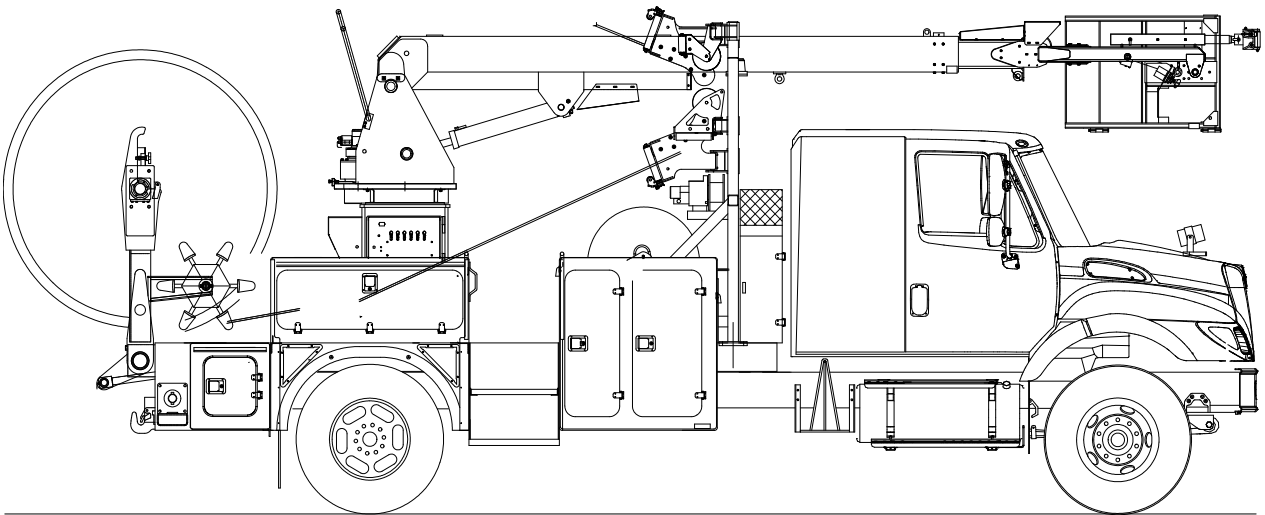




OPERATOR'S MANUAL

TELESCOPIC AERIAL DEVICE

Line Runner 800



Posi-Plus Technologies Inc. Copyright © 2018

COPYRIGHT-WARNING

ANY REPRODUCTION OR DISTRIBUTION OF THIS WORK, IN WHOLE OR IN PART, BY ANY MEANS WHATSOEVER, IS STRICTLY PROHIBITED WITHOUT THE EXPRESS WRITTEN CONSENT OF POSI-PLUS TECHNOLOGIES INC.

TABLE OF CONTENTS

Section 1 - Unit specifications

About this manual.....	5
General specifications.....	5
Standard optional features.....	6
Components identification.....	7
Reach diagrams.....	8

Section 2 - Safety

Accident prevention signs.....	10
Safety instructions.....	10
Safety information.....	11

Section 3 – Safety decals

Listing and location of safety decals.....	15
--	----

Section 4 – Before you operate

Capacity and stability.....	16
Operation near energized conductors.....	17
Daily preoperational checks.....	18
Preparing for operation.....	21
Operating instructions.....	21

Section 5 – Controls

In cab controls.....	22
Intercom system.....	25
Monitor and camera.....	26
Pedestal controls.....	27
Upper controls.....	29
Tailshelf control.....	32
Rear tailshelf controls.....	36
Foot control.....	36
Portable control.....	37

Section 6 – Operation

Booms.....	38
Boom rotation.....	38
Personnel platform.....	39
Platform leveling system.....	40
Reel lifter.....	42
Strand carrier.....	44
Reel driver.....	45
Strand carrier with hydraulic brake.....	46
Tow line winch on boom rest.....	47
Lower boom lifting eye.....	47
Upper boom tow line hook.....	48
Capstan drive.....	49

Stringing system	50
120 Volts AC power source.....	52
Section 7 – Protection systems	
Limitations of protection systems	53
Boom stow protection.....	53
Side load protection.....	53
Section 8 – Emergency operation	
Operating safely	55
Emergency lowering DC pump	55
Section 9 - Troubleshooting	
Troubleshooting chart.....	57
Section 10 – Care of the unit	
Hydraulic system	58
Structures and mechanical systems	60

Preface

The Posi+ Line Runner 800 aerial device is the result of Posi+ advanced technology and quality awareness in design, engineering and manufacturing. At the time of delivery from the factory, this unit met or exceeded all applicable standards published by both the Canadian Standards Association C225 and the American National Standards Institute A92.2. All information, illustrations and specifications contained within this manual are based on the latest product information available at the time of publication.

It is mandatory that all operators read and understand this manual to operate the machine in a safe and efficient manner.

This unit should never be altered or modified in any way that might affect the structural integrity or operational characteristics without the specific written approval of Posi+. Any unauthorized alterations or modifications will void the warranty. Of greater concern, is the possibility that unauthorized modification could adversely affect the safe operation of this unit, resulting in property damage and/or personal injury.



Danger

Electrocution Hazard

This unit is a non-insulating aerial device.

Maintain safe clearances from electrical power lines and apparatus. You must allow for platform sway, rock or sag.

This aerial device does not provide protection from contact with or proximity to an electrically charged conductor.

Death or serious injury will result from such contact or inadequate clearance. The operator of this machine must be familiar with and understand the safety information in the manual and on the placards before operating the unit.

Set-up requirements, work procedures, and safety precautions for each particular situation are the responsibility of the personnel involved in the use and/or care of this unit.

Dealers, installers, owners, users, operators, renters, lessors, lessees and brokers must comply with the appropriate sections of the applicable CSA C225 or ANSI A92.2 standards, OSHA, local and company regulations.

In this manual, there are the applicable reach diagrams for this aerial device. There is one in feet and one in meter. These diagrams will help you choose the proper vehicle's position for the optimum operation of the aerial device.

Section 1 - Unit specifications

About this manual

This manual provides instruction for the operation of the unit. The operator must be familiar with the unit and its capabilities before using the unit on the job. This manual is written to provide an understanding of the unit, safety, proper set-up, and operation.

General specifications

The Posi+ model 800 uses a telescopic boom design that is capable of movement through 100 degrees, from minus 20 degrees below horizontal to 80 degrees above horizontal. The turntable has a 370° non-continuous rotation. The unit has been manufactured with fully proportional controls that allow for smooth operation of the aerial device functions.

This unit has been designed to be operated as a mobile aerial device. The driver must never exceed 3 km/h (2 mph) when the operator is inside the platform. It should only be operated on firm surfaces up to 5 degrees of inclination. For a maximum stability, the truck chassis must be on a level and firm surface only.

Height (ground to bottom of platform)	35 ft	10,7 m
Working Height	40 ft	12,2 m
Reach from Centerline or Rotation Lower boom at 0° Articulation	29'3"	8,9 m
Total Unit Capacity	450 lb to 500 lb *	205 kg to 227 kg *
Platform Capacity	350 lb	159 kg
Cable Down Load	100 lb to 150 lb *	45 kg to 68 kg *
Lower Boom Articulation	-20° to 80°	
Rotation	370° non-continuous	

*These capacities may vary with respect to the pulling eye at the platform. If the pulling eye is telescopic, then the lower capacities will be applicable. The capacities applicable to this unit will be engraved on the aerial device identification placard on the turret.

Standard optional features

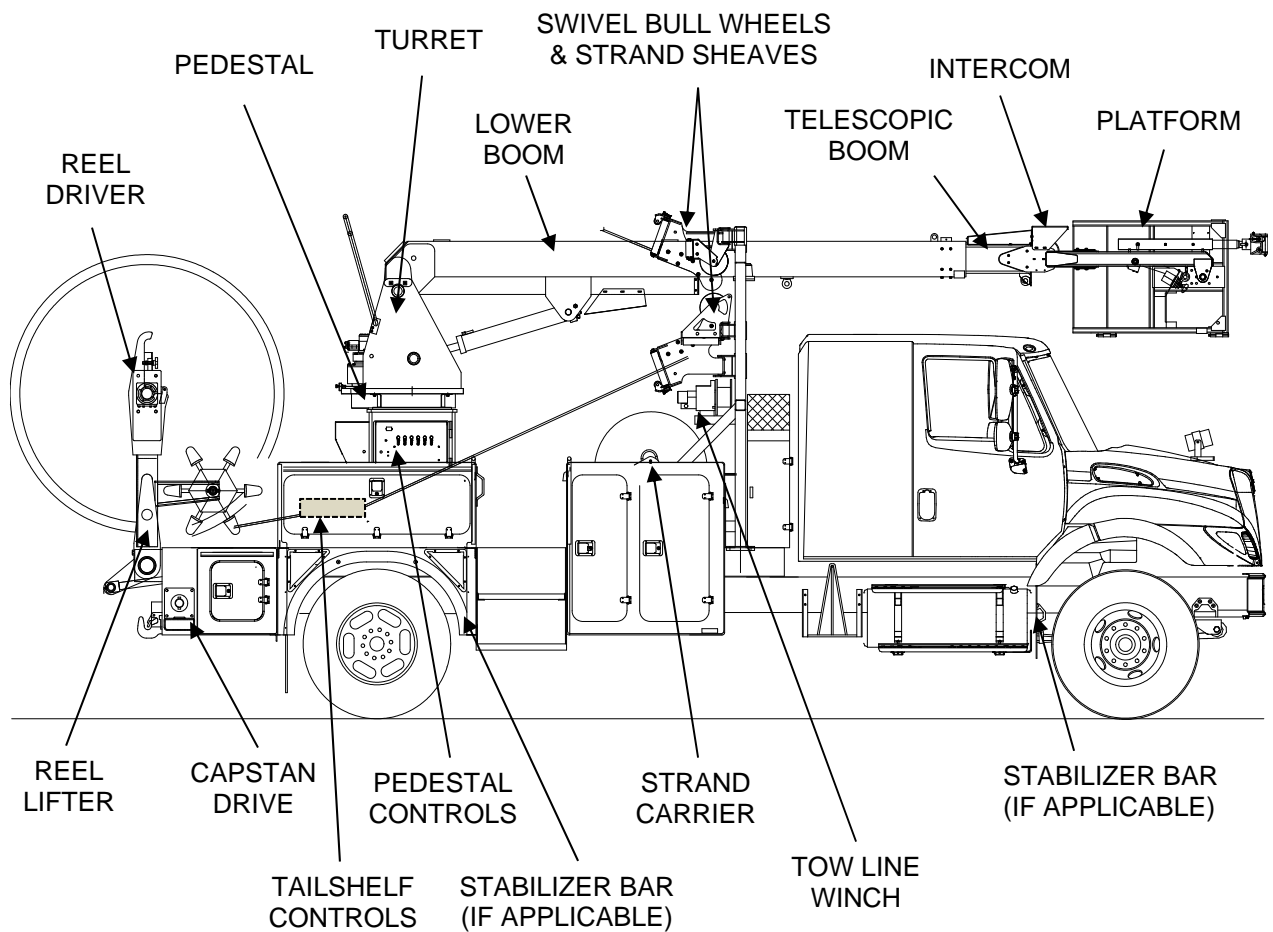
The standard optional features have been designed and built for service to the utility industry. It is intended to be used in the installation, service and repair of telecommunication lines by supplying cable to personnel in the workstation. It is designed to be operated while the chassis is in motion. Operators must be familiar with the controls and operation of these features before operating the unit in the field.

Unit with a reel lifter could also be equipped with a strand carrier. It is designed to carry a maximum load of 5000 pounds on the rear station and 2000 pounds on the accompanying strand carrier. The maximum reel lifter load may depend on the Gross Vehicle Weight Rating (GVWR) of the chassis.

The Posi+ aerial device may be delivered with any one or all the numerous optional features. This manual is prepared to cover all the options, even though machines may or may not be equipped with them.

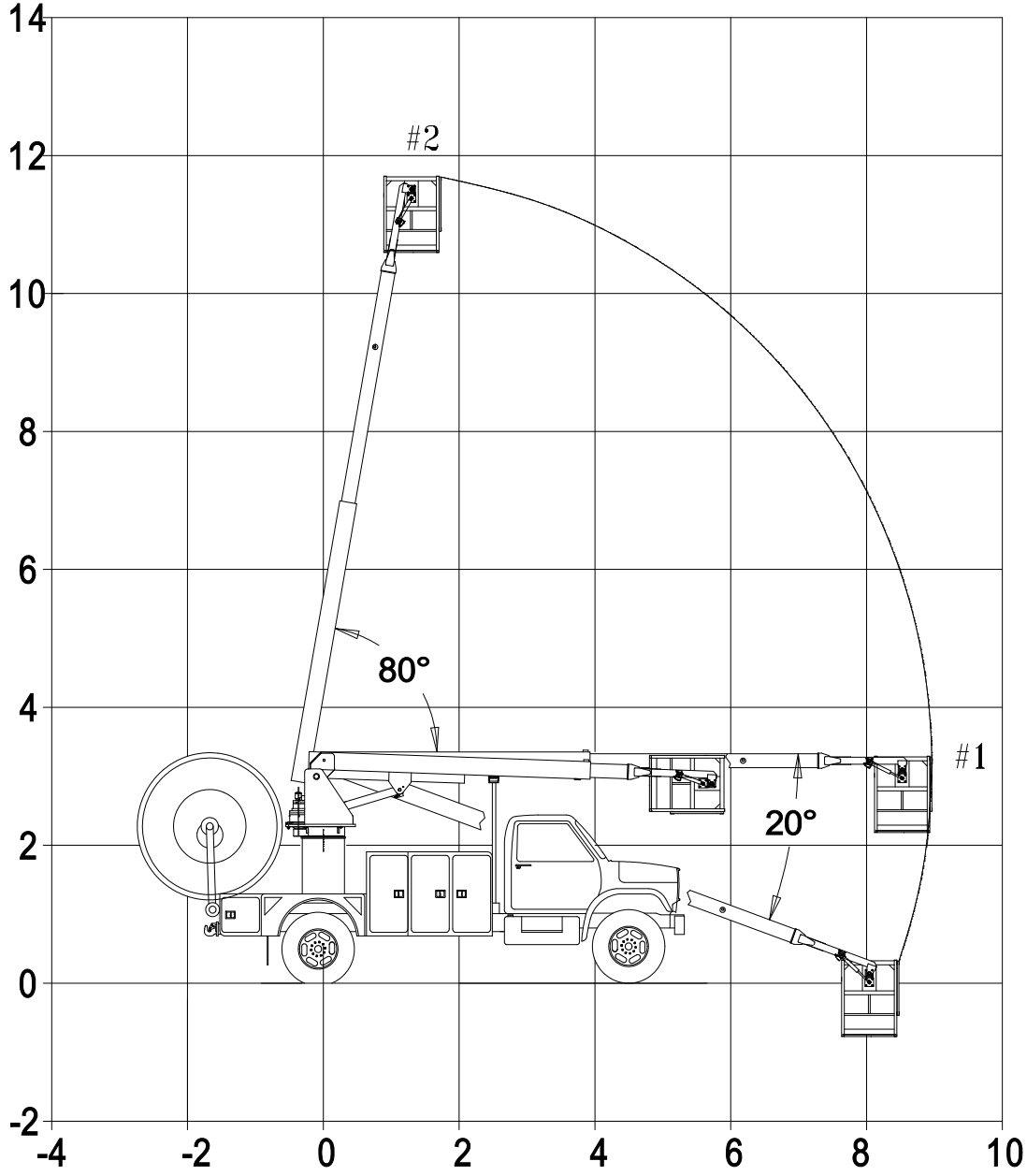
- **Reel lifter**
 - Maximum load 5000 lb
 - Reel maximum wide 67"
 - Reel maximum diameter 84"
- **Reel driver**
 - Torque 0-15,600 in-lb
- **Reel driver with disk brake**
 - Torque 0- 36,000 in-lb
 - Brake torque 0-18,000 in-lb
- **Strand carrier**
 - Maximum load 2000 lb
 - Reel maximum wide 28"
 - Reel maximum diameter 36"
- **Strand carrier hydraulic brake**
 - Torque of 0-6,500 in-lb
- **Strand sheaves, swivel bull wheels and body fairlead**
- **Tow line winch S4CDU on boom rest**
 - Full drum, capacity of 750 lb
 - Speed 57 RPM
- **Capstan drive on reel lifter arm** Torque 4,200 in-lb
Speed 38 RPM
- **Capstan drive 13 CDU**
 - Torque 13,000 in-lb
 - Speed 35 RPM
- **Capstan drive 16 CDU**
 - Torque 16,000 in-lb
 - Speed 25 RPM
- **Tool outlet**
 - 5 or 6 GPM
 - 2000 PSI
- **Trailer outlet**
 - 10 GPM
 - 2000 PSI

Components identification



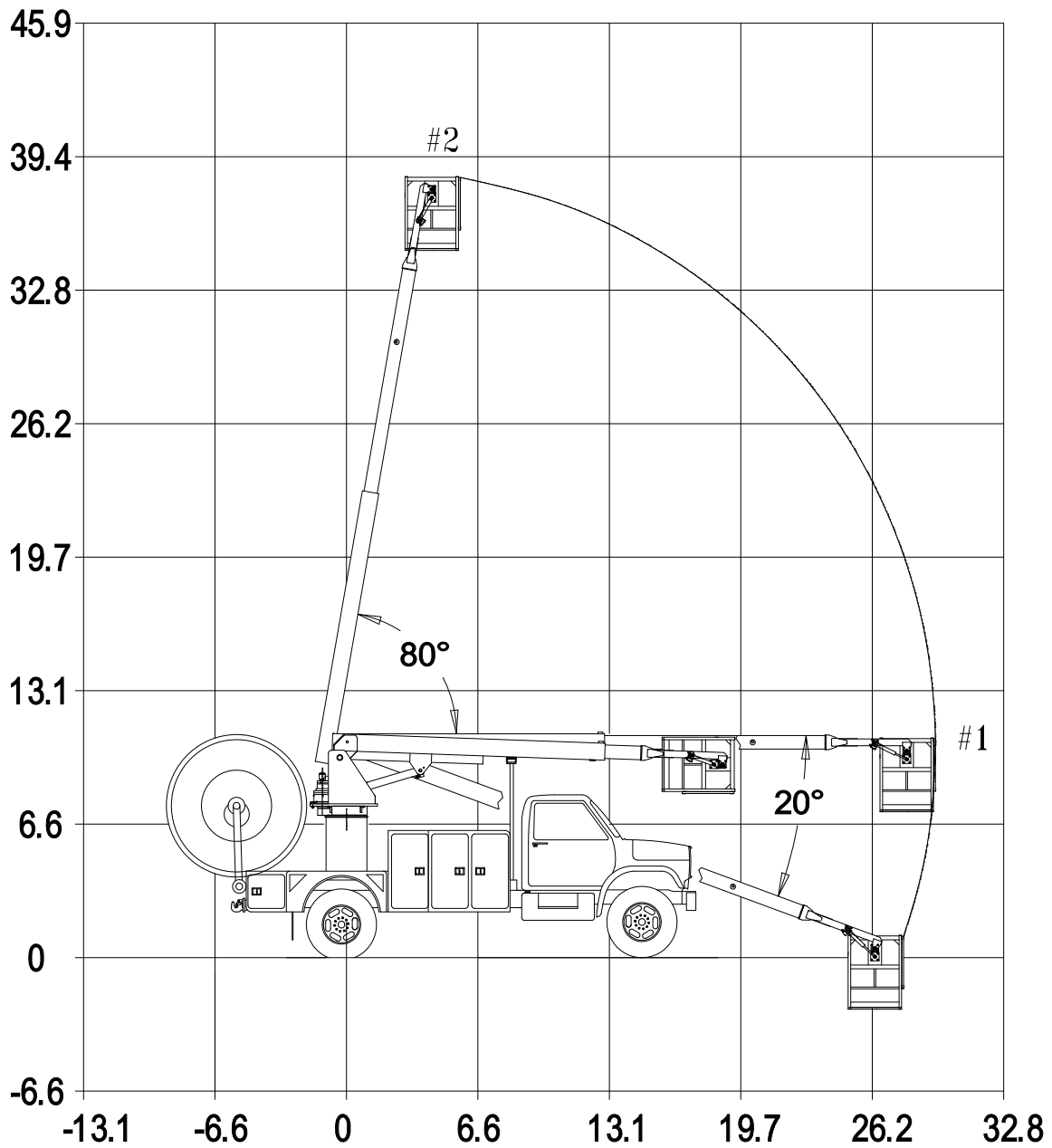
AERIAL DEVICE REACH DIAGRAM MODEL 800-40 (UNITS = METERS)

POS. #1 = (8.9 , 3.3)	POS. #2 = (1.3 , 11.7)
-----------------------	------------------------



AERIAL DEVICE REACH DIAGRAM MODEL 800-40 (UNITS = FEET)

POS. #1 = (29.4 , 10.7)	POS. #2 = (4.2 , 38.3)
-------------------------	------------------------



Section 2 - Safety

Accident prevention signs

Your aerial device was complete with accident prevention signs when it was delivered. These accident prevention signs are prepared by an industry council. If for any reason any of the accident prevention signs are lost or become illegible, replacements may be obtained from Posi+.

Safety instructions

This "safety alert symbol" is used throughout this manual to indicate danger, warning, caution, and attention instructions. These instructions must be followed to prevent the possibility of personal injury and/or property damage.

The terms "danger, warning, and caution" represent varying degrees of personal injury and/or property damage that could possibly result if the preventive instructions are not followed. The following paragraphs from ANSI Z535.4-1991 explain each term.



Indicates an imminently hazardous situation which, if not voided, will result in death or serious injury. This signal word is to be used in the most extreme situations.



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

The terms "attention" is used to alert personnel of instructions that must be followed to prevent the possibility of property damage. Property damage could include structural damage to the unit, component failure, or damage to nearby property. Read and follow all danger, warning, caution and attention instructions.

Read and follow all danger, warning, caution and attention instructions.

Safety information



Study all safety messages and apply them on the job.

General safety information

- Dealers, installers, owners, users, operators, renters, lessors, lessees, and brokers must comply with the appropriate sections of the applicable CSA or ANSI standards, OSHA, local and company regulations.
- Knowledge of the information in this manual and proper training provide a basis for safely operating the unit. Follow your employer's safe work practices and the procedures in this manual when operating the unit.
- This unit is designed and manufactured with many features intended to reduce the likelihood of an accident. Safety alerts throughout this manual highlights situations in which accidents can occur. Pay special attention to all safety alerts.
- This aerial device should never be altered or modified in any way which might affect the structural integrity or operational characteristics without the specific written approval of Posi-Plus Technologies Inc. Unauthorized alterations or modifications will void the warranty. Of greater concern is the possibility that unauthorized modification could adversely affect the safe operation of the unit, resulting in personal injury and/or property damage.
- The operator bears ultimate responsibility for following all regulations and safety rules of their employer and/or any state or federal law.
- Never operate the aerial device with the vehicle out of level by more than 5° on all sides (i.e. front, rear, curbside and roadside).

Before operation



- Do not operate the unit without proper training.
- Keep any tools or equipment needed to perform manual emergency operation in a well-marked, designated area.
- A pre-operational inspection should be performed daily, as described in the daily pre-operational checks Section.
- Do not use hands or other body parts to check hydraulic lines and fittings for leaks. Death or serious injury can result from hydraulic oil being injected into the flesh.
- Make sure that the unit is operating properly, and has been inspected, maintained and tested in accordance with the manufacturer's and government's requirements.
- The unit may be stabilized by stabilizer bars and/or outriggers. Set the unit on level and firm ground before moving the booms from the rest.
- Make sure that the fall protection equipment for each operator is in good condition (i.e. no damage, no cuts, carabiner with safety latch working properly).

- Make sure the platform floor is clear of debris, tools and other equipment that could make the operator unstable and prevent from having both feet on the floor during the operation.
- All platform occupant(s) must always wear a certified CSA or OSHA approved full body harness attached and secured to the anchor provided at the upper controls' station before entering the platform.
- All platform occupants must always wear appropriate personal protective devices at all times (i.e. hard hats, safety shoes or boots; safety glasses, work gloves).
- Never try to climb in or enter the platform, if the platform is not down to the ground.
- Never place any item in the platform for the purpose of increasing work height (i.e. planks, ladders, step stools).
- Never wear climbers inside the platform.
- Before entering the platform, visually inspect the unit and test operate it at the beginning of each day by using the lower controls.

During operation



- Always maintain safe clearance from obstacles, electrical power lines and apparatus. The operator must allow for platform sway, rock or sag.
- Always maintain a safe distance from overhead obstacles (including overhead electrical power lines).
- Always maintain a clear view of the path of travel when operating from the platform.
- Do not exceed the platform capacity that is stated on the serial number placard.
- Understand the stability characteristics of this unit before using it.
- All platform occupant(s) of this aerial device must always wear a certified CSA or OSHA approved full body harness attached to a lanyard while operating the unit from the platform. The lanyard must be secured to the lanyard anchor (D-ring) at the boom tip.
- All platform occupants must always wear appropriate personal protective devices at all times (i.e. hard hats, safety shoes or boots; safety glasses, work gloves).
- Always stand firmly and keep both feet on the floor of the platform.
- Never sit, stand, or climb on the edge of the platform.
- Never place any item or equipment in the platform for the purpose of increasing work height (planks, ladders, step stools).
- Never try to climb down from the platform, if the platform is not down to the ground.
- Make sure the platform floor is clear of debris, tools and other equipment that could make the operator unstable and prevent from having both feet on the floor during the operation.
- Never belt off or tie off to an adjacent pole, structure or other equipment.
- Operate the controls smoothly, avoiding rapid reversals.
- Use care when getting on and off the unit and/or when entering and exiting the platform to avoid slipping or falling. Always maintain three points contact.



Danger

This aerial device is not insulating and carries no dielectric rating. Death or serious injury can result from the use of such equipment in contact with or with inadequate clearance from an energized conductor.

Maintain safe clearance from electrical power lines and apparatus. The operator must allow for platform sway, rock or sag.

- Never allow ground personnel to come in contact with the aerial device, vehicle or vehicle attachments while in operation near energized power lines.
- Pinch points exist on an aerial device between the lower boom and the turntable. Stand clear while raising and lowering the lower boom.
- This unit has been designed to be operated as a mobile aerial device. The driver **must never exceed 3 km/h (2 mph)** when the operator is inside the platform. It should only be operated on firm surfaces up to 5 degrees of inclination. For a maximum stability, the truck chassis must be on a level and firm surface only.



Danger

Do not attempt to operate the aerial device if the communication system is malfunctioning. Death or serious injury may result if the operator in the platform is unable to communicate with the driver of the truck.

- The operator must make sure that the door latch of the platform is engaged properly on the platform door retainer at all times.



Danger

The safety chain routed through the platform door must be secured at all times.

- Avoid contact of the booms or platform with fixed objects such as tree limbs, poles, buildings, etc.
- Do not sit or stand on the lip edge of the platform.
- All operators must operate the aerial device only when their view is unobstructed or a second person who has an unobstructed view instructs the operator of the position of the booms at all times.



DANGER

Falling from platform will result in death or serious injury.

All platform occupant(s) must always wear a certified CSA or OSHA approved full body harness with a lanyard attached to the anchor provided.

Never sit, stand, or climb on the platform edge. Never use planks, ladders or other devices as substitute work positions. Always stand firmly and keep both feet on the floor of the platform.

Secure platform door with safety chain at all times. Platform door latch must be secured at all times. Inspect latch daily.

100-377-100

Section 3 – Safety decals

This section contains the decals listing and a drawing showing their location for this particular unit. A copy of each decal follows the listing.

If for any reason any of the accident prevention signs are lost or become illegible, replacements can be obtained from your Posi+ dealer. This section will help you to find the decal to be replaced.

Section 4 – Before you operate

Capacity and stability

The maximum platform capacity for this aerial device is stated on the aerial device identification placard mounted on the side of the pedestal. A sample of the aerial device identification placard may be found at Section 3 of this Operator's Manual.

The Posi+ Line Runner 800 Series aerial device has been designed to be operated as a mobile aerial device. **The driver must never exceed 3 km/h (2 mph)** when the operator is inside the platform. It should only be operated on firm surfaces up to 5 degrees of inclination. For a maximum stability, the truck chassis must be on a level and firm surface only.

This aerial device has been tested per the stability requirements of both CAN/CSA-C225 and ANSI A92.2 standards as of the date of manufacture. If there were some specific requirements for the stability tests, the applicable report will show the compliance with these requirements.

This unit can be equipped with stabilizer bars on both, the front and rear axles to maintain stability during operation. Consult the Stability Test report and the Parts Manuals for the applicable stabilizer options on this unit.

Stability, or resistance to tipping, is determined by the size and weight of the chassis and the location of the aerial device mounting on the chassis. If the unit has stabilizer bars installed, they are part of your daily preoperational checks.

The aerial device capacity can be found on the serial number placard that is located on the turntable. The capacity is listed both for the platform and for the entire unit.

- **Total unit capacity** is the total weight of the men and material in the platform, and the cable down load that may be lifted by the aerial device without overloading the unit.
- **Platform capacity** is the total weight to be lifted in the platform, including the personnel, tools and material.
- **Cable down load capacity** is the total weight of cable that can be lifted at the platform while installing a cable.

Compare the total weight to the capacity listed on the serial number placard.



Caution

Never lift an unknown load. Determine the weight of the material before moving it. Use the placards provided on the unit and in this manual to determine the available rated lifting capacities. Do not exceed rated lifting capacities.



Caution

Operators are instructed to operate the aerial device controls smoothly, avoiding sudden reversals in direction or abrupt stops. This aerial device will meet or exceed the extreme requirements for stability as set forth in the CAN/CSA-C225 and ANSI A92.2 Standards, as delivered. Even so, in extreme conditions of rough control, dynamic or shock loading may have a detrimental effect on stability.

Complete dated and signed records of satisfactory testing and inspection should be maintained in permanent files.



Warning

Aerial devices are designed to operate on slopes up to five degrees. For maximum stability the truck chassis must be on a level and firm surface.

It is impossible to foresee all possible situations and combinations for set up of the unit. The operator bears ultimate responsibility for insuring that the unit is properly set up for the particular conditions encountered.

Operation near energized conductors



Danger

This aerial device is not insulating and carries no dielectric rating. Death or serious injury can result from the use of such equipment in contact with or with inadequate clearance from an energized conductor.

Maintain safe clearance from electrical power lines and apparatus. The operator must allow for platform sway, rock or sag.

Operators must comply with the appropriate sections of the applicable CSA or ANSI standards, OSHA, local and company regulations.

Daily preoperational checks

The aerial device should be inspected at the beginning of each work day, before going out on the job. By spending a few moments every day inspecting the unit, potential service and safety problems may be detected. **The following inspections and tests shall be performed by the operator immediately prior to first use at the beginning of each shift.**

The following items should be checked during the daily pre-operation inspection.

1. Check the oil level of the hydraulic reservoir. The oil level must be between the Add and Full marks on the sight gauge with the truck on level ground, booms in the rest position. If necessary, add oil of the proper type as described in the Maintenance Manual. The need to add oil on a regular basis indicates a leak in the hydraulic system which should be corrected.
2. Conduct a visual inspection of the unit. Inspect pins, fasteners, structures and welds for looseness, cracks, wear or damage. Special attention should be given to check fasteners of the following components:
 - Lower boom pivot pin.
 - Lower boom cylinder mounting pins.
 - Upper boom cylinder mounting pins.
 - Leveling cylinders mounting pins.
 - Platform mounting shafts.
 - Platform mounting fasteners.
 - Arbor bar bearings.
3. Check the electrical and hydraulic system, wire routing, hydraulic cylinders, hoses and tubes for leakage or damage. Any loose or damaged component, fasteners, hose, tube, pin or weld must be repaired or replaced before operating the unit.



Warning

Do not use hands or other body parts to check hydraulic lines and fittings for leaks. Death or serious injury can result from hydraulic oil being injected into the flesh.

4. Visual and audible safety devices should be checked for proper operation. Any malfunction, missing or illegible markings or placards should be corrected before operating the unit.
5. Check the tires for proper inflation, no damages.
6. Check the stabilizer bar(s); look for deformation or damage, visible defects, rubbers condition.
7. Apply the parking brake, start the engine and engage the PTO.

8. Check the voice communication system, upper speaker and in cab intercom.
9. Test the override systems of this unit. The lower controls must override the upper controls. If the overrides (station selector) are not operating correctly, the machine should not be used until the problem is corrected.
10. With no one in the platform, **cycle the aerial device functions through the complete range of motion from the lower control station**. If all functions operate properly from the lower control station, then test the operation of each function from the upper controls. While the unit is operating, look for oil leakage from the hydraulic lines and components. If any function does not operate properly, or an oil leak is found, the problem must be corrected before further operation of the aerial device.
11. There is an electrical interlock system on the upper controls. When the trigger on the single handle upper controller is activated, the boom can be moved. When this trigger is released, it should not be possible to move the boom and it should not be possible to rotate the unit. The machine must not be operated unless the trigger is working correctly.



Warning

Platform occupant(s) must always wear a certified CSA or OSHA approved personal fall protection system attached and secured to the anchor provided.

12. In the event that your unit is equipped with an emergency lowering DC pump, start the DC pump from the lower controls to check the pump for proper operation. Then start the DC pump at the upper control station and check the pump for proper operation (if applicable).



Caution

The DC pump is intended for emergency lowering use only. Do not run for over three (3) minutes continuously. Damage to the pump or motor can result.

13. The upper controls' enclosure is a very important part of this unit. It must be kept dry at all times. If for any reason, a component has to be changed in and/or on the upper controls' enclosure, then the seals or gaskets have to be replaced, if they are damaged. If you suspect that a water seal is damaged, then it must be replaced immediately.



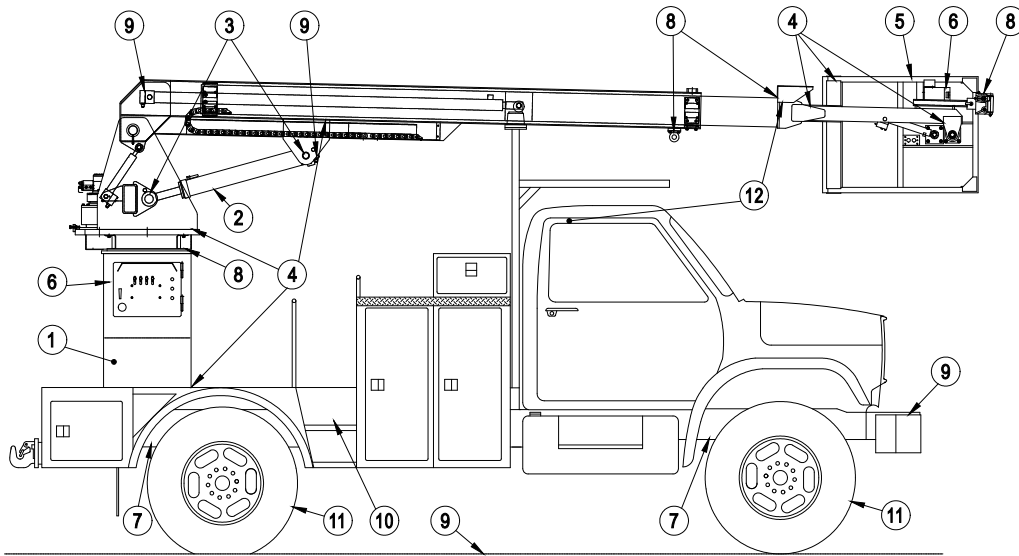
Warning

Erratic movements of the aerial device can happen if upper controls enclosure is not kept watertight check all seal and rubbers before to operate.

Figure 4.1



**DAILY PRE-OPERATION INSPECTION
MODEL 800**



- ① **HYDRAULIC OIL IN RESERVOIR - CHECK:**
 - "BLACK LINE" LEVEL = FULL
 - "RED LINE" LEVEL = ADD
 - OIL CLEANLINESS ON GAUGE
- ② **BOOM CYLINDERS (2 PLACES) - LOOK FOR:**
 - ROD OR CYLINDER DAMAGE
 - BEARING SECURE IN ROD END
 - NO LEAKS ON HOLDING VALVES
- ③ **BOOM + PLATFORM PINS (11 PLACES) - LOOK FOR:**
 - DAMAGE OR DEFORMATION
 - RETAINERS IN PLACE
 - PINS SECURED
- ④ **STRUCTURAL WELDS - LOOK FOR:**
 - CRACKS & DAMAGE ON BOOMS, PEDESTAL, PLATFORM + TURRET

- ⑤ **PLATFORM - LOOK FOR:**
 - DAMAGE & CRACKS
 - MOUNTING STRUCTURE DEFORMATION/CRACKS
 - MOUNTING BOLTS SECURED
- ⑥ **CONTROLS - CHECK FOR:**
 - PROPER & SMOOTH OPERATION OF EVERY FUNCTIONS
 - EMERGENCY STOP
 - INTERLOCK ON JOYSTICK
 - LOWER CONTROLS OVERRIDE SWITCH
- ⑦ **STABILIZER BARS - CHECK FOR:**
 - DAMAGE OR DEFORMATION
 - VISIBLE DEFECTS
- ⑧ **FASTENERS - LOOK FOR:**
 - FASTENERS AND MOUNTING BOLTS IN PLACE
 - PRESENCE OF RUST

- ⑨ **HYDRAULIC LEAKS - LOOK FOR:**
 - OIL ON THE GROUND & ON THE BODY DECK
 - CYLINDERS' HOLDING VALVES LEAKS
 - LOOSE FITTINGS & HOSES DAMAGE
 - PUMP, MOTOR & VALVES LEAKS
- ⑩ **ANTI-SKID SURFACES - LOOK FOR:**
 - CLEANLINESS & DAMAGE
 - REPAIR & CLEANING MUST BE DONE TO PREVENT ACCIDENTS
- ⑪ **TIRES - CHECK FOR:**
 - PROPER INFLATION & DAMAGE
- ⑫ **VOICE COMMUNICATION SYSTEM - CHECK FOR:**
 - UPPER SPEAKER OPERATION
 - INTERPHONE OPERATION
- ⑬ **OTHER COMPONENTS - LOOK FOR:**
 - LOOSE COMPONENTS
 - NOISY OPERATION

IMPORTANT: REFER TO THE OPERATOR'S MANUAL FOR MORE INSPECTION INFORMATION

100-229-060

Preparing for operation

1. Positioning of the vehicle will be governed by the reach of the booms and the work to be done.
2. The driver and the operator are both responsible for placing the vehicle in the proper position for safe operation of the lift at all times and in every condition. The operator must make sure that any signals that might be used are understood by all personnel concerned, including bystanders. When operating on crowned or inclined roads, where the slope may exceed five degrees, or when on soft ground, extra caution must be taken to maintain the vehicle. The driver must check the surface conditions before moving the vehicle when operating on the shoulder or off the road. Proper tire pressure must be maintained to ensure vehicle stability.
3. If there is any doubt as to vehicle stability under any conditions, do not operate the lift. Working areas must be identified with approved cautionary signs and/or other approved safety devices. Before operating the lift, make sure that any rotating, elevating, or other operations will not interfere with traffic, nearby objects or energized conductors. Keep bystanders away from the lift and clear of working areas.
4. Start the engine and turn "ON" the PTO/PUMP switch of the cab control panel. This switch starts the PTO/PUMP hour counter and allows the hydraulic operation of the aerial lift.
5. Before moving the boom, ensure that the vehicle is on a firm surface.
6. The controls at the platform allow aerial device rotation in both directions, booms raise and lower, and boom extends and retracts. The controls will not operate until the trigger on the side of the control handle has been depressed.

Operating instructions

1. Do not exceed platform capacity.
2. Inspect unit for loose objects, hydraulic leaks or physical damage.
3. Turn "ON" the PTO/PUMP switch of the cab control panel. This switch starts the PTO/PUMP hour counter and allows the hydraulic operation of the aerial lift.
4. Wear your safety belt and lanyard.
5. Raise booms sufficiently to clear all obstructions before rotating booms.
6. Operate controls slowly for smooth movements.
7. Make sure that the voice communication system is turned "ON" and working properly before any travel.
8. The driver **must never exceed 3 km/h (2 mph)** when the operator is inside the platform.
9. Inspect and service unit per the instructions given in the manual.
10. Tires and suspension are the stability, inspect all of them meticulously.

Section 5 - Controls

In cab controls

The in cab controls are:

- Switch controlling the PTO.
- Switch controlling strobe lights.
- Control display unit (CDU).
- Intercom.
- Connection for access to the controller program.



Units without tensioning system

When the vehicle ignition key is turned “ON”, the CDU displays the “Main” page, which shows the PTO hours accumulated and information available from the engine controller.

This page is automatically displayed when the ignition key is turned “ON”; the operator has no actions to do on the CDU before operating the unit.



The other pages of the display are useless for the operator and the program settings are protected.

Units with reel and strand tensioning system

For units with this equipment, when the key is turned ON, the display shows the reel and the strand tension actual setting. This setting can be modified from upper and in cab controls.



Limitations

Limitations are programmed to protect the pump against high rotation speed:

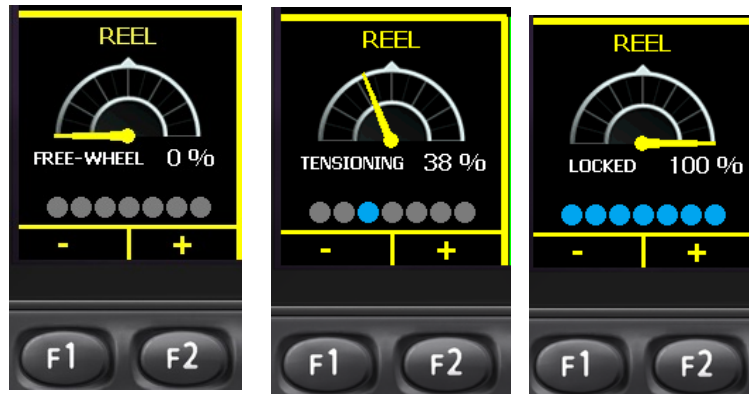
- The PTO will switch “off” if the engine speed reaches 1800 rpm and switches back to “on” when the RPM returns under 1000.
- When the vehicle reaches 20 km/h (12 miles/hour) with the PTO switch “on”, a buzzer sounds in the cab and an alert is displayed on the CDU to alert the driver.
- The tool outlets and the tailshelf controls are not functional if the parking brake is not applied.

Tensioning adjustment

On the “Main” page, the reel and strand carrier tension settings are displayed. Seven (7) LEDs indicates the tension level actual setting.

Fourteen levels of tensioning are available; one or two LEDs turned on indicates the actual setting.

Reel tension setting:



- Pressing F1 decreases reel tension down to the freewheel operation.
- Pressing F2 increases reel tension up to the maximum braking capacity.

When the reel driver is operated to “Pay-in” or “Pay-out”, the tensioning brake is released; the tension is applied to the previous setting when the reel driver function is stopped.



Caution

Make sure every worker is aware and ready before to modify the tension settings from one of the controls.

IMPORTANT:

When one of these situations happens:

- Emergency stop is pressed
- PTO turned OFF

The tension setting is maintained

When the vehicle key switch is turned “Off”:

The pressure in the hydraulic brake circuits is released and:

- The reel driver brake is released (0%).
- The strand carrier brake is released (0%).

When the vehicle key switch is turned “On”, the tension returns to the “Freewheel 0%” setting.



Caution

Before any displacement, make sure the end of the reel cable is attached to the drum so not to unwind while driving to or from the job site.

Strand carrier tension setting:



- Pressing F3 decreases strand tension down to the freewheel operation.
- Pressing F4 increases strand tension up to the maximum braking capacity.
- Freewheel when no LEDs on, setting at 0%
- Maximum brake when all LED's are on.

The tension setting for the reel can be set from the upper controls or from the cab controls. From the lower controls, the tension setting is "Locked" or "Freewheel".



Caution

Make sure every worker is aware and ready before to modify the tension settings from one of the controls.

IMPORTANT:

When one of these situations happens:

- Emergency stop is pressed
- PTO turned OFF

The tension is maintained at the selected setting.

When the vehicle key switch is turned "Off":

The pressure in the hydraulic brake circuits is released and:

- The reel driver brake is released (0%).
- The strand carrier brake is released (0%).

When the vehicle key switch is turned "On", the tension returns to the "Freewheel 0%" setting.

Intercom system

Two models of intercom are available, the standard model and the premium quality model. Both intercom systems consist of a master unit mounted in the cab and a slave unit mounted at the platform.

The master unit is wired into the cab control station and supplies DC power to the slave unit. It has a push-to-talk switch that allows the driver to talk to the operator.

It is normally in the listen mode, unless the switch is activated.

Volume of both speakers is controlled from the master unit in the cab.

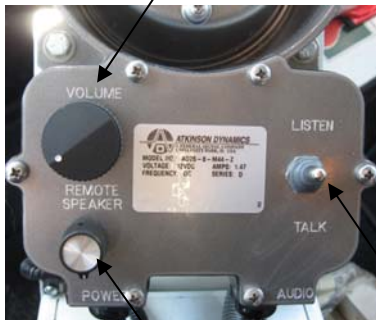
The slave unit is a "hands-free" unit, so it is in talk mode at all times unless the push-to-talk switch at the master unit is activated. This way, the operator can talk to the driver without having to manually operate the intercom.



Warning

Do not attempt to operate the aerial device if the communication system is malfunctioning. Death or serious injury may result if the operator in the platform is unable to communicate with the driver of the truck.

Platform speaker volume



Voice system power & In-cab speaker volume



-Hold down to talk to the platform.
-Listening mode when in normal position.



Free hand platform speaker

Monitor and camera

A color monitor installed in the cab and a camera installed at the lower boom tip allows the vehicle driver to have a constant view of the operator in the platform.

When the vehicle key switch is turned on, both, monitor and camera are powered.

Monitor

Different controls on the monitor:

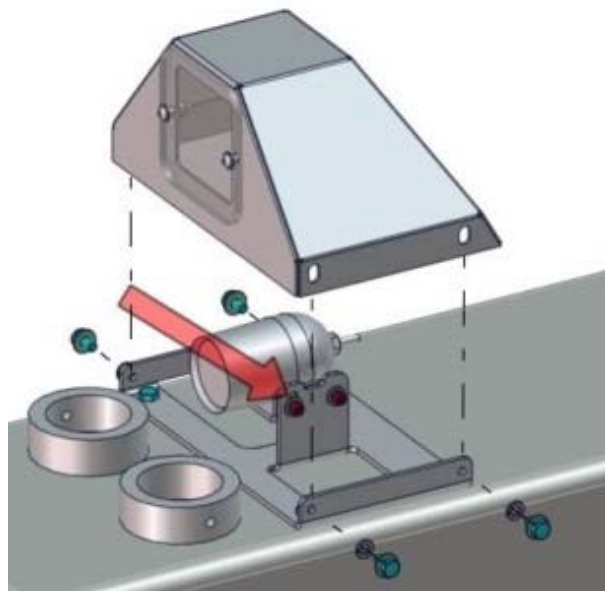
- 1 Power On/off
- 2 Menu (contrast, tint, etc.)
- 3 Selector
- 4 Selector
- 5 Display switch



Camera

The camera is a color, day and night, marine type and weatherproof camera.

If necessary, the vertical position of the camera can be adjusted by removing the cover to access the adjustment bolt.



Pedestal controls

The following controls are installed on curbside on the pedestal:

- **Controls selector**, two positions toggle switch.

This switch allows selecting the operation from upper controls & remote controls or from lower controls only. This selector also acts as an EMERGENCY STOP for both, the upper controls & the remote controls. When shifted to the “LOWER CONTROLS” position, this selector will stop all the functions operated from the upper controls and the remote controls.

Note: To operate with the lower tailshelf controls or the portable remote control, this selector has to be set at “UPPER & REMOTE CONTROLS” and the vehicle’s parking brake must also be applied.

- **Emergency pump**, spring return toggle switch.

This switch must be hold to run the emergency pump. Hold the switch while operating with the control levers.



IMPORTANT: The selector described above will not shut off the power supply to the junction box at pedestal. However, if the emergency stop at the upper controls or if the emergency stop on the remote controls is activated, then a message will show up on the display in the cabin. It will state which emergency stop has been activated.

Electro-hydraulic valve controls

The electro-hydraulic valve controls are located at the pedestal.



The station consists of a conventional five to nine handle controls that operates the following functions:

- Lower boom “Up/Down”
- Boom rotation “CCW/CW”
- Upper boom “Extend/Retract”
- Platform tilt “Tilted position/Working position”
- Reel lifter “Up/Down”.

Depending on the options selected, other control valves are also installed.

- Tow line winch (optional) “Pay-out/Pay-in”
- Capstan drive “CW/CCW”
- Reel driver “Pay-in/Pay-out”
- Tool outlets

All these functions are proportional when operated from the control handles.

Notes:

- The control levers are moving when the functions are operated from the upper or lower electronic controls
- The tool outlets are activated only if the vehicle parking brake is applied.

A pressure gage indicates the actual pressure in the hydraulic circuit.

Upper controls

The one-hand joystick control mounted on the side of the platform operates the aerial device movement.

The following three proportional boom functions can be operated with the single handle controller:

- Upper boom “extend/retract”
- Rotation “clockwise/counter clockwise”
- Lower boom “raise/lower”

Operation of the single handle controller provides the operator multiple simultaneous boom movement, while having one hand free.



In addition to providing for directional control of the aerial device, the single handle controller has an interlock button (trigger) fitted into the handle. The joystick trigger must be depressed before any movement of the joystick handle.



Caution

The interlock button must be fully depressed before the controller handle is moved in any direction. Releasing the interlock button before centering the control handle may produce sudden and abrupt stopping of movement.

Testing the interlock system

It is recommended that the interlock system be tested daily to assure that it is operating properly. Testing can be easily accomplished by simply moving the single handle controller without depressing the interlock button (trigger). If movement of the booms or rotation occurs, the cause should be determined and the unit not operated until the problem is corrected.



Caution

When testing the operation of the interlock system, the platform and booms should be in such a position that no damage can result from unexpected unit movement.

Emergency stop

Whenever required the emergency stop can be used to stop all boom functions. To activate, push down the red button that is installed on top of the upper controls' enclosure. Even if the single handle controller is activated in any position, the emergency stop can always be applied.

The emergency stop deactivates the electronic controls. Operation can still be done from the pedestal controls if "Lower controls" is selected at the pedestal controls selector.



Tow line winch

A spring return, three positions, toggle switch is located on left side of the control box and operates the tow line winch.

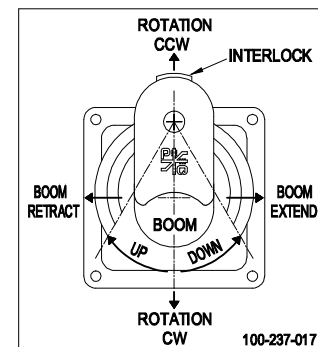
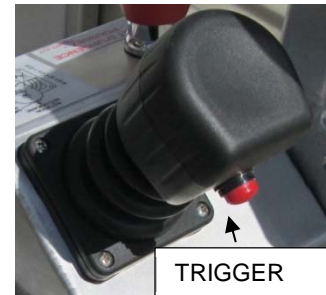
Joystick

When a function is operated, the function's speed is proportional to the distance the single handle upper control is shifted.

A decal indicates the functions operated from the joystick. The trigger must be depressed before operating the boom functions.

A double click on the trigger will reduce the boom speed to 25% (programmable) of the full speed.

Note: Since the joystick is programmable from the control display, joystick functions could be different from the decal shown here. Consult the parts manual for the specific joystick functions.



Key pad controls

A key pad is installed at the platform to operate the standard and optional equipment. The actual upper control pad of your unit might differ depending on the options chosen to equip the unit.

The functions available are:

- Emergency pump
- Three speed
- Platform tilt
- Reel driver
- Reel tensioner
- Strand brake



Platform tilt

The “Platform tilt” key allows the operator to adjust the platform to a comfortable working position. **The joystick trigger must be hold to operate this function.**



Caution

If the platform is tilted to an inclined position when the lower boom is at its maximum up position, the platform retaining system could become applied and the leveling system locked. The platform has to be tilted back to level to remove the retaining system.

NOTE:

- LED's located above the keys indicates the function operating, the speed and the tension level selected.
- To operate with the emergency pump, press and hold the “Emergency pump” key, and then press the key of the function to be operated.

ATTENTION: The DC pump is intended for emergency lowering use only. Do not run for over three (3) minutes continuously. Damage to the pump or motor can result.

Tailshelf control (option)

The tailshelf control station can be installed permanently in the rear curbside compartment or is portable and includes a cable, which can be plugged at a connector located inside the curbside rear compartment of the vehicle body.

The tailshelf station consists of one or two key pads with 8 to 22 keys.

One pad can control the reel lifter, the reel driver, the capstan drive and the tool outlets.

A second pad can control the boom functions and the platform tilt. Other keys can be added for the reel and strand brakes.

The actual tailshelf control of your unit might be different because of the options chosen to equip the unit.



NOTES:

- LED's located above the keys indicates the function activated.
- Always have a tool connected before operating the tool outlet. One or both outlets can be selected by activating the key repeatedly.

IMPORTANT: When not in operation, the portable control is to be properly secured in the controls' compartment or in the cab. The control must be attached so as not to "bounce around" during transportation.

If the control is not turned "Off" (or left to the "On" position) and the PTO has been disengaged, then at the next operation, this control has to be reset. This is done by turning "Off" and "On" the remote control.

This interlock protects against the event that an object being moved during transportation is activating the control's keys.

Tailshelf control

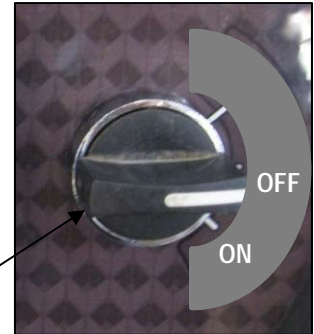


KEY PAD FOR OPTIONS: REEL LIFTER, STRAND CARRIER, TOW LINE WINCH, CAPSTAN

KEY PAD FOR BOOM AND ACCESSORIES CONTROLS



EMERGENCY STOP PUSH BUTTON



SELECTOR "ON" "OFF"

Emergency stop

- Push button to stop all electronic and hydraulic controls: lower and upper.
- Turn clockwise to release and restart all controls.

Selector "On / Off"

- "Off" position turns off the tailshelf electronic control only.

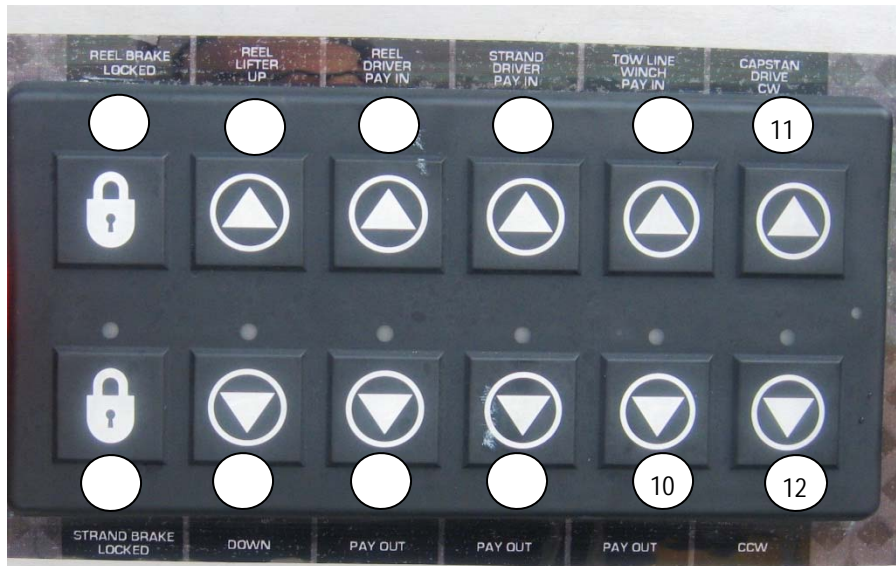


Warning

When this lower control is turned "OFF", the "Emergency stop" on this control is not operational.

Key pad for optional equipment:

Reel driver and lifter, strand carrier, tow line winch and capstan drive.



- | | |
|-------------------------------|------------------------------|
| 1- REEL BRAKE "LOCK-UNLOCK" | 7- STRAND DRIVER "PAY IN" |
| 2- STRAND BRAKE "LOCK-UNLOCK" | 8- STRAND DRIVER "PAY OUT" |
| 3- REEL LIFTER "UP" | 9- TOW LINE WINCH "PAY IN" |
| 4- REEL LIFTER "DOWN" | 10- TOW LINE WINCH "PAY OUT" |
| 5- REEL DRIVER "PAY IN" | 11- CAPSTAN DRIVE "CW" |
| 6- REEL DRIVER "PAY OUT" | 12- CAPSTAN DRIVE "CCW" |

NOTES:

- LED's located above the keys indicates the function activated.
- Reel and strand brake that are set "Locked" from this control station will be set "Locked" at all control stations (in-cab display or platform control).
- The "Freewheel" function is available when the brake lock is removed.
- When the "Emergency stop" is activated, the reel driver brake stay applied if "Locked" was selected.
- When the "Emergency stop" is activated, the strand carrier brake stay applied if "Locked" was selected.
- Strand and reel brake functions returns automatically to "Freewheel" when the vehicle key switch is turned "Off".

Key pad for boom and accessories



- | | |
|-------------------------------------|--------------------------------------|
| 1- LOWER BOOM "UP" | 8- PLATFORM TILT "INCLINED POSITION" |
| 2- LOWER BOOM "DOWN" | 9- TOOLS /TRAILER HYDRAULIC OUTLETS |
| 3- TELESCOPIC BOOM "EXTEND" | 10- AUXILIARY FUNCTION |
| 4- TELESCOPIC BOOM "RETRACT" | 11- EMERGENCY PUMP |
| 5- BOOM ROTATION "CLOCKWISE" | 12- THREE SPEEDS |
| 6- BOOM ROTATION "COUNTERCLOCKWISE" | |
| 7- PLATFORM TILT "WORKING POSITION" | |

NOTES:

- The "Tools/Trailer" function must be turned "ON" only when connected to a tool or a trailer and turned OFF when not in use. The function turns automatically "Off" when not operated for two (2) minutes.
- To operate a function with the DC pump, press the "Emergency pump" key and press the key of the function to be operated.

ATTENTION: The DC pump is intended for emergency lowering use only. Do not run for over three (3) minutes continuously. Damage to the pump or motor can result.

Rear tailshelf controls

At the rear tailshelf, the control panel includes the optional accessories as: tool outlets and an electronic outlet for the capstan foot pedal or the reel lifter control connection.

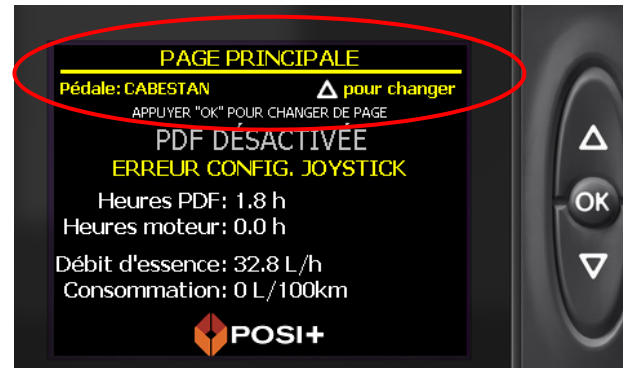
These controls are operational only if the parking brake is applied in the vehicle's cab.



Two remote controls can be connected to the electronic outlet (BobTail), the reel lifter control or the capstan foot pedal control.

The control to be operated has to be selected at the control display unit inside the cab.

Press the arrow Δ , select the equipment to control and press OK.



REEL LIFTER CONTROL



CAPSTAN FOOT PEDAL CONTROL

Portable control (option)

A portable control with a belt allows operating the equipment as:

- Reel lifter
- Capstan drive
- Tow line winch

This control is operational only if the parking brake is applied in the vehicle's cab.

The joystick allows operating the equipment selected from the three (3) positions toggle switch.

A two (2) positions toggle switch turns "On" or "Off" the control.

ATTENTION

It is not allowed to leave a portable control switched "On" without any supervision.

When not in operation, the portable control must be turned "Off" and is to be properly secured so as not to "bounce around" during transportation.

If the control is not turned "Off" (or left to the "On" position) and the PTO has been disengaged, then at the next operation, this control has to be reset. This is done by turning "Off" and "On" the remote control.

This interlock protects against the event that an object being moved during transportation is activating the control's keys.



Section 6 - Operation

Boom

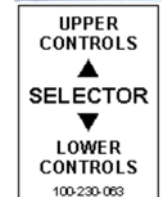
This unit is a non-overcenter type design that uses a hydraulic cylinder to raise and lower the boom. The boom may be actuated from the control station at the pedestal door, from the upper controls' joystick or from the lower control at tailshelf.

To operate the booms with the manual levers at the pedestal, the selector switch located on the pedestal must be to "Lower controls".

To operate the booms from the upper controls, the selector switch located on the pedestal must be to "Upper controls".

The "Lower controls" position overrides the upper controls.

To operate with the optional lower controls at tailshelf, the selector can be to upper or lower control, but the vehicle parking brake must be applied.



Lower Boom

The lower boom can be articulated from 20 degrees below the horizontal (-20°) to 80 degrees above the horizontal (+80°).

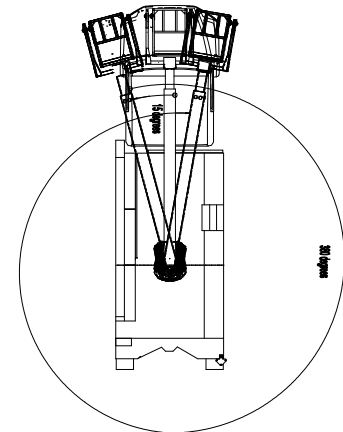
Telescopic boom

The telescopic boom is hydraulically extended or retracted by the use of a hydraulic cylinder controlled from either the upper or lower control stations.

Boom rotation

The standard 800 Series aerial device can be rotated through 370 degrees after the boom has been elevated to clear any obstacles. The standard boom rotation movement stops approximately at 11 o'clock (on the roadside).

A planetary gearbox is used to drive the outer race of the rotation bearing. The gearbox pinion meshes with the rotation bearing gear teeth to rotate the unit. A hydraulic motor drives the planetary in the gearbox.



The rotation motor is equipped with a spring applied, hydraulically released brake. This means the brake is engaged until it is released by hydraulic pressure. When the rotation control handle is shifted, pressure begins to build up in the rotation motor. This pressure releases the brake and allows the motor to rotate the boom. When the control handle is returned to neutral, the rotation motor stops and the pressure in the brake decreases. As the pressure in the motor decreases, the brake is applied and the rotation motion is stopped.

Personnel Platform

This aerial device is equipped with an aluminum platform.



Danger

The aluminum platform at the boom tip area does not provide any protection against electrical continuity. It cannot protect against any contact with energized lines.



Caution

Use care when getting on and off the unit and/or when entering and exiting the platform to avoid slipping or falling. Maintain three points contact when getting on and off.

The personnel platform capacity is found on the serial number placard.

The "Platform Capacity" indicated on the placard installed at the upper controls station is the total weight allowed as platform contents: Operator(s), liner(s), tools and equipment.

All platform occupant(s) of this aerial device must always wear a certified CSA or OSHA approved full body harness attached to a lanyard while operating the unit from the platform. The lanyard must be secured to the lanyard anchor (D-ring) near or on the platform.

All platform occupants must always wear appropriate personal protective devices at all times (i.e. hard hats, safety shoes or boots; safety glasses, work gloves).

Always stand firmly and keep both feet on the floor of the platform. Never sit, stand, or climb on the edge of the platform. Never place any item or equipment in the platform for the purpose of increasing work height (planks, ladders, step stools). Never try to climb down from the platform, if the platform is not down to the ground. Make sure the platform floor is clear of debris, tools and other equipment that could make the operator unstable and prevent from having both feet on the floor during the operation.

Attachment for fall protection

Depending on the model and options installed on the unit, the attachment for fall protection (D-ring attachment) can be installed in different locations, but it is always located near the platform mounting bracket. The D-ring is rated for one person only.



Danger

During operation of this aerial device, all platform occupant(s) of this aerial device must always wear a certified CSA or OSHA approved full body harness attached to a lanyard while operating the unit from the platform. The lanyard must be secured to the lanyard anchor (D-ring) at the boom tip.

Platform leveling system

The platform leveling system is a master/slave arrangement between two small hydraulic cylinders of equal diameter and stroke. The master driving cylinder is connected between the turntable and the lower boom, so that any movement of the lower boom causes a proportionate movement in the cylinder. With movement, the cylinder piston becomes, in effect, a pump forcing oil into the slave cylinder which is attached between the upper boom and platform shaft. The two cylinders are hydraulically connected, rod side to rod side. Therefore, both cylinders will travel exactly the same distance. This action keeps the platform standing surface parallel with the turntable at all times.

In addition to keeping the platform level, the system is capable of stowing the platform horizontal for road travel.

When the platform is not stowed and moved to the work position, it can be leveled from the upper or lower controls to suit the operator. In the event that the platform position needs to be changed slightly, this can be done from either control position by the operator. The platform leveling at the upper controls can only be accomplished by activating the platform leveling key switch at the same time as the joystick trigger (dead man) button.

It is recommended that the platform leveling not be adjusted by the operator while the booms are in motion in any direction.



Danger

Never operate the platform tilt from the lower controls when the platform is occupied.



Caution

If the platform is tilted to an inclined position when the lower boom is at its maximum up position, the platform retaining system could become applied and the leveling system locked. The platform has to be tilted back to level to remove the retaining system.

During the operation of this aerial device, if the platform tilt cylinder becomes fully extended, then the leveling of the platform may lag with respect to the booms displacement. If this condition happens, then lift the booms by a few degrees and readjust the platform level by using the platform "TILTED/WORKING" position control. Operate the platform tilt control in the "TILTED POSITION" very slowly until the platform is leveled again.

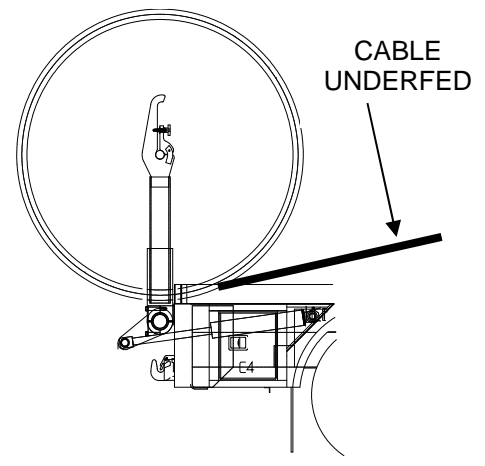
Reel lifter and strand carrier

The reel lifter and the strand carrier are optional equipment and have different driver and brake systems available.

Reel lifter

The reel lifter is designed to carry a maximum load of 5000 pounds. The maximum reel lifter load may depend on the Gross Vehicle Weight Rating (GVWR) of the chassis. The reel lifter can support reels as large as 84" in diameter.

The reel lifter can be operated from the lower controls located at tailshelf.



Capacity

Maximum capacity of the reel lifter is stated on the placard mounted on the reel lifter arm. Capacity figures indicate the rated load lifting capacity of the reel lifter and do not indicate chassis capacity. Verify the vehicle load and capacity before manipulating a reel weighing the maximum lifter capacity.



Caution

Never lift an unknown load. Determine the weight of the material before moving it. Use the placards provided on the machine and in the Operators Manual to determine the available rated lifting capacities of the reel lifter. Do not exceed the rated lifting capacities of the reel lifter.

Loading the reel

To prepare the reel lifter for loading, remove the safety chain (if equipped), and then the operator should lower the arms so that the arbor bar can be removed. Once the arbor bar is removed, the operator should then place the arbor bar through the center of the reel so that when loaded, it will be in an underfed position.

Note -- The arbor bar is designed to support a steel reel. If a wood reel is to be loaded, the wood reel adapter must be installed.

The arbor bar collars should now be installed and locked into position using a wrench.

Once the arbor bar has been placed through the reel so that the cable is in an underfed position, the operator should lower the arms to their lowest position. If the reel is too large

to be manually positioned in the lowered arms, the operator can move the vehicle into position to lift the reel.



Caution

The operator must ensure that when the reel is loaded, it is in an underfed position. Placing the reel in the reel lifter in the wrong position will damage the cable as it is fed through the stringing system.

Once the reel and arbor bar are in the arm hands, the operator should close the caps over the arbor bar and tighten them by rotating the cap spin knobs. After the reel has been secured in the arms, the operator should then rotate the arms up into the desired position.

Unloading the reel

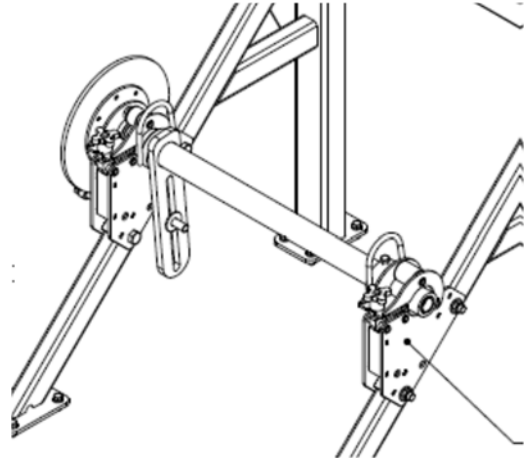
Unloading operations for the reel lifter are the reverse of the loading operations. To unload the reel lifter, remove the safety chain (if equipped), then the operator should lower the rear arms to the ground, loosen and open the caps, and either rolls the reel out of the rear arms or drive the vehicle forward.

ATTENTION: To secure the reel, install reel chocks when unloading on inclined ground.

Strand carrier

To prepare the strand carrier for loading, the operator must first remove the strand carrier arbor bar from the bed of the vehicle. The operator should then slide the arbor bar through the center of the reel located on the ground. The operator can then place the lifting collar on the arbor bar and lock it into position.

Attach a chain sling to the arbor bar. The operator should then maneuver the aerial lift from the lower controls so that the lower boom lifting eye is centered over the strand carrier arbor bar. The operator should then clip the other end of the chain sling to the lower boom lifting eye. The maximum capacity of the lower boom lifting eye is 2,000 pounds. Do not exceed this maximum capacity rating.



Then the operator raises and rotates the boom until the strand carrier arbor bar is in position above the strand carrier. The arbor bar can then be lowered into the strand carrier hands. Then the operator closes the caps and secures the arbor bar in place.



Warning

The lower boom lifting eye should only be used when the platform is not occupied. Always keep the upper boom as near to the stowed position as possible. Be careful of striking the vehicle or other obstacles with the platform.

Never stand or walk on or beneath a load that is being moved or lifted. Never use a lower boom lifting eye to lift personnel. Serious injury or death may result.



Caution

Never lift an unknown load. Determine the weight of the material before moving it. Use the placards provided on the machine and in the Operators Manual to determine the available rated lifting capacity of the lifting eye. Do not exceed the rated lifting capacity.

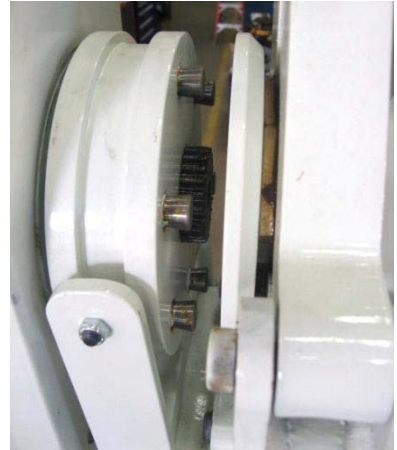
The lower boom lifting eye should not be used for material handling purposes. Use the lower boom lifting eye only to load the strand carrier.

Reel driver

Clutch system

The reel driver and the reel drive-tensioner have a clutch system that does not require tools for engaging or disengaging. The clutch is held in place by a spring loaded lock pin. The operator can either engage or disengage the clutch by pulling the lock pin and moving the clutch to the desired position. From a position on the driver assembly side of the vehicle, the clutch is engaged by pulling the clutch handle away from the reel and disengaged by pushing the clutch handle toward the reel.

Before engaging the clutch, always release the tension that can be applied on the reel. When engaging the clutch, the operator may have to rotate the reel and arbor bar so that the holes on the arbor bar clutch plate line up with the clutch drive pins. When the clutch is disengaged, the reels and arbor bars are free-wheeling. Make sure that the reel driver prongs on the adapter plate are properly engaged before driving the reel otherwise, the prongs will be damaged, as well as the roller head on the clutch arm.



Warning

The driver assembly must not be operated in order to align the holes on the arbor bar clutch plate with the clutch drive pins. Manually rotate the reel only. Serious personal injury may result if the driver assembly is improperly used. Never disengage the clutch of the reel driver if there is any tension what so ever on the reels. Always release the tension on the reels before engaging or disengaging the clutch, serious injury may occur if there is some tension on the reels and/or arbor bars while disengaging the clutch.

Reel driver

The reel lifter can be equipped with a driver. It can be used as a cable winder or cable retriever.

The driver is designed to provide a torque of 15,600 in-lb. The driver can be operated from the pedestal or from the optional lower controls.



Reel driver with brake

The reel lifter is equipped with a driver and an adjustable brake. It can be used as a cable winder or cable retriever and also as a tensioner.

The driver is designed to provide a torque from of 36,000 in-lb. The brake is adjustable from 0 to 18,000 lb-po of torque.

The driver can be operated from the platform or from the lower controls. The braking torque can be set from the control inside the vehicle cab or at platform.

The brake setting returns to “Freewheel” when the vehicle key switch is turned off.



Strand carrier with hydraulic brake

The strand carrier brake is an aluminum-bronze, corrosion resistant, disk brake system. The tension level is adjustable and can be set from the lower control, the platform control or the display control in the cab.

The brake setting returns to “Freewheel” when the vehicle key switch is turned off.

ATTENTION: The disk is part of the arbor bar while the caliper is part of the carrier. Be careful when loading or unloading a reel not to damage the disk and the brake pads



Tow line winch on boom rest (option)

The hydraulic tow line winch located on the boom rest is operated from the upper or the lower controls. The winch is capable of handling 1500 pounds of bare drum line pull.



Lower boom lifting eye

This attachment adapts the lower boom for light-duty material handling. The lifting eye provides a secure mounting for a shackle at the end of the lower boom.

The lifting eye is rated for 2000 pounds at any boom angle.



Warning

The lower boom lifting eye should only be used when the platform is not occupied. Always keep the upper boom as near to the stowed position as possible. Be careful of striking the vehicle or other obstacles with the platform.



Caution

Never lift an unknown load. Determine the weight of the material before moving it. Use the placards provided on the machine and in the Operator's Manual to determine the available rated lifting capacities of the lower boom lifting eye. Do not exceed the rated lifting capacities of the lower boom lifting eye.

Upper boom tow line hook (option)

The upper boom tow line hook located underneath the upper boom end is used to lift vertical loads. The loads cannot be lifted directly of this tow line hook. A swivel sheave must first be installed on the lower boom lifting eye and an adequate shackle must be installed on the upper boom tow line hook.

A rope attached to the load must be routed to the sheave and attached to the shackle in order to use this tow line hook as a hoist.

Finally, the lower boom must be lifted, the upper boom may be extended and the booms may be rotated to position the load.



The maximum vertical load that can be lifted using this tow line hook via the lower boom lifting eye is 1200 lb.



Warning

The upper boom tow line hook must only be used when the platform is not occupied. Side loads must never be applied to the booms.



Caution

Never lift an unknown load. Determine the weight of the material before moving it. Use the placards provided on the machine and in the Operator's Manual to determine the available rated lifting capacities of the upper boom tow line hook. Do not exceed the rated lifting capacities of the upper boom tow line hook.

Capstan drive (option)

Two models of capstan drive can be installed on the 800. One is installed on the reel lifter curbside arm and has a line pull rating of 1200 lb on a 7" capstan head.

The other model is installed near the curbside rear tailshelf and capacities available are line pull rating of 1300, 3000 or 4000 lb on a 7" capstan head.

Both are controlled from a hydraulic valve located near the capstan drive and can also include a foot operated control valve. If the unit is equipped with the optional portable control, the capstan drive could also be operated from this control.

The vehicle's parking brake must be applied to operate from the foot pedal control.



- “**Capstan drive CCW**” depress to operate the capstan counterclockwise.
- “**Capstan drive CW**” depress to operate the capstan clockwise.



Stringing system

This section assumes that the 800 unit is equipped with the following options: reel lifter, strand carrier and stringing system (rear roller assemblies, upper and lower strand sheave assemblies, and fairlead assembly).



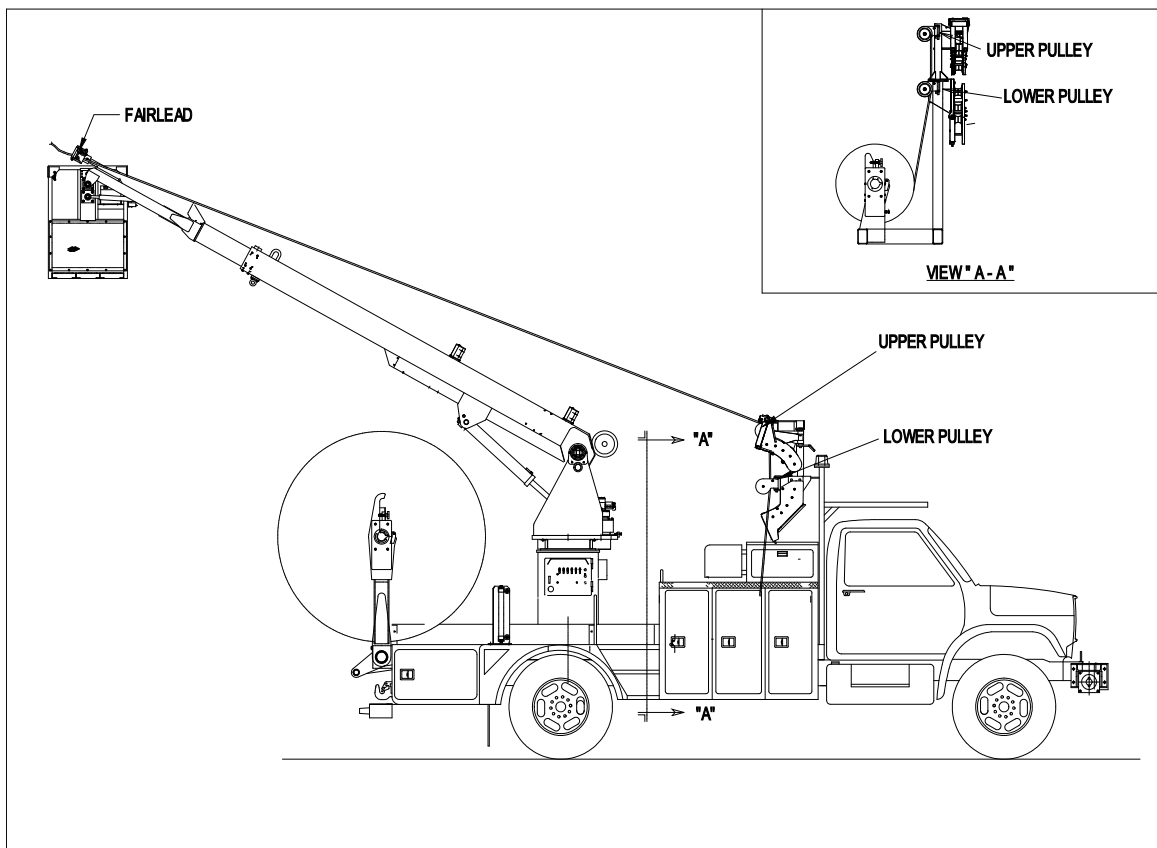
Danger

Before attempting stringing operations, the operator of this machine must be familiar with and understand the safety information in the Model 800 aerial device Operators Manual and on all placards.

Stringing strand from the strand carrier

After the strand carrier has been loaded as described under Strand Carrier, the operator is ready to route the strand through the stringing system.

The operator first pulls the end of the strand through the lower strand sheave. The operator then threads the strand through the upper strand sheave and finally to the fairlead assembly at the aerial device platform.

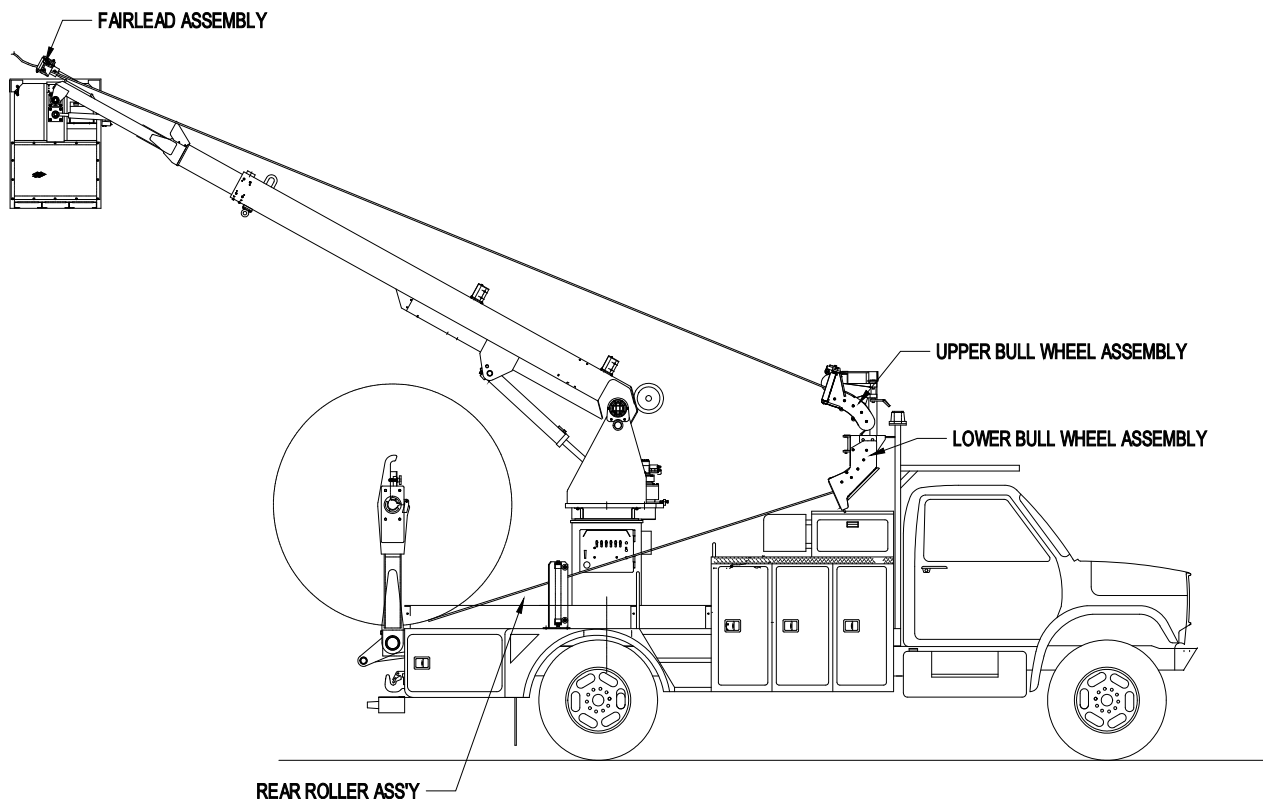


While stringing strand from pole to pole, the operator, from either the cab or upper control station, can use the brake to maintain tension on the strand as it pays out. When the strand has been tensioned to the desired point, the operator can place the proportional brake control to maintain the tension of the strand.

When at the end of the run and ready to connect the strand to the pole, use the tow line winch to tighten the cable to the final desired tension. Place a snatch block around the pole, run the winch line through the snatch block, connect the winch line to the grip on the cable, and pay in the winch.

Stringing cable from the reel lifter

After the cable reel has been loaded into the reel lifter, the operator is ready to feed the cable through the stringing system. Take the end of the cable and feed it first through the rear roller assembly. Then, the cable is fed through the lower bull wheel assembly, upper bull wheel assembly, and finally to the fairlead assembly.



Attention

The operator must ensure that when the reel is loaded, it is in an underfed position. Placing the reel in the reel lifter in the wrong position will damage the cable as it is fed through the stringing system.

The lock pin from the upper bull wheel assembly must be removed before stringing the cable to allow the pulleys to rotate with the movement of the cable.

If the cable on the reel lifter is self-supporting, use the same procedure for stringing cable from pole to pole and tensioning the cable as was used with the strand carrier. If the cable is not self-supporting, and is being lashed to existing support strand, the clutch should be disengaged or freewheel selected to minimize the drag on the cable.

Each roller assembly is equipped with a gate that allows removal of the cable without requiring a cut. If it is necessary to unload a cable reel from the rear reel lifter station, the operator should follow the instructions under Unloading the Reels. Then, open the gate on each roller assembly and remove the cable from the assembly without a cut.

Stringing strand from the reel lifter

If strand has been loaded into the reel lifter, the operator is ready to thread the strand through the stringing system. Feed the strand through the rear roller assembly, lower bull wheel assembly, upper bull wheel assembly, and finally the fairlead assembly. The stringing process for strand from the rear station is the same as for cable.



Attention

The driver torque of the reel lifter may damage wood reels.

The lock pin from the upper bull wheel assembly must be removed before stringing the cable to allow the pulleys to rotate with the movement of the cable.

The rear station driver and brake system operations can also be used to string and tension strand.

120 Volts AC power source

Electric power is provided at the platform through an electric cable which is carried in the chain link hose tracking system.

Depending on the type of inverter installed and its circuit protection, the platform outlet could have a ground fault circuit-interrupter provided, protecting personnel when a fault current to ground exceeds the predetermined setting.

The ground fault circuit-interrupter, if installed, should be tested frequently. Push the red button, then power from the outlet should be cut. Push the reset button to reactivate the outlet.



Section 7 - Protection systems

Limitations of protection systems

The Line Runner 800 aerial device is equipped with protection systems that are intended to protect the machine from being overloaded due to operator errors. However, even with these protection systems, the unit can be damaged if the operator disregards the recommended methods and procedures described in this manual.

Boom stow protection

The boom stow protection system prevents damage to the chassis when the boom is lowered on the boom rest.

An adjustable limiting valve is provided in the electro-hydraulic section valve that controls the lower boom cylinder. This limiting valve limits the maximum pressure that can be reached on the rod side of the cylinder. So when the boom is positioned on the boom rest, it is not possible to reach the maximum operating pressure of the unit. This function prevents the overstressing of the chassis and of the structural parts of the aerial lift.

Side load protection

The side load protection system helps prevent damage to the aerial device structures when a side load is developed on the booms. Side load may be caused by a variety of aerial device operations. The following list describes some aerial device operating practices that cause side loads.

- Tensioning strand with the reel driver.
- Tensioning self-supporting cable with the reel driver.
- Using the tow line winch to tension strand.
- Using the tow line winch to tension self-supporting cable.
- Using the tow line winch to pull a lasher.

If an excessive side load is developed on the booms, the gearbox and rotation motor will back drive and the rotation brake will slip. This allows the booms to side slip, or rotate toward the load.

Operate the unit in a manner that avoids developing a side load on the booms. Do not rely on the side load protection system to prevent side loads from developing on the booms. The system is intended to protect the aerial device from excessive side loading due to operator error. Each time the side load protection system operates, the aerial device is subjected to an overload. Repeated overloads could cause fatigue failure of the machine components.



Excessive side loading of the booms during aerial device operation should be avoided. The booms should be rotated toward the load rather than depending upon side load protection. Side loading can result in damage to the structures or the rotation system and may adversely affect vehicle stability. Never exceed the load the rotation system can pull around under its own power.

Never attempt to counteract the side load protection system by shifting the rotation function of the single handle upper control in the opposite direction of the side slip. Attempting to do this will result in increased side loading of the booms.



Do not attempt to override the side load protection system with the rotation function from the single handle upper control. Attempting to override the side load protection system will cause increased side loading of the booms.

Section 8 - Emergency operation

Operating safely

Should the occupant of the platform suffer injury while aloft, disabling that person from operating the platform controls, the platform may be lowered by means of the overriding lower controls.



Danger

Before attempting to lower the platform with the pedestal controls or the tailshelf controls, for the protection of the ground personnel, it must first be determined that the vehicle is not energized. Death or serious injury can result from contact with equipment that has become electrically energized.

Upon determining that it is safe to touch the vehicle, the lower controls may be used for booms' movement.

- From the pedestal, select “Lower controls” to override the upper controls.
- The elevator and accessories can be operated from the manual controls at pedestal or from the remote control.

Emergency lowering DC pump

If a situation arises that the machine cannot be operated due to a loss of hydraulic power, such as engine or pump failure, the emergency lowering DC pump can be used to lower the main boom.

The 12-volt DC battery operated pump is designed for use in case the truck engine or power system fails. The emergency lowering DC pump may be operated from the platform or from the pedestal and the lower controls. The pump is located near the reservoir and power is supplied to the pump from the truck battery. The capacity of this pump is dependent on the capacity of the battery.

The emergency lowering DC pump system has been designed to allow for lowering the booms to the ground for operator rescue, but may not allow for complete storage of the booms.

Attention

The DC pump is intended for emergency lowering use only. Do not run for over three (3) minutes continuously. Damage to the pump or motor can result.

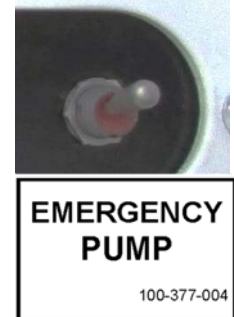
Operation from the lower controls or from the upper controls

At the upper controls, to start the emergency DC pump, press and hold the key "Emergency pump", and then operate the boom and the accessories with the joystick or the keypad.



At the lower controls, select "Lower controls", and then press and hold the toggle switch "Emergency pump" and operate the functions with the manual levers.

The DC pump can be heard while it is operating. Because of the emergency lowering pump's smaller capacity, the functions will move slowly when using the pump.



Rotate or lower the unit enough to position the platform clear of the work area. Then lower the unit to the ground, or to a position where the operator(s) may get out of the platform. The unit may then be stowed using the lower controls.

Section 9 - Troubleshooting

Normal operation of the aerial device may be interrupted by a failure or malfunction in the engine or hydraulic system. The chart below summarizes trouble situations, with typical symptoms and troubleshooting procedures.

Troubleshooting chart

Symptom	Possible Cause	Corrective Action
All functions stop working.	Engine or pump failure.	Repair or replace engine or pump. Stow the booms using the Emergency lowering DC pump system.
	Low fluid level in reservoir.	Check fluid level. Add fluid to the Full mark. Use correct type of fluid.
	Oil reservoir gate valves closed.	Check gate valves and open if they were closed.
	Emergency stop has been applied at a control station	Put the Emergency stop button to working position.
Severe hydraulic leak.	Failure of hose, tube, fitting, seal, etc.	Replace defective component.
Upper controls stop working	Emergency stop switch in the "stop" position.	Move the emergency stop switch to the working position.
	One-hand control (upper controls' joystick) damaged.	Replace the joystick. Stow the booms using the lower controls.

Section 10 - Care of the unit

Although the maintenance responsibilities for equipment will vary depending upon company policies, an alert operator can contribute greatly to the proper care of the aerial device. The guidelines given in this section are for the hydraulic system upkeep.

The observation and correction of minor maintenance problems, as they occur, may help prevent costly repairs and reduce downtime. For a complete description of any maintenance procedure, refer to the Maintenance Manual.

At no time should an aerial device be altered or modified without the specific written approval from Posi-Plus Technologies Inc.

Hydraulic system

The condition of the hydraulic oil is the major factor in obtaining long life and trouble free service from the pump, motor, valves, cylinders, seals, etc. in the hydraulic system.



Warning

Any oil added to the reservoir must be pre-filtered to ISO 14/12. To obtain this filtration rating, use a filter with a $\beta_3=200$ rating.

The proper oil type, oil temperature, oil level, and oil cleanliness should be maintained by following the guidelines recommended in the Maintenance Manual for top performance from the hydraulic system. When cleaning the unit, care should be taken not to spray water under pressure directly on or around the fill cap of the reservoir. This could spray water inside the oil cap.

The minimum temperature at which oil will flow to the pump varies with the type of oil used. The Maintenance Manual recommends hydraulic oil for various temperature conditions. Regardless of the oil being used, cold weather start-up can damage the pump quickly if the operator does not allow the oil to warm up before operating the unit.

Attention

Do not put the unit in service and run the pump at normal operating speeds until the hydraulic reservoir feels warm to the touch.

The maximum temperature at which a hydraulic system can operate also depends to some extent upon the hydraulic oil being used. Winter weight oil should not be allowed to exceed 160°F (71°C) and summer weight oil should not be run over 180°F (82°C) . If an operator cannot hold his hand on the side of the reservoir momentarily before removing

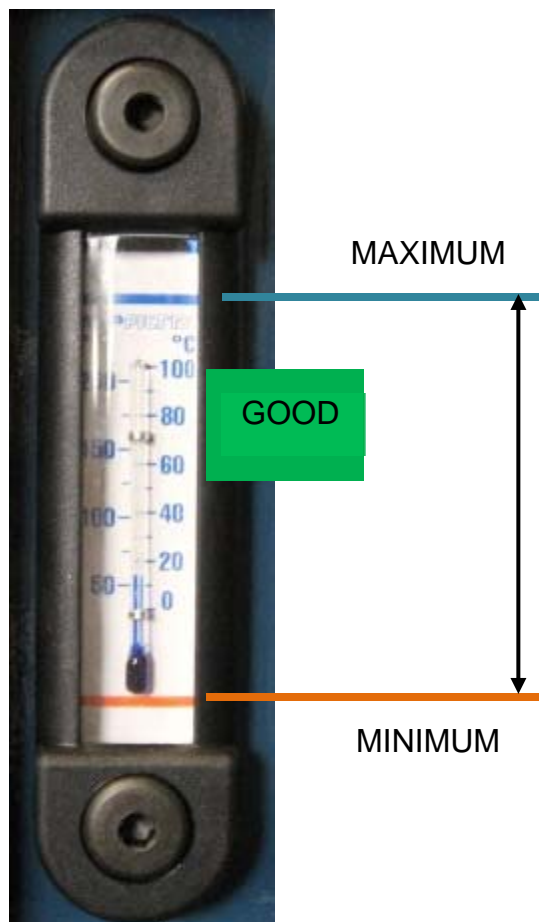
it, the oil is reaching a temperature in excess of 150°F (66°C). If overheating occurs during normal use, it could be an indication of a worn pump or other components, low oil level, improper oil, or excessive engine/pump speed. In any case, the cause of the overheating should be identified and corrected immediately.

The oil level in the hydraulic reservoir should be checked daily as described in the daily preoperational checks section. With the unit on level ground, booms in the boom rest, the oil level should be between the Add and the Full marks on the filler cap dipstick or applicable sight gauge. Green area shown here is a GOOD oil level, between maximum and minimum is an acceptable level. If oil must be added, oil of the proper type, as described in the Maintenance Manual, should be used.



Warning

Only use pre-filtered hydraulic oils to ISO 14/12 as recommended. Other fluids added to the hydraulic system may increase component wear, affect the lubricating characteristics of the oil, or may induce the valves to malfunction.



Structures and mechanical systems

The observation and correction of minor maintenance problems, as they arise, may prevent the need for major repairs, decrease downtime and improve safety. Loose fasteners should be corrected, as they occur, before serious problems develop.

Any unusual noises observed during operation should be reported so that the cause can be determined and corrective action taken.

A noisy pump should not be run until the problem is corrected. Excessive pump noise can be an indication of a variety of problems such as: loose or leaking suction lines, a partially closed suction valve, and worn seals in the pump, low oil level, or cold hydraulic oil. If a pump with an existing problem is left running, serious pump damage could result.

Proper lubrication on a regular basis, as indicated in the Maintenance Manual, will increase the life of the machine and help to avoid future maintenance problems. Any squeaky or jerky action of the moving parts on the aerial device is an indication that lubrication is needed immediately. Any sign of lubricant leaking from the gearbox should be reported and corrected as soon as possible.

Shock loads and overloading should be avoided as these conditions can present hazards to the machine and personnel in the working area. Start and stop all operations as smoothly as possible. Care should be taken to make sure the debris or tools are not allowed into the retraction area of the aerial device.



Caution

Keep the unit and work areas clean. Spilled hydraulic oil creates slick surfaces and may cause personnel to slip and/or fall.

When cleaning with high pressure washers or steam cleaning, care should be taken not to apply pressure directly to electrical connections, control panels or electrical components.

At no time should this aerial device being altered or modified without the specific written approval from Posi-Plus Technologies Inc.