



OWNER'S MANUAL
WPLS-160
Wireless Portable Lift System



Important Safety Instructions
READ THIS MANUAL CAREFULLY
AND RETAIN FOR YOUR RECORDS

US Patent #6,634,461 & #7,014,012
Canadian Patent Pending

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Foreword

Thank you for your purchase. With Gray products, you take part in a long history of products engineered for the transportation service industry. Company founder J. H. Gray applied for his first automotive jack patent in 1921, and since 1952 Gray has been producing the highest quality hydraulic and pneumatic equipment available for the professional service technician. Our purpose is to provide you with quality equipment that makes your job easier and with exemplary service after the sale. Please call Gray's customer service, at 1-800-821-7320 or 816-233-6121, with any comments or questions.

Signal Words

Signal words call attention to a safety message or messages, or a property damage message or messages, and designates a degree or level of hazard seriousness. The signal words are “DANGER”, “WARNING”, “CAUTION”, and “NOTICE”.

- **DANGER:** Indicates a hazardous situation, which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.
- **WARNING:** Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.
- **CAUTION:** Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury. It may be used to alert against unsafe practices.
- **NOTICE:** Indicates a property damage message.

Receiving Inspection

Before attempting to operate these lifts, thoroughly read and understand this manual. Completely remove all tape and packaging. Inspect each lift immediately upon delivery. If shipping damage is evident, inform the delivering carrier immediately and contact customer service at the numbers and address printed on the back cover of this manual.

Introduction

Owner and / or Operator Responsibilities

The owner and / or user must have an understanding of the manufacturer's operating instructions and warnings before using these lifts. Personnel involved in the use and operation of equipment shall be careful, competent, trained, and qualified in the safe operation of the equipment and its proper use when servicing motor vehicles and their components. Warning information should be emphasized and understood.

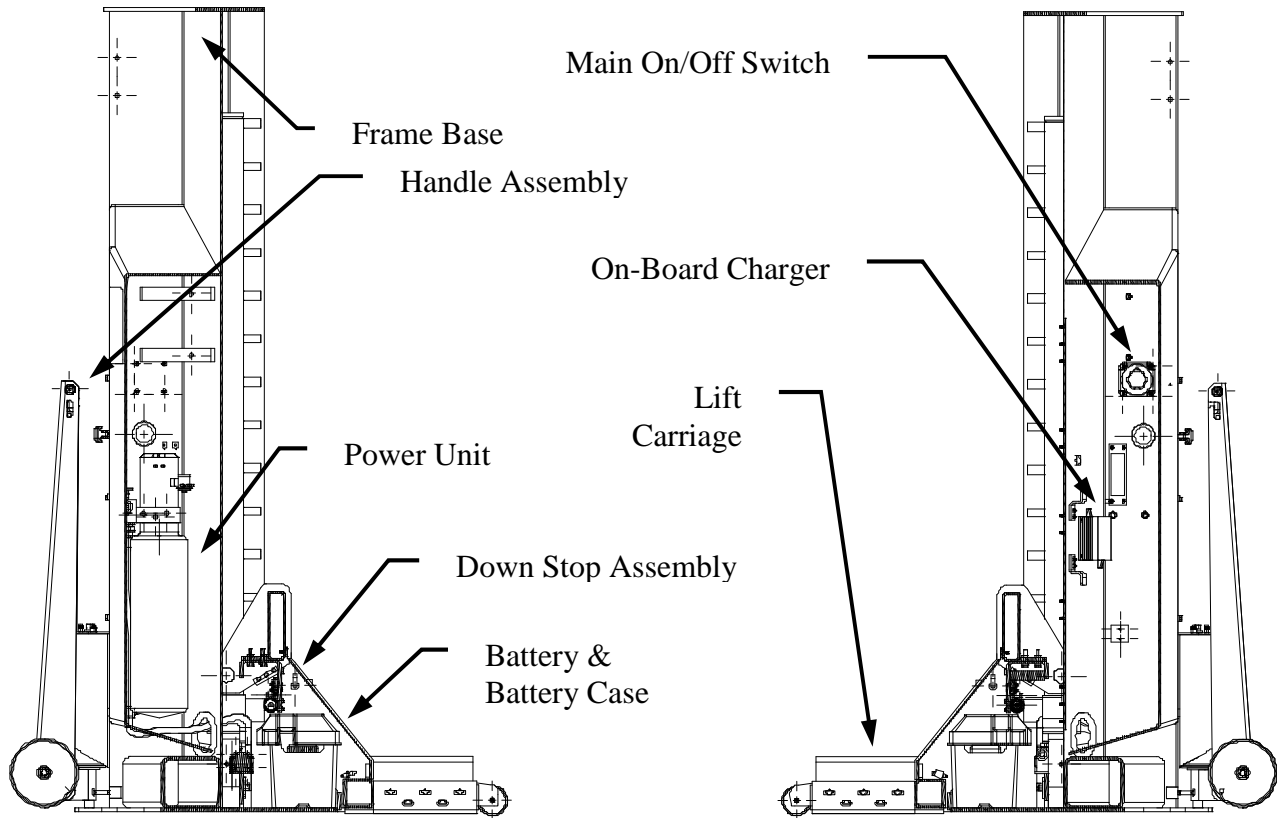
The owner / manager must make this manual available to all personnel using these lifts at your direction. They must read and understand the contents of this manual. If the operator is illiterate or is not fluent in English, the manufacturer's instructions and warnings shall be read to and discussed with the operator in a language the operator understands by the purchaser / owner, making sure that the operator comprehends its contents and observes the proper procedures for use of these lifts.

Owner and / or user must study and maintain for future reference the manufacturer's instructions. Review the video to familiarize yourself with the features and benefits of Gray's "Wireless" Portable Lifting System. Owner and / or user are responsible for keeping all warning labels and instruction manuals legible and intact. Replacement labels and literature are available from the manufacturer.

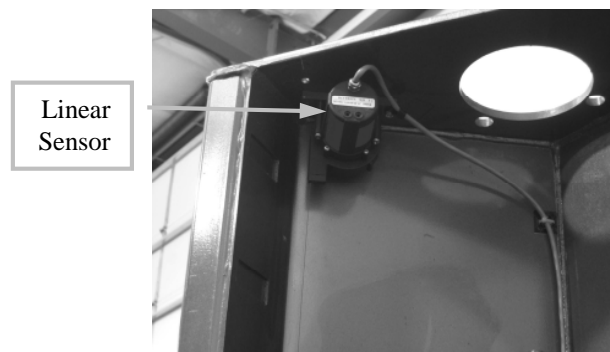
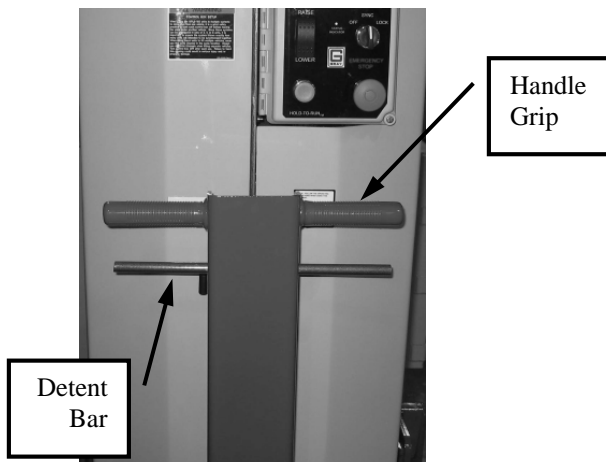
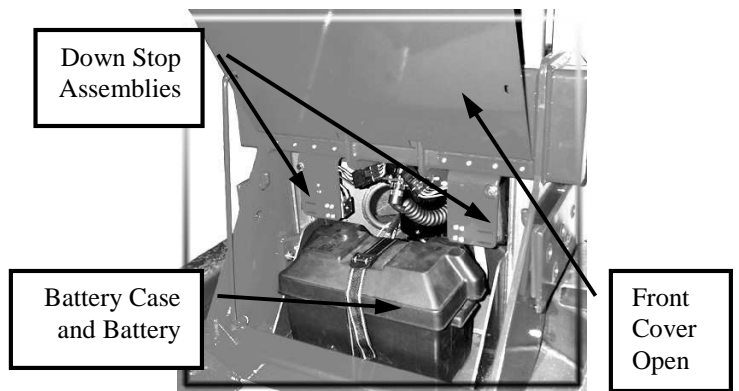
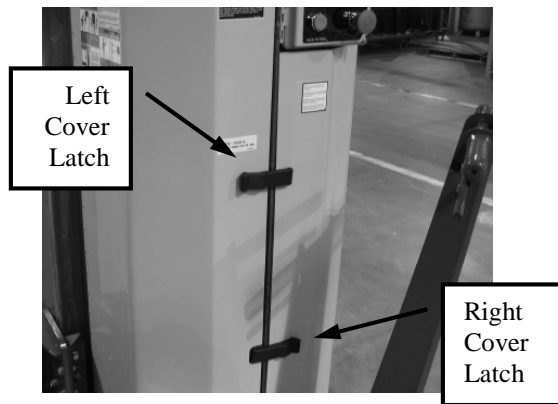
Specifications

Max. Capacity per Unit	16,000 lbs (8 Tons)	7,258 kg.
Max. Capacity per set of 4	64,000 lbs (32 Tons)	29,030 kg.
Max. Capacity per set of 6	96,000 lbs (48 Tons)	43,545 kg.
Min. Wheel Diameter (w/adapter)	14"	356 mm
Maximum Wheel Diameter	24.5"	622 mm
Maximum Lift Height	67"	1,702 mm
Lift Speeds (varies with load)	50"/minute	1,270 mm/minute
Weight per Column	1,360 lbs.	617 kg.
Height	93"	2,362 mm
Height at full lift	148"	3,759 mm
Width	43"	1,092 mm
Length	58"	1,473 mm
Turning Radius	48"	1,219 mm
Operating Voltage	12 VDC nominal	
Operating Peak Power	4 Hp	3.0 KWatts
Charger Voltage Required	120 VAC @ 60 Hz	
Charger Amperage Required	1.1 Amps	

Component Identification



Major Components And Cover Locations



Safety Instructions

WARNING

To avoid serious injury or death, read this manual carefully before operating this unit. Call customer service at the numbers and address printed on the back cover of this manual if you have any questions.

Failure to understand and obey safety instructions may result in unsafe or improper use of this product.

1. Use the Wireless Portable Lift System only on hard, level surfaces. Lifting on other than hard surfaces with a slope of more than 3 degrees (5% grade) can result in lift instability and possible loss of load.
2. DO NOT raise / lower one side of a vehicle.
3. DO NOT use the Wireless Portable Lift System to raise a vehicle by the frame or structural member. Only use the wheels of the vehicle to lift with the lift system.
4. DO NOT raise one end of a vehicle if the opposite end is supported by stands.
5. DO NOT use the Wireless Portable Lift System in conjunction with any other equipment used to raise a vehicle.
6. Lift only on same axle. Product is to be used only in sets of 2, 4 or 6 units, not as a single unit.
7. DO NOT place feet or any part of body between lift frame base and carriage. Personnel injury can occur.
8. DO NOT place hands, other parts of body, or clothing between carriage slide pads and the upright rails the carriage slides on vertically. These are potential pinch points that can injury hands and fingers or possible grab clothing that can cause personal injury.
9. DO NOT use blocks, non-factory supplied adapters or cribbing devices with this lift.
10. Maximum capacity is listed on the ID decal. Do not use the lift as a stand to support more than maximum capacity. DO NOT overload.
11. DO NOT use the Wireless Portable Lift System as a wheel dolly for the removal of tires.
12. No alterations shall be made to this product.
13. NEVER stand under the load or vehicle when it is being lifted or lowered.
14. NEVER stand either in or on the vehicle when it is being lifted or lowered.
15. DO NOT use the hoisting equipment to reach a lifted vehicle or to reach any part of the vehicle.
16. Keep both the material and the surrounding area clean.
17. Before lowering a raised vehicle make sure there are no obstructions under the vehicle and the lift carriages of the Wireless Portable Lift System.
18. Always keep the covers closed on the lifts.
19. DO NOT attempt to move the load horizontally when the vehicle is raised on the Wireless Portable Lift System by any means.
20. Whenever the lifted vehicle is propped up and the lifting units are removed, use only the stands intended for this purpose.
21. It is recommended that proper stands be used when the vehicle will be left in the raised

position for extended periods of time.

22. Do not use lifts outdoors when wind speeds exceed 20 mph.
23. NEVER start the vehicle motor when the vehicle is supported by the lifts or stands. Only start engine when vehicle is standing on the ground.
24. Make sure there is adequate clearance above highest point of vehicle before lifting. Lift raises 67”.
25. NEVER use the battery and/or charger for any other purpose. NEVER use an unapproved power source other than the battery to power the lift.
26. DO NOT expose the charger to rain or snow.
27. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
28. NEVER smoke or allow an open spark or flame in the vicinity of the battery.
29. Make sure cord is located so that it cannot be stepped on, tripped over, or otherwise subjected to damage or stress.
30. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electrical shock or injury to persons.
31. DO NOT operate the charger if it has received a sharp blow, been dropped, or otherwise damaged in any way. Call the 800 customer service number on last page of manual.
32. DO NOT disassemble the charger. If it is in need of repair call the 800 customer service number on the last page of manual.
33. To reduce risk of electrical shock, unplug the charger from an outlet before attempting any maintenance or cleaning.
34. NEVER charge a frozen battery.
35. Be extra cautious to reduce the risk of dropping a metal tool onto the battery. It might spark or short- circuit battery or other electrical part that may cause an explosion.
36. Have plenty of fresh water & soap nearby in case battery acid contacts skin, clothing, or eyes.
37. Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
38. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters an eye, immediately flood with cold running water for at least 10 minutes and get medical attention.

Failure to understand and obey these warnings may result in personal injury and / or property damage.

SAVE THESE INSTRUCTIONS!

Operating Instructions

Using the WPLS Lift System to Raise a Vehicle

This section discusses the appropriate and safe methods for using the WPLS Wireless Portable Lift System to raise and lower a vehicle.

WARNING

Using the WPLS Lift System to raise a vehicle requires several steps that must be followed each and every time the lift system is used:

1. Inspect each lift for signs of wear or damage.
2. Transport the lifts to the work area.
3. Locate appropriate support stands, if needed.
4. Prepare the surrounding area before using the lift system.
5. Identify vehicle axles to lift, examine the tires, and prepare the vehicle.
6. Raise the vehicle.
7. Lower the vehicle to the Ground.

Each of these steps is discussed in detail in the following sections. Failure to follow all of these instructions can lead to serious injury or death.

1. Inspect the Lift for Signs of Wear or Damage

Before each use, you should inspect the lift for any visible signs of wear or damage. See the “Structural Inspection” section for details about how to inspect the lift. **WARNING!** *If you see any signs of wear or damage, or if there is any indication that the lift is not performing normally, immediately take it out of service and call customer service at 800-821-7320 or 816-233-6121. NEVER use a lift that appears damaged in any way.*

2. Transport the Lifts to the Work Area

Transport the lift to the work area by either (a) wheeling it or (b) lifting and transporting it using the provided forklift pockets. The lift can be wheeled to the work area over smooth surfaces and short distances—transport the lifts if traveling over longer distances and/or rough surfaces. **WARNING!** *Jolting caused by the wheels catching on uneven surfaces can cause physical strain and personal injury.*

See the “Handle Operation” section for details on how to properly maneuver the lift unit.

3. Locate Appropriate Support Stands, if needed

Gray Manufacturing Company, Inc. recommends the use of appropriate support stands when the vehicle to be lifted is to be left elevated for an extended amount of time. Gray Manufacturing Company, Inc. manufactures support stands that are made specifically for high rise supporting.

4. Prepare the Surrounding Area Before Using the Lift System

It is important that the surrounding area be prepared properly before raising a load.

WARNING! Failure to follow all of these instructions can result in lift instability and loss of a load:

- a. Use the lift only on hard, level surfaces capable of safely supporting the load. A level surface is considered to be 3 degree slope (5% grade) or less.
- b. The base of each lift unit must have its footprint in full contact with the floor.
- c. NEVER attempt to lift from an uneven surface where a lift unit could shift under load such a raised seam in a concrete floor.
- d. Clear the surrounding area of personnel, tools, equipment and other material.

If these conditions cannot be met, move the vehicle and lift system to an area where it can be lifted safely.

5. Identify the Vehicle Axles to Lift, Examine the Tires, and Prepare the Vehicle

It is important that the vehicle be in proper condition before raising it off the floor.

- a. Always position a pair of lift units on opposite tires of the same axle. The steering wheels should be pointing straight ahead. The vehicle's rims should be at least 19 ½" inches in diameter. For rims of 14-19 inches in diameter, refer to the "Small Wheel Adapters" section.
- b. Check that the tires on the vehicle are properly inflated, in road worthy condition, and the weight on any tire does not exceed the rated capacity of any lift unit. Be sure to consider the weight carried by unsupported axles (i.e. set of four lifting a tandem axle vehicle).
- c. Release the vehicle's parking or air brake and place the transmission in neutral.
- d. Ensure each lift unit is properly charged and the Battery Charger Indicator Light is Green before use.
- e. Position the Lift Units so the lift pads on the Carriage are cradling the tires evenly and parallel with the hub. Push the lift pads under the tire until the Carriage cross tube contacts the tire. Release and stow handle assembly to be sure rear pivot wheels are off the ground.
- f. Turn Selector switch on the Control Box at first lift unit to SYNC position. Use Raise/Lower rocker switch to select number of lifts to synchronize. Push the "Hold to Run™" button to confirm selection before moving to the next lift. See **Figure 1**.
- g. Turn on remaining lift units one-at-a-time by moving each Selector switch to SYNC and each unit should identify themselves with Unit # on the first display line. When all are in SYNC, a "Ready to Operate" should be displayed on the second line and the Status Indicator light will be solid green.

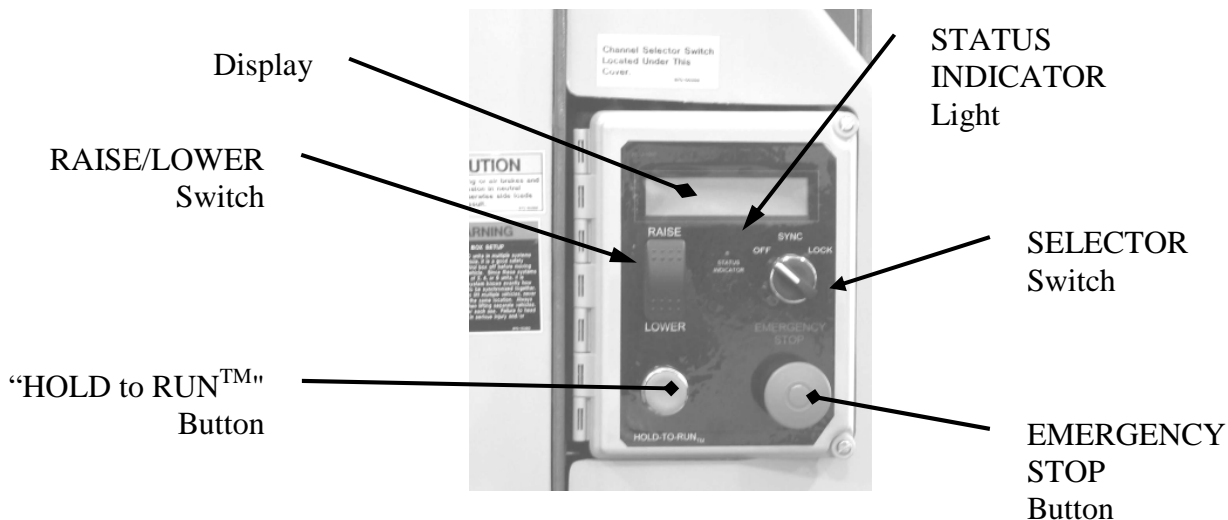


Figure 1

6. Raise the Vehicle

- a. Position yourself at any one of the synchronized Lift Units. Be aware of any overhead obstruction above the vehicle. Lift Units can raise the vehicle 67" from the floor. While operating, keep a safe minimum distance at all times between the vehicle and all overhead obstructions in order to prevent damage to the vehicle, the Lift System, and/or the building structure.
- b. When ready to lift, push and hold the "Hold-to-Run™" button while moving the rocker switch to Raise position. See **Figure 1**. As Carriages raise vehicle, the Status Indicator will flash green. This will be normal.
- c. Release both the "Hold-to-Run™" button and the rocker switch when at the desired height.
- d. While working on the Vehicle, move the selector switch on each Lift Unit to the "Lock" position. This will inhibit unauthorized use of the lift system. The use of stands is recommended during extended periods of time with the vehicle being elevated.

WARNING

One Control Box Selector switch must be turned to LOCK when left unattended in a raised position or each turned to OFF when left unattended in the fully lowered position for an extended amount of time. Failure to do so could result in serious injury and/or property damage.

7. Lowering the Vehicle to the Ground

WARNING! *To avoid serious injury or death, NEVER drive the vehicle off the lifts or attempt to move a vehicle that is elevated by the lift system.*

- a. Clear the work area under the vehicle of all personnel, tools, and shop equipment.
- b. Position yourself at any one of the synchronized Lift Units. Be aware of any obstructions underneath the vehicle.
- c. If the system was set to the 'Lock' position, turn the Selector switch back to the 'Sync' position and press the "Hold-to-Run" button on each lift to reset the system.
- d. When ready to lower, push and hold the "Hold-to-Run™" button while moving the rocker switch to Lower. Be aware that the Lift Unit(s) may rise slightly before lowering to ensure all Down Stop Assemblies are retracted.
- e. Release both the "Hold-to-Run™" button and the rocker switch when the vehicle is lowered to the floor and the lift carriage has cleared contact with the tires. Green Status Indicator should become solid when all Carriages have reached stowed position.

CAUTION

Do not turn the synchronized Lift Units "OFF" until vehicle is completely down, Carriage Arms have disengaged from the tires, and the Carriages are completely stowed.

- f. Place the transmission in gear (or park) and engage the brakes.
- g. Move the Lift Units away from the work area and recharge each Lift Unit after use.

NOTICE

When storing Lift Units, make sure that the Control Box selector switch is in the "OFF" position and plug in the charger.

Handle Operation

The handle should be stored in the upright position when not moving the lift unit. To move the unit for positioning, lift up on detent bar while holding handle grips. Pull on handle and press down to raise lift while engaging the rear wheels with ground. There are two positions to lift the unit from the floor. Release the detent bar to engage the stop for the height desired. The handle height when engaged to the stop is at approximately 39" or 36" above the ground.

When the handle is engaged in one of these two positions, the unit can be maneuvered by rolling to the vehicle wheel to be cradled prior to set up on the Wireless Portable Lift System. When the lift unit is in place, push down on the handle and raise the detent bar to disengage the stop. While holding both handles, slowly let the handle rise to clear the wheels from the ground. *Do not* let the handle go after it is disengaged from the stop, possible personal injury could occur. Lift the handle to store it in the upright position. Release the detent bar to engage the up stop. Never leave the handle engaged with the wheels loaded on the ground, possible damage could occur to the handle assembly. The large rear wheels should always be clear of the ground prior to lifting the vehicle.

Charging the Battery

The on-board Charging unit is located behind the Left Cover. See **Figure 2**. Inspect the condition of the cord and plug and only use if in good condition. Unwind the power cord and insert the plug into a suitable 120 VAC 60 Hz power source with matching plug style. Each charger should draw less than 2 Amps apiece so a 20 Amp circuit breaker should easily be able to handle six units charging simultaneously on the same circuit branch. The factory equipped battery is an AGM type and normally will not 'gas' when charging exclusively with the factory installed charger.

NOTICE

An Operator's Manual from the charger manufacturer has been included in the information packet for this lift system. Read operating and safety manuals before using charger.

Save these supplemental instructions!

⚠ WARNING

There are no serviceable items inside on-board Charger.

If the lift cannot be moved to a power outlet within reach of the 6 foot charger cord, a suitable extension cord can be used. See **Table 1** below for proper selection. Always use a grounded cord set with matching plug styles. Beware of additional hazards associated with stringing extension cords on the floor such as tripping, crushing, electrocution hazards as well as others.

Minimum Extension Cord Size			
Length (ft.)	25	50	100
Wire Size (AWG)	16	14	12
Charger Rating: 120 VAC @ 60 Hz			
1.1 Amps			

Table 1

⚠ WARNING

Do not use the battery or charger as an energy source for any other purpose.



Figure 2

Emergency Procedures

In the event that the system must be stopped immediately, the WPLS system has provided an Emergency Stop button on each Control Box. It is red in color and simply needs to be pushed in on any Control Box to halt a vehicle lift that may be in progress. The normal emergency stop condition, or “E-Stop” message on the display, will communicate with all controls synchronized in the system to halt all at once. After the situation is assessed, and it is determined that it is safe to continue lifting or lowering, the emergency Stop button originally pushed in can be pulled back out and the Hold-to-Run button pushed to reset the system. See **Figure 1**.

In the unlikely event that the system would lose communication at the same time an Emergency Stop button is pressed and a lift is still moving, simply press the Emergency Stop button on the unit still moving. If this fails to stop the unit, open the left cover and turn the Master Switch to OFF. See **Figure 2**.

Anytime the controls are found not to be functioning while a vehicle is already raised, the vehicle may be lowered to the ground with the controls turned OFF using the following steps. Open the right hand cover by opening the LH latch first, then the RH latch.

1. Turn all Control Boxes to the OFF position. See **Figure 1**.
2. Station a person at each lift with all right side covers open.
3. Each person must one at a time hold the Emergency Override Toggle down. See **Figure 3**. No motion should occur yet. If there is, release all Override Toggles, then verify all Needle Valves are closed (CW).
4. Each person slowly opens the Needle Valve located on Power Unit to begin decent while holding Toggle down. See **Figure 4**.
5. Coordinate level Lowering by adjusting the Needle Valve: Counterclockwise is FASTER, Clockwise is SLOWER. **Be sure to close all Needle Valves prior to next use.**

If one or more unit(s) do not move down initially, it may be resting on a Down Stop slot. Close the Needle Valve and slightly raise the carriage to clear the Down Stops. This is done by pushing in the Emergency Raise Push Button and lifting up on the Emergency override Toggle together. Then resume lowering.

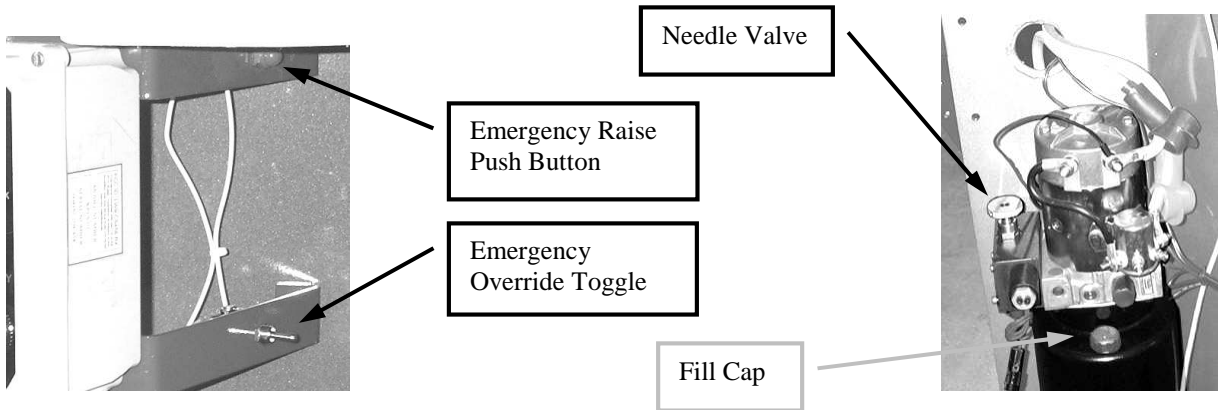


Figure 3

Figure 4

Channel Selector Switch on Control Box

Four Channel Selector Toggle switches are provided on each Control Box in order allow the Operator a choice over which frequency Channel the system is being set up on. There are 16 channels available which enables multiple systems to work side-by-side within a facility but on different channels. This also enables a system that senses multiple "Signal Loss" faults to conveniently move to another Channel for clearer communications. Use the following guidelines to properly use this feature.

WARNING

Turn control box selector switch to OFF position before changing Channel Selector Toggle positions. Failure to do so will prevent change from properly taking place and communication problems will exist.

1. Ensure all lifts are lowered and in stowed position.
2. Open Right Hand cover where the Control Box is located.
3. Ensure the Control Box Selector switch is in the OFF position.
4. Move any Toggle switch to a new position. See **Figure 5**. Reference **Table 2** for Channel Selector Toggle patterns. A Toggle pointing away from the Operator is considered ON; pointing towards the Operator is OFF.
5. Turn the Control Box Selector switch to SYNC position and proceed with the startup procedure.
6. Repeat for each additional Lift Unit to complete the Lift System. Be sure that the Toggle Switch pattern is identical for each Lift Unit.

WARNING

Turn control box selector switch to the OFF position after each use. Failure to do so could result in serious injury and/or property damage.

When using the WPLS-160 units in multiple systems to raise more than one vehicle, it is a good safety practice to turn each control box off before moving the units under another vehicle. Since these systems can be configured in sets of 2, 4, or 6 units it is important to ensure the system knows exactly how many units are intended to be synchronized together. When using these units to lift multiple vehicles, *never* use the same channel in the same location. Always use separate channels when lifting separate vehicles.

WARNING

Do not attempt to lift more than one vehicle with one system. Do not attempt to lift one vehicle with units synchronized into two or more different systems. Always synchronize one system per vehicle.

The WPLS-160 wireless feature complies with part 90 of the FCC Rules. The operation of these are registration-free and there are no licensing requirements for the end user.

The controls on these Lift Units are equipped with a "SLEEP" mode. If the display back lighting is off while in the SYNC or LOCK mode, push the "Hold-to-Run TM" button to brighten control display. This feature does not interfere with the system's operation.

WARNING

There are no serviceable items inside Control Box.

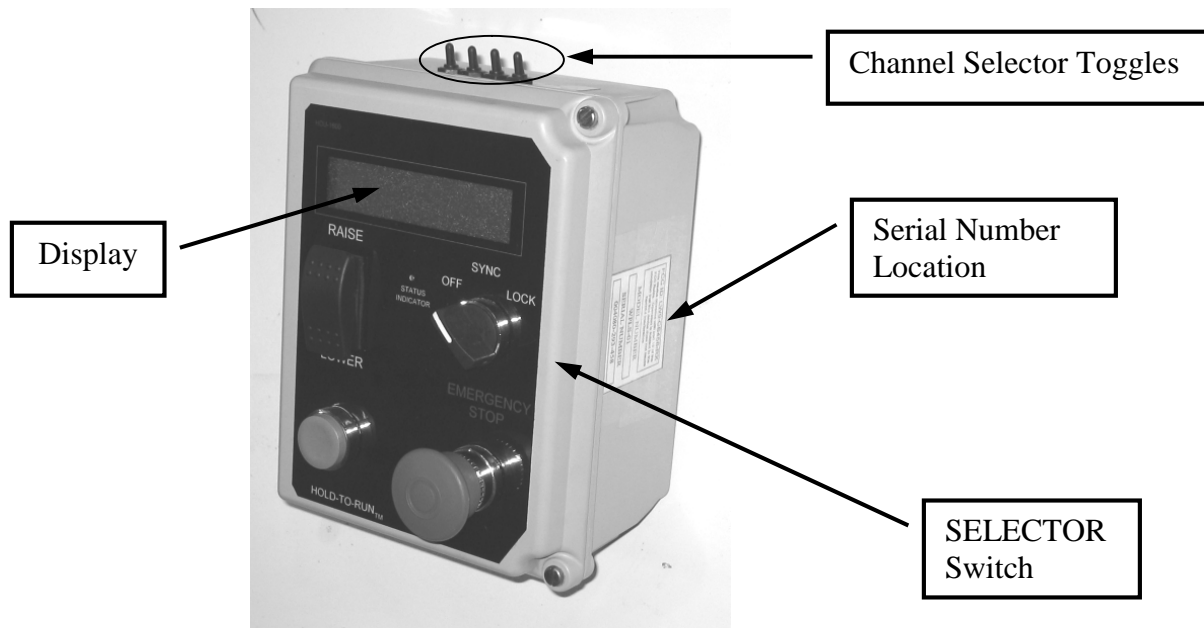


Figure 5

Table 2: Channel Selector Switch Chart

RF Channel	TOGGLE POSITION			
	3	4	5	6
1	ON	ON	ON	ON
2	OFF	ON	ON	ON
3	ON	OFF	ON	ON
4	OFF	OFF	ON	ON
5	ON	ON	OFF	ON
6	OFF	ON	OFF	ON
7	ON	OFF	OFF	ON
8	OFF	OFF	OFF	ON
9	ON	ON	ON	OFF
10	OFF	ON	ON	OFF
11	ON	OFF	ON	OFF
12	OFF	OFF	ON	OFF
13	ON	ON	OFF	OFF
14	OFF	ON	OFF	OFF
15	ON	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF

Small Wheel Adapters

⚠ WARNING

The small wheel adapters should be used for wheel from 14" to 19" only. DO NOT overload when using this adapter. Failure to heed this warning may result in personal injury and/or property damage.

The optional wheel adapters are located on each side of the carriage, see **Figure 6**. Secure adapters by inserting hooks into top row of grip holes and then resting them on the carriage arm in the working position. See **Figure 7**. When lifting a vehicle with 14" to 16" wheels, use both of the wheel adapters. If you are lifting a vehicle with 17" to 19" wheels, use only one of the wheel adapters. Remember to release the emergency brake and put the vehicle in neutral prior to lifting.

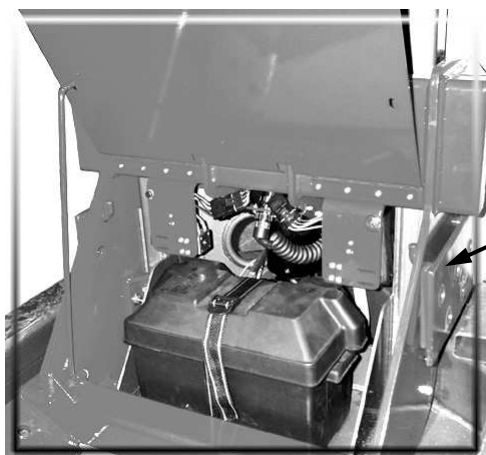


Figure 6

Insert Hook
Into Holes

Stored
Location

Working
Position

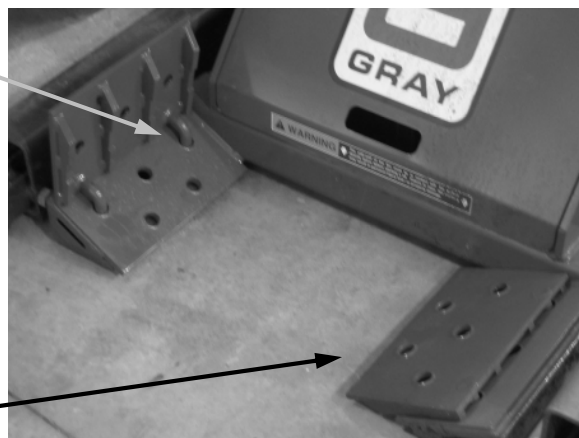


Figure 7

Maintenance Instructions

⚠ WARNING

All inspection and maintenance procedures must be performed after the lift system has been removed from service. Failure to heed this warning may result in personal and / or property damage.

NOTICE

The owner must inspect, or appoint a knowledgeable person to inspect the lifts. Visual inspection should be made before each use of lifts, checking for abnormal conditions. Regular inspections should be made weekly for daily use and monthly for intermittent use. Each lift must be inspected immediately if subjected to an abnormal load or shock. Any lift which appears to be damaged in any way, is found to be badly worn, or operates abnormally shall be removed from service until necessary repairs are made.

Annual Maintenance Requirements

1. Check oil level in the oil reservoir. Refer to the "Adding Hydraulic Fluid" section.
2. All warning and capacity labels should be readable and complete. Wash external surfaces of lift, labels, and decals with a mild soap solution.
3. Lubricate rails of the lift that slide pads slide on with a dry film PTFE type lubricant as needed if chatter/vibration develops. Refer to the "Periodic Lubrication for Wear Pads" section.
4. Inspect Battery Terminals connections to make sure they are clean and residue free.

Structural Inspection

⚠ WARNING

The lift must be removed from service and inspected for damage immediately if the lift is subjected to an abnormal shock or load. Failure to heed this warning may result in personal and/or property damage.

NOTICE

The owner must inspect, or appoint a knowledgeable person to inspect the lift for signs of corrosion and / or excessive wear. Visual inspection should be made before each use of lift, checking for abnormal conditions. Regular inspections should be made weekly for daily use and monthly for intermittent use. Each lift must be inspected immediately if subjected to an abnormal load or shock. Any lift which appears to be damaged in any way, is found to be badly worn, or operates abnormally shall be removed from service until necessary repairs are made.

1. Inspect lifts regularly and remove from service if it is cracked, chipped or shows signs of excessive wear.
2. The lifts should raise and lower smoothly through its full range. Inspect the lift frame rails for damage such as gouging. If lift stutters when lowering (jerky) the rails may need to be re-lubricated. Refer to the “Periodic Lubrication for Wear Pads” section.
3. All controls should operate freely. Inspect for oil leaks. If oil leaks occur, investigate and correct the source of the leakage. Then refer to the “Adding Hydraulic Fluid” section of this manual.
4. Check that all Grade #8 fasteners are tight and properly wire-tied together.

⚠ CAUTION

Clean up any oil leakage immediately. Oil left on a floor can be a slipping hazard.

If any irregularities or problems are detected during an inspection, the lifts must be removed from service immediately and repaired. Contact customer service at the numbers printed on the back of this manual.

Adding Hydraulic Fluid

The hydraulic reservoir is located on the Power Unit mounted directly below the Control Box.

1. Remove the lift unit from service.
2. The carriage must be in the fully lowered position and the lift unit must be on a level surface.
3. Open the right hand cover by releasing the LH Latch first, then the RH Latch.
4. Clean around the surface of the oil fill plug to prevent contamination of the hydraulic oil system.
5. Remove the oil fill plug. See **Figure 4**. Visually check the hydraulic oil level. The fluid should be visible and just covering the dipstick. If the fluid level is low, add a high-grade hydraulic fluid equivalent to Tellus T22 so the oil level just covers the dipstick. Allow at least a 1” air gap for fluid expansion.

⚠ CAUTION

Do not use brake or transmission fluid. Use of the wrong fluid can deteriorate the seals and corrosion problems will occur.

6. Re-install the oil fill plug. Clean up any spilled oil and secure the right hand cover back onto the frame. Test the lift for normal operation.

If the carriage doesn’t rise to full height before pump cavitates, check for air in the system. See “Bleeding Air from Cylinder.” If this doesn’t solve the problem, call customer service at the numbers printed on the back of this manual.

Periodic Lubrication for Wear Pads

The WPLS is designed with pre-lubricated Wear Pads to transfer the load from the moving Carriage to the stationary Column. This design will provide a long service life before any replacement is needed.

In addition, all 2005 units and later, have the Column Rails prepared with an extreme pressure coating at the factory instead of the standard paint. This coating is made with a Moly Disulfite compound and eliminates the possibility of paint flaking. During the production of the WPLS lift, a dry film lubricant is sprayed on the Rails and used to assist the Wear Pads during their 'break-in' period. This lubricant is a PTFE based product that sprays on dry and stays dry. A dry film lubricant will not attract dirt or other air born particles that could be harmful to the Wear Pads.

During everyday use, the WPLS may require periodic re-lubrication to continue smooth operation. A chatter noise or vibration sound may indicate the need to re-lubricate with the following list of Recommended Dry Film Lubricants. *Do not use Silicon or Graphite based products!* In some environments, this re-lubrication could occur even monthly. If further assistance is needed, call Gray Customer Service for further instructions.

The following products have been used with success:

Recommended Dry Film Lubricants*		
Source	P/N	Description
Grainger	4KK82	LPS® Dry Film PTFE (12 oz. aerosol)
Gunk	L512	Liquid Wrench® Dry Lubricant (11 oz. aerosol)
Sherwin-Williams	S00311	Sprayon™ Dry Film P.T.F.E. (12 oz. aerosol)

*not intended to be an all-inclusive list.

Lubrication Instructions

1. With Carriage stowed, wipe down three sides of each Rail (Front, Back, and Side) with a clean, dry cloth or towel.
2. Spray three sides of each Column Rail with a thin even coat of PTFE from the recommended list. **See Figure 1.**
3. Raise Carriage 2 to 3 feet and repeat for lower portion of each Column.. Lower Carriage to stowed position

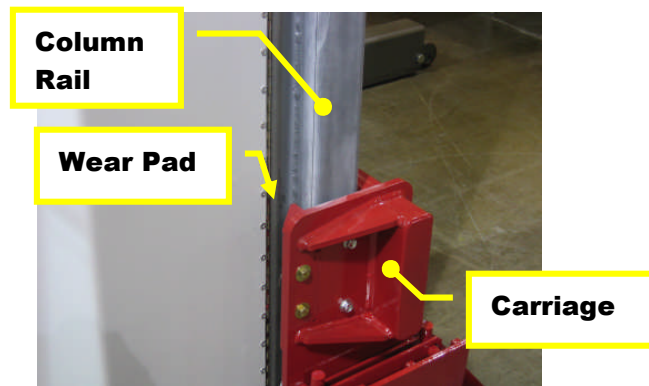


Figure 1

Bleeding Air From Cylinder

If Carriage is spongy or jumpy when either raising or lowering with no load on the carriage, there is most likely air trapped in the cylinder. In order to remove the trapped air do the following:

1. Turn the control box to the OFF position.
2. Open the right hand side cover by releasing the LH Latch first, then the RH Latch.
3. Raise the carriage lift up by pushing the Emergency Override Toggle in the up direction and pushing in on the Emergency Raise Push Button. **See Figure 3.** Raise the carriage approximately two feet off the ground.
4. Position a ladder behind the lift so you can reach the top of the cylinder. With a 3/16" allen wrench and a rag, slightly open the vent screw in the top on the cylinder, see **Figure 8**, while surrounding the port with a clean

rag. You can hear the air escaping. This might take a little time depending on the amount of air trapped in the cylinder.

5. When oil starts to escape past the vent screw, retighten the vent screw. The air will now be purged from the system. Clean up any oil residue that escapes from the cylinder.
6. When you get down from the ladder, lower the carriage by following the “Emergency Lowering Procedure”.
7. To make sure that no additional air will get into the system, the oil level in the hydraulic reservoir should be checked to ensure the unit has a proper oil level in the reservoir. To do this, follow the “Adding Hydraulic Fluid” procedure listed in the owner’s manual.

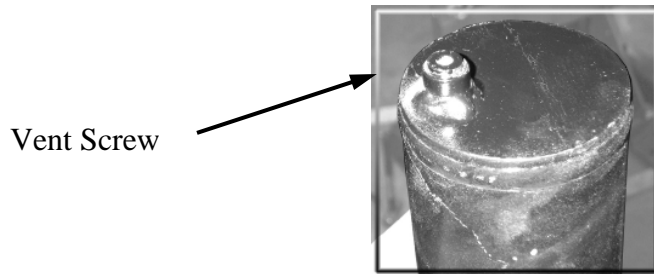


Figure 8

Electrical Components

The electrical system is powered by a 12 VDC battery capable of discharging up to 260 Amps to raise Rated Load. This electrical system does not need any routine maintenance, but there are several circuit protectors to be aware of.

⚠ WARNING

Always disconnect the battery from the system before changing fuses. Failure to heed this warning may result in personal and/or property damage.

- A. Battery Charger is protected from a battery short circuit by a 30 Amp glass type in-line fuse located near the battery terminals (See **Figure 9, Item A**).
- B. DC Power Unit motor is protected by a 300 Amp ANL type fuse located inside Left Cover mounted to a block with clear Plexiglas cover (See **Figure 10, Item B**).
- C. Down Stop Assembly circuit is protected by a 15 Amp blade type which is located to the left of the fuse block (See **Figure 10, Item C**). It will have a red colored lead wire.
- D. Control Box is protected by a 7.5 Amp blade type in-line fuse which is located just under the Main On/Off switch (See **Figure 10, Item D**).
- E. Down Stop Limit Switch signal to Control Box is protected by a 3 Amp in-line fuse which is located to the left of the fuse block (See **Figure 10, Item E**).

All Blade type fuses are clearly marked when opening protective caps.

NOTICE

Always replace fuse protective caps or covers after inspection of the fuse.

⚠ CAUTION

Always replace a blown fuse with the same size and type. An improper replacement could damage the equipment.

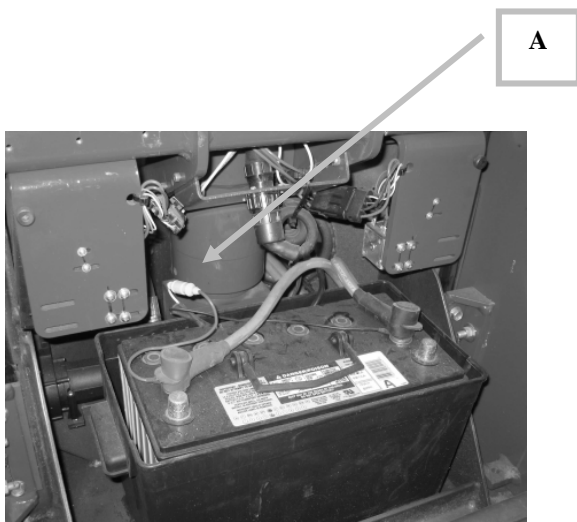


Figure 9 (Battery Cover removed for clarity)

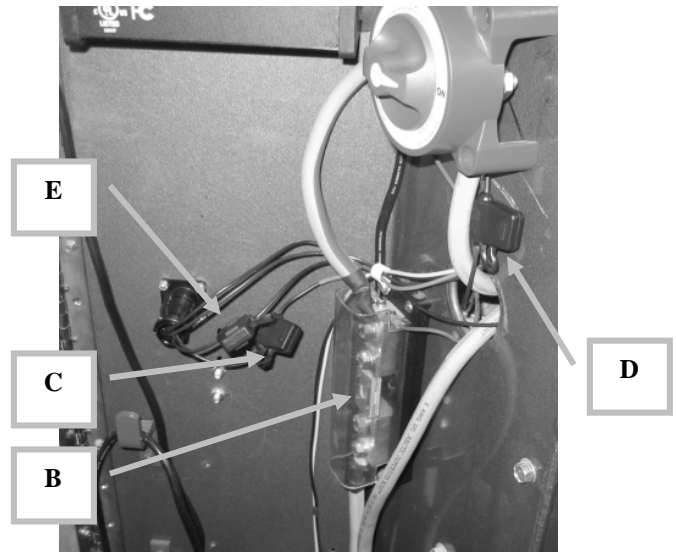


Figure 10

FCC PART 15 STATEMENTS FOR USER’S MANUAL

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS.

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.

Troubleshooting

This page is a list of preprogrammed faults and possible solutions. This list of faults is also listed on a label located on the inside of the LH Cover. If the solution listed fails to correct the problem, call customer service at the numbers and address printed on the back cover of this manual. Please have the model number, and serial number of your lift unit available. The serial number is permanently stamped to [the rear of the right base tube cover plate](#). [The serial number of the control box is on the right hand side panel](#). It can be seen without opening the right hand cover.

Control Panel Messages	Meaning	Possible Solutions*
“Recharge Needed”	<ul style="list-style-type: none"> • Energy Level on one or more Lift(s) has dropped below desired minimum – <i>please recharge before next lift</i>. • Lift Unit(s) has flashing Red Status Indicator. • Further use without recharge <i>could</i> shorten battery life. 	<ul style="list-style-type: none"> • Plug in On-Board Charger.
“Max. Allowed Lift Height”	<ul style="list-style-type: none"> • Lift System has reached the maximum height allowed for the present configuration of lifts. • All Lift Units have flashing Green Status Indicator. • Using only two Lift Units will raise 30” maximum. 	<ul style="list-style-type: none"> • Lift System may be lowered from this height.
“Low Battery”	<ul style="list-style-type: none"> • Energy Level on one or more Lift Unit(s) has dropped to a point where further lifting <i>will</i> damage Battery. However, vehicle can be lowered. • Lift Unit(s) has flashing Red Status Indicator. • Identified Lift Unit(s) <i>must</i> be recharged (or swapped to spare battery) before further lifting can take place. <p>Note: If backup Battery is used to finish lift operation, properly charge or replace Lift Unit Battery and reconnect to System Power Cable.</p>	<ol style="list-style-type: none"> 1. Plug in on-board charger, if 110 VAC is available. 2. If not available: <ul style="list-style-type: none"> ○ Locate spare 12 VDC Battery. ○ Locate supplied Jumper Cables. ○ Turn all Controls to OFF position. ○ Disconnect System Power Cable. ○ Connect Jumper Cables to spare battery terminals. ○ Connect Jumper Cables to System Power Cable. ○ Re-synchronize system to continue.
“Signal Loss”	<ul style="list-style-type: none"> • Communication from one or more Lift Unit(s) was lost. • Lift Unit(s) has flashing Red Status Indicator. • Can be caused by outside RF interferences and is considered normal. • Communication link needs to be reestablished. 	<ol style="list-style-type: none"> 1. Verify Lift Unit(s) control is in the SYNC position, then press “Hold-to-Run” switch. 2. If not, select SYNC and verify height position. Then, press “Hold-to-Run” switch at <i>each</i> Control to reestablish communication. 3. If “Signal Loss” continues to reoccur, turn all Controls to OFF, select another frequency several channels away, and re-synchronize the system.
“Feedback Loop”	<ul style="list-style-type: none"> • Carriage position on one or more Lift Unit(s) is not responding properly to Control commands. • Lift Unit(s) has flashing Red Status Indicator. • Carriage speed does not match Control Box output. 	<ol style="list-style-type: none"> 1. Press “Hold-to-Run” switch to continue. 2. If reoccurs, verify no obstructions with Lift Carriage. 3. If no obstructions, check operation of Linear Sensor.
“Out-of-Sync”	<ul style="list-style-type: none"> • Lift Units heights are not within acceptable synchronization range. • All Lift Units have flashing Red Status Indicator. • All Lift Units must be within 3” of each other to operate. 	<ol style="list-style-type: none"> 1. Press “Hold to Run” switch to clear fault. 2. Operate Lift System in the <i>opposite</i> direction temporarily to re-synchronize. 3. If unable to re-synchronize, use Emergency Lowering Procedure and re-sync at ground level.
“E-Stop”	<ul style="list-style-type: none"> • Red Emergency Stop button has been pushed IN on one or 	<ol style="list-style-type: none"> 1. Determine cause of activation.

	<p>more Lift Unit(s).</p> <ul style="list-style-type: none"> • Lift Unit(s) has flashing Red Status Indicator. • All Red Emergency Stop buttons must be OUT to operate. 	<ol style="list-style-type: none"> 2. Rectify condition and verify ready to operate. 3. Reset Emergency Stop Button and push "Hold-to-Run" switch to continue.
<p>"Too Many to Lift, ..."</p>	<ul style="list-style-type: none"> • Number of Lift Units in SYNC is <i>more</i> than the Operator inputted during set up. • Last Lift Unit in SYNC has flashing Red Status Indicator. • Another System is already operating on that RF channel. • Number of Lift Units set to SYNC <i>must equal</i> the Number inputted during set up. 	<ol style="list-style-type: none"> 1. Find all Lift Unit(s) <i>not</i> intended to be used on current vehicle. 2. If other Units are being used on another vehicle, switch channels and re-synchronize. 3. If other Units are to be idle, verify all Controls are OFF before synchronizing current system.
<p>"Too Few to Lift"</p>	<ul style="list-style-type: none"> • Number of Lift Units in SYNC is <i>less</i> than the Operator inputted during set up. • Operated Unit will have flashing Red Status Indicator. • Number of Lift Units set to SYNC <i>must equal</i> the Number inputted during set up. 	<ol style="list-style-type: none"> 1. Push Hold-to-Run switch to clear fault message. 2. Find all Lift Unit(s) that are intended to be used and verify the Controls are in the SYNC position. 3. If all are in SYNC, turn all OFF and restart. Ensure proper Number of lifts is inputted when prompted.
<p>"Down Stop Error"</p>	<ul style="list-style-type: none"> • At least one Lift Unit has Stop Blocks not completely retracted to allow lowering of vehicle. • Lift Unit(s) has flashing Red Status Indicator. • All Stop Blocks must be completely retracted before Lift System will allow vehicle to Lower. 	<ul style="list-style-type: none"> • Call Technical Service for assistance.

Notes



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