

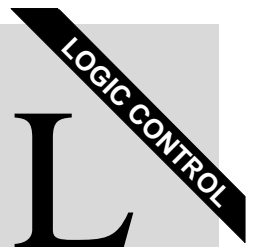
OWNER'S MANUAL

MODELS:

J ♦ H ♦ HJ

SOLID STATE

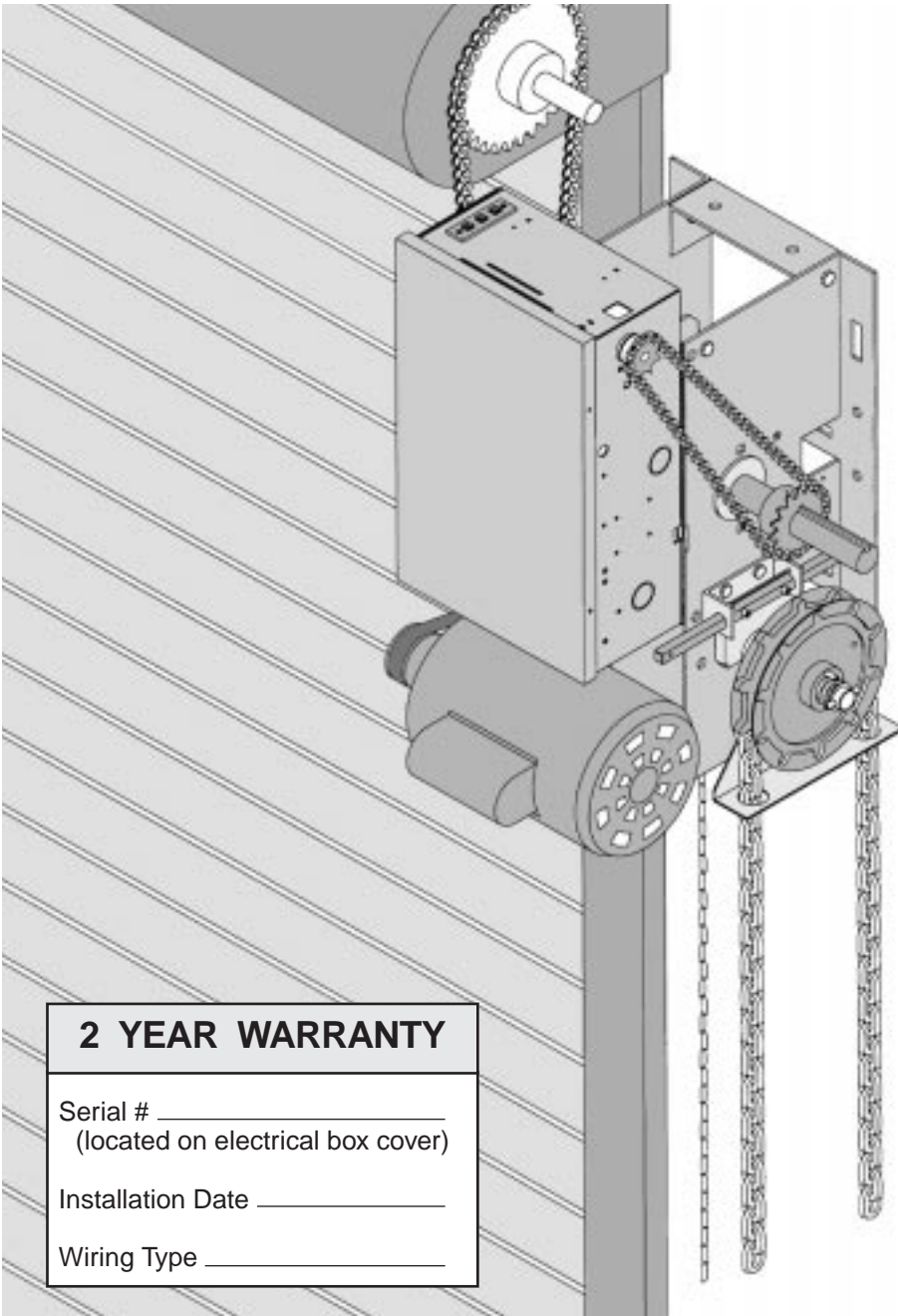
INDUSTRIAL DUTY DOOR OPERATOR



FACTORY SET

C2 Wiring

See pages 13 & 14
for other wiring
configurations



2 YEAR WARRANTY

Serial # _____
(located on electrical box cover)

Installation Date _____

Wiring Type _____

NOT FOR RESIDENTIAL USE

41B6



LISTED DOOR OPERATOR

SPECIFICATIONS

MOTOR

TYPE:Continuous duty
HORSEPOWER:.....1/3, 1/2, 3/4 & 1 Hp
 Single or Three phase
SPEED:.....1725 RPM
VOLTAGE:115, 220, 230 Single
 phase
 208, 230, 460, 575 Three
 phase
CURRENT:See motor nameplate

ELECTRICAL

TRANSFORMER:.....24VAC
CONTROL STATION:NEMA 1 three button station.
 OPEN/CLOSE/STOP
WIRING TYPE:.....C2 (Factory Shipped)
 Momentary contact to OPEN & STOP, constant
 pressure to CLOSE, open override plus wiring for
 sensing device to reverse. See pages 13 and 14 for
 optional control settings and operating modes.
LIMIT ADJUST:Linear driven, fully
 adjustable screw type cams. Adjustable to 24 feet.

MECHANICAL

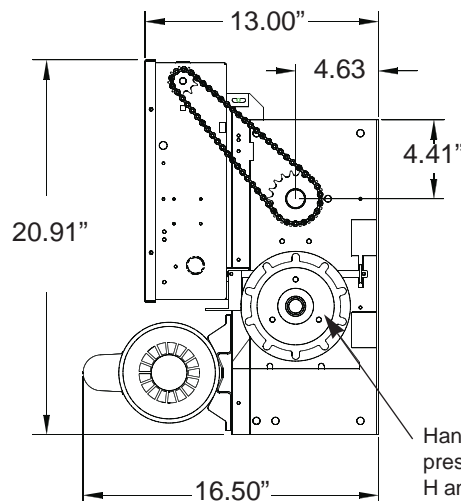
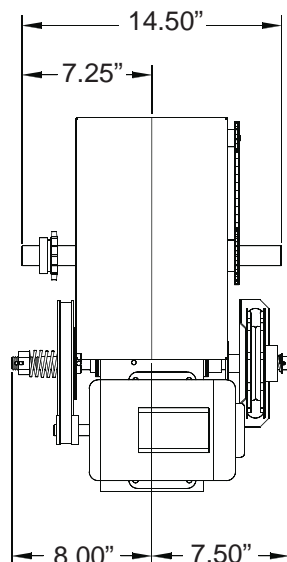
DRIVE REDUCTION:...Primary: Heavy duty (5L) V-Belt.
 Secondary: #48 chain/sprocket Output: #50 chain
OUTPUT SHAFT SPEED:36 R.P.M.
DOOR SPEED:6 - 7" per sec.
 depending on door
BRAKE: (Optional)Solenoid actuated disc
 brake
BEARINGS:Output Shaft: Shielded
 Ball Bearing. Clutch Shaft: IronCopper sintered and
 oil impregnated.
HAND CHAIN WHEEL:Left or right handing
Models H and HJ only.

SAFETY

DISCONNECT :
Model J: Floor level disconnect for emergency manual
 door operation.
Model H: Floor level chain hoist with electrical interlock
 for emergency manual door operation.
Model HJ: Includes both floor level disconnect
 systems stated above.
REVERSING EDGE:.....(Optional) Electric or pneumatic
 sensing device attached to the bottom edge of door.
**A REVERSING EDGE IS STRONGLY
 RECOMMENDED FOR ALL COMMERCIAL
 OPERATOR INSTALLATIONS. REQUIRED WHEN
 THE 3 BUTTON CONTROL STATION IS OUT OF
 SIGHT OF DOOR OR ANY OTHER CONTROL
 (AUTOMATIC OR MANUAL) IS USED.**

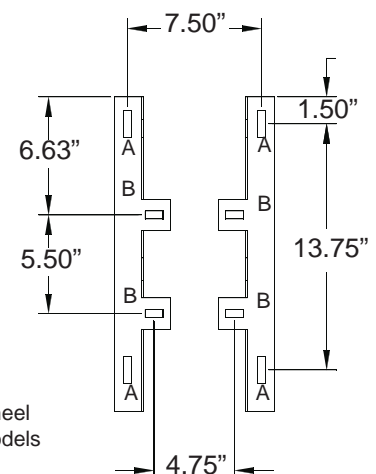
WEIGHTS AND DIMENSIONS

HANGING WEIGHT:80-110 LBS.



MOUNTING DIMENSIONS

A - Wall Mounting
 B - Bracket Mounting (rolling door)



IMPORTANT SAFETY NOTES



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.

SITE PREPARATIONS

It is imperative that the wall or mounting surface provide adequate support for the operator.

This surface must:

- Be rigid to prevent play between operator and door shaft.
- Provide a level base.
- Permit the operator to be fastened securely and with the drive shaft parallel to the door shaft.

The safety and wear of the operator will be adversely affected if any of the above requirements are not met.

For metal buildings, fasten 2" x 2" x 3/16" (or larger) angle iron frames to the building purlins. Retain 5-1/2" between frames. See Figure 1.

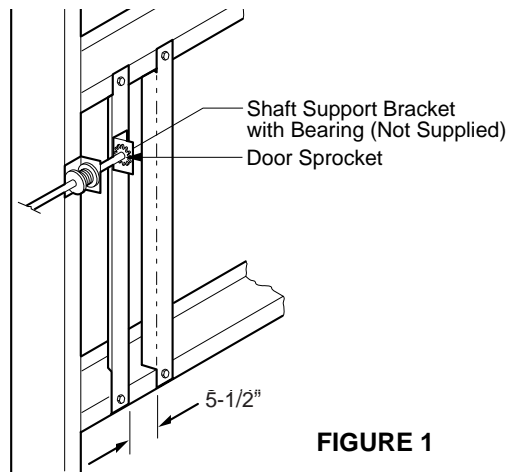


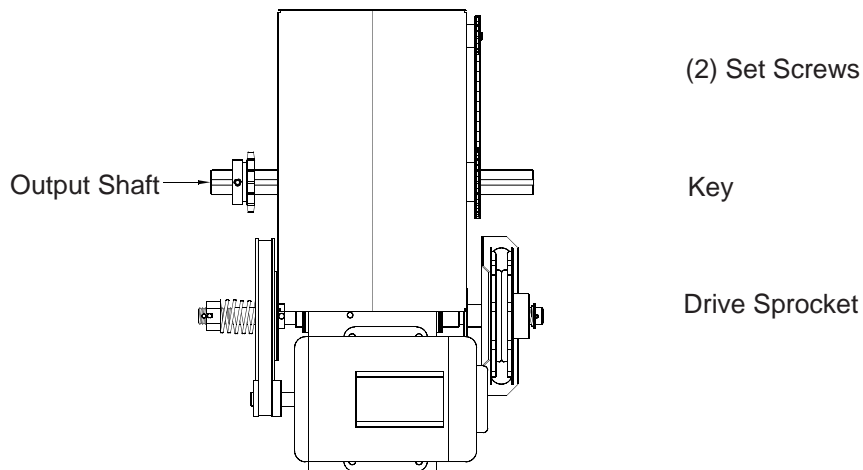
FIGURE 1

OPERATOR PREPARATION

Both J and H series operators have dual output shafts and may be mounted on either the right (standard) or left side of door, and in either a vertical (standard) or horizontal mounting position. If you need to move the drive sprocket, loosen BOTH set screws, remove the sprocket and key, and place on the opposite side of the drive shaft. Be sure to tighten BOTH set screws securely.

Hand Chain Handing

For models H and HJ with manual hoist hand chain systems, the handing of the operator must be determined at the time of order. The handing is indicated by last letter of the model name (R or L). **The hand chain wheel can not be switched on site.** If your installation causes the hand chain to hang in the door opening, hook the chain off to the side near the top of the door jamb.



OPERATOR MOUNTING

Before your operator is installed, be sure the door has been properly aligned and is working smoothly. The operator may be wall mounted or mounted on a bracket or shelf. If necessary, refer to the operator preparations on page 3. Refer to the illustration and instructions below that suits your application.

1a. Wall Mounting

The operator should generally be installed below the door shaft, and as close to the door as possible. The optimum distance between the door shaft and operator drive shaft is between 12" - 15". Refer to Figure 3.

Optimum Distance
12 - 15"

Typical Right Hand
Wall Mounted Operator

FIGURE 3

1b. Bracket or Shelf Mounting

The operator may be mounted either above or below the door shaft. The optimum distance between the door shaft and operator drive shaft is between 12" - 15". Refer to Figure 4.

OPTIONAL
Mounting Bracket
P/N 08-9098

Optimum Distance
12 - 15"

IMPORTANT: The shelf or bracket must provide adequate support, prevent play between operator and door shaft, and permit operator to be fastened securely and with the drive shaft parallel to the door shaft.

FIGURE 4

- 1c. Place door sprocket on the door shaft. Do not insert the key at this time.
2. Place drive sprocket on the appropriate side of the operator. Do not insert the key at this time.
3. Wrap drive chain around door sprocket and join roller chain ends together with master link.
4. Raise operator to approximate mounting position and position chain over operator sprocket.
5. Raise or lower operator until the chain is taut (not tight). Make sure the operator output shaft is parallel to door shaft and sprockets are aligned. When in position, secure the operator to wall or mounting bracket.
6. Align sprockets and secure, (see Figure 5).

Be sure door sprocket is properly aligned with drive before securing to the shaft.

Chain Keeper

FIGURE 5

- 7. Install Hand Chain (Models H and HJ only)**
Place hand chain around hand chain wheel. Be sure to pass it through both openings in the chain guide. Remove enough links so chain hangs approximately two feet above the floor

- 8. Mount Chain Keeper / Keyhole Bracket**
Using suitable hardware mount the chain keeper approximately 4 feet above the floor, near the free hanging chain. Remove disconnect sash chain from bag and place the end through the keyhole in the chain keeper. Remove excess links if necessary.

EMERGENCY MANUAL OPERATION

This operator has provisions for manually operating the door in case of emergency or power failure. Refer to the appropriate instructions below for your model operator.

Model H

These operators are equipped with a manual hoist. An electrical interlock will disable the electrical controls when the hoist is used. To operate the hoist:

1. Pull the disconnect chain (small chain) to engage the hoist mechanism. The disconnect chain may be locked in position by slipping the end through the keyhole of the chain keeper mounted on the wall.
2. Operate the door in the desired direction by pulling on one side or the other of the continuous loop hoist chain (large chain).
3. The disconnect chain must be released from the chain keeper before the door will operate again electrically.

Model J

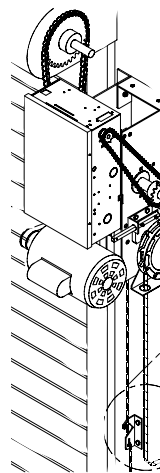
This operator has a floor level disconnect chain to disconnect the door from the door operator.

1. To disengage, pull the chain and secure in the disengaged position by slipping the end through the keyhole bracket mounted on the wall. Or if emergency egress device is used, pull handle to disengage operator from door.
2. The door may now be pushed up or pulled down manually. Release the disconnect chain to operate the door again electrically.

Model HJ

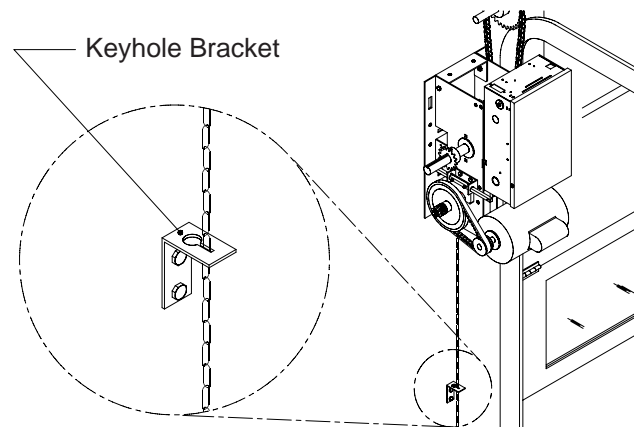
This operator includes both, a floor level disconnect chain to disconnect the door from the door operator and a disconnect chain with manual hoist to electrically disable the electrical controls.

1. Refer to model H instructions for hoist operation.
2. Refer to model J instructions for manual operation.



Chain Keeper
(with pad locking provisions)

Electrical Interlock with Hoist for Models H and HJ



Manual Disconnect for Models J and HJ

ENTRAPMENT PROTECTION ACCESSORIES (OPTIONAL)

SENSING EDGES

All types of sensing edges with an isolated normally open (N.O.) output are compatible with your operator. This includes pneumatic and electric edges. If your door does not have a bottom sensing edge and you wish to purchase one, contact the supplier of your operator.

If not pre-installed by the door manufacturer, mount the sensing edge on the door according to the instructions provided with the edge. The sensing edge may be electrically connected by either coiled cord or take-up reel. Refer to the steps below.

Important Notes:

- a) Proceed with Limit Switch Adjustments before making any sensing edge wiring connections to operator as described below.
- b) Electrician must hardwire the junction box to the operator electrical box in accordance with local codes.

IT IS STRONGLY RECOMMENDED THAT A SENSING EDGE OR OTHER ENTRAPMENT PROTECTION DEVICE BE USED IN CONJUNCTION WITH THIS OPERATOR.

TAKE-UP REEL: Take-up reel should be installed 12" above the top of the door.

COIL CORD: Connect operator end of coil cord to junction box (not supplied) fastened to the wall approximately halfway up the door opening.

LIMIT SWITCH ADJUSTMENT

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

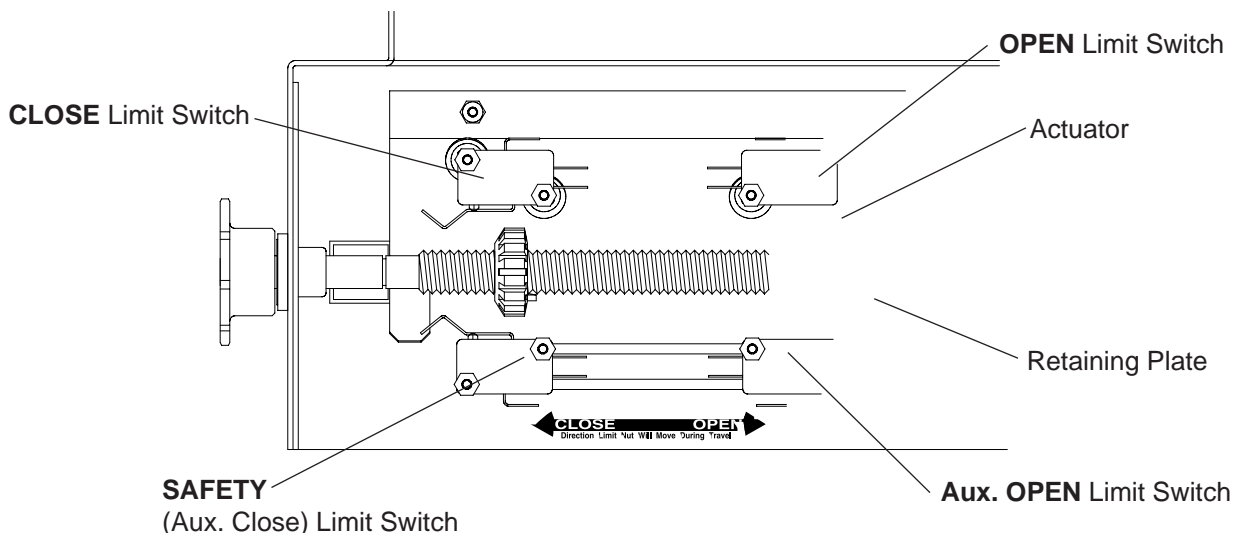
1. To adjust limit nuts depress retaining plate to allow nut to spin freely. After adjustment, release plate and ensure it seats fully in slots of both nuts.
2. To **increase** door travel, spin nut **away** from actuator. To **decrease** door travel, spin limit nut **toward** actuator.
3. Adjust open 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. Adjust close limit nut so that actuator is engaged as door fully seats at the floor.



WARNING

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

If other problems persist, call our toll-free number for assistance - 1-800-528-2806.



INSTALL POWER WIRING & CONTROL STATION

Before installing control station be sure to follow all warnings described below. Failure to do so may result in severe injury to persons and/or damage to operator. Do not install any wiring or attempt to run the operator without consulting the wiring diagram. Install the optional Reversing Edge before proceeding with the Control Station installation.

IMPORTANT SAFETY NOTES



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.



WARNING

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.

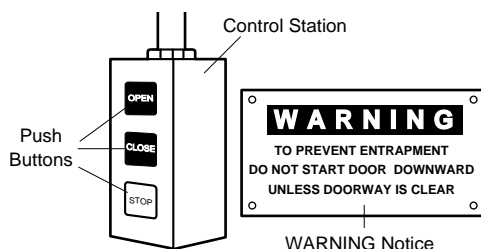


WARNING

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.

MOUNT WARNING NOTICE

IMPORTANT: Mount WARNING NOTICE beside or below the push button station.

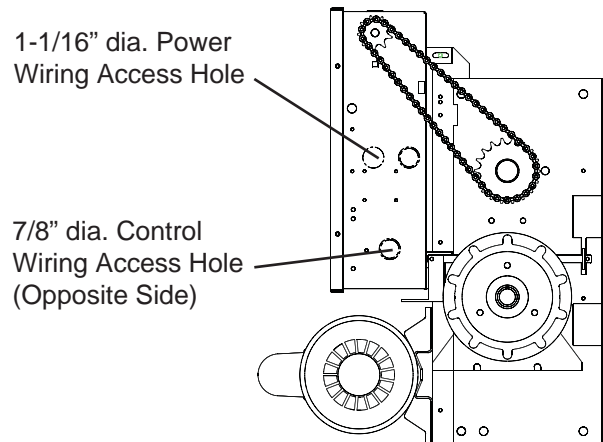


CONTROL STATION WIRING

Refer to Control Connection Diagrams on pages 11 & 13. Make connection through hole labeled for control. Do not run control wires in the same conduit as power wires.

CABLE CONNECTION NOTE:

Be sure to use the control box opening with the 7/8" dia. hole for CONTROL cable(s). All power wires use the 1-1/16" dia. hole.



1. Complete electrical connections to the operator and the control station. Fasten the control station to the wall and **MOUNT THE WARNING NOTICE BESIDE OR BELOW THE PUSH BUTTON STATION.**

2. Apply power to the operator. Press OPEN push button and observe direction of door travel and then **Press the STOP button.**

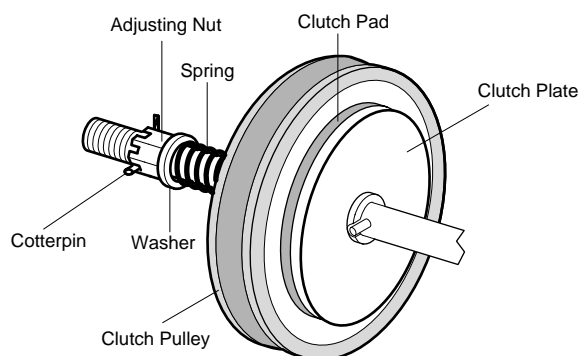
If door did not move in the correct direction, check for improper wiring at the control station or between operator and control station.

If the 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 for assistance (1-800-528-2806).

CLUTCH ADJUSTMENT

1. Remove cotterpin from nut on the clutch shaft.
2. Back off clutch nut until there is very little tension on the clutch spring.
3. Tighten clutch nut gradually until there is just enough tension to permit the operator to move the door smoothly but to allow the clutch to slip if the door is obstructed. When the clutch is properly adjusted, it should generally be possible to stop the door by hand during travel.
4. Reinstall Cotterpin.



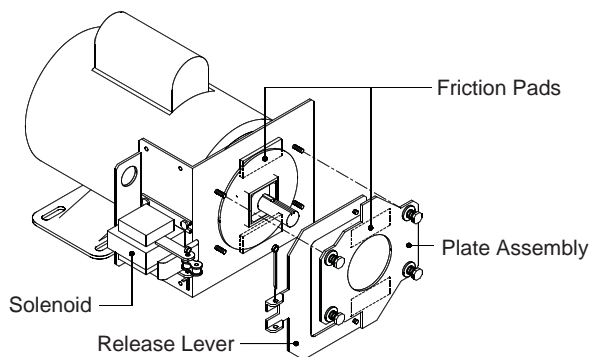
CAUTION: The adjustable friction clutch is NOT an automatic reversing device. An electric or pneumatic reversing edge can be added to bottom edge of door if desired.

BRAKE ADJUSTMENT

A solenoid brake is an optional modification. If present, the brake is adjusted at the factory and should not need additional adjustment for the the life of the friction pad. If desired, a brake can also be field installed. To order a kit for field installation on an existing operator, call the parts and service department at 1-800-528-2806.

Replace friction pads when necessary. Refer to the illustration for identification of components for the solenoid type brake system.

Solenoid Brake System



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.

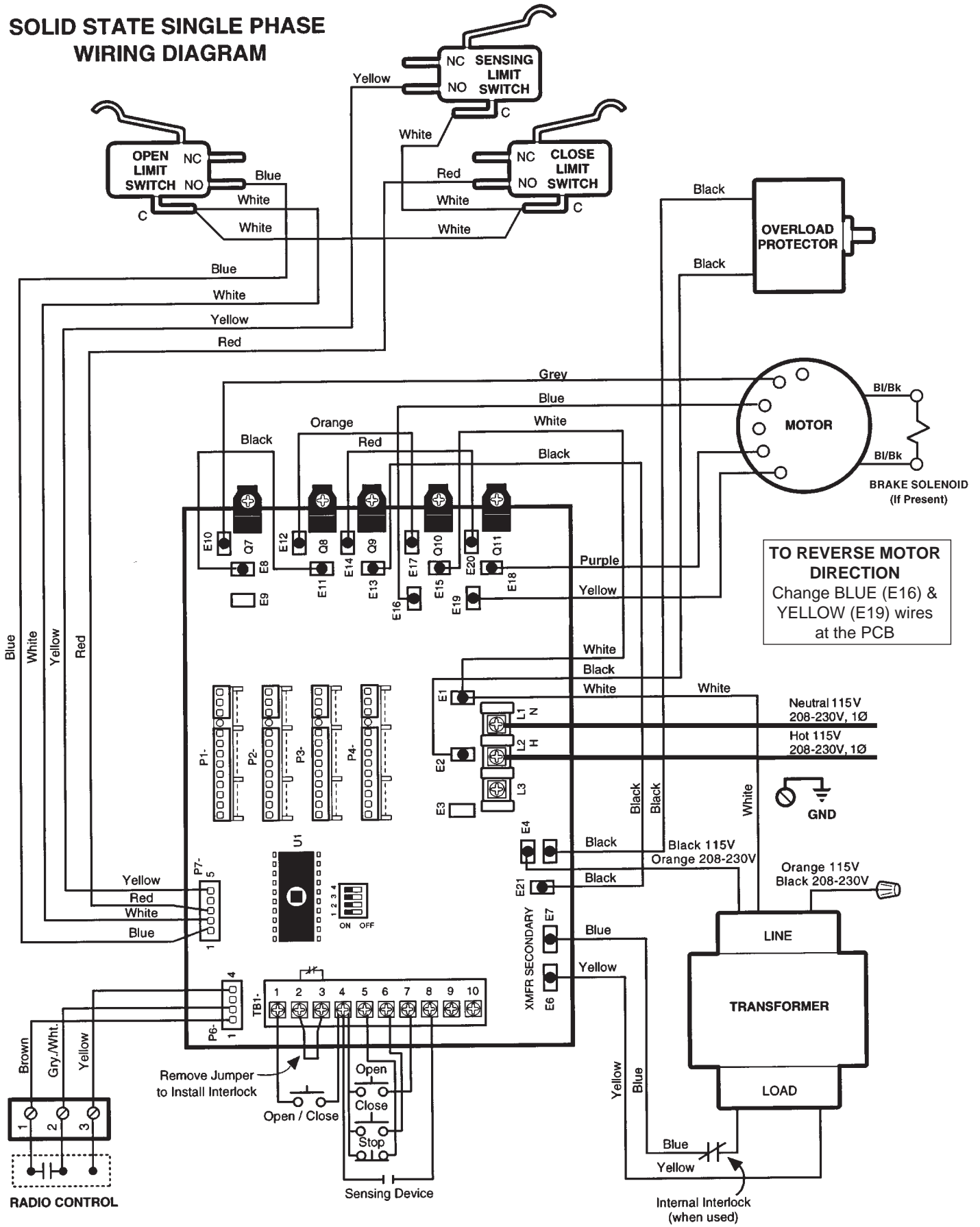
HOW TO ORDER REPAIR PARTS

OUR LARGE SERVICE ORGANIZATION
SPANS AMERICA
INSTALLATION AND SERVICE INFORMATION
ARE AVAILABLE 6 DAYS A WEEK
CALL OUR TOLL FREE NUMBER - 1-800-528-2806
HOURS 7:00 TO 3:30 p.m. (Mountain Std. Time)
MONDAY Through SATURDAY

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

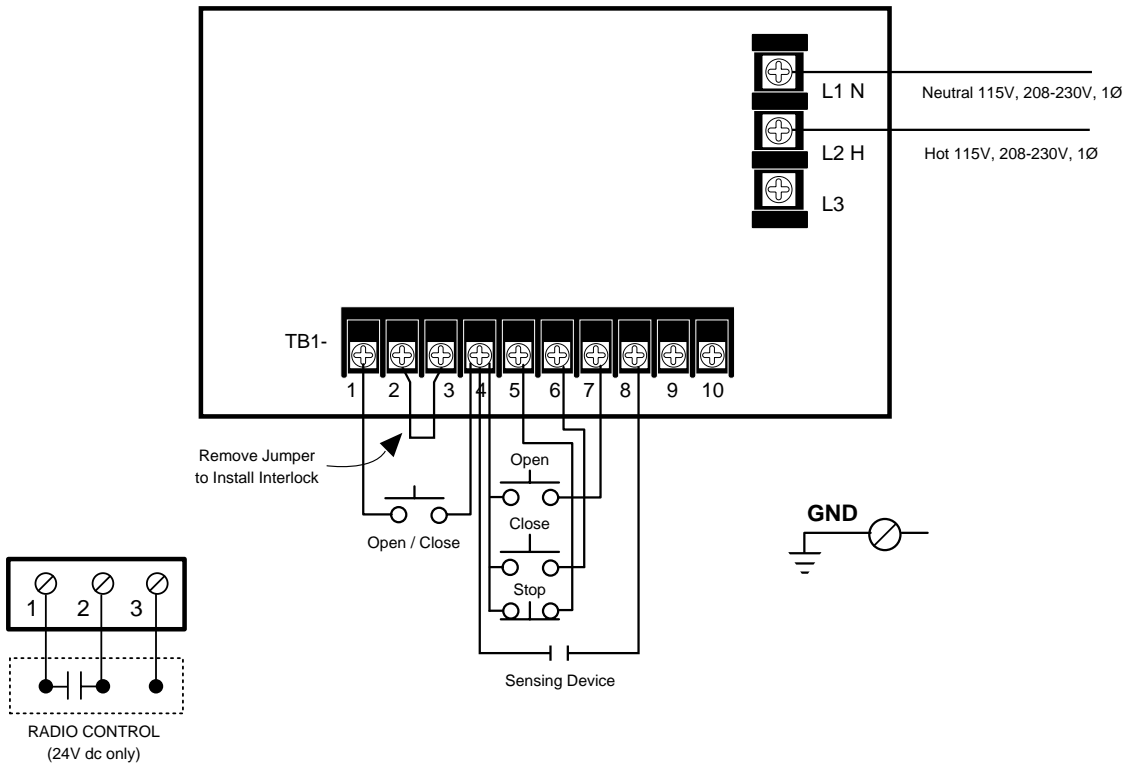
ADDRESS ORDER TO:
THE CHAMBERLAIN GROUP, INC.
Electronic Parts & Service Dept.
2301 N. Forbes Blvd., Suite 104
Tucson, AZ 85745

SOLID STATE SINGLE PHASE WIRING DIAGRAM



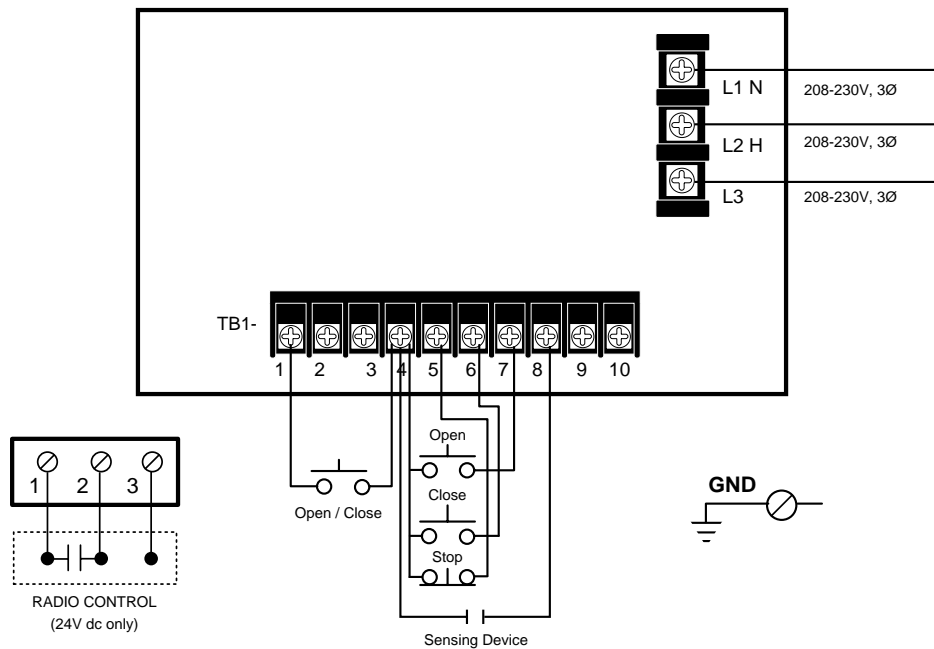
STANDARD POWER & CONTROL CONNECTION DIAGRAM

Solid State Board CDO - 115V, 208-230V, 1Ph



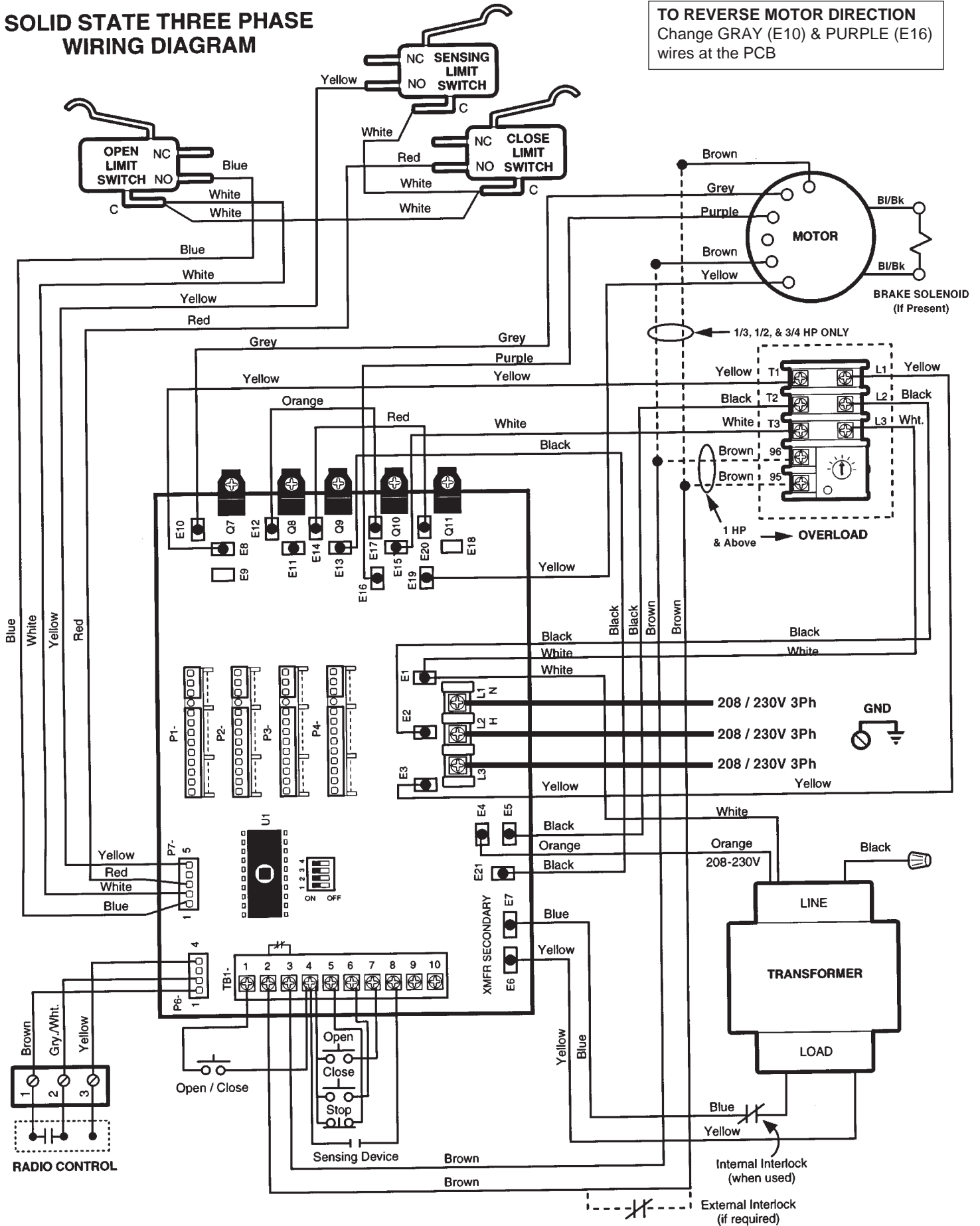
STANDARD POWER & CONTROL CONNECTION DIAGRAM

Solid State Board CDO - 208-230V3Ph



SOLID STATE THREE PHASE WIRING DIAGRAM

TO REVERSE MOTOR DIRECTION
Change GRAY (E10) & PURPLE (E16) wires at the PCB

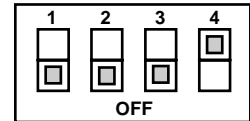


OPTIONAL CONTROL SETTINGS

Set / Reset 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
max.
run
timer

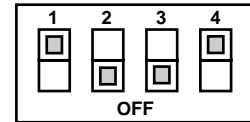


Adjustable Mid Stop

Set: 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).

Clear: Begin with door in closed position. Set operator in set mid stop mode. Press control station open button. Allow the door to run to the open limit. Set the dip switch to desired operating mode (B2, C2, D1, E2, T, TS).

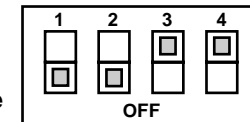
Set
adj.
mid
stop



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.

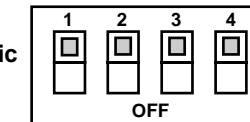
Set
timer
to
close



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.

Diagnostic
mode

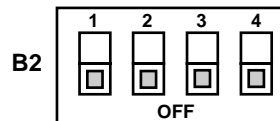


OPERATING MODE

TYPE STATION

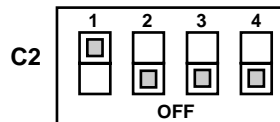
B2 3 Button, 1 Button, 1 & 3 Button Radio Control

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.



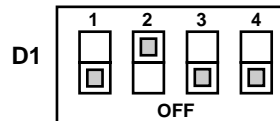
C2 3 Button, 3 Button Radio Control

Function: Momentary contact to open and stop with constant pressure to close, open override plus wiring for sensing device to reverse.



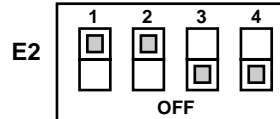
D1 2 Button, 3 Button Radio Control

Function: Constant pressure to open and close with wiring for sensing device to stop.



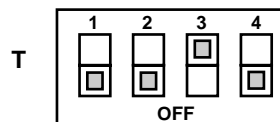
E2 2 Button, 3 Button Radio Control

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.



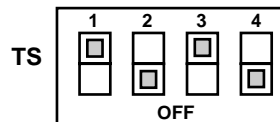
T* 3 Button, 1 Button, 1 & 3 Button Radio Control

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.)**

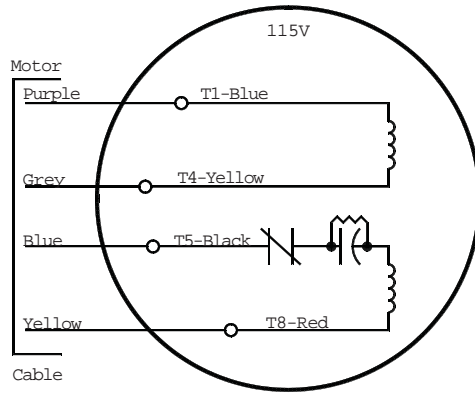


NOTE:

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.

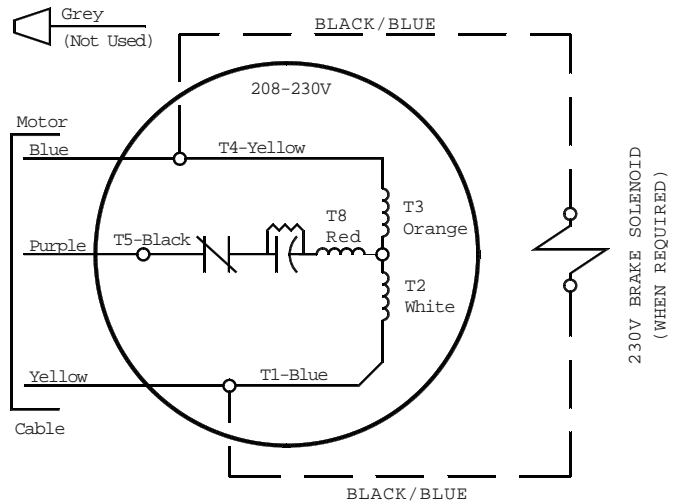
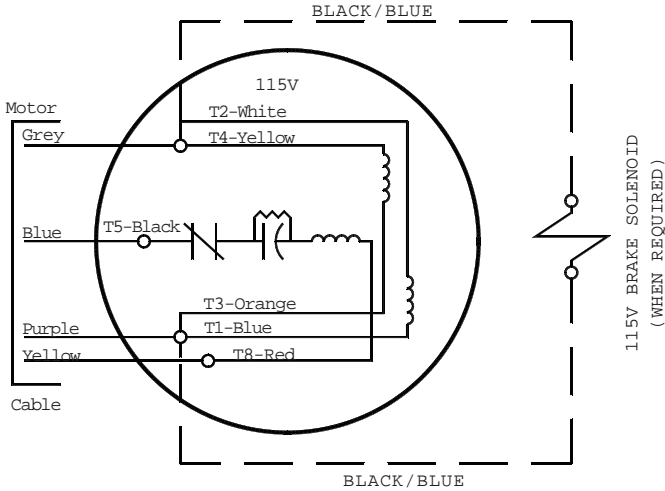
NEMA MOTOR WIRING DIAGRAMS

SINGLE VOLTAGE 1/3 & 1/2HP 115V ONLY



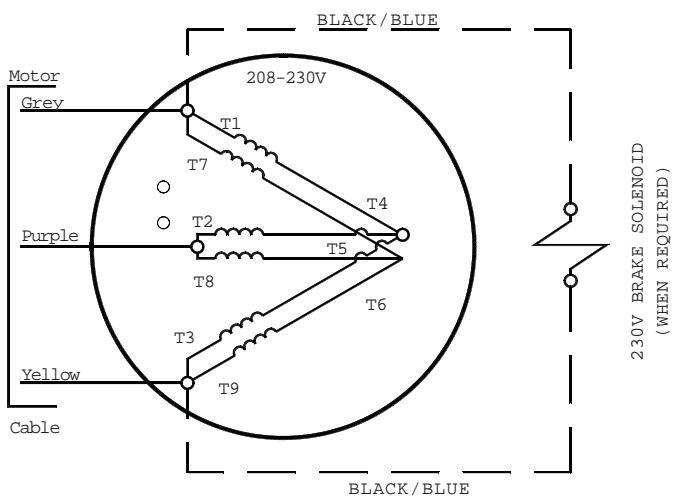
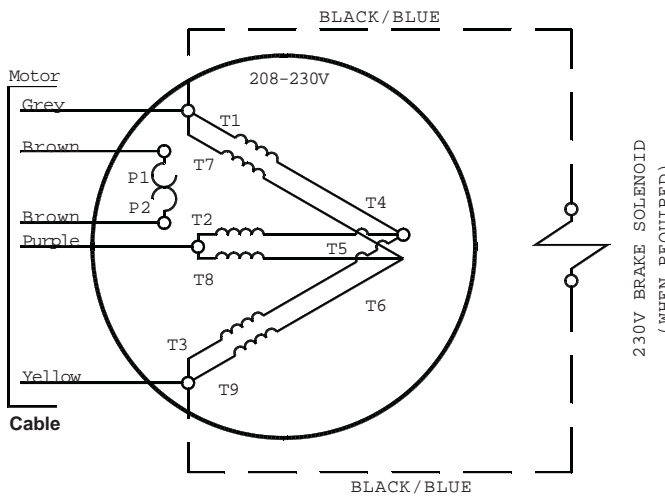
TO REVERSE MOTOR DIRECTION
Change BLUE (E16) & YELLOW (E19)
wires at the PCB

1 PHASE



3 PHASE

TO REVERSE MOTOR DIRECTION
Change GRAY (E10) & PURPLE (E16)
wires at the PCB

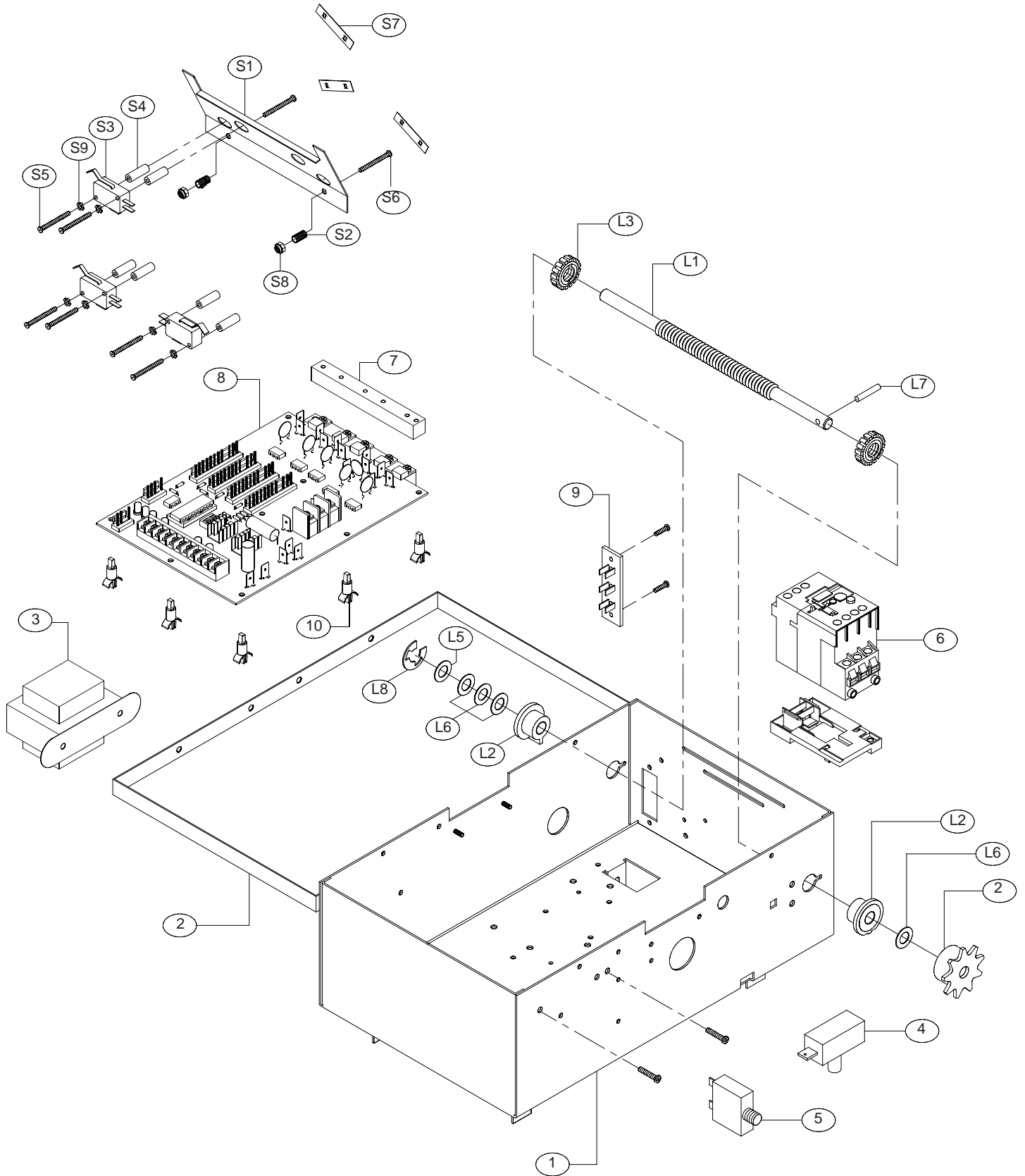


1/3, 1/2 & 3/4 Horsepower

15

1 Horsepower and above

ELECTRICAL BOX - ILLUSTRATED PARTS



REPLACEMENT PART KITS

Below are replacement kits available for your operator. For replacement of electrical box, motor or brake components be sure to match model number of your unit to kit number below to ensure proper voltage requirements. Optional modifications and/or accessories included with your operator may add or remove certain components from these lists. Please consult a parts and service representative regarding availability of individual components of kits specified below. Refer to page 9 for all repair part ordering information.

Complete Electrical Box Replacement Kits

To order a complete electrical box replacement kit, add a K- prefix to the model number of your operator. For example:

J5011M (Operator) = K-J5011M (Electrical Box Kit)

Electrical Box Sub-Assemblies

K72-12510 Limit Shaft Assembly
K75-12514 Limit Switch Assembly

Motor Kits

K20-1033B2 Models H/J3311L, H/J3321L
K20-3033B4 Models H/J3323L, H/J3338L, H/J3343L
K20-1050B2 Models H/J5011L, H/J5021L
K20-3050B4 Models H/J5023L
K20-1075B2 Models H/J7511L, H/J7521L
K20-3075B4 Models H/J7523L
K20-1100B2 Models H/J1011L, H/J1021L
K20-3100B4 Models H/J1023L

Shaft Assembly Kits

K72-12531 Clutch Shaft Assy, J
K72-12532 Output Shaft Assy, J
K72-12563 Clutch Shaft Assy, H
K72-12564 Output Shaft Assy, H
K72-12556 Clutch Shaft Assy, HJ
K72-12557 Output Shaft Assy, HJ

Disconnect Assembly Kits

K75-12558 Disconnect Assy Service Kit, RH
K75-12560 Disconnect Assy Service Kit, LH

Model J and Right Hand Model H to use right hand assembly, Left hand Model H to use left hand assembly, Model HJ requires both assemblies

Brake Kits

71-B120J 115V Model J 71-B120H 115V Model H
71-B240J 230-460V Model J 71-B240H 230-460V Model H

* COMPLETE ELECTRICAL BOX KITS			
Item	P/N	Description	Qty
1	10-10020M1	Electrical Box	1
2	10-10115X	Electrical Box Cover	1
3	21-10038	Transformer, 115/230V	1
4	23-10916	SPDT Interlock Switch	1
5	25-2xxx	(See Variable Components)	1
6	25-4xxx	(See Variable Components)	1
7	29-10037	Heatsink, PCB	1
8	29-10042	PCB Assembly	1
9	42-10040	Terminal Block, Radio	1
10	80-10027	Standoff, PCB	7

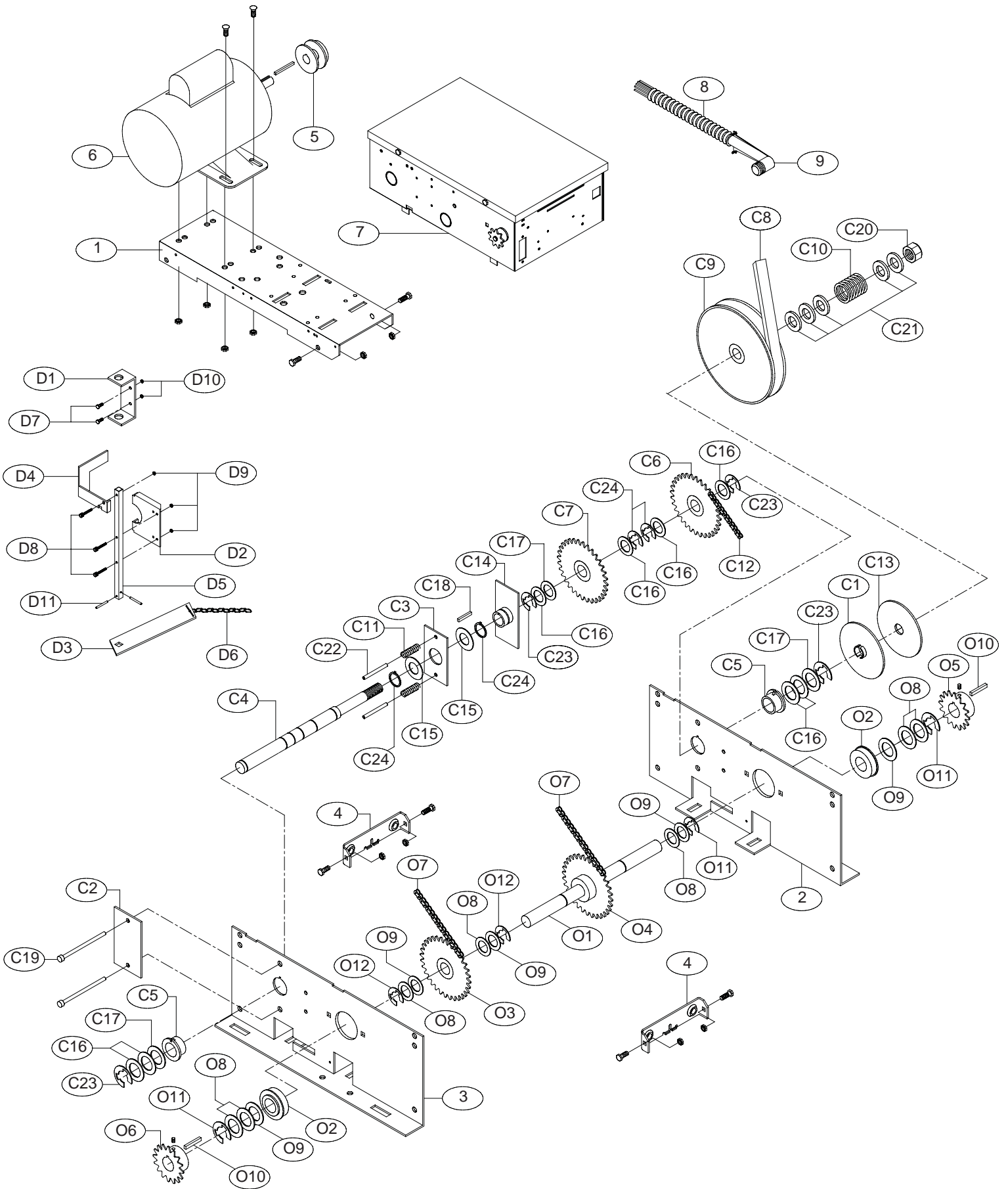
* Electrical Box Kits include parts from K72-12510 and K75-12514

K72-12510 LIMIT SHAFT ASSEMBLY KIT			
Item	P/N	Description	Qty
L1	11-10021	Limit Shaft, Standard T	1
L2	12-10028	Flange Bearing, 3/8" I.D.	2
L3	13-10024	Limit Nut	2
L4	15-48B9A	Sprocket 48B9 x 3/8" Bore	1
L5	80-10025	Washer, Shim 3/8" I.D. x .050 THK.	1
L6	80-10026	Washer, Shim 3/8" I.D. x .010 THK.	4
L7	86-RP04-100	Roll Pin, 1/8 DIA. x 1" Long	1
L8	87-E-038	E Ring, 3/8"	1

K75-12514 LIMIT SWITCH ASSEMBLY KIT			
Item	P/N	Description	Qty
S1	10-10013	Depress Plate	1
S2	18-10036	Spring, Depress Plate	2
S3	23-10041	Limit Switch	3
S4	31-10043	Standoff, Limit Switch	6
S5	82-PX04-19	Screw, #4-40 x 1-3/8" Pan Head Ph	6
S6	82-PX06-16	Screw, #6-32 x 1" Pan Hd Phil	2
S7	84-DT-04	Nut, Double Tinnerman	3
S8	84-LH-06	Locknut, #6-32 Nylon Hex	2
S9	85-IG-04	Lockwasher, #4 Internal Tooth	6

VARIABLE PARTS														
ITEM	PART NO.	DESCRIPTION	H/J3311L	H/J3321L	H/J3323L	H/J5011L	H/J5021L	H/J5023L	H/J7511L	H/J7521L	H/J7523L	H/J1011L	H/J1021L	H/J1023L
5	25-2006	Overload, 6 Amp		●			●							
	25-2008	Overload, 8 Amp	●							●				
	25-2010	Overload, 10 Amp				●							●	
	25-2015	Overload, 15 Amp							●					
	25-2020	Overload, 20 Amp										●		
6	25-4004-K	Overload, 2.5 - 4.0 Amp												●

MODEL J - ILLUSTRATED PARTS



REPLACEMENT PARTS LIST – MODEL J

SOLID STATE

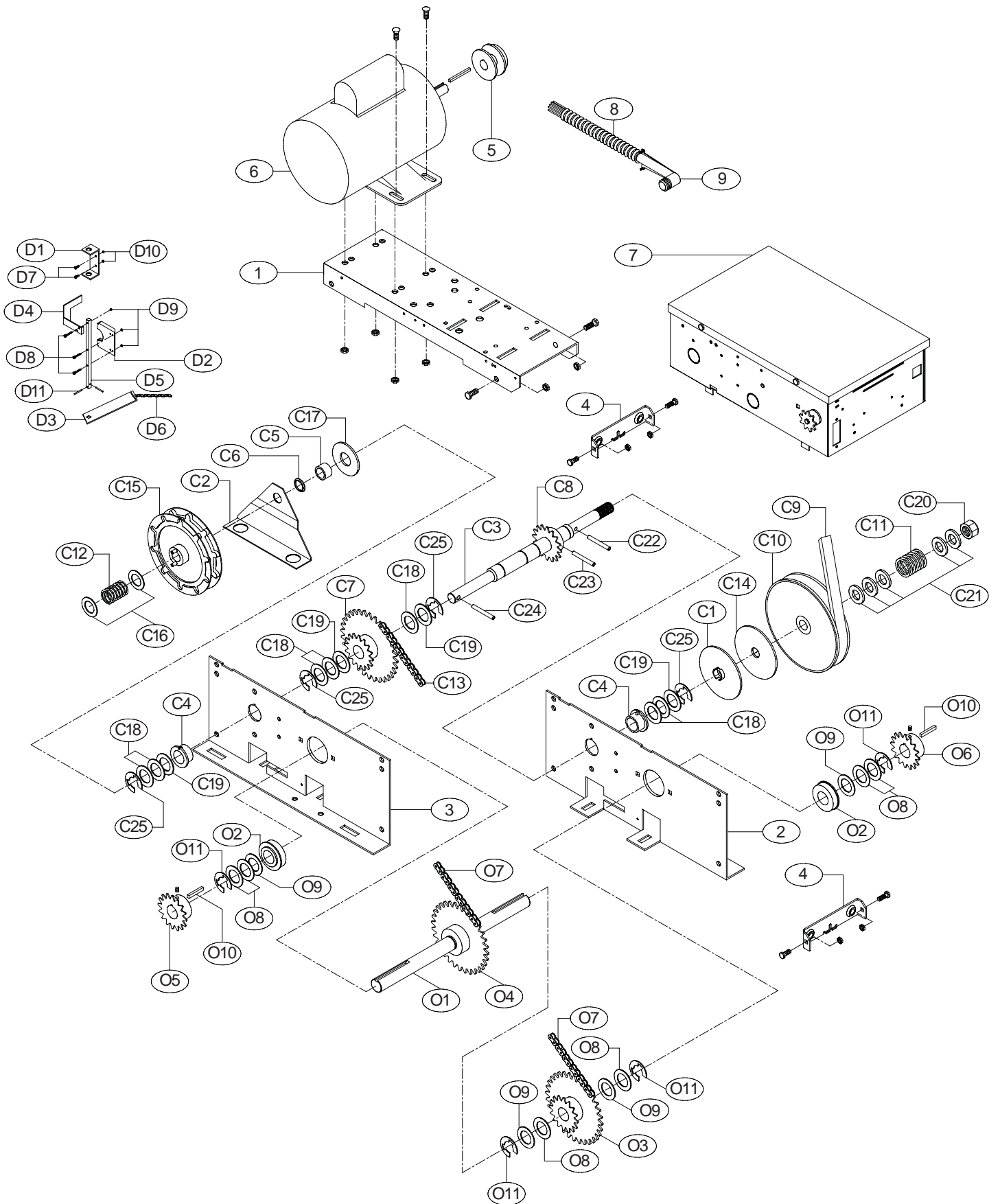
Refer to the parts lists below for replacement kits available for your operator. If optional modifications and/or accessories are included with your operator, certain components may be added or removed from these lists. Individual components of each kit may not be available. Please consult a parts and service representative regarding availability of individual components. Refer to page 9 for all repair part ordering information.

INDIVIDUAL PARTS			
ITEM	PART #	DESCRIPTION	QTY
1	10-10871	Motor Plate	1
2	10-10872	Side Plate RH	1
3	10-10873	Side Plate LH	1
4	10-10874	Frame Connecting Bracket	2
5	17-6014	2" Motor Pulley	1
6	See Page 17	Motor Replacement Kit	1
7	See Page 17	Elec. Box Replacement Kit	1
8	28-10218	Conduit, 3/8"	1
9	28-10219	Connector, 90 degree	1

K72-12532 OUTPUT SHAFT ASSEMBLY KIT			
ITEM	PART #	DESCRIPTION	QTY
O1	11-10879	Output Shaft	1
O2	12-10891	1" Ball Bearing	2
O3	15-10885	Sprocket Assy, 48B32/48B14	1
O4	15-48B32LXX	Sprocket, 48B332	1
O5	15-48B18LGE	Sprocket, 48B18 x 1" Bore	1
O6	15-50B12LGF	Sprocket, 50B12 x 1" Bore	1
O7	19-48047M	#48 Chain 47P W/ML	2
O8	80-206-10	Spacer 1-1/32 x 1-1/2 x 1/64	7
O9	80-206-11	Spacer 1-1/16 x 1-1/2 x 1-16	5
O10	80-207-19	Key 1/4 x 1/4 x 1-1/2	2
O11	87-E-100	E Ring, 1" Plated	3
O12	87-P-100	Push on Fastener	2

K72-12531 CLUTCH SHAFT ASSEMBLY KIT			
ITEM	PART #	DESCRIPTION	QTY
C1	10-10166	Clutch Plate	1
C2	10-10930	External Disconnect Bracket	1
C3	10-10932	Internal Disconnect Plate	1
C4	11-10920	Clutch Shaft	1
C5	12-10715	1" Flanged Keyed Bearing	2
C6	15-10885	48B32/48B14 Idler Sprocket Assy	1
C7	15-10923	Compound Sprocket #48B32 x 14	1
C8	16-5L300	V Belt, 5L x 30"	1
C9	17-10165	7" Pulley	1
C10	18-10168	Compression Spring LG MW ZP	1
C11	18-10931	Compression Spring	2
C12	19-48047M	#48 Chain 47P W/ML	1
C13	39-10167	Clutch Pad	1
C14	75-10921	Rotor Assembly	1
C15	80-202-24	Flatwasher	2
C16	80-206-10	Spacer 1-1/32 x 1-1/2 x 1/64	8
C17	80-206-11	Spacer 1-1/16 x 1-1/2 x 1/16	3
C18	80-207-19	Key 1/4 x 1/4 x 1-1/2	2
C19	80-PX10-28	#10-32 x 3 SLTD RNH HD-ZP	2
C20	84-SH-76	Hex Castle Nut 3/4 x 16 ZP	1
C21	85-FW-75	Washer .75 I.D. x 1.5 O.D. x .125	5
C22	86-RP10-208	Roll Pin 5/16 x 2-1/2"	2
C23	87-E-100	E Ring, 1" Plated	6
C24	87-E-150	External Snap Ring, Zinc Coated	2

K75-12558 RIGHT HAND DISCONNECT ASSY KIT			
ITEM	PART #	DESCRIPTION	QTY
D1	10-10707	Disconnect Support Bracket	1
D2	10-10708	Yoke	1
D3	10-10875	Disconnect Lever	1
D4	10-10898	Interlock Switch Actuator	1
D5	11-10878	Disconnect Shaft	1
D6	19-8A-12	12 ft. Of Sash Chain	1
D7	82-HN25-12	1/4-20 x 3/4 HEX HD CAP Scr	2
D8	82-SH10-14	Screw 10-32 x 7/8"	3
D9	84-FN-10	Serrated Flange Nut, #10-32	3
D10	84-FN-25	Nut, 1/4-20 Serrated Flange	2
D11	86-RP04-100	Roll Pin 1/8 x 1"	2



REPLACEMENT PARTS LIST - MODEL H

SOLID STATE

Refer to the parts lists below for replacement kits available for your operator. If optional modifications and/or accessories are included with your operator, certain components may be added or removed from these lists. Individual components of each kit may not be available. Please consult a parts and service representative regarding availability of individual components. Refer to page 9 for all repair part ordering information.

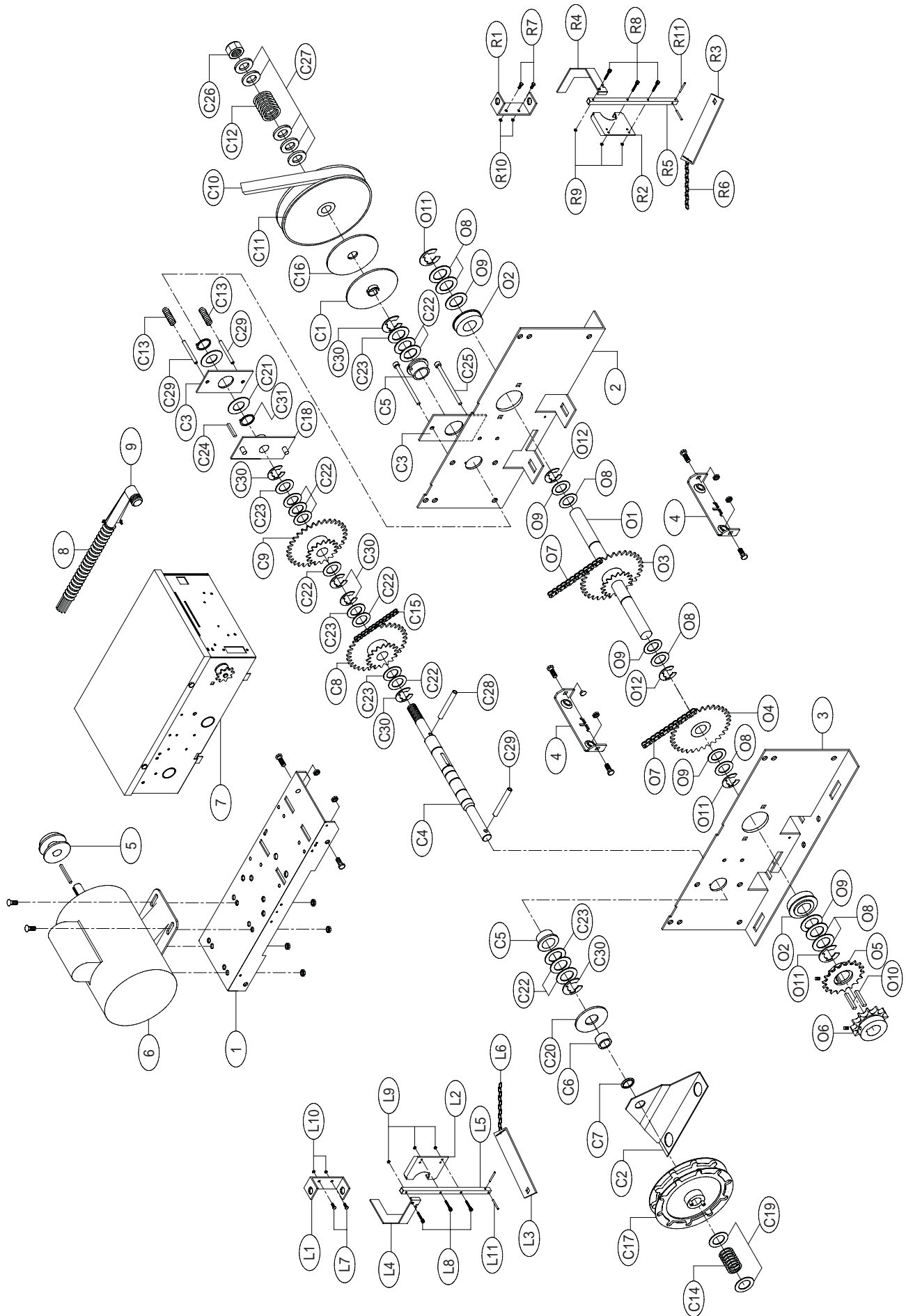
K72-12563 CLUTCH SHAFT REPLACEMENT KIT			
ITEM	PART #	DESCRIPTION	QTY
C1	10-10166	Clutch Plate	1
C2	10-10882	Chain Guide	1
C3	11-10892	Clutch Shaft	1
C4	12-10715	Bushing Flange, 1"	2
C5	12-10882	Bushing .753 I.D. x 5/8"	1
C6	12-10883	NY Liner Bearing	1
C7	15-10885	Sprocket, 48B32/48B14	1
C8	15-48B14LXX	Sprocket, 48B14 x 1" Bore	1
C9	16-5L304	V Belt, 5L x 30.4"	1
C10	17-10165	7" Pulley	1
C11	18-10168	Spring, Comp. - Clutch	1
C12	18-11379	Spring, Comp. - Hoist	1
C13	19-48047M	#48 Chain 47P W/ML	1
C14	39-10167	Clutch Pad	1
C15	75-10884	Chain Wheel Assy	1
C16	80-10022	Spacer .80 I.D.	2
C17	80-10883	Washer .753 I.D.	1
C18	80-206-10	Spacer 1-1/32 x 1-1/2 x 1/64	7
C19	80-206-11	Spacer 1-1/16 x 1-1/2 x 1/16	4
C20	84-SH-76	Hex Castle Nut 3/4 x 16 ZP	1
C21	85-FW-75	Washer 3/4 I.D.	5
C22	86-RP08-200	Roll Pin 1/4" x 2"	1
C23	86-RP10-200	Roll Pin 5/16" x 2"	1
C24	86-RP10-208	Roll Pin 5/16" x 2-1/2"	1
C25	87-E-100	E Ring 1" Plated	4

INDIVIDUAL PARTS			
ITEM	PART #	DESCRIPTION	QTY
1	10-10871	Motor Plate	1
2	10-10872	Side Plate RH	1
3	10-10873	Side Plate LH	1
4	10-10874	Frame Connecting Bracket	2
5	17-6014	2" Motor Pulley	1
6	See Page 17	Motor Replacement Kits	1
7	See Page 17	Electrical Box Replacement Kit	1
8	28-10218	Conduit, 3/8"	1
9	28-10219	Connector, 90 degree	1

K72-12564 OUTPUT SHAFT REPLACEMENT KIT			
ITEM	PART #	DESCRIPTION	QTY
O1	11-10879	Output Shaft	1
O2	12-10891	1" I.D. Ball Bearing	2
O3	15-10885	Sprocket, 48B32/48B14	1
O4	15-48B32LXX	Sprocket, 48B32 x 1" Bore	1
O5	15-48B18LGE	Sprocket, 48B18 x 1" Bore	1
O6	15-50B12LGF	Sprocket, 50B12 x 1" Bore	1
O7	19-48047M	#48 Chain 47P W/ML	2
O8	80-206-10	Spacer 1-1/32 x 1/64	6
O9	80-206-11	Spacer 1-1/16 x 1/16	4
O10	80-207-19	Key 1/4 x 1/4 x 1-1/2	2
O11	87-E-100	E Ring 1" Plated	4

K75-12558 RIGHT HAND DISCONNECT ASSY KIT			
ITEM	PART #	DESCRIPTION	QTY
D1	10-10707	Disconnect Support Bracket	1
D2	10-10708	Yoke	1
D3	10-10875	Disconnect Lever	1
D4	10-10898	Interlock Switch Actuator	1
D5	11-10878	Disconnect Shaft	1
D6	19-8A-12	12 ft. Of Sash Chain	1
D7	82-HN25-12	1/4-20 x 3/4 HEX HD CAP Scr	2
D8	82-SH10-14	Screw 10-32 x 7/8"	3
D9	84-FN-10	Serrated Flange Nut, #10-32	3
D10	84-FN-25	Nut, 1/4-20 Serrated Flange	2
D11	86-RP04-100	Roll Pin 1/8 x 1"	2

K75-12560 LEFT HAND DISCONNECT ASSY KIT			
ITEM	PART #	DESCRIPTION	QTY
D1	10-10707	Disconnect Support Bracket	1
D2	10-10708	Yoke	1
D3	10-10875	Disconnect Lever	1
D4	10-10898-L	Interlock Switch Actuator	1
D5	11-10878	Disconnect Shaft	1
D6	19-8A-12	12 ft. Of Sash Chain	1
D7	82-HN25-12	1/4-20 x 3/4 HEX HD CAP Scr	2
D8	82-SH10-14	Screw 10-32 x 7/8"	3
D9	84-FN-10	Serrated Flange Nut, #10-32	3
D10	84-FN-25	Nut, 1/4-20 Serrated Flange	2
D11	86-RP04-100	Roll Pin 1/8 x 1"	2



REPLACEMENT PARTS LIST – MODEL HJ

SOLID STATE

Refer to the parts lists below for replacement kits available for your operator. If optional modifications and/or accessories are included with your operator, certain components may be added or removed from these lists. Individual components of each kit may not be available. Please consult a parts and service representative regarding availability of individual components. Refer to page 9 for all repair part ordering information.

K72-12557 OUTPUT SHAFT ASSEMBLY KIT			
ITEM	PART #	DESCRIPTION	QTY
O1	11-10879	Output Shaft	1
O2	12-10891	1" Ball Bearing	2
O3	15-10885	Sprocket Assy, 48B32/48B14	1
O4	15-48B32L	Sprocket, 48B332	1
O5	15-48B18LGE	Sprocket, 48B18 x 1" bore	1
O6	15-50B12LGF	Sprocket, 50B12 x 1" bore	1
O7	19-48047M	#48 Chain 47P W/ML	2
O8	80-206-10	Spacer 1-1/32 x 1-1/2 x 1/64	7
O9	80-206-11	Spacer 1-1/16 x 1-1/2 x 1-16	5
O10	80-207-19	Key 1/4 x 1/4 x 1-1/2	2
O11	87-E-100	E Ring, 1" Plated	3
O12	87-P-100	Push on Fastener	2

K75-12558 RIGHT HAND DISCONNECT ASSY KIT			
ITEM	PART #	DESCRIPTION	QTY
R1	10-10707	Disconnect Support Bracket	1
R2	10-10708	Yoke	1
R3	10-10875	Disconnect Lever	1
R4	10-10898	Interlock Switch Actuator	1
R5	11-10878	Disconnect Shaft	1
R6	19-8A-12	12 ft. Of Sash Chain	1
R7	82-HN25-12	1/4-20 x 3/4 HEX HD CAP Scr	2
R8	82-SH10-14	Screw 10-32 x 7/8"	3
R9	84-FN-10	Serrated Flange Nut, #10-32	3
R10	84-FN-25	Nut, 1/4-20 Serrated Flange	2
R11	86-RP04-100	Roll Pin 1/8 x 1"	2

K75-12560 LEFT HAND DISCONNECT ASSY KIT			
ITEM	PART #	DESCRIPTION	QTY
L1	10-10707	Disconnect Support Bracket	1
L2	10-10708	Yoke	1
L3	10-10875	Disconnect Lever	1
L4	10-10898-L	Interlock Switch Actuator	1
L5	11-10878	Disconnect Shaft	1
L6	19-8A-12	12 ft. Of Sash Chain	1
L7	82-HN25-12	1/4-20 x 3/4 HEX HD CAP Scr	2
L8	82-SH10-14	Screw 10-32 x 7/8"	3
L9	84-FN-10	Serrated Flange Nut, #10-32	3
L10	84-FN-25	Nut, 1/4-20 Serrated Flange	2
L11	86-RP04-100	Roll Pin 1/8 x 1"	2

INDIVIDUAL PARTS			
ITEM	PART #	DESCRIPTION	QTY
1	10-10871	Motor Plate	1
2	10-10872	Side Plate RH	1
3	10-10873	Side Plate LH	1
4	10-10874	Frame Connecting Bracket	2
5	17-6014	2" Motor Pulley	1
6	See Page 17	Motor Replacement Kit	1
7	See Page 17	Elec. Box Replacement Kit	1
8	28-10218	Conduit, 3/8"	1
9	28-10219	Connector, 90 degree	1

K72-12556 CLUTCH SHAFT ASSEMBLY KIT			
ITEM	PART #	DESCRIPTION	QTY
C1	10-10166	Clutch Plate	1
C2	10-10882	Chain Guide	1
C3	10-10932	Internal Disconnect Plate	2
C4	11-11836	Clutch Shaft	1
C5	12-10715	1" Flanged Keyed Bushing	2
C6	12-10882	Bushing .753 I.D. x 1.003 O.D. x 5/8	1
C7	12-10883	NY Liner Bearing	1
C8	15-10885	48B32/48B14 Idler Sprocket Assy	1
C9	15-10923	Sprocket #48B32/48B14	1
C10	16-5L304	V Belt, 5L x 30.4"	1
C11	17-10165	7" Pulley	1
C12	18-10168	Spring, Comp. - Clutch	1
C13	18-10931	Spring, Comp. - Disconnect	2
C14	18-11379	Spring, Comp. - Hoist	1
C15	19-48047M	#48 Chain 47P W/ML	1
C16	39-10167	Clutch Pad	1
C17	75-10884	Chain Wheel Assy	1
C18	75-10921	Rotor Assembly	1
C19	80-10022	Spacer .80 I.D. x 1.125 O.D. x .050	2
C20	80-10883	Washer .753 I.D. x 2.50 O.D. x 1/8	1
C21	80-202-24	Flatwasher	2
C22	80-206-10	Spacer 1-1/32 x 1-1/2 x 1/64	10
C23	80-206-11	Spacer 1-1/16 x 1-1/2 x 1/16	5
C24	80-207-19	Key 1/4 x 1/4 x 1-1/2	1
C25	80-PX10-28	#10-32 x 3 SLTD RNH HD-ZP	2
C26	84-SH-76	Hex Castle Nut 3/4 x 16 ZP	1
C27	85-FW-75	Washer 3/4 I.D. x 1-1/2 O.D. x .125	5
C28	86-RP08-200	Roll Pin 1/4" x 2"	1
C29	86-RP10-208	Roll Pin 5/16 x 2-1/2"	3
C30	87-E-100	E Ring 1" Plated	6
C31	87-E-150	External Snap Ring, ZP	2

CONTROL CONNECTION DIAGRAM

41B6



IMPORTANT NOTES:

- The 3-Button Control Station provided must be connected for operation.
- If a STOP button is not used, a jumper must be placed between terminals 4 and 5.

3 BUTTON STATION OR 3 POSITION KEYSWITCH WITH SPRING RETURN TO CENTER AND STOP BUTTON		
<p>STANDARD</p>	<p>2 OR MORE</p>	<p>KEY LOCKOUT</p>
2 BUTTON STATION OR 3 POSITION KEYSWITCH WITH SPRING RETURN TO CENTER		
<p>STANDARD</p>	<p>D1 & E2 MODE ONLY</p> <p>2 OR MORE</p>	
<p>D1 & E2 MODE ONLY</p>	<p>D1 & E2 MODE ONLY</p>	
1 BUTTON STATION OR ANY AUXILIARY DEVICE	RESIDENTIAL RADIO CONTROLS	
<p>OPEN / CLOSE</p>	<p>OPEN / CLOSE</p> <p>4 1 10</p>	
<p>B2, T & TS MODE ONLY</p>	<p>RADIO CONTROL (24VDC ONLY)</p>	
SENSING DEVICE TO REVERSE OR STOP	EXTERNAL INTERLOCK	
	<p>Remove Jumper When Interlock is Used</p>	
<p>Sensing Device</p>	<p>ONE</p> <p>2 OR MORE</p> <p>All Wiring Types</p>	