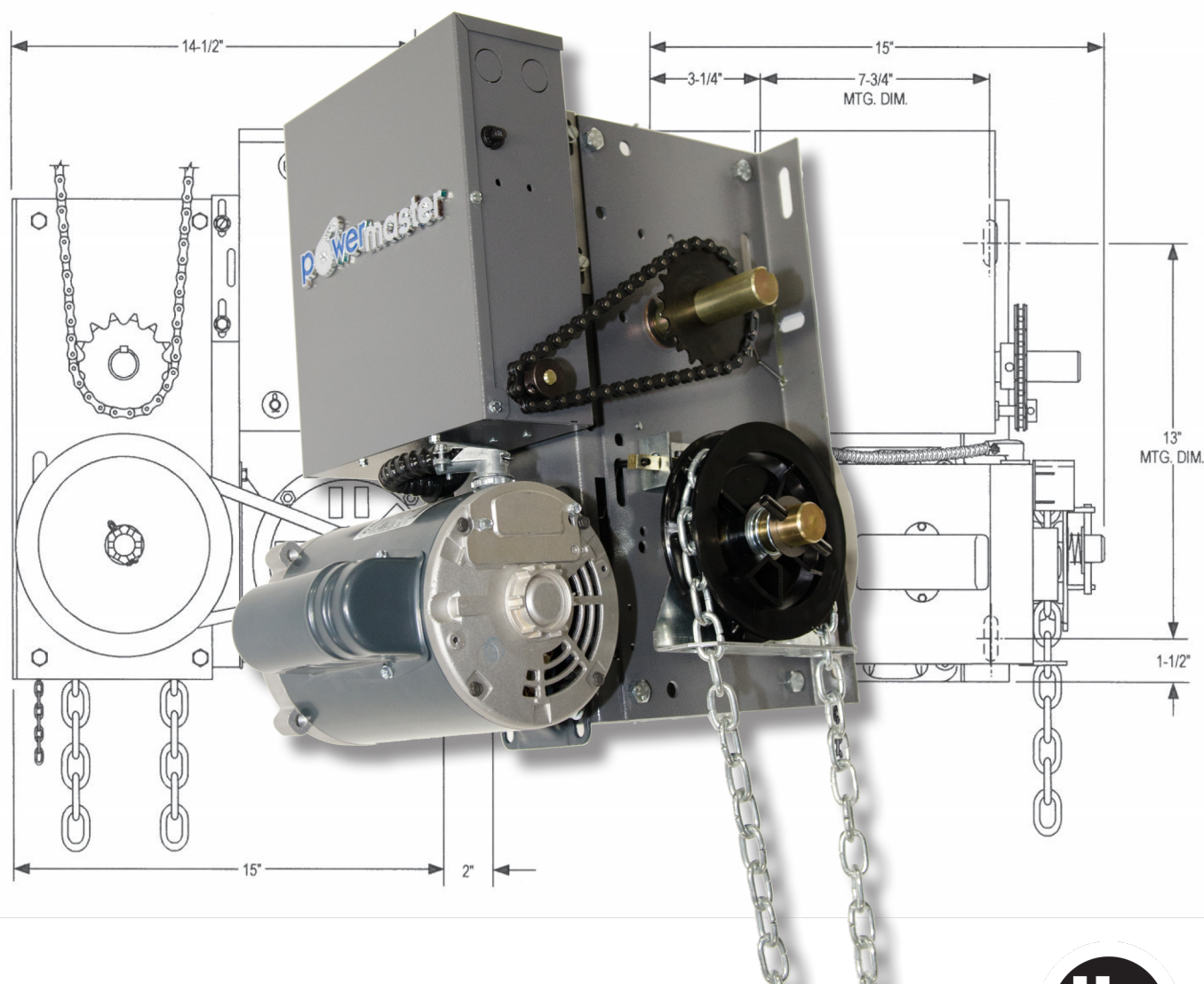




INSTALLATION AND OWNER'S MANUAL

MODEL H & J

Jackshaft Operators



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.

The purpose of this booklet is to provide assembly, installation, and operation information concerning PowerMaster Model H and J commercial vehicular garage operators and related accessory components.

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 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 H operator is equipped with a chain hoist to aid in manual operation. Use of this feature will not affect the limit switch adjustment.

Control circuit: Standard 3-button open, close, and stop. 5 VDC.

Connections for Auxiliary Entrapment protection devices: use with reversing door edge, or a photo-electric beam device across the opening.

Constant pressure to close: standard operation.

See CDO Board manual for additional features.

MODEL H & J OPERATOR APPLICATIONS:

Jackshaft operators are intended for commercial and industrial use to raise or lower sectional overhead doors by chain coupling or by direct coupling to the door shaft. Jackshaft 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. Jackshaft operators may also be used with rollup service doors and grilles, when **appropriately modified by the factory** to obtain correct speeds.

A jackshaft operator does NOT lock the door in its closed position. However, because the operator prevents the cross-header shaft from turning, the torsion springs provide no assistance in lifting the door, should an attempt be made to raise it manually.

H & J jackshaft operators are used when the application calls for continuous duty, indoor commercial installation with 24' high door: 280 square feet max using a 1/2hp unit, or 480 square feet max using a 3/4hp unit.

OPTIONAL FEATURES:

- Digital radio control: open, close, stop operation. Radio units are available to control up to 27 doors from one transmitter.
- Digital timer to close: adjustable from 0 to 5 minutes in 5-second intervals.
- Keyless entry system: connection terminals provided for hard-wired or wireless entry systems.

**WARNING**

ELECTRIC DOOR OPERATORS 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, 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 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 INSTALLATION.

WARNING: Springs are subject to very high forces at all times. Adjustments are to be made by qualified professional door installer ONLY.

WARNING: Remove or disable any locking devices from door. Remove all ropes.

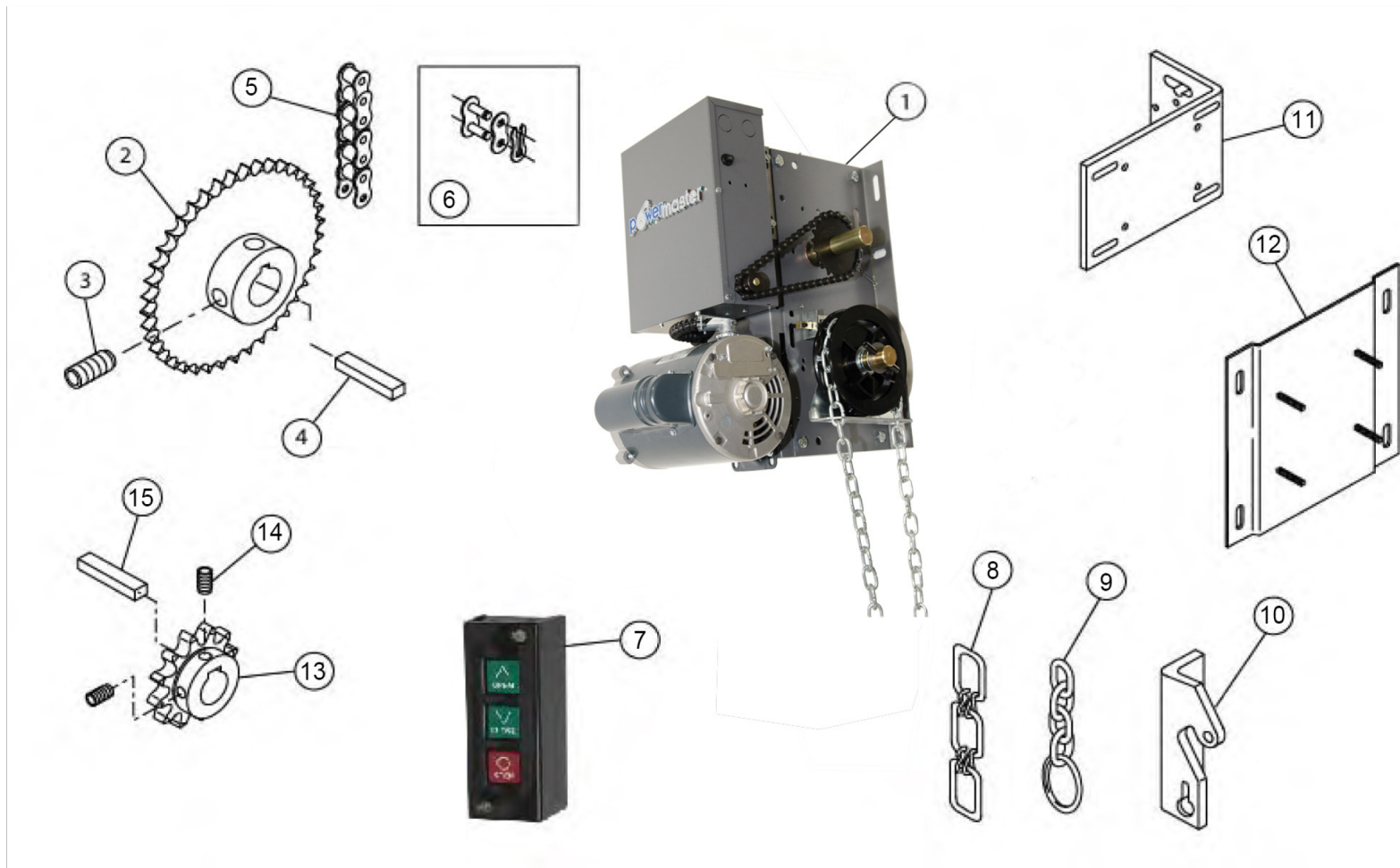


Figure 1: Component Identification

TABLE 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 Square Head	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

Item#	Description	Quantity
9	Sash Chain, Pre-cut	1
10	Chain Lock Bracket	1
11	Mounting Bracket	Optional
12	Wall Mounting Plate w/ Studs	Optional
13	Drive Sprocket	1
14	Set Screw, 5/16-18 x 5/16 socket head set screw	2
15	Key, 1/4 x 1/4 x 1	1

**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.
- PowerMaster models H and J are commercial vehicular door operators, and as such, are 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 U/L recognized and has been tested for use with this unit (such as 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)
- For products having a manual release, instruct the end user on the operation of a manual release.

Figure 6 illustrates several positions suitable for mounting the operator; right hand or left hand, wall or ceiling mount.



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!

CHAIN COUPLING MOUNTING

Refer to **Figure 1**, **Figure 2**, and **Table 1** for component identification and operator mounting slot locations. Place the sprockets [Item 2] and [Item 13] on the chosen side of the torsion shaft of the door, and on the corresponding end of the output shaft of the operator (**Figure 3**). The sprockets should be kept as close as possible to the bearings. Fasten the connecting link to each end of the door chain and loop the chain over sprocket [2] on the torsion shaft. Temporarily suspend the operator in its mounting position using the chain over sprocket [13] at one end of the jackshaft and a rope or chain at the mid point to support the operator weight. With the chain tight and straight and the jackshaft parallel with the torsion shaft, trace the mounting slot on the mounting surface; then lower the operator to the floor.

It is essential that the surface supporting the operator be rigid and secure. Failure to provide a firm mounting surface will result in damage to the door torsion shaft and the premature failure of the operator.

If the construction permits, the operator should be mounted with 3/8 inch diameter bolts through the wall. If it is not feasible to go through the wall, use lag bolts to fasten the operator to the mounting surface. Locate the four holes within the tracings of the slots made in the previous step at the positions which will allow for adjustment of the chain tension. After drilling the mounting holes and installing lag shields (if necessary), bolt the operator to the mounting surface: but **DO NOT** completely tighten the bolts at this time. Check

the alignment of the sprockets, adjust their positions on the shafts if necessary, and tighten the screws securely on both sprockets. Then, pulling downward on the operator to remove slack from the chain, tighten the four mounting bolts.

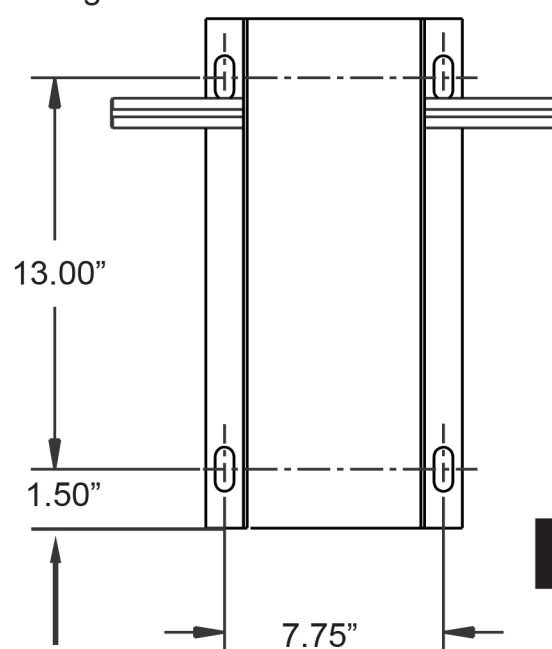


Figure 2

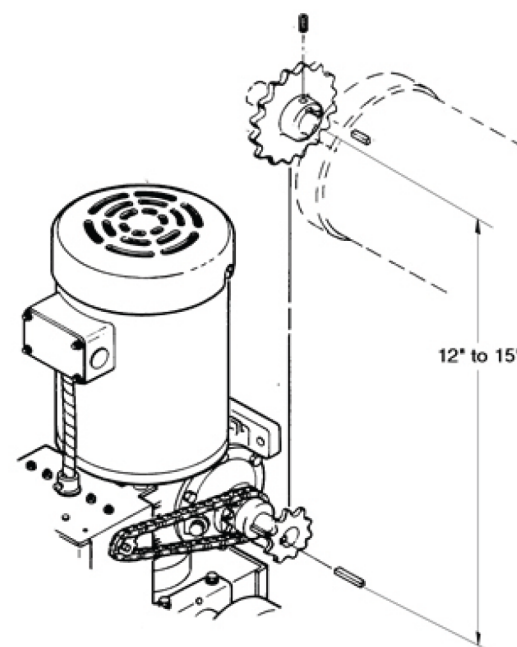


Figure 3

Inspect the installation. There should be no slack in the chain, nor should it be under severe tension (which may shorten the life of the bearings). If there is any flexibility in the system due to construction of the surface supporting the operator, or noticeable deflection of the door shaft, it is advisable to install a shaft support between the operator jackshaft and the door shaft to prevent the loss of limit setting due to the possibility of the chain jumping over the sprocket teeth. Shaft supports are available from the factory. 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 (**Figure 4**).

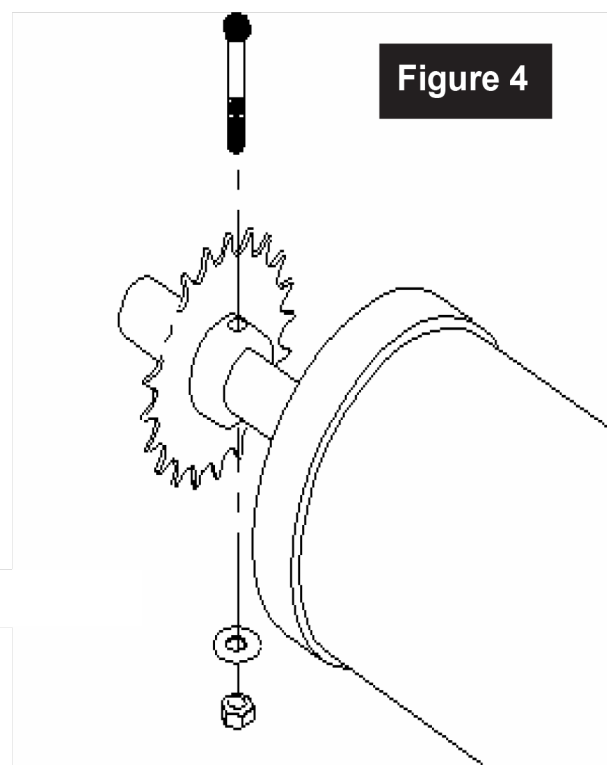
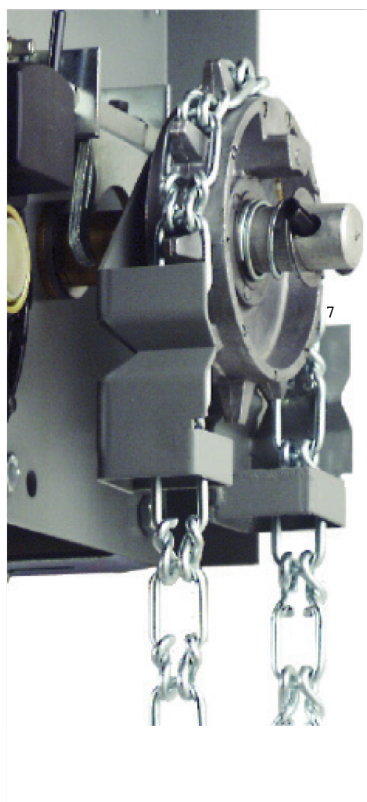


Figure 4

CHAIN HOIST INSTALLATION INSTRUCTIONS

(For use in manual operation)



If the operator is furnished with a chain hoist (Model H) refer to **Figure 5** 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.

Remove the sash chain from the shipping bag and let hang from the disconnect lever. Pull the sash chain to engage the hand chain (for manual operation). This will de-energize the interlock switch and remove power to the operator.

Use lag screws to fasten the chain hoist holding bracket furnished with the operator to the wall vertically in line with the sash chain about four feet off the floor (**Figure 5**). This bracket is also used to hold the release chain in place for both the chain hoist equipped units (H) and the floor disconnect units (J).

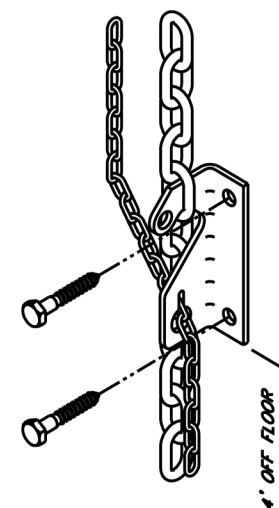


Figure 5

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

Figure 6 OPERATOR MOUNTING POSITIONS

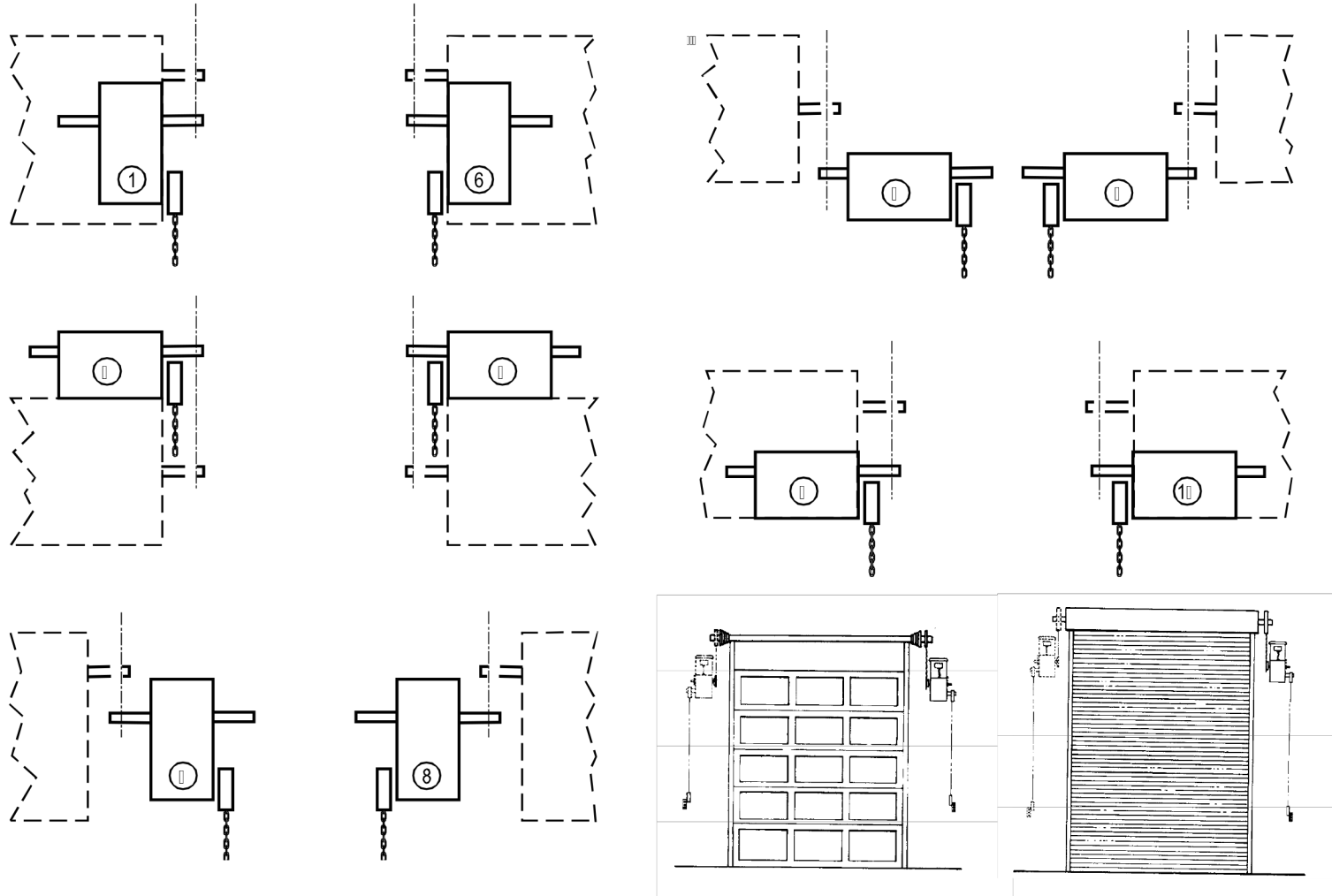
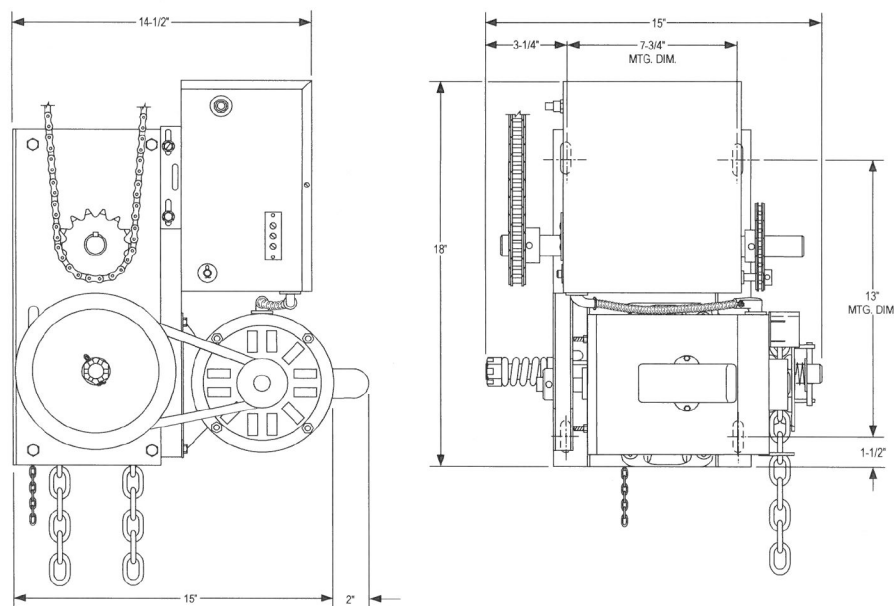


Figure 7 MODEL H&J OPERATOR DIMENSIONS



NOTE: Model H is shown. Model J operators do not include chain hoist. Operator dimensions are identical.

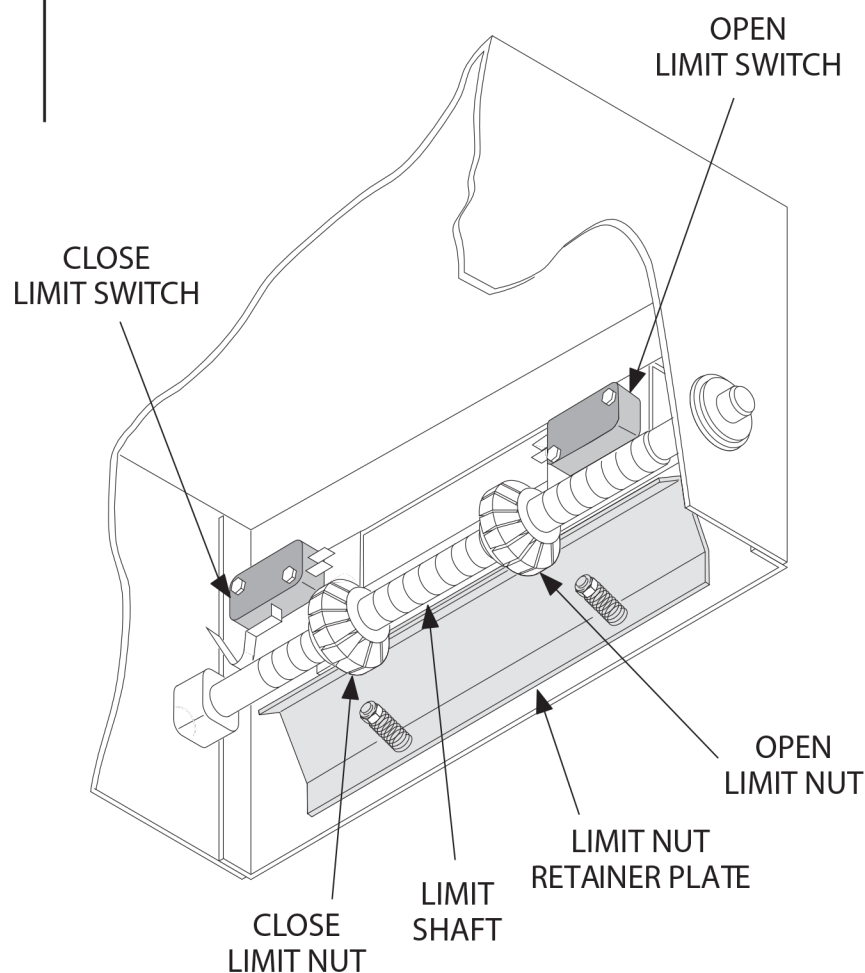
**WARNING**

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 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. If the OPEN limit switch is a DPDT switch, you will need to listen for two audible “click” sounds (a DPDT switch has a total of six connecting terminals protruding from the switch body, while an SPDT switch has only three terminals). 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. 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 8**

**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 H & J Operators are designed and constructed for use with voltages from 115 VAC to 480 VAC in single or three phase configurations. 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 (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 pushbutton 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 (DOOR EDGE OR PHOTOELECTRIC) MUST BE CONNECTED TO THE UNIT.

**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.

Warning! Control voltage of the operator is a 5 VDC, Class 2. Do not run the power leads and control circuit wiring in the same electrical conduit.

NOTE: Most H & J 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.

For operators that are not installed with reversing edge components or photoelectric devices, a three button station or a control station wired for constant pressure to close is used. 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 9**).

Operators equipped with one of the following safety systems may have one or more additional means of control which should be wired in accordance with the diagram supplied in the operator.

Accepted safety equipment:

- Photoelectric safety sensors manufactured by Linear Corp, emitter, Part No. 217792-XXY and detector, Part No. 217800-XXY.
- Door Edge Sensor and Interface Module manufactured by Miller Edge model series designated ME, MT, MU and CPT223 with suffix T2 provided with interface module model Signature Module model SM-102.
- Optical Door Edge Sensor and Photo Eye manufactured by Fraba Inc models OPTOEDGE, OPTOEYE; Part Nos. OSE-T, OSE-R, OSE-P, OPE.

SEE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF THIS SAFETY EQUIPMENT.



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.

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

Figure 9

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 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 board setting.

Door Edge/ Photoelectric Input: The operator wiring provides for input from an optional electric door bottom edge or photoelectric device that will cause a closing door to stop and may reverse it to open depending on the board setting.

CLUTCH ADJUSTMENT



WARNING

RISK OF ENTRAPMENT THAT MAY RESULT IN SEVERE INJURY OR DEATH! DISCONNECT POWER TO THE OPERATOR BEFORE SERVICING OR MAKING ADJUSTMENTS. ENSURE DOORWAY IS CLEAR BEFORE STARTING TESTING OF UNIT.



CAUTION

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

The clutch serves to protect the door, the electric operator and other equipment from undue stress or damage caused by starting forces and/or an obstruction to the door. It should be set NO TIGHTER than is necessary to smoothly and consistently move the door throughout its full range of travel. When properly set, it will slip freely if the door should encounter an obstruction, and it should be possible to stop the travel of the door by hand.

WARNING: BEFORE ADJUSTMENT, REMOVE POWER TO THE OPERATOR!

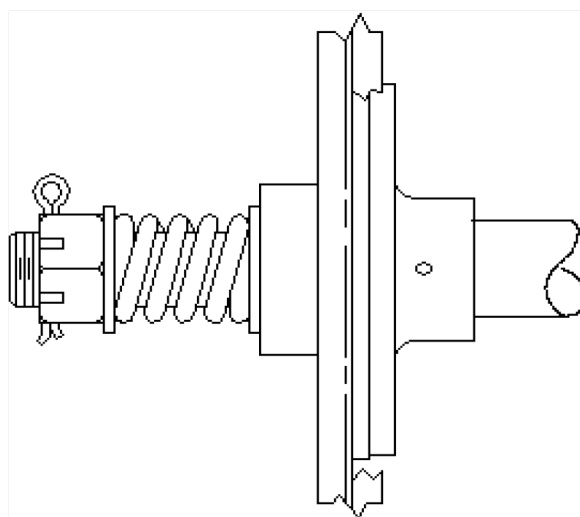
1. Remove cotter pin from slotted hex nut and clutch shaft.
2. Back off slotted hex nut until there is insufficient tension on clutch spring to permit clutch to drive door.
3. Tighten slotted hex nut gradually until there is just enough tension on spring to permit operator to move door smoothly, but to allow clutch to slip if door is obstructed.
4. Be sure the cotter pin is reinstalled each time operator is tested for clutch adjustment and that it is locked in place on completion of adjustment.

CAUTION: NEVER COMPRESS CLUTCH SPRING BEYOND POINT LIMITED BY THE DESIGN OF THE OPERATOR OR REPLACE IT WITH A HEAVIER SPRING.

Due to changing conditions of the door and normal wear, it may be necessary to occasionally readjust the clutch to obtain dependable operation.

WARNING: BEFORE DOING SO, BE CERTAIN THAT THE DOOR IS IN GOOD WORKING CONDITION, PROPERLY COUNTERBALANCED AND THAT THE CLUTCH IS NOT SLIPPING BECAUSE OF LOOSE OR MISSING HARDWARE, BINDING IN THE TRACK, RUBBING AGAINST THE DOOR STOPS OR DEFECTIVE OR MISADJUSTED SPRINGS. ANY SERVICE REQUIRED TO THE DOOR, THE DOOR SPRINGS OR DOOR OPERATOR MUST BE PERFORMED BY A QUALIFIED PROFESSIONAL DOOR INSTALLER.

The clutch pad will wear during normal operation and should be replaced when it becomes difficult or impossible to sufficiently tighten the clutch to obtain smooth operation of the door when it is in good working condition. To replace the clutch pad, first loosen the motor mounting bolts and remove the V-belt, followed by the clutch adjusting nuts, spring and clutch pulley. Check condition of V-belt before reassembly and replace if required.



WARNING

IMPROPER ADJUSTMENT OF CLUTCH SETTING COULD CAUSE ENTRAPMENT, INJURY OR DEATH. SET CLUTCH ADJUSTMENT FOR JUST ENOUGH FORCE TO OPERATE THE DOOR RELIABLY, BUT NO STRONGER. CONTACT A SERVICE PROFESSIONAL TO CORRECT ANY BINDING, STICKING OR OTHER DOOR PROBLEMS. DO NOT OVER-ADJUST CLUTCH SETTING TO COMPENSATE FOR A POORLY WORKING DOOR.

TESTING



WARNING

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



WARNING

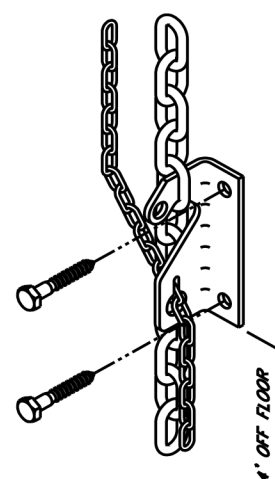
DO NOT STAND UNDER DOOR TO TEST REVERSING EDGE. USE A CORRUGATED BOX OR SIMILAR OBJECT.

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. Model H & J operators are equipped with a reversing edge circuit for use with UL-recognized products specifically tested for use with this equipment. Each of these products should be tested separately to confirm 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. Lock in position using chain lock as shown. For products having a manual release, if possible, use the manual release only when the door is closed. Use caution when using this release when the door is open. Weak or broken springs may cause the door to fall rapidly, causing severe injury or death.



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 or 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.

Normally, very little maintenance is required. A monthly visual inspection must be made for loose or missing hardware and for excessive slack in the v-belt and jackshaft chain. The clutch must be checked periodically and adjustments made if necessary.

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

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.

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 properly functioning. **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.

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.	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. See Figure 8.
Door drifts when operator shuts off	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.	Verify that disconnect pin is making contact with interlock switch located inside base frame. 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	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 "down" or away from door wall or 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.	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 UP limit, check DOWN button and circuit. If door overrides DOWN limit, check UP button and circuit.
	Limit drive chain broken or inoperative.	Replace chain, check limit screw for rotating.

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 on the opposite page MUST be completed and returned within THIRTY CALENDAR DAYS FROM DATE OF PURCHASE VIA CERTIFIED MAIL, fax (631-231-4274) or via email at 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?

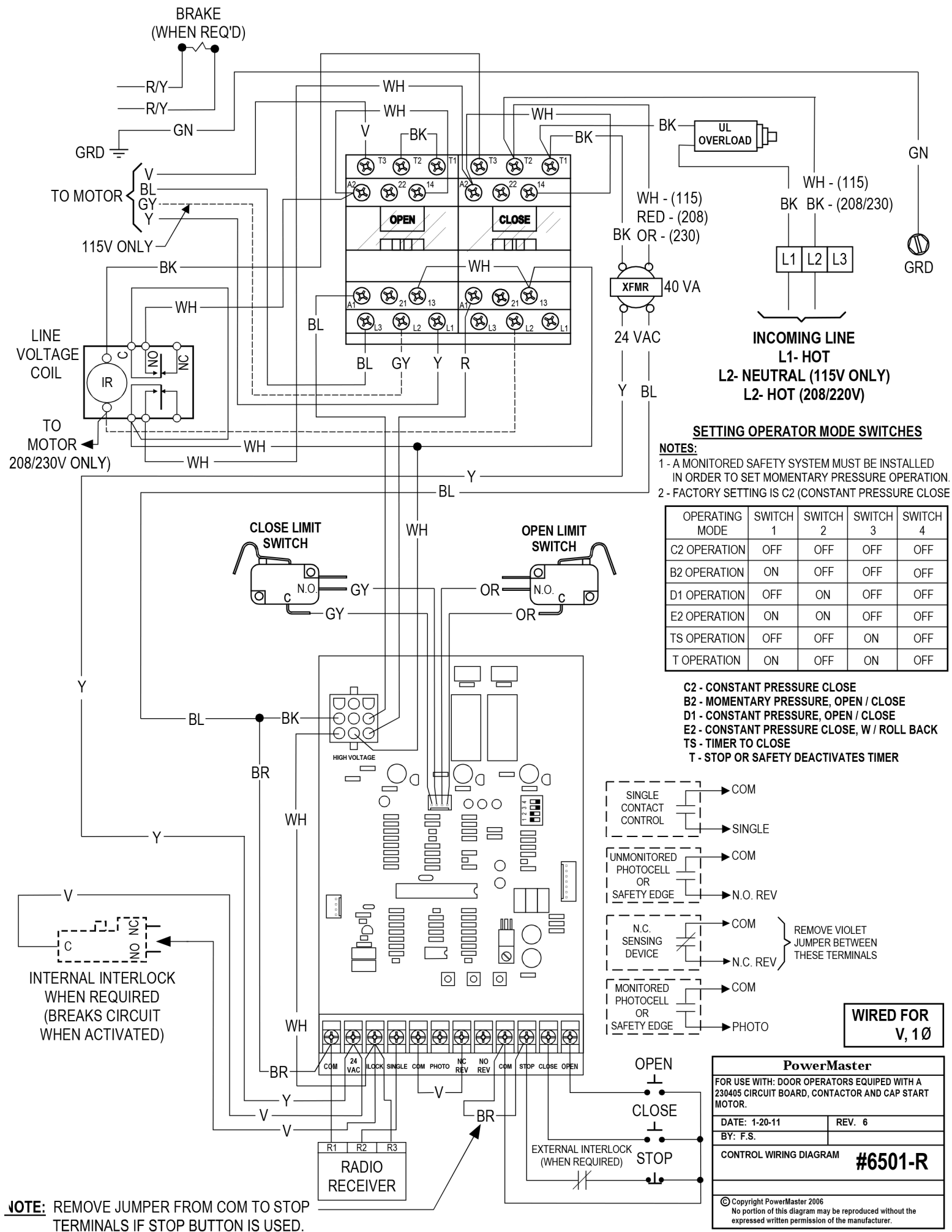
Visit: www.vepower.net/faqs

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

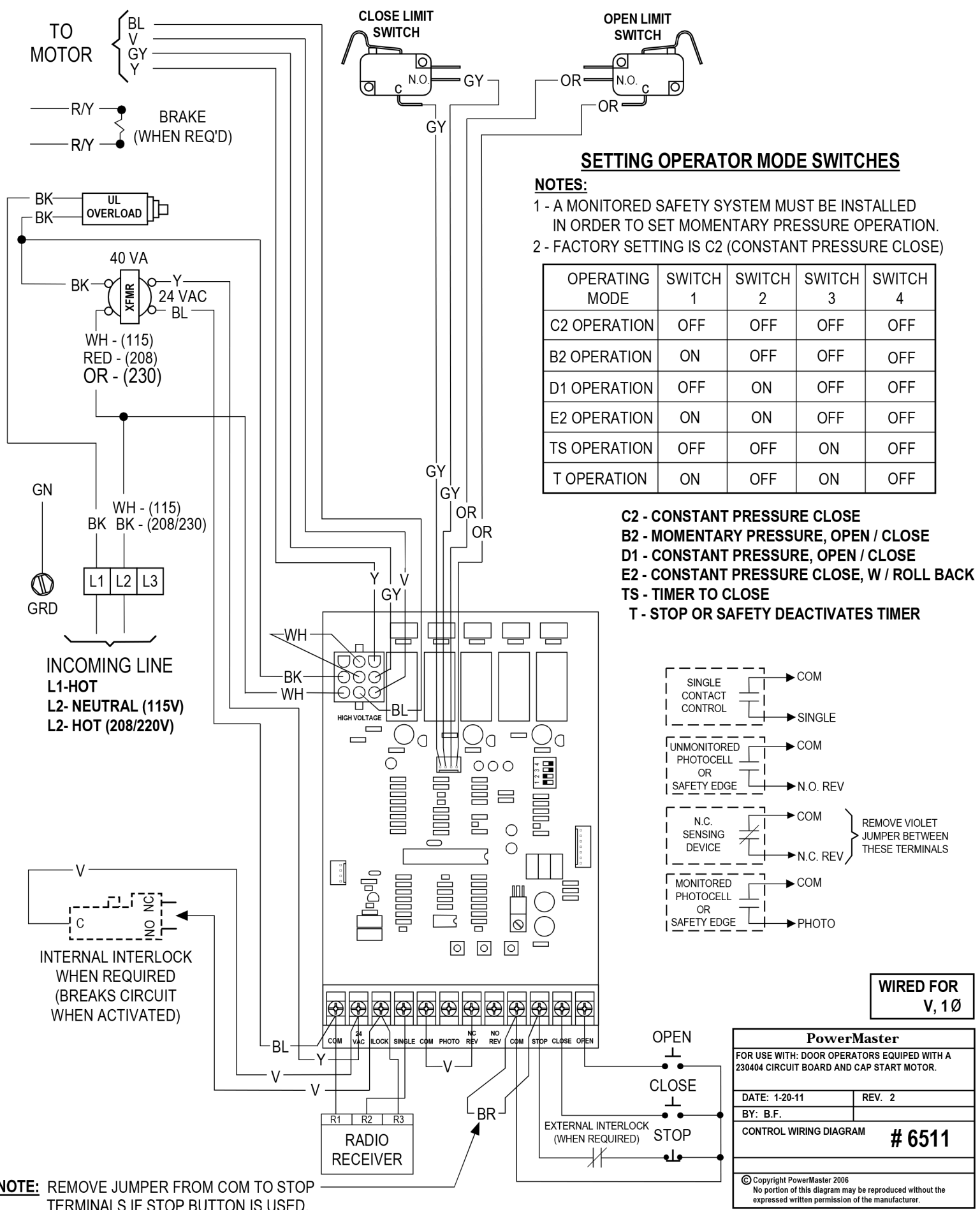
Email us: PMtech@VEpower.net



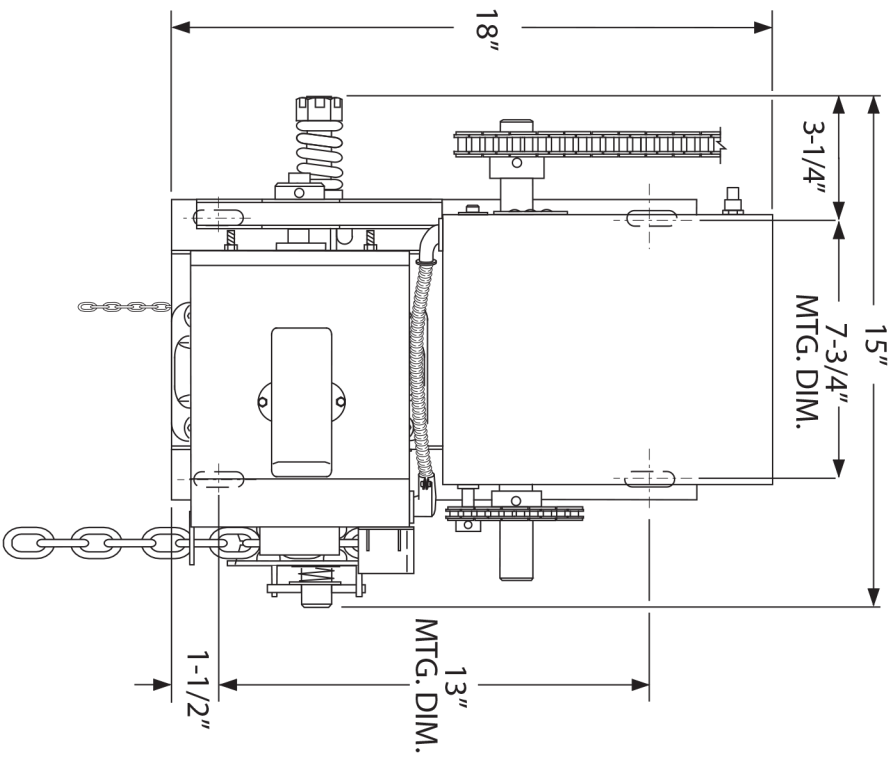
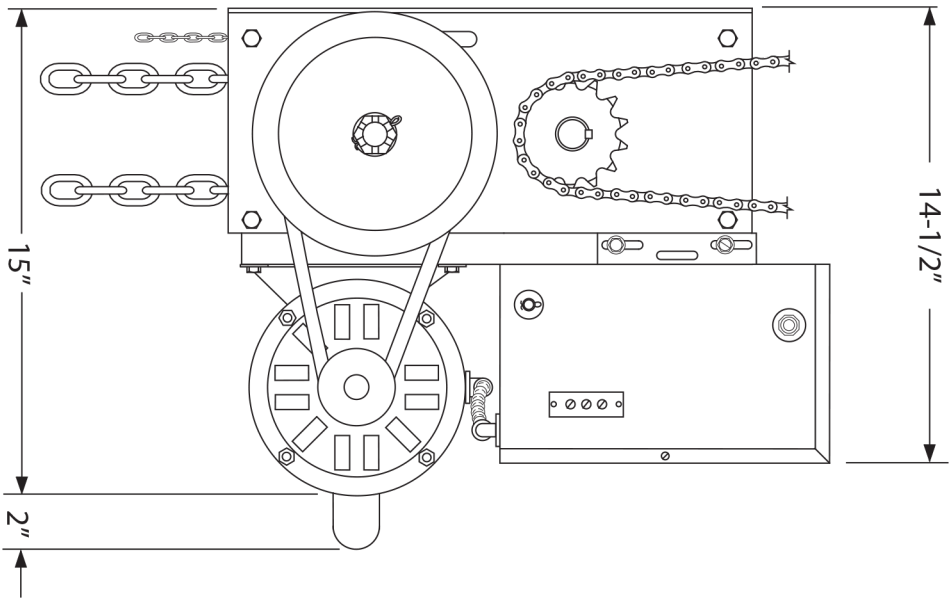
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NOTE: INTERNAL START SWITCH, IN MOTOR, MUST NOT BE USED WITH THIS TYPE OF WIRING.



NOTE: REMOVE JUMPER FROM COM TO STOP TERMINALS IF STOP BUTTON IS USED.



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