

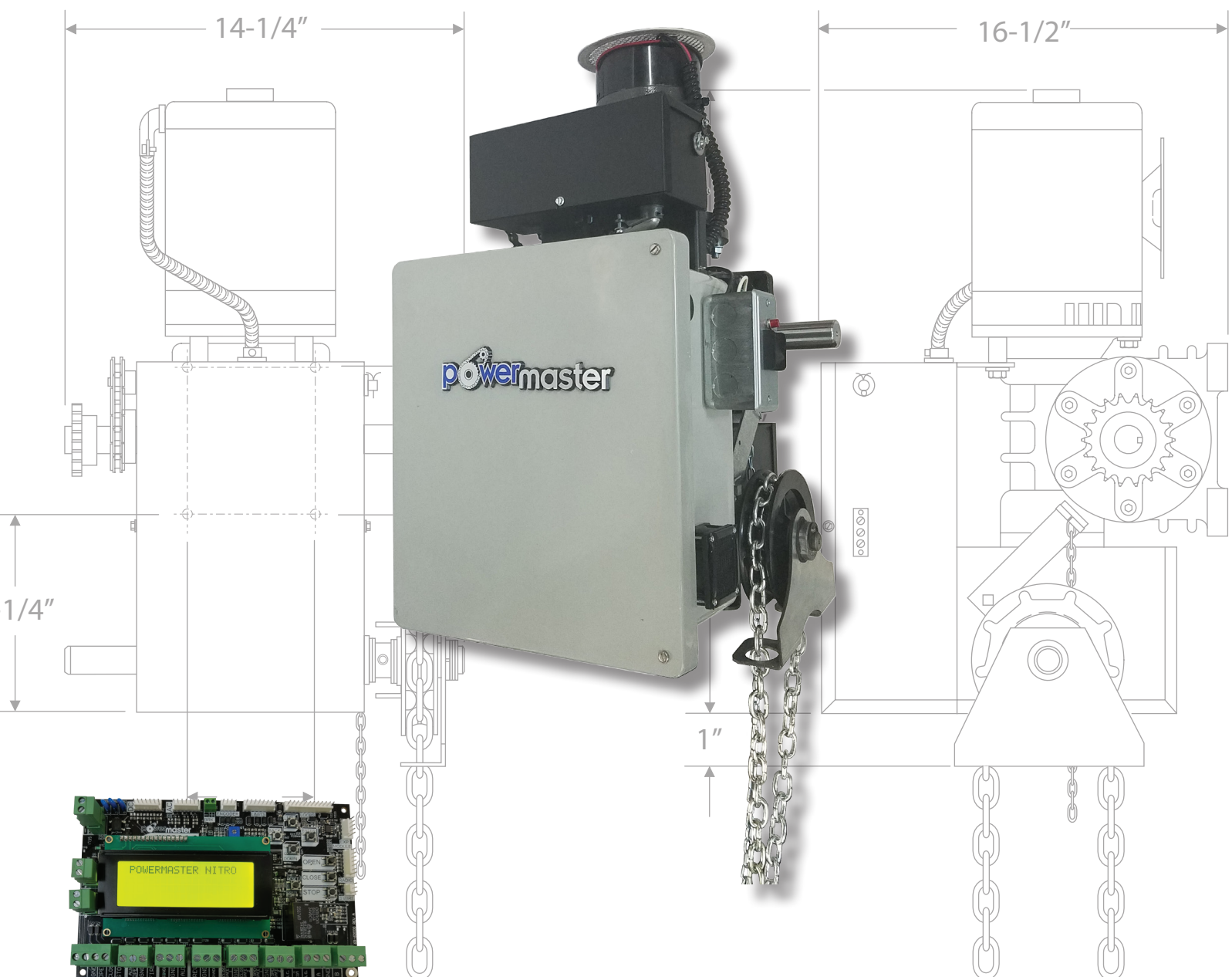


INSTALLATION AND OWNER'S MANUAL

MODEL D-MG

Gearhead Operator with Battery Backup

UL 325 and UL 991 Listed



**NITRO BOARD
INSTRUCTIONS INCLUDED**

Serial #:

Date Installed:

Your Dealer:

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



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

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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

Indicates a MECHANICAL hazard of injury or death. Gives instructions to avoid the hazard.



CAUTION

Indicates a MECHANICAL hazard of damage to your operator or equipment. Gives instructions to avoid the hazard.



WARNING

Indicates an ELECTRICAL hazard of injury or death. Gives instructions to avoid the hazard.



CAUTION

Indicates an ELECTRICAL hazard of damage to your operator or equipment. Gives instructions to avoid the hazard.

PRODUCT FEATURES

The purpose of this booklet is to provide assembly, installation, and operation information concerning PowerMaster Model MG 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.

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 be exercised by the person(s) installing, maintaining, and operating the equipment described herein.

Do not use this equipment for any purpose other than its intended use: the operation of an overhead commercial vehicular garage door.

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. The Model MG operator is equipped with a chain hoist to aid in manual operation. Use of this feature will not affect the limit settings.

Control circuit: 24 Volts AC. Standard 3-button open, close, and stop supplied. Will accept all standard control devices.

Connections for Auxiliary Entrapment Protection Devices: Use with reversing door edge components or a photo-electric beam device across the opening.

Constant Pressure to Close: Standard Operation

See CDO Board Manual for additional features.

MODEL MG OPERATOR APPLICATIONS

MG 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. MG operators are suitable where all or part of the door remains in a vertical position when fully open, such as doors with at least 18 inches of lift clearance or full vertical lift doors. MG operators may also be used with roll-up service doors and grilles when specified on order from factory.

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

MG operators are used in the following applications:

- Continuous Duty, Medium and Heavy Duty Cycle Commercial installations
- Indoor use only

OPTIONAL FEATURES

Digital Radio Controls: Open, Close and Stop operation. Radio units are available to control multiple doors.

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

PREPARATION

 WARNING	ELECTRIC DOOR OPERATORS ARE DESIGNED FOR DOORS IN GOOD WORKING CONDITION: PROPERLY OPERATING, PROPERLY COUNTERBALANCED, AND PROPERLY ADJUSTED IN ACCORDANCE WITH THE DOOR MANUFACTURER’S INSTALLATION INSTRUCTIONS.
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Before starting the installation of the operator, the door must be in good working condition, properly operating, and be 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 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 more secure installation of the shaft sprocket or flange coupler.

 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. ADJUSTMENTS ARE TO BE MADE BY A QUALIFIED PROFESSIONAL DOOR INSTALLER ONLY.

 WARNING
REMOVE OR DISABLE ANY LOCKING DEVICES FROM DOOR. REMOVE ALL ROPES.

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.

COMPONENT IDENTIFICATION



FIGURE 1

COMPONENT IDENTIFICATION LISTING

Item#	Description	Quantity
1	Operator Powerhead	1
2	Driven Sprocket on Door Shaft	1
3	Set Screw, 5/16-18 x 1	2
4	Steel Square Key	1
5	Drive Chain	1
6	Master Link	1
7	3-Button Station	1
8	Hand Chain, Pre-cut	1
9	Sash Chain, Pre-cut	1
10	Chain Lock Bracket	1
11	Mounting Bracket (optional)	
12	Wall Mtg Plate (optional)	
13	Drive Sprocket	1
14	Set Screw, 5/16-18 x 5/16	2
15	Key, 1/4 x 1/4 x 1	1

IMPORTANT INSTALLATION NOTES



WARNING

TO REDUCE THE RISK OF SEVERE INJURY OR DEATH, READ & FOLLOW ALL INSTALLATION INSTRUCTIONS!

- Install only on a properly operating, properly balanced garage door. An improperly operating or improperly balanced door could cause severe injury. Have a qualified service person make repairs to cables, spring assemblies, or other items before attempting to install the door operator.
- Remove all ropes and remove or disable all locks (unless mechanically and/or electrically interlocked to the power unit) that are connected to the garage door before installing the operator.
- Lightweight doors (such as fiberglass, aluminum, etc) must be reinforced to avoid door damage. Check the door manufacturer's instruction manual for a bracing procedure, or for a reinforcement kit.
- The MG Series Operator is a commercial vehicular door operator, and as such, is not intended for pedestrian traffic. Where applications occur in areas known to have pedestrian traffic, a pedestrian door **MUST** be available to enter/exit the building. You must also install an **AUXILIARY ENTRAPMENT PROTECTION** device that is UL recognized and has been tested for use with this unit (such as a photoelectric beam device and/or reversing sensing door edge) as part of the complete system.
- The connection of an auxiliary entrapment protection device is **REQUIRED** on all applications when the 3-button station is out of sight of the door, or when any other automatic or manual control is used.
- Install the operator **AT LEAST 8 feet** above the floor.
- Do not connect the operator to the power source until instructed to do so.
- Mount the control station as follows:
 - Within sight of the door;
 - At a minimum height of 5 feet above the floor so small children cannot reach it; **and**
 - Away from the door, so the user is prevented from coming in contact with the door while operating the controls.
- Do not over tighten clutch adjustment to compensate for a poorly working door.
- Securely attach entrapment warning placard adjacent to the control station in a prominent location.
- After installing the operator, test all safety features for proper operation (See **TESTING** section)

INSTALLATION INSTRUCTIONS

DOOR TYPES AND MOUNTING POSITIONS

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

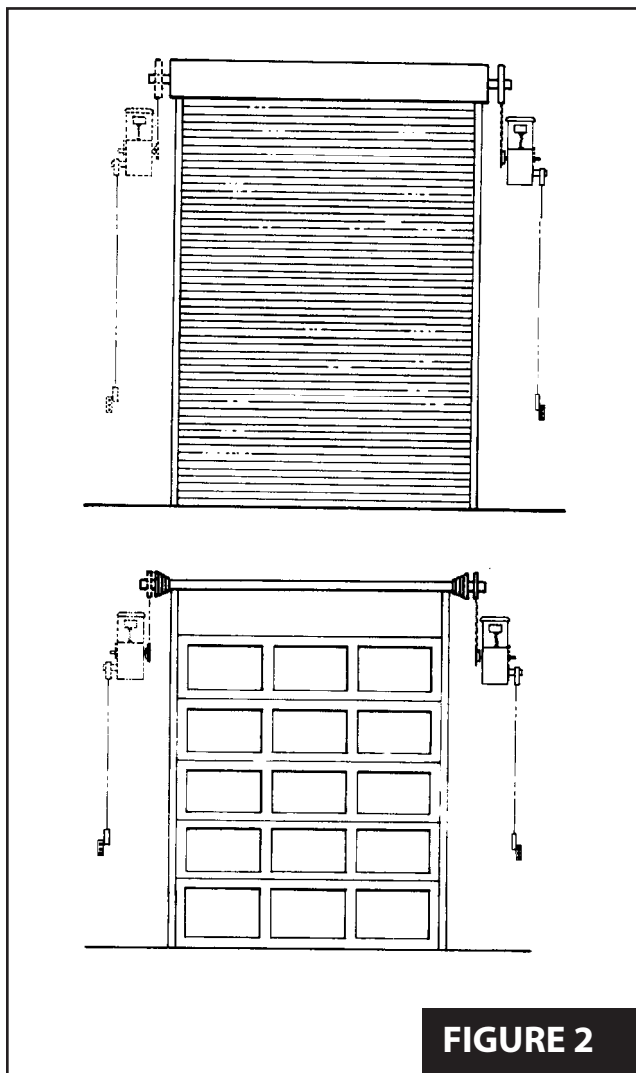


FIGURE 2

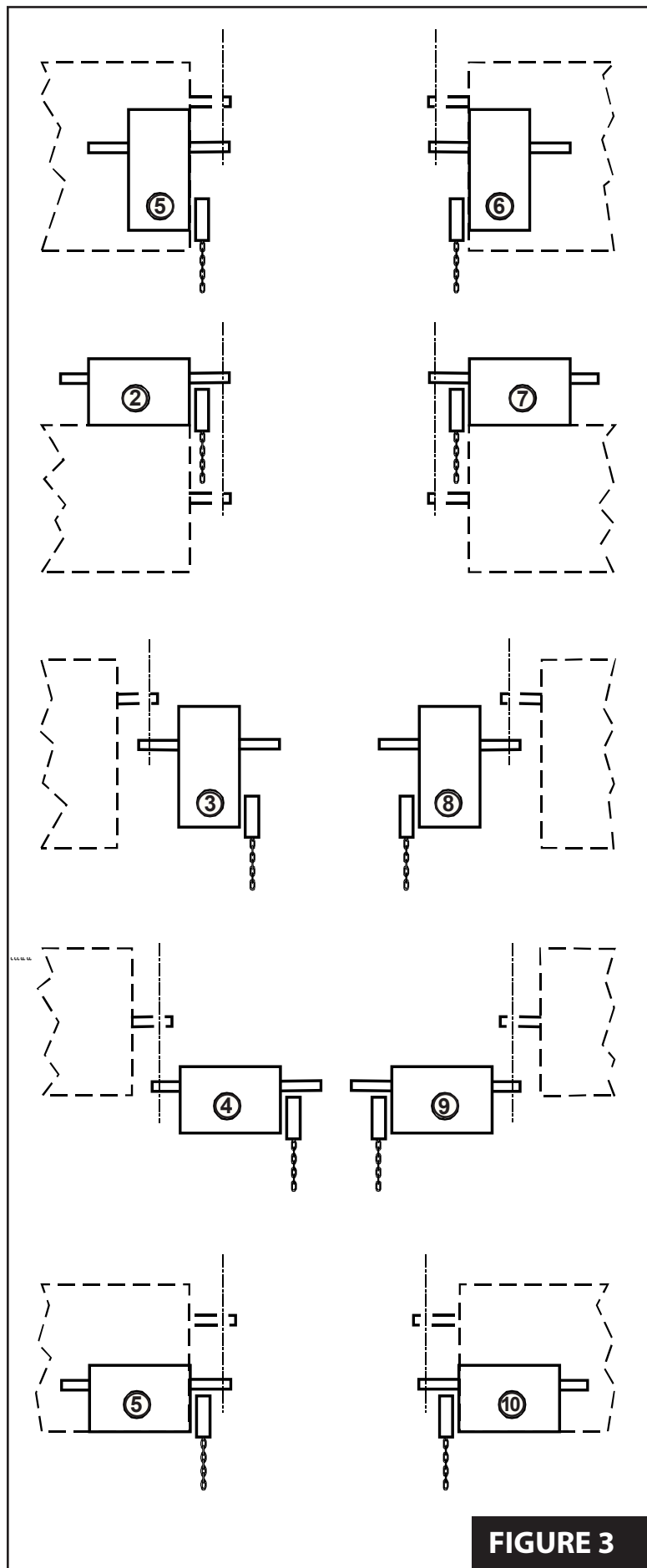


FIGURE 3



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** 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 MG operator must be wall mounted. For rolling steel doors, the operator must be wall mounted or hood mounted by using an optional hood mounting bracket **[Item 11]**. A wall mounting plate **[Item 12]** is also available from the factory (see **Figure 1**). The mounting plate/bracket provides for chain tension adjustment as well as aiding installation.

NOTE: THE OPERATOR DRIVE SPROCKET MAY BE INSTALLED ON EITHER SIDE OF THE GEAR REDUCER. SELECTION DEPENDS ON WHICH SIDE OF THE DOOR THE OPERATOR IS MOUNTED ON.

2. Determine which side of the door the operator will be located on. Fasten sprockets **[Item 2]** and **[Item 13]** and the keys **[Items 4 and 15]** on the chosen side of the torsion shaft of the door and on the corresponding end of the output shaft of the operator. Tighten the set screws enough to prevent the sprockets from sliding off the shaft. If the door shaft lacks a keyway, you will need to drill and pin the sprocket in accordance with **Step 6** (Tightening the set screws is sufficient for this step). The sprockets

should be kept as close as possible to the bearings. Fasten the wall mounting plate or the mounting bracket (as applicable and if available) to the operator gear box flange. 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 **Figure 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 two drive sprockets **[Item 2 and Item 13]** with the drive chain **[Item 5]** and connecting link **[Item 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's torsion shaft, trace the mounting slots (holes) on the mounting surface, then lower the operator to the floor. The MG operator gear box mounting hole pattern is shown in **Figure 4**.

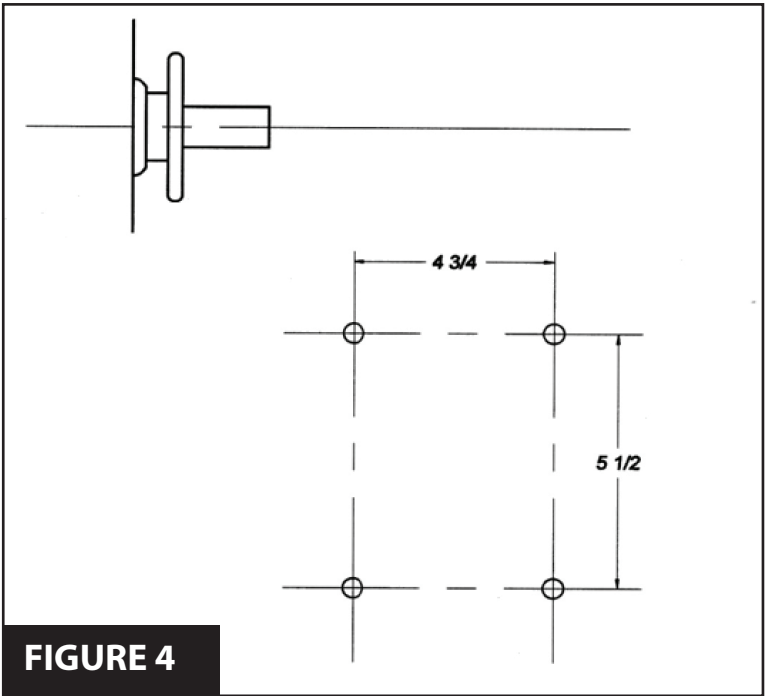


FIGURE 4

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 of 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 sprockets in place with their 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 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 5

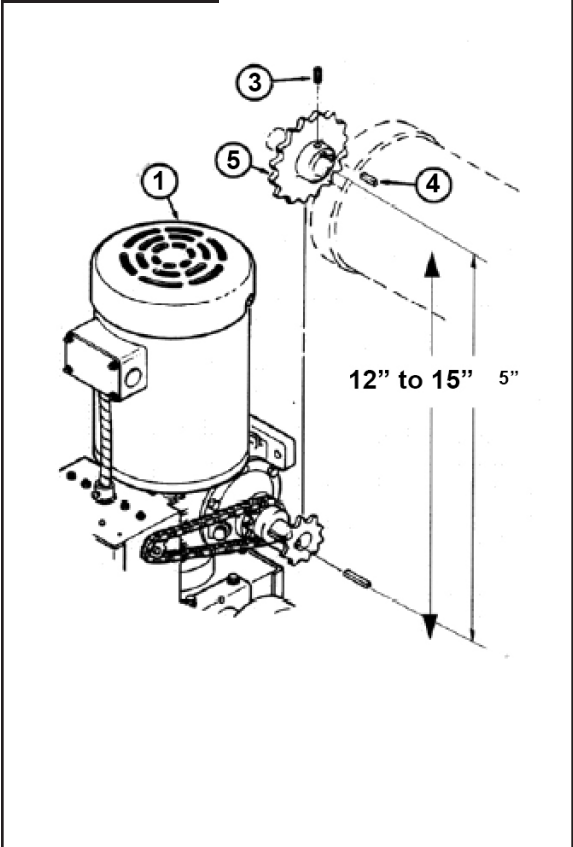


FIGURE 6

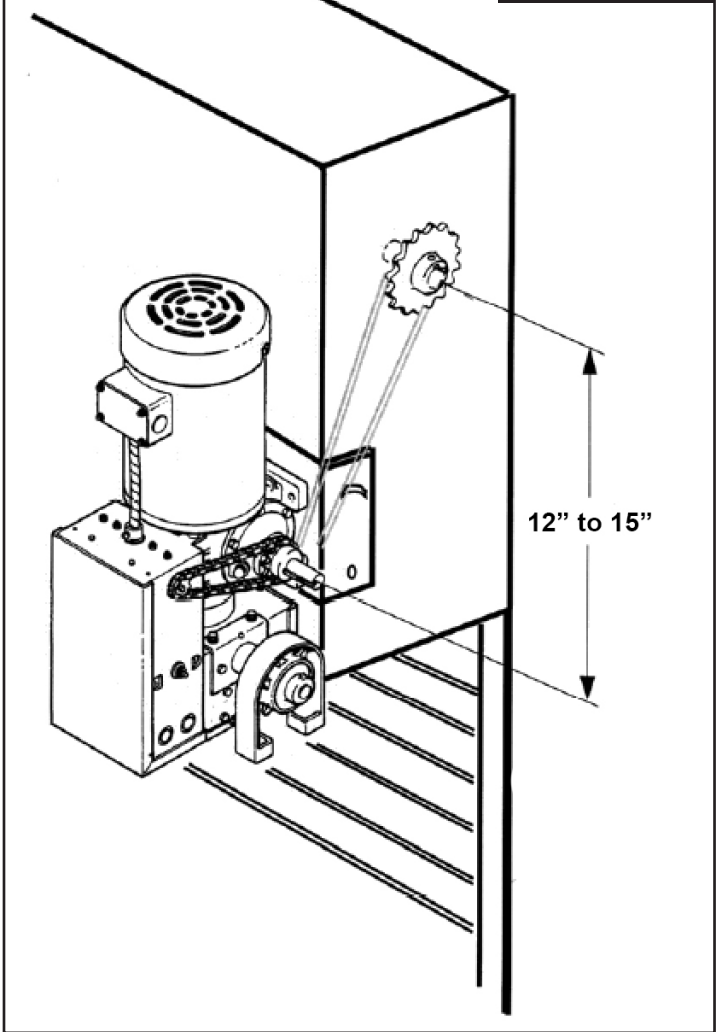
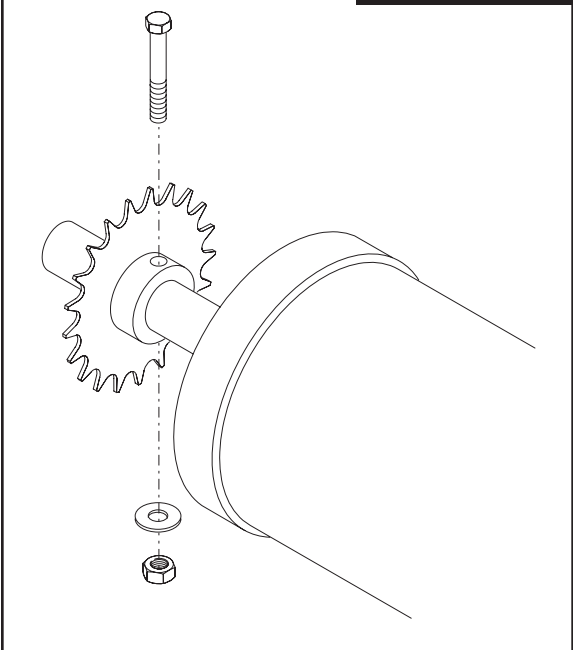
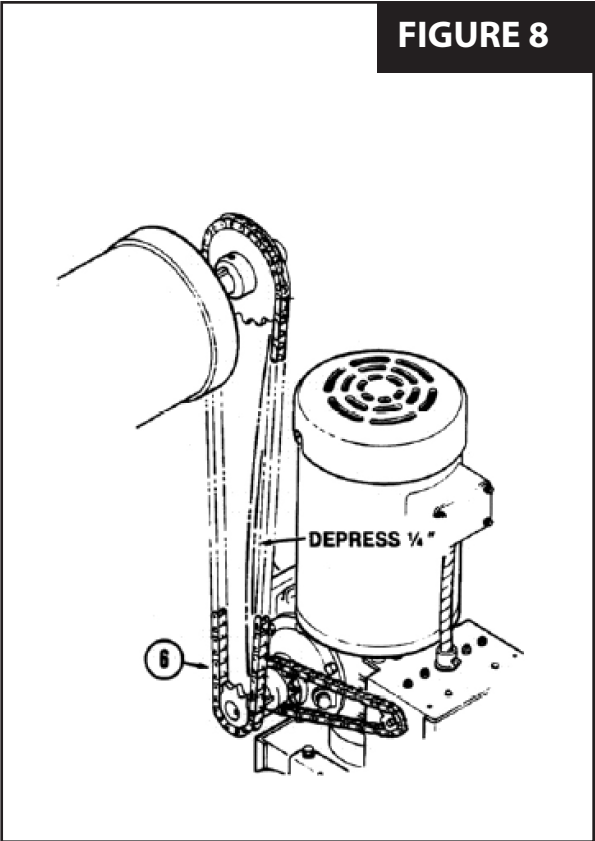


FIGURE 7

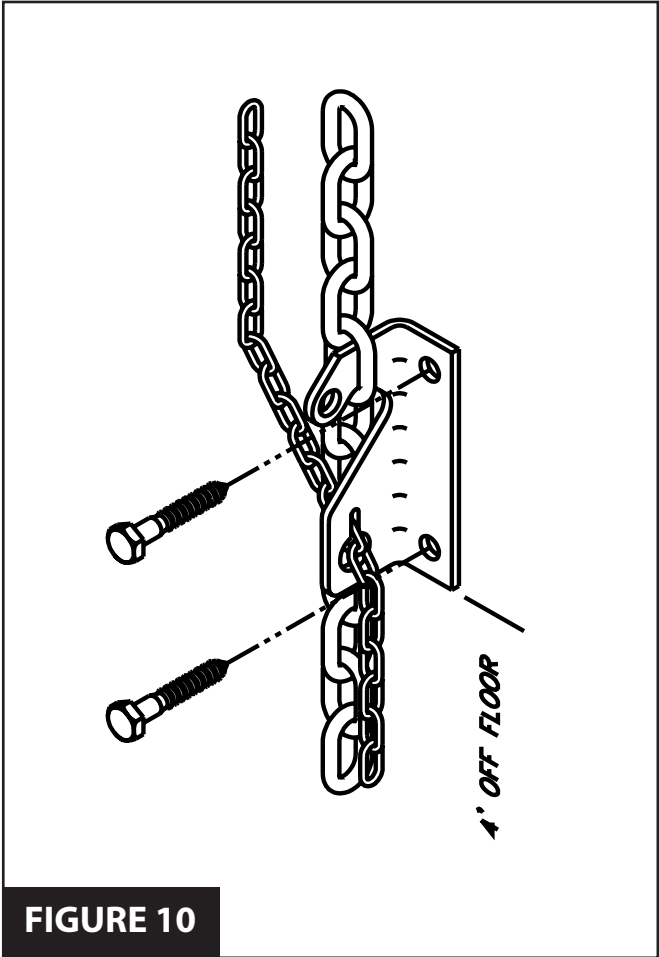
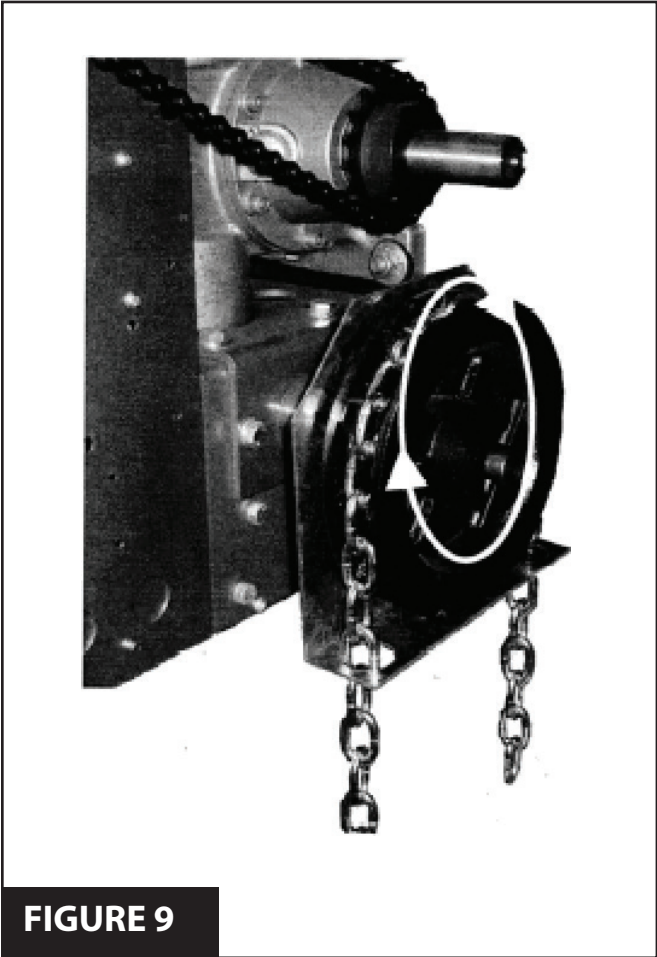


CHAIN HOIST INSTALLATION

- 1. Refer to **Figure 9** to install the chain hoist. Pass the hand chain [Item 8] over the chain pocket wheel and through the guide holes in the chain guard. Fasten the ends of the chain together (to make one continuous loop) by opening and re-closing one link using two pairs of pliers. If the chain is too long, shorten it to the desired length by removing links.
- 2. Remove the sash chain from the shipping bag and let hang from the disconnect lever. Pull the sash chain to engage the hand chain. This will actuate the interlock switch and disengage the solenoid brake.
- 3. Use lag screws to attach the chain lock bracket [Item 10] to the wall, vertically in line with the sash chain about four feet off the floor. See **Figure 10**.



BEFORE PROCEEDING WITH THE OPERATOR INSTALLATION AND SETTINGS, MAKE A FINAL CHECK FOR TIGHTNESS OF ALL MOUNTING HARDWARE AND SET SCREWS.



SETTING THE LIMIT SWITCHES



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.

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 switches. The **OPEN** limit switch is on the LEFT, and the **CLOSE** limit switch is on the RIGHT. Auxiliary switches may also be present to control other function.
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. Release the retaining bracket and be certain that it engages in slots of both limit nuts.
4. Manually lower the door to a nearly closed position, and repeat **Step #3** using 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 pre-set 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 (If it does, switch L1 and L2). With the door in 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 in the proper open and close positions.

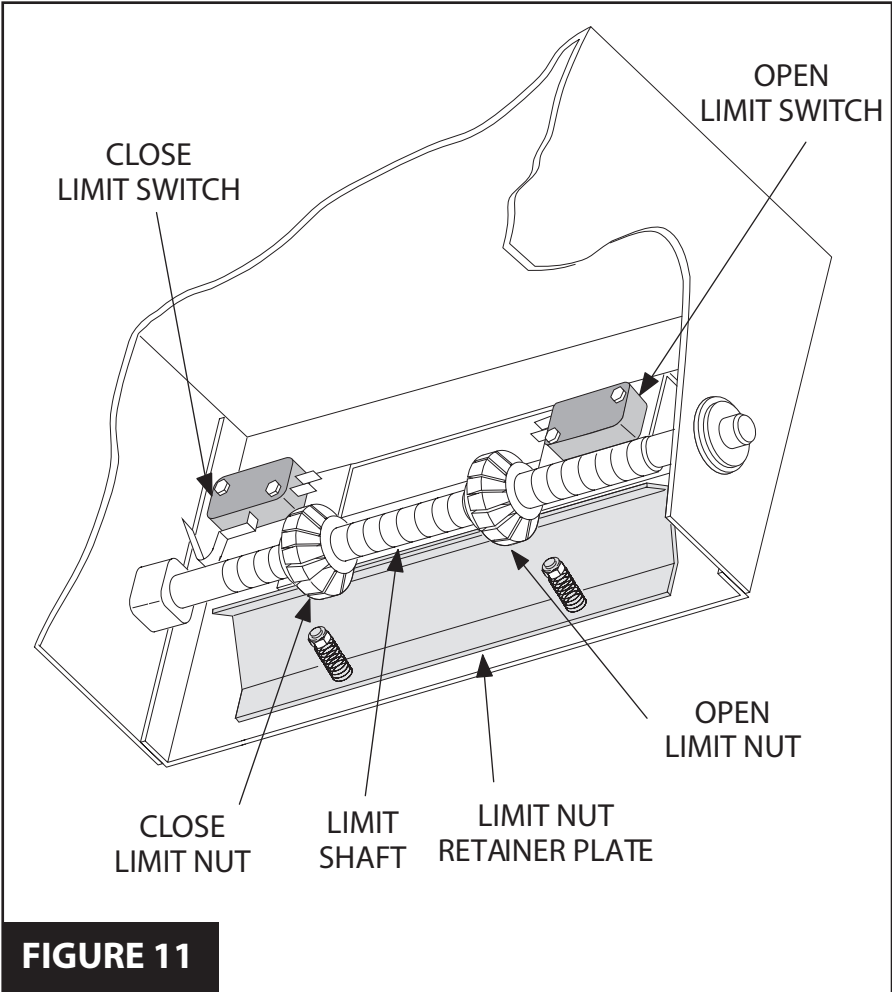


FIGURE 11

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**

NOTE: PowerMaster DMG operators are designed and constructed for use in single phase configurations. Check the operator nameplate label on the control box cover. 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 (to 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 the field wiring terminal connections for the operator. Always connect the wires to the push-button controls and auxiliary devices exactly as shown.



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 MUST BE CONNECTED TO THE UNIT.

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

NOTE: MG Series 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 wiring diagram.

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. Additionally, the control station must be located within clear sight of the door. Adjacent to the control station, the warning placard (included with the operator) must be installed (**Figure 12**).

WARNING: TO PREVENT ENTRAPMENT, DO NOT START DOOR DOWNWARD TRAVEL UNLESS DOORWAY IS CLEAR

FIGURE 12



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.

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.

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 FUNCTIONALITY.

SEE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF SAFETY EQUIPMENT.

TESTING



WARNING

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



WARNING

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

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 around 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 2-button control station, and may be designed to function differently than the more common 3-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.

MG Series Operators are equipped with a reversing edge circuit for use with foam edge door components. 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. 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 or using the hoist chain. 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.

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 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) to compensate for a poorly working door.
- 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 IT 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 input for an electric edge or photoelectric device that will cause a closing door to stop and reverse it to open.

MAINTENANCE SUGGESTIONS

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. The brake is adjusted at the factory and will need periodic adjustment for wear.

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 by removing oil level plug. If oil level is below this plug, add Mobil 1 Gear Oil or equivalent to bring to proper level.

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, is properly counter-balanced and periodically lubricated. **An annual inspection of the door BY A QUALIFIED SERVICE TECHNICIAN IS RECOMMENDED.***

**The 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 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 SERVICE TECHNICIAN.*

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

We constantly strive to maintain and improve quality of our products. Therefore, the components shown in the illustrations were accurate at time of printing but are subject to change without notice as quality improvements are made.

**WARNING**

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

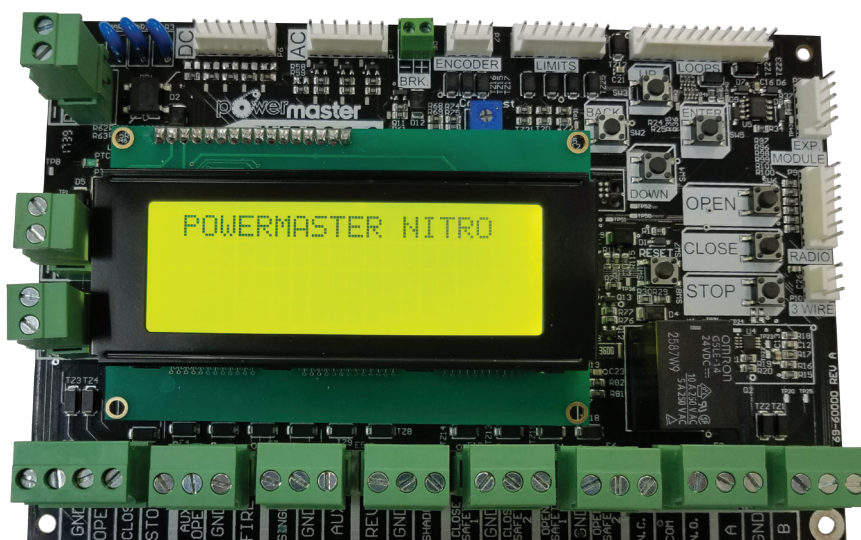
TROUBLE SHOOTING CHART

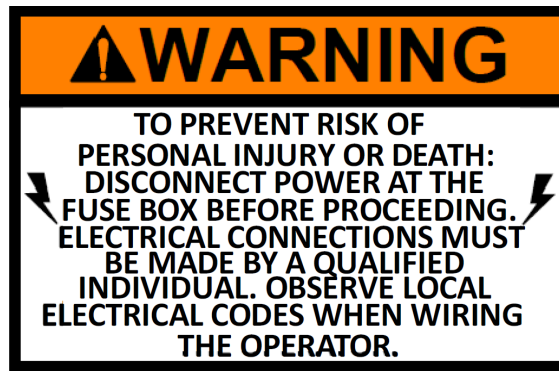
SYMPTOM	POSSIBLE CAUSE	SOLUTION
Motor runs but door does not move.	Door jammed or obstructed.	Check manual operation of door.
	Sprocket key missing or drive chain broken.	Check drive chain for operation.
Limit switches do not hold setting.	Drive chain too loose; permits chain to jump teeth on sprocket.	Adjust chain to proper tension.
	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.
Door drifts when operator shuts off.	Inoperative or improperly adjusted brake.	Adjust brake.
	Door tension incorrect.	Disconnect operator and check operation of door.
Motor hums - does not run.	Dead phase (on 3-phase).	Check power supply.
	Brake does not release.	Check wires to brake solenoid. Check adjustment.
	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 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 pushbutton circuit.	Check pushbutton circuits for voltage against voltage indicated on wiring diagram. Check pushbutton wiring. Check interlock switch wiring.
	Interlock switch broken or inoperative.	Check that brake release pin is making contact with interlock switch located inside chassis box. Check wiring to switch and switch function. Normally closed for operation electrically and normally open for hand chain operation.
Operator closes door when OPEN button is pressed, and limit switches do not function properly.	On 3-phase operators, power supply is connected out of phase.	Interchange connections of any two power supply leads (See wiring diagram).
	Operator not installed correctly.	Re-mount operator so that motor is “up” or toward door wall. Contact factory as to wiring changes required.
Operator fails to shut off at fully open or fully closed position.	On 3-phase operators, power supply is connected out of phase.	Check phase as above.
	Limit nuts not adjusted properly.	See Limit Adjustments section
	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 pushbutton or short in control wiring.	If door overrides open limit, check open limit. If door overrides close limit, check close limit.
	Limit drive chain broken or inoperative.	Replace chain, check limit screw for rotating.



SUPPLEMENTARY INSTRUCTION MANUAL

for units equipped with
PowerMaster Nitro Board

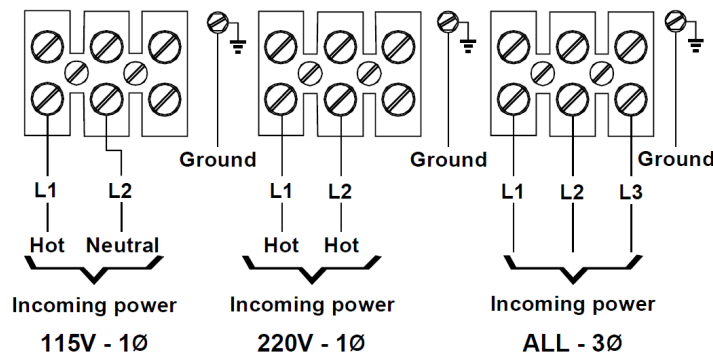




WARNING: These operators have been designed and constructed for use with voltages from 115 to 460 VAC. Check the operator nameplate label on the control box cover for the proper voltage and phase. The application of an improper input voltage or phase will result in catastrophic failure to the internal electrical components.

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 and connect a ground wire to the grounding screw.

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 control and auxiliary devices exactly as shown.



WARNING:

Control voltage of the door operator is 5 volts DC, 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 SUCH AS A DOOR EDGE OR PHOTOELECTRIC MUST BE CONNECTED.

Note: These Operators are able to accept monitored safety devices for entrapment protection. To comply with code requirements, at least one monitored safety device **MUST** be installed and wired to the operator. Additional safety devices may be necessary, depending on installation requirements.

Number 22-gauge wire or heavier must be used for wiring the control stations and auxiliary control devices to the operator. Smaller gauge wire may cause operational problems.



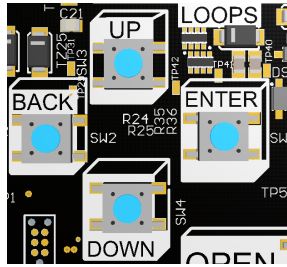
WARNING

TO AVOID POSSIBLE DAMAGE TO THE DOOR AND OPERATOR ENSURE ALL DOOR LOCKS ARE DISABLED. SETUP THE LOCKBAR SENSING ON THE CONTROL BOARD, OR USE AN INTERLOCK SWITCH IF A LOCK IS REQUIRED TO RETAIN FUNCTIONALITY.

1 Board Interface

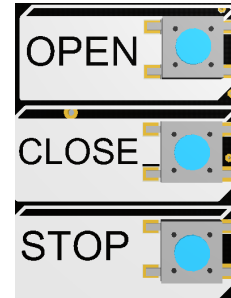
LCD Navigation

The board is equipped with **UP**, **DOWN**, **BACK**, and **ENTER** buttons located to the upper right corner of the board.



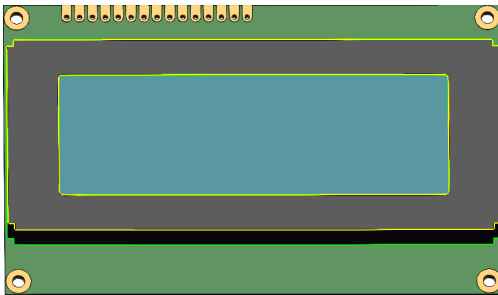
On Board 3-Button Controls

The board is equipped with **OPEN**, **CLOSE**, and **STOP** buttons located to the right side of the board.



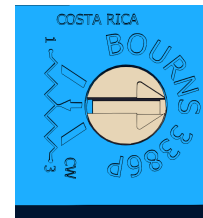
LCD Display

The board is equipped with a 20 x 4 LCD display to provide user feedback and change settings.



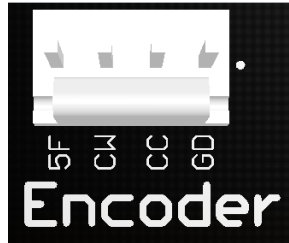
Contrast Adjustment

The board is equipped with a potentiometer in order to adjust the contrast of the LCD screen.



2 Headers

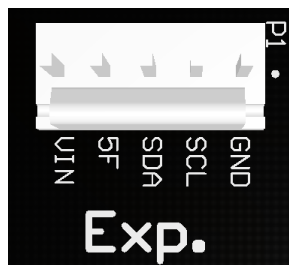
Encoder



Limits



Expansion Headers



3 Wire Header



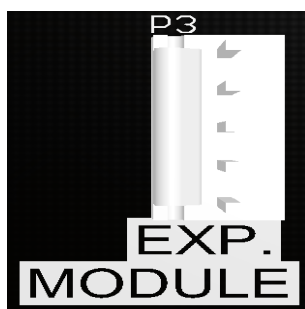
DC Motor Header



AC Motor Header



Expansion Module Header



Radio Header



3 Terminals

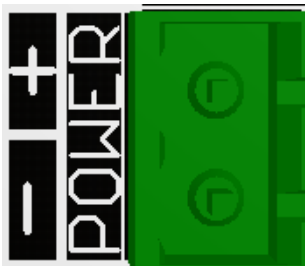
Horn Terminal



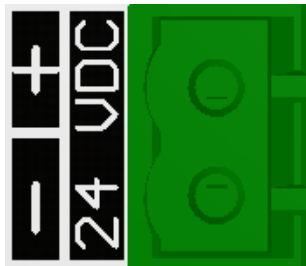
Brake Terminal



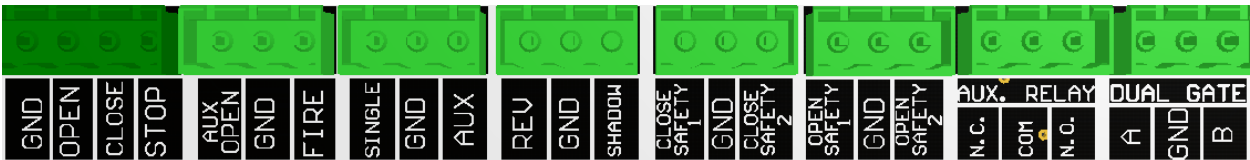
Power Terminal



24 VDC



Terminal Strip



4 Setup Wizard

Setup Introduction

1. To begin setting up the operator press the **ENTER** button.

```
*****SETUP WIZARD*****  
PRESS ENTER
```

Operator Type

1. To select the correct operator type press the **UP** and **DOWN** buttons.

2. Once the desired operator type is selected press the **ENTER** button.

```
**OPERATOR SELECT**  
> SLIDE GATE  
  SWING GATE  
  BARRIER GATE
```

Operator Select

1. To select the correct operator press the **UP** and **DOWN** buttons.

2. Once the desired operator is selected press the **ENTER** button.

```
*****SLIDE GATE*****  
> AC MOTOR  
  DC MOTOR  
  VARIABLE SPEED
```

```
*****SWING GATE*****  
> AC MOTOR  
  DC MOTOR  
  VARIABLE SPEED
```

NOTE: The model of the operator can be found on the cover or side of the machine.

Handedness

1. To select the correct hand press the **UP** and **DOWN** buttons.

2. Once the desired hand is selected press the **ENTER** button.

A green LCD screen with a black border. The text on the screen is: *****HANDING*****
> RIGHT HAND
LEFT HAND
The screen has a grid pattern in the background.

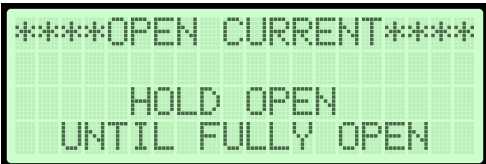
```
*****HANDING*****
> RIGHT HAND
LEFT HAND
```

NOTE: The hand of the operator is the side of the driveway the operator is on from the inside looking out.

Open Force Setup

1. Hold the **OPEN** button and run the operator from the **FULLY CLOSED** position all the way to the **OPEN LIMIT**.

2. Once the operator is at the **FULLY OPEN** position press the **ENTER** button.

A green LCD screen with a black border. The text on the screen is: *****OPEN CURRENT*****
HOLD OPEN
UNTIL FULLY OPEN
The screen has a grid pattern in the background.

```
*****OPEN CURRENT*****
HOLD OPEN
UNTIL FULLY OPEN
```

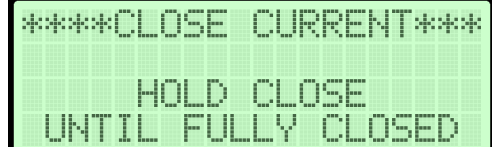
NOTE: The open current setting adjusts the maximum current allowed to operate the door/gate in the open direction.

If the open current load exceeds this threshold, the operator will trigger a safety.

Close Force Setup

1. By holding the **CLOSE** button run the operator from the **FULLY OPEN** position all the way to the **CLOSE LIMIT**.

2. Once the operator is at the **FULLY CLOSED** position press the **ENTER** button.



****CLOSE CURRENT****
HOLD CLOSE
UNTIL FULLY CLOSED

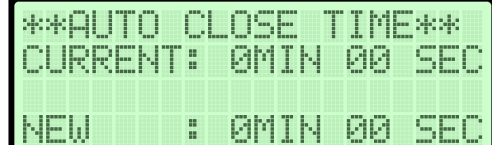
NOTE: The close current setting adjusts the maximum current allowed to operate the door/gate in the close direction.

If the close current load exceeds this threshold, the operator will trigger a safety.

Auto Close Time Adjustment

1. By pressing the **UP** and **DOWN** buttons set the adjusted time for the auto close timer.

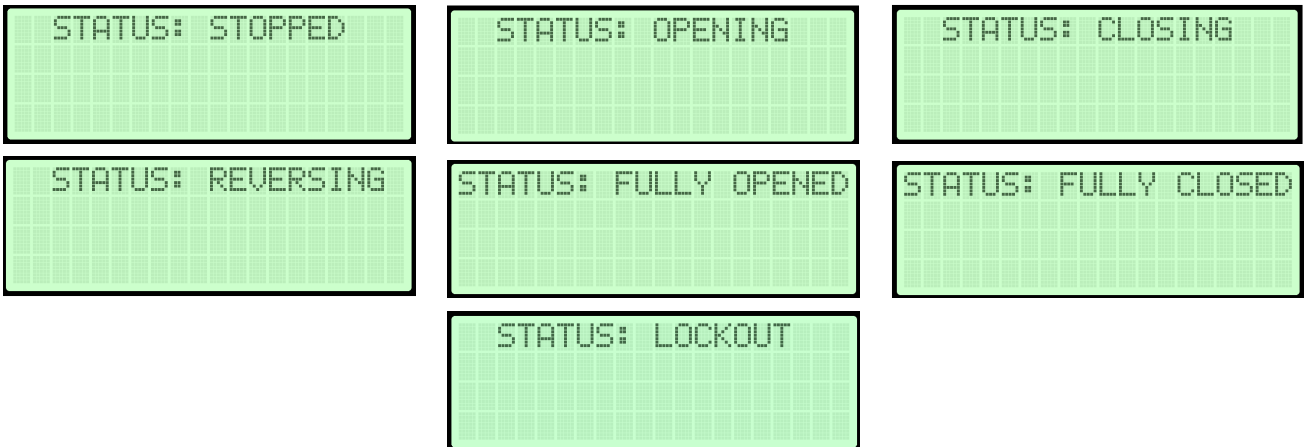
2. Once the desired time is set press the **ENTER** button.



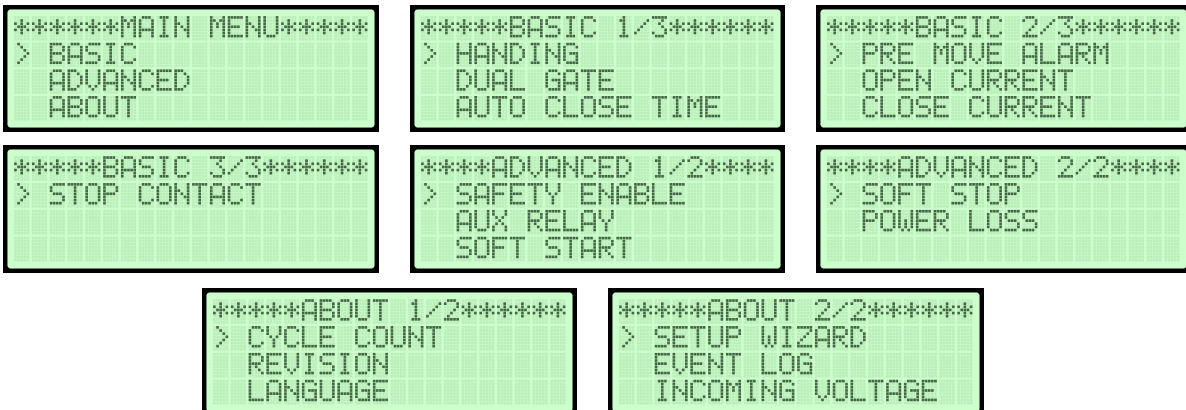
AUTO CLOSE TIME
CURRENT: 0MIN 00 SEC
NEW : 0MIN 00 SEC

NOTE: 0 MIN 00 SEC is OFF. The Auto Close Time specifies the time it will take until a gate or door automatically closes after it has been opened.

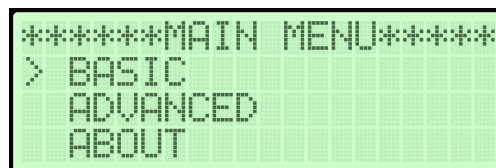
5 Status



6 Menu Overview



7 Basic Programming



Handing

1. When the pointer is at **HANDING** press the **ENTER** button.
2. To select the correct hand press the **UP** and **DOWN** buttons.
3. Once the desired hand is selected press the **ENTER** button.

```
*****BASIC 1/3*****  
> HANDING  
  DUAL GATE  
  AUTO CLOSE TIME
```

```
*****HANDING*****  
> RIGHT HAND *  
  LEFT HAND
```

NOTE: The hand of the operator is the side of the driveway the operator is on from the inside looking out.

Dual Gate

1. When the pointer is at **DUAL GATE** press the **ENTER** button.
2. Once the desired gate is selected press the **ENTER** button.

```
*****BASIC 1/3*****  
  HANDING  
> DUAL GATE  
  AUTO CLOSE TIME
```

```
*****DUAL GATE*****  
> SINGLE GATE *  
  DUAL GATE
```

NOTE: The single gate setting is for standalone gates. The dual gate setting is for gates that run simultaneously.

Auto Close Time

1. When the pointer is at **AUTO CLOSE TIME** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons set the adjusted time for the auto close timer.
3. Once the desired time is set press the **ENTER** button.

```
*****BASIC 1/3*****  
HANDING  
DUAL GATE  
> AUTO CLOSE TIME
```

```
**AUTO CLOSE TIME**  
CURRENT: 0MIN 00 SEC  
NEW      : 0MIN 00 SEC
```

NOTE: 0 MIN 00 SEC is OFF. The auto close time specifies the time it will take until a gate or door automatically closes after it has triggered the open limit.

Pre Move Alarm

1. When the pointer is at **PRE MOVE ALARM** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons set the adjusted time for the pre move alarm.
3. Once the desired time is set press the **ENTER** button.

```
*****BASIC 2/3*****  
> PRE MOVE ALARM  
OPEN CURRENT  
CLOSE CURRENT
```

```
***PRE MOVE ALARM***  
CURRENT: 0 SEC  
NEW      : 0 SEC
```

NOTE: 0 SECONDS is OFF. The pre move alarm allows users to specify the amount of time a door or gate should wait until opening/closing.

Open Current

1. When the pointer is at **OPEN CURRENT** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons set the maximum current for the open current setting.
3. Once the desired current is set press the **ENTER** button.

```
*****BASIC 2/3*****  
  PRE MOVE ALARM  
> OPEN CURRENT  
  CLOSE CURRENT
```

```
*****OPEN CURRENT*****  
CURRENT: 5  
NEW      : 5
```

NOTE: The open current setting adjusts the maximum current allowed to operate the door/gate in the open direction. If the open current load exceeds this threshold, the operator will trigger a safety.

Close Current

1. When the pointer is at **CLOSE CURRENT** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons set the maximum current for the close current setting.
3. Once the desired current is set press the **ENTER** button.

```
*****BASIC 2/3*****  
  PRE MOVE ALARM  
  OPEN CURRENT  
> CLOSE CURRENT
```

```
*****CLOSE CURRENT***  
CURRENT: 5  
NEW      : 5
```

NOTE: The close current setting adjusts the maximum current allowed to operate the door/gate in the close direction. If the close current load exceeds this threshold, the operator will trigger a safety.

Stop Contact

1. When the pointer is at **STOP CONTACT** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons set Normally Open or Normally Close.
3. Once the desired contact is set press the **ENTER** button.

```
*****BASIC 3/3*****  
> STOP CONTACT
```

```
*****STOP CONTACT*****  
> NORMALLY CLOSED *  
   NORMALLY OPEN
```

NOTE: Stop Contact set's whether the STOP contact is Normally Open or Normally Close.

8 Advanced Programming

```
*****MAIN MENU*****  
   BASIC  
> ADVANCED  
   ABOUT
```

Safety Enable

1. When the pointer is at **SAFETY ENABLE** press the **ENTER** button.
2. Users will be allowed to select between **CLOSE SAFETY** and **OPEN SAFETY**.

```
*****ADVANCED 1/2*****  
> SAFETY ENABLE  
   AUX RELAY  
   SOFT START
```

```
***SAFETY ENABLE***  
> CLOSE SAFETY 2  
   OPEN SAFETY 2
```

Close Safety

1. When the pointer is at **CLOSE SAFETY** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons select the desired setting.
3. Once the desired setting is selected press the **ENTER** button.

```
***SAFETY ENABLE***  
> CLOSE SAFETY 2  
  OPEN SAFETY 2
```

```
****CLOSE SAFETY 2*  
> ON  
  OFF*
```

NOTE: Close safety will detect an obstruction during closing while the unit is moving. Any close obstruction signal will cause the unit to stop then reverse to the full open position.

Open Safety

1. When the pointer is at **OPEN SAFETY** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons select the desired setting.
3. Once the desired setting is selected press the **ENTER** button.

```
***SAFETY ENABLE***  
  CLOSE SAFETY 2  
> OPEN SAFETY 2
```

```
****OPEN SAFETY 2**  
> ON  
  OFF*
```

NOTE: Open safety will detect an obstruction during opening while the gate is moving. Any open obstruction signal will cause the unit to stop then reverse to the full closed position.

Aux Relay

1. When the pointer is at **AUX RELAY** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons select the desired setting.
3. Once the desired setting is selected press the **ENTER** button.

```
*****ADVANCED 1/2*****  
SAFETY ENABLE  
> AUX RELAY  
SOFT START
```

```
*****AUX RELAY*****  
> AUX RELAY OFF *  
MAGLOCK  
STROBE
```

- Aux Relay Off: the auxiliary relay will be disabled
 - Maglock: the magnetic lock will be enabled during pending or actual motion (open/close)
 - Strobe: the warning strobe light will be enabled during pending or actual motion (open/close)
-

Soft Start

1. When the pointer is at **SOFT START** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons select the desired setting.
3. Once the desired setting is selected press the **ENTER** button.

```
*****ADVANCED 1/2*****  
SAFETY ENABLE  
AUX RELAY  
> SOFT START
```

```
*****SOFT START*****  
CURRENT: 0  
NEW : 0
```

NOTE: The soft start feature will cause the operator to start the DC motor slowly. This reduces malfunctions from wear and tear as well as an overload of current.

Soft Stop

1. When the pointer is at **SOFT STOP** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons select the desired setting.
3. Once the desired setting is selected press the **ENTER** button.

```
*****ADVANCED 2/2*****  
> SOFT STOP  
POWER LOSS
```

```
*****SOFT STOP*****  
CURRENT: 0  
NEW      : 0
```

NOTE: The soft stop feature will cause the operator to stop the DC motor slowly. This reduces malfunctions from wear and tear as well as an overload of current. It is recommended for gates with heavy loads.

Stop Contact

1. When the pointer is at **POWER LOSS** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons select the desired setting.
3. Once the desired setting is selected press the **ENTER** button.

```
*****ADVANCED 2/2*****  
SOFT STOP  
> POWER LOSS
```

```
*****POWER LOSS*****  
> FAIL SAFE *  
FAIL SECURE
```

NOTE: Select Fail Safe if the intended operation when the batteries are low that the operator will go to the full OPEN position. Select Fail Secure if the intended operation when the batteries are low that the operator will go to the full CLOSE position.

9 About

```
*****MAIN MENU*****  
  BASIC  
  ADVANCED  
> ABOUT
```

Cycle Count

1. When the pointer is at **CYCLE COUNT** press the **ENTER** button.
2. The cycle count will then be displayed.

```
*****ABOUT 1/2*****  
> CYCLE COUNT  
  REVISION  
  LANGUAGE
```

```
*****CYCLE COUNT*****  
  
CYCLE COUNT: 123456
```

NOTE: The cycle count shows the number of cycles the operator has run for. 1 cycle is considered a full open and close motion.

Revision

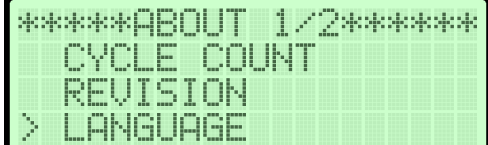
1. When the pointer is at **REVISION** press the **ENTER** button.
2. The revision number will then be displayed.

```
*****ABOUT 1/2*****  
  CYCLE COUNT  
> REVISION  
  LANGUAGE
```

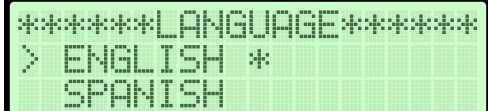
```
*****REVISION*****  
> U1.01
```

Language

1. When the pointer is at **LANGUAGE** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons select the desired setting.
3. Once the desired setting is selected press the **ENTER** button.



```
*****ABOUT 1/2*****  
CYCLE COUNT  
REVISION  
> LANGUAGE
```



```
*****LANGUAGE*****  
> ENGLISH *  
SPANISH
```

NOTE: This setting allows the user to change the language for the LCD. Currently English and Spanish are supported.

Event Log

1. When the pointer is at **EVENT LOG** press the **ENTER** button.
2. By pressing the **UP** and **DOWN** buttons, you can view the logs.



```
*****ABOUT 2/2*****  
SETUP WIZARD  
> EVENT LOG  
INCOMING VOLTAGE
```



```
***EVENT LOG 1/5***  
1. STOP  
2. OPENING  
3. OPEN BUTTON
```

NOTE: A log of the 15 most recent activities will be shown. The most recent activity will be number "1".

Setup Wizard

1. When the pointer is at **SETUP WIZARD** press the **ENTER** button.
2. By pressing the **ENTER** button, the setup wizard will run.

```
*****ABOUT 2/2*****  
> SETUP WIZARD  
  EVENT LOG  
  INCOMING VOLTAGE
```

```
****SETUP WIZARD****  
  
PRESS ENTER
```

Incoming Voltage

1. When the pointer is at **Incoming Voltage** press the **ENTER** button.
2. This will display what voltage is being supplied to the circuit board in real time.

```
*****ABOUT 2/2*****  
  SETUP WIZARD  
  EVENT LOG  
> INCOMING VOLTAGE
```

```
**INCOMING VOLTAGE**  
  
VOLTAGE : 31.7 VDC
```

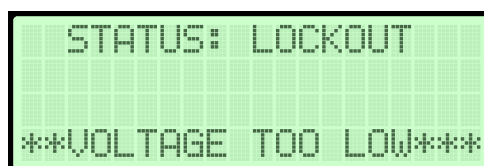
10 Lockout

Low Voltage:

Reason: This lockout occurs when the total voltage of the system is below 21.5 volts.

Fix: Restore voltage to above 21.5 volts.

- Make sure that no fuses are blown and that there is adequate AC power.
- This will occur when batteries are fully discharged after AC power loss. Batteries will recharge when AC power is restored.



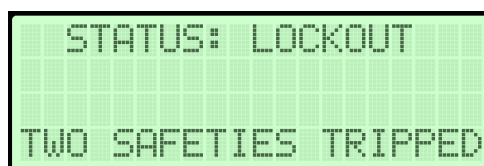
STATUS: LOCKOUT
VOLTAGE TOO LOW

Two Safeties Tripped:

Reason: This lockout occurs when a total of two safety reversals happen before a limit is triggered. This can be any combination of external safeties or the inherent force limiter.

Fix: Press the **STOP** button on the circuit board.

- Check external safety devices.
- Check that the gate moves freely.
- Re-adjust the force settings on the board.
- Check log for greater details.



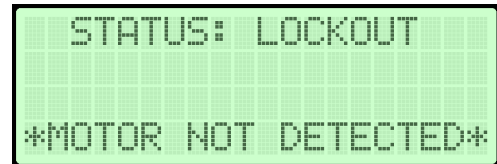
STATUS: LOCKOUT
TWO SAFETIES TRIPPED

Motor Not Detected:

Reason: This lockout occurs when the circuit board does not detect a that a motor is present.

Fix: Press the **STOP** button on the circuit board.

- Check that the motor overload isn't tripped.
 - Check the motor wiring is correct and not damaged.
 - Check that the motor brushes aren't damaged or worn out.
-



Terminal Characteristics

#	Terminal	Voltage	Description
1	GND	0 VDC	Ground connection
2	OPEN	24-30 VAC	Open command. This is a NO connection.
3	CLOSE	24-30 VAC	Close command. This is a NO connection.
4	STOP	5 VDC	Stop command. Can be configured NO or NC
5	AUX OPEN	5 VDC	Auxiliary open command. Serves as open command for devices other than push button. This is a NO connection.
7	FIRE	5 VDC	NO connection in fire box for fire department access
8	SINGLE	30 VDC	NO connection to alternate between open and close with single button operation.
10	AUX	5-30 VDC	Connects to auxiliary devices
11	REV	5 VDC	NO connection to device. Causes reversal in direction
13	SHADOW	5 VDC	Keeps the gate open as long as the signal is present. This is a NO connection.
14	CLOSE SAFETY 1	5 VDC	Required pulse or 10k monitored safety device. This terminal monitors when the gate is CLOSING
16	CLOSE SAFETY 2	5-30 VDC	Optional pulse or 10k monitored safety device. This terminal monitors when the gate is CLOSING
17	OPEN SAFETY 1	5-30 VDC	Required pulse or 10k monitored safety device. This terminal monitors when the gate is OPENING
19	OPEN SAFETY 2	5-30 VDC	Optional pulse or 10k monitored safety device. This terminal monitors when the gate is OPENING
20	AUX RELAY N.C	0-120 VAC	NC connection for auxiliary relay.
21	AUX RELAY COM	0-120 VAC	COM connection for auxiliary relay.
22	AUX RELAY N.O	0-120 VAC	NO connection for auxiliary relay.
23	DUAL GATE A	5-30 VDC	Optional connection A for dual gate operation
24	DUAL GATE GND	5-30 VDC	Optional connection GND for dual gate operation.
25	DUAL GATE B	5-30 VDC	Optional connection B for dual gate operation.
26	BRK	24 VDC	Connection for an external brake
27	POWER	24-30 VAC/DC	Incoming power connection. Could be supplied off of transformer or DC power supply.
28	24 VDC	24 VDC	24 volts for accessory power connections.
29	HORN	24 VDC	Connection for the exterior horn.

Notes

[illegible]

PowerMaster

Limited 2-Year Warranty

MECHANICAL PARTS:

PowerMaster warrants all DOOR OPERATORS (MG, H, J, T, SL categories) to be free of defects in materials and workmanship for a period of two (2) years from date of manufacture, provided that product has been registered. A one year warranty applies if product has not been registered.

ELECTRICAL PARTS (including boards, switches, relays, etc):

PowerMaster warrants electrical parts for a two (2) year period, provided that product has been registered. A one year warranty applies if product has not been registered.

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, acts of God, 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 found with your operator **MUST BE COMPLETED AND RETURNED WITHIN THIRTY CALENDAR DAYS FROM DATE OF PURCHASE**. Send completed forms to PowerMaster Registrations, 140 Emjay Blvd, Brentwood NY 11717.

You can also register via email to Office@PowerMasterNY.com.

If registration is not activated, a **ONE YEAR** warranty from date of manufacture will apply for all claims.

REGISTRATION INFORMATION

Operator Information

Model DMG
Serial # _____
Date Installed _____

Location Installed

Address _____
Address _____
Address _____

Installer's Information

Company Name _____
Address _____
Address 2 _____
City, State, Zip _____
Telephone # _____
Contact Name _____

Need Technical Support?

Visit: www.PowerMasterNY.com

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

Email us: technical@PowerMasterNY.com



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