

# Viper Mini/ Mid MKII Wire Rope Lubricator for the Lubrication of Bulk Carrier Crane's Wire Ropes





# Assembly & Operation Manual

## Index

Require Items.....	3
Hoist Wire Rope Lubrication.....	4
Luffing Rope Lubrication.....	5
Additional Notes.....	6
Trouble Shooting .....	7
Safety Instructions – Caution & Danger.....	8-9
Guarantee & Contact Information.....	10





# Assembly & Operation Manual

## Required Items:

- Viper Mini or Mid MKII Kit
- Approved Viper Lubricant Extension Hose (up to 35m available)
- Correct Viper Seals and Rope Cleaner (VRC) units (refer to Viper WRL Selection Chart)
- Air or Electronic Winch to pull Viper along rope
- Correct Compressed Air Supply (refer to relevant Viper Operational Manual)
- Correct Wire Rope Lubricant between NLGI 0 t NLGI 1.5



## Hoist Wire Rope Lubrication:

1. Lower hoist ropes to the lowest possible position, consider lowering them into the cargo bays.
2. Clamp Viper mini collar near the wire rope drum and secure it with the straps (provided).
3. Initiate the air grease pump and start winding the hoist rope to lubricate it. This will lubricate more than  $\frac{1}{2}$  of the rope, the part that you will be able to wind on the drum. There will still remain a portion of the rope on the jib, which can be lubricated by lowering once again the wire rope to lowest possible position (into the cargo bays) and then clamp, secure and use the Viper Mini on deck.

Alternate method to lubricate the remaining hoist rope

4. Tie rope lines on both ends of Viper Mini collar and clamp it on hoist wire ropes on the top of the crane.
5. Initiate the air grease pump and start pulling the collar in order to lubricate the rope on the jib. In order to have consistent grease coating, it is recommended to use a portable winch to pull the collar
6. Pull back the Viper mini collar and repeat on any other jib wire rope lines

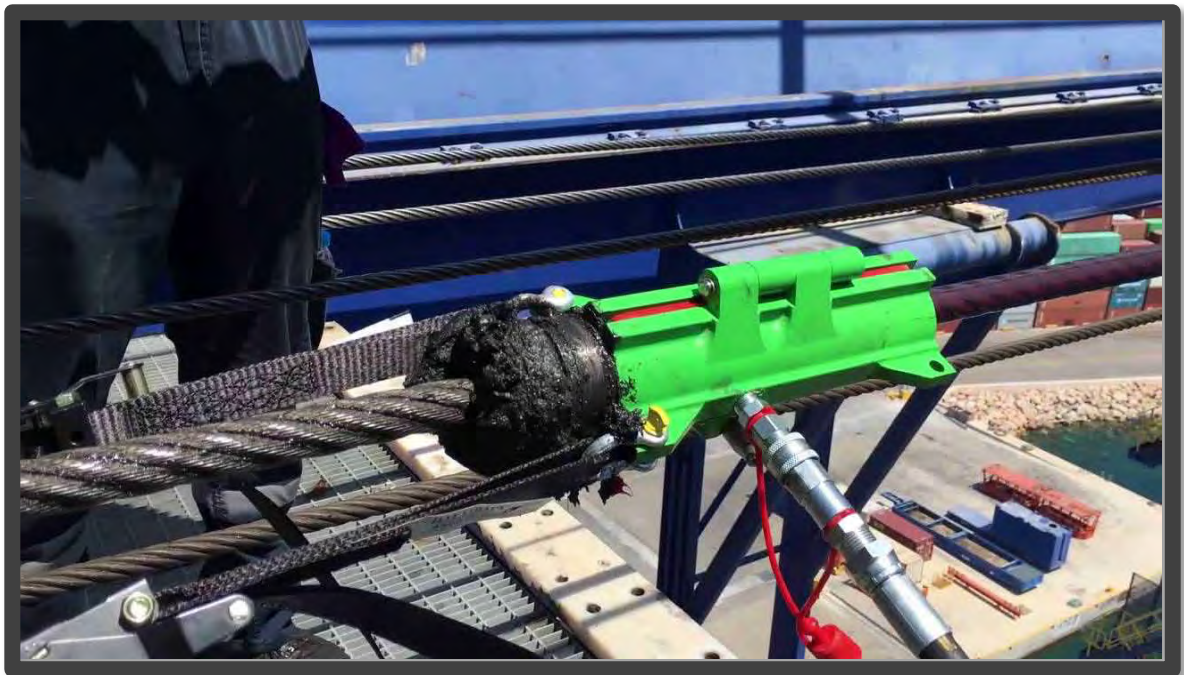


## Luffing Rope Lubrication:

1. Lift jib to the highest possible angle.
2. Clamp Viper mini collar near the wire rope drum and secure it with the straps (provided)
3. Initiate air grease pump and lower boom in order to lubricate the rope

Same scenario as above hoist lines, there still is a portion of the ropes on the jib which is not lubricated.

4. Tie rope lines on the Viper mini collar and clamp it on luffing wire ropes at the top of the crane
5. Initiate the air grease pump and start pulling the collar in order to lubricate the rope on the jib. In order to have consistent grease coating, it is recommended to use a portable winch to pull the collar
6. Pull back the Viper mini collar and repeat on any other jib wire rope lines





## Additional notes:

- We strongly recommend the use of the Viper rope cleaner in every use, in order to clean previous grease and debris from strands
- When clamping the Viper collar do not over-tight, it should be moving easily when a low force is applied.
- When the collar is clamped on ropes at the top of the crane, it is recommended to lift the pail of grease and pump and use it on top of the crane, in order to minimise the length of grease supply hose



## Trouble Shooting

1. **NO LUBRICANT ON WIRE ROPE AFTER START UP**
  - a) Check lubricant container content.
  - b) Check lubricator pump air shut-off valve is open.
  - c) Check air pressure on gauge.
  - d) Check lubricant control valve is open.
  
2. **INADEQUATE LUBRICANT COVERAGE**
  - a) Utilize lubricant drum heater or change to lighter viscosity if ambient temperature is 5°C or below.
  - b) Increase air pressure and hence lubricant flow, until correct quantity of lubrication is on wire rope.
  - c) Reduce wire rope speed to ensure complete coverage.
  
3. **TOO MUCH LUBRICANT ON WIRE ROPE**
  - a) Reduce volume of lubricant via the flow control valve.
  - b) Increase wire rope speed through the lubricator collar.
  - c) Use a combination of both.
  - d) Investigate type of wire rope lubricant used.
  - e) Measure rope diameter and ensure correct seals in use.
  
4. **LEAKING FROM COLLAR**
  - a) Tighten collar clamping screws
  - b) Check correct Viper seal is being used for wire rope size.
  - c) Check air pressure, reduce if required.
  - d) Adjust Lubricant flow rate air pressure.
  - e) Check condition of seals for any damage.



## Safety Recommendations – Caution Level Rating

- Before installation of the wire rope lubricator onto the cable, ensure the work area is clean and safe to work in with adequate space around the cable attachment point, for attachment of the Viper collar.
- Ensure buckles and straps, D shackles and attachment points used to anchor the Viper Lubricator are rated for a minimum WWL of 500 kg.
- Check hydraulic hose, couplings air lines and fittings for damage or wear, before connecting to grease pump and Viper lubricator collar. Carry out visual inspection of the Viper collar to ensure it has not been damaged during transport or handling. Damage to the casing that prevents it from sealing correctly will severely reduce the unit's ability to force lubricant to the ropes core and could be a potential safety hazard.
- Always ensure the return grease line feeds to a container of suitable size for receiving the excess grease from the Viper lubricator. Grease allowed to flow from the return line without being captured may cause a serious slip or environmental hazard.
- Note Lubricants vary in their hazard and environmental ratings, please ensure Material Safety Data Sheets for all lubricants used with the Viper are kept in close proximity to the kit. Lubrication Engineers recommend a copy of the Lubricant in use MSDS is kept in the Aluminum carry case for reference as required. Lubrication Engineers supply a copy of the Viper WRL Coating Grease CG-0 MSDS with any kits that include this product.





## Safety Recommendations – Viper Mini MKII Assembly and Use

### Danger Rating



- Before attaching the Viper lubricator collar to the cable, you must ensure the cable winch control has been locked out and tagged. Serious injury or death may occur should the cable winching equipment be activated while the Viper Lubricator is being fitted to the cable.



- When the Viper Lubricator has been assembled, attached to the Cable and anchored in position, the lubrication system can be activated. While in operation the grease pump can generate up to 5,500 PSI grease pressure. Under no circumstances should the Viper collar be opened or the grease hose disconnected while under pressure as this can cause serious injury.



- While in operation the Viper Lubricator utilises both high pressure air, up to 120 PSI max and high pressure grease up to 5,500 PSI. Always wear appropriate PPE (Personal Protective Equipment) while carrying out the cable lubrication operation.



- Suggested PPE includes, safety glasses, leather gloves, safety boots, long sleeved shirts, high visibility vest, hard hat and hearing protection.





## Viper Mini & Mid MKII Wire Rope Lubricator - Guarantee

The **VIPER MKII** Wire Rope Lubricator Kits and all the components are guaranteed for a period of 12 months from date of purchase against any fault of manufacture or material failure.

Fair wear and tear is expected of the unit and is not covered by warranty, tearing of the seals due to broken wires or other obstructions are not covered by this warranty.

***Any parts to be claimed for warranty must be first returned to the Lubrication Engineers for inspection prior to warranty being granted.***

***NOTE: Use of Lubrication Engineers Lubricants with the Viper will enable the user to "DOUBLE" their Viper warranty period to Two years.***

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