RSX®

The Genuine. The Original.

OVERHEAD DOOR®

FIRE DOOR OPERATOR

c(UL)us LISTED

FM APPROVED

PROPER APPLICATIONS:		
Door Type(s)	Operator Type(s)	HP/MAX. Door Weight
Rolling Steel	Hoist Model Only	1/2HP = 998lbs.
Fire Door Only	FOH, TOH, Bench,	3/4HP = 1220lbs.
	FOH Horizontal	1HP = 1440lbs.

NOT FOR RESIDENTIAL USE
For use on Rolling Steel Fire Doors Only

This Installation Manual provides the information required to install, troubleshoot and maintain a RSX® Fire Door Operator.

Table of Contents

The Genuine. The Original.

OVERHEAD DOOR ®

Section 1: How to use this manual

The 12 sections of this Installation Manual provide the information required to install, troubleshoot and maintain a Fire Door 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.
> ⚠ **AVERTISSEMENT:** Ne pas effectuer correctement toutes les étapes dans les sections 4-6 peut entraîner des blessures graves voire la mort.

Sections 4-6

Provides step by step installation and set-up instructions for the fire door commercial operator. Each section is written such that it must be followed in a step by step order to complete a successful installation.

Section 7
Details important test features.

Section 8
Provides optional programming/setup features and general information.

Sections 9-12
Provides related information on troubleshooting, service and maintenance items, operator drawings for use in troubleshooting and service activities, test recording, 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 injury, 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 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 of 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 and external reversing means is installed. Do Not operate a door that jambs or one that has a broken spring.
ELECTRICAL SHOCK	⚠️ **WARNING** Could cause Serious Injury or Death	Turn off electrical poser 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 cause 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 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 the 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 motor protector is tripped, a trained service technical may be needed to correct the condition which caused the overheating. When the 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 2: Safety Information & Instructions

⚠ AVERTISSEMENT

Les portes basculantes sont de gros objets lourds qui fonctionnent à l'aide de ressorts soumis à une haute tension et de moteurs électriques. Dans la mesure où les objets en mouvement, les ressorts sous tension et les moteurs électriques peuvent entraîner des blessures, votre sécurité et celle des autres exigent que vous preniez connaissance des informations stipulées dans ce manuel. Si vous avez des questions ou si vous ne comprenez pas les informations ci-incluses, veuillez contacter le représentant de service le plus près. Pour obtenir le numéro du revendeur Overhead Door local, appelez le +1 (800) 929-3667, et pour **obtenir des conseils techniques de l'usine Overhead Door, appelez le +1 (800) -275-6187.**

Dans ce manuel, les mots Danger, Avertissement, et Attention sont utilisés pour faire ressortir d'importantes informations relatives à la sécurité. Le mot :

⚠ **DANGER** signale une situation dangereuse imminente qui si elle n'est pas évitée, risque d'entraîner des blessures graves, voire mortelles.

⚠ **AVERTISSEMENT** signale une situation potentiellement dangereuse qui, si elle n'est pas évitée, risque d'entraîner la mort ou des blessures graves.

⚠ **ATTENTION** signale une situation potentiellement dangereuse qui, si elle n'est pas évitée, risque d'entraîner des blessures ou des dommages matériels.

Le terme **REMARQUE** est utilisé pour signaler les étapes importantes à suivre ou d'importants éléments à prendre en considération.

DANGER POTENTIEL	EFFET	PRÉVENTION
PORTE EN MOUVEMENT	⚠ **AVERTISSEMENT** Pourrait entraîner des blessures graves voire la mort	Utiliser uniquement si la porte est en vue et libre de tout obstacle. Ne laisser personne se tenir dans l'ouverture de la porte pendant qu'elle est en mouvement. Ne pas permettre aux enfants de jouer avec l'opérateur de la porte. Ne pas modifier la commande de l'opérateur à contact momentané à moins qu'un moyen d'inversion externe soit installé. Ne pas faire fonctionner une porte qui bloque ou dont le ressort est cassé.
CHOC ÉLECTRIQUE	⚠ **AVERTISSEMENT** Pourrait entraîner des blessures graves voire la mort	Couper le courant avant d'enlever le couvercle de l'opérateur. Lorsque le couvercle doit être remplacé, s'assurer que les fils ne sont ni coincés ni près des pièces mobiles. L'opérateur doit être correctement mis à la terre.
TENSION ÉLEVÉE RESSORT	⚠ **AVERTISSEMENT** Pourrait entraîner des blessures graves voire la mort	Ne pas essayer d'enlever, réparer ni ajuster les ressorts ou toute autre pièce à laquelle le ressort de la porte est attaché, y compris blocs de bois, supports en acier, câbles ou autres articles semblables. Les réparations et les réglages doivent être effectués par technicien qualifié qui se sert d'outils appropriés et qui respecte les instructions.

Section 3: Critical Installation Information

Job Site Issues to Consider/Concerns:
The following list of items should be considered prior to selecting an operator for a given job site.

1. Available power supply.
2. Type of door.
3. Potential operator mounting obstructions. Items to consider include, but are not limited to: side room, room above door shaft, room below door shaft, available mounting surface integrity, power supply location, and convenient chain hoist and release cable positioning.
4. Size of door for appropriate operator torque and door travel speed selection.
5. Operator mounting environment. Items to consider include operator location, dampness of location, dustiness of the location and corrosiveness of the location.
6. Door activation needs/requirements. Examples include 3 button control stations, 1 button control stations, radio controls, pull cords, loop detectors, photoelectric controls, key switches, etc. See "Entrapment Protection" section below.
7. Interlock switches are required under certain conditions for doors with pass doors and door locks. See Section 5.6.
8. Accessory equipment. Examples include reversing edges which are required for doors set to operate as momentary contact, auxiliary control relays, warning lights, etc. See "Entrapment Protection" section below.

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

⚠️ **AVERTISSEMENT:** NE PAS mettre sous tension tant que l'instruction n'est pas donnée de le faire.

APPROVED ENTRAPMENT PROTECTION DEVICES

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

The Reversing Devices currently UL Approved are:
1). MillerEdge ME and MT series monitored edge sensors used in combination with Timer-Close Module P/N OPABTCX.S
2). MillerEdge ME and MT series monitored edge sensors used in combination with MillerEdge Interface Module OPAKMEIX.S. (Direct connect through STB inputs.)
3). MillerEdge Wireless monitored edge sensor OPAKMMWE.S.
4). ASO Sentir GF Series Edges.

These Monitored Sensing Edges are available in any door width.
NOTE: *DO NOT use take up reels in conjunction with the Monitored Sensing Edge system. Use Coil Cords Only.*

Section 3: Critical Installation Information

Technical Data

The following information will help the installer and electrician fully understand all aspects of this installation.

This unit contains the following parts:
Operator assembly.
Owners manual and warning/caution placards.
Hardware box.
3-button control station.
Drive Chain. #50
- Output Shaft Speed: 46 RPM
- Motor is continuous duty type
- Control wiring: Maximum of 1000 feet of 22-24 ga. stranded wire run.

Electrical Load Information:
Amperage draw in Full Load Amps (FLA)

1 Phase 1/2HP Operators:	3 Phase 1/2HP Operators:
115VAC - 60Hz - 10 FLA	208VAC - 60Hz - 3 FLA
208VAC - 60Hz - 5 FLA	230VAC - 60Hz - 3 FLA
230VAC - 60Hz - 5 FLA	460VAC - 60Hz - 3 FLA
	575VAC - 60Hz - 2 FLA
1 Phase 3/4HP Operators:	
115VAC - 60Hz - 11 FLA	3 Phase 3/4HP Operators:
208VAC - 60Hz - 6 FLA	208VAC - 60Hz - 3 FLA
230VAC - 60Hz - 6 FLA	230VAC - 60Hz - 4 FLA
	460VAC - 60Hz - 3 FLA
1 Phase 1HP Operators:	575VAC - 60Hz - 2 FLA
115VAC - 60Hz - 14 FLA	
208VAC - 60Hz - 7 FLA	3 Phase 1HP Operators:
230VAC - 60Hz - 7 FLA	208VAC - 60Hz - 4 FLA
	230VAC - 60Hz - 4 FLA
	460VAC - 60Hz - 3 FLA
	575VAC - 60Hz - 2 FLA

Section 3: Critical Installation Information

⚠ 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.

⚠ ATTENTION: Vérifiez l'état de fonctionnement de la porte avant d'installer l'opérateur. La porte doit pouvoir bouger librement et ne pas coincer. Désactivez tous les dispositifs de verrouillage de la porte (si équipés). Les réparations et les réglages de porte, plus particulièrement pour les câbles et les ressorts DOIVENT être effectués par un technicien qualifié qui se sert d'outils appropriés et qui respecte les instructions.

IMPORTANT INSTALLATION INSTRUCTIONS

WARNING
To reduce the risk of severe injury or death:

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.
2. Install only on a properly operating and balanced door. A door that is operating improperly could cause severe injury. Have qualified service personnel make repairs to cables, spring assemblies and other hardware before installing the operator.
3. Remove all pull ropes and remove, or make inoperative, all locks (unless mechanically and/or electronically interlocked to the power unit) that are connected to the door before installing the operator.
4. Install the door operator at least 8ft. (2.44m) or more above the floor if operator has exposed moving parts. If the operator must be installed less than 8ft. (2.44m) above the floor, then exposed moving parts must be protected by covers or guarding, provided by the operator manufacturer.
5. Do not connect the door operator to the power source until instructed to do so.
6. Locate the control station: (a) within sight of the door, (b) a minimum of 5 feet above the floor so that small children cannot reach it, and (c) away from all moving parts of the door.
7. Install the Entrapment Warning Placard next to the control station and in a prominent location.
8. For products having a manual release, instruct the end user on the operation of the manual release.

IMPORTANT INSTRUCTIONS D'INSTALLATION

AVERTISSEMENT
Pour réduire les risques de blessures graves ou de mort :

1. LIRE ET RESPECTER TOUTES LES INSTRUCTIONS D'INSTALLATION.
2. Installez uniquement sur une porte fonctionnant correctement et bien équilibrée. Une porte qui fonctionne mal peut provoquer des blessures graves. Demandez à un technicien qualifié d'effectuer les réparations des câbles, des ressorts et de toute autre quincaillerie avant de procéder à l'installation de l'opérateur.
3. Retirez toutes les cordes de traction ainsi que tous les verrous ou rendez-les inopérants (à moins qu'ils ne soient mécaniquement et/ou électroniquement interverrouillés à l'unité motrices) qui sont connectés à la porte avant de procéderà l'installation de l'opérateur.
4. Installez l'opérateur de porte à une distance de 2,44 m (8 pi) ou plus au-dessus du sol si des pièces en mouvement de l'opérateur sont exposées. Si l'opérateur doit être installé à une distance de moins de 2,44 m (8 pi) au-dessus du sol, les pièces en mouvement exposées doivent être protégées par des couvercles ou systèmes de protection fournis par le fabricant de l'opérateur.
5. Ne pas raccorder l'opérateur de la porte à la source d'alimentation avant que l'instruction ne soit donnée de le faire.
6. Installez la station de commande : (a) en vue de la porte, (b) à 1,5 m minimum au-dessus du sol pour que les jeunes enfants ne puissent pas l'atteindre, et (c) à l'écart de toutes les pièces mobiles de la porte.
7. Installez le poster d'avertissement de pincement à côté de la station de commande à un endroit bien en vue.
8. Pour les produits ayant un déclenchement manuel, indiquez à l'utilisateur comment déclencher manuellement.

Section 4: Installation
Front and Top of Hood Mount

The Fire Door Operator can be purchased for right-hand or left-hand mounting for Front of Hood & Top of Hood Mount configurations. Right hand mounting shown. Left hand mounting is a mirror image.

1) Weld the Rolling Door weld plate assembly (provided) to the door headplate, A minimum of two 1" weld beads are required on each side of the weld plate for proper attachment. See Fig 1 for proper placement.
2) Remove 8 nuts (4 each side) and exchange sides of the mounting brackets and reinstall with mounting pads inboard. Fig 2
3) Attach operator to main mounting bracket using the four 5/16"- 18 X 1-1/4" carriage bolts, flange nuts. Fig 3
5) Attach operator assembly to weld plate using hardware provided. Do not tighten. Fig 4

FRONT OF HOOD   **TOP OF HOOD**

1/4"   9"   5-1/2"   1/4"   4-1/2"

STANDARD WELD PLATE ATTACHMENT (14" HEADPLATE & LARGER)
Fig. 1
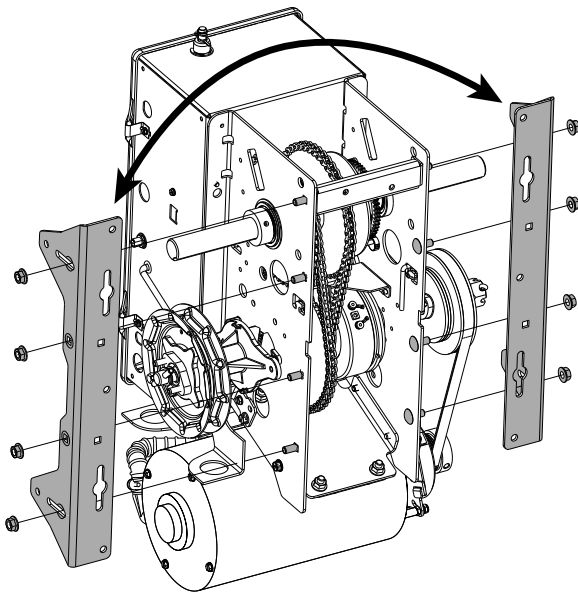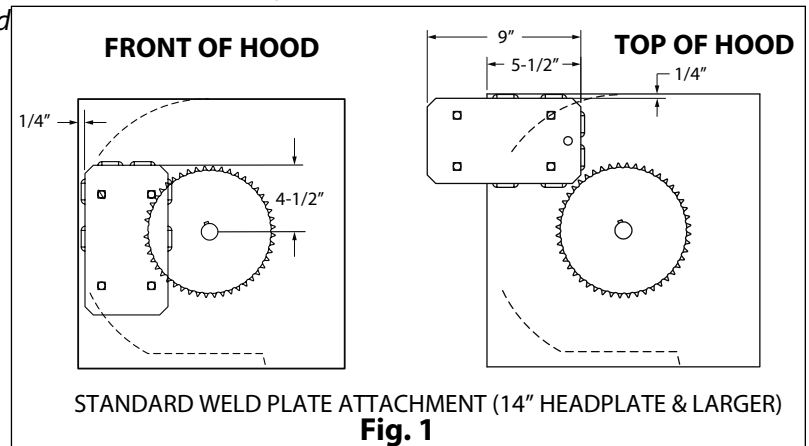
Fig. 2
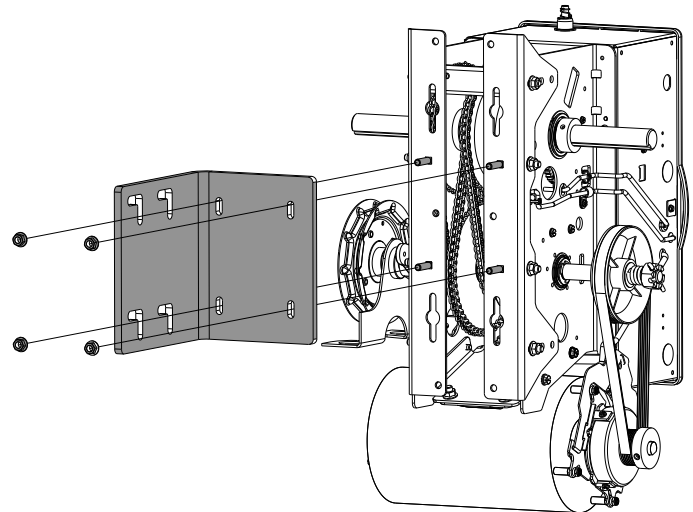
Fig. 3
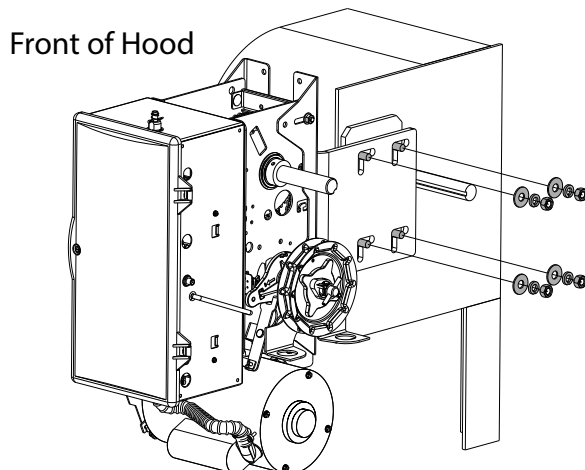
Front of Hood

Top of Hood

Fig. 4

Section 4: Installation

Front and Top of Hood Mount (continued)

Attach Operator to Door.

6. Mount operator assembly to weld plate and install mounting hardware, do not tighten. Fig. 5
7. Attach 12 tooth sprocket and key to operator output shaft, do not tighten.
8. Attach door sprocket and key to door shaft, do not tighten.
9. Install chain onto sprockets.
10. Move and align sprockets and chain as close to the operator as possible. Fig. 6
11. Adjust operator to remove slack from chain. Be certain operator output shaft is parallel with door shaft.
12. Tighten operator mounting bracket nuts.
13. Apply locking compound to all sprocket set screws and tighten.

Front of Hood

Top of Hood

**TOP VIEW
FOH mount
shown**
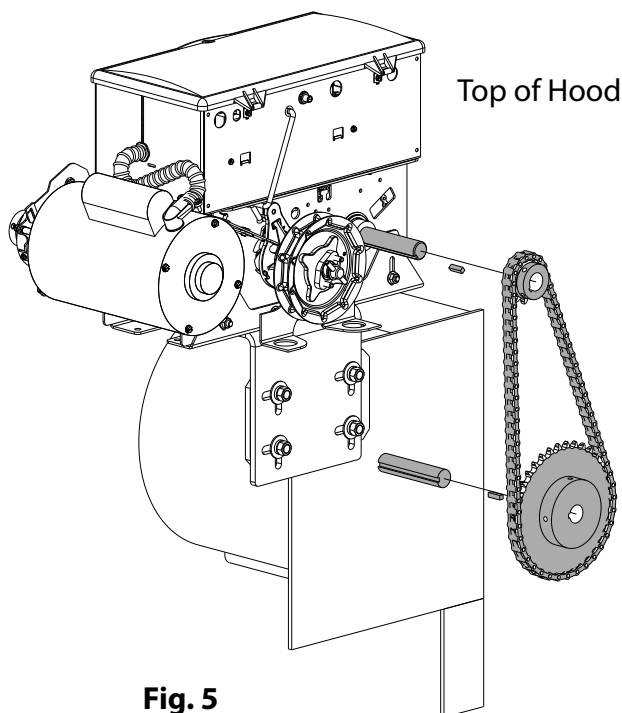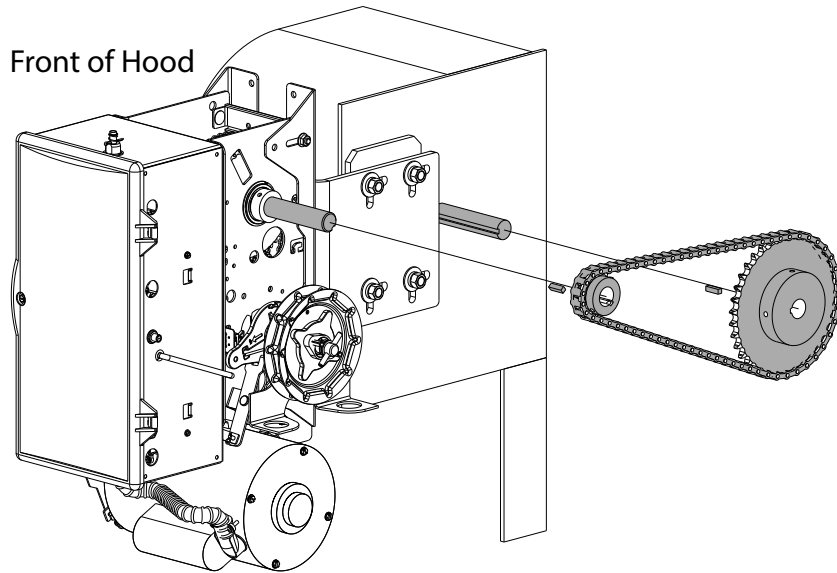
Fig. 5

Fig. 6

Section 4: Installation

Wall Mount

The Fire Door Operator can be purchased for right-hand or left-hand mounting for Wall Mount configuration. Right hand mounting shown. Left hand mounting is a mirror image.

1) Determine location for operator above or below door shaft.
2) Mark mounting holes on wall using template as a guide. Fig. 7
3) Install appropriate bolts or lag screws with washers to wall leaving a 1/2" gap to slide mounting brackets onto. (See chart)
4) Hang operator to wall on adjustable mounting holes/hardware. Fig. 8
5) Install door sprocket and key to door shaft, do not tighten.
6) Install operator sprocket and key to operator output shaft, do not tighten.
7) Align sprockets and install chain.
8) Adjust operator and align shafts. Operator and door shafts must be parallel for proper operation.
9) Adjust operator as needed and tighten mounting hardware.
10) Install appropriate bolts/lags into at least 2 lock down holes. Fig. 7
11) Apply locking compound to door and operator sprocket set screws and tighten.

JAMB	FASTENER	DRILL SIZE	JAMB FASTENER SPECIFICATIONS
Steel	1/2" self-tapping screw	27/64" diameter	Steel jambs must be minimum 3/8" thick
Concrete	1/2" expansion bolt	1/2" diameter	Drill hole at least 4" from jamb corner per OHD Installation Instruction 307390.0001.
Filled block	1/2" expansion bolt	1/2" diameter	Drill hole at least 4" from jamb corner per OHD Installation Instruction 307390.0001.
Wood	1/2" lag screw	3/8" diameter	Drill hole 3" deep
Unfilled block	1/2" thru bolt	9/16" diameter	Install 3" O.D. steel washer on opposite side of wall.

6" 8-5/8"

10"

Adjustable Mounting Holes

Lock Down Holes (4)

Right Hand

Fig. 7

Fig. 8
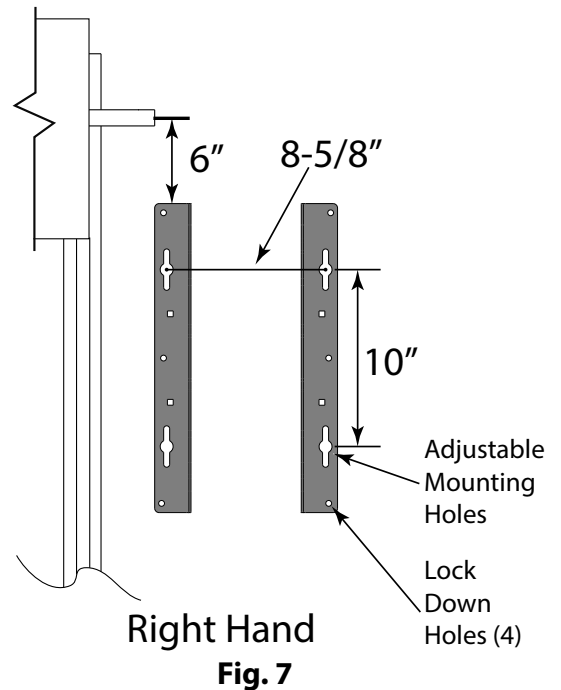
Section 4: Installation

Bench Mount

The Fire Door Operator can be purchased for right-hand or left-hand mounting for Bench Mount configuration. Right hand mounting shown. Left hand mounting is a mirror image.

1. Weld the door plate assembly (provided) to the door headplate, A minimum of two 1" weld beads are required on each side of the weld plate for proper attachment. See Fig 9 for proper placement.
2) Remove 8 nuts (4 each side) and exchange sides of the mounting brackets and reinstall with mounting pads inboard. Fig. 10
3) Attach operator to bench mounting bracket using the four 5/16"- 18 X 1-1/4" carriage bolts, hex nuts, and lock washers provided. Fig. 11

110010.001 Weld plate.
Weld to headplate min. (2) 1.4"
X 1" LG weld beads per side.
If weld plate extends beyond
headplate, weld back side of
weld plate to headplate.

"A"   3-3/4"
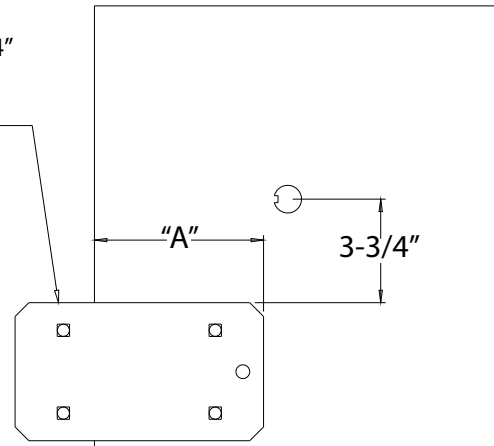
Headplate Size	"A" Dim.
14"	6-1/8"
16"	8-1/8"
18" +	9-1/4"

Fig. 9
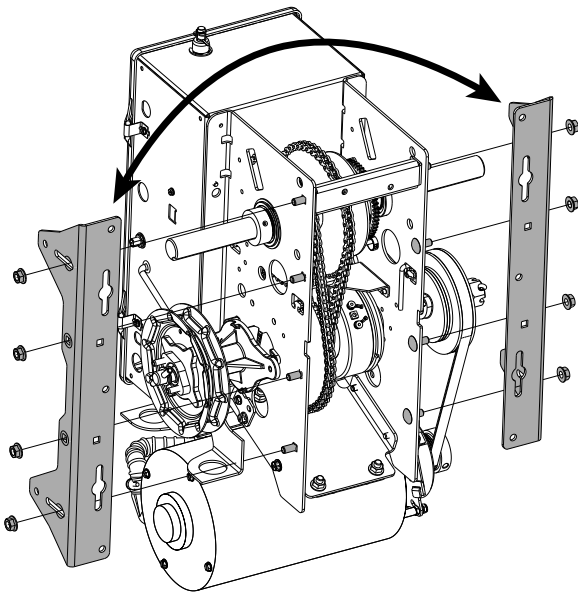
Fig. 10
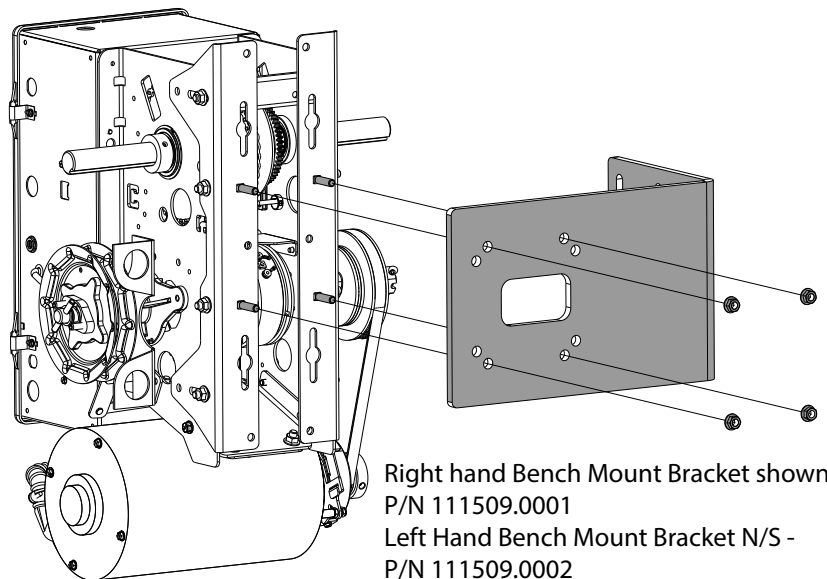
Right hand Bench Mount Bracket shown -
P/N 111509.0001
Left Hand Bench Mount Bracket N/S -
P/N 111509.0002

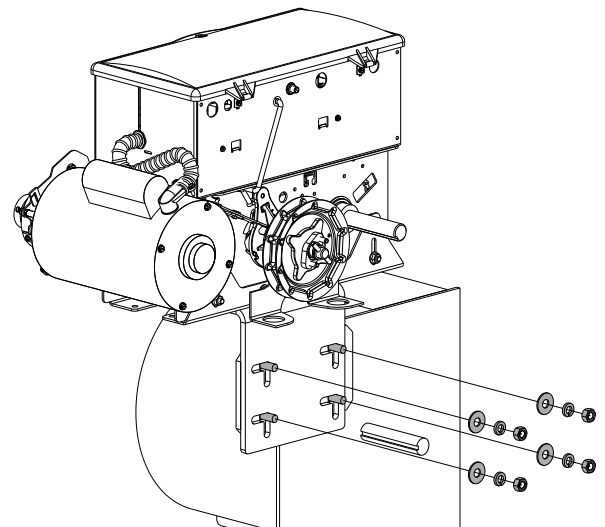**Fig. 11**

Section 4: Installation

Bench Mount (continued)

Attach Operator to Door:
4. Mount operator assembly to weld plate and install mounting hardware, do not tighten. Fig. 12
5. Attach 12 tooth sprocket and key to operator output shaft, do not tighten.
6. Attach door sprocket and key to door shaft, do not tighten.
7. Install chain onto sprockets.
8. Adjust operator to remove slack from chain. Be certain operator output shaft is parallel with door shaft.
9. Tighten operator mounting bracket nuts.
10. Apply locking compound to all sprocket setscrews and tighten.
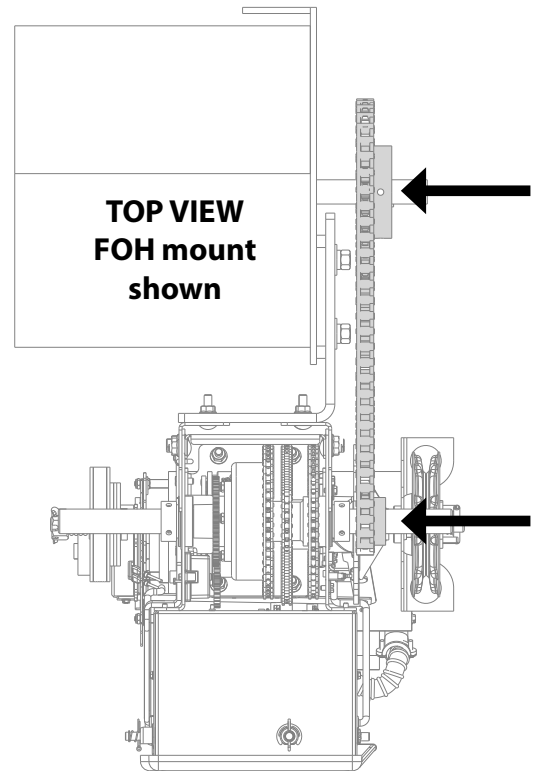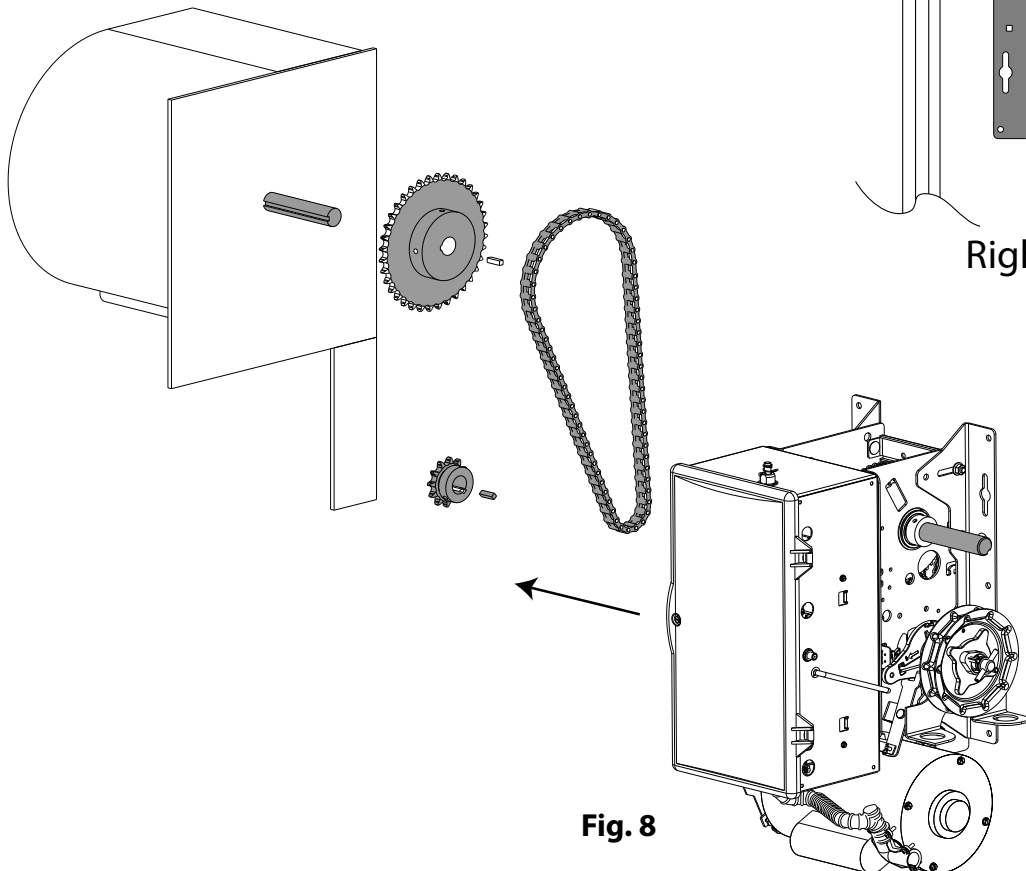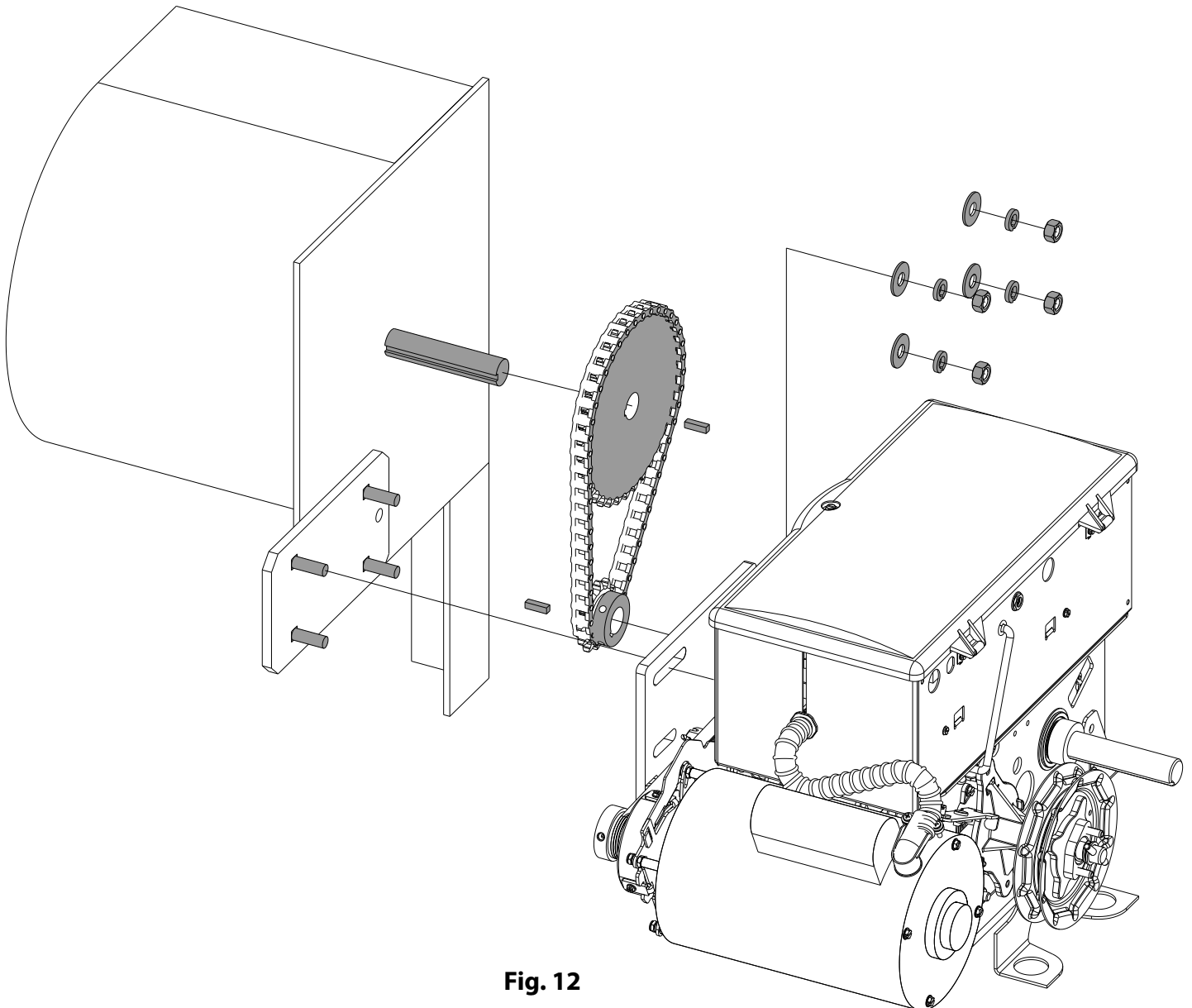
Fig. 12

Section 4: Installation
Front of Hood Horizontal Mount

The Fire Door Operator can be purchased for right-hand or left-hand mounting for Horizontal Front of Hood mounting. Right hand mounting shown. Left hand mounting is a mirror image.

1. Weld the door plate assembly (provided) to the door headplate, A minimum of two 1" weld beads are required on each side of the weld plate for proper attachment. See Fig 13 for proper placement.
2) Remove 8 nuts (4 each side) and exchange sides of the mounting brackets and reinstall with mounting pads inboard. Fig. 14
3. Attach operator to bench mounting bracket using the four 5/16"- 18 X 1-1/4" carriage bolts, hex nuts, and lock washers provided. Fig. 15
4. Attach front of hood bracket to bench mount bracket using hardware provided. Fig. 15

Fig. 14

Headplate Detail
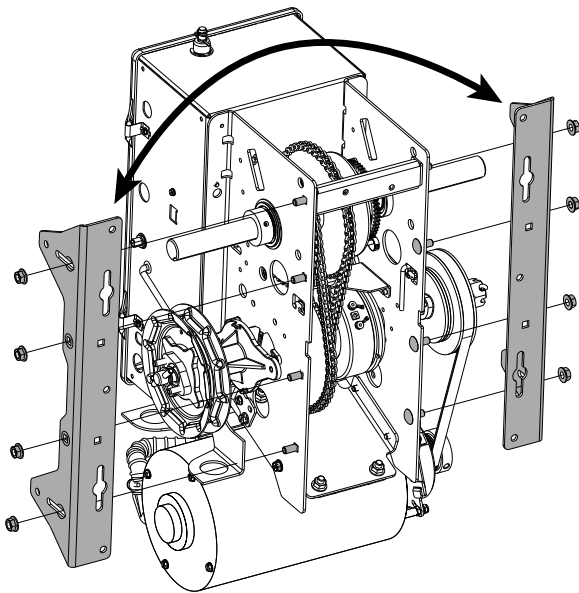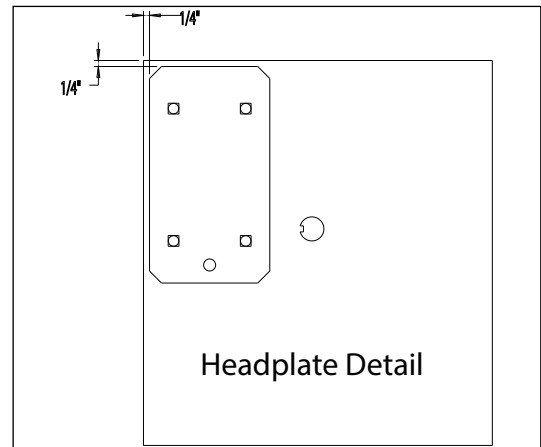
Fig. 13
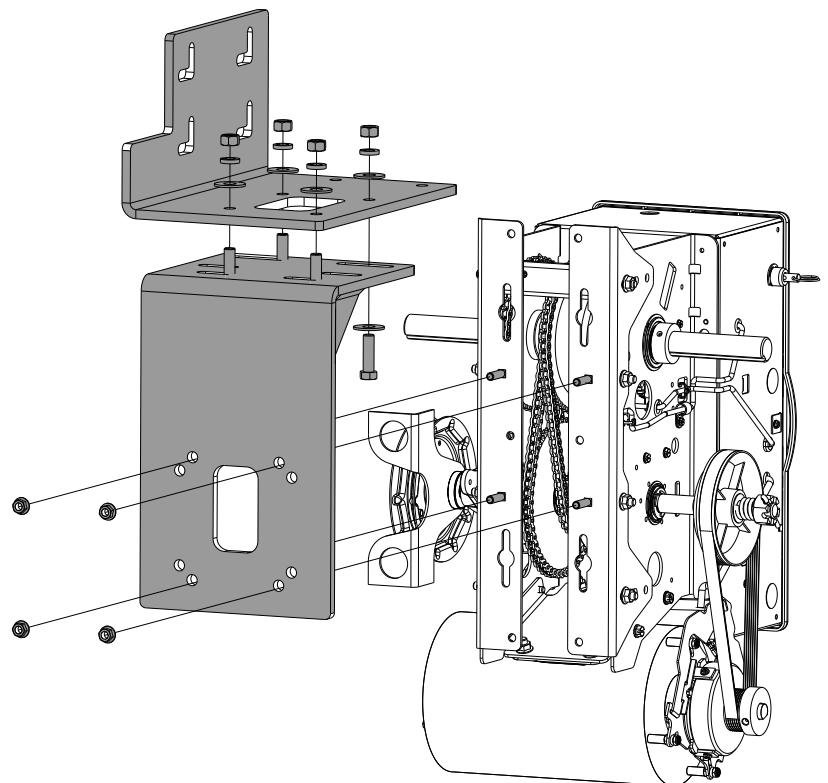
Fig. 15

Section 4: Installation
Front of Hood Horizontal Mount (continued)

Attach Operator to Door:

5. Mount operator assembly to weld plate and install mounting hardware, do not tighten. Fig. 16
6. Attach 12 tooth sprocket and key to operator output shaft, do not tighten.
7. Attach door sprocket and key to door shaft, do not tighten.
8. Install chain onto sprockets.
9. Adjust operator to remove slack from chain. Be certain operator output shaft is parallel with door shaft.
10. Tighten operator mounting bracket nuts.
11. Apply locking compound to all sprocket setscrews and tighten.
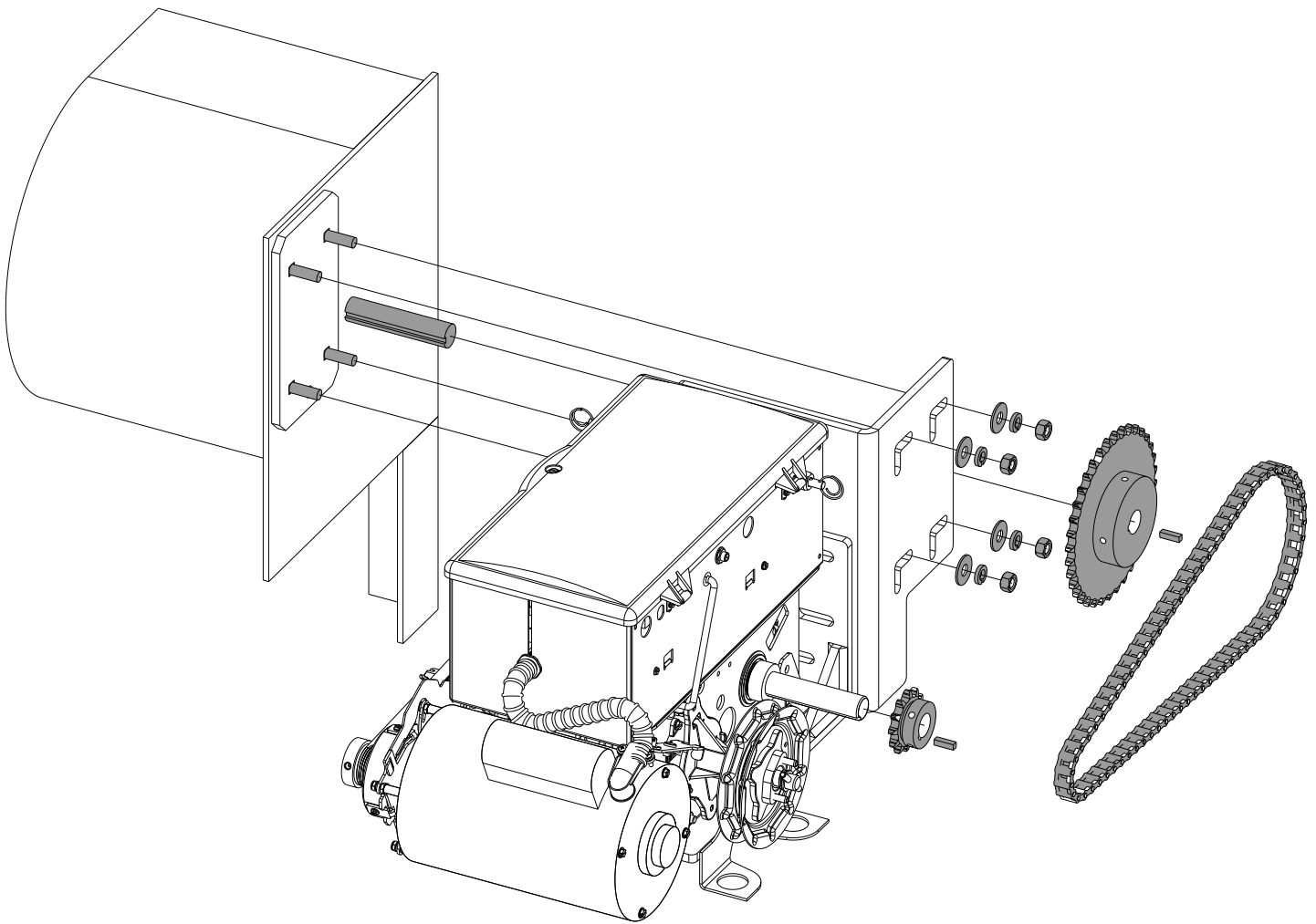
Fig. 16

Section 4: Installation

Hand Chain and Keeper

1) Route the hand chain through the chain guide, around the pocket wheel and back through the chain guide. Fig. 17
2) Connect the hand chain ends together as shown in Fig 18 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. 19. 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. 20
   - With operator installed motor UP, attach hoist cable to cam arm hole closest to electric box. Fig. 20

NOTE: *To insure smooth operation, make sure there is no twist in the hand chain before connecting the link ends together.*
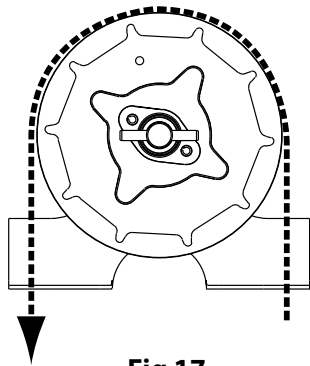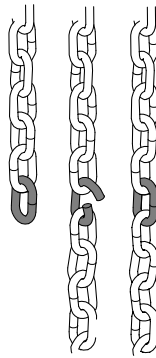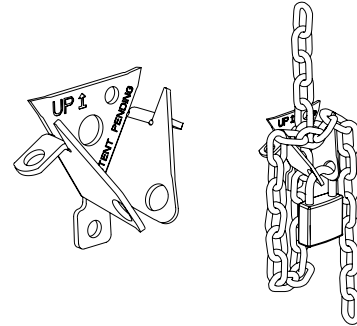
Fig 17   **Fig 18**   **Fig 19**
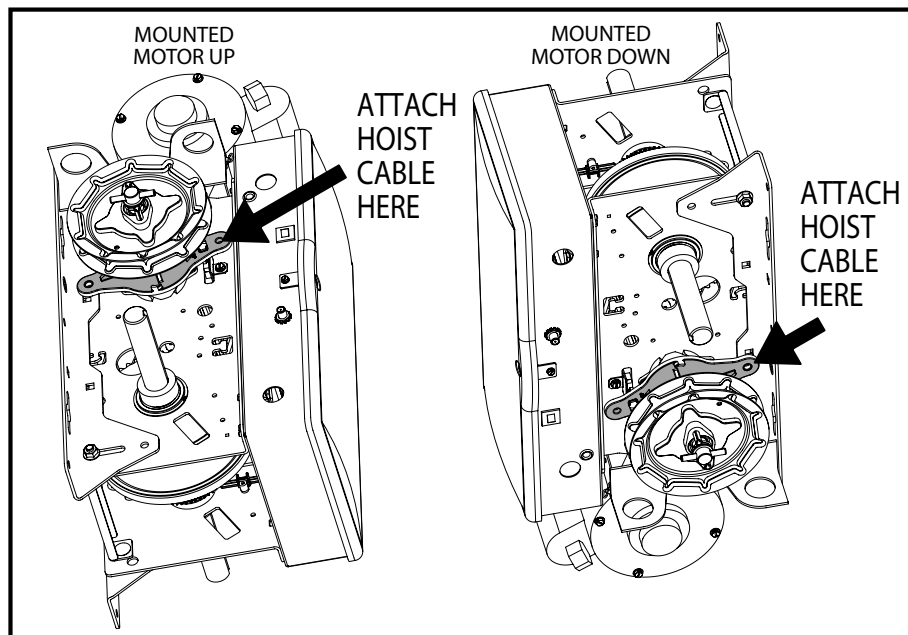
Fig 20

Section 4: Installation

Fusible Link Switch

The Fire Door Operator provides a connection for the Fusible Link. If tension is lost from chain, operator will release its clutch and door will drop.

1) Move Fusible Link Switch from top of Electric Box to Side if necessary depending on installation of operator direction or side. Fig. 21-22
2) Remove E-Ring to remove switch assembly.
3) Remove plug and insert into hole where fuse link switch was removed.
4) Install fuse link switch assembly into desired connection point and install E-Ring.
5) Follow all recommendations for release chain installation per NFPA 80. Note direction of pull on switch. Fig. 23
6) Remove fuse link switch pin to tension chain. Ensure switch holds tension on chain and does not contact internal switch. Fig. 23

NOTE: *If operator and headplate sway during door operation, bracing is necessary. Using structural angle, diagonally brace from operator mounting bracket or from front portion of headplate back to wall.*

E-Ring

Fuse Link Switch Pin

Fuse Link Switch Assembly

Plug
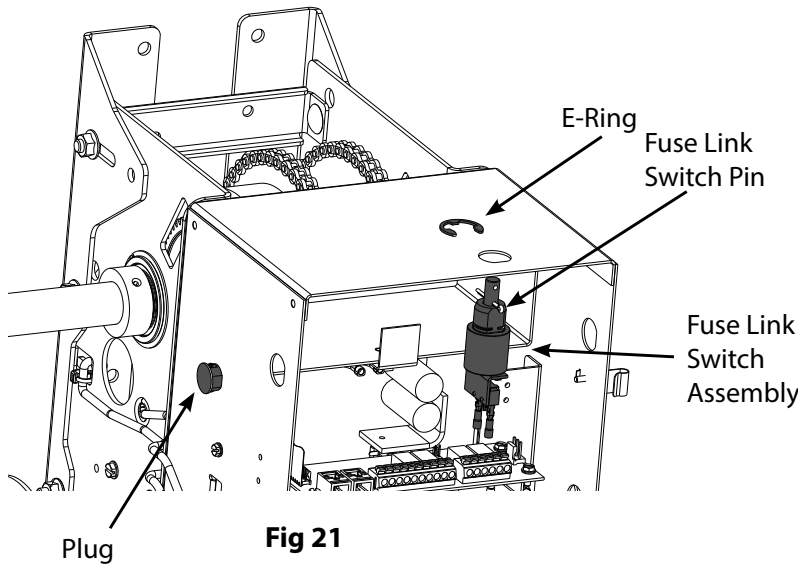
Fig 21

Tensional Direction

Switch Mount Either Side

Fig 22

Wall Mount Bracket

FIG. 3

Turnbuckle

Sash Chain Example

Fusible Link

Remove Pin
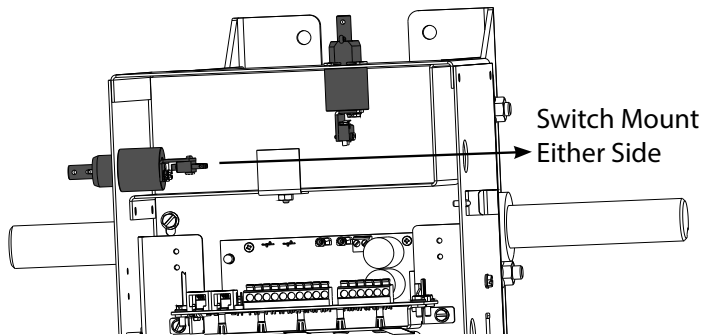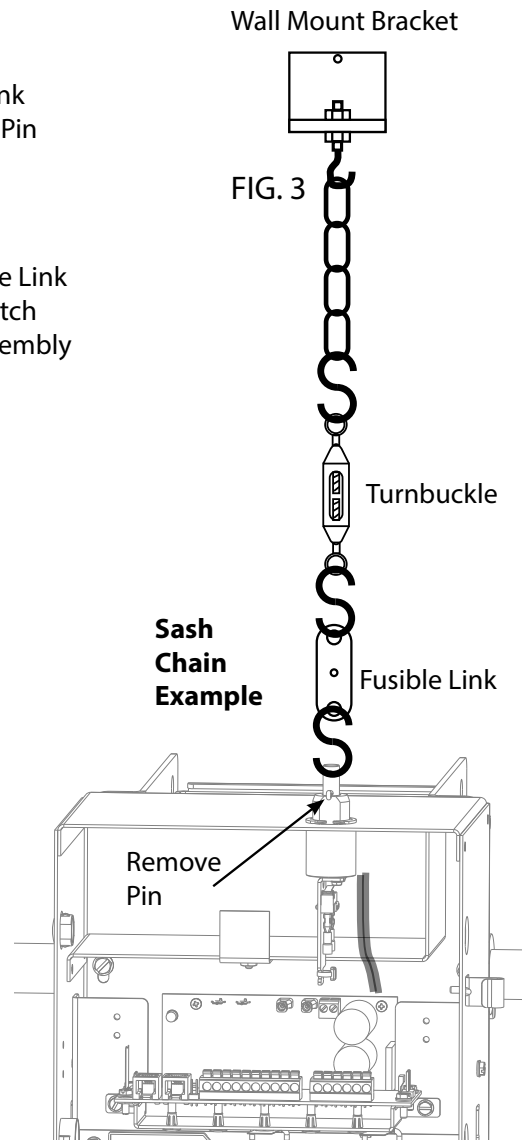
Fig 23

Section 4: Installation

Clutch Adjustment

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: Fig, 24

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.*
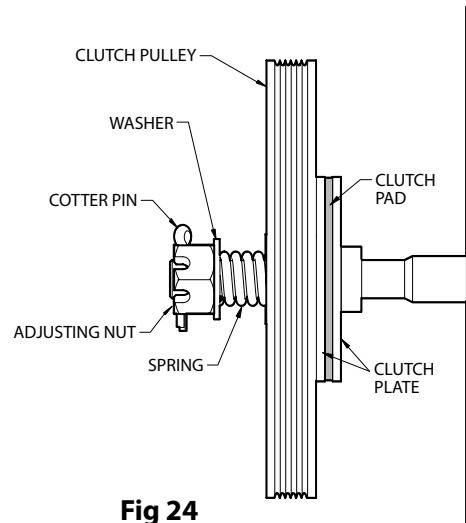
Fig 24

Optional Auxiliary Board (AOM or TCM)

Only one auxiliary board can be used with this opener.

1) Unplug FDO module ribbon harness from main control board plug connector. Fig. 25
2) Remove the two screws mounting the FDO module to plate.
3) Use the two screws included with the auxiliary board and mount to plate where FDO module was.
4) Plug auxiliary board ribbon harness into plug connector on main control board.
5) Reinstall FDO module onto plate just above the auxiliary board.
6) Plug FDO module ribbon harness into connector on auxiliary board.

NOTE: *Additional menu items will appear during programming. See the instructions included with the Auxiliary board to see changes.*

FDO Module

Ribbon Harness Plug

AUX Board
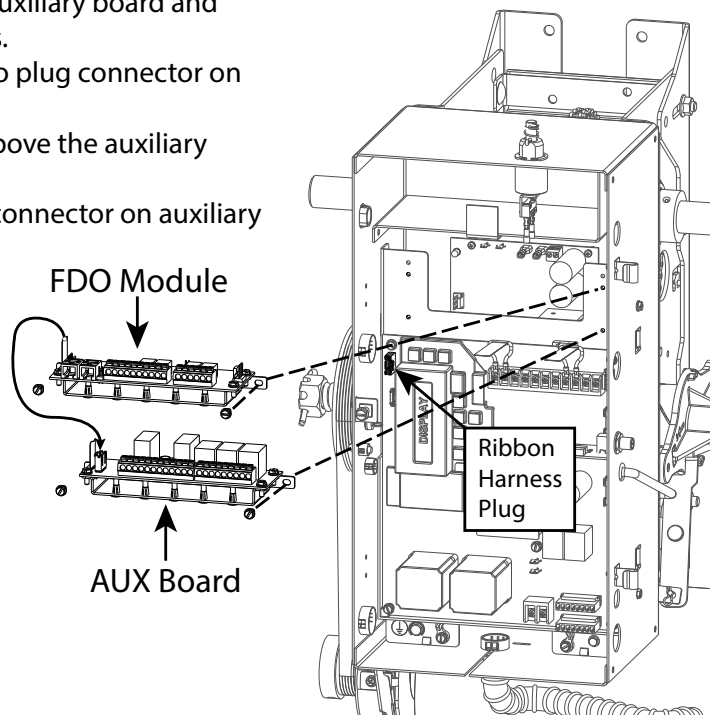
Fig 25

Section 5: Wiring

⚠ WARNING

- DO NOT apply power to operator until instructed to do so.
- It is strongly recommended, and may be required by law in some areas, 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.

⚠ AVERTISSEMENT

- NE PAS mettre sous tension tant que l'instruction n'est pas donnée de le faire.
- Il est fortement recommandé voire même exigé par la loi dans certaines régions, de contacter un électricien qualifié pour l'acheminement du fil électrique.
- Assurez-vous que l'alimentation électrique a été déconnectée des câbles d'alimentation d'entrée connectés à l'opérateur avant de manipuler ces câbles. Une procédure de verrouillage/étiquetage appropriée est recommandée.
- Le câblage au secteur doit satisfaire à tous les codes de construction locaux.
- Assurez-vous que les valeurs nominales de la plaque signalétique pour tension, phase et fréquence de l'opérateur correspondent à celles des tensions de l'alimentation sur site.
- La capacité d'entrée doit correspondre à la valeur nominale de l'ampérage des opérateurs indiquée sur la plaque signalétique.
- Pour réduire le risque de choc électrique, assurez-vous que le châssis de l'unité est correctement mis à la terre.

Installation of all wiring and connections, including Power Limited Class 1 and Class 2 circuits, shall be performed in accordance with, but not limited to, the latest NFPA, UL, and N.E.C. standards and codes.
In addition, all installations subject to Canadian standards shall be performed in accordance with the Canadian Electrical Code, Part 1, with respect to wiring material type, wiring gauge related to power capacity requirements, circuit length and wiring methods.

Section 5: Wiring

External Wire Diagram

External Radio connections are Non-Power-Limited. All connections are to be made within 20ft. (6.1M), enclosed in conduit and in the same room.

Special Application External Radio Terminal 0-40 VDC 250mA. Max Current

Yellow
Orange
Blue

EXT RADIO CONNECTOR PIGTAIL

GND
RELAY
NOM
+ 24VDC

RADIO

EXT INTLK
EXT INTLK
REMOVE JUMPER WHEN INSTALLING EXTERNAL INTERLOCK

EXT INTLK connections are Non-Powered-Limited. All connections are to be made within 20 ft. (6.1M) and enclosed in conduit and in the same room.

MONITORED SENSING EDGE

INTERFACE MODULE (OPAKMEIX.S)

N-O REVERSE
N-O REVERSE
ODC STB
ODC STB
1-BTN
GND
STOP
CLOSE
OPEN
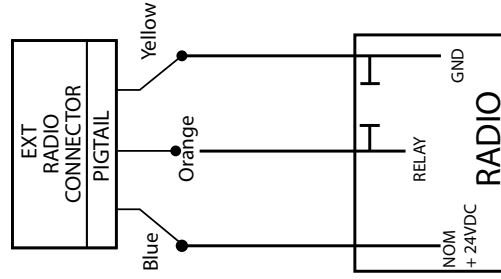
CONTROL SIGNAL TERMINAL STRIP
Power-Limited Class 2 Supply 0-40VDC

1-BTN STATION N/O
KEY SWITCH STATION N/O
CARD READER N/O
O/C PULL SWITCH N/O

REMOVE JUMPER IF STOP BUTTON IS USED

MULTIPLE 3-BUTTON STATION INSTALLATIONS REQUIRE THE STOP BUTTON TO BE WIRED IN SERIES

OPEN
CLOSE
STOP

3-BUTTON STATION
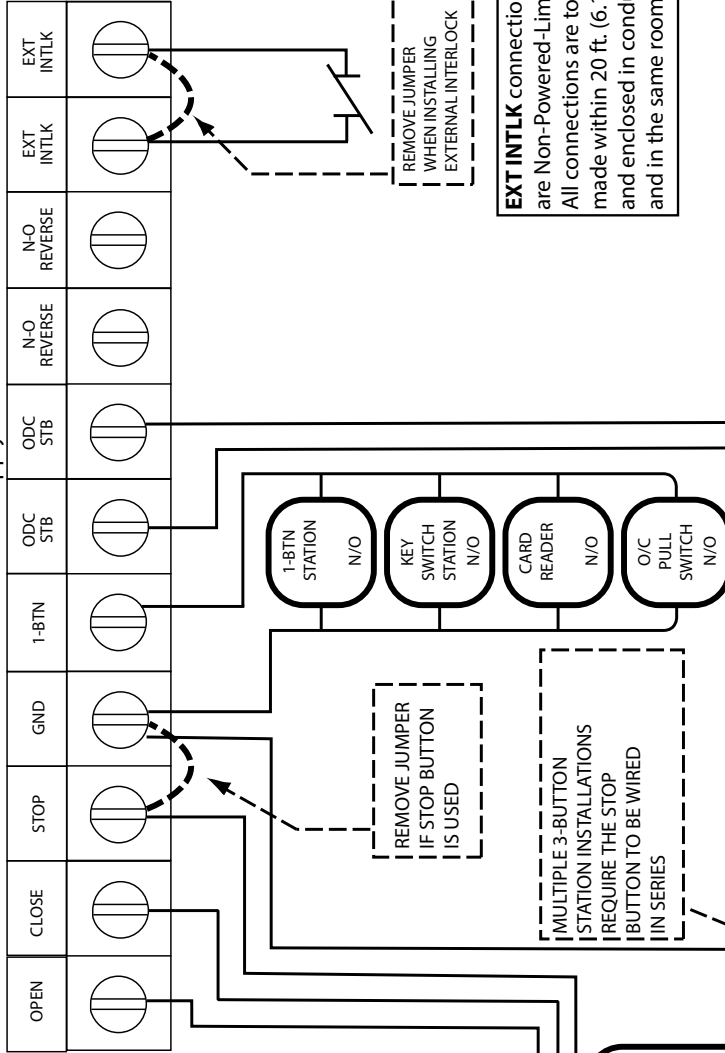
OPEN, CLOSE, STOP and 1-BTN terminals are 40VDC, 20mA MAX. ODC STB Terminals are 40VDC, 150mA MAX. N/O Reverse Terminals are 40VDC, 10mA MAX. EXT INTLK Terminals are 40VDC, 2.5mA MAX.

LINE IN POWER CONNECTIONS

GND
L1/ [1] N/ [2]
LINE (HOT)
NEUTRAL
LINE 2
120V
208/230V
LINE 1

SINGLE PHASE

Chassis
L1/ [1] L2/ [2] L3/ [3]
(HOT) (HOT) (HOT)
GND

3 PHASE

208/230
460
575

5.2
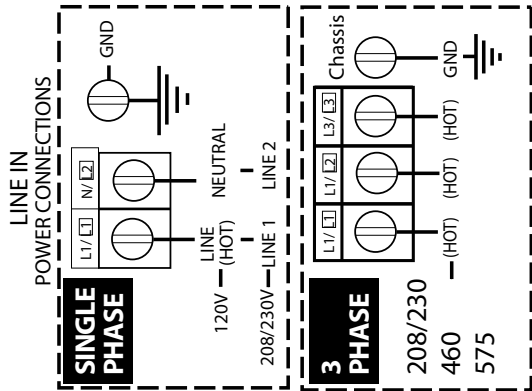
Section 5: Wiring

Line Voltage Wiring

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.

1 Phase
LINE IN
POWER CONNECTIONS

L1/L1   N/L2

115V — LINE (HOT)   NEUTRAL
208V / 230V — LINE 1   LINE 2

GND

3 Phase
LINE IN
POWER CONNECTIONS

L1   L2   L3

LINE 1   LINE 2   LINE 3

GND
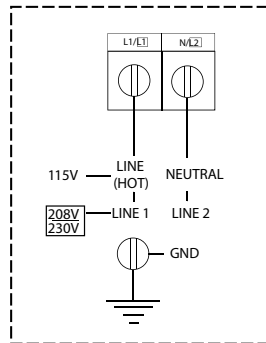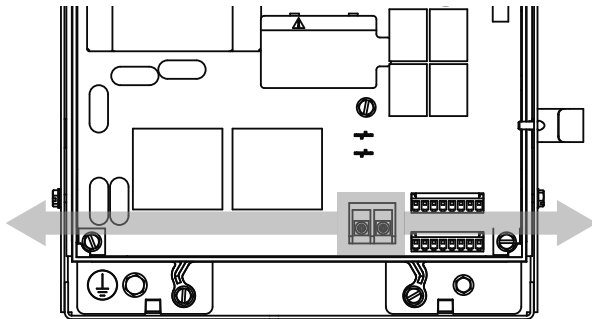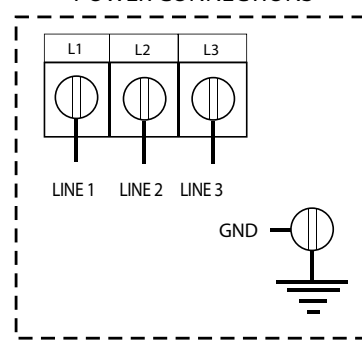
1 Phase Line Voltage Wiring
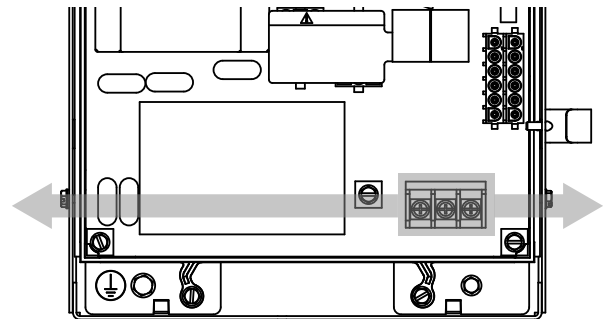
3 Phase Line Voltage Wiring

Route Line Voltage wires in shaded areas

Section 5: Wiring

Low Voltage Control Wiring

1) Connect all LOW VOLTAGE control circuit wires 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 safety circuit wiring.
   - Route FDO Control Board wires through opposite side of unit.
   - Plug all unused conduit holes.

Route Low Voltage Control & FDO Board wires in shaded areas. Keep FDO Board and Control Wires separated.

FDO BOARD

Fire Door Module Non-Power limited Circuit Wiring

Low Voltage Power Limited Circuit Wiring
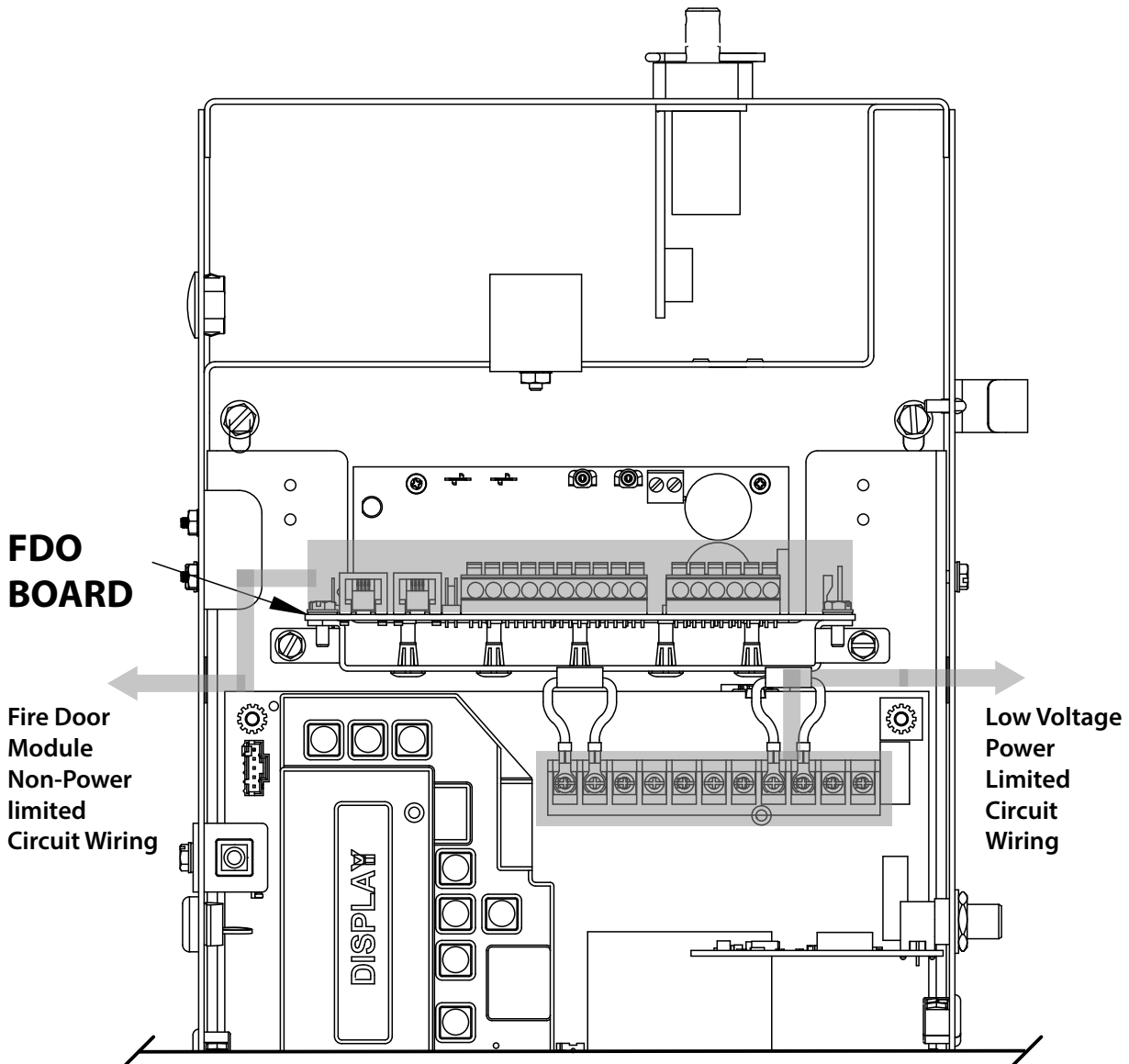
Section 5: Wiring

Wall Controls

> ⚠ **WARNING:**
> - Wall Control(s) must be located so that the door is within sight of the user and is far enough from the door, or positioned such that the user is prevented from coming in contact with the door while operating controls.
> - Attach the Warning placard adjacent to the Wall Control. Fig. 4
>
> ⚠ **AVERTISSEMENT:**
> - La ou les commandes murales doivent être situées de telle sorte que l'utilisateur puisse voir la porte et positionnées de telle sorte que l'utilisateur ne puisse pas entrer en contact avec la porte lorsqu'il se sert des commandes.
> - Fixez le poster d'avertissement à côté de la commande murale. Fig. 4

> ⚠ **WARNING:**
> Before momentary contact control can be used on the CLOSE button, a monitored external reversing device such as a sensing edge switch must be used. See pages 5.7-5.8 for installation of entrapment protection devices.
>
> ⚠ **AVERTISSEMENT:**
> Avant d'utiliser la commande à contact momentané sur le bouton FERMETURE, un dispositif d'inversion externe surveillée tel qu'un système de un commutateur de détection de bord doit être utilisé. Voir l'installation des dispositifs de protection contre le coincement en pages 5.7-5.8.

> ⚠ **WARNING:**
> Single button input will reverse the door to the up limit. A timer will resume downward travel if set. Use of an emergency stop button is strongly recommended for single button input applications.
>
> ⚠ **AVERTISSEMENT:**
> Une entrée à bouton unique inversera la porte vers la limite supérieure. Une minuterie reprendra le parcours vers le bas, si réglé. L'utilisation d'un bouton d'arrêt d'urgence est fortement recommandée pour les applications d'entrée à bouton unique.

1) For a single 3 - button installation, make connections as shown in Fig. 1.
2) For single button accessory controls, make connections as shown in Fig. 2.
3) For a multiple 3 - button installations, make connections as shown in Fig. 3.
4) Install WARNING placard next to control station. Fig. 4
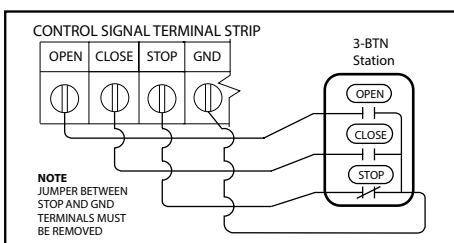
Fig. 1
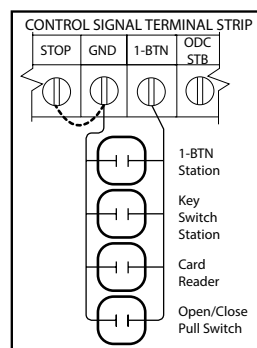
Fig. 2
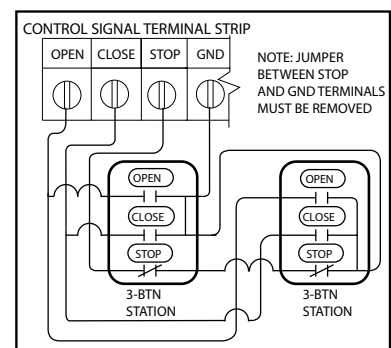
Fig. 3

Fig. 4

Entrapment Warning Placard

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: *Low voltage wiring can be run a maximum of 1000 feet. DO NOT use long distance wiring kits on this operator.*

Section 5: Wiring
Interlock Switches

1) Optional external interlock switches are required with some 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. Fig. 5

CONTROL SIGNAL TERMINAL STRIP

| ODC STB | ODC STB | N-O REVERSE | N-O REVERSE | EXT INTLK | EXT INTLK |

* REMOVE JUMPER WHEN INSTALLING EXTERNAL INTERLOCK

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

Switches must be set in the field.

A

Side lock interlock:
   Should be open when door is locked.
   Closed when door is unlocked.

SWITCH (N.C.)

TRACK

STANDARD SLIDELOCK

Fig. 5

Section 5: Wiring
Monitored Sensing Edge Installation

MillerEdge® Wired Monitored Sensing Edge

Right hand installation shown, Left hand installation mirrored

1) Mount junction box to wall One half the door height plus 12 inches from floor.
2) Install Hard-wiring from operator and coil cord to junction box and secure with conduit clamps.
3) Connect hard-wiring from operator to coil cord with wire nuts and install junction box cover plate. These are not polarity sensitive.
4) Install hard-wires to *ODC STB* terminals in operator.
5) Attach coil cord to Monitored Edge Interface Module junction box and secure with conduit clamps.
6) Install wires to Monitored Interface Module as shown.
7) Install cover plate. Fig. 6

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

⚠ AVERTISSEMENT:
L'activation de l'opérateur avec un contact constant sur le bouton FERMER annulera les dispositifs de renversement externes non fonctionnels, y compris les systèmes de détection des bords.

NOTE: *DO NOT use take up reels with Monitored Edge systems*

Fig. 6

5.7
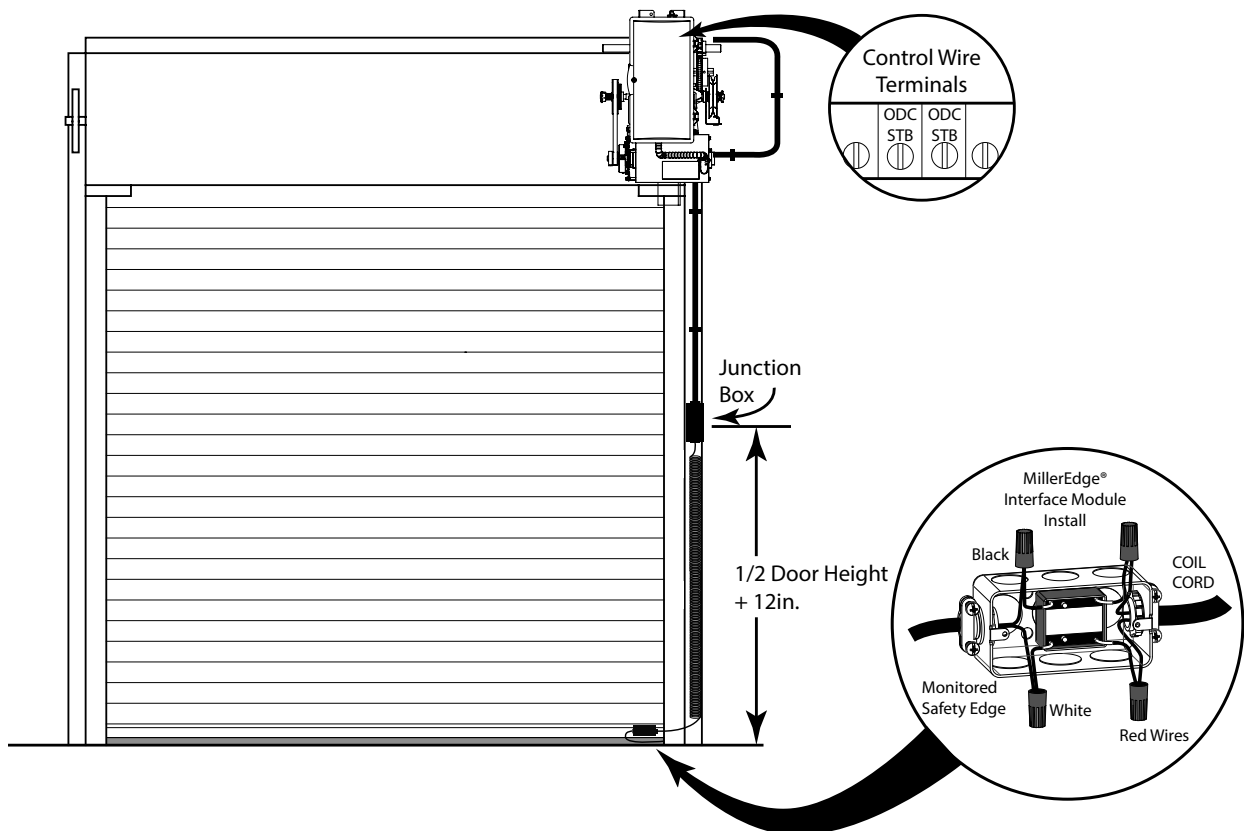
Section 5: Wiring
Wireless Monitored Safety Edge Systems

MillerEdge® MEL Wireless Monitored Sensing Edge

Right hand installation shown, Left hand installation mirrored

1) Mount Wireless Edge Receiver adjacent to operator. Fig. 7
2) Route MEL wireless receiver wires into operator electric box using suitable conduit and clamp systems.
3) Attach MEL wireless receiver power wires (red/black) to external radio plug as shown.
4) Attach MEL wireless receiver trip wires (green/white) to ODC STB terminals* on control wire terminal strip.
5) Mount MEL wireless transmitter to bottom edge of door per MEL instructions.

NOTE: *To obtain proper operation of MEL edge sensor, each transmitter/receiver set must be set to a unique address. Follow instructions provided with the MillerEdge® MEL kit to set the address.*

Control Wire Terminals

ODC STB	ODC STB

White
Green

MEL Receiver

MEL RECEIVER

External Radio Harness

Yellow
Black
Orange
Blue
Red

MEL POWER CONNECTION

MEL Transmitter
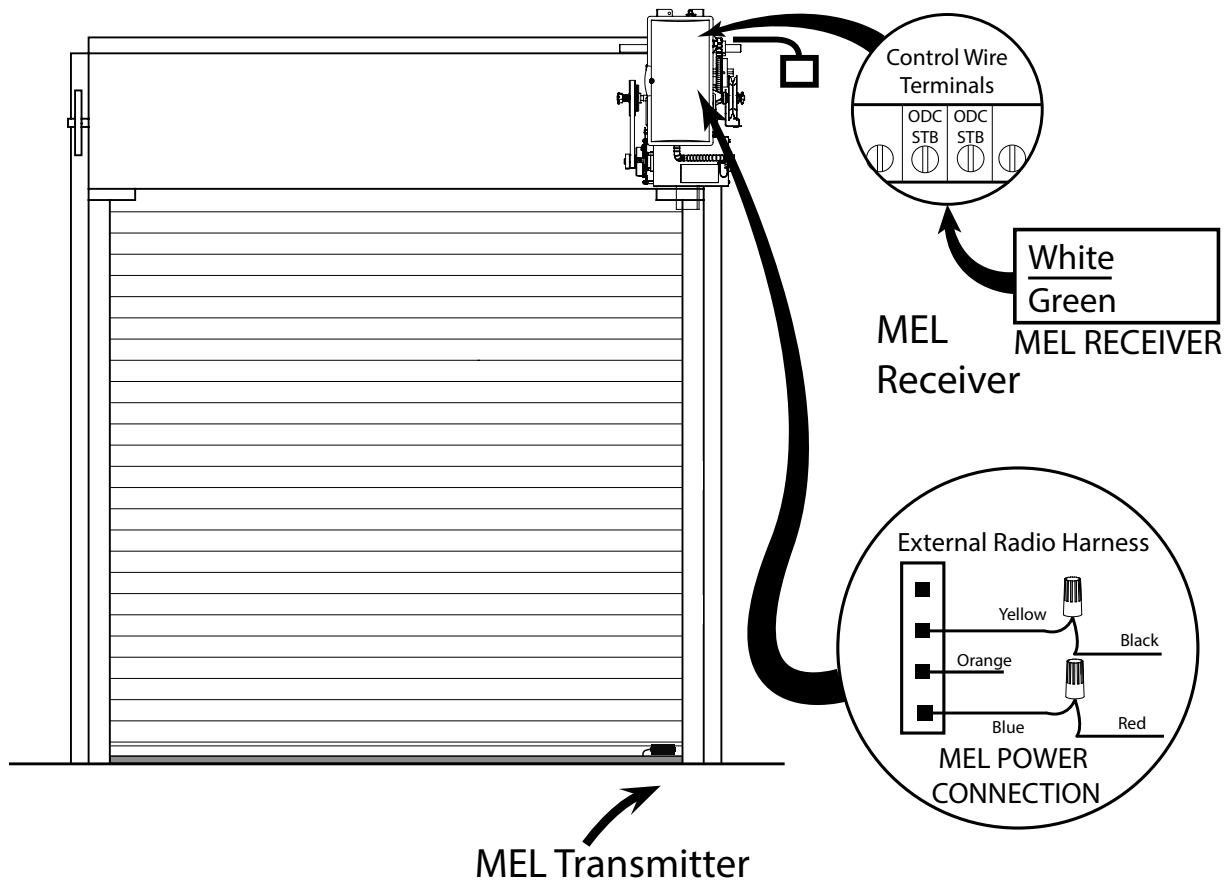
Fig. 7

Section 5: Wiring
External Radio Installation

Although the Fire Door Operator is equipped with an internal radio, external universal connection can also be used.

1) Make wire connections to External Radio Plug (provided) as shown.
2) Install plug to external radio harness plug on control board as shown.
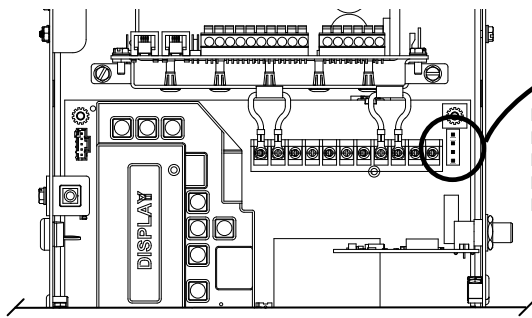
Non-Power Limited External Radio Harness Plug

Special Application
External Radio Terminal
0-40 VDC
250mA. Max Current

External Radio Harness

Blue   Yellow
   Orange

Relay   GND

NOM
+24 VDC

3 Wire Radio
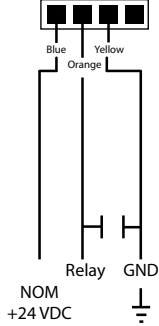
NOTE: *For OPEN/CLOSE/STOP remote control, Use of the on-board radio is recommended with P/N OCDFX-5 OPEN/CLOSE/STOP Transmitter(s)*

External Radio connections are Non-Power-Limited. All connections are to be made within 20ft. (6.1M), enclosed in conduit and in the same room.

FDO Board

Clutch & Fuse Link Switch Harness

Main Control board Ribbon Harness

CAN-BUS Communication Cable to UVDM board

Power Harness to Power Supply Board
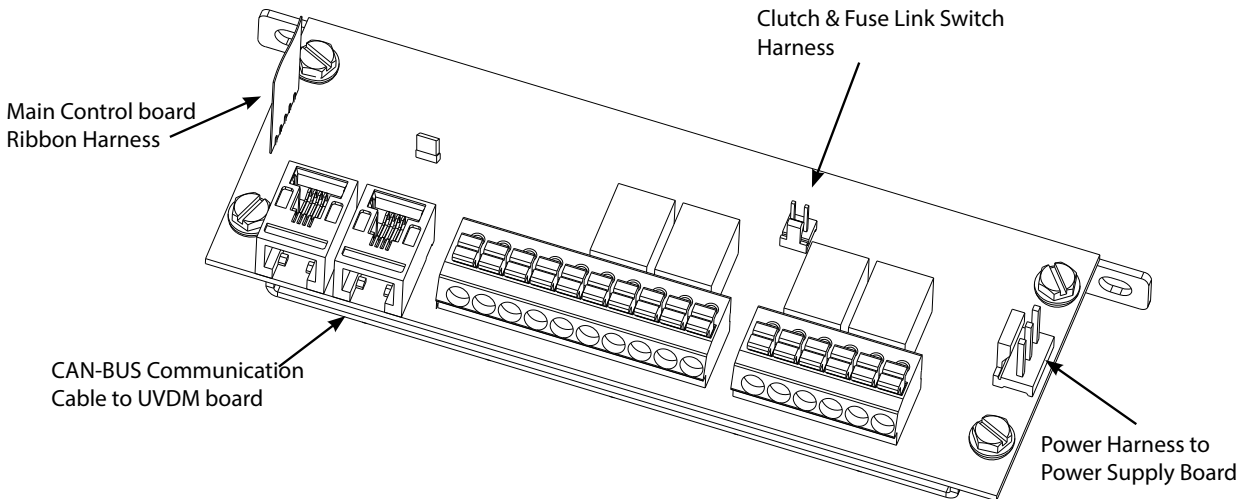
FDO Module Control Board:
The FDO control board is the heart of the FDO operator. All external connections to smoke detectors, heat detectors, Test & Reset switch, and signaling devices (Notification Appliance) will be wired to and/or controlled by this board.
See page 9.8 for function and troubleshooting LED locations.

Field and System Wiring shall consist of 22-18AWG wiring. Use only 350VAC, 125VDC, 2Amp, 2AG Fast Acting fuses. All FDO board circuits are non-power-limited. All End-of-line devices must be installed adjacent to the last initiating device.

FDO Board Wiring

System Wiring Notes

- Terminals 3-6. 75 ohm maximum line impedance.
- Terminals 7-9, 10-12 are form C dry contacts, common relays, 2A @ 28VDC resistive load.
- Terminals 13 and 14, Regulated 24VDC, 160mA MAX, two (2) Class B Style W notification appliances **20 ohm** maximum line impedance. End-of-line resistor required. Place end-of-line resistor at positions 13 and 14 if appliances are not used.
- Terminals 15 and 16 are special application initiating device power.
- Terminals 15-18, two (2) Class B Style A four-wire initiating devices maximum @0.075A / 28.6VDC maximum. End-of-line relay required as above.
- Terminals 17 and 18, four (4) Class B Style A detectors maximum. 28.8VDC @50mA maximum. 35 Ohm maximum line impedance. End-of-line resistor required.
- End-of-line relay 112325.0001.S shall be installed with four-wire initiating devices. Do not loop wire under terminals for connections.
- All wiring connections are to be made within 20 feet (6.1m), enclosed in conduit and in the same room.
- Replace batteries every two years.

NOTE: *FDO Board connections are Non-Power-Limited. All connections are to be made within 20ft. (6.1M), enclosed in conduit and in the same room.*

Fire Alarm Control Panel

N/O
Relay
Control
Module
COM
* EOLR

—OR—

TWO-WIRE
INITIATING DEVICE
EOLR

—OR—

FOUR-WIRE
INITIATING DEVICE
*EOLR
End-of-Line Relay

FDO Board

Ribbon

Alarm Relay
N/O N/C Com

Trouble Relay
N/O N/C Com

REMOTE TEST
RESET STATION
RED GREEN WHITE BLACK
NORMAL TROUBLE TEST RESET

FIRE
SOUNDER/STROBE
(NOTIFICATION APPLIANCE)
* EOLR

* 112228.0001 End-of-Line Resistor
Use 112249.0001 End-of-Line resistor with Plate for Canadian installations

* = End-of-Line Resistor (EOLR)

Section 5: Wiring

Initiation Device Wiring

> ### ⚠ WARNING:
> To reduce the risk of serious injury or death and prevent damage to the unit, all field connections must be made with power disconnected to all components.
>
> ### ⚠ AVERTISSEMENT:
> Pour réduire le risque de blessures graves voire mortelles et ne pas endommager l'unité, toutes les connexions sur site doivent être effectuées avec les sources d'alimentation aux composants déconnectées.

- When installing smoke detectors with this unit, refer to NFPA 72 and NFPA 80 and any other applicable codes or regulations for instructions concerning proper placement and detection coverage.
- End of line devices shall be installed for electrical supervision of smoke detectors and notification appliances.

NOTE: *DO NOT interface this unit to 4-wire smoke detectors if electrical supervision is not provided!*

NOTE: *All wiring connections are to be made within 20 feet (6.1m), enclosed in conduit and in the same room.*

Normally Open 2-Wire Initiating Devices

1. Remove End-of-Line resistor (112228.0001) from the Fire Door Module terminal block, positions 17 & 18.
2. Connect wiring from N/O smoke loop Fire Door Module terminal block, positions 17 & 18.
3. End-of-Line resistor shall be connected at the end-of-line detector as shown. Fig 8

112228.0001 End-of-Line Resistor
Use 112249.0001 End-of-Line Resistor with Plate for Canadian installations
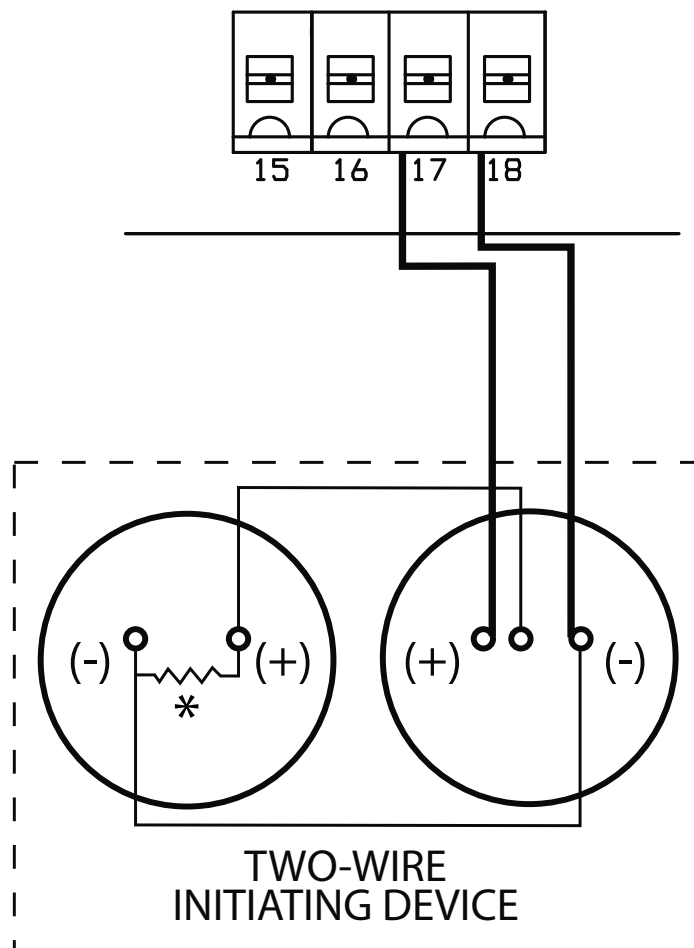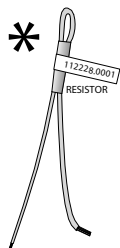
Fig. 8

Section 5: Wiring

Initiation Device Wiring

Normally Open 4-Wire Initiating Devices

> ### ⚠ WARNING:
> To reduce the risk of serious injury or death and prevent damage to the unit, all field connections must be made with power disconnected to all components.
>
> ### ⚠ AVERTISSEMENT:
> Pour réduire le risque de blessures graves voire mortelles et ne pas endommager l'unité, toutes les connexions sur site doivent être effectuées avec les sources d'alimentation aux composants déconnectées.

1. Connect wiring from N/O smoke loop to Fire Door Module terminal block positions 17 & 18, making sure end of line resistor (112228.0001) is installed as indicated. Fig. 9
2. Auxiliary power (+24VDC) for smoke detectors may be obtained from Fire Door Module terminal block positions 15 & 16. Observe proper polarity — 15 (–), 16 (+).
3. 4 detector maximum.
4. Electrical power supervision in the form of an end-of-line device (NE-EOLR -1) shall be provided on all 4-wire smoke detectors. See information and specifications from detector manufacturer.

NOTE: *All wiring connections are to be made within 20 feet (6.1m), enclosed in conduit and in the same room.*

NOTE: *Fire Door Module initiating device loops cannot be directly series or parallel connected between release devices or shared with other alarm equipment. Incorrect wiring from unit to unit may cause damage to Fire Door Operator.*

112228.0001 End-of-Line Resistor
Use 112249.0001 End-of-Line Resistor with Plate for Canadian installations
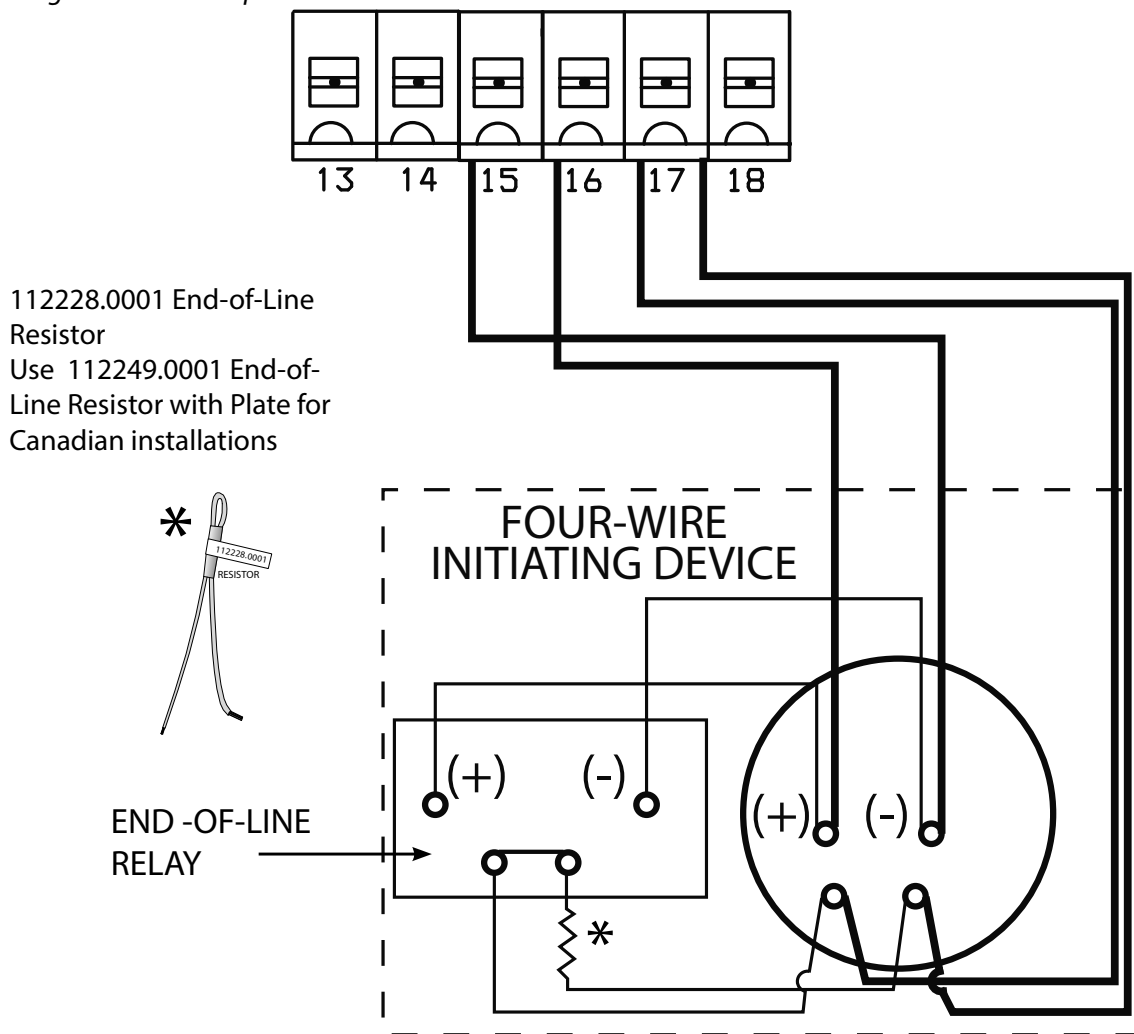
Fig. 9

Section 5: Wiring

> **⚠ WARNING:**
> To reduce the risk of serious injury or death and prevent damage to the unit, all field connections must be made with power disconnected to all components.
>
> **⚠ AVERTISSEMENT:**
> Pour réduire le risque de blessures graves voire mortelles et ne pas endommager l'unité, toutes les connexions sur site doivent être effectuées avec les sources d'alimentation aux composants déconnectées.

Notification Appliance Wiring. Fig. 10

- (+24VDC output), connect notification appliance (optional) observing polarity to Fire Door Module terminal block positions 13 (+) and 14 (–).
- Install resistor as illustrated.
- DO NOT connect a speaker to this output.

Remote Test and Trouble Plate: Fig. 11

The Remote Test and Trouble Plate provides convenient test and trouble silencing capabilities. The Trouble Silence function allows a user to temporarily silence the Trouble Sounder with a keyed function. The plate includes an LED Trouble Indicator, which illuminates indicating the trouble still exists. If the trouble condition is not corrected after a predetermined time period, the manual intervention for trouble sounder will start again and a reset is required.

- Connect wiring from remote test plate to the Fire Door Module terminal positions 3, 4, 5 and 6.

13   14   15

307885.0001

F
I
R
E

(-)
*
(+)

SOUNDER/STROBE
(NOTIFICATION APPLIANCE)

112228.0001 End-of-Line Resistor
Use 112249.0001 End-of-Line Resistor with Plate for Canadian installations

*
112228.0001
RESISTOR

Fig. 10

3   4   5   6

RED   GREEN   WHITE   BLACK

TROUBLE
NORMAL
TEST   RESET

REMOTE TEST
RESET STATION
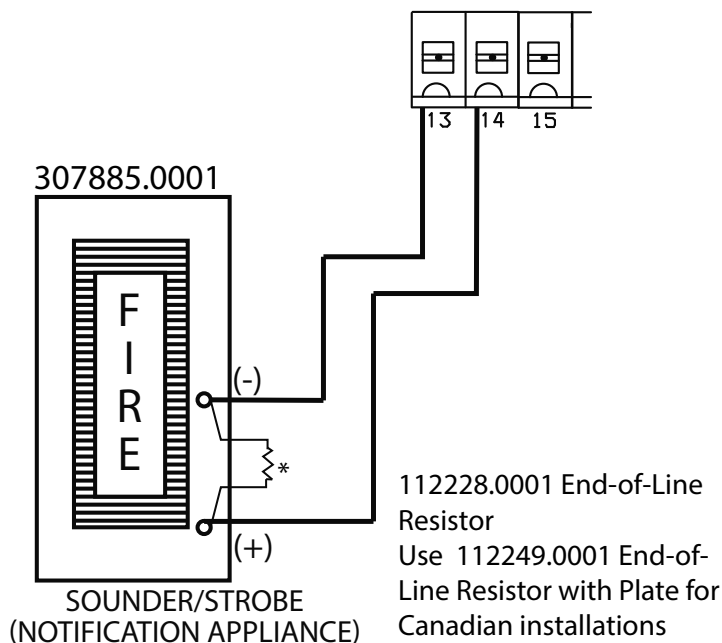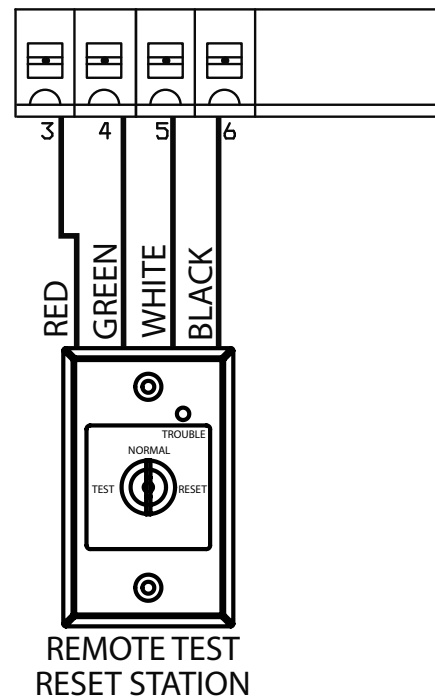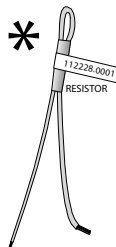
Fig. 11

Section 5: Wiring

Fire Alarm Control Panel Relay Input:

- In lieu of smoke detectors, the release device may be put into alarm by the fire alarm control panel. Most commonly, a relay module is used as an interface between the fire alarm control panel and the release device. The relay module must provide form C dry contacts, connect wiring from N/O relay contacts to terminals 17 and 18. Make sure end of line resistor is installed as indicated.

NOTE: *When choosing a relay module to activate the release device in an alarm condition, always select one that provides Form C dry contact relays. DO NOT use any relay module providing or passing any control voltage through the contacts into the release device. Passing voltage will cause problems with the operation of the device and may damage the devices terminals and/or circuit board.*

112228.0001 2.2K

Relay Control Module
NOT SUPPLIED

17 — N/O

18 — COM

Fire Alarm Control Panel

RESISTOR

FIG. 12
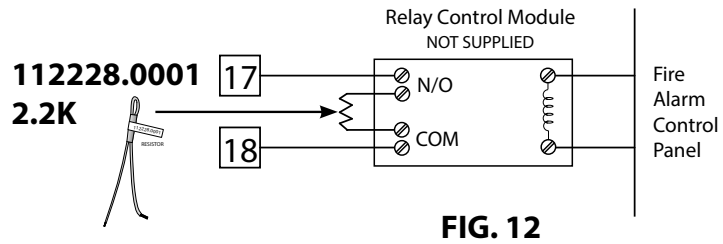
Battery Wiring

> ## ⚠ CAUTION:
> Danger of explosion exists if batteries are improperly replaced. Replace only with the same or equivalent type batteries recommended by the manufacturer. Dispose of used batteries in accordance with manufacturer instructions. See operating or maintenance instructions for type of batteries to be used. Replace batteries every two (2) years.
>
> ## ⚠ ATTENTION:
> Risque d'explosion si les batteries sont remplacées de manière incorrecte. Remplacer uniquement avec des batteries identiques ou un type recommandé par le fabricant. Mettre les batteries usagées au rebut en respectant les instructions du fabricant. Voir les instructions de fonctionnement ou de maintenance pour le type de piles à utiliser. Remplacer les piles tous les deux (2) ans.

1) Connect the lead - acid batteries, observing illustration for proper wiring. Fig. 13
- Replace only with 12VDC, 5AH, sealed lead acid batteries.
- Standby battery time is 24 hours.

Black   RED

BAT –   BAT +
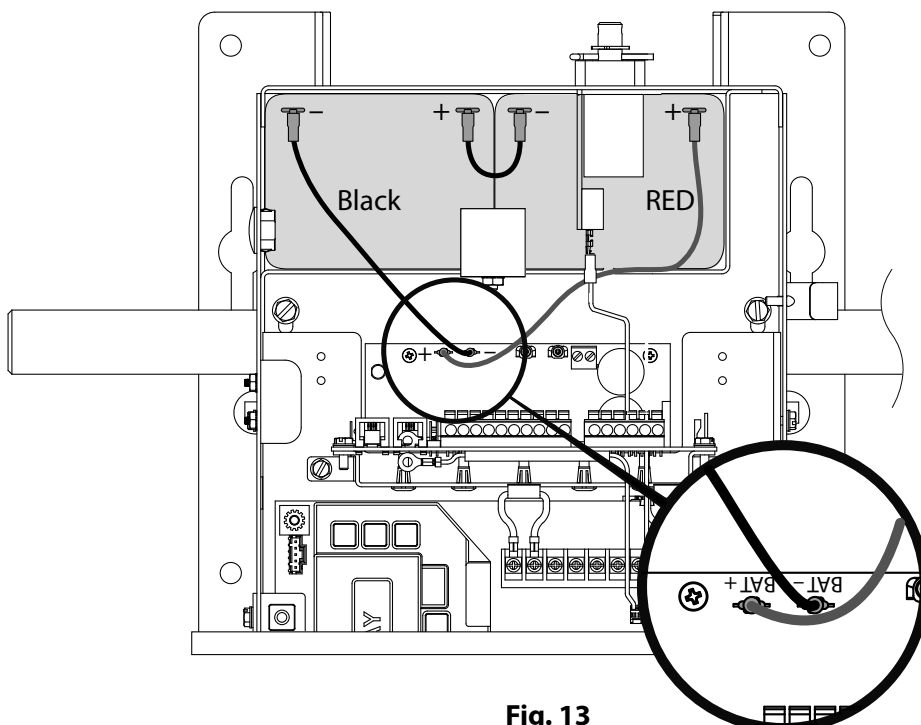
Fig. 13

Section 5: Wiring

Outputs:

Alarm Output:

Additional Alarm Outputs can be added to the system using terminals 7-8-9 located on the FDO circuit board.

These outputs can be any Notification Appliance such as visual and/or audible signals or wired into a fire control panel for indications of an alarm.

Alarm outputs are Form C dry contacts, common relays, 2A @ 28VDC resistive load.

Trouble Relay Output:

Additional Trouble indicator Outputs can be added to the system using terminals10-11-12 located on the FDO circuit board.

These outputs can be any Notification Appliance such as visual and/or audible signals or wired into a fire control panel for indications of a trouble alert.

Outputs are Form C dry contacts, common relays, 2A @ 28VDC resistive load.
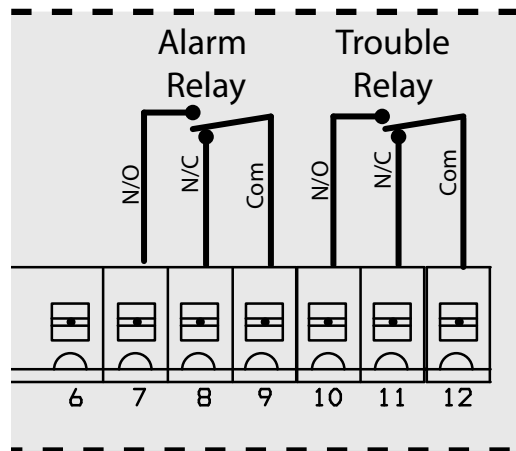
Section 5: Wiring

Motor Connection
1 Phase & 3 Phase

> ### ⚠ WARNING:
> Verify Line Voltage before making any connections to assure that motor harness is connected to proper motor connector on circuit board.
>
> ### ⚠ AVERTISSEMENT:
> Vérifiez la tension avant d'effectuer les connexions pour s'assurer que le harnais du moteur est relié au connecteur du moteur appropriée sur la carte du circuit.

> ### ⚠ DANGER:
> After power is supplied to the operator, Do Not make contact with components inside the control panel except for the Keypad Keys.
>
> ### ⚠ DANGER:
> Après avoir mis l'opérateur sous tension, NE PAS entrer en contact avec des composants à l'intérieur du panneau de commande, sauf pour les touches du pavé numérique.

1) Plug motor harness into proper connector on control board in electrical box. Fig. 14
2) Apply Power to Operator.
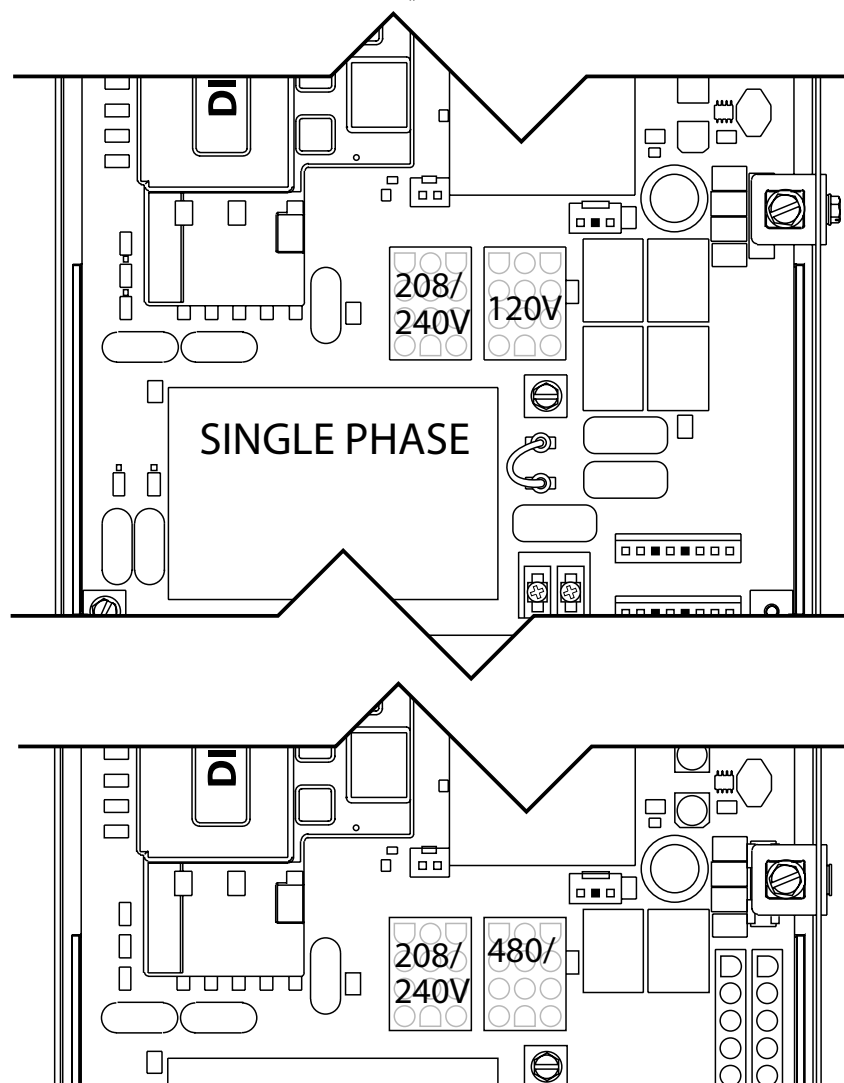
Fig. 14

Section 6: Operator Setup Procedure
Control Panel

Fire Door 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.

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.
> ## ⚠ DANGER:
> Après avoir mis l'opérateur sous tension, NE PAS entrer en contact avec des composants à l'intérieur du panneau de commande, sauf pour les touches du pavé numérique.

> ## ⚠ WARNING:
> DO NOT calibrate operator or operate door unless doorway is in sight and free of obstructions. Door will move during setup. Keep people clear of opening while door is moving.
> ## ⚠ AVERTISSEMENT:
> Calibrer l'opérateur et utiliser la porte uniquement si la porte est en vue et libre de tout obstacle. La porte se déplacera pendant la programmation. Ne laisser personne se tenir dans l'ouverture de la porte pendant qu'elle est en mouvement.

AFTER WIRING HAS BEEN COMPLETED, APPLY POWER TO THE OPERATOR.
Alarm will sound and beep once every 10 seconds.
Display will read "SET CLOSE DIRECTION"

Control Operating Modes

Fire Door Operator control boards operate in two modes: Run Mode and Calibration Mode. The control board should normally operate in the Run Mode.

With the operator standing idle:

Press CAL/RUN key to toggle between operating modes.
- The first display in CALIBRATION mode is "SET CLOSE DIR ."
- The display in RUN mode will be one of the condition codes listed in section 9.

Operation Keys, operate unit like a 3-button wall station.

Calibration & Run Key.

Display Backlighting Toggle Key.

Scroll Keys, used in Calibration Mode.

Set/Clear Key, used to reset and adjust calibration settings.
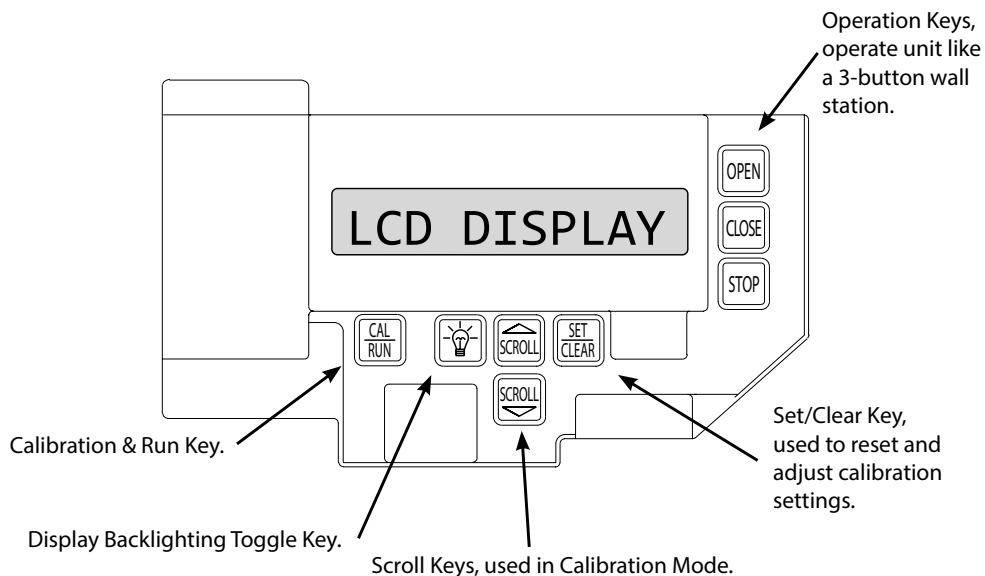
Fig. 1

Section 6: Operator Setup Procedure
Calibration Mode Structure

If at any time should programming become confused. Press the CAL/RUN key once to enter RUN MODE then press CAL/RUN key again to reenter CALIBRATION MODE.
Press the SCROLL key(s) to locate or check the settings on any menu item.

FDO Operator Calibration Menu Structure
1. SET CLOSE DIR> *-HIT SET/CLEAR TO ENTER THIS MODE-*
    •   PRESS CLOSE KEY BRIEFLY
    •   DID DOOR CLOSE?
    •   YES   NO
2. UP LIMIT>SET OR CLR
3. DOWN LIMIT> SET OR CLR
4. MID-STOP> SET OR CLR
5. LIMIT OVERRUN> 0-9
6. OPEN MODE> C-STP OR MOM
7. CLOSE MODE> C-STP OR C-REV OR MOM
8. ODC STB> ON OR OFF
9. TLC DELAY> 0:00 TO 5:00
10. BRAKING RATE>0-9
11. MAX RUN TMR> SET OR CLR
12. GDO TYPE> TROLLEY OR J-SHAFT
13. FD DELAY TMR> 10/20/30/60
14. FD SAFETY TMR> 2M/4M
15. FD OBSTRCT CYL>1/3
16. FD STP ON OB>ON/OFF
17. FD AUTO OPEN>ON/OFF
18. FD PWR ALARM>ON/OFF
19. FD ALARM@DN L>ON/OFF
20. LEARN NEW XMTR? *-HIT SET FOR YES-*
    •   PUSH XMTR BUTTON TWO TIMES TO LEARN XMTR
21. REMOVE XMTR? *- HIT SET FOR YES-*
    •   ARE YOU SURE?-YES/NO
22. REMOVE ALL XMTRS? *-HIT SET FOR YES-*
    •   ARE YOU SURE?-YES/NO
23. CYCLES> 000000
24. GDO V#> 020.00.000
25. RUN CODE 1> *CODE & DESCRIPTION*
26. ERROR CODE 1> *CODE & DESCRIPTION*
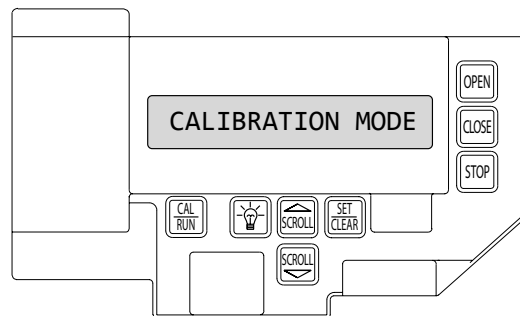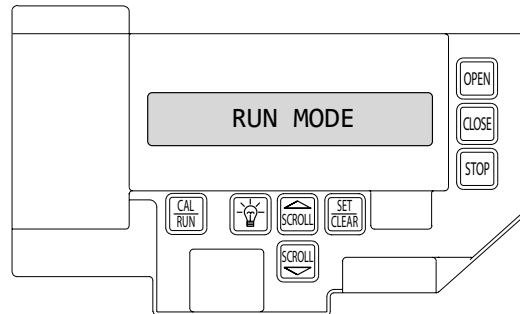
When returning to CALIBRATION MODE. Menu will always start at the first item (SET MOTOR DIR) press the SCROLL key to bypass this item until desired menu item is displayed.

•   Item 11 (MAX RUN TMR) will set itself once limits have been programmed and door has run one complete cycle.
•   Items 25-26 (RUN and ERROR codes) will retain the last 10 codes encountered. Press the SET/ CLEAR key to toggle through all codes.

NOTE: *Menu structure will change when any auxiliary board(s) are added. See instructions for each auxiliary board for changes.*

Section 6: Operator Setup Procedure
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.

NOTE: *Make sure door is in Mid-Travel.*

1) If operator is in RUN mode, press CAL/RUN key to enter calibration mode.
2) Press SET/CLEAR key to begin the calibration procedure and advance to the next screen. Fig. 1
3) Briefly press the CLOSE key. Fig. 2 (Pressing the Scroll key at this point will exit this control function.)

• The display will read " DID DOOR CLOSE? " Figure 3.

4) Press SCROLL key (up or down) to toggle between YES and NO. Figure 4.

• If YES is selected, no change to operator calibration is made. If NO is selected — It will change the operator's down direction.

5) Press the SET/CLEAR key.

SET CLOSE DIR

Fig. 1

DID DOOR CLOSE?

Fig. 3

PRESS CLOSE KEY

Fig. 2

SCROLL KEY

▶YES ◀   NO
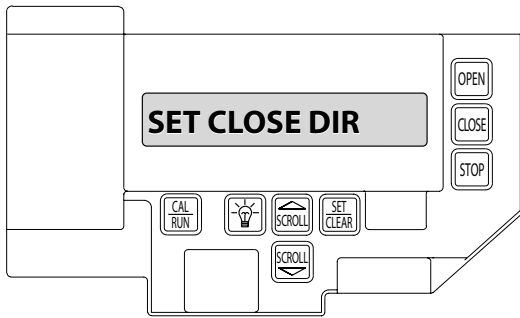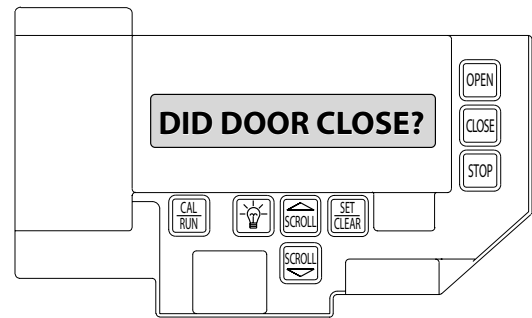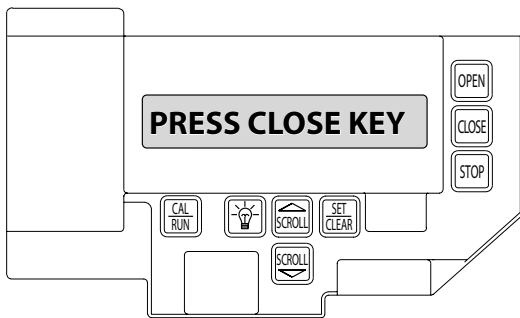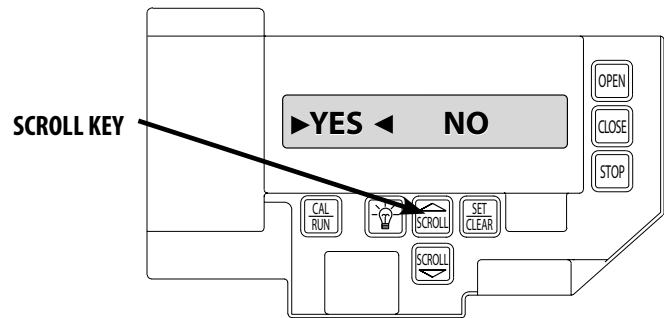
Fig. 4

Section 6: Operator Setup Procedure
Setting Braking Rate (Optional)

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. 0=Max. braking. 9=Min. braking. Figure 5.
3) Press 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 UP key until display reads "UP LIMIT CLR".
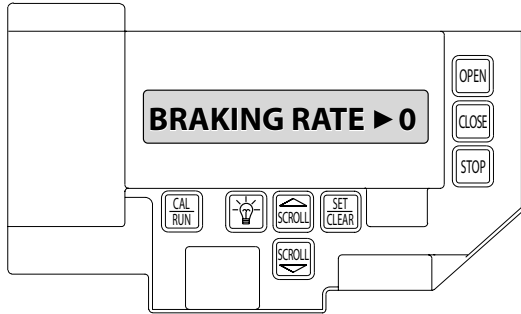
Fig. 5

Setting Travel Limits

UP and/or DOWN
1) Jog the door using the OPEN key until you reach the desired height.
2) Press SET/CLEAR key to switch display to "UP LIMIT>SET ". Figure 6.
3) Press SCROLL DN key until display reads "DOWN LIMIT CLR".
4) Jog door down to 2 in. from floor. (See Note Below)
5) Press SET/CLR to switch display to "DOWN LIMIT SET". Fig. 7
6) Press SCROLL DN key until display reads "LIMIT OVERRUN".
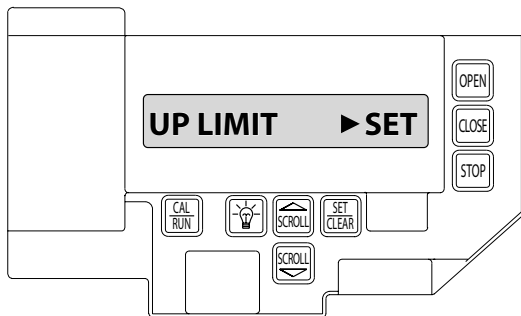
Fig. 6
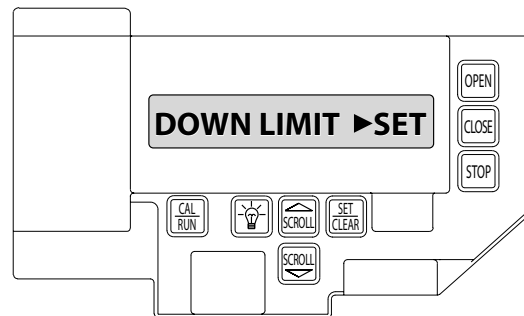
Fig. 7

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

Resetting Travel Limits

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

Section 6: Operator Setup Procedure
Setting Limit Overrun

> **⚠ WARNING:**
> The Limit Overrun will override external reversing devices, including photocells and sensing edges or reversing edges. Therefore, any externally connected devices will be disabled during that portion of the door travel controlled by the Limit Overrun function.
> The Down Limit Overrun function should be used to close the door no more than the final 2".
>
> **⚠ AVERTISSEMENT:**
> La fonction de dépassement de limite annulera les dispositifs de renversement externes, y compris les cellules photoélectriques et des systèmes de détection ou d'inversion aux bords. En conséquence, tous les dispositifs externes connectés seront désactivés pendant la partie de la course de la porte qui est contrôlée par la fonction de dépassement de limite.
> La fonction de dépassement de limite inférieure doit être utilisée pour fermer la porte uniquement aux derniers 5 cm.

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

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

1) Press SET/CLEAR until the display reads the desired value (1-9). Fig. 8
2) Press the OPEN key to open the door a few feet,then release
3) Press the CLOSE key to close the door and hold until the operator stops.
4) Check the door seal and repeat steps 3-5 until the appropriate seal is obtained between the door and the floor.
5) Press SCROLL DN key until display reads "ODC STB OFF".
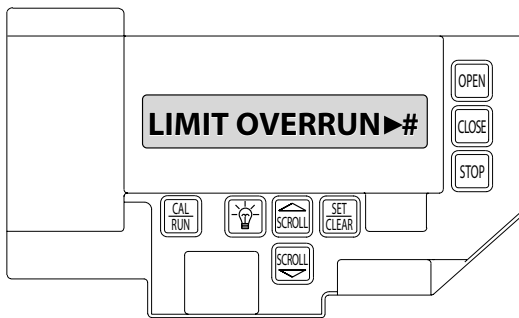
Fig. 8

> **⚠ CAUTION:**
> If proper seal cannot be obtained at a setting of 9, Reset the Limit Overrun back to 0 and reset the Down Limit position as described on 6.5. Then adjust the Limit Overrun as instructed above.
>
> **⚠ ATTENTION:**
> Si une adhésion appropriée ne peut être obtenue à un réglage de 9, réinitialiser le dépassement de limite à 0 puis la position de déplacement de la limite inférieure selon les instructions de la page 6.5. Régler ensuite le dépassement de limite tel qu'indiqué ci-dessus

Section 6: Operator Setup Procedure Monitored Reversing Devices

1) Press SET/CLEAR key to toggle to "ODC STB > ON". Fig. 9
2) Press SCROLL UP until display reads "OPEN MODE > C-STOP".
3) Press CAL/RUN to return to run mode.

NOTE: *STB photocells should NOT be used on the Fire Door Operators. Use only Monitored Safety Edges listed:*

- MillerEdge ME and MT series monitored edge sensors used in combination with MillerEdge Interface Module OPAKMEIX.S. (Direct connect through STB inputs.)
- MillerEdge Wireless monitored edge sensor OPAKMMWE.S.
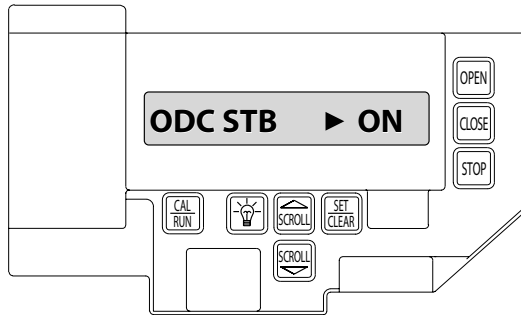
Fig. 9

Section 6: Operator Setup Procedure

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." Fig. 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. 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:
Before momentary contact control can be used on the CLOSE button, a monitored external reversing device such as a sensing edge switch must be used. See pages 5.7-5.8 for installation of entrapment protection devices.

⚠ AVERTISSEMENT:
Avant d'utiliser la commande à contact momentané sur le bouton FERMETURE, un dispositif d'inversion externe surveillée tel qu'un système ou un commutateur de détection de bord doit être utilisé. Voir l'installation des dispositifs de protection contre le coincement en pages 5.7-5.8.

| OPEN |
| CLOSE |
| STOP |

OPEN MODE►MOM

| CAL/RUN | 💡 | SCROLL ▲ | SET/CLEAR |
| SCROLL ▼ |
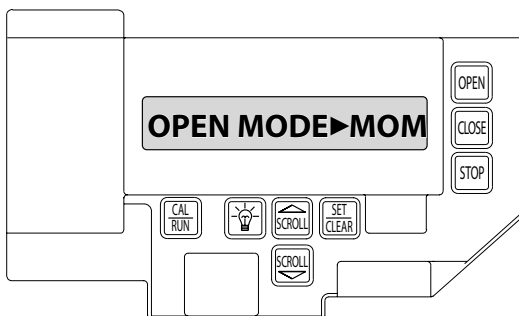
Fig. 10

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.*

Section 6: Operator Setup Procedure
FDO Board Set-up

Fire Door Operators are equipped with a Fire Door Module (FDM). This module will require input from the user.

The Alarm Delay Time is the amount of time after an alarm or test signal is activated until the Fire Door Operator will close or release.

Setting the Fire Alarm Delay Timer.
1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL DN until display reads "FD DELAY TMR > ." Fig. 11
3) Press SET/CLEAR to toggle a time value of 10-20-30-60 seconds.
4) Press SCROLL DN to lock desired setting and advance to "FD SAFETY TMR".
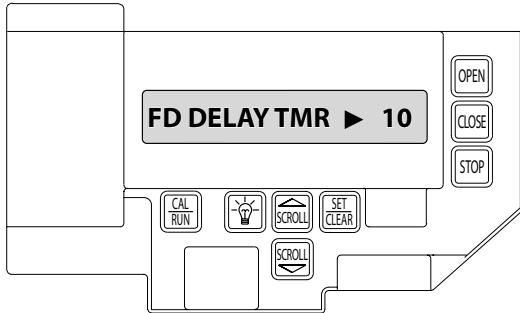
Fig. 11

The "Fire Alarm Safety Time" is the length of time after an alarm or test sequence begins that the Fire Door Operator will automatically release the door if the down limit has not been reached. This setting is toggled between 2 minutes and 4 minutes.

Setting the Fire Alarm Safety Timer.
1) Press SET/CLEAR to toggle a time value of 2 minutes (2M) or 4 Minutes (4M).
2) Press SCROLL DN to lock desired setting and advance to "FD OBSTRCT CYL>3". Fig. 12
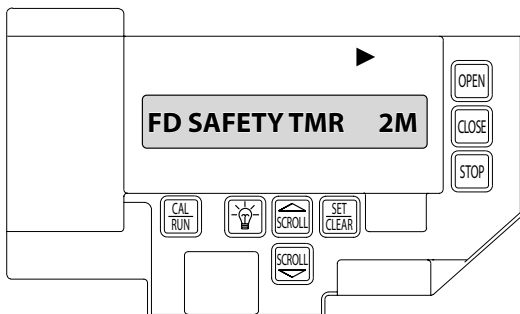
Fig. 12

Section 6: Operator Setup Procedure
FDO Board Set-up

The "Obstruction Cycles" is the number of times that a reverse may occur during an alarm or test before the Fire Door Operator will abort the close attempt and either stop on an obstruction or release mechanically.

Setting Obstruction Cycles
1) Press SET/CLEAR to toggle between 1 or 3 cycles. Fig. 13
2) Press SCROLL DN to lock desired setting and advance to "FD STP ON OB > OFF".
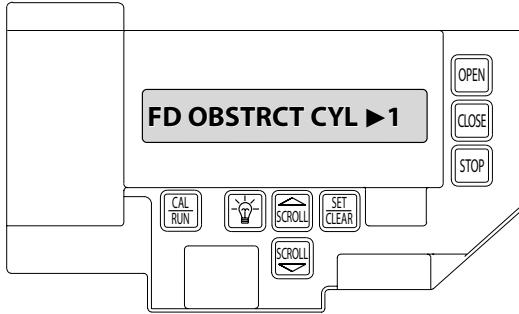
Fig. 13

The "Obstruction Behavior" is the action that the Fire Door Operator takes after the allowable number of reverse on obstruction cycles has been reached during an alarm test.

ON = Stop on Obstruction, meaning the Fire Door Operator will stop on the obstruction once the allowable number of obstruction cycles has been reached, during an attempt to close the door.

OFF = The Fire Door Operator will raise the door to the up limit and then mechanically release once the allowable number of reverse on obstruction cycles has been reached, during an attempt to close the door.

Setting the Obstruction Behavior.
1) Press SET/CLEAR to toggle setting ON or OFF. Fig. 14
2) Press SCROLL DN to lock desired setting and advance to "FD AUTO OPEN>OFF".
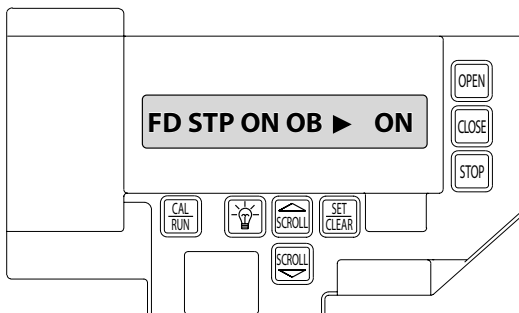
Fig. 14

Section 6: Operator Setup Procedure
FDO Board Set-up

"Auto Open" is the behavior that the Fire Door Operator will take after completing a TEST. When the test is finished, and the door has closed, upon reset, the Fire Door Operator can either re-open the door or leave the door closed. This setting DOES NOT affect behavior of the Fire Door Operator during an alarm.

ON = auto open is enabled, meaning after a test of the Fire Door Operator has completed, and the door is closed, the operator will reopen the door after being reset.
OFF = auto open is disabled, meaning the Fire Door Operator will not open the door upon being reset after a test.

Setting Auto Open
1)   Press SET/CLEAR to toggle between ON or OFF. Fig. 15
2)   Press SCROLL DN to lock desired setting and advance to FD PWR ALARM > OFF".

FD AUTO OPEN ▶ OFF
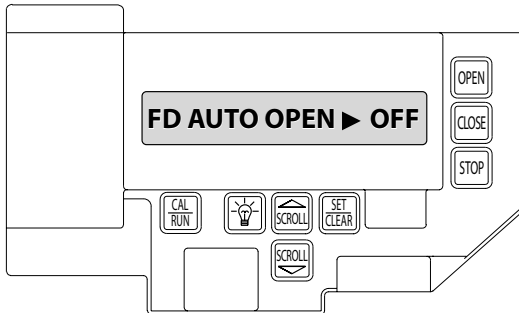
Fig. 15

___

"Alarm on Loss of Power" causes the Fire Door Operator to respond to a loss of power in the same manner as an active alarm signal.

ON = alarm on loss of power, meaning that, in the event of a loss of input power to the Fire Door Operator, the operator will treat the power loss as if an alarm was active. The operator will wait for the alarm delay timer to expire, and then activate the alarm outputs, and proceed to mechanically release the door.
OFF = DO NOT alarm on loss of power, meaning that in the event of a loss of input power to the Fire Door Operator, the operator will continue to monitor the alarm (and test) inputs before taking any action.

Setting the Alarm on Loss of Power.
1)   Press SET/CLEAR to toggle setting ON or OFF.Fig. 16
2)   Press SCROLL DN to lock desired setting and advance to "HS QUIET @ DN > OFF".

FD PWR ALARM ▶ ON
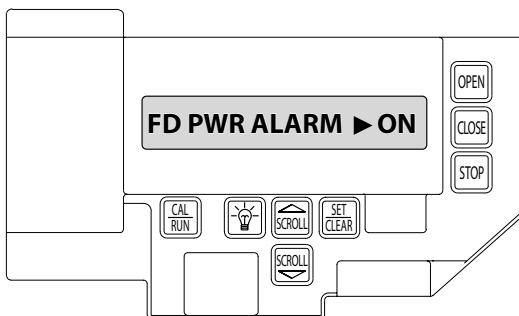
Fig. 16

Section 6: Operator Setup Procedure
FDO Board Set-up

"Notification Appliance (HS HORN/STROBE) at Down Limit" specifies how the Fire Door Operator will behave after the door has reached the down limit during a TEST. If the Notification Appliance (HS HORN/STROBE) is turned off at the down limit, then the Fire Door Operator will turn off the Notification Appliance (HS HORN/STROBE) after the door has closed, otherwise, the Notification Appliance (HS HORN/STROBE) will remain active until reset. This setting DOES NOT affect behavior of the Fire Door Operator in an alarm.

ON = Notification Appliance (HS HORN/STROBE) off
OFF = Notification Appliance (HS HORN/STROBE) on

Setting Notification Appliance (HS HORN/STROBE) at Down Limit
1) Press SET/CLEAR to toggle between ON or OFF. Fig. 17
2) Press CAL/RUN to return to RUN mode.
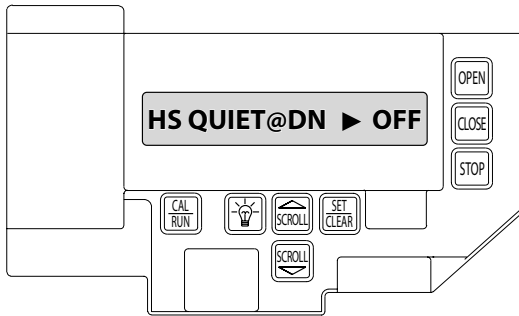
Fig. 17

Display will read "IDLE DOWN LIMIT". Proceed to section 7 "TEST PROCEDURES" to perform required test. Fig. 18
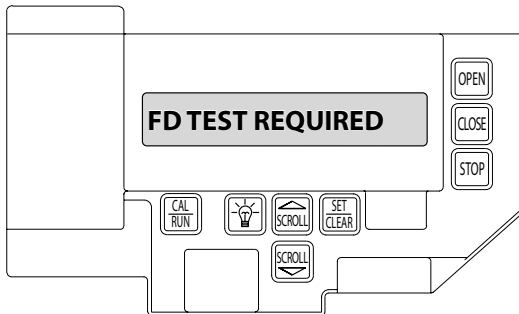
Fig. 18

Section 7: Test Procedures
General Information

The Fire Door Operator is intended for use on rolling fire doors. All models are normally-energized fail-safe operators incorporating internal batteries and proprietary control circuitry. All comply with UL864. The operators respond to emergency conditions generated by manual or automatic initiating devices and shall be installed in accordance with NFPA and UL864 standards.

The available operator features include patented annual test standard compliance technology, test plate interface, selectable time delays, minimum 24 hour battery support for release and smoke detectors, form-C relay outputs, notification appliance and troubleshooting capabilities. The fail-safe design incorporates an annual internal clock/calendar which generates a test trouble signal if the system has not been tested within 365 days per National Fire Code requirements.

⚠ **CAUTION:**
Review all installation instructions, procedures, cautions and warnings contained within this manual prior to installing and/or servicing this product. As with all releasing device systems, maximum fire protection is provided when installed in accordance with factory specifications and used with fuse link systems.
⚠ **ATTENTION:**
Lire toutes les instructions d'installation, procédures, précautions et avertissements stipulés dans ce manuel avant d'installer et/ou dépanner ce produit. Comme pour tout autre système de declenchement, un maximum de protection contre incendie est fourni lorsque l'installation est conforme aux spécifications usine et que le système est utilisé avec des fuse link

⚠ **CAUTION:**
Fail-safe operation can only be provided once input power has been applied. Do not install this unit without factory training.
⚠ **ATTENTION:**
Un fonctionnement à sécurité intégrée peut être assuré uniquement lorsque la puissance d'entrée a été appliquée. Ne pas installer cet appareil sans avoir suivi de formation.

⚠ **CAUTION:**
Test system regularly to ensure proper operation! (Testing should be done at least monthly.)
⚠ **ATTENTION:**
Tester le système régulièrement pour garantir un bon fonctionnement! (Tester au moins une fois par mois)

⚠ **WARNING:** To prevent possible serious injury or death:
 • While performing the mechanical or electrical door drop test, stay clear of the door and any moving parts.
 • Clear any objects or people from door path.
 • Prohibit traffic through the door opening while testing.
⚠ **AVERTISSEMENT:** Tester le système régulièrement pour garantir un bon fonctionnement! (Tester au moins une fois par mois)
Avertissement: pour eviter les blessures graves ou mortelles :
 • Tout en effectuant le test de chute de la porte mecanique ou electrique, se tenir à l'écart de la porte et de toutes les pièces mobiles.
 • Demander aux personnes de s'éloigner de la porte et retirer les objets du passage de la porte.
 • Interdire toute circulation par la porte pendant le test.

Section 7: Test Procedures

Standard Door Closure Test

1. Open door to full open.
2. Place TEST/RESET key switch in the TEST position.
   - After preset delay - Door closes.
3. Move key to RESET and then back to NORMAL.

Mechanical Door Drop Test

NOTE: TESTING MUST BE PERFORMED AND WITNESSED FOR NORMAL OPERATION AFTER INSTALLATION.

A "Test Required" trouble will occur until a complete test cycle is performed

This is a normal condition and part of the Internal Annual Test Clock/Calendar

The annual test is a National Fire Code requirement. More frequent tests may be required by the local Authority Having Jurisdiction (AHJ). Refer to test procedures contained herein.

Test steps 1-5 verify a mechanical release to a door with external power normal. Test steps 6-11 verify a mechanical release under battery power with external power loss.

1. Turn ON power to the Fire Door Operator.
- A "FDM TEST REQUIRED" trouble will be generated at power up. This is normal
- Turn the key-switch on the Remote Test and Trouble Plate (RTP) to RESET, then NORMAL, to silence the trouble.
- Move the door to the fully-open position.

> ⚠ **WARNING: KEEP THE DOOR OPENING CLEAR OF ALL PERSONNEL.**
> ⚠ **AVERTSISSEMENT: PERSONNE BE DOIT SE TENIR DANS L'OUVERTURE DE LA PORTE.**

2. Place the Fire Door Operator into hoist mode by pulling the hoist release cord.
3. Turn Reset Test Switch to TEST position. The notification appliance will sound indicating a door closure is about to occur, and after a 10 second factory set alarm delay (or optional longer delay) the Fire Door Operator will mechanically release door and door will close.
4. Release the hoist cord.
5. Turn Reset Test Switch to RESET position and then back to NORMAL.
6. Press the open button to raise the door. (Door may auto open).

> ⚠ **WARNING: KEEP THE DOOR OPENING CLEAR OF ALL PERSONNEL.**
> ⚠ **AVERTSISSEMENT: PERSONNE BE DOIT SE TENIR DANS L'OUVERTURE DE LA PORTE.**

7. Turn off power to the Fire Door Operator.
8. "External Power Loss," "Battery Not Charging," and "Control Board Error" LEDs on FDM will be generated in approximately 10 seconds. This is a normal condition.
9. Turn the Reset Test Switch to the TEST position. The notification appliance will sound indicating door closure is about to occur and after a 10 second factory set alarm delay (or longer optional delay) the Fire Door Operator will mechanically release the door.
10. Turn the Reset Test Switch to the RESET position and then back to NORMAL. This test verifies a mechanical release in absence of power to the Fire Door Operator.
11. Restore power to the Fire Door Operator and raise the door to the fully open position.
12. Turn the Reset Test Switch to RESET and back to NORMAL to clear trouble indicator on the Reset Test Switch.

Section 7: Test Procedures (continued)

Automatic Door Closure Test

Three Cycle Release on Obstruction Test:
1. Open door to full open position.
2. Make sure that the "FD OBSTCT CYL" are set to "3" and the "FD STP ON OB" is set to OFF.

⚠ **WARNING: KEEP THE DOOR OPENING CLEAR OF ALL PERSONNEL.**
⚠ **AVERTSISSEMENT: PERSONNE BE DOIT SE TENIR DANS L'OUVERTURE DE LA PORTE.**

3. Place a chair or other suitable obstruction in the normal path of the door. Stand clear of door opening.
4. Turn the key-switch to TEST and leave it there. The notification appliance will turn on indicating that a door closure is about to occur. After the factory set 10 second (or optional longer) delay, the Fire Door Operator will initiate a closure.
   - Upon contact with the obstruction, the safety edge will reverse the motor and raise the door to the up limit. The Fire Door Operator will make three attempts to close the door, after the third reversal it will release the door through the electrical clutch.
   - STAND CLEAR OF ANY PATH THE OBSTRUCTION MIGHT TAKE AFTER BEING CONTACTED BY THE DROPPED DOOR.
   - The door will drop onto the obstruction and will fully close once the obstruction is removed. The notification appliance will continue to sound until the alarm condition is cleared. (Unless QUIET @ DN is set to ON).
5. Reset the Fire Door Operator by turning the key-switch to the RESET position and then back to NORMAL. (Door may auto open).

Three Cycle Stop On Obstruction Test:
1. Open door to full open position.
2. Make sure that the "FD OBSTCT CYL" are set to "3" and the "FD STP ON OB" is set to ON.

⚠ **WARNING: KEEP THE DOOR OPENING CLEAR OF ALL PERSONNEL.**
⚠ **AVERTSISSEMENT: PERSONNE BE DOIT SE TENIR DANS L'OUVERTURE DE LA PORTE.**

3. Place a chair or other suitable obstruction in the normal path of the door. Stand clear of door opening.
4. Turn the key-switch to TEST and leave it there. The notification appliance will turn on indicating that a door closure is about to occur. After the factory set 10 second (or optional longer) delay, the Fire Door Operator will initiate a closure.
   - Upon contact with the obstruction, the safety edge will reverse the motor and raise the door to the up limit. The Fire Door Operator will make three attempts to close the door. On the third attempt, the Fire Door Operator will stop the door on the obstruction. If the obstruction is removed, the Fire Door Operator will wait 10 seconds, and then close the door. Should the door contact a second obstruction, the Fire Door Operator will fully open the door and mechanically release the door.
   - STAND CLEAR OF ANY PATH THE OBSTRUCTION MIGHT TAKE AFTER BEING CONTACTED BY THE DROPPED DOOR.
   - The notification appliance will continue to sound until the alarm condition is cleared. (Unless QUIET @ DN is set to ON).
5. Reset the Fire Door Operator by turning the key-switch to the RESET position and then back to NORMAL. (Door may auto open).

Section 7: Test Procedures (continued)

Auto Open Reset Test:

1. Open door to full open position.
2. Make sure that "FD AUTO OPEN" is set to ON.

> ⚠ **WARNING: KEEP THE DOOR OPENING CLEAR OF ALL PERSONNEL.**
> ⚠ **AVERTSISSEMENT: PERSONNE BE DOIT SE TENIR DANS L'OUVERTURE DE LA PORTE.**

3. Turn the key-switch to TEST and leave it there. The notification appliance will turn on indicating that a door closure is about to occur. After the factory set 10 second (or optional longer) delay, the Fire Door Operator will initiate a closure.
   • Make sure there are no obstructions in the path of the door.
4. After the door closes, reset the Fire Door Operator by turning the key-switch to the RESET position and back to NORMAL
• After approximately 3 seconds, the door will automatically start to open to the up limit.

Notification Off On Close Limit Test:

1. Open door to full open position.
2. Make sure that the "HS QUIET @ DN" is set to ON.

> ⚠ **WARNING: KEEP THE DOOR OPENING CLEAR OF ALL PERSONNEL.**
> ⚠ **AVERTSISSEMENT: PERSONNE BE DOIT SE TENIR DANS L'OUVERTURE DE LA PORTE.**

3. Turn the key-switch to TEST and leave it there. The notification appliance will turn on indicating that a door closure is about to occur. After the factory set 10 second (or optional longer) delay, the Fire Door Operator will initiate a closure.
   • Make sure there are not obstructions in the path of the door.
4. When the door reaches the down limit, the notification appliances will turn off.
5. Reset the Fire Door Operator by turning the key-switch to the RESET position and then back to NORMAL. (Door may auto open).

Alarm On Power Loss Test:

1. Open door to full open position.
2. Make sure that the "FD PWR ALARM" is set to ON.

> ⚠ **WARNING: KEEP THE DOOR OPENING CLEAR OF ALL PERSONNEL.**
> ⚠ **AVERTSISSEMENT: PERSONNE BE DOIT SE TENIR DANS L'OUVERTURE DE LA PORTE.**

3. Disconnect power from the Fire Door Operator.
   • The device will alarm.
   • After the factory set 10 second (or optional longer) delay. Door will mechanically release.
4. Re-apply power to operator and Reset the Fire Door Operator by turning the key-switch to the RESET position and back to NORMAL.

After completing all tests, verify the door is in normal operating condition (open or closed) and that all power required for normal operation has been restored to the Fire Door Operator. This equipment is designed to operate with its power source applied.

Notate test procedure completion in the back of this manual.
Leave manual with the operator or building supervisor.

Section 8: Optional Operator Setup Procedure

Transmitter Programming (Optional)

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? " Fig.1
   • 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/CLEAR .
   • 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 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. 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? " Fig.2
   • 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/CLEAR
   • 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/CLEAR
   • 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.
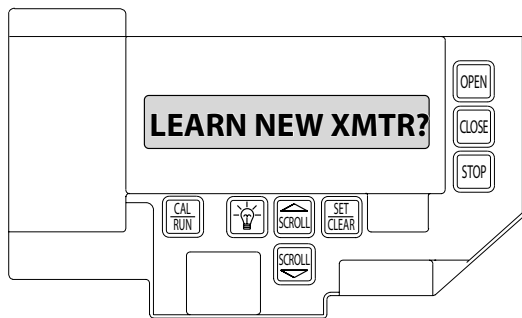
Fig. 1
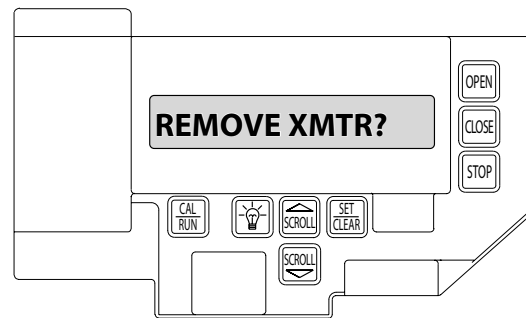
Fig. 2

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" Fig.3
   • 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/CLEAR key.
   • The display will read "ARE YOU SURE."
4. Press SET/CLEAR 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.
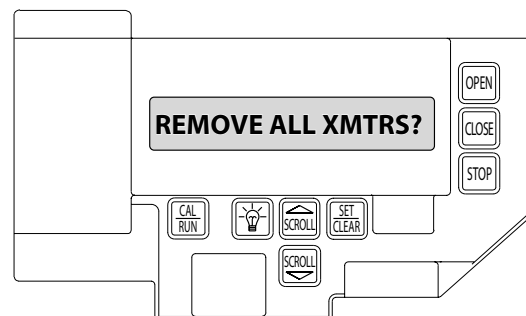
Fig. 3

Section 8: Optional Operator Setup Procedure
Mid-Stop Limit (Optional)

The Fire Door Operator includes a programmable Mid-Stop.

Do Not Use This Feature For This Model Operator.

Section 8: Optional Operator Setup Procedure
Resetting the MRT (Max Run Timer)

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 to enter calibration mode.
2) Press SCROLL (up or down) until display reads "MAX RUN TMR > SET." Fig. 5
3) Press SET/CLEAR until display reads "MAX RUN TMR > CLR."
4) Press 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.*

MAX RUN ►SET

OPEN
CLOSE
STOP

CAL RUN | SCROLL | SET CLEAR

SCROLL
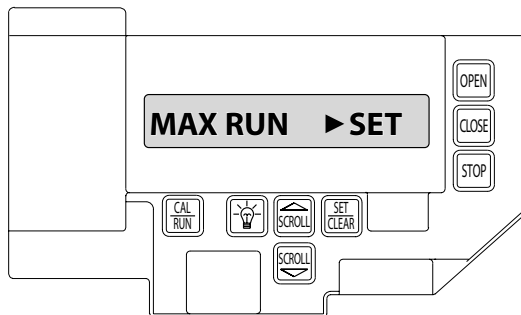
Fig. 5

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

⚠ **ATTENTION:**
La fonction MID-STOP doit être désactivée afin de régler correctement la minuterie de course maximum.

Section 8: Optional Operator Setup Procedure
Timer to Close Delay (Optional)

The Fire Door Operators feature an on-board self closing timer. This timer will only close the door if a monitored safety device is installed, programmed, and performing correctly.

This feature can be set OFF or from 2 seconds up to 5 minutes.

NOTE: *Minutes can be set in 1 minute increments. Seconds can be set in 2 second increments.*

Setting TCL Delay (Optional)
1) If operator is in RUN mode, press CAL/RUN to enter calibration mode.
2) Press SCROLL (up or down) until display reads "TCL DELAY >OFF" Fig. 6
3) Press SET/CLEAR key to toggle between OFF, 1,2,3,4,5 minutes.
4) Press SCROLL (down) to shift to the seconds.
5) Press SET/CLEAR to scroll through the seconds. (2 second increments)
6) Press CAL/RUN to return to run mode.
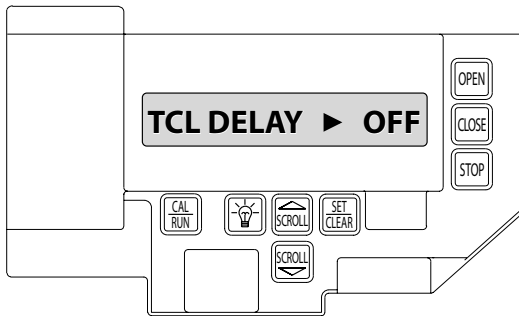
Fig. 6

Operator Cycle Count

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL until display reads "CYCLES>1,2,3 etc. where the number is the number of open/close cycles the operator has performed. Fig. 7
3) Press CAL/RUN to return to run mode.
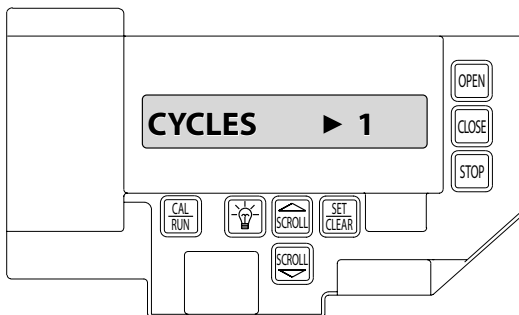
Fig. 7

Section 8: General Display Information
GDO and Display Firmware

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL until display reads "GDO V# > #####." Fig. 8
   • 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.
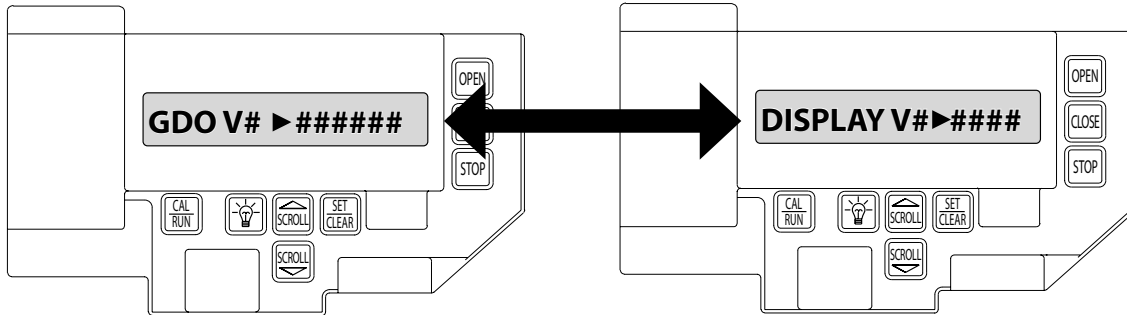
Fig. 8

GDO Type

Fire Door Operators are available for use in jackshaft configuration only. However, the same control board is used for Jackshaft and Trolley configurations. The control board must be set for the appropriate GDO configuration. A board set for trolley mode will not work in a jackshaft operator and vice-versa.

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

1) Press CAL/RUN to enter calibration mode.
2) Press SCROLL until display reads "GDO TYPE > ." Fig. 9
   • This will display the current GDO type.
3) Press SET/CLEAR until display indicates correct GDO type (J-SHAFT or TROLLEY)
4) Press CAL/RUN to return to run mode.
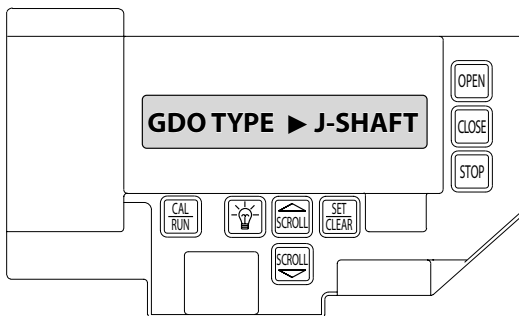
Fig. 9

Section 9: Troubleshooting
Troubleshooting Example

1. In Calibration Mode, display and write down each Run Code and Error Code stored in memory.
2. List as shown in Fig.1
3. Refer to following pages to interpret 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.

Fig. 1

ERROR CODES				RUN CODES	
NUMBER	CODE			CODE	NUMBER
1	45	REVERSED DUE TO ACTIVE N-O SAFETY INPUT	STOPPED AT UP LIMIT	3D	1
2	6D	WOULD NOT OPEN — ALREADY AT UP LIMIT	STOPPED DUE TO ACTIVE N-O SAFETY INPUT	35	2
3	00		CLOSED FROM CLOSE WALL BUTTON	20	3
4	00		STOPPED AT UP LIMIT	3D	4
5	00		OPENED FROM OPEN KEY ACTIVATION	14	5
6	00			00	6
7	00	RSX STORES "00" CODES IN UNUSED RUN AND ERROR CODE MEMORY LOCATIONS AT THE TIME OF MANUFACTURE. AS ERROR OR RUN CODES ARE		00	7

LED Indicators

™ Fire Door Operators include a self-diagnostic circuit board using troubleshooting LED indicators to signal the technician of a problem. Fig. 2

Fig. 2
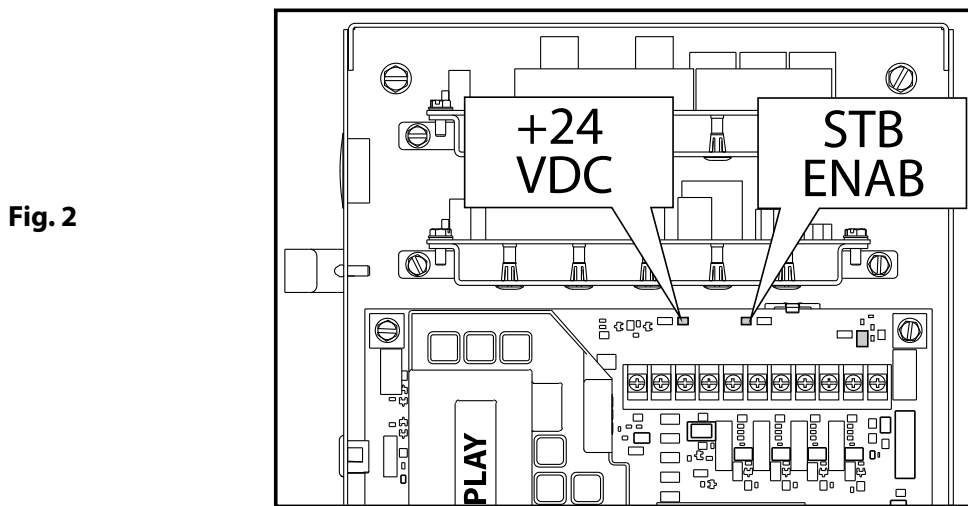
The Fire Door Operator contains troubleshooting LEDs on the main control board as well as a display screen. The FDO module also has an LED troubleshooting system that will also display most errors pertaining to the FDO module. Fig. 3

TROUBLESHOOTING LED's

Fig. 3

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

Section 9: Troubleshooting
Display Operation in Run Mode

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

The Operator will display any uncleared trouble codes, in turn, on the integrated display, alternating with the active condition (error or run) code, until all of the trouble codes have been cleared. Trouble Codes can only be cleared after the condition causing the code has been resolved, and the key-switch is turned to the RESET position. Trouble Codes are not cleared by pressing the STOP button or STOP key on the keypad. Trouble Codes are not stored in the Operator's memory.

Run Codes

To aid in troubleshooting problems, Fire Door Operators include a Run Code Memory that stores the most recent 10 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, 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.

RUN CODE 1>xx

Clear code in run mode

IN CALIBRATION MODE:
Displays 10 RUN Codes stored in memory. See RUN CODES for more details.
Press SCROLL down key to advance to next menu item.

RUN CODE 1>xx

Cycle

Advance to next menu item

CALIBRATION

-Scrolling Text-
MODE

Advance

IN CALIBRATION MODE:
Displays 10 ERROR Codes stored in memory. See ERROR CODES for more details.
Press SCROLL down key to advance to next menu item.

ERROR CODE 1>xx

-Scrolling Text-
XX>ERROR DECRIP.

Cycle

Section 9: Troubleshooting - Run Code Displays

Code	Display	Detailed/Expanded Description	Corrective Action
0C	IDLE > DOWN LIMIT	The door is at the Down Limit position.	None
0D	IDLE > UP LIMIT	The door is at the Up Limit position.	None
0E	IDLE > MID STOP	The door is at the Mid-Stop Limit position.	None
0F	IDLE > NO LIMIT	The door is at no established limit position.	None
10	OPENING > OPEN BTN	The Open Pushbutton input was activated causing the door to move in the opening direction.	None
11	OPENING > ONE BTN	The 1- Button input was activated causing the door to move in the open direction.	None
12	OPENING > RADIO	The External Radio input was activated causing the door to move in the open direction.	None
13	OPENING > AUX OPEN	The Auxiliary Open input (on the TCM Module) was activated causing the door to move in the open direction.	None
14	OPENING > OPEN KEY	The Open Key (on the circuit board) was activated causing the door to move in the open direction.	None
20	CLOSING > CLOSE PB	The Close Pushbutton input was activated causing the door to move in the close direction.	None
21	CLOSING > ONE BTN	The 1- Button input was activated causing the door to move in the close direction.	None
22	CLOSING > RADIO	The External Radio input was activated causing the door to move in the close direction.	None
24	CLOSING > CLOSE KP	The Close Key (on the circuit board) was activated causing the door to move in the close direction.	None
2A	CLOSING > TCM CLS	The TCM Module sent a close signal causing the door to move in the close direction.	None
2B	CLOSING > FDM CLS	The Fire Door Module sent a signal causing the door to move in the close direction.	None
30	HALT > WALL BUTTON	The door stopped because the Stop Pushbutton was activated.	None
31	HALT > ONE BUTTON	The door stopped (and /or reversed) because the 1-Button input was activated.	None
32	HALT > RADIO	The door stopped and reversed because the Radio input was activated.	None
33	HALT > AUX. OPEN	The door stopped (and /or reversed) because the Auxiliary Open input on the TCM Module was activated.	None
34	HALT > KEYPAD KEY	The door stopped because the Stop Key was activated.	None
35	HALT > N-O SAFETY	The door stopped and reversed because the Normally Open Reverse input was activated.	None
36	HALT > ODC STB	The door stopped and reversed because the Safety Beam or Monitored Edge with the Monitored Edge Interface Module was activated.	None
37	HALT > N-C SAFETY	The door stopped and reversed because the Normally Close Reverse input on the TCM Module was activated.	None
38	HALT > MON. EDGE	The door stopped and reversed because the Monitored Edge input on the TCM Module was activated.	None
39	HALT > DOOR FORCE	The door stopped because the Speed of the Limit Assembly slowed down (Trolley Models only).	Check the door balance. Check the Clutch adjustment to make sure it's not slipping. Check for mechanical issues. Replace the Limit Module. Replace the Main Control Board.
3A	HALT > LOSS OF C/C	The door stopped (and /or reversed) because the constant contact activation was removed before the door reached a limit.	None. User input was removed.
3B	HALT > SHUTDOWN	The door stopped because the Hoist Interlock, External Interlock circuit became active (opened) or the motor overheated.	Check the Hoist Interlock switch and wires. Check an External Interlock switch and wires. If no External Interlock is use check the gray jumper between the two EXT INTLK terminals. Check for a hot motor.
3C	HALT > DOWN LIMIT	The door stopped because it reached the Down limit position.	None
3D	HALT > UP LIMIT	The door stopped because it reached the Up limit position.	None
3E	HALT > MID STOP	The door stopped because it reached the Mid-Stop limit position.	None

Section 9: Troubleshooting
Error Codes

To aid in troubleshooting problems, Fire Door Operators include an Error Code Memory that stores the most recent 10 error events. These codes are stored with or without power. The latest 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 its codes in time sequence. Once 10 codes are stored, the oldest code will be erased to make room for the next newest code. These codes are displayed in Calibration Mode. The display will flash the number of the code in the sequence and the 2 digit code ID, followed by a description of the code.

Code	Display	Detailed/Expanded Description	Corrective Action
3F	HALT > MODULE FAIL	The door stopped because it determined there was a problem with an Expansion Module. (Timer Close or Auxiliary Output Module)	Check Expansion Module LED Status. Power the operator off, remove the module and re-apply power, if the operator starts working replace the module.
40	REV > OPEN BUTTON	The door stopped traveling down and reversed and is now traveling open because the Open Pushbutton was activated.	Check the Open Pushbutton and Open Pushbutton wires for a closed circuit.
41	REV > ONE BUTTON	The door stopped traveling down and reversed and is now traveling open because the 1-Button input was activated.	Check the 1-Button and 1-Button wires for a closed circuit.
42	REV > RADIO	The door stopped traveling down and reversed and is now traveling open because the External Radio input was activated.	Check the External Radio for a short circuit.
43	REV > AUX OPEN	The door stopped traveling down and reversed and is now traveling open because the Auxiliary Open input on the Timer Close Module was activated.	Check the Auxiliary Open Input on the Timer Close Module and the Auxiliary Open Input wires for a closed circuit.
44	REV > OPEN KEY	The door stopped traveling down and reversed and is now traveling open because the Open Key (on the circuit board) was activated.	Power the unit down and back up. If the error persist then replace the main circuit board.
45	REV > N-O SAFETY	The door stopped traveling down and reversed and is now traveling open because the Normally Open Reverse input was activated.	Check the N-O Reverse input and N-O Reverse wires for a closed circuit.
46	REV > ODC STB	The door stopped traveling down and reversed and is now traveling open because the Monitored Safety Beam (STB) or Monitored Edged with the Monitored Edge Interface Module input was activated.	Check the ODC STB input and ODC STB wires for a open or shorted (closed) circuit.
47	REV > N-C SAFETY	The door stopped traveling down and reversed and is now traveling open because the Normally Close Safety Input on the Timer Close Module was activated.	Check the Normally Closed Safety Input on the Timer Close Module and the Normally Closed Safety Input wires for a open circuit.
48	REV > MON. EDGE	The door stopped traveling down and reversed and is now traveling open because the Monitored Edge Input on the Timer Close Module was activated.	Check the Monitored Edge Input on the Timer Close Module and the Monitored Edge Input wires for a Open or shorted (closed) circuit.
49	REV > DOOR FORCE	The door stopped traveling down and reversed because the Speed of the Limit Assembly slowed down (Trolley Models only).	Check the door balance. Check the Clutch adjustment to make sure it's not slipping. Check for mechanical issues. Replace the Limit Module. Replace the Main Control Board.
4A	REV > LOSS OF C/C	The door stopped traveling down and reversed because the constant contact activation was removed before the door reached the down limit.	User input was removed.

Code	Display	Detailed/Expanded Description	Corrective Action
4B	REV > MAX RUN TMR	The door stopped traveling down and reversed because the Maximum Run Time between Limits was exceeded.	Check the door balance. Check the Clutch adjustment to make sure it's not slipping. Re-record the Max Run Timer values in both directions.
4F	REV > EXP MOD FAIL	The door stopped traveling down because it determined there was a problem with an Expansion Module.	Review the menu looking for a missing menu item. For example, if the limit module is defective there will not be any limit setting information in the menu.
50	STOP > HOT MOTOR	The door stopped moving because the motor overheated.	Check for a hot motor. Check the motor plug on the main board making sure the plug and wires are seated.
51	STOP > OPEN MRT	The door stopped traveling open because the Maximum Run Time between Limits was exceeded.	Check the door balance. Check the Clutch adjustment to make sure it's not slipping. Re-record the Max Run Timer values in both directions.
52	STOP > CLOSE MRT	The door stopped traveling close because the Maximum Run Time between Limits was exceeded.	Check the door balance. Check the Clutch adjustment to make sure it's not slipping. Re-record the Max Run Timer values in both directions.
57	STOP > OPEN INTLK	The door stopped because the Hoist Interlock or the External Interlock circuit became active (open).	Check the Hoist Interlock switch and wires. Check an External Interlock switch and wires. If no External Interlock is use check the gray jumper between the two EXT INTLK terminals
58	STOP > WRONG GDO	The door stopped because it determined the circuit board is set as a J-Shaft (side-mounted unit) but is installed on a Trolley unit.	Review the "GDO TYPE" in the calibration setting of the unit.
59	STOP > DOOR FORCE	The door stopped traveling up because the Speed of the Limit Assembly slowed down (Trolley Models only).	Check the door balance. Check the Clutch adjustment to make sure it's not slipping. Check the GDO Type in the set-up menu for the proper setting for the model installed (Trolley or J-Shaft). Check for mechanical issues. Replace the Limit Module. Replace the Main Control Board.
5A	STOP > WRONG LIMIT	The door stopped traveling because the unit was looking for the Up Limit and the Down Limit became active or the unit was looking for the Down Limit and the UP limit became active.	Review the calibration setting. Reset motor direction and limits.
5B	STOP > WRONG DIR	The door stopped traveling because the unit was looking for Limit direction input in one direction but received input in the opposite direction.	Review the calibration setting. Reset motor direction and limits.
5C	STALL > DOWN LIMIT	The door stopped traveling because it expected the Down Limit to clear (door moved off the down limit position) but it did not receive that signal.	Check door balance. Review the calibration setting. Reset motor direction and limits.
5D	STALL > UP LIMIT	The door stopped traveling because it expected the Up Limit to clear (door moved off the up limit position) but it did not receive that signal.	Check door balance. Review the calibration setting. Reset motor direction and limits.
5E	STALL > MID-STOP	The door stopped traveling because it expected the Mid Stop Limit to clear (door moved off the mid stop limit position) but it did not receive that signal.	Check door balance. Review the calibration setting. Reset motor direction and limits.
60	CHECK STOP BTN	The door will not move because the Stop Circuit (normally closed circuit) in not completed.	Check the Stop Pushbutton and Stop Pushbutton wires.
61	TCM DISABLED	The door will not time out and close because there are no Monitored Sensing/Safety devices enabled and/or not working.	Check the ODC STB and ODC STB wires. Chaeck the Monitored Edge, review the set-up in the menu to ensure the proper setting for the installed safety input.
62	NO RADIO >> C/C	The door will not move with a radio input (transmitters) because the unit is set for Constant Contact in the Open and/or Close Modes.	Review the calibration setting. Reset Open and Close Modes to Momentary
63	CHECK AUX OPEN	The unit determined the Auxiliary Open input on the Timer Close Module is active. This input will be ignored until it changes state.	Check the Auxiliary Input device wired into the Timer Close Module and Auxiliary Input device wires for a closed circuit.
64	CHECK STOP KEY	The unit will not run because it determined the Stop Key input on the circuit board is active.	Power the unit down and back up. If the error persist then replace the main circuit board.
65	CHECK N-O SAFETY	The unit will not close because it determined the Normally Open Reverse input on the circuit board is active (shorted).	Check the N-O Reverse device wired into the main board and the N-O Reverse Input device wires for a closed circuit.
66	CHECK ODC STB	The unit will not close because it determined the ODC Safe-T-Beam input on the circuit board is active.	Check the ODC STB and ODC STB wires.

Section 9: Troubleshooting. Error Code Displays

Code	Display	Detailed/Expanded Description	Corrective Action
67	CHECK N-C SAFETY	The unit will not close because it determined the Normally Closed Reverse input on the Timer Close Module is active (Open circuit).	Check the Normally Close (N-C Safe) Input device wired into the Timer Close Module and device wires for a open circuit.
68	CHECK MON. EDGE	The unit will not close because it determined the Monitored Edge (MON EDGE) input on the Timer Close Module is active.	Check the Monitored Edge (MON EDGE) Input device wired into the Timer Close Module and device wires.
69	OVERHEATED MOTOR	The unit will not run because it determined the Thermal Overload in the motor is active.	Check the door balance. Check the wires in the motor connector that plugs into the circuit board. Replace the motor.
6C	NO RUN > DOWN LIM	The unit will not run because the Down/close input was activated but the unit was already at the Down Limit position.	User input error
6D	NO RUN > UP LIMIT	The unit will not run because the Up/open input was activated but the unit was already at the Up Limit position.	User input error
6E	NO RUN > MID STOP	The unit will not run because the Up/open input was activated but the unit was already at or beyond the Mid Stop Limit position. This active input is preventing the unit from closing as well.	User input error
6F	EXP MODULE FAIL	The unit may not run because it had lost communication with one or more Expansion Modules (Limit Module, On-board Radio, Timer Close Module and/or Auxiliary Output Module)	Review the menu looking for a missing menu item. For example, if the limit module is defective there will not be any limt setting information in the menu.
85	EXP PORT PROBLEM	The unit may not run because it has determined that is has lost communication with one or more Expansion Modules (Limit Module, On-board Radio, Timer Close Module and/or Auxiliary Output Module)	Review the menu looking for a missing menu item. For example, if the limit module is defective there will not be any limt setting information in the menu.
88	TCM FAILURE	The unit has determined that the Timer Close Module has stopped communicating.	Check the ribbon cable connection. Power the unit down and back up. If the error persist then replace the Timer Close Module.
89	FDM FAILURE	The unit has determined that the Fire Door Module has stopped communicating.	Check the ribbon cable connection. Power the unit down and back up. If the error persist then replace the Fire Door Module.
8A	AOM FAILURE	The unit has determined that the Auxiliary Output Module has stopped communicating.	Check the ribbon cable connection. Power the unit down and back up. If the error persist then replace the Auxiliary Output Module.
8B	SPARE MOD FAILURE	Not Used	Contact Technical Services
8C	LOW SYSTEM VOLTS	The unit has determined that the secondary voltage is less than acceptable.	Check supply voltage to the unit. Make sure the Motor Connector is plugged into the correct socket for the voltage supplied.
8D	HI SYSTEM VOLTS	The unit has determined that the Line Voltage input to the unit is too high for the configuration of the unit.	Check supply voltage to the unit. Make sure the Motor Connector is plugged into the correct socket for the voltage supplied. Contact an Electrician
8E	REV INTERRUPTED	The unit did not complete a 2 second reversal before it had encountered a issue and stopped.	None

Section 9: Troubleshooting. Error Code Displays

Code	Display	Detailed/Expanded Description	Corrective Action
8F	LIMIT MOD. FAIL	The unit has determined that the Limit Module has stopped communicating.	Check the limit cable connection. Power the unit down and back up. If the error persist then replace the Limit Module.
A0	OPEN BTN BAD > PU	The unit determined that the Open Pushbutton input was active (shorted) when power was applied. This input will be ignored until it changes state.	Check the Open Pushbutton and Open Pushbutton wires for a closed circuit.
A1	CLOSE BTN BAD > PU	The unit determined that the Close Pushbutton input was active (shorted) when power was applied. This input will be ignored until it changes state.	Check the Closed Pushbutton and Close Pushbutton wires for a closed circuit.
A2	ONE BTN BAD > PU	The unit determined that the 1- Button input was active (shorted) when power was applied. This input will be ignored until it changes state.	Check the 1-Button and 1-Button wires for a closed circuit.
A3	RADIO BAD > PWR UP	The unit determined that the External Radio input was active when power was applied. This input will be ignored until it changes state.	Check the External Radio for a short circuit.
A4	AUX OPEN BAD > PU	The unit determined that the Auxiliary Open input on the Timer Close Module was active (shorted) when power was applied. This input will be ignored until it changes state.	Check the Auxiliary Input device wired into the Timer Close Module and Auxiliary Input device wires for a closed circuit.
A5	OPEN KEY BAD > PU	The unit determined that the Open Key input on the circuit board was active (shorted) when power was applied. This input will be ignored until it changes state.	Power the unit down and back up. If the error persist then replace the Main Circuit Board.
A6	CLOSE KEY BAD > PU	The unit determined that the Close Key input on the circuit board was active (shorted) when power was applied. This input will be ignored until it changes state.	Power the unit down and back up. If the error persist then replace the Main Circuit Board.
A7	MULT KEYS BAD > PU	The unit determined that more than one input on the circuit board keypad was active (shorted) when power was applied. These inputs will be ignored until they change state.	Power the unit down and back up. If the error persist then replace the Main Circuit Board.
B0	OPENING > XMTR #	The unit received a valid input from a "Learned" transmitter and the door is traveling open. The transmitter ID is displayed.	None
B1	CLOSING > XMTR #	The unit received a valid input from a "Learned" transmitter and the door is traveling close. The transmitter ID is displayed.	None
B2	HALT > XMTR #	The unit received a valid input from a "Learned" transmitter and has stopped the door. The transmitter ID is displayed.	None
B3	"Rev > XMTR# NO XMTR > CC"	The unit received a valid input from a "Learned" transmitter and the closing door stopped and reversed and is now traveling open	None
I2C Comm Error	I2C Comm Error	The system can not communicate on the I2C communication line.	While the operator is powered start unplugging the expansion devices one at a time (Timer Close Module, Auxiliary Output Module, On-board Radio, Limit Module), allow the unit to try to re-initiate, if the operator is able to re-initiate the LCD will update with the current status. If this happens then the last device you have unplugged is defective and needs to be replaced. if all devices have been unplugged and the operator still displays I2C Comm Error, replace the main control board.

Section 9: Troubleshooting
FDO Module Trouble Codes

Trouble Codes indicate a problem with the Fire Door Module, or a connection to the Fire Door Module. Multiple trouble codes can be active (or uncleared) at the same time. The Fire Door Operator will indicate uncleared troubles by lighting the Trouble LED on the Remote Test and Trouble Plate, and producing an audible indicator through the sounder. The uncleared trouble codes are displayed on the integrated operator display, and the trouble code numbers are flashed out on the Fire Door Module's on-board LED, in sequence. Once the cause of a trouble has been resolved, the trouble code will remain uncleared until the key-switch on the Remote Test and Trouble Plate is turned to the RESET position. Any unresolved troubles will remain uncleared and any resolved troubles will be cleared.

Trouble indications must be cleared by fixing their cause and then turning the key switch to reset and back. If the underlying cause has not been fixed, the reset switch will silence the trouble sounder for 24 hours, but the amber LED on the Fire Door Module will still flash and the main board LCD will still display the trouble. This silencing feature is for convenience only and does not indicate that the underlying cause of a trouble indication has been fixed.

If a trouble has been correctly cleared the LCD will no longer indicate the trouble, the amber LED will no longer flash out the trouble code, the sounder will no longer beep.

FDO Module
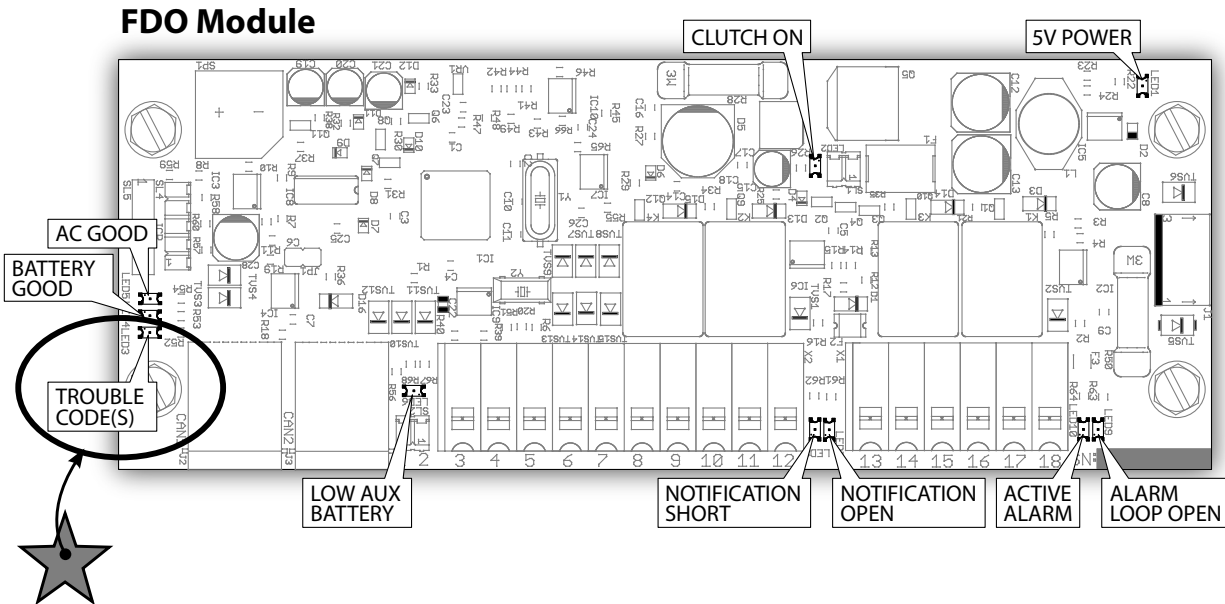
Trouble Code Blinks	Control Board Display	Trouble Code Description
1	CLUTCH CKT FAULT	WIRING FROM THE FDM TO THE ELECTRIC CLUTCH IS DISCONNECTED OR BROKEN
5	BATTERY NOT PRESENT	LEAD ACID BATTERIES ARE NOT CHARGING OR ARE DISCONNECTED
6	CHARGER VOLTAGE FAIL	FDM BATTERY CHARGER IS NOT WORKING BECAUSE THE SUPPLY VOLTAGE HAS FAILED
7	BATTERY LOW	LEAD ACID BATTERIES ARE DISCHARGED
8	EXTERNAL POWER LOSS	PRIMARY INPUT POWER TO THE FDM IS NOT PRESENT
10	NOTIFICATION CIRCUIT OPEN	WIRING FROM FDM TO NOTIFICATION APPLIANCE IS DISCONNECTED OR BROKEN, OR THE END-OF-LINE DEVICE IS NOT CONNECTED
11	NOTIFICATION CIRCUIT SHORT	FDM CONNECTION TO THE NOTIFICATION APPLIANCE IS SHORT CIRCUITED
12	ALARM CIRCUIT OPEN	WIRING FROM THE FDM TO THE SMOKE DETECTOR IS DISCONNECTED OR BROKEN, OR THE END-OF-LINE DEVICE IS NOT CONNECTED
15	TEST REQUIRED	TEST OF THE FIRE DOOR AND FIRE DOOR OPERATOR IS REQUIRED
16	REAL TIME CLOCK ERROR	FDM CLOCK IS NOT WORKING
17	STUCK RESET	THE KEY-SWITCH ON THE REMOTE TEST & TROUBLE PLATE IS STUCK IN THE "RESET" POSITION
19	COMM LOSS WITH MAIN BOARD	FDM HAS LOST COMMUNICATION WITH MAIN CONTROL BOARD
20	COMM LOSS WITH POWER SUPPLY MONITOR	FDM HAS LOST COMMUNICATION WITH THE POWER SUPPLY PANEL

Section 10: Service and Maintenance

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

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

⚠ **AVERTISSEMENT:**
Si les instructions de service et de maintenance recommandés ne sont pas suivies, l'opérateur pourrait tomber en panne prématurément.

⚠ **WARNING:**
To avoid SERIOUS INJURY or DEATH:
• Disconnect power BEFORE performing ANY adjustment or maintenance.
• ALL maintenance MUST be performed by qualified service personnel.

⚠ **AVERTISSEMENT:**
Pour éviter LES BLESSURES GRAVES OU MORTELLES :
• Coupez l'alimentation avant d'effectuer toute opération de réglage ou d'entretien.
• Les opérations d'entretien doivent obligatoirement être effectuées par un personnel qualifié.

Maintenance Schedule

SERVICE ITEM	SERVICE INTERVAL		
	MONTHLY	EVERY 3 MO. OR 5000 CYCLES	EVERY 6 MO. OR 5000 CYCLES
SENSING EDGE OPERATION	X		
CHECK BRAKE SYSTEM		X	
SPROCKET SET SCREWS		X	
MANUAL OPERATION			X

SERVICE ITEM	SERVICE INTERVAL		
	EVERY 12 MO. OR 10000 CYCLES	EVERY 24 MO. OR TROUBLE INDICATOR	EVERY 36 MO. OR 30000 CYCLES
CHECK DRIVE CHAINS AND LUBRICATE	X		
CLUTCH ADJUSTMENT	X		
CHECK FOR LOOSE OR MISSING HARDWARE	X		
CONDUCT TEST SEQUENCE	X		
REPLACE ALL BATTERIES*		X	
CHECK LIMIT POSITIONS			X
CHECK GEAR TRAIN WEAR			X

* Batteries should be disposed of in accordance with local, state and federal regulations.

Section 11: Parts Breakdown

See Page 11.3

See Page 11.3

See Page 11.2
For Electric
Box

See Page 11.2
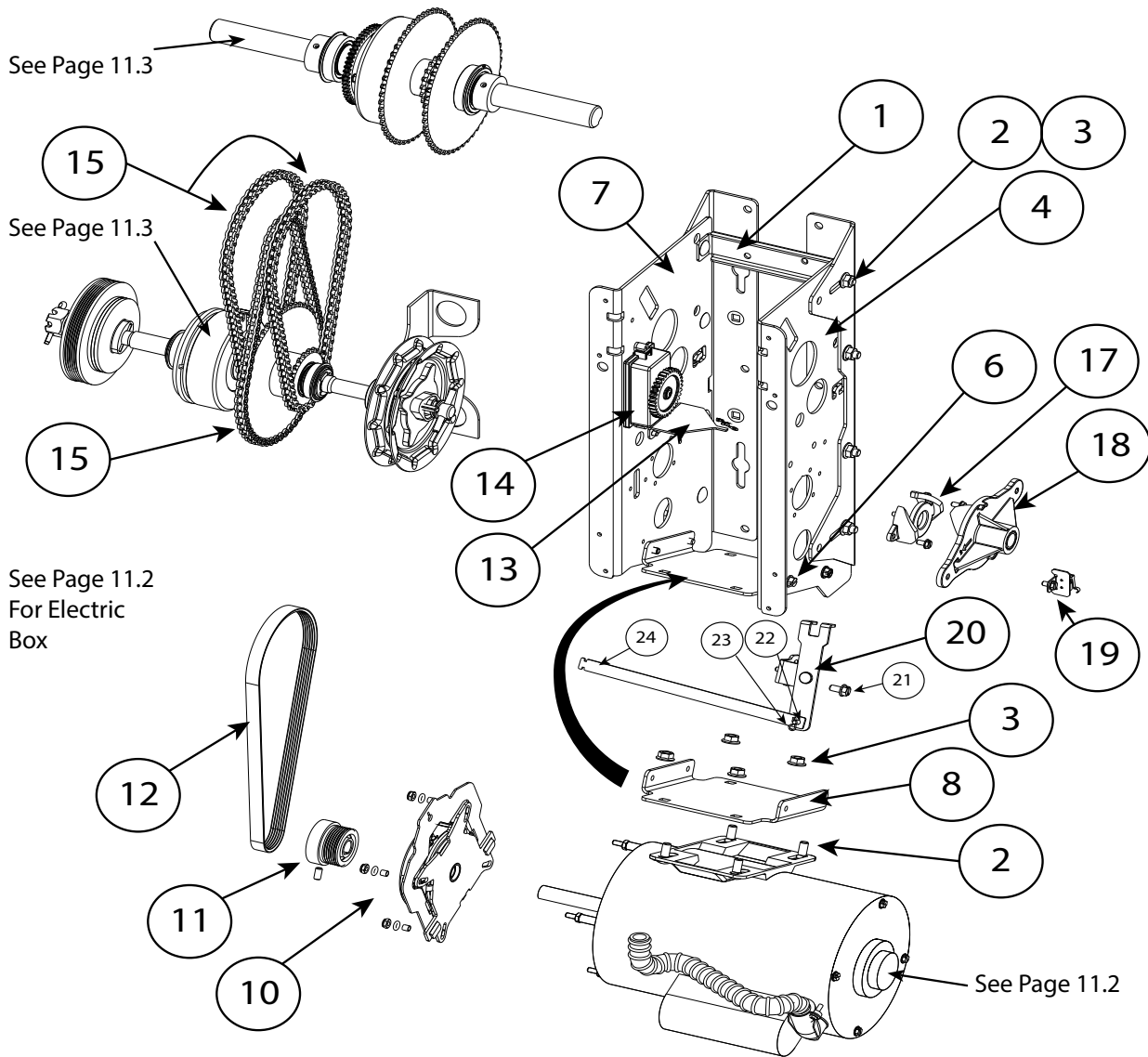
Item	Part Number	Description	QTY.
1	110627.0001	Bracket, Support	1
2	086420.0506	Bolt, Carriage	6
3	24121C05	Nut, Flange	6
4	112160.0001	Frame, RH	1
6	086575.1008	Screw, Self Tapping	4
7	112160.0002	Frame, LH	1
8	110636.0001	Motor Mount Plate	1
10	111396.0001	Brake Assembly 1/2HP-1PH	1
	111396.0002	Brake Assembly, All Others	1
11	110764.0003	Motor Pulley w/setscrews	1
12	111010.0001	Belt	1
13	111460.0001	Clutch Bracket	1
14	111421.0005	Limit Module	1

15	110877.0072	Chain, #35 X 72P,, loop	3
17	111036.0001	Ramp	1
18	111089.0001	Hoist Release	1
19	111149.0001	Interlock Switch Assembly RH	1
	111149.0002	Interlock Switch Assembly LH	
20	111088.0001	Release Arm Assembly	1
21	086575.0806	Screw,	1
22	111007.0001	Pin,	1
23	111004.0001	HairPin	1
24	111031.0001	Linkage, Hoist Release	1

Section 11: Parts Breakdown

Standard Equipment Motors

All motor assemblies come complete with motor side conduit connector, flexible conduit, and complete wire harness pre-installed.

Single Phase

Part Number	Horsepower	Available Voltages
110635.0001	1/2 HP	115, 208, 230
110635.0002	3/4 HP	115, 208, 230
110635.0003	1 HP	115, 208, 230

Three Phase

Part Number	Horsepower	Available Voltages
110635.0004	1/2 HP	208, 230, 460
110635.0005	3/4 HP	208, 230, 460
110635.0006	1 HP	208, 230, 460
110635.0007	1/2 HP	575
110635.0008	3/4 HP	575
110635.0009	1 HP	575
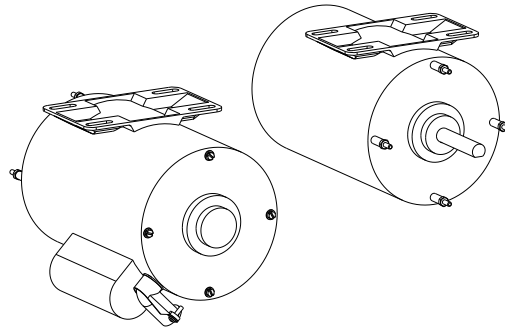
ODP, Single and Three Phase Motors
(Open Drip Proof) Standard Equipment

FDO Electric Box
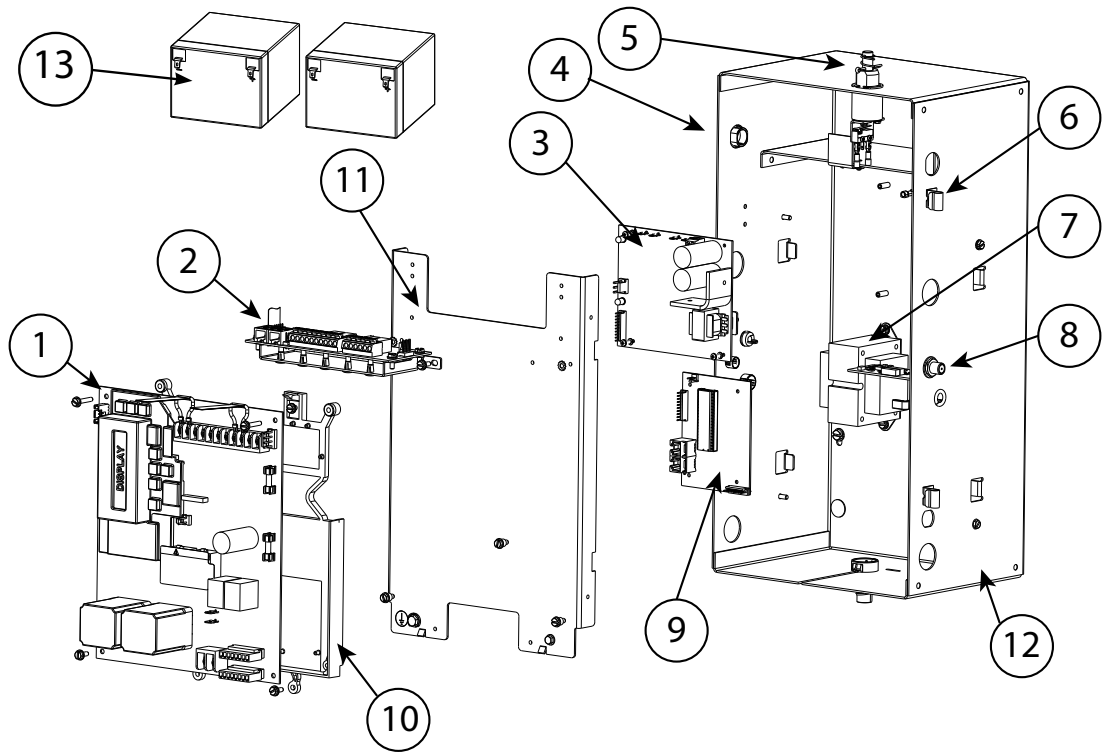
Item	Part Number	Description	QTY.
1	111854.0001	PCB Assy. 1/2HP 1PH	1
	111854.0002	PCB Assy. 3/4-1HP, 1PH	1
	111854.0004	PCB Assy. 208-230-460, 3PH	1
	111854.0005	PCB Assy. 575VAC	1
2	37803R	FDO Module Assembly	1
3	37653R	PCB, Power Supply	1
4	111347.0002	Bushing	6
5	112518.0002	Switch Assy. Fuse Link	1
6	110950.0001	Hinge Assembly	2
7	112203.0001	Transformer, All 1 Phase	1
	112203.0002	Transformer, All 3 Phase	1
	112203.0003	Transformer, 575VAC	1
8	111397.0001	Radio Kit	1
9	38015R	PCB, UVDM Interface	1
10	111401.0001	Insulator, PCB	1
11	112062.0001	Bracket, PCB mount	1
12	111680.0001	Box, Electric, FDO	1
13	111658.0002	Battery, 12VDC	2
N/S	111398.0001	Latch Assembly, Cover	1
N/S	112188.0001	Cover Assembly	1
N/S	111405.0001	Fuse Kit, 10pcs, .3A & 2.5A	1
N/S	112226.0001	Fuse Kit, 10pcs. 2.0A pwr bd.	1
N/S	111439.0001	Radio Pigtail	1

Section 11: Parts Breakdown

111459.0001
Clutch Shaft Assembly Kit, RH

111459.0002
Clutch Shaft Assembly Kit, LH
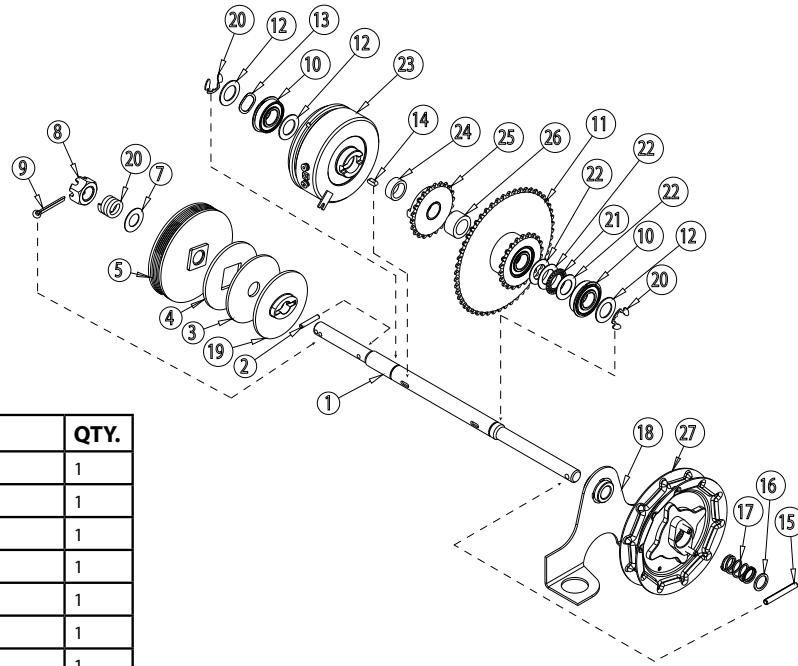
Item	Part Number	Description	QTY.
1	111445.0001	Shaft, Clutch, FDO	1
2	110881.0001	Pin, Dowel, 3/16x1	1
3	075193.0000	Lining, Clutch	1
4	108015.0001	Disc, Clutch, Movable	1
5	111433.0001	Pulley Assembly, Clutch	1
6	075197.0000	Spring, Clutch	1
7	086649.0029	Washer, Thrust, 5/8	1
8	110472.0001	Nut, Hex, Slotted, 5/8-11	1
9	080401.0624	Pin, Cotter, 3/16x1-1/2	1
10	110695.0001	Bearing, 3/4ID	2
11	111582.0001	Dual Sprocket Assy. 22T-52T	1
12	110819.0003	Washer, 3/4ID	3
13	110818.0004	Washer, Wave, Spring, 3/4ID	1
14	111217.0001	Key, Round End, 3/6x1-1/2	1
15	110313.0010	Pin, Spring, 1/4x2	1
16	110819.0001	Washer, Plain, 5/8ID	1
17	112389.0001	Spring, 3/4IDx1-1/2	1

18	110411.0001	Chain Guard Assembly	1
19	111037.0001	Disc, Clutch	1
20	111382.0001	Ring, Retaining, High Grip	2
21	111402.0001	Bearing, Thrust	1
22	111403.0001	Washer, Thrust	1
23	112158.0001	Clutch & Bushing Assy.	1
24	111475.0001	Spacer, Clutch	1
25	111471.0001	Sprocket & Bushing Assy.	1
26	111579.0001	Spacer, Clutch Shaft	1
27	110872.0001	Handwheel. Chain	1

111458.0001. FDO Output Shaft Assembly
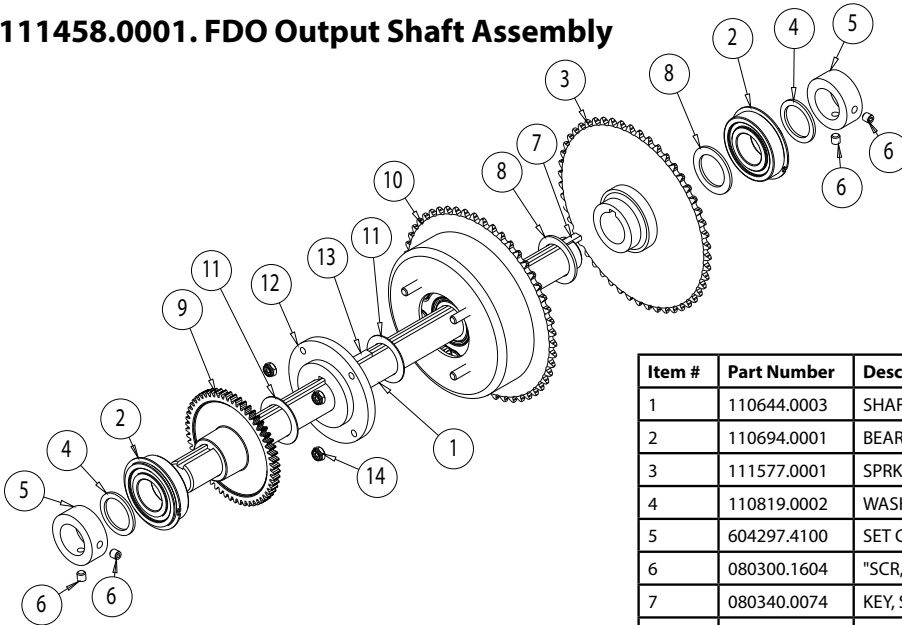
Item #	Part Number	Description	QTY.
1	110644.0003	SHAFT, OUTPUT, 1.00 DIA, SDMT	1
2	110694.0001	BEARING, 1.000 ID	2
3	111577.0001	SPRKT, 50T, #35	1
4	110819.0002	WASHER, PLAIN 1.026 ID	2
5	604297.4100	SET CLR, 1" ID X 1 5/8 OD	2
6	080300.1604	"SCR, SET, SCH, KNRLD, 1/4-20 X 1/4"	4
7	080340.0074	KEY, STD, SQ, 1/4 X 7/8	1
8	110393.0001	WASHER, SPACER 1.015 ID	2
9	111074.0001	GEAR, LIMIT, 56T, SIDEMOUNT	1
10	111455.0001	GOVERNOR ASSY,19T-50T	1
11	111325.0001	WASHER, GOVERNOR	2
12	111578.0001	SUPPORT HOUSING, GOVERNOR	1
13	080340.0078	KEY, STD, SQ, 1/4 X 5/8	1
14	601108.0007	NUT, LK, HEX, PLD, #10-32	4

Section 12: General Information

Device Compatibility Identifier:

Part Number	Model Number	Description
Photoelectric Smoke Detectors		
608964.0005	Hochiki SLR835BH-2	2-wire smoke detector w/135°F thermal sensor, compatibility identifier HD-6
Heat Detectors		
608964.0004	Hochiki DFE-190	190°F fixed temperature - Requires plate listed below
608964.0003	Hochiki DFE-135	135°F fixed temperature - Requires plate listed below
608965.0001	Hochiki NS6-100 Plate	Mounting plate for DFE-135/DFE-190
Notification Appliances		
608149.0002	System Sensor SR	Strobe. Set for 15 cd per System Sensor Instructions-24V
608148.0001	System Sensor HR	Horn. Set for non-temporal horn per System Sensor Instructions
608148.0004	System Sensor P2R	Horn/Strobe. Set for 15 cd and non-temporal horn per System Sensor Instructions
End of Line Devices		
112325.0001.S	System Sensor EOLR-1	End of Line Relay with Plate
112249.0001.S		End of Line Resistor w/Plate for Install in Single Gang Box

Replacement Parts:

Replacement Parts	Description	QTY.
112325.0001	End of line relay w/Plate	As Required
112249.0001	End of line resistor w/Plate	As Required
112012.0001	Armature Assembly	1
112007.0001	Remote test key switch with Plate	1
112228.0001	End-of-Line Resistor 2.2K	10 Pack

Section 12: General Information

Test Records:

Date	Serial #	Installer/Tester	Witness	Pass	Fail

Section 12: General Information

Test Records:

Date	Serial #	Installer/Tester	Witness	Pass	Fail

Notes:

The Genuine. The Original.

OVERHEAD DOOR ®

RSX® Fire Door Operator
Limited Warranty

The authorized distributor of Overhead Door Corporation products whose name appears below ("Seller") warrants to the original purchaser of the Operator specified below ("Operator"), subject to all the terms and conditions hereof, that the Operator will be free from defects in material and workmanship under normal use and service until the earlier of the following to occur:

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

Sellers sole obligation under this warranty is specifically limited to repairing or replacing, at it's option, any parts which shall be determined by Seller to be defective during the warranty period. Any labor charges are excluded and will be the responsibility of the owner.

This warranty applies only to an operator which is installed in commercial or industrial building applications. This warranty does not apply if the Operator has been altered or repaired by any person not authorized by Overhead Door Corporation to do so, or if it has been damaged due to misuse, accident or failure to provide necessary maintenance. This warranty is made only to the original purchaser of the Operator and is not transferable or assignable.

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

IN NO EVENT SHALL OVERHEAD DOOR CORPORATION BE RESPONSIBLE FOR, OR LIABLE TO ANYONE FOR, SPECIAL, INDIRECT, COLLATERAL, PUNITIVE,INCIDENTAL OR CONSEQUENTIAL DAMAGES, even if Overhead Door Corporation 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, interruption of business, or other similar indirect financial loss.

Claims under this warranty must be made in writing promptly to the Seller whose name and address appears to the right, and must be made within the warranty period. (Proof of purchase and identification as the original purchaser may be required.)

Overhead Door Corporation's Operator Division will only accept returned materials that are in warranty. Products being returned must be accompanied by a Return Authorization (RA) Tag. To obtain a Return Authorization Tag please use the following guidelines.

• Complete Operators will not be replaced without prior approval from the Operator Division.
• To return an Operator part during the warranty period, the Seller must contact the Technical Service Group of the Operator Division at 1-800-275-6187. The following information is required: Operator Model Number, Date Code, Voltage, Phase & Horsepower, and a description of the malfunction. The Technical Service Group will issue, via mail, an RA Tag for the part.
• Upon receipt of the part, the Operator Division will evaluate the part for a defect in material and/or workmanship. If it is determined there is a defect, the Seller will be credited the cost of the part. If it is determined there is not a defect in material and/or workmanship, no credit will be issued.

Model # (On electric box cover)_____
Serial # (On electric box cover)_____
Date Code _____
Original Purchaser_____
Installation Address_____
Seller_____
Sellers Address_____
Date of Installation_____
Signature of Seller_____

The Genuine. The Original.

OVERHEAD DOOR ®

Overhead Door Corporation

1-800-275-6187
www.OverheadDoor.com