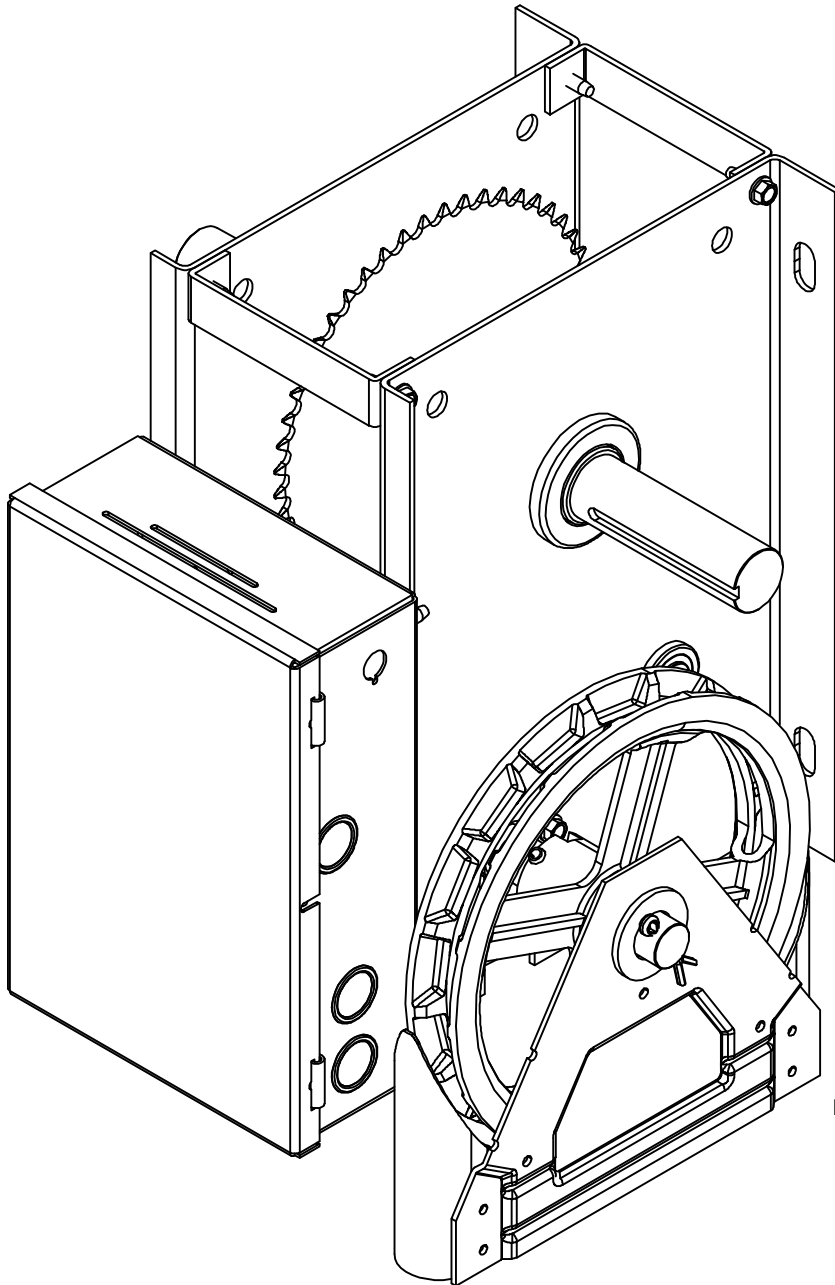


COOKSON OWNER'S MANUAL

FD-2A

AUTOMATIC RESETTING FIRE DOOR HOIST OPERATOR



PROTECTED BY ONE OR MORE OF THE
FOLLOWING PATENTS:

6155324

SPECIFICATIONS

ELECTRICAL

INPUT VOLTAGE

*24VAC +/- 5%

*24VDC +/- 5%

120VAC +/- 5%

*NOTE: ONLY USE CLASS II 24V SUPPLY

CURRENT (mA)

500

500

275

MECHANICAL

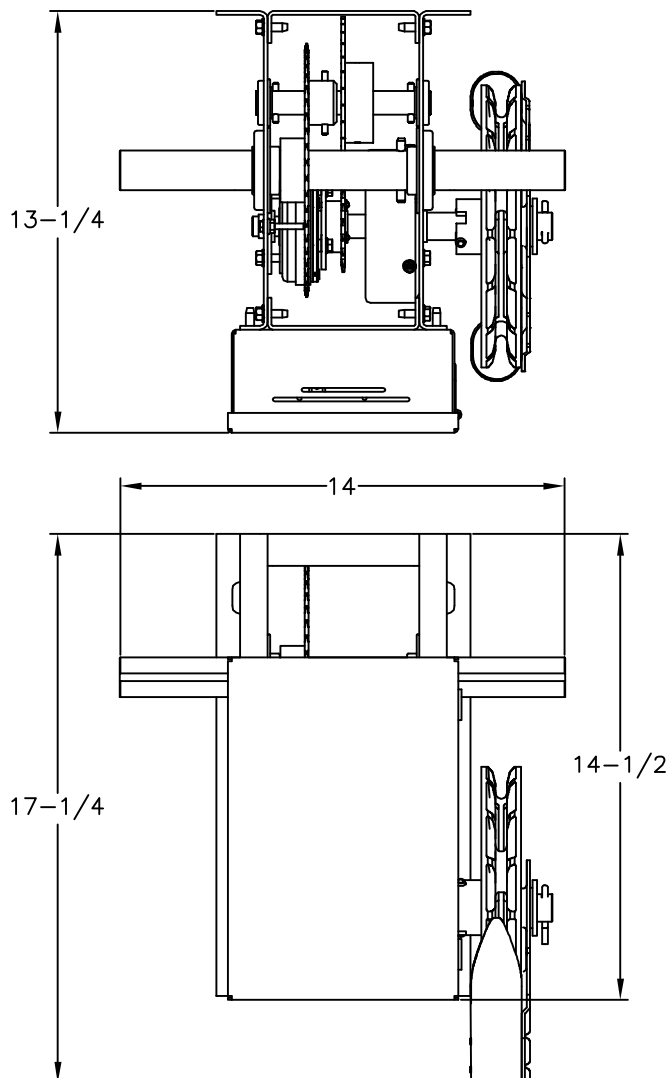
DRIVE REDUCTION:.....8:1 ROLLER CHAIN
REDUCTION

OUTPUT SHAFT.....Ø1-1/4 - 1/4" KEY WAY

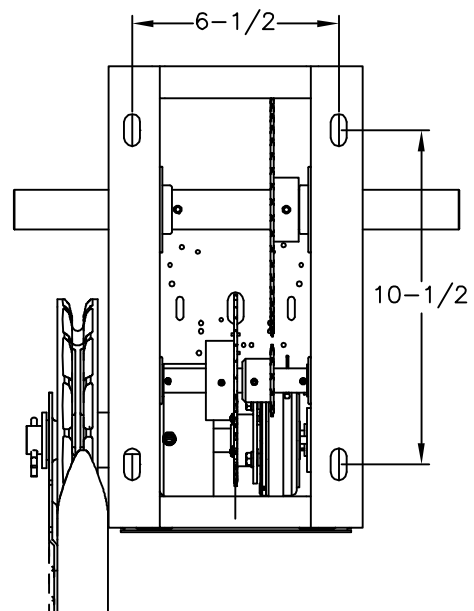
CLUTCH.....ELECTROMECHANICAL FRICTION DISK

BRAKE:.....CAM ACTUATED
LOAD HOLDING

DIMENSIONS



MOUNTING DIMENSIONS



THEORY OF OPERATION

GENERAL DESCRIPTION:

The FD-2A, Fire Door automatic resetting hoist interfaces with Rolling Fire Doors as a manual door operator which disengages when an alarm condition is sensed from a fire alarm system and/or smoke detector. Once power/alarm is restored the unit engages and is ready for normal operation. The FD-2A is designed for use with doors that are out of balance and utilizes a load holding brake that maintains door position. Power to the unit (24VAC/DC or 115VAC) maintains brake engagement via a clutch. The alarm system and/or smoke detector are wired such that an alarm condition will interrupt the power to the unit (Disengaging Clutch) allowing the door to close under it's normal fire drop operation. Note: Refer to Fire Door Manufacturer's Installation Instructions for door installation and operation.



FD-2A MODEL:

1.1 Unit has AC power/No alarm condition.

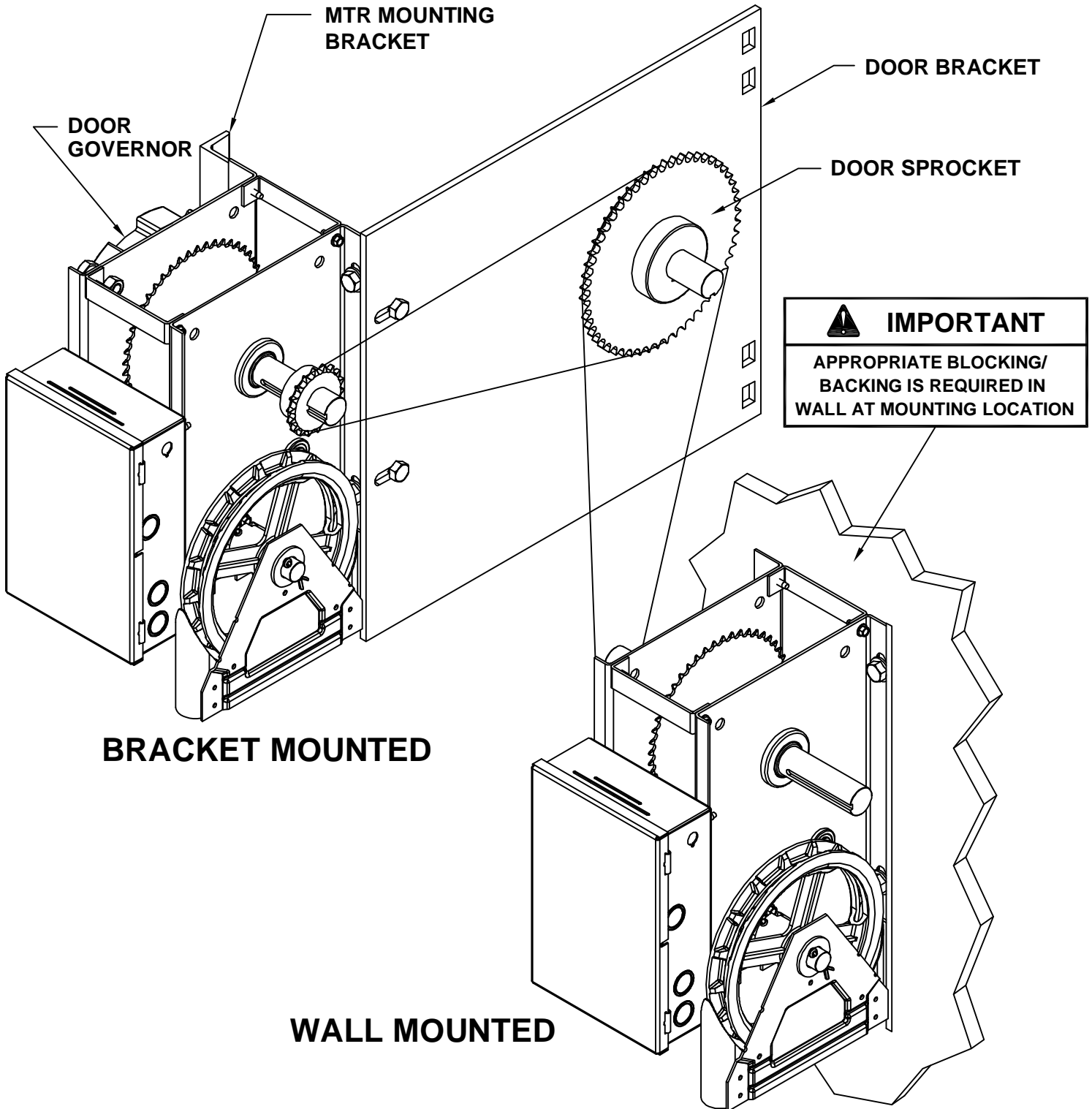
- Hoist normally operates doors/Brake maintains door position.

1.2 Alarm condition / Unit has no power

- The brake is released, door will close without delay.
- Once alarm is cleared (Power restored) hoist can be operated normally.
i.e.; resetting of door is not required.

MOUNTING

The unit may be mounted to door bracket, specifically provided by Door Manufacturer or directly to wall adjacent to door. A minimum of (4) Ø3/8" fasteners are required to mount unit.



WARNING

A COVER MUST BE INSTALLED OVER DOOR BRACKET & SPROCKETS WHEN MOVING PARTS ARE EXPOSED LESS THAN 8 FEET FROM THE FLOOR.

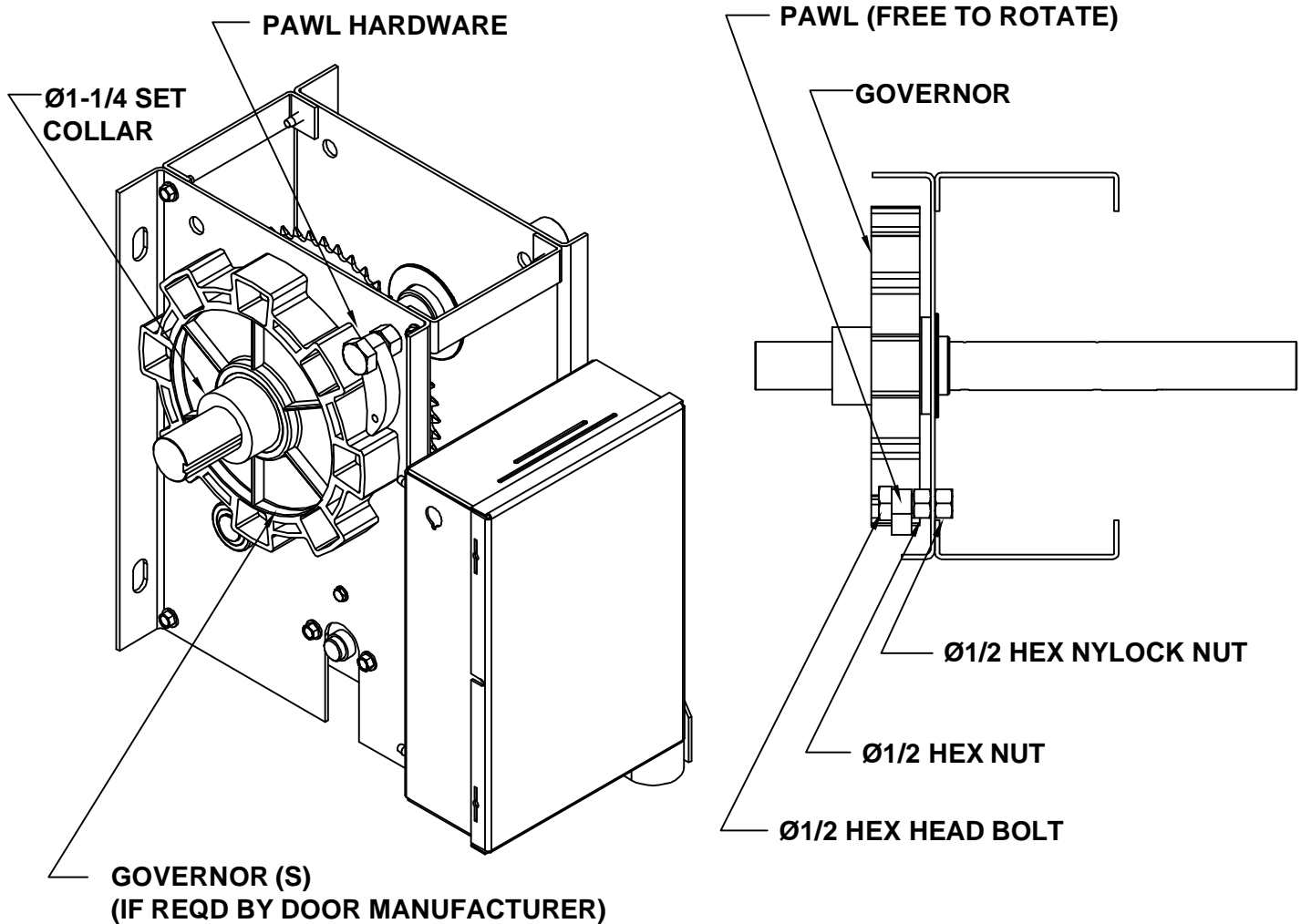
ADDITIONAL VISCUOUS GOVERNOR INSTALLATION

The unit is designed to allow for up to (2) governors to be installed directly on hoist output shaft. Refer to specific Door Manufacturer for Instruction.



IMPORTANT

FIRE DOOR GOVERNOR SIZE, QUANTITY & SPROCKET SELECTION ARE SPECIFICALLY DESIGNED BY DOOR MANUFACTURER FOR SIZE & TYPE OF DOOR. ONLY USE GOVERNOR, SPROCKETS & ROLLER CHAIN PROVIDED BY DOOR MANUFACTURER.



CHANGING HANDING

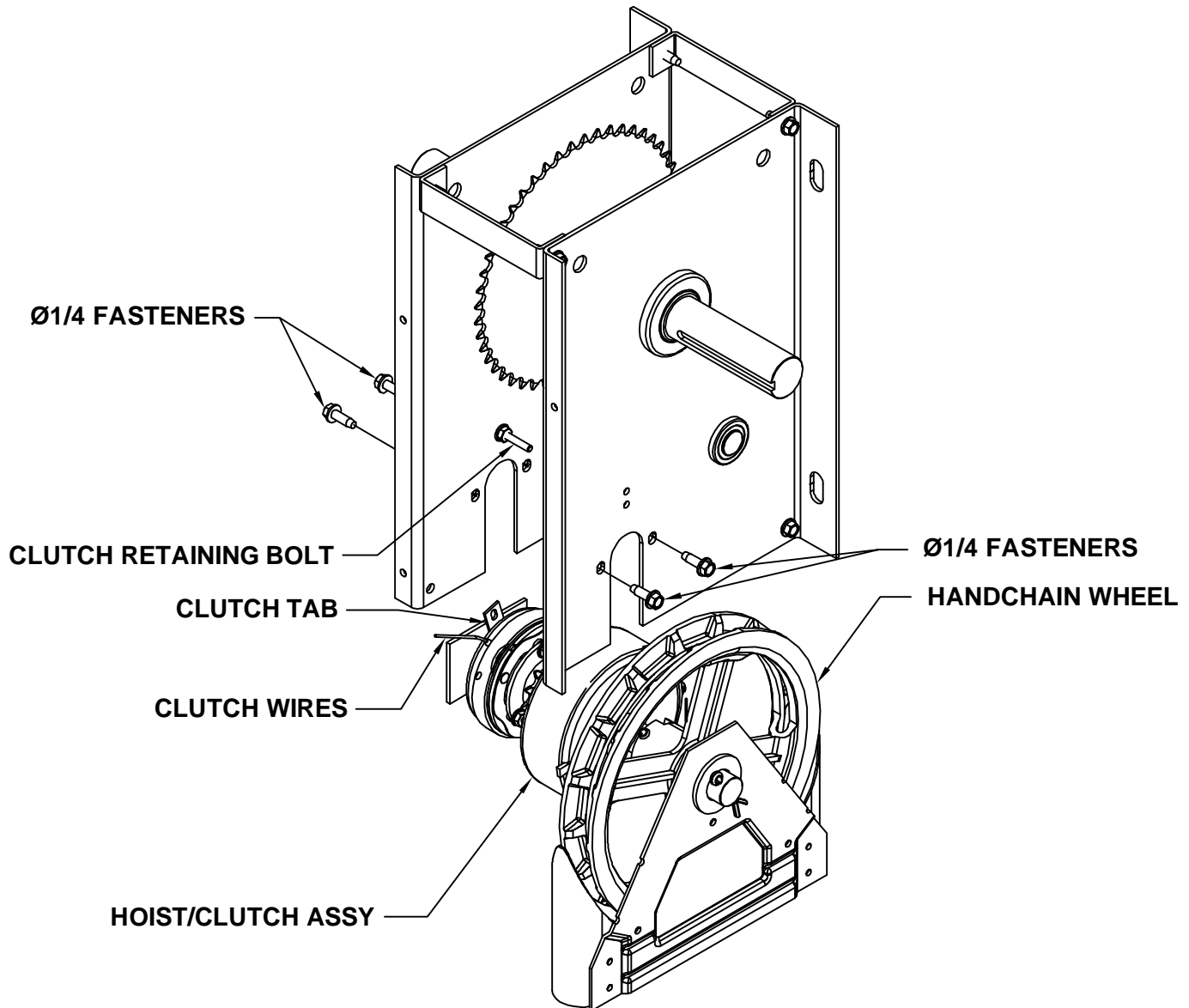
The output sprocket (and optional governor) can be interchanged from the left & right hand side of the unit. All units are provided with the hand chain on the right hand side of the unit. To change to left hand (Procedure recommended prior to installing):

- 1) Ensure that all power has been disconnected (and door completely closed, if installed).
- 2) Remove lower roller chain from clutch sprocket. Gently pull excess clutch wires through grommet in control panel to create at least 6" slack in wire.
- 3) Remove the (4) $\text{\O}1/4$ " fasteners securing the lower hoist/clutch assembly.



DO NOT ALLOW HOIST/CLUTCH ASSEMBLY TO FALL. DO NOT LET HOIST/CLUTCH ASSEMBLY HANG FROM CLUTCH WIRES.

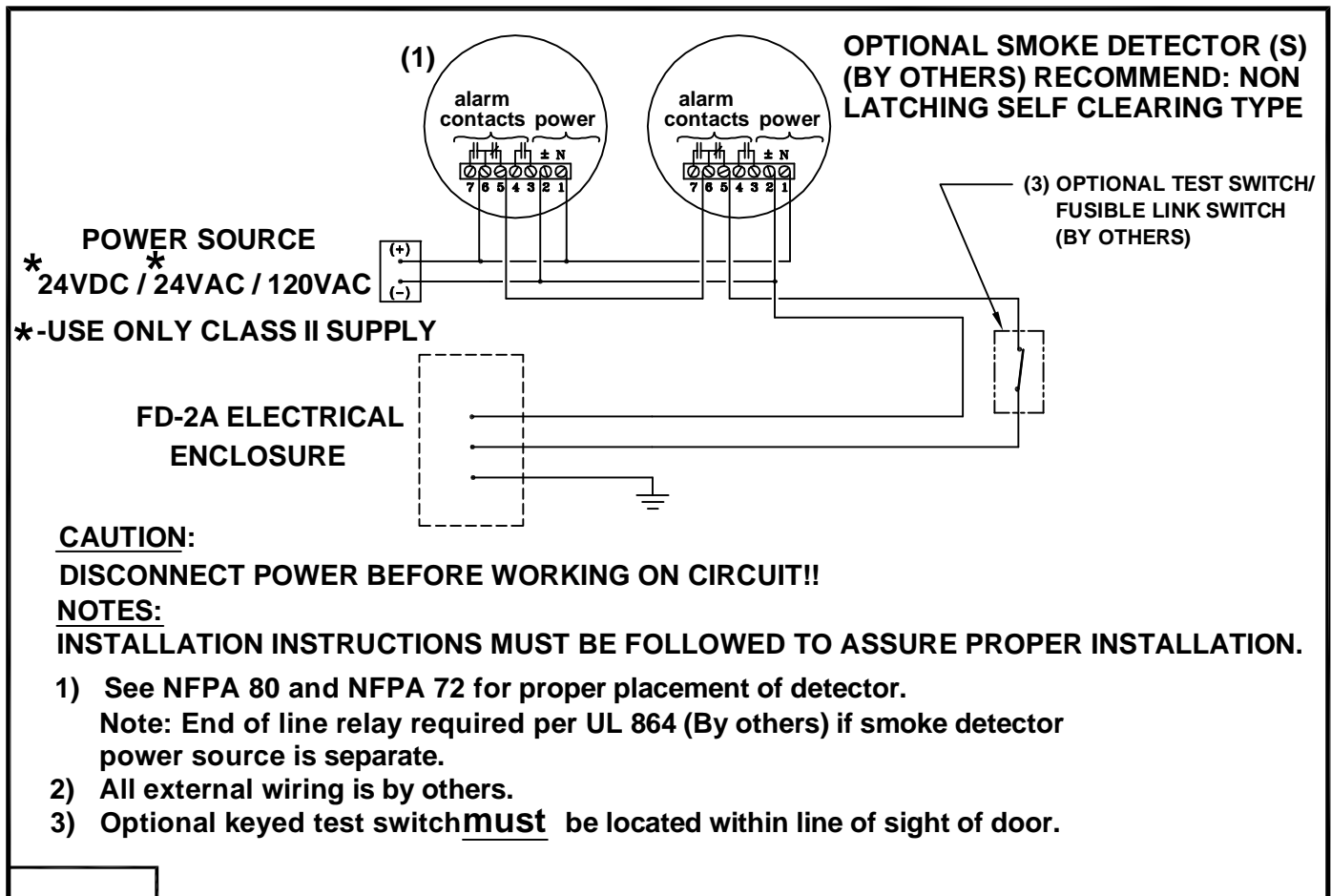
- 4) Rotate hoist/clutch assembly 180° , locating the hand chain wheel on the opposite side, paying close attention that the clutch wires are not damaged. Slide assembly into position and install the (4) $\text{\O}1/4$ " fasteners. Hand tighten.
- 5) Reinstall chain to clutch. Ensure that sprockets are aligned. If necessary loosen set screws on rear of clutch and adjust position. (Keep clutch parts together). Make sure chain is lightly tensioned and shafts are parallel, then tighten the (4) $\text{\O}1/4$ " fasteners.
- 6) Move clutch retaining bolt to opposite side of unit ensuring that bolt is tightened and clutch tab is retained. (See Figure)



INSTALL POWER WIRING

Unit requires one switched power input, 24VDC or 24VAC or 115VAC according to wiring diagram and local codes. Minimum wire size is 20GA copper. (Use heavier wire for long runs)

ELECTRICAL CONNECTIONS FOR FD-2A TO ALARM SYSTEM/SMOKE DETECTORS



INITIAL START UP OF UNIT



IMPORTANT

DOOR SHOULD BE INSTALLED AND COUNTER BALANCE SPRING TENSIONED ACCORDING TO DOOR MANUFACTURER'S INSTALLATION INSTRUCTIONS

With power applied to unit (Green power LED lit) the unit can be operated. For the first couple of open & closing cycles of the door, the clutch may experience some slippage. This is normal and will stop once clutch friction surfaces become burnished and maximum clutching torque is attained. If slipping does not subside see trouble shooting section.

AUTOMATIC CLOSING TEST



WARNING

DOOR WAY MUST BE CLEAR OF OBJECTS AND PERSONNEL BEFORE TESTING

1) Loss of Line Power

- a) With the door fully open, remove power; (Initiate alarm mode or turn off circuit) green LED will turn off.
- b) Door should fully close in accordance with Door Manufacturer's Specifications. If door does not perform correctly consult Door Manufacturer.
- c) Restore power/Reset alarm, green LED will light and unit is reset ready for normal operation.



IMPORTANT

UNIT MUST BE CONNECTED TO AN INITIATING DEVICE AND/OR ALARM SYSTEM THAT INTERRUPTS THE POWER SUPPLY IN AN ALARM CONDITION

MAINTENANCE SCHEDULE

CHECK AT THE INTERVALS LISTED IN THE FOLLOWING CHART.

| ITEM | PROCEDURE | EVERY 3 MONTHS | EVERY 6 MONTHS | EVERY 12 MONTHS |
|---------------------------------|--|-------------------|-------------------|--------------------|
| Drive Chain (Door) | Check for excessive slack. Check & adjust as required. Lubricate.* | X | | X |
| Output Sprocket | Check set screw tightness | X | | X |
| Fasteners | Check & tighten as required | | X | |
| Internal Sprockets and Chain | Check for wear & lubricate | | | X |

Bearings - The bearings on the operator are sealed, and should not require service for the life of the operator.

Clutch Friction Material - The electromagnetic clutch on the operator is factory adjusted, and should not require service for the life of the operator. Should service be required, the entire unit should be replaced.

* - Use SAE 30 Oil (Never use grease or silicone spray)

- Inspect and service whenever a malfunction is observed or suspected.
- **CAUTION: BEFORE SERVICING, ALWAYS DISCONNECT OPERATOR FROM POWER SUPPLY.**

WHEN ORDERING REPAIR PARTS PLEASE SUPPLY THE FOLLOWING INFORMATION:

PART NUMBER - DESCRIPTION - MODEL NUMBER - JOB NUMBER

ADDRESS ORDER TO:

COOKSON ROLLING DOORS
2417 S. 50TH AVE
PHOENIX, AZ. 85043
(602) 272-4244
ATTN: CUSTOMER SERVICE

OPERATOR MAINTENANCE

Operators require practically no special maintenance other than periodic checking to see that mechanical parts where necessary are lubricated and the electrical components are free of dirt.

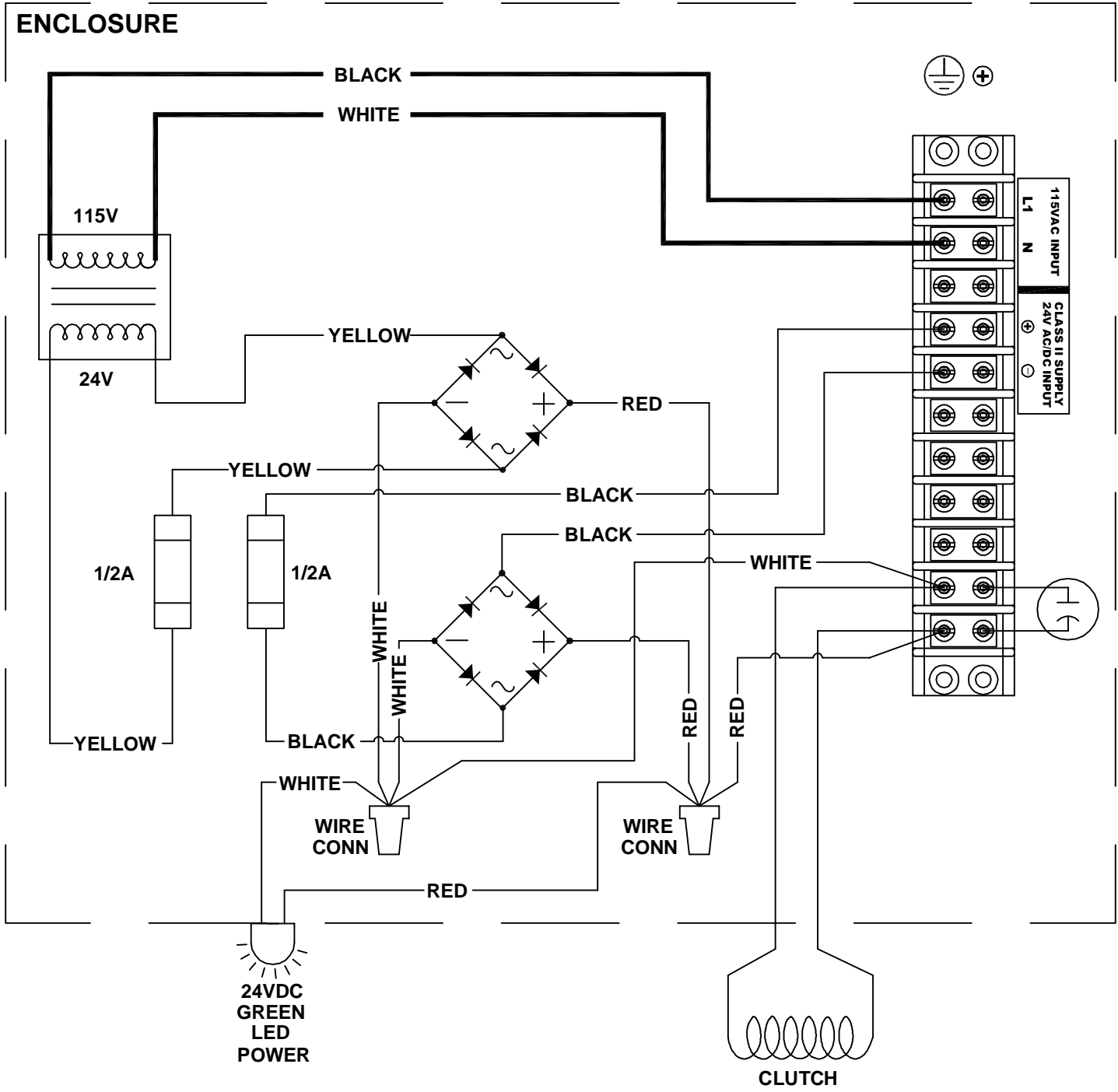
The Service Technician should familiarize himself/herself with the proper sequence of operation and all related controls. Power to operator must be disconnected when removing or replacing covers on electrical components, making adjustments, or performing maintenance.

OPERATOR MAINTENANCE CHECKS

1. Check wire connections for tightness and wire insulation for defects or abrasions.
2. Check to see that all conduit connections are secure.
3. Inspect roller chain and drive sprockets. Align, lubricate the sprockets, and tighten the set screws.
4. Generally inspect the motor mounting, and tighten the fasteners and bracing.
5. Verify that all conduit connections are tight and have no exposed wires.
6. Inspect the electrical enclosure for debris, arcing and moisture. Check for and tighten loose wiring connections.
7. Test operation through all controls.
8. Check amperage draw. Compare readings to those listed.

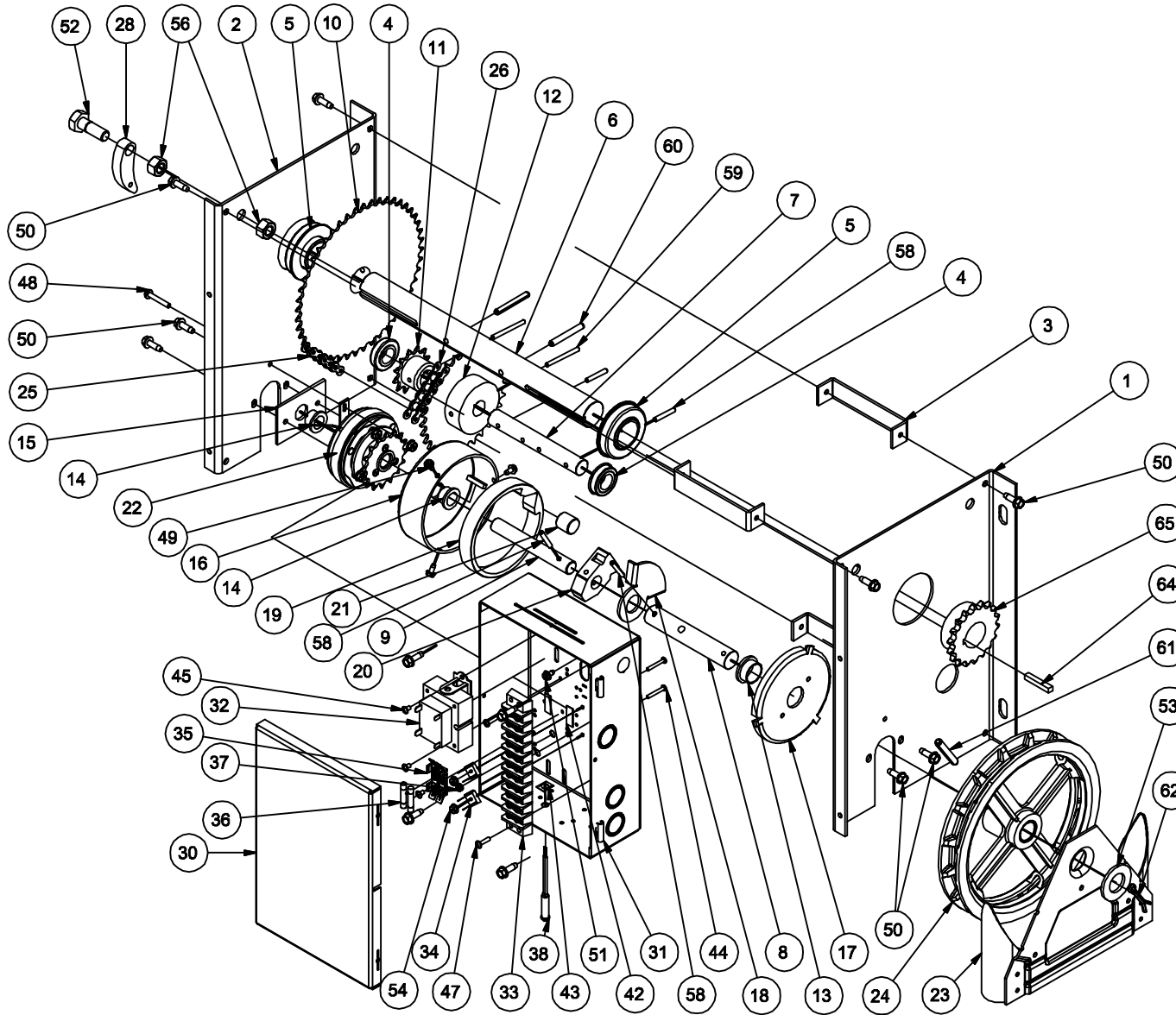
OPERATOR TROUBLE SHOOTING GUIDE

| SYMPTOM | POSSIBLE CAUSE | REPAIR |
|--|--|---|
| Does not operate Green LED not lit | <ul style="list-style-type: none"> ● No Power or incorrect voltage ● Blown Fuse ● Loose connection ● Insufficient Power supply | <ul style="list-style-type: none"> ● Check for correct Power & Voltage ● Check Fuse ● Verify all connections are good ● Verify Power supply & wire size and distance is appropriate for load |
| Does not operate Green LED lit | <ul style="list-style-type: none"> ● Clutch slipping <ul style="list-style-type: none"> ● Clutch friction surface not burnished ● Door not sufficiently tensioned ● Improper Door sprocket <ul style="list-style-type: none"> ● Clutch friction material worn ● Key not installed on Main Drive Sprockets ● Internal Chain derailment | <ul style="list-style-type: none"> ● See Initial Start up section ● Adjust door tension per Manufacturer's Instructions ● Verify correct sprocket with Door Manufacturer ● Replace Clutch ● Install keys ● Contact Customer Service |
| Does not hold Open Door position | <ul style="list-style-type: none"> ● Door not sufficiently tensioned ● Improper Door Sprocket ● Brake worn or excessive clearance | <ul style="list-style-type: none"> ● Adjust Door tension per Manufacturer's Instructions ● Verify correct Sprocket with Door Manufacturer ● Contact Customer Service |
| Excessive Force required to operate | <ul style="list-style-type: none"> ● Door not sufficiently tensioned ● Improper Door Sprocket ● Door is binding ● Brake insufficiently lubricated or excessive debris in Brake Housing | <ul style="list-style-type: none"> ● Adjust Door tension per Manufacturer's Instructions ● Verify correct Sprocket with Door Manufacturer ● Verify correct Door Installation ● Wipe inside Brake Housing clean with rags and lubricate with Grease |



NOTE: ONLY PROVIDE ONE SWITCHED INPUT POWER SOURCE

WIRING DIAGRAM



| Parts List | | | | |
|------------|-----|-----|------------|-------------------------------------|
| # | QTY | U/I | PART # | DESCRIPTION |
| 1 | 1 | EA | 2-1151-21R | PLATE, FRAME, FD-2A, RH |
| 2 | 1 | EA | 2-1151-21L | PLATE, FRAME, FD-2A, LH |
| 3 | 3 | EA | 2-1151-20 | BRACKET, SPREADER, FD-2A HSG |
| 4 | 2 | EA | 3-3101-02 | BEARING, RAD FLG 3/4 FRWY |
| 5 | 2 | EA | 3-3101-04 | BEARING RAD FLG 1-1/4-CANIMEX |
| 6 | 1 | EA | 2-1113-66 | SHAFT, OUTPUT, FD-2A, 1-1/4 |
| 7 | 1 | EA | 2-1113-64 | SHAFT, INTERM, FD-2A, 3/4 |
| 8 | 1 | EA | 2-1113-67 | SHAFT, HOIST, 7/8 DIA, FD-2A |
| 9 | 1 | EA | 2-1113-65 | SHAFT, CAM, 5/8 DIA-FD-2A |
| 10 | 1 | EA | 2-1123-91 | SPROCKET, 410B48 |
| 11 | 1 | EA | 2-1123-92 | SPROCKET, 410B12 |
| 12 | 1 | EA | 2-1123-93 | SPROCKET, 410B32 |
| 13 | 1 | EA | 3-3202-17 | BUSHING, FLGD, 7/8ID X 1 OD X 1/2LG |
| 14 | 2 | EA | 3-3202-18 | BUSHING, FLGD, 5/8ID X 3/4OD X 1/2 |
| 15 | 1 | EA | 2-1151-19 | PLATE, BEARING, FD-2A |
| 16 | 1 | EA | 2-1151-18A | HOUSING, BRAKE, FD-2A |
| 17 | 1 | EA | 2-1151-18B | COVER, BRAKE HOUSING, FD-2A |
| 18 | 1 | EA | 2-1151-16 | BRAKE PLATE - FD-2A |
| 19 | 1 | EA | 2-1684-01C | RING, BRAKE, WORKED, C.I. |
| 20 | 1 | EA | 2-1686-66D | BRAKE CAM, WORKED, FD-2A |
| 21 | 1 | EA | 2-1113-60 | BRAKE ROLLER, 3/4 DIA X .72 LG |
| 22 | 1 | EA | 4-1186-02 | CLUTCH ASSEMBLY FD-2A |
| 23 | 1 | EA | 2-1156-65 | CHAIN GUIDE ASSEMBLY |
| 24 | 1 | EA | 2-1680-64 | POCKET WHEEL 8-7/8 W/7/8 BORE |
| 25 | 1 | EA | 2-1126-25 | CHAIN, ROLLER, #410 56 PITCHES/28" |
| 26 | 1 | EA | 2-1126-25 | CHAIN, ROLLER, #410 42 PITCHES/21" |
| 27 | 2 | EA | 2-1126-26 | LINK, CONNECTOR #410 ROLL CHAIN |
| 28 | 1 | EA | 2-1487-04 | PAWL VIBRATECH GOVERNOR |
| 29 | 1 | EA | 3-1904-52A | CONTROL BOX ENCLOSURE-FD-2A |
| 30 | 1 | EA | 3-1904-52B | CONTROL BOX LID-FD-2A |
| 31 | 2 | EA | 3-1904-52C | CONTROL BOX HINGE-FD-2A |
| 32 | 1 | EA | 3-1600-08 | TRANSFORMER 115/24V 40VA CLII |
| 33 | 1 | EA | 3-1903-19 | TERMINAL STRIP, 11 POS SIZE 8 |
| 34 | 2 | EA | 3-1704-01 | RECTIFIER MOD KBPC104 |
| 35 | 1 | EA | 3-1702-06 | FUSE BLOCK, 3AG 2 POLE 3/16 QK CON |
| 36 | 2 | EA | 3-1702-05 | FUSE, 1/8A, TYP 3AG FAST ACTING |
| 37 | 1 | EA | 3-2201-08 | GROMMET-REG TYPE-3/16 HOLE DIA |
| 38 | 1 | EA | 3-1905-24G | INDICATOR 1/2W 24V LED-GRN |
| 39 | 2 | EA | 3-1904-53 | PLUG, HOLE, 5/8 DIA, PLASTIC |
| 40 | 1 | EA | 3-4202-38 | LABEL, FD-2A OPERATOR |
| 41 | 1 | EA | 3-4202-87A | LABEL, TERMINAL, FD-2A |
| 42 | 2 | EA | 3-4202-39 | LABEL, FUSE, 1/2 AMP |
| 43 | 1 | EA | 3-1905-24A | CLIP, INDICATOR LT |
| 44 | 2 | EA | 3-2105-05P | SCREW, PH RHMS, 6-32 X 1 |
| 45 | 3 | EA | 3-2105-09 | SCREW, PH, RHMS, 8-32 X 1/4 |
| 46 | 3 | EA | 3-2103-13 | SCREW PAN-HD PH 8-32 X 1/4 |
| 47 | 2 | EA | 3-2105-07 | SCREW, PH, RHMS, 8-32 X 5/8 |
| 48 | 1 | EA | 3-2105-15 | SCREW, PHMS, 10-24 X 1 |
| 49 | 3 | EA | 3-2130-16 | SCREW, SELF TAP, 10-32 X 3/8 |
| 50 | 14 | EA | 3-2150-04F | SCREW, SELF TAP, 1/4-20 X 1/2 |
| 51 | 1 | EA | 3-2150-01B | BOLT, HHMS, 10-32 X 3/8 GRN |
| 52 | 1 | EA | 3-2150-48A | BOLT HHMB 1/2 X 1 1/2, GD5 |
| 53 | 1 | EA | 3-2401-12 | WASHER, FLAT 7/8 PLTD |
| 54 | 2 | EA | 3-2301-01N | NUT, HH 6-32 NYLOCK |
| 55 | 1 | EA | 3-2301-03A | NUT, HH SERR PLTD, 10-24 |
| 56 | 2 | EA | 3-2301-09B | NUT, HH, NYLOCK, .50 |
| 57 | 1 | EA | 3-4202-94 | GROUND SYMBOL |
| 58 | 4 | EA | 3-2603-02 | PIN, ROLL, 3/16 X 1-1/4 |
| 59 | 2 | EA | 3-2603-03 | PIN, ROLL, .188 X 2 |
| 60 | 2 | EA | 3-2603-21 | PIN, ROLL, 1/4 X 2 |
| 61 | 1 | EA | 3-2604-60 | PIN, ROLL, 5/16 X 2 |
| 62 | 1 | EA | 3-2601-00 | PIN, COTTER 3/16 X 1-3/4 |
| 63 | 1 | EA | 3-2606-03 | KEY, 3/16 SQ X 1 |
| 64 | 1 | EA | 3-2606-13 | KEY, 1/4 SQ X 1-1/2 |
| 65 | 1 | EA | 2-1123-32H | SPKT 40B18 1 1/4B, 1/4KW W/ 2 SS |