OPERATING INSTRUCTIONS

MODEL NUMBERS: MTCL6625DC3,
               MTCL810TDC3

SERIAL NUMBER: ________
   (please see serial label and record number here)

READ ALL INSTRUCTIONS AND SAFETY RULES
BEFORE OPERATING THIS LIFTER

MTCL6625DC3 shown

CLADDING LIFTER
DC-VOLTAGE
WITH INTELLI-GRIP® TECHNOLOGY

DESIGNED FOR THE MATERIALS HANDLING PROFESSIONAL
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECIFICATIONS</td>
<td>3</td>
</tr>
<tr>
<td>SAFETY</td>
<td>4</td>
</tr>
<tr>
<td>OPERATING FEATURES</td>
<td>5</td>
</tr>
<tr>
<td>ASSEMBLY</td>
<td>6</td>
</tr>
<tr>
<td><strong>TO SET UP THE LIFTER</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>TO CHANGE THE PAD FRAME CONFIGURATION</strong></td>
<td>8</td>
</tr>
<tr>
<td>To Install/Remove Pad Frame Extensions and Reposition Vacuum Pads</td>
<td>11</td>
</tr>
<tr>
<td>To Connect/Disconnect Vacuum Hoses</td>
<td>13</td>
</tr>
<tr>
<td>INTENDED USE</td>
<td>14</td>
</tr>
<tr>
<td>LOAD CHARACTERISTICS</td>
<td>14</td>
</tr>
<tr>
<td>OPERATING ENVIRONMENT</td>
<td>15</td>
</tr>
<tr>
<td>DISPOSAL OF THE LIFTER</td>
<td>15</td>
</tr>
<tr>
<td>TYPICAL APPLICATIONS</td>
<td>16</td>
</tr>
<tr>
<td>OPERATION</td>
<td>17</td>
</tr>
<tr>
<td><strong>BEFORE USING THE LIFTER</strong></td>
<td>17</td>
</tr>
<tr>
<td>Taking Safety Precautions</td>
<td>17</td>
</tr>
<tr>
<td>Selecting a Language for the Intelli-Grip® Control Unit</td>
<td>17</td>
</tr>
<tr>
<td>Performing Inspections and Tests</td>
<td>18</td>
</tr>
<tr>
<td>Preparing to Use the Optional Remote Control System</td>
<td>19</td>
</tr>
<tr>
<td><strong>TO ATTACH THE PADS TO A LOAD</strong></td>
<td>20</td>
</tr>
<tr>
<td>Positioning the Lifter on the Load</td>
<td>20</td>
</tr>
<tr>
<td>Powering up the Lifter</td>
<td>21</td>
</tr>
<tr>
<td>Sealing the Pads against the Load</td>
<td>21</td>
</tr>
<tr>
<td>Reading the Vacuum Gauges</td>
<td>22</td>
</tr>
<tr>
<td>Vacuum Level on Optimal Surfaces</td>
<td>23</td>
</tr>
<tr>
<td>Vacuum Level on Other Surfaces</td>
<td>23</td>
</tr>
<tr>
<td><strong>TO LIFT AND MOVE THE LOAD</strong></td>
<td>24</td>
</tr>
<tr>
<td>Interpreting the Lift Light</td>
<td>24</td>
</tr>
<tr>
<td>Monitoring Vacuum Indicators</td>
<td>24</td>
</tr>
<tr>
<td>Controlling the Lifter and Load</td>
<td>25</td>
</tr>
<tr>
<td>In Case of Power Failure</td>
<td>25</td>
</tr>
<tr>
<td><strong>TO TILT THE LOAD</strong></td>
<td>25</td>
</tr>
<tr>
<td>Tilting Loads When Lifter is Positioned Above Center</td>
<td>26</td>
</tr>
<tr>
<td>Tilting Loads When Lifter is Positioned On Center</td>
<td>26</td>
</tr>
<tr>
<td>Operating the Tilt Latches</td>
<td>27</td>
</tr>
<tr>
<td><strong>TO RELEASE THE PADS FROM THE LOAD</strong></td>
<td>28</td>
</tr>
<tr>
<td><strong>AFTER USING THE LIFTER</strong></td>
<td>29</td>
</tr>
<tr>
<td>Storing the Lifter</td>
<td>29</td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td>31</td>
</tr>
<tr>
<td>Intelli-Grip® Diagnostic Codes</td>
<td>31</td>
</tr>
</tbody>
</table>

Rev 1.4/4-18 1 MTCL-DC3: #35301
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INSPECTION SCHEDULE</strong></td>
<td>34</td>
</tr>
<tr>
<td>Infrequent Use</td>
<td>35</td>
</tr>
<tr>
<td><strong>TESTING SCHEDULE</strong></td>
<td>36</td>
</tr>
<tr>
<td>Operational Tests</td>
<td>36</td>
</tr>
<tr>
<td>Load Test</td>
<td>36</td>
</tr>
<tr>
<td><strong>BATTERY ASSESSMENT</strong></td>
<td>36</td>
</tr>
<tr>
<td><strong>BATTERY RECHARGE</strong></td>
<td>37</td>
</tr>
<tr>
<td><strong>WARNING BUZZER BATTERY TEST</strong></td>
<td>38</td>
</tr>
<tr>
<td><strong>VACUUM PAD MAINTENANCE</strong></td>
<td>38</td>
</tr>
<tr>
<td>Pad to Load Friction Coefficient</td>
<td>38</td>
</tr>
<tr>
<td>Pad Inspection</td>
<td>38</td>
</tr>
<tr>
<td>Pad Cleaning</td>
<td>39</td>
</tr>
<tr>
<td><strong>VACUUM TEST</strong></td>
<td>39</td>
</tr>
<tr>
<td><strong>TILT DAMPER ADJUSTMENT</strong></td>
<td>40</td>
</tr>
<tr>
<td><strong>TILT LATCHES ADJUSTMENT</strong></td>
<td>41</td>
</tr>
<tr>
<td><strong>TO REPLACE SEALING RING IN VPFS10T PADS</strong></td>
<td>42</td>
</tr>
<tr>
<td><strong>TO REPLACE PAD INSERT IN VPFS625 PADS</strong></td>
<td>43</td>
</tr>
<tr>
<td><strong>REMOTE CONTROL SYSTEM TEST</strong></td>
<td>44</td>
</tr>
<tr>
<td><strong>REPLACEMENT PARTS LIST</strong></td>
<td>45</td>
</tr>
<tr>
<td><strong>LIMITED WARRANTY</strong></td>
<td>46</td>
</tr>
</tbody>
</table>
# SPECIFICATIONS

| Description: | Designed for use with a crane or other hoisting equipment, the MTCL-DC3 lifters employ vacuum to hold a load for lifting, and they provide manual 90° tilt movements for load manipulation. |
| Model Number: | | |
| MTCL6625DC3 | MTCL810TDC3 |
| Vacuum Pads: | Six with nominal dimensions of 6" x 25" [15 cm x 64 cm] (Model VPFS625) | Eight with 10" [25 cm] nominal diameter (Model VPFS10T) |
| Pad Spread: (to outer edges) | Length | Width | Length | Width |
| Minimum: | 17" [43 cm] | 17" [43 cm] | 23¾" [60 cm] | 23¾" [60 cm] |
| Maximum w/o Extensions: | 56" [142 cm] | 56" [142 cm] | 39½" [101 cm] | 39½" [101 cm] |
| Maximum w/Extensions: | 195¼" [497 cm] | 37" [94 cm] | 179½" [456 cm] | 39¾" [101 cm] |
| Maximum Load Capacity: | 150 lbs [68 kg] | 700 lbs [320 kg] | Per-Pad: | Overall: |
| Power Source: | 12 volts DC, 10 amps |
| Battery Capacity: | 35 amp-hours |
| Tilt Capability: | Manual, 90°; Latch engages automatically when pad frame reaches vertical or horizontal position (if desired) |
| Options: | Available with Remote Control System – FCC, CE, and ICC certified. See separate instructions about other options. |
| 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) |

Note: This symbol appears in the 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 Standard with replaceable sealing rings or inserts for rough or textured surfaces (see REPLACEMENT PARTS LIST).
2 The illustrations under ASSEMBLY: TO CHANGE THE PAD FRAME CONFIGURATION shows the Pad Spread and Maximum Load Capacity for many of the possible pad frame configurations.
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 in operating environment 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 BAIL
2  ADJUSTABLE LIFT POINT TUBE
3  BATTERY CHARGER WINDOW
4  LCD SCREEN with BATTERY GAUGE
5  POWER BUTTON
6  “RELEASE” BUTTON
7  “ATTACH” BUTTON
8  “FUNCTION” BUTTON
9  INTELLI-GRIP® CONTROL UNIT
10  CONTROL HANDLES
11  VACUUM PAD
12  TILT CONTROL LEVER
13  PAD FRAME
14  QUICK CONNECTOR
15  TILT DAMPER
16  TILT LATCH
17  STROBE LIGHT and WARNING BUZZER
18  MOVABLE PAD MOUNT
19  REMOTE CONTROL RECEIVER (option)
20  AIR FILTER
21  VACUUM GAUGES
22  VACUUM LIFT LIGHT
23  LIFT BAR

Not shown: PAD FRAME EXTENSIONS
ASSEMBLY

TO SET UP THE LIFTER

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 adjustable lift point tube to obtain the optimal hang angle of the lifter and load:4

   Remove both retaining bolts and associated hardware, and reposition the adjustable tube as desired. Reinstall the retaining bolts and hardware, making sure to tighten them 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 latches (see OPERATION: TO TILT THE LOAD: Operating the Tilt Latches) and raise the lift bar to a vertical orientation. Make sure the lift bar latches in the vertical orientation. Then attach the hoisting equipment hook to the lift bail.

   Make sure hoisting equipment hook is fitted with restraining latch to prevent lift bail 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. When applicable, remove the pad covers as shown, and save them for use whenever the lifter is stored.

4 A different hang angle may be desirable, depending on the angle needed to attach the lifter to the load, release the load or manipulate the load during a lift.
4) Configure the pad frame to provide optimal support of the load while lifting (see To Change the Pad Frame Configuration to follow).

5) Connect the electrical connectors as shown.

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

6) Before you put the lifter into service, perform Operational and Load Tests (see MAINTENANCE: TESTING SCHEDULE).
**TO CHANGE THE PAD FRAME CONFIGURATION**

A variety of pad frame configurations accommodate different load dimensions and weights, as shown. Configurations are created by installing or removing pad frame extensions and by repositioning or removing movable pad mounts.

Note: To ensure maximum effectiveness of the dual vacuum system, the vacuum pads must be connected in an equal and alternating distribution to the 2 circuits (marked "1" and "2"), as shown below.

---

**MTCL6625DC3 Pad Spread and Maximum Load Capacity**
(larger configurations shown with pad frame extensions)
MTCL810TDC3 Pad Spread and Maximum Load Capacity
(larger configurations shown with pad frame extensions)
1) Select a configuration to provide optimal support across the load surface and to minimize load overhang (see INTENDED USE: LOAD CHARACTERISTICS).

- To support the maximum load weight, you must install the Y-shaped pad frame extensions and all vacuum pads on the pad frame (see TO INSTALL/REMOVE PAD FRAME EXTENSIONS AND REPOSITION VACUUM PADS to follow) and connect all vacuum hoses to the vacuum pads, using the quick connectors (see discussion to follow).\(^5\)

- To support larger load dimensions, you must also install the straight pad frame extensions on the pad frame (see TO INSTALL/REMOVE PAD FRAME EXTENSIONS AND REPOSITION VACUUM PADS to follow).

- To support smaller weights and dimensions, you may remove some of the frame extensions or vacuum pads, and disconnect the corresponding vacuum hoses, provided that the lifter still has sufficient capacity to support the load in question.

! Removing or disconnecting any vacuum pad reduces lifting capacity.

2) Assemble the pad frame in a symmetrical configuration, to keep the lifter balanced (see illustrations on preceding pages).

Make sure all vacuum hoses are positioned to avoid damage during lifter operation.

3) Make sure all vacuum hoses are secure and routed to avoid being pinched, snagged, abraded or otherwise damaged during lifter operation.

\(^5\) Whenever a quick connector is disconnected, the corresponding vacuum pad does not contribute to the lifting capacity, whether or not the pad is mounted on the pad frame.
To Install/Remove Pad Frame Extensions and Reposition Vacuum Pads

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8.
1) Remove the cotterless hitch pin that secures the movable pad mount to the pad frame.
2) Remove the vacuum pad from the pad frame and, if necessary, disconnect the vacuum hose.
3) Insert a straight or Y-shaped pad frame extension into the pad frame and connect the corresponding vacuum hoses.
4) Use a cotterless hitch pin to secure the frame extension.
5) If a straight extension was installed in step 3, insert a Y-shaped extension into the straight extension and connect the corresponding vacuum hoses.
6) Use a cotterless hitch pin to secure the frame extension.
7) Position the pad mount on the pad frame and, if necessary, reconnect the vacuum hose.6

Always install VPFS625 pads in the same direction (parallel to one another) to avoid accidental load release (see configurations graphic).

8) Use a cotterless hitch pin to secure the pad mount.

Note: Repeat or reverse these steps to configure the pad frame as needed.

To remove frame extensions or vacuum pads, reverse the previous procedure. Store removed components in a clean, dry location to protect them from environmental exposure.

---

6 Each pad mount can also be rotated 180° to allow for the best hose routing.
To Connect/Disconnect Vacuum Hoses

• To connect a vacuum hose, push the male and female ends of the quick connector together until they lock.

Make sure quick connectors seal completely and all vacuum hoses function correctly.

• To disconnect the vacuum hose, move the release ring on the female end until the quick connector separates.

Make sure that the hoses are connected appropriately (Green to Circuit “1” and Red to Circuit “2”), as shown.

Note: The two vacuum circuits correspond with their matching vacuum gauges.
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. Flexible sealing rings are able to accommodate some surface relief, provided contour changes are not too abrupt. 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 able to obtain 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).

• 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 pads without breaking or otherwise being damaged.

• 8" [20 cm] is the maximum allowable thickness of loads at the Maximum Load Capacity (see SPECIFICATIONS).

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.

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7 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.

8 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.

9 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 contaminates that could cause a vacuum pump failure. Such contaminates could result in a load release and possible injury to the operator or others nearby.

Environmental contaminates 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.
**TYPICAL APPLICATIONS**

Though the lifter is designed with the flexibility to be used in many different ways, these illustrations represent some typical applications.
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.  

---

10 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 (e.g., 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.\(^\text{11}\)
- 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

---

\(^{11}\) 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) Position the lifter as needed to support the load correctly, as shown below: To install roof panels and horizontally oriented wall panels, the lifter must be positioned "on center"; to install vertically oriented wall panels, the lifter is normally positioned "above center".

To position the lifter on center, center the pad frame to within 2" [5 cm] of the load center, to avoid unexpected tilt and lifter damage.\(^\text{12}\)

To position the lifter above center, center the pad frame from left to right on the load and position the vacuum pads towards the end that will be at the top end while lifting, as shown at right.

\[\text{When lifter is positioned above center, tilt latches must be locked out before lifting load.}\]

When the lifter is positioned above center, the tilt latches must be locked out to avoid unexpected load release and lifter damage (see TO TILT THE LOAD: Tilting Loads Positioned Above Center and Operating the Tilt Latches, to follow).

3) Make sure that all vacuum pads will fit on the load (see SPECIFICATIONS: 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.

\(^{12}\) 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 pad frame’s center point. 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.
Lift point must be adjusted so as to prevent interference between adjustable lift point tube and load.

Note: If the load would extend higher than the lift point {1} when lifted or tilted upright, the lift point must be adjusted to prevent interference between the adjustable lift point tube {1} and the load {2} (see ASSEMBLY: TO SET UP THE LIFTER). Failure to do so could damage the lifter or load, and may result in an unexpected load release.

1 ADJUSTABLE LIFT POINT TUBE
2 LOAD

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.13

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).

13 The radio transmitter turns off automatically, after a period of inactivity.
Sealing the Pads against the Load
Press the “attach” button (_attach_ ) 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 (_attach_ ) 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. ¹⁴

🚫 _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.

¹⁴ 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.\(^{15}\)

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.\(^{16}\)

6) Lower the load after 5 minutes or whenever the vacuum level falls below 10" Hg [-34 kPa].

---

\(^{15}\) 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.

\(^{16}\) 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.

Any attempt to lift the load before the lift light is illuminated could result in a load release and possible 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”.17 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.

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17 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 the control handles to keep the lifter and load in the desired orientation while they are suspended from the crane, as shown.

⚠️ When lifter is positioned above center, tilt latches must be locked out before lifting load.

If the lifter is positioned above center on a load encountered in the flat orientation, the load automatically tilts to the upright position when lifted (see TO TILT THE LOAD: Tilting Loads Positioned Above Center to follow). In this case, failure to lock out the tilt latches could result in an unexpected load release or damage to the lifter. If the load is positioned on center, the load can be tilted as desired once sufficient clearance is established (see TO TILT THE LOAD: Tilting Loads Positioned On Center 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 TILT THE LOAD

⚠️ 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 the control handle, control line or other appropriate means to keep the load under control at all times.

3) Depending on whether the load will be lifted in the on center or above center orientations, follow the appropriate procedure:
Tilting Loads When Lifter is Positioned **Above Center**

*When lifter is positioned above center, tilt latches must be locked out before lifting load.*

Make sure the tilt latches are locked out, as shown to the right, when the lifter is positioned above center (see Operating the Tilt Latches to follow). Failure to lock out the tilt latches could result in an unexpected load release or damage to the lifter and load.

With the tilt latches locked out, the load will automatically tilt from the flat position to the upright position when lifted.

To tilt the load from the upright position to the flat position, use the hoisting equipment to lower the load until its lower edge is adequately supported. Then move the lifter forward and downward, allowing the load to tilt to the flat orientation as you continue to lower it.

Tilting Loads When Lifter is Positioned **On Center**

If the lifter is positioned on center, disengage the tilt latches (see Operating the Tilt Latches to follow) and prepare for a slight surge of motion as the load begins to tilt. Lift upward or press downward on the control handles to tilt the load as desired, and continue to apply pressure as necessary to maintain the desired load orientation.

If load size permits, maintain control with the handles throughout the tilt. For loads with overhang, it may be necessary to release the control handles as a load approaches the flat position. If so, keep the load under control using hand cups or other appropriate means.
Operating the Tilt Latches

This lifter is designed so that the pad frame automatically latches in place when the load reaches either the upright or the flat position, unless the tilt latches are locked out.

To disengage the tilt latches, push the tilt control lever part of the way upward, as shown. Begin to tilt the load and then release the control lever. ¹⁸

To lock out the tilt latches, so that they will not engage at any time during the tilt, push the tilt control lever all the way upward until it locks in the disengaged position, as shown.

Whenever tilt is not required, keep the tilt latches engaged, as shown to the left, to prevent load damage or personal injury.

¹⁸ Automatic latching can be defeated by continuing to hold the control lever so that the tilt latches do not engage.
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 (Fn) 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.

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).

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19 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.*

To remove the lifter from the hoisting equipment, place stable supports under the center of the **pad frame**. Additional supports may be placed under the **pad frame extensions** for stability. Use the hoisting equipment to gently lower the lifter until the supports are holding its entire weight. Make sure the lifter is stable; then detach the hoisting equipment hook from the **lift bail**.

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) When applicable, use the covers supplied to keep the **vacuum pads** clean, as shown.

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**!!–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 bail**.

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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 drainage.

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: □ = Onscreen code accompanied with sounding buzzer □ = Buzzer sounds constantly □ = Onscreen code accompanied with flashing strobe

<table>
<thead>
<tr>
<th>Code</th>
<th>On-Screen Message</th>
<th>Buzzer Pattern</th>
<th>Strobe Light Activity</th>
<th>Operator Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>B00</td>
<td>&quot;Low 12V Battery (＃)&quot;</td>
<td>1 chirp every 2 seconds (none)</td>
<td>Charge lifter battery 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.</td>
<td></td>
</tr>
<tr>
<td>B01</td>
<td>&quot;Lockout (low 12V battery) (＃)&quot;</td>
<td>continuous (none)</td>
<td>Charge lifter battery before proceeding with another lift (see BATTERY RECHARGE to follow). Refer fault(s) to qualified service personnel when necessary.</td>
<td></td>
</tr>
<tr>
<td>B02</td>
<td>&quot;Replace 12V battery?&quot;</td>
<td>1 chirp per minute (none)</td>
<td>Check condition of lifter battery (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 battery charger is plugged into power source when 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.</td>
<td></td>
</tr>
<tr>
<td>B03</td>
<td>&quot;Charge 12V battery soon&quot;</td>
<td>1 chirp per minute (none)</td>
<td>Charge battery (see BATTERY RECHARGE to follow).</td>
<td></td>
</tr>
<tr>
<td>B09</td>
<td>&quot;Replace 9V battery?&quot;</td>
<td>1 chirp per minute (none)</td>
<td>Replace warning buzzer battery (see WARNING BUZZER BATTERY TEST to follow).</td>
<td></td>
</tr>
<tr>
<td>C00</td>
<td>&quot;Fail-safe on module&quot;</td>
<td>continuous on (none)</td>
<td>Refer fault to qualified service personnel for resolution.</td>
<td></td>
</tr>
<tr>
<td>C011</td>
<td>&quot;Communication failure, module 1&quot;</td>
<td>fast chirp (none)</td>
<td>Temporary code should self-correct. If code persists, refer fault to qualified service personnel for resolution.</td>
<td></td>
</tr>
<tr>
<td>C021</td>
<td>&quot;Internal error, module 1&quot;</td>
<td>continuous (none)</td>
<td>Temporary code should self-correct. If code persists, refer fault to qualified service personnel for resolution.</td>
<td></td>
</tr>
<tr>
<td>C03</td>
<td>&quot;Firmware updater detected (＃)&quot;</td>
<td>N/A (none)</td>
<td>A service tool is connected and should be removed before returning lifter to service. Please contact WPG.</td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>C04</td>
<td>&quot;Module revision not compatible&quot;</td>
<td>1 chirp every 2 seconds</td>
<td>N/A</td>
<td>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.</td>
</tr>
<tr>
<td>E00</td>
<td>&quot;EEPROM error, cell #&quot;</td>
<td>occasional chirp</td>
<td>(none)</td>
<td>Refer fault to qualified service personnel for resolution.</td>
</tr>
<tr>
<td>E01</td>
<td>E02</td>
<td>E03</td>
<td>E04</td>
<td></td>
</tr>
<tr>
<td>I00</td>
<td>&quot;I2C error (#)&quot;</td>
<td>single chirp</td>
<td>(none)</td>
<td>Temporary code should self-correct. If code persists, refer fault to qualified service personnel for resolution.</td>
</tr>
<tr>
<td>N00</td>
<td>&quot;Automatic attach&quot;</td>
<td>N/A</td>
<td>(none)</td>
<td>Informative message indicates that significant vacuum was detected even though no one initiated &quot;attach&quot; function, so system activated &quot;attach&quot; mode as a precaution. No corrective action necessary.</td>
</tr>
<tr>
<td>N01</td>
<td>&quot;Automatic attach&quot;</td>
<td>N/A</td>
<td>(none)</td>
<td>Informative message indicates that operator failed to release load completely, so system activated &quot;attach&quot; mode as a precaution. No corrective action necessary.</td>
</tr>
<tr>
<td>N02</td>
<td>&quot;Automatic attach&quot;</td>
<td>N/A</td>
<td>(none)</td>
<td>When the lifter is powered up, informative message indicates that power was previously lost while load was attached, so system activated &quot;attach&quot; mode as a precaution. No corrective action necessary.</td>
</tr>
<tr>
<td>N03</td>
<td>&quot;Unable to turn module power off&quot;</td>
<td>1 chirp every 2 seconds</td>
<td>(none)</td>
<td>Disconnect connector between lifter battery 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.</td>
</tr>
<tr>
<td>N04</td>
<td>&quot;Failed to turn controls power off&quot;</td>
<td>1 chirp every 2 seconds</td>
<td>(none)</td>
<td>Disconnect connector between lifter battery 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.</td>
</tr>
<tr>
<td>N05</td>
<td>&quot;Unable to turn module power on&quot;</td>
<td>1 chirp every 2 seconds</td>
<td>(none)</td>
<td>Charge lifter battery (see BATTERY RECHARGE to follow). Then power lifter up again. If code persist, refer fault to qualified service personnel for resolution.</td>
</tr>
<tr>
<td>U00</td>
<td>&quot;WARNING! Is load attached?&quot;</td>
<td>fast chirp</td>
<td>on</td>
<td>Attempt was made to power down lifter while load was still detected: Set down load securely and release load before powering down lifter.</td>
</tr>
<tr>
<td>U01</td>
<td>&quot;Also hold [Fn] to power down&quot;</td>
<td>N/A</td>
<td>(none)</td>
<td>Hold both &quot;function&quot; button and &quot;power&quot; button to power down lifter.</td>
</tr>
<tr>
<td>U02</td>
<td>&quot;Turn off? Let go of buttons&quot;</td>
<td>N/A</td>
<td>(possible)</td>
<td>Use only &quot;function&quot; button and &quot;power&quot; button to power down lifter. Lifter cannot be powered down while any other button combination is pressed.</td>
</tr>
<tr>
<td>U03</td>
<td>&quot;Timed release: # seconds&quot;</td>
<td>1 chirp per button press</td>
<td>on</td>
<td>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 &quot;function&quot; button only to cancel this action, or press &quot;attach&quot; button to override. No corrective action necessary.</td>
</tr>
</tbody>
</table>

Rev 1.4/4-18  MTCL-DC3: #35301
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<tr>
<td>U04</td>
<td>&quot;Also hold [Fn] to release&quot;</td>
<td>N/A</td>
<td>(none)</td>
<td>Hold both &quot;function&quot; button and &quot;release&quot; button to release load.</td>
</tr>
<tr>
<td>U06</td>
<td>&quot;Let go of [Fn] and Release&quot;</td>
<td>N/A</td>
<td>on</td>
<td>Use only &quot;attach&quot; button to attach load. While &quot;attach&quot; button is pressed, lifter does not respond to pressing any other button. Release all buttons and press buttons again to activate a different function.</td>
</tr>
<tr>
<td>U08</td>
<td>&quot;Menu not available in Attach&quot;</td>
<td>N/A</td>
<td>N/A</td>
<td>Informative message indicates that Operator Menu cannot be accessed while lifter is attached to load.</td>
</tr>
<tr>
<td>U09</td>
<td>&quot;Counter-Balancer not forward&quot;</td>
<td>continuous</td>
<td>on</td>
<td>&quot;Release&quot; 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 OPERATING INSTRUCTIONS).</td>
</tr>
<tr>
<td>U10</td>
<td>&quot;Use POWER button for Live Stats&quot;</td>
<td>N/A</td>
<td>(none)</td>
<td>The &quot;power&quot; button (not &quot;function&quot; button) is now used to access Live Stats. No corrective action necessary.</td>
</tr>
<tr>
<td>U11</td>
<td>&quot;Testing battery - wait to attach&quot;</td>
<td>N/A</td>
<td>(none)</td>
<td>&quot;Attach&quot; function is prevented because battery test is currently in process. Wait until pump stops running and try again.</td>
</tr>
<tr>
<td>V000</td>
<td>&quot;LOW VACUUM! Secure load!&quot;</td>
<td>continuous</td>
<td>on</td>
<td>Immediately set down load until adequate vacuum can be obtained. Check load and vacuum pads for damage. Consult relevant ASSEMBLY, OPERATION and MAINTENANCE topics. Refer fault(s) to qualified service personnel when necessary.</td>
</tr>
<tr>
<td>V001</td>
<td>&quot;LOW VACUUM #! Secure load!&quot;</td>
<td>continuous</td>
<td>on</td>
<td>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 &quot;attach&quot; mode. Check load and vacuum pads for damage. Consult relevant ASSEMBLY, OPERATION and MAINTENANCE topics. Refer fault(s) to qualified service personnel when necessary.</td>
</tr>
<tr>
<td>V002</td>
<td>(indicates relevant vacuum circuit)</td>
<td>continuous</td>
<td>on</td>
<td>Indicates issue(s) affecting lifter’s ability to maintain vacuum in circuit indicated. Check load and vacuum pads for damage that may activate code. Consult relevant ASSEMBLY, OPERATION and MAINTENANCE topics. Refer fault(s) to qualified service personnel when necessary.</td>
</tr>
<tr>
<td>V003</td>
<td>&quot;High leak rate on circuit #&quot;</td>
<td>3 chirps</td>
<td>(none)</td>
<td>Indicates issue(s) affecting &quot;attach&quot; mode. Consult relevant ASSEMBLY, OPERATION and MAINTENANCE topics. Refer fault(s) to qualified service personnel when necessary.</td>
</tr>
<tr>
<td>V004</td>
<td>(indicates relevant vacuum circuit)</td>
<td>continuous</td>
<td>on</td>
<td>Indicates issue(s) that affect &quot;attach&quot; mode. Consult relevant ASSEMBLY, OPERATION and MAINTENANCE topics. Refer fault(s) to qualified service personnel when necessary.</td>
</tr>
<tr>
<td>V011</td>
<td>&quot;Vacuum not increasing normally&quot;</td>
<td>1 chirp every 2 seconds</td>
<td>on</td>
<td>Vacuum pump 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.</td>
</tr>
<tr>
<td>V03A</td>
<td>&quot;Pump running excessively&quot;</td>
<td>1 chirp every 2 seconds</td>
<td>(none)</td>
<td>Vacuum pump 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.</td>
</tr>
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<td>------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>V040</td>
<td>“Lockout (vacuum sensor error)”</td>
<td>continuous</td>
<td>(none)</td>
<td>“Attach” function is prevented because a vacuum sensor is not functioning correctly. Make sure vacuum sensors are properly plugged into module. Refer fault(s) to qualified service personnel when necessary.</td>
</tr>
<tr>
<td>V081</td>
<td>“Sensor #_error (low)” (# indicates relevant vacuum circuit)</td>
<td>continuous in &quot;attach&quot; mode; 1 chirp every minute in &quot;power save&quot; mode</td>
<td>(none)</td>
<td>Make sure vacuum sensor is properly plugged into module. Refer fault(s) to qualified service personnel when necessary.</td>
</tr>
<tr>
<td>V082</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>V083</td>
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<tr>
<td>V084</td>
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<tr>
<td>V091</td>
<td>“Sensor #_error (high)” (# indicates relevant vacuum circuit)</td>
<td>continuous in &quot;attach&quot; mode; 1 chirp every minute in &quot;power save&quot; mode</td>
<td>(none)</td>
<td>Make sure vacuum sensor is properly plugged into module. Refer fault(s) to qualified service personnel when necessary.</td>
</tr>
<tr>
<td>V092</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V093</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V094</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Action</th>
<th>Every Lift</th>
<th>Frequent&lt;sup&gt;20&lt;/sup&gt;</th>
<th>Periodic&lt;sup&gt;21&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examine the vacuum pads for contamination or debris, and clean them as necessary (see VACUUM PAD MAINTENANCE: Pad Cleaning).</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Examine the vacuum pads for visual damage.</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Examine the load surface for contamination or debris, and clean it as necessary.</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Examine the controls and indicators for visual damage.</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
</tbody>
</table>

---

<sup>20</sup> The Frequent Inspection is also required whenever the lifter is out of service for 1 month or more.

<sup>21</sup> 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).
<table>
<thead>
<tr>
<th>Action</th>
<th>Every Lift</th>
<th>Frequent&lt;sup&gt;20&lt;/sup&gt; (20-40 hours)</th>
<th>Periodic&lt;sup&gt;21&lt;/sup&gt; (250-400 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the battery for adequate charge. If necessary, charge and recheck the battery (see BATTERY RECHARGE).</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Examine the lifter’s structure for visual damage.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Examine the vacuum system (including vacuum pads, fittings and hoses) for visual damage.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Examine the air filters for conditions requiring service.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Perform the VACUUM TEST.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Check for unusual vibrations or noises while operating the lifter.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>If the lifter is equipped with a Remote Control System, perform the REMOTE CONTROL SYSTEM TEST.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>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. <strong>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.</strong></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Keep a written record of all Periodic Inspections.</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

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. 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.
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.
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.

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

22 ASME Standard B30.20 requires the lifter to be tested to 125% of its Maximum Load Capacity.
23 Flat Lifters are exempt from this requirement.
24 During this time the LCD screen will display “WARNING! Is load attached?”, the warning buzzer will chirp rapidly and the strobe light will flash.
25 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.
26 The battery charger must be disconnected from its AC power source in order to test the battery energy; otherwise, the energy reading on the battery gauge would not be accurate.
If battery energy registers in the red range, discontinue lifter use and charge the battery (see Battery Recharge). 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 will sound 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. Use a ground fault circuit interrupter to reduce the risk of electrical shocks.

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

Press the "MODE" button to select "NORMAL" mode. Lights 1-4 (see illustration) indicate the charging level attained. When the battery is fully charged, light 4 (green) turns on and the charger switches to maintenance mode.

The battery should take no more than 8 hours to charge completely. After reaching level 3, the charger analyzes the battery condition. If the battery needs to be replaced, the charger’s red error light (!) turns on (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 preceding).

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27 To increase the battery’s lifespan, charge it promptly after each use.

28 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.

29 If none of the charging level lights turns on, the battery connection or the battery itself may be faulty. If the red error light (!) turns on immediately, the battery leads may be reversed or the charger terminals may be short-circuited; once the problem has been corrected, the charger should function normally. The red error light can indicate other problems, depending on the mode selected and level of charging; if necessary, contact Wood’s Powr-Grip for assistance.

30 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.
**WARNING BUZZER BATTERY TEST**

The **warning buzzer** is powered by an independent 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. 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. Vacuum pads, along with replaceable pad inserts and sealing rings, should be replaced on a regular basis (at least every 2 years), to prevent deterioration of the friction coefficient.

Replaceable pad inserts and sealing rings may experience wear and deterioration during normal use. Pad inserts that exhibit wear, deterioration or damage must be replaced.

**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).

⚠️ **Replace pad insert or sealing ring if it has any nicks, cuts or abrasions.**

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

---

31 See **To Replace Pad Insert in VPFS625 Pads or To Replace Sealing Ring in VPFS10T Pads** to follow.
Pad Cleaning

1) Regularly clean the face of each vacuum pad as shown, to remove oil, dust and any other contaminates. 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.32

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).33

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.34

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

---

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

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

34 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.

**Tilt Damper Adjustment**

The tilt damper minimizes unexpected or rapid tilting of the pad frame and load. The damper is set at the factory and should not need adjustment. However, if readjustment is necessary, perform the following steps:

1) Pull the pin from the damper clevis.

2) Pull the piston rod out to its fully extended position.

3) To increase damping, turn the rod clockwise.
   To decrease damping, turn the rod counter-clockwise.

   **Caution: Do not turn damper rod in completely.**

   Turning the damper rod all the way in may cause damage to the damper or other lifter components.

4) When damping is satisfactory, reattach the piston rod to the lifter using the clevis pin.
**TILT LATCHES ADJUSTMENT**

If it becomes difficult to disengage or lock out the tilt latches, adjust the cable tension:

When the tilt latches are *engaged*, the latch pins should not retract at all, but the cable should remain taught as shown.

When the tilt control lever is placed in the *locked out* position, as shown, the latch pins should fully retract without the need to use excessive force.

1) Remove the flat head socket screw from one clevis, as shown, and remove the cable.

2) Loosen the clevis lock nut, and screw the clevis in to increase cable tension or out to reduce cable tension.

3) Tighten the lock nut, making sure the slot in the clevis is oriented to minimize wear on the cable.

4) Reattach the cable, and secure it with the socket screw. Make sure the cable tension achieves the desired result. If not, readjust as needed.
**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.
**To Replace Pad Insert in VPFS625 Pads**

If the lifter is equipped with VPFS625 vacuum pads, replace the pad insert (see Replacement Parts List) as shown:

1) Remove the seven lock nuts and washers that secure the top plate to the rubber-coated face plate of the pad assembly.
   
   Note: Use a 7/16" wrench to remove nuts.

2) Remove the top plate of the pad assembly and set it aside.

3) Remove the old pad insert.
   
   Note: The old insert will appear creased and compressed.

   Be sure to keep the filter screen (circled) when installing a new pad insert.

4) Install the new pad insert.
   
   Note: The new pad insert will not appear creased or compressed. When this installation is complete, it will have taken on the familiar form of the one previously removed.

5) Make sure that the holes in the pad insert match up with the seven bolts and the large hole for the filter screen (circled) in the face plate. The air-line connector (circled) on the top plate will be installed over this large hole as well.
6) Reinstall the top plate in the proper orientation, as detailed in Step 5. Reinstall the seven washers and nuts.

7) Tighten all seven lock nuts.
   Note: If lock nuts become worn, replace them as needed.

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. Vary the location and distance of the transmitter in relation to the lifter, to ensure that transmissions are effective in a variety of circumstances.

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.

---

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

36 This may require assistance from someone near the lifter, to verify that functions are being performed as intended.
## REPLACEMENT PARTS LIST

<table>
<thead>
<tr>
<th>Stock No.</th>
<th>Description</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>93022</td>
<td>Quick Connector – 1/8 FNPT – Male End – w/45° Barb</td>
<td>10/12</td>
</tr>
<tr>
<td>65443</td>
<td>Vacuum Hose – 3/8&quot; ID x 5/8&quot; OD – Clear</td>
<td>*</td>
</tr>
<tr>
<td>65442CA</td>
<td>Vacuum Hose – 0.160&quot; ID x 1/4&quot; OD – Red</td>
<td>*</td>
</tr>
<tr>
<td>65442AM</td>
<td>Vacuum Hose – 0.245&quot; ID x 3/8&quot; OD x 48&quot; Length – Coiled – Green</td>
<td>3</td>
</tr>
<tr>
<td>65441</td>
<td>Vacuum Hose – 0.245&quot; ID x 3/8&quot; OD x 48&quot; Length – Coiled – Red</td>
<td>3</td>
</tr>
<tr>
<td>65440</td>
<td>Vacuum Hose – 0.160&quot; ID x 1/4&quot; OD – Green</td>
<td>*</td>
</tr>
<tr>
<td>65439BM</td>
<td>Vacuum Hose – 3/32&quot; ID x 5/32&quot; OD – Green</td>
<td>*</td>
</tr>
<tr>
<td>65439AM</td>
<td>Vacuum Hose – 3/32&quot; ID x 5/32&quot; OD – Red</td>
<td>*</td>
</tr>
<tr>
<td>65437</td>
<td>Vacuum Hose – 0.245&quot; ID x 3/8&quot; OD – Red</td>
<td>*</td>
</tr>
<tr>
<td>64670</td>
<td>Battery – 12 V DC – 35 Amp-Hours</td>
<td>1</td>
</tr>
<tr>
<td>58383</td>
<td>Vacuum Pad – Model VPFS625 – w/Replaceable Sealing Insert</td>
<td>6</td>
</tr>
<tr>
<td>54107</td>
<td>Movable Pad Mount – 2&quot; Tubing Size (for VPFS10T pad)</td>
<td>8</td>
</tr>
<tr>
<td>53124</td>
<td>Pad Fitting – Elbow – 5/32&quot; ID – Long Stem (for VPFS10T pad)</td>
<td>8</td>
</tr>
<tr>
<td>49726</td>
<td>Vacuum Pad Insert – Model VIFS625 / 6&quot; x 25&quot; [15 cm x 64 cm] (for VPFS625 pad)</td>
<td>6</td>
</tr>
<tr>
<td>49724TT</td>
<td>Sealing Ring Insert – Model VIFS10T2 – Closed Cell Foam (for VPFS10T pad)</td>
<td>8</td>
</tr>
<tr>
<td>49724RT</td>
<td>Sealing Ring Insert – Model VIFS10T3 – Heat-Resistant Rubber (for VPFS10T pad)</td>
<td>8</td>
</tr>
<tr>
<td>49672FT</td>
<td>Vacuum Pad – Model VPFS10T / 10&quot; [25 cm] Diameter – w/Replaceable Sealing Ring</td>
<td>8</td>
</tr>
<tr>
<td>49150</td>
<td>End Plug – 2-1/2&quot; x 2-1/2&quot; x 1/4&quot; Tubing Size</td>
<td>2</td>
</tr>
<tr>
<td>49130</td>
<td>End Plug – 2&quot; x 3&quot; x 1/4&quot; Tubing Size</td>
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</tr>
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<td>49122</td>
<td>End Plug – 2&quot; x 2&quot; x 1/4&quot; Tubing Size</td>
<td>12</td>
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<tr>
<td>36105</td>
<td>Service Manual – 12 V DC – Dual Vacuum System – Intelli-Grip®</td>
<td>1</td>
</tr>
<tr>
<td>29353</td>
<td>Pad Cover (for VPFS10T pad)</td>
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<tr>
<td>20050</td>
<td>Pad Ring Installation Tool (for VPFS10T pad)</td>
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</tr>
<tr>
<td>16056</td>
<td>Quick Connector – 1/8 FNPT – Female End</td>
<td>12</td>
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<tr>
<td>15791</td>
<td>Control Handle</td>
<td>2</td>
</tr>
<tr>
<td>15632</td>
<td>Pad Filter Screen – Small (for VPFS10T pad)</td>
<td>8</td>
</tr>
<tr>
<td>15630</td>
<td>Pad Filter Screen – Large (for VPFS625 pad)</td>
<td>6</td>
</tr>
<tr>
<td>15624</td>
<td>Hose Fitting – Y-Connector – 1/4&quot; Barb</td>
<td>4</td>
</tr>
<tr>
<td>15310AM</td>
<td>Pad Fitting – Push-In Swivel Elbow – 1/4 MNPT to 3/8&quot; OD Hose Size (for VPFS625 pad)</td>
<td>6</td>
</tr>
<tr>
<td>13530</td>
<td>Cotterless Hitch Pin – 1/2&quot; x 3-1/2&quot;</td>
<td>10</td>
</tr>
<tr>
<td>10906PM</td>
<td>Shoulder Bolt - Socket Head – 3/8&quot; X 1&quot; X 5/16-18 Thread (for VPFS625 pad)</td>
<td>24</td>
</tr>
<tr>
<td>10904</td>
<td>Shoulder Bolt - Socket Head - 5/16&quot; X 1&quot; X 1/4-20 Thread (for VPFS10T pad)</td>
<td>48</td>
</tr>
</tbody>
</table>

* 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