INTENDED FOR USE BY QUALIFIED SERVICE PERSONNEL

SERVICE MANUAL

READ AND UNDERSTAND BEFORE SERVICING APPLICABLE EQUIPMENT

WOOD'S POWR-GRIP WPG.COM

908 W. Main • P.O. Box 368
Laurel, MT USA 59044
(1) 800-548-7341
(1) 406-628-8231
www.wpg.com

DC-VOLTAGE POWER SYSTEM WITH DUAL VACUUM SYSTEM AND INTELLI-GRIP® TECHNOLOGY

(SOFTWARE VERSION 7.6)

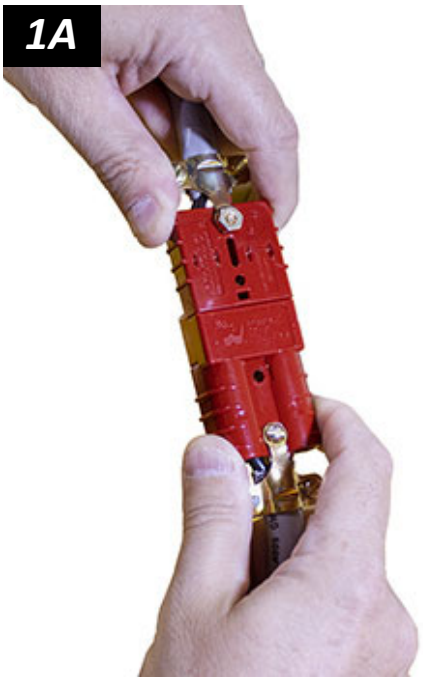
Stock number: 36105

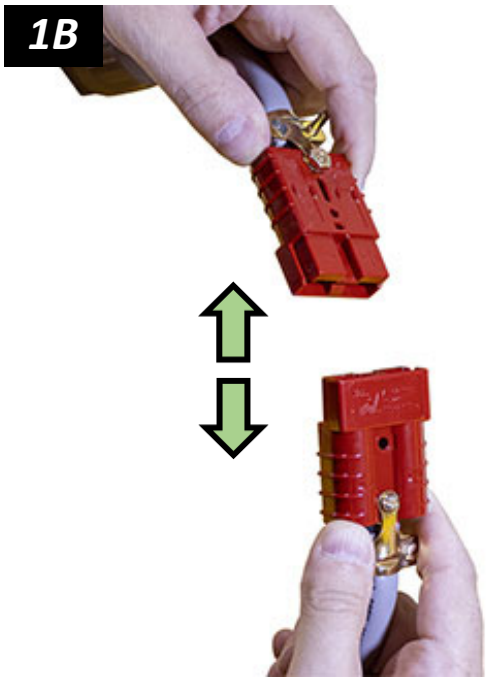
TABLE OF CONTENTS

BEFORE SERVICING LIFTER

Disconnect power source when necessary to prevent electrical shock or other risks.

When necessary, disconnect the electrical connectors for the power source (figs. 1A-B).





Service personnel must read and understand the lifter's *OPERATING INSTRUCTIONS* – especially the "INSPECTIONS AND TESTS" and "MAINTENANCE" sections – before servicing the vacuum lifter. Many of the following discussions assume knowledge of the *OPERATING INSTRUCTIONS*.

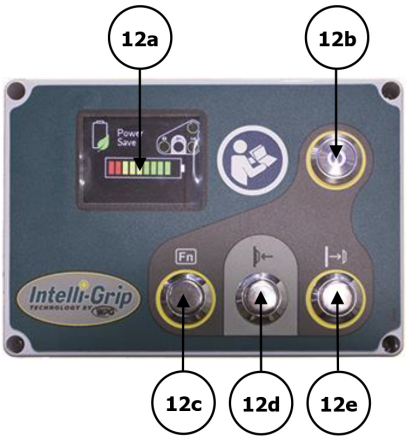
Note: The final section of the lifter's OPERATING INSTRUCTIONS may contain wiring and/or hose-routing diagrams for reference when servicing or troubleshooting the lifter.

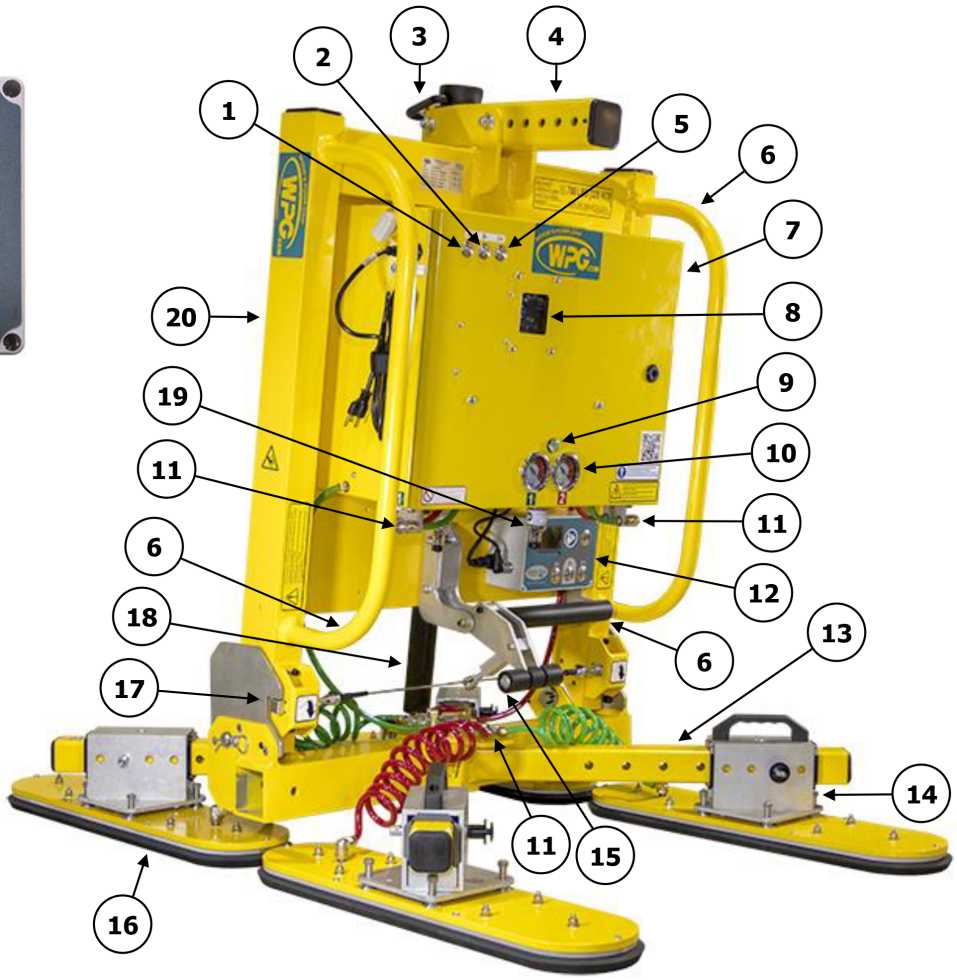
SERVICE SCHEDULE

Service must be performed whenever a deficiency is indicated by routine inspections or tests. Follow the "INSPECTIONS AND TESTS" section of the *OPERATING INSTRUCTIONS*. Any service warranted must be performed before resuming normal operation of the lifter.

SERVICE FEATURES

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





MTCL6625DC3

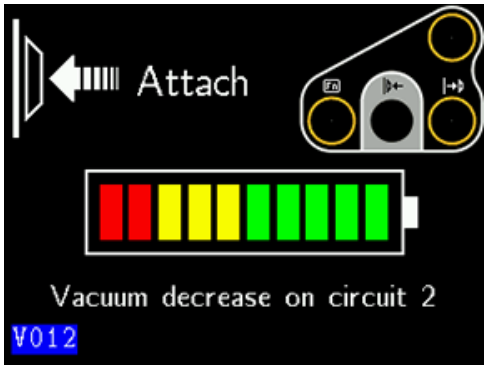
1	"FUNCTION" BUTTON	2	"ATTACH" BUTTON	3	LIFT POINT
4	ADJUSTABLE LIFT POINT TUBE	5	"RELEASE" BUTTON	6	CONTROL HANDLE
7	Enclosure with 12V BATTERY, CIRCUIT BOARD, VACUUM PUMPS and VACUUM SENSORS	8	Window for BATTERY CHARGER	9	VACUUM LIFT LIGHT
10	VACUUM GAUGES	11	QUICK CONNECTORS	12	INTELLI-GRIP® CONTROL UNIT
12a	LCD SCREEN with BATTERY GAUGE	12b	POWER BUTTON	12c	"FUNCTION" BUTTON
12d	"ATTACH" BUTTON	12e	"RELEASE" BUTTON	13	PAD FRAME
14	MOVABLE PAD MOUNT	15	TILT CONTROL LEVER	16	VACUUM PAD
17	TILT LATCH	18	TILT DAMPER	19	AIR FILTER
20	LIFT BAR				

Not shown: STROBE LIGHT, NOTIFICATION BUZZER, 9V BATTERY and PAD FRAME EXTENSIONS

TROUBLESHOOTING LIFTER FAULTS

Note: When applicable, consult the Troubleshooting Guide TST-016_GENERIC_LEAK_TEST.

TO TROUBLESHOOT USING DIAGNOSTIC CODES

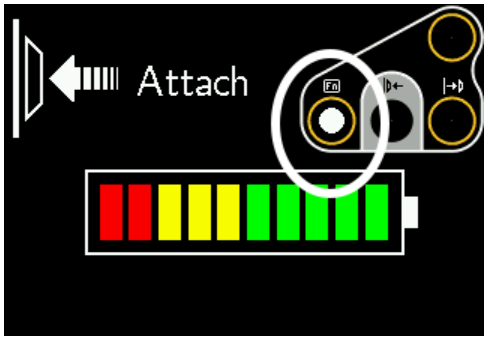


Generally, one or more diagnostic codes will show in the bottom-left corner of the lifter's LCD screen, accompanied by a corresponding message below the battery gauge, whenever the lifter has a problem.[1]

The example at right shows code V012, which indicates vacuum in one of the circuits decreased at faster rate than expected.

Once a code shows, locate the code under "INTELLI-GRIP® DIAGNOSTIC CODES" and follow directions for the code.

TO TROUBLESHOOT USING OTHER ON-SCREEN INFORMATION



The LCD screen example at right displays other helpful information for troubleshooting:

- **Button activity (top-right corner).** To test, press each button and make sure its corresponding indicator on the LCD screen lights up (circled).[2]
- **"Attach", "Release" or "Power Save" modes (top-left corner).** The mode should reflect the lifter activity prompted by the user. Otherwise, a lifter problem likely exists. For example, the LCD screen should not show "Attach" mode as you attempt to release a load.
- **Battery gauge (center).** This battery gauge shows the 12V battery's current energy level. For more information, see the lifter's *OPERATING INSTRUCTIONS*. Additionally, see the "BATTERY CHARGER TEST" in this manual.

1..... In most cases, a diagnostic code stays on screen only as long as the software detects a problem. Before releasing a load, make sure to record the information showing on the screen.

2..... If the lifter has a Remote Control System, test the radio transmitter's buttons similarly.

To Submit Lifter Data to WPG

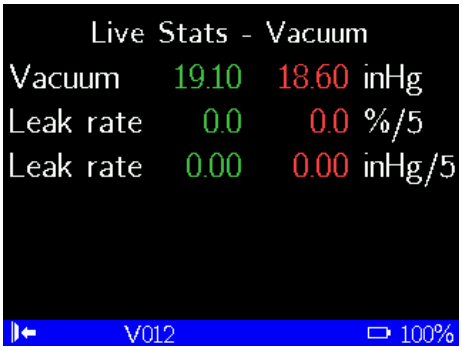
You can send lifter data to WPG by submitting digital photo files via email, including:

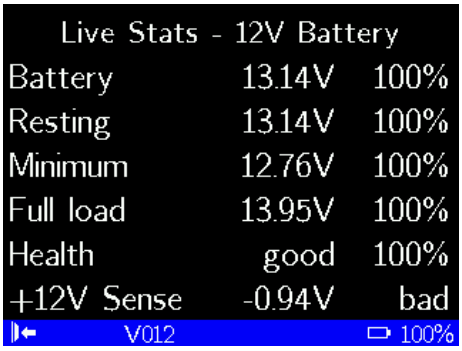
- A photo of the LCD screen taken during lifter startup, as shown in the example at right.

  *Tip: Press **and hold** the power button when starting the lifter. This action displays the startup screen as long as needed for you to capture the image.*

  Note: If you are not able to access the startup screen, submit a photo file of the serial tag instead.

- Photos of "Live Stats" screens, as shown in the examples at right. To show these screens, press the power button 5 times quickly to show the first "Live Stats" screen. After that, each press of the power button will show a different screen until it returns to the normal operation screen.





- Other descriptive photos files, as problems occur.

To Submit Video to WPG

Even if you have submitted photos of screen views, you should include video that depicts the lifter problem clearly whenever possible. Describe what the lifter did and what you expected it to do.

Note: Videos may be too large to submit via email. Alternatively, you can upload them to OneDrive, DropBox or a similar file-hosting service and provide a link to WPG.

INTELLI-GRIP® DIAGNOSTIC CODES

Refer to the following table whenever a diagnostic code appears on the LCD screen. Codes are listed in alphanumeric order. If the Operator Explanations/Directions do not resolve the issue, follow the Service Personnel Directions, replacing parts as necessary (see "REPLACEMENT PARTS").

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Explanations/Directions	Service Personnel Directions
B00	"Low 12V Battery (#)"	1 chirp every 2 seconds	(none)	**Condition:** Battery gauge displays 0% energy. **Solution:** Charge 12V battery completely, as directed in lifter's *OPERATING INSTRUCTIONS*. If unsuccessful, perform diagnostics as directed for Code B02.	Check for faulty 12V battery or malfunctioning charging system.
B01	"Lockout (low 12V battery) (#)"	continuous	(none)	**Condition:** Insufficient energy in 12V battery is preventing "attach" and "release" functions from working. **Solution:** Charge battery completely, as directed in lifter's *OPERATING INSTRUCTIONS*.	Check for faulty 12V battery or malfunctioning charging system.
B02	"Replace 12V battery?"	1 chirp per minute	(none)	**Condition:** Lifter failed voltage test when powered up. **Solution:** Perform the following diagnostics: • Is battery charger connected to AC power source? If so, power down lifter, disconnect charger from power source and power up again. • Does battery gauge show diminished energy? If so, charge 12V battery completely, as directed in lifter's *OPERATING INSTRUCTIONS*. *Note: Replace battery when indicated by battery charger.* • Is battery cold? (See Operating Temperatures in lifter's *OPERATING INSTRUCTIONS*). If so, power down lifter, warm battery and power up again.	Continue diagnostics: • Does vacuum pump run upon powering up lifter? ○ If not, do "Live Stats" show "Battery" voltage >11V? (see "TO SUBMIT LIFTER DATA TO WPG"). • If so, replace pump. • If not, replace 12V battery. • Is wiring faulty between battery and Intelli-Grip® control unit? If so, repair or replace wiring as necessary. If none of the above applies, the battery is likely to need replacement soon.
B03	"Charge 12V battery soon"	1 chirp per minute	(none)	**Condition:** 12V battery has ≤ 20% energy remaining. **Solution:** Charge battery completely, as directed in lifter's *OPERATING INSTRUCTIONS*.	N/A

INTELLI-GRIP® DIAGNOSTIC CODES

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Explanations/Directions	Service Personnel Directions
B09	"Replace 9V battery?"	1 chirp per minute	(none)	**Condition:** 9V battery for notification buzzer is expended or missing. **Solution:** Replace battery, as directed in lifter's *OPERATING INSTRUCTIONS*.	Check 9V battery voltage with multi-meter. If battery is OK, check for bad connection in battery holder or associated wiring.
C00	"Fail-safe on module"	continuous	on	**Condition:** Fail-safe mode has been activated, to prevent potential injury. **Solution:** See Service Personnel Directions.	Disconnect 12V battery and replace Intelli-Grip® control unit.
C011	"Communication failure, module 1"	fast chirp	(none)	**Condition:** Failure detected in connection between Intelli-Grip® control unit and module circuit board. **Solution:** See Service Personnel Directions.	***Caution:*** *To avoid damage, replace components in the following order, as needed:* 1) Replace communication cable connecting Intelli-Grip® control unit and module circuit board. ***Caution:*** *To avoid damage, always power down lifter and disconnect 12V battery from vacuum generating system before connecting or disconnecting this cable.* 2) Replace circuit board.* 3) Replace control unit. *Alternatively, you can use C011 Tester #59923 at this point to determine whether circuit board or control unit is faulty (see "REPLACEMENT PARTS").
C021 C031	"Internal error, module 1"	continuous	(none)	**Condition:** Fault detected in module circuit board. **Solution:** See Service Personnel Directions.	Power down lifter and disconnect 12V battery. Then replace module circuit board.
C04	"Module revision not compatible"	1 chirp every 2 seconds	(none)	**Condition:** Intelli-Grip® control unit cannot confirm compatibility of module circuit board. **Solution:** See Service Personnel Directions.	If Code C011 also displays, follow directions for it. If not: 1) Check for software updates on Intelli-Grip® Mobile App. 2) Power down lifter and disconnect 12V battery from vacuum generating system. Then replace module circuit board.

INTELLI-GRIP® DIAGNOSTIC CODES

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Explanations/Directions	Service Personnel Directions
C05	"Module revision lockout"	continuous (while button is held)	(none)	**Condition:** Attempt to use "attach" or "release" function is prevented due to Code C04 condition. **Solution:** See Service Personnel Directions.	Follow directions for Code C04.
E00 E01 E02 E03 E04	"EEPROM error, cell #"	occasional chirp	(none)	**Condition:** Failure detected in memory hardware. **Solution:** See Service Personnel Directions.	Power down lifter and disconnect 12V battery. Then replace Intelli-Grip® control unit.
I000	"I2C error (#)"	single chirp	(none)	**Condition:** Communication error detected within control system. **Solution:** Power down lifter and power up again.	Power down lifter and disconnect 12V battery. Then replace Intelli-Grip® control unit.
N00	"Automatic attach"	(none)	(none)	**Condition:** System activated "attach" mode as precaution because significant vacuum was detected, even though no one initiated "attach" function. **Solution:** *None required.* However, see Service Personnel Directions.	Adjust sensitivity of vacuum detection, when appropriate (see "TO CHANGE THE VACUUM DETECTION THRESHOLD").
N01	"Automatic attach"	(none)	(none)	**Condition:** System activated "attach" mode as precaution because load did not release completely. **Solution:** *None required.* However, see Service Personnel Directions.	Adjust sensitivity of vacuum detection, when appropriate (see "TO CHANGE THE VACUUM DETECTION THRESHOLD").
N02	"Automatic attach"	(none)	(none)	**Condition:** System activated "attach" mode as precaution when lifter was powered up, because power was previously lost while load was attached. **Solution:** *None required.*	N/A

INTELLI-GRIP® DIAGNOSTIC CODES

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Explanations/Directions	Service Personnel Directions
N03	"Unable to turn module power off"	1 chirp every 2 seconds	(none)	**Condition:** Power to module circuit board could not be turned off. **Solution:** a) Remove 9V battery. b) Disconnect 12V battery from vacuum generating system. c) Charge battery completely, as directed in lifter's *OPERATING INSTRUCTIONS*. d) Reconnect battery and try to power down again. e) If successful, reinstall 9V battery.	Do "Live Stats" show "Battery" voltage > 11V (see "TO SUBMIT LIFTER DATA TO WPG")? If so, power down lifter and disconnect 12V battery. Then replace module circuit board.
N04	"Failed to turn controls power off"	1 chirp every 2 seconds	(none)	**Condition:** Power to Intelli-Grip® control unit could not be turned off. **Solution:** a) Remove 9V battery. b) Disconnect 12V battery from vacuum generating system. c) Charge battery completely, as directed in lifter's *OPERATING INSTRUCTIONS*. d) Reconnect battery and try to power down again. e) If successful, reinstall 9V battery.	Do "Live Stats" show "Battery" voltage > 11V (see "TO SUBMIT LIFTER DATA TO WPG")? If so, power down lifter and disconnect 12V battery. Then replace Intelli-Grip® control unit.
N05	"Unable to turn module power on"	1 chirp every 2 seconds	(none)	**Condition:** Power to module circuit board could not be turned on. **Solution:** a) Power down lifter. b) Charge 12V battery completely, as directed in lifter's *OPERATING INSTRUCTIONS*. c) Power up lifter again.	Power down lifter and disconnect 12V battery. Then replace module circuit board.
N07	"Auto power-down disabled"	(none)	(none)	**Condition:** Automatic power-down is prevented. **Solution:** Power down lifter and power up again.	Check for other Diagnostic Codes and perform service as directed.

INTELLI-GRIP® DIAGNOSTIC CODES

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Explanations/Directions	Service Personnel Directions
N08	"Powering down in # seconds"	1 chirp per minute	(none)	**Condition:** Lifter will automatically power down in number of seconds shown. **Solution:** *None required.* Press any button to cancel action.	N/A
N10	"App-support hardware fault"	(none)	(none)	**Condition:** Fault is detected in hardware that enables communication with mobile app. **Solution:** Power down lifter and power up again.	Power down lifter and disconnect 12V battery. Then replace Intelli-Grip® control unit.
U00	"WARNING! Is load attached?"	fast chirp	on	**Condition:** Attempt was made to power down lifter while load was still detected. **Solution:** Lower load onto stable support and release load *before* powering down.	N/A
U01	"Also hold [Fn] to power down"	(none)	(none)	**Condition:** Only power button was used. **Solution:** Hold power button AND "function" button at same time to power down lifter.	N/A
U02	"Turn off? Let go of buttons"	(none)	(possible)	**Condition:** Incorrect combination of buttons was used in apparent attempt to power down lifter. **Solution:** Hold only power button AND "function" button at same time to power down.	N/A
U03	"Timed release: # seconds"	1 chirp per button press	on	**Condition:** Timed release function has been activated for number of seconds shown (see lifter's *OPERATING INSTRUCTIONS*). **Solution:** *None required.* Press "function" button to cancel action or press "attach" button to override.	N/A
U04	"Also hold [Fn] to release"	(none)	(none)	**Condition:** Only "release" button was used. **Solution:** Hold "release" button AND "function" button at same time to release load.	N/A

INTELLI-GRIP® DIAGNOSTIC CODES

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Explanations/Directions	Service Personnel Directions
U06	"Let go of [Fn] and Release"	(none)	on	**Condition:** "Function" button or "release" button was used in combination with "attach" button. **Solution:** Use only "attach" button to attach load.	N/A
U08	"Menu not available in Attach"	(none)	(none)	**Condition:** Attempt to access Operator Menus was made while lifter was attached to a load. **Solution:** Access Operator Menus when lifter is not attached.	N/A
U09	"Counterweight not retracted"	continuous	on	**Condition:** "Release" function is prevented because counterweight is not positioned correctly. **Solution:** Reposition counterweight as directed in Counter-Balancer's *OPERATING INSTRUCTIONS* and try again.	N/A
U10	"Use POWER button for Live Stats"	(none)	(none)	**Condition:** "Function" button was used in apparent attempt to access Live Stats. **Solution:** Use power button to access Live Stats.	N/A
U11	"Testing battery - wait to attach"	(none)	(none)	**Condition:** "Attach" function is prevented because 12V battery test is in progress. **Solution:** Wait until vacuum pump stops running and try again.	N/A
V000	"INSUFFICIENT VACUUM!"	continuous	on	**REQUIRED ACTION:** *Immediately lower load onto stable support until sufficient vacuum can be obtained.* **Condition:** Vacuum level is insufficient for lifting. **Solution:** Check load and vacuum pads for damage, as directed in lifter's *OPERATING INSTRUCTIONS*.	Troubleshoot leak(s) in vacuum system.

INTELLI-GRIP® DIAGNOSTIC CODES

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Explanations/Directions	Service Personnel Directions
V001 V002 V003 V004	"INSUFFICIENT VACUUM #!" (# indicates relevant vacuum circuit)	continuous	on	**REQUIRED ACTION:** *Immediately lower load onto stable support until sufficient vacuum can be obtained.* **Condition:** Vacuum level in circuit indicated is insufficient for lifting. **Solution:** Check load and vacuum pads for damage, as directed in lifter's *OPERATING INSTRUCTIONS*. *Note: These codes can also be activated due to condition under Code N00.*	Troubleshoot leak(s) in relevant vacuum circuit.
V011 V012 V013 V014 V015	"Vacuum decrease on circuit #" (# indicates relevant vacuum circuit)	3 chirps	(none)	**Condition:** Vacuum decreased at faster rate than expected in circuit(s) indicated. **Solution:** Check for likely causes, including: • bouncing or landing load; • use on rough or porous loads; • other sources of vacuum leaks. Eliminate leaks when possible, as directed in lifter's *OPERATING INSTRUCTIONS*.	Determine whether reduction in vacuum level is due to leaks or other circumstances. Repair any leak(s) found in relevant vacuum circuit(s). The sensitivity to vacuum level changes can also be adjusted, when appropriate (see "TO CHANGE THE LEAK RATE THRESHOLD").
V020	"Vacuum not increasing normally"	1 chirp every 2 seconds	on	**Condition:** After lifter began to attach, vacuum level did not increase at normal rate. **Solution:** Make sure all vacuum pads seal securely, as directed in lifter's *OPERATING INSTRUCTIONS*. *Note: This Code can be activated by use at high elevation. If so, contact WPG for directions.*	Check for fault(s) in vacuum system.
V03A V03B	"Pump running excessively"	1 chirp every 2 seconds	(none)	**Condition:** Vacuum pump is running more often than normal. **Solution:** Likely causes/solutions include: • significant vacuum leak: Check for fault(s) in vacuum system (see lifter's *OPERATING INSTRUCTIONS*). • high elevation prevents lifter from achieving minimum vacuum level: Contact WPG for directions.	Check for fault(s) in relevant vacuum pump (see "VACUUM PUMP MAINTENANCE – MODEL 1034204") or in vacuum system.

INTELLI-GRIP® DIAGNOSTIC CODES

Code	On-Screen Message	Buzzer Pattern	Strobe Light Activity	Operator Explanations/Directions	Service Personnel Directions
V04	"Lockout (vacuum sensor error)"	continuous	(none)	**Condition:** A vacuum sensor malfunction prevents "attach" and "release" functions from working, once "Power Save" mode has been activated. **Solution:** Make sure sensor connectors are attached correctly.	Check for fault(s) in vacuum sensor, wiring or connectors.
V05	"DANGER! INSUFFICIENT VACUUM!"	continuous	on	**REQUIRED ACTION:** *Keep everyone away from suspended load until it can be safely lowered onto stable support.* **Condition:** Vacuum levels in BOTH circuits are insufficient for lifting. **Solution:** See Service Personnel Directions.	Troubleshoot leak(s) in both vacuum circuits. ***Do not place lifter back into service until problem is resolved.***
V081 V082 V083 V084	"Sensor # error (low)" (# indicates relevant vacuum circuit)	continuous in "attach" mode; 1 chirp every minute in "Power Save" mode	(none)	**Condition:** Vacuum sensor malfunction in vacuum circuit indicated. **Solution:** Make sure sensor connector is attached correctly.	Check for fault(s) in vacuum sensor, wiring or connector.
V091 V092 V093 V094	"Sensor # error (high)" (# indicates relevant vacuum circuit)	continuous in "attach" mode; 1 chirp every minute in "Power Save" mode	(none)	**Condition:** Vacuum sensor malfunction in vacuum circuit indicated. **Solution:** Make sure sensor connector is attached correctly.	Check for fault(s) in vacuum sensor, wiring or connector.

INTELLI-GRIP® OPERATOR MENUS

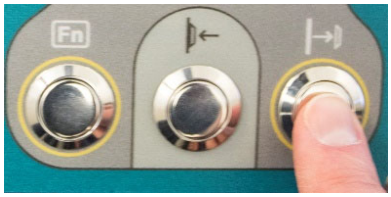
The Intelli-Grip® Control Unit features several menus that allow the operator to view more detailed information on the LCD screen and change various settings.

TO ACCESS AND NAVIGATE THE OPERATOR MENUS

To access the main Operator Menu, hold the "function" button (Fn) for 5 seconds.

Note: Some operator menus can only be accessed when the lifter is in "Power Save" mode.

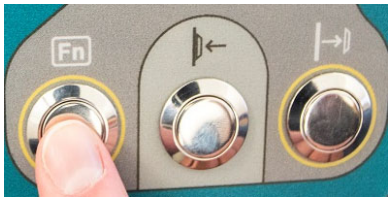
To scroll down, press the "release" button (|→▯).



To scroll up, press the "attach" button (▯←).

To select an item, press the "function" button (Fn).

When you are finished, scroll to "**Exit Menu**" and press the "function" button (Fn).



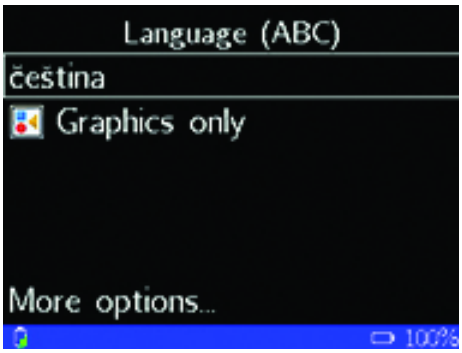
To exit all menus, press the power button (⏻).

Note: A similar process is used to navigate all operator menus.

TO CHANGE THE SCREEN LANGUAGE

1) Access the Operator Menu and select **"Language (ABC)"**, as previously directed.
2) In the Language (ABC) menu, select your preferred language or **"More options"** to see additional choices.

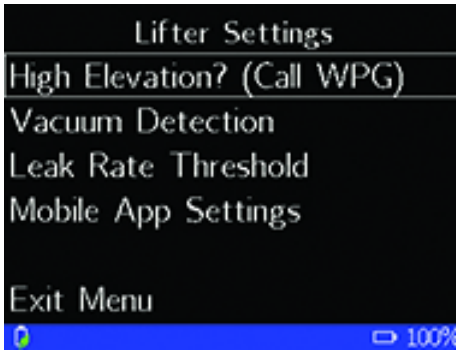
*Note: If you select **"Graphics only"**, no words of any language are displayed on the LCD screen during typical operation, but English is displayed in the menus.*



TO USE THE LIFTER AT HIGH ELEVATION

Using the lifter at high elevation may prevent the vacuum generating system from attaining the minimum vacuum level for lifting (see Operating Elevation under "SPECIFICATIONS" in lifter's *OPERATING INSTRUCTIONS*).

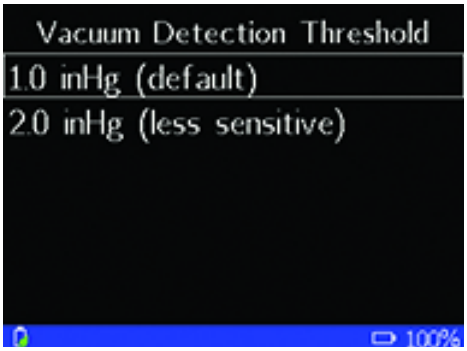
1) Access the Operator Menu and select **"Lifter Settings"**, as previously directed.
2) As indicated in the Lifter Settings menu, you must call Wood's Powr-Grip to learn more about using the lifter at high elevation.



Note: The phone number is on the cover page of this SERVICE MANUAL.

TO CHANGE THE VACUUM DETECTION THRESHOLD

As a precaution, the lifter will activate the "attach" mode if vacuum is detected under unusual conditions (see Codes N00, N01 and N02 under "INTELLI-GRIP® DIAGNOSTIC CODES"). If desired, the sensitivity of this feature can be adjusted by following these steps:

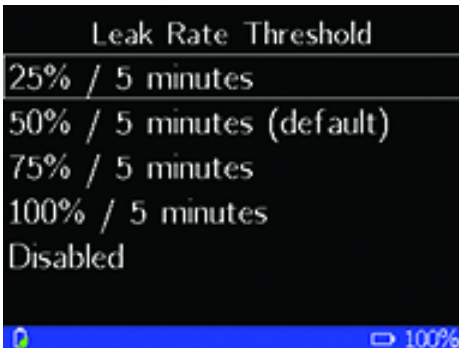


1) Access the Operator Menu and select **"Lifter Settings"**, as previously directed.
2) In the Lifter Settings menu, select **"Vacuum Detection"**.
3) In the Vacuum Detection Threshold menu, select the desired sensitivity threshold.

   This setting can only be changed using this menu. It will ***not*** reset automatically when the lifter is powered down.

TO CHANGE THE LEAK RATE THRESHOLD

The lifter will alert the operator if vacuum decreases more quickly than expected (see Codes V011, V012, V013, V014 and V015 under "INTELLI-GRIP® DIAGNOSTIC CODES"). With rough or porous loads, this can result in frequent or constant alarms. To adjust the sensitivity of this feature, follow these steps:



1) Access the Operator Menu and select **"Lifter Settings"**, as previously directed.
2) In the Lifter Settings menu, select **"Leak Rate Threshold"**.

3) In the Leak Rate Threshold menu, select the desired sensitivity threshold or disable the alarm.

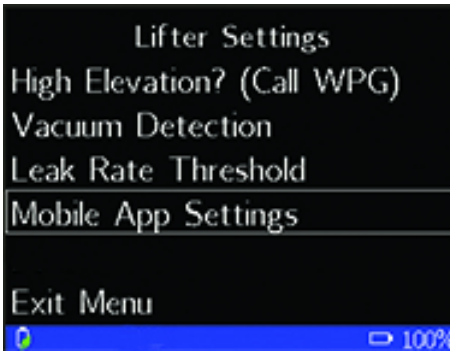
   This setting can only be changed using this menu. It will ***not*** reset automatically when the lifter is powered down.

TO CHANGE MOBILE APP SETTINGS

To make use of WPG's Mobile App, you must enable communication from the lifter to your mobile device, as follows:

1) Access the Operator Menu and select **"Lifter Settings"**, as previously directed.
2) In the Lifter Settings menu, select **"Mobile App Settings"**.
3) In the Mobile App Settings menu, select "Communication enabled" to enable communication ("ON").

   Select "Communication enabled" again to disable communication ("OFF").



Then press the power button (⏻) to complete the change.

Note: If the mobile app notifies you that a firmware update is available, tap the notification and follow the in-app instructions to update the lifter software.

TO VIEW SYSTEM INFORMATION

The lifter keeps a record of the following information:

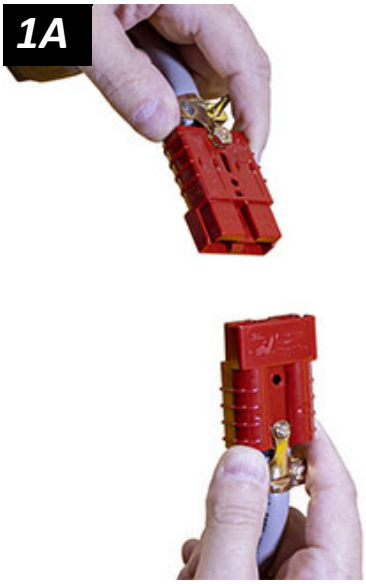
- Total hours of lifter operation (“Hour Meter”).
- Total number of lifting cycles completed (“Lift Counter”).
- Present voltage of the 12V battery (“Battery Voltage”).

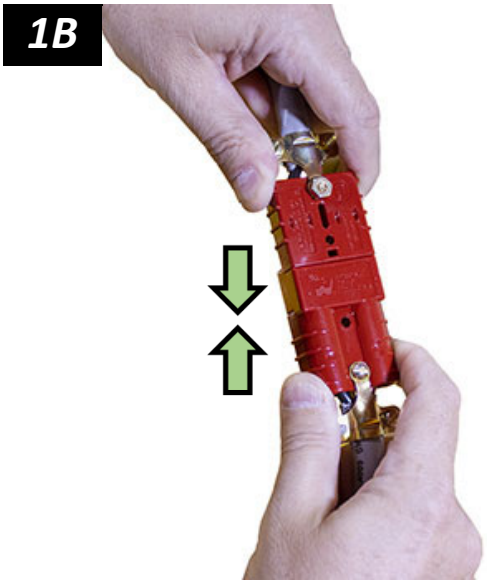
To review this information, follow these steps:

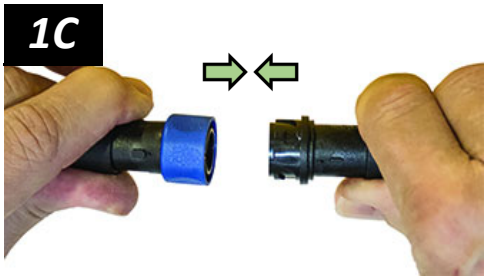
1) Access the Operator Menu and select **“System Information”**, as previously directed.
2) In the System Information menu, find the desired information.

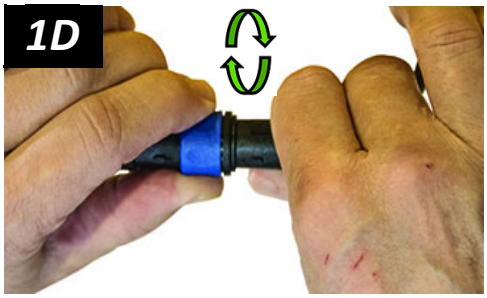
BATTERY CHARGER TEST

The battery charger should function as described in the lifter's *OPERATING INSTRUCTIONS*. If not, the following test allows you to determine whether to replace the charger. Perform this test ***only*** when the 12V battery is ***not*** fully charged.



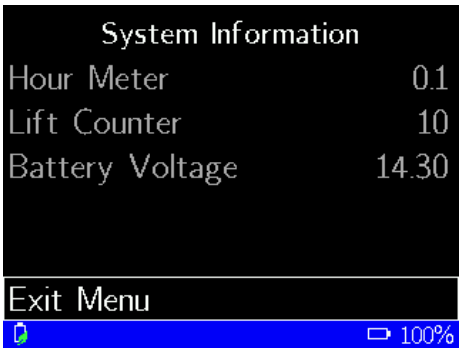






1) If electrical connectors for the battery or charger were previously disconnected, reconnect them (figs. 1A-B and figs. 1C-D).

2) Make sure the battery charger is ***not*** plugged into an AC power source. Then access the "Battery Voltage" reading on the LCD screen, as previously directed (see "TO VIEW SYSTEM INFORMATION").[1]



3) Now plug the battery charger into an appropriate AC power source, as directed in the lifter's *OPERATING INSTRUCTIONS*.

   If the charger is functioning correctly, the voltage reading on the LCD screen should begin to increase when the charger is plugged in.

   If the charger is ***not*** functioning correctly, replace it and repeat the test (see "REPLACEMENT PARTS").

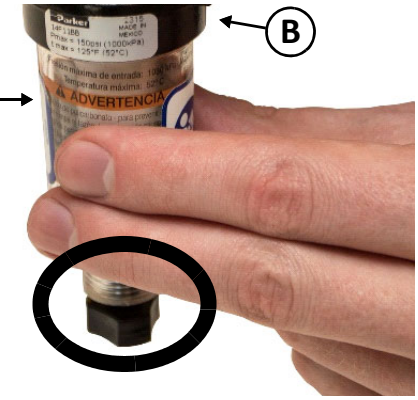
1..... If the battery is completely discharged, the LCD screen will not display anything. In this case, a voltmeter may be used to determine battery voltage in this test.

AIR FILTER MAINTENANCE – 1 OZ BOWL SIZE

Inspect each <u>air filter</u> regularly, and service when necessary.

Immediately remove liquid or other contaminants found in the filter bowl (A in fig. 1A), to prevent contact with the filter element (C in fig. 2A).

1A



Never use bowl drain (circled in fig. 1A) to remove liquid, because this could cause air leak.

Replace the filter element whenever:

- It has an overall dirty appearance.
- There is a noticeable increase in the time required to attain full vacuum.

Filter Service Procedure

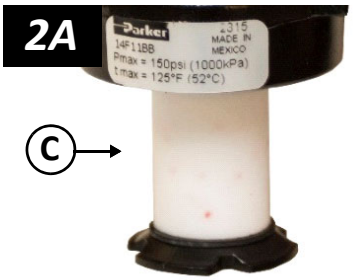
1) Unscrew the bowl (A in fig. 1A) from the body (B in fig. 1A) of the <u>air filter</u>.

   Note: To protect air-line fittings from damage, hold the body while turning the bowl.

2) Determine whether the filter element (C in fig. 2A) needs to be replaced (see above).

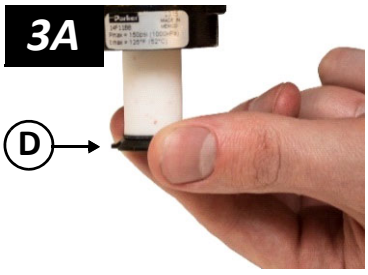
   - *If so*, proceed to *step 3*.
   - *If not*, remove any liquid or contaminants from the bowl; clean the old bowl seal (see *step 4* on next page) with mild soap and water; and skip to *step 6*.

2A



3) Carefully unscrew the element holder (D in fig. 3A) and remove all internal parts (fig. 3B).

3A



3B

4) Identify the parts in the Filter Element Kit **(#16134)**, including the element (A in fig. 4A), element holder (B), lubricant (C), deflector (D), element gaskets (E), bowl seal (F). Then dispose of the corresponding old parts.

4A

5) Place the new element gaskets, element and deflector on the element holder as shown in fig. 5A. Then screw the assembly back into the filter body.

   Note: Tighten gently – finger-tight.

5A

6) Clean the bowl, using mild soap and water only.

   Caution: *Do not use any other cleaning agents.*

7) Lubricate the new or cleaned bowl seal using a mineral-based oil or grease, such as that provided in the filter element kit.

   Caution: *Do not use synthetic oils, such as esters, and do not use silicones.*

   Then place the bowl seal around the rim of the bowl.

8) Screw the bowl back into the body. Hand-tighten only.

   Caution: *Do not contaminate the filter element with lubricant from the bowl seal.*

9) Perform the "Vacuum Test" to make sure the air filter does not leak (see lifter's *OPERATING INSTRUCTIONS*).

Note: Repeat this procedure for any other filter of the same type.

VACUUM PUMP MAINTENANCE – MODEL 1034204

Disconnect power source before proceeding.

#66136

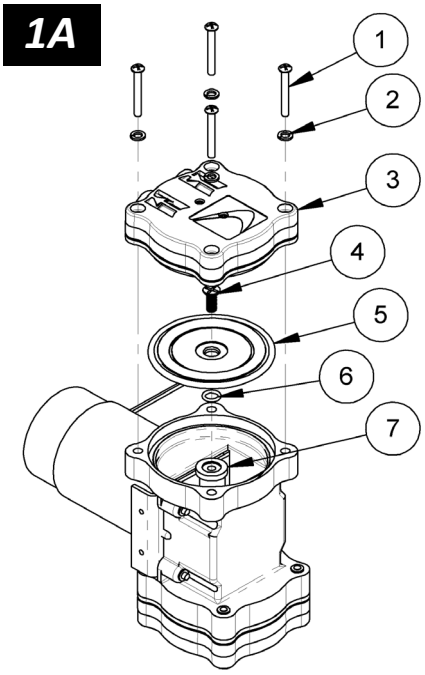
If the vacuum pump takes too long to attain full vacuum, replace the diaphragm or the head assemblies as necessary to obtain acceptable pump performance (fig. 1A). Perform the following maintenance on both heads of the pump. Then perform the "Vacuum Test" (see the lifter's *OPERATING INSTRUCTIONS*).

Caution: *Do not overtighten head screws, because this may damage the threads in the pump body.*

Replacing the Diaphragm

1) Remove the four head screws (item 1 in fig. 1A) and lock washers (item 2), and remove the head assembly (item 3).
2) Remove the diaphragm retaining screw (item 4), diaphragm (item 5), rubber O-ring (item 6) and flat washer (item 7). Be sure to note the diaphragm orientation for reassembly.
3) Replace the flat washer, rubber O-ring, diaphragm and diaphragm retaining screw.
4) Reverse the steps above to reassemble.

1A



1 HEAD SCREW
2 LOCK WASHER
3 HEAD ASSEMBLY (**#66197AA**)
4 DIAPHRAGM RETAINING SCREW
5 DIAPHRAGM (**#66197AM**)
6 RUBBER O-RING
7 FLAT WASHER

Replacing the Head Assembly[1]

1) Remove the hose fittings from the head assembly, and carefully clean the threads. Be sure to note the fitting locations for reassembly.
2) Remove the four head screws (item 1 in fig. 1A), lock washers (item 2) and head assembly (item 3).
3) Replace the head assembly (reverse *step 2*).
4) Reinstall the hose fittings, using an appropriate thread sealant.

1..... ***Caution:*** Depending on the product, the head assembly (item 3 in fig. 1A) may be rotated to an orientation different from the one shown. When removing the head assembly, always take note of its orientation and install it the same way during reassembly.

REPLACEMENT PARTS

Stock No.	Description	Qty.
66197AM	Pump Diaphragm Kit	4
66197AA	Pump Dual-Head Assembly	4
65211	Check Valve – 1/8 NPT	2
64752A	Audio Alarm – 5-15 V DC – Panel Mount	1
64713AU	Battery Charger – 7 Amp – 220 / 240 V AC – Australian Type	1
64712US	Battery Charger – 7 Amp – 100 / 115 V AC	1
64711EU	Battery Charger – 7 Amp – 220 / 240 V AC	1
64670	Battery – 12 V DC – 35 Amp-Hours	1
64460	Circuit Breaker – 15 A	1
64457B1	Module Circuit Board – Populated	1
59923	Intelli-Grip Code C011 Tester	1
59906	Remote Control System Retrofit Kit	1
59901VM	Solenoid Valve – 12 V DC – 4 W – Latching	2
59901BM	Intelli-Grip® Control Unit	1
59900VM	Solenoid Valve – 12 V DC – 4 W	2
59900PM	Vacuum Pump– Diaphragm Type – 2.5 SCFM – 12 V DC	2
59900LA	Strobe Light – 12 V DC – Amber	1
59900GM	LED Indicator – 12 V DC – Green (aka, vacuum lift light)	1
59900BA	Battery Holder – 9 V DC (for notification buzzer)	1
59086NC	Battery Connector – Twin Lead	1
16134	Element Kit for Air Filter – 1 oz Bowl Size	2
15920	Vacuum Gauge – 1/8 NPT – CBM Type – with Panel Mount Bracket – 16" Hg (-54 kPa)	2

*See lifter's **OPERATING INSTRUCTIONS** for additional parts.*

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

COPYRIGHT NOTICE

Portions of the source code for this product require reproduction of a copyright notice or a permission notice in the distribution. These notices are included below:

Software Name: Tiva Peripheral Driver Library
License Type: BSD-3-Clause