

LOGIC CONTROL

L

FACTORY SET

C2 Wiring

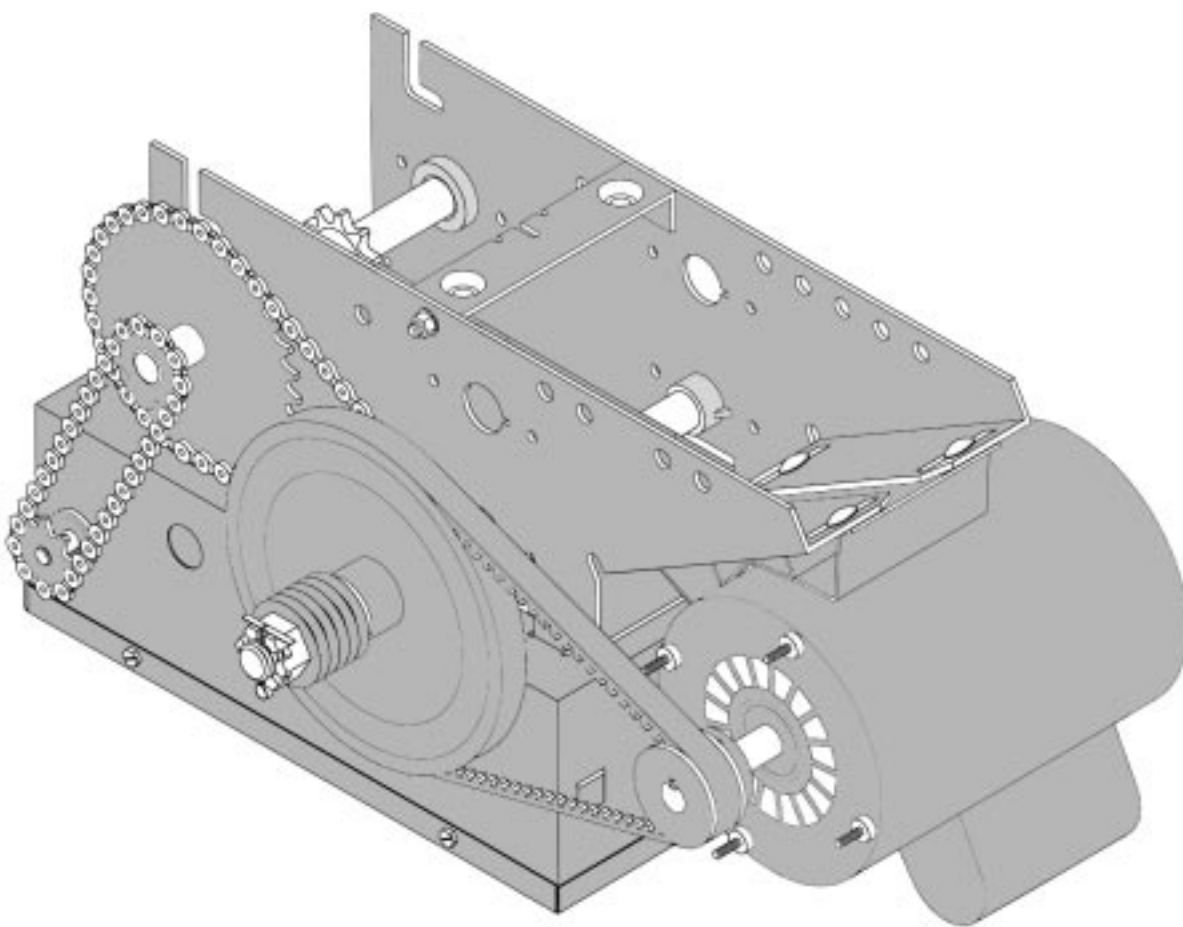
See pages 13 & 14
for other wiring
configurations

OWNER'S MANUAL

MODEL T

SOLID STATE

INDUSTRIAL DUTY DOOR OPERATOR



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, 230 Single phase
230 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

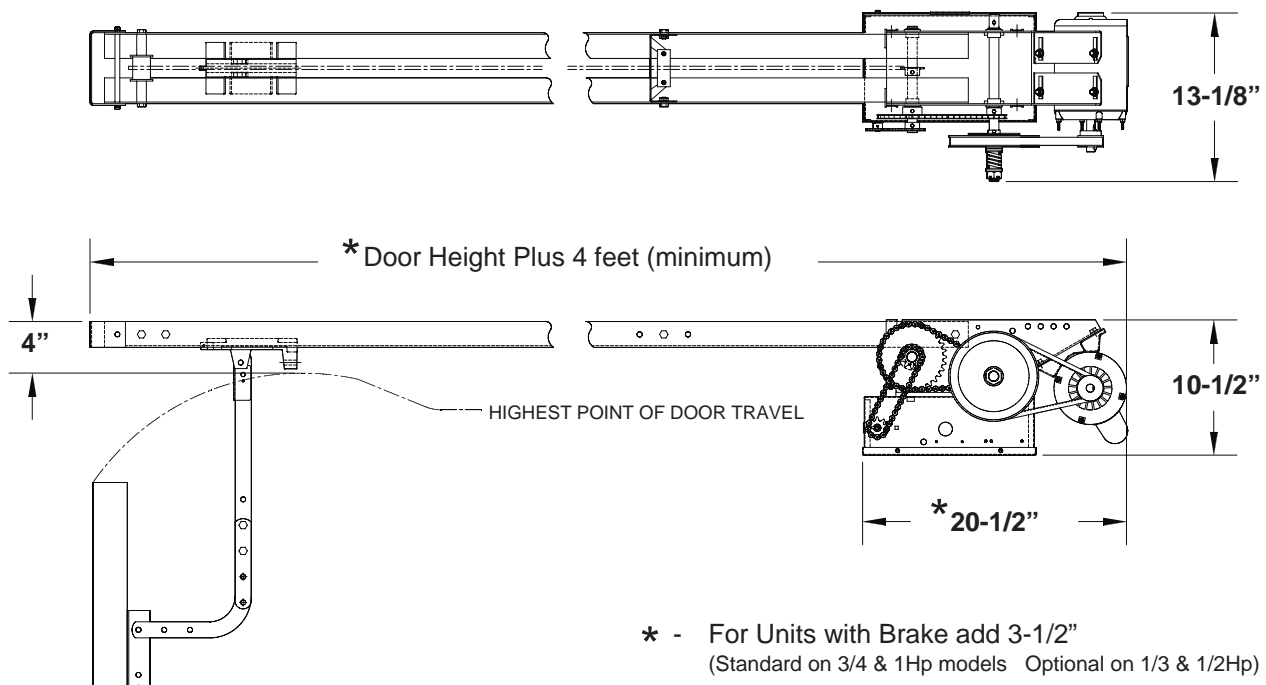
DRIVE REDUCTION:.....Primary: Heavy duty (5L) V-Belt. Secondary: #41 chain/sprocket. Output: #48 chain (1/3 & 1/2Hp) or #41 chain (3/4 & 1Hp)
OUTPUT SHAFT SPEED:140 R.P.M.
DOOR SPEED:11" - 12" per sec. depending on door
BRAKE:Solenoid actuated disc brake on 3/4 & 1Hp
BEARINGS:Output Shaft: Shielded Ball Bearing. Clutch Shaft: IronCopper sintered and oil impregnated.

SAFETY

DISCONNECT:Quick disconnect door arm for emergency manual door operation.
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.



PREPARATION

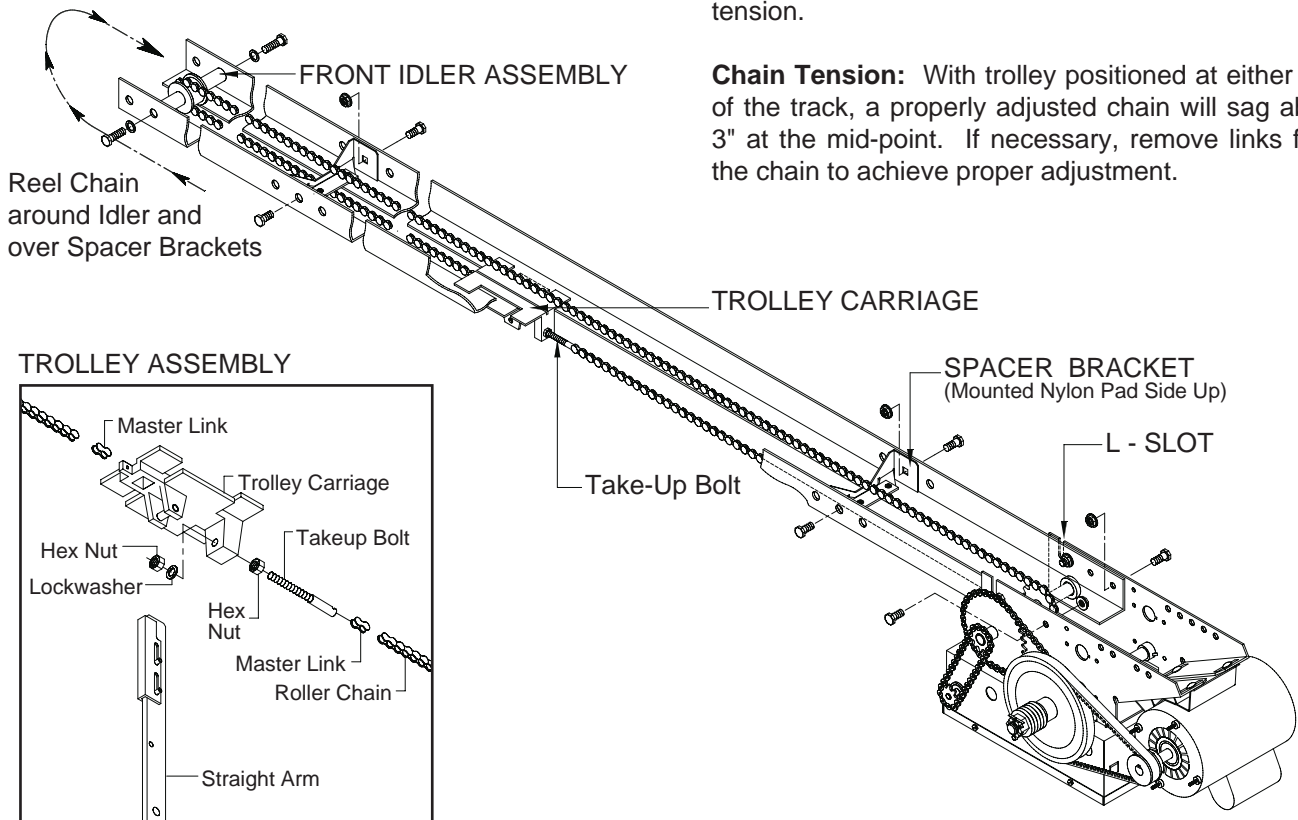


WARNING

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 OR DEATH. CALL A PROFESSIONAL DOOR SERVICEMAN TO MOVE OR ADJUST DOOR SPRINGS OR HARDWARE.

TRACK ASSEMBLY

1. Using the 3/8"-16 x 3/4 " bolts and flange hex nuts supplied, assemble the operator track by installing and tightening the track spacer brackets. Position the spacers evenly over the length of the track. NOTE: The nylon pad on the spacer bracket should face up.
2. Using (2) 3/8"-16 x 1" bolts and lock washers, install the front idler assembly to the second set of holes of one end of the track. Refer to the illustration below.
3. Slide the trolley carriage onto the track so that the take-up bolt will be toward the operator.



POWERHEAD ATTACHMENT

1. Position the track assembly on the frame of the powerhead so that the motor side of operator is in back (away from door).
2. Loosely install two 3/8"-16 x 3/4" bolts and nuts in third hole from the end of the track .
3. Align the track so that the bolts inserted in step 2 line up with the L-Slots in the frame.
4. Connect the track to the powerhead by fastening two 3/8"-16 x 3/4" bolts and nuts through the frame and the end holes in track. Tighten all four bolts to secure the track to the powerhead.

TROLLEY CARRIAGE / CHAIN ATTACHMENT

1. Attach the take-up bolt to the trolley carriage using 3/8-16 hex nuts and lock washer, as shown below.
2. Using one of the master links, attach the chain to the other end of the trolley carriage. Reel the chain around the front idler shaft, over the spacer brackets, back to the drive shaft sprocket, and then to the take-up bolt on the carriage.
3. Using the other master link, attach the chain to the take-up bolt and tighten to the desired chain tension.

Chain Tension: With trolley positioned at either end of the track, a properly adjusted chain will sag about 3" at the mid-point. If necessary, remove links from the chain to achieve proper adjustment.

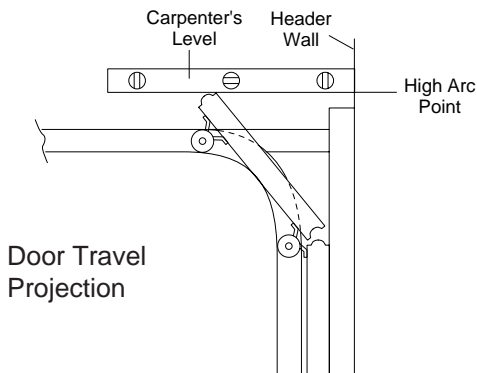
INSTALLATION INSTRUCTIONS

IMPORTANT NOTE: Before the operator is installed, be sure the door has been properly aligned and is working smoothly. Although each installation will vary due to particular building characteristics, refer to the following general procedures to install the operator.

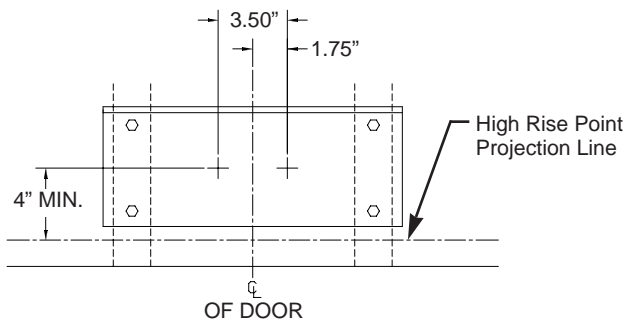
MOUNT HEADER BRACKET

The trolley operator is generally mounted over the center of the door. However, off center mounting may be required due to interfering structures or location of door stile / top section support. In such cases, the operator may be mounted up to 24" off center on torsion spring doors. Extension springs require center mounting.

1. Locate the center of the door and mark a line on the wall directly above the door. Extend this line up the wall.
2. Determine the highest point of door travel. Slowly raise the door and observe the action of the top section. When the top section reaches its highest point, use a level and project a line from this point to the center line of the door.



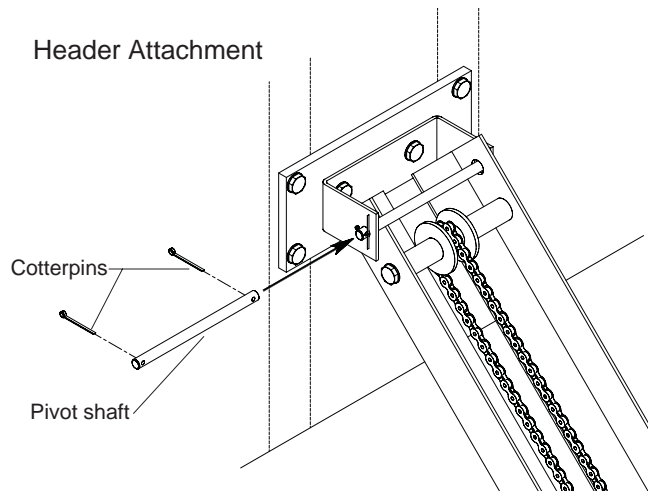
3. Using the projected lines for location, mount a suitable wood block or length of angle iron to the wall above the door opening. Refer to the illustration below. This will provide a mounting pad for the front header bracket of the operator. If necessary reinforce the wall with suitable mounting brackets to ensure adequate support of mounting pad. Using suitable hardware, mount the (U shaped) front header bracket to the pad.



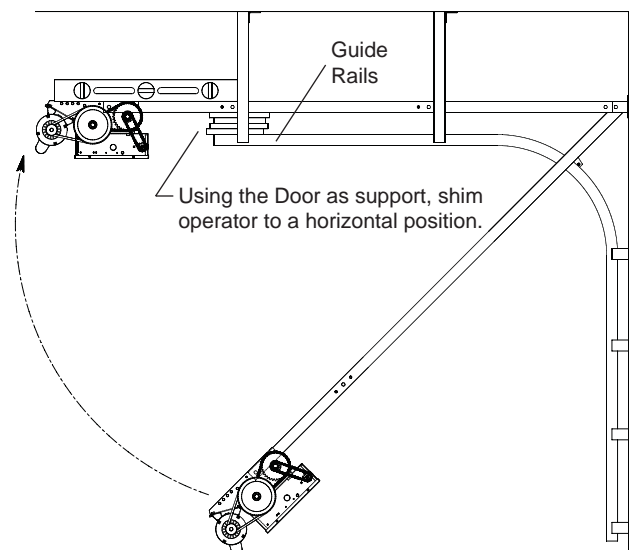
Header Bracket Drill Pattern

MOUNT OPERATOR

1. Allowing the motor to rest on the floor, raise the front end of the track assembly to the front header bracket and fasten using the 3/8" dia. x 6.40" long pivot shaft and cotterpins supplied.



2. Swing the operator to a horizontal position above the guide rails and temporarily secure with a suitable rope, chain, or support from the floor. Now open garage door slowly, being careful not to dislodge the temporary support. Using the door as a support, place a level against the rail and shim the operator until it is horizontal. Make sure that the operator is aligned with the center line of the door.



Operator Alignment

INSTALLATION INSTRUCTIONS

OPERATOR SUPPORT

1. The illustration below shows a typical method of hanging the operator from the ceiling. Each installation may vary, but in all cases side braces should be used for additional strength.

2. For mounting of the support brace(s) to the powerhead, Four holes (clearance up to 3/8" bolts) are located on each side of frame.

NOTE: If the operator is longer than 15 feet, use of a mid-span support is recommended.

 **WARNING**

FAILURE TO SUSPEND THE OPERATOR SECURELY MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH, AND/OR PROPERTY DAMAGE.

STRAIGHT ARM ATTACHMENT

1. Fully close the door and move the trolley slider to within (2") two inches of the front idler.

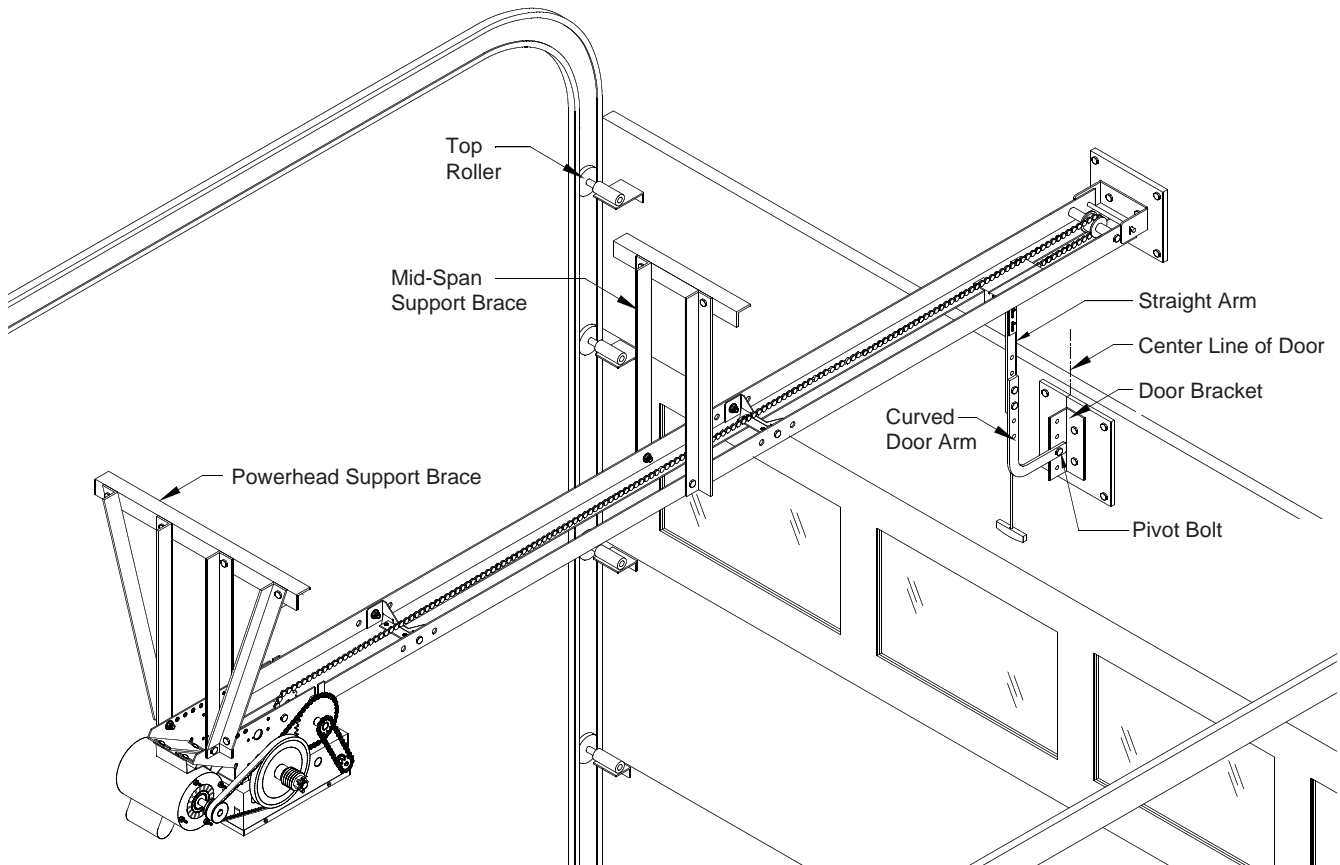
2. Latch the straight door arm to the fixed roll pin in the trolley carriage. Make sure the open side of notch on the arm faces the doorway.

3. Attach the door bracket to the door arm using the 3/8"-16 x 1" bolt and nylon locking nut provided. Leave the nut and bolt loose enough to allow the two pieces to pivot freely.

4. Using 3/8" hardware provided, bolt the curved door arm to the straight arm, aligning the mounting holes in such a way that the door bracket pivot bolt will be in line with the top rollers on the door.

5. Position the door bracket to the center line on the door. Using suitable hardware, attach the door bracket to the door. Many installations, except solid wood doors, will require additional support for the door. Refer to the illustration below.

IMPORTANT NOTE: At this time, ensure all bolts and lag screws are properly secured.



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.

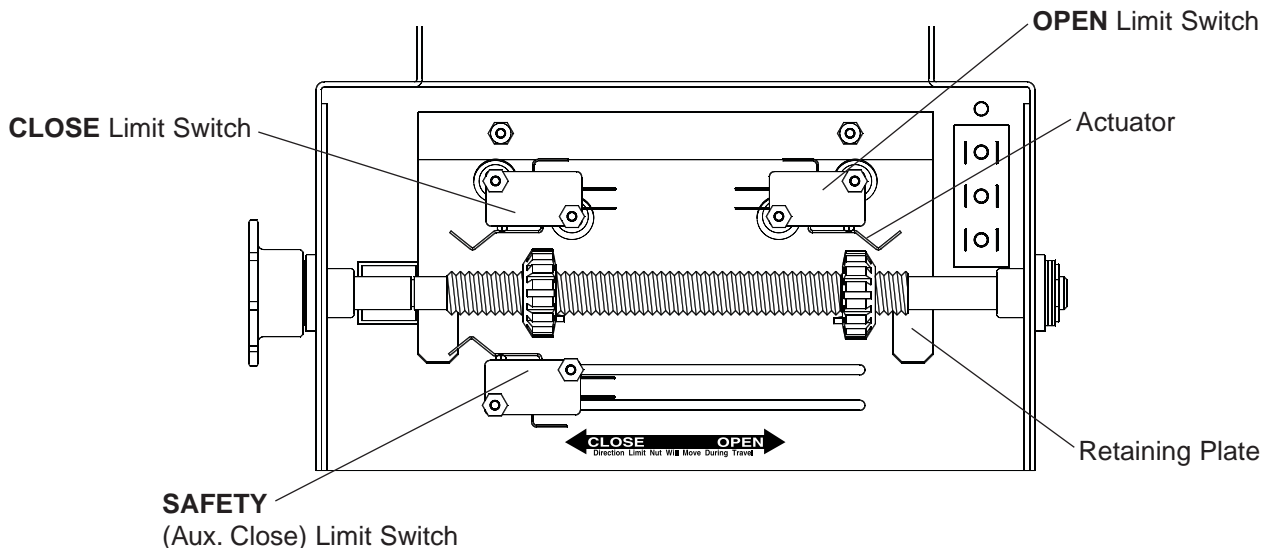
1. To adjust limit nuts depress retaining plate to allow nut to spin freely. After adjustment, release plate and ensure it seats fully in slots of both nuts.
2. To **increase** door travel, spin nut **away** from actuator. To **decrease** door travel, spin limit nut **toward** actuator.
3. Adjust open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

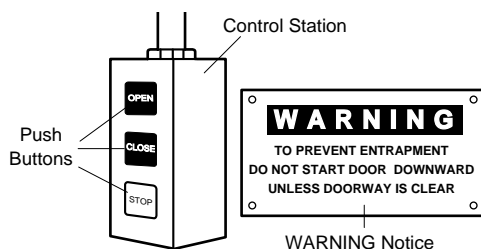


WARNING

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.

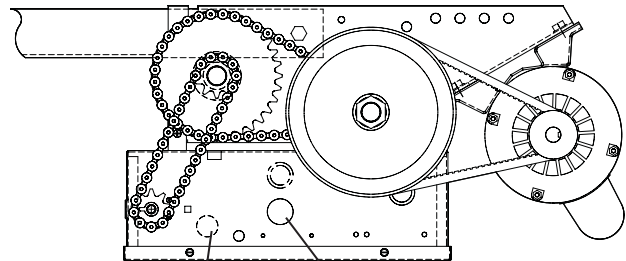


CONTROL STATION WIRING

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.



7/8" dia. Control Wiring Access Hole (Opposite Side)

1-1/16" dia. Power Wiring Access 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 trolley movement and then **Press the STOP button.**

If trolley 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).

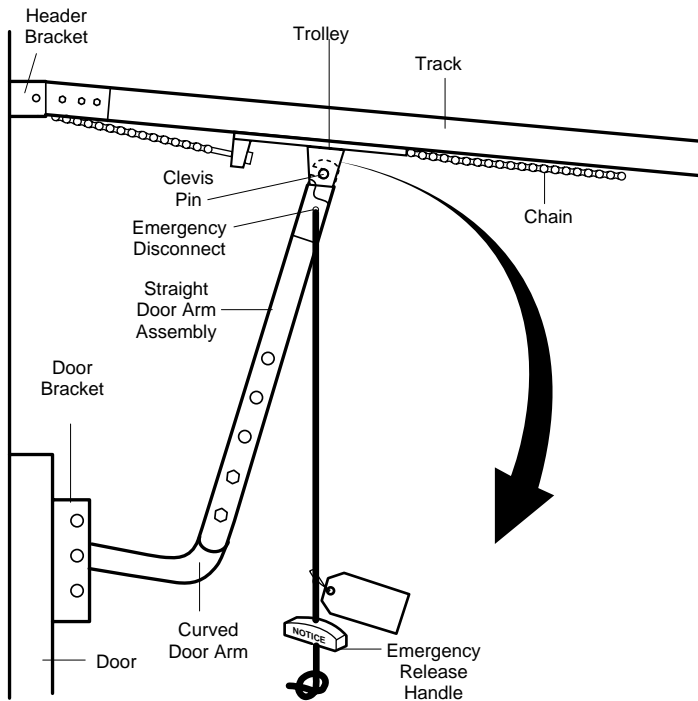
EMERGENCY DISCONNECT SYSTEM



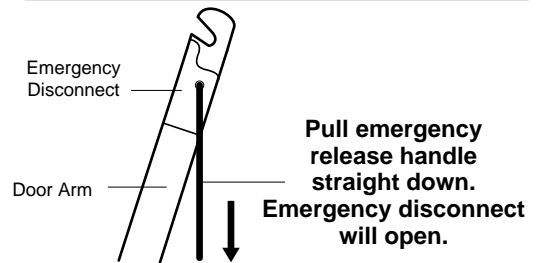
WARNING

DOOR ARM IS RELEASED FROM TROLLEY WHEN EMERGENCY DISCONNECT OPENS.

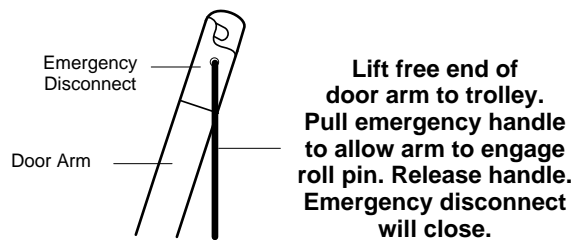
TO AVOID BEING STRUCK BY DOOR ARM, DO NOT STAND UNDER THE ROPE OR DOOR ARM WHEN PULLING THE EMERGENCY RELEASE.



TO DISCONNECT DOOR FROM OPENER

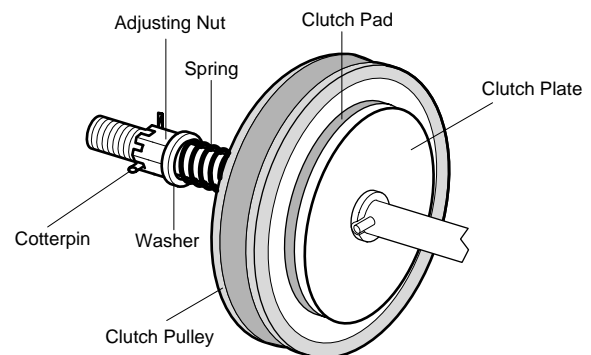


TO RECONNECT DOOR ARM TO TROLLEY



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.



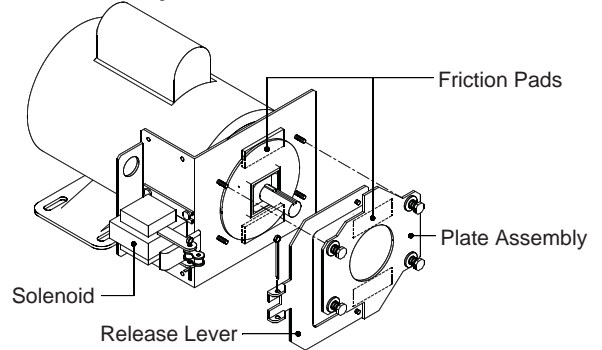
CAUTION: The adjustable friction clutch is NOT an automatic reversing device. An electric or pneumatic reversing edge can be added to bottom edge of door if desired.

BRAKE ADJUSTMENT

A solenoid brake is standard on 3/4 and 1 horsepower models, and is optional on 1/3 and 1/2 horsepower models. The brake is adjusted at the factory and should not need additional adjustment for the the life of the friction pad.

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

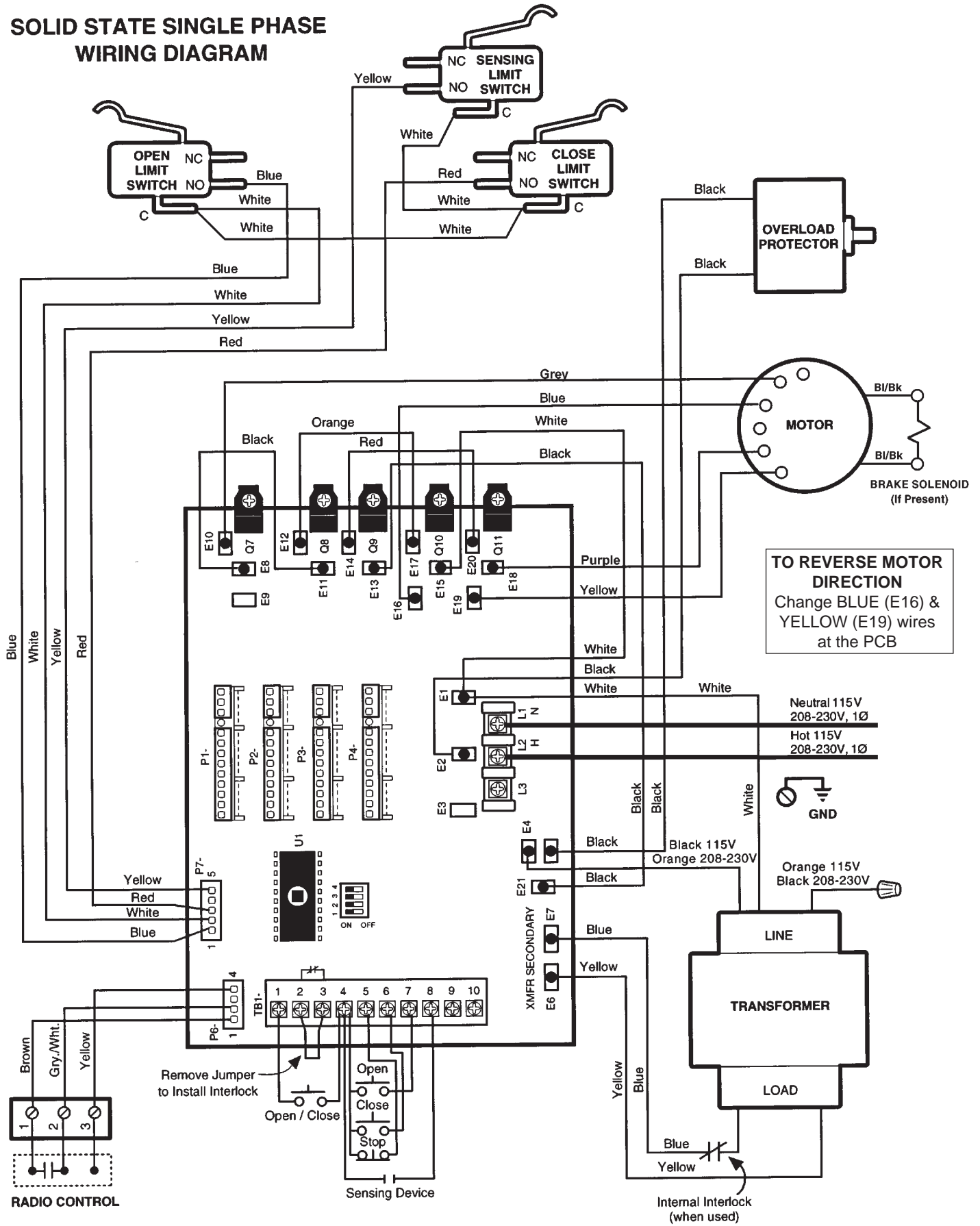
CALL OUR TOLL FREE NUMBER - 1-800-528-2806
HOURS 7:00 TO 3:30 p.m. (Mountain Std. Time)
MONDAY Through SATURDAY

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

ADDRESS ORDER TO:

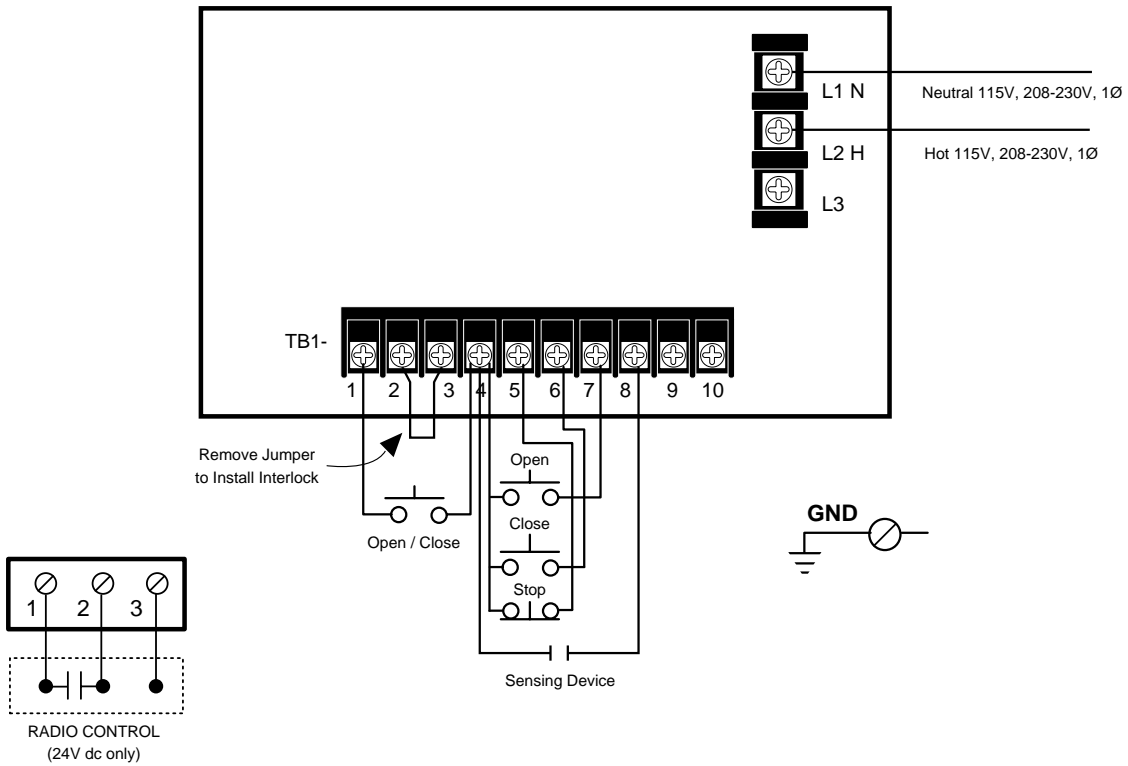
THE CHAMBERLAIN GROUP, INC.
Electronic Parts & Service Dept.
2301 N. Forbes Blvd., Suite 104
Tucson, AZ 85745

SOLID STATE SINGLE PHASE WIRING DIAGRAM



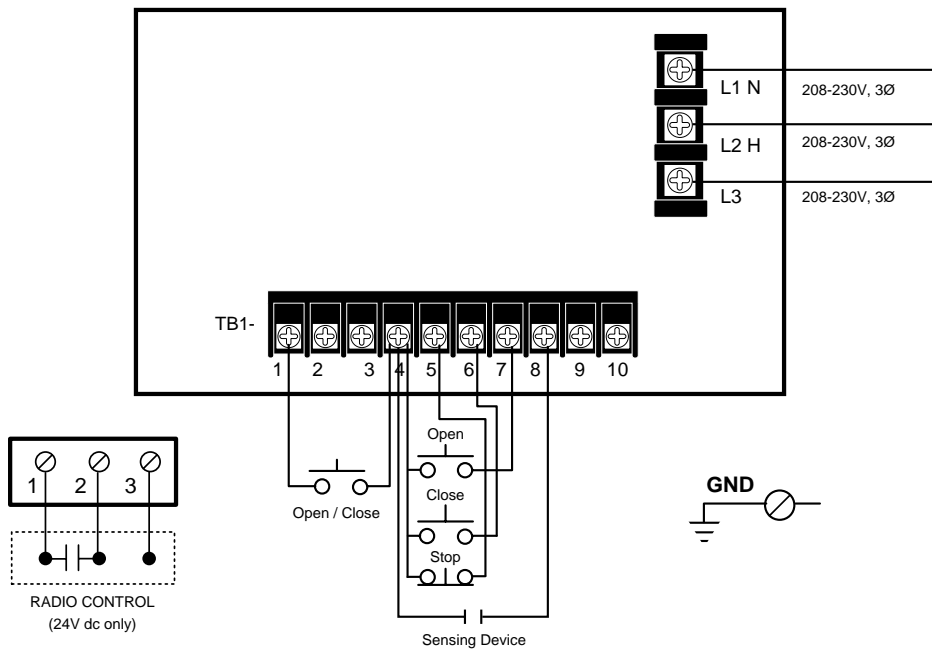
STANDARD POWER & CONTROL CONNECTION DIAGRAM

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



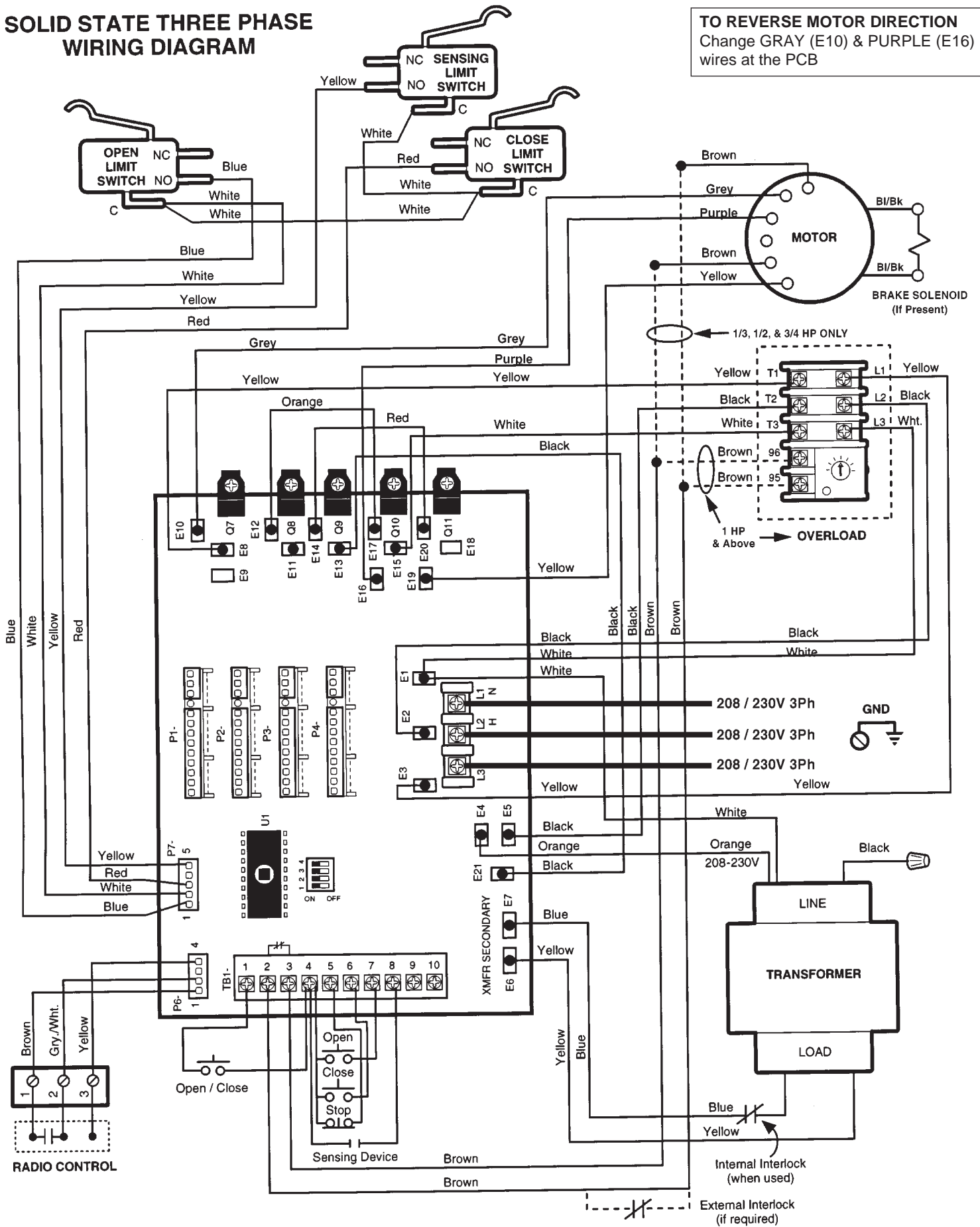
STANDARD POWER & CONTROL CONNECTION DIAGRAM

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

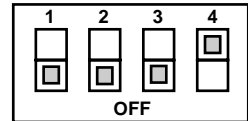


OPTIONAL CONTROL SETTINGS

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

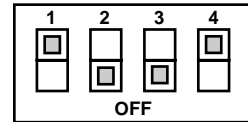


Adjustable Mid Stop

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).

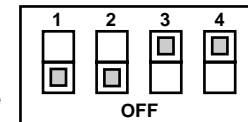
Set
adj.
mid
stop



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.

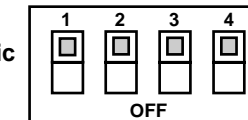
Set
timer
to close



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

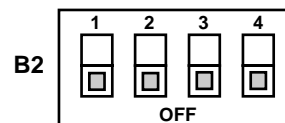


OPERATING MODE

TYPE STATION

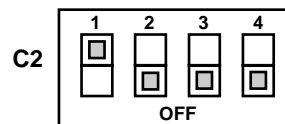
B2 3 Button, 1 Button, 1 & 3 Button Radio Control

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.



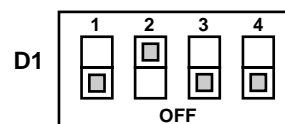
C2 3 Button, 3 Button Radio Control

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



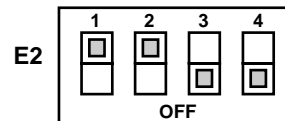
D1 2 Button, 3 Button Radio Control

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



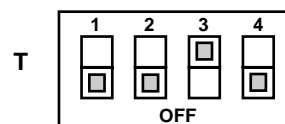
E2 2 Button, 3 Button Radio Control

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.



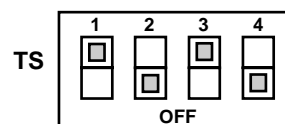
T* 3 Button, 1 Button, 1 & 3 Button Radio Control

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:

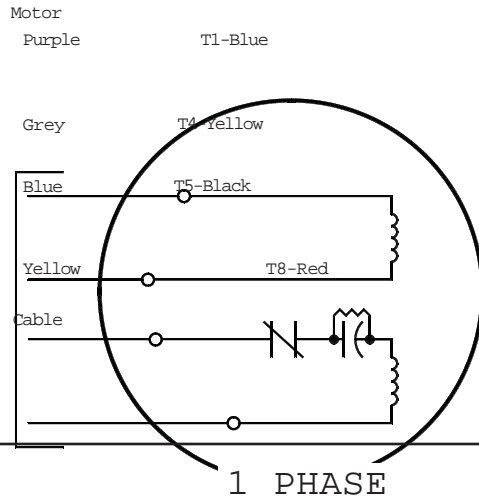
1. External interlocks may be used with all functional modes.
2. Auxiliary devices are any devices that have only one set of contacts. Examples are: photocell, loop detector, pneumatic or electrical treadles, residential radio controls, one button stations, pull cords, etc.
3. Open override means that 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

115V



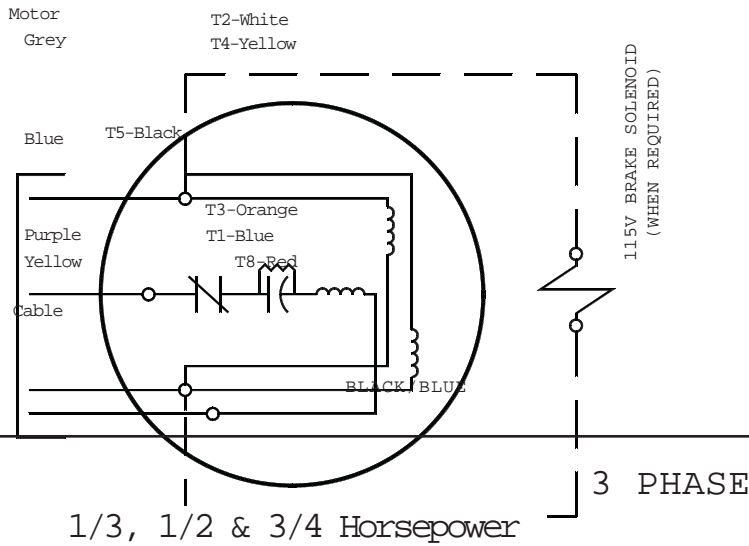
TO REVERSE MOTOR DIRECTION
Change BLUE (E16) & YELLOW (E19)
wires at the PCB

BLACK/BLUE

Grey
(Not Used)

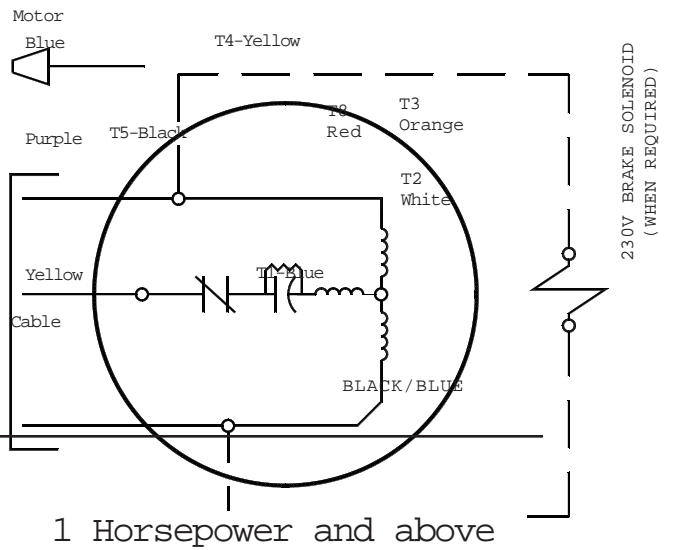
BLACK/BLUE

115V



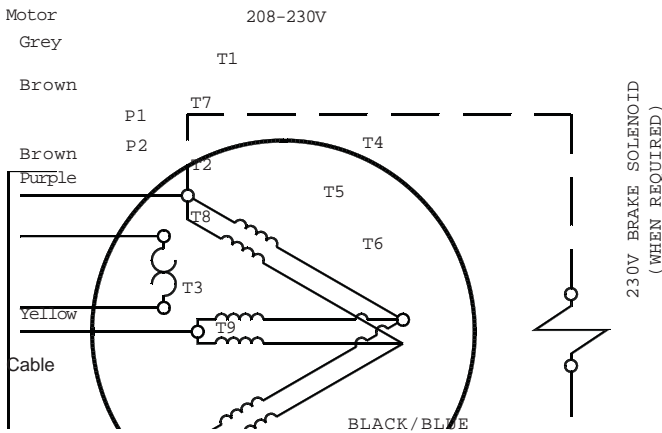
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208-230V



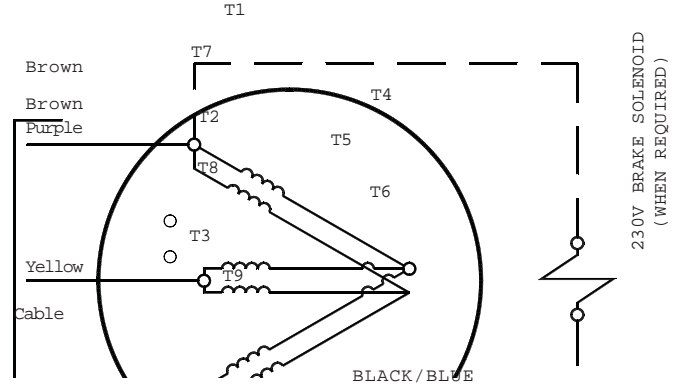
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208-230V



Motor
Grey T1

208-230V



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.

Electrical Box Replacement Kits

K74-T3311L	Model T3311L
K74-T3321L	Model T3321L
K74-T3323L	Model T3323L
K74-T5011L	Model T5011L
K74-T5021L	Model T5021L
K74-T5023L	Model T5023L
K74-T7511L	Model T7511L
K74-T7521L	Model T7521L
K74-T7523L	Model T7523L
K74-T1011L	Model T1011L
K74-T1021L	Model T1021L
K74-T1023L	Model T1023L

Electrical Box Sub-Assemblies

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

Motor Kits

K20-1033B2	Models T3311L, T3321L
K20-3033B4	Models T3323L, T3338L, T3343L
K20-1050B2	Models T5011L, T5021L
K20-3050B4	Models T5023L
K20-1075B2	Models T7511L, T7521L
K20-3075B4	Models T7523L
K20-1100B2T	Models T1011L, T1021L
K20-3100B4T	Models T1023L

Shaft Assemblies

K72-12506	Clutch Shaft Assembly (1/3 & 1/2 HP Models)
K72-12507	Clutch Shaft Assembly (3/4 & 1HP Models)
K72-12508	Output Shaft Assembly (1/3 & 1/2 HP Models)
K72-12509	Output Shaft Assembly (3/4 & 1 HP Models)

Hardware, Track, Drive Chain Kits

K72-12491	Hardware Kit
See pg. 19	Drive Chain
See pg. 19	Track

Brake Kits

71-B120	115 Volt Models
71-B240	230-460 Volt Models

* COMPLETE ELECTRICAL BOX KITS			
Item	P/N	Description	Qty
1	10-10020	Electrical Box	1
2	10-10115	Electrical Box Cover	1
3	21-10038	Transformer, 115/230V	1
4	25-XXXX	(See Variable Components)	1
5	29-10037	Heatsink, PCB	1
6	29-10042	PCB Assembly	1
7	42-10040	Terminal Block, Radio	1
8	42-110	Terminal Block, 10 Position	1
9	80-10027	Standoff, PCB	7

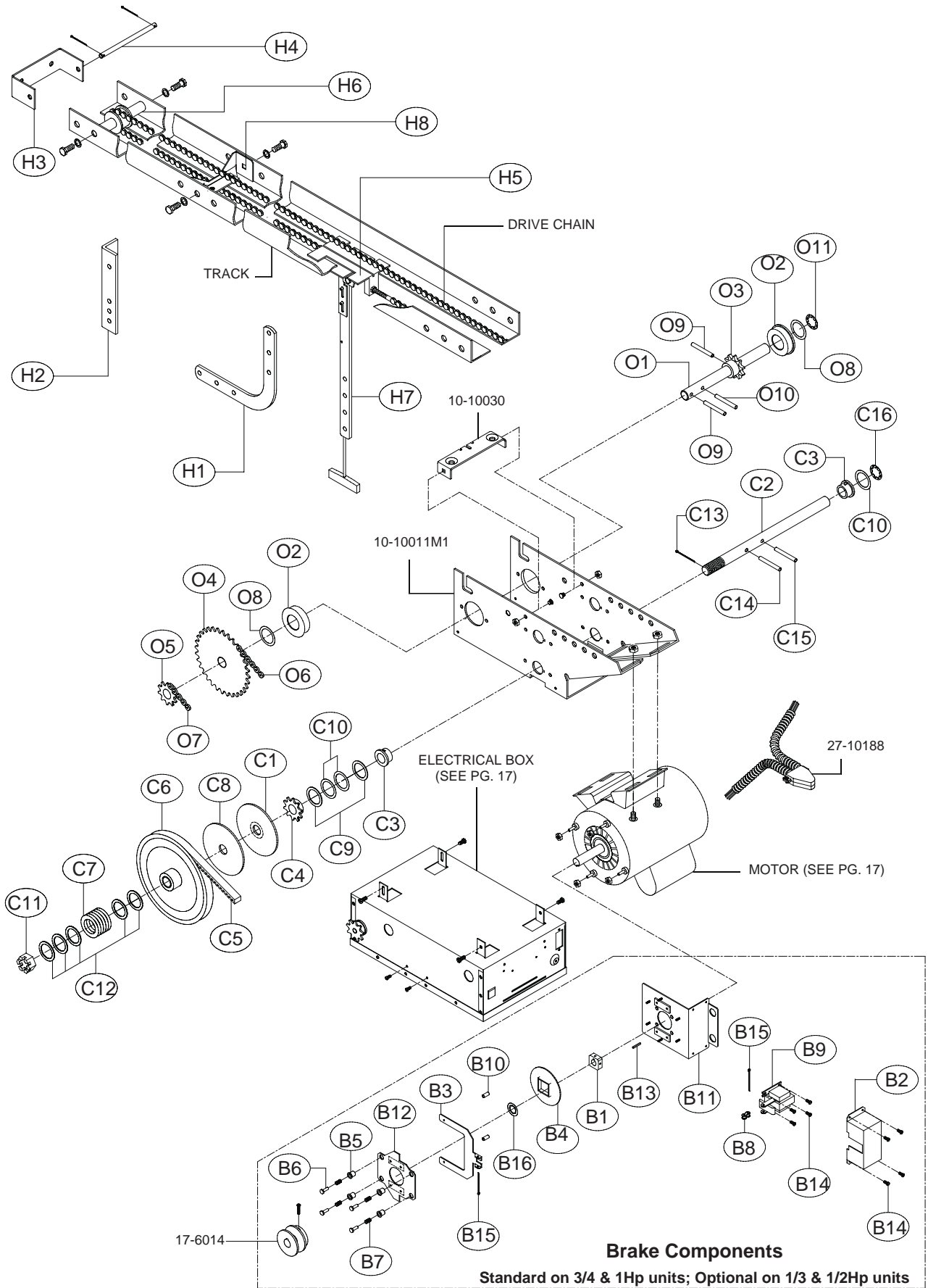
* Electrical Box Kits include parts from K72-12510 and K72-12514

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-RP05-108	Roll Pin, 1/8 DIA. x 1 Long	1
L8	87-E-038	E Ring, 3/8"	1

K72-12514 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	T3311L	T3321L	T3323L	T5011L	T5021L	T5023L	T7511L	T7521L	T7523L	T1011L	T1021L	T1023L
			4	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											●		
25-10296	Overload, 2.8 - 4.4 Amp										●			●

ILLUSTRATED PARTS



REPLACEMENT PARTS LIST (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.

BRAKE ASSEMBLY KITS

KIT PART #	FOR	OPERATOR(S)	
71-B120		115 Volt Models	
71-B240		230-460 Volt Models	
71-B575		575 Volt Models	

ITEM	PART #	DESCRIPTION	QTY
B1	07-10179	Brake Hub	1
B2	10-10187	Brake Solenoid Cover	1
B3	10-10190	Brake Release Lever	1
B4	10-10191	Brake Disc, Zinc Plated	1
B5	11-10192	Spring Cup for Brake Assembly	4
B6	11-10193	Brake Stud	4
B7	18-10194	Spring, Compression x .875" Long	4
B8	19-48001	Chain, #48 x 1 Pitch	1
B9	22-120	Brake Solenoid, 115V	1
	22-240	Brake Solenoid, 230-460V	1
	22-575	Brake Solenoid, 575V	1
B10	31-10186	Spacer, .20 I.D. x .31 Long	2
B11	75-10180	Brake Mounting Plate Assembly	1
B12	75-10184	Brake Pressure Plate Assembly	1
B13	80-9001	Feather Key	1
B14	82-WX10-08T	Screw, #10-32 x 1/2" Serrated Flange	8
B15	86-CP04-112	Cotter Pin, 1/8" x 1-3/4" Zinc Plate	2
B16	87-P-062	Push on Fastener, 5/8" Int. Star	1

K77-10201 HARDWARE KIT

ITEM	PART #	DESCRIPTION	QTY
H1	10-10203	Curved Arm	1
H2	10-10204	Door Bracket	1
H3	10-10205	Header Bracket	1
H4	11-10130	Header Pivot Pin	1
H5	75-10170	Slider Assembly	1
H6	75-10174	Front Idler Assembly	1
H7	75-10214	Straight Arm Assembly	1
H8	75-10259	Track Spacer Assembly	2

K75-12870 STRAIGHT AND CURVED ARM ASSY

H1	10-10203	Curved Arm	1
H7	75-10214	Straight Arm Assembly	1

CLUTCH SHAFT ASSEMBLY KITS

K72-12507 (1/3 & 1/2 HP) OR K72-12506 (3/4 & 1 HP)

ITEM	PART #	DESCRIPTION	QTY
C1	10-10166	Clutch Plate	1
C2	11-10014	Clutch Shaft	1
C3	12-10029	Bearing 3/4" I.D.	2
C4	15-41B10G1	Sprocket, 48B10 x 3/4"	1
C5	16-5L300	Cogged Belt	1
C6	17-10165	4L Motor Pulley 7" O.D.	1
C7	18-10164	Spring, Clutch (1/3 & 1/2 HP)	1
	18-10168	Spring, Clutch (3/4 & 1 HP)	1
C8	39-10167	Clutch Disc	1
C9	80-10022	Shim Washer Thick	2
C10	80-10023	Shim Washer Thin	3
C11	84-SH-76	Nut 3/4-16 Castle	1
C12	85-FW-75	Flatwasher 3/4" I.D.	5
C13	86-CP05-108	Cotterpin 1/8" x 1-3/4" Long	1
C14	86-RP08-102	Roll Pin 1/4" x 1-1/8" Long	1
C15	86-RP08-200	Roll Pin 1/4" x 2" Long	1
C16	87-P-075	Turac 3/4" Push on Fastener	1

OUTPUT SHAFT ASSEMBLY KIT

K72-12509 (1/3 & 1/2 HP) OR K72-12508 (3/4 & 1 HP)

ITEM	PART #	DESCRIPTION	QTY
O1	11-10015	Output Shaft	1
O2	12-10331	Bearing, Flange	2
O3	15-41B10G1	Sprocket, 41B10 x 3/4" Bore, PM	1
	15-48B10GXX	Sprocket, 48B10 x 3/4" Bore, Steel	1
O4	15-41B32GXX	Sprocket, 41B32 x 3/4" Bore	1
O5	15-48B10G1	Sprocket, 48B10 x 3/4" Bore, PM	1
O6	19-41047M	Drive Chain, #41 x 47 Pitches	1
O7	19-48033	Limit Chain, #48 x 33 Pitches	1
O8	80-10023	Shim Washer, Thin	2
O9	86-RP08-102	Roll Pin, 1/4" Dia. x 1-1/8" Long	2
O10	86-RP08-108	Roll Pin, 1/4" Dia. x 1-1/2" Long	1
O11	87-P-075	Push Ring, 3/4" I.D.	1

DOOR TRACK AND DRIVE CHAIN KITS

DOOR HEIGHT	DOOR TRACK		DOOR DRIVE CHAIN	
	PART #	DESCRIPTION	#48 CHAIN (1/3 & 1/2 HP)	#41 CHAIN (3/4 & 1 HP)
Doors to 8'	10-5808	Track, 11' Length	19-5810	19-5112
Doors to 10'	10-5810	Track, 13' Length	19-5810	19-5112
Doors to 12'	10-5812	Track, 15' Length	19-5812	19-5112
Doors to 14'	10-5814	Track, 17' Length	19-5814	19-5114
Doors to 16'	10-5816	Track, 19' Length	19-5816	19-5116
Doors to 18'	10-5818	Track, 21' Length	19-5818	19-5118
Doors to 20'	10-5820	Track, 23' Length	19-5820	19-5120
Doors to 22'	10-5820	Track, 23' Length	19-5824	19-5124
Doors to 24'	10-5824	Track, 27'-6" Length	19-5824	19-5124

CONTROL CONNECTION DIAGRAM

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.

