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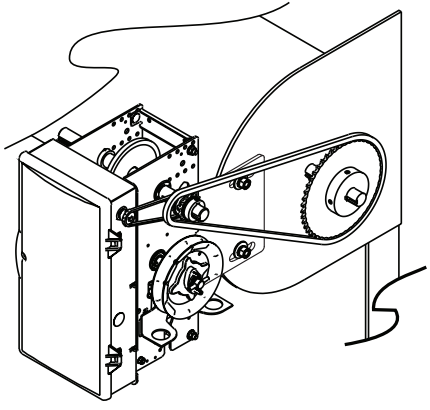
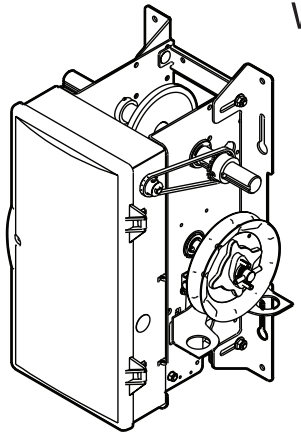
GENIE
COMMERCIAL LINE

GCL-MJ&MH™
Medium Duty Operator

JACKSHAFT/HOIST





WITH EXCLUSIVE FEATURE:

TENSIBELT™

MEETS UL325/2010

PROPER APPLICATION

Door Type	Operator Type	HP/Max Door Weight
Sectional (Vertical Lift and Lift Clearance Type Rolling Steel	Jackshaft/Hoist (Sidemount, Chain Couple)	(Available in 1/2HP only) Sectional = 620 lbs. Rolling Steel = 580 lbs.

NOT FOR RESIDENTIAL USE

This Installation Manual provides the information required to install, troubleshoot and maintain a GCL-MJ&MH™ Commercial / Industrial Door Operator.

Table of Contents

Section 1: How to use this manual

The 11 sections of this Installation Manual provide the information required to install, troubleshoot and maintain an GCL-MJ&MH™ commercial/industrial door operator.

Section 2
Provides important defining information related to safety terminology used throughout this manual, as well as safety related instructions which must be followed at all times while doing any steps/tasks/instructions detailed in this manual.

Section 3
Details pre-installation concerns/issues/decisions that are recommended to be considered and/or resolved prior to beginning any commercial door operator installation.

WARNING

Failure to correctly perform all steps in sections 4-6 can result in serious injury or death.

Sections 4-6
Provide step by step installation and set-up instructions for the GCL-MJ&MH™ commercial door operator. Each section is written such that it must be followed in a step by step order to complete a successful installation.

Sections 7-8
Detail important features and troubleshooting information for typical installation and normal operations that may occur.

Sections 9-11
Provide related information on service and maintenance items, operator drawings for use in troubleshooting and service activities, along with important warranty and returned goods policy information.

FOR ASSISTANCE CALL 1-800-843-4084

Section 2: Safety Information & Instructions

⚠ WARNING

Commercial/Industrial Sectional and Rolling Steel Doors are large, heavy objects that move with the help of springs under high tension and electric motors. Since moving objects, springs under tension, and electric motors can cause injuries, your safety and the safety of others depend on you reading the information in this manual. If you have any questions or do not understand the information presented, call your nearest service representative. For the number of your local Genie® Dealer, call 800-OK-GENIE, and for Genie® Factory Technical Advice, call 800-843-4084.

In this Manual, the words Danger, Warning, and Caution are used to stress important safety information. The word:

⚠ **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in injury or property damage.

*The word **NOTE** is used to indicate important steps to be followed or important considerations.*

POTENTIAL HAZARD	EFFECT	PREVENTION
 MOVING DOOR	⚠WARNING Could result in Serious Injury or Death	**Do Not** operate unless the doorway is in sight and free of obstructions. Keep people clear of opening while door is moving. **Do Not** allow children to play with the door operator. **Do Not** change operator control to momentary contact unless an external reversing means is installed. **Do Not** operate a door that jams or one that has a broken spring
 ELECTRICAL SHOCK	⚠WARNING Could result in Serious Injury or Death	Turn off electrical power before removing operator cover. When replacing the cover, make sure wires are not pinched or near moving parts. Operator must be electrically grounded.
 HIGH SPRING TENSION	⚠WARNING Could result in Serious Injury or Death	**Do Not** try to remove, repair or adjust springs or anything to which door spring parts are fastened, such as, wood block, steel bracket, cable or any other structure or like item. Repairs and adjustments must be made by a trained service representative using proper tools and instructions.

IMPORTANT

READ PRIOR TO ANY DOOR OPERATION

1. **Read manual and warnings carefully.**
2. **Keep the door in good working condition. Periodically lubricate all moving parts of door.**
3. **If door has a sensing edge, check operations monthly. Make any necessary repairs to keep it functional.**
4. **AT LEAST twice a year, manually operate door. The Door should open and close freely. If it does not, the door must be taken out of service and a trained service representative must correct the condition causing the malfunction.**
5. **The Operator Motor is protected against overheating by an internal thermal protector. If the operator ceases to function because motor protector has tripped, a trained service technician may need to correct the condition which caused the overheating. When motor has cooled, thermal protector will automatically reset and normal operation can be resumed.**
6. **In case of power failure, the door can be operated manually by pulling the release cable to disconnect the operator drive system**
7. **Keep instructions in a prominent location near the pushbutton.**

Section 3: Critical Installation Information

Job Site Issues to Consider/Concerns

The following list of items should be considered prior to selecting an operator for a given job site.

1-Available power supply.

2-Type of door.

3-Potential operator mounting obstructions. Items to consider include, but are not limited to: side room, room above door shaft, room below door shaft, available mounting surface integrity, power supply location, and convenient chain hoist and release cable positioning.

4-Size of door for appropriate operator torque and door travel speed selection.

5-Operator mounting environment. Items to consider include operator location and dampness, dustiness and corrosiveness of the location.

6-Door activation needs/requirements. Examples include 3 button control stations, 1 button control stations, radio controls, pull cords, loop detectors, photoelectric controls, key switches, etc. *See "Entrapment Protection" section below.*

7-Interlock switches are required under certain conditions for doors with pass doors and door locks. See page 5.5.

8-Accessory equipment. Examples are reversing edges and/or photocell beams (required for doors set to operate as momentary contact), auxiliary control relays, warning lights, etc.

⚠ ENTRAPMENT PROTECTION

The installation of a fail safe external reversing device (such as a monitored reversing edge or photocell system, etc.) is required on all momentary contact electronically operated commercial doors. If such a reversing device is not installed, the operator will revert to a constant contact control switch for operation (Closing only).

The Reversing Devices currently UL Approved with are:

1) MillerEdge ME, MT and CPT series monitored edge sensors used in combination with Timer-Close Module P/N OPABTCX.S, or OPAKMEIGX.S INTERFACE MODULE.

2) Residential Safe-T-Beam® Monitored Photocells from The Genie® Company, model OSTB-BX (P/N 38176R).

3) Series II Commercial Safe-T-Beam®, Monitored Photocells P/N OPAKPE.S.

4) Series II Commercial Safe-T-Beam®, NEMA4 Monitored Photocells P/N OPAKPEN4GX.S.

⚠ WARNING: DO NOT apply line voltage until instructed to do so.

⚠ CAUTION:

Check working condition of door before installing the operator. Door must be free from sticking and binding. If equipped, deactivate any door locking device(s). Door repairs and adjustments, including cables and spring assemblies MUST be made by a trained service representative using proper tools and instructions.

Section 3: Critical Installation Information

ENTRAPMENT PROTECTION

The GCL-MJ&MH™ can be used with the following UL Approved entrapment devices in compliance with UL325 requirements active starting August 29, 2010.
UNTIL ONE OF THESE MONITORED EXTERNAL ENTRAPMENT DEVICES IS INSTALLED, THE OPERATOR WILL NOT ALLOW MOMENTARY CONTACT OPERATION IN THE CLOSE DIRECTION.

LISTED DEVICES	ALLOWABLE DOOR WIDTH
MillerEdge ME, MT and CPT series monitored edge sensors used in combination with Timer-Close Module or OPAKMEIGX.S Interface Module.	ANY WIDTH
Residential Safe-T-Beam® Monitored Photocells model OSTB-BX P/N 38176R.	30 FEET
Commercial Photoeye Kit P/N OPAKPE.S	30 FEET
NEMA4 Monitored Photocells P/N OPAKPEN4GX.S.	35 FEET

Rolling Steel Door Chart (sq. ft.)

Model	HP	UL Listed	STEEL, NON-INSULATED						STEEL, INSULATED			COUNTER DOOR		GRILLES		FIRESTAR 2" SLAT		FIRESTAR 3" SLAT				FIRESTAR 3" SLAT INSULATED		SHEET DOOR
			16GA.	18GA.	20GA.	22GA.	24GA.	26GA.	18GA.	20GA.	22GA.	ALUM.	STL/SST	ALUM.	STL/SST	20GA.	22GA.	16GA.	18GA.	20GA.	22GA.	20GA.	22GA.	26GA .
GCL-MJ&MH	1/2	YES	197	246	246	338	394	394	148	148	197	126	126	300	200	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	256

Note: Total door weight and not square footage is the critical factor in selecting the proper operator. These Sq.Ft. measurements are based on square doors, e.g. 16' x 16'.

Unbalanced Fire Shutters have a maximum square footage of 52 for 22GA. steel and 42 for 20GA. steel.

Sectional Door Chart (sq. ft.)

Model	HP	UL Listed			CommercialSteelInsulated&Non-Insulated								Thermospan				Thermomark		Aluminum	
			Door Series ->		216	216 ins.	220	220 ins.	2415	2415 ins.	2411	2411 ins.	125	150	200	200-20	5150	5200	451	452
			Mounting Type	Max. Door Weight (Lbs)	16GA. Flush Steel	16GA. Flush Steel Insulated	20GA. Ribbed Steel	20GA. Ribbed Steel Insulated	24GA. Ribbed Steel	24GA. Ribbed Steel Insulated	Nominal 24GA. Ribbed Steel	Nominal 24GA. Ribbed Steel Insulated	PU/FIP Insulated	PU/FIP Insulated 1.38"	PU/FIP Insulated 2"	PU/FIP Insulated 2" 20GA. Exterior	PU/FIP Insulated Raised Panel 1.38"	PU/FIP Insulated Raised Panel 2"	1/8" Glass 1.38"	1/4" or 1/2" Glass 1.38"
GCL-MJ GCL-MH	1/2	Yes	TS	620	170	120	230	160	270	200	300	256	256	256	240	160	256	256	210	144

T=Trolley S=Jackshaft,SideMount C=Jackshaft,CenterMount

Note: Total door weight, and not the square footage, is the critical factor in selecting the proper operator.
Square footage measurements are based on "square doors." (Example=16' x 16')

NOTE: Doors that require special windloading and wide doors, normally require increased strutting (reinforcement). Strutting doors can significantly increase door weight beyond weight shown. Consult Customer Service for the impact of wind load andstrutting on square foot limits.

NOTE: "PU-FIP" stands for "polyurethane, foamed-in-place." If no notation is present, insulation is "polystyrene, layed-iin-place."

Section 3: Critical Installation Information

IMPORTANT INSTALLATION INSTRUCTIONS

WARNING -

To reduce the risk of severe injury or death:

1) READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.
2) Install only on a properly operating and balanced door. A door that is operating improperly could cause severe injury. Have qualified service personnel make repairs to cables, spring assemblies and other hardware before installing the operator.
3) Remove all pull ropes and remove, or make inoperative, all locks (unless mechanically and/or electronically interlocked to the power unit) that are connected to the door before installing the operator.
4) Install the door operator at least 8 feet above the floor if the operator has exposed moving parts.
5) Do not connect the door operator to the power source until instructed to do so.
6) Locate the control station: (a) within sight of the door, (b) a minimum of 5 feet above the floor so that small children cannot reach it, and (c) away from all moving parts of the door.
7) Install the Entrapment Warning Placard next to the control station and in a prominent location.
8) For products having a manual release, instruct the end user on the operation of the manual release.

Section 4: Installation

Rolling Steel/Grill Doors
Front of Hood

*The Rolling Steel Door Operator can be assembled for **right-hand** or **left-hand** mounting **Front of Hood.***
Each model can also be wall mounted (next pages).

1) Mounting hardware and instruction will be supplied based on door specifications.
   (Typical mounting arrangements shown in figures 1 and 2.)

Figure 1

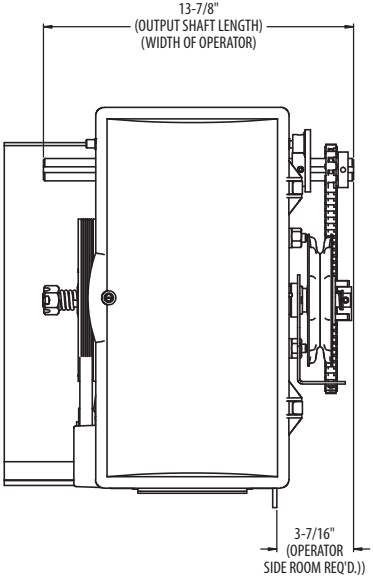
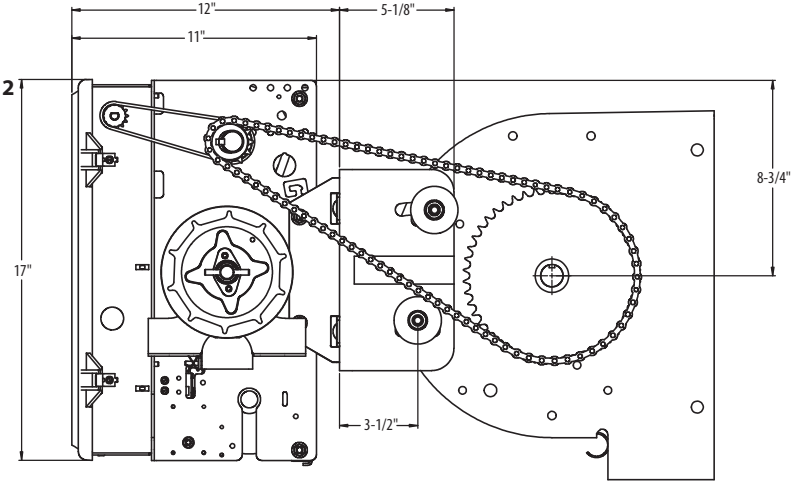


Figure 2



Front of Hood (continued)

5) Attach operator assembly to end plate as shown using hardware provided. **Fig 3**.

NOTE: At this time, hand tighten only, the mounting bracket nuts where it attaches to the head plate. This allows for adjustment in order to tension the drive chain.

Attach Operator to Door: Front of Hood.

1) Attach 12 tooth sprocket to operator output shaft.
2) Align keyways and insert key into sprocket and output shaft keyway. Do not tighten set screw at this time.
3) Attach door sprocket to door shaft. Do not tighten at this time.
4) Assemble chain using chain master link.
5) Place assembled chain over door shaft sprocket and around the 12 tooth sprocket.
6) Adjust operator position to remove slack from the chain.
7) Tighten operator mounting bracket nuts.
8) Tighten sprocket set screws.

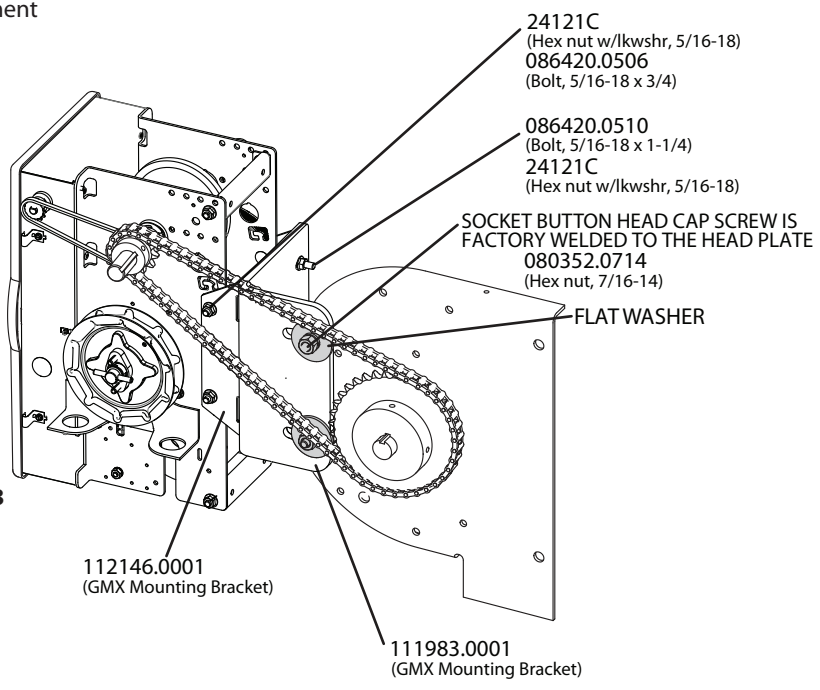


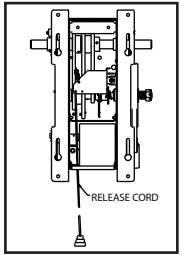
Figure 3

Wall Mount

The GCL-MJ&MH™ Rolling Steel unit can be wall mounted where necessary by using an optional "Wall Mount Kit." (P/N 111011.0001.S). **Fig.4**.

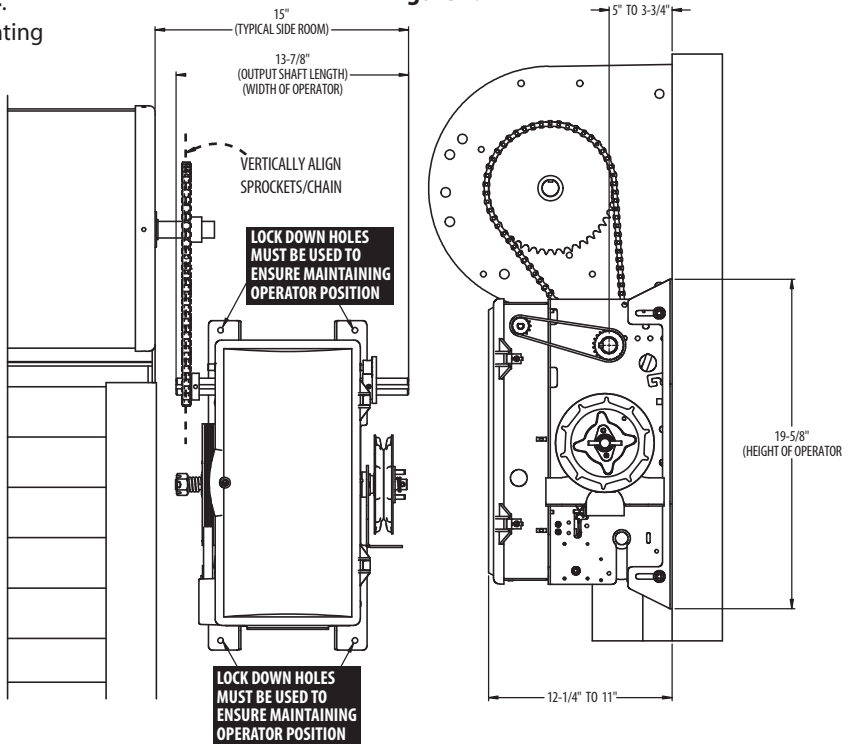
1) Attach wall mount brackets to operator using the 4 mounting bolts and nuts supplied(Hand-tighten until later). Position the operator in the brackets as shown.
2) Attach 12 tooth sprocket to operator output shaft.
3) Align keyways and insert key into sprocket and output shaft keyway. Do not tighten set screw yet.
4) Attach door sprocket to door shaft. Do not tighten yet.
5) Assemble chain using chain master link.
6) Place assembled chain over door shaft sprocket and operator sprocket.
7) Raise or lower operator to remove slack from the chain. Ensure operator output shaft is parallel with door shaft.
8) Tighten operator mounting bracket nuts.
9) Align chain and **secure** operator to wall.
10) Tighten operator chain sprocket set screws.
11) Slide operator in the wall bracket mounting holes if necessary for fine adjust of chain tension.

JACKSHAFT VERSION



The release cable must be attached before mounting the unit.

Figure 4.



Sectional Doors—Chain Couple

The Wall Mount Operator can be assembled for right hand mounting above or below the door shaft. **Fig.5A**.

NOTE: The operator output shaft extends 3-7/8" on each side of the operator frame.

1) Attach 12 tooth sprocket to operator output shaft.
2) Align keyways and insert key into sprocket and output shaft keyway. Do not tighten set screw at this time.
3) Attach door sprocket to door shaft. Do not tighten at this time.
4) Assemble chain using chain connecting link.
5) Place assembled chain over door shaft sprocket and operator sprocket.
6) Raise or lower operator to remove slack from the chain.
7) Be certain operator output shaft is parallel with door shaft.
8) Align chain and secure operator to wall or mounting pad. **Fig.5B**.
9) Tighten operator sprocket set screws.

INSTALLATION TIP:
While sprocket set screws are loose, if possible, manually operate door to help align chain. A properly tensioned drive chain should deflect no more than 1/2" when thumb pressure is applied mid-way between the 2 sprockets. While there is no hard and fast rule governing chain tension, it must be tight enough to prevent clicking, popping and jumping the teeth of the sprocket. The 1/2" guideline will insure sufficient tension.

NOTE: If using slotted mounting holes to mount unit, you must use at least 2 lockdown holes in opposite corners to firmly mount unit to wall. **Fig. 5B**

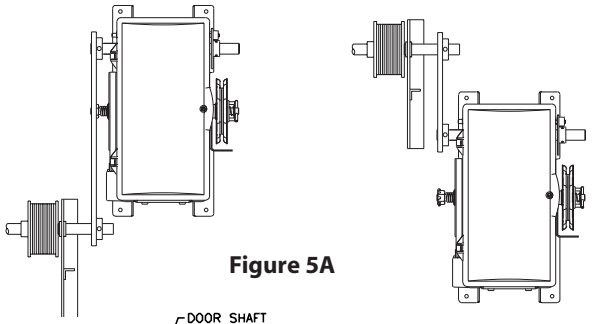


Figure 5A

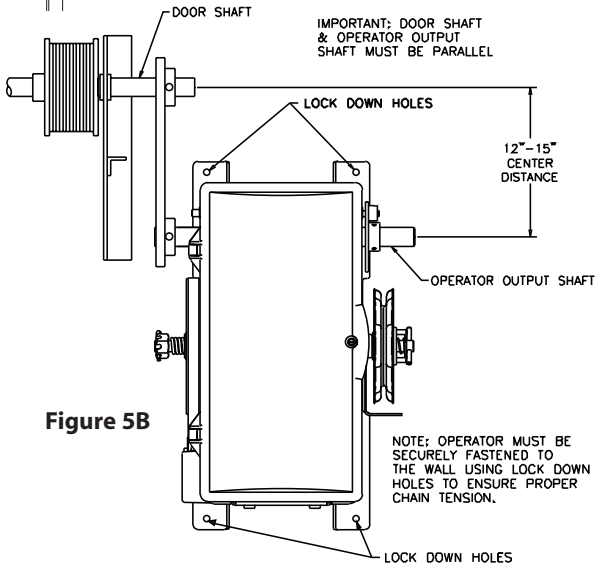


Figure 5B

Chain Couple

For Hollow Counterbalance Door Shaft:

1) Use non-threaded hole in door shaft sprocket as a guide and drill a 3/8" diameter hole through one side of the door shaft. **Fig. 6A**.
2) Insert clevis pin through sprocket and shaft to hold sprocket in position.
3) Drill through opposite side of shaft to obtain proper hole alignment. **Fig. 6B**.
4) Insert clevis pin through both holes and secure with cotter pin. **Fig. 6C**.

For Solid Counterbalance Door Shaft:

1) Insert key into door shaft keyway.
2) Slide sprocket into place and secure with set screws.

To Complete the Installation:

If needed, realign operator sprocket with door sprocket. If you have excessive door shaft movement, an optional chain tension plate is available. **Fig. 7A** & **7B**, pg 4.6.

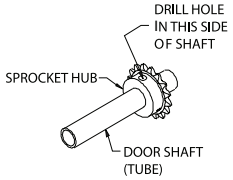


Figure 6A

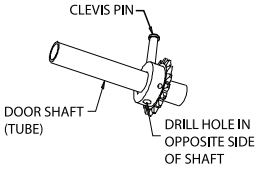


Figure 6B

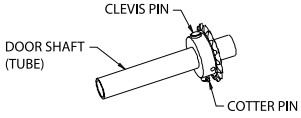


Figure 6C

Chain Couple
Spreader Bracket

Bracket is available as an optional kit, P/N 111005.0001.S

Installation of optional chain spreader bracket: Fig 7A & 7B.

1) Place sprocket, upper plate and bearing assembly on door shaft as shown.
2) Place lower plate, bearing assembly and sprocket on operator shaft as shown.
3) Install door and operator sprockets and chain assembly as described on page 4.4.
4) Install bolts and nuts through plates.
5) Tighten and align chain and plate and secure operator to wall.
6) Tighten spreader bracket bolts.

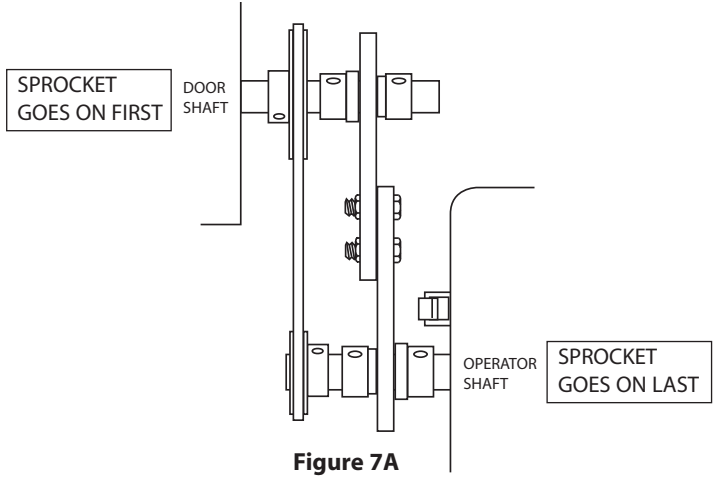
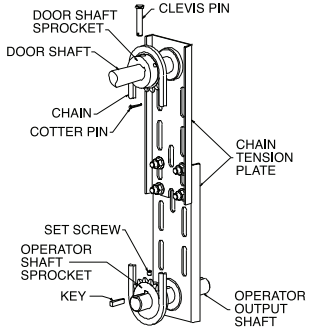
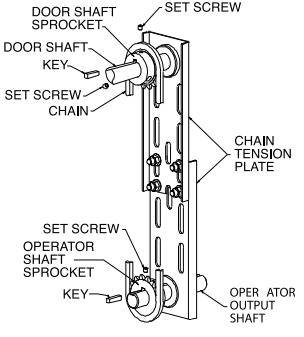


Figure 7A



HOLLOW COUNTERBALANCE DOOR SHAFT



SOLID COUNTERBALANCE DOOR SHAFT

Figure 7B

Clutch Adjustment Fig. 8

The operators have a friction style clutch that can be adjusted.

NOTE: The clutch is intended to provide protection for the door, the operator and associated equipment. It is not intended for entrapment protection.

To Adjust the Clutch

1) Decrease the tension on the clutch until the operator will not lift the door.
   - Turning the adjustment castle nut counter-clockwise will decrease tension and clockwise will increase tension.
2) Gradually increase tension until the operator will perform a complete open and close cycle without clutch slippage.
3) Insert a cotter pin through the adjustment castle nut and bend a leg of the cotter pin to hold it in place.

NOTE: Periodically check the system for proper clutch action. If clutch starts to slip after working properly for some time , check manual operation of door BEFORE adjusting clutch. The door may not be operating freely or the counterbalance spring may need adjusting. Repairs and adjustments must be performed by a trained service representative using proper tools and instructions.

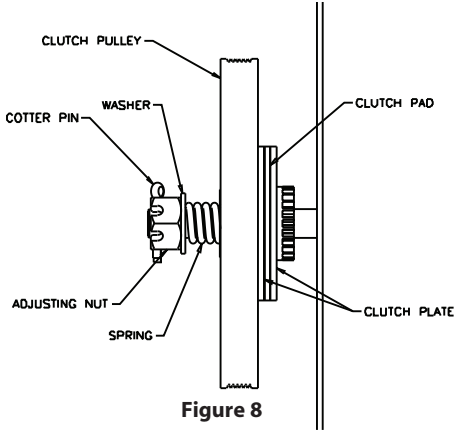


Figure 8

Brake Adjustment Fig. 9

1) Loosen the Adjustment Bracket Lock Nut/Bolt.
2) Slide the Adjustment Bracket as needed to reach the desired spring tension.
   - When properly adjusted, the pivot arm should move with very little effort.
3) Re-tighten the Adjustment Bracket Lock Nut/Bolt.

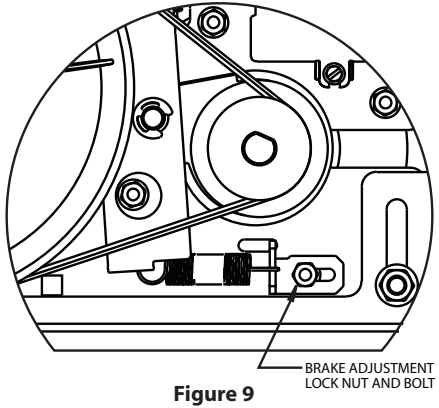


Figure 9

Hand Chain & Keeper

1) Route the hand chain through the chain guide, around the pocket wheel and back through the chain guide. **Fig.10**.
2) Connect the hand chain ends together as shown in **Fig 11**. by twisting open the last link on one end of the chain, and slipping the last link on the opposite end onto the open link.
3) Twist open link closed again.
4) Mount chain keeper to wall in line with chain approximately 4 feet from floor.
5) Loop chain around keeper as shown. **Fig. 12**. Optional Padlock not provided.
6) Install release cable. **Fig. 13**.

NOTE: To insure smooth operation, make sure there are no twist in the hand chain before connecting the link ends together.

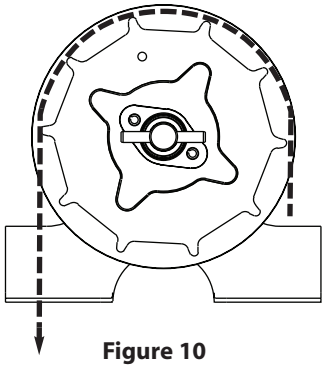


Figure 10

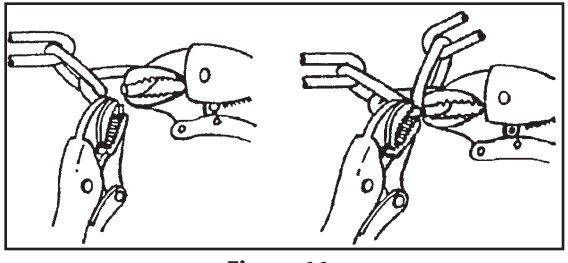
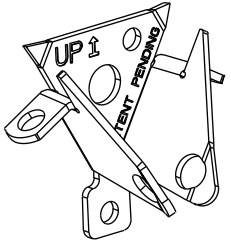


Figure 11



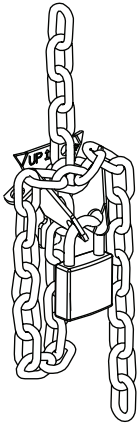


Figure 12

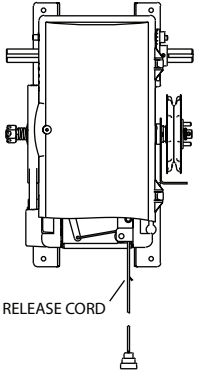


Figure 13

Section 5: Wiring

Line Voltage Wiring Fig. 1

⚠ WARNING

- DO NOT apply power to operator until instructed to do so.
- The Genie® Company recommends that line voltage wiring be performed by a qualified electrician.
- Be sure that electrical power has been disconnected from the input power wires being connected to the operator prior to handling these wires. An appropriate lock-out / tag-out procedure is recommended.
- Line voltage wiring must meet all local building codes.
- Make sure operator voltage, phase and frequency nameplate ratings are identical to the job site line voltage ratings.
- Input power wiring must be properly sized for the operators amperage rating located on the nameplate.
- To reduce the risk of electric shock, make sure the chassis of this unit is properly grounded.

1) Remove LINE VOLTAGE INPUT PLUG and install proper fittings and 1/2"conduit.
2) Route proper LINE VOLTAGE wires into operator.
3) Locate LINE INPUT terminals on circuit board. Using correct connectors, attach wires to LINE INPUTS, and GROUND terminal. **Fig. 2**.
   - Keep low voltage and line voltage wires separate.
   - Route all line voltage wires as shown.
   - Plug all unused conduit holes.

Figure 1

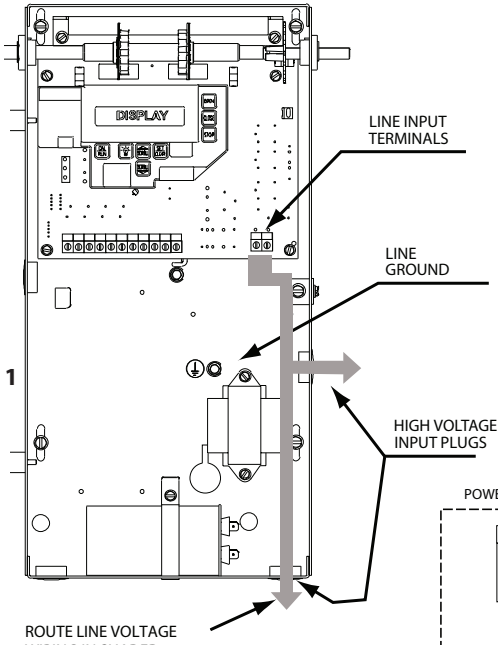
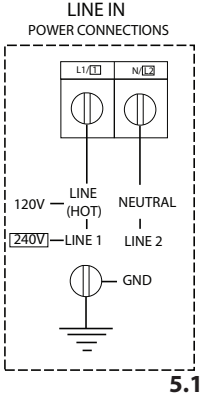


Figure 2



Low Voltage Control Wiring (general) Fig. 3

1) Connect all LOW VOLTAGE control circuit wires to this side of unit using 1/2" conduit or flexible convoluted tubing.
   - Keep low voltage and line voltage wires separate.
   - Route all low voltage control wiring as shown. This includes all control circuit wires such as wall controls, timers and single button input devices as well as radio control and safety circuit wiring. See Figs 2 through 13 in this section.
   - Plug all unused conduit holes.

NOTE: For a detailed description of control wire terminals see Appendix B.

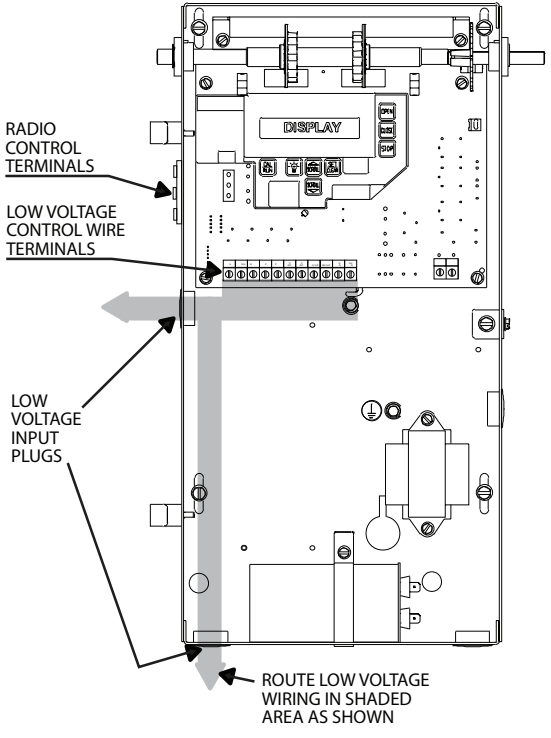
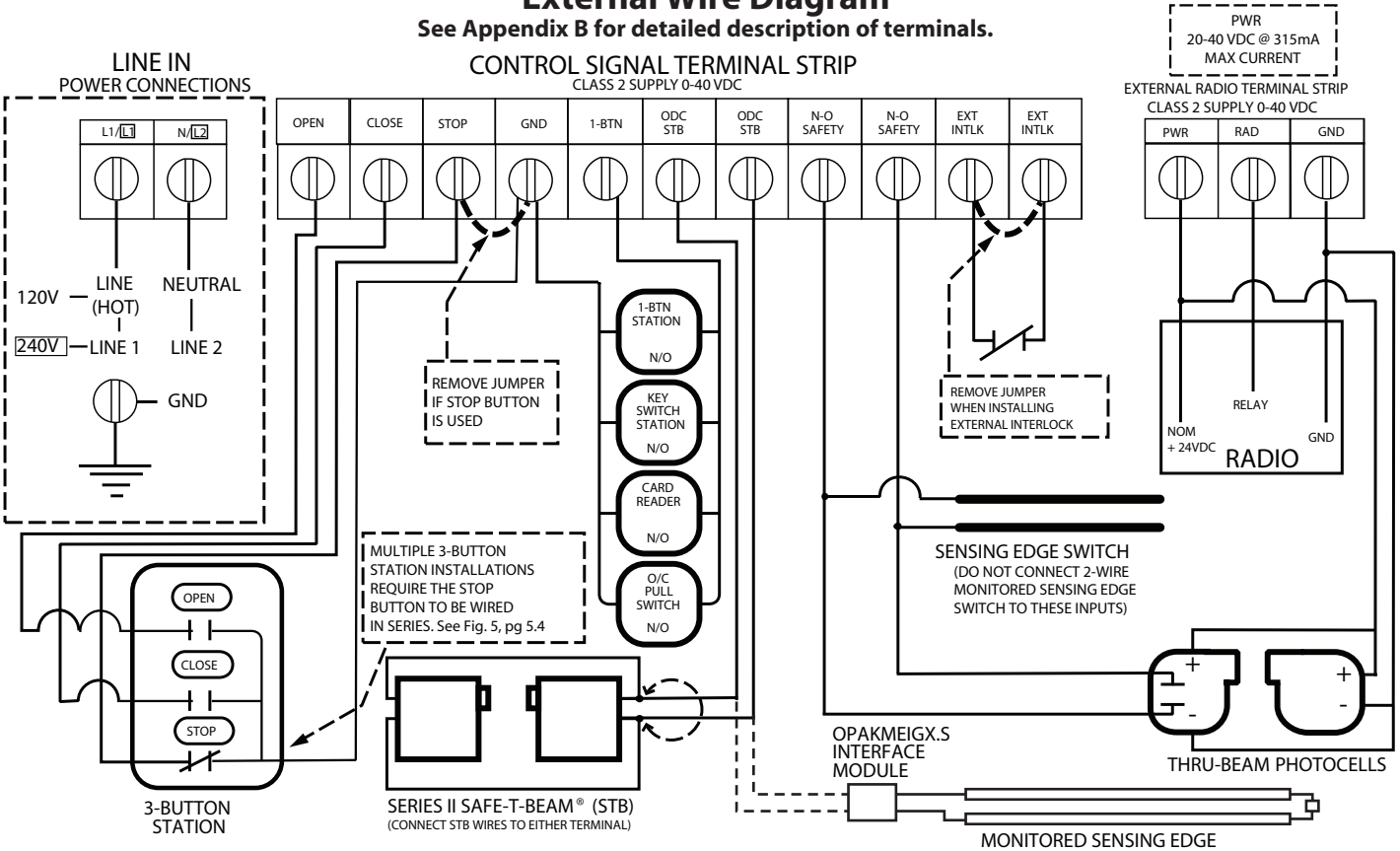


Figure 3

External Wire Diagram

See Appendix B for detailed description of terminals.



Wall Control

1) For one 3 - button installation, make connections as shown in **Fig. 4**.
2) For a multiple 3 - button installations, make connections as shown in **Fig. 5**.
3) For single button accessory controls, make connections as shown in **Fig. 6**.

NOTE: If an External STOP button is NOT being installed, a jumper wire must be installed between the "STOP" AND "GND" terminals as shown in **Fig. 6**.

NOTE: Long Distance Relay Kit wiring is not required for long distance control runs and should not be used

WARNING:

- Wall Control(s) must be located so that the door is within sight of the user and far enough from the door, or positioned, such that the user is prevented from coming in contact with the door while operating the controls.
- Attach the Warning placard adjacent to the Wall Control. **Fig. 4A** .
- Attach the Caution label adjacent to the Wall Control. **Fig. 4B**.

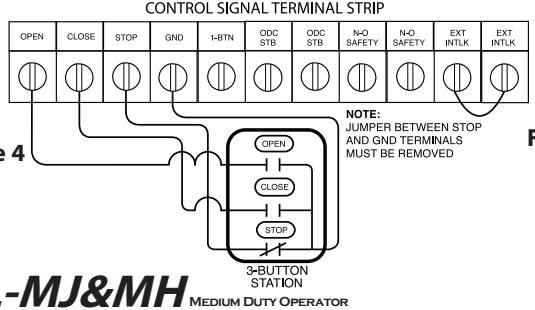


Figure 4

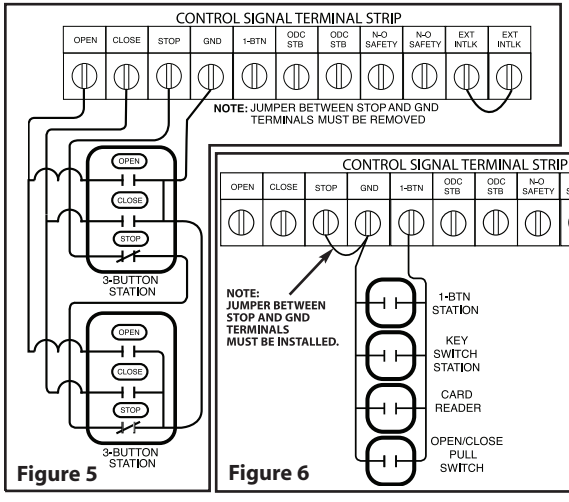


Figure 5

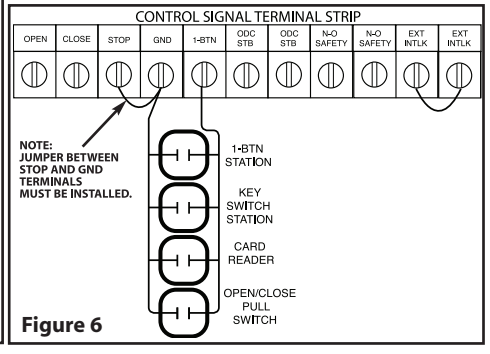


Figure 6

⚠WARNING: If momentary contact control is to be used, a monitored external reversing device such as a photocell system or sensing edge switch must be used. See pages 5.6-5.7 for installation of entrapment protection devices.

Figure 4A
Entrapment Warning Placard

Figure 4B

CAUTION

This door is operated by a limited-duty operator.
To prevent the motor protector from tripping,
do not exceed 15 cycles of opening
and closing per hour.

NOT FOR RESIDENTIAL USE

Interlock Switches

1) Optional external interlock switches are required with some Sectional or Rolling Steel Doors to prevent the door from operating under certain conditions including the following:
   - If the door is equipped with a functioning door lock, an interlock switch must be installed to prevent electric operation when the lock is engaged.
   - If the door is equipped with a pedestrian pass-through door, an interlock switch must be installed at the pass-through door in order to prevent electrical operation when the pass-through door is open.

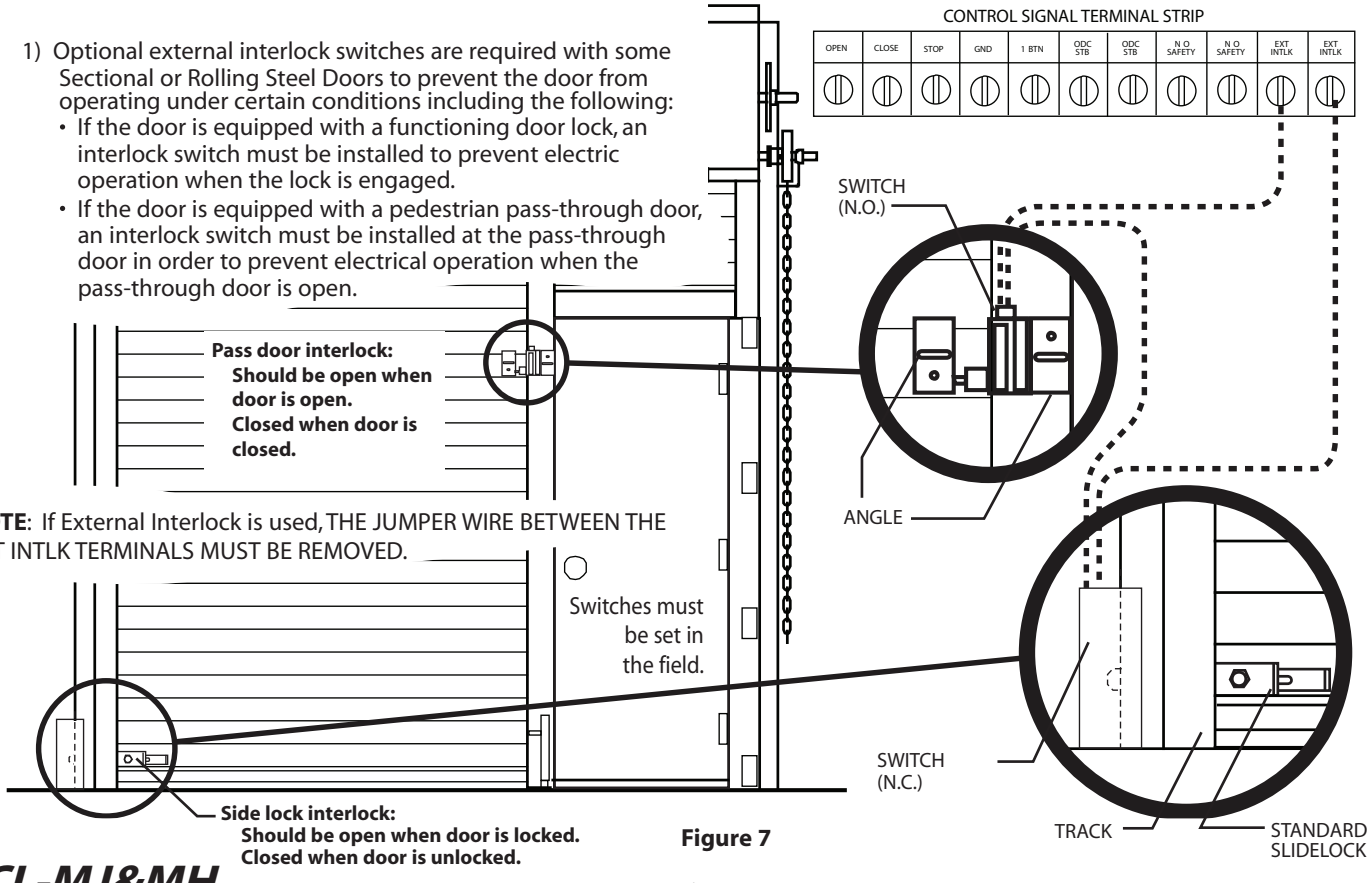


Figure 7

Radio Control Installation

1) For a 3-wire radio control installation, make connections as shown in **Fig. 8**.

NOTE: PWR terminal supplies 20 – 40VDC. Radios used must be compatible with this voltage range.

NOTE: If no voltage is present at PWR terminal, check fuse on circuit board.

Series II Safe-T-Beam® Monitored Photocells

1) Monitored SERIES II (STB) photocells can be installed as shown in **Fig. 9**. Wiring to these photocells can be connected to either terminal (they are not polarity sensitive). **(Troubleshooting in Section 8)**

NOTE: Monitored Sensing device must be installed or unit will be Constant Contact Close.

⚠WARNING: Actuating operator using constant contact on the CLOSE button will override external reversing devices, including photocells.

2) **To Mount Photocells**: (Kit includes detailed Instructions).
Determine location for mounting. They do not need to be directly adjacent to the door but must be somewhere along the wall where there will be an unobstructed line between them. **Fig 10**. Screws provided for mounting on soft material (wood, drywall, etc.) They must extend out away from the wall sufficiently that no door hardware breaks the plane of the photo-beam.

⚠WARNING: Photocell systems provide entrapment protection when mounted near the doorway in such a way that the lower portion of an individual's leg will break the photocell beam during normal walking conditions.

Commercial Non-Monitored Photocells

1) Nominal 24 Volt DC Commercial photocells with normally open contacts can be connected as shown in **Fig. 11**.

NOTE: Blue wire supplies 20 – 40VDC. Photocells used must be compatible with this voltage range.

NOTE: If no voltage is present at Blue wire, check fuse on circuit board.

Figure 8

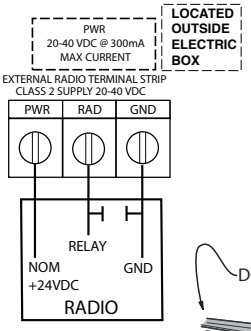
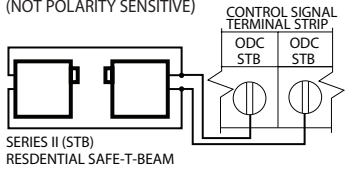


Figure 9



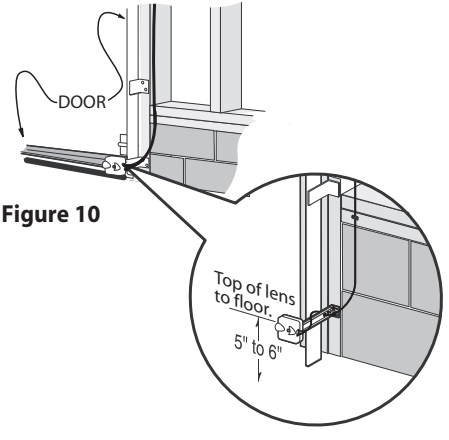
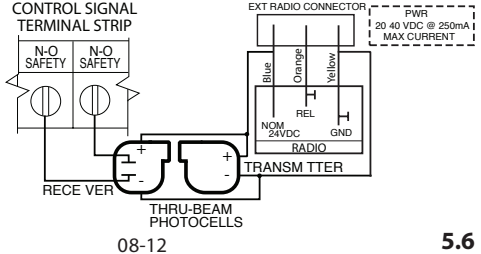


Figure 10

Figure 11



Sensing Edge Switch Installation

Figure 12 shows an example of a typical sensing edge installation. Left hand side is shown but right hand is a mirror image of this.

1A) If wiring from sensing edge switch to operator is coiled cord or 2 wire jacketed cord:
- Install junction box 12" above the center of the door opening on same side as sensing switch.
- Secure one end of cord to junction box using a cable clamp.

1B) If connection is to be made through a take up reel cord:
- Install on same side as sensing edge switch and above door opening and slightly to the side.
- Install junction box adjacent to take up reel and route the stationary cord from the reel to the box and secure with a cable clamp.

NOTE: Do not use a take-up-reel on a monitored edge. They have slip connections in them that momentarily break contact which causes false reversals.

2) Secure other end of cord (straight, coiled or reel) to sensing edge switch enclosure using a cable clamp.

3) Connect wires of cord to sensing edge switch using wire nuts or other suitable wire connectors.

4) Run a straight 2 wire cord from the junction box (Step 1) to the operator electrical box.
- Secure using cable clamp on each end.

5) Join wires in cord from operator to wires in cord from switch using wire nuts or other suitable wire connectors.

6A) **Monitored** sensing or reversing edge connects to optional Timer-Close Module terminals shown in **Fig. 13A**.

6B) **Monitored** sensing edge connects to main cirsuit board ODC STB terminals using the optional OPAKMEIGX.S as shown in **Fig. 13B**.

7) Operate the door to make certain cord is free to travel and does not become snared during door opening or closing.
- Check sensing edge switch for proper operation.

⚠ WARNING: Actuating the operator using constant contact on the CLOSE button will override external reversing devices, including sensing edges or reversing edges.

Figure 12

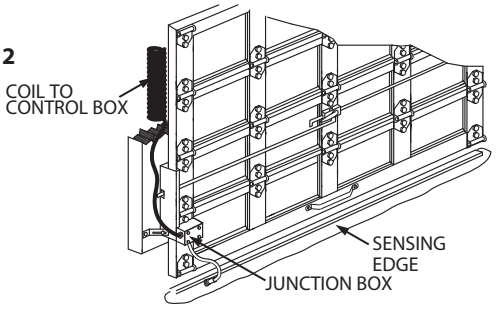


Figure 13A

NOTE Monitored 2-wire sensing or reversing edge can only be used in combination with a Timer-Close Module.

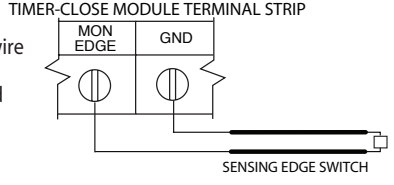
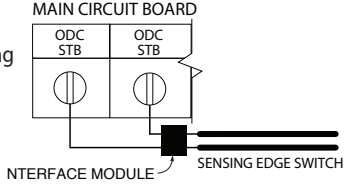


Figure 13B

NOTE: Monitored sensing edge connects to main circuit board ODC STB terminals using optional OPAKMEIGX.S INTERFACE MODULE.



IMPORTANT SAFETY INSTRUCTIONS

WARNING -
To reduce the risk of severe injury or death:

1) READ AND FOLLOW ALL INSTRUCTIONS.
2) Never let children operate or play with door controls. Keep the remote control (where provided) away from children.
3) Personnel should keep away from a door in motion and keep the moving door in sight until it is completely closed or opened. NO ONE SHOULD CROSS THE PATH OF A MOVING DOOR.
4) Test the door's safety features at least once a month. After adjusting either the force or the limit of travel, retest the door operator's safety features.
5) For products having a manual release, if possible, use the manual release only when the door is closed. Use caution when operating the release while the door is open. Weak or broken springs may cause the door to fall rapidly, causing severe injury or death.
6) KEEP DOOR PROPERLY OPERATING AND BALANCED. See Door Manufacturer's Owner's Manual. An improperly operating or improperly balanced door could cause severe injury or death. Have only trained door systems technicians make repairs to cables, spring assemblies and hardware.
7) SAVE THESE INSTRUCTIONS.

Section 6: Operator Setup Procedure

Control Panel

These operators include a full function control panel including a liquid crystal display (LCD), calibration keys and Open, Close and Stop keys for on board operator control.See **Fig.1**. The open, close and stop keys function as a 3-button wall control. The Display will show current operator conditions and calibration information. Due to limited character space,some displays will be abbreviated. See Appendix C (pgs.10.7-10.9) for full display descriptions.

Operator includes a non-volatile memory. The unit will remember all calibration settings plus error code and run code logs, if power is removed from unit.

NOTE: During Setup, refer to Caution Label for limited use (pictured on page 5.4).

⚠DANGER: After power is supplied to the operator, **Do Not** make contact with components inside the control panel except for the Keypad Keys. **Fig. 1**.

Control Operating Modes

Operator control boards operate in two modes: Run Mode and Calibration Mode. The control board should normally operate in the Run Mode. The operator is calibrated in Calibration Mode.

With the operator standing idle

PRESS CAL/RUN TO TOGGLE BETWEEN OPERATING MODES.

- The first display in calibration mode is "open mode >***"
  (*** = current operating mode).
- Display in run mode will be one of the condition codes listed in Appendix C.

NOTE: The CAL/RUN key will not toggle between operator modes while the operator is running.

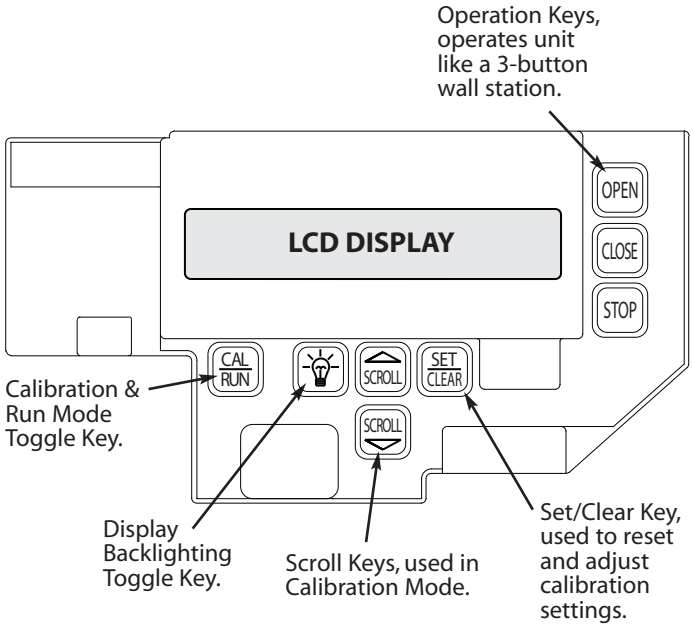


Figure 1

Setting Constant Contact

These operators are shipped from the factory with both open and close operating modes set to constant contact – stop (C – STP) If your unit is set to Momentary Contact (MOM) Open and/or CLOSE, reset the operating modes by taking the following steps:

1) Press CAL/RUN to enter calibration mode. **Fig. 2**.
2) Press SET/CLEAR until display reads "OPEN MODE > C-STP." **Fig. 3**.
3) Press SCROLL (DN) until display reads "CLOSE MODE." **Fig. 4**.
4) Press SET/CLEAR until display reads "CLOSE MODE > C-STP." **Fig. 5**.

⚠WARNING: If a monitored external reversing device is not used, then the operator will run Constant Contact Close. Verify close mode is set to "C-STP"and NOT "C-REV"or "MOM" before continuing.

5) Press CAL/RUN to return to run mode.

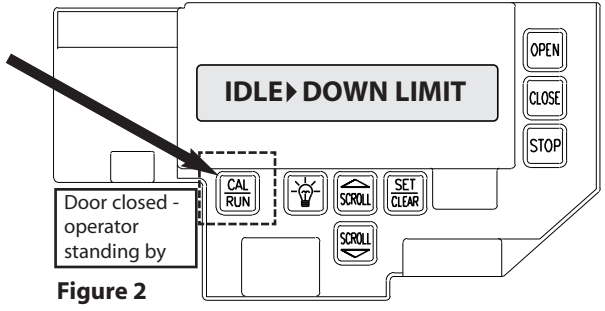


Figure 2

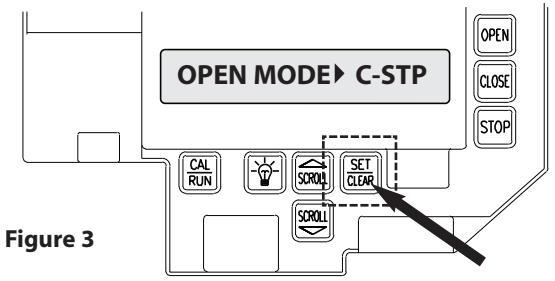


Figure 3

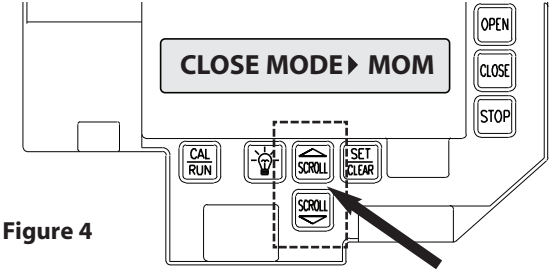


Figure 4

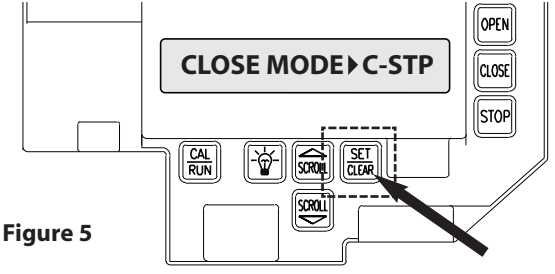


Figure 5

Setting Limit Travel

1) Engage door to Operator.

NOTE: Verify open and close operating modes are set to constant contact – Stop (C-STP). See page 6.2 for details.

2) Press CAL/RUN until operator is in run mode.

3) Press and hold OPEN Key on Control Panel. Run door to desired open position, release OPEN Key.

4) Push LIMIT LOCKING BAR away from Limit Sensors and turn Open Limit Travel Nut until travel nut arrow and open limit sensor arrow are aligned and the display reads "IDLE>UP LIMIT."

5) Release the LIMIT LOCKING BAR and make sure bar seats completely into both Travel Nuts. **Fig. 6**.

6) Press and hold CLOSE key on Control Panel. Run door to within 2" above floor, release Close button.

NOTE: If the operator stops while trying to set limits and the display reads "GDO shutdown>MRT / Hit key to reset," see page 6.6 "Resetting Max Run Timers".

7) Push LIMIT LOCKING BAR away from Limit Sensors and turn Close Limit Travel Nut until travel nut arrow and close limit sensor arrow are aligned and the display reads "IDLE > DOWN LIMIT." **Fig. 7**.

8) Run door fully Open and Closed with Open & Close Keys on control panel and make final adjustments as necessary to make sure that door opens fully and closes no more than 2" above the floor.

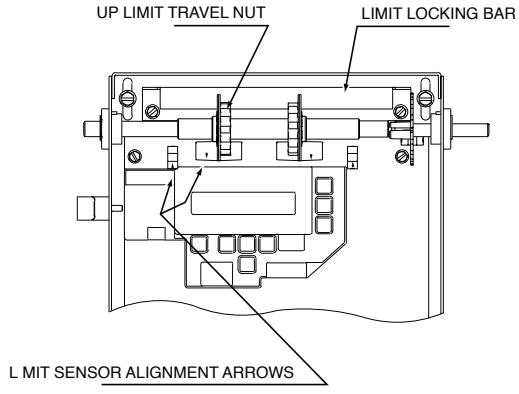


Figure 6

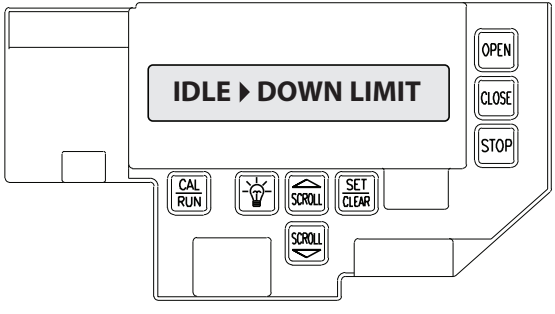


Figure 7

Setting Limit Overrun

⚠WARNING: The Limit Overrun function will override external reversing devices, including photocells and sensing edges or reversing edges. Therefore,any externally connected devices will be disabled during that portion of the door travel controlled by the Limit Overrun function.
The Down Limit Overrun function should be used to close the door no more than the final 2".

A) The Limit Overrun setting is a matter of trial and error. The goal is to adjust the Limit Overrun until an appropriate seal is obtained between the bottom edge of the door and the floor.

B) The Limit Overrun setting can be varied between 0 and 9. 0 - disables the Limit Overrun so that the door stops at the down limit switch setting. 9 - causes the greatest amount of door travel beyond the limit switch setting. Door should close gently with light tension on door cables,or minimal stacking on rolling steel slats.

1) Press CAL-RUN to enter calibration mode
2) Press scroll (▼) until the display reads "LIMIT OVERRUN >(0-9)." **Fig. 8**.
3) Press SET/CLEAR until the display reads the desired value.
4) Press the OPEN key to open the door a few feet,then release
5) Press the CLOSE key to close the door and hold until the operator stops.
6) Check the door seal and repeat steps 3-5 until the appropriate seal is obtained between the door and the floor.

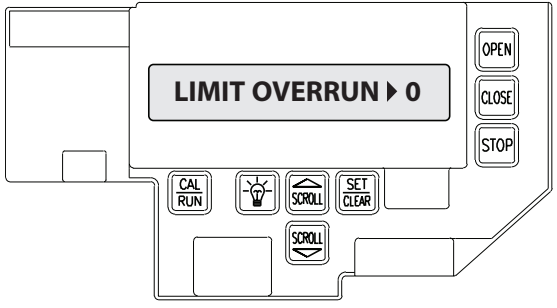


Figure 8

⚠CAUTION: If proper seal cannot be obtained at a setting of 9, Reset the Limit Overrun back to 0 and reset the Down Limit position as described on pg. 6.3. Then adjust the Limit Overrun as instructed above.

7) Press CAL-RUN to return to run mode.

Monitored Reversing Devices

ODC Safe-T-Beams® (OPTIONAL)

1) If operator is in RUN mode, press CAL/RUN to enter calibration mode.
2) Press SCROLL (up or down) until display reads "ODC STB>ON" or "ODC STB>OFF" **Figure 9.**
3) Press SET/CLEAR key to toggle between ON and OFF.
4) Press SCROLL (up or down) to shift to a new function and lock setting.
5) Press CAL/RUN to return to run mode.

WARNING: Photocell systems provide entrapment protection when mounted near the doorway in such a way that the lower portion of an individuals leg will break the photocell beam during normal walking through the doorway. If an alternative mounting location is chosen, it must be approved by the facility owner.

NOTE: Installation of Series II Monitored Photocells DOES NOT make the operator unit legal for residential use.

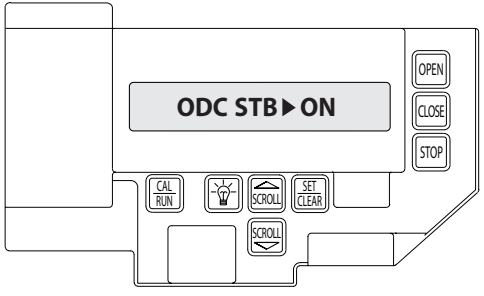


Figure 9

Current UL Approved Monitored Reversing Devices (See page 5.7)

1) MillerEdge ME and MT series monitored edge sensors used in combination with Timer-Close Module P/N OPABTCX.S or OPAKMEIX.S INTERFACE MODULE.

2) MillerEdge ME and MT series monitored edge sensors (Direct connect through STB inputs). (Direct connect through STB inputs).

3) Residential Safe-T-Beam® Monitored Photocells from The Genie® Company, model OSTB-BX (P/N 38176R).

4) Monitored Photocells (P/N OPAKPEN4GX.S.).

Max Run Timer

This operator will automatically set its maximum run timers (MRT) when the unit is run two full cycles from limit to limit, without stopping, in the run mode. The Max Run Timer is a feature that prevents the unit from running continuously in the event of a slipping clutch, etc.

NOTE: The MRT's are set to the time required to run from one limit to the other, plus 5 seconds (nominal). When the MRT is exceeded, the operator stops and may reverse. The operator will not respond to any command until it is reset by pressing one of the calibration keys or by cycling power to the unit.

Resetting the Max Run Timers

The Maximum Run timers can be reset using this procedure:

1) Press CAL/RUN to enter calibration mode.
2) Press Scroll (▼) until display reads "MAX RUN TMR > SET."
3) Press SET/CLEAR until display reads "MAX RUN TMR > CLEAR." **FIG. 10**.
4) Press CAL/RUN to return to run mode.
5) Cycle door fully open and fully closed (two full cycles) without stopping.

NOTE: The Max Run Timers must be reset each and every time the travel limits are adjusted.

⚠CAUTION: The Mid-Stop feature must be turned off to properly set the maximum run timers.

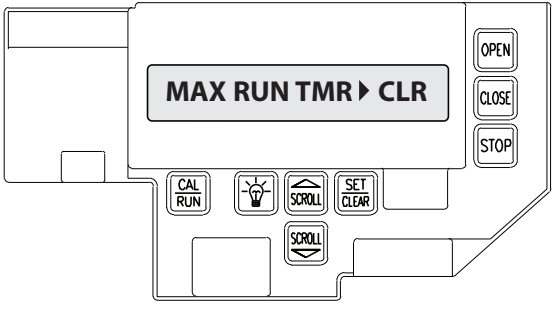


Figure 10

Setting the Mid-Stop

This operator includes a programmable Mid-Stop. This feature allows the operator to stop at a user selectable point when opening. It is used when operating very tall doors that seldom open to their full height. The Mid-Stop does not affect the operator when closing.

1) To operate door to full open position from mid-stop, press open button again.

NOTE: Setting of the MID-STOP should only be performed AFTER Travel Limit and Max Run Timer settings have been made.

To set the Mid-Stop:

1) Press CAL/RUN to enter calibration mode.
2) Press the CLOSE key to close the door to the down limit.
3) Press SCROLL (▼) until the display reads "MID-STOP > CLEAR." **Fig. 11**.

NOTE: If the display reads MID-STOP > SET at this point, first clear the MID-STOP as described below then repeat steps 1-3 and continue.

4) Press the OPEN key to open the door and release the key when the door is at the desired Mid-Stop height.
5) Press the SET/CLEAR until the display reads "MID-STOP > SET."
6) Press CAL/RUN to return to run mode.

To clear the Mid-Stop:

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL (▼) until the display reads MID-STOP > SET.
3) Press SET/CLEAR until the display reads MID-STOP > CLR
4) Press CAL/RUN to return to run mode.

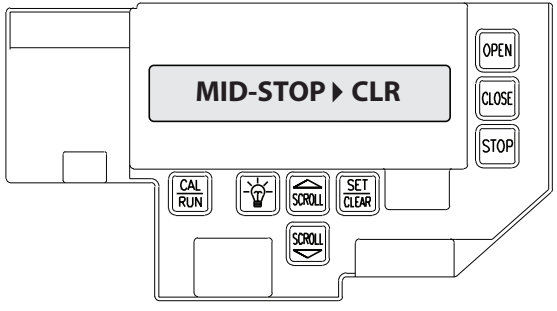


Figure 11

Changing Open and Close Modes

NOTE: Once the travel limit and safety modes have been set, the OPEN and CLOSE modes may be set for Momentary Contact if desired.

> **⚠ WARNING**
> If momentary contact control is to be used, a monitored external reversing device such as a photocell system or sensing edge switch must be used.

NOTE: The radio control input will not operate when the open or close mode is set in the Constant Contact mode. Operating modes affect all control inputs and keys. .

To set the OPEN mode: **Fig. 12**

1) Press CAL/RUN to enter the calibration mode.
2) Press SCROLL (▲) or (▼) until display reads "OPEN MODE > ."
   - This displays current setting.
3) Press SET/CLEAR until the display reads the desired operating mode:
   - C-STP = Constant contact is required to open door. Door will stop if button or key is released before operator reaches its limit.
   - MOM = Momentary contact will cause door to open to limit.
4) Press CAL/RUN to return to run mode.

To set the CLOSE mode: **Fig. 13**.

1) Press CAL/RUN to enter the calibration mode.
2) Press SCROLL (▲) or (▼) until display reads "CLOSE MODE > ". This displays current setting.
3) Press SET/CLEAR until the display reads the desired operating mode:
   - C-STP = Constant contact is required to close door. Door will stop if button or key is released before operator reaches its limit.
   - C-REV = Constant contact is required to close the door. Door will reverse automatically if close button or key is released before door reaches down limit.
   - MOM = Momentary contact will cause door to close to limit.
4) Press CAL/RUN to return to run mode.

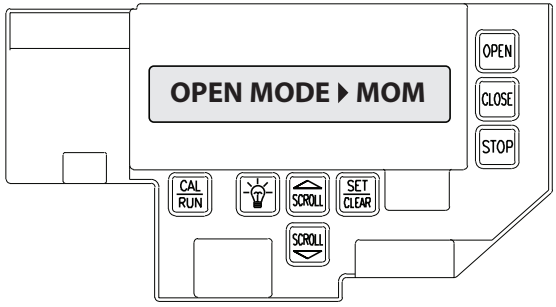


Figure 12

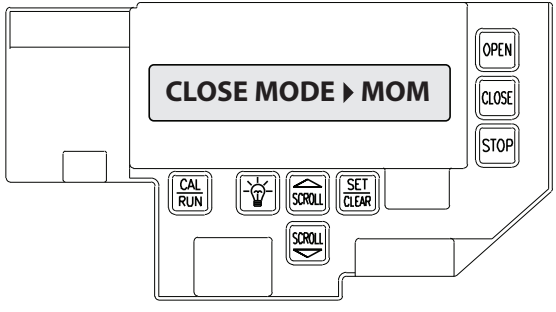


Figure 13

Section 7: Special Operator Features

Operator Cycle Count Fig. 1

These operators include a built-in cycle counter that store the count with or without power to the operator.

To view the Cycle Count:

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL (▲) or (▼) until display reads "CYCLES > ." This will display current cycle count.
3) Press CAL/RUN to return to run mode.

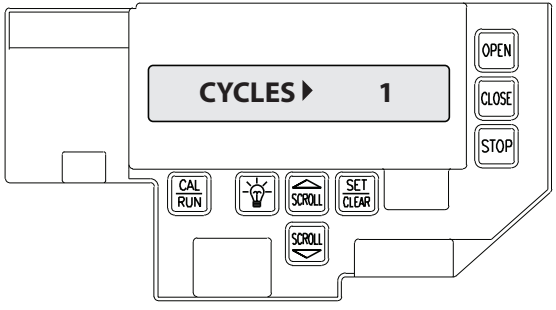


Figure 1

Circuit Board Firmware Version Fig. 2

These operators can display the version number of the firmware used in the on-board micro-controller.

To view this version number:

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL (▲) or (▼) until the display reads "GDO V# > ." This will display the current firmware version number.
3) Press CAL/RUN to return to run mode.

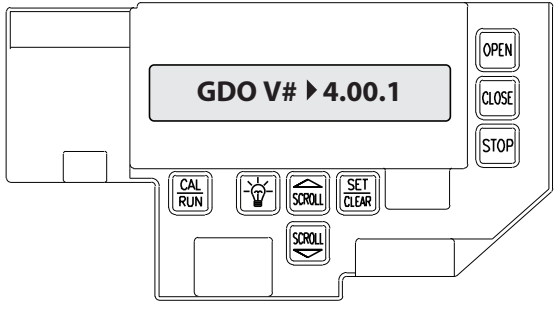


Figure 2

Operator Type Fig. 3

These operators are available for use in jackshaft or trolley configurations. The same control board is used for either configuration, however the control board must be set for the appropriate GDO configuration. A board set for trolley mode will not work in a jackshaft operator and vice-versa.

NOTE: The GDO type is factory set. The installer should not have to set this feature. However, if the GDO type is inadvertently changed, or if a board needs to be replaced in the field, follow these instructions to set GDO type.

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL (▲) or (▼) until display reads "GDO TYPE >." This will display the current GDO type.
3) Press SET/CLEAR until display indicates correct GDO type (J-SHAFT or TROLLEY)
4) Press CAL/RUN to return to run mode.

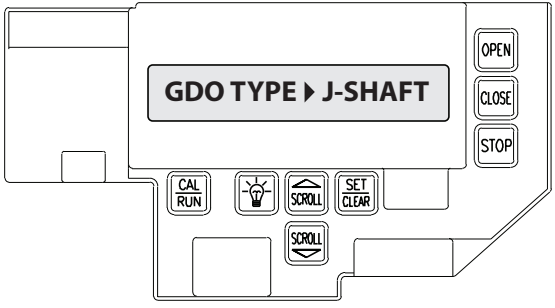


Figure 3

Section 8: Troubleshooting

Display Operation in Run Mode

The operators display their status on the LCD display. Each time the operator runs, stops, reverses or refuses to run, the display will indicate why the action did, or did not, take place.

Once an error code has been generated, the operator will continue to display the error code while the operator is not running. This error code can be cleared by pressing the STOP button or STOP key on the keypad. The error code will automatically clear when the operator stops at the down limit. Error codes will continue to be stored in the operator's Error Code Memory after they have been cleared from the display in the Run Mode.

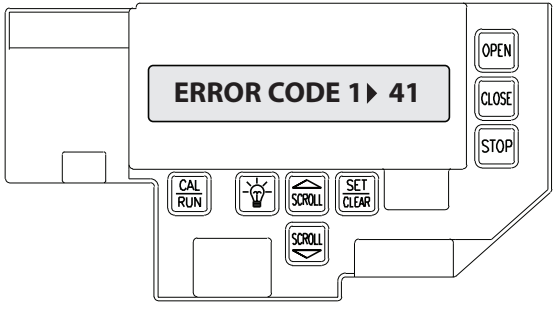


Figure 1

Error Codes

To aid in troubleshooting problems, the operators include an error code memory that stores the last 10 error events. These codes are stored with or without power. The last error code detected is also displayed on the LCD until the stop button or key is pressed or the operator stops at the down limit.

The error code memory stores the last 10 error codes in sequence. Once 10 codes are stored, the oldest code is erased to make room for the newest code. These codes are displayed in calibration mode. The display will flash the number of the error code and the 2-digit error code followed by a description of the error code. ***Fig. 1 & 2****.*

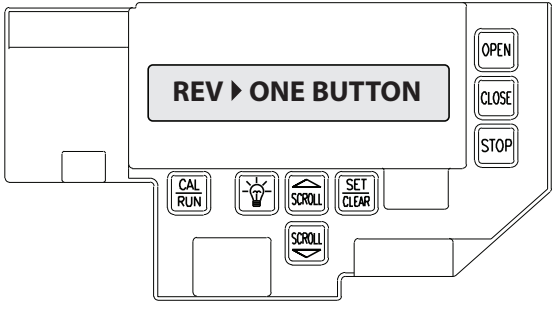


Figure 2

Error Codes (cont')

To view the error code memory: (Fig. 1 & 2)

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL (▲) or (▼) until display reads "ERROR CODE 1 >."
   - The display will begin flashing the error code number and 2-digit error code followed by its description.
   - Reminder: Error code number 1 is the latest code generated.
3) Press SET/CLEAR. The display will now read "ERROR CODE 2 >." (This is the error code which was generated before error code 1.)
4) Repeat step 3 until all 10 error codes have been displayed or move on to step 5 when ready.
5) Press CAL/RUN to return to run mode.

NOTE: For all error codes see Appendix C, Pages 10.8 - 10.9.

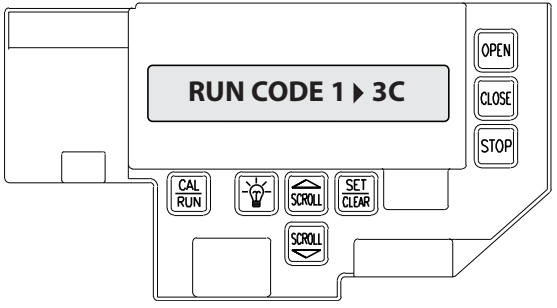


Figure 3

Run Codes

These operators also include a run code memory that stores the last 10 run events. These codes are stored with or without power. Each time the operator runs or stops, it generates a code that it stores in this memory (Why the operator ran or stopped). Used together with the error code memory, it becomes a powerful troubleshooting aid.

The run code memory stores the last 10 error codes in sequence. Once 10 codes are stored, the oldest code is erased to make room for the newest code. These codes are displayed in calibration mode. The display will flash the number of the run code and the 2-digit run code followed by a description of the run code. ***Fig. 3 & 4****.*

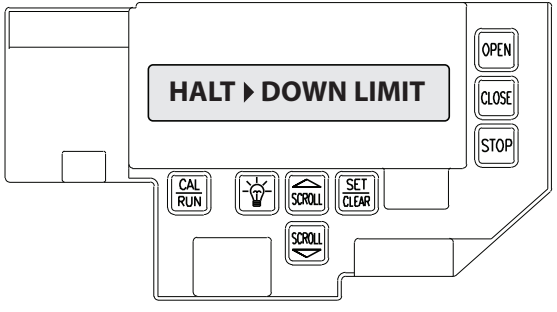


Figure 4

Run Codes (cont')

To view the run code memory: (Fig. 3 & 4)

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL (▲) or (▼) until display reads "RUN CODE 1 > ."
   - The display will begin flashing the run code number and code followed by its description.
   - Remember: run code number 1 is the latest code generated.
3) Press SET/CLEAR. The display will now read "RUN CODE 2 > ." (This is the run code which was generated before run code 1.)
4) Repeat step 3 until all 10 run codes have been displayed or move on to step 5 when ready.
5) Press CAL/RUN to return to run mode.

NOTE: For all run codes see Appendix C, Page 10.7.

TROUBLESHOOTING EXAMPLE USING RUN AND ERROR CODE MEMORIES. Fig. 5.

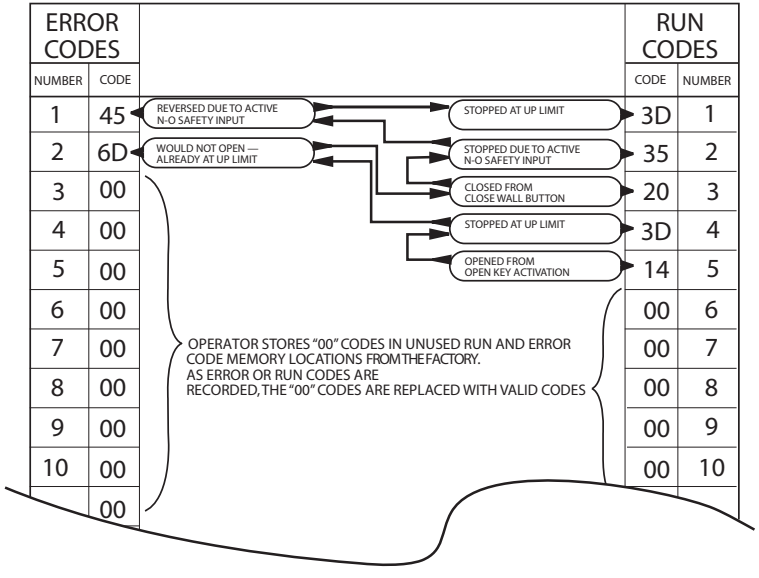
1. In Calibration Mode, display and write down each Run Code and Error Code stored in memory.

2. List as shown below.

3. Refer to Appendix C to interpret the codes.

In this example, the operator was opened using the OPEN key on the keypad and stopped at the up limit. The OPEN wall button was then activated, causing the "6D" code to be generated since the operator could not open when it is already at the up limit. The CLOSE wall button was then activated, causing the operator to close. While closing, the Normally-Open (N-O) Safety Input was activated, causing the operator to stop and then reverse, stopping at the up limit.

Figure 5



LED Indicators Fig. 6

These operators include a self-diagnostic circuit board using troubleshooting LED indicators to signal the technician of a problem.

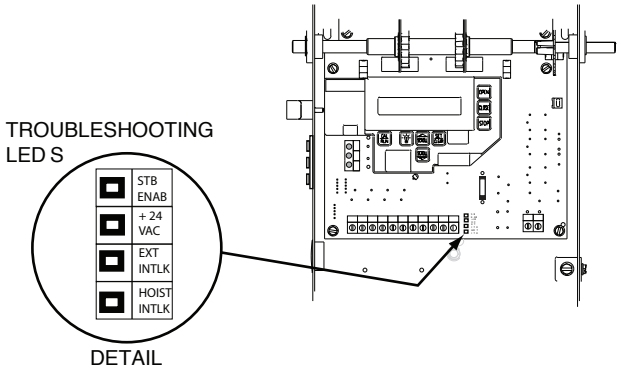


Figure 6

TROUBLESHOOTING LED's				
HOIST INTERLOCK	EXTERNAL INTERLOCK	+ 24 VOLTS DC	STB ENABLE	INDICATION
			OFF	STB DISABLED
			ON	STB ENABLED
ON	ON	ON		NORMAL OPERATING CONDITION
OFF	ON	ON		**HOIST INTERLOCK SWITCH OPEN:** 1) HOIST RELEASE NEEDS RESET. 2) HOIST INTERLOCK CONNECTOR NOT PLUGGED IN. 3) HOIST INTERLOCK DEFECTIVE.
OFF	OFF	ON		EXTERNAL INTERLOCK OPEN
OFF	OFF	OFF		**POWER SUPPLY PROBLEM:** 1) CHECK AC POWER SUPPLY. 2) CHECK MAIN POWER FUSE. 3) CHECK SECONDARY FUSE (2A).

Monitored Photocell Self-diagnostic Troubleshooting Chart

SOURCE (RED LED)	SENSOR (GREEN LED)	INDICATED CONDITION	REQUIRED ACTION
● ON	● ON	NORMAL OPERATION	NONE REQUIRED
○ OFF	○ OFF	1. POWER HEAD NOT POWERED 2. WIRING FROM POWER HEAD BAD	1. CHECK BREAKERS, FUSES, PLUGS 2. CHECK WIRING FOR OBVIOUS SHORTS
○ OFF	● ON	1. WIRING TO SOURCE MISSING OR BAD 2. POWER HAS BEEN INTERRUPTED	1. CHECK WIRING 2. REMOVE POWER AND REAPPLY
2 BLINKS, PAUSE (REPEAT)	● ON	1. BEAM NOT ALIGNED 2. BEAM OBSTRUCTED 3. SENSOR DEFECTIVE	1.CHECK ALIGNMENT 2. CHECK FOR OBSTRUCTION 3. CALL CUSTOMER SERVICE
2 BLINKS, PAUSE (REPEAT)	○ OFF	1. WIRE TO SENSOR MISSING OR BAD 2. SENSOR DEFECTIVE	1. CHECK WIRING 2. CALL CUSTOMER SERVICE
3 BLINKS, PAUSE (REPEAT)	● ON	1. SENSOR RECEIVING INTERFERENCE	1. ATTEMPT TO DETERMINE SOURCE OF INTERFERENCE 2. CALL CUSTOMER SERVICE
4 BLINKS, PAUSE (REPEAT)	● ON	1. SOURCE NOT SENDING PULSES 2. SOURCE DEFECTIVE	1. CALL CUSTOMER SERVICE 2. CALL CUSTOMER SERVICE

⚠ **WARNING:** Actuating the operator by using constant contact on the CLOSE button will override external reversing devices, including photocells.

Section 9: Service and Maintenance

Maintenance Schedule

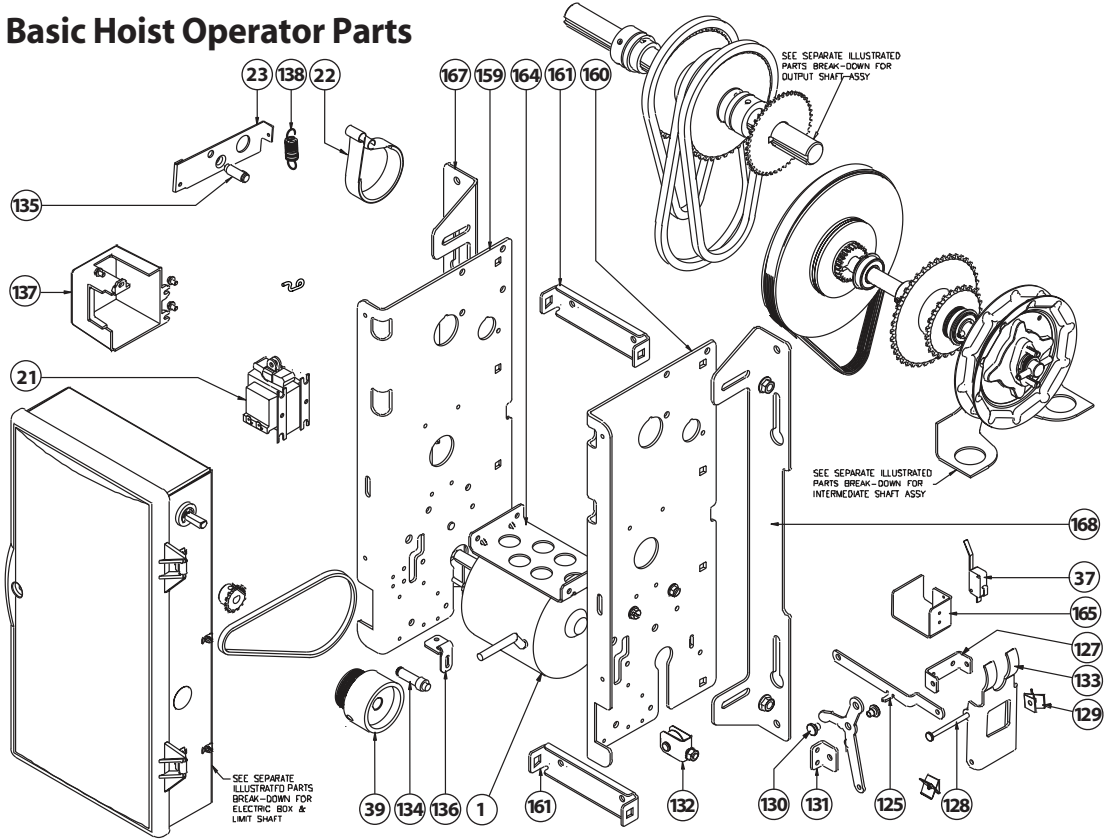
The following table provides a schedule of recommended Service and Maintenance items to be completed by a trained service representative.

⚠ CAUTION:
Failure to perform the recommended Service & Maintenance may result in premature failure of the operator.

SERVICE ITEM	SERVICE INTERVAL (FREQUENCY)		
	EVERY 6 MO. OR 5,000 CYCLES	EVERY 12 MO. OR 10,000 CYCLES	EVERY 36 MO. OR 30,000 CYCLES
MANUAL OPERATION OF DOOR	●		
DRIVE CHAIN TENSION	●		
* PHOTOCELL/ SENSING EDGE OPERATION	●		
CLUTCH ADJUSTMENT		●	
BRAKE ADJUSTMENT		●	
CHECK FOR LOSE OR MISSING HARDWARE		●	
CHECK LIMIT POSITION			●
GEAR TRAIN WEAR			●

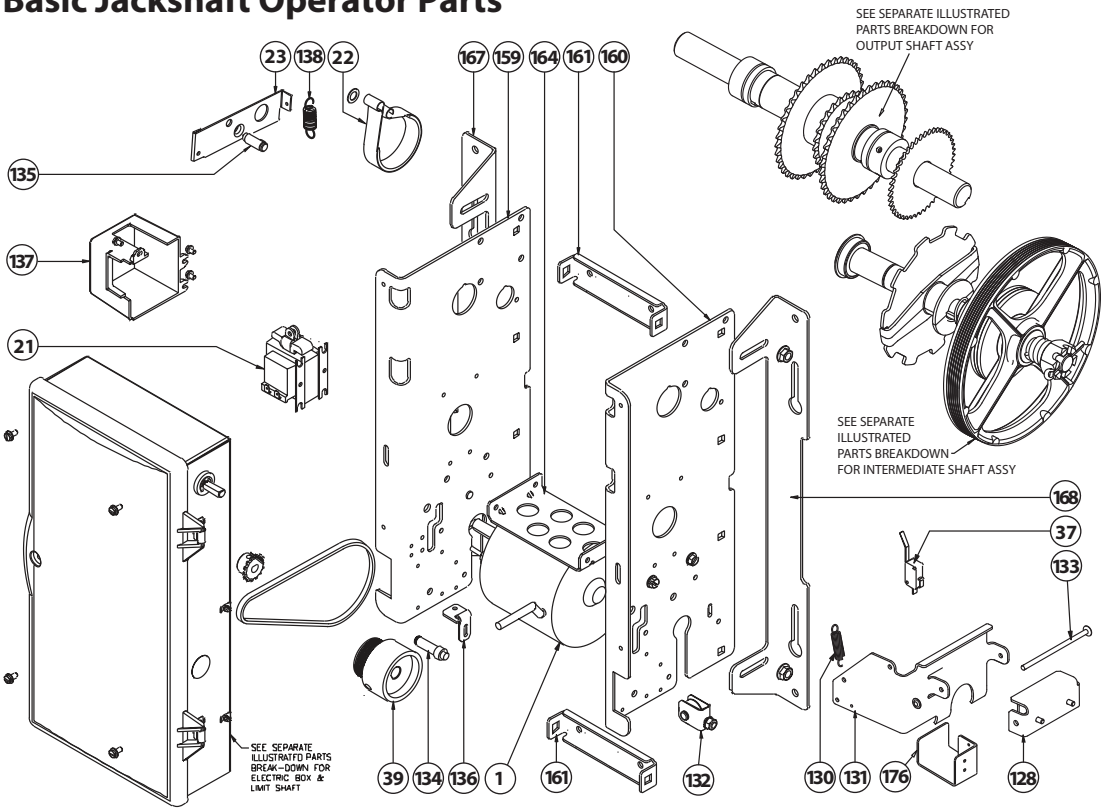
* **ALL EXTERNAL REVERSING DEVICES SHOULD BE CHECKED MONTHLY.**

Basic Hoist Operator Parts



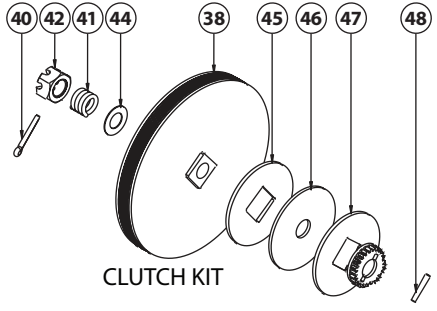
PARTS LIST		
ITEM NO.	PART NUMBER	DESCRIPTION
1	110380.0001	ELECTRIC MOTOR, 1/2HP, 120V
	110380.0002	ELECTRIC MOTOR, 1/2HP, 240V
21	110847.0001	BRAKE SOLENOID, 115V
	110847.0002	BRAKE SOLENOID, 230V
22	110450.0001	BRAKE BAND
23	110449.0001	BRAKE RELEASE LEVER
37	108190.0001	INTERLOCK SWITCH
39	110443.0001	BRAKE PULLEY
125	110503.0001	BRAKE RELEASE LINK
127	110807.0001	BRAKE PIVOT BRACKET
128	111007.0001	BRAKE RELEASE—CLEVIS PIN
129	8115B17	BRAKE RELEASE—SPEED NUT
130	110809.0001	BRAKE RELEASE ROD RIVET
131	110807.0001	BRAKE RELEASE ARM BRACKET
132	107978.0001	RELEASE PULLEY
133	110502.0001	HANDWHEEL RELEASE ARM
134	110522.0001	BRAKE POST—FLOATING
135	110521.0001	BRAKE POST—FIXED
136	110808.0001	BRAKE ADJUSTMENT PLATE
137	110549.0001	BRAKE SOLENOID COVER
138	110824.0001	BRAKE RELEASE SPRING
159	111051.0001	OPERATOR CHASSIS LEFT
160	111051.0002	OPERATOR CHASSIS RIGHT
161	110803.0001	OPERATOR CHASSIS SUPPORT BRACE
164	110804.0001	SUPPORT BRACKET
165	110805.0001.S	WIRE GUARD BRACKET
167	110425.0001	LEFT MOUNTING BRACKET
168	110425.0002	RIGHT MOUNTING BRACKET

Basic Jackshaft Operator Parts

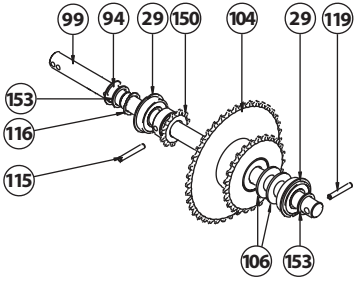


PARTS LIST		
ITEM NO.	PART NUMBER	DESCRIPTION
1	110380.0001	ELECTRIC MOTOR, 1/2HP, 120V
	110380.0002	ELECTRIC MOTOR, 1/2HP, 240V
21	110847.0001	BRAKE SOLENOID, 115V
	110847.0002	BRAKE SOLENOID, 230V
22	110450.0001	BRAKE BAND
23	110449.0001	BRAKE RELEASE LEVER
37	108190.0001	INTERLOCK SWITCH
39	110443.0001	BRAKE PULLEY
128	110815.0001	BRACKET PIVOT
130	110867.0001	RELEASE SPRING
131	111143.0001	RELEASE BRACKET
132	107978.0001	RELEASE PULLEY
133	18586A04.S	COLD HEADED PIN
134	110522.0001	BRAKE POST—FLOATING
135	110521.0001	BRAKE POST—FIXED
136	110808.0001	BRAKE ADJUSTMENT PLATE
137	110549.0001	BRAKE SOLENOID COVER
138	110824.0001	BRAKE RELEASE SPRING
159	111051.0001	OPERATOR CHASSIS LEFT
160	111051.0002	OPERATOR CHASSIS RIGHT
161	110803.0001	OPERATOR CHASSIS SUPPORT BRACE
164	111804.0001	MOTOR MOUNT
166	110803.0001	SUPPORT BRACE
167	110425.0001	LEFT MOUNTING BRACKET
168	110425.0002	RUGHT MOUNTING BRACKET
176	110805.0001	WIRE GUARD

Basic Shaft Assembly Parts

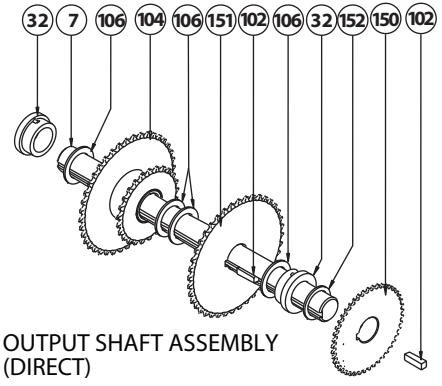


CLUTCH KIT

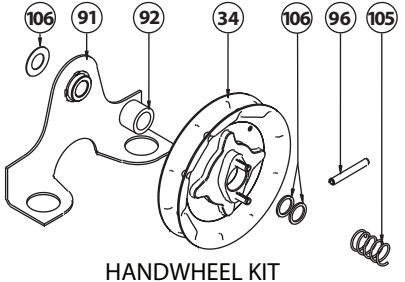


INTERMEDIATE SHAFT ASSEMBLY
(HOIST)

PARTS LIST		
ITEM NO.	PART NO.	DESCRIPTION
7	110478.0003	OUTPUT SHAFT
29	110813.0001	INTERMEDIATE SHAFT BEARINGS
32	106064.0001	OUTPUT SHAFT BUSHINGS
34	110872.0001	HANDWHEEL
38	111125.0001	CLUTCH PULLEY
40	080401.0624	COTTER PIN
41	075197.0000	CLUTCH SPRING
42	110472.0001	SLOTTED CLUTCH NUT
44	086649.0029	CLUTCH THRUST WASHER
45	108015.0001	MOVABLE CLUTCH PLATE
46	075193.0000	CLUTCH LINING
47	111037.0001	CLUTCH DISC
48	110881.0001	DOWEL PIN
91	107967.0001	CHAIN GUARD
92	110876.0001	BUSHING, .627 ID
94	080415.0025	E-RING
96	110313.0010	SPRING PIN, .250 X .188
99	110463.0001	INTERMEDIATE SHAFT
102	080340.0074	SQUARE KEY STOCK, 3/16
104	110543.0001	SPRKT, 25T-40T, #35CH, 3/8P
105	110545.0001	HANDWHEEL SPRING
106	110391.0001	SPACER WASHER
115	110313.0008	SPRING PIN, .188 DIA. x 1 38
116	110818.0001	WAVE WASHER
119	110313.0010	SPRING PIN
150	110465.0001.S	SPRCKT, 23T, #25CH, 1/4P, W/KEY
151	110482.0001	SPRKT, 40T, #35CH, 3/8P
152	110819.0002	PLAIN WASHER
153	110819.0001	PLAIN WASHER



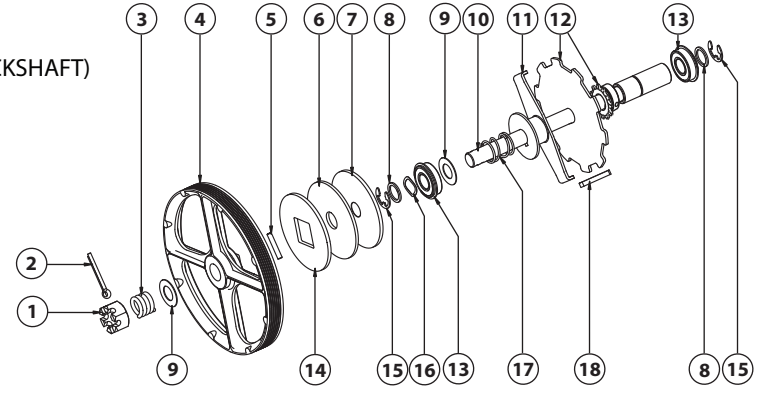
OUTPUT SHAFT ASSEMBLY
(DIRECT)



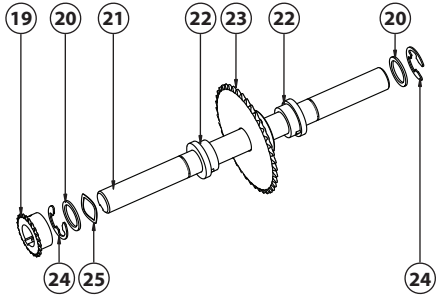
HANDWHEEL KIT

Basic Shaft Assembly Parts

INTERMEDIATE
SHAFT ASSEMBLY (JACKSHAFT)



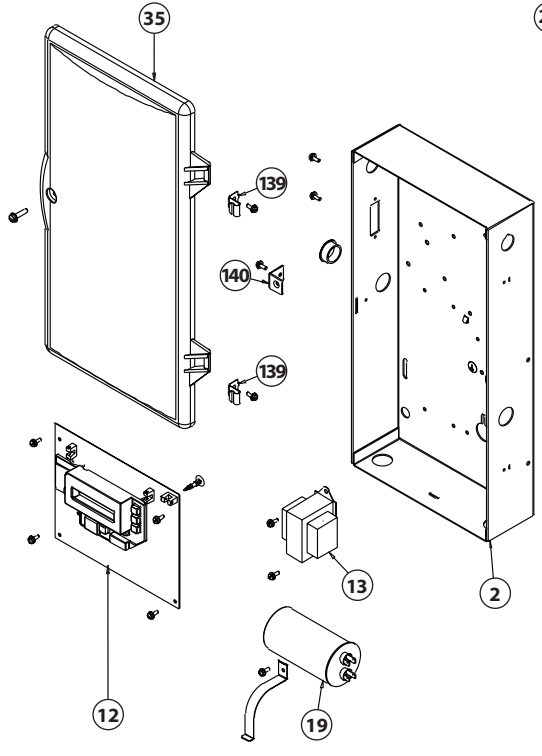
OUTPUT SHAFT ASSEMBLY
(INDIRECT)

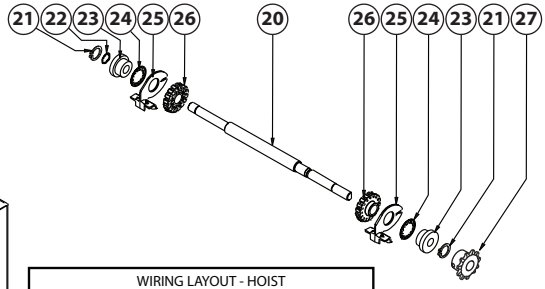


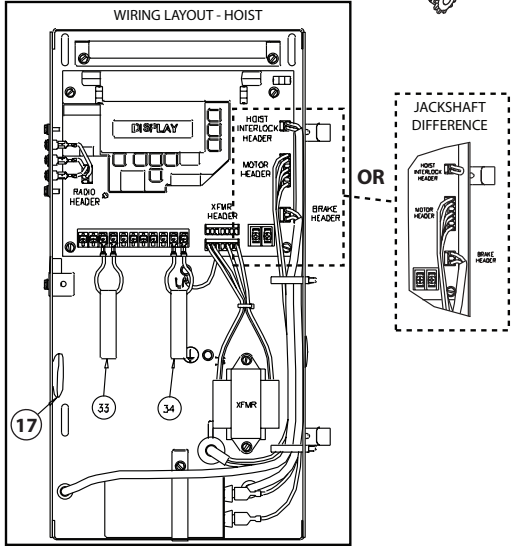
PARTS LIST		
ITEM NO.	PART NO.	DESCRIPTION
1	110472.0001	SLOTTED NUT, 5/8-11
2	080401.0624	COTTER PIN
3	075197.0000	CLUTCH SPRING
4	111324.0001.S	CLUTCH PULLEY ASSY
5	110881.0001.S	DOWEL PIN
6	075193.0000	CLUTCH LINING
7	111037.0001	CLUTCH DISC
8	110819.0001	PLAIN WASHER
9	086649.0029	PLAIN WASHER
10	110392.0001	INTERMEDIATE SHAFT
11	110387.0001	SLIDER
12	110817.0001	SPRKT & ENGAGEMENT PLATE
13	110813.0001	BEARING
14	108015.0001	MOVABLE CLUTCH DISC
15	080415.0021	E-RING
16	110818.0001	WAVE WASHER
17	110389.0001	RELEASE SPRING
18	110816.0001	ROUND END KEY, .188 X 1.500
19	110460.0003	SPRKT, 23T, #25CH, 1/4P, W/KEYWAY
20	110819.0002	PLAIN WASHER
21	110478.0003	OUTPUT SHAFT, W/KEYWAY
22	106064.0001	BUSHING
23	110482.0003	SPRKT, 40T, #35CH, 3/8P, W/KEYWAY
24	080415.0025	E-RING
25	110818.0002	WAVE WASHER

Appendix A (cont')

Basic Electric Box Parts







PARTS LIST		
ITEM NO.	PART NO.	DESCRIPTION
2	110405.0001	ELEC BOX ASSY, 115V
	110405.0002	ELEC BOX ASSY, 230V
12	112365.0001.S	KIT, PCB
13	110846.0001	TRANSFORMER, 120V
	110846.0002	TRANSFORMER, 240V
17	110957.0001	FUSE KIT
19	110830.0001	CAPACITOR, 115V
	110830.0002	CAPACITOR, 230V
20	111048.0001	LIMIT SHAFT
21	109876.0003	E-RING
22	110818.0003	WAVE WASHER
23	077538.0000	BUSHING, 3/8/ID
24	110823.0001	PUSH-ON RETAINING RING
25	110550.0001	LIMIT TRIGGER
26	110459.0001	TRAVEL NUT
27	601332.0001	SPRKT, 14T, 1/4P, 3/8 BORE
35	111851.0001	COVER ASSY, ELEC BX
15	080415.0021	E-RING
139	110423.0001	E-BOX HINGE
140	110870.0001	E-BOX LATCH

Section 10: Appendix B

Screw Terminal Assignments

INPUT		FUNCTION	CONNECTION TYPE
11-POSITION TERMINAL BLOCK INSIDE ELECTRIC BOX	OPEN	Causes door to open if not at Up Limit. Causes a closing door to reverse.	Normally-Open Dry Contact to GND.
	CLOSE	Causes door to close if not at Down Limit.	Normally-Open Dry Contact to GND.
	STOP	Causes a moving door to stop. Prevents the operator from running.	Normally-Closed Dry Contact to GND.
	GND	Common ground connection for Open, Close, Stop &1-Btn Inputs.	
	1-BTN	Causes door to open if not at Up Limit or Mid-Stop Limit. Causes door to close if at Up Limit or Mid-Stop Limit. Causes door to stop if opening. Causes a closing door to reverse.	Normally-Open Dry Contact to GND.
	ODC STB	Reverses a closing door if photocell beam is blocked. NOTE: STB's must be enabled in Calibration Mode.	ODC Series II Safe-T-Beams® ONLY to these inputs. (not polarity sensitive)
	ODC STB	Reverses a closing door if photocell beam is blocked. NOTE: STB's must be enabled in Calibration Mode.	ODC Series II Safe-T-Beams® ONLY to these inputs. (not polarity sensitive)
	N-O REVERSE	Causes a closing door to reverse. NOTE: Will not open a stopped door.	Normally-Open 2-Wire Non-Monitored Edge Sensor. (not polarity sensitive)
	N-O REVERSE	Causes a closing door to reverse. NOTE: Will not open a stopped door.	Normally-Open 2-Wire Non-Monitored Edge Sensor. (not polarity sensitive)
	EXT INTLK	Causes a moving door to stop. Prevents the operator from running when contact is open. Operates even if microcontroller is non-functional.	Normally-Closed dry contacts. (board will energize these contacts at nominal +24VDC).
	EXT INTLK	Causes a moving door to stop. Prevents the operator from running when contact is open. Operates even if microcontroller is non-functional.	Normally-Closed dry contacts. (board will energize these contacts at nominal +24VDC).
2-POSITION TERMINAL BLOCK (INSIDE ELECTRIC BOX)	L1 / L1	Power to operator.	120VAC: Connect to Line (Hot) / 240VAC: Connect to Line 1.
	N / L2	Power to operator.	120VAC: Connect to Neutral / 240VAC: Connect to Line 2.

Other Connections

RADIO AND ACCESSORIES PIGTAIL	PWR	Power for radio & other accessories. +20 to +40VDC, fused at 250mA (F1).	Connect to radio or other accessory's power input.
	RAD (Radio Input Control)	Causes door to open if not at Up Limit or Mid-Stop Limit. Causes door to close if at Up Limit or Mid-Stop Limit. Causes a closing door to reverse.	Connect to radio or other accessory's signal (output).
	GND	Common ground connection for PWR and RAD terminals.	Connect to radio or other accessory's ground input.
PLUG CONNECTIONS INSIDE ELECTRIC BOX	EXPANSION PORT	Connects accessory modules to operator.	Accessory Module Ribbon Cable.
	TRANSFORMER	Connects main transformer to control board.	Transformer Plug.
	BRAKE	Connects brake solenoid to control board.	Brake Solenoid Plug.
	MOTOR	Connects motor and capacitor to control board.	Motor Plug.
	HOIST INTLK	Causes moving door to stop. Prevents the operator from running. Operates even if microcontroller is non-functional.	Hoist Interlock Plug or Jumper.
	LIMIT SENSOR	Causes door to stop at top and bottom of normal travel.	Limit Sensor Plug.

Display Run Codes

Condition Code	DISPLAY	Condition Code Description
0C	IDLE > DOWN LIMIT	STANDING BY AT DOWN LIMIT (NOTE: THIS MESSAGE IS DISPLAYED IF BOTH LIMITS ARE ACTIVE)
0D	IDLE > UP LIMIT	STANDING BY AT UP LIMIT
0E	IDLE > MID STOP	STANDING BY AT MID-STOP LIMIT
0F	IDLE > NO LIMIT	STANDING BY BETWEEN LIMITS
10	OPENING > OPEN BTN	OPENING FROM OPEN BUTTON
11	OPENING > ONE BTN	OPENING FROM 1 BUTTON
12	OPENING > RADIO	OPENING FROM RADIO
13	OPENING > AUX OPEN	OPENING FROM AUXILIARY OPEN INPUT
14	OPENING > OPEN KEY	OPENING FROM KEYPAD OPEN KEY
20	CLOSING > CLOSE PB	CLOSING FROM CLOSE BUTTON
21	CLOSING > ONE BTN	CLOSING FROM 1 BUTTON
22	CLOSING > RADIO	CLOSING FROM RADIO
24	CLOSING > CLOSE KP	CLOSING FROM KEYPAD CLOSE KEY
2A	CLOSING > TCM CLS	CLOSING FROM TIMER CLOSE MODULE
30	HALT > WALL BUTTON	GDO STOPPED BECAUSE STOP OR OPEN BUTTON WAS ACTIVATED, POSSIBLY STARTING A REVERSAL
31	HALT > ONE BUTTON	GDO STOPPED BECAUSE 1 BUTTON WAS ACTIVATED, POSSIBLY STARTING A REVERSAL
32	HALT > RADIO	GDO STOPPED BECAUSE RADIO INPUT WAS ACTIVATED, STARTING A REVERSAL
33	HALT > AUX. OPEN	GDO STOPPED BECAUSE AUXILIARY OPEN INPUT WAS ACTIVATED, STARTING A REVERSAL
34	HALT > KEYPAD KEY	GDO STOPPED BECAUSE KEYPAD STOP OR OPEN KEY WAS ACTIVATED, POSSIBLY STARTING A REVERSAL
35	HALT > N-O SAFETY	GDO STOPPED BECAUSE N-O REVERSING INPUT WAS ACTIVATED, STARTING A REVERSAL
36	HALT > ODC STB	GDO STOPPED BECAUSE ODC STB WAS BLOCKED, STARTING A REVERSAL
37	HALT > N-C SAFETY	GDO STOPPED BECAUSE N-C REVERSING INPUT WAS ACTIVATED, STARTING A REVERSAL
38	HALT > MON. EDGE	GDO STOPPED BECAUSE MONITORED EDGE SENSOR INPUT WAS ACTIVATED, STARTING A REVERSAL
39	HALT > DOOR FORCE	GDO STOPPED BECAUSE THE FORCE REQUIRED TO OPERATE THE DOOR WAS TOO HIGH, POSSIBLY STARTING A REVERSAL
3A	HALT > LOSS OF C/C	GDO STOPPED BECAUSE CONSTANT CONTACT ON THE CONTROL WAS REMOVED BEFORE REACHING A LIMIT, POSSIBLY STARTING A REVERSAL
3B	HALT > SHUTDOWN	GDO STOPPED BECAUSE THE GDO DETECTED A FAULT SUCH AS AN OPEN INTERLOCK, OVERHEATED MOTOR, ETC.
3C	HALT > DOWN LIMIT	GDO STOPPED BECAUSE IT REACHED THE DOWN LIMIT
3D	HALT > UP LIMIT	GDO STOPPED BECAUSE IT REACHED THE UP LIMIT
3E	HALT > MID STOP	GDO STOPPED BECAUSE IT REACHED THE MID-STOP LIMIT
3F	HALT > MODULE FAIL	GDO STOPPED BECAUSE AN EXPANSION MODULE WAS NOT WORKING PROPERLY

Display Error Codes

Condition Code	DISPLAY	Condition Code Description
40	REV > OPEN BUTTON	GDO REVERSED BECAUSE THE OPEN BUTTON WAS ACTIVATED
41	REV > ONE BUTTON	GDO REVERSED BECAUSE THE 1 BUTTON WAS ACTIVATED
42	REV > RADIO	GDO REVERSED BECAUSE THE RADIO INPUT WAS ACTIVATED
43	REV > AUX OPEN	GDO REVERSED BECAUSE THE AUXILIARY OPEN INPUT WAS ACTIVATED
44	REV > OPEN KEY	GDO REVERSED BECAUSE THE KEYPAD OPEN KEY WAS ACTIVATED
45	REV > N-O SAFETY	GDO REVERSED BECAUSE THE N-O REVERSING INPUT WAS ACTIVATED
46	REV > ODC STB	GDO REVERSED BECAUSE THE ODC STB WAS BLOCKED
47	REV > N-C SAFETY	GDO REVERSED BECAUSE THE N-C REVERSING INPUT WAS ACTIVATED
48	REV > MON. EDGE	GDO REVERSED BECAUSE THE MONITORED EDGE SENSOR WAS ACTIVATED
49	REV > DOOR FORCE	GDO REVERSED BECAUSE THE FORCE REQUIRED TO CLOSE THE DOOR WAS TOO HIGH
4A	REV > LOSS OF C/C	GDO REVERSED BECAUSE CONSTANT CONTACT ON THE CONTROL WAS REMOVED BEFORE REACHING THE DOWN LIMIT
4B	REV > MAX RUN TMR	GDO REVERSED BECAUSE THE CLUTCH SLIPPED OR SOME OTHER FAULT OCCURRED THAT ALLOWED THE GDO TO RUN TOO LONG
4F	REV > EXP MOD FAIL	GDO REVERSED BECAUSE AN EXPANSION MODULE WAS NOT WORKING PROPERLY
50	STOP > HOT MOTOR	GDO STOPPED BECAUSE THE MOTOR WAS OVERHEATED
51	STOP > OPEN MRT	GDO STOPPED BECAUSE THE CLUTCH SLIPPED OR SOME OTHER FAULT OCCURRED THAT ALLOWED THE GDO TO RUN OPEN TOO LONG
52	STOP > CLOSE MRT	GDO STOPPED BECAUSE THE CLUTCH SLIPPED OR SOME OTHER FAULT OCCURRED THAT ALLOWED THE GDO TO RUN DOWN TOO LONG
57	STOP > OPEN INTLK	GDO STOPPED BECAUSE THE HOIST INTERLOCK OR EXTERNAL INTERLOCK IS OPEN
58	STOP > WRONG GDO	GDO STOPPED BECAUSE THE BOARD IS SET FOR JACKSHAFT MODE, BUT INSTALLED IN A TROLLEY OPERATOR
59	STOP > DOOR FORCE	GDO STOPPED BECAUSE THE FORCE REQUIRED TO OPEN THE DOOR WAS TOO HIGH
5A	STOP > WRONG LIMIT	GDO STOPPED BECAUSE THE UP LIMIT ACTIVATED WHEN CLOSING OR THE DOWN LIMIT ACTIVATED WHEN OPENING
5C	STALL > DOWN LIMIT	GDO STOPPED BECAUSE IT COULDN'T LEAVE THE DOWN LIMIT DUE TO A SLIPPING CLUTCH OR OTHER PROBLEM
5D	STALL > UP LIMIT	GDO STOPPED BECAUSE IT COULDN'T LEAVE THE UP LIMIT DUE TO A SLIPPING CLUTCH OR OTHER PROBLEM
60	CHECK STOP BTN	GDO WON'T RUN BECAUSE THE STOP BUTTON IS ACTIVE
61	TCM DISABLED	TIMER CLOSE WON'T WORK BECAUSE NO SAFETIES ARE ENABLED
62	NO RADIO >> C/C	RADIO INPUT WON'T WORK WITH OPEN OR CLOSE FUNCTION IN CONSTANT CONTACT MODE
63	CHECK AUX OPEN	GDO WON'T CLOSE BECAUSE AUXILIARY OPEN INPUT IS ACTIVE
64	CHECK STOP KEY	GDO WON'T RUN BECAUSE THE KEYPAD STOP KEY IS ACTIVE
65	CHECK N-O SAFETY	GDO WON'T CLOSE BECAUSE THE N-O REVERSING IS ACTIVE
66	CHECK ODC STB	GDO WON'T CLOSE BECAUSE THE ODC STB IS BLOCKED
67	CHECK N-C SAFETY	GDO WON'T CLOSE BECAUSE THE N-C REVERSING INPUT IS ACTIVE
68	CHECK MON. EDGE	GDO WON'T CLOSE BECAUSE THE MONITORED EDGE SENSOR IS ACTIVE
69	OVERHEATED MOTOR	GDO WON'T RUN BECAUSE THE MOTOR IS OVERHEATED
6C	NO RUN > DOWN LIM	GDO WON'T CLOSE BECAUSE ITS ALREADY AT THE DOWN LIMIT
6D	NO RUN > UP LIMIT	GDO WON'T OPEN BECAUSE ITS ALREADY AT THE UP LIMIT
6E	NO RUN > MID STOP	GDO WON'T RUN BECAUSE ITS AT OR ABOVE THE MID-STOP LIMIT & CAN'T RUN UP & A REVERSING INPUT IS PREVENTING IT FROM CLOSING
6F	EXP MODULE FAIL	GDO WON'T RUN BECAUSE AN EXPANSION MODULE FAILURE IS PREVENTING IT

Display Error Codes (cont')

Condition Code	DISPLAY	Condition Code Description
70	BOARD FAILURE 70	CONTROL BOARD FAILURE 70, CONTACT FACTORY TECHNICAL SERVICE DEPT.
71	BOARD FAILURE 71	CONTROL BOARD FAILURE 71, CONTACT FACTORY TECHNICAL SERVICE DEPT.
74	BOARD FAILURE 74	CONTROL BOARD FAILURE 74, CONTACT FACTORY TECHNICAL SERVICE DEPT.
75	BOARD FAILURE 75	CONTROL BOARD FAILURE 75, CONTACT FACTORY TECHNICAL SERVICE DEPT.
76	BOARD FAILURE 76	CONTROL BOARD FAILURE 76, CONTACT FACTORY TECHNICAL SERVICE DEPT.
77	BOARD FAILURE 77	CONTROL BOARD FAILURE 77, CONTACT FACTORY TECHNICAL SERVICE DEPT.
80	BOARD FAILURE 80	CONTROL BOARD FAILURE 80, CONTACT FACTORY TECHNICAL SERVICE DEPT.
81	BOARD FAILURE 81	CONTROL BOARD FAILURE 81, CONTACT FACTORY TECHNICAL SERVICE DEPT.
82	BOARD FAILURE 82	CONTROL BOARD FAILURE 82, CONTACT FACTORY TECHNICAL SERVICE DEPT.
83	BOARD FAILURE 83	CONTROL BOARD FAILURE 83, CONTACT FACTORY TECHNICAL SERVICE DEPT.
84	BOARD FAILURE 84	CONTROL BOARD FAILURE 84, CONTACT FACTORY TECHNICAL SERVICE DEPT.
85	EXP PORT PROBLEM	EXPANSION PORT IS SHORT CIRCUITED, TRY DISCONNECTING EXPANSION MODULES OR CONTACT FACTORY TECHNICAL SERVICE DEPT.
86	BOARD FAILURE 86	CONTROL BOARD FAILURE 86, DISCONNECT EXPANSION MODULES. IF NO CHANGE, CONTACT FACTORY TECHNICAL SERVICE DEPT.
88	TCM FAILURE	TIMER CLOSE MODULE (TCM) HAS FAILED
8A	AOM FAILURE	AUXILIARY OUTPUT MODULE (AOM) HAS FAILED
8E	REV INTERRUPTED	GDO LOST POWER OR ENCOUNTERED ANOTHER PROBLEM DURING THE REVERSAL PROCESS, REVERSAL IS COMPLETING NOW
8F	LIMIT MOD. FAIL	GDO WON'T RUN, LIMIT MODULE HAS FAILED
90	DIAGNOSTIC MODE	GDO IS IN DIAGNOSTIC MODE, NORMAL FUNCTIONS ARE NOT ALLOWED
A0	OPEN BTN BAD > PU	OPEN & CLOSE BUTTONS WON'T WORK, THE OPEN BUTTON WAS ACTIVE WHEN THE GDO WAS POWERED-UP
A1	CLOSE BTN BAD > PU	OPEN & CLOSE BUTTONS WON'T WORK, THE CLOSE BUTTON WAS ACTIVE WHEN THE GDO WAS POWERED-UP
A2	ONE BTN BAD > PU	1 BUTTON WON'T WORK, THE 1 BUTTON WAS ACTIVE WHEN THE GDO WAS POWERED-UP
A3	RADIO BAD > PWR UP	RADIO INPUT WON'T WORK, THE RADIO INPUT WAS ACTIVE WHEN THE GDO WAS POWERED-UP
A4	AUX OPEN BAD > PU	AUXILIARY OPEN INPUT WON'T WORK, THE AUXILIARY OPEN INPUT WAS ACTIVE WHEN THE GDO WAS POWERED-UP
A5	OPEN KEY BAD > PU	KEYPAD OPEN & CLOSE KEYS WON'T WORK, THE OPEN KEY WAS ACTIVE WHEN THE GDO WAS POWERED-UP
A6	CLOSE KEY BAD > PU	KEYPAD OPEN & CLOSE KEYS WON'T WORK, THE CLOSE KEY WAS ACTIVE WHEN THE GDO WAS POWERED-UP
A7	MULT KEYS BAD > PU	1 OR MORE KEYPAD CALIBRATION KEYS WON'T WORK, 1 OR MORE WERE ACTIVE WHEN THE GDO WAS POWERED-UP
AA	TCM BAD > POWER UP	TIMER CLOSE MODULE WON'T CLOSE DOOR, IT WAS ACTIVE WHEN THE GDO WAS POWERED-UP

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Commercial Operator Limited Warranty

The Genie Company ("Seller") warrants to the original purchaser of this commercial door operator ("Product") subject to all of the terms and conditions hereof that the Product and all components thereof will be free from defects in materials and workmanship under normal use for the following period(s) measured from the date of installation

- Two (2) years or When the Operator exceeds 20 000 cycles of operation as measured by the integrated cycle counter contained in the Operator.

Seller's obligation under this warranty is specifically limited to repairing or replacing at its option any part which is determined by Seller to be defective during the applicable warranty period. Any labor charges are excluded and will be the responsibility of the purchaser.

This warranty is made to the original purchaser of the Product only and is not transferable or assignable. This warranty does not apply to any unauthorized alteration or repair of the Product or to any Product or component which has been damaged or deteriorated due to misuse neglect accident failure to provide necessary maintenance normal wear and tear or acts of God or any other cause beyond the reasonable control of Seller.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL SELLER BE RESPONSIBLE FOR OR LIABLE TO ANYONE FOR SPECIAL INDIRECT COLLATERAL PUNITIVE INCIDENTAL OR CONSEQUENTIAL DAMAGES even if Seller has been advised of the possibility of such damages. Such excluded damages include but are not limited to loss of goodwill loss of profits loss of use cost of any substitute product interruption of business or other similar indirect financial loss.

Claims under this warranty must be made promptly after discovery within the applicable warranty period and in writing to the Seller or to the authorized distributor or installer whose name and address appear below. The purchaser must allow Seller a reasonable opportunity to inspect any Product claimed to be defective prior to removal or any alteration of its condition. Proof of the purchase and/or installation date and identification as the original purchaser may be required.

ORIGINAL PURCHASER _____

INSTALLATION ADDRESS _____

SELLER: _____

SELLER S ADDRESS: _____

FACTORY ORDER #: _____

DATE OF INSTALLATION: _____

SIGNATURE OF SELLER: _____

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COMMERCIAL LINE

One Door Dr.
Mt. Hope, OH 44660