

FACTORY SET

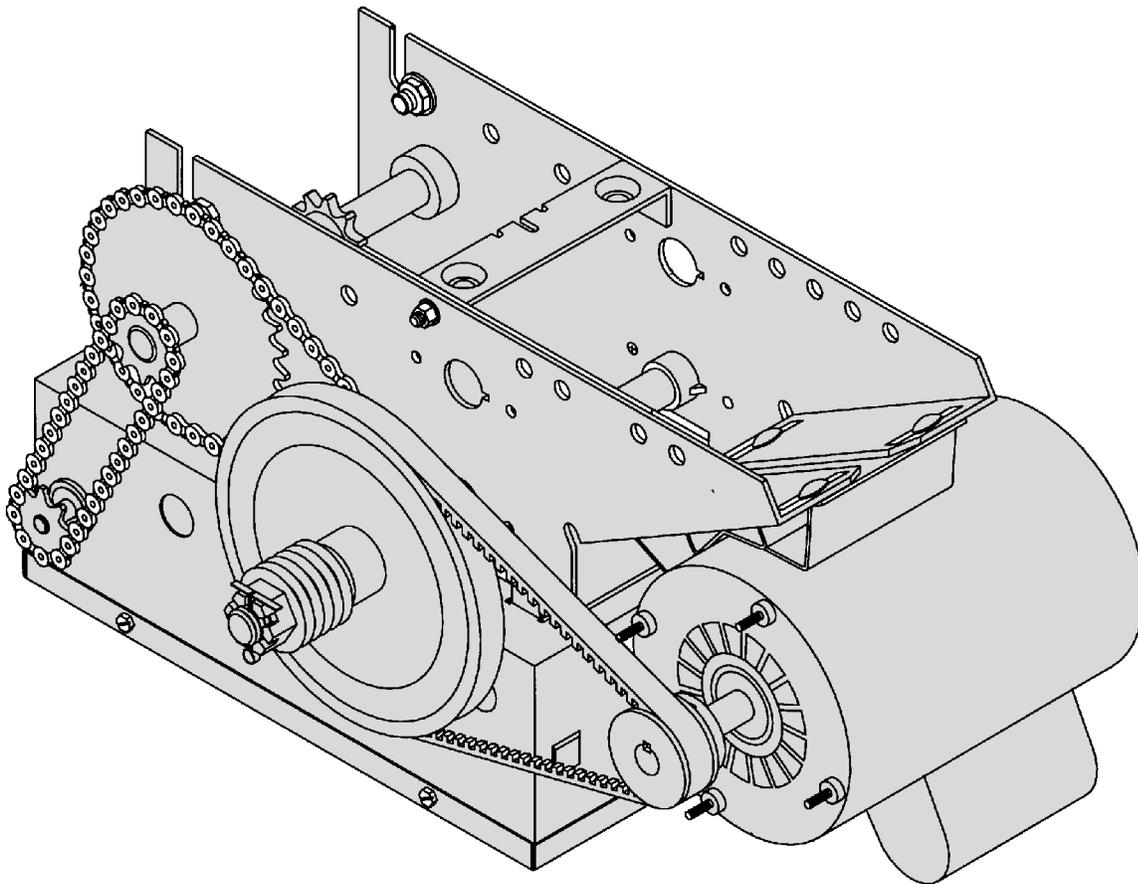
C2 Wiring

See page 8 for
other wiring
configurations

OWNER'S MANUAL

MODEL T

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, 220, 230 Single phase
 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 page 8 for optional control settings.
LIMIT ADJUST:Linear driven, fully adjustable screw type cams. Adjustable to 24 feet.

MECHANICAL

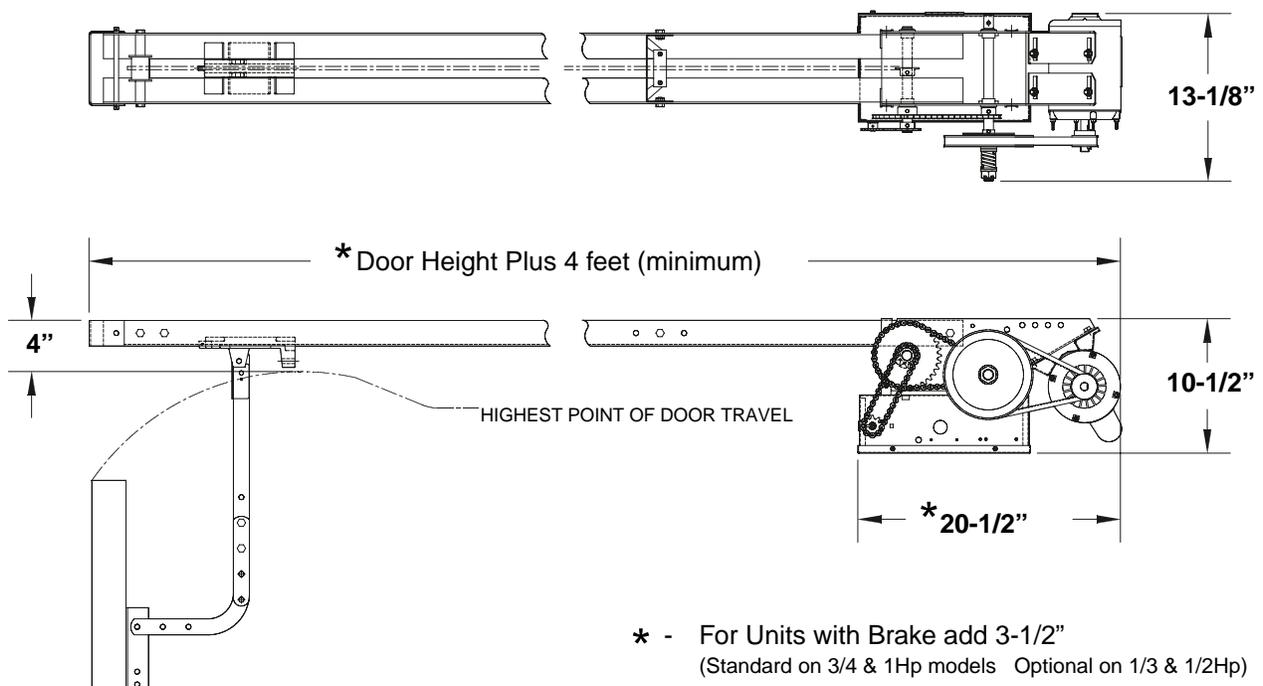
DRIVE REDUCTION:.....Primary: Heavy duty (5L) V-Belt. Secondary: #41 chain/sprocket.
 Output: #48 chain (1/3 & 1/2Hp) or #41 chain (3/4 & 1Hp)
OUTPUT SHAFT SPEED:140 R.P.M.
DOOR SPEED:11" - 12" per sec.
 depending on door
BRAKE:Solenoid actuated disc brake on 3/4 & 1Hp
BEARINGS:Output Shaft: Shielded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

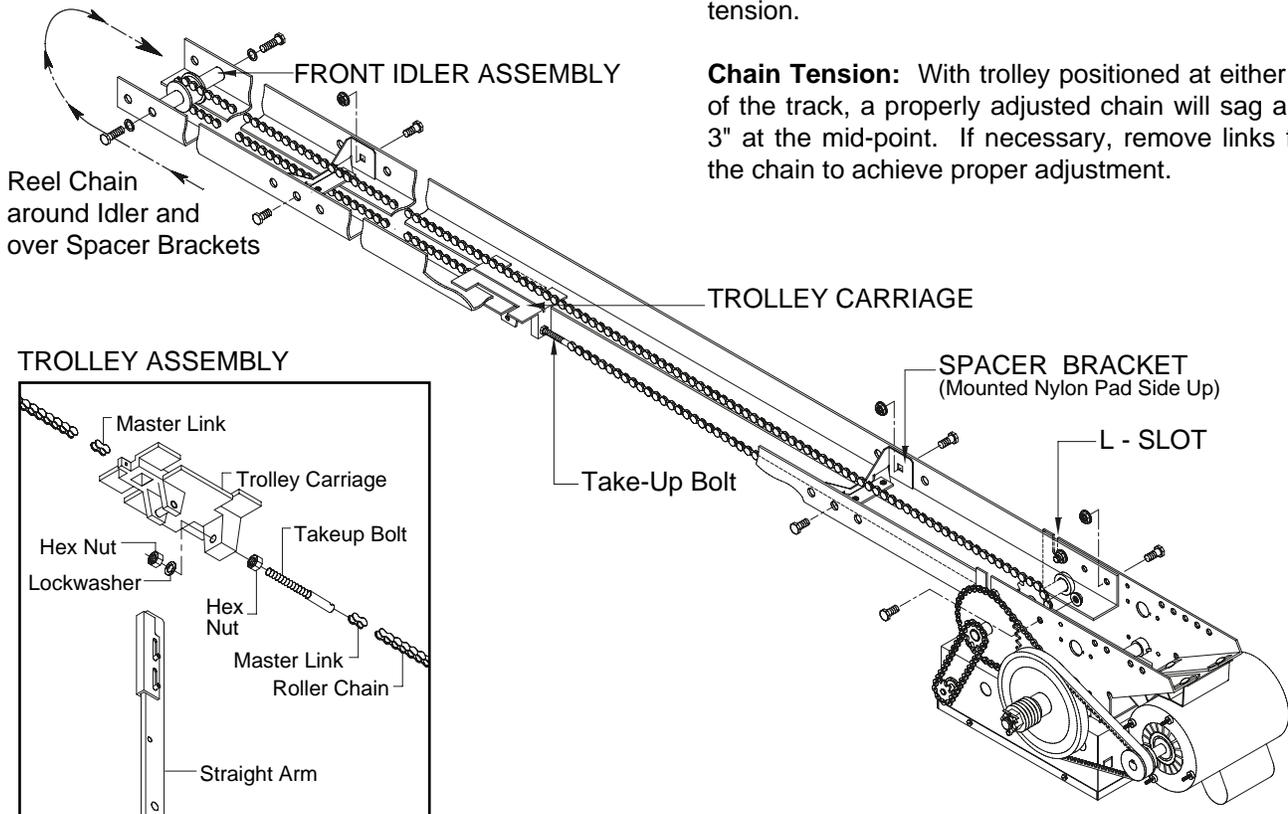


WARNING

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.

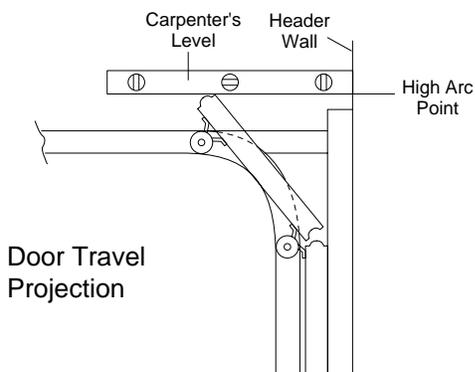
INSTALLATION INSTRUCTIONS

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.

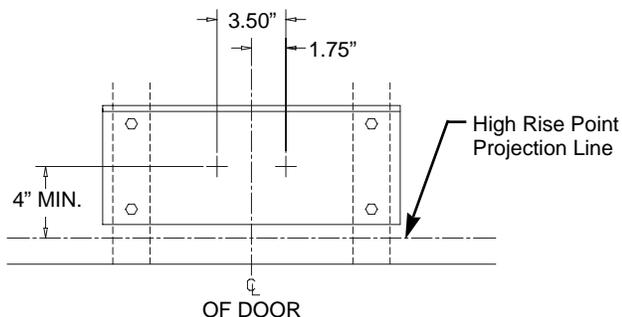
MOUNT HEADER BRACKET

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.



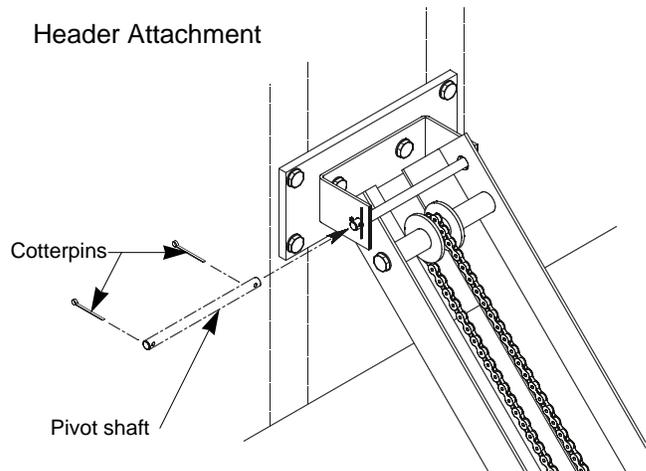
3. Using the projected lines for location, mount a suitable wood block or length of angle iron to the wall above the door opening. Refer to the illustration below. This will provide a mounting pad for the front header bracket of the operator. If necessary reinforce the wall with suitable mounting brackets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



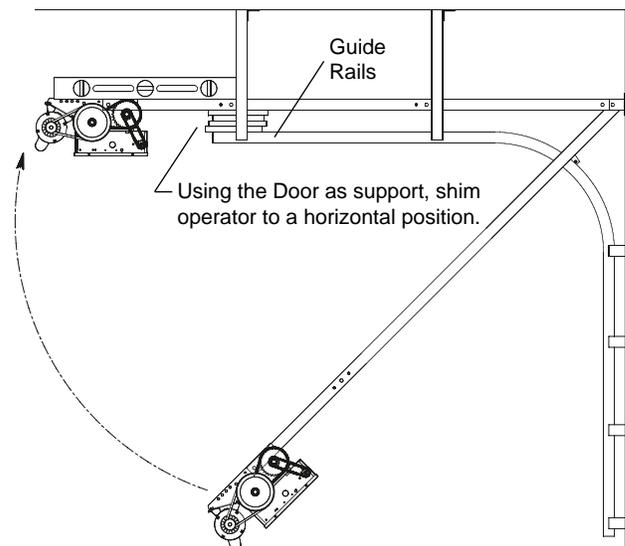
Header Bracket Drill Pattern

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.

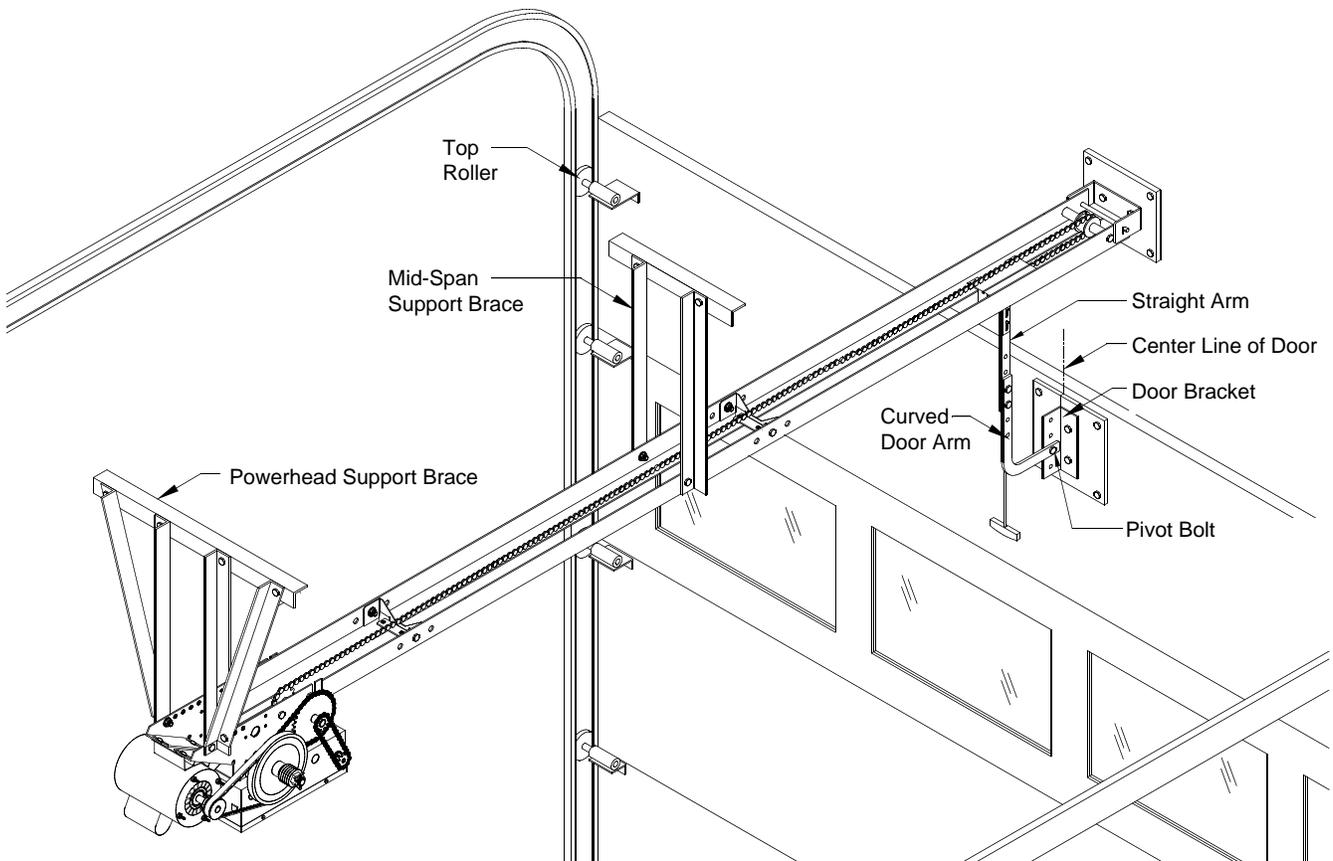
2. Latch the straight door arm to the fixed roll pin in the trolley carriage. Make sure the open side of notch on the arm faces the doorway.

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 & PHOTO EYES

Sensing devices supplied for door industry type operators with an isolated normally open (N.O.) output are compatible with your operator. This includes pneumatic and electric edges, and through beam and retro reflective photo eyes. If your door does not have a bottom sensing edge or safety photo eyes and you wish to add a safety device to your application, please contact your local LiftMaster Authorized Dealer.

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:

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

NOTICE

IT IS STRONGLY RECOMMENDED THAT A SAFETY PHOTO EYE OR SENSING EDGE BE USED IN CONJUNCTION WITH THE OPERATOR.

WIRING:

For wiring of your sensing device to the operator, refer to the wiring diagram supplied with your operator. See field connection terminals identified as Sensing Device or Safety Edge.

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.

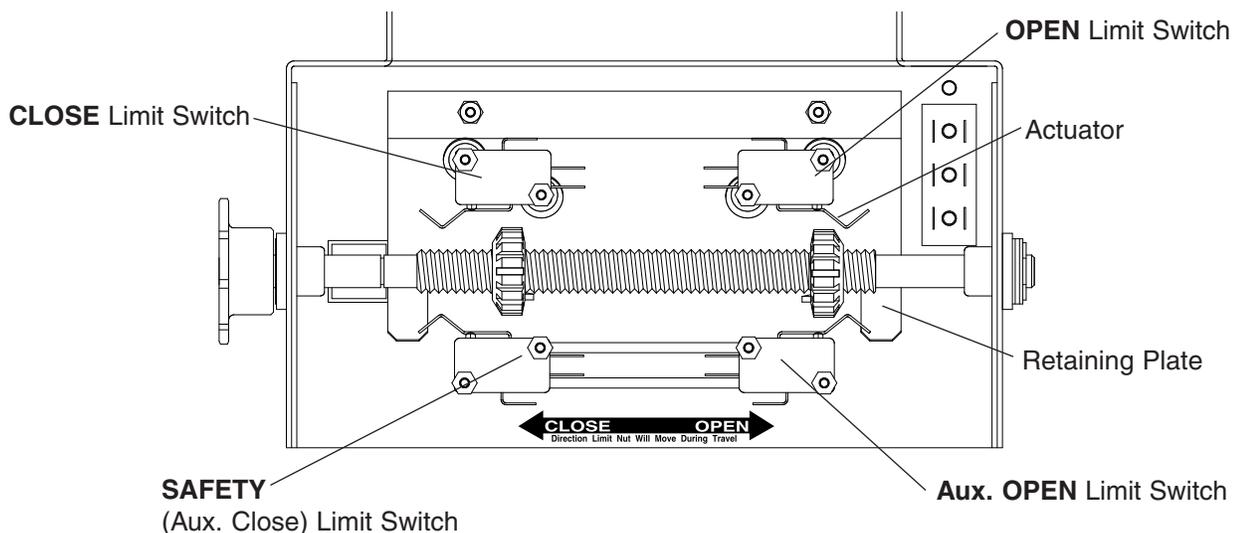
- To adjust limit nuts depress retaining plate to allow nut to spin freely. After adjustment, release plate and ensure it seats fully in slots of both nuts.
- To **increase** door travel, spin nut **away** from actuator. To **decrease** door travel, spin limit nut **toward** actuator.
- Adjust open limit nut so that door will stop in open position with the bottom of the door even with top of door opening.
- 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

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



POWER WIRING CONNECTIONS

Remove the cover from the electrical enclosure. Inside this enclosure you will find the wiring diagram(s) for your unit. Refer to the diagram (glued on the inside of the cover) for all connections described below. If this diagram is missing, call the number on the back of this manual. **DO NOT INSTALL ANY WIRING OR ATTEMPT TO RUN THIS OPERATOR WITHOUT CONSULTING THE WIRING DIAGRAM.**



WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING.

OPERATOR MUST BE PROPERLY GROUNDED AND PERMANENTLY WIRED 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.



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.

POWER WIRING

1. Be sure that the power supply is of the correct voltage, phase, frequency, and amperage to supply the operator. Refer to the operator nameplate on the cover.
2. Using the 1-1/16" dia conduit access knockout as shown below, bring supply lines to the operator and connect wires to the terminals indicated on the WIRING CONNECTIONS DIAGRAM.

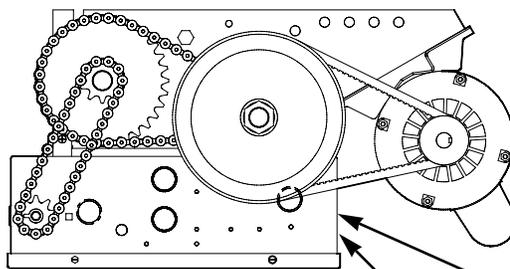
DO NOT TURN POWER ON UNTIL YOU HAVE FINISHED MAKING ALL POWER AND CONTROL WIRING CONNECTIONS AND HAVE COMPLETED THE LIMIT SWITCH ADJUSTMENT PROCEDURE.

IMPORTANT: THIS UNIT MUST BE PROPERLY GROUNDED. A GROUND SCREW IS SUPPLIED IN THE ELECTRICAL BOX FOR CONNECTION OF THE POWER SUPPLY GROUND WIRE. FAILURE TO PROPERLY GROUND THIS UNIT COULD RESULT IN ELECTRIC SHOCK AND SERIOUS INJURY.

ON THREE PHASE MACHINES ONLY!

Incorrect phasing of the power supply will cause the motor to rotate in the wrong direction (open when CLOSE button is pressed and vice-versa). To correct this, interchange any two of the incoming three phase power lines.

CONDUIT ACCESS



WARNING
Do Not Run Power & Control Wiring in the Same Conduit

7/8" Dia Knockouts for control wiring conduit access (1 on end panel)

1-1/16" Dia Knockouts for power wiring conduit access (1 on end panel)

CONTROL WIRING

DETERMINE WIRING TYPE

Refer to the wiring diagram located on the inside cover the electrical box to determine the type of control wiring.

Standard C2 or B2 Wiring

Standard operators are shipped from the factory with jumper set for C2 wiring, which requires constant pressure on button to close the door. If momentary contact on close direction is desired (B2 wiring) you must include an entrapment protection device. See close control jumper setting below.

- **Constant pressure on close (C2 wiring)**

Red jumper wire was placed on terminal #2 in electrical enclosure. The operator will require constant pressure on close control in order to keep door moving in the close direction.

- **Momentary contact on close (B2 wiring)**

Move red jumper wire from terminal #2 to terminal #3. The operator will require only momentary contact to close the door.

SPECIAL CONTROL WIRING DATA	WI
<p>This Operator has Control Wiring. </p>	<p>Wiring Type</p>
<p>SUPPLEMENTAL WIRING DIAGRAM(S)</p> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>	
<p>REPLACEMENT WIRING DIAGRAM</p> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>	
<p>Note: Supplemental Wiring Diagrams are to be used in addition to 1742-1. Replacement Wiring Diagram is to be used in place of 1742-1.</p>	

Wiring Diagram label on inside cover of electrical box

SPECIAL CONTROL WIRING

If your operator was shipped from the factory with non-standard control wiring or with optional accessories that require addition instructions, refer to the wiring diagram(s) indicated in the special control wiring data box. When a replacement wiring diagram is present, wiring diagrams in this manual will not apply. Refer only to the replacement wiring diagram for all connections.

***IMPORTANT NOTE:** If your wiring diagram is missing, or you are unsure of the wiring type for your operator, contact the customer service department @ 1-800-528-2806.*

LOCATING THE CONTROL STATION

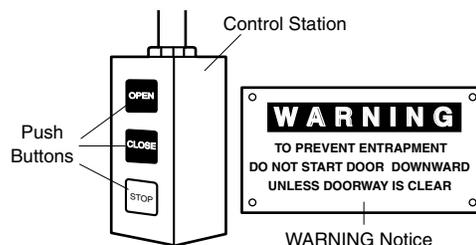
All operators are supplied with some type of control station. Generally a three button station (OPEN/CLOSE/STOP) is provided. A two-position key switch or control station (OPEN/CLOSE) may be added or substituted when requested at the time of order. Mount the control station near the door.

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.

MOUNT WARNING NOTICE

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



CONTROL WIRING (con't)

Radio Controls

On all models with type B2 control wiring, a terminal bracket marked R1 R2 R3 is located on the outside of the electrical enclosure. All standard radio control receivers (single channel residential type) may be mounted to this bracket. The operator will then open a fully closed door, close a fully open door, and reverse a closing door from the radio transmitter. However, for complete door control from a transmitter, a commercial three-channel radio set (with connections for OPEN/CLOSE/STOP) is recommended.



WARNING

DO NOT USE RADIO CONTROLS WITH YOUR OPERATOR UNLESS YOU HAVE INSTALLED SOME TYPE OF ENTRAPMENT PROTECTION DEVICE. THE USE OF RADIO CONTROLS PRESENTS POTENTIAL HAZARDS DUE TO THE USER'S ABILITY TO OPEN OR CLOSE THE DOOR WHEN OUT OF SIGHT OF THE DOOR. IN ADDITION, IF A SINGLE CHANNEL CONTROL IS USED, THE USER WILL NOT BE ABLE TO STOP THE DOOR FROM THE TRANSMITTER.

Additional Access Control Equipment

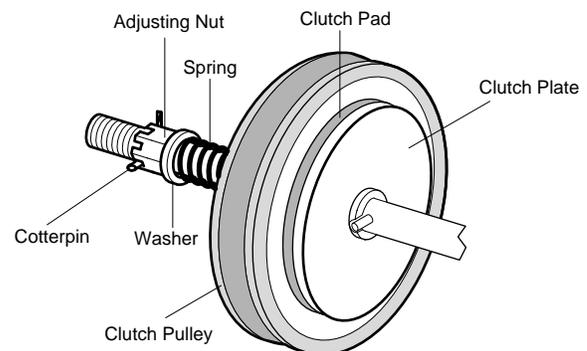
Locate any additional access control equipment as desired (but so that the door will be in clear sight of the person operating the equipment), and connect to the terminal block in the electrical enclosure as shown on the FIELD WIRING CONNECTIONS diagram. Any control with a normally (N.O.) isolated output contact may be connected in parallel with the OPEN button. More than one device may be connected in this manner. Use 16 gauge wire or larger for all controls. **DO NOT USE THE CONTROL CIRCUIT TRANSFORMER (24VAC) IN THE OPERATOR TO POWER ANY ACCESS CONTROL EQUIPMENT OTHER THAN A STANDARD RESIDENTIAL TYPE RADIO RECEIVER.**

External Interlock Switch

The operator has a terminal connection for an external interlock switch. This switch must be a normally closed (N.C.) two-wire device with a contact rating of at least 3 amps @ 24VAC. When such a switch is connected as shown on the FIELD WIRING CONNECTIONS diagram, the control circuit will be disabled when the switch is actuated, thereby preventing electrical operation of the door from the control devices.

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.

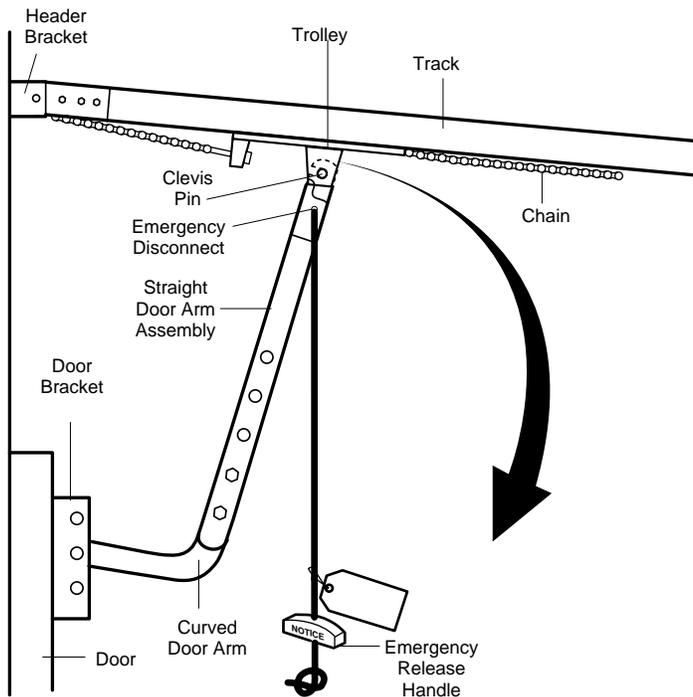
EMERGENCY DISCONNECT SYSTEM



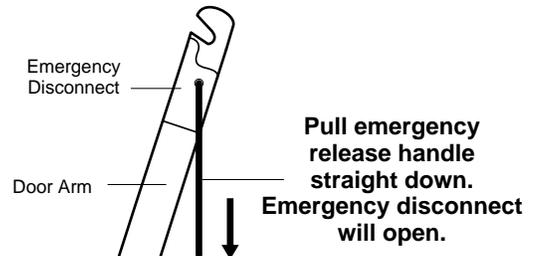
WARNING

DOOR ARM IS RELEASED FROM TROLLEY WHEN EMERGENCY DISCONNECT OPENS.

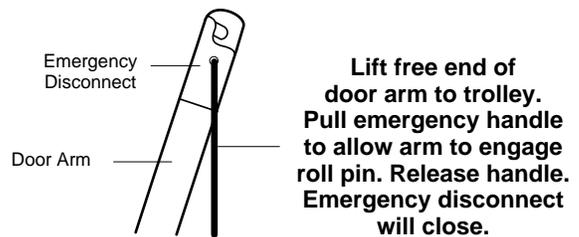
TO AVOID BEING STRUCK BY DOOR ARM, DO NOT STAND UNDER THE ROPE OR DOOR ARM WHEN PULLING THE EMERGENCY RELEASE.



TO DISCONNECT DOOR FROM OPENER



TO RECONNECT DOOR ARM TO TROLLEY



TEST THE SYSTEM

Turn on power. Test all controls and safety devices to make sure they are working properly. It will be necessary to refer back to page 6 for fine adjustment of the limit switches.

IMPORTANT NOTES:

- Do not leave operator power on unless all safety and entrapment protection devices have been tested and are working properly.
- Be sure you have read and understand all Safety Instructions included in this manual.
- Be sure the owner or person(s) responsible for operation of the door have read and understand the Safety Instructions, know how to electrically operate the door in a safe manner, and know how to use the manual disconnect operation of the door operating system.



WARNING

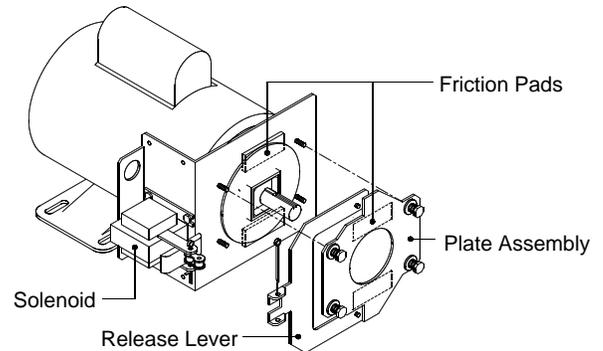
DO NOT PLACE HANDS OR TOOLS IN OR NEAR THE OPERATOR WHEN THE POWER IS ON OR WHEN TESTING CONTROL OR SAFETY DEVICES. ALWAYS DISCONNECT POWER BEFORE SERVICING OR ADJUSTING THE OPERATOR.

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.

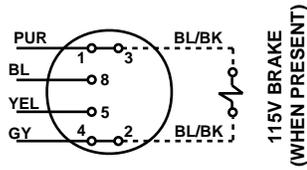
■ **CAUTION: BEFORE SERVICING, ALWAYS DISCONNECT OPERATOR FROM POWER SUPPLY.**

HOW TO ORDER REPAIR PARTS

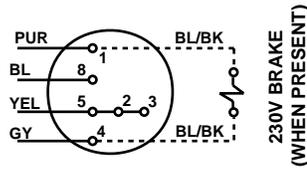
OUR LARGE SERVICE ORGANIZATION
SPANS AMERICA
INSTALLATION AND SERVICE INFORMATION
ARE AVAILABLE 6 DAYS A WEEK
CALL OUR TOLL FREE NUMBER - 1-800-528-2806
HOURS 7:00 TO 3:30 p.m. (Mountain Std. Time)
MONDAY Through SATURDAY

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

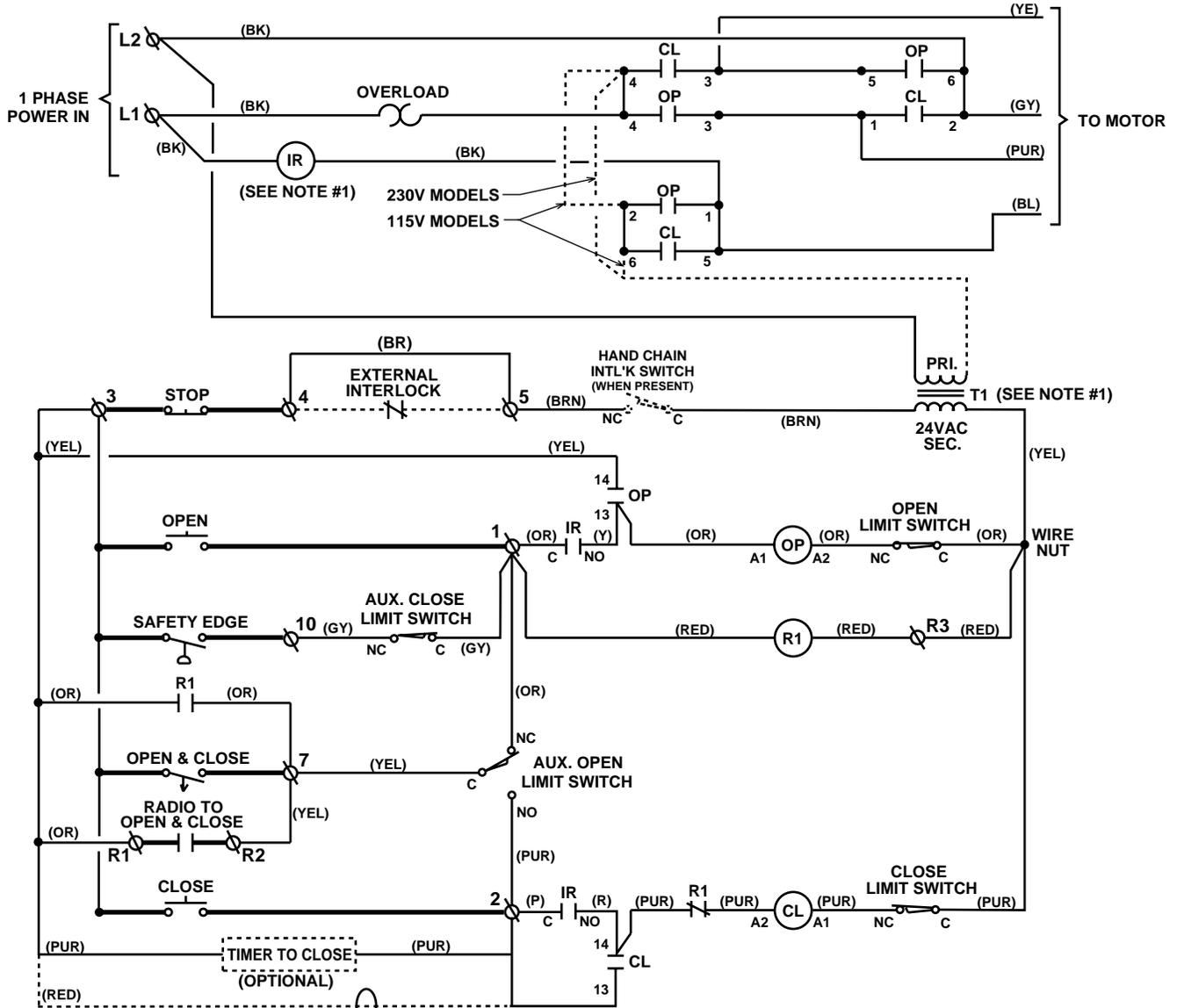
ADDRESS ORDER TO:
THE CHAMBERLAIN GROUP, INC.
Electronic Parts & Service Dept.
2301 N. Forbes Blvd., Suite 104
Tucson, AZ 85745



115 VOLT - 1 PHASE MOTOR CONNECTION



230 VOLT - 1 PHASE MOTOR CONNECTION



* - Shipped from Factory

CLOSE CONTROL WIRING OPTIONS

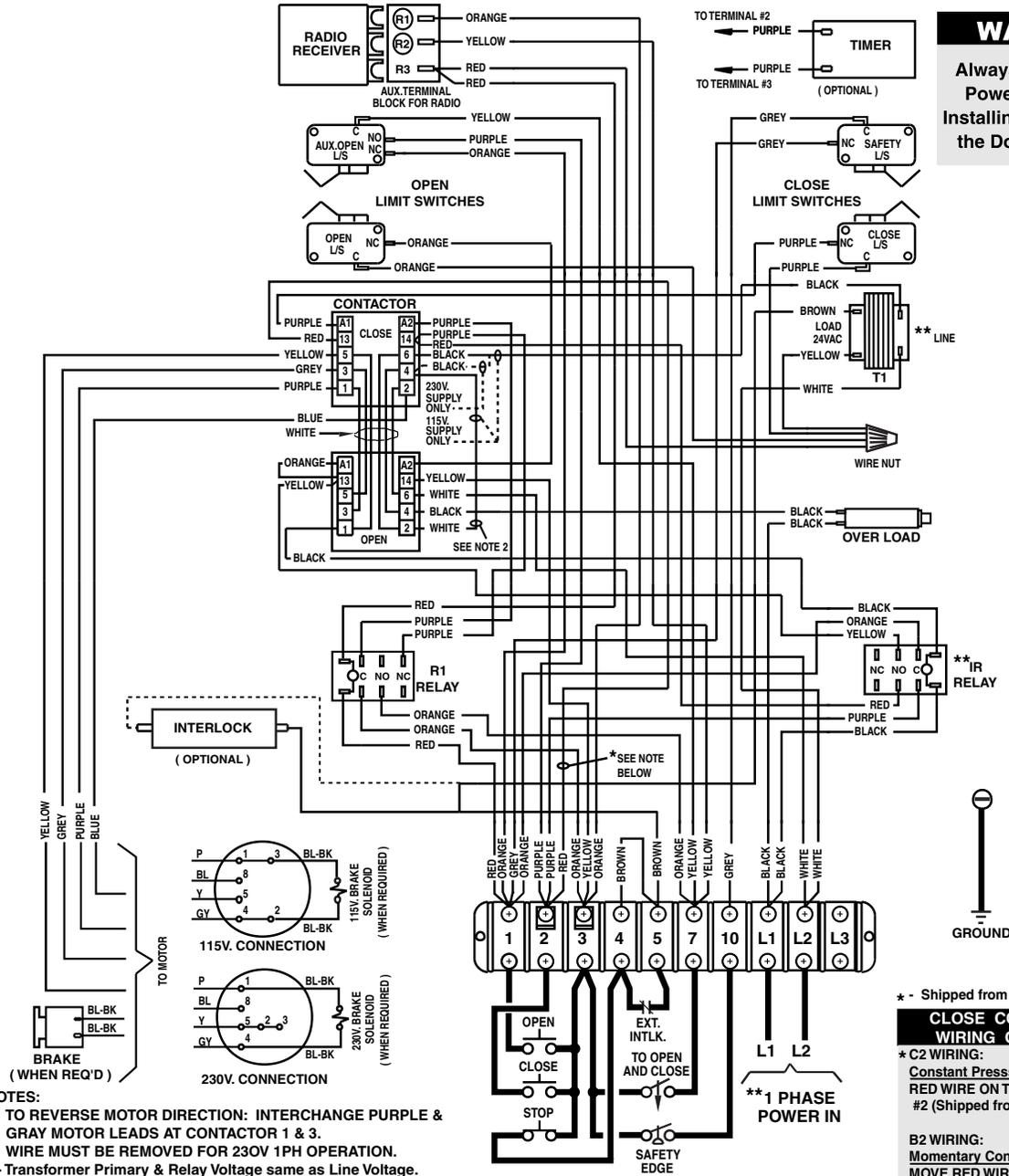
- *C2 WIRING - Constant Pressure to Close
RED WIRE ON TERMINAL #2 (Shipped from Factory)
- B2 WIRING - Momentary Contact to Close
MOVE RED WIRE FROM TERMINAL #2 TO TERMINAL #3

NOTE:

1. Voltage same as line voltage.

SINGLE PHASE WIRING DIAGRAM

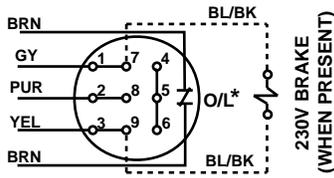
1742-1



WARNING
Always Disconnect Power Whenever Installing or Servicing the Door Operator.

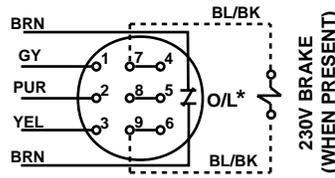
- NOTES:
 1) TO REVERSE MOTOR DIRECTION: INTERCHANGE PURPLE & GRAY MOTOR LEADS AT CONTACTOR 1 & 3.
 2) WIRE MUST BE REMOVED FOR 230V 1PH OPERATION.
 **- Transformer Primary & Relay Voltage same as Line Voltage.

* - Shipped from Factory
CLOSE CONTROL WIRING OPTIONS
 * C2 WIRING:
 Constant Pressure to Close
 RED WIRE ON TERMINAL #2 (Shipped from Factory)
 B2 WIRING:
 Momentary Contact to Close
 MOVE RED WIRE FROM TERMINAL #2 TO TERMINAL #3

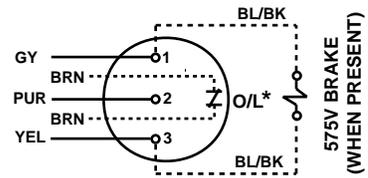


230 VOLT - 3 PHASE MOTOR CONNECTION

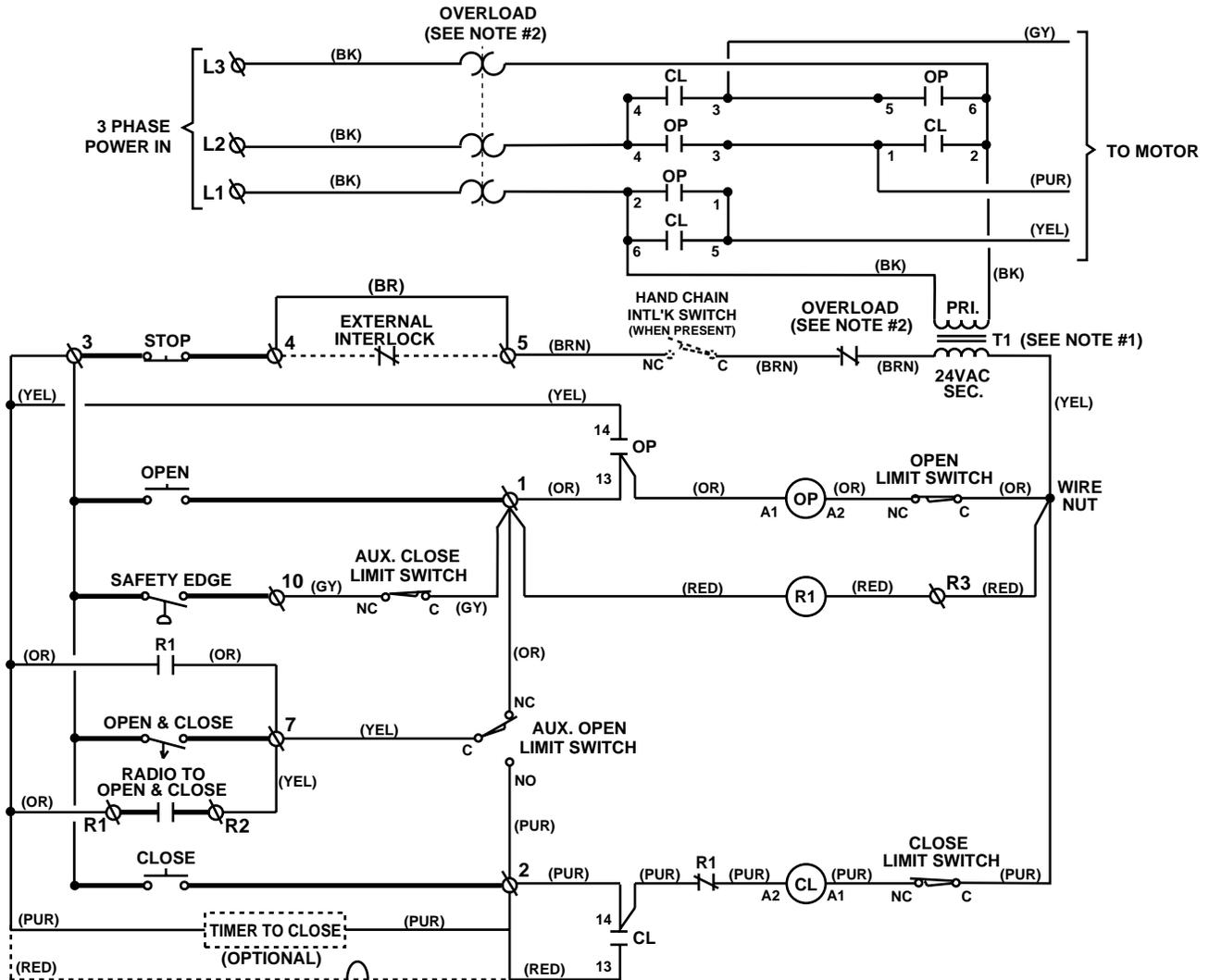
* - SEE NOTE #2



460 VOLT - 3 PHASE MOTOR CONNECTION



575 VOLT - 3 PHASE MOTOR CONNECTION



* - Shipped from Factory

CLOSE CONTROL WIRING OPTIONS

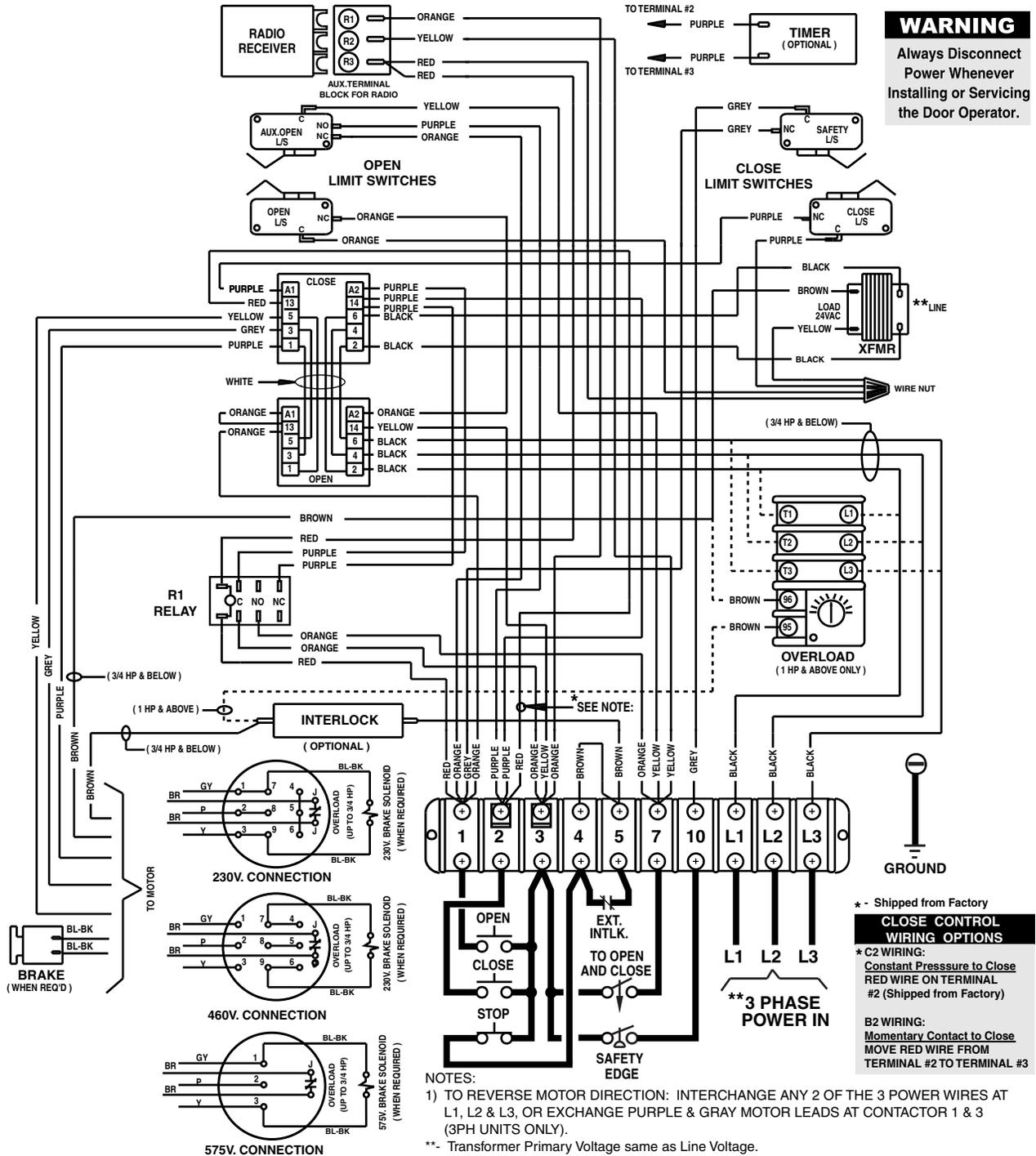
- *C2 WIRING - Constant Pressure to Close
RED WIRE ON TERMINAL #2 (Shipped from Factory)
- B2 WIRING - Momentary Contact to Close
MOVE RED WIRE FROM TERMINAL #2 TO TERMINAL #3

NOTE:

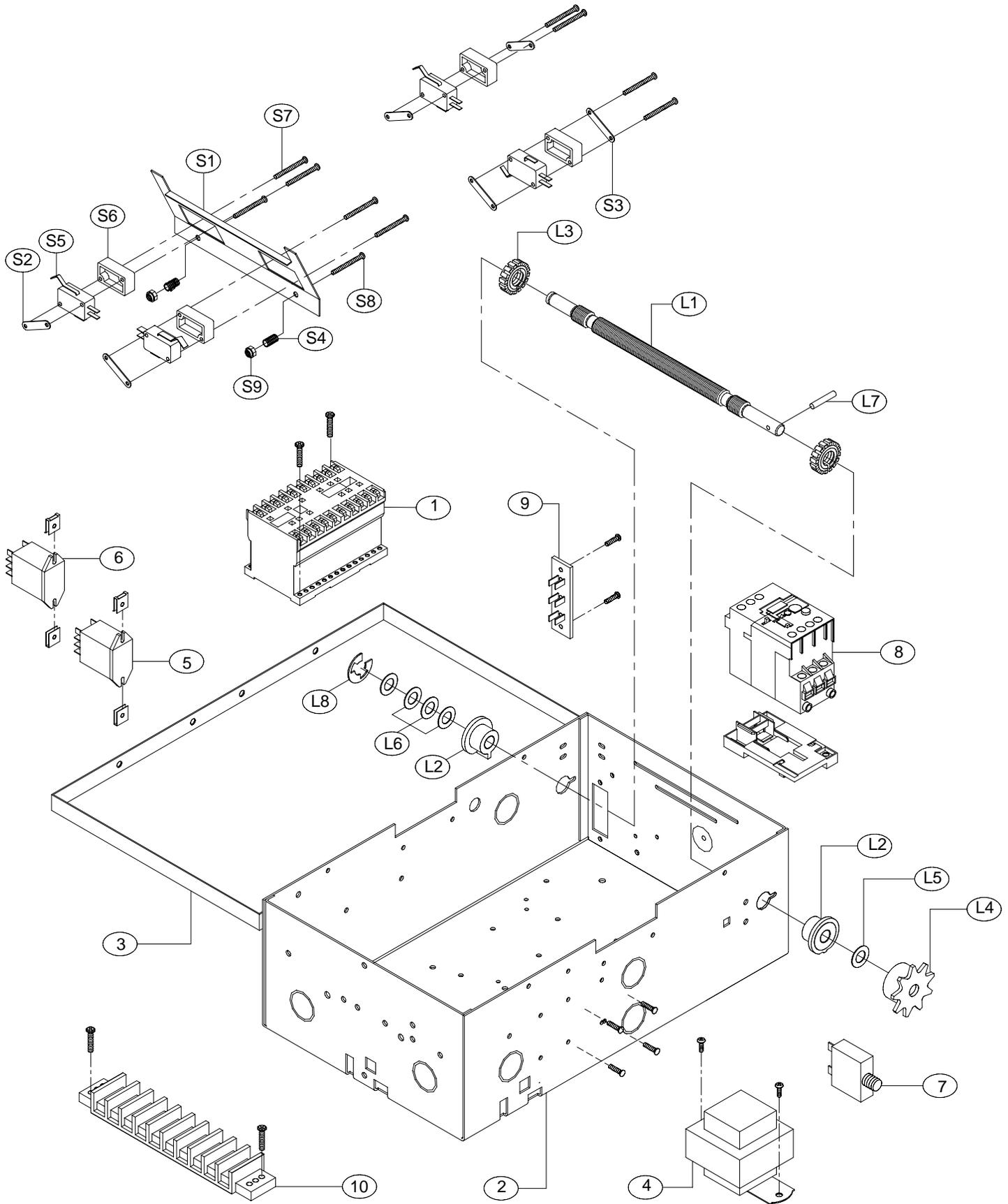
1. Voltage same as line voltage
2. Overload in motor for models up to 3/4 Hp, located in limit box for 1 Hp and above.

THREE PHASE WIRING DIAGRAM

1742-3



ILLUSTRATED PARTS – ELECTRICAL BOX



REPLACEMENT PART KITS - ELECTRICAL BOX

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 11 for all repair part ordering information.

Complete Electrical Box Replacement Kits

To order a complete electrical box kit, add a K74- prefix to the model number of your operator. For example:

T5011M (Operator) = K74-T5011M (Electrical box replacement kit)

Electrical Box Sub-Assemblies

K72-12510 Limit Shaft Assembly
K72-12511 Limit Switch Assembly

Motor Kits

K20-1033B2 Models T3311M, T3321M
K20-3033B4 Models T3323M, T3338M, T3343M
K20-3033M5 Model T3353M
K20-51033B Model T3325M
K20-1050B2 Models T5011M, T5021M
K20-3050B4 Models T5023M, T5038M, T5043M
K20-3050M5 Model T5053M
K20-51050B Model T5025M
K20-1075B2 Model T7511M, T7521M
K20-3075B4 Models T7523M, T7538M, T7543M
K20-3075B5 Model T7553M
K20-51075B Model T7525M
K20-1100B2 Models T1011M, T1021M
K20-3100B4 Models T1023M, T1043M
K20-3100B5 Model T1053M

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
71-B575 575 Volt Models

* COMPLETE ELECTRICAL BOX KITS			
Item	P/N	Description	Qty
1	03-8024-K	Contactora	1
2	10-13790	Electrical Box	1
3	10-10115	Electrical Box Cover	1
4	21-5XXX	(See Variable Components)	1
5	24-XXX	(See Variable Components)	1
6	24-24-1	24VAC DPDT Relay	1
7	25-2XXX	(See Variable Components)	1
8	25-4XXX	(See Variable Components)	1
9	42-10040	Terminal Block, Radio	1
10	42-110	Terminal Block, 10 Position	1

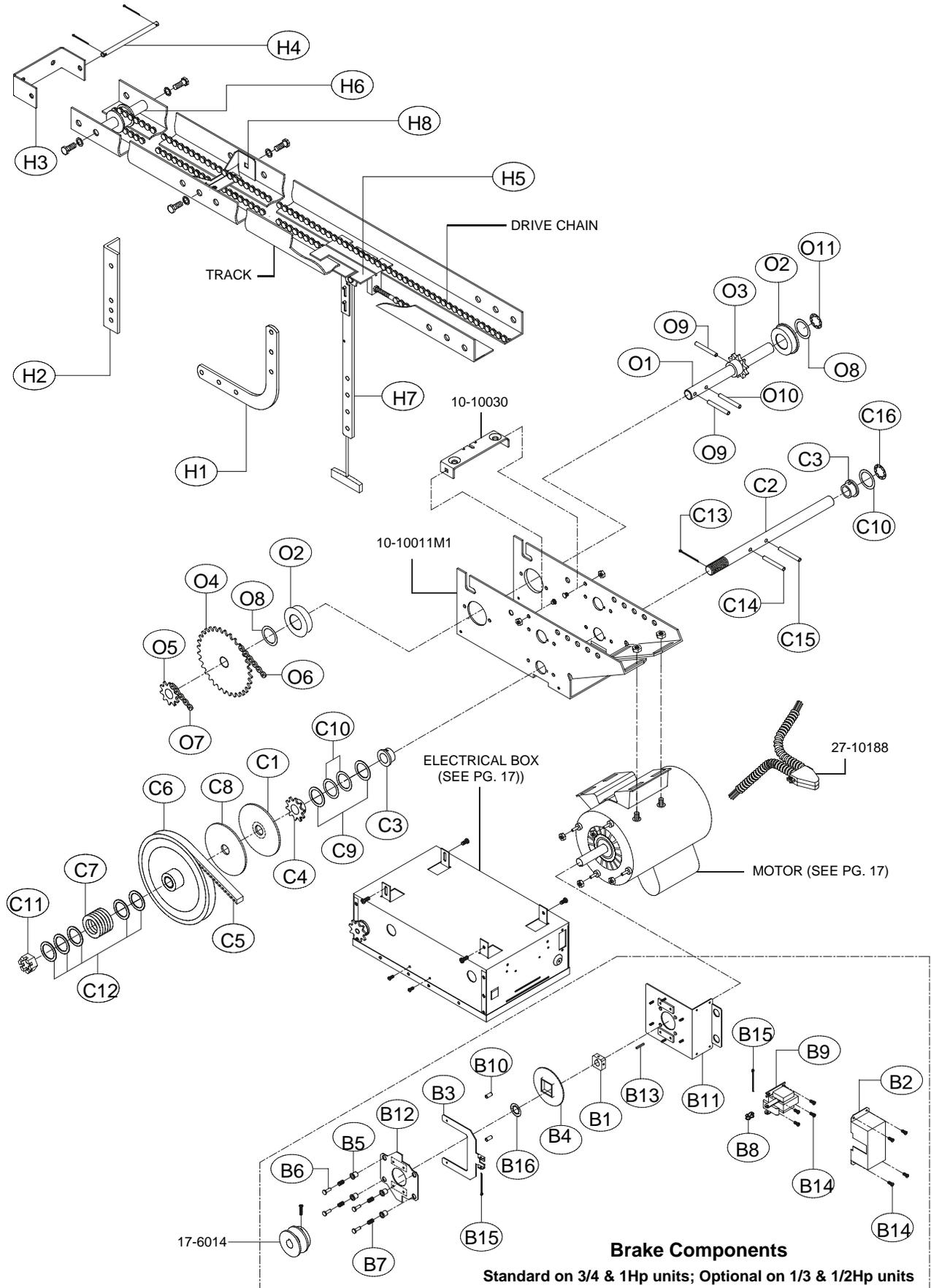
* Electrical Box Kits include parts from K72-12510 and K72-12511

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-CP05-108	Roll Pin, 1/8 DIA. x 1 Long	1
L8	87-E-038	E Ring, 3/8"	1

K75-12511 LIMIT SWITCH ASSEMBLY KIT			
Item	P/N	Description	Qty
S1	10-10013	Depress Plate	1
S2	10-12553	Nut Plate, Switch	4
S3	10-12806	Backup Plate	2
S4	18-10036	Spring, Depress Plate	2
S5	23-10041	Limit Switch	4
S6	31-12542	Standoff, Limit Switch	4
S7	82-PX04-20	Screw, #4-40 Pan Head Phillips	8
S8	82-PX06-16	Screw, #6-32 x 1" Pan Hd Phillips	2
S9	84-LH-06	Locknut, #6-32 Nylon Hex	2

		VARIABLE COMPONENT KITS																											
ITEM	PART NO.	DESCRIPTION	T3311M	T3321M	T3323M	T3343M	T3353M	T3325M	T3338M	T5011M	T5021M	T5023M	T5043M	T5053M	T5025M	T5038M	T7511M	T7521M	T7523M	T7543M	T7553M	T7525M	T7538M	T1011M	T1021M	T1023M	T1043M	T1053M	
			4	21-5115	Transformer, 115 Volts	●							●							●							●		
21-5230	Transformer, 230 Volts			●	●			●			●	●		●				●	●			●			●	●			
21-5460	Transformer, 460 Volts					●			●				●		●					●			●					●	
21-5575	Transformer, 575 Volts						●							●							●								●
5	24-115-1	Relay, 115 Volts	●							●							●							●					
	24-230-5	Relay, 230 Volts		●				●			●			●				●				●			●				
7	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																							●				
8	25-4001-8K	Overload 1.2-1.8 Amp																											●
	25-4002-5K	Overload 1.6-2.5 Amp																									●		
	25-4004-K	Overload 2.5-4.0 Amp																								●			

ILLUSTRATED PARTS - MODEL T



REPLACEMENT PART KITS - MODEL T

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 11 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'	10-5824	Track, 27'-6" Length	19-5824	19-5124
Doors to 24'	10-5824	Track, 27'-6" Length	19-5824	19-5124

CONTROL CONNECTION DIAGRAM

IMPORTANT NOTES:

- 1) The 3-Button Control Station provided must be connected for operation.
- 2) If a STOP button is not used, a jumper must be placed between terminals 3 and 4.
- 3) Auxiliary control equipment may be any normally open two wire device such as pullswitch, single button, loop detector, card key or such device.

ATTENTION ELECTRICIAN:
USE 16 GAUGE OR HEAVIER WIRE
FOR ALL CONTROL CIRCUIT WIRING.

3 BUTTON STATION or 3 POSITION KEYSWITCH w/ SPRING RETURN TO CENTER AND STOP BUTTON		
<p>STANDARD</p> <p style="text-align: center;">ALL CONTROL WIRING TYPES</p>	<p>2 OR MORE</p> <p style="text-align: center;">ALL CONTROL WIRING TYPES</p>	<p>KEY LOCKOUT</p> <p style="text-align: center;">ALL CONTROL WIRING TYPES</p>
2 BUTTON STATION or 3 POSITION KEYSWITCH w/ SPRING RETURN TO CENTER		1 BUTTON STATION or ANY AUXILIARY DEVICE
<p>STANDARD</p> <p style="text-align: center;">ALL CONTROL WIRING TYPES</p>	<p>2 OR MORE</p> <p style="text-align: center;">ALL CONTROL WIRING TYPES</p>	<p style="text-align: center;">OPEN / CLOSE</p> <p style="text-align: center;">B2 or T1 WIRING TYPES ONLY</p>
SENSING DEVICE TO REVERSE OR STOP		RESIDENTIAL RADIO CONTROLS
<p style="text-align: center;">Sensing Device</p> <p style="text-align: center;">ALL CONTROL WIRING TYPES</p>		<p>*OPEN TIMER TO CLOSE</p> <p style="text-align: center;">RADIO CONTROL</p> <p style="text-align: center;">ALL CONTROL WIRING TYPES * T1 WIRING - RADIO TO OPEN ONLY</p>
TIMER TO CLOSE w/ WARNING LIGHT		EXTERNAL INTERLOCK
<p>Warning Light will activate 15 sec. before door closes.</p> <p style="text-align: center;">Auxiliary Terminal Block</p> <p style="text-align: center;">Timer Defeat Switch Power Supply for Warning Light</p> <p style="text-align: center;">T1 CONTROL WIRING ONLY</p>		<p style="text-align: center;">Remove Jumper When Interlock is Used</p> <p style="text-align: center;">ONE</p> <p style="text-align: center;">2 OR MORE</p> <p style="text-align: center;">ALL CONTROL WIRING TYPES</p>