

## VAN LADDER ANNUAL INSPECTION CHECKLIST

### For Model 3928-HD (S/N 10438 – CURRENT)

Van Ladder Owner's Name: \_\_\_\_\_

Van Ladder Serial # \_\_\_\_\_ Vehicle VIN: \_\_\_\_\_

Inspection Date: \_\_\_\_\_ Vehicle Mileage: \_\_\_\_\_

✓ = Acceptable      R = Repair or Adjustment Needed      N/A = Not Applicable

#### Vehicle

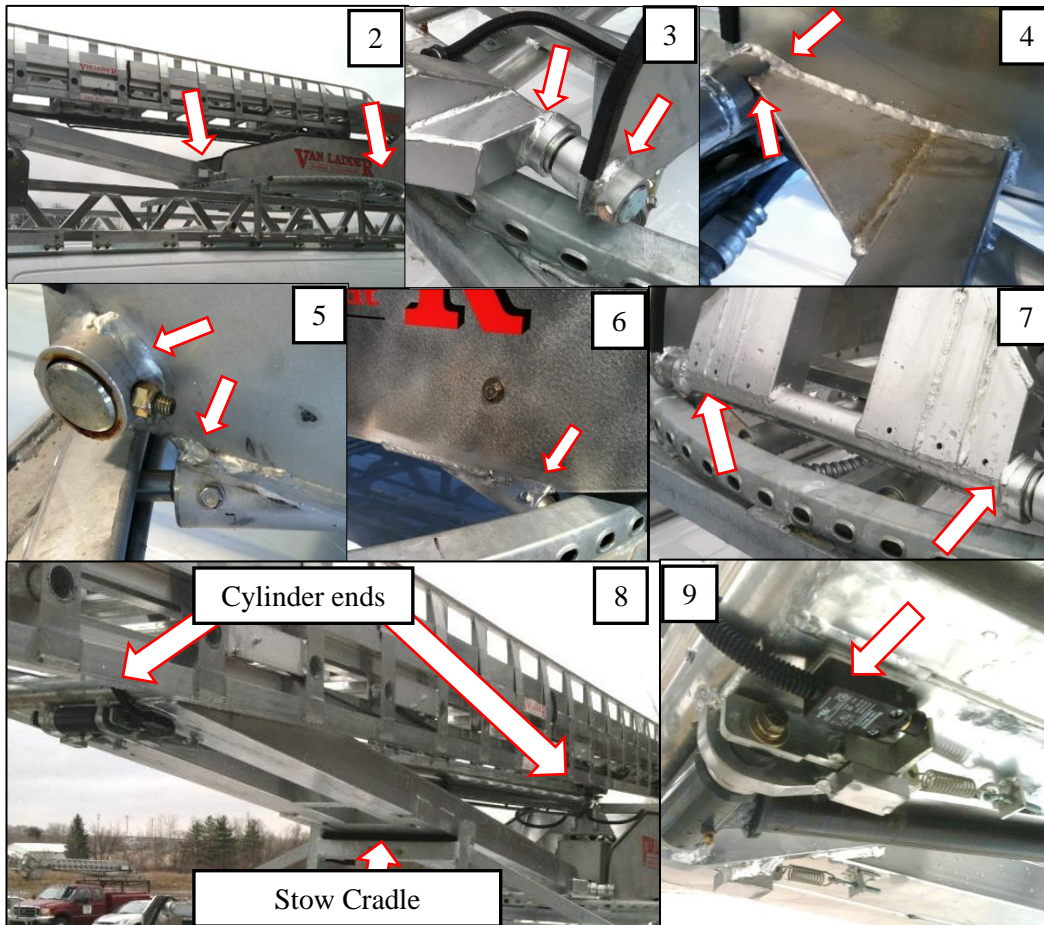
- Front platform and step secure, structurally sound and good anti-slip surfaces
- Rear access ladder secure, no damage to welded structure
- Inspect vehicle suspension components (springs, shackles, sway bars, etc.)
- "Electrocution Hazard" decals – intact and legible on all four sides of vehicle
- Van Ladder Mount Structure– Fasteners secure, no structural damage
- "Overall height" decal and slope level indicator properly positioned in cab
- Operator's manual stored properly in vehicle
- Main Power Cab control – Operating properly, components sound
- Van Ladder Batteries – Load Test, Terminals clean and tight
- System Brain box-no evidence of excessive heat, loose or damaged circuitry
- Master Power/ Emergency Stop Switch – operating properly
- Battery Voltage gauge – Operating properly
- Remote Control – Operating properly, components sound
- Charging Components – Operating properly, wires and connections sound
- Vehicle Tires – Ensure pressure at max cold PSI rating, no abnormal wear
- Vehicle Battery and wiring leads – Load Test battery, Terminals clean and tight, Van Ladder power lead and circuit breaker is sound

#### Rotation Ring, Carriage, & Lift Arm

- Rotation Ring – no damage to welded structure (fig 1...check for elongated holes and pinched or separated channel), fasteners secure
- Inspect condition of Van Ladder wiring harness through roof to slip ring
- Slip Ring – inspect brushes and contact rings for tarnish or indications of excessive heat, ensure connections are secure and wires not twisted, inspect center bearing, ensure all fasteners are tight, cover installed properly
- Decals – ensure all warning and operational decals are intact and legible
- Slide Blocks & Rollers – Intact with clearance between axles and channel. Lubricate channel with synthetic brake grease (CRC #05353 recommended)
- Rotation Power unit– fasteners secure, shield in place, no oil leaks, if abnormal noise, inspect motor for excessive dust, moisture, and proper brush length (1/2" or more)
- Rotation Shaft & Cog wheel – inspect for excessive wear, tight fasteners & keyways



- Hydraulic Power unit – shield in place, no oil leaks, inspect pressure adjustment cap for tampering, proper fluid level, electrical connections secure
- Hydraulic hoses - no leaks, bulging, deformation, or weathering
- Carriage – No damage to welded structure (see figures 2-6 closely inspect front lift arm pivot area, hydraulic cylinder anchorages, and ladder boom anchorage), fasteners secure
- Lift Arm – No visible damage to welded structure (figures 7-8...lower pivot must be clean of grease and dirt to inspect properly), limit switches intact, track rollers turning



- Stow Cradle – No visible damage to welded structure or alarm switch (fig 8)
- Hydraulic Lift Cylinder – fasteners and fittings secure, no oil leaks, inspect base end and rod end welds, end pivots and pins (fig 8)
- Hydraulic Creep Test: Load 350lbs in bucket at full side reach and just above lowest elevation. Creep must not exceed 4 inches/ hour. (or 1 inch in 15 min)
- Down limit switch – plunger switch near rod end of cylinder is properly functioning to prevent DOWN function after firmly contacting cradle (fig 9)

**Ladder Boom**

- Base Ladder – No damage to welded structure, fasteners secure, no sharp edges on handrails, inspect pivot points for excessive wear.
- Fly Ladder – No damage to welded structure, fasteners secure, no sharp edges on handrails, inspect bucket pivot points for excessive wear, all rollers moving freely

- Bucket wiring harness and Power track – fasteners tight, no visible damage or excessive wear, properly routed, secured, & protected
- System Control Box – Ensure connections tight, check for evidence of heat, condition of relays and circuit breakers, exterior plugs and wires
- Telescopic and Boom Angle Limit Switches – fasteners tight, no visible damage or tampering (e.g. tied down levers), proper switch operation
- Decals – ensure all warning and operational decals are intact and legible
- Telescopic Power unit – fasteners secure, shield in place, no oil leaks, if abnormal noise, inspect motor for dust, moisture, and proper brush length (½” or more)
- Telescopic Shaft & Drums – fasteners secure, no damage or abnormal cable wrapping
- Telescopic Cables – Inspect all cables for frays, corrosion (rust), abnormal wear & proper routing... Check torque on telescopic cable anchor fasteners and adjust if necessary (Min: 25 in/lbs, Max: 35 in/lbs)...minimum cable replacement interval: 3 years...see manual p 21-22)

***Cage Bucket***

- Cage Bucket weldment: fasteners tight, welded structure sound, no sharp edges on handrails, inspect pivot points for excessive wear, mid-rail cables and hooks in good condition
- Decals – ensure all warning and operational decals are intact and legible
- Fall Arrest Anchor –good condition and fasteners secure
- Ensure all electrical wiring is sound and properly routed, secured & protected
- Linear Actuator – inspect for damage, fasteners secure
- Bucket Control Box – inspect wire condition, connections, drain hole, toggles and seals, damage to box, decals intact and legible, properly operating (check e-stop switch and “ON” switch for bypasses and correct operation)
- 110V option (if equipped) – test GFCI receptacle and all wiring and components associated with this option

***Accessory Items (Inspect if so equipped)***

- Note accessory items having been inspected for structural soundness and proper operation, decals are intact and legible, electrical wiring and connections are sound, items operate properly and safely:

***Lubrication***

- Ensure all components are properly lubricated as specified in the *Lubrication* section of the Van Ladder owner’s manual
  - Telescopic Cables (Vitallife 400 cable lubricant)
  - Rotation ring channel (CRC #05353 Synthetic Brake Grease)
  - Lift arm pivot zerks (Multi-purpose grease)
  - Hydraulic cylinder zerks (Multi-purpose grease)
  - Base ladder zerks (Multi-purpose grease)

## ***Operational Test Procedure***

- Perform operational testing of the unit as specified below

**⚠ WARNING: Always perform operational testing from the Remote Controls before operating the Van Ladder from the bucket controls.**

**⚠ WARNING: ANY indication of improper operation during operational testing should be inspected by trained personnel before use of the aerial device.**

### **Using Remote Control:**

1. Raise the unit from the stowed position.
2. Use EXTEND function until *T limit switch* activates, preventing further reach.
3. Use UP function until boom angle is achieved at which EXTEND function works again. (**NOTE: Check for abnormal noise or lack of power from hydraulics**)
4. Use EXTEND function until *Max-T limit switch* activates, deactivating motor and preventing further reach. (**NOTE: Ensure telescopic motor stops immediately when control switch is released or when limit switch deactivates function. Motor stalling or cable slack may indicate a faulty switch**)
5. Use UP function until maximum boom angle achieved.
6. Use DOWN function until *Boom angle switch* prevents further DOWN movement
7. Use RETRACT function until *T limit switch*, allows further DOWN movement.
8. Use RETRACT function until *Min-T limit switch* activates when fully retracted (ensure brake stops motor immediately)
9. Use LEFT and RIGHT functions to rotate unit for 1 full revolution both directions. Ensure cog engages properly with the ring holes and doesn't skip, or make abnormal noises. At lower elevations, where the boom could rotate into the stow cradle, limit switches should deactivate rotational movement. Ensure these switches are working.

**⚠ CAUTION: Whenever positioning the Van Ladder in or near the Stow cradle, ensure the bucket does not contact the vehicle and cause damage.**

10. Use DOWN function to carefully lower unit into the stow cradle. DOWN function should stop approximately ½" before contacting the cradle.
11. On the remote control, flip the "control select" switch to bucket controls and return the remote to its hanger inside the vehicle

### **Using the Bucket Controls:**

12. Stepping up on the front platform and using the stow controls, activate the "Boom Down" to firmly stow the boom in the cradle. DOWN should stop automatically.

**⚠ WARNING: The plunger style limit switch located at the upper end of the lift arm should be inspected daily to ensure it is properly stopping hydraulic down movement when stowing. (see page 14 for more information)**

13. Raise the boom from the stowed position and ensure proper operation of all directional functions and *Emergency Kill Switch*
14. EXTEND the boom out horizontality and look for the 300LBS indicator to illuminate as the ladder is extended past the first limit switch.
15. Go UP with the boom and look for the 300LBS indicator to turn OFF when the ladder reaches approximately 45° of boom angle.
16. Rotate the boom off to the side of the vehicle and lower it all the way down. Exit the bucket and, using the stow controls, attempt to lower the boom down. The red fault indicator on the side of the System Control Box will illuminate. Press the reset switch on the side of the System Control Box to reset.
17. Ensure Cradle rest alarm switch activates buzzer on main power control when vehicle is running, e-brake is released and unit is not stowed.
18. Ensure all operational controls and limit switches are operating properly.

