

KEEP FOR FUTURE REFERENCE

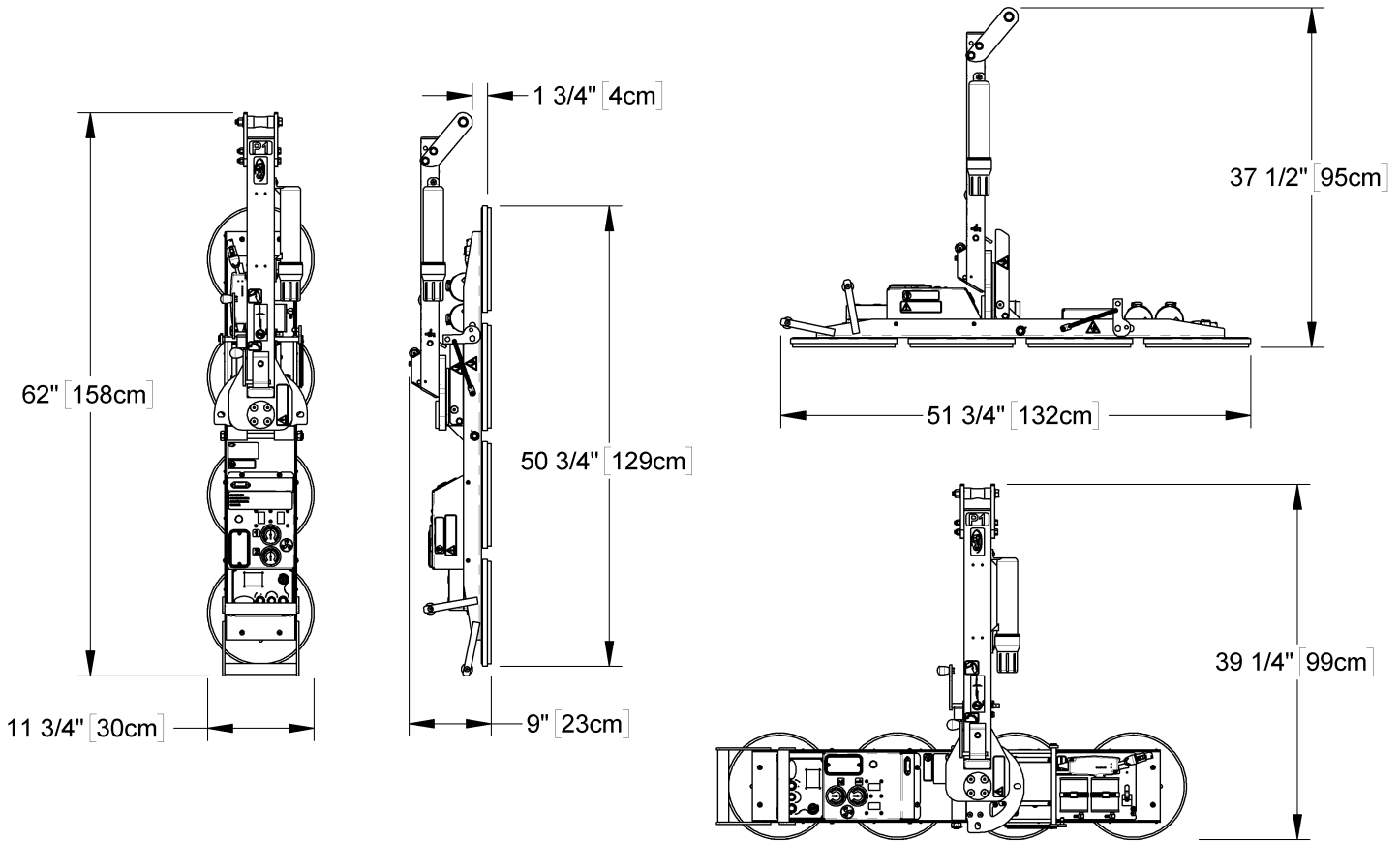


**P.O. Box 368 – 908 West Main
Laurel, MT USA 59044
phone 800-548-7341
phone 406-628-8231
fax 406-628-8354**

OPERATING INSTRUCTIONS



MODEL NUMBERS: P110C04DC3,
P110T04DC3, P11104DC3
SERIAL NUMBER: _____
(please see serial label and record number here)



P110T04DC3 shown

**SINGLE-CHANNEL LIFTER, DC-VOLTAGE
WITH INTELLI-GRIP® TECHNOLOGY
(AVAILABLE WITH REMOTE CONTROL SYSTEM)**



**READ ALL INSTRUCTIONS AND SAFETY RULES
BEFORE OPERATING THIS LIFTER**










DESIGNED FOR THE MATERIALS HANDLING PROFESSIONAL

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SPECIFICATIONS

Description: 	Designed for use with a crane or other hoisting equipment, P1-04DC3 lifters employ vacuum to hold a load for lifting, and they provide manual 180° rotation and manual 90° tilt movements for load manipulation.		
Model Number:	P110C04DC3	P110T04DC3	P11104DC3
Vacuum Pads: ¹ (4 each, standard rubber)	10" [25 cm] nom. diameter, concave (Model G0750)	10" [25 cm] nom. diameter (Model VPFS10T) ²	11" [28 cm] nom. diameter, lipped (Model G3370)
Maximum Pad Spread: (to outer edges)	49" x 10" [125 cm x 25 cm]	50¾" x 11¾" [129 cm x 30 cm]	51" x 12" [130 cm x 30 cm]
Maximum Load Capacity: ³ Per-Pad: Overall:	150 lbs [68 kg] 600 lbs [270 kg]	150 lbs [68 kg] 600 lbs [270 kg]	175 lbs [80 kg] 700 lbs [320 kg]
Lifter Weight: 	90 lbs [41 kg]		
Power Source:	12 volts DC, 4.5 amps		
Battery Capacity:	7 amp-hours		
Rotation Capability: 	Manual, 180°, with automatic locking at each ¼ revolution (when desired)		
Tilt Capability: 	Manual, 90°, with automatic locking in vertical position		
Options: 	<i>Available</i> with Remote Control System – FCC, CE and ICC certified.		
Operating Elevation: 	Maximum = 6000 feet [1828 meters]		
Operating Temperatures: 	32° to 104° F [0° to 40° C]		
Service Life:	This lifter is designed to have a service life of at least 20,000 lifting cycles, when used and maintained as intended (vacuum pads, filter elements and other wear-out items are excluded).		
Software Version:	Intelli-Grip® 6.0		
ASME Standard BTH-1:	Design Category "B", Service Class "0" (see www.WPG.com for more information)		

!!-CE-!! Note: This symbol appears in the *OPERATING INSTRUCTIONS* manual only when requirements of a CE Standard are *different* from requirements of other standards that also apply to this vacuum lifter. CE requirements are mandatory in geographical areas where CE Standards apply, but may be optional in other locations.

¹ Available with alternative rubber compounds for special applications (see REPLACEMENT PARTS LIST).

² Standard with replaceable sealing rings for rough or textured surfaces (see REPLACEMENT PARTS LIST).

³ The Maximum Load Capacity is rated at 16" Hg [-54 kPa] on clean, smooth, nonporous flat surfaces, with a friction coefficient of 1 (see MAINTENANCE: VACUUM PAD MAINTENANCE: Pad to Load Friction Coefficient). A qualified person should evaluate the effective lifting capacity for the actual application. In addition to the effect of friction between the vacuum pads and load, the lifting capacity may be affected by the following load characteristics: rigidity, strength, surface conditions, overhang, angle, center of gravity and temperature.

SAFETY



The following safety rules must be observed to protect the operator and others from potential dangers.



Wear personal protective equipment that is appropriate for the material being handled. Follow trade association guidelines.



Operate the lifter under conditions approved for its design (see INTENDED USE: OPERATING ENVIRONMENT).



Do not operate a lifter that is damaged, malfunctioning, or missing parts.



Do not operate a lifter if the sealing edge of any vacuum pad is cut or otherwise damaged.



Do not remove or obscure safety labels.



Do not operate a lifter if the Maximum Load Capacity or any safety label appears to be missing or obscured.



Make certain the contact surfaces of the load and vacuum pads are clean prior to attaching the pads (see MAINTENANCE: VACUUM PAD MAINTENANCE).



Do not exceed the Maximum Load Capacity or attempt to lift loads the lifter is not designed for (see INTENDED USE: LOAD CHARACTERISTICS).



Do not attempt to lift cracked or broken glass with this lifter.



Position the vacuum pads correctly on the load prior to lifting (see OPERATION: TO ATTACH THE PAD TO A LOAD).



Do not lift a load when any vacuum indicator shows inadequate vacuum.



Do not touch the vacuum release controls during a lift. This may result in loss of vacuum and release of the load.



Do not allow people to ride on the lifter or the load being lifted.



Do not lift a load higher than necessary or leave suspended loads unattended.



Do not lift a load over people.



Keep other personnel far enough away from the lifter to avoid injury in the event of an unexpected load release.



Place the power control in the inactive position and, when possible, disconnect the power source before opening any enclosure on the lifter. (Only applicable to powered lifters)



Do not make any modifications to the lifter (see LIMITED WARRANTY).

OPERATING FEATURES

Note: Components shown here are underlined> on their first appearance in each section to follow.



- | | | |
|---|------------------------------|-------------------------------------|
| 1 LIFT SPOOL | 8 CONTROL HANDLES | 17 WARNING BUZZER |
| 2 LIFT BAR | 9 INTELLI-GRIP® CONTROL UNIT | 18 POWER BUTTON |
| 3 INSTRUCTIONS CANISTER | 10 BATTERY | 19 "RELEASE" BUTTON |
| 4 TILT RELEASE LEVER | 11 BATTERY CHARGER | 20 "ATTACH" BUTTON |
| 5 ROTATION RELEASE LEVER | 12 VACUUM RESERVE TANKS | 21 "FUNCTION" BUTTON |
| 6 PAD CHANNEL | 13 VACUUM PAD | 22 LCD SCREEN with BATTERY GAUGE |
| 7 Cover for VACUUM PUMP,
VACUUM SENSORS and
AIR FILTERS | 14 Windows for AIR FILTERS | 23 STROBE LIGHT |
| | 15 VACUUM GAUGES | 24 WARNING BUZZER BATTERY
HOLDER |
| | 16 VACUUM LIFT LIGHT | |

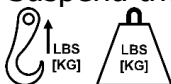
ASSEMBLY

1) Open the shipping container and remove all devices for restraining or protecting the vacuum lifter. Save the container and devices for use whenever the lifter is transported.

2) Position the lift spool to optimize the lifter's hang angle for the intended use, as shown. When a different spool position is desired, remove and loosen the bolts as needed to move the lift spool. Then reinstall all hardware, and tighten bolts securely.



3) Suspend the lifter from a crane as follows: Select hoisting equipment (crane and hoist, when applicable) rated to carry the Maximum Load Capacity plus the Lifter Weight (see SPECIFICATIONS).

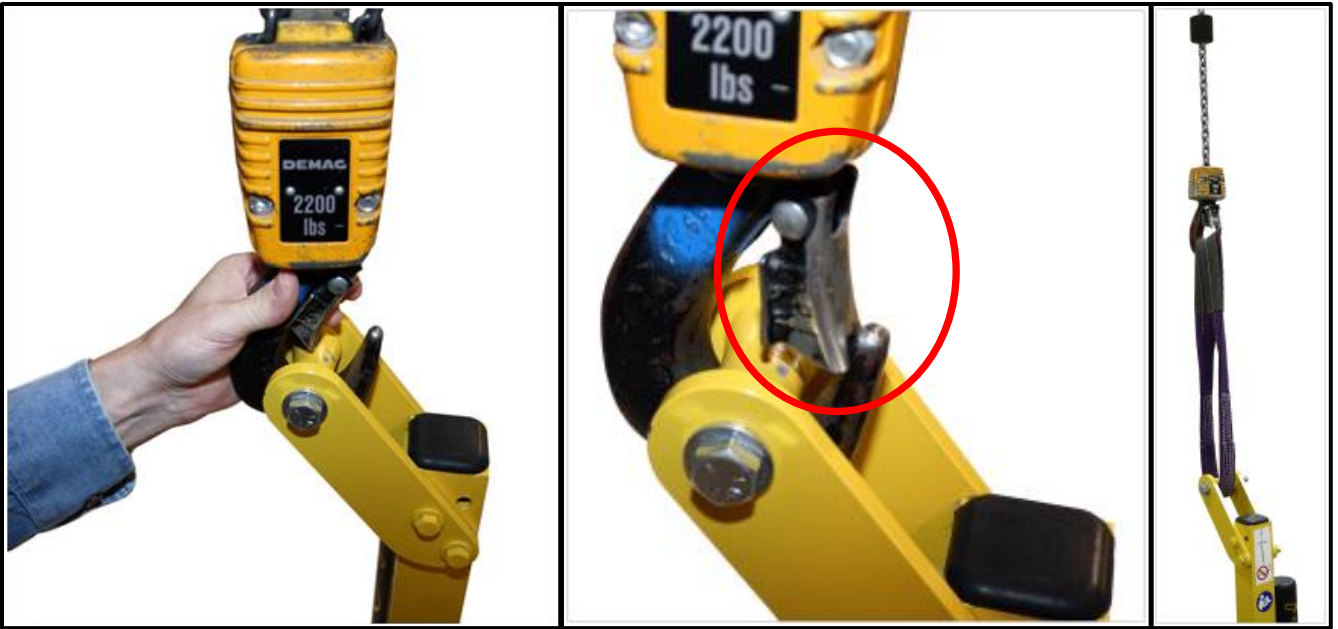


Note: Any application of the lifter must conform to all statutory or regulatory standards that relate to the hoisting equipment when used in its geographical location.

Disengage the tilt latch and raise the lift bar to a vertical orientation, as shown.



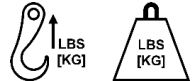
Then attach the hoisting equipment hook to the lift spool as shown.



! Make sure hoisting equipment hook is fitted with restraining latch to prevent lift spool from slipping off under any circumstances.

Note: Make sure the hook does not interfere with the load, using a sling or other rigging as necessary.

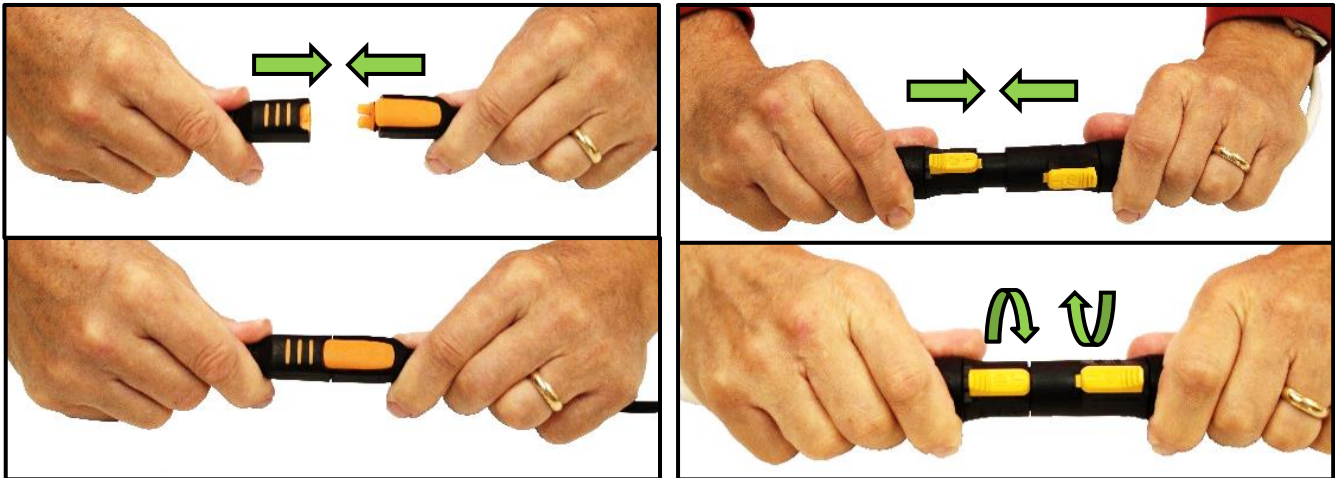
! Only use slings rated to carry Maximum Load Capacity plus Lifter Weight.



Use the hoisting equipment to raise the lifter out of the shipping container. Be careful to avoid damaging any vacuum pads. Remove the pad covers as shown, and save them for use whenever the lifter is stored.



4) Connect the electrical connectors, as shown.



Install the 9-volt battery for the warning buzzer as directed under MAINTENANCE: WARNING BUZZER BATTERY TEST.

5) Before you put the lifter into service, perform Operational and Load Tests (see MAINTENANCE: TESTING SCHEDULE).




INTENDED USE

LOAD CHARACTERISTICS



This lifter is NOT intended for lifting hazardous materials, such as explosives or radioactive substances.

The operator must verify that the lifter is intended to handle each load, in accordance with the following requirements:

- The load weight must not exceed the Maximum Load Capacity (see SPECIFICATIONS). 
- The load must be a single piece of nonporous or semiporous material with a flat and relatively smooth contact surface.⁴ To determine whether the load is too porous or rough, perform the test under Vacuum Level on Other Surfaces (see OPERATION: TO ATTACH THE PADS TO A LOAD).
- The load's contact surface must be suitable for obtaining a friction coefficient of 1 with the lifter's vacuum pads (see MAINTENANCE: VACUUM PAD MAINTENANCE: Pad to Load Friction Coefficient) or capacity should be derated appropriately.
- In order to avoid damaging the vacuum pads, the load's surface temperature must not exceed the Operating Temperatures (see SPECIFICATIONS).⁵ 
- The load's *minimum* length and width are determined by the Pad Spread (see SPECIFICATIONS).
- The load's *maximum* length and width are determined by the allowable overhang, or the amount of load material that can extend sideways beyond the vacuum pad without breaking or otherwise being damaged.⁶
- 1" [2.5 cm] is the maximum allowable thickness of loads at the Maximum Load Capacity (see SPECIFICATIONS).⁷ 

Note: Standard vacuum pads can stain or deform load surfaces with light colors or soft coatings. Test such surfaces for detrimental effects before using the lifter on them. Alternative rubber compounds are available for these applications; contact Wood's Powr-Grip or an authorized dealer for more information.

⁴ Lifters that feature concave vacuum pads can also attach to some kinds of curved loads. Since curvature affects the lifting capacity, contact Wood's Powr-Grip for help in determining the effective lifting capacity for a particular curved load.

⁵ If such an application cannot be avoided, Wood's Powr-Grip does offer a heat-resistant rubber compound and other solutions which may enable you to lift loads with higher surface temperatures. Contact Wood's Powr-Grip or an authorized dealer for more information.

⁶ The allowable overhang depends on the kind of load material being lifted, the thickness of the material, and the angle at which it is handled (if any). Since materials such as glass, stone or sheet metal each have different physical properties, the allowable overhang must be evaluated separately for each type of load. If necessary, contact Wood's Powr-Grip or an authorized dealer for help in determining the recommended overhang in a specific situation.

⁷ Note that allowable thickness increases as load weight decreases. If necessary, contact Wood's Powr-Grip for help in determining the maximum thickness permitted when handling any specific load.

OPERATING ENVIRONMENT

The operator must determine whether the lifter is intended to be used in each work environment, in accordance with the following restrictions:



Never use lifter in dangerous environments.

- This lifter is not intended for use in any environment that is inherently dangerous to the operator or likely to compromise the lifter's ability to function. Environments containing explosives, caustic chemicals and other dangerous substances must be avoided.
- The lifter's work environment is limited by the Operating Elevation and Operating Temperatures indicated in SPECIFICATIONS.
- The lifter's work environment must be free of metal particles or any other contaminants that could cause a vacuum pump failure. Such contaminants could result in a load release and possible injury to the operator or others nearby.



°F [°C]



Environmental contaminants could result in vacuum pump failure.

- Using the lifter in wet environments may require the operator to take special precautions: Moisture on contact surfaces of the load or vacuum pads diminishes the lifter's slip resistance, thereby reducing the lifting capacity (see MAINTENANCE: VACUUM PAD MAINTENANCE: Pad to Load Friction Coefficient).



Moisture reduces slip resistance of vacuum pads.

The lifter is not designed to be water-tight. Submerging the lifter or using it in rain may damage lifter components; these and similar conditions must be avoided.

DISPOSAL OF THE LIFTER

After the vacuum lifter has reached the end of its Service Life (see SPECIFICATIONS), dispose of it in compliance with all local codes and relevant regulatory standards.

Note: This lifter is equipped with a battery, which may be subject to special disposal regulations.

OPERATION

BEFORE USING THE LIFTER

The operator must determine whether the lifter is capable of performing each intended task (see SPECIFICATIONS and INTENDED USE). In addition, all of the following preparations must be completed prior to lifting any load.

Taking Safety Precautions



Read all directions and safety rules before using lifter.

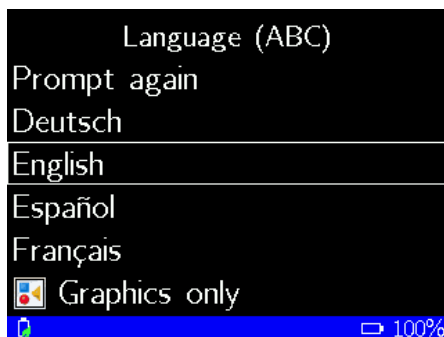
- Be trained in all relevant industry and regulatory standards required to operate the lifter in your location.



Always wear appropriate personal protective equipment.

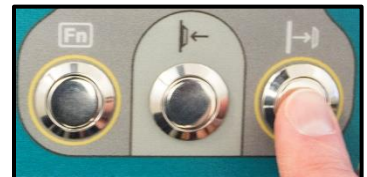
- Take any personal precautions required to handle the load safely.
- Consult appropriate trade association guidelines to determine what precautions are necessary for each type of load material.

Selecting a Language for the Intelli-Grip® Control Unit



When the lifter is powered up for the first time, the Intelli-Grip® Control Unit prompts the operator to select a preferred language for the LCD screen.

To move down through the list, press the "release" button (|→|).



To move up through the list, press the "attach" button (|←|).



To select the desired language, press the "function" button (Fn).



Note: To change the language, refer to the INTELLI-GRIP® OPERATOR SETTINGS section of the *SERVICE MANUAL*.

Performing Inspections and Tests



Always check battery energy (as shown on LCD screen) before using lifter. (See MAINTENANCE: BATTERY ASSESSMENT)

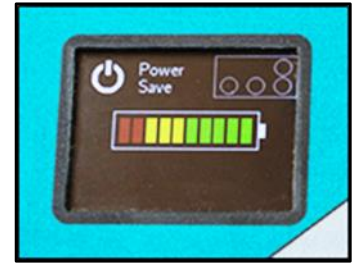
- Perform all inspections and tests required by the INSPECTION and TESTING SCHEDULES (see MAINTENANCE).
- Always conduct a VACUUM TEST before placing a lifter in service (see MAINTENANCE).
- **Caution: Examine each air filter regularly, and service when necessary.**

Service the 2 air filters whenever the filter bowls contain liquid or the filter elements appear dirty, as directed in the *SERVICE MANUAL* under AIR FILTER MAINTENANCE.



Make sure warning buzzer can be heard over ambient noise at operator position.

The warning buzzer must be clearly audible at the maximum distance between the operator and the lifter, despite any intervening barriers or obstructions.⁸



⁸ Maximum buzzer volume is 95 dBA at 2 ft [60 cm]. Consult EN 7731 to make sure the warning buzzer complies with CE Standards.

Preparing to Use the Optional Remote Control System



The optional Remote Control System features a radio receiver and a radio transmitter, as shown.

If the lifter is equipped with this option, the operator can engage the lifter's "attach" and "release" functions at distances up to 250 ft [76 m], provided there is a direct and clear view of the lifter and its status indicators (see MAINTENANCE: REMOTE CONTROL SYSTEM TEST).

Whenever you are lifting a load from a remote location, follow these safety rules:

- Visually verify the status of the lifter and load prior to remote operations.
- Do not operate the lifter remotely unless there is clear communication about intended actions (eg, releasing load) with all personnel near the lift.



Make sure nearby personnel are aware of intended remote control actions.

- Monitor the lifter at all times to make sure that it is functioning as intended.⁹
- Be sure that the load is landed and supported correctly before releasing it (see TO RELEASE THE PADS FROM THE LOAD to follow).

Note: To prevent any radio transmission, press the emergency transmitter disconnect button on the radio transmitter. To reset the emergency disconnect, twist the button clockwise and allow it to spring outward to its normal position.

- 1 EMERGENCY TRANSMITTER DISCONNECT
- 2 TRANSMISSION INDICATOR LIGHT
- 3 "RELEASE" BUTTON
- 4 TRANSMITTER POWER/"FUNCTION" BUTTON
- 5 "ATTACH" BUTTON



⁹ The Remote Control System is designed with safeguards to prevent multiple lifters from responding until a clear transmission is received. Nevertheless, radio controlled lifters should be tested to ensure that each transmitter controls only one lifter. The buttons located on the lifter always function, regardless of any radio transmissions in the vicinity.

To ATTACH THE PADS TO A LOAD

Positioning the Lifter on the Load

- 1) Make sure that the contact surfaces of the load and all vacuum pads are clean (see MAINTENANCE: VACUUM PAD MAINTENANCE).



- 2) Center the lifter's pad channel on the load as shown, to avoid unexpected rotation or tilt.¹⁰
- 3) Make sure that all vacuum pads will fit on the load (see SPECIFICATIONS: Maximum Pad Spread) and that the pads will be loaded evenly (see SPECIFICATIONS: Per-Pad Load Capacity).
- 4) Place the lifter on the load so that all vacuum pads are touching the contact surface.



¹⁰ The lifter is designed to handle the maximum load weight (see SPECIFICATIONS: Maximum Load Capacity) when the load's center of gravity is positioned within 2" [5 cm] of the lifter's rotation axis. Occasional loading deviations are permissible, provided that the operator can maintain control of the load at all times and that the load weight is low enough to avoid damaging the lifter.


Powering up the Lifter

Press the lifter's power button (Φ), as shown.

The vacuum pump will turn on for a few seconds. This is a normal function of the Intelli-Grip® Control Unit's self-diagnostics.

Note: To prevent an accidental shut-down while the lifter is in use, the power-down function is restricted while vacuum is detected.



 If the lifter is equipped with a Remote Control System, press the transmitter power (Φ) as shown and hold it briefly to activate the radio transmitter.¹¹

Note: If the transmitter is activated, the transmission indicator light flashes green when any button on the transmitter is pressed and held; if the transmitter is not activated, the indicator light flashes red (see BEFORE USING THE LIFTER: Preparing to Use the Optional Remote Control System preceding).



¹¹ The radio transmitter turns off automatically, after a period of inactivity.

Sealing the Pads against the Load

Press the "attach" button (⏏←) on the lifter as shown.



Keep "attach" function activated throughout lift.



If the lifter is equipped with a Remote Control System, press the "attach" button (⏏←) on the radio transmitter as shown.



The vacuum pump will immediately begin to draw air through the vacuum pads. Firm pressure on the lifter helps the pads to seal against the load.¹²



If warning buzzer sounds, do not attempt to lift load.

Note: If it takes too long for the lifter to attach, the warning buzzer will sound until the lifter attains sufficient vacuum to safely lift the load.

Reading the Vacuum Gauges

Two vacuum gauges display the current vacuum level in positive inches of Hg and negative kPa for the 2 circuits of the lifter's vacuum system:

- The *green* range indicates vacuum levels sufficient for lifting the maximum load weight (see figure B1).
- The *red* range indicates vacuum levels that are **not** sufficient for lifting the maximum load weight (see figure B2).

If it takes more than 5 seconds for the vacuum level to reach 5" Hg [-17 kPa] on either vacuum gauge, press on any vacuum pad that has not yet sealed.



¹² Although a vacuum pad may become distorted during shipping or storage, this condition should correct itself with continued use.

Vacuum Level on Optimal Surfaces

When the lifter is attached to clean, smooth, nonporous load surfaces, it should be able to maintain a vacuum level in the green range on each vacuum gauge, except when used at high elevations (see SPECIFICATIONS: Operating Elevation). If not, perform the VACUUM TEST (see MAINTENANCE) to determine whether there is a deficiency in the vacuum generating system.



Vacuum Level on Other Surfaces

When the lifter is attached to contaminated, rough or porous load surfaces, it may not be able to maintain a vacuum level in the green range on each vacuum gauge, due to leakage in the seal between the vacuum pads and the load surface.¹³

In the case of contamination, thoroughly clean the contact surfaces of the load and the vacuum pads (see MAINTENANCE: VACUUM PAD MAINTENANCE: Pad Cleaning), and reattach the lifter to the load.

If the load has rough or porous surfaces, ***the operator must conduct a load suitability test***, as follows:

- 1) Make sure the lifter's vacuum generating system is functioning correctly (see MAINTENANCE: VACUUM TEST).
- 2) Attach the vacuum pads to the load as previously directed.
- 3) After the vacuum pump stops running, press the "function" button ([Fn]) and the "power" button (Φ), and hold them for at least 5 seconds to power down the lifter.
Note: During this time the LCD screen will display "WARNING! Is load attached?", the warning buzzer will chirp rapidly and the strobe light will flash.
- 4) Raise the load a minimal distance, to assure that it is supported by the lifter.



Take all necessary safety precautions, in case load should fall during test.

- 5) Monitor each vacuum gauge while the load is suspended for 5 minutes: ***The lifter must maintain a minimum vacuum level of 10" Hg [-34 kPa] during this time.*** If not, the load does not possess the characteristics required for using this lifter.¹⁴
- 6) Lower the load after 5 minutes or whenever the vacuum level falls below 10" Hg [-34 kPa].

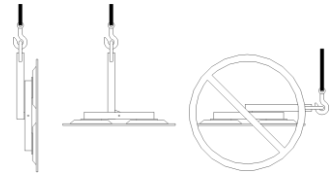
¹³ Contaminated loads can also cause the vacuum pump to run frequently or continuously. Since excessive pumping quickly reduces battery energy, the operator should clean the load when possible, to minimize pumping.

¹⁴ Certain load materials are too rough or porous to allow the lifter to form a seal which can be maintained for 5 minutes without power. However, in geographical locations where CE Standards do not apply, it may be possible to use the lifter to lift such loads. Contact Wood's Powr-Grip for more information.

TO LIFT AND MOVE THE LOAD



Lift bar must be oriented vertically to lift load (see To TILT).



Interpreting the Lift Light



A lifter's Maximum Load Capacity is rated at a vacuum level of 16" Hg [-54 kPa] (see SPECIFICATIONS). After the lifter has attained this level, the green vacuum lift light turns *on* automatically, to signal that the lifter is ready to lift the maximum load weight. The vacuum pump also turns *off*, to conserve battery energy.



Never attempt to lift load unless green lift light is illuminated.

If you attempt to lift the load before the lift light is illuminated, this could result in a load release or personal injury.

Monitoring Vacuum Indicators

The vacuum lift light and both vacuum gauges must remain completely visible to the operator throughout the entire lift.



Keep vacuum indicators visible throughout entire lift.

The vacuum pump turns on and off automatically, as needed to overcome leakage in the vacuum system. However, if the leak rate is greater than normal, the warning buzzer chirps and the LCD screen displays a diagnostic code, along with the message "High leak rate".¹⁵ Such leaks can cause the battery to be discharged more quickly, reducing the lifter's run-time. To correct a leak, perform the VACUUM TEST (see MAINTENANCE) and inspect the vacuum pads for damage (see MAINTENANCE: VACUUM PAD MAINTENANCE: Pad Inspection).



If the vacuum level drops below 16" Hg [-54 kPa] on either vacuum gauge, the warning buzzer sounds continuously, the lift light turns off, and the LCD screen displays a diagnostic code, along with the message "LOW VACUUM! Secure load!" If this occurs while you are lifting a load, move away immediately and stay clear of the load until it can be safely lowered to the ground or a stable support.



Stay clear of any suspended load while indicators warn of low vacuum.

Discontinue lifter use until the cause of the vacuum loss can be determined. If the vacuum loss cannot be remedied immediately, perform inspection and maintenance as needed to identify and correct any deficiency before resuming normal operation of the lifter.

¹⁵ Automatic leak detection is **not** a substitute for performing the VACUUM TEST, as required by the INSPECTION and TESTING SCHEDULES (see MAINTENANCE).

Controlling the Lifter and Load

When the vacuum indicators show that the lifter is ready, use the hoisting equipment to raise the lifter and load as needed to clear any obstacles in their path. Use a control handle to keep the lifter and load in the desired orientation while they are suspended from the crane, as shown. Once sufficient clearance is established, the load can be rotated or tilted as desired (see TO ROTATE THE LOAD EDGEWISE or TO TILT THE LOAD to follow).



In Case of Power Failure

In the case of a power failure (ie, in battery), the warning buzzer will sound to alert the operator of potential danger.



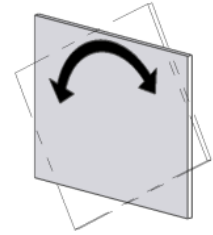
Stay clear of any suspended load in the event of a power failure.

Although the lifter is designed with 2 vacuum reserve tanks to support the load for at least 5 minutes without power, this depends on many factors (see INTENDED USE: LOAD CHARACTERISTICS and MAINTENANCE: VACUUM PAD MAINTENANCE, VACUUM TEST). If a power failure occurs, keep all personnel clear of the suspended load until it can safely be placed on the ground or a stable support. Correct any deficiency before resuming normal operation of the lifter.

TO ROTATE THE LOAD EDGEWISE

 **Never disengage both the rotation latch and the tilt latch at the same time.**

This lifter is not designed for rotation and tilt functions to be used simultaneously. Doing so could result in load damage or personal injury.



 **Make sure load is positioned correctly on lifter (see To ATTACH).**

- 1) Make sure there is sufficient clearance for the load to rotate without contacting the operator or any nearby objects.
- 2) Maintain a firm grip on one control handle to keep the load under control at all times (see figure B3).

 **Unbalanced loads may rotate unexpectedly when latch is disengaged.**

- 3) Pull the rotation release lever to disengage the rotation latch, and rotate the load to the desired position as shown.



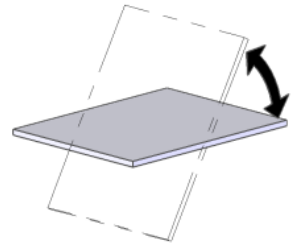
- 4) To stop the load's motion automatically at each quarter turn, simply let go of the rotation release lever so that the rotation latch engages at the next stop.

Note: Whenever rotation is not required, keep the rotation latch engaged, to prevent load damage or personal injury.

TO TILT THE LOAD

 **Never disengage both the rotation latch and the tilt latch at the same time.**

This lifter is not designed for rotation and tilt functions to be used simultaneously. Doing so could result in load damage or personal injury.



 **Make sure load is positioned correctly on lifter (see To ATTACH).**

- 1) Make sure there is sufficient clearance for the load to tilt without contacting the operator or any nearby objects.
- 2) Maintain a firm grip on one control handle to keep the load under control at all times (see figure B4).

 **Unbalanced loads may tilt unexpectedly when latch is disengaged.**

- 3) If the pad channel is latched in the vertical position, pull the tilt release lever to disengage the tilt latch as shown.



- 4) If load size permits, maintain control with the control handle throughout the tilt. For loads with overhang, it may be necessary to release the handle as the load approaches the flat position. If so, keep the load under control using hand cups or other appropriate means, as shown.



Note: The pad channel automatically latches in place when it returns to the vertical position.



TO RELEASE THE PADS FROM THE LOAD



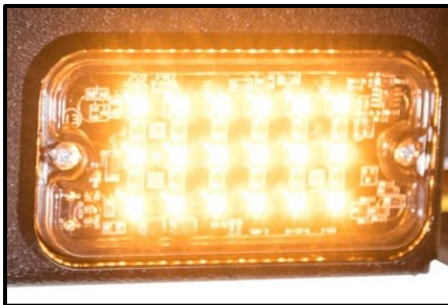
Make sure load is fully supported before releasing vacuum pads.

- 1) Make sure the load is at rest and fully supported.
- 2) Press and hold the “function” button (**Fn**) and the “release” button (|→|) as shown. This will force air into the vacuum pads, quickly breaking the vacuum seal. If not, follow the directions on the LCD screen.



 If the lifter is equipped with a Remote Control System, press and hold the “function” button () and the “release” button (|→|) on the radio transmitter as shown, to force air into the vacuum pads, quickly breaking the vacuum seal.

Note: The strobe light flashes as long as the operator is pressing the “function” or “release” buttons. This shows the operator when signals are being transmitted successfully from a remote location and also warns other personnel that the operator is preparing to release the load.



- 3) Continue to hold both the “function” and “release” buttons until the vacuum pads disengage completely from the load. Otherwise, the lifter will automatically revert to “attach” mode.¹⁶



Do not attempt to move lifter until vacuum pads disengage completely from load.

If you attempt to move the lifter before the vacuum pads are completely disengaged, this could result in load damage or personal injury.

After the load is successfully released, the lifter automatically activates the “power save” mode to conserve battery energy.

- 4) Prior to lifting another load, perform the Every-Lift Inspection (see MAINTENANCE: INSPECTION SCHEDULE).

¹⁶ A “Timed Release” function can be used to help separate the lifter from the load: Hold the “function” and “release” buttons until a yellow arrow appears on the LCD screen. Then tap the “function” button 2 or more times. This extends the release mode for 5 seconds per each additional tap of the “function” button.

AFTER USING THE LIFTER

Press the power button (Φ) and the "function" button (Fn) at the same time to power down the lifter.

Caution: Do not set lifter against any surfaces which could soil or damage vacuum pads.



A control handle can be used to support an unloaded lifter when not suspended from a crane, as shown: Use the hoisting equipment to gently lower the lifter onto the control handle. Make sure the lifter leans securely against an appropriate support; then detach the hoisting equipment hook from the lift spool.

If the lifter is transported to another location, secure the lifter in the original shipping container, so as to protect the vacuum pads and all other components from damage.

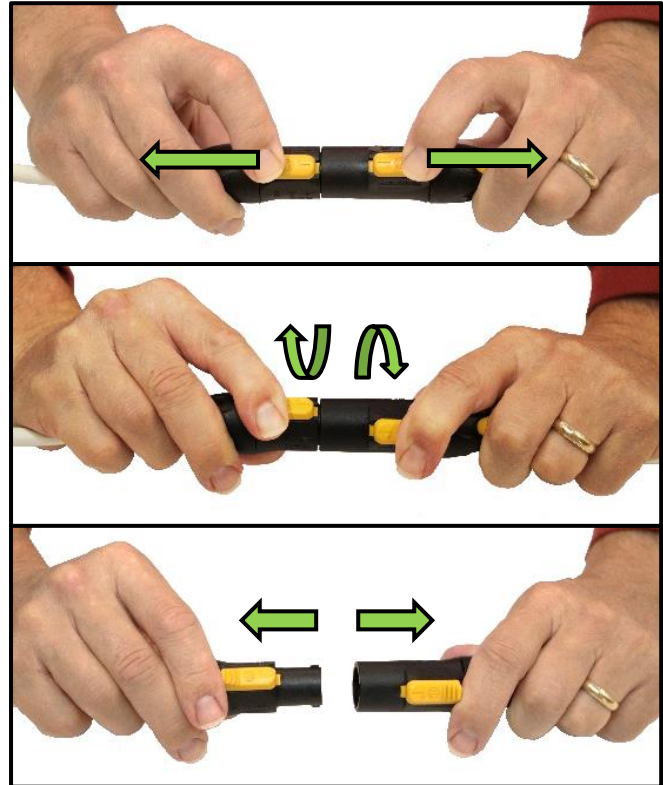
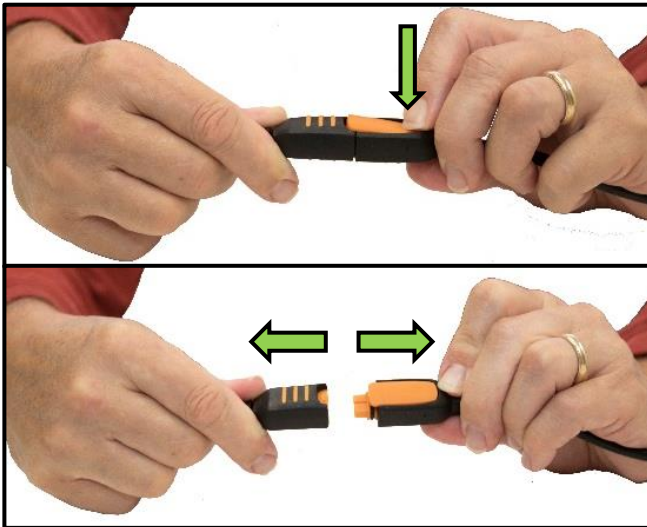
Storing the Lifter

- 1) Use the covers supplied to keep the vacuum pads clean, as shown.



!!-CE-!! To store the lifter on relatively horizontal surfaces without tipping over, place the vacuum pads face-down on a clean, smooth, flat surface. Then lower the lift bar to a horizontal orientation and place a support under the lift spool.

- 2) Charge the battery completely when placing it in storage and at six-month intervals thereafter (see MAINTENANCE: BATTERY RECHARGE).
- 3) Disconnect the electrical connectors, as shown, in order to minimize battery discharge.



- 4) Store the battery at temperatures between 32° and 70° Fahrenheit [between 0° and 21° Celsius].

Note: Storage at temperatures above 100° Fahrenheit [38° Celsius] should be avoided.

MAINTENANCE






Make sure battery is disconnected before servicing lifter.

Note: Refer to ***SERVICE MANUAL #36105*** when applicable.

INTELLI-GRIP® DIAGNOSTIC CODES

Refer to the following table when a diagnostic code appears on the LCD screen of the Intelli-Grip® Control Unit. Codes are listed in alphabetical order.

Key:  = Code accompanied with sounding buzzer  = Buzzer sounds continuously  = Code accompanied with flashing strobe light

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Directions
B00	"Low 12V Battery (#)"	1 chirp every 2 seconds	(none)	Charge lifter <u>battery</u> or, if necessary, replace it (see BATTERY RECHARGE to follow). A cold battery may need to be warmed or charged more often. Refer fault(s) to qualified service personnel when necessary.
B01	"Lockout (low 12V battery) (#)"	continuous	(none)	Charge lifter <u>battery</u> before proceeding with another lift (see BATTERY RECHARGE to follow). Refer fault(s) to qualified service personnel when necessary.
B02	"Replace 12V battery?"	1 chirp per minute	(none)	Check condition of lifter <u>battery</u> (see BATTERY ASSESSMENT and BATTERY RECHARGE to follow). Since a cold battery may prematurely activate this notification, warm battery and retest when appropriate. Replace battery as needed. Note: This notification can be activated erroneously if <u>battery charger</u> is plugged into power source while lifter is powered up. If so, power down lifter, disconnect charger from power source, and power up lifter. If code persists, check battery condition as directed above. Refer fault(s) to qualified service personnel when necessary.
B03	"Charge 12V battery soon"	1 chirp per minute	(none)	Charge <u>battery</u> (see BATTERY RECHARGE to follow).
B09	"Replace 9V battery?"	1 chirp per minute	(none)	Replace <u>warning buzzer</u> battery as needed (see WARNING BUZZER BATTERY TEST to follow).
C00	"Fail-safe on module"	continuous	on	Refer fault to qualified service personnel for resolution.
C011	"Communication failure, module 1"	fast chirp	(none)	Temporary code should self-correct. If code persists, refer fault to qualified service personnel for resolution.
C021	"Internal error, module 1"	continuous	(none)	Temporary code should self-correct. If code persists, refer fault to qualified service personnel for resolution.

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Directions
C03	"Firmware updater detected (#)"	N/A	(none)	A service tool is connected and should be removed before returning lifter to service. Please contact WPG.
C04	"Module revision not compatible"	1 chirp every 2 seconds	N/A	Make sure lifter is being used within Operating Temperatures (see SPECIFICATIONS). Then power lifter down and up again. If code persists, refer fault to qualified service personnel for resolution.
E00 E01 E02 E03 E04	"EEPROM error, cell #"	occasional chirp	(none)	Refer fault to qualified service personnel for resolution.
I000	"I2C error (#)"	single chirp	(none)	Temporary code should self-correct. If code persists, refer fault to qualified service personnel for resolution.
N00	"Automatic attach"	N/A	(none)	Informative message indicates that significant vacuum was detected even though no one initiated "attach" function, so system activated "attach" mode as a precaution. No corrective action necessary.
N01	"Automatic attach"	N/A	(none)	Informative message indicates that operator failed to release load completely, so system activated "attach" mode as a precaution. No corrective action necessary.
N02	"Automatic attach"	N/A	(none)	When the lifter is powered up, informative message indicates that power was previously lost while load was attached, so system activated "attach" mode as a precaution. No corrective action necessary.
N03	"Unable to turn module power off"	1 chirp every 2 seconds	(none)	Disconnect connector between lifter <u>battery</u> and vacuum generating system. Charge battery completely (see BATTERY RECHARGE to follow). Then reconnect battery and try to power down again. If code persists, disconnect connector and refer fault to qualified service personnel for resolution.
N04	"Failed to turn controls power off"	1 chirp every 2 seconds	(none)	Disconnect connector between lifter <u>battery</u> and vacuum generating system. Charge battery completely (see BATTERY RECHARGE to follow). Then reconnect battery and try to power down again. If code persists, disconnect connector and refer fault to qualified service personnel for resolution.
N05	"Unable to turn module power on"	1 chirp every 2 seconds	(none)	Charge lifter <u>battery</u> (see MAINTENANCE: BATTERY RECHARGE to follow). Then power lifter up again. If code persists, refer fault to qualified service personnel for resolution.
U00	"WARNING! Is load attached?"	fast chirp	on	Attempt was made to power down lifter while load was still detected: Set down load securely and release load <i>before</i> powering down lifter.
U01	"Also hold [Fn] to power down"	N/A	(none)	Hold both " <u>function</u> " button and " <u>power</u> " button to power down lifter.
U02	"Turn off? Let go of buttons"	N/A	(possible)	Use only " <u>function</u> " button and " <u>power</u> " button to power down lifter. Lifter cannot be powered down while any other button is pressed.

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Directions
U03	"Timed release: # seconds"	1 chirp per button press	on	Informative message indicates that timed release has been initiated for the number of seconds indicated (see OPERATION: TO RELEASE THE PADS FROM THE LOAD). Press " <u>function</u> " button only to cancel this action, or press " <u>attach</u> " button to override. No corrective action necessary.
U04	"Also hold [Fn] to release"	N/A	(none)	Hold both " <u>function</u> " button and " <u>release</u> " button to release load.
U06	"Let go of [Fn] and Release"	N/A	on	Use only " <u>attach</u> " button to attach load. While " <u>attach</u> " button is pressed, lifter does not respond to pressing any other button. Release all buttons and press buttons again to activate a different function.
U08	"Menu not available in Attach"	N/A	N/A	Informative message indicates that Operator Menu cannot be accessed while lifter is attached to load.
U09	"Counterbalancer not forward"	continuous	on	"Release" function is prevented because Counter-Balancer carriage is not positioned correctly. Move carriage to forward position and completely secure load before attempting to release it (see <i>OPERATING INSTRUCTIONS</i>).
U10	"Use POWER button for Live Stats"	N/A	(none)	The " <u>power</u> " button (not " <u>function</u> " button) is now used to access Live Stats. No corrective action necessary.
U11	"Testing battery - wait to attach"	N/A	(none)	"Attach" function is prevented because battery test is currently in process. Wait until pump stops running and try again.
V000	"LOW VACUUM! Secure load!"	continuous	on	Immediately set down load until adequate vacuum can be obtained. Check load and <u>vacuum pads</u> for damage. Consult relevant ASSEMBLY, OPERATION and MAINTENANCE topics. Refer fault(s) to qualified service personnel when necessary.
V001 V002 V003 V004	"LOW VACUUM #! Secure load!" (# indicates relevant vacuum circuit)	continuous	on	Immediately set down load until adequate vacuum can be obtained in vacuum circuit indicated. This warning may have been activated because significant vacuum was detected, causing system to activate "attach" mode. Check load and <u>vacuum pads</u> for damage. Consult relevant ASSEMBLY, OPERATION and MAINTENANCE topics.
V011 V012 V013 V014	"High leak rate on circuit #" (# indicates relevant vacuum circuit)	3 chirps	(none)	Indicates issue(s) affecting lifter's ability to maintain vacuum in circuit indicated. Check load and <u>vacuum pads</u> for damage that may activate code. Consult relevant ASSEMBLY, OPERATION and MAINTENANCE topics. Refer fault(s) to qualified service personnel when necessary.
V020	"Vacuum not increasing normally"	1 chirp every 2 seconds	on	Indicates issue(s) that affect "attach" mode. Consult relevant ASSEMBLY, OPERATION and MAINTENANCE topics. Refer fault(s) to qualified service personnel when necessary.

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Directions
V03A V03B	"Pump running excessively"	1 chirp every 2 seconds	(none)	<u>Vacuum pump</u> is unable to maintain vacuum efficiently. Likely causes include a significant vacuum leak or difficulty achieving minimum vacuum level resulting from use at high elevations. In case of suspected leak, check for fault(s) in vacuum system (see relevant ASSEMBLY, OPERATION and MAINTENANCE topics). In case of high elevation, contact WPG for directions. Refer fault(s) to qualified service personnel when necessary.
V040	"Lockout (vacuum sensor error)"	continuous	(none)	"Attach" function is prevented because a <u>vacuum sensor</u> is not functioning correctly. Make sure vacuum sensors are properly plugged into module. Refer fault(s) to qualified service personnel when necessary.
V081 V082 V083 V084	"Sensor #_error, (low)" (# indicates relevant vacuum circuit)	continuous in "attach" mode; 1 chirp every minute in "power save" mode	(none)	Make sure <u>vacuum sensor</u> is properly plugged into module. Refer fault(s) to qualified service personnel when necessary.
V091 V092 V093 V094	"Sensor #_error, (high)" (# indicates relevant vacuum circuit)	continuous in "attach" mode; 1 chirp every minute in "power save" mode	(none)	Make sure <u>vacuum sensor</u> is properly plugged into module. Refer fault(s) to qualified service personnel when necessary.


INSPECTION SCHEDULE

Perform inspections routinely, according to the following frequency schedule. If any deficiency is detected, correct it before using the lifter (see *SERVICE MANUAL* when necessary) and perform the next most frequent inspection.

Action	Every Lift	Frequent ¹⁷ (20-40 hours)	Periodic ¹⁸ (250-400 hours)
Examine the <u>vacuum pads</u> for contamination or debris, and clean them as necessary (see VACUUM PAD MAINTENANCE: Pad Cleaning).	✓	✓	✓

¹⁷ The Frequent Inspection is also required whenever the lifter is out of service for 1 month or more.

¹⁸ The Periodic Inspection is also required whenever the lifter is out of service for 1 year or more. If necessary, return the lifter to Wood's Powr-Grip or an authorized dealer for repair (see LIMITED WARRANTY).

Action	Every Lift	Frequent ¹⁷ (20-40 hours)	Periodic ¹⁸ (250-400 hours)
Examine the <u>vacuum pads</u> for visual damage.	✓	✓	✓
Examine the load surface for contamination or debris, and clean it as necessary.	✓	✓	✓
Examine the controls and indicators for visual damage.	✓	✓	✓
Check the <u>battery</u> for adequate charge. If necessary, charge and recheck the battery (see BATTERY RECHARGE).	✓	✓	✓
Examine the lifter's structure for visual damage.		✓	✓
Examine the vacuum system (including <u>vacuum pads</u> , fittings and hoses) for visual damage.		✓	✓
Examine the <u>air filters</u> for conditions requiring service.		✓	✓
Perform the VACUUM TEST.		✓	✓
Check for unusual vibrations or noises while operating the lifter.		✓	✓
 If the lifter is equipped with a Remote Control System, perform the REMOTE CONTROL SYSTEM TEST.		✓	✓
Examine the entire lifter for external evidence of looseness, excessive wear, deformation, cracks, excessive corrosion, dents to structural or functional components, cuts, or any deficiency which might constitute a hazard.			✓
Inspect all parts of the electrical system for damage, wear or contamination that could constitute a hazard, in compliance with all local codes and regulatory standards that are relevant for the geographical region. Caution: Be sure to use appropriate cleaning methods for each type of electrical component, as specified by codes and standards. Improper cleaning can damage components.			✓
Keep a written record of all Periodic Inspections.			✓

Note: See following sections (VACUUM PAD MAINTENANCE, BATTERY ASSESSMENT, VACUUM TEST) for details about these inspections.

Infrequent Use

If a lifter is used less than 1 day in a 2-week period, perform the Periodic Inspection *each time before using the lifter*.

TESTING SCHEDULE


Perform these tests when placing the lifter in service *initially* and *each time following a repair*. Correct any deficiency and retest before using the lifter.

Note: See following sections (BATTERY ASSESSMENT, VACUUM TEST, etc) for details about these tests.

Operational Tests

- Perform the VACUUM TEST to follow.
- Test all features and functions of the lifter (see OPERATING FEATURES, OPERATION and MAINTENANCE).

Load Test

 Prove that the lifter can lift 100% of its Maximum Load Capacity (see SPECIFICATIONS), using an actual load or an equivalent simulation.¹⁹ Employ the following method to test with an actual load:

- 1) Place a test load with appropriate LOAD CHARACTERISTICS (see INTENDED USE) on a stable support. Make sure the load is oriented in the upright position.²⁰
- 2) Attach the vacuum pads to the load as previously directed.
- 3) After the vacuum pump stops running, press the “function” button (**Fn**) and the “power” button (Φ), and hold them for at least five seconds to power down the lifter.²¹
- 4) Raise the load a minimal distance, to ensure that it is supported by the lifter.



Take all necessary safety precautions, in case load should fall during test.

- 5) Hold the load for 5 minutes and then lower it. The load must not slip or fall during this time period. If it does, conduct a VACUUM TEST and inspect each vacuum pad as indicated under VACUUM PAD MAINTENANCE: Pad Inspection (see sections to follow). Correct any deficiency that is found and retest the lifter.

¹⁹ ASME Standard B30.20 requires the lifter to be tested to 125% of its Maximum Load Capacity.

²⁰ Flat Lifters are exempt from this requirement.

²¹ During this time the LCD screen will display “WARNING! Is load attached?”, the warning buzzer will chirp rapidly and the strobe light will flash.

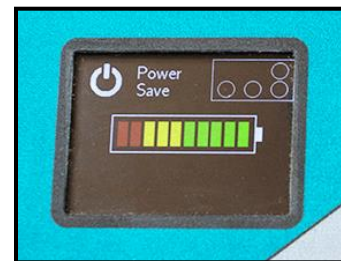
BATTERY ASSESSMENT

A battery gauge (as shown on LCD screen) enables you to evaluate whether the battery has adequate energy for lifting. While the lifter is powered up, the battery gauge automatically monitors battery energy.²²

Check the battery energy before every lift and also at the end of each day's use, to decide whether a charge is needed.²³

If battery energy registers in the red range, discontinue lifter use and charge the battery (see BATTERY RECHARGE).²⁴ If battery energy continues to decrease, the controls will become locked out until the battery is charged again.

Note: If the battery loses power, the warning buzzer sounds an alarm (see WARNING BUZZER BATTERY TEST to follow).



BATTERY RECHARGE

Charge the battery whenever the battery gauge indicates diminished energy (see BATTERY ASSESSMENT preceding). **Caution: Make sure the lifter is powered down.**

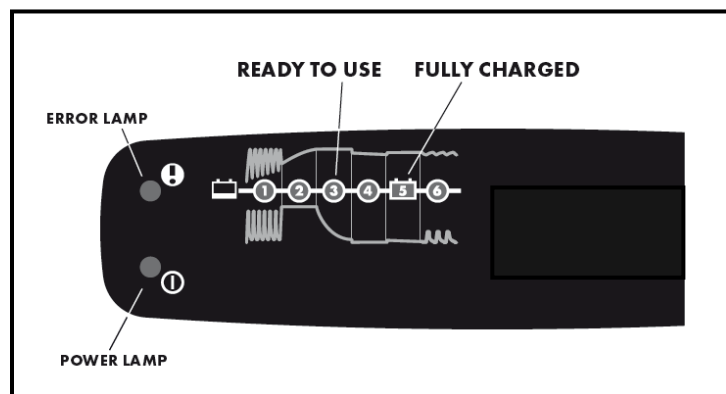
Identify the input voltage marked on the battery charger, and plug it in to an appropriate power source.²⁵ Use a ground fault circuit interrupter to reduce the risk of electrical shocks.

 **Make sure power source is equipped with ground fault circuit interrupter.**

The power lamp (Φ) turns on, to indicate that the charger is functioning. To determine charging status, consult the six-stage display on the charger. The battery is ready for use at stage 3 and fully charged at stage 5.

Normally, the battery should take no more than 8 hours to charge completely.²⁶ If not, check for the following conditions and correct any deficiencies as directed:

- Power lamp (Φ) flashes: Charger is not connected to battery; reconnect charger (see ASSEMBLY).
- Error lamp (!) turns on: Battery leads connected to the wrong poles; reverse battery leads.



²² The pump may turn on periodically to perform a load test on the battery, especially if the lifter remains in "power save" mode for a long time.

²³ The battery charger must be disconnected from its AC power source in order to check the battery energy; otherwise, the energy reading on the battery gauge would not be accurate.

²⁴ To increase the battery's lifespan, charge it promptly after each use.

²⁵ Any external power supply must conform to all applicable local codes. **Caution: Do not operate the lifter while the charger is connected to an AC power source.**

²⁶ The charger is designed to automatically sense the energy level of the battery and reduce the charging rate when the battery is fully charged. Accordingly, the charger does not need to be unplugged until the lifter is going to be used again.

- Error lamp (!) turns on and charging stops at stage 1 or stage 4: Battery is no longer functioning; replace battery (see REPLACEMENT PARTS LIST).

Before you return the lifter to service, be sure to unplug the charger and power up the lifter, to ensure that the battery gauge reflects the current energy reading (see BATTERY ASSESSMENT).


WARNING BUZZER BATTERY TEST

The warning buzzer is powered by an independent 9-volt battery, which is automatically tested each time you power up the lifter. If the battery needs to be replaced, the LCD screen displays "Replace 9V battery?" and the buzzer chirps once per minute. Press the warning buzzer battery holder inward, causing it to release, and slide the battery tray out as shown. After you power down the lifter, install a new 9-volt battery according to the polarity markings. Then power up the lifter again, to retest the battery.



VACUUM PAD MAINTENANCE

Pad to Load Friction Coefficient

 The friction coefficient represents the lifter's ability to resist load slippage (Note: Flat lifters are exempt). The Maximum Load Capacity assumes a friction coefficient of 1.0 (see SPECIFICATIONS). This rating is based on testing of clean, new, standard rubber vacuum pads on clean, dry, regular glass. If the lifter is used under other conditions, a qualified person must first determine the effective lifting capacity.

Exposure to heat, UV light or chemicals can cause vacuum pads to deteriorate. Standard rubber pads should be replaced on a regular basis (at least every 2 years), to prevent deterioration of the friction coefficient.

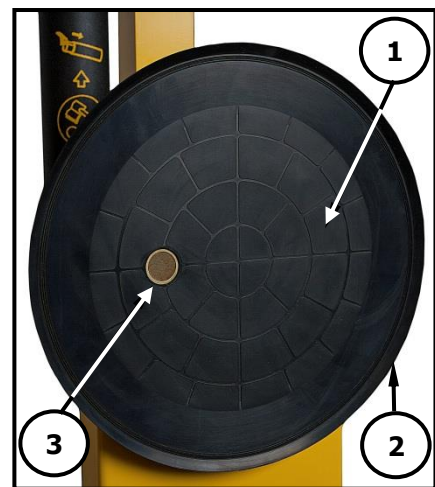
Pad Inspection

Inspect each vacuum pad for the following deficiencies routinely (see preceding INSPECTION and TESTING SCHEDULES), and correct them before using the lifter.

- Contaminates on the pad face (1) or sealing edges (2) (see Pad Cleaning discussion to follow).
- Filter screen (3) missing from pad face (see REPLACEMENT PARTS LIST).
- Nicks, cuts or abrasions in sealing edges of vacuum pad (see REPLACEMENT PARTS LIST).²⁷

 **Replace vacuum pad if sealing edge has any nicks, cuts or abrasions.**

- Wear, stiffness or glaze of vacuum pad (see REPLACEMENT PARTS LIST).



²⁷ If the lifter is equipped with VPFS10T or VPFS625 pads, the sealing edge is the replaceable sealing ring. When it is damaged, see TO REPLACE SEALING RING INSERT to follow.

Pad Cleaning

- 1) Regularly clean the face of each vacuum pad as shown, to remove oil, dust and any other contaminants. Acceptable cleaning agents include soapy water and other mild cleansers.



⊘ Never use solvents, gasoline or other harsh chemicals to clean vacuum pad.

Solvents, petroleum-based products (including kerosene, gasoline and diesel fuel) or any harsh chemicals can damage vacuum pads.

⊘ Never use unauthorized rubber conditioners on vacuum pad.

Most rubber conditioners, such as ArmorAll®, can leave a hazardous film on vacuum pads, which could compromise lifting capacity and/or create a hazard to the operator or others.

- 2) Make sure to prevent liquid from contaminating the vacuum system through the suction hole on the pad face.
- 3) Use a clean sponge or lint-free cloth to apply an authorized cleanser and wipe the pad face clean.²⁸
- 4) Allow the pad to dry completely before using the lifter.

VACUUM TEST

Test the vacuum system for leakage routinely (see preceding INSPECTION and TESTING SCHEDULES).

- 1) Clean the face of each vacuum pad (see VACUUM PAD MAINTENANCE: Pad Cleaning).
- 2) Use a test load with a weight equal to the Maximum Load Capacity (see SPECIFICATIONS) and a clean, smooth, nonporous surface, as well as other appropriate LOAD CHARACTERISTICS (see INTENDED USE).²⁹
- 3) Attach the lifter to the test load as previously directed (see OPERATION: TO ATTACH THE PADS TO A LOAD). After the vacuum pump stops running, the vacuum level should register above 16" Hg [-54 kPa] on each of the vacuum gauges.
- 4) Raise the load a minimal distance, to make sure that the vacuum pads are loaded to capacity. Then press the "function" button (Fn) and the "power" button (Φ), and hold them for at least five seconds to power down the lifter.³⁰

! Take all necessary safety precautions, in case load should fall during test.

²⁸ A toothbrush (or similar brush with bristles *that do not harm rubber*) may be used to remove contaminants clinging to sealing edges. If these cleaning methods are not successful, contact Wood's Powr-Grip or an authorized dealer for assistance.

²⁹ The load surface should be flat or possess no more curvature than the lifter is designed for (if any).

³⁰ During this time the LCD screen will display "WARNING! Is load attached?", the warning buzzer will chirp rapidly and the strobe light will flash.

5) Monitor the vacuum gauges: *The vacuum level should not decrease by more than 4" Hg [-14 kPa] in 5 minutes.*




Never use a lifter that has failed the VACUUM TEST.

Correct any deficiency in the vacuum system before using the lifter.

6) Lower the load after 5 minutes or whenever a lifter fails the test.

REMOTE CONTROL SYSTEM TEST

 If the lifter is equipped with a Remote Control System, perform this test in the environment where the lifter is normally employed. Use the radio transmitter to activate each of the remote functions.³¹ Vary the location and distance of the transmitter in relation to the lifter, to ensure that transmissions are effective in a variety of circumstances.³²

If the Remote Control System does not function correctly, ...

- The battery for the radio transmitter may need to be replaced.
- Metal or other electrically conductive surfaces may be causing interference between the radio transmitter and radio receiver. Reposition the transmitter as necessary to transmit signals effectively.

If the problem persists, repeat the test under different conditions, to determine whether there is transmission interference in the work environment or the Remote Control System is not functioning as intended. Correct any deficiency before resuming normal use of the Remote Control System.

³¹ Use a test material with appropriate surface characteristics (see INTENDED USE: LOAD CHARACTERISTICS) to test the attach and release functions.

³² This may require assistance from someone near the lifter, to verify that functions are being performed as intended.

TO REPLACE SEALING RING IN VPFS10T PADS

If the lifter is equipped with VPFS10T vacuum pads, replace the sealing ring (see REPLACEMENT PARTS LIST) as shown:

- 1) Remove the old sealing ring.

Make sure the entire vacuum pad is clean, including the mounting groove (see VACUUM PAD MAINTENANCE: Pad Cleaning preceding).

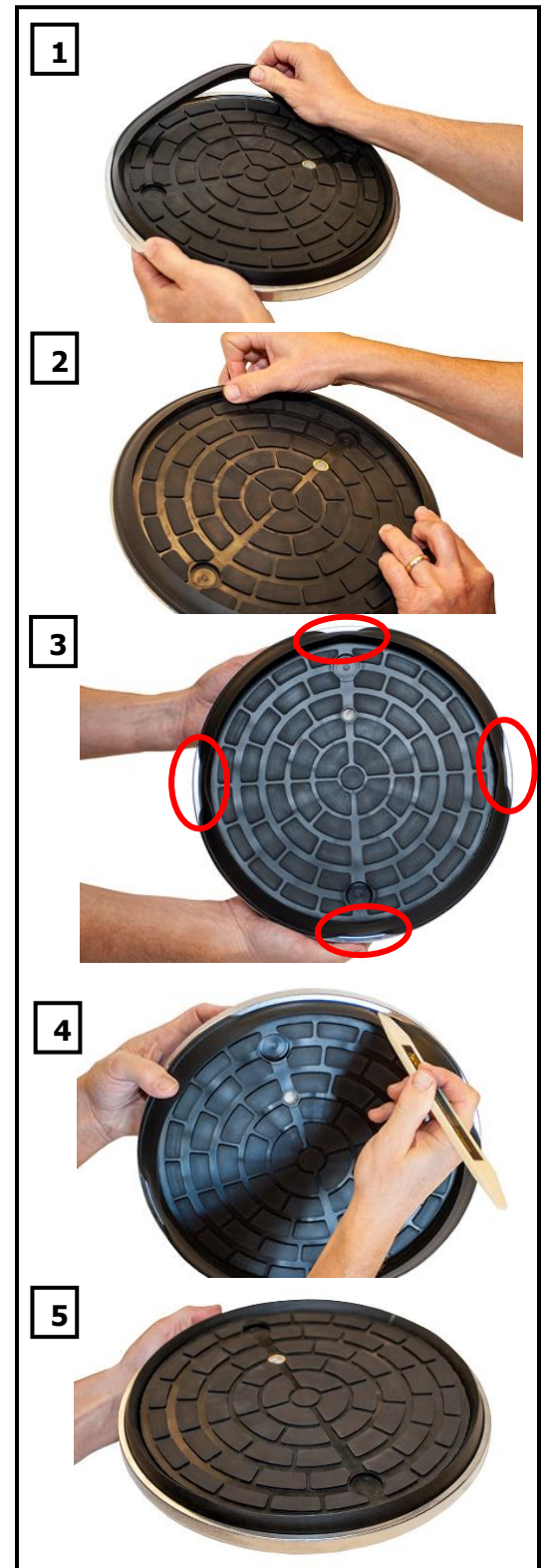
- 2) Place the inside edge of a new sealing ring against the inside edge of the mounting groove.

- 3) Push the sealing ring into the mounting groove, beginning in 4 locations as shown.

- 4) Push gently and firmly on the outside edge of the sealing ring until its base (flat side) fits flush against the bottom of the mounting groove. A pad ring installation tool is available to facilitate this process (see REPLACEMENT PARTS LIST).

- 5) Make sure that the sealing ring seats completely and securely in the mounting groove, around the entire perimeter of the vacuum pad.

Note: If the sealing ring ever comes partially or entirely out of the mounting groove, inspect the sealing ring for damage and reinstall an undamaged sealing ring according to preceding directions.



REPLACEMENT PARTS LIST

Stock No.	Description	Qty.
65442CA	Vacuum Hose – 0.160" ID x 1/4" OD – Red	*
65440	Vacuum Hose – 0.245" ID x 3/8" OD – Red	*
65437	Vacuum Hose – 0.245" ID x 3/8" OD – Green	*
65429BM	Vacuum Hose – 0.160" ID x 1/4" OD – Green	*
64716	Battery Charger – 0.8 Amp – 240 V AC – Australian Type	1
64715	Battery Charger – 0.8 Amp – 240 V AC	1
64714	Battery Charger – 0.8 Amp – 100 / 120 V AC	1
64664	Battery – 12 V DC – 7 Amp-Hours	1
59906	Remote Control System Retrofit Kit (optional)	1
59086NC	Battery Connector – Twin Lead	1
57012	Pad Channel Tilt Pin	1
54390NC	Power Lead	1
53122	Pad Fitting – Elbow – 5/32" ID	4
49724TT	Sealing Ring Insert – Model VIFS10T2 – Closed Cell Foam (for VPFS10T pads)	4
49724RT	Sealing Ring Insert – Model VIFS10T3 – Heat-Resistant Rubber (for VPFS10T pads)	4
49672FT	Vacuum Pad – Model VPFS10T / 10" [25 cm] Diameter – w/Replaceable Sealing Ring	4
49646T	Vacuum Pad – Model G3370 / 11" [28 cm] Diameter – Lipped	4
49643T	Vacuum Pad – Model G3370 / 11" [28 cm] Diameter – Lipped – Low-Marking (option)	4
49605T	Vacuum Pad – Model HV11 / 10" [25 cm] Diameter – Lipped (option)	4
49586TA	Vacuum Pad – Model G0750 / 10" [25 cm] Diameter – Concave	4
49130	End Plug – 2" x 3" x 1/4" Tubing Size	2
36105	Service Manual – 12 V DC – Dual Vacuum System – Intelli-Grip®	1
29353	Pad Cover	4
20050	Pad Ring Installation Tool (for VPFS10T pads)	1
15632	Pad Filter Screen – Small (for G0750 & VPFS10T pads)	4
15630	Pad Filter Screen – Large (for G3370 & HV11 pads)	4
15624	Hose Fitting – Y-Connector – 1/4" Barb	4

* Length as required.

See **SERVICE MANUAL #36105** for additional parts.

**SERVICE ONLY WITH IDENTICAL REPLACEMENT PARTS,
AVAILABLE AT WPG.COM OR THROUGH AN AUTHORIZED WPG DEALER**

LIMITED WARRANTY

Powr-Grip products are carefully constructed, thoroughly inspected at various stages of production, and individually tested. They are warranted to be free from defects in workmanship and materials for a period of one year from the date of purchase.

If a problem develops during the warranty period, follow the instructions hereafter to obtain warranty service. If inspection shows that the problem is due to defective workmanship or materials, Powr-Grip will repair the product without charge.

WARRANTY DOES NOT APPLY WHEN:

- Modifications have been made to the product after leaving the factory.
- Rubber portions have been cut or scratched during use.
- Repairs are required due to abnormal wear and tear.
- The product has been damaged, misused, or neglected.

If a problem is not covered under warranty, Powr-Grip will notify the customer of costs prior to repair. If the customer agrees to pay all repair costs and to receive the repaired product on a C.O.D. basis, Powr-Grip then will proceed with repairs.

TO OBTAIN REPAIRS OR WARRANTY SERVICE

For purchases in *North America*:

Contact the Technical Service Department at Wood's Powr-Grip Co. When factory service is required, ship the complete product—prepaid—along with your name, address and phone number to the street address hereafter.

For purchases in *all other localities*:

Contact your dealer or the Technical Service Department at Wood's Powr-Grip Co. for assistance.

Wood's Powr-Grip Co., Inc.
908 West Main St. / P.O. Box 368
Laurel, MT USA 59044

phone 800-548-7341

phone 406-628-8231

fax 406-628-8354

712	FILE DIRECTORY:	712A-W01 [A-W01]
STANDARD	FILE (SHEET):	
WIRE LEGEND: CONTROLLED BY WIRING SYMBOLS DRAWING EXCEPT AS NOTED AND BELOW. LINE STYLES AND WIDTHS FOR WIRE UNLESS NOTED OTHERWISE. 24AWG. 22AWG. 20AWG. 18AWG. 16AWG. N/A N/A N/A CATS PRODUCT MANAGER: GARY B. DATE: 10/07/2016 CHECKED: <i>cc</i> 11-04-16 APPROVED: <i>am</i> 11-4-16		
TYPE: STANDARD THIS DRAWING IS THE PROPERTY OF WOOD'S POWR-GRIP CO., INC. LAUREL, MONTANA U.S.A. IT IS LOANED WITH THE UNDERSTANDING THAT NEITHER IT NOR ANY INFORMATION CONTAINED THEREIN WILL BE COPIED, PUBLISHED OR TRANSMITTED TO OTHERS WITHOUT EXPRESS WRITTEN PERMISSION.		
DC3 INTELLI-GRIP VACUUM CONTROL SYSTEM MRT MODULE B WIRING SCHEMATIC D712A-W01 [A-W01]		
SIZE: A	SCALE: NONE	REVISION: 01.A
ECN NUMBER: 4156	ECN DATE: 10/07/2016	ECN BY: CCH
EST. WEIGHT: N/A		

