Operational & Maintenance Manual

Products: Enter Product Category / Model Number

Installation Site

Enter Project Name/Site info

Contractor

Enter Contractor Firm Name here

Architect

Enter Architect Firm Info Here

Distributor

Overhead Door Company of ABC
123 Eagle Street
Eagle Town, TX 75067

Enter Company Name Ex: Overhead Door Company of
Enter Street Address
Enter City, ST zip code

Dear Customer:

Thank you for choosing our company as your custom door installation specialist.

The Operation and Maintenance Manual, which is enclosed, has been supplied by Overhead Door Corporation to meet your needs as our customer. Appropriate information for the products installed has been compiled in this manual for your use. We recommend compliance with all of the safety information provided within the manual.

We strongly recommend implementing a preventative maintenance program. Benefits of properly maintaining your door system include:

- Increased operational efficiency and reliability.
- Extended useful life of your equipment.
- Increased probability of dependable equipment performance.
- Elimination of non-budgeted maintenance cost for door service.

As an Overhead Door distributor, we offer you complete product support for your service and maintenance needs. Do not hesitate to call us for assistance.

We hope that you will also continue to consider our company for your future product and installation needs. We are firmly committed to providing the finest in Overhead Door products, accessories, and a level of customer support unmatched in the industry.

Sincerely,

Enter Company Name Ex: Overhead Door Company of

Operation & Maintenance Manual

Commercial Operators

Table of Contents

GENERAL INFORMATION

OVERHEAD DOOR CORPORATION

Overhead Door Corporation, based in Dallas, Texas, is a leading single-source manufacturer of integrated door and operator systems for commercial and residential applications.

Overhead Door is the door solutions provider that delivers expert service and the highest level of performance and reliability. Our comprehensive product line encompasses a wide variety of commercial door solutions including: commercial operators, commercial sectional and rolling service doors, advanced performance rolling doors, and security grilles.

With our nationwide network of more than 400 authorized distributors, we are a leading provider of overhead and garage door systems, and we continue to lead the way with reliable solutions and unmatched professional installation, service and support that keeps customers coming back. The brand trusted for over 90 years, Overhead Door gives home and business owners confidence and peace of mind.

To locate a distributor:
From the United States, call 1-800-929-3667 (DOOR)
International: 1-717-248-0131
http://www.overheaddoor.com/Pages/distributor-locator.aspx

Contact Information:
Overhead Door Corporation
2501 S. State Hwy. 121, Suite 200
Lewisville, TX 75067
Telephone: 1-800-275-3290
www.overheaddoor.com

PREVENTATIVE MAINTENANCE

BENEFITS OF PREVENTATIVE MAINTENANCE PROGRAM

- **Increase operational efficiency, safety and reliability**
- **Extend useful life of your equipment**
- **Reduce probability of equipment malfunctioning**
- **Decrease costly downtime**
- **Decrease long-term repair expense**
- **Priority scheduling for service**
- **Establish relationship with experienced, service-oriented professionals**

SCOPE OF WORK FOR ELECTRIC OPERATORS

For the period _____, 20__, through _____, 20__, the following services and inspections will be provided as part of the Preventative Maintenance Program for operator(s):

ELECTRIC OPERATORS:

1) Inspect and adjust limit switches.
2) Inspect and adjust belts.
3) Inspect and adjust brake.
4) Inspect gear reducer.
5) Inspect operator mounting.
6) Inspect and test disconnect.
7) Inspect and lubricate roller chain.
8) Inspect and tighten all sprockets.
9) Inspect safety labels, placement and condition.

INSTALLATION INSTRUCTIONS

11-08

RSX™

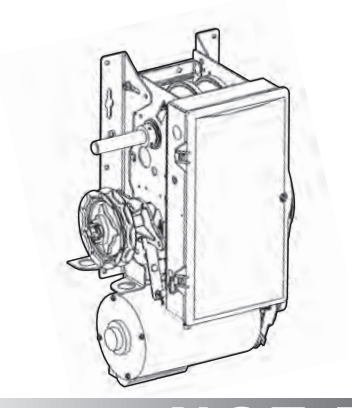
STANDARD DUTY COMMERCIAL OPERATOR

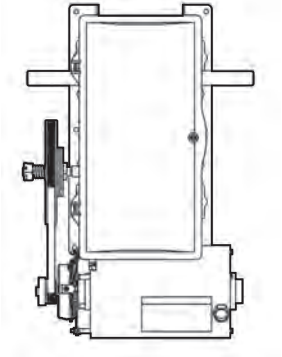
111211.0001
EN 36423

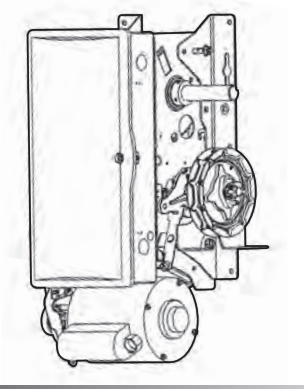
The Genuine. The Original.

OVERHEAD DOOR®

SIDEMOUNT







NOT FOR RESIDENTIAL USE

This Installation Manual provides the information required to install, troubleshoot and maintain an RSX™ 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 RSX™ 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 RSX™ 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.

Section 2: Safety Information & Instructions

⚠ WARNING

Overhead 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 Overhead Door Dealer, call 800-929-3667, and for **Overhead Door Factory Technical Advice, call 800-275-6187.**

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 by disconnecting it from the operator. 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: General 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.

- Available power supply.
- Type of door.
- 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.
- Size of door for appropriate operator torque and door travel speed selection.
- Operator mounting environment. Items to consider include operator location, dampness of location, dustiness of the location and corrosiveness of the location.
- 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.
- Interlock switches are required under certain conditions for doors with pass doors and door locks. See Section 5.5 below.
- Accessory equipment. Examples include reversing edges and/or photocell beams, which are required for doors set to operate as momentary contact, auxiliary control relays, warning lights, etc.

  See "Entrapment Protection" section below.

Entrapment Protection Recommendations
Overhead Door Corporation recommends the installation of a fail safe external reversing device (such as a reversing edge or photocell system, etc.) on all electronically operated commercial doors. If such a reversing device is not chosen, then the operator must be installed with only a constant contact control switch for operation.

NOTE: A monitored 2-wire reversing edge or sensing edge can be installed using the optionally available Timer Close Module (TCM) P/N OPABTCX.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 4: Installation

The Model RSX™ Side Mount is available with and without hoist. Hoist models are available left or right hand from the factory. The standard mounting position is with the motor down, but if necessary, can be installed with the motor up.

NOTE: Units without Hoist will not have a pocket wheel as shown in the following diagrams.

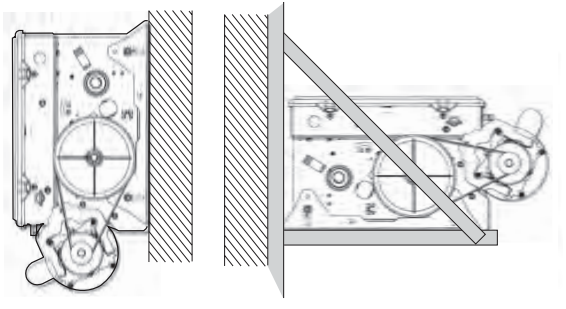


Figure 1

Direct Couple

1) The RSX™ side mount can be directly coupled to the door shaft when the centerline of shaft is 3-3/4", 5", OR 6", however, some installations will require chain and sprocket coupling to the door shaft. **Fig 6**, page 4.4.
2) Determine if centerline of door shaft is 3-3/4", 5", OR 6".
3) Adjust mounting feet on operator to required centerline distance. Tighten securely. **Fig. 2**.
4) Slide coupling onto operator shaft on desired side. **Fig. 3**.
5) Raise operator into position.
6) Slide coupling onto door counterbalance shaft. Do NOT secure coupling at this time.
7) Make certain operator and door shafts are in alignment.
8) Secure operator to the wall or mounting pads using 4 outer most mounting holes.
9) Secure Coupler.

NOTE: A Speed Changing Kit is available for Direct Couple Operators. Contact Customer Service or your local Overhead Door Dealer for details.

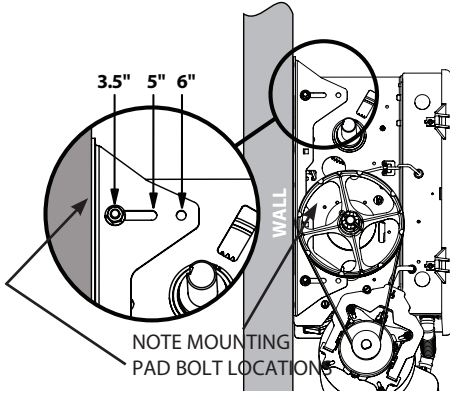


Figure 2

NOTE: The output shaft of the RSX™ can be moved from side to side to increase/decrease the effective shaft length for direct coupling. This is done by loosening the set screws in the shaft set collars and sprocket, moving the shaft and retightening the set screws. Be sure the bearings are fully seated in the side frames before re-tightening the set screws. **Fig. 4**.

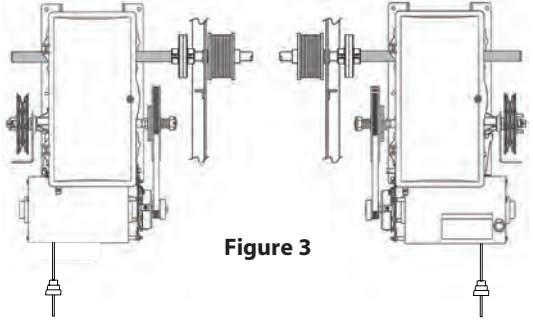


Figure 3

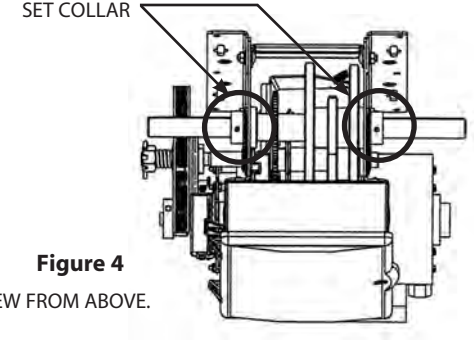


Figure 4

VIEW FROM ABOVE.

Direct Couple (continued)

Hollow Door Shaft:

1) Use coupling as a drill guide and drill a 3/8″ diameter hole through door shaft and other side of coupling. **Fig. 5**. (Right-hand mount shown, Left mount is mirror image.)
2) Secure coupling to door shaft with 3/8″ x 1-3/4″ clevis pin and 1/16″ x 3/4″ cotter pin from hardware kit.

Solid Door Shaft:

1) Raise door until keyway of door shaft is in line with keyway of operator coupling.
2) Insert key. If keyway on door shaft restricts insertion, move coupling toward operator, insert key and return.

Operator Output Shaft:

1) Secure coupling to operator with set screws provided.

NOTE: Hoist models include an interlock switch to prevent electrical operation when hoist is engaged. See item 17 on page 10.1.

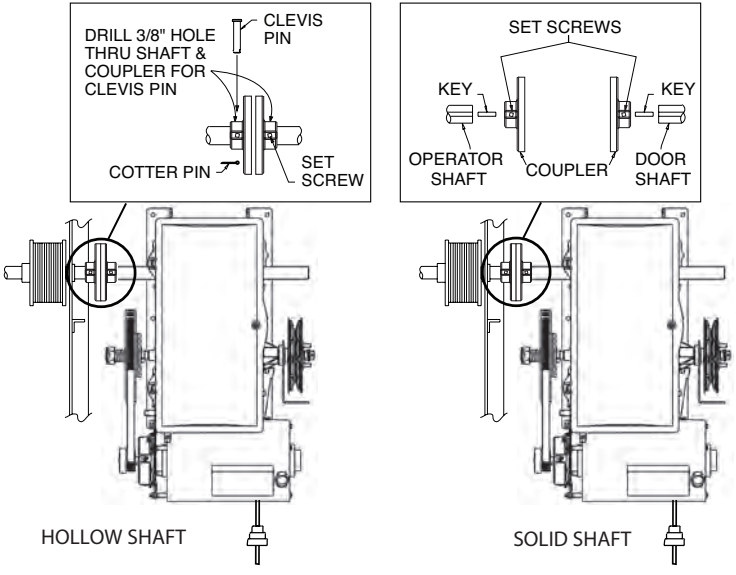


Figure 5

Chain Couple (optional)

The RSX™ Side Mount Operator can be assembled for right or left hand mounting above or below the door shaft.

Some reasons for chain coupling are:

- Insufficient side room or other interference.
- Change door speed for standard lift doors or full vertical doors.
- Centerline of door shaft different than 3-3/4", 5", OR 6".

CHAIN COUPLING KIT CHART			
KIT P/N	RATIO	OPERATOR SHAFT SPROCKET	DOOR SHAFT SPROCKET
109049.0001	1:1	109047.0001 16T	109047.0002 16T
109049.0002 SPEED-UP	21:16	109048.0001 21T	109047.0002 16T

If you will be using the Tension Plate Kit shown on page 4.6, slide the bearing plates on the operator output shaft and door shaft now. Assembly of the Kit will be done after the drive chain is installed.

1) Attach the operator sprocket to operator output shaft.
2) Align keyways and insert key into sprocket and door shaft keyway. Do not tighten set screw at this time.
3) Attach 16 tooth sprocket to door shaft. Do not tighten yet.
4) Assemble chain using chain connecting link.
5) Place assembled chain over door shaft 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. 6B**.
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. 6A**.

Figure 6A

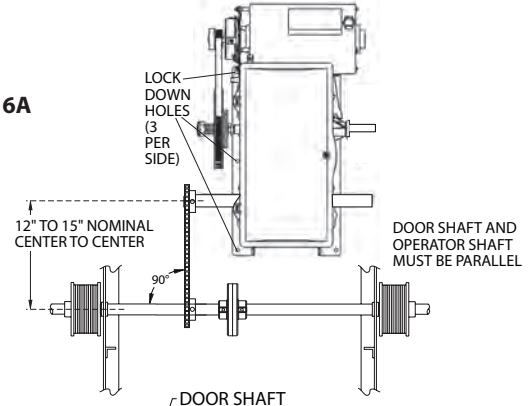
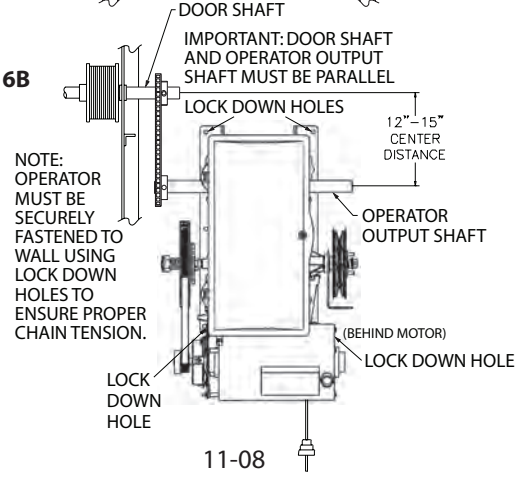


Figure 6B



Chain Couple (optional)

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. 7A**.
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. 7B**.
4) Insert clevis pin through both holes and secure with cotter pin. **Fig. 7C**.

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. 8**, pg 4.6.

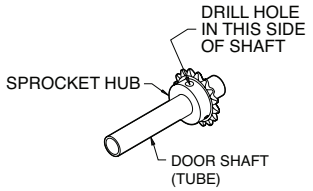


Figure 7A

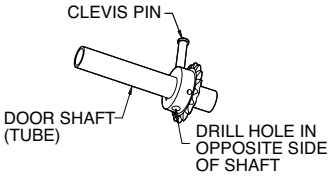


Figure 7B

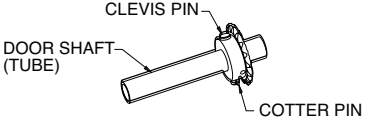


Figure 7C

Chain Couple (optional)
(Tension Plate Kit)

Kit available separately, P/N 111005.0001.S

Installation of optional chain spreader bracket: Fig 8A & 8B.

1) Place drive chain sprocket and bearing plate assembly on door shaft as shown.
2) Place bearing plate assembly and sprocket on operator shaft as shown.
3) Install door and operator sprockets and chain assembly as described in preceding instructions. See page 4.5.
4) Install bolts and nuts through plates. Do not tighten.
5) Tension chain by raising or lowering the operator as needed. Tighten operator mounting bolts.
6) Align sprockets to achieve a 90° angle between the chain and the shafts. Tighten all set screws.
7) Tighten Tension Plate bolts.

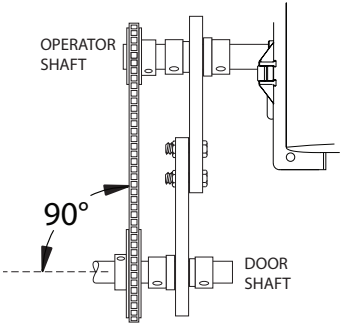


Figure 8A

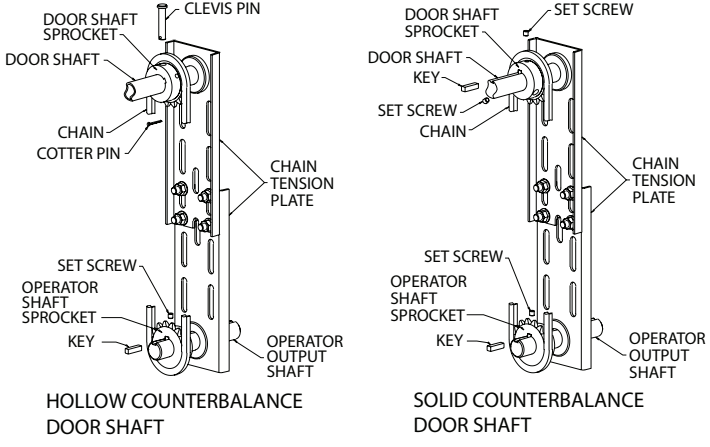


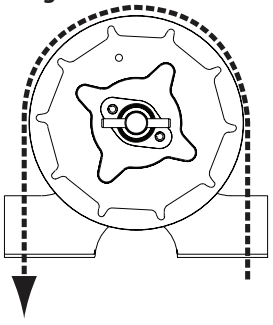
Figure 8B

Hand Chain and Keeper

1) Route the hand chain through the chain guide, around the pocket wheel and back through the chain guide. **Fig.9**.
2) Connect the hand chain ends together as shown in **Fig 10**. 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. 11**. Optional Padlock not provided.
6) Install hoist cable.
   - With operator installed motor DOWN, attach hoist cable to cam arm hole closest to mounting plate. **Fig. 12**.
   - With operator installed motor UP, attach hoist cable to cam arm hole closest to electric box. **Fig. 12**.

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

Figure 9



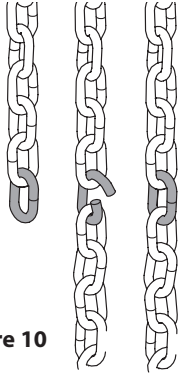
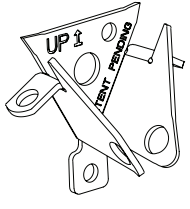


Figure 10



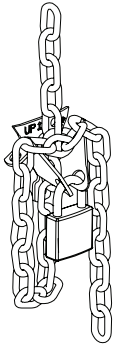


Figure 11

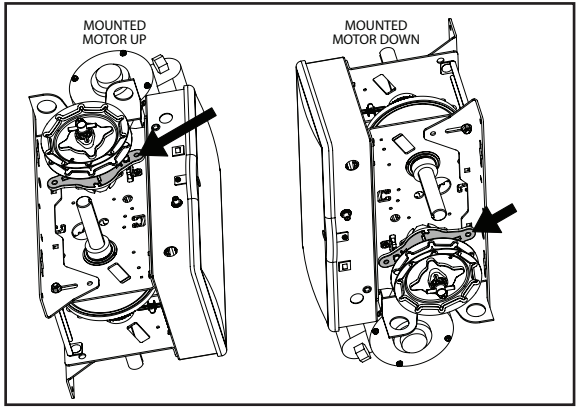


Figure 12

Clutch Adjustment Fig. 13

The RSX™ 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 compression on the clutch until the operator will not lift the door.
   - Turning the adjustment castle nut counter-clockwise will decrease compression and clockwise will increase compression.
2) Gradually increase compression 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.

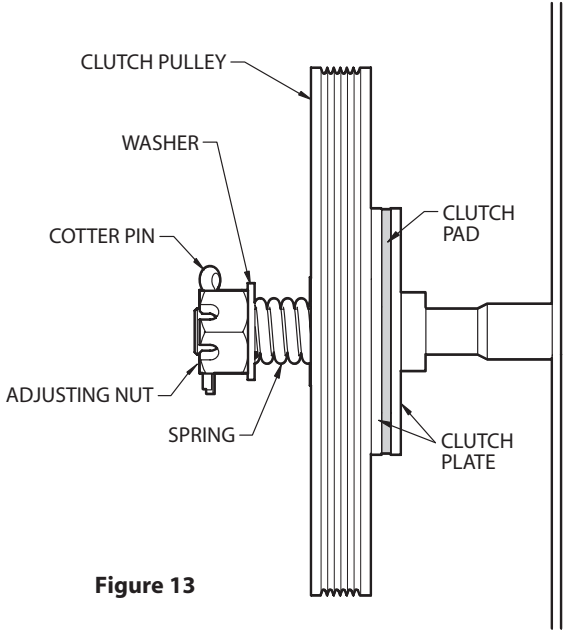


Figure 13

Section 5: Wiring

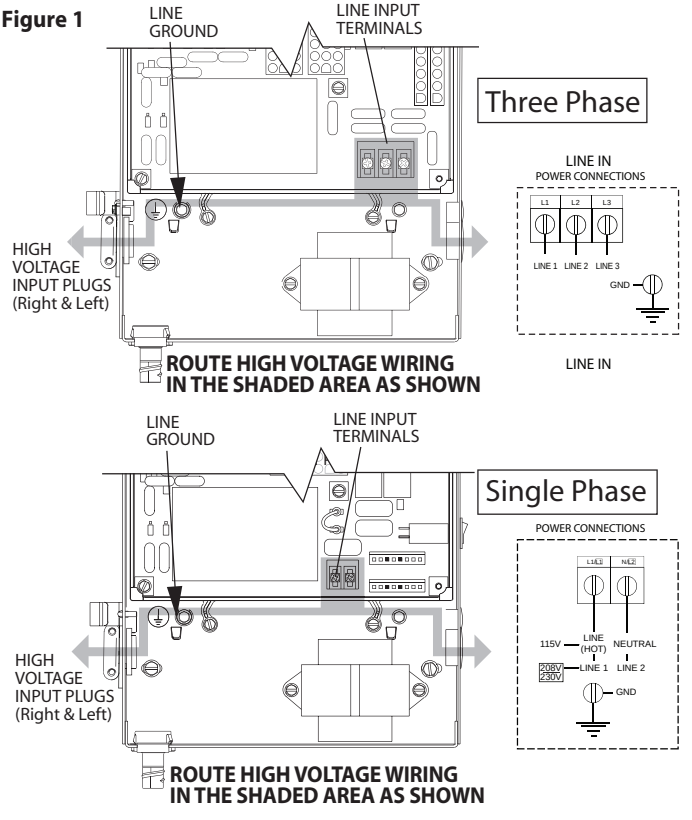
Line Voltage Wiring Fig. 1

⚠ WARNING

- DO NOT apply power to operator until instructed to do so.
- Overhead Door Corporation 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.
    - Keep low voltage and line voltage wires separate.
    - Route all line voltage wires as shown.
    - Plug all unused conduit holes.

Figure 1



Low Voltage Control Wiring (general) Fig. 2

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 10 in this section.
   - Plug all unused conduit holes.

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

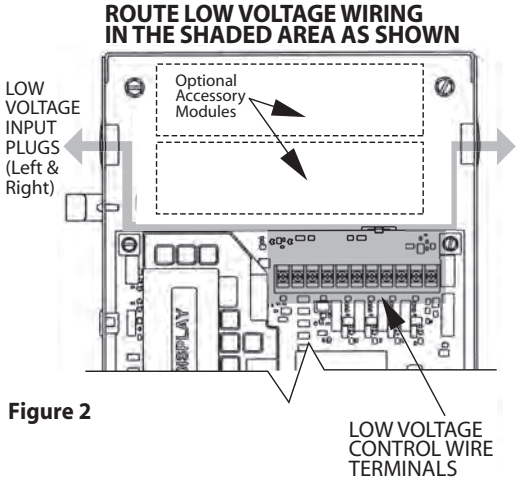
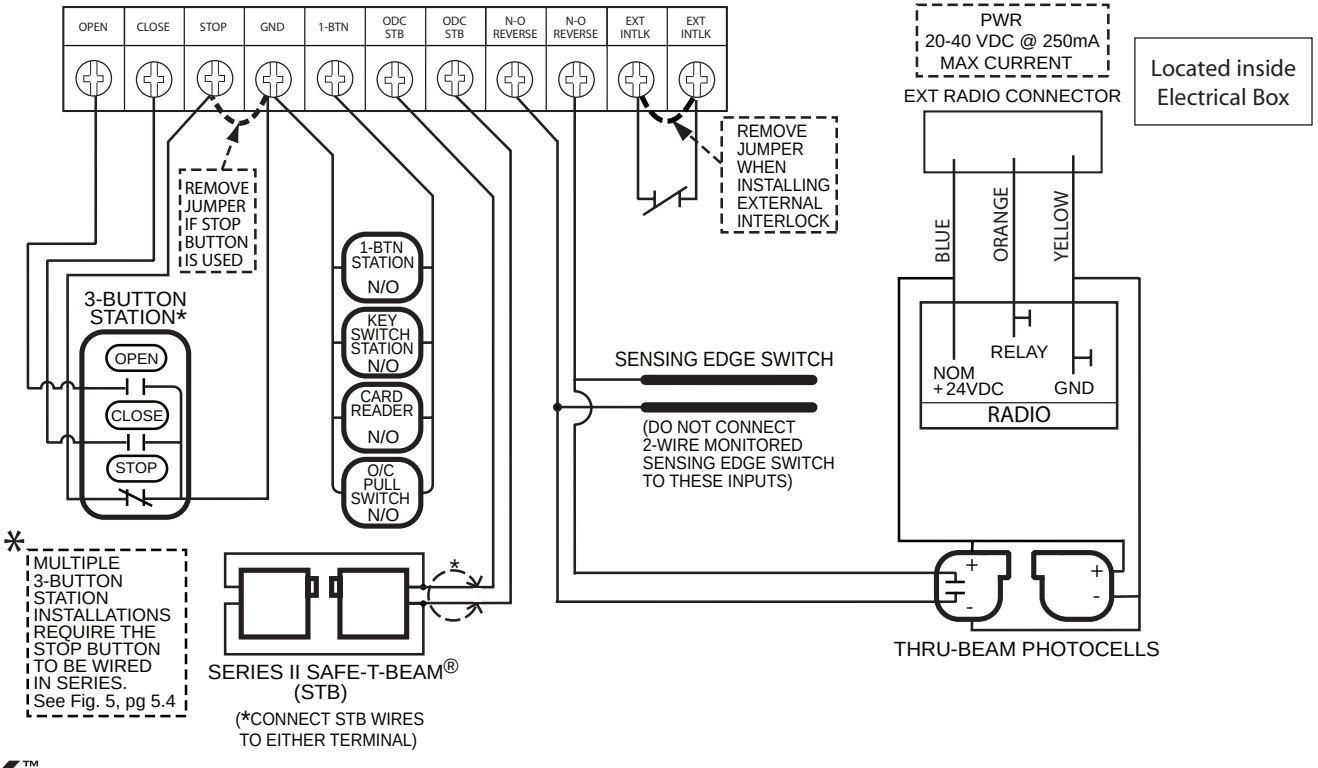


Figure 2

External Wire Diagram

See Appendix B for detailed description of terminals.



Wall Control

⚠ WARNING:

- Wall Control(s) must be located so that the door is within sight of the user.
- Attach the Warning placard adjacent to the Wall Control. **Fig. 3A**.

⚠ WARNING:

If momentary contact control is to be used, an 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.

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

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

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

Figure 3

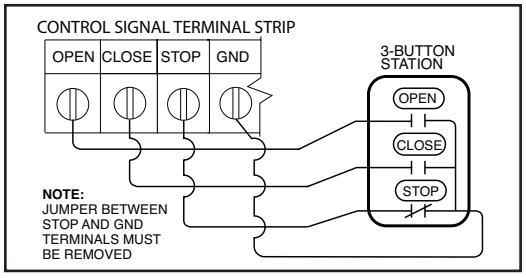


Figure 3A

Entrapment Warning Placard

Figure 4

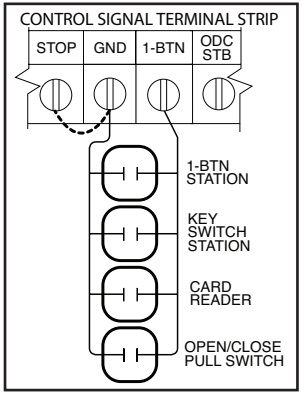
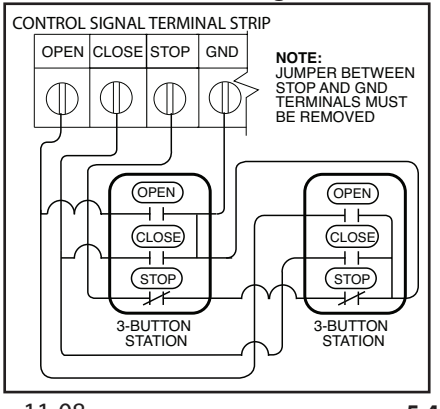


Figure 5



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 (A) 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 (B) must be installed at the pass-through door in order to prevent electrical operation when the pass-through door is open.
2) The Switches must be set in the field.

NOTE: If External Interlock is used, THE JUMPER WIRE BETWEEN THE EXT INTLK TERMINALS MUST BE REMOVED.

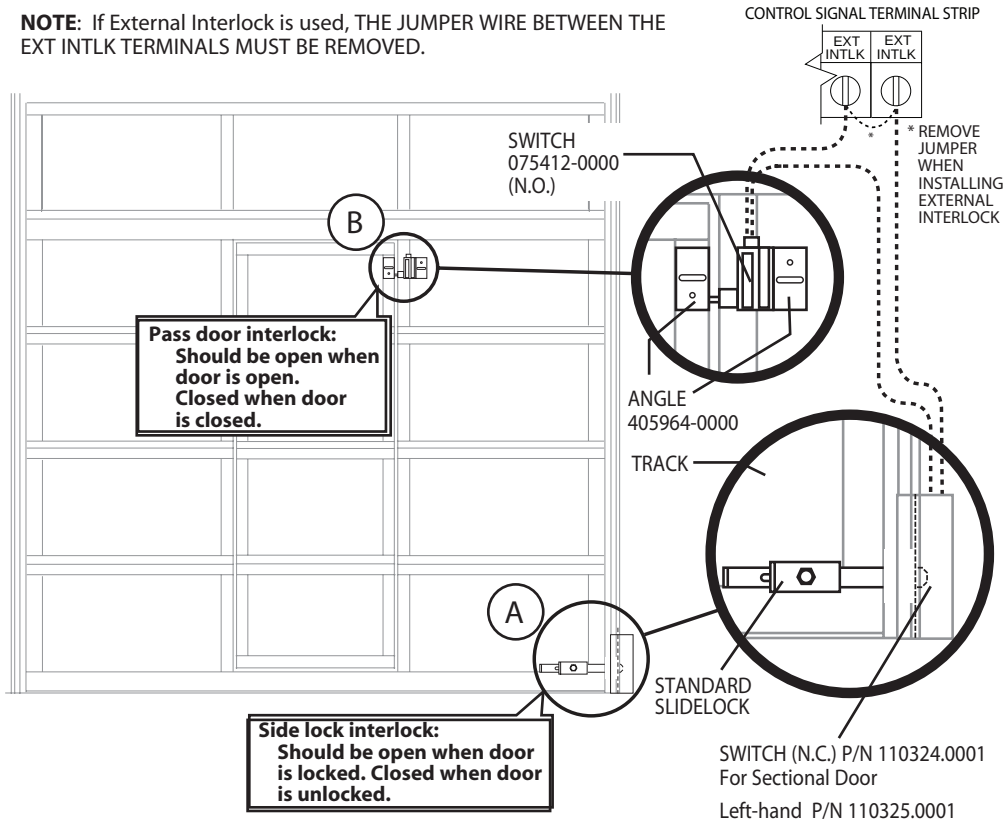


Figure 6

Photocell Wiring

Series II Safe-T-Beam® Monitored Photocells

1) Monitored SERIES II (STB) photocells (P/N 35048R.S)can be installed as shown in **Fig. 7**. Wiring to these photocells can be connected to either terminal (they are not polarity sensitive). **(Troubleshooting in Section 8)**.

NOTE: Installer must enable ODC STB in calibration mode. See page 6.9.

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 9**.
   - 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. If an alternative location is chosen it must be approved by the facility owner.

Commercial Non-Monitored Photocells

1) Nominal 24 Volt DC Commercial photocells with normally open contacts can be connected as shown in **Fig. 8**.

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 F-1 on Control board.

Figure 7

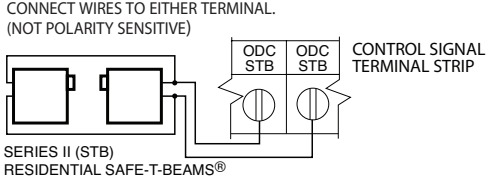


Figure 8

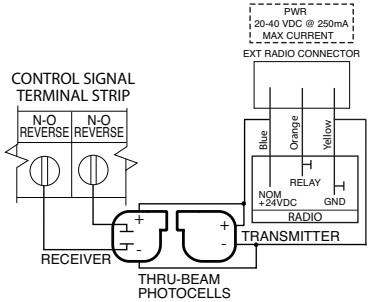
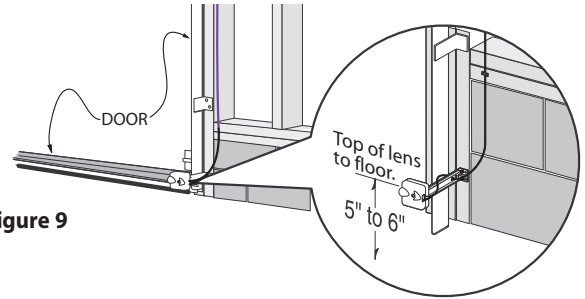


Figure 9



Sensing Edge Switch Installation

Figure 10 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.

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.

6) Connect to terminal strip using N-O Safety inputs. See **Fig. 11**.

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.

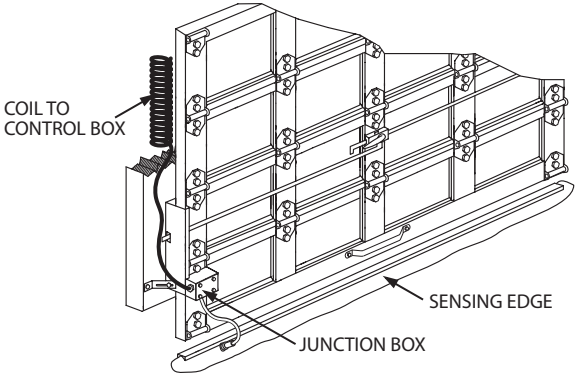


Figure 10

NOTE: Do not connect a 2-wire monitored sensing edge switch to these terminals.

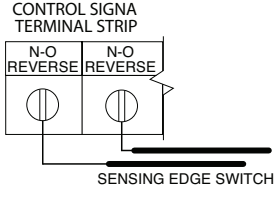


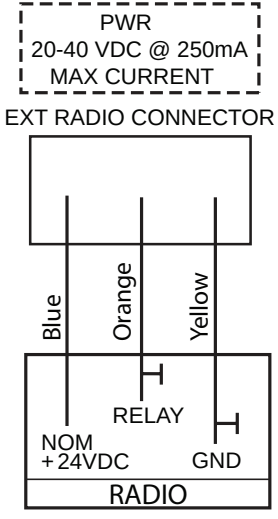
Figure 11

External Radio Installation

Although the RSX™ Operators are equipped with an internal radio, they also provide a universal connection for an external radio.

To Add the External Radio

1) Plug the pigtail with the 3-terminal strip attached (provided) onto the plug connector marked "EXT RAD." **Fig. 12**.
2) Make wiring connections to the terminal strip per the diagram below.



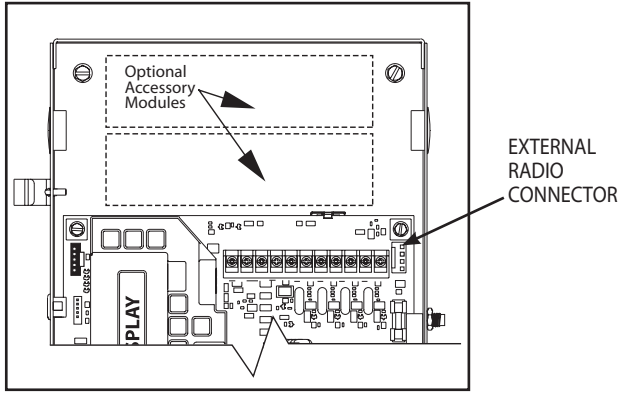


Figure 12

Section 6: Operator Setup Procedure

Control Panel

RSX™ 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. 10.9-10.11) for full display descriptions.

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

⚠ 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

RSX™ 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).
- The display in run mode will be one of the condition codes listed in Appendix C.

⚠ WARNING: DO NOT calibrate operator or operate door unless doorway is in sight and free of obstructions. Keep people clear of opening while door is moving.

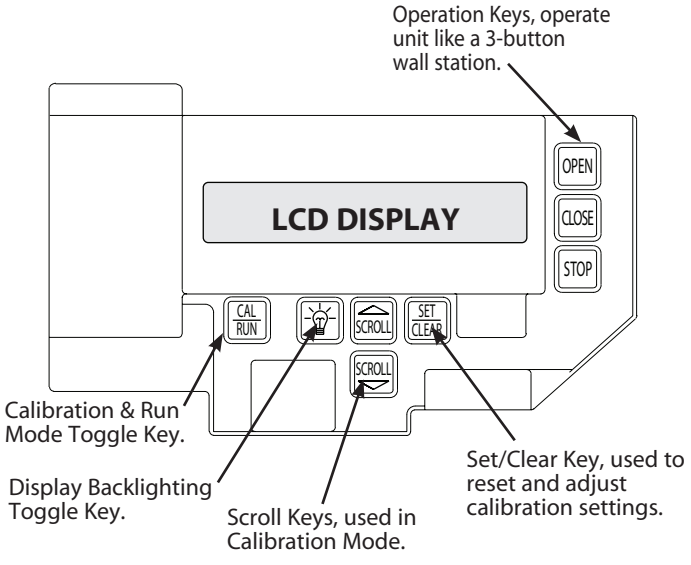


Figure 1

Setting Close Direction

The direction of motor rotation depends on mounting position and/or how the main input power phases are wired. This setting is used to insure the door is closing and opening according to the input commands.

1) If operator is in RUN mode, press CAL/RUN [CAL RUN] to enter calibration mode.
2) Press SET/CLEAR [SET CLEAR] to begin the calibration procedure and advance to the next screen. **Figure 3**.
3) Briefly press the CLOSE [CLOSE] key. *(Pressing the Scroll key at this point will exit this control function.)*
   - The display will read " DID DOOR CLOSE? " **Figure 4**.
4) Press SCROLL [SCROLL] (up or down) to toggle between YES and NO. **Figure 5**.
   - If YES is selected, no change to operator calibration is made. If NO is selected — the POD will change the operator's down direction.
5) Press SET/CLEAR [SET CLEAR].
6) Press CAL/RUN [CAL RUN] to return to run mode.

Figure 2

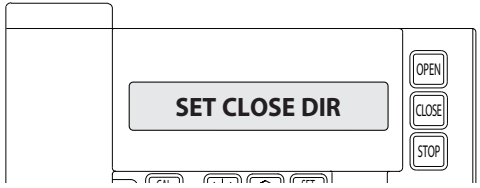


Figure 3

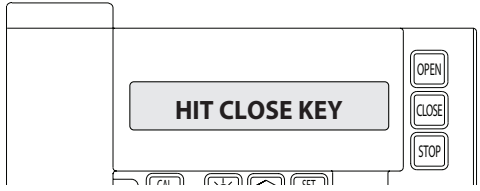


Figure 4

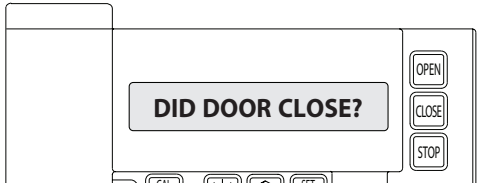
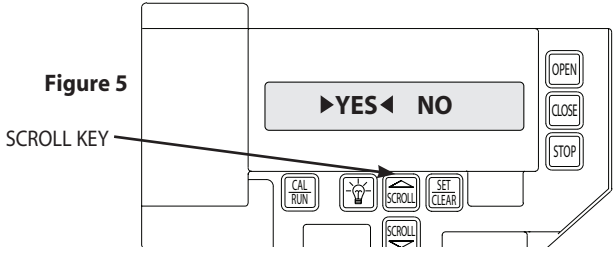


Figure 5



Setting Braking Rate

1) If operator is in RUN mode, press CAL/RUN to enter calibration mode.
2) Press Scroll until display reads "BRAKING RATE >#." where # is the deceleration rate, ranging from 0 to 9. Zero = minimum braking. . **Figure 6**.
3) Press SET/CLEAR to toggle between 0 and 9—one digit at a time.
4) Pick a value and operate the door. Adjust as necessary.
5) Press SCROLL (up or down) to shift to a new function and lock setting.
6) Press CAL/RUN to return to run mode.

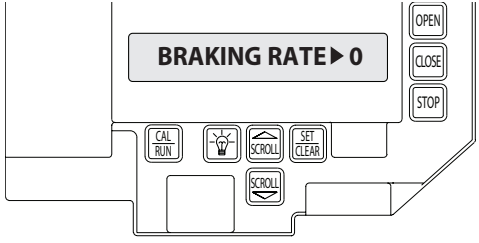


Figure 6

Setting Travel Limits

UP and/or DOWN

1) If operator is in RUN mode, press CAL/RUN [CAL RUN] to enter calibration mode.
2) Press SCROLL [SCROLL] (up or down) until display reads "UP LIMIT>CLR " or "DOWN LIMIT>CLR " **Figure 7**.
3) Jog the door using the OPEN [OPEN] or CLOSE [CLOSE] key until you reach the desired height.
4) Press SET/CLEAR [SET CLEAR] key to switch display to "UP LIMIT>SET " or "DOWN LIMIT>SET ." **Figure 8**.
5) Press SCROLL [SCROLL] (up or down) to shift to a new function and lock limit setting.
6) Press CAL/RUN [CAL RUN] to return to run mode.

Resetting Travel Limits

UP and/or DOWN

1) If operator is in RUN mode, press CAL/RUN [CAL RUN] to enter calibration mode.
2) Press SCROLL [SCROLL] (up or down) until display reads "UP LIMIT>SET " or "DOWN LIMIT>SET." **Figure 8**.
3) Press SET/CLEAR [SET CLEAR] to switch display to "UP LIMIT>CLR" or "DOWN LIMIT>CLR"
4) Jog the door using the OPEN [OPEN] or CLOSE [CLOSE] key until you reach the desired height.
5) Press SET/CLEAR [SET CLEAR] to switch display to "UP LIMIT>SET" or "DOWN LIMIT>SET"
6) Press CAL/RUN [CAL RUN] to return to run mode.

NOTE: The recommended setpoint for the DOWN Travel Limit is normally at approximately 2 inches off the floor. This final distance will be covered by the Limit Overrun Function to establish a more accurate seal.

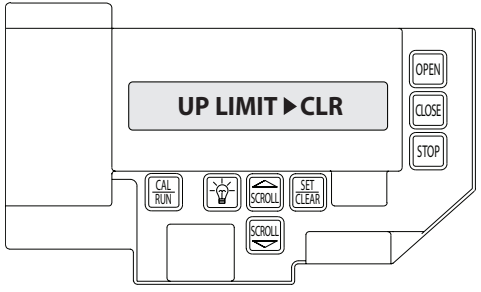


Figure 7

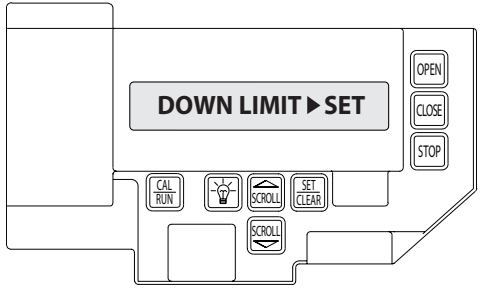


Figure 8

ALTERNATE METHOD FOR REMOTELY SETTING ALL LIMITS.

This method will not clear or change an already set limit. To use this method you must first clear the existing limit setpoint.

1) Using the OPEN,CLOSE, STOP buttons on the Wall Station, place the door in the desired position for the limit you wish to set (UP, DOWN or MID-STOP).
2) With the door stopped and in desired position:
   - Press and hold the STOP button for, at least 10 seconds. **DO NOT press any other button**.

NOTE: Following the setting of a limit you will hear the operator move for a split second as it confirms the setting.

3) While still holding the STOP button:
   - To set the **Up Limit**
     a. Press and hold the OPEN button for one second.
     b. Release the STOP button, then release the OPEN button.
   - To set the **Down Limit**
     a. Press and hold the CLOSE button for one second.
     b. Release the STOP button, then release the CLOSE button.
   - To set the **Mid-Stop Limit**
     a. Press and hold **both** OPEN and CLOSE buttons for one second.
     b. Release the STOP button, then release the OPEN and CLOSE buttons.

This procedure will work with the Cal Pod (keypad) in either CAL or RUN mode.

This procedure was specifically designed to prevent the accidental altering of a limit through normal use or a faulty button or wiring.

Setting Limit Overrun

This Setting is a matter of trial and Error

1) If operator is in RUN mode, press CAL/RUN [CAL RUN] to enter calibration mode.
2) Press SCROLL [SCROLL] until display reads "LIMIT OVERRUN>#" where # is the increment of travel beyond the CLOSE Limit ranging from 0 to 9. Zero turns off the Overrun function and the door stops at the DOWN Limit. Nine is the maximum distance the door will travel passed the limit. This function is used to insure a good seal at the bottom of the door. **Figure 9**.
3) Press SET/CLEAR [SET CLEAR] key to toggle between 0 and 9—one digit at a time.
4) Pick a value and operate the door. Adjust as necessary.
5) Press a SCROLL [SCROLL] key to shift to a new function and lock in the setting.
6) Press CAL/RUN [CAL RUN] to return to run mode.

NOTE: The actual distance that the Overrun function covers is variable depending on model of operator and size of the door (nominally about 2 inches of travel).

⚠ WARNING: The Limit Overrun function will override external reversing devices, including photocells and sensing or reversing edges. Therefore, any externally connected devices will be disabled during that portion of door travel which is controlled by the Limit Overrun function.

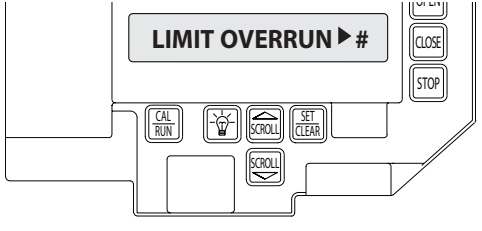


Figure 9

Setting Open and Close Modes (Constant vs Momentary Contact)

OPEN

1) If operator is in RUN mode, press CAL/RUN to enter calibration mode.
2) Press SCROLL (up or down) until display reads "OPEN MODE>MOM" or "OPEN MODE>C-STP."**Figure 10**.
   - MOM=momentary contact, meaning you **press and release** the OPEN or CLOSE key and **the door will continue to move** until it reaches its travel limit. (See NOTE)
   - C-STP=constant contact-stop, meaning **if you release the key** prior to the door reaching its travel limit, **the door will stop**.
3) Press SET/CLEAR key to toggle between "OPEN MODE>C-STP" or "OPEN MODE>MOM" on the display.
4) Press SCROLL (up or down) to shift to a new function and lock setting.
5) Press CAL/RUN to return to run mode.

CLOSE

1) If operator is in RUN mode, press CAL/RUN to enter calibration mode.
2) Press SCROLL (up or down) until display reads "CLOSE MODE>MOM," "CLOSE MODE>C-STP" or "CLOSE MODE>C-REV." **Figure 10**.
   - MOM=momentary contact, meaning you **press and release** the OPEN or CLOSE key and **the door will continue to move** until it reaches its travel limit. (See NOTE)
   - C-STP=constant contact-stop, meaning **if you release the key** prior to the door reaching its travel limit, **the door will stop**.
   - C-REV=constant contact-reverse, meaning **if you release the key** prior to the door reaching its travel limit, **the door will reverse direction**. (See NOTE)
3) Press SET/CLEAR key to toggle between "CLOSE MODE>C-STP" or "CLOSE MODE>C-REV" or "CLOSE MODE>MOM" on the display.
4) Press SCROLL (up or down) to shift to a new function and lock setting.
5) Press CAL/RUN to return to run mode.

NOTE: Momentary contact **(MOM)** or Constant Reverse (**C-REV**) may not be used unless both the OPEN and CLOSE Limits have been set.

In situations where an external reversing device is either not installed or not operating properly, Constant Contact **(C-STP)** MUST BE USED.

⚠ WARNING: If momentary contact control is to be used, an 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.

NOTE: During adjustment of a Travel Limit, the Open and Close Modes will automatically fail-safe to Constant Contact until the Limit has been set or reset. At that time the Open and Close Modes will revert to their previous setting.

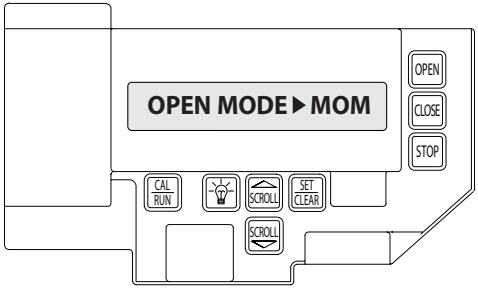


Figure 10

(Optional) Transmitter Programming

Adding a Transmitter

1) If operator is in RUN mode, press CAL/RUN to enter calibration mode.
2) Press SCROLL (up or down) until display reads "LEARN NEW XMTR? " **Figure 11**.
   - This question along with the instruction "HIT SET FOR YES" will continuously pan across the display window. (Pressing SCROLL or RUN/CAL will cancel the operation.)
3) Press SET.
   - Display will read "PUSH XMTR BUTTON TWO TIMES TO LEARN XMTR."
4) Press Transmitter button two times.
   - The display will read "XMTR ___LEARNED." Where it assigns a random number between 1 and 255 to the transmitter. That transmitter is entered and ready to operate the door. (Label/mark the transmitter.)
5) Press SCROLL (up or down) to move on to another menu item, or CAL/RUN to exit the CAL mode.

Removing Individual Transmitter

1) If operator is in RUN mode, press CAL/RUN to enter calibration mode.
2) Press SCROLL (up or down) until display reads "REMOVE XMTR? " **Figure 12**.
   - This question along with the instruction "HIT SET FOR YES" will continuously pan across the display window. (Pressing SCROLL or CAL/RUN will cancel the operation.)
3) Press SET.
   - A menu displaying the available transmitter numbers will appear. Press SCROLL (up or down) to cycle through the menu to the number of the transmitter to be removed. (Pressing CAL/RUN will cancel the operation.)
4) Press SET.
   - The transmitter is removed.
5) Press SCROLL (up or down) to move on to another menu item, or CAL/RUN to exit the CAL mode.

Figure 11

Figure 12

Figure 13

Removing All Transmitters

1) If operator is in RUN mode, press CAL/RUN to enter calibration mode.
2) Press SCROLL (up or down) until display reads "REMOVE ALL XMTRS" **Figure 13**.
   - This question along with the instruction "HIT SET FOR YES" will continuously pan across the display window. (Pressing SCROLL or CAL/RUN will cancel the operation.)
3) Press the SET key.
   - The display will read "ARE YOU SURE."
4) Press the SET key.
   - All transmitters are removed.
5) Press SCROLL (up or down) to move on to another menu item, or CAL/RUN to exit the cal mode.

Setting Mid-Stop Limit

The RSX™ 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 only open to their full height occasionally. The Mid-Stop does not effect the operator when closing. 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.

1) Press CAL/RUN [CAL RUN] to enter calibration mode.
2) Press CLOSE [CLOSE] to close the door to the down limit.
3) Press SCROLL [SCROLL] (up or down) until display reads "MID-STOP >CLR" **Figure 14**.

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 [OPEN] to open the door to desired mid-stop height.
5) Press SET/CLEAR [SET CLEAR] until the display reads "MID-STOP > SET"
6) Press CAL/RUN [CAL RUN] to return to run mode.

To CLEAR the Limit

1) Press CAL/RUN [CAL RUN] to enter calibration mode.
3) Press SCROLL [SCROLL] (up or down) until display reads "MID-STOP >SET"
5) Press SET/CLEAR [SET CLEAR] until the display reads "MID-STOP > CLR"
8) Press CAL/RUN [CAL RUN] to return to run mode.

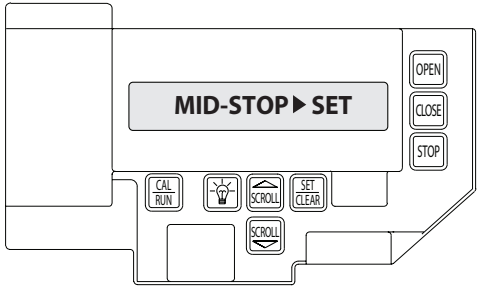


Figure 14

AN ALTERNATE METHOD FOR SETTING LIMITS USING THE WALL BUTTONS, IS ON PAGE 6.5

Resetting the MRT *(The Max Run Timer is set automatically once the unit is cycled between Limits. The Max Run Timer prevents the unit from running continuously in the event of a problem. 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 will not respond to any command until it is reset by pressing one of the calibration keys or by cycling power to the unit.*

TO RESET

1) Press CAL/RUN [CAL RUN] to enter calibration mode.
2) Press SCROLL [SCROLL] (up or down) until display reads "MAX RUN TMR > SET." **Figure 15**.
3) Press SET/CLEAR [SET CLEAR] until display reads "MAX RUN TMR > CLR."
4) Press CAL/RUN [CAL RUN] to return to RUN mode.
5) Cycle the door between limits.

NOTE: **The Max Run Timer must be reset each and every time the Travel Limits are adjusted.**

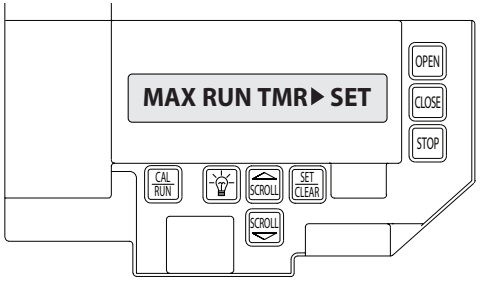


Figure 15

⚠ CAUTION: The MID-STOP feature must be turned off in order to properly set the Max Run Timer.

Monitored Reversing Devices

ODC Safe-T-Beams® (OPTIONAL)

1) If operator is in RUN mode, press CAL/RUN [CAL RUN] to enter calibration mode.
2) Press SCROLL [SCROLL] (up or down) until display reads "ODC STB>ON" or "ODC STB>OFF" **Figure 16**.
3) Press SET/CLEAR [SET CLEAR] key to toggle between ON and OFF.
4) Press SCROLL [SCROLL] (up or down) to shift to a new function and lock setting.
5) Press CAL/RUN [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 RSX™ unit legal for residential use. The Overhead Door Corporation strictly prohibits any installation of an RSX™ unit in any residentially zoned construction.

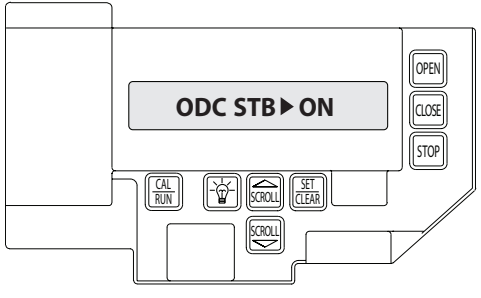


Figure 16

Section 7: Special Operator Features (No user input)

Operator Cycle Count

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL (up or down) until display reads "CYCLES>1,2,3 etc. where the number is the number of open/close cycles the operator has performed. **Figure 1**.
3) Press CAL/RUN to return to run mode.

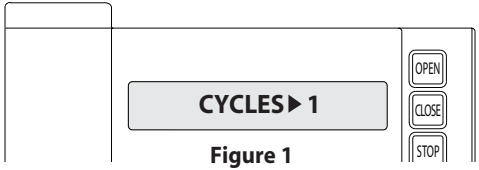


Figure 1

GDO and Display Firmware

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL (up or down) until display reads "GDO V# > ######." **Figure 2**. This display will cycle between the version number of the current GDO firmware and the current Display Firmware.
3) Press CAL/RUN to return to run mode.

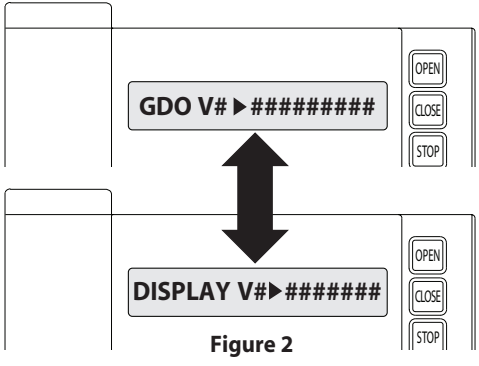


Figure 2

Operator Type Fig. 3

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

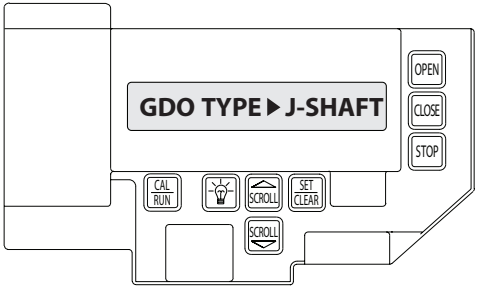


Figure 3

Section 8: Troubleshooting

Display Operation in Run Mode

RSX™ operators display their status on the integrated 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 RSX™ 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 RSX™ operator's Error Code Memory after they have been cleared from the display in the Run Mode.

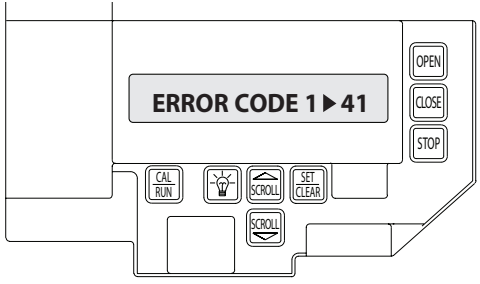


Figure 1

Error Codes

To aid in troubleshooting problems, RSX™ 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****.*

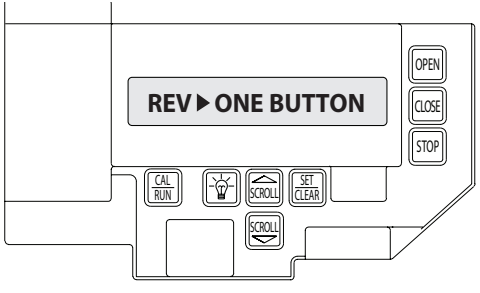


Figure 2

Error Codes (continued)

To view the error code memory:

1) Press CAL/RUN [CAL RUN] to enter calibration mode.
2) Press SCROLL [SCROLL] (up or down) 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 [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 [CAL RUN] to return to run mode.

NOTE: For all error codes see Appendix C, Sections 10.11 - 10.12.

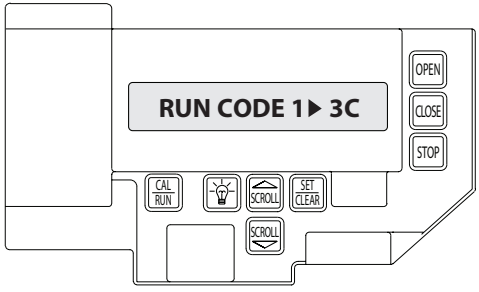


Figure 3

Run Codes

RSX™ 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 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***.

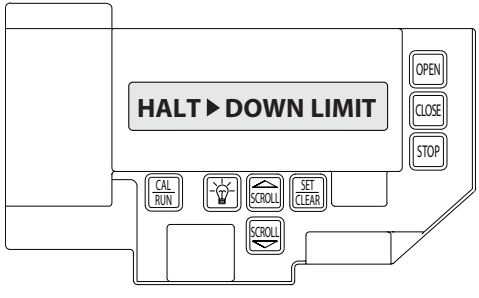


Figure 4

Run Codes (continued)

To view the run code memory:

1) Press CAL/RUN [CAL/RUN] to enter calibration mode.
2) Press SCROLL [SCROLL] (up or down) 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 [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 [CAL/RUN] to return to run mode.

NOTE: For all run codes see Appendix C, Section 10.10.

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 in Fig. 5.

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.

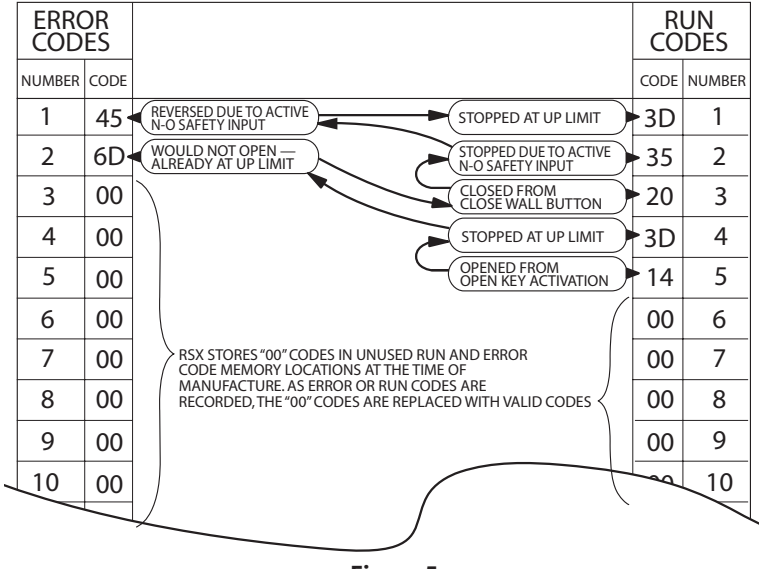
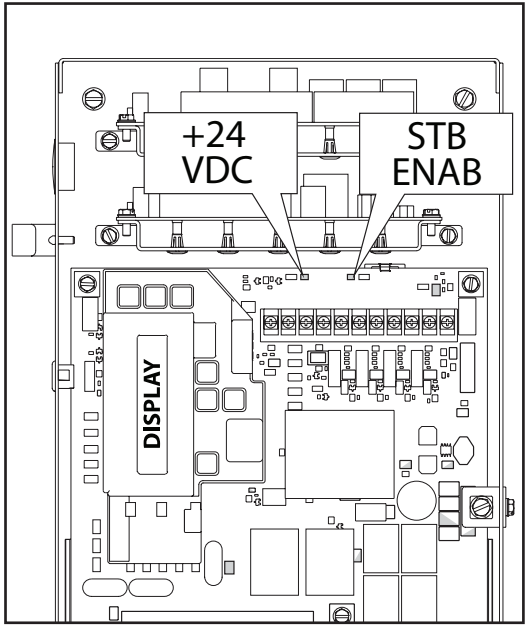


Figure 5

LED Indicators Fig. 6

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

Figure 6



TROUBLESHOOTING LED's

STB ENABLE	**NORMALLY ON - STB ENABLED**	**OFF - STB DISABLED**
+ 24 VOLTS DC	**NORMALLY ON - POWER AVAILABLE**	**OFF - CHECK AC POWER SUPPLY CHECK FUSES**

Safe-T-Beam® 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.

⚠ **WARNING**: OVERHEAD DOOR CORPORATION RECOMMENDS THAT LINE VOLTAGE WIRING BE PERFORMED BY A QUALIFIED ELECTRICIAN. SEE SECTION 5 FOR ADDITIONAL WIRING INSTRUCTIONS.

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.

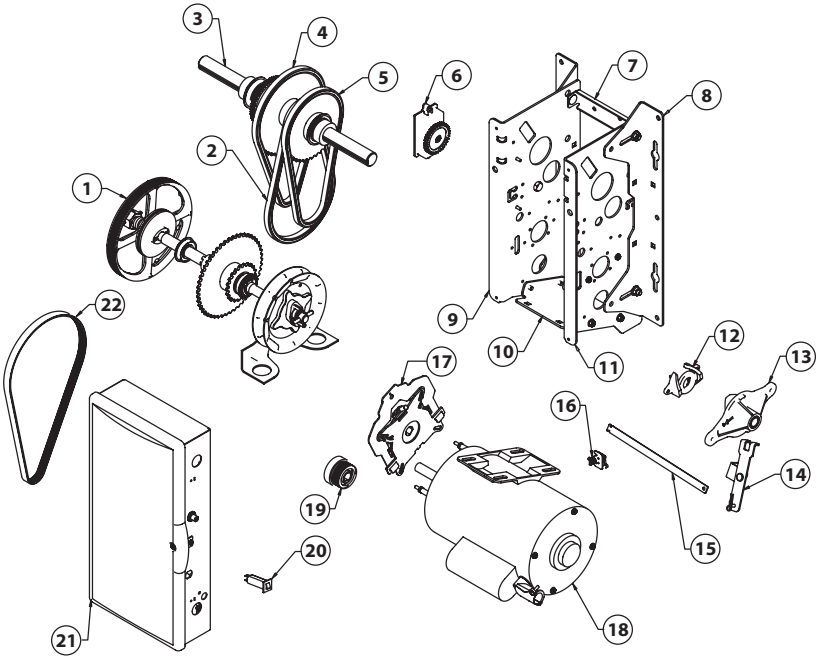
⚠ CAUTION: Failure to perform the recommended Service & Maintenance may result in premature failure of the operator.

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

* If Installed.

Section 10: Appendix A

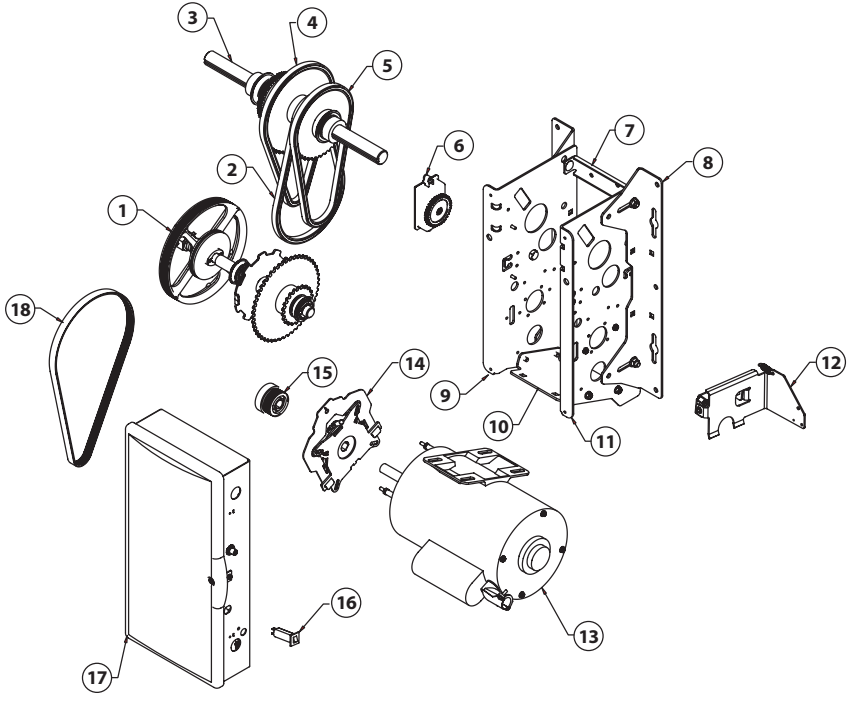
Operator Parts Breakdown (Hoist)



Item	Part Number	Description	Qty
1	111386.0001	CLUTCH SHAFT ASSY	1
2	110877.0072	CHAIN, #35 X 72P	1
3	111392.0001	OUTPUT SHAFT ASSY	1
4	110877.0070	CHAIN, #35 X 70P	1
5	110877.0068	CHAIN, #35 X 68P	1
6	111421.0001	LIMIT MODULE	1
7	110627.0001	SUPPORT BRACE	1
8	110626.0001	MOUNTING BRACKET	1
9	110625.0002	LEFT HAND ENCLOSURE	1
10	110636.0001	MOTOR PLATE	1
11	110625.0001	RIGHT HAND ENCLOSURE	1
12	111036.0001	LIFTING RAMP	1
13	111089.0001	RELEASE LEVER ASSY	1
14	111088.0001	RELEASE BRACKET ASSY	1
15	111031.0001	HOIST LINK	1
16	111420.0001	INTERLOCK SW.	1
17	111396.0001	BRAKE ASSY, STD MOTOR, 1/2 HP, 1 PHASE	1
	111396.0002	BRAKE ASSY, ALL OTHER MOTORS	1
18	110635.0001	MOTOR, 1/2 HP, 1 PHASE	1
	110635.0002	MOTOR, 3/4 HP, 1 PHASE	1
	110635.0003	MOTOR, 1 HP, 1 PHASE	1
	110635.0004	MOTOR, 1/2 HP, 3 PHASE	1
	110635.0005	MOTOR, 3/4 HP, 3 PHASE	1
	110635.0006	MOTOR, 1 HP, 3 PHASE	1
	110635.0007	MOTOR, 1/2 HP, 575V	1
	110635.0008	MOTOR, 3/4 HP, 575V	1
	110635.0009	MOTOR, 1 HP, 575V	1
19	111404.0001	MOTOR PULLEY	1
20	110100.0012	CIRCUIT BREAKER, 3/4 HP, 1 PHASE	1
	110100.0015	CIRCUIT BREAKER, 1 HP, 1 PHASE	1
21	111395.0001	ELECTRIC BOX, 1 PHASE, 3/4 HP, CONTACTOR	1
	111395.0002	ELEC BOX, 1 PH, 1 HP, CONTACTOR	1
	111395.0003	ELEC BOX, 1 PH, 1/2 HP, RELAY	1
	111395.0004	ELEC BOX, 3 PH, CONTACTOR	1
	111395.0005	ELEC BOX, 3 PH, RELAY	1
	111395.0006	ELEC BOX, 575V	1
22	111075.0001	POLY-V BELT	1

Section 10: Appendix A

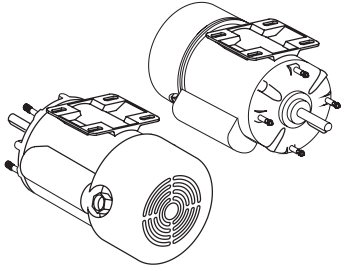
Operator Parts Breakdown
(Release)



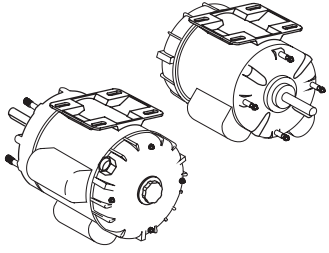
Item	Part Number	Description	Qty
1	111387.0001	CLUTCH SHAFT ASSY	1
2	110877.0072	CHAIN, #35 X 72P	1
3	111392.0001	OUTPUT SHAFT ASSY	1
4	110877.0070	CHAIN, #35 X 70P	1
5	110877.0068	CHAIN, #35 X 68P	1
6	111421.0001	LIMIT MODULE	1
7	110627.0001	SUPPORT BRACE	1
8	110626.0001	MOUNTING BRACKET	2
9	110625.0002	ENCLOSURE, LEFT HAND	1
10	110636.0001	MOTOR PLATE	1
11	110625.0001	ENCLOSURE, RIGHT HAND	1
12	111030.0001	RELEASE ASSY	1
13	110635.0001	MOTOR, 1/2 HP, 1 PHASE	1
	110635.0002	MOTOR, 3/4 HP, 1 PHASE	1
	110635.0003	MOTOR, 1 HP, 1 PHASE	1
	110635.0004	MOTOR, 1/2 HP, 3 PHASE	1
	110635.0005	MOTOR, 3/4 HP, 3 PHASE	1
	110635.0006	MOTOR, 1 HP, 3 PHASE	1
	110635.0007	MOTOR, 1/2 HP, 575V	1
	110635.0008	MOTOR, 3/4 HP, 575V	1
	110635.0009	MOTOR, 1 HP, 575V	1
14	111396.0001	BRAKE ASSY, STD MOTOR, 1/2 HP, 1 PHASE	1
	111396.0002	BRAKE ASSY, ALL OTHER MOTORS	1
15	111404.0001	PULLEY, MOTOR	1
16	110100.0012	CIRCUIT BREAKER, 3/4 HP, 1 PHASE	1
	110100.0015	CIRCUIT BREAKER, 1 HP, 1 PHASE	1
17	111395.0001	ELECTRIC BOX, 1 PHASE, 3/4 HP, CONTACTOR	1
	111395.0002	ELEC BOX, 1 PH, 1 HP, CONTACTOR	1
	111395.0003	ELEC BOX, 1 PH, 1/2 HP, RELAY	1
	111395.0004	ELEC BOX, 3 PH, CONTACTOR	1
	111395.0005	ELEC BOX, 3 PH, RELAY	1
	111395.0006	ELEC BOX, 575V	1
18	111075.0001	POLY-V BELT	1

Appendix A (continued)

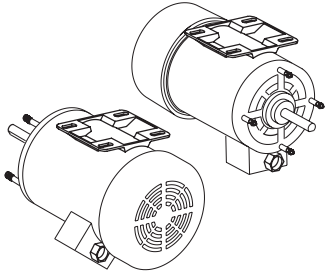
Alternate Motor Options



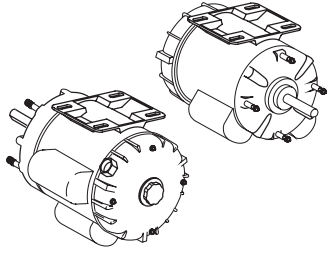
TEFC, SINGLE PHASE
111306.0001, 1/2 HP, 115/208,230 V
111306.0002, 3/4 HP, 115/208/230 V
111306.0003, 1 HP, 115/208/230 V



TENV, SINGLE PHASE
111309.0001, 1/2 HP, 115/208/230 V
111309.0002, 3/4 HP, 115/208/230 V
111309.0003, 1 HP, 115/208/230 V



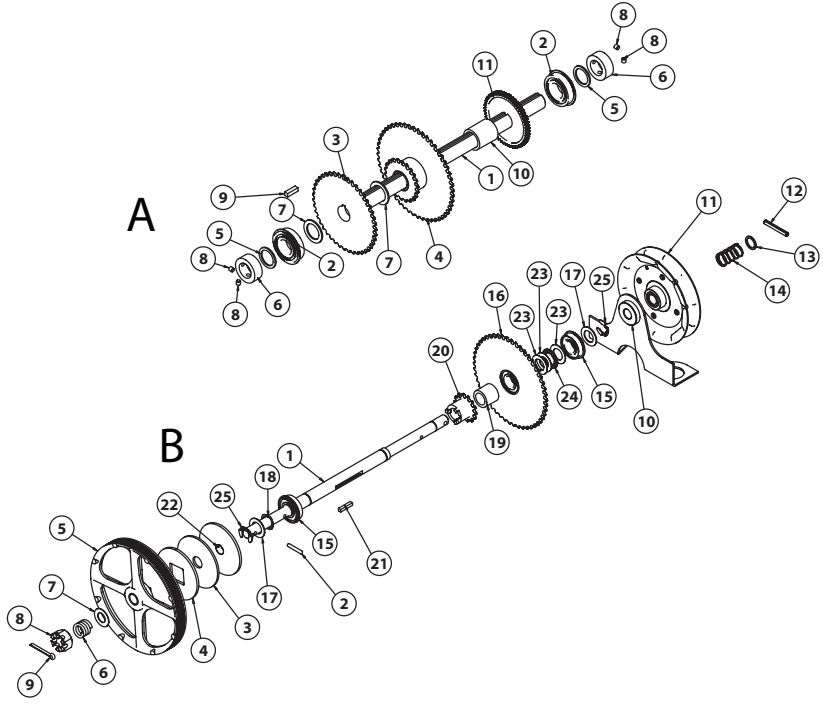
TEFC, THREE PHASE
111308.0001, 1/2 HP, 208/230/460 V
111308.0002, 3/4 HP, 208/230/460 V
111308.0003, 1 HP, 208/230/460 V
111308.0004, 1/2 HP, 575 V
111308.0005, 3/4 HP, 575 V
111308.0006, 1 HP, 575 V



TENV, THREE PHASE
111309.0004, 1/2 HP, 208/230/460 V
111309.0005, 3/4 HP, 208/230/460 V
111309.0006, 1 HP, 208/230/460 V
111309.0007, 1/2 HP, 575 V
111309.0008, 3/4 HP, 575V
111309.0009, 1 HP, 575 V

Appendix A (continued)

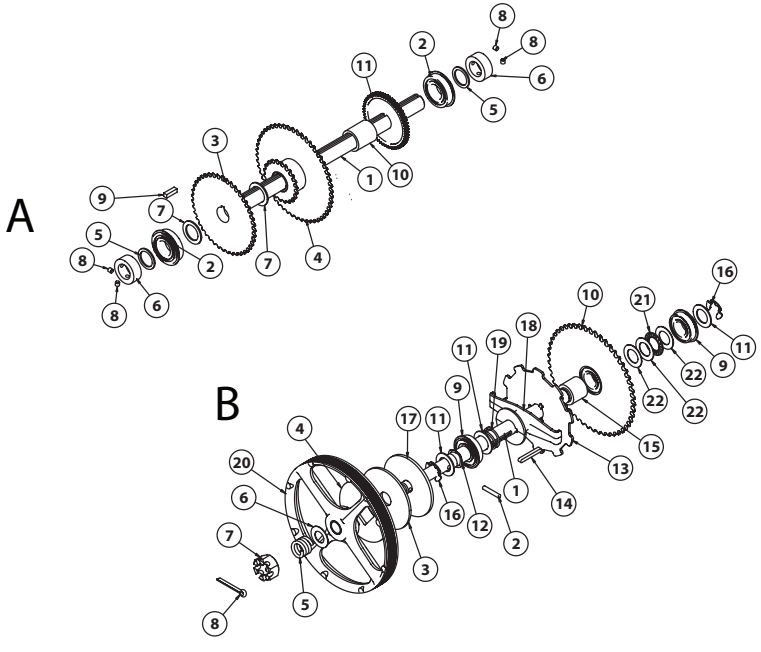
Shafts Parts Breakdown (Hoist)



Item	Part Number	Description	Qty
A	**111392.0001**	**KIT, OUTPUT SHAFT, SDMT**	
1	110644.0001	SHAFT, OUTPUT, 1" DIA., SDMT	1
2	110694.0001	BEARING, 1.000" ID	2
3	110663.0003	SPROCKET, 43T, #35CH, 3/8P	1
4	111013.0001	SPRKT & BUSHING ASSY, 22T-52T	1
5	110819.0002	WASHER, PLAIN, 1.026 ID	2
6	604297.4100	SET COLLAR, 1" ID X 1-5/8" OD	2
7	110393.0001	WASHER, SPACER, 1.015" ID	2
8	080300.1604	SCR, SET, KNRLD, 1/4"-20 X 1/4"	4
9	080340.0074	KEY, STANDARD, SQ, 1/4" X 7/8"	1
10	111044.0001	SPACER, OUTPUT SHAFT	1
11	111074.0001	GEAR, LIMIT, 56T, SDMT	1
B	**111386.0001**	**KIT, CLUTCH SHAFT, SXH, SDMT**	
1	110669.0001	SHAFT, CLUTCH, .75" DIA, HOIST	1
2	110881.0001	PIN, DOWEL, .188" X 1.13/1.00	1
3	075193.0000	LINING, CLUTCH	1
4	108015.0000	DISC, CLUTCH, MOVEABLE	1
5	111324.0001	PULLEY ASSY, CLUTCH	1
6	075197.0000	SPRING, CLUTCH	1
7	086649.0029	WASHER, THRUST, .64	1
8	110472.0001	NUT, HEX, SLOTTED, 5/8"-11	1
9	080401.0624	PIN, COTTER, 3/16" X 1-1/2" L	1
10	110411.0001	CHAIN GUARD ASSY	1
11	110872.0001	HANDWHEEL, STANDARD CHAIN	1
12	110313.0007	PIN, SPRING, .250" DIA X 1.88"	1
13	110819.0001	WASHER, PLAIN, .651 ID	1
14	110545.0001	SPRING, HANDWHEEL	1
15	110695.0001	BEARING, .750 ID	2
16	111020.0001	SPRING ASSY, 22T-50T	1
17	110819.0003	WASHER, .770" ID	2
18	110818.0004	WASHER, WAVE SPRING, .780" ID	1
19	111045.0001	SPACER, CLUTCH SHAFT	1
20	110709.0001	SPROCKET, 14T, .75" ID	1
21	111068.0001	KEY, SQUARE, 3/16"	1
22	111037.0001	DISC, CLUTCH	1
23	111403.0001	WASHER, THRUST	3
24	111402.0001	BEARING, THRUST	1
25	111382.0001	RING, RTNG, HIGH GRIP STRENGTH	2

Appendix A (continued)

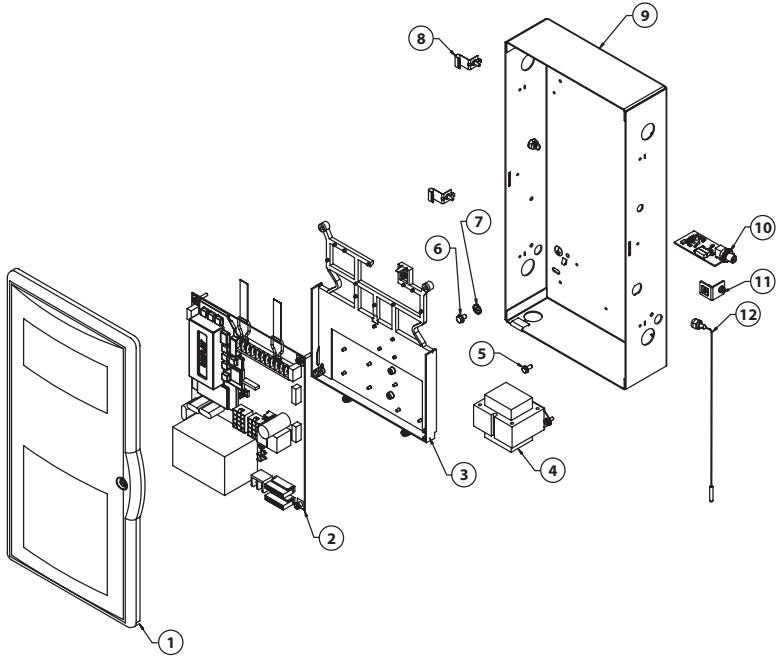
Shaft Parts Breakdown (Release)



Item	Part Number	Description	Qty
A	**111392.0001**	**KIT, OUTPUT SHAFT, SDMT**	
1	110644.0001	SHAFT, OUTPUT, 1" DIA., SDMT	1
2	110694.0001	BEARING, 1.000" ID	2
3	110663.0003	SPROCKET, 43T, #35CH, 3/8P	1
4	111013.0001	SPRKT & BUSHING ASSY, 22T-52T	1
5	110819.0002	WASHER, PLAIN, 1.026 ID	2
6	604297.4100	SET COLLAR, 1" ID X 1-5/8" OD	2
7	110393.0001	WASHER, SPACER, 1.015" ID	2
8	080300.1604	SCR, SET, KNRLD, 1/4"-20 X 1/4"	4
9	080340.0074	KEY, STANDARD, SQ, 1/4" X 7/8"	1
10	111044.0001	SPACER, OUTPUT SHAFT	1
11	111074.0001	GEAR, LIMIT, 56T, SDMT	1
B	**111387.0001**	**KIT, CLUTCH SHAFT, SXJ, SDMT**	
1	111029.0001	SHAFT, CLUTCH, , .75" DIA	1
2	110881.0001	PIN, DOWEL, .188" X 1.13/1.00	1
3	075193.0000	LINING, CLUTCH	1
4	108015.0000	DISC, CLUTCH, MOVEABLE	1
5	075197.0000	SPRING, CLUTCH	1
6	086649.0029	WASHER, THRUST, .64	1
7	110472.0001	NUT, HEX, SLOTTED, 5/8"-11	1
8	080401.0624	PIN, COTTER, 3/16" X 1-1/2" L	1
9	110695.0001	BEARING, .750" ID	2
10	111020.0001	SPRCKET ASSY, 22T-50T, #35 CHAIN	1
11	110819.0003	WASHER, .770" ID	3
12	110818.0004	WASHER, WAVE SPRING, .780" ID	1
13	110610.0001	SPRKT & ENGAGEMENT PLATE	1
14	110816.0001	KEY, ROUND END, .188 X 1.50"	1
15	111045.0001	SPACER, CLUTCH SHAFT	1
16	111382.0001	RING, RTNG, HIGH GRIP STRENGTH	2
17	111037.0001	DISC CLUTCH	1
18	110387.0002	SLIDER, JACKSHAFT, SX	1
19	111175.0001	SPRING, 1.10" OD	1
20	111324.0001	PULLEY ASSY, CLUTCH	1
21	111402.0001	BEARING, THRUST	1
22	111403.0001	WASHER, THRUST	3

Appendix A (cont')

Base Electric Box Parts Breakdown

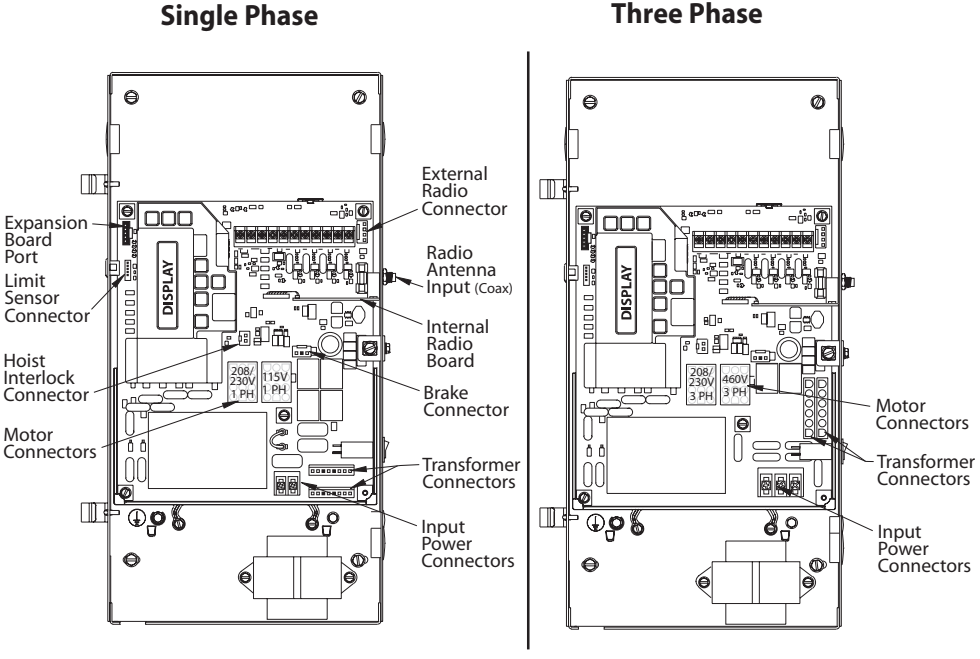


Item	Part Number	Description	Qty
1	111400.0001	COVER ASSY, 1 PHASE	1
	111400.0002	COVER ASSY, 3 PHASE	1
	111400.0003	COVER ASSY, 575V	1
2	111399.0001	CIRCUIT BOARD ASSY, 1 PHASE, 3/4 & 1 HP CONTACTOR	1
	111399.0002	CIRCUIT BOARD ASSY, 1 PHASE, 1/2 HP RELAY	1
	111399.0003	CIRCUIT BOARD ASSY, 3 PHASE, 3/4 & 1 HP CONTACTOR	1
	111399.0004	CIRCUIT BOARD ASSY, 3 PHASE, 1/2 HP RELAY	1
	111399.0005	CIRCUIT BOARD ASSY, 575V	1
3	111401.0001	INSULATOR BOARD ASSY	1
4	111087.0001	XFMR, 115/208/230V, 1 PHASE	1
	111087.0002	XFMR, 208/230/460V, 3 PHASE	1
	111087.0003	XFMR, 575V	1
5	8706.E29	SCREW, GROUND, #8-32 X 3/8"	1
6	8706.F29	SCREW, GROUND, #10-32 X 3/8"	1
7	22634A	WASHER, CUP	1
8	110950.0001	HINGE ASSY	2
9	110630.0001	ELECTRIC BOX	1
10	111397.0001	RECEIVER ASSY	1
11	111398.0001	LATCH ASSY	1
12	111352.0001	ANTENNA ASSY	1
NS	111405.0001	SPARE FUSE KIT	1

NS=NOT SHOWN

Appendix A (cont')

Electric Box Layout



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 RSX™ operator.	120VAC: Connect to Line (Hot) / 240VAC: Connect to Line 1.
	N / L2	Power to RSX™ operator.	120VAC: Connect to Neutral / 240VAC: Connect to Line 2.
RADIO AND ACCESSORIES PIGTAIL	PWR	Power for radio & other accessories. +20 to +40VDC, fused at 315mA (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.	
	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 RSX™ 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.

Section 10: Appendix C

Run Code Displays

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**
2B	CLOSING > FDM CLS	CLOSING FROM FORE DOOR 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 CONTROL 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
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

Section 10: Appendix C

Error Code Displays

Condition Code	DISPLAY	Condition Code Description
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
53	STOP > BRAKE FAULT	GDO STOPPED BECAUSE OF
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**
5B	STOP > WRONG DIR	GDO STOPPED BECAUSE
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
5E	STALL > MID-STOP	GDO STOPPED BECAUSE
5F	STALL > NO LIMIY	GDO STOPPED BECAUSE
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
6A	**POWER WIRING ERROR**	**GDO WON'T RUN BECAUSE**
6B	FIRE DOOR SHTDN	GDO WON'T RUN BECAUSE OF LOSS OF POWER
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

Section 10: Appendix C

Error Codes Displays (continued)

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.
87	IEM FAILURE	RESERVED--NOT CURRENTLY USED
88	TCM FAILURE	TIMER CLOSE MODULE (TCM) HAS FAILED
89	FDM FAILURE	FIRE DOOR MODULE (FDM) HAS FAILED
8A	**AOM FAILURE**	**AUXILIARY OUTPUT MODULE (AOM) HAS FAILED**
8B	SPARE MOD FAILURE	RESERVED--NOT CURRENTLY USED
8C	LOW SYSTEM VOLTS	POWER SUPPLY LINE VOLTAGE LOW
8D	HI SYSTEM VOLTS	POWER SUPPLY LINE VOLTAGE HIGH
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	RESERVED--NOT CURRENTLY USED
AB	FDM BAD > POWER UP	RESERVED--NOT CURRENTLY USED
B0	**OPENING > XMTR #**	**OPENING FROM TRANSMITTER # __**
B1	CLOSING > XMTR #	CLOSING FROM TRANSMITTER # __
B2	HALT > XMTR #	HALT FROM TRANSMITTER # __
B3	NO XMTR > CC	NO CONTROL FROM TRANSMITTER, CONSTANT CONTACT EMPLOYED AT LOCAL CONTROL

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CENTERMOUNT

NOT FOR RESIDENTIAL USE

CENTER MOUNT INSTALLATION

This document is a supplement to the RSX SIDEMOUNT Manual.

Equipment Differences from normal Side Mount Unit.

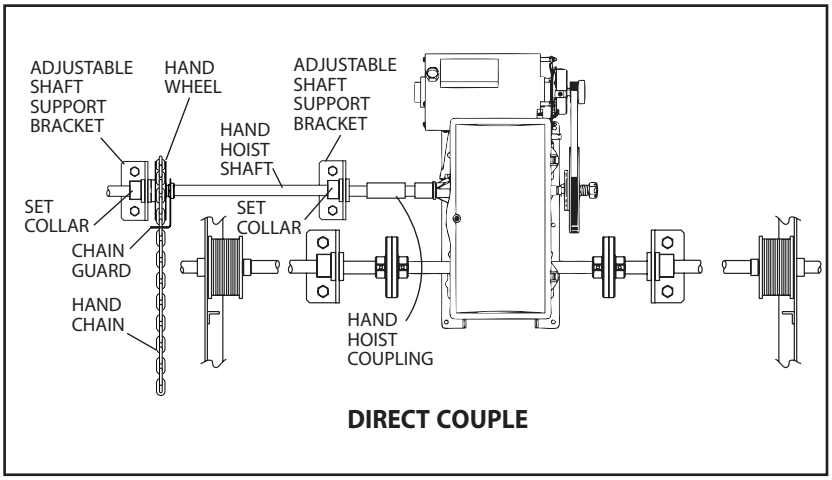
1) Door Shaft will be split in 2 pieces to allow installing the drive sprocket on a Chain Coupled Door. In addition, the shaft pieces will be shortened on a Direct Couple Door to allow space for the Operator Output Shaft.
2) The Emergency Hand Hoist is mounted on an extension shaft that places the Hand Wheel and Hoist Chain at the edge of the door.
3) Included is a kit for mounting the Hoist with the extended shaft (Installation Instructions on reverse side of this instruction).

Installation Differences-Direct Couple.

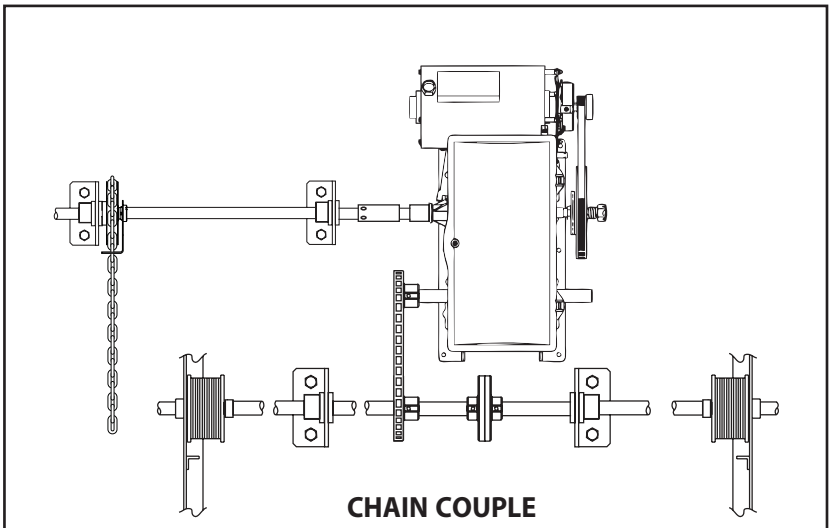
1) If not closed — fully close the door.
2) Slide a coupling half onto each door shaft and operator shaft each with a square key .
3) Slide the operator between the door shafts so that the output shaft is aligned with the two door shaft halves.
4) Butt the coupling halves together and tighten their set screws.
5) Roll both halves of the door shaft to remove slack from the cables and equalize tension on both ends. They can be held in position using clamps or locking pliers while the shafts are being coupled together. Bolt the coupling halves together with flat washers next to the coupling and lock washers next to the nuts.
6) Install Hoist Kit. (See Reverse)

Installation Differences-Chain Couple.

1) Slide the door shaft sprocket onto the half of the door shaft that allows it to be aligned with the sprocket on the operator output shaft.
2) Slide a coupling half onto each door shaft each with a square key.
3) Butt the coupling halves together and tighten their set screws.
4) Roll both halves of the door shaft to remove slack from the cables and equalize tension on both ends. Bolt the coupling halves together with flat washers next to the coupling and lock washers next to the nuts.
5) Align the door shaft sprocket with the operator output sprocket and tighten the set screws in both the sprocket and coupling.
6) Install Hoist Kit. (See Reverse)



DIRECT COUPLE



CHAIN COUPLE

HOIST SHAFT INSTALLATION

1) Drive spring pin out of the intermediate shaft (handwheel) and remove all items up to the handwheel release, retaining the washer. **FIGURE 1**.
2) Place the washer back onto the shaft and insert the new dowel pin. **FIGURE 2**.
3) Next slide the short half of the dentil coupling, the spring and finally snap the e-ring type retainer into place.
4) Insert the handwheel extension shaft into the dentil sleeve coupler and secure with the set screws.
5) Slide shaft support bracket(s) onto the extension shaft. Check that the bearing bracket are free to slide back and forth. **FIGURE 3**.
6) Mount the support bracket(s) to the wall or support pad. Use a level.
7) Adjust the bearing brackets to make the extension shaft parallel with the wall and tighten down the brackets.
8) Slide the handwheel, chain guard and set collar up against the support bracket and tighten the set screws on the collar and handwheel.
9) Install hand chain. (See Owner's Manual)

FIGURE 1

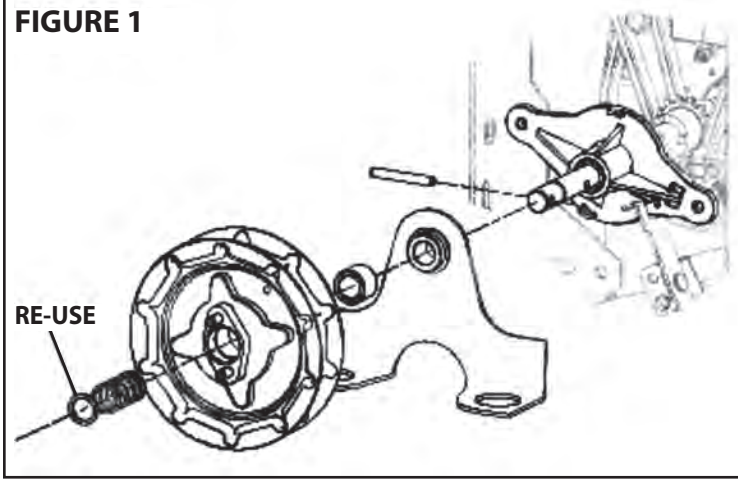
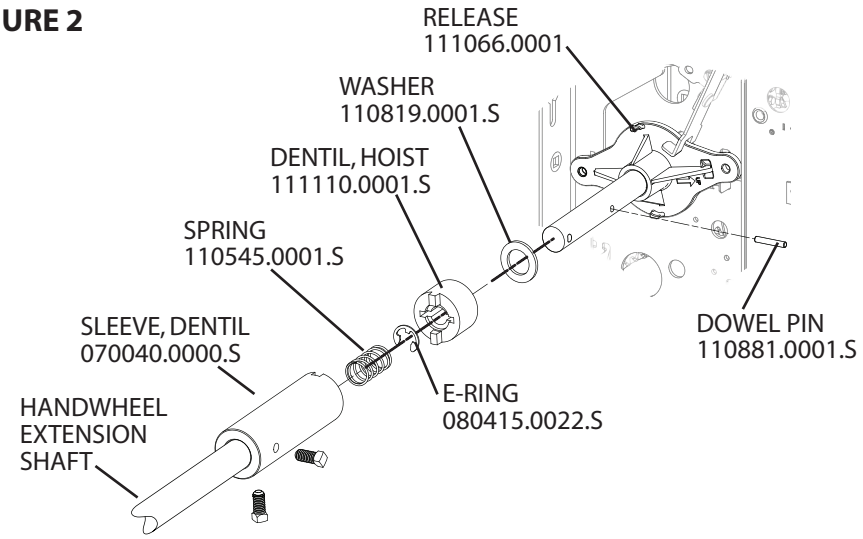


FIGURE 2



TYPICAL HORIZONTAL MOUNTING SETUP

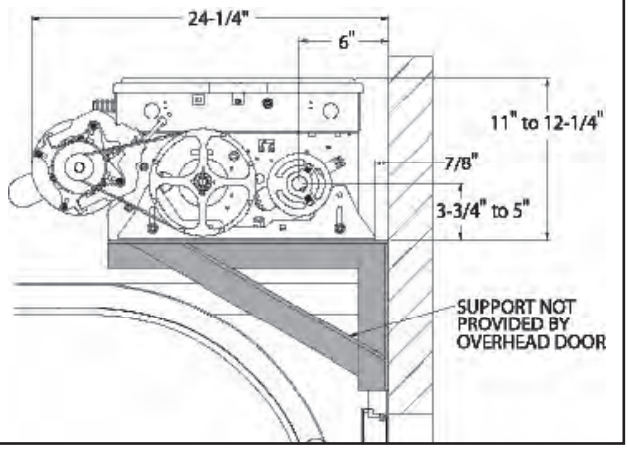
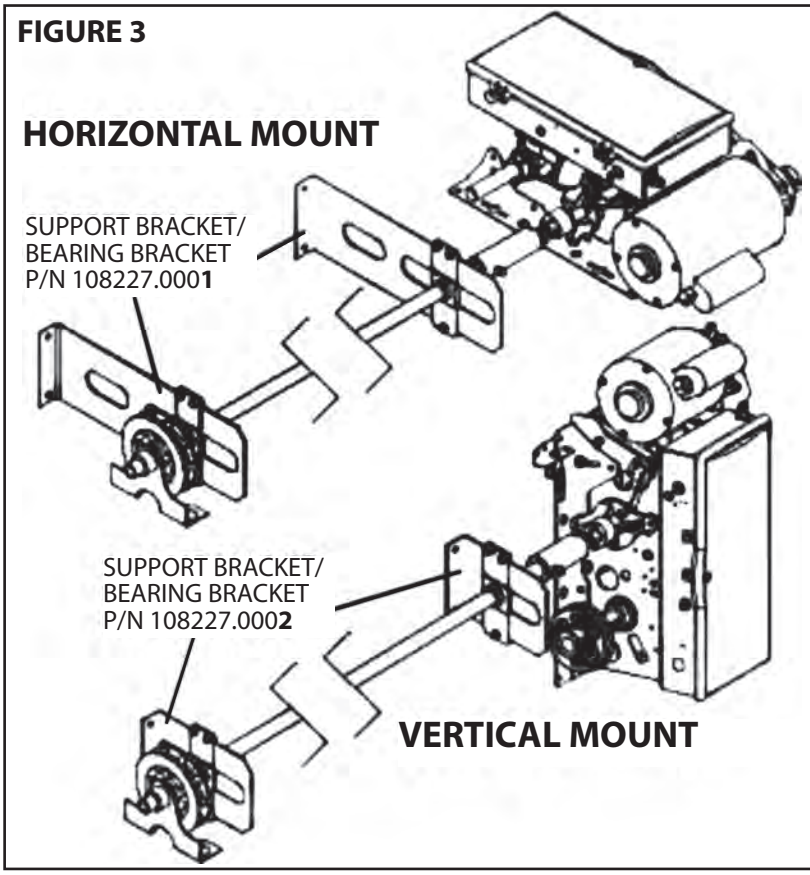


FIGURE 3



The Genuine. The Original.

OVERHEAD DOOR®

Access Systems Division
a Division of Overhead Door Corporation
22790 Lake Park Blvd.
Alliance, Ohio 44601

WARRANTY

The Genuine. The Original.

OVERHEAD DOOR®

RSX®
Commercial Operator Limited Warranty

The authorized distributor of Overhead Door Corporation products, whose name appears below ("Seller") warrants to the original purchaser of model RSX® Trolley and RSX® Hoist commercial operators ("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 20,000 cycles*, whichever occurs first.

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 applies only to an operator which is installed in commercial or industrial building applications. 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 EXPRESS 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.

*The number of cycles referred to herein shall be measured by an integrated cycle counter contained in or attached to the Product. If the cycle counter is rendered inoperable Seller shall use other reasonable means to determine cycle count.

ORIGINAL PURCHASER _____

INSTALLATION ADDRESS _____

SELLER: _____

SELLER'S ADDRESS: _____

FACTORY ORDER #: _____

DATE OF INSTALLATION: _____

SIGNATURE OF SELLER: _____

C900-772

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