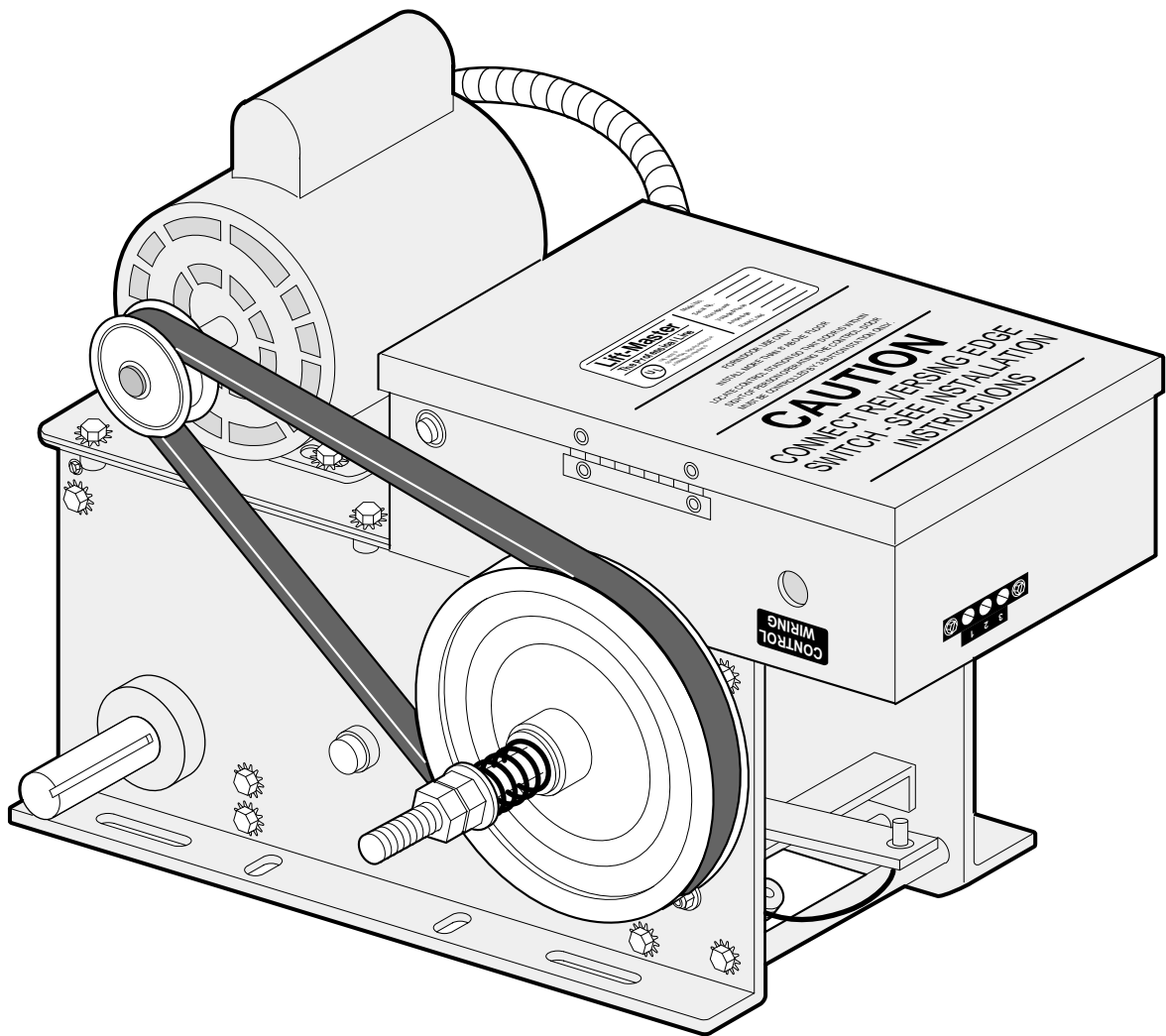


# OWNER'S MANUAL

## MODEL HJ

## SOLID STATE

HEAVY DUTY  
BELT DRIVEN JACKSHAFT OPERATOR



Serial # \_\_\_\_\_  
(located on electrical box cover)

Installation Date \_\_\_\_\_

Wiring Type \_\_\_\_\_



COMMERCIAL DOOR OPERATOR  
LISTED  
NOT FOR RESIDENTIAL USE



## INSTALL OPERATOR



### CAUTION

TO AVOID DAMAGE TO DOOR AND OPERATOR, MAKE ALL DOOR LOCKS INOPERATIVE. SECURE LOCK(S) IN "OPEN" POSITION.  
IF THE DOOR LOCK NEEDS TO REMAIN FUNCTIONAL, INSTALL AN INTERLOCK SWITCH.  
DO NOT CONNECT ELECTRIC POWER UNTIL INSTRUCTED TO DO SO.



### WARNING

KEEP DOOR BALANCED. STICKING OR BINDING DOORS MUST BE REPAIRED. DOORS, DOOR SPRINGS, CABLES, PULLEYS, BRACKETS AND THEIR HARDWARE MAY BE UNDER EXTREME TENSION AND CAN CAUSE SERIOUS PERSONAL INJURY. CALL A PROFESSIONAL DOOR SERVICEMAN TO MOVE OR ADJUST DOOR SPRINGS OR HARDWARE.

## FOR SECTIONAL AND ROLLING TYPE DOORS

**CAUTION: AT LEAST 2 PERSONS AND A SAFE WORKING PLATFORM ARE REQUIRED FOR INSTALLATION**

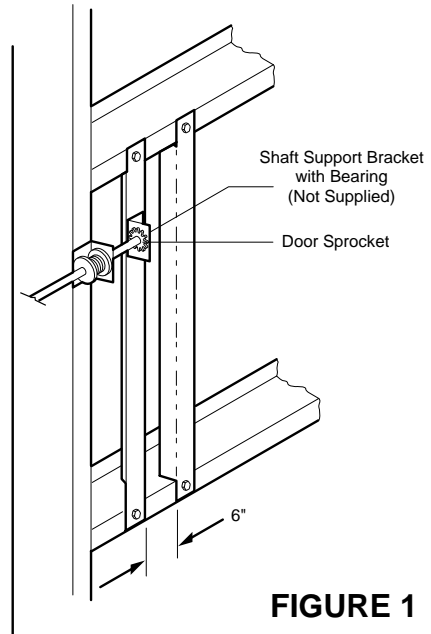
Check the operator name plate mounted on the electrical box to be sure the voltage, phase and h.p. are correct for your needs.

1. Close door.
2. For metal buildings, fasten 2"x2"x3/16" (or larger) angle iron frames to the building purlins. Retain 6" between frames. See Figure 1.
3. Place door sprocket and shaft support bracket (sectional door only) on door shaft as shown. Attach shaft support bracket to angle brace.

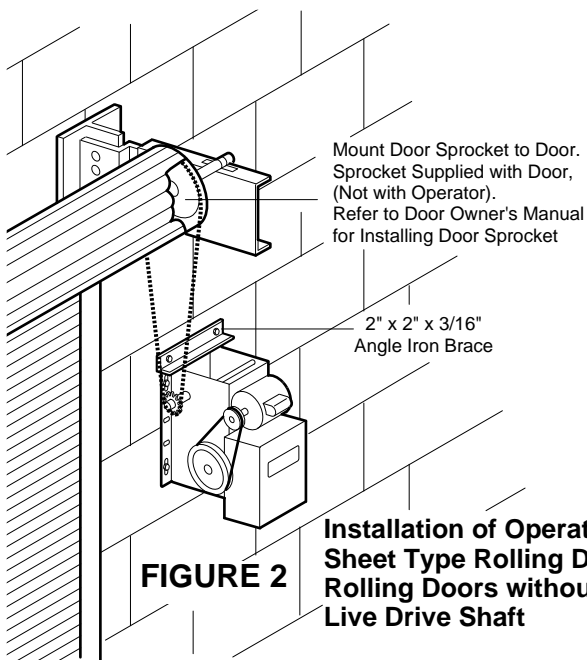
On concrete buildings, attach shaft support bracket to wall of building.

**NOTE 1: On concrete or block walls, install operator as shown in Figure 2.**

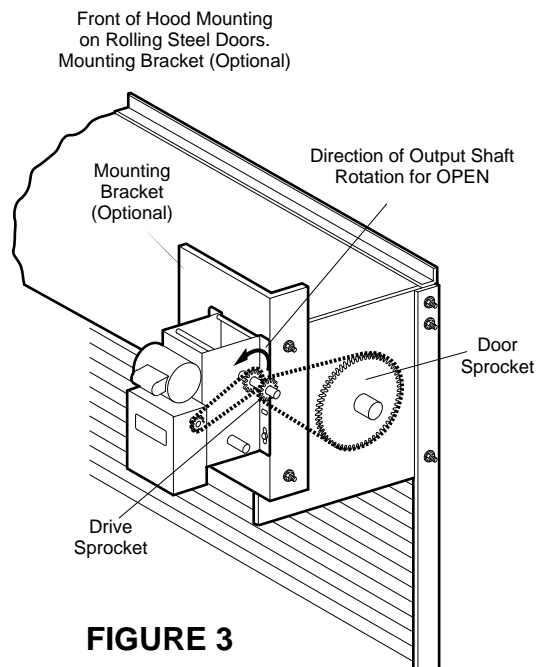
**NOTE 2: For standard rolling steel doors, install operator as shown in Figure 3. (If mounting to a steel building, make an angle iron mounting frame as shown in Figure 1).**



**FIGURE 1**



**FIGURE 2**



**FIGURE 3**

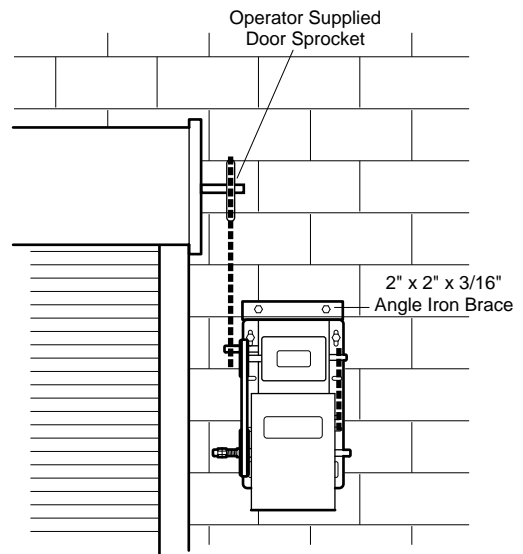
4. Place drive sprocket on appropriate side of operator. Do not insert key at this time.
5. Position roller chain over door sprocket and join ends together with master link.
6. Raise or lower operator until the chain is taut (not tight) as in Figure 4. Mark slotted holes to match operator frame.

**If drive sprocket is ABOVE door sprocket,** drill hole at the top of each slot.

**If drive sprocket is BELOW door sprocket,** drill hole at bottom of each slot.

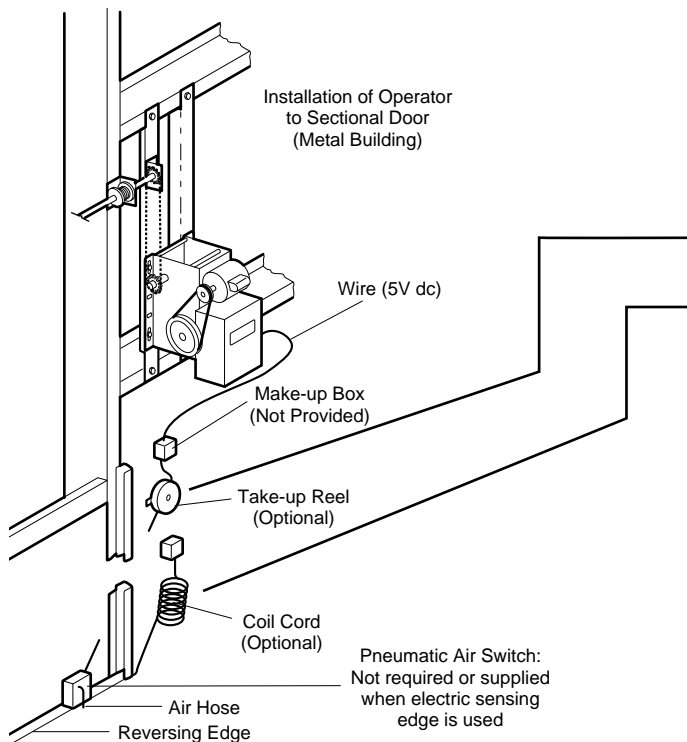
Placement of the drilled holes will allow for chain adjustment if necessary.

7. Make sure operator output shaft is parallel to door shaft and sprockets are aligned. When in position, secure operator with 3/8" bolts or concrete anchors as required.



**Installation of Operator to Standard Rolling Steel Doors.**

**FIGURE 4**



**FIGURE 5**

**REEL (OPTIONAL)**

Take-up reel should be installed 12" above top of door.

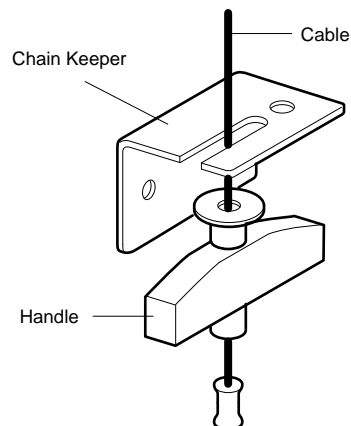
**COIL-CORD (OPTIONAL)**

Connect operator end of coil cord to junction box (not supplied) fastened to the wall approximately halfway up the door opening. (See Figure 5)

Electrician must hardwire junction box to the operator electric box in accordance with local codes.

**FOR OPERATORS WITH CHAIN HOISTS**

8. Place hand chain through eye bolt guides and around pocket wheel. Remove enough links so chain hangs approximately four feet above floor.
9. Uncoil disconnect cable and fasten chain keeper to the wall of building as shown in Figure 6. Adjust disconnect cable handpull and fender washer so chain keeper holds cable in position when cable is pulled as far as its travel permits.



**FIGURE 6**

## CONNECT OPERATOR TO POWER SUPPLY



### WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING.

OPERATOR MUST BE PROPERLY GROUNDED AND CONNECTED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES. NOTE: THE OPERATOR SHOULD BE ON A SEPARATE FUSED LINE OF ADEQUATE CAPACITY.

ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.



### CAUTION

TO AVOID DAMAGE TO DOOR AND OPERATOR, MAKE ALL DOOR LOCKS INOPERATIVE. SECURE LOCK(S) IN "OPEN" POSITION.

IF THE DOOR LOCK NEEDS TO REMAIN FUNCTIONAL, INSTALL AN INTERLOCK SWITCH.

REFER TO MASTER WIRING DIAGRAM.

MAKE CONNECTION THROUGH THE 1-1/16" DIA. LABELED HOLE.

DO NOT RUN CONTROL WIRES IN THE SAME CONDUIT AS THE POWER WIRES.

## INSTALL CONTROL STATION

Install the optional Reversing Edge before proceeding with the installation of the Control Station.

10. Complete the electrical connections to operator and control station (Refer to Control Connection Diagram, Pg. 20). Fasten the control station to the wall.

**FASTEN WARNING NOTICE BESIDE OR BELOW THE PUSH BUTTONS.**

11. Apply power to operator. Press either the OPEN or the CLOSE push button and observe direction of door travel. Press the STOP button.

If door does not move in the correct direction, check for improper wiring at control station or between operator and control station.

If the operator is single phase and control station wiring is correct, exchange the red and orange wires of the MOTOR CABLE at the motor end.

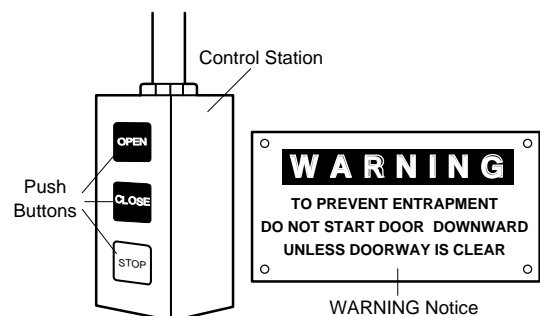
If operator is three phase and control station wiring is correct, exchange any two of the three incoming power leads.

If electrical problems persist, call our Toll Free number (1-800-528-6563) for assistance.



### WARNING

INSTALL THE CONTROL STATION WHERE THE DOOR IS VISIBLE, BUT AWAY FROM THE DOOR AND ITS HARDWARE. IF CONTROL STATION CANNOT BE INSTALLED WHERE DOOR IS VISIBLE, OR IF ANY DEVICE OTHER THAN THE CONTROL STATION IS USED TO ACTIVATE THE DOOR, A REVERSING EDGE MUST BE INSTALLED ON THE BOTTOM OF THE DOOR. FAILURE TO INSTALL A REVERSING EDGE UNDER THESE CIRCUMSTANCES MAY RESULT IN SERIOUS INJURY OR DEATH TO PERSONS TRAPPED BENEATH THE DOOR.



# ADJUST LIMITS



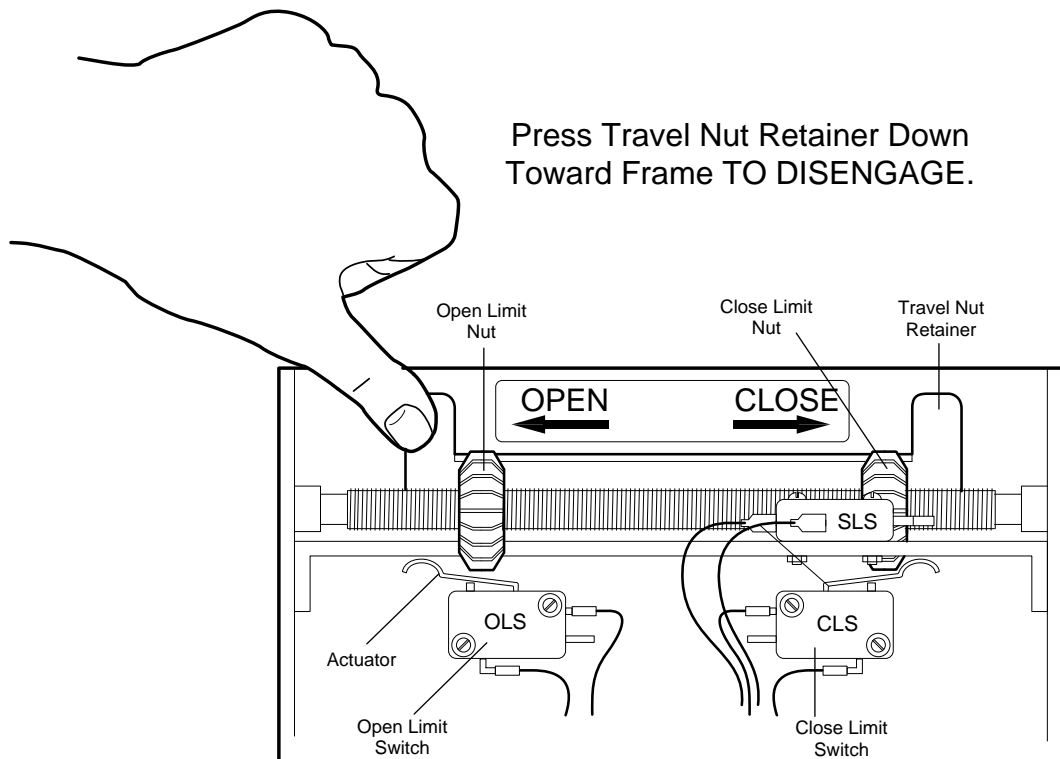
## WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER BEFORE MANUALLY MOVING LIMIT NUTS.

**MAKE SURE THE LIMIT NUTS ARE POSITIONED BETWEEN THE LIMIT SWITCH ACTUATORS BEFORE PROCEEDING WITH ADJUSTMENTS.**

1. Depress open limit switch. The operator should stop.
2. To **increase** door travel, spin nut **away** from actuator. To **decrease** door travel, spin limit nut **toward** actuator.
3. Adjust open limit nut so that door will stop in open position with the bottom of the door even with top of door opening.
4. Repeat Steps 1 and 2 for close cycle. Be sure close limit actuator is engaged as door fully seats at the floor.

If other problems persist, call our toll-free number for assistance - 1-800-528-6563.



**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

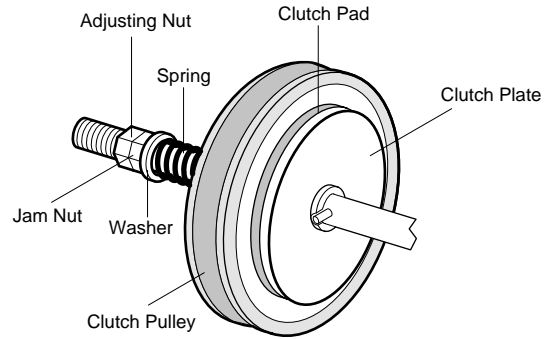
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## **MEMO:**

## ADJUST CLUTCH

Adjust clutch so that it is tight enough to open and close the door but will slip when the door meets an obstruction. Either loosen or tighten the clutch nut with 1/4 turn increments. The clutch will require periodic inspection and adjustment.

**CAUTION:** The adjustable friction clutch is **NOT** an automatic reversing device. An electric or pneumatic reversing edge can be added to bottom edge of door if desired.



## CONNECT REVERSING EDGE DEVICE (OPTIONAL)

WARNING

IF CONTROL STATION CANNOT BE INSTALLED WHERE DOOR IS VISIBLE, OR IF ANY DEVICE OTHER THAN THE CONTROL STATION IS USED TO ACTIVATE THE DOOR, A **REVERSING EDGE MUST BE INSTALLED ON THE BOTTOM OF THE DOOR**. FAILURE TO INSTALL A REVERSING EDGE UNDER THESE CIRCUMSTANCES MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH TO PERSONS TRAPPED BENEATH THE DOOR.

The operator has been pre-wired to accept connection of a reversing edge device (Figure 5, page 4). Connect the normally open contacts to terminals T4 and T8 on the low voltage terminal block. A cut-off switch will de-activate the safety device during the last few inches of the door's downward travel.

### MAINTENANCE SCHEDULE: Check at the intervals listed in the following chart.

ITEM	PROCEDURE	EVERY 3 MONTHS	EVERY 6 MONTHS	EVERY 12 MONTHS
Drive Chain	Check for excessive slack. Check & adjust as required. Lubricate.*	●		✓
Sprockets	Check set screw tightness	●		✓
Clutch	Check & adjust as required		●	✓
Belt	Check condition & tension		●	✓
Fasteners	Check & tighten as required		●	✓
Manual Disconnect	Check & operate		●	✓
Bearings & Shafts	Check for wear & lubricate	●		✓

- \* Use SAE 30 Oil (Never use grease or silicone spray).
- ✓ Repeat ALL procedures.
- Do not lubricate motor. Motor bearings are rated for continuous operation.
- Do not lubricate clutch or V-belt.
- Inspect and service whenever a malfunction is observed or suspected.
- **CAUTION: BEFORE SERVICING, ALWAYS DISCONNECT OPERATOR FROM POWER SUPPLY.**

### HOW TO ORDER REPAIR PARTS

OUR LARGE SERVICE ORGANIZATION  
SPANS AMERICA

INSTALLATION AND SERVICE INFORMATION  
ARE AVAILABLE 6 DAYS A WEEK

CALL OUR TOLL FREE NUMBER – 1-800-528-6563  
HOURS 7:00 TO 3:30 p.m. (Mountain Std. Time)  
MONDAY Through SATURDAY

IN CANADA  
CALL OUR TOLL FREE NUMBER – 1-800-654-4736

**WHEN ORDERING REPAIR PARTS  
PLEASE SUPPLY THE FOLLOWING INFORMATION:**  
**PART NUMBER    DESCRIPTION    MODEL NUMBER**

**ADDRESS ORDER TO:**  
THE CHAMBERLAIN GROUP, INC.  
Electronic Parts & Service Dept.  
2301 N. Forbes Blvd., Suite 104  
Tucson, AZ 85745

# BRAKE INSTALLATION & ASSEMBLY PARTS

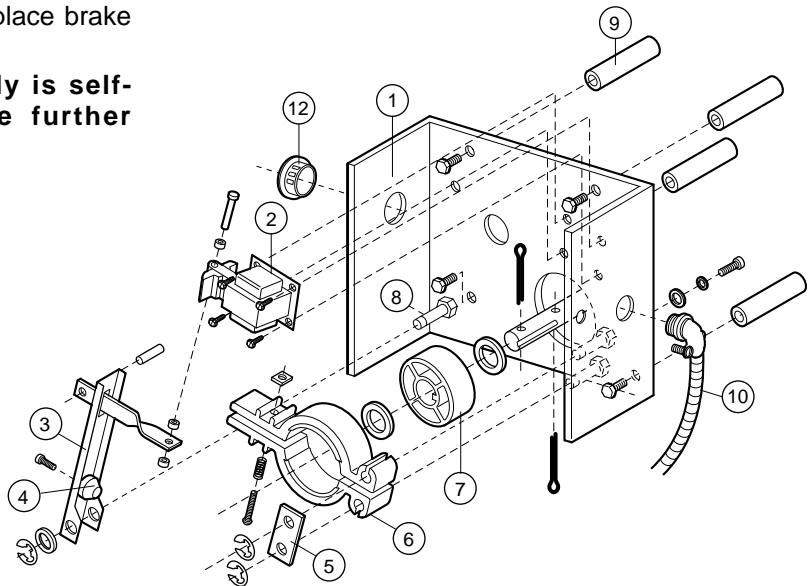
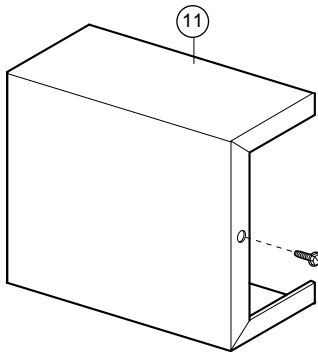
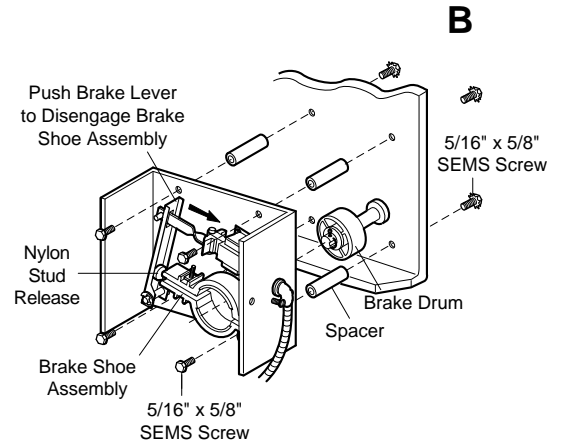
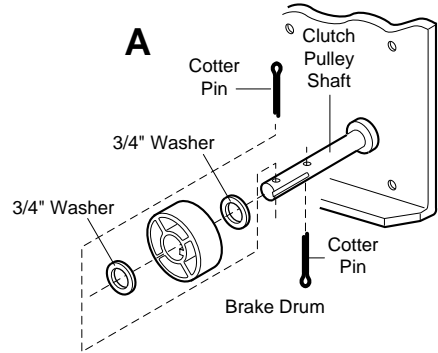


## WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRICAL POWER TO OPERATOR BEFORE PROCEEDING.

1. Install brake drum on clutch pulley shaft as illustrated in Fig. A.
2. Attach the four spacers provided to back of brake pulley assembly housing using four 5/16 x 5/8 sems screws (Fig. B).
3. Push brake lever engaging nylon stud release between brake shoes and align brake drum between brake shoe assembly (Fig. B).
4. Adjust spring loaded bolt on brake shoe assembly so that spring is compressed to 1".
5. Mount brake assembly housing to operator frame using the four spacers and 5/16 x 3/8 sems screws (See Fig. B).
6. Remove plug from 7/8" hole in electrical box and attach conduit assembly.
7. Connect wires per master wiring diagram, (See "brake optional").
8. Reconnect power to the operator.
9. Test for proper brake operation and replace brake cover.

**ADJUSTMENT:** The brake assembly is self-adjusting and should not require further adjustment.



## REPAIR PARTS FOR BRAKE ASSEMBLY

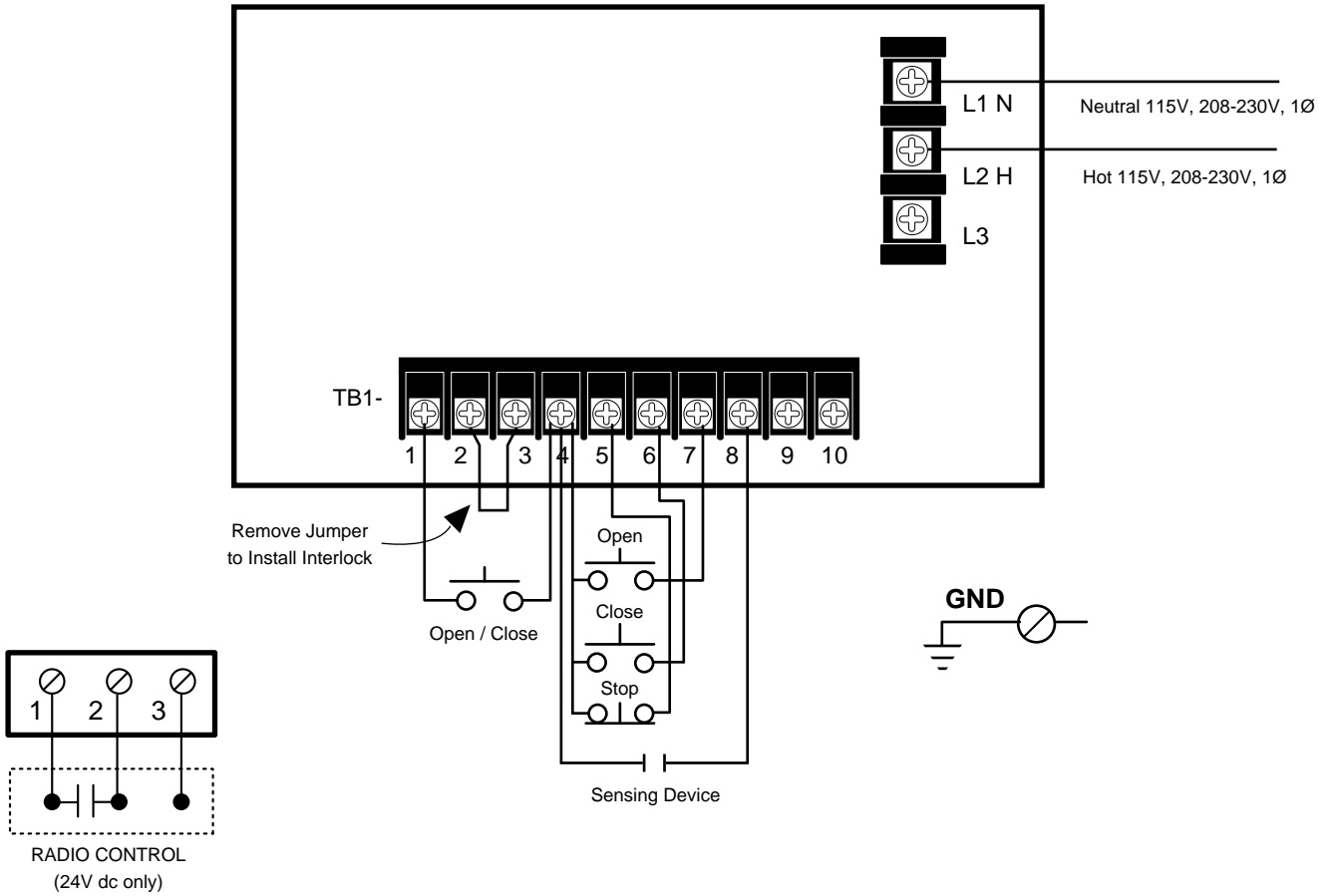
ITEM	PART NO.	DESCRIPTION & QUANTITY
1	17D111	Brake Box (1)
2	204B118	Solenoid 115V (1)
	204B118-1	Solenoid 230V (1)
3	113B49	Brake Lever, Pivot (1)
4	179A46	Brake Release Stud
5	142A143	Brake Stud Plate (1)

ITEM	PART NO.	DESCRIPTION & QUANTITY
6	1B4421	Brake Shoe Assy. (2)
7	60B31	Brake Drum (1)
8	179B45	Brake Pivot Stud (3)
9	184A111	Brake Spacer (4)
10	1B4726	Conduit Assy. HJ-Series (1)
11	31D387	Cover (1)
12	31A388	Dome Plug (1)

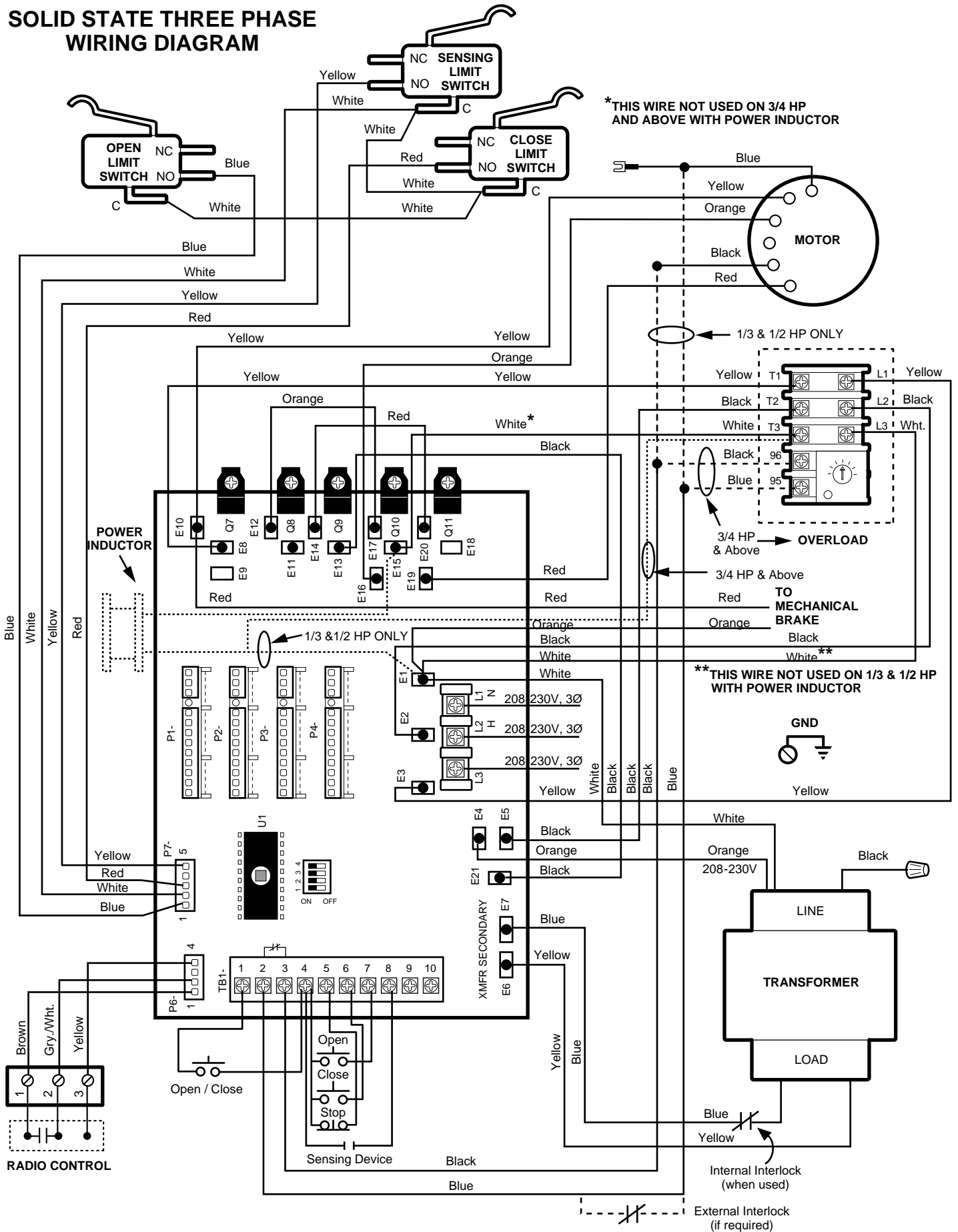


# STANDARD POWER AND CONTROL CONNECTION DIAGRAM

(Solid State Board CDO - 115V, 208-230V, 1Ø)

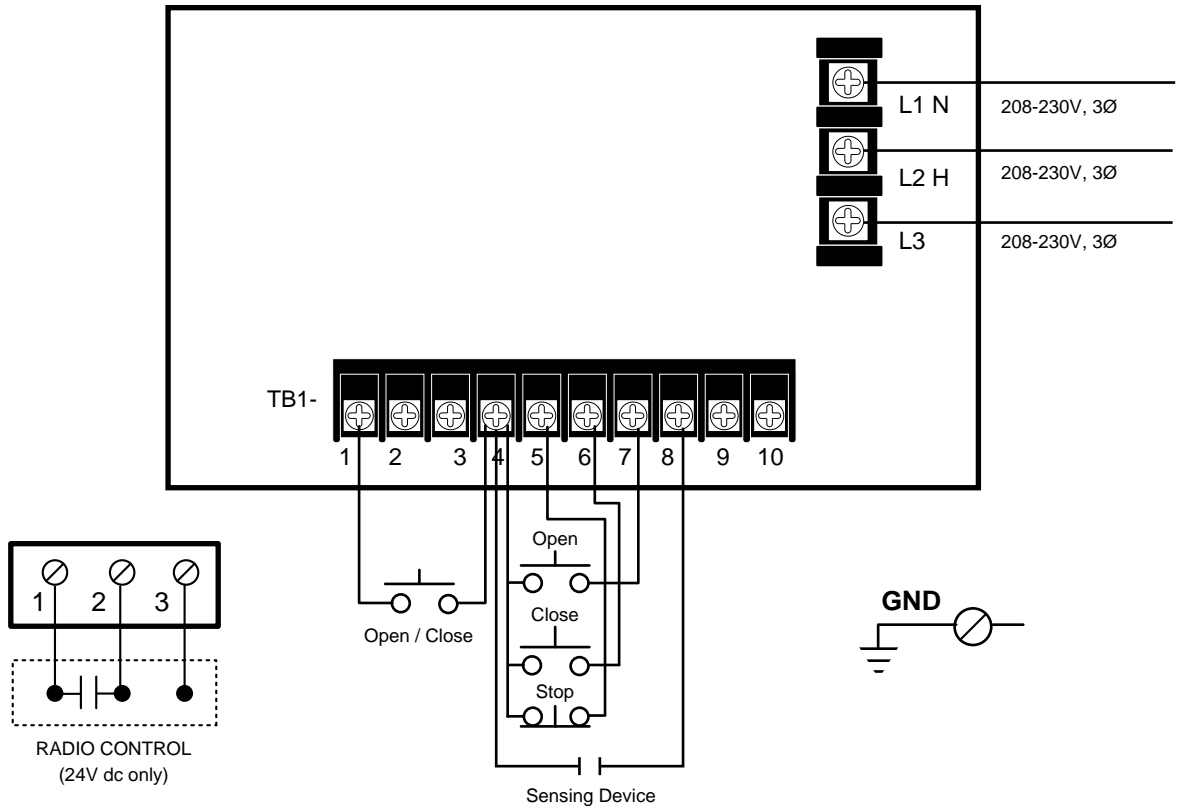


# SOLID STATE THREE PHASE WIRING DIAGRAM



# STANDARD POWER AND CONTROL CONNECTION DIAGRAM

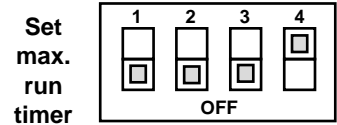
(Solid State Board CDO - 208-230V, 3Ø)



## OPTIONAL SETTINGS

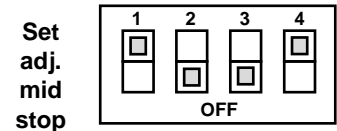
### Set Maximum Run Timer

Begin with door in closed position. Set dip switch to max. run timer mode. Press control station open button to operate door from closed to full open position without stopping. Set dip switch to desired operating mode (B2, C2, D1, E2, T, TS).



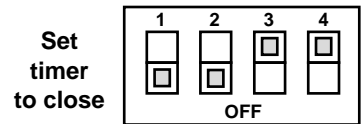
### Set Adjustable Mid Stop

Begin with door in closed position. Set dip switch to adj. mid stop mode. Press control station open button to operate door from closed to mid stop position and stop with control station stop button. Set dip switch to desired operating mode (B2, C2, D1, E2, T, TS).



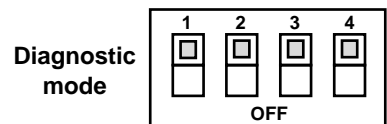
### Set Timer to Close (NOTE: Requires P/N 1A4811 CPSII Option Board with Timer to Close Function.)

Set dip switch to timer to close mode. Momentarily press control station open button to set timer duration in 5 second increments. (Red diagnostic L.E.D. will flash to indicate the entry of each 5 second increment into memory). To re-set timer memory to zero, press control station close button. Set dip switch to (T or TS) operating mode after timer is programmed.



### Diagnostic Mode

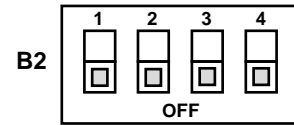
Set dip switch to diagnostic mode. Flashing red diagnostic L.E.D. indicates proper microprocessor function. If the diagnostic L.E.D. does not light, the control logic board requires replacement.



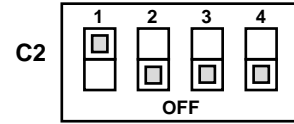
# OPERATING MODE

## TYPE STATION

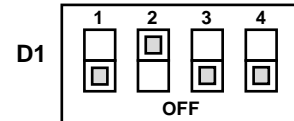
**B2** 3 Button, 1 Button, 1 & 3 Button Radio Control  
Function: Momentary contact to open, close and stop, plus wiring for sensing device to reverse and auxiliary devices to open and close with open override.



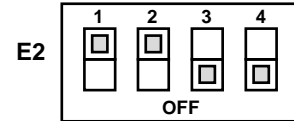
**C2** 3 Button, 3 Button Radio Control  
Function: Momentary contact to open and stop with constant pressure to close, open override plus wiring for sensing device to reverse.



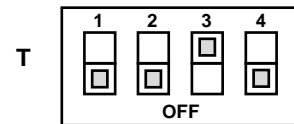
**D1** 2 Button, 3 Button Radio Control  
Function: Constant pressure to open and close with wiring for sensing device to stop.



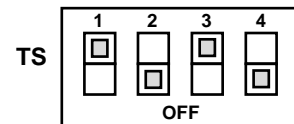
**E2** 2 Button, 3 Button Radio Control  
Function: Momentary contact to open with override and constant pressure to close. Release of close button will cause door to reverse (roll-back feature) plus wiring for sensing device to reverse.



**T\*** 3 Button, 1 Button, 1 & 3 Button Radio Control  
Function: Momentary contact to open, close, and stop, with open override and timer to close. Every device that causes door to open, except a reversing device, activates timer to close. Auxiliary controls can be connected to open input to activate the timer to close. If the timer has been activated, the open button and radio control can recycle the timer. The stop button will deactivate the timer until the close button is used to close the door. **(NOTE: Requires P/N 1A4811 CPSII Option Board with Timer to Close Function.)**



**TS\*** 3 Button, 1 Button, 1 & 3 Button Radio Control  
Function: Momentary contact to open, close, and stop with open override and timer to close. Every device that causes door to open, including a reversing device, activates timer to close. Auxiliary controls can be connected to open input to activate the timer to close. If the timer has been activated, the open button and radio control can recycle the timer. The stop button will deactivate the timer until the close button is used to close the door. **(NOTE: Requires P/N 1A4811 CPSII Option Board with Timer to Close Function.)**

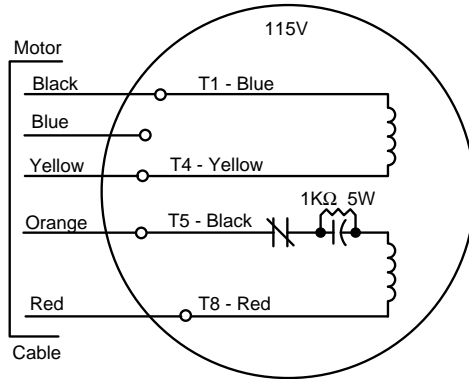


### NOTE:

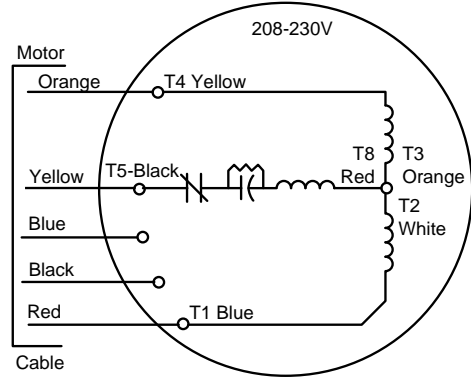
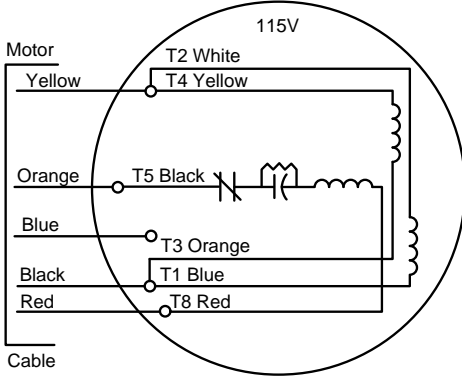
1. External interlocks may be used with all functional modes.
2. Auxiliary devices are any devices that have only one set of contacts. Examples are: photocell, loop detector, pneumatic or electrical treadles, residential radio controls, one button stations, pull cords, etc.
3. Open override means that the door may be reversed while closing by activating an opening device without the need to use the stop button first.

# NEMA MOTOR WIRING DIAGRAMS

## SINGLE VOLTAGE 1/3 & 1/2HP 115V only

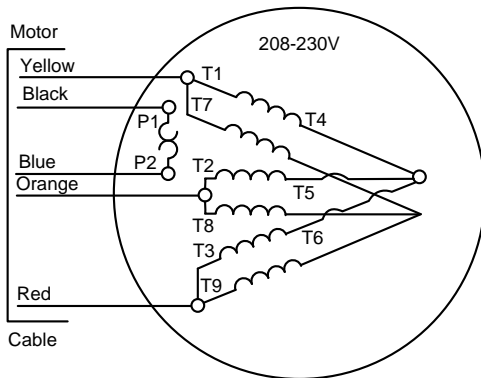


## 1 PHASE

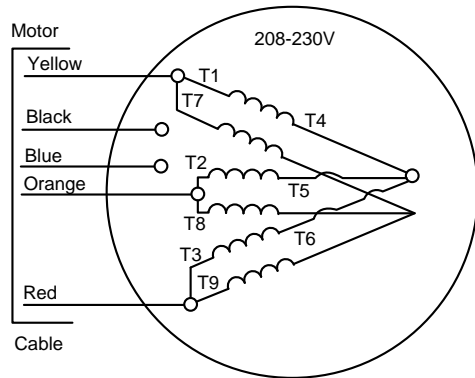


## 3 PHASE

### 1/3 & 1/2HP

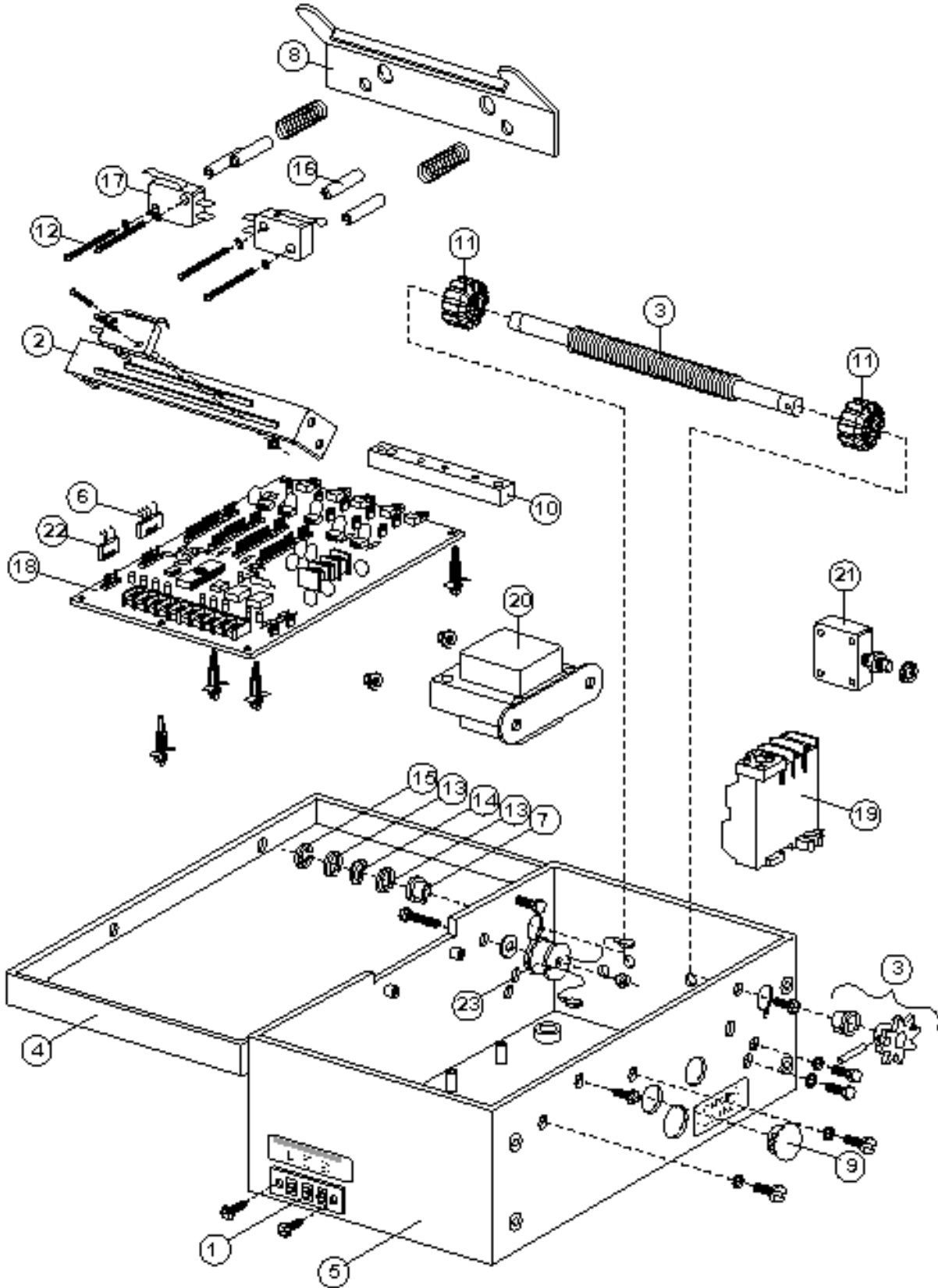


### 3/4HP & OVER



○ DENOTES WIRENUT CONNECTION

ILLUSTRATED PARTS – SOLID STATE ELECTRICAL BOX



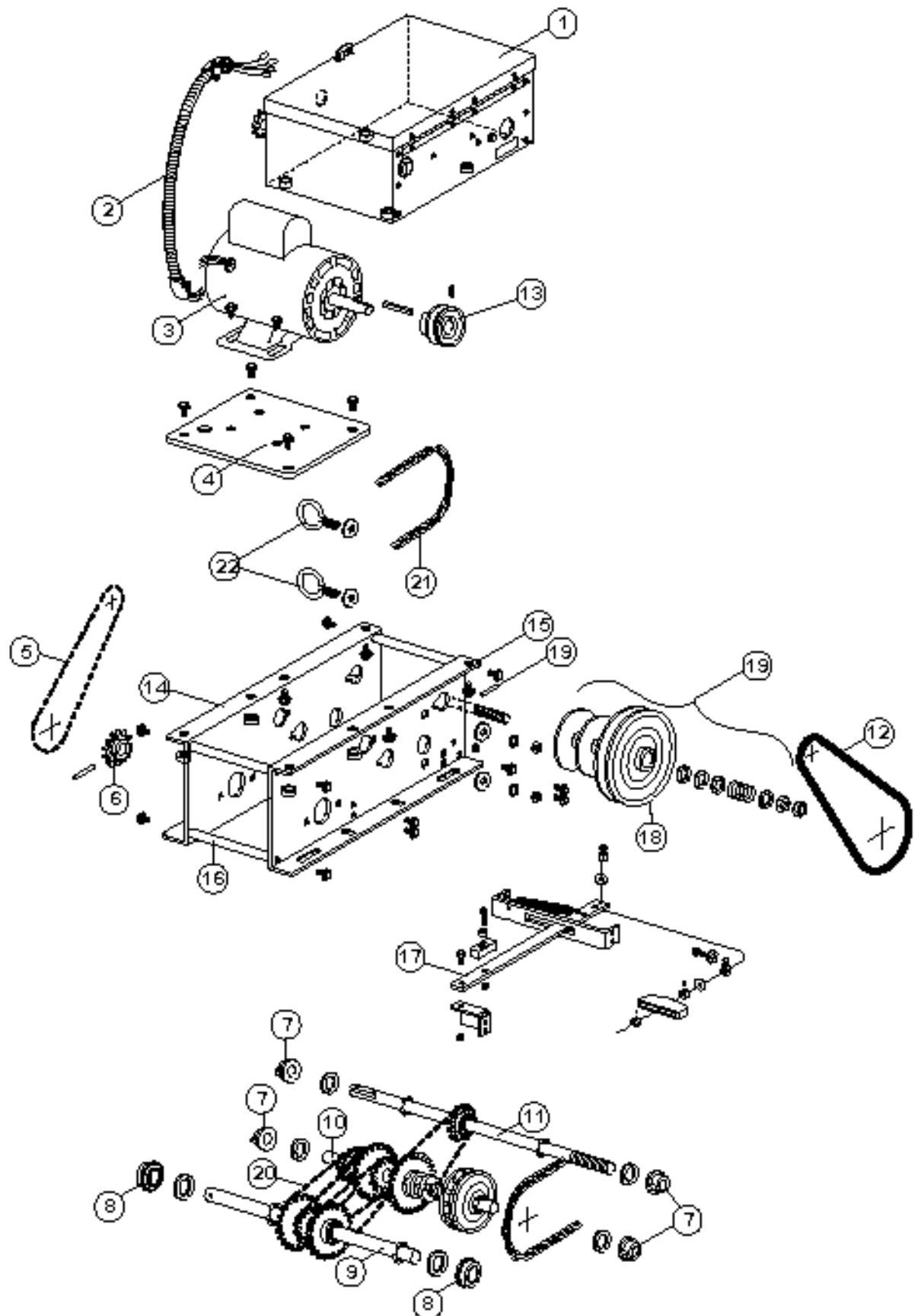
## REPAIR PARTS - SOLID STATE ELECTRICAL BOX

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	1B3727	1	Terminal Assy. 3-Lug
2	41K4304	1	Switch Bracket Assy. (Aux. & Sensing)
3	1B3796	1	Ltd. Shaft-Sprocket Assy.
4	1B4681	1	Cover & Hinge Assy.
5	1C4691	1	Electric Box Assy.
6	1B4683	1	Wire Harness Limit Switch
7	11A012	1	Flanged Sleeve Bearing
8	12B552	1	Limit Bracket
9	31A388	1	Dome Plug
10	155B16	1	Heat Sink
11	133A182	2	Limit Nut 1/2"
12	171A411	4	Screw 4/40 x 1-1/2" Pan Head
13	216A184	2	Thrust Washer
14	216A191	1	Washer, Spring Curved
15	158A49	1	Retaining Ring 3/8"
16	184A109	4	Spacer - Stand Off - Round
17	180B133	2	Limit Switch

ITEM	PART NO.	DESCRIPTION	DESCRIPTION														
			MOTOR P/N	1/3 HP, 115V, 1 PHASE 123D121	1/3 HP, 230V, 1 PHASE 123D121	1/3 HP, 230V, 3 PHASE 123D117	1/2 HP, 115V, 1 PHASE 123D122	1/2 HP, 230V, 1 PHASE 123D122	1/2 HP, 230V, 3 PHASE 123D118	3/4 HP, 115V, 1 PHASE 123D123	3/4 HP, 230V, 1 PHASE 123D123	3/4 HP, 230V, 3 PHASE 123D119	1 HP, 115V, 1 PHASE 123D124	1 HP, 230V, 1 PHASE 123D124	1 HP, 230V, 3 PHASE 123D120		
M		Motor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	1D4650	PCB Assy.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	180C104-3	Overload 2.8 - 4.4A*													1		1
20	204B134	Transformer 115V/230V	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	180B159-0	Overload 3.5A		1													
	180B159-1	Overload 5A						1									
	180B159-2	Overload 7A	1								1						
	180B159-3	Overload 8A														1	
	180B159-4	Overload 10A					1										
	180B159-5	Overload 15A												1			
	180B159-9	Overload 12A									1						
22	1B4682	Radio Control Harness	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	1B4824	Inductor Power Assy.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

REMARKS: \*Overload to be set at 115% maximum of motors rated current.

# ILLUSTRATED PARTS – OPERATOR MODEL HJ



## REPAIR PARTS – MODEL HJ

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1		1	Electrical Box Assy. (See detail)
2	1B4684	1	Motor Cable Assy.
3	Motor	1	See Chart
4	1C3972	1	Motor Plate Assy.
5	1A3971	1	Chain Assy. (49 Pitches)
6	81C149	1	Sprocket-Hub Assy. 1"
7	41K4306	2	Oil Lite Brg. 3/4" I.D. Kit
8	41K4498	2	Ball Bearing Kit - 1" I.D.
9	1C3690-1	1	Output Shaft Assy.
10	1C3687-1	1	Shaft Assy. - Hoist
11	1C3691-2	1	Shaft Assy. - Pulley
12	20B9	1	V-Belt 5L
13	144B37	1	Pulley 2-1/2" 5L
14	59D48	1	Frame - Jack - Right
15	59D48-1	1	Frame - Jack - Left
16	184B97	4	Spacer
17	41K4346	1	Disconnect Arm Assy.
18	144C38	1	Pulley 8" - 5L
19	41K4301	1	Clutch Assy. Kit
20	1A3741	4	Chain Assy. (41 Pitches)
21	22A14	Varies	Unwelded Hand Chain
22	171A410	2	Eye Bolt 1"

# CONTROL CONNECTION DIAGRAM



**ATTENTION: The 3-Button Control Station provided must be connected for operation.**

3 BUTTON STATION OR 3 POSITION KEYSWITCH WITH SPRING RETURN TO CENTER AND STOP BUTTON	
<p><b>STANDARD</b></p>	<p><b>2 OR MORE</b></p>
<p><b>KEY LOCKOUT</b></p>	
2 BUTTON STATION OR 3 POSITION KEYSWITCH WITH SPRING RETURN TO CENTER	
<p><b>STANDARD</b></p> <p><b>D1 &amp; E2 MODE ONLY</b></p>	<p><b>2 OR MORE</b></p> <p><b>D1 &amp; E2 MODE ONLY</b></p>
1 BUTTON STATION OR ANY AUXILIARY DEVICE	RESIDENTIAL RADIO CONTROLS
<p><b>OPEN / CLOSE</b></p> <p><b>B2, T &amp; TS MODE ONLY</b></p>	<p><b>OPEN TIMER TO CLOSE</b></p>
SENSING DEVICE TO REVERSE OR STOP	EXTERNAL INTERLOCK
	<p><b>REMOVE JUMPER</b></p> <p><b>ONE</b></p> <p><b>2 OR MORE</b></p> <p><b>WIRING TYPES - ALL</b></p>