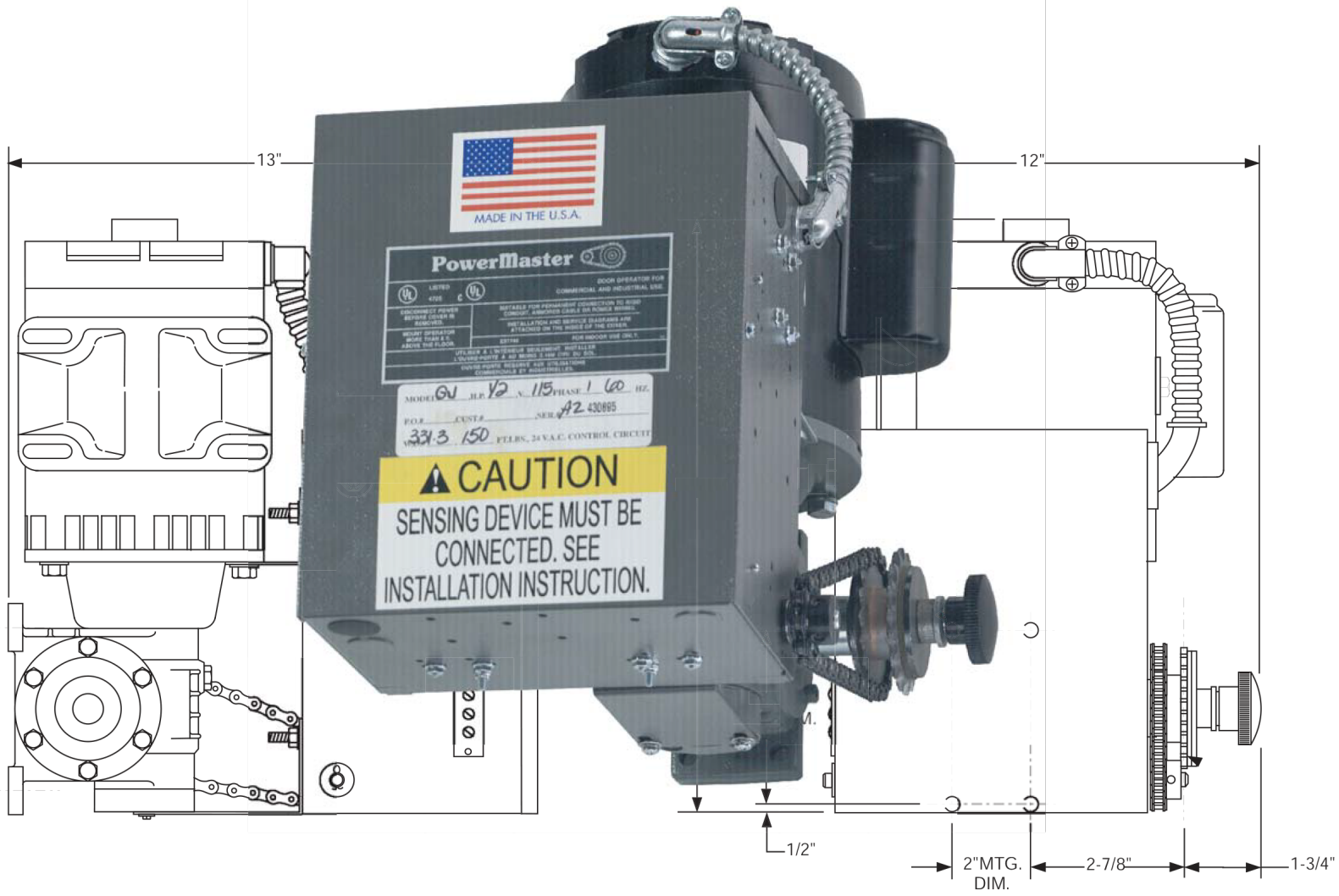
# INSTALLATION AND OWNER'S MANUAL

## Model GJ & MGJ

## Gear Reduced Jackshaft

powermaster




| |
|---|
| **Serial #:** |
| **Date Installed:** |
| **Your Dealer:** |

READ THIS MANUAL CAREFULLY BEFORE INSTALLATION OR USE. SAVE THESE INSTRUCTIONS

c UL us

**LISTED**

As of date of manufacture, meets all ANSI/UL 325 Safety Requirements for Vehicular door operators.

# TABLE OF CONTENTS



## READ THESE STATEMENTS CAREFULLY AND FOLLOW THE INSTRUCTIONS CLOSELY!

The Warning and Caution boxes throughout this manual are there to protect you and your equipment. Pay close attention to these boxes as you follow the manual.

| WARNING | CAUTION | WARNING | CAUTION |
|---|---|---|---|
| Indicates a MECHANICAL hazard of INJURY OR DEATH. Gives instructions to avoid the hazard. | Indicates a MECHANICAL hazard of DAMAGE to your operator or equipment. Gives instructions to avoid the hazard. | Indicates an ELECTRICAL hazard of INJURY OR DEATH. Gives instructions to avoid the hazard. | Indicates an ELECTRICAL hazard of DAMAGE to your operator or equipment. Gives instructions to avoid the hazard. |

**Registration Information-End User Copy**

**Model** _____ Location Installed:
Date Installed_____ Address _____
Serial # _____ Address _____
Address _____

Installer's Information

Company Name _____
Company Address _____
Company Address _____
Company Address _____
Company Telephone # _____
Company Contact

The purpose of this booklet is to provide assembly, installation and operation information concerning PowerMaster GJ Commercial Vehicular Garage Door Operators and related Accessory Products.

**NOTE: IT IS IMPORTANT THAT THIS INSTRUCTION MANUAL BE READ AND UNDERSTOOD COMPLETELY BEFORE INSTALLATION OR OPERATION IS ATTEMPTED. IT IS INTENDED THAT THE INSTALLATION OF THIS UNIT WILL BE DONE ONLY BY PERSONS TRAINED AND QUALIFIED IN THE INSTALLATION, ADJUSTMENT AND SERVICE OF COMMERCIAL OVERHEAD DOORS AND DOOR OPERATORS AND BY QUALIFIED ELECTRICIANS.**

**NOTE: THE IMPORTANT SAFEGUARDS AND INSTRUCTIONS IN THIS MANUAL CANNOT COVER ALL POSSIBLE CONDITIONS AND SITUATIONS WHICH MAY OCCUR DURING ITS USE. IT MUST BE UNDERSTOOD THAT COMMON SENSE AND CAUTION MUST BE EXERCISED BY THE PERSON(S) INSTALLING, MAINTAINING AND OPERATING THE EQUIPMENT DESCRIBED HEREIN. DO NOT USE THIS EQUIPMENT FOR ANY OTHER APPLICATION THAN ITS INTENDED PURPOSE - OPERATING OVERHEAD COMMERCIAL VEHICULAR GARAGE DOORS.**

## STANDARD FEATURES:

**Limit Switches:** Rotary limit switches, easily adjusted over a wide range. The motor may be removed without affecting the limit switch adjustments.

**Manual Release:** Permits manual operation of the door in the event of a power failure. Disengage operator by pulling chain and securing in wall mounted chain lock.

**Control Circuit:** 24 Volts AC. Standard three button open, close and stop supplied. Will accept all standard control devices.

**Connections For Auxiliary Entrapment Protection Devices:** Use with foam or pneumatic reversing door edge components or a photoelectric beam (across the opening).

**Momentary Contact To Close:** Feature can be activated by simply moving a wire on the terminal strip.

**Constant Contact To Close:** Standard operation.

## MODEL GJ OPERATOR APPLICATIONS:

GJ operators are intended for commercial and industrial use to raise or lower rolling steel or sectional overhead doors by chain coupling to the door shaft. GJ operators may also be used with roll up service doors and grilles when a chain hoist is not required..

A GJ operator **DOES NOT LOCK THE DOOR IN ITS CLOSED POSITION.** However, because the cross-header shaft is prevented by the operator from turning, the torsion springs provide no assistance in lifting the door should an attempt be made to raise it manually.

GJ operators are used in the following applications:

- Continuous Medium Duty Cycle Commercial installations.
- Indoor Use Only
- Use with foam/pneumatic reversing door edge or photoelectric device - REQUIRED where the 3-button station is out of sight of the door, or any other automatic, remote or manual control is used to activate the door.

## OPTIONAL FEATURES:

**Digital Radio Controls:** Open, Close and Stop operation. Radio units are available to control up to 27 doors from one transmitter

**Digital Timer to Close:** Adjustable from 0 to 17 minutes in one second intervals.

**Keyless Entry System:** Connection terminals provided for hard wired keyless entry system. Optional radio receiver will allow operation of a wireless keyless system.

**WARNING**

**ELECTRIC DOOR OPENERS ARE DESIGNED FOR DOORS IN GOOD WORKING CONDITION, PROPERLY COUNTERBALANCED AND PROPERLY ADJUSTED IN ACCORDANCE WITH THE DOOR MANUFACTURER'S INSTALLATION INSTRUCTIONS.**

Before starting the installation of the operator, the door must be in good working condition and properly counterbalanced. Inspect the door and door guides for loose or missing hardware. Test the door manually for balance and ease of operation. Lubricate door hinges and rollers. If necessary, employ a qualified technician to adjust the springs for proper counterbalance of the door.

Stops should be installed at the top end of each track to prevent the possibility of the door rollers moving beyond the ends of the track.

If the cross header shaft is made from hollow tubing rather than solid rod, it is recommended that it be plugged with a short length of solid bar for a more secure installation of the shaft sprocket or flange coupler.

Before removing the operator powerhead from the shipping carton, inspect the nameplate on the cover of the operator control box to verify that it is the correct model for the intended application and that the voltage and phase are in accordance with electrical power provided at the job site.

**Warning: Rope off the area to keep personnel and vehicles clear of the door and floor space in the vicinity of the operator during the installation.**

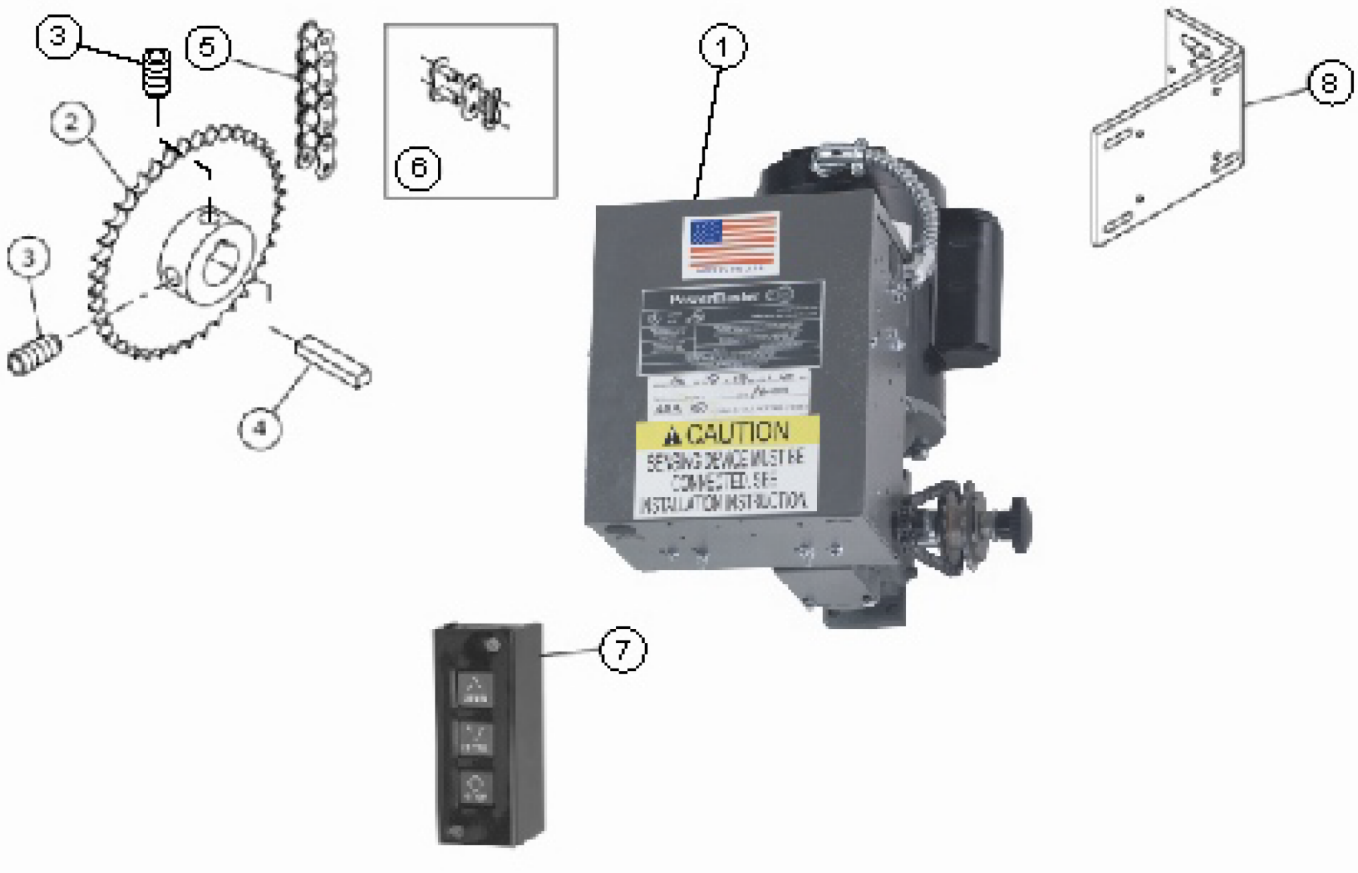
**WARNING**

**SPRINGS ARE SUBJECT TO VERY HIGH FORCES AT ALL TIMES AND ADJUSTMENTS MUST BE MADE ONLY BY A QUALIFIED PROFESSIONAL DOOR INSTALLER.**

**WARNING**

**REMOVE OR DISABLE ANY LOCKING DEVICES FROM DOOR AND REMOVE ALL ROPES.**

## FIGURE 1 - COMPONENT IDENTIFICATION



**WARNING**

**TO REDUCE THE RISK OF SEVERE INJURY OR DEATH: READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS!**

- Install only on a properly balanced garage door. An improperly balanced door could cause severe injury. Have a qualified service person make repairs to cables, spring assemblies and other hardware before installing the opener.
- Remove all ropes and remove or make inoperative all locks (unless mechanically and/or electrically interlocked to the power unit) that are connected to the garage door before installing the opener.
- Lightweight doors (fiberglass, aluminum etc.) must be reinforced to avoid door damage. Check the door manufacturer's instruction manual for a bracing procedure or the availability of a Reinforcement Kit.
- The GJ Series Operator is a Commercial Vehicular Door Operator and as such is **NOT** recommended for pedestrian traffic. In installations where it is known that pedestrians will be nearby ensure a pedestrian door is available for entrance and exit to the building. In addition **YOU MUST install an auxiliary entrapment protection device (reversing door edge or photoelectric beam device) as part of the complete operator system**.
- Connect an auxiliary entrapment protection device (reversing edge or photoelectric device across the door opening). **A device of this type is STRONGLY ADVISED FOR ALL commercial operator installations.**
- An auxiliary entrapment protection device is *REQUIRED* when the three button control station is out of sight of the door or any other automatic or manual control is used.
- Install the opener at least 8 feet or more above the floor.
- Do not connect the opener to the source of power until instructed to do so.
- Locate the control station:

  a) within sight of the door and;

  b) at a minimum height of five feet above the floor and;

  c) away from all moving parts of the door.
- Do not overtighten the clutch adjustment (when provided) to compensate for a poorly working door.
- Securely attach any WARNING signs or placards to either the door or above the control station as directed (see page 10).
- After installing the opener, all control features must be tested for proper operation (see page 13).

## TABLE 1 - COMPONENT IDENTIFICATION LISTING

| Item # | Description | Qty. |
|---|---|---|
| 1 | Operator Power Head | 1 |
| 2 | Driven Sprocket on Door Shaft | 1 |
| 3 | Set Screw, 5/16-18 x 1, Square Head | 2 |
| 4 | Steel Square Key | 1 |
| 5 | Drive Chain | 1 |
| 6 | Master Link | 1 |
| 7 | 3 Button Station | 1 |
| 8 | Mounting Bracket (optional) | 1 |

# 6 DOOR TYPES & MOUNTING POSITIONS

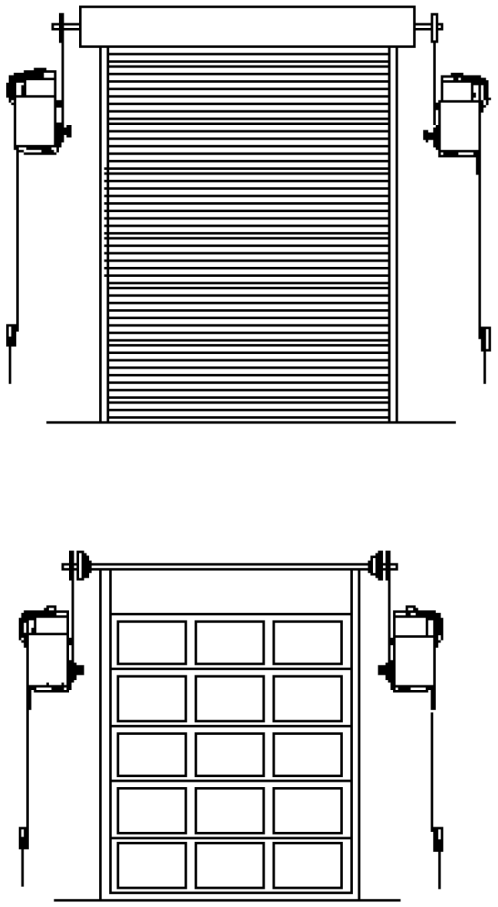


*FIGURE 2*

#1. VERTICAL FRONT OF COIL, RIGHT HAND

#2. HORIZONTAL TOP OF COIL, RIGHT HAND

#3. VERTICAL WALL MOUNT, RIGHT HAND

#4. HORIZONTAL SIDE OF COIL, RIGHT HAND

#5. HORIZONTAL FRONT OF COIL, RIGHT HAND

#6. VERTICAL FRONT OF COIL, LEFT HAND

#7. HORIZONTAL TOP OF COIL, LEFT HAND

#8. VERTICAL WALL MOUNT, LEFT HAND

#9. HORIZONTAL SIDE OF COIL, LEFT HAND

#10. HORIZONTAL FRONT OF COIL, LEFT HAND

**NOTE:** MOUNTINGS #2, #4, #5, #7, #9, AND #10 REQUIRE AN ADDITIONAL DISCONNECT CHAIN BRACKET.

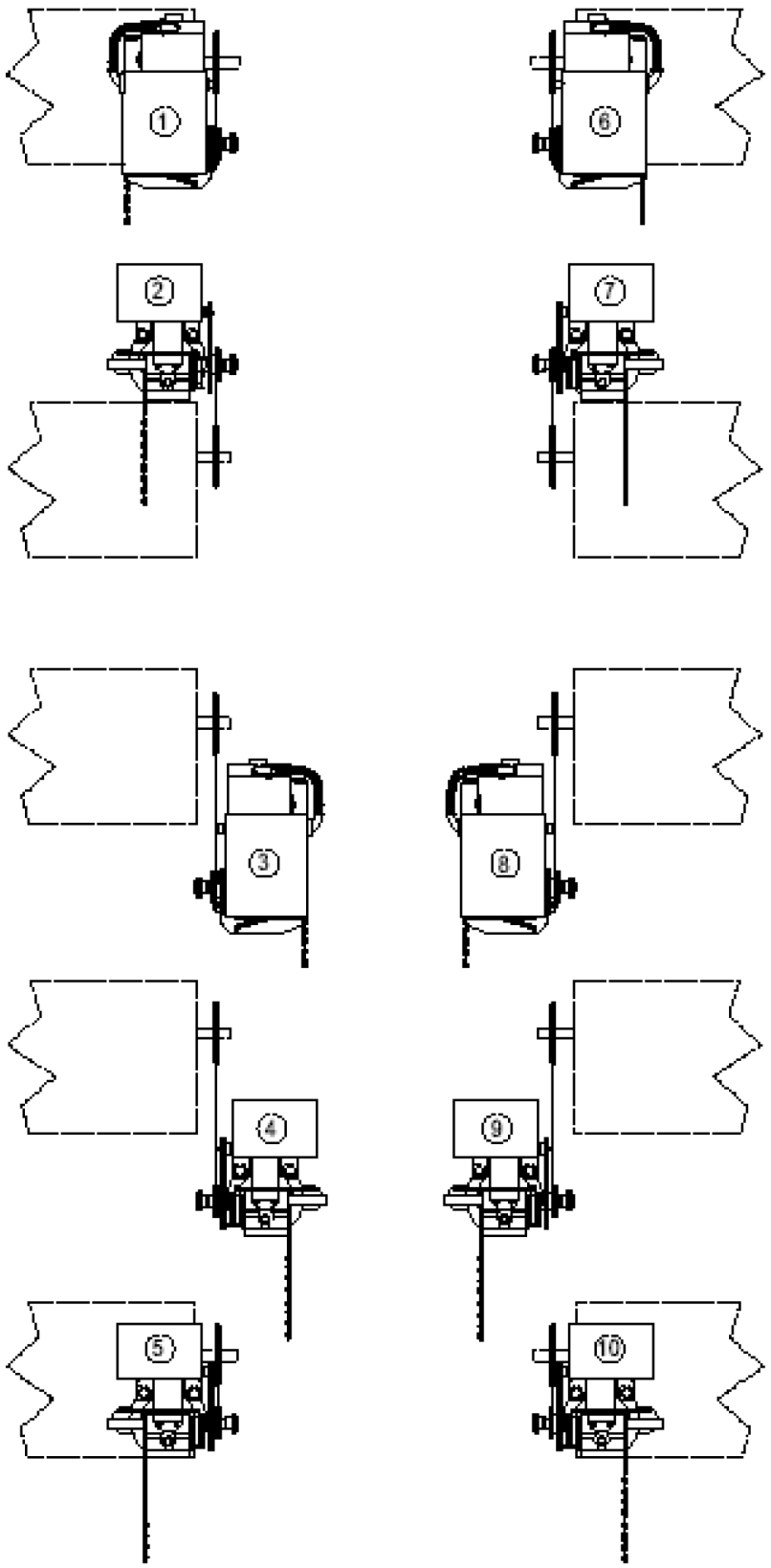



*Figure 3*

**WARNING**

**SPRINGS, PULLEYS, CABLES AND MOUNTING HARDWARE USED TO BALANCE YOUR GARAGE DOOR ARE UNDER EXTREME TENSION AT ALL TIMES AND CAN CAUSE SEVERE INJURY OR DEATH IF DISTURBED. DO NOT ATTEMPT ADJUSTMENT.**

**MOUNTING THE OPERATOR: WHEN PREPARING THE MOUNTING SURFACE ENSURE THE OPERATOR WILL BE RIGID AND SECURE WHEN INSTALLED, THE MOUNTING SURFACE WILL PROVIDE A LEVEL BASE, AND THE OPERATOR'S DRIVE SHAFT WILL BE PARALLEL WITH THE DOOR SHAFT. FAILURE TO MEET THESE CONDITIONS WILL RESULT IN AN OVERALL UNSAFE DOOR OPERATION AND PREMATURE FAILURE OF THE DOOR AND DOOR OPERATOR.**

1. **Figures 2 and 3,** page 6 illustrates several positions suitable for mounting the operator; right hand or left hand wall mount or horizontal (shelf) mount to the torsion shaft. For sectional doors, the GJ operator must be wall mounted. For rolling steel doors the operator may be wall mounted or hood mounted by using an optional hood mounting bracket, [9].

   **NOTE: THE OPERATOR IS BUILT FOR RIGHT OR LEFT HAND INSTALLATION AS ORDERED. DO NOT ATTEMPT TO CHANGE HAND OF OPERATOR IN THE FIELD.**

2. Determine location and mounting for the unit. Install the driven sprocket on the door shaft with key (4) and set screw (3). Do not tighten the set screws at this time. If the door shaft lacks a keyway you will need to drill and pin the sprocket in accordance with Step 6. The sprocket should be kept as close as possible to the bearing. Fasten the wall mounting plate or the mounting bracket (if applicable ) to the operator gear box base. Temporarily suspend the operator in its mounting position so that the distance between the door shaft and the operator's output shaft is between 12" and 15". See F**igure 5** for wall mount and **Figure 6** for bracket plate mount illustration. The distance between the shafts may be greater if the mounting conditions prohibit installation as suggested.

3. Connect the operator drive sprocket [and the door sprocket with the drive chain [5] and connecting link [6], shortening the chain to the proper length if necessary. To shorten the chain use a chain break tool or drive out the appropriate rivets with a punch.

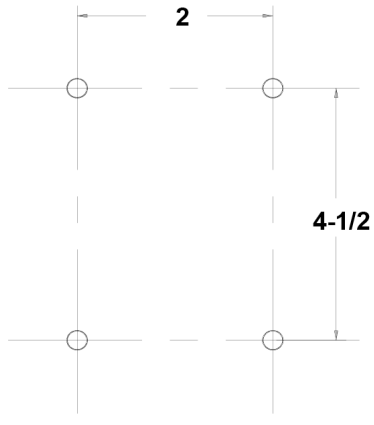
4. With the chain tight and straight and the operator's output shaft parallel with the door shaft, trace the mounting slots (holes) on the mounting surface then lower the operator to the floor. The GJ operator gear box mounting hole pattern is shown in **Figure 4**.

5. The operator should be installed using 3/8" bolts through the wall. If the building's construction will not allow the usage of through bolts then use lag bolts and shields (or the equivalent type fasteners). Mount the operator, slipping the drive chain on before bolting the operator to the mounting surface but do not completely tighten the bolts at this time.

6. Re-align the door shaft and operator drive shaft sprockets and connecting drive chain. Secure the door sprocket in place with the set screws. If no keyway exists in the door shaft, drill a 3/8" diameter hole through the door sprocket and door shaft with the sprocket in its aligned position. Insert a 3/8" diameter bolt (not provided) through the sprocket hub and shaft. Secure with a lock washer and hex nut. See **Figure 7**.

7. Adjust the drive chain tension such that there is no more than 1/4" slack when the chain is depressed between the sprockets. See **Figure 8**. The preferred mounting is with the motor end up and the operator below the door shaft. This results in better clearance for the hand chain and disconnect chain.

***Figure 4***



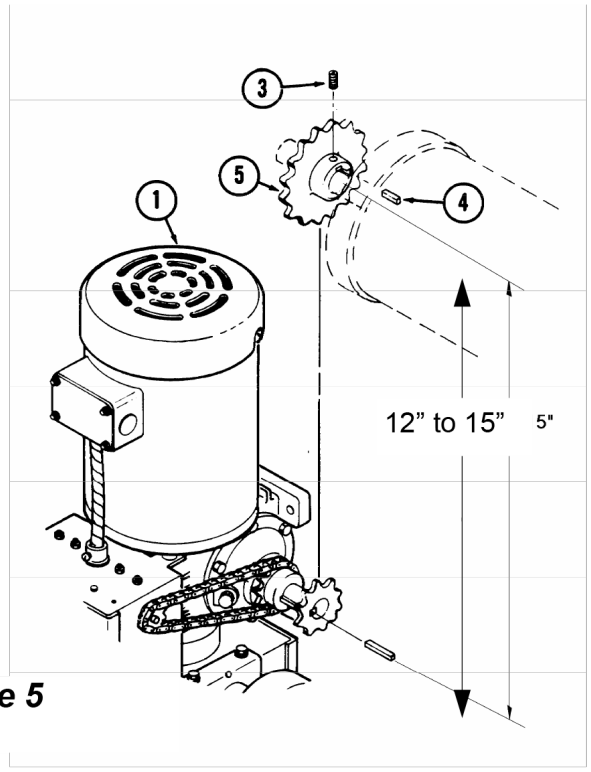



Figure 5

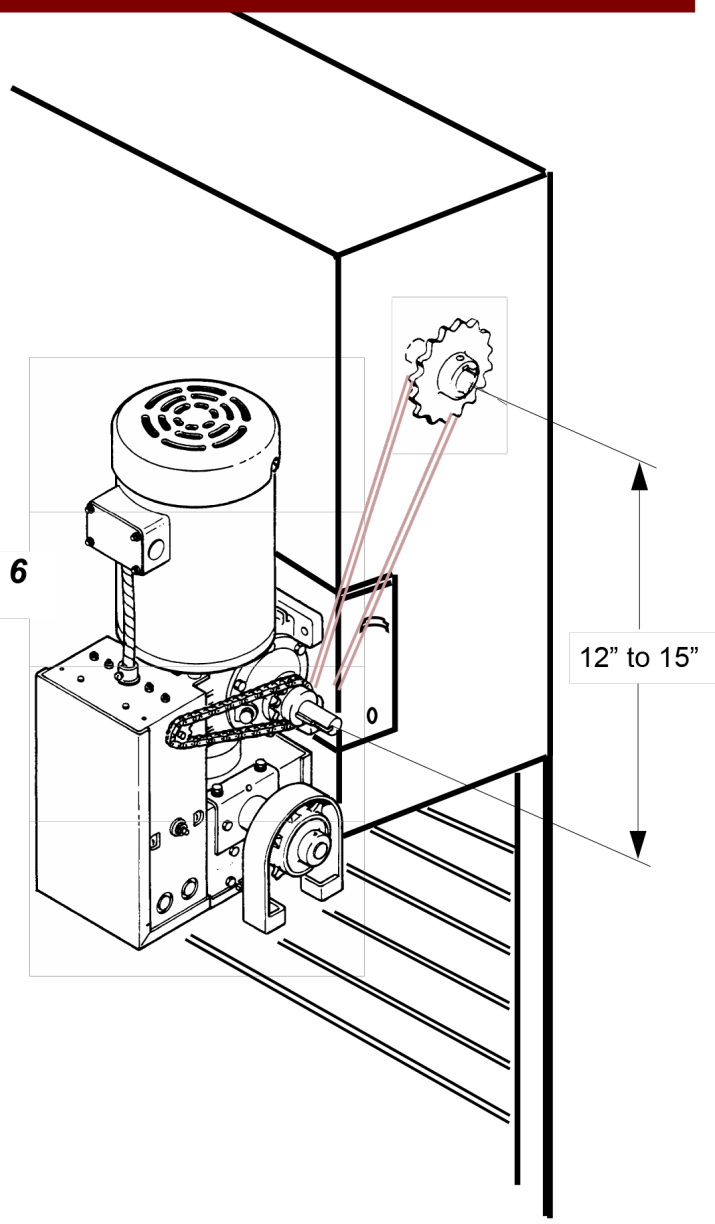



Figure 6

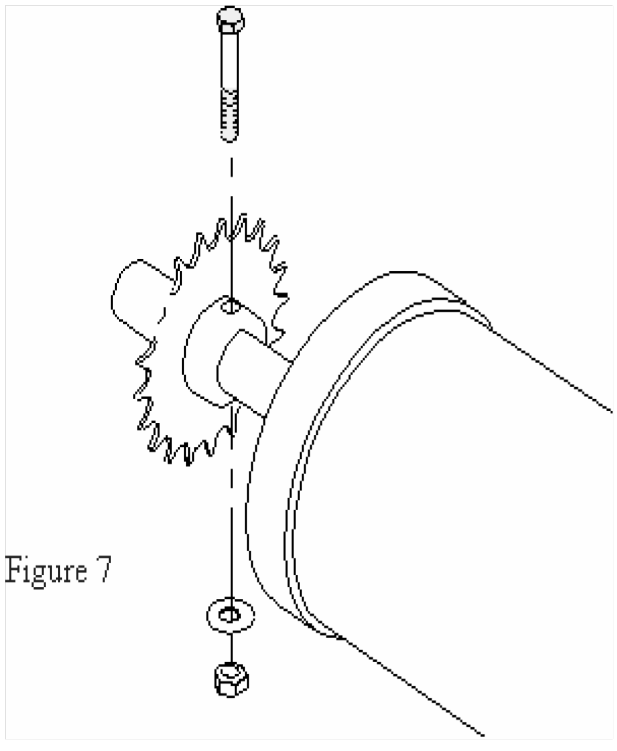


Figure 7

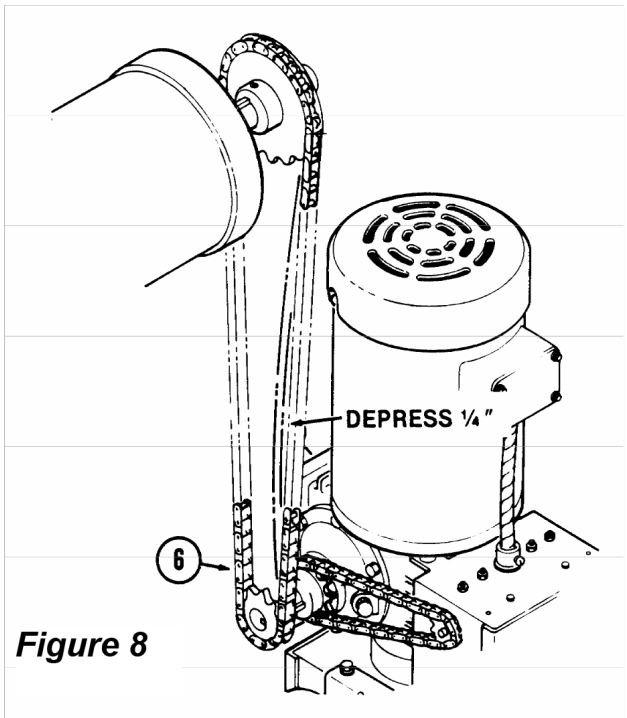



Figure 8

**WARNING**

**TO AVOID RISK OF ENTRAPMENT AND POSSIBLE DAMAGE TO THE DOOR AND OPERATOR THE LIMITS MUST BE ADJUSTED BEFORE APPLYING POWER TO THE OPERATOR.**

## SETTING THE LIMIT SWITCHES

1. Open the cover on the electrical enclosure. There are two limit nuts on the threaded shaft that move laterally along the shaft as the operator opens and closes the door. When a limit nut nears the end of the shaft it activates a (set of) switch(es). The OPEN limit switch is on the LEFT and the CLOSE limit switch is on the RIGHT. Auxiliary switches may also be present, they are used to control other functions. These are mounted to a separate bracket and should not be confused with the the OPEN and CLOSE Limit Switches which are mounted to the back of the electrical enclosure box and are somewhat hidden from view.

2. Manually raise the door to a nearly open position.

3. Depress the limit nut retaining bracket away from the slots in the limit nuts. Turn the OPEN limit nut on the shaft until it engages the Open Limit Switch, the switch will sound an audible “click” when engaged. If the Open Limit is a DPDT switch (a total of 6 (six) connecting terminals protruding from the switch body, a SPDT switch has only three (3) terminals), you will need to listen for two audible clicks. Release the retaining bracket and be sure that it engages in slots of both limit nuts.

4. Manually lower the door to a nearly closed position and repeat Step #3 with the Close limit nut and switch.

5. If auxiliary switches are present, the limit nut will actuate them just prior to activating the open or close limit switch. (This is preset at the factory.)

6. Manually move the door to a half open position to avoid door damage due to incorrect power supply phasing. On three phase units the door may initially run in the wrong direction when power is first applied. With the door in a mid position there will be time to stop the door before damage can happen if incorrect phasing occurs.

7. A final limit adjustment will be necessary after the connection of the power supply in order to ensure the door stops at the proper Open and Close positions.

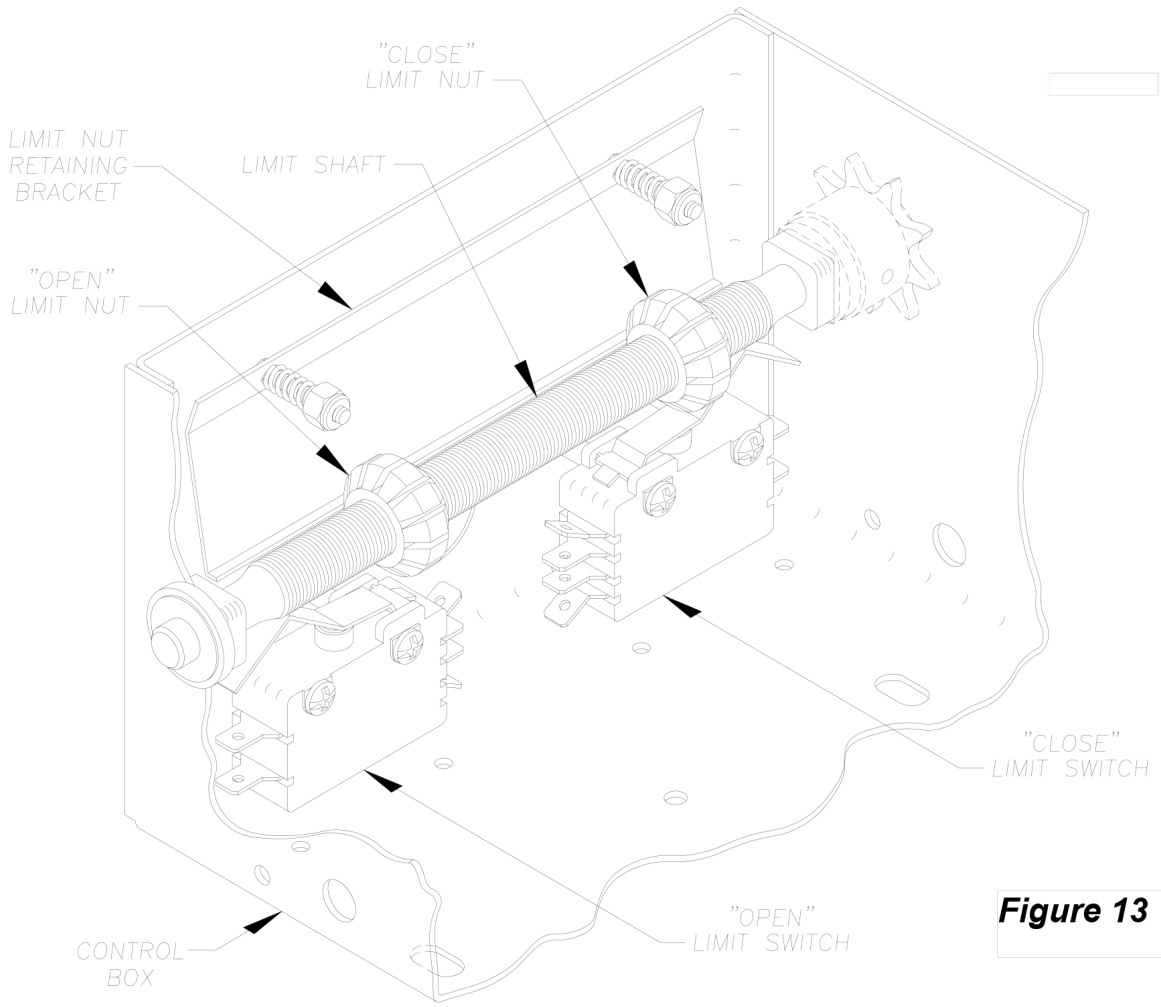



***Figure 13***

# ELECTRICAL WIRING INSTRUCTIONS



## WARNING

**TO PREVENT THE RISK OF PERSONAL INJURY OR DEATH :**

- **DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING.**
- **ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.**
- **OBSERVE LOCAL ELECTRICAL CODES WHEN WIRING THE OPERATOR.**

## WARNING

**RISK OF ENTRAPMENT THAT MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH. DISCONNECT POWER TO THE OPENER BEFORE AND DURING INSTALLATION OF AN ACCESSORY REVERSING DOOR EDGE OR PHOTOELECTRIC DEVICE. DO NOT RECONNECT POWER TO OPENER UNTIL INSTRUCTED TO DO SO. ENSURE DOORWAY IS CLEAR BEFORE STARTING TESTING OF UNIT.**

NOTE: **PowerMaster operators have been designed and constructed for use with voltages from 115 Volts AC to 480 Volts AC, in single or three phase. Check the operator nameplate label on the control box cover for the proper voltage and phase. The application of an improper input voltage or phase will result in catastrophic failure to the internal electrical components. Observe local electrical codes when wiring the operator.**

When hard wiring, observe state and local electrical codes. A wiring diagram is attached to the inside of the control box cover. Connect the appropriate voltage and phase power leads to the appropriate terminals as per the wiring diagram and connect a ground wire to the grounding screw. On three phase units, incorrect phasing of the power supply will cause the motor to rotate in the wrong direction (open when CLOSE button is pushed and vice versa). To correct this, interchange any two of the incoming three phase conductors.

The wiring diagram attached inside the cover of the control box details all of the field wiring terminal connections for the operator. Always connect the wires to the push-button controls and auxiliary devices exactly as shown.

**Warning: Control voltage of the operator is 24 volts AC, Class 2. Do not run the power leads and control circuit wiring in the same electrical conduit.**

## WARNING

**TO PREVENT THE RISK OF PERSONAL INJURY AND/ OR DAMAGE TO DOOR OR PROPERTY, ONLY OPERATE DOOR CONTROL WHEN DOOR IS IN CLEAR VIEW. IF CONTROL STATION CANNOT BE LOCATED WHERE THE DOOR IS VISIBLE OR IF ANY OTHER DEVICE IS USED TO CONTROL THE DOOR AN AUXILIARY ENTRAPMENT DEVICE (DOOR EDGE OR PHOTOELECTRIC) *MUST BE CONNECTED*.**

Note: PowerMaster operators are pre-wired to accept reversing edge components. To comply with UL requirements, one of these systems must be installed and wired to the operator. Refer to Figures 16 and 17 for Edge component wiring and installation.

For operator models not installed with reversing edge components or photoelectric device, ONLY ONE THREE BUTTON STATION OR A CONTROL WIRED FOR CONSTANT PRESSURE TO CLOSE MAY BE USED TO CONTROL THE OPERATOR. THIS IS TO COMPLY WITH UL SAFETY REQUIREMENTS. IN THIS CASE THE CONTROL STATION MUST BE LOCATED WITHIN CLEAR SIGHT OF THE DOOR ADJACENT TO A PLACARD (SUPPLIED WITH THE OPERATOR) WITH THIS WORDING:

**WARNING TO PREVENT ENTRAPMENT DO NOT START DOOR DOWNWARD UNLESS DOOR WAY IS CLEAR**

Operators which are equipped with a reversing edge circuit may have one or more additional means of control which should be wired in accordance with the diagram supplied in the operator. Refer to **Figure 17.**

**Number 18 gauge wire or heavier must be used for wiring the control stations and auxiliary control devices to the operator. Smaller gauge wire will cause operational problems, especially when multiple push-button stations are used or during summer months.**

## CAUTION

**TO AVOID DAMAGE TO DOOR AND OPERATOR ENSURE ALL DOOR LOCKS ARE DISABLED.**
**USE AN INTERLOCK SWITCH IF A LOCK IS REQUIRED TO RETAIN FUNCTIONALTY.**

# 11 PNEUMATIC DOOR EDGE INSTALLATION - FIELD WIRING

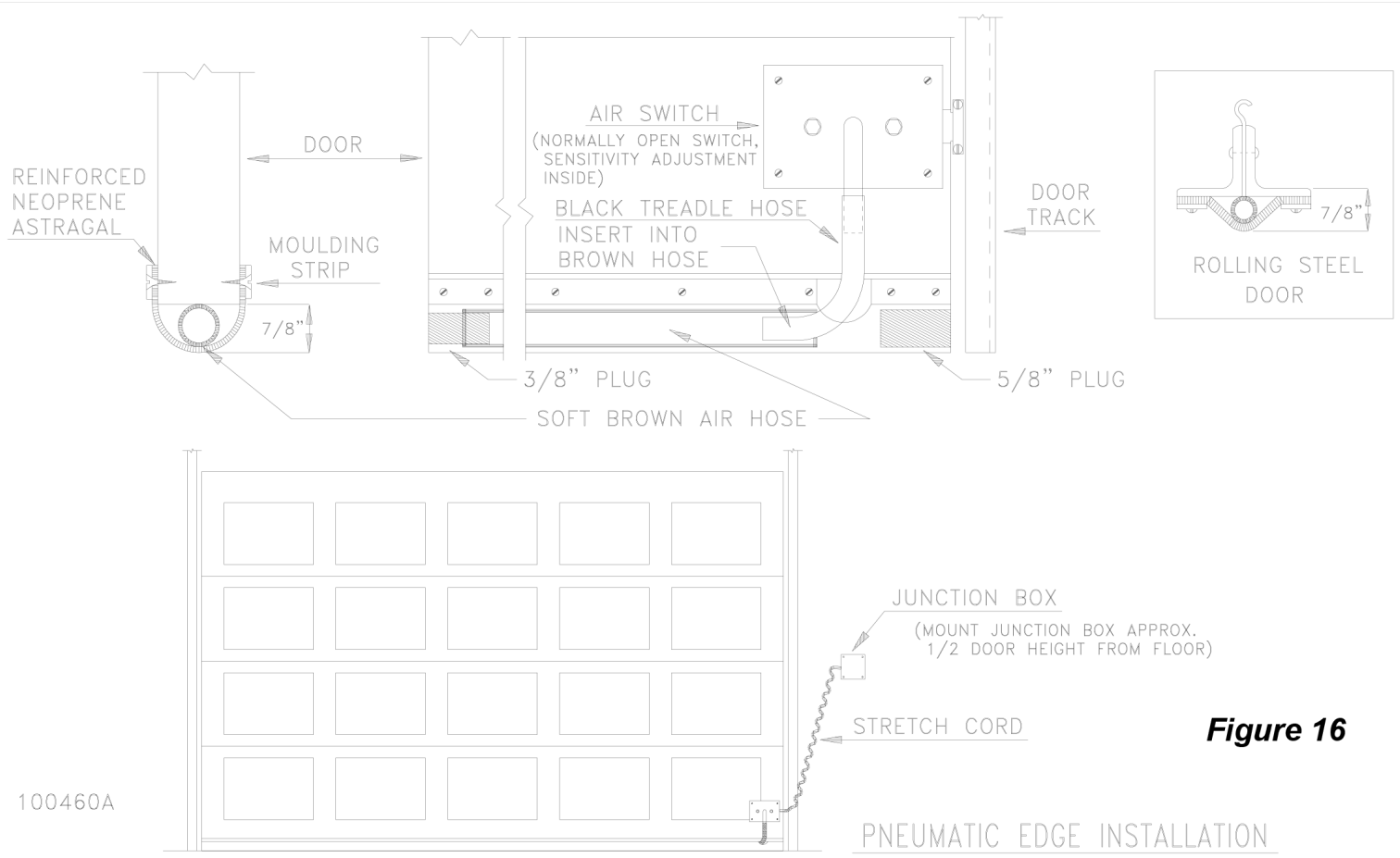
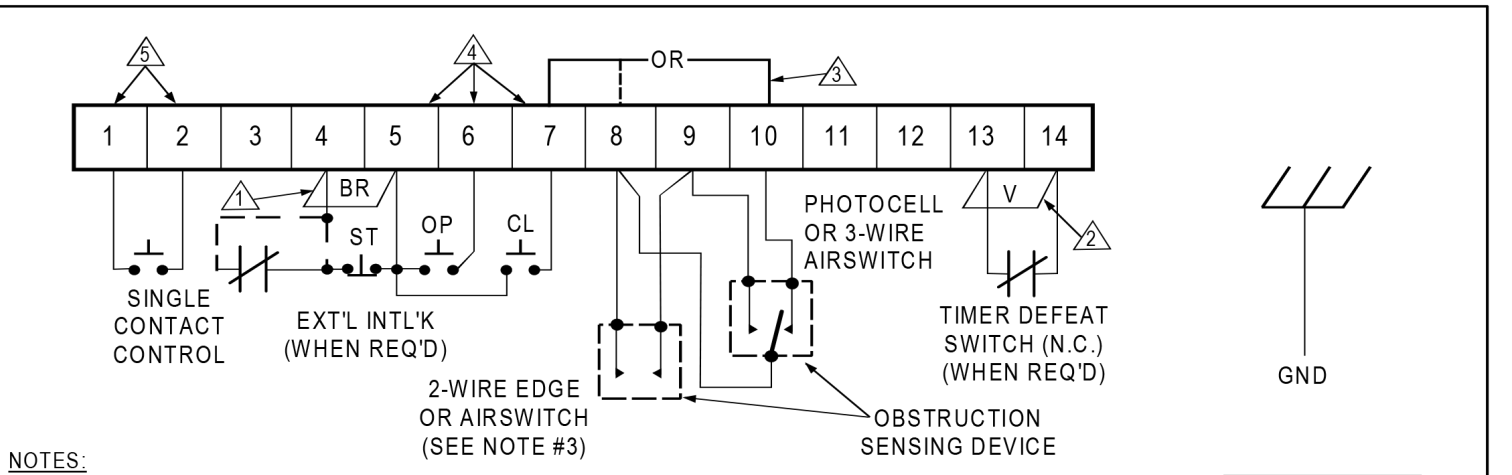



***Figure 16***




NOTES:

1. - INSTALL BROWN JUMPER WIRE IF THERE IS NO STOP BUTTON OR EXTERNAL INTERLOCK SWITCH CONNECTED TO TERMINAL STRIP.
2. - REMOVE VIOLET JUMPER WIRE WHEN TIMER DEFEAT SWITCH IS USED.
3. - INTERNAL ORANGE JUMPER.
   -MOVE THIS JUMPER FROM TERMINAL #7 TO #8 IF ALL OBSTRUCTIONS SENSORS ARE 2-WIRE TYPE.
   -REMOVE JUMPER IF 3-WIRE DEVICES ARE USED.
4. -TREADLES, PULL SWITCHES, KEY SWITCHES, PHOTO-ELECTRIC DEVICES, ETC. MAY BE CONNECTED TO TERMINALS INDICATED.
5. -REMOTE CONTROL UNITS (EXCLUDING TREADLES AND PHOTO-ELECTRIC UNITS). PULL SWITCHES AND SINGLE CONTACT CONTROL STATIONS MAY BE CONNECTED TO TERMINALS INDICATED.

**FIGURE 17**

## IMPORTANT SAFETY INSTRUCTIONS FOR OWNER

**WARNING** **TO REDUCE THE RISK OF SEVERE INJURY OR DEATH: READ AND FOLLOW ALL INSTRUCTIONS!**

- **NEVER let children operate or play with door controls. Keep the Remote Control away from children.**
- **ALWAYS keep a moving door in sight and keep people and objects away from the door area until the door is completely closed. NO ONE SHOULD CROSS THE PATH OF A MOVING DOOR.**
- TEST THE DOOR OPENER'S REVERSING FEATURE (where applicable) MONTHLY. The door MUST reverse upon contact with a 4" high object on the floor.
- After adjusting the force setting, if equipped with a clutch, or the limit of travel, ALWAYS RETEST the Opener. **Failure to ADJUST THE OPENER PROPERLY may result in SERIOUS INJURY OR DEATH.**
- **DO NOT over adjust the force setting (clutch, where applicable) to compensate for a poorly working door. See page 19 for procedure to check the door operation and insert sheet for proper clutch adjustment.**
- **KEEP THE GARAGE DOOR PROPERLY BALANCED. (See the door owner's manual.)**
- **AN IMPROPERLY BALANCED DOOR MAY CAUSE SEVERE INJURY OR DEATH.**
- **Have a QUALIFIED SERVICE PERSON MAKE REPAIRS TO CABLES, SPRING ASSEMBLIES AND OTHER HARDWARE.**
- **SAVE THIS INSTRUCTION MANUAL AND GIVE TO THE END USER.**

**NOTE:** **It is now necessary to turn on the power in order to run the Opener to check for proper operation and limit settings.** Before doing so, ensure that all mounting hardware are installed and properly tightened, that all electrical connections are per local code requirements, and that proper wiring practices have been followed. **Also, double-check that all ropes have been removed from the door and that the doorway is clear.**

**WARNING**

**FAILURE TO TEST REVERSING SYSTEM COULD RESULT IN DEATH OR SERIOUS INJURY. TEST THIS SYSTEM ONCE A MONTH.**

**WARNING**

**AVOID ELECTROCUTION:**
**DO NOT ROUTE LOW VOLTAGE WIRES IN SAME CONDUIT AS HIGH VOLTAGE WIRES.**
**FOLLOW ALL LOCAL ELECTRICAL CODES or THE NATIONAL ELECTRICAL CODE (NEC).**

## WIRING TERMS

**MOMENTARY CONTACT:** Button can be pushed and then released and door will keep moving or stop without maintaining pressure on the button.

**CONSTANT PRESSURE:** Constant pressure is required on the button in order for continued door movement. When the button is released the door will stop and possibly reverse to full open depending on wiring type.

**DOOR EDGE/PHOTOELECTRIC INPUT:** The operator wiring provides for input from an optional pneumatic or electric door bottom edge or photoelectric device that will cause a closing door to stop and may reverse it to open depending on the wiring type.

# TESTING

**WARNING**

**ALWAYS DISCONNECT POWER TO THE OPERATOR BEFORE SERVICING, CONNECTING ACCESSORY DEVICES OR MAKING ADJUSTMENTS.**

Following installation, the operator MUST be tested and respond correctly to all controls as specified on the wiring diagram. KEEP personnel and equipment clear of the area beneath the door when performing the tests. When testing the 3-button wall station, first observe that each button operates the door in the direction indicated and that the STOP button performs that function. With the door stopped at its full open position, the OPEN button should be inoperative. This should be verified and, likewise, the CLOSE button should be inoperative with the door fully closed.

Certain operator control circuits use only a single button or a two button control station and may be designed to function differently than the more common three-button circuit described above. Test the controls in accordance with the proper response for your installation.

Observe the door when traveling in each direction for smoothness of operation. Test the setting of the clutch (if equipped) by restraining the door by hand. The clutch should slip. Re-check the limit settings. The door should close tightly at the floor without excessive impact. Likewise, it should fully clear the door opening without the carrier striking the stops on the rail.

GJ operators are equipped with a reversing edge circuit for use with pneumatic edge or foam edge door components.

**WARNING**

**DO NOT STAND UNDER DOOR TO TEST REVERSING EDGE. USE A CORRUGATED BOX OR SIMILAR OBJECT.**

To test it for proper reversal, place an object beneath the leading edge of the door. The door should instantly reverse when it comes into contact with the object provided the height of the object exceeds the cut out point built into the close limit switch (approximately four inches).

If the operator is equipped with other means of control, such as additional 3 button stations or radio controls, each of these should be tested separately for proper operation.

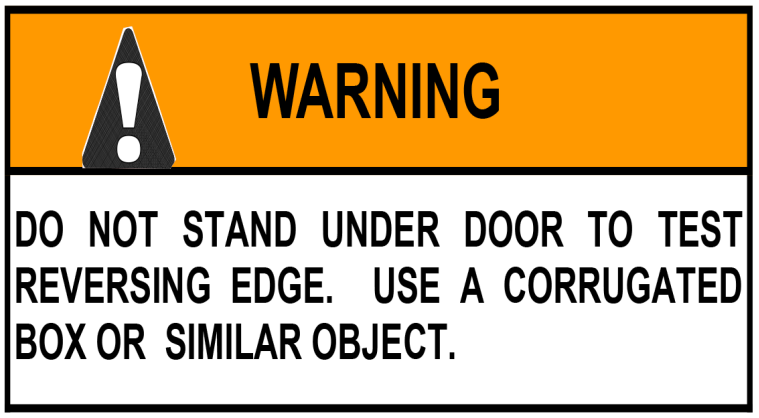
To test the manual disconnect first move the door to the fully closed position. Then disconnect the power to the operator. Manual door operation mode should engage when the release chain is pulled. The door can then be manually opened or closed by physically moving the door. If it is difficult to engage and/or the jackshaft to doorshaft chain appears to be under compression, reset the CLOSE limit slightly to reduce the door travel in the close direction.

# MAINTENANCE



Normally, very little maintenance is required. A monthly visual inspection must be made for loose or missing hardware and for excessive slack in the jackshaft chain.

Test the reversing edge circuit or components (where applicable) at least once a month by permitting the door to contact an obstruction while closing.




Periodic inspection of gear box oil level should be made. If oil level is below 1/2 full, add Mobil 1 Gear Oil or equivalent to bring level to 1/2 full.

Lubrication of the operator is not required. It is important, for trouble free service from the operator, that the door be kept free from binding, properly counter balanced and periodically lubricated. **An annual inspection of the door by a qualified overhead door professional is recommended.**

*Door must be in good operating condition. An electrical door operator cannot move a garage door that is in poor condition. The door must operate freely in the track, with no binding or obstructions, and must be well balanced. Check the spring balance of your door by manually bringing the door to a half-open position and leaving it there. If the door stays in that position, it is well balanced. If it moves more than a few inches the springs possibly need adjustment. Call a qualified door service company.

**Warning: Repairs and adjustments to the door and operator should be performed only by someone qualified to service commercial overhead doors and operators.**

# TROUBLE SHOOTING

| SYMPTOM | POSSIBLE CAUSE | SOLUTION |
|---|---|---|
| Motor runs but door does not move | Door jammed or obstructed. | Check manual operation of door. |
| | Sprocket key missiing | Check door sprocket. |
| | Disconnect engaged | Release disconnect chain from chain lock. |
| Limit switches do not hold setting | Drive chain too loose; permits chain to jump teeth | Adjust chain to proper tension. See Figure 7. |
| | Limit nuts binding on screw, causing them to jump position on retaining bracket. | Check for free rotation on limit screw. Lubricate screw or replace nuts if threads are defective. |
| | Limit nut retaining bracket not engaging notches in nuts. | Set nuts and be sure bracket is in notch on each nut. (See Figure 13. |
| | Limit sprocket loose | Check set screws |
| Door drifts when operator shuts off. | Door tension incorrect. | Disconnect operator and check operation of door. |
| Motor hums — does not run. | Dead phase (3 Phase). | Check power supply. |
| | Centrifugal Switch (1 Phase) | Lubricate switch or change motor |
| | *Door locked or jammed. | Check door. Try manual operation. |
| Motor does not run when open or close wall button is pressed. | Building fuse blown or circuit breaker tripped. | Check power supply fuses, circuit breakers, disconnect switch, check for cause. |
| | Overload protector tripped. | Reset and check for cause. |
| | NOTE: To isolate cause, operate contactor solenoid plunger manually. If motor runs, cause is in push button circuit. | Check pushbutton circuits. Check push button wiring. Check transformer for 24volt output. For technical support call **1-800-243-4476** |
| Operator closes door when “open” button is pressed, and limit switches do not function properly. | On three phase operators power supply is connected out of phase. | Interchange connections of any two power supply leads. (See wiring diagram) |
| | Operator not installed correctly. | Remount operator so that motor is “up” or toward door wall or contact factory as to wiring changes required. |
| Operator fails to shut off at fully open closed position. | On three phase operators power supply is connected out of phase. | Check phase as above. |
| | Limit nuts not adjusted | See limit adjustments page 9. |
| | Defective limit switch. | Operate limit switch manually while door is moving to determine if switch is operative. |
| | Single phase operator (without instant reverse motor). Stuck push button or short in control wiring. | If door overrides up limit, check down button and circuit. If door overrides down limit, check open button and circuit. |
| | Limit drive chain broken or inoperative. | Replace chain, check limit sprocket set screws for tightness. |

# PowerMaster

## Limited 2-Year Warranty

PowerMaster warrants all door operators to be free of defects in materials and workmanship for a period of two (2) years from date of purchase. If any part is found to be defective during this period, new parts will be furnished free of charge. Failure of this product due to misuse, improper installation, alterations, vandalism, or lack of maintenance is not covered under this warranty, and voids any other implied warranties herein.

PowerMaster is not responsible for any labor charges incurred in connection with the installation of warranted parts.

In order to activate this warranty, the registration form below MUST be completed and returned within THIRTY CALENDAR DAYS FROM DATE OF PURCHASE via certified mail, fax (631-231-4274) or via email to pmtech@optonline.net. If registration is not activated, a one-year warranty will apply.

Model _____

Serial # _____

Date Installed _____

### Installer's Information

Company Name _____

Address _____

Address 2 _____

City, State, Zip _____

Telephone # _____

Contact Name _____

# Need Technical Support?

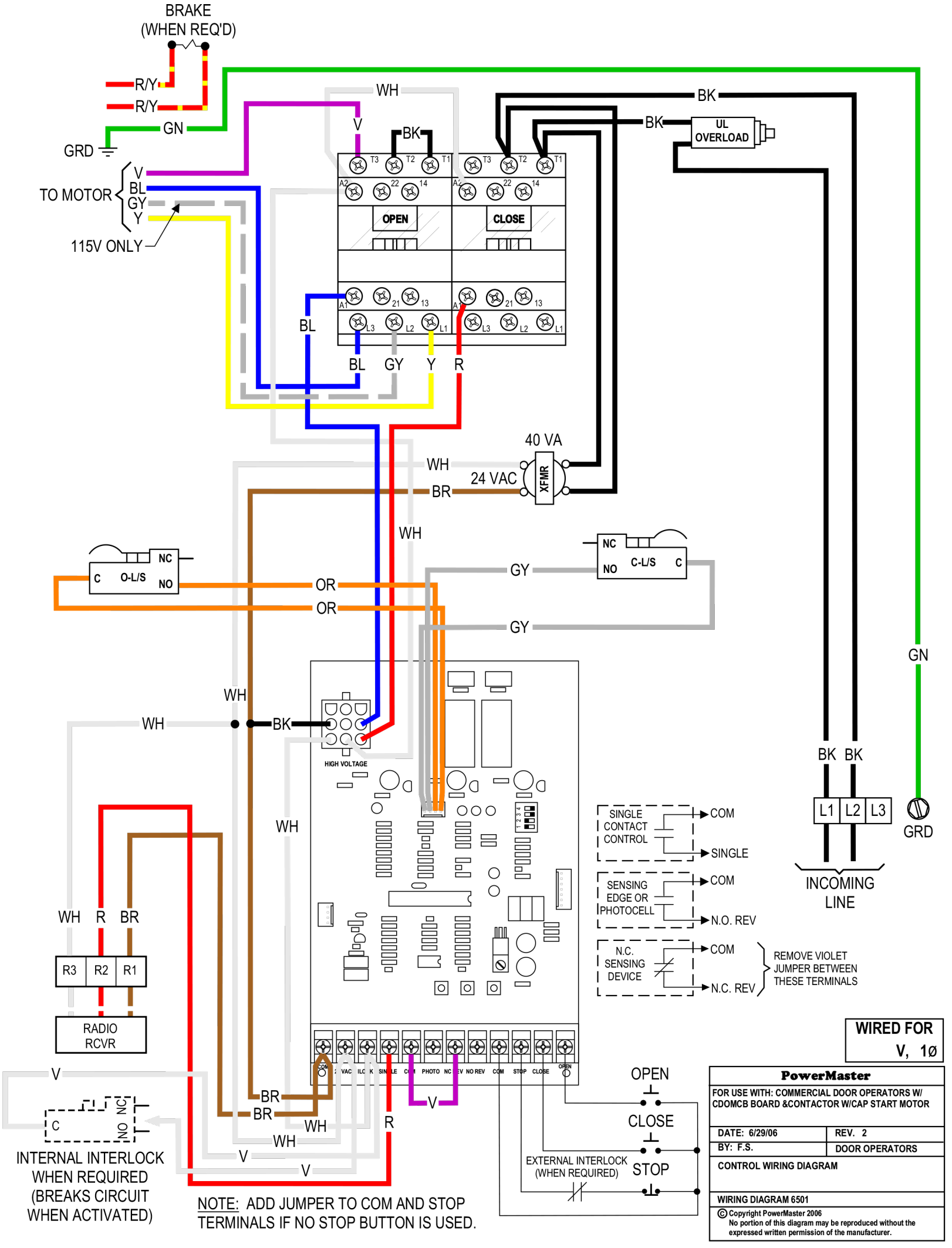
Visit: www.vepower.net/faqs

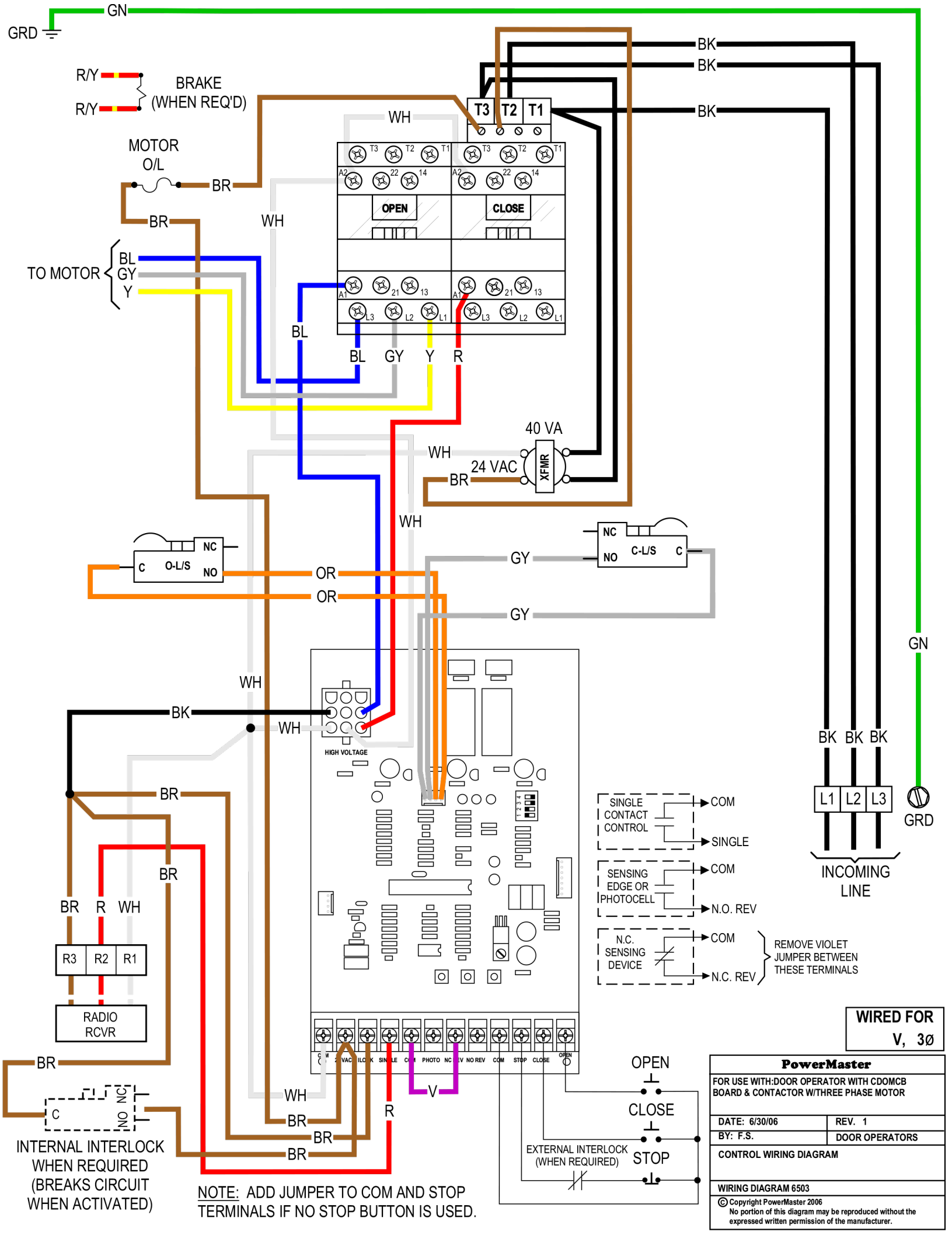
Call us toll free @ 1-800-243-4476

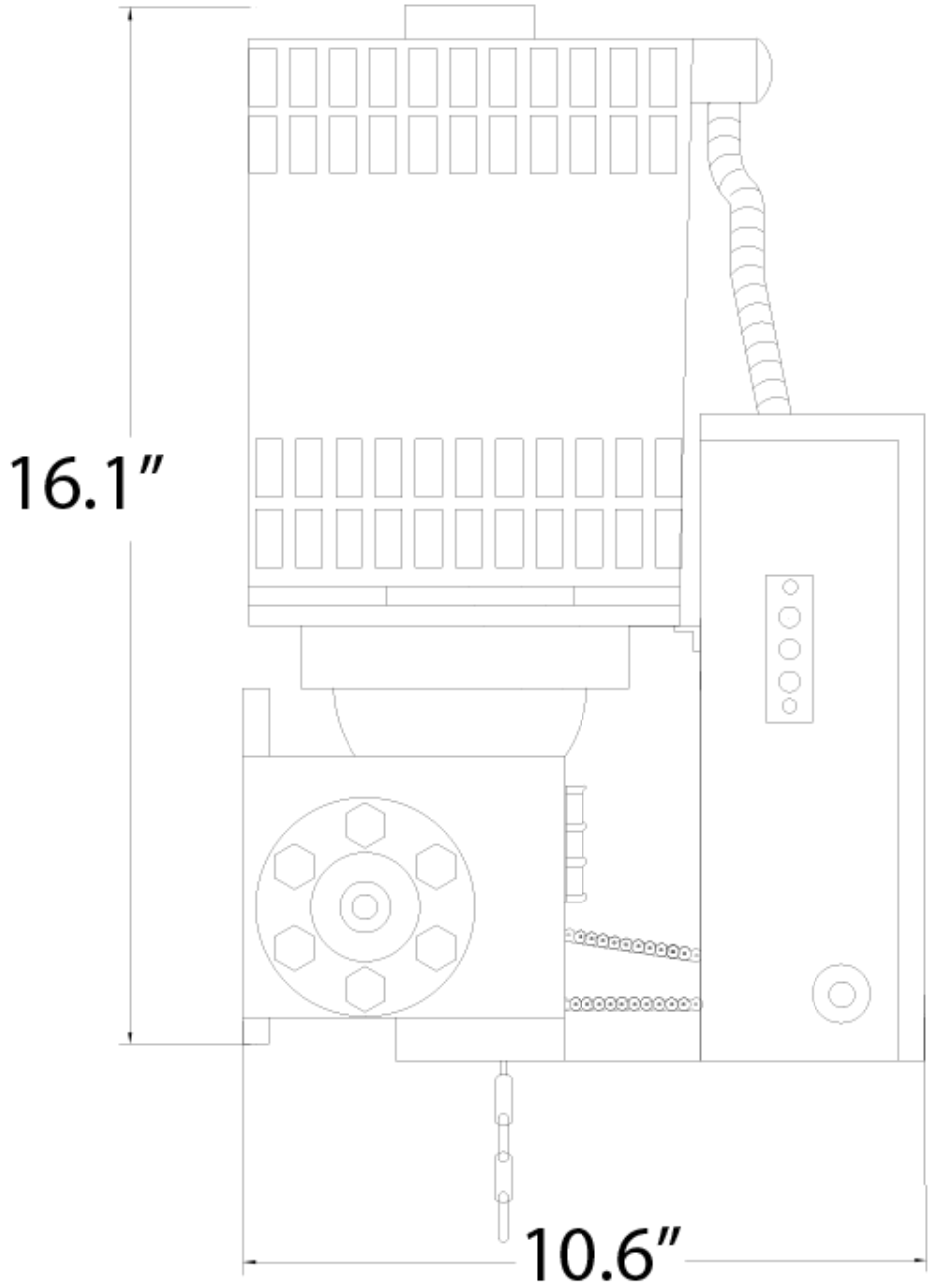
Email us: PMtech@VEpower.net

powermaster

www.facebook.com/PowerMasterOperators



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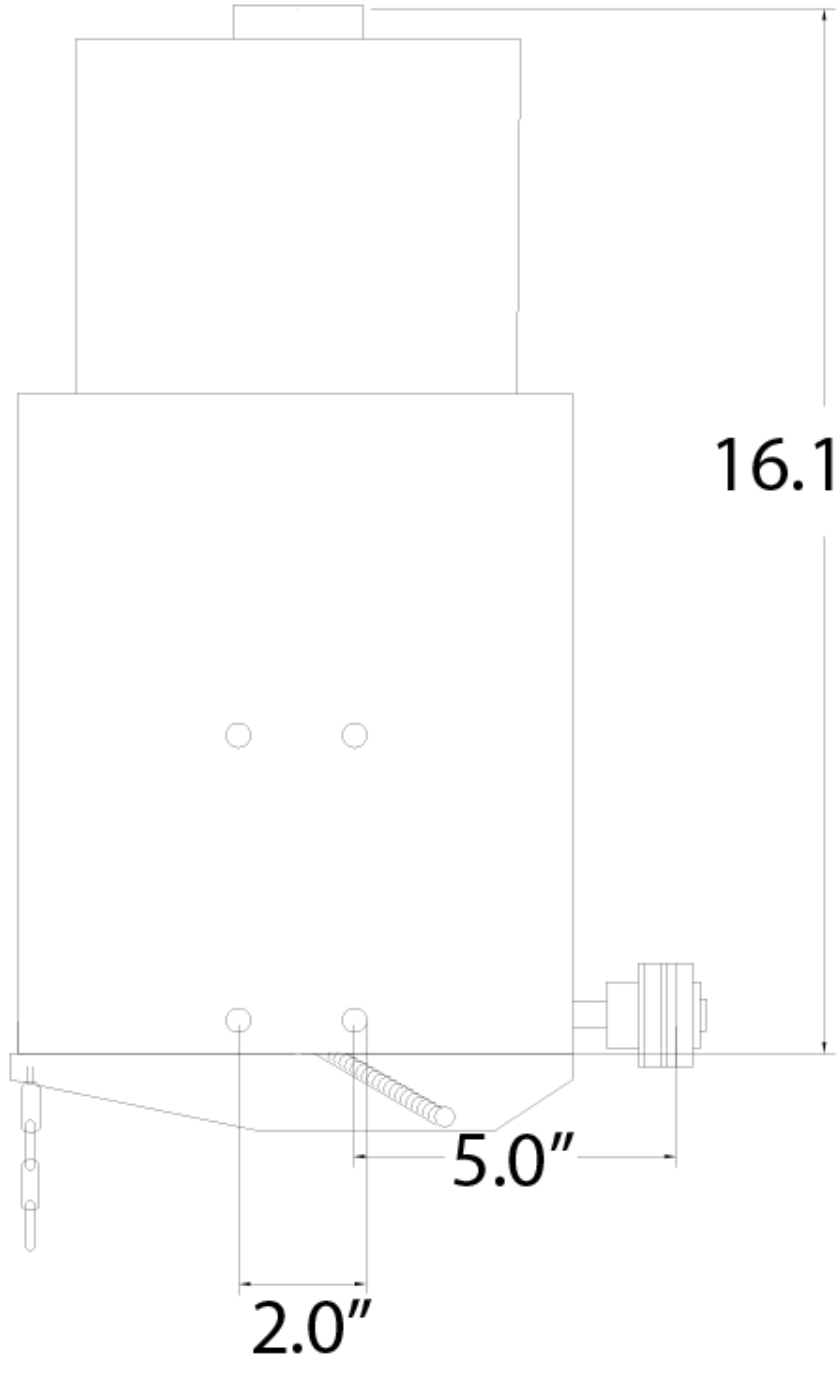
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