

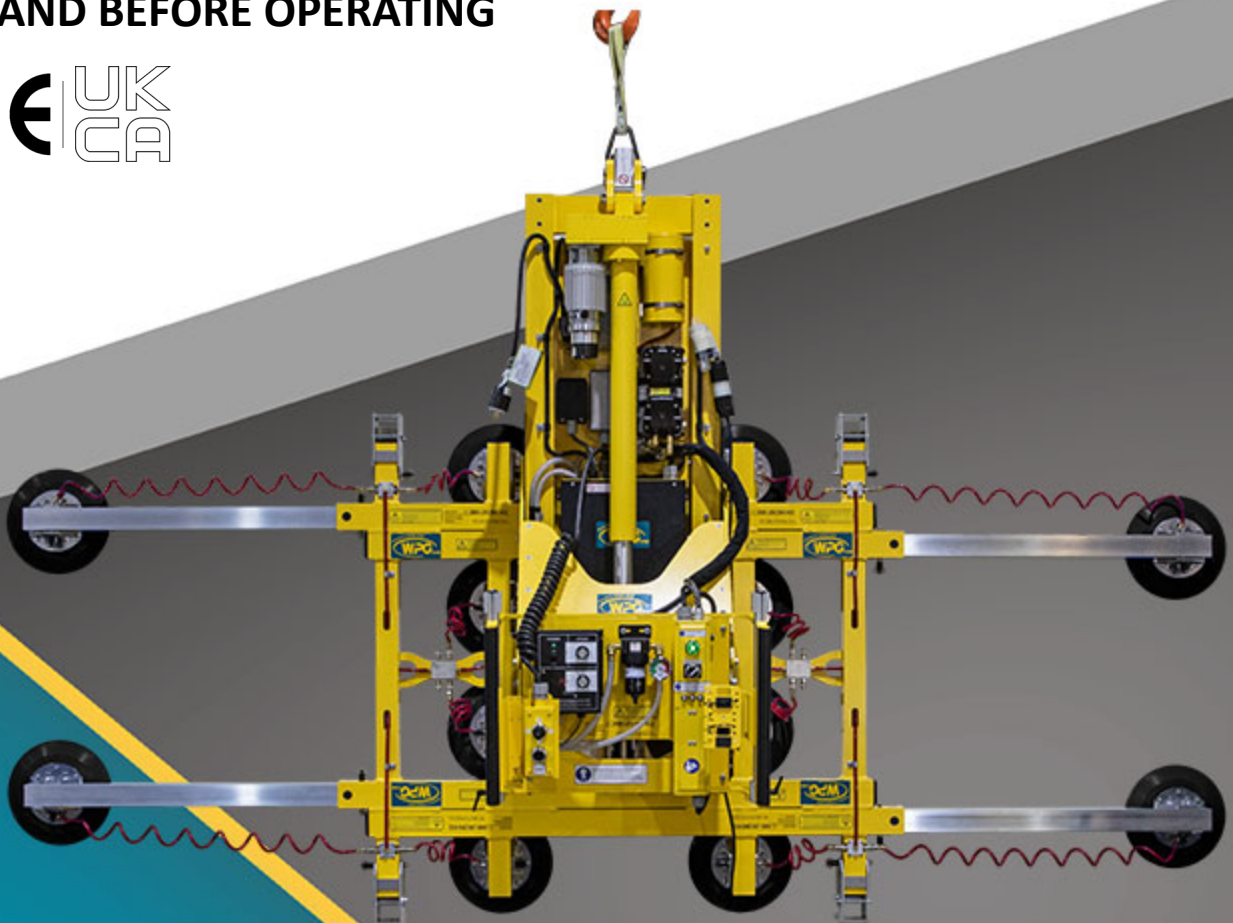
KEEP FOR FUTURE REFERENCE

# OPERATING INSTRUCTIONS



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[www.WPG.com](http://www.WPG.com)

 **INTENDED FOR USE BY SKILLED  
PROFESSIONALS • READ AND  
UNDERSTAND BEFORE OPERATING**



**MANUAL ROTATOR /  
POWER FILTER,  
HIGH-DUTY VERSION,  
AC-VOLTAGE**

Model numbers: MRPTH89AC,  
MRPTH1211LAC (shown), MRPTH2011LAC

Record serial number in blank space above (to locate, see serial label on the product).









# TABLE OF CONTENTS

<b>SPECIFICATIONS</b> .....	<b>3</b>
<b>SAFETY</b> .....	<b>6</b>
<b>OPERATING FEATURES</b> .....	<b>7</b>
<b>ASSEMBLY</b> .....	<b>8</b>
TO CHANGE THE PAD FRAME CONFIGURATION .....	10
Removing the Parking Stands .....	11
Extending/Retracting the Telescoping Pad Arms .....	12
Repositioning (or Removing) Movable Pad Mounts .....	12
Connecting/Disconnecting Vacuum Hoses .....	13
<b>INTENDED USE</b> .....	<b>14</b>
LOAD CHARACTERISTICS.....	14
OPERATING ENVIRONMENT .....	15
DISPOSAL OF THE LIFTER .....	15
<b>OPERATION</b> .....	<b>16</b>
BEFORE USING THE LIFTER.....	16
Taking Safety Precautions .....	16
Performing Inspections and Tests .....	16
TO ATTACH THE PADS TO A LOAD .....	17
Generating Airflow.....	17
Positioning the Lifter on the Load.....	17
Reading the Vacuum Gauge .....	18
TO LIFT AND MOVE THE LOAD.....	19
Interpreting the Lift Light.....	19
Monitoring Vacuum Indicators .....	19
Controlling the Lifter and Load .....	20
In Case of a Power Failure.....	20
TO ROTATE THE LOAD .....	21
TO TILT THE LOAD .....	22
TO RELEASE THE PADS FROM THE LOAD .....	23
AFTER USING THE LIFTER.....	23
Storing the Lifter .....	24
Transporting the Lifter .....	24
<b>INSPECTIONS AND TESTS</b> .....	<b>25</b>

# TABLE OF CONTENTS

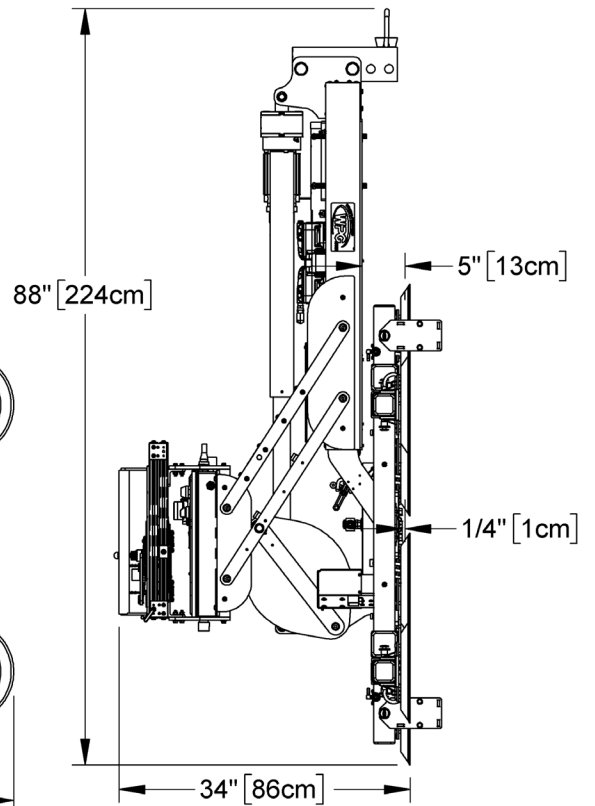
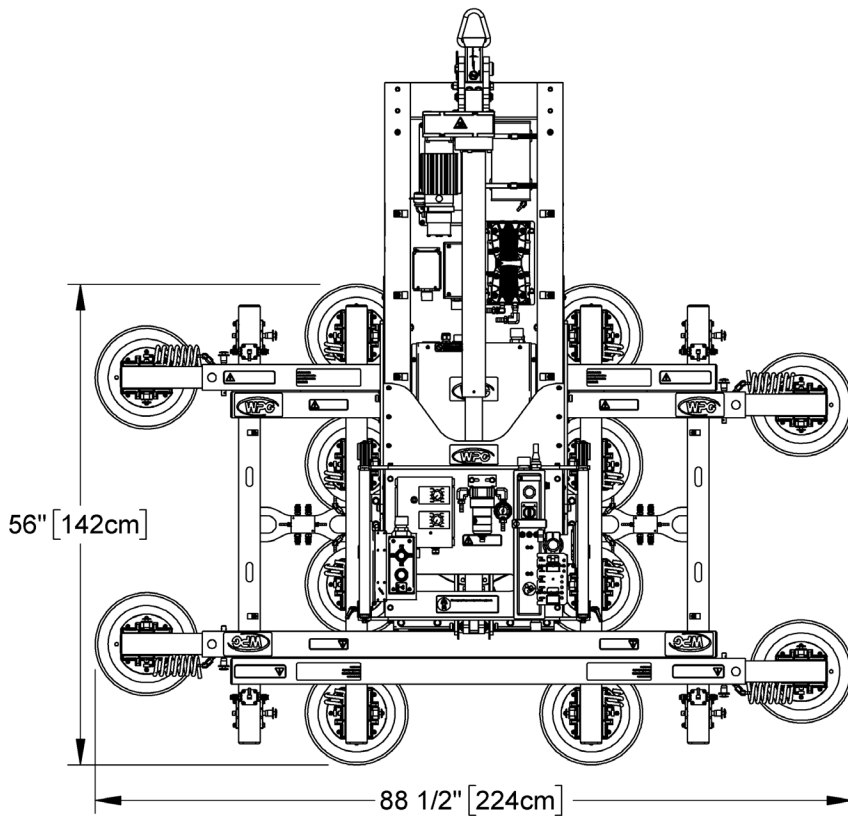
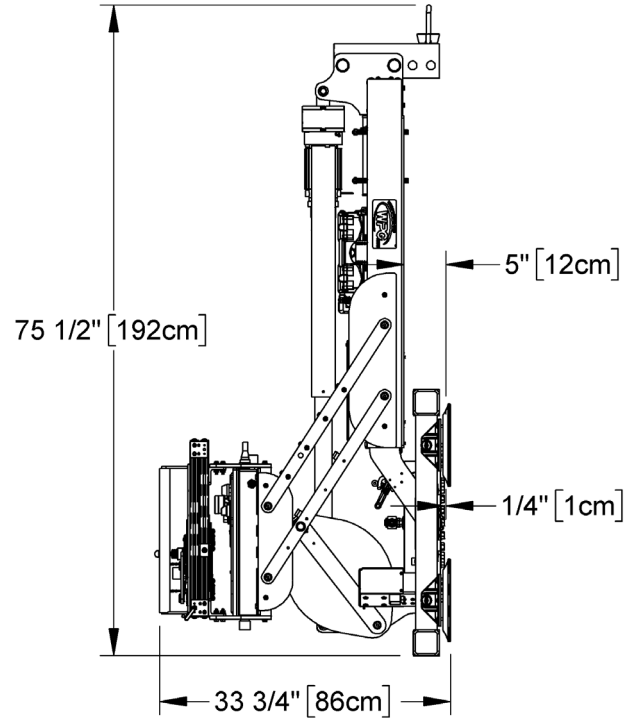
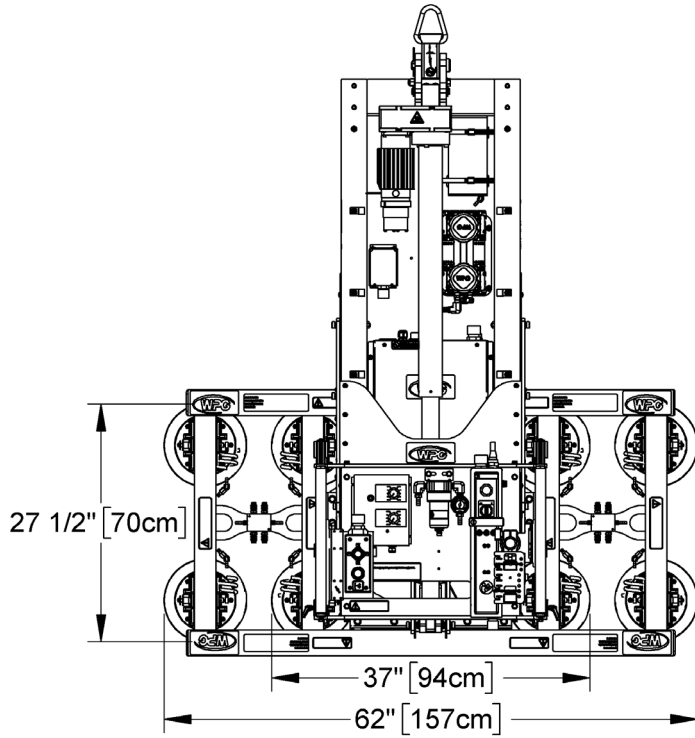
INSPECTION SCHEDULE .....	25
TESTING .....	26
Lifter/Load Compatibility Test.....	26
Operational Tests .....	27
Vacuum Test.....	27
Rated Load Test.....	28
<b>MAINTENANCE .....</b>	<b>29</b>
VACUUM PAD MAINTENANCE.....	29
Pad-to-Load Friction Coefficient .....	29
Pad Inspection .....	29
Pad Cleaning .....	30
<b>REPLACEMENT PARTS.....</b>	<b>31</b>
<b>LIMITED WARRANTY .....</b>	<b>32</b>
TO OBTAIN REPAIRS OR WARRANTY SERVICE.....	32

# SPECIFICATIONS

<b>Product Description</b>	Designed for use with hoisting equipment, the MRPTH-AC lifters support loads using vacuum and manipulate loads using manual 360° rotation and powered 90° tilt motions.		
<b>Model Number</b>	MRPTH89AC	MRPTH1211LAC	MRPTH2011LAC
<b>Vacuum Pads</b> (standard rubber <sup>1</sup> )	Eight 9" [23 cm] nom. diameter (Model VPFS9)	Twelve 11" [28 cm] nom. diameter, lipped (Model G3370)	Twenty 11" [28 cm] nom. diameter, lipped (Model G3370)
<b>Pad Spread<sup>2</sup></b>	-----to outer edges-----		
<b>Length – Maximum</b>	62" [157 cm]	140¾" [356 cm]	140½" [357 cm]
<b>Length – Minimum</b>	62" [157 cm]	64½" [164 cm]	88" [223 cm]
<b>Width – Maximum</b>	27½" [70cm]	56" [142 cm]	56" [142 cm]
<b>Width – Minimum</b>	27½" [70cm]	46¾" [117 cm]	56" [142 cm]
 <b>Maximum Load Capacity<sup>3</sup></b>	Per pad: 125 lbs [57 kg] Total: 1000 lbs [455 kg]	Per pad: 167 lbs [75.5 kg] Total: 2000 lbs [905 kg]	Per pad: 150 lbs [68 kg] Total: 3000 lbs [1360 kg]
 <b>Lifter Weight</b>	565 lbs [257 kg]	700 lbs [318 kg]	740 lbs [336 kg]
<b>Power Source</b>	See serial label for specific AC voltage, frequency and amperage.		
 <b>Rotation Capability</b>	Manual, 360°, with latching at every 18° of revolution (when required)		
 <b>Tilt Capability<sup>4</sup></b>	Powered, 90°, with adjustable electronic speed controller. Maximum speed = approx 20 seconds per tilt (1 tilt = 90° travel in one direction).		
	<b>Maximum Duty Cycle</b>	<b>Load Weight<sup>5</sup></b>	
	20 tilts per hour	2501 lbs [1134 kg] to 3000 lbs [1360 kg]	
	25 tilts per hour	2001 lbs [907 kg] to 2500 lbs [1133 kg]	
	30 tilts per hour	1501 lbs [680 kg] to 2000 lbs [907 kg]	
	35 tilts per hour	1001 lbs [454 kg] to 1500 lbs [680 kg]	
	40 tilts per hour	501 lbs [227 kg] to 1000 lbs [454 kg]	
45 tilts per hour	0 lbs [0 kg] to 500 lbs [226 kg]		
<b>Product Options</b>	See separate instructions about options.		
 <b>Operating Elevation</b>	Up to 6,000' [1,828 m]		
 <b>Operating Temperatures</b>	32° – 104° F [0° – 40° C]		
<b>Service Life</b>	20,000 lifting cycles, when used and maintained as intended <sup>6</sup>		
<b>ASME Standard BTH-1</b>	Design Category "B", Service Class "0"		
<b>Troubleshooting Guide<sup>7</sup></b>	<a href="#">TST-016_GENERIC_LEAK_TEST_rev_2014-086</a>		

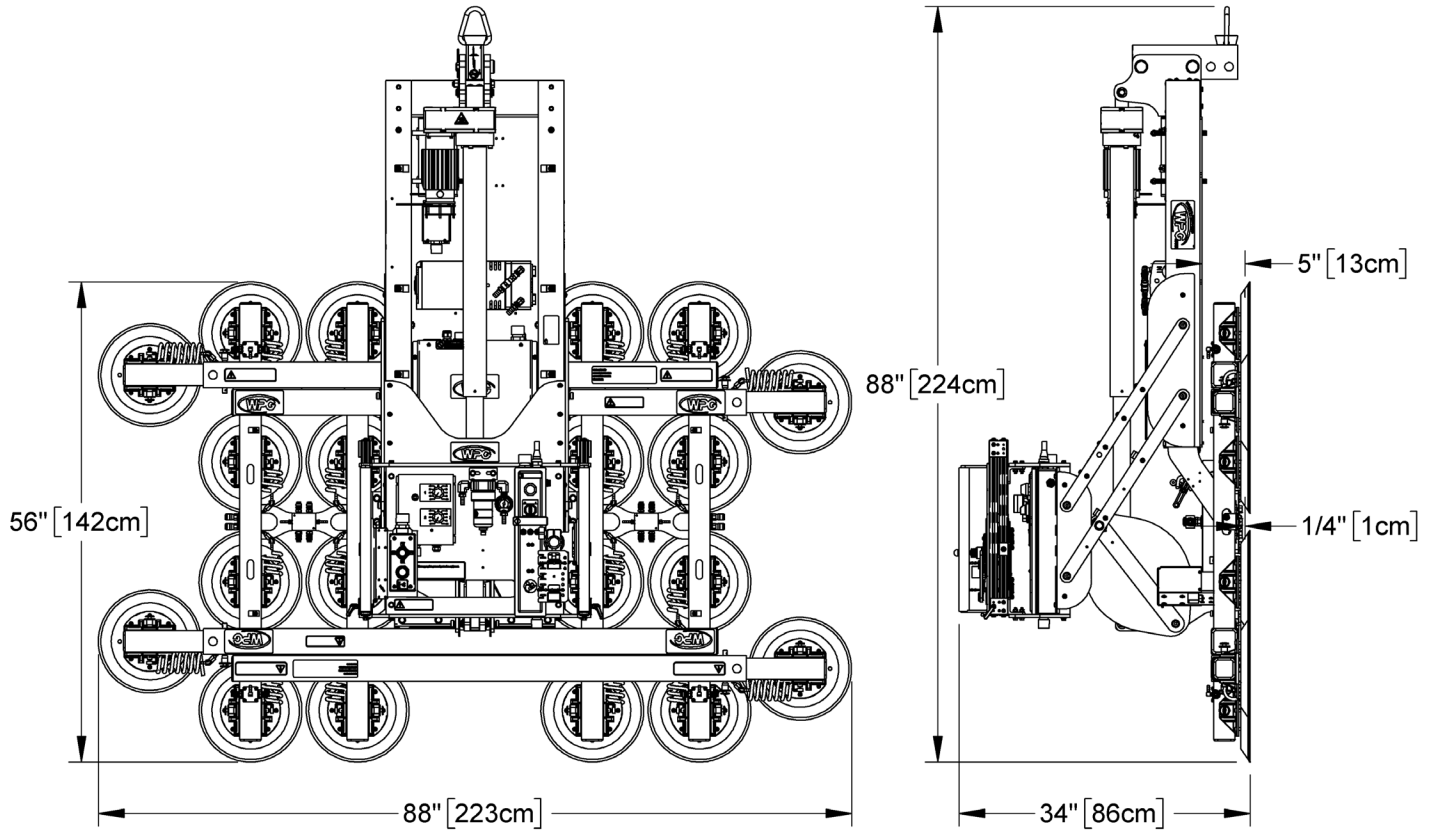
- 1..... Available with other rubber compounds for special purposes (see [www.wpg.com](http://www.wpg.com)).
- 2..... These dimensions reflect pad configurations with the Maximum Load Capacity; other configurations are possible for lighter loads.
- 3..... The Maximum Load Capacity is rated at a vacuum of 16" Hg [-54 kPa] on clean, smooth, nonporous flat surfaces with a friction coefficient of 1. Pad compound, load rigidity, strength, surface conditions, overhang, angle, center of gravity and temperature can also affect the lifting capacity. A "qualified person" should evaluate the effective lifting capacity for each use (see definition under "Rated Load Test").
- 4..... Specifications shown for 120V AC lifters; characteristics may vary for other voltages.
- 5..... Load Weight must not exceed the lifter model's Maximum Load Capacity.
- 6..... Vacuum pads, filter elements and other wear-out items are excluded.
- 7..... To view this guide, click the link at right. Additionally, you can search for your lifter's Model Number at [www.wpg.com](http://www.wpg.com) and select the "Troubleshooting" link on the product page.

# SPECIFICATIONS



*Note: A standard MRPTH89AC (top) and a standard MRPTH1211LAC (bottom) are shown.*

# SPECIFICATIONS



*Note: A standard MRPTH2011LAC is shown.*

# SAFETY



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



Do not remove or obscure safety labels.



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



Use the lifter only in an approved "OPERATING ENVIRONMENT" (see "INTENDED USE").



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



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



Do not use a lifter to lift cracked or broken glass.



Do not exceed the Maximum Load Capacity or lift loads the lifter is not designed for (see "INTENDED USE").



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



Make sure the contact surfaces of the load and vacuum pads are clean before attaching the lifter (see "MAINTENANCE").



Position the vacuum pads correctly on the load before lifting (see "OPERATION: Positioning the Lifter on the Load").



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



Keep unauthorized personnel away from the lifter, to avoid injury in case of an unintended load release.



Do not touch the vacuum release controls during a lift.



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



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



Do not position a loaded or unloaded lifter over people.

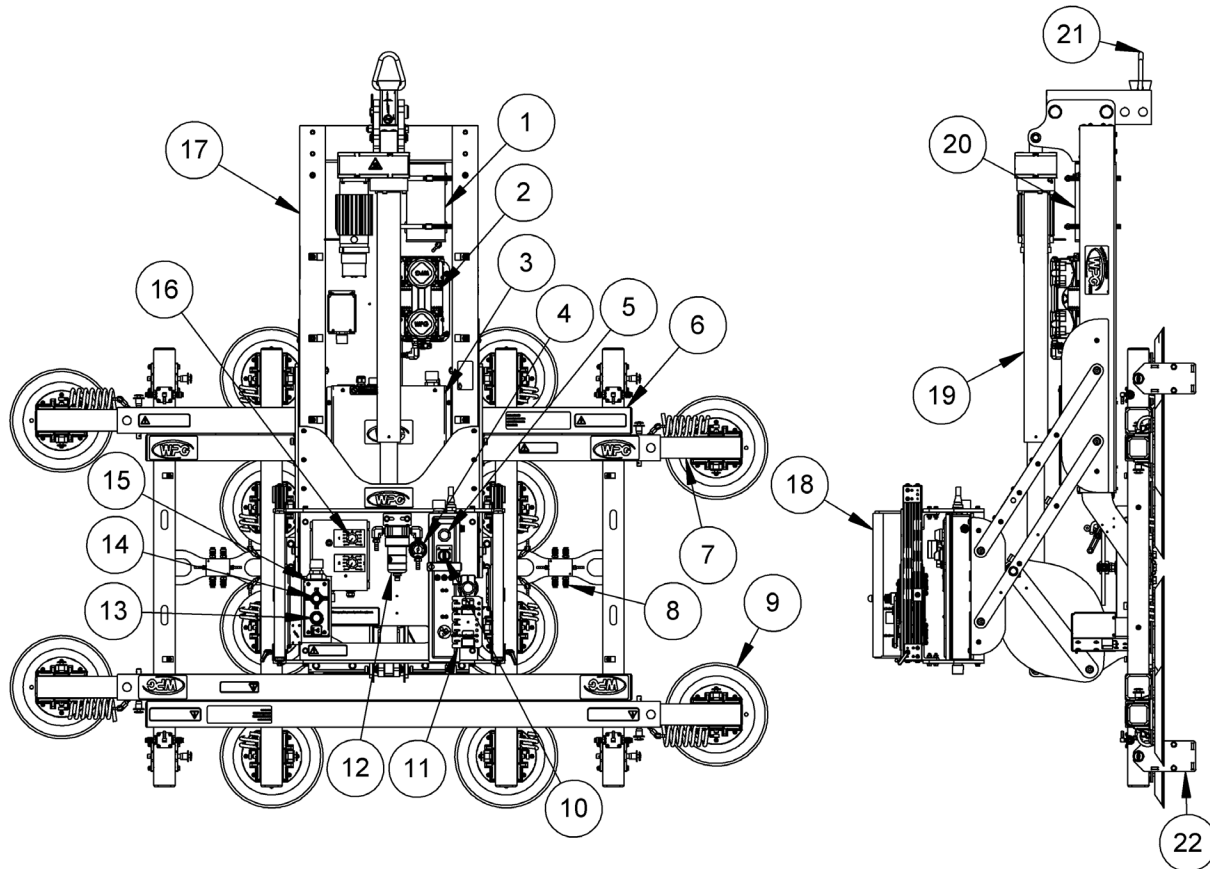


Before servicing a powered lifter, place the power control in the inactive position and, when possible, disconnect the power source.



# OPERATING FEATURES

Features shown here are underlined> on their first appearance in each section following.<sup>1</sup>



- |    |                          |    |                                       |    |                                 |
|----|--------------------------|----|---------------------------------------|----|---------------------------------|
| 1  | VACUUM RESERVE TANK      | 2  | VACUUM PUMP                           | 3  | Enclosure w/VACUUM SWITCH       |
| 4  | VACUUM GAUGE             | 5  | VACUUM LIFT LIGHT                     | 6  | PAD FRAME                       |
| 7  | TELESCOPING PAD ARM      | 8  | QUICK CONNECTOR                       | 9  | VACUUM PAD w/ MOVABLE PAD MOUNT |
| 10 | POWER SWITCH             | 11 | HOIST PENDANT HOLDER                  | 12 | AIR FILTER                      |
| 13 | VACUUM RELEASE BUTTON    | 14 | TILT & ROTATION RELEASE TOGGLE SWITCH | 15 | MOVABLE CONTROL PENDANT         |
| 16 | TILT SPEED CONTROLLER    | 17 | LIFT BAR                              | 18 | CONTROL HANDLE                  |
| 19 | TILT ACTUATOR            | 20 | TRANSFORMER (optional)                | 21 | LIFT POINT                      |
| 22 | PARKING STAND (optional) |    |                                       |    |                                 |

*Note: A standard MRPTH1211LAC is shown. Although some of the following photos do not show this specific lifter, they all illustrate how this kind of lifter functions.*

For information about specific parts, see [“REPLACEMENT PARTS”](#) and/or any separate instructions for Product Options.

<sup>1</sup>..... Some features may be optional, depending on the lifter in question.

# ASSEMBLY

- 1) Remove all shipping materials and save them with the shipping container for future use.
- 2) Connect the power cable:



**Make sure power source has ground fault circuit interrupter.**

- 2.1) Wire the female connector provided to an appropriate power source, as indicated on the label attached.



**Wiring must be done by qualified service personnel.**

*Note: Brown-outs, over-taxed generators, extension cords and other conditions can reduce power at the lifter.*



**Without adequate power, lifter could release load, resulting in load damage and personal injury.**

- 2.2) Route the power cable so that it does not become tangled during operation.

- 2.3) Plug in the power cable: Insert the power cable's male connector into the female connector and twist to secure them together (fig. 2A-B).

**2A**



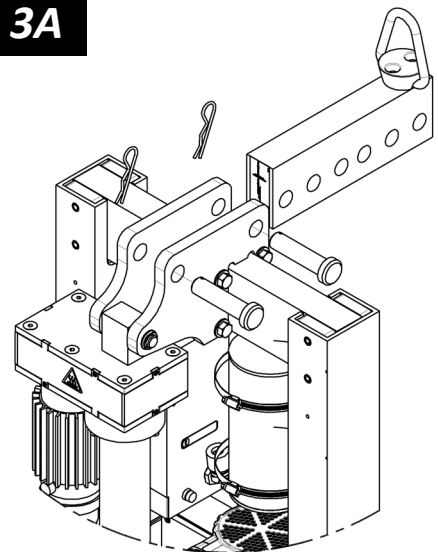
**2B**



- 3) As needed, adjust the lift point position (fig. 3A):<sup>1</sup>

- 3.1) Remove the cotter pins that secure the mounting pins. Then remove the mounting pins.
- 3.2) Move the lift point to the position that provides the best hang angle for the load.
- 3.3) Reinstall the mounting pins, and secure them with the cotter pins.

**3A**



**Make sure all hardware for adjustable lift point is installed securely before using lifter.**

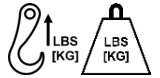
Failure to install adjustable lift point hardware securely can result in load damage or personal injury.

1..... Moving the lift point *forward* (away from operator) helps keep the hang angle vertical while the lifter is *loaded*; moving the lift spool *rearward* (towards operator) helps keep the hang angle vertical while the lifter is *unloaded*.

# ASSEMBLY


4) Suspend the lifter from appropriate hoisting equipment:

4.1) Select a crane and/or hoist rated for the Maximum Load Capacity plus the Lifter Weight.



*Note: Any lifter use must comply with all statutory or regulatory standards for hoisting equipment in your region.*

4.2) Attach the hoisting hook to the lift point (fig. 4D).

 **Make sure hook has restraining latch (circled in fig. 4E).**



*Note: Use rigging (fig. 4F) as needed to make sure the hook does not interfere with the load.*

 **Only use rigging rated for Maximum Load Capacity plus Lifter Weight.**

4.3) Use the hoisting equipment to remove the lifter from the shipping container. Avoid damaging the vacuum pads.

*Note: The hoist control pendant can be attached to the lifter by placing it in the hoist pendant holder provided.*

5) Remove the pad covers (fig. 5A) and save them for future use.



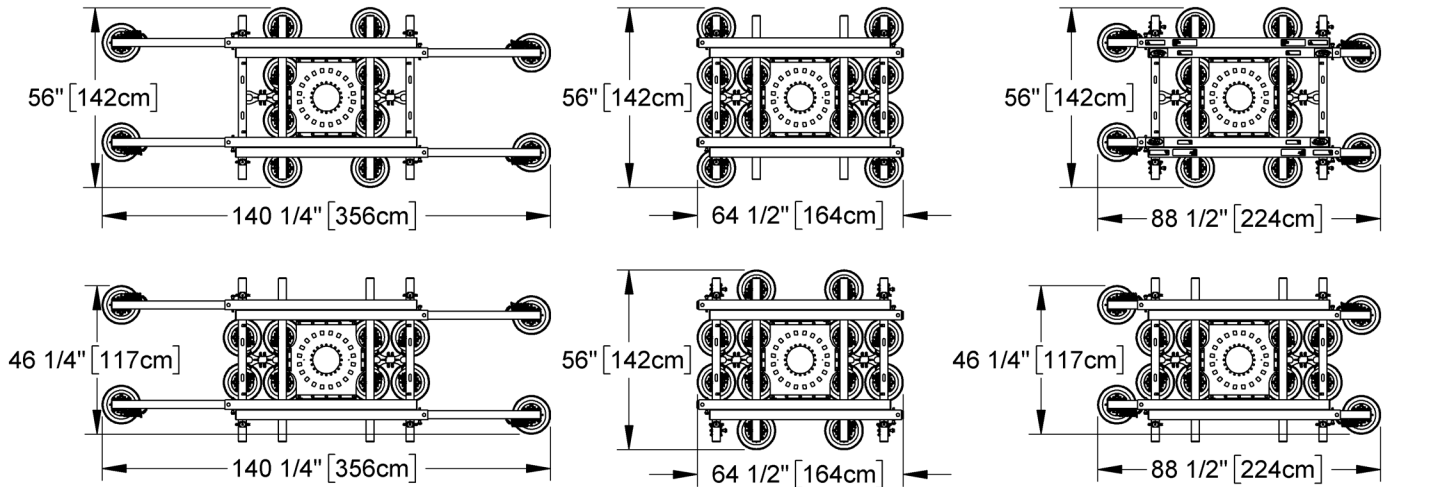
6) If the lifter has an adjustable pad frame, configure the frame for optimal load support (see [“TO CHANGE THE PAD FRAME CONFIGURATION”](#)).

7) Perform tests as required under [“TESTING”](#).

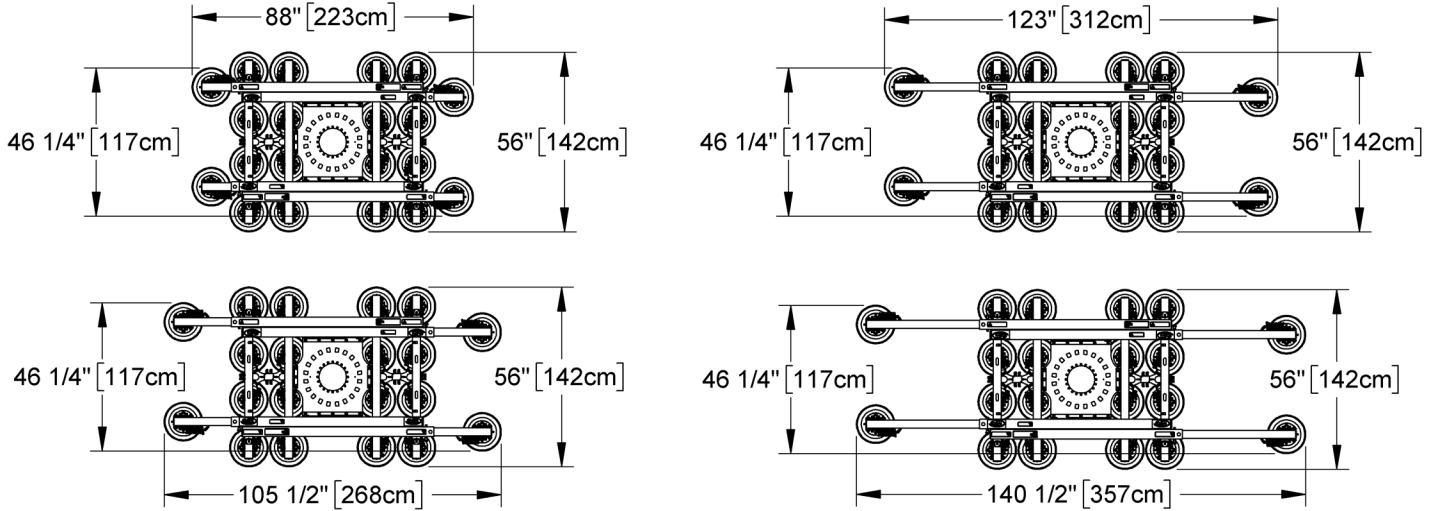
# ASSEMBLY

## TO CHANGE THE PAD FRAME CONFIGURATION

If the lifter has an adjustable pad frame, various configurations enable it to match different load dimensions:<sup>1</sup>



**MRPTH1211LAC**



**MRPTH2011LAC**

- 1) Choose a configuration to maximize support across the load surface and to minimize load overhang (see "LOAD CHARACTERISTICS").

1..... The configurations shown preserve the Maximum Load Capacity (see "SPECIFICATIONS"); other configurations are possible for lighter loads.

# ASSEMBLY

2) Reposition telescoping pad arms and reposition or remove movable pad mounts as needed (see following sections):

- To support the maximum load weight, you must install all vacuum pads on the pad frame



**Securely position vacuum hoses to avoid damage during lifter operation.**

and connect all vacuum hoses to the pads, using the quick connectors (see “[Connecting/Disconnecting Vacuum Hoses](#)”).

- To support larger load dimensions, you should extend telescoping pad arms on the pad frame.
- To support smaller dimensions and weights, you may retract telescoping pad arms or remove some vacuum pads and disconnect the corresponding vacuum hoses, **provided the lifter still has sufficient capacity to support the load in question.**<sup>1</sup>

*Note: To calculate the lifting capacity when some pads are removed, consult the Per-Pad Load Capacity and multiply by the number of pads currently in use.*



**Caution:** Always position pads in a symmetrical configuration and use as many pads as possible, to maximize lifting capacity and minimize load overhang.

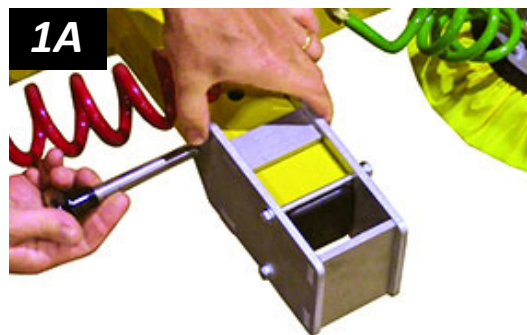


**Use only symmetrical pad frame configurations.**

## Removing the Parking Stands

Parking stands must be removed to accommodate certain pad frame configurations:

- 1) Remove the cotterless hitch pin (fig. 1A).
- 2) Slide the parking stand off the pad frame (fig. 2A).
- 3) Repeat steps 1-2 to remove the other parking stands.



1..... 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.

# ASSEMBLY

## Extending/Retracting the Telescoping Pad Arms

- 1) Remove the cotterless hitch pin and slide a telescoping pad arm into or out of the pad frame until the hitch pin holes align at the desired position (fig. 1A).<sup>1</sup>



- 2) Reinsert the pin to secure the telescoping pad arm (fig. 2A).
- 3) Repeat steps 1-2 to reposition other telescoping pad arms, as needed.

## Repositioning (or Removing) Movable Pad Mounts

- 1) Remove the cotterless hitch pin from a movable pad mount (fig. 1B).



- 2) Move the pad mount to the desired position on the pad frame and align the pin holes (fig. 2B).
- 3) Reinsert the pin to secure the pad mount (fig. 3A).
- 4) Repeat steps 1-3 to position other pad mounts, as needed.

To remove a vacuum pad altogether, disconnect the corresponding vacuum hose (see next section) and remove the pad mount as previously directed. Store removed components in a clean, dry location.



***Removing or disconnecting any vacuum pad reduces lifting capacity.***

1..... Pad arms should not be removed during normal operation of the lifter.

# ASSEMBLY

## Connecting/Disconnecting Vacuum Hoses



***Make sure quick connectors seal completely and all vacuum hoses function correctly (see “Vacuum Test”).***

To *connect* a vacuum hose, push the male and female ends of the quick connector together until they lock (fig. 1A-B).



To *disconnect* a vacuum hose, move the release ring on the female end until the quick connector separates (figs. 2A-B).



## LOAD CHARACTERISTICS

Make sure the vacuum lifter is intended to handle each load according to these requirements:



**Do NOT lift explosives, radioactive substances or other hazardous materials.**



- The load weight must not exceed the Maximum Load Capacity.
- The load must be a single piece of relatively nonporous material with a flat and relatively smooth contact surface.<sup>1, 2</sup> To determine whether the load is too porous or rough, perform the “[Lifter/Load Compatibility Test](#)”.
- The load's contact surface must be able to obtain a friction coefficient of 1 with the lifter's vacuum pads (see “[Pad-to-Load Friction Coefficient](#)”). Otherwise, the capacity should be derated appropriately.
- The load's surface temperature must not exceed the Operating Temperatures.<sup>3</sup>
- The load's *minimum* length and width are determined by the current Pad Spread (see “SPECIFICATIONS”).
- The load's *maximum* length and width are determined by its allowable overhang.<sup>4</sup>
- 1" [2.5 cm] is the allowable thickness at Maximum Load Capacity.<sup>5</sup>



*Note: Standard vacuum pads can stain or deform load surfaces with light colors or soft coatings. Test such surfaces for damaging effects before using the lifter on them.<sup>6</sup>*

1..... Although concave vacuum pads can also attach to some curved loads, curvature can reduce lifting capacity. Contact WPG for more information.

2..... A “single piece” of material includes curtainwall assemblies, unitized glazing systems and similar construction units.

3..... Vacuum pads made from a heat-resistant rubber compound can enable you to lift loads with higher surface temperatures. Contact WPG or an authorized dealer for more information.

4..... The allowable overhang is the amount of load material that can extend sideways beyond the vacuum pads without breaking or otherwise being damaged. This depends on the load material, its thickness, and the angle of handling (if any). Since every material has different physical properties, the allowable overhang must be evaluated separately for each load type. Contact WPG or an authorized dealer for more information.

5..... However, the allowable thickness increases as load weight decreases. Contact WPG for more information.

6..... Alternative rubber compounds are available for these purposes. Contact WPG or an authorized dealer for more information.



# INTENDED USE

## OPERATING ENVIRONMENT

Make sure the vacuum lifter is intended for use in each work environment, given the following restrictions:

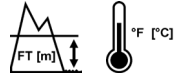
- This lifter is not intended for any environment that is dangerous to the operator or damaging to the lifter. Avoid environments containing explosives, caustic chemicals and other dangerous substances.

 **Never use lifter in dangerous environments.**



***Metal particles and similar environmental contaminants could result in vacuum pump failure.***

- The work environment is limited by the Operating Elevation and Operating Temperatures.<sup>1, 2</sup>
- The lifter is not designed to be watertight. Do not use it in rain or other unsuitable conditions.



***Moisture can result in reduced lifting capacity.***

**CE/UKCA** — A secondary positive holding device is required to lift loads on construction sites.

## DISPOSAL OF THE LIFTER

After the Service Life of the vacuum lifter has ended (see “SPECIFICATIONS”), dispose of it in compliance with all local codes and applicable regulatory standards.

1..... Although lifter use may be possible at higher elevation, lifting capacity is reduced whenever the lifter is unable to attain vacuum in the green range on the vacuum gauge. Contact WPG for more information.

2..... Special provisions may allow the lifter to operate outside the specified temperature range. Contact WPG for more information.

## BEFORE USING THE LIFTER

Determine whether the vacuum lifter is capable of each intended task (see “SPECIFICATIONS” and “[INTENDED USE](#)”). Then complete the following preparations:

### Taking Safety Precautions

- Be trained in all industry and regulatory standards for lifter operation in your region.
- Follow trade association guidelines about precautions needed for each load material.



***Read all directions and safety rules before using lifter.***



***Always wear appropriate personal protective equipment.***

### Performing Inspections and Tests

- Follow the “[INSPECTION SCHEDULE](#)” and “[TESTING](#)”.
- Examine the [air filter](#) and perform service whenever its bowl contains liquid or other contaminants or its element appears dirty (see “[AIR FILTER MAINTENANCE](#)” in [SERVICE MANUAL](#)).<sup>1</sup>



***Examine air filter regularly and service when needed.***

1..... Lifters used on wet load surfaces must be equipped with 2 or more filters connected *in series*. See “[OPERATING ENVIRONMENT](#)” for restrictions.

# OPERATION

## To ATTACH THE PADS TO A LOAD

### Generating Airflow

Place the power switch in the “on” position ( | ), to engage the vacuum pump.<sup>1</sup>



**Keep pump running throughout lift.**

The lifter is designed for the vacuum pump to run continuously. Placing the power switch in the “off” position (○) during lifter operation could result in a load release and personal injury (see “[In Case of a Power Failure](#)”).

### Positioning the Lifter on the Load

- 1) Make sure the contact surfaces of the load and vacuum pads are clean (fig. 1A; see “[Pad Cleaning](#)”).



- 2) Center the pad frame on the load (fig. 2A).<sup>2</sup>



1..... If any powered component fails to function while the power switch is in the “on” position, make sure the lifter is connected correctly to an appropriate power source (see “ASSEMBLY”). If so, examine each circuit breaker (next to power switch) to determine whether it has interrupted the electrical circuit to the component. Although you can reset the circuit breaker, the power interruption may indicate an electrical problem that requires attention. Any fault must be corrected before resuming normal operation of the lifter.

2..... The lifter is designed to handle the maximum load weight when the load’s center of gravity is positioned within 2" [5 cm] of the pad frame’s center point. Uncentered loads may rotate unexpectedly or interfere with the lifter’s tilt capability.

# OPERATION

- 3) Make sure all vacuum pads will fit on the load and will be loaded evenly (fig. 3A). Consult the Per-Pad Load Capacity.

3A



- 4) Place the vacuum pads in contact with the load surface until they begin to seal.<sup>1</sup>

## Reading the Vacuum Gauge

A vacuum gauge shows the current vacuum level in positive inches of Hg and negative kPa:

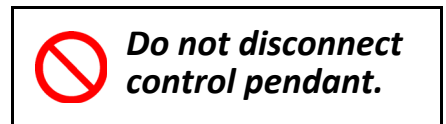
- **Green range** ( $\geq 16$ " Hg [-54 kPa]): Vacuum level is sufficient to lift the maximum load weight (fig. 1B).
- **Red range** ( $< 16$ " Hg [-54 kPa]): Vacuum level is **not** sufficient to lift the maximum load weight (fig. 1C).



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

Once the pads have sealed, the lifter should be able to maintain sufficient vacuum for lifting, except when used above the maximum Operating Elevation.<sup>2</sup> If it does not, perform the "Vacuum Test".

*Note: Disconnecting the movable control pendant during lifter operation is likely to result in a load release and personal injury.*



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

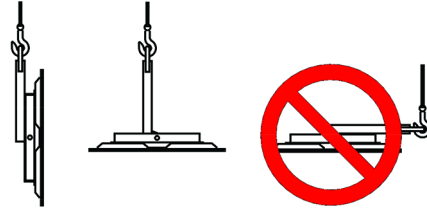
2..... If the lifter is used above the maximum Operating Elevation (see "SPECIFICATIONS"), it may not be able to maintain sufficient vacuum for lifting. Contact WPG for more information.

# OPERATION

## To Lift and Move the Load



***Lift bar must be vertical to lift load.***



## Interpreting the Lift Light



When vacuum is sufficient to lift the Maximum Load Capacity, the vacuum lift light turns on automatically.



***Never lift load unless lift light is illuminated, because premature lifting could result in load release and personal injury.***

## Monitoring Vacuum Indicators

Monitor the vacuum lift light and the vacuum gauge (fig. 1B) throughout the entire lift.

The vacuum pump runs continuously to maintain sufficient vacuum for lifting the maximum load weight.

However, if the lift light turns off and the ***vacuum gauge shows a level less than 16" Hg [-54 kPa]:***



***Make sure all vacuum indicators remain completely visible.***

1) Keep everyone away from a suspended load until it can be safely lowered to a stable support.



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

2) Stop using the lifter until the cause of the vacuum loss can be identified: Conduct the “[Pad Inspection](#)” and perform the “[Vacuum Test](#)”.

3) Correct any faults before resuming normal operation of the lifter.

# OPERATION

## Controlling the Lifter and Load

When the lifter is ready, use the hoisting equipment to raise the lifter and load as needed.

Use a control handle (circled in fig. 1A) to keep the lifter and load in the required position.

Once there is enough clearance, you may move the load as required.



## In Case of a Power Failure

A vacuum reserve tank helps maintain vacuum temporarily in the event of a power failure. Although the lifter is designed to support the load for at least 5 minutes without power, this depends on many factors, including the [“LOAD CHARACTERISTICS”](#) and the condition of the vacuum pads (see [“VACUUM PAD MAINTENANCE”](#)).

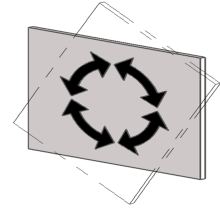
If a power failure occurs, keep everyone away from a suspended load until it can be safely lowered to a stable support. Correct any faults before resuming normal operation of the lifter.



***Stay clear of any suspended load during power failure.***

# OPERATION

## To ROTATE THE LOAD



***Make sure load is positioned correctly on lifter (as previously directed).***

- 1) Make sure the load has enough clearance to rotate without contacting anyone or anything.



***Keep hands and fingers away from pinch points between pad frame and lift bar.***

- 2) Keep the load under control at all times, using control lines, hand cups or other appropriate means.



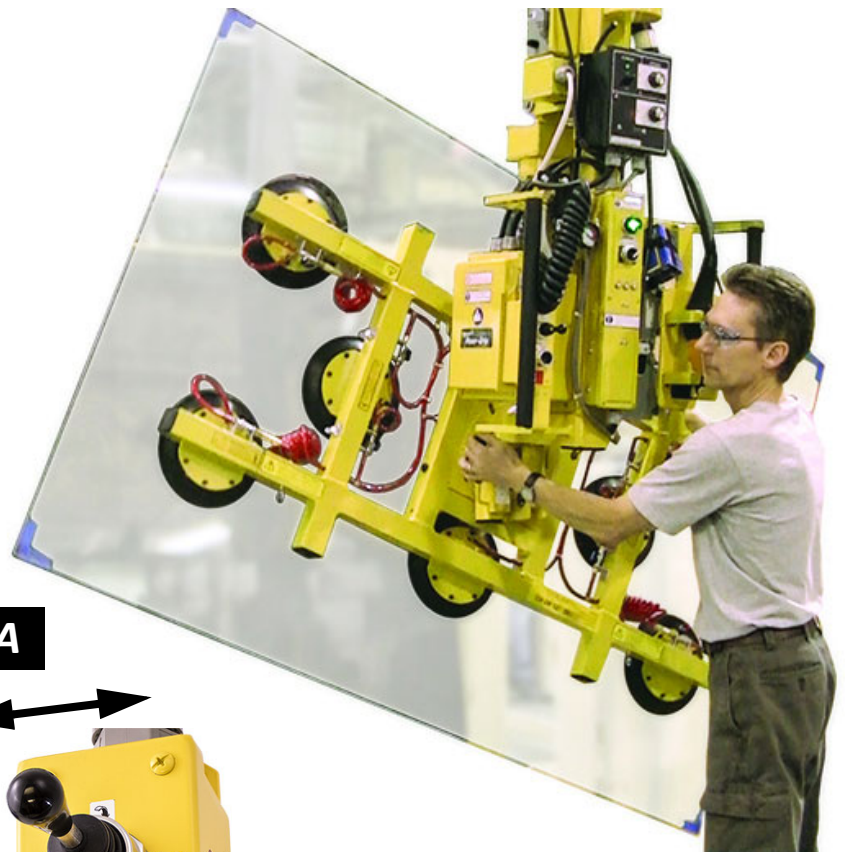
***Unbalanced loads may rotate unexpectedly when rotation latch is disengaged.***

- 3) Move the toggle switch on the movable control pendant left or right (fig. 3A) to disengage the rotation latch. Then rotate the load as required.

**3A**

- 4) To stop load motion, let go of the toggle switch and guide the load to the next stop.

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

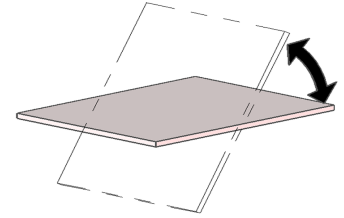


# OPERATION

## To TILT THE LOAD



**Make sure load is positioned correctly on lifter (as previously directed).**

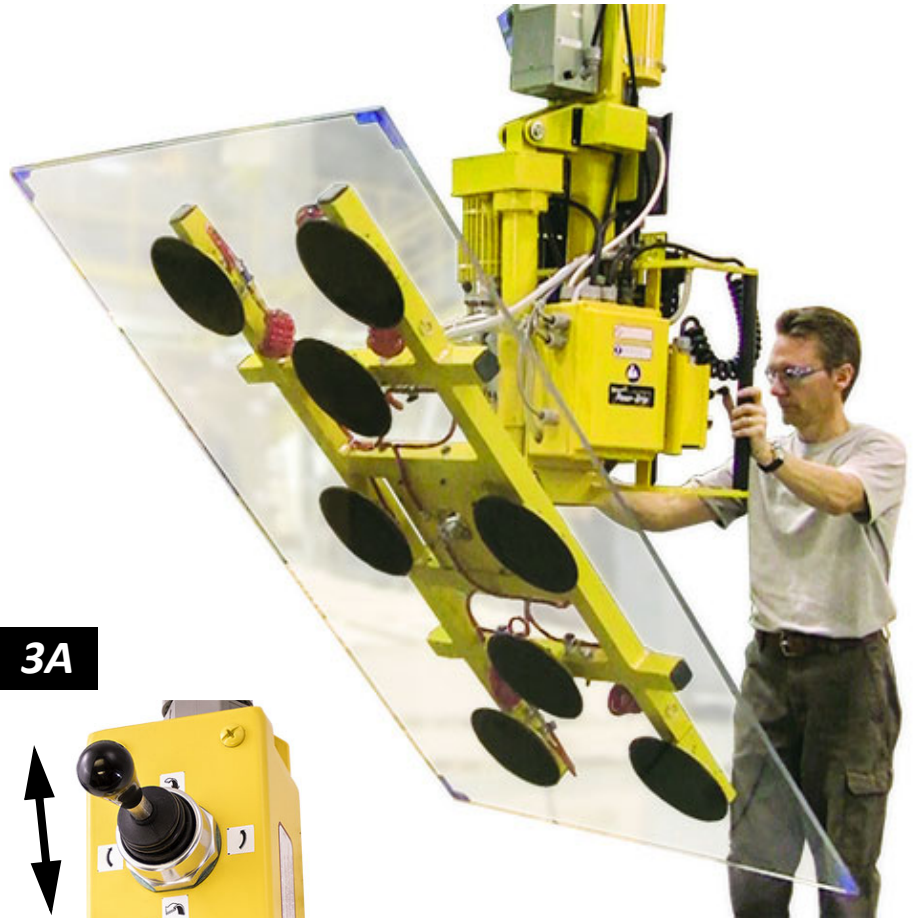


- 1) Make sure the load has enough clearance to tilt without contacting anyone or anything.

**Caution:** Load must meet “LOAD CHARACTERISTICS” and must be positioned as directed in “Positioning the Lifter on the Load” to avoid damaging the actuator when tilting.

**Caution:** Do not exceed Maximum Duty Cycle for your Load Weight (see “Tilt Capabilities” under “SPECIFICATIONS”).

**Note:** See “LOAD CHARACTERISTICS” about allowable load overhang.



**3A**



- 2) Move the toggle switch on the movable control pendant up or down (fig. 3A), to tilt the load as required.
- 3) Release the toggle switch to stop motion.



# OPERATION

## TO RELEASE THE PADS FROM THE LOAD



**Make sure load is at rest and fully supported before releasing vacuum pads.**

- 1) Push the vacuum release button (|→) — circled in fig. 1A) on the movable control pendant, to break the vacuum seal.



**Do not move lifter until pads release completely, because such movement could result in load damage or personal injury.**

- 2) Continue to hold the release button until the vacuum pads release the load completely. Otherwise, the lifter will automatically reattach.

Before you lift another load, perform the Every-Lift Inspection (see “[INSPECTION SCHEDULE](#)”).



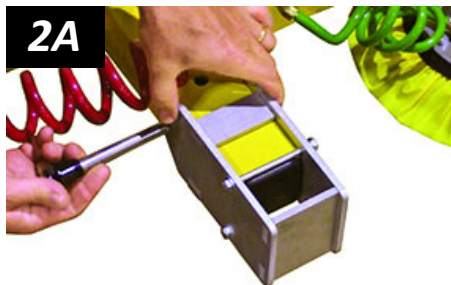
## AFTER USING THE LIFTER

- 1) Place the power switch in the “off” position (○).

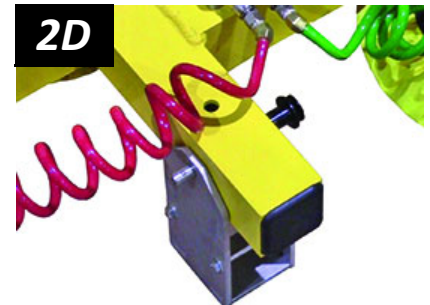
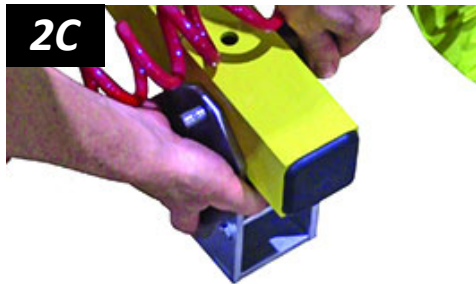
**Caution:** Do not set the lifter on surfaces that could soil or damage vacuum pads.

- 2) If the lifter has parking stands, position them to support the lifter:

- 2.1) Remove the cotterless hitch pin and slide a parking stand off the pad frame (figs. 2A-B).



- 2.2) Rotate the parking stand 90° to its functional position, and slide it back onto the pad frame. Then align the hitch pin holes and reinsert the cotterless hitch pin to secure the stand (figs. 2C-D).



- 2.3) Repeat steps 2.1 and 2.2 to move the other parking stands as described.

# OPERATION

- 3) Use the hoisting equipment to lower the vacuum lifter gently onto a stable support. Then detach the hoisting hook from the lift point.

## Storing the Lifter

- 1) Unplug the power cord (see “ASSEMBLY”).
- 2) Use the covers supplied to keep the vacuum pads clean (fig. 1A).



**CE/UKCA** — *To prevent the lifter from tipping over on relatively horizontal surfaces, use the parking stands as previously described, if the lifter has them. Otherwise, place the vacuum pads facedown on a clean, smooth, flat surface, lower the lift bar and place a support under the lift point.<sup>1</sup>*

- 3) Store the lifter in a clean, dry location.

## Transporting the Lifter

Secure the lifter in the original shipping container with the original shipping materials or equivalent.

---

1..... Storing the lifter without placing a support under the lift bar can result in damage to the tilt actuator.

# INSPECTIONS AND TESTS

## INSPECTION SCHEDULE

Perform inspections according to the following frequency schedule. If any fault is found, correct it and perform the next most frequent inspection before using the vacuum lifter.

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

Action	Every Lift	Frequent <sup>1</sup> (every 20-40 hrs)	Periodic <sup>2</sup> (every 250-400 hrs)
Examine <u>vacuum pads</u> for contaminants or damage (see “ <a href="#">Pad Inspection</a> ”).	✓	✓	✓
Examine load surface for contaminants or debris.	✓	✓	✓
Examine controls and indicators for damage.	✓	✓	✓
Examine lifter’s structure for damage.		✓	✓
Examine vacuum system for damage (including <u>vacuum pads</u> , fittings and hoses).		✓	✓
Examine <u>air filter</u> for conditions requiring service (see “AIR FILTER MAINTENANCE” in <a href="#">SERVICE MANUAL</a> ).		✓	✓
Perform “ <a href="#">Vacuum Test</a> ”.		✓	✓
Check for unusual vibrations or noises while operating lifter.		✓	✓
Examine entire lifter for evidence of: <ul style="list-style-type: none"> <li>• looseness, excessive wear or excessive corrosion</li> <li>• deformation, cracks, dents to structural or functional components</li> <li>• cuts in vacuum pads or hoses</li> <li>• any other hazardous conditions</li> </ul>			✓
Inspect drive belt for <u>tilt actuator</u> (see “TILT COMPONENTS MAINTENANCE” in <a href="#">SERVICE MANUAL</a> ).			✓
Inspect entire electrical system for damage, wear or contamination that could be hazardous, in compliance with all local codes and regulatory standards. <b>Caution:</b> Use appropriate cleaning methods for each electrical part, as specified by codes and standards. Improper cleaning can damage parts.			✓

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

2..... The Periodic Inspection is also required whenever the lifter has been out of service for 1 year or more. Keep a written record of all Periodic Inspections. If necessary, return the lifter to WPG or an authorized dealer for repair (see “[LIMITED WARRANTY](#)”).

## TESTING

Perform the following test to determine whether or not a load surface is too porous or rough:

### Lifter/Load Compatibility Test<sup>1</sup>

- 1) Make sure the vacuum generating system is functioning correctly (see “[Vacuum Test](#)”).
- 2) Thoroughly clean the load surface and the vacuum pads (see “[Pad Cleaning](#)”).
- 3) Place the load in the upright position on a stable support.
- 4) Attach the vacuum pads to the load as previously directed.
- 5) After the vacuum level appears in the green range on the vacuum gauge, place the power switch in the “off” position (○).
- 6) Raise the load a minimal distance, to make sure it is supported by the lifter.
- 7) Watch the vacuum gauge: **Starting from a vacuum level of 16" Hg [-54 kPa], the lifter must maintain a vacuum level greater than 12" Hg [-41 kPa] for 5 minutes.**<sup>2</sup> If not, lifting this load requires additional precautions (eg, a load sling). Contact WPG for more information.
- 8) Lower the load *after* 5 minutes or *before* the vacuum level diminishes to 12" Hg [-41 kPa].



**Take precautions in case load should fall during test.**

1..... The “[Pad-to-Load Friction Coefficient](#)” can affect the outcome of this test.

2..... Under CE and UKCA requirements, the lifter must maintain a vacuum level **greater than 8" [-27 kPa]**.

# INSPECTIONS AND TESTS

Perform the following tests before placing the lifter in service *initially, following any repair*, when directed in the “*INSPECTION SCHEDULE*”, or *whenever necessary*:

## Operational Tests

Test all features and functions of the lifter (see “OPERATING FEATURES” and “OPERATION”).

## Vacuum Test

- 1) Clean the face of each vacuum pad (see “*Pad Cleaning*”).
- 2) Use a test load with weight equal to the Maximum Load Capacity, a clean, smooth, nonporous surface and other appropriate “*LOAD CHARACTERISTICS*”.<sup>1</sup>
- 3) Attach the lifter to the test load as previously directed.



- 4) After the vacuum level appears in the green range on the vacuum gauge, raise the load a minimal distance and place the power switch in the “off” position (○).



**Take precautions in case load should fall during test.**

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

- 6) Lower the load after 5 minutes or whenever a lifter fails the test, and release the load as previously directed.



**Never use lifter that has failed test.**

- 7) Correct any fault in the vacuum system before returning the lifter to service.




**This service must be performed by qualified service personnel.**

1..... The load should have either a flat surface or no more curvature than the lifter is designed for, if any.

# INSPECTIONS AND TESTS

## Rated Load Test<sup>1</sup>

The following steps must be performed or supervised by a qualified person:<sup>2</sup>

- 1) Use a test load that weighs 125% ( $\pm 5\%$ ) of the Maximum Load Capacity and has the appropriate “LOAD CHARACTERISTICS”. 
- 2) Attach the vacuum pads to the load as previously directed.
- 3) Position the load to produce the greatest stress on the lifter consistent with “INTENDED USE”.
- 4) Raise the load a minimal distance and leave it suspended for 2 minutes.
- 5) Once the test is completed, lower the load for release as previously directed.
- 6) Inspect the lifter for any stress damage, and repair or replace components as necessary to successfully pass the test.
- 7) Prepare a written report of the test and keep it on file.



***Take precautions in case load should fall during test.***



***Never use lifter that has failed test.***

---

1..... An equivalent simulation may also be used. Contact WPG for more information.

2..... A “qualified person” has successfully demonstrated the ability to solve problems relating to the subject matter and work, either by possessing a recognized degree in an applicable field or a certificate of professional standing, or by possessing extensive knowledge, training and experience.

# MAINTENANCE

Note: Refer to [SERVICE MANUAL #35277](#) when applicable.

## VACUUM PAD MAINTENANCE

### Pad-to-Load Friction Coefficient

The friction coefficient represents the lifter's ability to resist load slippage. The Maximum Load Capacity is based on a friction coefficient of 1, as determined by testing of clean, new, standard rubber vacuum pads on clean, dry, regular glass. ***If the lifter is used under any other conditions, a qualified person must first determine the effective lifting capacity.***<sup>1</sup>



Long-term exposure to heat, chemicals or UV light can damage vacuum pads. Replace pads every 2 years or more often when necessary.

### Pad Inspection

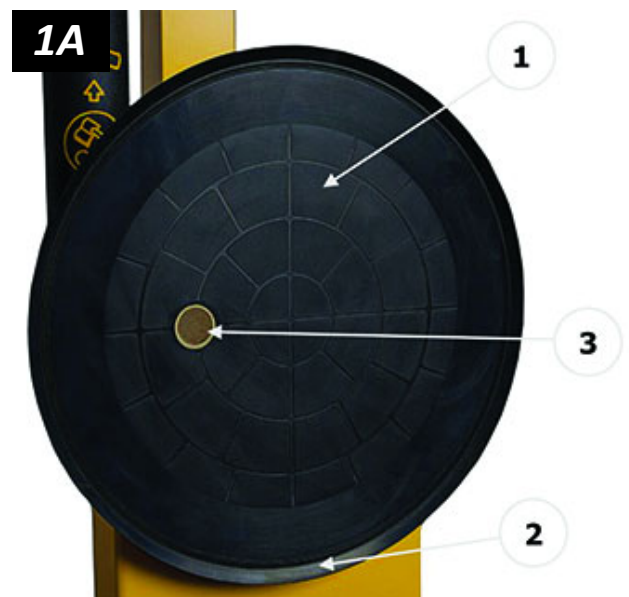
Inspect each vacuum pad (fig. 1A) according to the “[INSPECTION SCHEDULE](#)” and correct the following faults before using the lifter (see “[REPLACEMENT PARTS](#)”, when applicable):

- Contaminates on the face (item 1 in fig. 1A) or sealing edges (item 2 in fig. 1A).
- Filter screen (item 3 in fig. 1A) missing from face.



***Replace any pad that has damaged sealing edges.***

- Nicks, cuts, deformation or abrasions in sealing edges.
- Wear, stiffness or glaze.



1..... A “qualified person” has successfully demonstrated the ability to solve problems relating to the subject matter and work, either by possessing a recognized degree in an applicable field or a certificate of professional standing, or by possessing extensive knowledge, training and experience.

## Pad Cleaning

- 1) Regularly clean the face of each vacuum pad (fig. 1A), using soapy water or other mild cleansers to remove oil, dust and other contaminants.



***Never use harsh chemicals on vacuum pad.***

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



***Never use rubber conditioners on vacuum pad.***

Many rubber conditioners can leave a hazardous film on vacuum pads.

- 2) Prevent liquid from entering the vacuum system through the suction hole on the pad face.
- 3) Wipe each pad face clean, using a clean sponge or lint-free cloth to apply the cleanser.<sup>1</sup>
- 4) Allow each pad to dry completely before using the lifter.



1..... A brush with bristles *that do not harm rubber* can help remove contaminants clinging to sealing edges. If these cleaning methods are not successful, contact WPG or an authorized dealer for assistance.



# REPLACEMENT PARTS

Stock No.	Description	Qty. per Lifter
65444	Vacuum Hose – 1/2" ID x 0.748" OD – Clear	*
65440AM	Vacuum Hose – 0.245" ID x 3/8" OD x 120" length – Coiled – Red	8/12/20
65440	Vacuum Hose – 0.245" ID x 3/8" OD – Red	*
65438	Vacuum Hose – 1/8" ID x 1/4" OD – White	*
65301AM	Handle Grip Foam	2
65010	Pad Spring – Coil Type	8/12/20
64289	Bulb – 24 V – Bayonet (for vacuum lift light)	1
64262	Green Lens (for vacuum lift light)	1
64236	Vacuum Switch – 1/4 NPT	1
53132	Hose Fitting – Tee – 5/32" ID	1/3/3
53122	Pad Fitting – Elbow – 5/32" ID	8/12/20
49506TA	Vacuum Pad – Model VPFS9 / 9" [23 cm] Diameter (for MRPTH89AC)	8
49646T	Vacuum Pad – Model G3370 / 11" [28 cm] Diameter – Lipped (for MRPTH12/2011LAC)	12/20
49170	End Plug – 3" x 3" x 3/16" Tubing Size (for MRPTH12/2011LAC)	4
35277	Service Manual – AC – High Duty	1
29353	Pad Cover	8/12/20
16057	Quick Connector – 1/8 F-NPT – Male	8/12/20
16056M	Quick Connector – 1/8 M-NPT – Female	8/16/16
16056	Quick Connector – 1/8 F-NPT – Female	4/4/4
15910	Vacuum Gauge – 1/8 NPT – CBM Type	1
15632	Pad Filter Screen – Small (for VPFS9 pad)	8
15630	Pad Filter Screen – large (for G3370 pad)	12/20
13532	Cotterless Hitch Pin – 1/2" x 3-3/8"	8/16/20
10900	Shoulder Bolt – Socket Head – 5/16" x 1/2" x 1/4-20 Thread (for mounting vacuum pads)	48/76/120

\* Length as required; sold by the foot (approx 30.5 cm).

See **SERVICE MANUAL #35277** for additional parts.

**SERVICE ONLY WITH IDENTICAL REPLACEMENT PARTS,  
AVAILABLE AT [WPG.COM](http://WPG.COM) OR THROUGH AN AUTHORIZED WPG DEALER**

# LIMITED WARRANTY

Wood's Powr-Grip® (WPG) 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 below to obtain warranty service. If inspection shows that the problem is due to defective workmanship or materials, WPG 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, and/or;
- the product has been damaged, misused or neglected.

If a problem is not covered under warranty, WPG 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, then WPG will proceed with repairs.

## **TO OBTAIN REPAIRS OR WARRANTY SERVICE**

### **For purchases in *North America*:**

Contact the WPG Technical Service Department. When factory service is required, ship the complete product – prepaid – along with your name, address and phone number to the street address listed at the bottom of this page. WPG may be reached by phone or fax numbers listed below.

### **For purchases in all *other localities*:**

Contact your dealer or the WPG Technical Service Department for assistance. WPG may be reached by phone or fax numbers listed below.

Wood's Powr-Grip Co., Inc.

908 West Main St.

Laurel, MT 59044 USA

406-628-8231 (phone)

800-548-7341 (phone)

406-628-8354 (fax)

KEEP FOR FUTURE REFERENCE

# ENGINEERING DRAWINGS



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Laurel, MT USA 59044  
800-548-7341 (phone) • 406-628-8231 (phone)  
406-628-8354 (fax) • [www.WPG.com](http://www.WPG.com)

**MANUAL ROTATOR / POWER FILTER,  
HIGH-DUTY VERSION, AC-VOLTAGE**

Model numbers: MRPTH89AC, MRPTH1211LAC, MRPTH2011LAC

TYPE: **STANDARD** FILE DIRECTORY: **700**  
 FILE [SHEET]: **700-W06 [W06]**

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**WPG**

STANDARD PARTS  
 N/A

4SCFM 100/120/240VAC 50/60HZ ROT VANE VAC PMP WIR SCH  
 D700-W06 [W06]

SIZE: SCALE: **A** NONE REVISION: **01.A** ECN NUMBER: **4478** ECN DATE: **01/10/2018** ECN BY: **JAC** EST. WEIGHT: **N/A**

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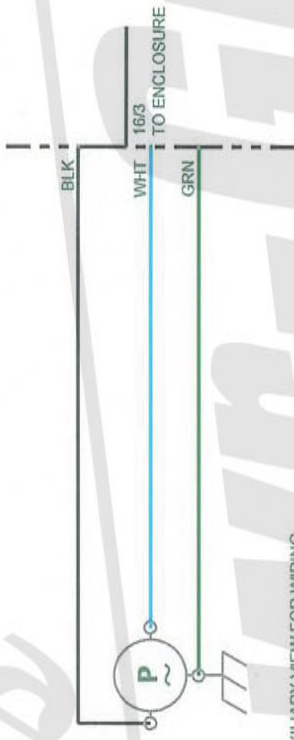
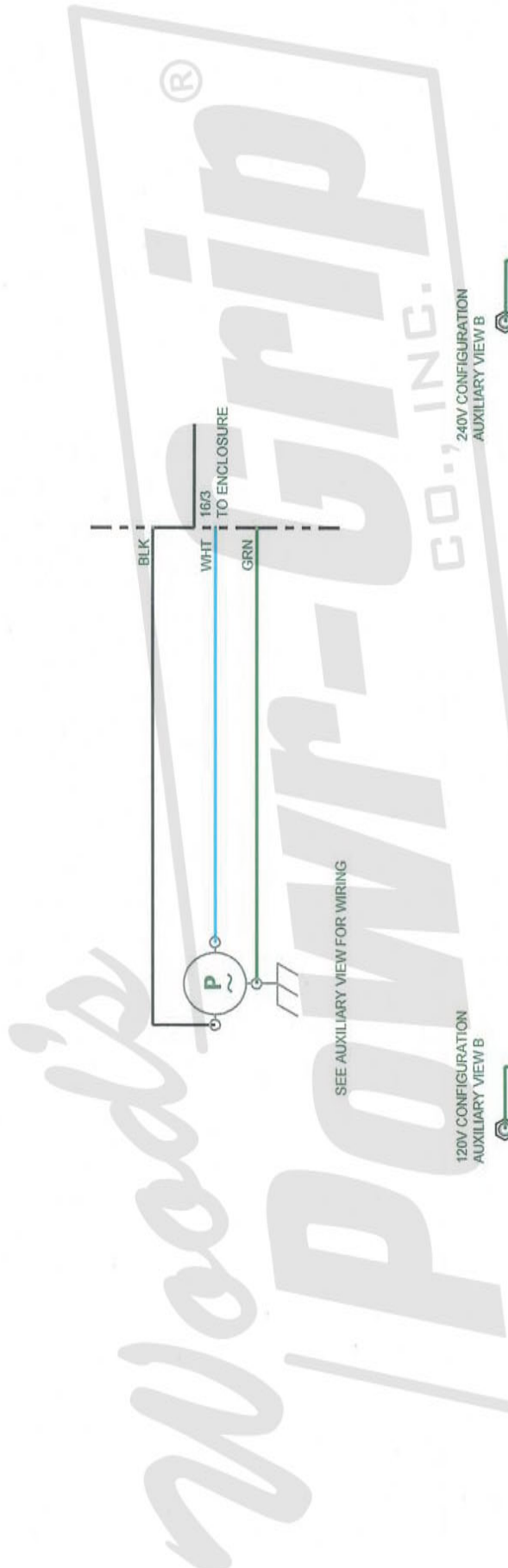
LINE STYLES AND WIDTHS FOR WIRE UNLESS NOTED OTHERWISE.

..... N/A  
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PRODUCT MANAGER: **GARY B.** DATE: **01/10/2018**

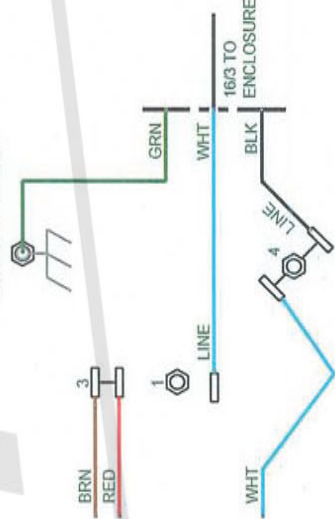
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APPROVED: **OWN** **1-15-18**

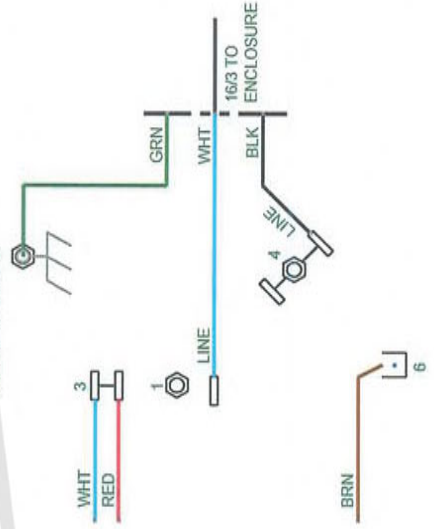


SEE AUXILIARY VIEW FOR WIRING

120V CONFIGURATION  
 AUXILIARY VIEW B



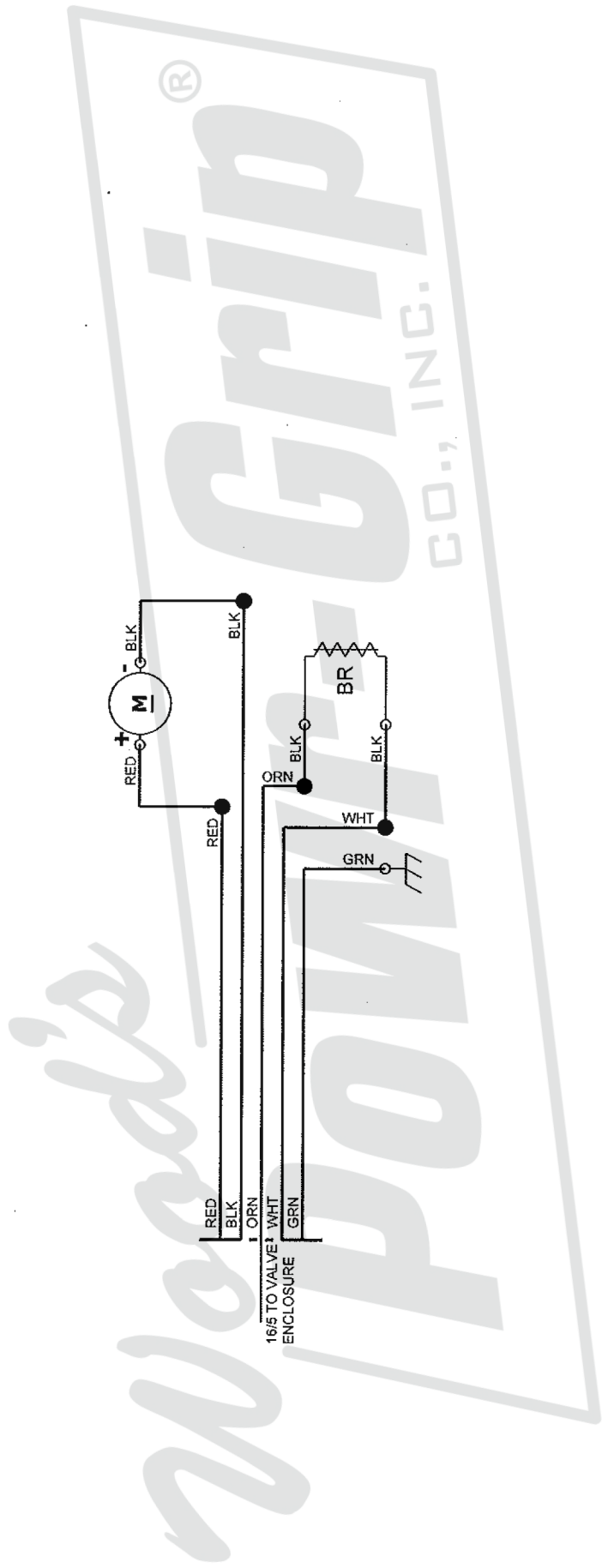
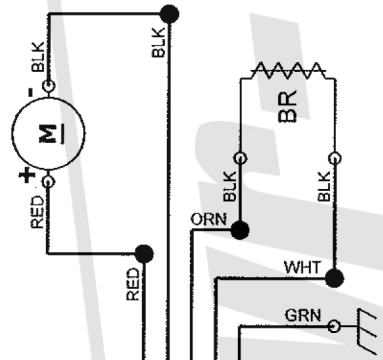
240V CONFIGURATION  
 AUXILIARY VIEW B



TYPE: <b>STANDARD</b>	FILE DIRECTORY: <b>720-W01 [W01]</b>
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HIGH-DUTY ACTUATOR N/A HIGH DUTY ACTUATOR WIRING SCHEMATIC D720-W01 [W01]	
SIZE: <b>A</b>	SCALE: <b>NONE</b>
REVISION: <b>01.A</b>	ECN NUMBER: <b>3711</b>
ECN DATE: <b>04/01/2015</b>	ECN BY: <b>KMK</b>
EST. WEIGHT: <b>N/A</b>	

WIRE LEGEND: CONTROLLED BY WIRING SYMBOLS DRAWING EXCEPT AS NOTED AND BELOW.  
 LINE STYLES AND WIDTHS FOR WIRE UNLESS NOTED OTHERWISE.

PRODUCT MANAGER: <b>JOSH E.</b>	DATE: <b>01/30/2004</b>
CHECKED: <i>OR</i>	<i>07-29-15</i>
APPROVED: <i>om</i>	<i>7-29-15</i>



WIRE LEGEND: CONTROLLED BY WIRING SYMBOLS DRAWING EXCEPT AS NOTED AND BELOW.

LINE STYLES AND WIDTHS FOR WIRE UNLESS NOTED OTHERWISE.

PRODUCT MANAGER: JOSH E.

CHECKED: CR

APPROVED: CMN

DATE: 01/30/2004

DATE: 05-22-17

DATE: 5-22-17

TYPE: STANDARD

FILE DIRECTORY: 720C-W02 [C-W02]

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WPG

LAUREL, MONTANA U.S.A.

HIGH-DUTY ACTUATOR DYNAMIC BRAKE DUAL CONTROL SPEED CONTROL WIRING SCHEMATIC D720C-W02 [C-W02]

REVISION: ECN NUMBER: 4322

ECN DATE: 05/08/2017

ECN BY: JAC

EST. WEIGHT: N/A

SCALE: A

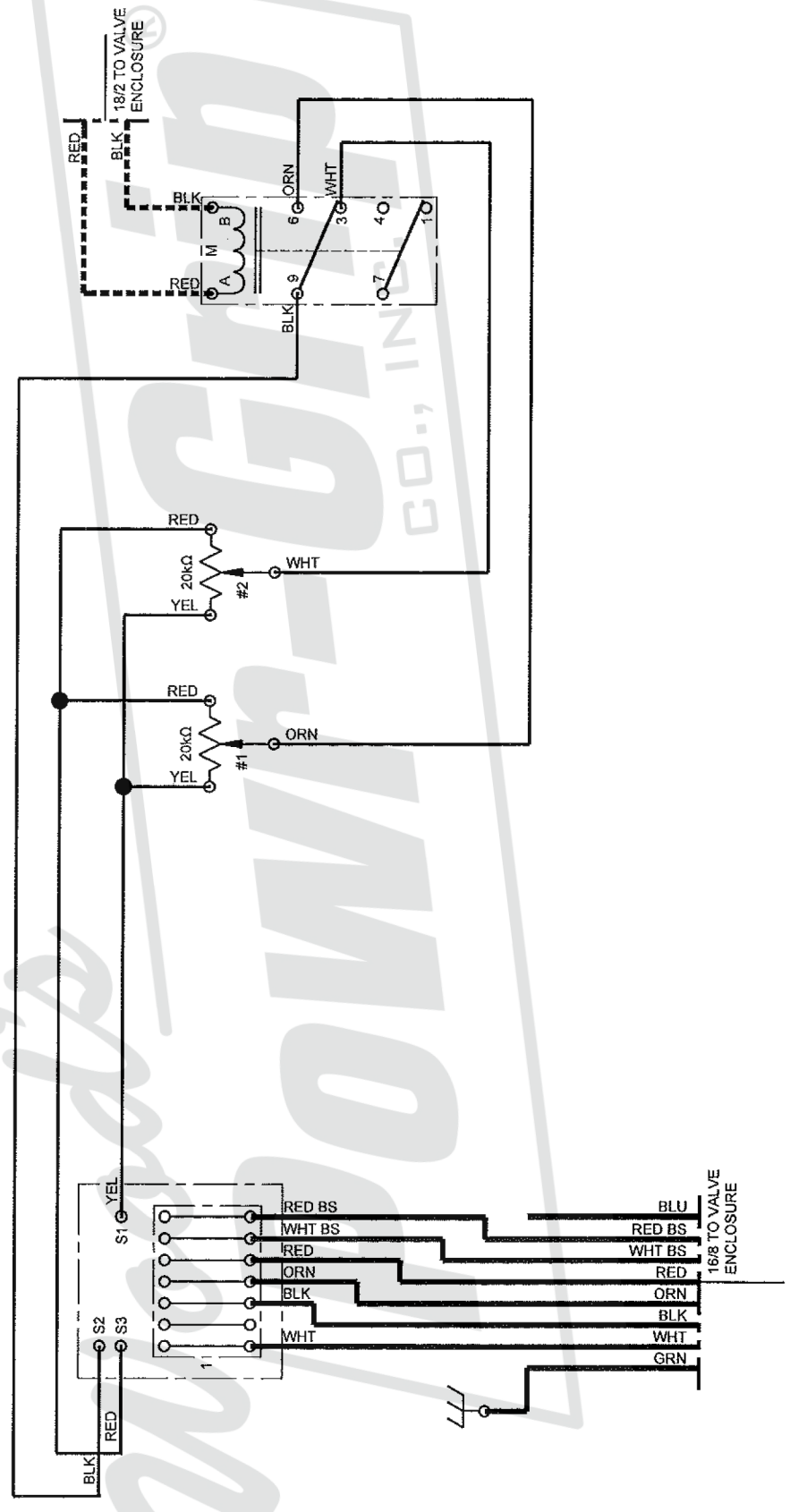
REVISION: NONE

ECN NUMBER: 02.A

ECN DATE: 05/08/2017

ECN BY: JAC

EST. WEIGHT: N/A



FILE DIRECTORY:  
FILE [SHEET]:

STANDARD

831C-W01 [C-W01]

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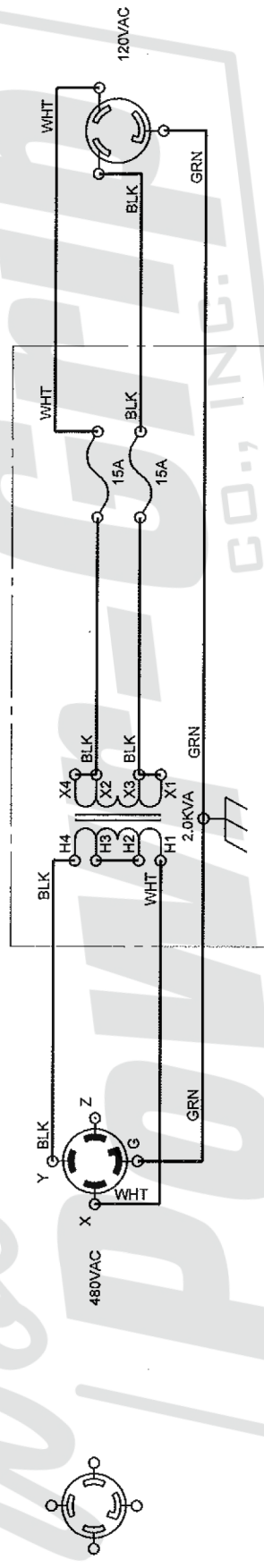
1000LB MANUAL ROTATE/POWER TILT  
VOLTAGE ADAPTATION  
DOMESTIC TRANSFORMER WIRING SCHEMATIC  
D831C-W01 [C-W01]

SIZE: <b>A</b>	SCALE: <b>NONE</b>	REVISION: <b>01.A</b>	ECN NUMBER: <b>3705</b>	ECN DATE: <b>03/25/2015</b>	ECN BY: <b>KMK</b>	EST. WEIGHT: <b>N/A</b>
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WIRE LEGEND: CONTROLLED BY  
WIRING SYMBOLS DRAWING  
EXCEPT AS NOTED AND BELOW.  
LINE STYLES AND WIDTHS FOR  
WIRE UNLESS NOTED OTHERWISE.  
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--- 16AWG ---  
--- N/A ---  
--- N/A ---

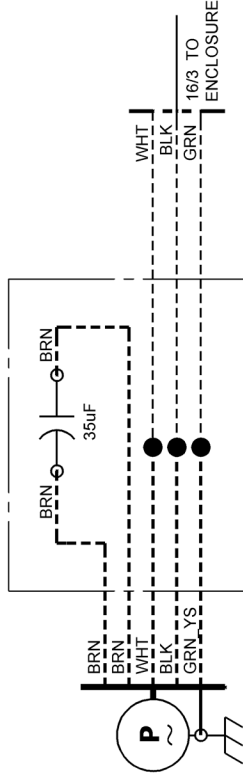
PRODUCT MANAGER: <b>JOSH E.</b>	DATE: <b>03/16/2010</b>
CHECKED: <i>al</i>	<b>05-21-15</b>
APPROVED: <i>Over</i>	<b>5-26-15</b>

NOTES:  
1) POWER PLUG CONNECTORS SHOWN FROM WIRE CONNECTION END.  
2) SUBSTITUTE GREEN WITH YELLOW WIRE FOR GREEN, IF GREEN WIRE IS UNAVAILABLE.



TYPE:	PROJECT	FILE DIRECTORY:	831-2019
		FILE [SHEET]:	60310-01-01-W01 [W01]
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1000LB MANUAL-ROTATOR/POWER-FILTER PUMP WITH MOTOR FILTER 120VAC 4SCFM WOBBLE PISTON VAC PMP WIRING SCHEMATIC 60310-01-01-W01 [W01]			
SIZE:	A	SCALE:	NONE
REVISION:	00.C	ECN NUMBER:	VER 00.C
ECN DATE:	05/06/2020	ECN BY:	BKS
EST. WEIGHT:	N/A		

WIRE LEGEND: CONTROLLED BY WIRING SYMBOLS DRAWING EXCEPT AS NOTED AND BELOW.	DATE:	02/05/2016
LINE STYLES AND WIDTHS FOR WIRE UNLESS NOTED OTHERWISE:	PRODUCT MANAGER:	GARY B.
..... 18AWG	---	N/A
..... 14AWG	---	N/A
..... 16AWG	---	N/A
.....	---	N/A
CHECKED:		
APPROVED:		







FILE DIRECTORY: 20180601.00.00  
FILE (SHEET): DTO293590-W02 [W02]

TYPE: DTO

WIRE LEGEND: CONTROLLED BY WIRING SYMBOLS DRAWING EXCEPT AS NOTED AND BELOW.  
LINE STYLES AND WIDTHS FOR WIRE UNLESS NOTED OTHERWISE.  
..... 20AWG  
..... 18AWG  
..... 16AWG  
..... 10AWG

WOOD'S POWER-GRIP CO., INC.  
LAUREL, MONTANA U.S.A.

3000LB MANUAL ROTATE, POWER TILT  
HIGH DUTY/HIGH FLOW VALVE ENCLOSURE WIRING DIAGRAM  
N/A

REVISION: ECN NUMBER: ECN DATE: ECN BY: EST. WEIGHT:  
A NONE 01.A VER 01.A 04/23/2020 DM N/A

DATE: 06/01/2018  
PRODUCT MANAGER: DANIEL M.  
CHECKED: *DM*  
APPROVED: *4/26/20*

NOTES:  
1) MAKE ALL RELAY CONTACTS NORMALLY OPEN.

