such a small Groove pattern that it's difficult for the Groove Cleaner to stay on track. Therefore, Smooth Bore Cleaners are suggested, which are efficient at cleaning the outer circumference of the Wire Rope.

Testimonial

Testimonial

USS Hancock:

"The Kirkpatrick Wire Rope Lubricator and Groove Cleaners, have eliminated the need for two people and 3 hours to complete this Preventative Maintenance Schedule (PMS). Now one maintenance man can clean and lubricate a cable in less than 30 minutes"

10 Year Cost Savings: \$652,320.00

Labor Reduction: 75%

Breakeven Point 1.2 Months

U.S NAVY Pollution Prevention P2

AFLOAT Program

Groove Cleaner Kits (Continued)

Part Numbers and National Stock Numbers for Groove Cleaner Assemblies currently available. See the top of the Table for the Diameter, Lay Pattern, and the number of Outer Strands for those Groove Cleaner Kit Configurations that are currently available.

Part Number Right Lay	NSN: & Assigned Part Number Right Lay	Part Numbers Left Lay	NSN: & Assigned Part Numbers Left Lay	Number of Strands	Rated Diameter Inch	Rated Diameter Millimeters
8MM-RL6	NSN: 49030-01-462-1175 GR389RL-6 (6 Strands)	8MM-LL6	NSN: 4930-01-462-1160 GR38LL-6 (6 Strand)	6	3/8 Inch	8mm-9 mm
11MM-RL6	N/A	N/A	N/A	6	7/16 Inch	11mm-12mm
12MM-RL6	NSN: 4930-01-462-1149 GR12RL-6 (6 Strand)	12MM-LL6	NSN: 4930-01-462-1142 GR12LL-6 (6 Strand)	6	½ Inch	12mm 13mm
12MM-RL7	N/A	N/A	N/A	7	½ Inch	12mm-13mm
14MM-RL6	NSN: 4930-01-462-1169 GR916RL-6 (6 Strands)	14MM-LL6	NSN 4930-01-462-1139 GR916LL-6 (6 Strand)	6	9/16 Inch	14mm-15mm
16MM-RL6	NSN: 4930-01-462-1145 GR58RL-6 (6 Strand)	16MM-LL6	NSN: 4930-01-462-1145 GR58LL-6 (6 Strand)	6	5/8 Inch	16 mm-17mm
16MM-RL12	N/A	N/A	N/A	12	5/8 Inch	16mm-17mm
19MM-RL6	NSN: 4930-01-462-1148 GR34RL (6 Strand)	19MM-LL6	NSN 4930-01-462-1157 GR34LL (6 Strand)	6	¾ Inch	19mm-20mm
19MM-RL7	N/A	N/A	N/A	7	¾ Inch	19mm-20mm
19MM-RL8	N/A	N/A	N/A	8	¾ Inch	19mm-20mm
19MM-RL12	N/A	N/A	N/A	12	¾ Inch	19mm-20mm
20MM-RL6	N/A	N/A	N/A	6	13/16 Inch	20mm-21mm
20MM-RL8	N/A	N/A	N/A	8	13/16 Inch	20mm-21mm
22MM-RL6	NSN: 4930-01-462-1158 GR78RL-6 (6 Strand)	22MM-LL6	NSN: 4930-01-462-1170 GR78LL-6 (6 Strands)	6	7/8 Inch	22mm-23mm
22MM-RL8	N/A	N/A	N/A	8	7/8 Inch	22mm-23mm
24MM-RL6	N/A	24MM-LL6	N/A	6	15/16 Inch	24mm-25mm
25MM-RL6	NSN: 49300-01-462-1172 GR1RL-6 (6 Strands)	25MM-LL6	NSN: 4930-01-462-1174 GR1LL-6 (6 Strands)	6	1 Inch	25mm-26mm
25MM-RL8	N/A	N/A	N/A	8	1 Inch	25mm-26mm
26MM-RL6	N/A	26MM-LL6	N/A	6	1 Inch	26mm-27mm
26MM-RL8	N/A	N/A	N/A	8	1 Inch	26mm-27mm
26MM-RL10	N/A	N/A	N/A	10	1Inch	26mm-27mm
26MM-RL16	N/A	N/A	N/A	16	1 Inch	26mm-27mm
27MM-RL6	N/A	27MM-LL6	N/A	6	1-1/16 Inch	27mm-28mm
27MM-RL16	N/A	N/A	N/A	16	1-1/16 Inch	27mm-28mm
28MM-RL6	NSN: 4930-01-462-1176 GR118RL-6 (6 Strands)	28MM-LL6	NSN: 4930-01-462-1141 GR118LL-6)6 Strands)	6	1-1/8 Inch	28mm-29mm
28MM-RL8	N/A	N/A	N/A	8	1-1/8 Inch	28mm-29mm
29MM-RL6	N/A	29MM-LL6	N/A	6	1-1/8 Inch	29mm-30mm

Groove Cleaner Kits (Continued)

Part Number Right Lay	NSN: & Assigned Part Number Right Lay	Part Numbers Left Lay	NSN: & Assigned Part Numbers Left Lay	Number of Strands	Rated Diameter Inch	Rated Diameter Millimeters
30MM-RL6	N/A	30MM-LL6	N/A	6	1-3/16 Inch	30mm-31mm
30MM-RL 18	N/A	N/A	N/A	18	1-3/16 Inch	30mm-31mm
31MM-RL8	N/A	31MM-LL8	N/A	8	1-1/4 Inch	31mm-32mm
32MM-RL 12	N/A	32MM-LL12	N/A	12	1-1/4 Inch	32mm-33mm
32MM-RL16	N/A	32MM-LL16	N/A	16	1-1/4 Inch	32mm-33mm
33MM-RL6	N/A	33MM-LL6	N/A	6	1-5/8 Inch	33mm-34mm
N/A	N/A	33MM-LL8	N/A	8	1-5/8 Inch	33mm- 34mm
33MM-RL 18	N/A	N/A	N/A	18	1-5/8 Inch	33mm-34mm
34MM-RL4	N/A	N/A	N/A	4	1-5/16 Inch	34mm- 35mm
34mm-RL6	N/A	34MM-LL6	N/A	6	1-5/16 Inch	34mm-35mm
35MM-RL6	N/A	35MM-LL6	N/A	6	1-3/8 Inch	35mm-36mm
36MM-RL6	N/A	36MM-LL6	N/A	6	1-7/16 Inch	36mm-37mm
36MM-RL9	N/A	N/A	N/A	9	1-7/16 Inch	36mm-37mm
36MM-RL18	N/A	N/A	N/A	18	1-7/16 Inch	36mm-39mm
37MM-RL6	N/A	37MM-LL6	N/A	6	1-7/16 Inch	37mm 38mm
37MM-RL18	N/A	N/A	N/A	18	1-7/16 Inch	37mm-38mm
38MM-RL6	N/A	38MM-LL6	N/A	6	1-1/2 Inch	38mm-39mm
38MM-RL8	N/A	38MM-LL8	N/A	8	1-1/2 Inch	38mm-39mm
38MM-RL12	N/A	38MM-LL12	N/A	12	1-1/2 Inch	38mm-39mm
38MM-RL6	N/A	38MM-LL16	N/A	16	1-1/2 Inch	38mm-39mm
39MMRL6	N/A	N/A	N/A	6	1-9/16 Inch	39mm-40mm
40MM-RL6	N/A	40MM-LL6	N/A	6	1-9/16 Inch	40mm-41mm
41MM-RL6	N/A	41MM-LL6	N/A	6	1-5/8 Inch	41mm- 42mm
41MM-RL6	N/A	41MM-LL6	N/A	6	1-5/8 Inch	41mm-42mm
42MM-RL6	N/A	42MM-LL6	N/A	6	1-5/8 Inch	42mm-43mm
N/A	N/A	42MM-LL8	N/A	8	1-5/8 Inch	42mm-43mm
43MM-RL6	N/A	43MM-LL6	N/A	6	1-11/16 Inch	43mm-44mm
44MM-RL6	N/A	44MM-LL6	N/A	6	1-3/4 Inch	44mm-45mm
44MM-RL8	N/A	44MM-LL8	N/A	8	1-3/4 Inch	44mm-45mm
44MM-RL12	N/A	N/A	N/A	12	1-3/4 Inch	44mm-45mm
45MM-RL6	N/A	45MM-LL6	N/A	6	1-3/4 Inch	45mm-46mm
45MM-RL12	N/A	45MM-LL12	N/A	12	1-3/4 Inch	45mm-46mm
46MM-RL6	N/A	46MM-LL6	N/A	6	1-13/16 Inch	46mm-47mm
46MM-RL8	N/A	46MM-LL8	N/A	8	1-13/16 Inch	46mm-47mm
47MM-RL8	N/A	47MM-LL8	N/A	8	1-7/8 Inch	47mm-48mm
48MM-RL6	N/A	48MM-LL6	N/A	6	1-7/8 Inch	48mm-49mm
49MM-RL8	N/A	49MM-LL8	N/A	8	1-15-16 Inch	49mm-50mm
50MM-RL6	N/A	N/A	N/A	6	2 Inch	50mm-51mm
51MM-RL6	N/A	51MM-LL6	N/A	6	2-1/16 Inch	51mm-52mm

Groove Cleaner Kits (Continued)

Part Number Right Lay	NSN: & Assigned Part Number Right Lay	Part Numbers Left Lay	NSN: & Assigned Part Numbers Left Lay	Number of Strands	Rated Diameter Inch	Rated Diameter Millimeters
52MM-RL8	N/A	N/A	N/A	8	2-1/16 Inch	52mm-53mm
54MM-RL6	N/A	54MM-LL6	N/A	6	2-1/8 Inch	54mm 55mm
58MM-RL6	N/A	58MM-LL6	N/A	6	2-1/4 Inch	58mm-59mm
N/A	N/A	58MM-LL8	N/A	8	2-1/4 Inch	58mm-59mm
58MM-RL12	N/A	N/A	N/A	12	2-1/4 Inch	58mm-59mm
58MM-RL18	N/A	N/A	N/A	18	2-1/4 Inch	58mm-59mm
59MM-RL16	N/A	59MM-LL16	N/A	16	2-5/16 Inch	59mm-60mm
60MM-RL6	N/A	N/A	N/A	6	2-3/8 Inch	60mm-61mm
N/A	N/A	62MM-LL6	N/A	6	2-7/16 Inch	62mm
62MM-RL18	N/A	N/A	N/A	18	2-7/16 Inch	62mm
N/A	N/A	64MM-LL6	N/A	6	2-1/2 Inch	64mm
64MM-RL8	N/A	64MM-LL8	N/A	8	2-1/2 Inch	64mm
66MM-RL6	N/A	N/A	N/A	6	2-5/8 Inch	66mm
70MM-RL6	N/A	N/A	N/A	6	2-3/4 Inch	70mm
78MM-RL6	N/A	N/A	N/A	6	3-1/16 Inch	78mm
90MM-RL6	N/A	90MM-LL6	N/A	6	3-9/16 Inch	90mm
92MM-RL6	N/A	N/A	N/A	6	3-5/8 Inch	92mm
99MM-RL6	N/A	N/A	N/A	6	3-11/16 Inch	94mm
95MM-RL6	N/A	N/A	N/A	6	3-3/4 Inch	95mm
95MM-RL18	N/A	N/A	N/A	18	3-3/4 Inch	95mm
98MM-RL9	N/A	N/A	N/A	9	3-7/8 Inch	98mm
98MM-RL18	N/A	N/A	N/A	18	3-7/8 Inch	98mm
100MM-RL18	N/A	N/A	N/A	18	3-5/16 Inch	100mm
101MM-RL8	N/A	N/A	N/A	8	4 Inch	101mm
108MM-RL6	N/A	N/A	N/A	6	4-1/4 Inch	108mm

Smooth Bore Wire Rope Cleaners:

(Clean Wire Rope Outer Circumference)

Smooth Bore Cleaners 3/8 Inch (9.5 mm) to 2-1/8 Inch (54mm) Part Number	Center Hole Diameter: Inch	Center Hole Diameter: Millimeters
9MM-SB	3/8 Inch	9mm-10mm
12MM-SB	½ Inch	12mm- 13mm
14MM-SB	9-16 Inch	14mm-15mm
16MM-SB	5/8 Inch	16mm-17mm
19MM-SB	¾ Inch	19mm-20mm
22MM-SB	7/8 Inch	22mm-23mm
25MM-SB	1 Inch	25mm-26mm
28MM-SB	1-1/8 Inch	28mm-29mm
32MM-SB	1-1/4 Inch	32mm-33mm
35MM-SB	1-3/8 inch	35mm-36mm
38mm-SB	1-1/2 Inch	38mm-39mm
39MM-SB	1-9/16 Inch	39mm-40mm
41MM-SB	1-5/8 Inch	41mm-42mm
44MM-SB	1-3/4 Inch	44mm-45mm
48MM-SB	1-7/8 Inch	48mm
51MM-SB	2 Inch	51mm
54MM-SB	2-1/8 in	54mm
58MM-SB	2-1/4 Inch	58mm
64MM-SB	2-1/2 in	64mm
76MM-SB	3 Inch	76mm
84MM-SB	3-1/4 Inch	84mm
89MM-SB	3-1/2 Inch	89mm
95MM-SB	3-3/4 Inch	44mm
102MM-SB	4 Inch	102mm
108MM-SB	4-1/4 Inch	108mm

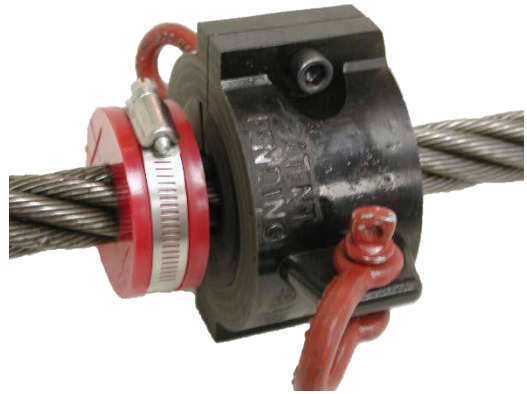
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Section-SIX Optional Components

- Manual Strippers
- Centering Bushing
- Pump Repair Kits
- Pump Air Components

The Manual Stripper provides a rotational base for the Groove Cleaners. This device allows the user the ability to strip a majority of their Wire Rope for inspection purposes apart from the lubrication process. The Manual Stripper component can also be tied off to allow the Wire Rope to pass through it, or it can be pulled along the Wire Rope in conjunction with the Groove Cleaner / Smooth Bore Cleaner.

A Centering (Alignment) Bushing with a center cut to the Diameter of the Wire Rope is required to be inserted in the Manual Stripper to keep it centered and aligned. Each Manual Stripper is provided with one Diameter Centering Bushing. Additional Diameters are priced separately.



Testimonial

"We were rewarded by a System that not only lubricated the Wire rope uniformly; it cleaned the surface and removed moisture. An additional benefit was the tension it sets up on the Wire Rope while lubricating. If each district purchased a system for its individual sizes of Wire rope, we could all have safer, easier and most important, quality maintenance of Wire Rope"

Article in "United States
Cost Guard's aids to
Navigation Bulletin"



Optional Components

Pump Repair Kits, Pump Air Components, Valves, Follower Plates, Pail & Drum Covers

Part Numbers	Part Description
9110-PR-Kit	Pump Repair Kits for Standard Systems & JUL Systems Models SU35B and JU5L Models SU120 and JU16L Models SU400 and JU55L
9111-PR-35	Pump Repair Kit for Jumbo Model JU35
9111-PR-120	Pump Repair Kit for Jumbo Model JU120
9111-PR-400	Pump Repair Kit for Jumbo Model JU400 and SU400C
9110-FRL	Pump Air Components for Standard & JUL Systems
9111-FRL	Pump Air Components for Jumbo Systems
FC7000TKG	Pump Lubricant Flow Control Valve;
	Lubrication Supply / Discharge Hose 10' x ½" Diameter (2,500 PSI Rated) ½" Duo-Lube Split "T" Two-Sided Feed (Jumbo Systems Only) ¼" Duo-Lube Split "T" Two-Sided Feed (Internal Spray Systems Only) 7"x3/4" ID Clear Discharge Hose (Standard & Jumbo Systems)
	Follower Plates
9110-35-FP	SU35B
9110-120-FP	SU120
9110-400-FP	SU400
9111-35FP	JU35
9111-120-FP	JU120
9111-400-FP	JU400 and SU400C
	Pail & Follower Plates
9110-35-DC	SU35B & JU5L
9110-120-DC	SU120 & JU16L
9110-400-DC	SU400 & JU55L
9111-35-DC	JU35
9111-120-DC	JU120
9111-400-DC	JU400 and SU400C

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Dynagard™ Wire Rope Lubricants & Solvents



Hawaiian Tug and Barge Tow Line Treated with Dynagard Blue

Dynagard™ Wire Rope Lubricants have been developed to meet the highest standards in Wire Rope protection no matter how they are initially applied. They optimize penetration and coating using both pressure and manual application methods through their superior coating and penetration characteristics.

Dynagard™ Wire Rope Lubricants stay alive with strand movement offering superior fluid film support against friction wear and corrosion throughout the life of the Wire Rope. Our Customers have claimed their maintenance cycles have been greatly reduced and Wire Rope life increased with the use of the Dynagard™ products in all areas where Wire Rope longevity is a major concern.

Our Dynagard Blue™, Dynagard Blue (CSS13™) and Dynagard “E”™ products meet the highest standards of environmental protection with the Dynagard “E”™ being the first seed oil based Wire Rope Lubricant introduced into the world market in 1993. It is now registered under CEFAS. It is also listed along with the Dynagard Blue™ on the Qualified Products List by Naval Sea Systems Command. The Dynagard LVL™ is an evaporative product that goes on as a liquid, offering superior penetration. However, unlike oil products; after the initial penetration, it stays on the Wire Rope and becomes viscous adhering to the individual strands, providing the fluid film protection working Wire Ropes require. This product is especially strong regarding mine hoist rope applications. The Dynagard CSS13 Wire Rope Lubricant has a heavy molecular structure which adds 30% more weight and adhesion to the overall product making it highly adhesive in marine environments while maintaining a superior Bio-Aquatic LC-50 rating.

Dynagard Plus™ is an excellent solvent for cold (room temperature) cleaning of a wide variety of manufacturing equipment, Wire Rope, and products including common and exotic metals, reinforced fiberglass and plastics.

Environmental Review of Dynagard™ Wire Rope Lubricants:

What is a Bio-Aquatic LC50 Test?

LC50 stands for the Lethal Concentration and how long it takes to kill 50% of the marine life being used for the test. The role of LC50 testing is to determine how environmentally safe a coating product is to organisms in a marine environment. Knowing the safety or toxicity levels of the product, you are considering is essential to meet environmental regulations such as the VGP introduced in 2013.

Correctly interpreted, LC50 stands for the length of time (24, 48, or 96 hours) a particular marine species is exposed to a contaminant, such as a Wire Rope coating product. LC50 testing evaluates how many parts per million (PPM) it takes to kill 50% of the marine test organisms in a given time frame. For informational purposes: Our Environmental Dynagard Blue™ has a Bio-Aquatic LC 50 rating 250 x greater than the VGP Requirement of 1,000 PPM (Liters) and Our Dynagard “E”™ has an LC 50 Rating 20 x greater.

The higher the PPM rating within the test time frame, the safer the product is to the marine life to which it is exposed.

The Lower the PPM rating, the less environmentally friendly or safe the product is to marine life. Naturally, a 24-hour test period is less definitive than a 48-hour period. This distinction is worth considering when evaluating Bio-Aquatic data involving a Wire Rope Coating for your company or government branch.

Definition of the Specimens used for the Dynagard™ Environment Testing:

Saltwater Americamysis Bahia: A microscopic shrimp-like crustacean of the order Mysida, the opossum shrimps. It is native to estuarine waters in Texas and Florida in the United States. It is often referred to in the literature as Mysidopsis Bahia, and is widely cultured and used in the laboratory for toxicology testing for its size and high sensibility to pollutants in a marine environment. The use of this specimen has set the standard for Saltwater Marine testing worldwide.



Freshwater Ceriodaphnia Dubia: A tiny aquatic invertebrate used as an indicator organism to measure toxicity in freshwater environments. C. Dubia is considered to be a representative of Creek organisms at the bottom of the food web. Toxicity to this species is believed to indicate poor water quality. Diazinon and Chlorpyrifos have been identified as impairing water quality because they are occurring at levels toxic to Ceriodaphnia Dubia. These pesticides can cause toxicity to Ceriodaphnia even at very low levels.

The Fathead Minnow, Pimephales Promelas: A freshwater fish widely distributed in the United States usually found in brooks, ponds, and small lakes. The species is tolerant of high turbidity, high temperatures, and low oxygen concentrations.

Pimephales Promelas is the EPA recommended vertebrae species for freshwater chronic toxicity tests. In these tests, the larva is exposed for a predetermined period to different concentrations of effluent or to receiving water. Test results are based on the survival and weight of the larva.

Testimonials

USS Wasp (LHD-1) Wins SECNAV Environmental Award for the addition of new environmentally safe equipment.

Results for the Kirkpatrick Model SU35B Wire Rope Lubricator used onboard the USS Wasp (LHD-1): 400' of 1-1/8 Inch load line lubricated. 75% of 35 Pound / 15.75 Kilogram Pail of QPL Approved Dynagard Blue™ Wire Rope Lubricant used.

21 Pounds (9.5 Kilograms) of previously applied MIL-G-1845B Lubricant was removed in the process. One rag used in the clean-up.



Time from set-up to completion and clean-up: 2 hours. The previous time frame to accomplish the same project using manual methods: 1 full day, three men.

U.S.S. Wasp (LHD)
Training Session incorporating hangar deck crane (1997)

The USS Wasp has always been proactive in its approach to environmental protection and was working toward a goal of zero Discharge of Wire Rope Lubricant even before receiving the equipment.

This is a letter of thanks.

I have been inspecting Wire Rope used for a variety of industrial applications now for over 18 years. The bulk of my work and the most critical is electromagnetic testing of personnel and haulage types in the mining industry. A majority of these ropes are in operation 24 hours per day. As such, they are exposed to extreme environmental and chemical wear that significantly detract from their overall service life. Life's and profitability depend on the reliability of these hoist ropes.

Several years ago, one of my clients, Morton Salt in Weeks Island Louisiana began using Wire Rope Lubrication System and Dynagard™ Wire Rope Lubricants. I inspect Morton's hoist ropes approximately every six months according to Federal guidelines. Before Morton's use of your products, they were replacing their ropes about every 9-12 months. This is not enough Wire Rope life for any application. These ropes were being retired because of excessive corrosion within the internal strands. Salt, as well, as potash mines have an extremely corrosive environment, and as a result, their rope life is measurably shorter than other types of mining operations, it was discovered that the Dynagard Blue™ Wire Rope Lubricant had significantly restricted internal corrosion over the competitive product previously used for the Morton ropes. In fact, in my opinion, it had eliminated the corrosion according to my non-destructive testing of the ropes during the first 12 months it had been tracked. Given these initial test results, I anticipate that the rope life on Morton's hoist ropes will go from a 9-month life to several years.

I have recommended your Wire Rope Lubrication System to all my clients. Most are now using your System, and I can categorically say that all but one of these Customers have experienced a better life span incorporating your Systems into their maintenance programs.

I shall continue to recommend your products to any clients that I encounter. My job has been made much easier if the mine ropes are properly lubricated and maintained. Once again, thanks. Keep up the excellent work. You have my permission to use this letter as a testimonial of a fine product and caring company who takes pride in Customer support.

Sincerely:

Bill Braniff,
President & Senior Technician Braniff Inspection Systems.

Dynagard™ Environmental Wire Rope Lubricants are approved for use by the following Government Organizations:

The United States Navy

They adopted our test specifications and now use Mysidopsis Bahia Estuary Shrimp species for their Type II Environmental Qualified Products List as well.



Bureau of Land Management:

Colorado River, Hoover Dam

U.S. Army Corps of Engineers Columbia River System,
Oregon



Tennessee Valley Authority for all their fresh water Systems.

This organization chose to do their independent testing and still confirmed the Bio-Aquatic Safety Standards of the Dynagard™ product.



The United States Coast Guard

The Canadian Hydro Group for freshwater Systems in Canada B.C

Hydro performed an independent test of our Dynagard "E"™ product and found it to be 97% biodegradable.



The United States Navy for both the Type I and Type II Qualified Products List (QPL).

Naval Sea Systems Command in conjunction with NEC

Confirmed both Dynagard Blue™ Type I and
Dynagard E™ Type II for the Qualified Products List



Note: All evaluations and subsequent confirmations were performed independently of The Kirkpatrick Group, Inc.

Dynagard Blue™ Environmental Wire Rope Lubricant

Dynagard Blue™ is an Unleaded Environmental Wire Rope Lubricant. This coating is non-sheening and excellent for resistance to softening under severe working conditions, water resistant, extreme pressure, and compatible with all Kirkpatrick Wire Rope Lubrication Systems in addition to Manual Applications.

The viscosity and slickness stay alive through the Wire Rope as the strands move during load-bearing operations. This attribute helps with continuous redistribution to cover any internal strand areas that may have been missed during the initial lubrication process.

Dynagard Blue™ has outstanding structural and chemical stability. An unleaded extreme pressure additive provides exceptional protection against wear and shock loads. Additional additives enhance resistance to water wash-off, protection against fling-off at high Wire Rope travel speeds, and long service in a high-temperature environment.

It won't corrode steel and copper bearing alloys and is compatible with conventional Seal materials.

Recent LC-50 Bio-Aquatic toxicity tests using sensitive marine organisms performed by independent test laboratories have shown it to have over 250,000 PPM LC-50 rating making it possibly the best LC-50 value of any Wire Rope Lubricant marketed in the world today.

A copy of the Test data is available upon request.

VGP Compliant. It's LC-50 rating is 250x higher than the minimum 1,000 PPM requirement.

A sample of Dynagard Blue™ Environmental Wire Rope Lubricant was used for a product testing study to determine the toxicity of a part per million dosages of product to the Americamysis Bahia (Marine Invertebrate) over a 90-day period. Tests were run on day 1, day 7, day 15, day 30, day 60, and day 90. This test was designed to verify the maximum length of time that the Dynagard Blue™ would maintain its optimal LC50 levels over 90 days. Previous tests showed the products to have over 25,000 PPM at 48 hours. An LC50 test was then performed for 90 hours; the results were 56,000 PPM. Then a third biodegradation test was performed at 90 days. The LC50 results were over 90,000 PPM.

Dynagard Blue™ Maintain its Optimal levels for over 90-Days						
Day	Date	LC50	Upper CL	Lower CL	Upper Difference	Lower Difference
1	9/11/2014	62,942.45	67,130.11	59,016.02	4,187.66	3,926.43
7	9/18/2014	61,520.57	65,537.96	57,749.44	4,017.339	3,771.13
14	9/25/2014	51,375.05	56,741.46	46,516.18	5,366.41	4,858.87
22	10/3/2014	55,624.68	60,743.86	50,936.92	5,119.18	4,687.76
69	11/19/2014	76,285.13	83,832.81	69,416.99	7,547.68	6,868.14
91	12/11/2014	92,456.21	99,678.70	85,757.05	7,222.49	6,699.16

Dynagard Blue™ Environmental Wire Rope Lubricant

National Stock Number: U.S Government & NATO	9150-01520-8116
MIL-PRF-18458C (Type I & Type II QPL) Meets or surpasses requirements. U.S. Navy Qualified Products List	Pass 05Q / 2006-268
LC50 Bio-Aquatic Rating, EPA/821-R-02-014 Test Duration: 48 Hr. Acute Test Specimen used: Salt Water Species (Mysidopsis Bahia)	250,000 ppm (2016)
LC50 Bio-Aquatic Rating, EPA/821/R-02/012 Test Duration: 48 hr. Contracted by the Tennessee Valley Authority Test Specimen: Fresh Water Species Ceriodaphnia Dubia and Pimephaleas Promelas	(Over 25,000 ppm-2008)
LC50 Bio-Aquatic (Degradation) Using same stock solution for 90 days. From Day 1 to Day 90: 30,000 PPM more product solution to create the same toxicity level as day 1. Day 1= 62,942 PPM, Day 90= 92,456 ppm Test Specimen used: Mysidopsis Bahia	
Viscosity	NLGI Grade 2
Color	Blue
Texture	Smooth/Creamy
Mineral Oil%	50% Nominal
Oil Separation % (Fed 791-321.1)	1.94%
Penetration: mm, (ASRM D217)	305
Viscosity, cST AT 40 Degrees Centigrade	320
Viscosity, cST AT 100 Degrees Centigrade	21-23
Dropping Point, C (F)	177 C (350 F)
Low Temperature Flexibility (Section 4.4.4., No cracks @ 6 Degrees C)	Pass
Rust Test, ASTM D-1743	Pass
Salt fog Corrosion Resistance ASTM B117	1,000 hr. / Pass
Salt Spray, Fed Standard 791, TM 4001 (10 days)	Pass
Accelerated Weathering (ASTM G 152, 153)	Pass
Load Wear Index (ASTM D2596)	34.43
Adhesive % (Sec. 4.6.6. 150 rpm @ 151 +/- 2 deg. F)	99.7
Volatile Matter (2.0% Max.)	1.02
4-Weld, Kilograms	250
4-Ball Wear Diameter, mm, max.	0.65

Dynagard Blue CSS13 TM

Environmental Wire Rope Lubricant

Dynagard Blue CSS13 TM is formulated with a high viscosity base oil and engineered with a unique combination of additives to create the highest level of adhesion performance against fling off at high-speed Wire travel. It is also designed to resist water wash off in severe working marine environments.

This heavy duty coating product is for all maintenance applications where there is a high degree of friction wear due to critical workloads. With Dynagard Blue CSS13 TM optimal levels of fluid film protection against friction wear inside the Wire Rope are possible because of its specialized formulation. The same superior fluid film performance and adhesion also generate the perfect protection against corrosion in both salt and freshwater environments.

Due to its excellent water repellency, CSS13 is resistant to water wash off. It also has a wide operation temperature range, preventing both softening and extreme hardening within the most severe working environments. Dynagard Blue CSS13TM has one of the safest marine Bio-Aquatic LC50 ratings at over 19,000 PPM (Mysidopsis Bahia @ 48 Hours).

NLGI Grade (ASTM)	Grade 2
Thickener Type	Calcium Sulfonate
Color	Blue
Marine Bio-Aquatic LC50: 48 Hours <ul style="list-style-type: none"> Salt Water/Mysidopsis Bahia 	19,922 PPM
Base Oil Viscosity (ASTM D445)	316°C/601°F
SUS @ 100°F	2468
SUS @ 210°F	148.2
cST @ 40°C	460
cST @ 100°C	30.2
VI	>94
Drop Point °F (ASTM D2265)	+550°F
Worked Penetration: @ 25° C = (ASTM D217)	265-295 Typical
Changed after 100,000 Strokes (ASTM D217)	<+20
Oil Separation 25°C, 24 Hours, % (ASTM D1742)	<1.0
Four Ball Weld Load, Kilograms (ASTM D2783)	500
Timken OK Load, Kilograms (ASTM D2783)	65
Wear Scar Diameter, mm (ASTM D2266)	.45
Water Washout, Weight % loss @ 175F (ASTM 1264)	1.3
Water Spray Test, Hours (ASTM B117)	1000 Hours
Rust Test Rating (ASTM D1743)	Pass

Dynagard “E”™ Environmental Wire Rope Lubricant

QPL-Qualified Product List NAVSEA (Qualified Product Listing)

Dynagard “E” is a revolutionary non-toxic, biodegradable Wire Rope Lubricant that meets the performance levels of petroleum-based greases in areas of fluid film and corrosion protection of Wire Rope Strands. Exceptional for manual application: Dynagard “E” also meets the operational requirements for all Kirkpatrick Wire Rope Lubrication System Models providing for optimum coating and penetration prolonging the working life of Wire Rope while at the same time meeting the environmental concerns of our Customers. Dynagard “E” was the first seed oil based high viscosity grease introduced onto the world market in 1993. It also was the benchmark product used in 2002 to establish MIL-PRF18458C Type II requirements under the Environmentally Preferable Lubricants program (NSWCCD, Code 632) for the United States Navy’s Naval Sea System Command. Documentation is available upon request.

Dynagard “E” and its components have been evaluated by independent laboratories. Using 3rd party test results, The Kirkpatrick Group, Inc. has determined that it is fully compliant for the VGP definition of an Environmentally Acceptable Lubricant (EAL).

Chemex International UK Comments After testing:

The report states the biodegradable Lithium grease is not readily soluble in cold or hot water. It was vigorously shaken/homogenized which would not occur in any lubrication mechanism in which the product would be exposed offshore. Also, the relative insolubility of the grease to water at any temperature would result in exposure limits infinitely lower than the values generated from this series of tests. Current field experience in fresh and salt water environments shows no toxic effects are observed despite prolonged exposure to a wide variety of environments. (Chemex)



Hoover Dam



Hoover Dam – 76mm -Being coated with
Dynagard E™



USS Stennis (CVN-74)



USS Stennis Aircraft Elevator Support Cables

Dynagard “E”™ Results

(Environmentally Safe Wire Rope Lubricant)

U.S. NATO and Canadian National Stock Number		NSN 9150-01-520-8143
MIL-PRF-18458C (Type II Environmental Designation) DLA Qualified Products Database		Approved 11/28/06/ Renewed 2011
LC50 Acute Toxicity Bio-Aquatic Rating, EPA/600/4-90/027 Test Duration: 48 Hours Test Specimen used: Microscopic Estuary Shrimp Species Mysidopsis Bahia		(19,500 PPM)
LC50 (48 Hours) Acartia Tonsa		(15.9mg/l) (Pass)(Chemex)
EC50 Toxicity Rating. Test Specimen Phaeodactylum tricornutum (72 Hours)		(Marine alga) (Chemex) Pass
LC50 Toxicity Rating. Test Specimen; Turbot (Scophthalmus Maximus) (96 Hours LOEC)		>1,000mg/l (Chemex)
Biodegradability Rating (CEC L-33-A-93)		97%
Biodegradability Rating (insoluble Substances (BODIS) >20% (Over 60% @ 56 Days) (OECD 301B)		37% (complete Paste. 28 Days)
CEPHAS (OCNS Group Rating)		Pass
Thickener Type		Lithium-Calcium
Viscosity		NLGI Grade 2
Viscosity Index		>100
Base Oil Viscosity (ASTM D445)		VG150
Color		Dark Brown
Texture		Smooth/Creamy
Consistency	ASTM D217	2
Tackiness	Visual	Slightly Tacky
Thickener Type		Lithium-Calcium
Base Oil Viscosity	ASTM D445	VG 150
VI		>100
Flash Point, ASTM D92 (C/F)		316° C/601°F
Dropping Point, ASTM D566		Over 400°
Oil Separation % (25 C, 24 Hrs.)	ASTM D 1742	5.0 Max (1.5 Actual)
Four Ball Weld Load, Kilograms	ASTM D 2783	250
Timken Ok Load, Pounds.	ASTM D 2509	40
Wear Scar Dia, mm	ASTM D 2266	0.6

Worked Penetration: mm, (ASSTM D217):	301, Typical
Salt Spray, Fed. Std. 791, TM 4001	Pass
Accelerated Weathering (Fed 791-4001, ASTM G152, 153)	Pass
Rust Test, ASTM D-1743	Pass
Water Washout, Weight % loss @ 175 F (AST 1264)	2.7 (5.0 Max)
Water Spray off, % (ASTM D 4049)	<20
Salt fog Corrosion Resistance ASTM B117	1,000 hr. / Pass
Salt Spray, Fed Standard 791, TM 4001 (10 days)	Pass
Accelerated Weathering (G23, 10 days)	2 Dots / Pass
Low-Temperature Flexibility (Sec. 4.4.4. no cracks @ 6 Degrees C)	Pass (No Cracking)
Load Wear Index (ASTM D2596)	35.58
Adhesive % (Sec. 4.6.6. 150 rpm @ 151 +/- 2 deg. F)	99.7
Volatile Matter	.02 Max

Dynagard "E"™ Declaration VGP

Using independent laboratories evaluation of the Dynagard "E"™ product including CHEMEX in Great Britain, The Dynagard "E"™ is now registered with CEPHAS. Therefore, The Kirkpatrick Group, Inc. has determined that the Dynagard "E"™ product meets the VGP definition of an Environmentally Acceptable Wire Rope Lubricant, is not Bio-Accumulative, and is Biodegradable according to the (OECD 301B) requirement.



R.T. Kirkpatrick
President
The Kirkpatrick Group, Inc.

Date: August 31, 2015

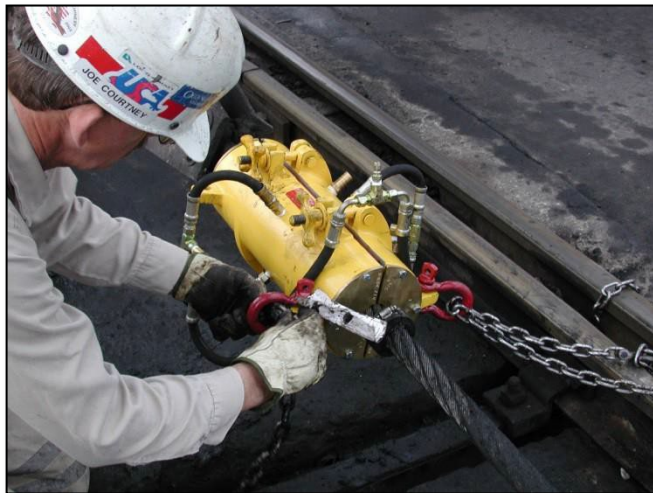
Manufactured by:
Kirkpatrick Wire Rope Lubrication Systems
Dynagard™ Environmentally Wire Rope Lubricants
Palisades Central II, 2435 North Central Expressway, Suite 1150
Richardson, Texas 75075 USA
Tel: (972) 509-2468 / Fax (972) 608-3860

Dynagard LVL™

Wire Rope Lubricant

Dynagard LVL™ is an extremely tenacious Wire Rope Dressing formulated for use in both Marine and Mining environments. This product is especially effective in applications where a rapidly penetrating product is required along with low fling off adhesive attributes of a much higher viscosity coating. This is particularly important for high-speed Wire Rope travel where fling-off is more apt to occur. Dynagard LVL™ penetrates the outer strands of Wire Rope and is excellent in displacing moisture when used with the Kirkpatrick JUL Internal Spray Systems. This product is also superior for Mine Friction Hoist applications where slippage is a safety concern.

As the carrier solvent evaporates, a flexible thin film of lubrication is formed. This fluid barrier prevents the incursion of moisture or dirt between the strands and contains rust and corrosion inhibitors to prevent abrasive and corrosive wear. The fluid film barrier of the Dynagard LVL™ also protects against the formation of rust and prevents strand binding which reduces cable flexibility and life. This product also offers protection against corrosion and prevents the pitting of Wire Strands that can cause fatigue failure. The Dynagard LVL™ maintains optimal performance in both dry and high humidity/saltwater environments.



Dynagard LVL Being Applied to a Mine's Slope Rope.
Model JU16L, Highland Mining, Kentucky USA



Barrick Gold Mine, Elko, Nevada USA:
Model JU16L Applying Dynagard LVL™ to Mine Hoist Rope



Dynagard LVL™ Wire Rope Lubricant	
Thickener Type	Organo Clay Resins
Fluid Type	Petroleum Oil & Resins
Color / Appearance	Black Semi-Fluid
Dropping Point of Dried Film (ASTM D566)	350°F (177°C)
Specific Gravity	1.10
Density (Pounds /Gallons)	9.15
Oil Separation: Weight % Loss @ 212°F (100°C)	>3.0
Flash Point (ASTM D92)	>430°F (221°C)
Viscosity Brookfield ASTM D1296 #7 Spindle, 10 rpm @ 77°F (25°C)	64,000-12,000cps
Additive Type	Organic: EP/AW/R&O/Graphite/MoS
Copper Strip Corrosion (ASTM D4048)	1A
Shell 4-Ball (ASTM D D2596)	620
Weld Point, Kgf	>85
Load Wear Index	
Service Rating	-25°F (-32°C) to 350°F(17°C)



Alliance Coal, Indiana, USA. Dynagard LVL being applied with JU16L System

Dynagard Plus™

Wire Rope Citric Degreaser and Cleaner

Dynagard Plus™ is an excellent solvent for cold (room temperature) cleaning of a wide variety of manufacturing equipment, Wire Rope, and products including common and exotic metals, reinforced fiberglass and plastics.

Prior to the Wire Rope Lubrication process, Dynagard Plus™ is excellent for softening hardened materials on the surface of the Wire Rope. This softening allows for easy removal by the Groove Cleaner Kits as the Wire Rope travels into the Lubrication Collar. A clean Groove Pattern and Outer Strand Surface allow for better penetration of the Wire Rope Lubricant inside the Pressurized Lubrication Collar.

Dynagard Plus™ is an excellent product for use in industry because none of its ingredients are listed as a carcinogen, nor does it contain any ozone-depleting chlorinated solvents. It may be used to replace MEK (Methyl Ethyl Ketone) and 111 trichloroethylene, which are hazardous to employees' health and the environment, but are used every day to degrease, clean metal parts and to strip paint and ink.

The low evaporation rate helps decrease the amount of solvent used compared to chlorinated solvents.

It is safe and easy to use.

Method of use

- 1.- Dynagard Plus™ can be wiped on with a cloth
- 2.- Placed in an agitated soak tank
- 3.- Applied as a spray.
- 4.- Pumped through the Kirkpatrick Wire Rope Lubrication Collar.

DO NOT USE IN A VAPOR DEGREASER!

Directions for use

Use a cloth soaked in Dynagard Plus™, wipe on part or Wire Rope to be cleaned. After Part/Wire Rope is cleaned, wipe with a wet cloth.

Note: Dynagard Plus™ can be diluted up to 3 to 1 with water or use full strength.

It can be used in agitated soak tank, use a high tank so there will be some physical action as well as chemical action. After parts are cleaned, rinse with water (spray or soak) for fast drying of parts.

Spray should be sufficient to give some physical action as well as chemical action.

Dynagard™ Environmental Wire Rope Lubricant

Dynagard Blue™ Environmental Wire Rope Lubricant	
<ul style="list-style-type: none"> • 35 Pounds / 15.87 Kilograms Pails • 120 Pounds / 54.43 Kilograms Mid-Sized Drum • 400 Pounds / 181 Kilograms Full-Sized Drum 	
Dynagard “E”™ Environmental Wire Rope Lubricant	
<ul style="list-style-type: none"> • 35 Pounds / 15.87 Kilograms Pails • 120 Pounds / 54 Kilograms Mid-Sized Drum • 400 Pounds / 181 Kilograms Full-Sized Drum 	
Dynagard Blue CSS13™ Environmental Wire Rope Lubricant	
<ul style="list-style-type: none"> • 45 Pounds / 20.25 Kilograms Pails • 140 Pounds / 63.5 Kilograms Mid-Sized Drum • 450 Pounds / 204 Kilograms Full-Sized Drum 	
Dynagard LVL™ (Low Viscosity)	
<ul style="list-style-type: none"> • 5 Gallon / 18.93 Liter Pails • 16 Gallon / 56.78 Liter Mid-Sized Drum • 55 Gallon / 208.19-Liter Full-sized Drum 	
Dynagard Plus™ Environmental Citric Cleaner	
<ul style="list-style-type: none"> • 5 Gallon/18.93-liter Pail 	

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Information Required for an Accurate Quote

Please answer the following questions to the best of your ability so that we can accurately provide you with a System that best suits your job requirement, thank you.

1. What are your Wire Rope Diameters and lengths?
2. What are the number of outer strands for each Diameter and their lay direction? Please note whether they are Lang Lay or Regular Lay if you have that information available.
 - a. Example: $\frac{3}{4}$ in (19mm), 6 strands, right regular lay.
3. What is your estimate of the maximum and minimum Wire Rope travel speed for each rope?
4. Describe the kind of work application for each rope.
 - a. Example: Crane Boom Hoist, Crane Load Line, Mine Vertical Hoist, or Mooring Line.
5. How heavily coated is each Wire Rope? How much debris or environmental build-up is there from previously applied coatings?
 - a. Note: Knowing this information helps us determine whether or not Groove Cleaners will be beneficial. New Wire Rope does not initially require the use of Groove Cleaners.
6. In what condition is your Wire Rope?
 - a. Example: Are there burrs, broken strands, rough surface rust, or is it smooth with no broken strands from friction wear?
7. How have you performed your Wire Rope Maintenance up to this point?
 - a. Example: Maintenance by hand, spray, vat, etc.
8. How often do you perform Wire Rope Maintenance?
9. How far will your work location be from the Air Source?
10. What length and what Diameter is your Air-Line?
11. What is the viscosity of the Wire Rope coating you've been applying? What is the trade name of the product?
 - a. Example: Consistency of liquid, molasses, gel, peanut butter, or soft grease?
12. What is the temperature range of your working environment during the Wire Rope Maintenance Procedure?

Note: Air Supply is Required:

Standard Systems Wire Rope Diameter to 1-7/8 Inch (48mm) can function with compressors of 15 CFM or stronger capacity. Much depends on the Wire Rope travel speed and lubricant viscosity used during the Wire Rope maintenance process. Large Diameter 2 Inch (521mm) and larger, 6-Strand, 7-strand, 8-strand Wire Rope Groove Cleaner Kits require Jumbo Systems. The air supply should, therefore, be at least 30 to 40 CFM for them to perform optimally. Most plant or shipboard air is adequate to run the Jumbo Pump System.

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Section- NINE

Ordering Procedure

Review our Catalog for exact Part Numbers and components descriptions. Complete Systems come with all components required to begin immediate operation, except the air source and the Lubricant requirements

1. All Systems come with one Diameter Seal and Scraper Plate Kit and one Diameter and pattern Groove Cleaner Kit
2. The Customer must specify the Wire Rope Diameter and the Lay direction they require with each Complete System order. Additional Diameter/lay direction Wire Ropes require matching Seal and Groove Cleaner Kits. These optional items are in addition to the full System price.
3. Wire Rope should be measured with a micrometer for accuracy before ordering Seal and Groove Cleaner Kits. Some new Wire Rope can be nominally larger than their rated Diameters. Conversely, older Wire Ropes can be smaller in Diameter than their rated size. Diameter fluctuations are especially true for hemp or sisal core ropes after they've been in service.
4. Before ordering Groove Cleaner Kits, it's a good idea to document the lay pattern and number of outer strands of your Wire Rope.

Further Clarifications:

Lay Patterns Defined: right or left regular lay, right or left Lang lay, or right or left long lay.

The number of Outer Strands Defined: 6-Strand, 7-Strand, 8-Strand, 12-Strand or non-rotational multi-strand.

Dynagard Blue™ Shelf Life:

Dynagard Blue™ environmental Wire Rope Lubricant as approved under MIL-PRF-18458C (Serial Number 05/05Q/2006-268) (NSN:9150-01-520-8116) Type I and Dynagard "E"™ approved through MIL-PRF-18458C Type II (Ser 05Q/2006/268) (NSN: 9150-01-520-8143) have a minimum shelf life of 5 years.

Applicable Warranty:

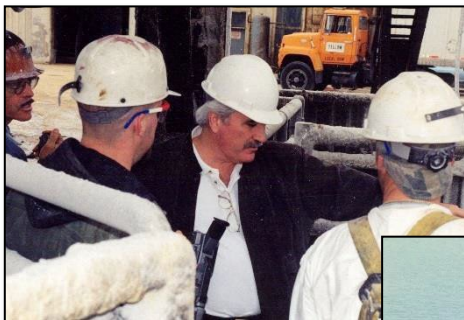
Base Pump - 2 years, 100% against flaws in materials and workmanship

Lubrication Collars - 5 years, 100% against flaws in materials and workmanship.

Freight Policy -The Customer is responsible for the return of any parts warranty for review (prepaid). Please contact the Kirkpatrick Group, Inc. for instructions before shipping any parts to our office.

Note: Warranty does not apply to high wear items such as Seals and Groove Cleaners.

Kirkpatrick Systems In-Field Applications Worldwide



The Kirkpatrick Group, Inc.

Palisades Central II

2435 North Central Expressway, Suite 1150

Richardson, Texas 75080 USA

Toll Free: (800) 466-4414

Tel:(972) 509-2468 - Fax (972) 608-3860

Website

www.thekirkpatrickgroup.com

Email

sales@thekirkpatrickgroup.com

Sales

Jerry Swords

Director of U.S. and International Sales

sales@thekirkpatrickgroup.com