



**INSTRUCTIONS FOR CLEANING A  
LOW PROFILE HEAVY-DUTY NON-LOCKING  
PHASE 1 PNEUMATIC MAST**

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## Document History

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## Safety Summary

This section describes safety information for the system. These are recommended precautions that personnel must understand and apply throughout installation, operation, maintenance, and troubleshooting. Be sure to read and understand the entire manual before performing any procedure outlined in this manual. Contact the Will-Burt Company with any questions before performing any procedure outlined in this manual.

## Signal Word Definitions

### WARNING

Warnings highlight an essential operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to, or death of, personnel or long-term health hazards.

### CAUTION

Cautions highlight an essential operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment or loss of mission effectiveness.

**Note:** Notes highlight an essential operating or maintenance procedure, condition, or statement.

## General Safety Instructions

The following are general safety precautions that are not related to any specific procedures. These are recommended precautions that personnel must understand and apply throughout installation, operation, maintenance, and troubleshooting. Additional precautions which apply to specific procedures and steps may be listed with the procedure or step to which they apply.

### WARNING

**Safety Equipment!** Helmets or hard hats, eye protection, gloves, and safety shoes or combat boots must be properly worn while working in the deployment area. Death or serious injury could result if proper safety equipment is not properly worn.

### WARNING

**Tip Over Hazard!** Do not operate in high winds. Operate on level ground only. Stand clear of mast and mast payload during operation. Be certain mast is level and secure before and during installation, operation and maintenance. Mast tip over could result in death or serious injury.

### WARNING

**Safety Instruction – Read Manual!** Failure to follow operating instructions could result in death or serious injury. Read and understand the operator's manual before using the mast.

**⚠ WARNING**

**Trained Personnel Only!** Installation, operation, and maintenance to be performed by trained and authorized personnel only. Death or serious injury could result if proper installation, inspection, operation, and maintenance procedures are not observed.

**⚠ WARNING**

**Pinch Point Hazard!** Keep clear of moving parts. Be sure to stay clear of mast during operation. Moving parts can crush and cut resulting in serious injury.

**⚠ WARNING**

**Crush Hazard!** Do not stand directly beneath the mast or payload. Be certain payload is properly installed and secured. Death or serious injury could result if mast fails suddenly.

**⚠ WARNING**

**Burst Hazard!** Do not exceed maximum operating pressure of 35 psi for heavy-duty masts. Keep personnel clear of safety valve exhaust direction. Over pressurizing mast will trip safety valve and could result in death or serious injury.

**⚠ WARNING**

**Lifting Hazard!** Manually lifting over 55 lb. (25 kg) is prohibited. In the UK, all lifting equipment must be thoroughly examined annually by a competent person according to the Lifting Operations and Lift Equipment Regulations 1998. Equivalent regulations exist in other EU states.

## Section 1 Introduction

Review this manual in its entirety. Contact the Will-Burt Company with any questions before performing any procedure outlined in this manual.

This manual describes cleaning procedures for the Low Profile Heavy-Duty Non-Locking (HDNL) Pneumatic Mast.

### 1.1 Safety Precautions

Refer to the Safety Summary for precautions to be observed while operating or servicing this equipment.

### 1.2 Additional Documentation

Additional information for the mast can be found in the *Low Profile Heavy-Duty Non-Locking Pneumatic Mast Operator's Manual* (TP-5252001). Contact The Will-Burt Company to obtain this document.

### 1.3 Cleaning Equipment

Table 1-1 lists equipment recommended for installation.

*Table 1-1 Equipment Recommended for Cleaning*

Recommended Equipment			
Personal Protective*			
	Safety Glasses	Work Gloves	Nitrile or Vinyl Gloves
	Hearing Protection	Hard Hat or Helmet	Safety Shoes
*Depending on the national and local standards and codes of practice, and the environment, additional personal protective equipment may be necessary.			
Hand Tools			
	Clean Rags	Non-Abrasive Cleanser or Solvent such as Lacquer Thinner	
	Mast Lubricant (P/N: 900600) or Lightweight Machine Oil Such as SAE 10		
Equipment			
	Cleaning Fixture Assembly (P/N: 5346001)		

## 1.4 Cleaning Fixture Assembly (P/N: 5346001)

This manual assumes the use of the Low Profile Cleaning Fixture Assembly (P/N: 5346001) (Figure 1-1).

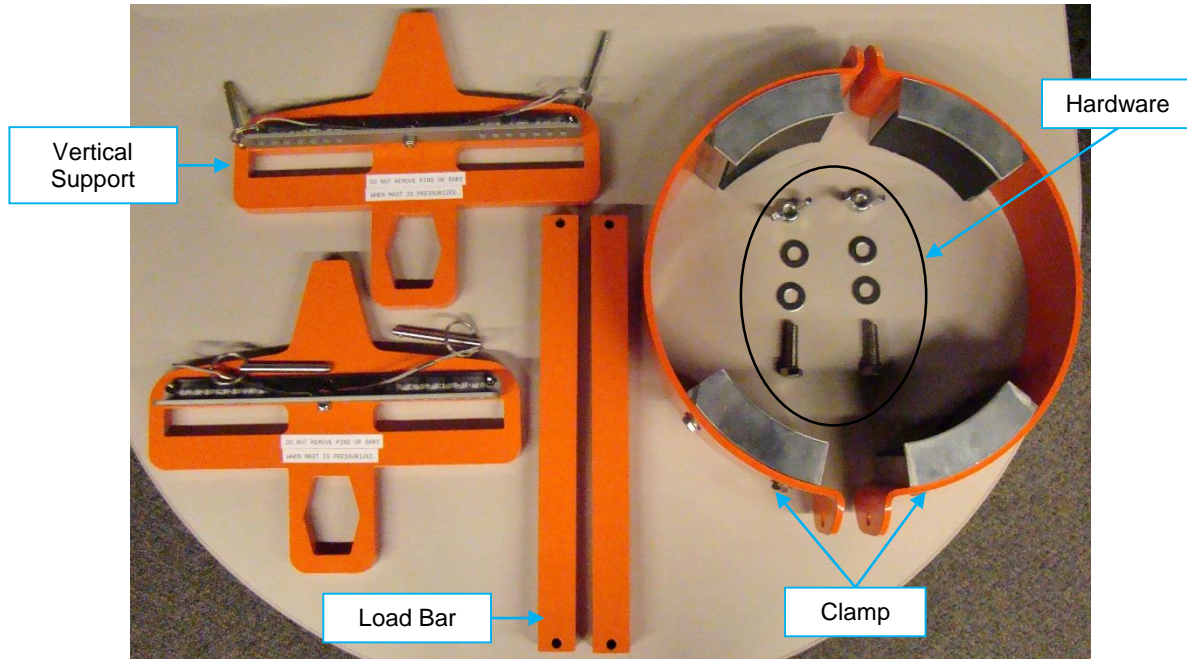


Figure 1-1 Cleaning Fixture Assembly



## Section 2 Cleaning Instructions

Cleaning a Low Profile HDNL Pneumatic Mast requires:

- (2) People
- (1) Cleaning Fixture Assembly (P/N: 5346001)

When cleaning a Low Profile HDNL Pneumatic Mast:

- Understand and follow all precautions from the *Low Profile Heavy-Duty Non-Locking Pneumatic Mast Operator's Manual* (TP-5252001).
- The payload may remain installed on the mast.
- Bring the air source near the mast, if possible, to simplify the process.
- Begin with the innermost tube (position 1) and work tube-by-tube outwards.

### 2.1 Pre-Cleaning Check

Before performing maintenance operations, ensure:

- All operators read and understand the entire maintenance procedure and are properly trained.
- The following precautions are understood and followed:

**⚠ WARNING**

**Health and Safety Hazard!** Solvent used to clean parts is potentially dangerous. Avoid inhalation of fumes and also prolonged contact to skin.

**⚠ WARNING**

**Fire Hazard!** Do not smoke. Use cleaning solvent in a well-ventilated area. Keep cleaning solvent away from ignition sources. Always store cleaning solvent in the proper marked container. Cleaning solvent, used for maintenance, is flammable and can be explosive resulting in death or serious injury.

**⚠ WARNING**

**Safety Instruction – Roof Access!** If the mast will be mounted to a vehicle, the operator must provide a safe means to access the roof of the vehicle during installation.

## 2.2 Cleaning

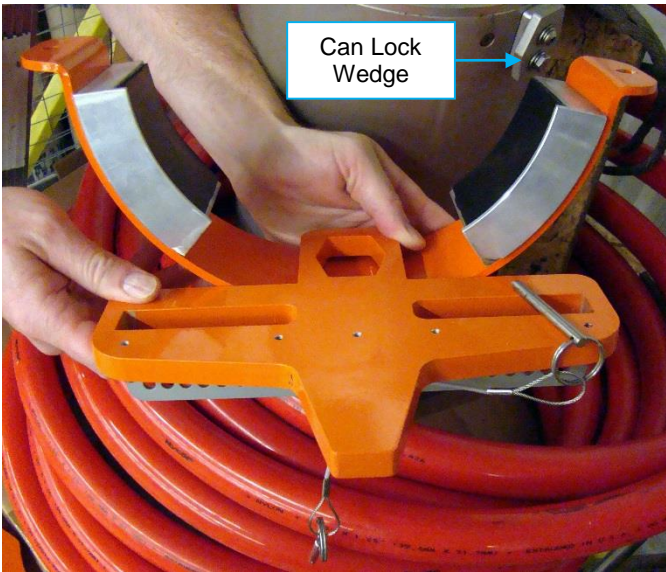
To clean:

1. Extend the mast approximately (12) inches to install the Cleaning Fixture (Figure 2-1).



*Figure 2-1 Extend the Mast*

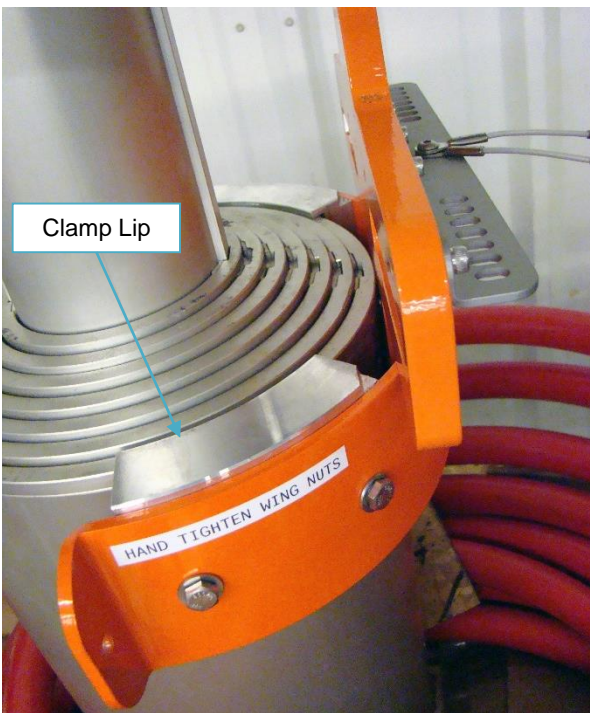
2. Position one half of the Clamp and one Vertical Support on the mast (Figure 2-2). The Vertical Support will fit onto the Can Lock Wedge. The lip of the Clamp will fit over the edge of the mast.



Clamp and Vertical Support



Vertical Support Goes over Can Lock Wedge



Clamp Lip Goes Over Edge of Mast



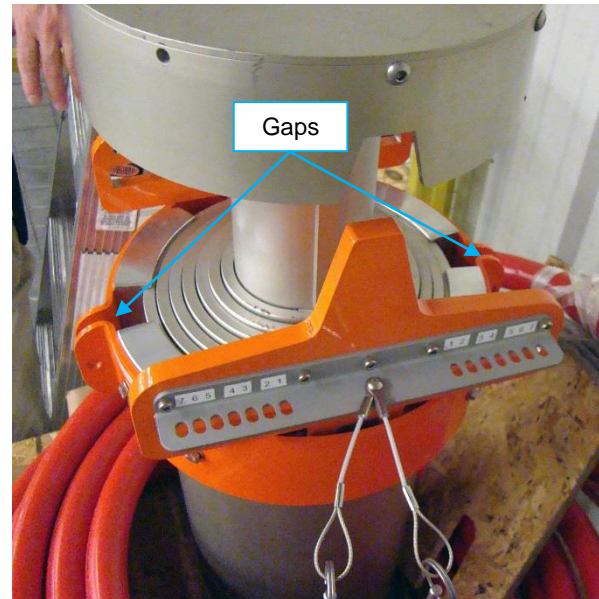
Clamp and Vertical Support on Mast

*Figure 2-2 Clamp and Vertical Support on Mast*

- Repeat this process for the second half of the Clamp and the second Vertical Support (Figure 2-3). Space the gaps between the Clamp halves so that they are approximately equal distant apart.



Both Clamps and Vertical Support On Mast



Gaps Between Clamps

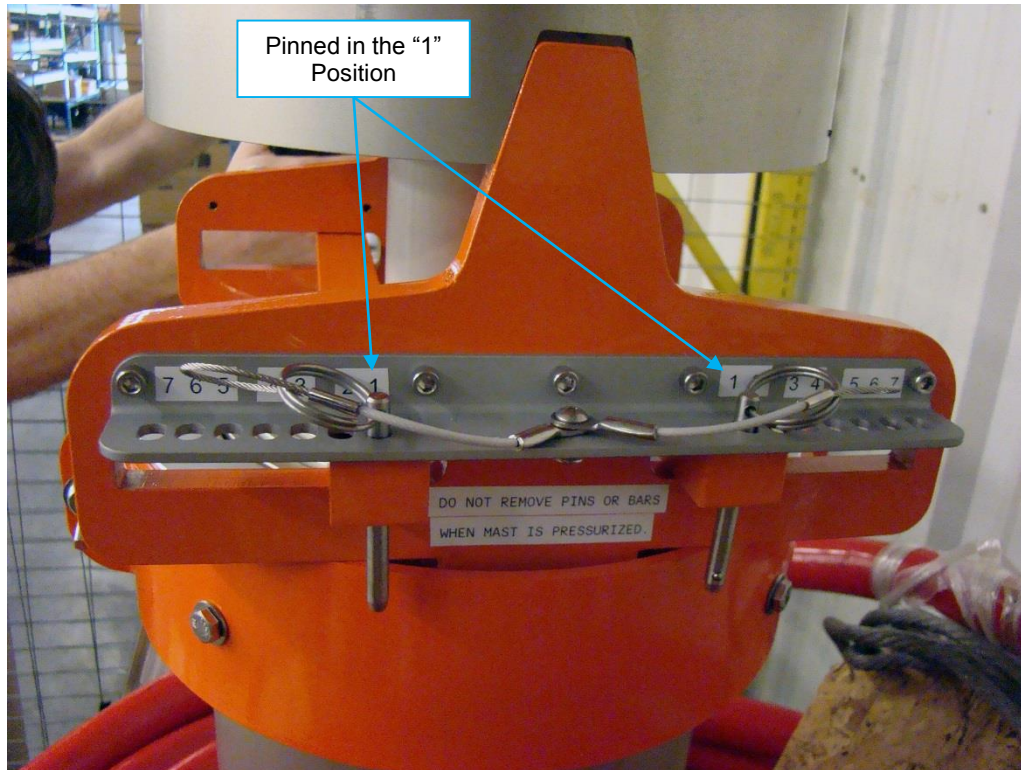
*Figure 2-3 Both Clamps and Vertical Supports on Mast*

- Secure the Clamp halves together with (2) bolts and (2) wingnuts (Figure 2-4). There will be (1) bolt and (1) wingnut per side. Hand tighten the wingnuts. Do NOT overtighten the wingnuts or damage to the mast could occur.



*Figure 2-4 Secure the Clamp*

5. Insert the (2) Load Bars into the slots in the Vertical Supports (Figure 2-5). Ensure both ends of both Load Bars are set to the same number as shown on the Vertical Supports. Pin the Load Bars in place and ensure the Load Bars remain in the correct positions.



*Figure 2-5 Load Bars In Position*

The numbers on the Vertical Supports correspond to the mast tubes as follows:

- 1: Allows only the inner top tube to extend.
- 2: Allows only the top tube and the next larger intermediate tube to extend, starting with the intermediate tube.
- 3: Allows only the top tube and the next larger two intermediate tubes to extend, starting with the outermost of the intermediate tubes.
- 4: Allows only the top tube and next larger three intermediate tubes to extend, starting with the outermost of the intermediate tubes.
- 5: Allows only the top tube and next larger four intermediate tubes to extend, starting with the outermost of the intermediate tubes.
- 6: Allows only the top tube and next larger five intermediate tubes to extend, starting with the outermost of the intermediate tubes.
- 7: Allows only the top tube and next larger six intermediate tubes to extend, starting with the outermost of the intermediate tubes.
- None (Cleaning Fixture Assembly Removed): Allows the top tube and all intermediate tubes to extend starting with the outermost tube.

6. Pressurize the mast to extend the mast tube. Once the mast tube is fully extended, stop pressurizing the mast. The lower mast tubes are prevented from extending by the Load Bars. These tubes will press against the Load Bars (Figure 2-6).

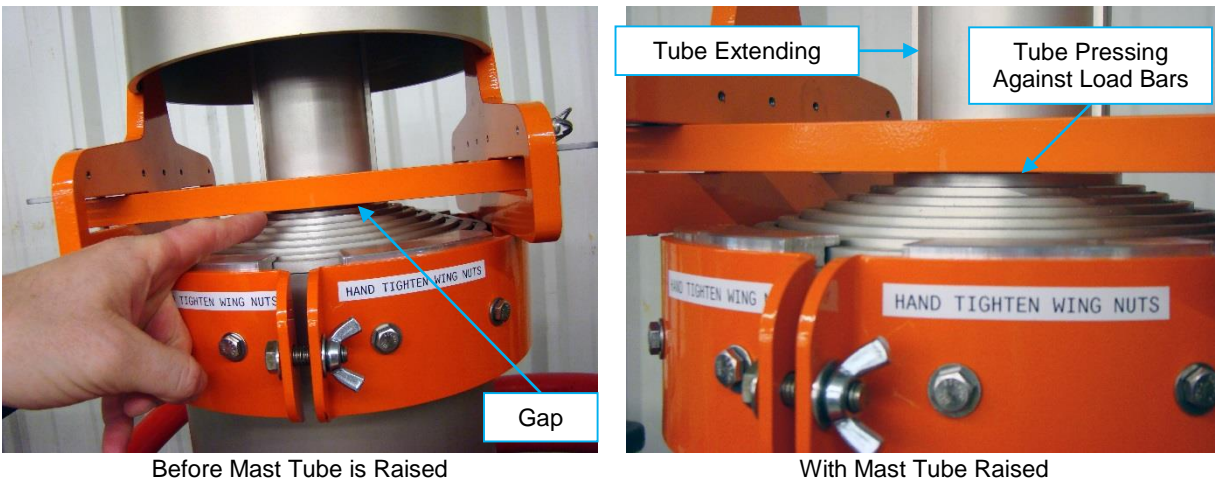


Figure 2-6 Mast Tubes Prevented from Extending

7. Wipe down the extended mast tube.
8. Lower the mast tube by depressurizing the mast.

**⚠ WARNING**

**Safety Instruction – Pressurized Vessel!** Ensure the entire mast is depressurized. If the entire mast is not depressurized, mast tubes could rise suddenly when the Load Bars are moved.

9. With the mast completely depressurized and the can safely sitting on the Vertical Supports, unpin the Load Bars and move them to the next position. Re-pin the Load Bars in the new position and repeat steps 5 through 9 for each remaining tube.
10. After the last tube is cleaned, and with the mast pressurized, remove the Cleaning Fixture Assembly (P/N: 5346001) by removing the wing nuts and all the hardware.
11. Clean the last intermediate tube and base tube.
12. Depressurize the mast and allow the mast to nest.