Commercial Door Operators

Product Library

OPERATOR APPLICATION

TYPES OF OPERATORS	DOOR TRUCK CONFIGURATION	DOORS	TRACK LENGTH AVAILABILITY (IN FEET/METRES)*	MAX SIZE OF DOOR
Jackshaft # Continuous-Duty HJ+GJ	High lift Vertical lift	1. Sectional 2. Rolling doors 3. Rolling grilles	Not required	24' (7.32m) high Sectional 30' (9.14m) high Rolling & Grilles
Trolley Drawbar Continous-Duty HT-GT	Standard lift	Sectional	8' (2.44m), 10'(3.05m), 12' (3.66m), 14' (4.27m), 16' (4.88m), 18'(5.49m), 20' (6.10m), 22' (6.71m).	22' (6.71m) high Sectional
Medium-Duty # Jackshaft (12 cycles per hour)	High lift Vertical lift	1. Sectional 2. Rolling doors 3. Rolling grilles	Not required	14' (4.27m) wide 14' (4.27m) high
Medium-Duty Trolley (12 cycles per hour)	Standard lift	Sectional	8' (2.44m), 10' (3.05m), 12' 3.66m), 14' (4.27m),	14' (4.27m) wide 14' (4.27m) high

* If the door height exceeds an even foot increment by more than 6 inches (15.24cm), then use the next even foot (metre) increment for that door
# Recommended door shaft sprocket to be anchored to a solid shaft, not a tubular (hollow) shaft.

HORSEPOWER SELECTION GUIDE

HP REQUIRED PER MAX SQ FT. (SQ METRES) OF DOOR

		1/3 HP (249W)	1/2 HP (373W)	3/4 HP (560W)	1 HP (746W)	1-1/2 HP (1119W)	2 HP (1493W)
SECTIONAL DOORS	FIBERGLASS	300 (27.87)	400 (37.16)	560 (52.03)	625 (58.06)		
	ALUMINUM	286 (26.48)	350 (32.52)	500 (46.45)	575 (53.42)	625 (58.06)	
	WOOD	260 (24.15)	320 (29.73)	450 (41.81)	500 (46.45)	560 (51.10)	
	24 & 22 GAUGE	285 (26.48)	360 (32.52)	500 (46.45)	575 (53.42)	625 (58.06)	
	20 GAUGE STEEL	260 (24.15)	320 (29.73)	450 (41.81)	500 (46.45)	560 (51.10)	
	18 GAUGE STEEL	175 (16.26)	250 (23.23)	325 (30.19)	400 (37.16)	475 (44.13)	
	24 &22 GAUGE STEEL	260 (24.15)	320 (29.73)	450 (41.81)	500 (46.45)	560 (51.10)	
	20 GAUGE STEEL INS.	175 (16.26)	260 (23.23)	325 (30.19)	400 (37.16)	475 (44.13)	
	18 GAUGE GAUGE STEEL INS.	126 (11.61)	200 (18.58)	275 (25.55)	300 (27.87)	380 (35.80)	
ROLLING DOORS	24 GAUGE STEEL	300 (27.87)	362 (33.63)	525 (48.77)	625 (58.06)		
	22 GAUGE STEEL	275 (25.55)	325 (30.19)	460 (42.74)	585 (54.35)		
	20 GAUGE STEEL (18)	215 (19.97)	265 (24.62)	365 (33.91)	455 (42.27)	645 (59.92)	
	16 GAUGE STEEL	185 (17.19)	240 (22.30)	300 (27.87)	365 (33.91)	495 (45.99)	625 (58.06)
	STEEL INSULATED	125 (11.61)	160 (14.86)	210 (19.51)	260 (24.15)	360 (33.45)	460 (42.74)
	ALUMINUM GRILLES	300 (27.87)	365 (33.91)	525 (48.77)	625 (58.06)		
	ALUMINUM DOORS	275 (25.55)	325 (30.19)	460 (42.74)	585 (54.35)		
	STEEL GRILLES	215 (19.97)	265 (24.62)	365 (33.91)	455 (42.27)		

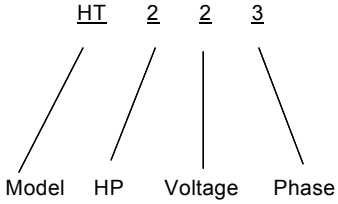
Lift-Master
The Professional Line
Commercial Operators

COMMERCIAL DOOR OPERATOR ORDERING GUIDE

There is a Lift-Master commercial and industrial door operator for every application ranging from medium duty commercial operators to gearhead industrial operators.

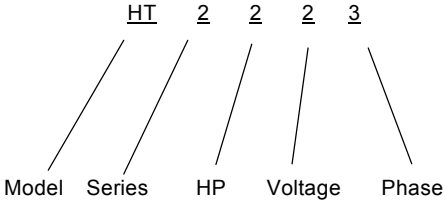
To specify a standard Lift-Master operator, uses the following ordering format and designations

SOLID STATE UNITS



Horsepower	Voltage	Phase
1/3 HP =3	115=1	1 phase=1
1/2 HP =2	208/230=2	3 Phase=3
3/4 HP =4	460=4	
1 HP =1		
1 1/2 HP =5		
2 HP =6		

REVERSING CONTRACTOR UNITS



Series	Horsepower	Voltage	Phase
1000=1	1/3 HP=3	115=1	1 Phase=1
2000=2	1/2 HP=2	208/230=2	3 Phase=3
3000=3	3/4 HP=4	460=4	
	1 HP=1		
	1 1/2 HP=5		
	2 HP =6		

To select your Lift-Master Commercial Operator:

1. Refer to architectural specifications where applicable.
2. Determine the duty cycle and series required:

Series 1000	Medium Duty Operator (Model MT, MJ)	1/2 HP 115V, 1Phase only, UL rated up to 12 cycles per hour, not recommended for more than 50 cycles per day.
Solid State & Series 2000	Heavy Duty Operator (Model HT, HJ, APT)	For applications up to 80 cycles per day (continous duty).
Solid State & Series 3000	Gearhead Operator (Model GT, GJ)	For applications over 80 cycles per day (continous duty).

3. Determine the type of operator required from the operator application chart on opposite page.
4. Select the operator horsepower from the horsepower chart on opposite page.
5. Select voltage and phase of the operator as required by the specifications or power supply available at the installation site.

When ordering a trolley (drawbar) operator:

1. Determine the proper operator as outlined above.
2. Give door width and height
3. if required, specify a solenoid brake.
4. Itemize any operator modifications or optional accessories.

When ordering a jackshaft operator:

1. Determine the proper operator as outlined above.
2. Give door width, height and type (high lift, vertical lift, rolling door, rolling grille, etc.)
3. Number of turns of door shaft to open.
4. Diameter of door shaft and key size.
5. Amount of high lift.
6. Itemize any operator modifications or optional accessories.

The Lift-Master Nameplate

Many answers can be found right on your operator's nameplate. For example:

SOLID STATE

Lift-Master The Professional line THE CHAMBERLAIN GROUP, INC ELMHURST, ILLINOIS 60126	Model No. Serial No. Horsepower Voltage/Phase Amperage	HT-211 SS 102-A2-31081 1/2 115/1 SEE MOTOR NAMEPLATE
UL 196L LISTED CSA LR95713	RATED LOAD	239 in lb/sec
COMMERCIAL DOOR OPERATOR ASSEMBLED IN MEXICO		32 B2040

MAGNETIC REVERSING CONTACTOR UNITS

Lift-Master The Professional line THE CHAMBERLAIN GROUP, INC ELMHURST, ILLINOIS 60126	Model No. Serial No. Horsepower Voltage/Phase Amperage	HT-2211 102-A2-31081 1/2 115/1 SEE MOTOR NAMEPLATE
UL 196L LISTED CSA LR95713	RATED LOAD	239 in lb/sec
COMMERCIAL DOOR OPERATOR ASSEMBLE DIN MEXICO		32 B2040

The **model number** identifies your operator by specific application, design, production and replacement parts.

SOLID STATE

Model No. HT-211

HT	1/2	1	1
Model	Horsepower	Voltage	Phase

MAG. REV. CONTACTORS

Model No. HT-2211

HT	1/2	1/2	1	1
Model	Series	Horsepower	Voltage	Phase

The serial number is the key to getting service information about your particular operator.
Just give us the model number and serial number for your operator if you have any questions.

Serial No. SS* 102-A2-31081 or Serial No. 102-A2-31081

SS*	10	2	A	2	31081
Solid State	Week of year	Last digit of year	Run letter	Last digit of yea	Sequential number

* An SS at the beginning of the serial number indicates the unit is Solid State.

Horsepower is the output power rating of the motor. Before starting the installation, always verify that the operator's horsepower rating is sufficient for the door on which it is to be applied.

Voltage/Phase provides the power supply information for your operator. Always wire the operator in conformance with the National Electriacal Code, Article 430, or local electrical code. Before starting the installation, always verify that the available power supply is correct for your operator.

Amperage gives the amount of current which the operator's motor draws from the power source while operating at full load at rated voltage. This information is located on the motor's nameplate and is helpful when sizing circuits overloads.

Rated Load designates the operator's full torque when it is running at the rated load speed at a rated horsepower. It is valuable information when calculating the maximum load to which your operator can be applied.

A.O. SMITH MOTOR DATE CODE

THE DATE CODE READS FIRST DIGIT WEEK, SECOND DIGIT MONTH, LAST 2 DIGITS IS THE YEAR.

2F95 = 2ND WEEK OF JUNE 1995

A=JAN
B=FEB
C=MARCH
D=APRIL
E=MAY
F=JUNE
G=JULY
H=AUG
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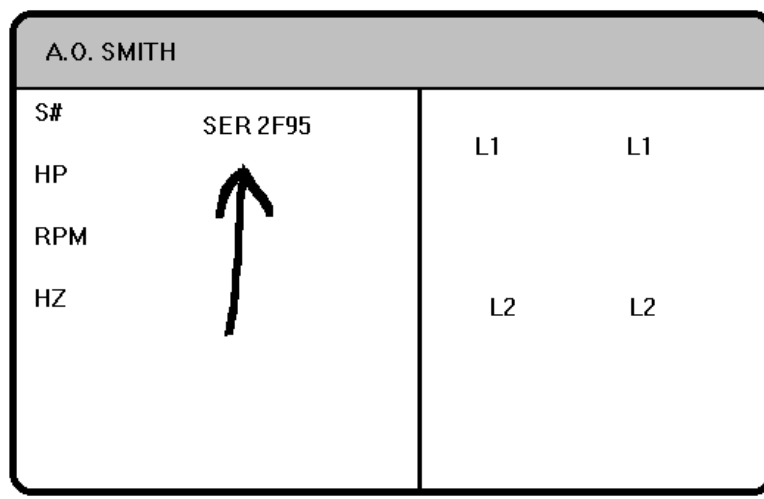

LIFT-MASTER COMMERCIAL OPERATORS NEMA RATINGS FOR ELECTRICAL ENCLOSURES

The National Electrical Manufacturers Association (NEMA) has established ratings for electrical enclosures to be used in various environments. All standard operator controls are supplied in NEMA 1 enclosures.

The atmosphere in which the operators an its control stations are located determine the specific rating for the required enclosures. Listed below are descriptions for the various NEMA ratings.

NEMA1 GENERAL PURPOSE: An indoor use enclose usually made of sheet metal designed to prevent accidental contact with the enclosed live electrical parts. Used where unusual environmental conditions do not exist.

NEMA 3R RAINPROOF AND ICE RESISTANT: Outdoor use enclosure designed to protect electrical parts from rain, sleet, and melting ice.

NEMA 4 WATERTIGHT AND DUSTTIGHT: Indoor and outdoor use enclosures. These are usually made from a sheet or cast metal or polyester with gaskets to protect electrical components against splashing water, seepage of water, and falling or hose directed water.

NEMA 7 EXPLOSION PROOF: This is a general classification for enclosures to be used in areas containing flammable vapors or gases. The enclosure is designed to contain an explosion without rupture or permitting flame emission from inside enclosure. The National Electrical Code (N.E.C.) rating for this is: Class I, Division 1 or 2, Class Group.

NEMA 9 EXPLOSION PROOF: Same as NEMA 7 except for a dust atmosphere. The N.E.C. rating for this is: Class II, Division 1 or 2, Class Group.

NEMA 12 DUSTTIGHT AND DRIPTIGHT: Indoor use to protect the enclosed equipment against fibers, lint, dust, and dirt, and light splashing, seepage, and dripping. Doors of these devices shall be provided with oil-resistant gaskets.

NEMA 13 OILTIGHT AND DUSTTIGHT: Indoor use enclosure used primarily to house push buttons, pilot lights, limit switches.

LIFT-MASTER COMMERCIAL OPERATORS MODIFICATIONS FOR SPECIAL APPLICATIONS

CARWASH MODIFICATION - MODELS HT & HJ

- ❒ Electrical enclosure meets NEMA 4, 12, and 13 specifications
- ❒ Electrical box cover hinged and gasketed
- ❒ V-Ring type face seal on limit shaft
- ❒ 1/2” trade size liquid tight conduit provides system continuity
- ❒ Liquid tight connectors used in conjunction with sealing washer at enclosure entrance and motor make up box.
- ❒ Severe duty fan cooled motor with epoxy paint, sealed end bells, and heavy duty base mount.
- ❒ NEMA 4, 3-button station supplied with operator
- ❒ Optional nickel plated chain modification
- ❒ U.L. listing

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LIFT-MASTER COMMERCIAL OPERATORS MODIFICATIONS FOR SPECIAL APPLICATIONS

WATERTIGHT MODIFICATION - MODELS GT GJ

- ❒ Electrical enclosure meets NEMA 4, 12, and 13 specifications
- ❒ Electrical box cover hinged and gasketed
- ❒ V-Ring type face seal on limit shaft
- ❒ 1/2” trade size liquid tight conduit provides system continuity
- ❒ Liquid tight connectors used in conjunction with sealing washer at enclosure entrance and motor make up box.
- ❒ Severe duty fan cooled motor with epoxy paint, sealed end bells, and heavy duty base mount.
- ❒ NEMA 4, 3-button station supplied with operator
- ❒ Optional nickel plated chain modification
- ❒ U.L. listing

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Troubleshooting Guide
Troubleshooting Series 1000 Medium-Duty

Problem	Possible Fault	Test	Remedy
Motor does not run or hum in either direction when commanded.	Motor	Motor is extremely hot.	Let cool down so internal overload can reset.
	Power source	Measure voltage across L1 & L2.	Examine circuit breaker or fuses at electrical service panel.
	Transformer	Check for 24 VAC across transformer secondary points: T4 & T7 on terminal strip in unit.	Replace if necessary.
	Limit switches	Both limits activated. Visually check. Check continuity from common to N.C. prongs.	Readjust or replace if necessary.
	Control stations/devices or control stations/ devices wiring	Pushbutton sticking. Shorted wiring. Faulty auxiliary device. Disconnect control station/device wiring. Place jumper between T4 and T3. Test unit's standard functions. Cross T3>T1 to open. T3>T2 to close. T3>T6 to open/close. T3>T5 while closing to reverse.	Replace/repair/rewire if necessary.
	External interlocks	nterlocks must be "Normally Closed". Check switch and wiring.	Replace if necessary.
Motor hums but will not run.	Motor start/run capacitor	Test with known good motor capacitor.	Replace if necessary.
	Unit/motor mechanically bound	Remove belt. Motor Shaft should turn freely. Pulley and internal shafts should turn freely.	Repair if necessary
	Motor/capacitor wiring, relay wiring or connections	Check wiring as per associated wiring diagrams in owner's manual.	Rewire if necessary.
	Brake	Check brake to insure disengagement when starting relays energize. If not, manually disengage and test again.	Repair if necessary.

Problem	Possible Fault	Test	Remedy
Motor runs in wrong direction.	Operator installed upside-down.	Visually inspect.	MJ: Install operator with motor up (towards ceiling). MT: Looking up from floor level, electrical box and motor should be towards floor. Correct if necessary.
	Capacitor wired incorrectly.	Visually inspect.	There should be two brown wires connected to one post, two black wires to the other post. (There is no polarity to be observed between terminals.)
Motor runs, but door does not move.	Manual disconnect	Visually inspect.	MT: Reconnect if necessary. MJ: Disengage cable disconnect from wall holder bracket.
	Clutch adjustment		Adjust if necessary. (See owner's manual.)
	Drive train	Visually inspect all chains, sprocket assemblies (internal and external). Also all belt connections, woodriff keys, set screws, loose pulleys...	Repair if necessary.
Motor runs one direction only.	Pushbutton station	Check wire connections and continuity.	Rewire if necessary.
	Limit switches or limit switch wiring	Test switch and wiring continuity. If unit goes up, check down limit. If unit goes down, check up limit.	Rewire/replace if necessary.
	Open or close relay	Open/close relays should "pull in" upon appropriate command.	Apply 24 VAC across relay coil connections (pins 10 and 11). Jump a wire from T-4 to pin 10. Jump another from T-7 to momentarily contact pin 11. Relay should energize upon contact. Replace if necessary.
	Motor	Check motor, relay and capacitor wire connections. For further motor testing, call Lift-Master Technical Service at (800) 528-6563.	

Troubleshooting Series 1000

Problem	Possible Fault	Test	Remedy
Unit fails to open or close completely.	Limit adjustment.		Adjust if necessary.
	Clutch slipping, door obstructed, binding, etc.	Visually inspect.	Readjust/repair if necessary.
Unit continues to run at end of door travel.	Limit switch adjustment	The up and down limit switches are located closest to the electrical box sidewalls. They are the second "click" heard when adjusting the limit nut for each respective side.	Readjust if necessary.
	Limit switch	Check continuity of limit switch.	Replace if necessary.
	Wires or spade lug connections to switch	Visually inspect all wires for proper connection. Continuity test all wires from point to point. Ensure terminals are not shorted.	Repair/replace if necessary.
Unit will not operate from radio controls (externally wired).	Radio	Remove radio wiring from external radio terminal strip. Short screws #1 and #2. Unit should operate. If it does, radio or radio wiring is at fault.	Replace if necessary.
	Operator	Short T3>T6.Unit should operate. If ti does, check continuity of wiring from 7 screw terminal strip to external radio terminals. R1 to T3, R2 to T6, R3 to T7.	Rewire if necessary.
Motor operates in open direction only (Open) when commanded from radio.	A.D.L.S. - Auxiliary Device Limit Switch	Verify activation of ADLS when limit nut is in full open position. Check continuity of ADLS.	Repair/replace if necessary.
Unit travels in close direction only when commanded from radio.	A.D.L.S. - Auxiliary Device Limit Switch	Check continuity of ADLS.	Repair/replace if necessary.

Problem	Possible Fault	Test	Remedy
Auxiliary devices will not operate unit. (External wiring to devices/device test good.) Auxiliary devices: loop detectors, interlocks, ceiling pullcords, etc.	Device(s) not connected to proper screw terminals.	Consult control connection diagram in owner's manual.	Wire accordingly.
	ADLS switch	Test continiuity of switch.	Replace if necessary.
		Check "timing" of ADLS switch: Open limit nut should activate ADLS before open limit switch.	
	Limit nut overruns ADLS.	Activcate ADLS manually.	If problem resolves itself, readjust timing of switch activation. (See "Test" for above, previous problem.)
Sensing to reverse device does not activate unit properly. (Sensing device(s) and corresponding wiring check good.)	Device(s) not connected to proper screw terminals.	Consult control connection diagram in owner's manual.	Wire accordingly.
	S.L.S. switch (used for reverse cut-off switch on close limit side).	Test continuity of switch.	Replace if necessary.
		Check "timing" of S.L.S. switch: close limit nut should activate S.L.S. before close limit switch.	Readjust accordingly.
	Limit nut overruns SLS.	Activate SLS manually.	If problem resolves itself, readjust timing of switch activation. (See "test" for above, previous problem.)
Manual disconnect does not allow manual operation (MJ only).	Cable collar not properly adjusted.	Visually inspect. When disconnect cable is pulled, and cable collar inserted in wall bracket slot, dental gear should completely disconnect from drive gear.	Readjust disconnect cable retaining collar.
	Disconnect arm and dental assembly	Disconnect arm and dental gear must move freely and together on hoist shaft.	Repair, readjust or replace if necessary.

Troubleshooting Guide

Troubleshooting series 2000 & 3000 Heavy/Industrial Duty

Problem	Possible Fault	Test	Remedy
Motor does not run in either direction when command is given from station.	Power source	If SINGLE PHASE: measure voltage across L1 & L2. If THREE PHASE: measure voltage across L1 & L2,L2 & L3,L1 & L3.	Examine circuit
	Overload	Check voltage into and ot of overload.	Reset/replace if necessary.
	Transformer	Measure voltage across secondary of transformer.	Replace if necessary.
	Internal/external interlocks	Interlock switch must be “closed”. Check continuity. (Internal interlock standard on GJ operators.)	Adjust or replace if necessary.
	IR relay (Single Phase Only)	IR relay should “click” when removed or inserted or when voltage is applied to operator.	Replace IR relay.
	Limit switches	Both Up and Down limit switches activated.	Readjust limit nuts.
	Control station	See “Control Connection Wiring Diagram”.	Rewire if necessary.
		Check continuity through push button station.	Replace if necessary.
	Control wires	Test continuity of low voltage wires.	Rewire, repair or replace if necessary.
Motor does not run in either direction when contactor is manually engaged.	Overload	Overload tripped.	Manually reset.
		Test overload continuity.	Replace with properly rated overload.
		Check electrical wiring diagram for wire connections at motor and contactor.	Repair if required.

Troubleshooting Series 2000 & 3000

Problem	Possible Fault	Test	Remedy
Motor hums but will not run with command from control station.	Brake	Check brake linkage and solenoid adjustment.	Manually disengage brake and repair if required.
	Motor start capacitor (single phase)	Test with known good capacitor.	Replace if necessary.
	Drive Train	Belt Drive: Rotate drive pulley, check internal sprockets, shaft and chain for adjustment. Gearhead: Remove the motor from the gearhead and run motor.	Adjust or repair.
		Check gearhead for oil.	Lubricate or replace gearhead if necessary.
	Motor	Motor shaft should turn freely.	Replace if necessary.
		Check motor wiring diagram for proper connections at motor and contactor.	Rewire if necessary.
Motor runs, but door does not move.	Manual disconnect (BeltJack - HJ)	Check disconnect arm and dental assembly.	Repair or readjust if necessary.
	Clutch adjustment	Visually inspect.	Readjust if necessary.
	Drive train	Visually inspect. Chain off sprocket, belt slipping, sheared or missing roll pin, loose pulley...	Reconnect, readjust, repair or replace if necessary.
Door travels in one direction only from control station.	Limit switch	Test continuity of limit switch and wire connections. If operator goes up OK, check down limit switch. If operator runs down OK, check up limit switch.	Rewire or replace if necessary.
	Limit switch wiring		
	Pushbutton station	Check wire connections.	Rewire or replace if necessary.
	Contactor	Check contactor wire connections.	Rewire or replace if necessary.
	Motor	Check motor wiring diagram.	Rewire or replace if necessary.

Troubleshooting Series 2000 & 3000

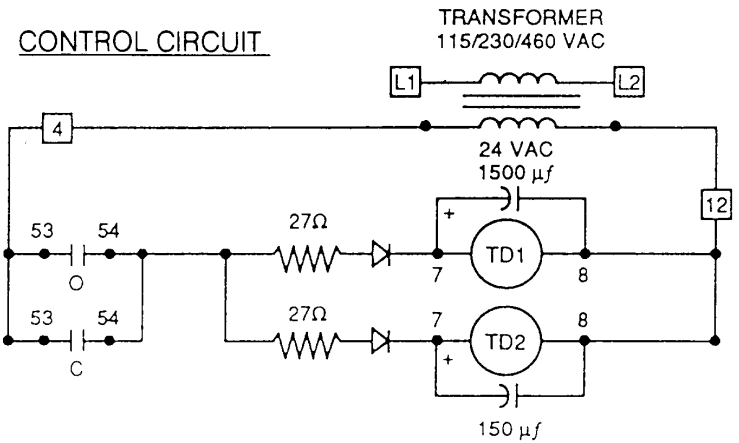
Problem	Possible Fault	Test	Remedy
Operator fails to open or close completely.	Limit adjustment	Check limit nut adjustment.	Readjust limits.
	Clutch slipping, door obstructed or binding.	Visually inspect.	Adjust clutch, remove obstruction or repair door system.
Operator continues to run at end of door travel.	Limit adjustment.	Limit nut must activate limit switch arm.	Reform switch arm.
		Check for limit switch LED activation on printed circuit board.	Replace switch if necessary.
		Check all wire connections of limit switch assembly.	Rewire if necessary.
Timer to close function inoperable.	Timer to close control station	Test continuity through wire and control station.	Repair or replace.
	Timer impulse or timer latch relays	Timer impulse should energize upon control station activation. Timer latch should activate upon completeing open cycle.	Replace if necessary.
	Timer defeat switch (if used)	Test defeat switch. check wiring. (must be wired “Normally Closed”.)	Rewire or replace if necessary.
	Timer	If timer latch and timer impulse relays activate and timer does not time out, replace timer.	Replace if necessary.
Auxiliary device(s) will not cause operator to function properly (Radio control, sensing edge, interlocks,...).	Incorrect control function-switch settings	Check positions of switches for desired wiring type.	Reset if necessary.
	Check electrical wiring diagram for proper wire connections	Phtsically check wire connections.	Rewire if necessary.
	Auxiliary device	Auxiliary devices must be wired for “Normally Open”. Device should “Make” contact when activated.	Rewire if necessary.
	Auxiliary device limit switch or sensing limit switch	Test continuity of switches. Check timing of corresponding switch. Limit nut should activate SLS before CLOSE switch, and limit nut should activate ADLS before OPEN switch.	Adjust switch if necessary.

Problem	**Possible Fault**	**Test**	**Remedy**
Jackshaft will not disconnect for manual operation.	Collar on disconnect cable	When disconnect is pulled and inserted into slot of chain/disconnect bracket, collar should slide directly below slot, keeping disconnecting dental from engaging with dental sprocket.	Readjust disconnect cable retaining collar.
	Disconnect dental	Disconnect dental must slide freely on output shaft.	Repair, readjust or replace if necessary.
Jackshaft chain hoist will not engage.	GJ: Collar on disconnect cable	When disconnect cable is pulled and inserted into chain keeper slot, collar should slide directly below slot, retaining and securing the disconnect arm so as to fully engage the bevel gears below the gearhead. At the same time, the disconnect cable should also cause the brake to disengage.	Turn chain wheel via chain to align bevel gears. Readjust disconnect collar on cable to ensure 100% gear mesh. The disconnect cable must pull on brake activator arm, fully disengaging the brake pads from the brake drum.
	HJ: Chain/Chain Wheel	Before attempting disconnect... chain/chain wheel must move freely. Turn slowly while pulling disconnect cable.	Visually and physically inspect. Repair if necessary.
	Disconnect cable	Disconnect cable retaining collar must be adjusted for full engagement between dental and chain wheel.	Readjust if necessary (see HJ disconnect above).

DYNAMIC BRAKE CIRCUIT DESCRIPTION

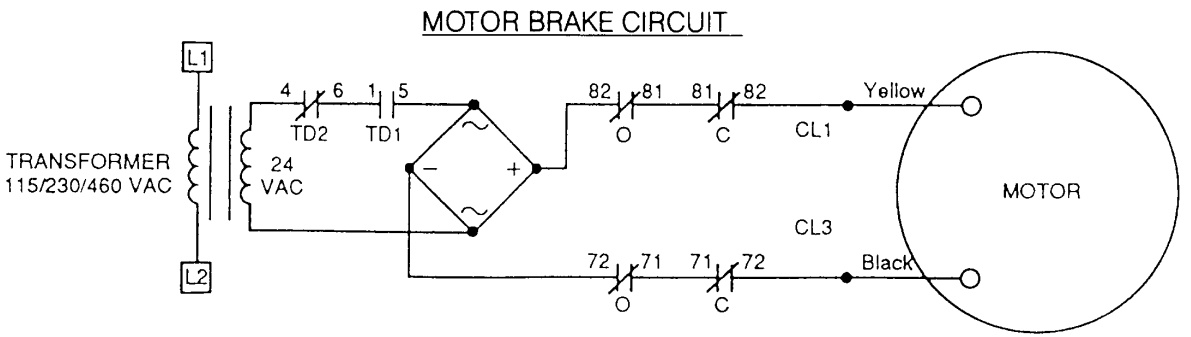
CONTROL CIRCUIT

When either the open or close contactor coil energized, normally open contacts 53 and 54 close supplying 24 VDC to TD1 and TD2. Upon denergizing of the contactor the auxiliary contacts 53 and 54 open disconnecting TD1 and TD2 from the controk voltage. A 1500μf capacitor is connected in parallel to TD1 providing a 2 sec. delay on break. A 150μf capacitor is connected in parallel to TD2 provide a .25 sec. delay on brake



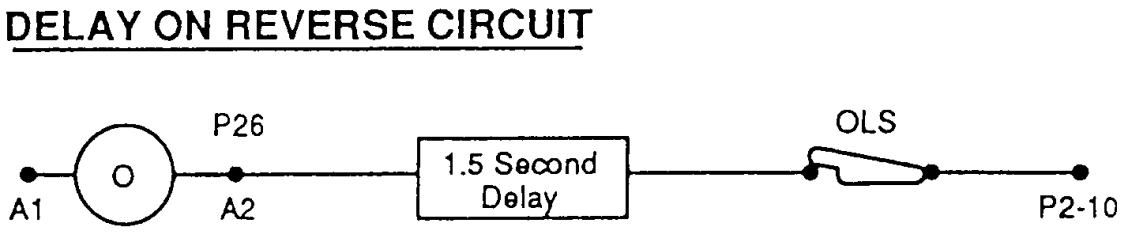
MOTOR CIRCUIT

When the motor is running either open or close, the normally closed contacts 71 & 72 and 81 & 81 are open isolating the bridge rectifier from the motor voltage, TD1 contacts 1 & 5 are held closed and TD2 contacts 4 & 6 are held open. When the contactor deenergizes the auxiliary contacts 71 & 72 and 81 & 82 close connecting the motor to the bridge rectifier. After a .25 second delay TD2 contacts 4 & 6 close connecting the 24 VAC brake transformer to the rectifier thus providing 24 VDC whish sets up a fixed magnetic field that absorbs the inertia of the motor's rotor and brakes the motor. After 2 seconds TD1 contacts 1 & 5 open disconnecting the 24 VAC transformer from the bridge rectifier thus preventing the motor from operating.



DELAY ON REVERSE CIRCUIT

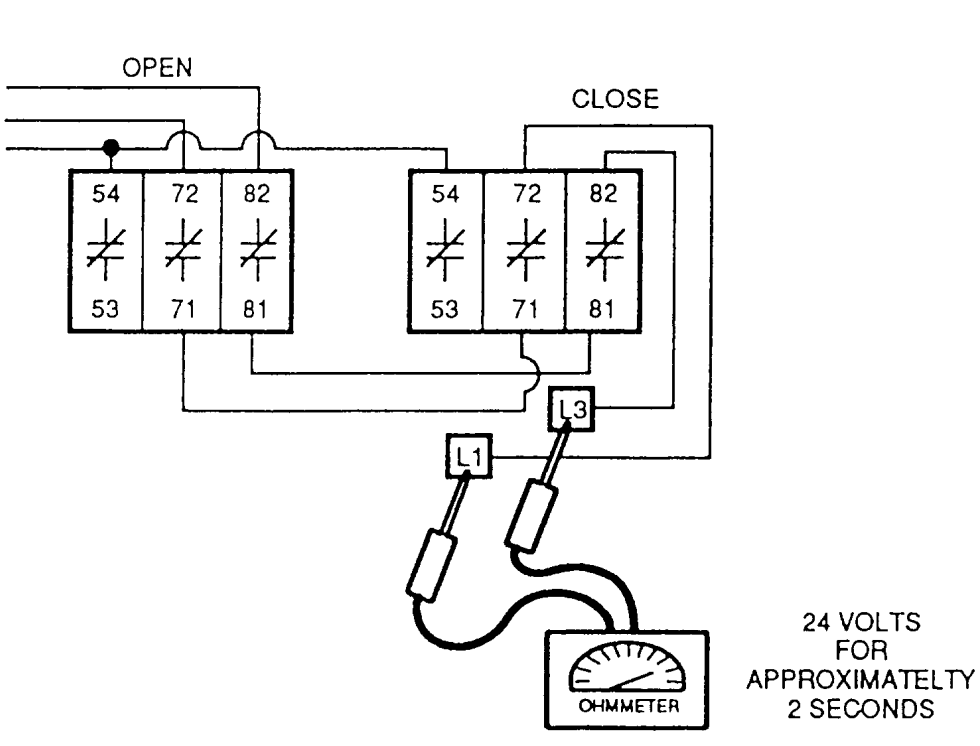
To permit the full impact of the dynamic brake, a delay on open time capsule is connected in series between the open limit switch normally closed contact and A2 of the open contactor coil. The delay on open circuit also protects the door system from mechanical shock loading when reversing large doors.



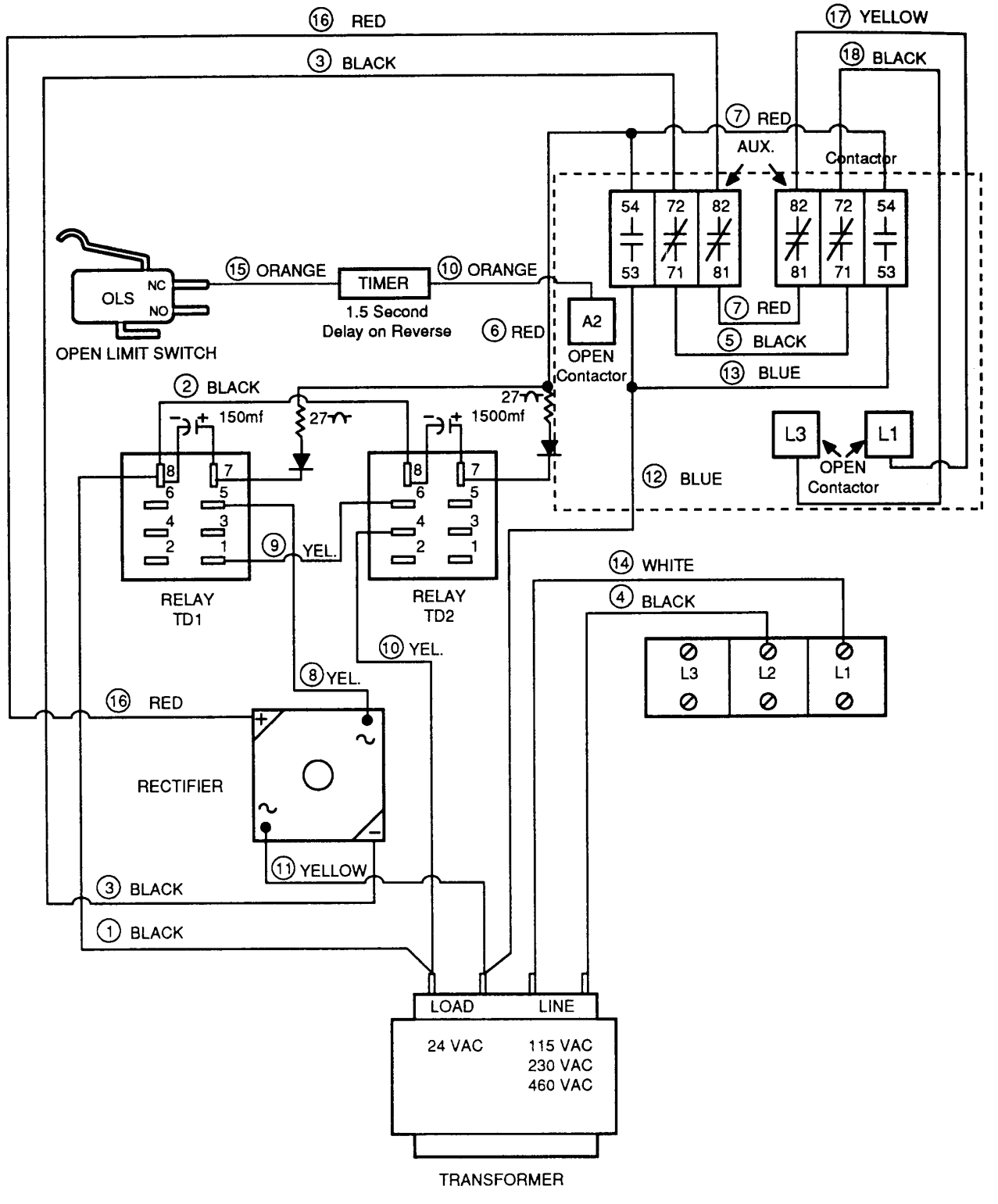
TESTING THE DYNAMIC BRAKE

1. Place a voltage meter across L1 and L3 of the close contactor. The meter should read line voltage.

2. Press stop button. The voltage should to zero; spike to 24V then return to zero.



DYNAMIC BRAKE WIRING DIAGRAM

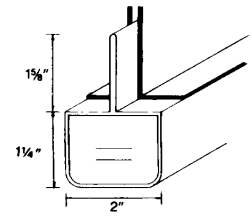


SensingEdge Selection by Application

	MT-21†	MT-22†	MU-22†	MC-22†	M3R-2040	ME-106	ME-109	ME-110
OVERHEAD DOORS								
Rolling	•	•		•				
Rolling Fire	•							
Grilles						•	•	•
Shutters						•	•	•
Sectional			•					
Fast Acting		•	•		•			
FOLDING/SLIDING			•					
HANGAR*			•					
GATES								
Barrier Arms								•
Cantilever			•					
Pivot								
Sliding			•					
Swinging								
Vertical Lift								
REVOLVING DOORS								
ELEVATOR DOORS	•	•	•					
*Specify door thickness and overtravel for sizing								
†Available with XR-5 chemical resistant cover								

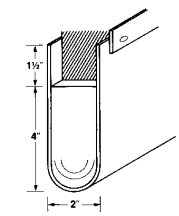
MT-21™

Ideal for rolling fire doors, this low-profile edge is available with standard PVC cover (gray, yellow, black, white) or with XR-5 chemical-resistant cover (yellow only). Specify right,left or end wire outlet location.



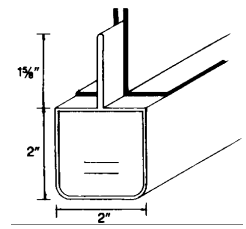
M3R-2040™

Specifically designed to give the added cushioning and sensitivity required for fast-acting doors. 4-wire electrical configuration is standard. Bright caution yellow covers are recommended. Specify right, left, end or universal wire outlet location.



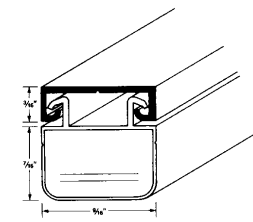
MT-22™

Installs easily on rolling doors with double L-angle bottom bars. Available in dimensions up to 12"x10". Available in gray, yellow, black or white PVC cover or with XR-5 chemical-resistant cover (yellow only). Specify right, left or end wire outlet location.



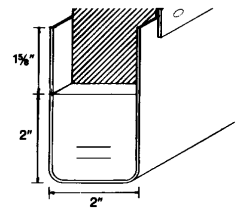
ME-106™

This small-profile edge is an attractive and functional addition to grilles and shutters. The reversing edge slides into the rigid black PVC mounting channel which attaches to the bottom bar. Available in black or orange.



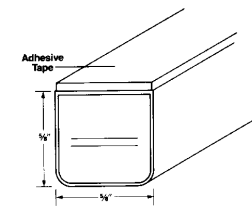
MU-22™

Designed for use on 13/4"-2"-thick sectional doors. Dimensions up to 16"x12" are available for hangar door applications with optional yellow XR-5 cover. PVC cover can be gray, yellow, black or white. Specify right, left, end or universal wire outlet location.



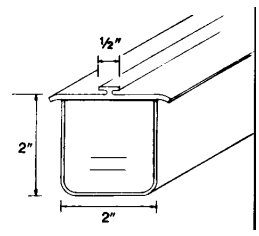
ME-109™

This small-profile edge attaches to the bottom bar with double-face tape-no hardware required. Black cover is barely visible or choose caution orange for added visual recognition.



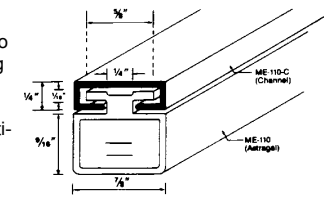
MU-22™

For easy installation, this edge slides into accepting bottom bar on some sectional and rolling doors. Available with gray, yellow, black or white PVC cover. Slide in section is gray. Specify right, left or end wire outlet location.



ME-110™

A choice of mounting channels allows this edge to easily adapt to a variety of applications including rolling grilles and shutters. Black extruded PVC cover is standard. Right, left or end wire outlet locati--ons are available.



Note: All Miller Sensing Edges are available in 2-or 4-wire electrical configurations. Most are available as pneumatics.

Operate sensing edges at 24 volts or less for safety. Check reversing mechanism regularly to assure integrity of operations.

08722/MIL
BuyLine 5716

	ME-111	ME-112	ME-113	ME-120	ME-123	MG-020	MGR-20	MGS-20
OVERHEAD DOORS								
Rolling								
Rolling Fire								
Grilles	•							
Shutters	•							
Sectional		•	•		•			
Fast Acting								
FOLDING/SLIDING			•	•	•			•
HANGAR*								
GATES								
Barrier Arms	•							
Cantilever			•		•	•	•	•
Pivot			•	•	•	•	•	•
Sliding			•	•	•	•	•	•
Swinging						•	•	•
Vertical Lift			•	•	•	•		
REVOLVING DOORS						•		
ELEVATOR DOORS	•					•		

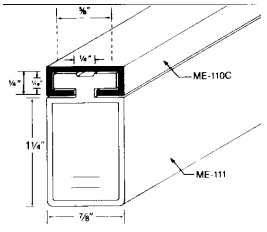
*Specify door thickness and overtravel for sizing

†Available with XR-5 chemical resistant cover

You can select from one of our basics styles or a special edge can be designed to meet your exact requirements and specifications.

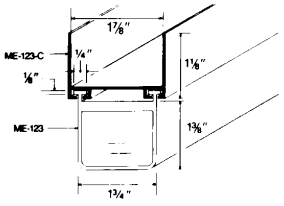
ME-111™

This edge helps protect car hoods from scratches caused by parking lot barrier gate arms. Optional mounting channels allow for easy installation. Cover is black extruded PVC. Right, left or end wire outlet locations are available.



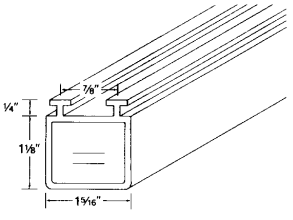
ME-123™

Easily adapts to commercial sectional doors from 1-1/2" to 2" thick. A variety of black rigid PVC mounting channel designs allow for quick installation. The extruded PVC cover is available in black or bright yellow. Choose right, left or end wire outlet location.



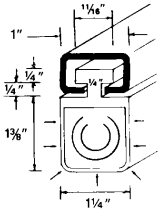
ME-112™

For use on sectional doors from 3/4" to 1-1/4" thick with accepting bottom profile. This Slide-in SensingEdge attaches to existing bottom bar with no mounting channel required. Choose right, left or end wire outlet location.



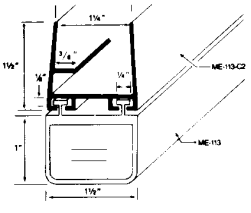
MG-020™

This edge is equally sensitized on 3 sides. Black mounting channels are available in aluminum or rigid PVC. Extruded PVC cover can be black or caution yellow. Select right, left, or end wire outlet location.



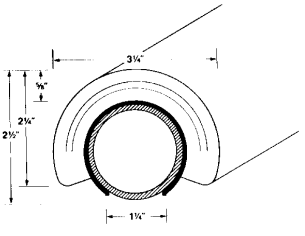
ME-113™

Select from one of our mounting channel designs or slide-in to accepting bottom retainer of 1/4" to 1-1/2" sectional doors. Choose right, left or end wire outlet location.



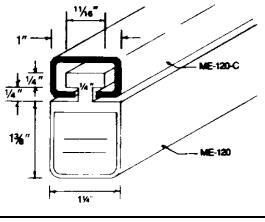
MGR-20™

Specially designed to clip onto a 2" round gate post, this edge installs in minutes. Available in black or yellow. Wire outlet may be universal, right or left hand.



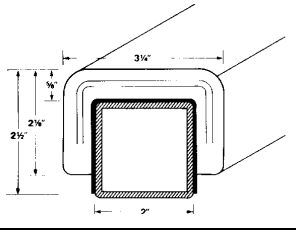
ME-120™

This versatile sensing edge is available with black or caution yellow extruded PVC cover. Optional black mounting channels are available in aluminum or rigid PVC. Select right, le



MGS-20™

Installation is a snap on 2" square gate posts.This sleek design is available in black or caution yellow. Select universal, right or left outlet wire location.



Materials, designs and construction are subject to change without notice. Dimensions are nominal.

For detailed specifications, installation and testing instructions, contact Miller Edge, Inc.

SensingEdge

Specifications

Motor driven doors and gates shall be equipped with electrically activated reversing edges (not pneumatic) which contain completely flexible Alumaglas® contact elements separated by a perforated foam cushion as manufactured by Miller Edge, Inc., Concordville, PA 19331. Reversing edges shall be activated by 5 psi (nominal) pressure along entire span of opening and provide mechanical stops.

For 4-wire option: SensingEdge shall be of 4-wire electrical configuration so that a loss of continuity in the circuit will cause a closing door to open and prevent an open door from closing.

Hangar doors: SensingEdge shall be 4-wire elec trical configuration so that a loss of continuity in the circuit will cause a closing door to open and prevent an open door from closing. Sensing edges shall have bright yellow covers of XR-5 chemical -resistant material to provide chemical resistance to: kerosene, diesel fuel, hydraulic fluids, JP-4 jet fuel, salt water, 50% phosphoric acid, 50% hydrochloric acid, 50% acetic acid, 50% nitric acid and SAE-30 oil.

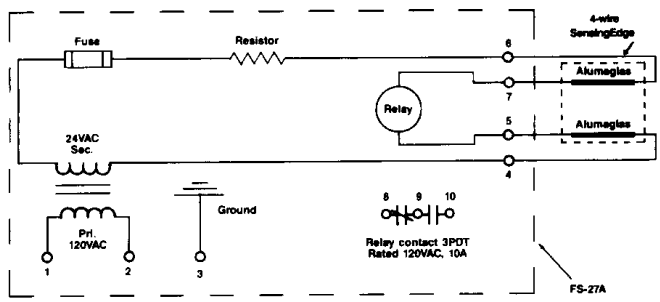
Recommended 4-wire configuration option

Safety experts recommend that a 4-wire configuration be specified for optimum protection. In the event of a continuity loss in the circuit, the door will revert to manual operation. The system works as follows: Relay is energized during normal operating conditions. Relay is de-energized when:

- edge is actuated-relay is shunted
- there is a short circuit -relay is shunted
- there is a break in lead wire or contacts-current is interrupted
- there is a power loss

We offer the following control panel in a NEMA 13 enclosure (model #FS-27A) for use with this option. With relay energized, terminals TB8 and TB9 are open circuit (N.C. held open); TB9 and TB10 are closed (N.O. held closed). When relay is de-energized, the opposite is true.

NOTE: Resistor must withstand 24VAC when Alumaglas® contacts close and give a 12V drop in series with 12V relay.



Available accessories

We also offer a variety of accessories including:

- Treadle switch (pneumatic only)
- Coil cords & retractable reels
- Junction boxes
- Relays and Transformers (400V-24V, 220V-24V, 110V-24V)
- Four-wire intrinsically safe control panel in NEMA 7 explosion-proof enclosure for hazardous locations (model #FSIS-25-4).

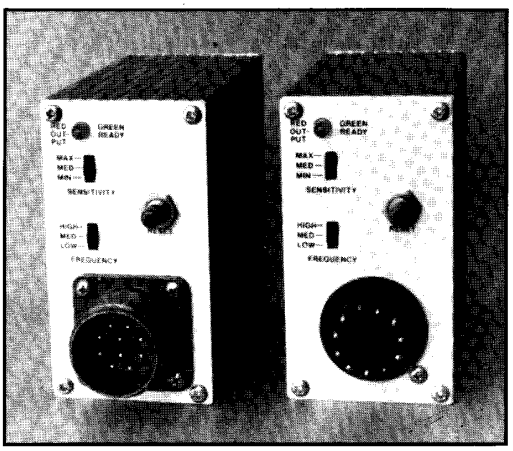
Warranty

We will replace, within one year of shipment from our factory, any SensingEdge subject to normal use which is found to have defective materials or work - manship,as determined solely by our authorized factory representative. This warranty is void where evidence of misuse or abuse is present. Miller Edge manufactures its products to meet stringent specifications and cannot assume responsibility for those consequences arising from improper installation or misuse. Installation instructions and testing procedures provided by Miller Edge must be followed for proper operation and maintenance.

MillerEdge

MILLER EDGE, INC., P.O. BOX 38, CONCORDVILLE, PA 19331 610-459-4242
FAX: 610-459-8338 1-800-220-EDGE

SENTINEL D VEHICLE DETECTOR --- TYPE SMD



FEATURES

- ð **SELF TUNING**
- ð **AUTOMATIC SENSITIVITY BOOST - ON BOARD SELECTABLE**
- ð **AUTOMATIC ENVIRONMENTAL TRACKING**
- ð **FAIL SAFE PRESENCE OUTPUT**
- ð **PULSE OUTPUT ON VEHICLE ENTRY OR EXIT - ON BOARD SELECTABLE**
- ð **RESET SWITCH**
- ð **NO OUTPUT ON POWER UP - ON BOARD SELECTABLE**
- ð **LONG PRESENCE TIME**

SENTINEL MODEL SMD - LOOP DETECTORS

The Sentinel D Detectors utilize digital and surface mount technology. The use of these technologies allowed us to design a reliable and compact loop detector.

SPECIFICATIONS

Self Tuning: The detector is tuning automatically on power up to loop inductance range of 20 to 1000 uH with a Q factor of five or greater. No manual tuning or maintenance is required.

Automatic Environmental Tracking (AET): The detector is designed to track automatically environmental changes which influence the loop inductance. The detector will track up to 1% drift per hour. No manual tuning or maintenance is required.

Automatic Sensitivity Boost (ASB): The sensitivity is optimized for vehicle access control. As soon as detection occurs, the sensitivity is automatically boosted. This holds detection of a high bed vehicle or truck-trailer combination. This feature is on board selectable with ASB jumper.

Sensitivity: Sensitivity is selectable with a three external switch (maximum, normal, minimum). For standard application use normal setting.

Frequency Selection: Frequency is selectable with a three way external switch to provide frequency separation between adjacent loop detectors and to eliminate crosstalk.

Presence Output: Presence time is designed for access control applications with minimum 1 hour hold time for 3% inductance change. The presence relay operates in fail-safe mode so its coil is normally energized for the “no call” state. When detector has two presence relays the second relay is operating in the “non fail-safe mode” with the coil deenergized for the “no call” state.

Pulse Output: Momentary closure of relay contact for 125 milliseconds per vehicle. Pulse is normally generated on vehicle entry. The detector has an on board selector to provice for pulse on vehicle exit or entry, or pulse off selection.

Reset: Reset of the detector is achieved during power up or via the external momentary switch. No output is generated during reset via the external switch.

Power Up: The “No False Output” (NFO) feature ensures that no output is generated on the fail-safe relay during power up. This feature is on board selectable via the (PWR) jumper.

Loop Monitor: If the loop and/or lead in exceed the induction range the detector will generate a continuous fail-safe output for the presence relay; the pulse relay will remain open.

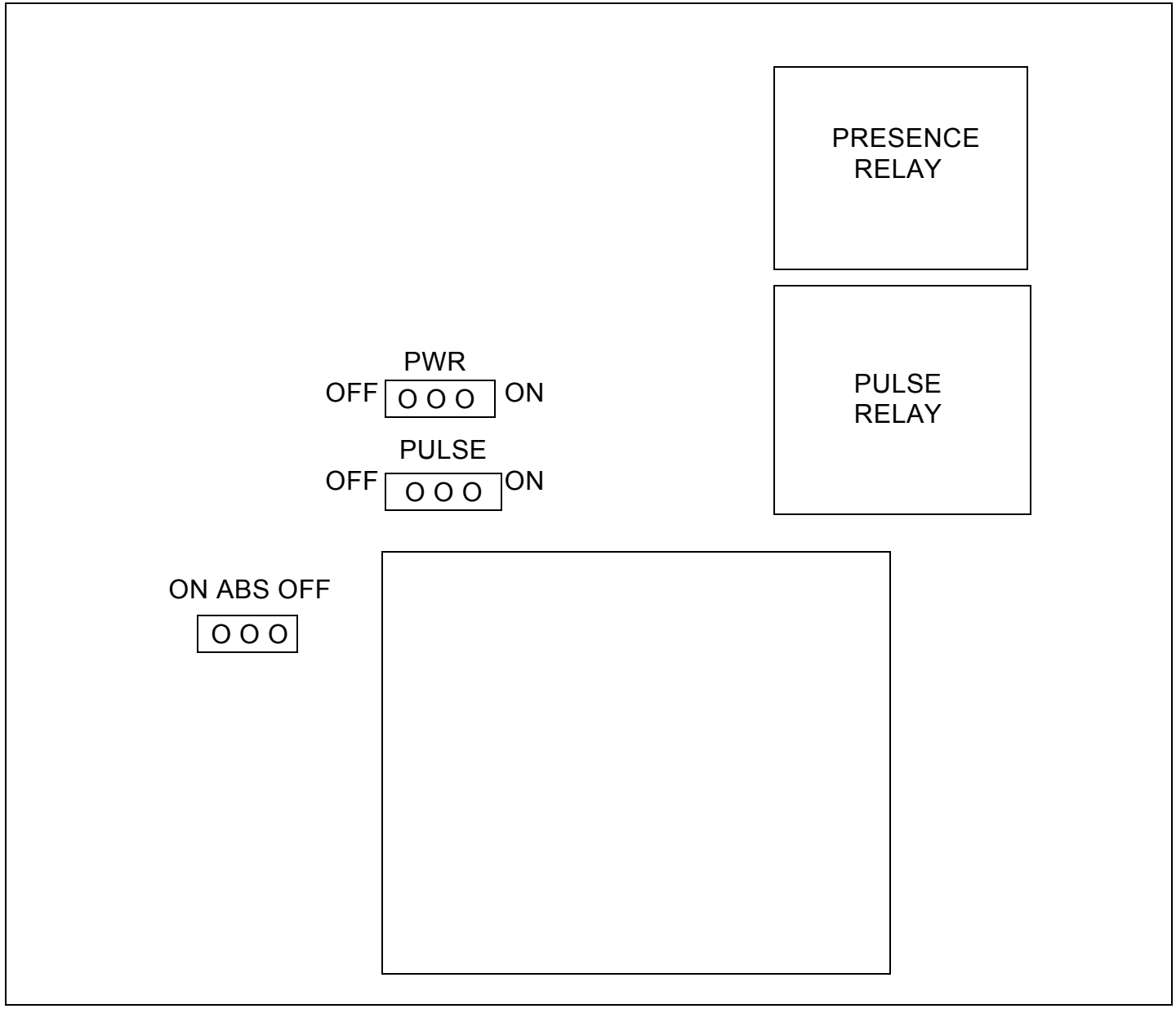
Indicator: Two color LED, green designating power on and red designating detect call or loop failure.

Power: 110v AC or 24v AC +\- 10% (24vDC optional.)
Temperature: -40F° to +170F°
Output Relay Contact Rating: 3 amp 120v AC or 28v DC

Enclosure: The enclosure is made out of non-corrosive extruded aluminum. The dimensions are width - 1.9”, height - 3.6”, depth - 3.9”.

Surface Mount Technology: All digital circuitry is utilizing the advanced SMD technology to achieve compact size and high quality by using automatic pick and place manufacturing process.

ON BOARD JUMPER CONFIGURATIONS



ASB - ON
AUTOMATIC SENSITIVITY
ON

ASB - OFF
AUTOMATIC SENSITIVITY
OFF

PULSE - OUT
PULSE IS GENERATED
ON EXIT FROM THE LOOP

PWR - OFF
OUTPUT IS GENERATED
DURING TUNING PERIOD
ON POWER UP

PWR - ON
OUTPUT IS NOT GENERATED
DURING TUNING PERIOD
ON POWER UP

NOTE - POSITION THE JUMPERS IN THE DESIRED COMBINATION. FOR EXAMPLE SWITCH THE ASB ON, MOVE THE ASB JUMPER TO THE LEFT POSITION ON THE HEADER.

ORDERING INFORMATION

SENTINEL D MODEL SMD 10
MS 3102A-18-1P CONNECTOR

PIN	SMD10A	SMD10B
A	A.C. (-) 120V	A.C. (-) 120V
B	PRESENCE RELAY N.O.	PRESENCE RELAY COMMON
C	A.C. (+)	A.C. (+)
D	LOOP	LOOP
E	LOOP	LOOP
F	PRESENCE RELAY COMMON	PRESENCE RELAY N.O.
G	PRESENCE RELAY N.C.	PRESENCE RELAY N.C.
H	CHASSIS	CHASSIS
I	PULSE RELAY COMMON	PULSE RELAY COMMON
J	PULSE RELAY N.O.	PULSE RELAY N.O.

SENTINEL D MODEL SMD 11
MS 3102A-18-1P CONNECTOR

PIN	SMD11G	SMD11F	SMD11Q	SMD11P	SMD11H	SMD11T
1	A.C. (+) 120V	A.C. (+) 24V	A.C. (+) 120V	A.C. (+) 24V	A.C. (+) 120V	SPARE
2	A.C. (-) 120V	A.C. (-) 24V	A.C. (-) 120V	A.C. (-) 24V	A.C. (-) 120V	SPARE
3	PULSE RELAY N.O.	PULSE RELAY N.O.	LOOP	SPARE	*PRESENCE(II) RELAY N.O.	PULSE RELAY N.O.
4	CHASSIS	CHASSIS	LOOP	CHASSIS	CHASSIS	CHASSIS
5	PRESENCE RELAY COMMON	PRESENCE RELAY COMMON	PRESENCE RELAY N.C.	PRESENCE RELAY COMMON	PRESENCE (II) RELAY COMMON	PRESENCE RELAY COMMON
6	PRESENCE RELAY N.O.	PRESENCE RELAY N.O.	PRESENCE RELAY COMMON	PRESENCE RELAY N.O.	PRESENCE (II) RELAY N.O.	PRESENCE RELAY N.O.
7	LOOP	LOOP	PRESENCE RELAY N.O.	LOOP	LOOP	LOOP
8	LOOP	LOOP	PULSE RELAY N.O.	LOOP	LOOP	LOOP
9	PULSE RELAY COMMON	PULSE RELAY COMMON	PULSE RELAY COMMON	PRESENCE RELAY N.C.	*PRESENCE(II) RELAY COMMON	PULSE RELAY COMMON
10	PRESENCE RELAY N.C.	PRESENCE RELAY N.C.	SPARE	SPARE	PRESENCE (II) RELAY N.C.	PRESENCE RELAY N.C.
11	SPARE	SPARE	CHASSIS	SPARE	*PRESENCE(II) RELAY N.C.	SPARE

SMD11H - * PRESENCE RELAY (II) IS “NON FAIL SAFE”
ALL DETECTORS HAVE 24vDC OPTION - SPECIFY WHEN ORDERING

SENTINEL - D VEHICLE DETECTOR INSTALLATION GUIDE

FOREWORD

Optimum functioning of the detector module is largely dependent on factors associated with the inductive sensor loop connected to it. These factors include choice of material, loop configuration and correct installation practice. A successful inductive loop vehicle detection system can be achieved by bearing the following operational constraints in mind, and strictly following the installation instructions.

1. OPERATIONAL CONSTRAINTS

1.1 Crosstalk

When two loop configurations are in close proximity, the magnetic field of one can overlap and disturb the field of the other. This phenomena, known as crosstalk, can cause false detects and detector lock-up. Crosstalk can be eliminated by:

1. Careful choice of operating frequency. The closer together the two loops, the further apart the frequencies of operation must be.
2. Separation between adjacent loops. Where possible a minimum spacing of 6 feet between loops should be adhered to.
3. Careful screening of lead-in cables if they are routed together with other electrical cables. The screen must be earthed at the detector end only.

1.2 Reinforcing

The existence of reinforced steel below the road surface has the effect of reducing the inductance, and therefore the sensitivity, of the loop detection system.

The ideal spacing between the loop cable and steel reinforcing is 6 inches, although this is not always practically possible. The slot depth should be kept as shallow as possible, taking care that no part of the loop or lead-in remains exposed together to
after the sealing compound has been applied.

2. INSTALLATION INFORMATION

2.1 Loop and Feeder Specification

The loop and feeder should preferably constitute a single unjoined length of insulated copper conductor, with a minimum rating of 15 Ampere.

Joints in the loop or feeder are not recommended. Where this is not possible, joints are to be soldered and terminated in a waterproof junction box. This is extremely important for reliable detector performance.

2.2 Sensing Loop Geometry

Sensing loops should, unless site conditions prohibit, be rectangular in shape and should normally be installed with the longest sides at right angles to the direction of traffic movement. These sides should be ideally be 3 feet apart.

The length of the loop will be determined by the width of the roadway to be monitored. The loop should reach to within 1 foot of each edge of the roadway.

In general, loops having a circumference measurement in excess of 30 feet should be installed using two turns of wire, while loops of less than 30 feet in circumference, but greater than 18 feet, should have three turns. Loops having a circumference measurement less than 18 feet should have four turns. It is good practice at time of installation to construct adjacent loops with alternate three and four turn windings.

2.3 Loop Installation

All permanent loop installations should be installed in the roadway by cutting slots with a masonry cutting disc or similar device. A 45° crosscut should be made across the loop corners to reduce the chance of damage that can be caused to the loop cable at
right angle corners.

A slot must also be cut from the loop circumference at one corner of the loop to the roadway edge to accommodate the feeder.

A continuous loop and feeder is obtained by leaving a tail long enough to reach the detector before inserting the cable into the loop slot. Once the required number of turns of wire are wound into the slot around the loop circumference, the wire is routed again via the feeder slot to the roadway edge. A similar length is allowed to
reach the detector and these two free ends are twisted

ensure they remain in close proximity to one another. (Minimum 7 turns per foot.) Maximum recommended loop feeder length is 300 feet. It should be noted that the loop sensitivity decreases as the feeder length increases, so ideally the feeder cable should be kept as short as possible.

The loops are sealed using a “quick-set” black epoxy compound or hot bitumen mastic to blend with the roadway surface.

EMX Incorporated
20600 Chagrin Boulevard, Suite 503
Shaker Heights, Ohio 44122
Tel: 1-216-349-0909
1-800-426-9912
Fax: 1-216-349-5011

Manufacturers of: Detectors, Card Readers, Automatic Vehicle Identification and Sensors

New

EMX Lite Preformed Loops™

PICTURE
NOT
AVAILABLE

PICTURE
NOT
AVAILABLE

EMX Lite Preformed Loops™

1. Rugged and flexible TPE tubing with overall diameter of **0.26 inches suitable for Saw Cut**, tar and concrete installation.
2. **Lighting Protection!!!** The EMX Lite Preformed Loop™ includes electronic lightning protection of vehicle detectors.
3. The EMX Lite Preformed Loop™ comes with 50 feet of twisted and jacketed lead-in-wire.
4. The loops can be shipped by regular UPS.

ARCHITECTURAL Specifications

Supply the EMX Lite Preformed Loop™. The vehicle detection loop will be constructed of stranded wire conductors with thermoplastic elastomer insulation jacketing. The outer shell is to consist flexible nonmetallic 0.26" tubing. The vehicle detection loop will include electronic lightning protection. The lead in wire will be twisted jacketed and minimum 50 feet long.

To Order Call 1-800-426-9912
Fax: 1-216-349-5011

Technical Specification:

Operation Temperature: -60F° to +260F°
Overall Diameter: 0.26 inches
Loop Dimensions: 4' x 6', 4' x 8', 4' x 10' custom sizes available.
Lead-in-wire: 50 feet long twisted wire in PVC jacket
Loop Wire Approvals: UL subject 13, type PLTC 300V,
90C Passes IEEE-328 210,000 BTU flame test Pennsylvania Bureau of Deep Mine Safety Approval P-MWMS-1-85

Call for special sizes and custom quote.
We accept MasterCard and VISA credit cards.

WARRANTY

EMX Inc. warrants the product described herein for a period of 1 year under normal use and service from the date of sale to our customer. The product will be free of defects in materials and workmanship. This warranty does not cover ordinary wear and tear, abuse, misuse, overloading, altered products, or damage caused by the purchaser connecting the unit wrong, or lightning damage.

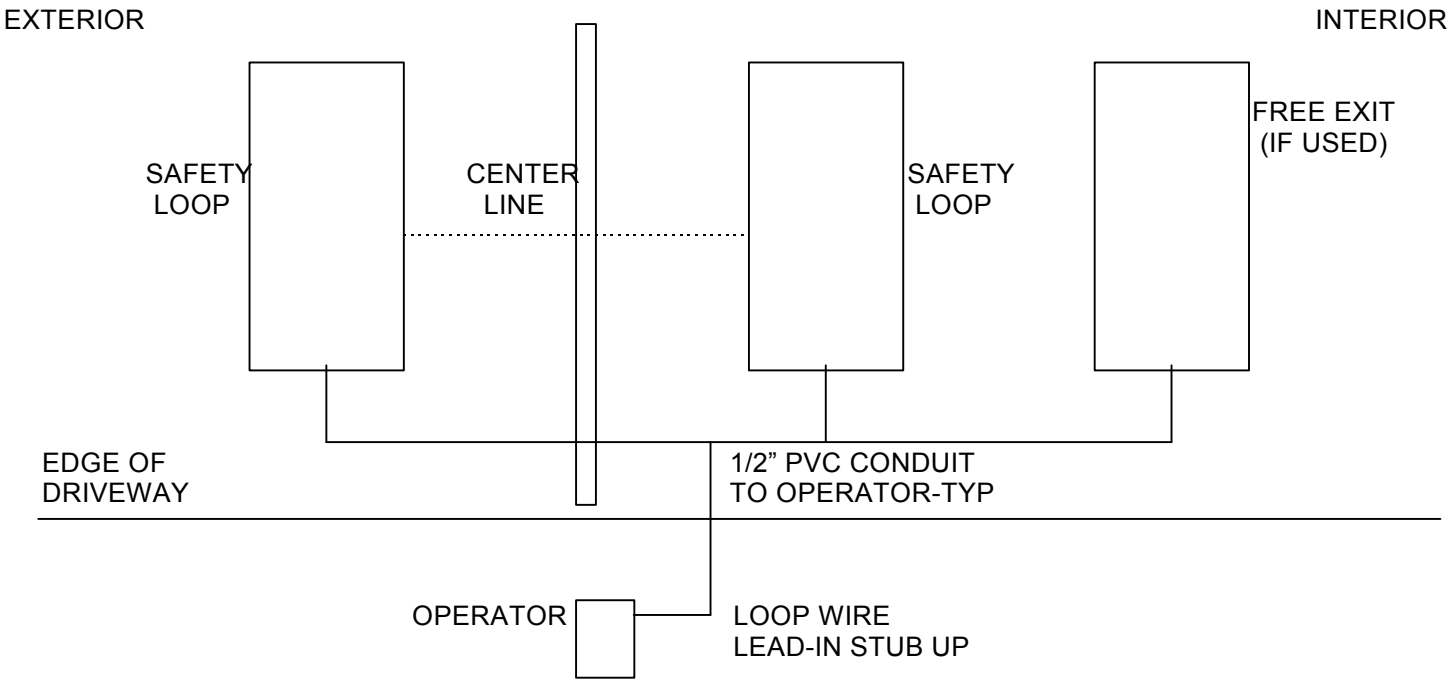
There is no warranty of merchantability. There are no warranties which extend beyond the description herein. There are no warranties expressed or implied or any affirmation of fact or representation except as set forth herein.

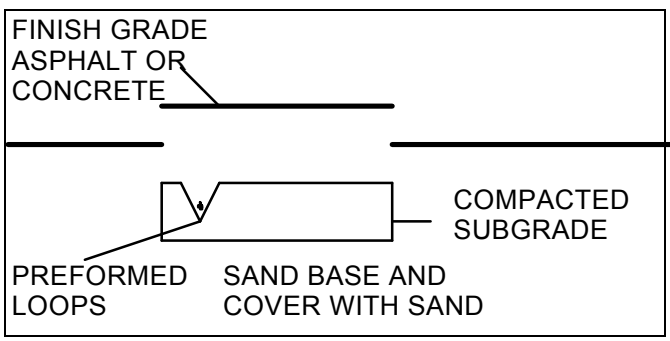
EMX Inc. sole responsibility and liability, and purchaser's exclusive remedy shall be limited to the repair or replacement at EMX's option of a part or parts not so conforming to the warranty. In no event shall EMX Inc. be liable for damages of any nature, including incidental or consequential damages, including but not limited to any damages resulting from non-conformity, defect in material or workmanship.

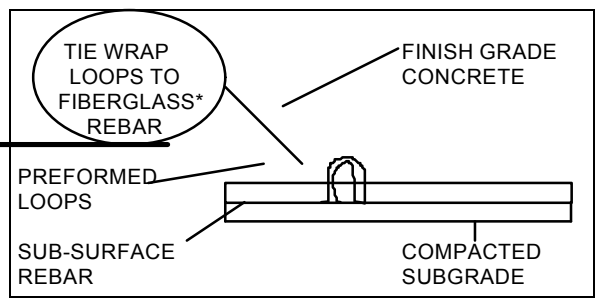
EMX

EMX Industries Inc. 5325 Naiman Pkwy #F Solon, OH 44139 • (216) 349-0909

Loop Configurations

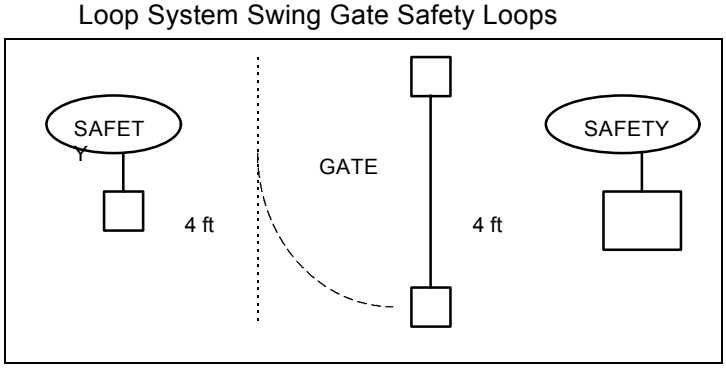




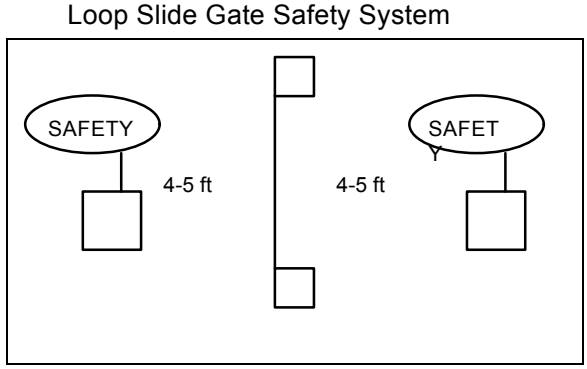


* IF THE REBAR IS MADE OF STEEL USE 2 x 4 WOODEN PLANKS TO SEPARATE BETWEEN THE THE LOOP AND THE STEEL

Loop System Swing Gate Safety Loops



Loop Slide Gate Safety System



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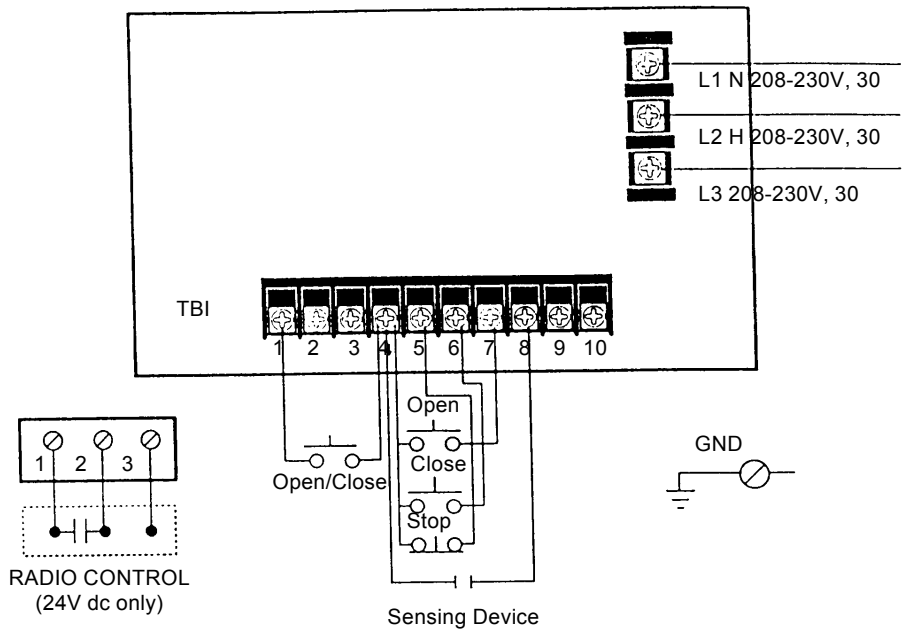
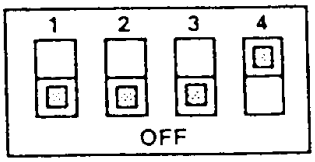
STANDARD POWER AND CONTROL CONNECTION DIAGRAM (Solid State Board CDO - 208-230V, 3∅)



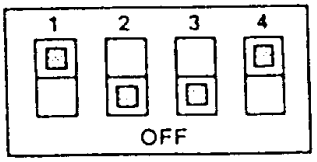
Set Maximum Run Timer
Begin with door in closed position. Set dip switch to max. run timer mode. Press control station open button door from closed to full open position without stopping. Set dip switch to desired operating mode (B2, C2, D1, E2, T, TS).

Set max. run timer



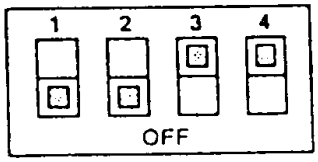
Set Adjustable Mid Stop
Begin with door in closed position. Set dip switch to adj. mid stop mode. Press control station open button to operate door from closed to mid stop position and stop with control station stop button. Set dip switch to desired operating mode (B2, C2, D1, E2, T, TS).

Set adj. mid stop



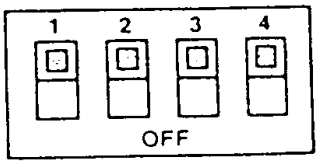
Set Timer to Close (NOTE: Requires P/N 1A4811 CPSII Option Board with Timer to Close Function)
Set dip switch to timer to close mode. Momentarily press control station open button to set timer to set timer duration in 5 second increments. (Red diagnostic L.E.D. will flash to indicate the entry of each 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.

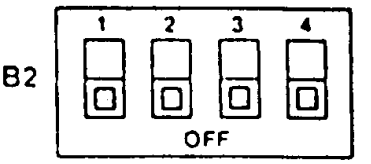
Diagnostic mode



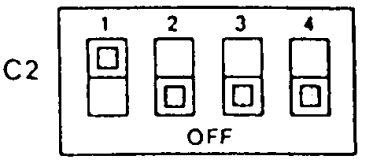
OPERATING MODE

TYPE **STATION**

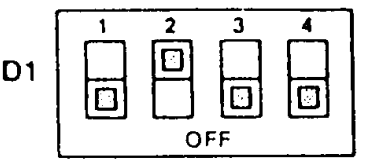
B2 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close and stop, plus wiring for sensing device to reverse and auxiliary devices to open and close with open override.



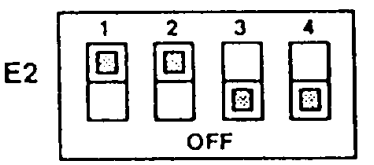
C2 3 Button, 3 Button Radio Control
Function: Momentary contact to open and stop with constant pressure to close, open override plus wiring for sensing device to reverse.



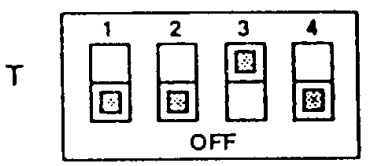
D1 2 Button, 3 Button Radio Control
Function: Constant pressure to open and close with wiring for sensing device to stop.



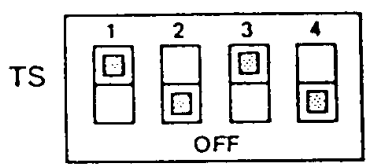
E2 2 Button, 3 Button Radio Control
Function: Momentary contact to open with override and constant pressure to close. Release of close button will cause door to reverse (roll-back feature) plus wiring for sensing device to release.



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, excepting a reversing device, activates timer to close. Auxiliary controlscan 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.)**



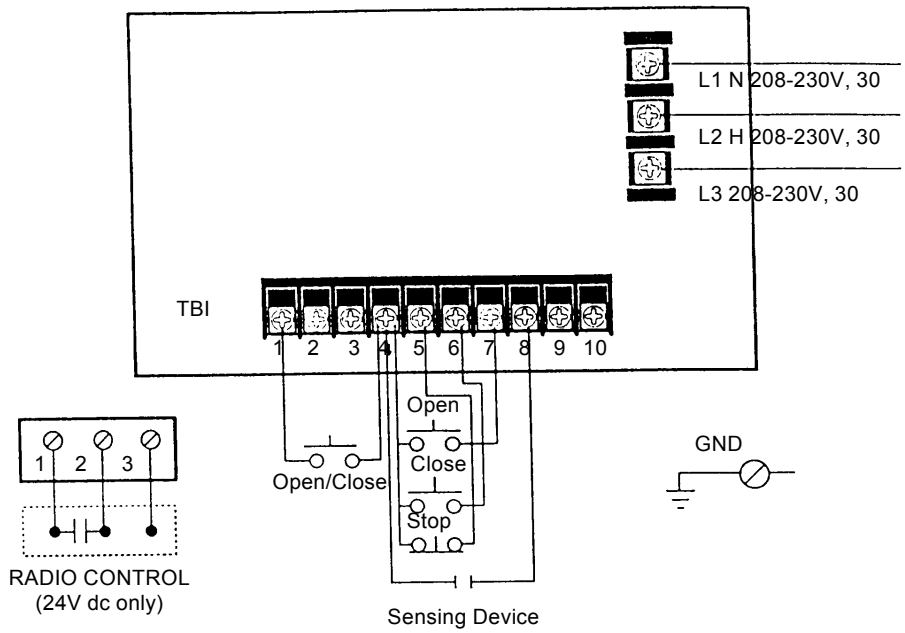
TS* 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close, and stop with open override and timer to close. Every device that causes door to open, including a reversing device, activates timer to close. Auxiliary controls can be connected to open input to activate the 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.

STANDARD POWER AND CONTROL CONNECTION DIAGRAM (Solid State Board CDO - 208-230V, 3∅)



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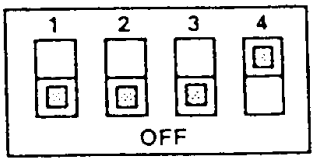
Set max. run timer



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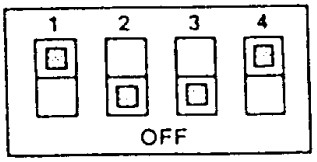
Begin with door in closed position. Set dip switch to adj. mid stop mode. Press control station open button to operate door from closed to mid stop position and stop with control station stop button. Set dip switch to desired operating mode (B2, C2, D1, E2, T, TS).

Set adj. mid stop



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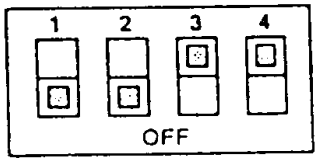
Set timer to close



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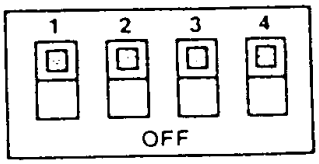
Diagnostic mode



OPERATING MODE

TYPE **STATION**

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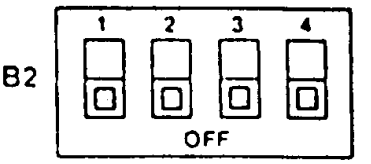
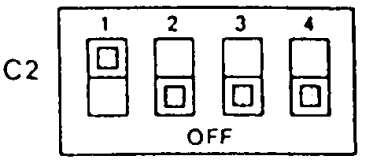
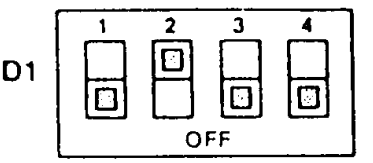


C2 3 Button, 3 Button Radio Control
Function: Momentary contact to open and stop with constant pressure to close, open override plus wiring for sensing device to reverse.



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



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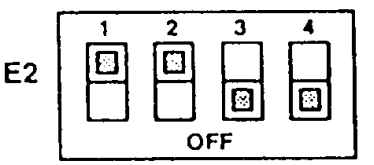

T* 3 Button, 1 Button, 1 & 3 Button Radio Control
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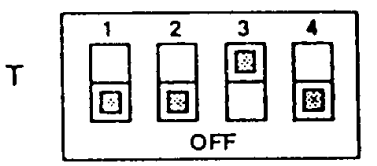

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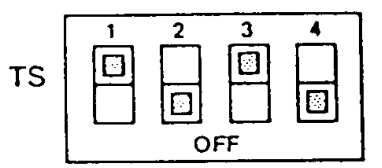

NOTE:

1. External interlocks may be used with all functional modes.
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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.

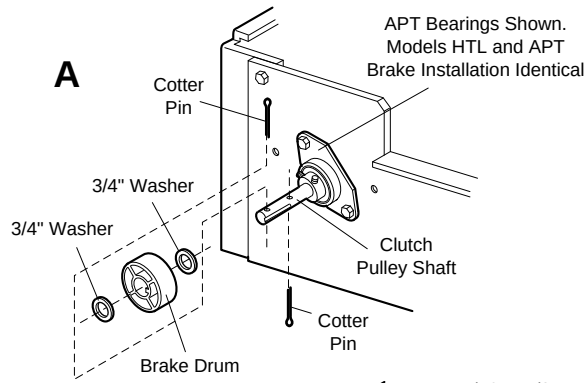
1A4786 & 1A4787
BRAKE INSTALLATION & ASSEMBLY PARTS FOR SOLID STATE UNIT

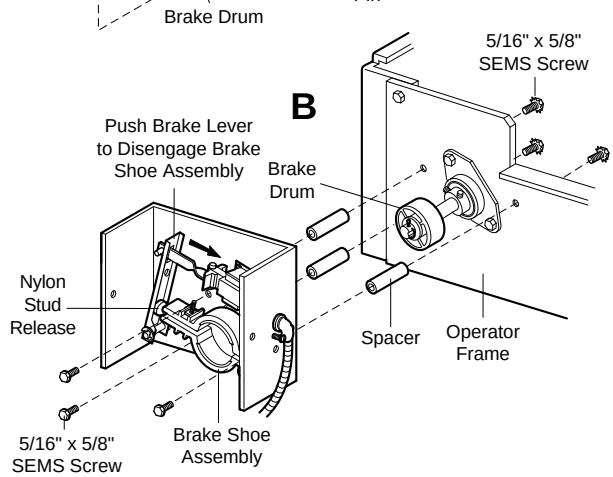
WARNING

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

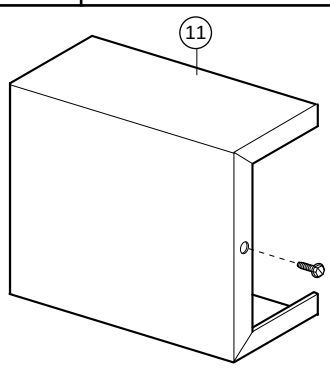
1. Install brake drum on clutch pulley shaft as illustrated in Fig. A.
2. Attach the three spacers provided to back of brake assembly housing using three 5/16 x 5/8 sems screws (Figs. B and C).
3. Push brake lever engaging nylon stud release between brake shoes and align brake drum between brake shoe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

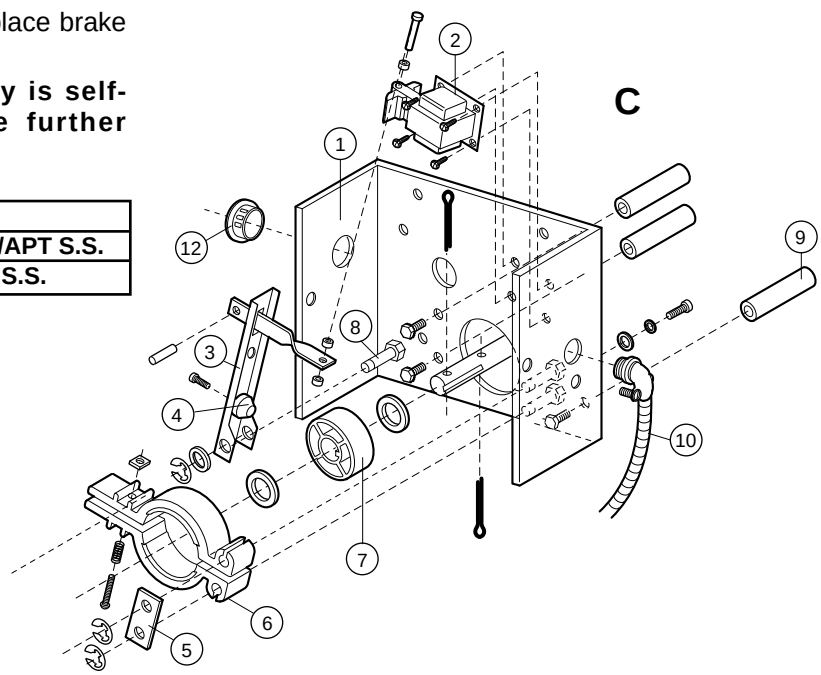
ADJUSTMENT: The brake assembly is self-adjusting and should not require further adjustment.





KIT NO.	DESCRIPTION
1A4786	115V Solenoid Brake HTL/APT S.S.
1A4787	230V Solenoid Brake HTL S.S.





REPAIR PARTS FOR BRAKE ASSEMBLY

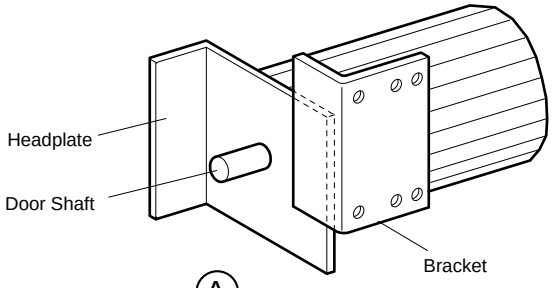
ITEM	PART NO.	DESCRIPTION & QUANTITY
1	17D111	Brake Box (1)
2	204B118	Solenoid 115V (1)
	204B118-1	Solenoid 230V (1)
3	113B49	Brake Lever Pivot (1)
4	179A46	Brake Release Stud
5	142A143	Brake Stud Plate (1)
6	1B4421	Brake Shoe Assy. (2)

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

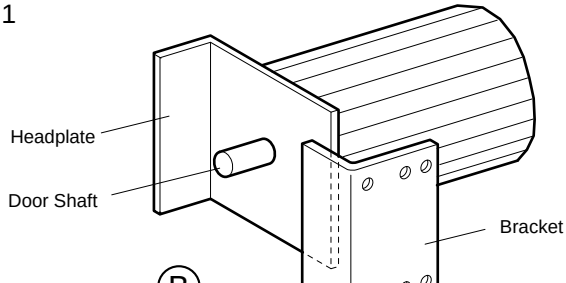
1A3980 INSTALLATION INSTRUCTIONS FOR HJ HOOD MOUNT

Illustrations shown are for left hand mounting. Right hand mounting opposite.

FIGURE 1



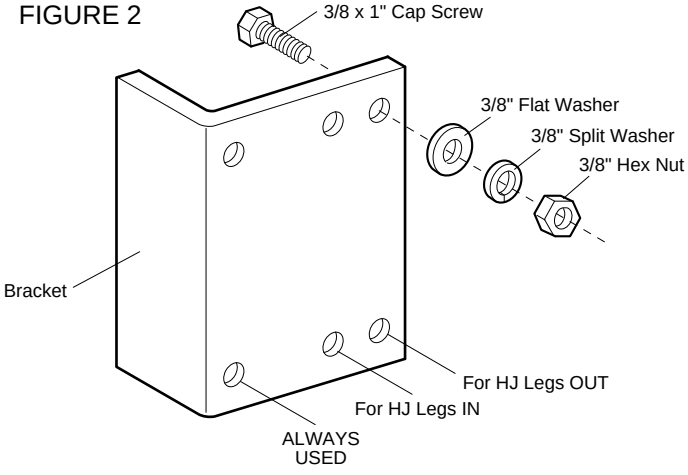
Front of Hood ABOVE Door Shaft



Front of Hood BELOW Door Shaft

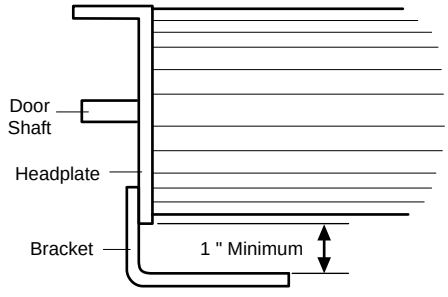
1. Review the illustrations shown above (Figure 1) and select the one (A or B).that matches your application.

FIGURE 2



2. Install the four 3/8 x 1 cap screws and hardware shown (Figure 2). Do not tighten.

FIGURE 3 - (Top View)



3. Temporarily locate and clamp bracket in correct position on headplate. **NOTE:** Leave a minimum of 1" between bracket and headplate (Figure 3).

---

4. Place drive sprocket on operator output shaft and driven sprocket on door shaft. Do not insert keys or tighten set screws.
5. Hold operator in position on bracket and wrap #50 roller chain around drive socket and driven sprocket to determine length of chain required.

   NOTE: Flatwasher, lockwasher, and nut will need to be removed and replaced on operator mounting screws to perform this step.

   NOTE: Observe location of mounting screws in slots of frame. Leave room in slots for chain tensioning. For Application 1A, screws should be close to top of slot with chain installed, for Application 1B, screws should be close to bottom of slot. Readjust bracket if necessary and repeat procedure before cutting chain.

   NOTE: Make certain that operator shaft is above or below door shaft, never in-line.
6. Remove operator from bracket and cut #50 chain to required length.
7. Permanently attach bracket to headplate in the location determined in Step 5. Welding is recommended for this procedure.
8. Attach operator to bracket using 3/8 x 1 mounting screws and hardware. Do not tighten.
9. Insert key in driven sprocket and align driven sprocket with drive sprocket. Tighten set screws. Do not place key in drive sprocket at this time.
10. Wrap #50 chain around drive and driven sprocket and connect ends using #50 master link.
11. Remove slack from chain by moving operator on mounting screws in bracket. Tighten mounting screws.

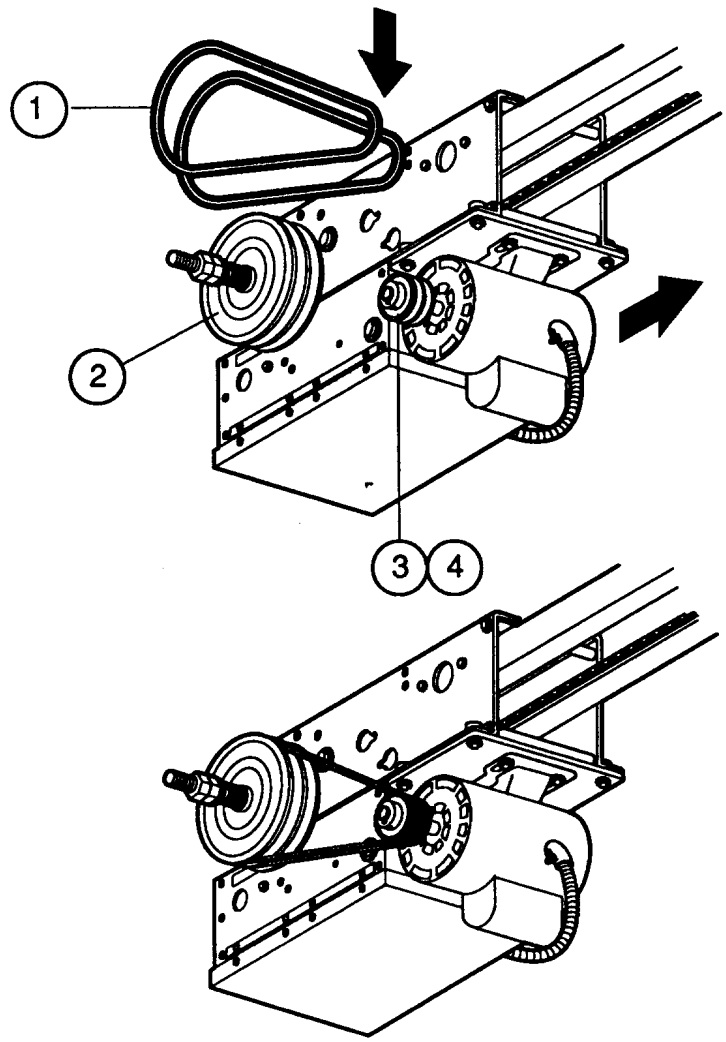
    NOTE: Keyway in operator output shaft may not be aligned with keyway in drive sprocket. Complete electrical connections to operator (refer to manual) then operate unit with 3 button control until keyways align. Insert key in drive sprocket and tighten set screws. Complete remaining instructions in manual.

1A4106 “3L” V-BELT DRIVE KIT

CLOSE DOOR AND DISCONNECT ELECTRIC POWER BEFORE INSTALLING THIS KIT.

OUR LARGE SERVICE ORGANIZATION SPANS AMERICA INSTALLATION AND SERVICE INFORMATION ARE AVAILABLE 6 DAYS A WEEK CALL OUR TOLL FREE NUMBER 1-800-528-6563 HOURS 7:00 to 3:30p.m. (Mountain Std. Time) MONDAY through SATURDAY

1. Loosen motor, remove belt and pulleys.
2. Install belts and pulleys, tighten motor.
3. Adjust clutch and test.



ITEM	PART NO.	DESCRIPTION	QTY
1	20B10	Belt	2
2	144C40	Pulley	1
3	144B39	Motor Pulley	1
4	171A397	Set Screw 5/16” x 5/16” -8	1

Printed in Mexico

Electrical Box Assembly Replacement Kit for Model “MCT” & “BMCT” Operators

APPLICATION REQUIREMENTS:
Replacement of Electrical Box and/or its components for a Grey Line Model MT or BMCT Operator.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

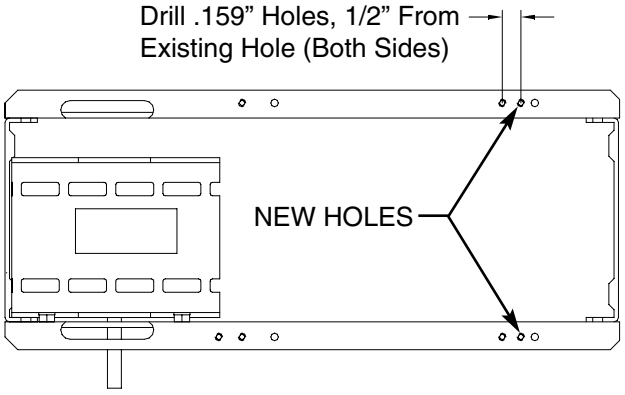
INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner’s Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and place it aside. Remove the electrical box cover. Disconnect the motor wires that pass into the electrical box.

Remove the four flanged hex screws securing the electrical box to the motor frame and carefully remove the old box.

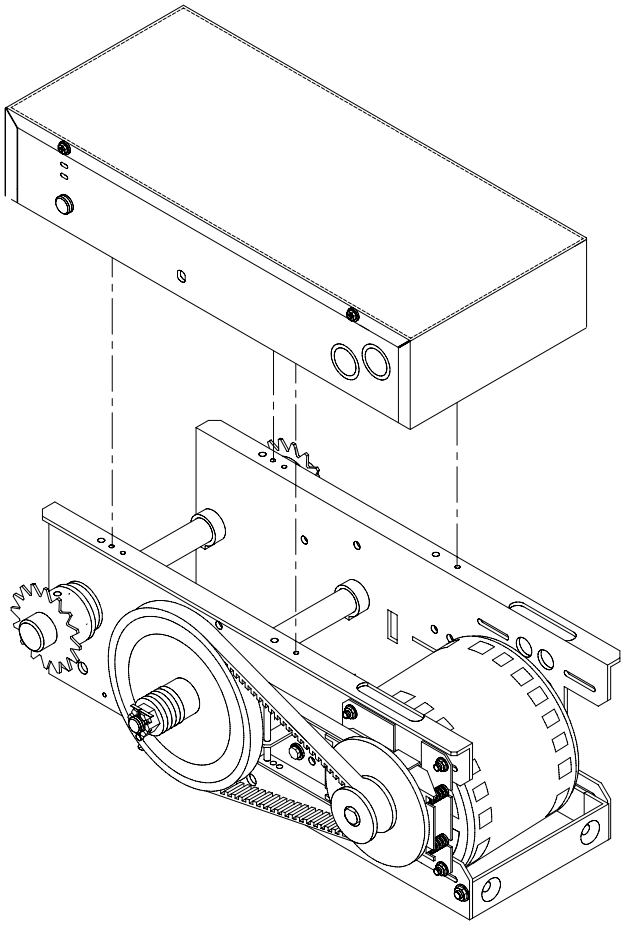
MODIFYING EXISTING FRAME:
Locate the #10-32 Tapped Hole on the top of the frame opposite the motor. Drill a #21 Drill .159” Dia. Hole 1/2” from the hole just located. Repeat same steps on opposite side. (See Illustrations).



MOUNTING NEW BOX:
Place the new electrical box on the motor frame, aligning the slots in the box with their corresponding holes on the motor frame (See Illustrations). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

Install the new limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electrical box to the motor frame by tightening the hex screws.

Reconnect the motor wires. Refer to the wiring diagrams supplied for connections. Restoring power completes the installation.



Lift-Master
The Professional Line

Frame Assembly Replacement Kit for Model "MCT" & "BMCT" Operators

APPLICATION REQUIREMENTS:
Replacement of Frame and/or its components for a Grey Line Model MCT & BMCT Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and place it aside. Remove the electrical box cover. Disconnect the motor wires that pass into the electrical box.

Remove the four flanged hex screws securing the electrical box to the motor frame and carefully remove the old box.

REMOVE EXISTING MOTOR:
Remove the motor pulley and belt from the motor and set the pulley and belt off to the side for reinstallation.

Remove flange nuts securing the motor to the frame and set off to the side for reinstallation. Remove the motor and also set to the side for reinstallation.

MOUNTING MOTOR TO NEW FRAME:
Mount the motor to the new frame in the same manner as it was removed above do not tighten down the motor at this time.

Reinstall the motor pulley and the belt. Adjust the motor pulley to the desired tension by sliding the motor and then tighten down flange nuts.

MOUNTING BOX TO NEW FRAME:
Place the electrical box on the brackets on the new motor frame, aligning the slotted tabs on the box with their corresponding holes on the brackets (see illustration). Attach the new electrical box using the (4) screws provided. Do not tighten screws at this time (Refer to illustration below).

Install the new limit chain and secure with master link. Slide the electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the electrical box to the new motor frame by tightening the hex screws.

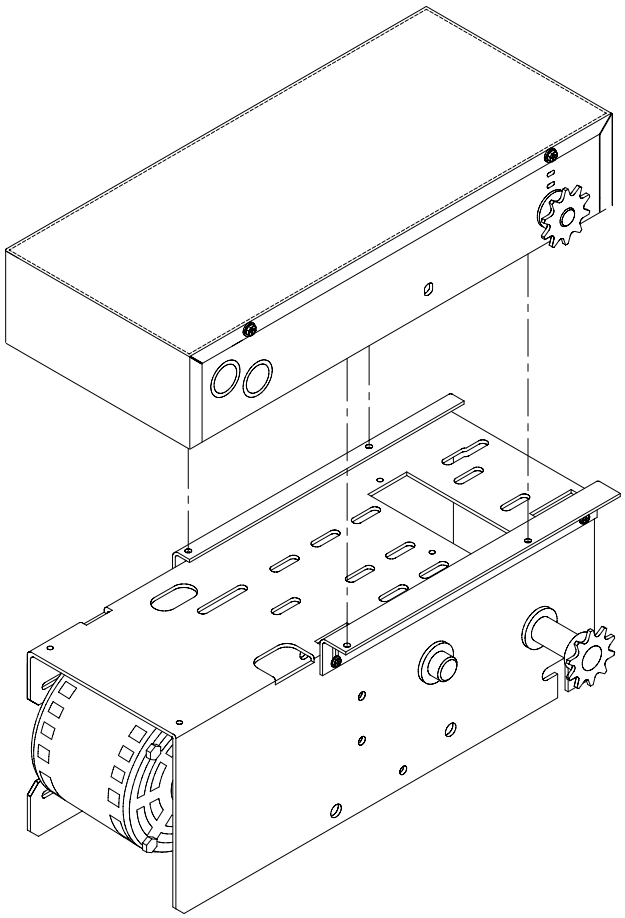
Reconnect the motor wires. Refer to the wiring diagrams supplied for connections. Restoring power completes the installation.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.



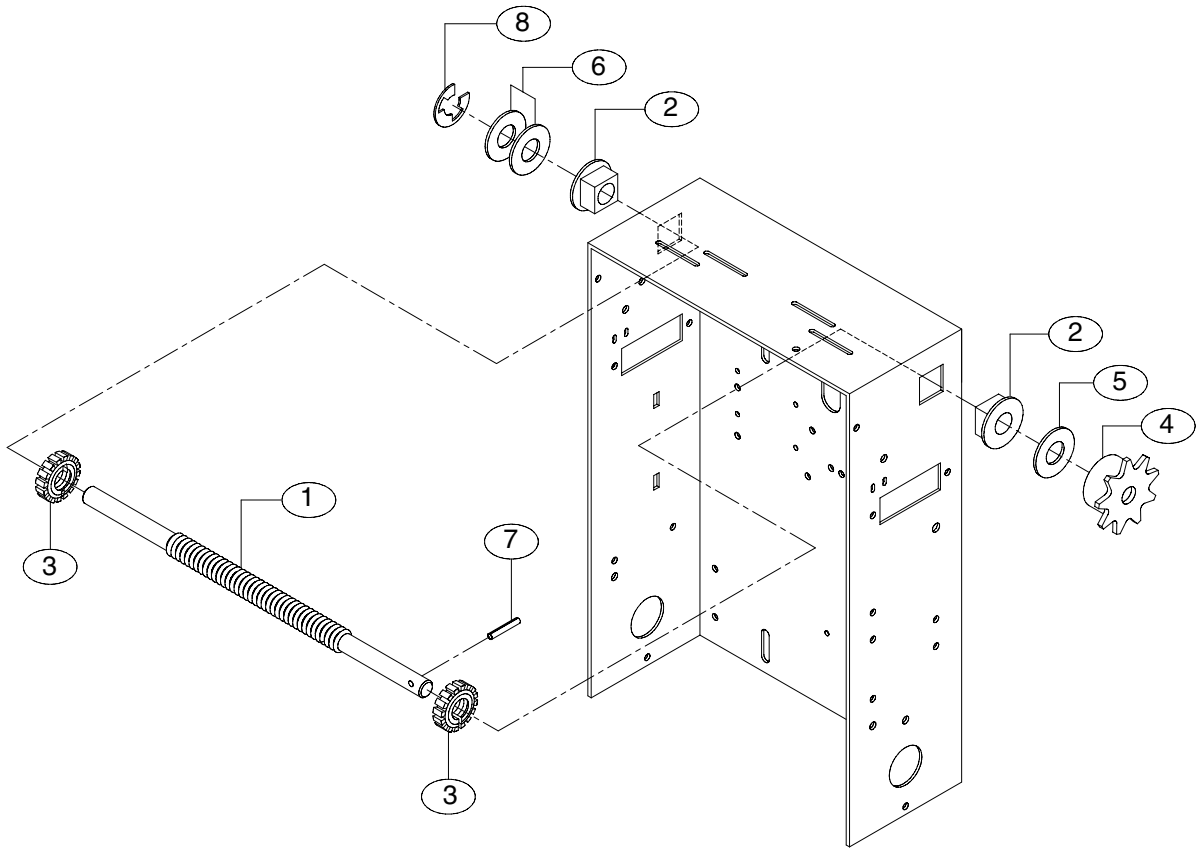
Lift-Master
The Professional Line

K72-12565
Limit Shaft Assembly Service Kit for MGJ Operators

APPLICATION REQUIREMENTS:
Replacement of Limit Shaft and/or its components for a Model MGJ Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	11-11373	MGJ Limit Shaft	1
2	12-10458	3/8” Bearing, Plastic Flange	2
3	13-10024	Limit Nut	2
4	15-48B07AXX	Sprocket, 48B07	1
5	80-10026	Washer, Shim 3/8” I.D. x .01	1
6	85-FW-38	Flatwasher, 3/8”	2
7	86-RP04-012	Roll Pin, 1/8” Dia. x 3/4” Long	1
8	87-E-038	E Ring, 3/8”	1



INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

NOTE: Refer to the Owner’s Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING SHAFT:
Remove the master link from the limit chain, remove the chain and place it aside. Remove the electrical box cover. Remove the E-ring and the shims from the end of the limit shaft. To remove the limit shaft pull it out from the sprocket side, loosening the limit nuts as needed. Remove the flange bearings from the electrical box.

INSTALLING NEW LIMIT SHAFT:
To install the new limit shaft follow the steps outlined above in reverse order, referring to the Owner’s Manual if necessary. Restoring power completes the installation.

Printed in Mexico

K75-12566
Limit Switch Assembly Service Kit for MGJ Operators

APPLICATION REQUIREMENTS:

Replacement of Limit Switch Assembly and/or its components for a Model MGJ Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	10-11419	Depress Plate	1
2	18-10036	Spring, Depress Plate	2
3	23-10041	SPDT Limit Switch	4
4	31-13062	Spacer, .115” ID x 5/8” Long	8
5	82-PX06-16	Screw, #6-32 x 1” Pan HD PH	2
6	82-PX06-19	Screw, #6-32 x 1-3/8” Pan HD PH	8
7	84-DT-06	Nut, #6-32 Double Tinnerman	4
8	84-LH-06	Locknut #6-32	2

INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

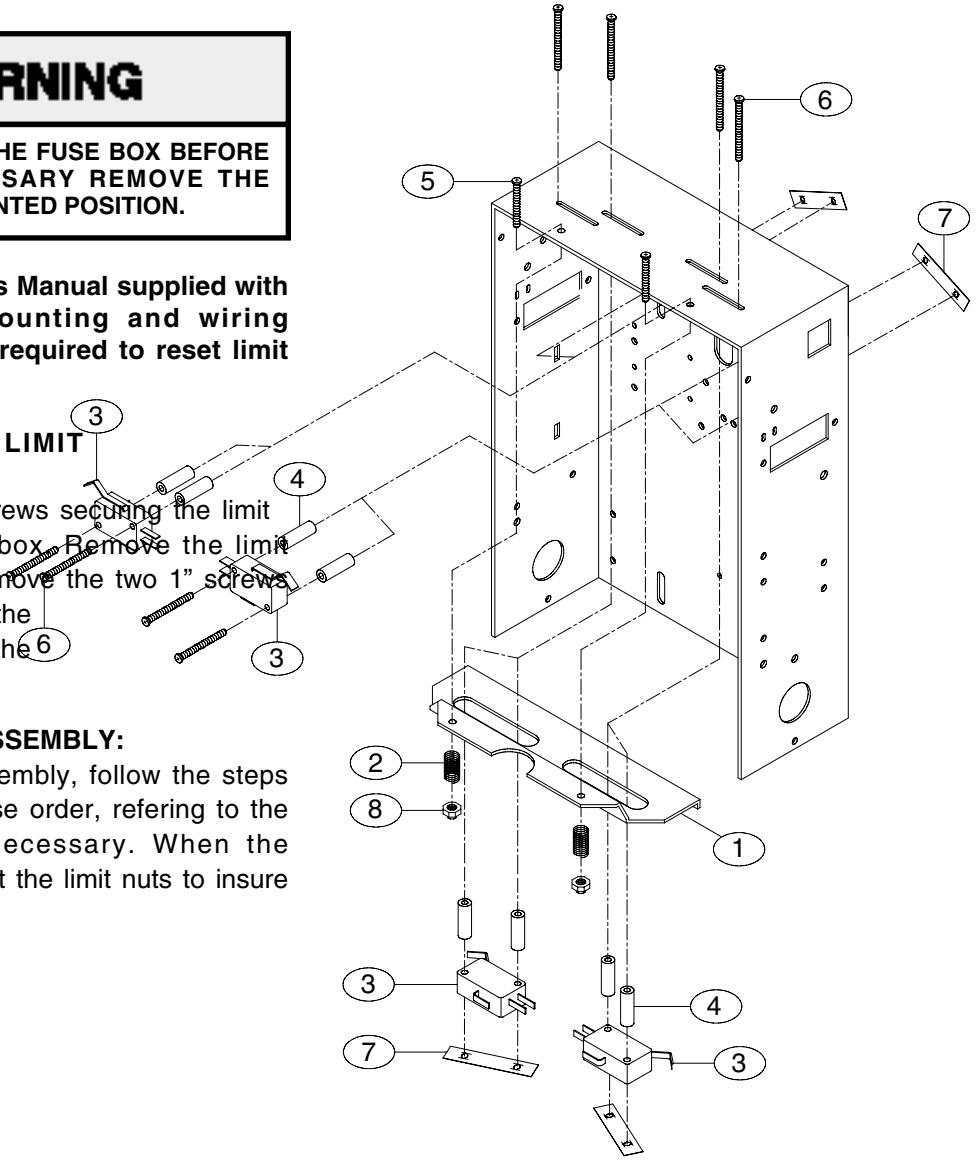
NOTE: Refer to the Owner’s Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING LIMIT ASSEMBLY:

Remove the eight 1-3/8” screws securing the limit switches to the electrical box. Remove the limit switches and standoffs. Remove the two 1” screws from their locknuts. Remove the depress plate springs and the depress plate.

INSTALLING NEW LIMIT ASSEMBLY:

To install the new limit assembly, follow the steps outlined above in the reverse order, refering to the Owner’s Manual when necessary. When the installation is complete, reset the limit nuts to insure proper operation.



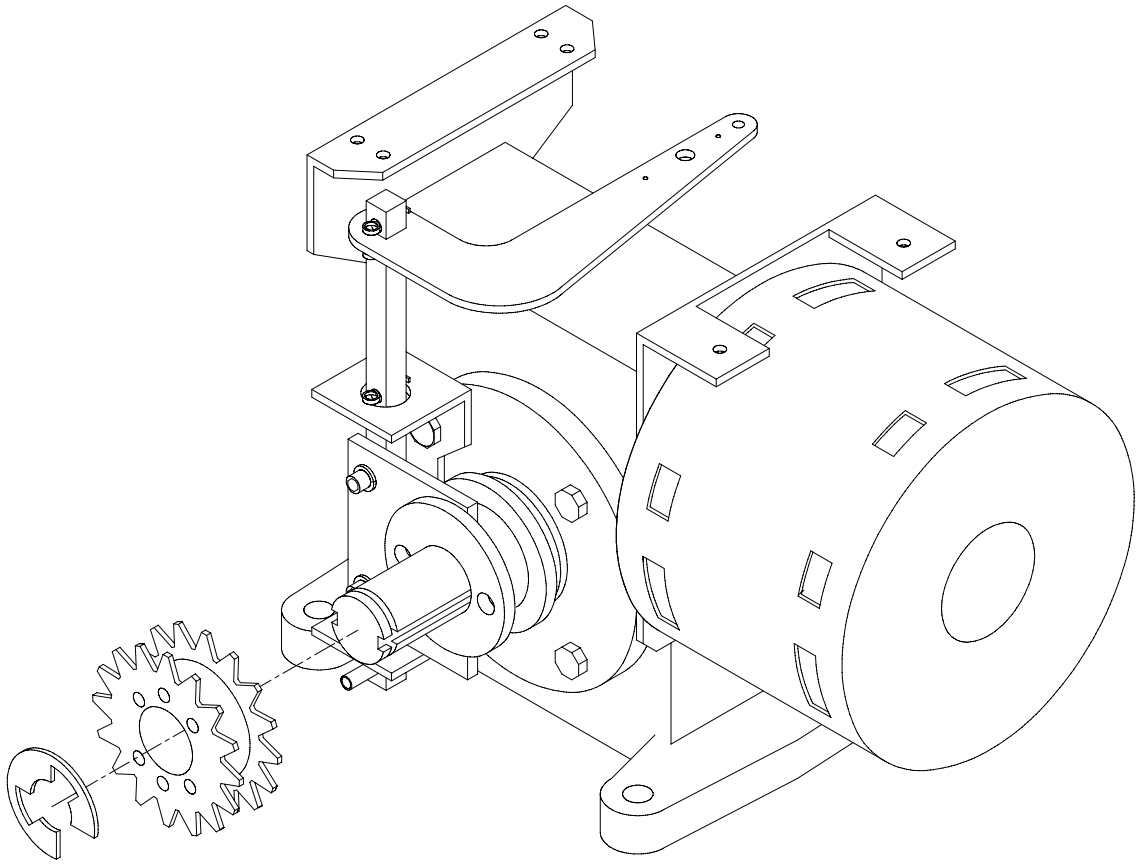
shaft, set the yoke aside. Remove the three cotter pins from the disconnect shaft. Slide the old disconnect shaft out of the support bracket. The release lever will now be free inside the motor frame. Remove the release lever and sash chain from the motor frame. Remove the old disconnect support bracket by first removing the two gear reducer housing screws. Slide the disconnect hub, compression spring, and flatwasher from the end of the gear reducer shaft.

INSTALLING NEW ASSEMBLY:
Insert the roll pin into the end of the disconnect shaft (See Illustration). Attach the sash chain to the end of the release lever with a cotter pin. For the remainder of the installation, follow the steps outlined above in reverse order.

To re-attach the electrical box, line up the slotted holes in the bottom of the box with the corresponding holes in the motor frame. Attach the box to the frame with the four hex screws. Do not tighten screws at this time.

Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electrical box to the motor frame by tightening the hex screws.

Reconnect the motor wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and replace the electrical box cover. Restoring power completes the installation.



Lift-Master
The Professional Line

Frame Assembly Replacement Kit for Model "T" & "SD" Operators

APPLICATION REQUIREMENTS:
Replacement of Frame and/or its components for a Grey Line Model T & SD Operator.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING MOTOR WIRES/CONDUIT:
Disconnect the Motor wires from the electrical box and the motor. Discard motor wires, conduit and connectors..

REMOVE EXISTING MOTOR:
Remove the carriage bolts and flange nuts securing the motor to the frame and set off to the side for reinstallation. Remove the belt from the motor and also set to the side for reinstallation.

MOUNTING MOTOR TO NEW FRAME:
Mount the motor to the new frame in the same manner as it was removed above. Line up the belt on the two pulleys by adjusting the position of the motor pulley as needed.

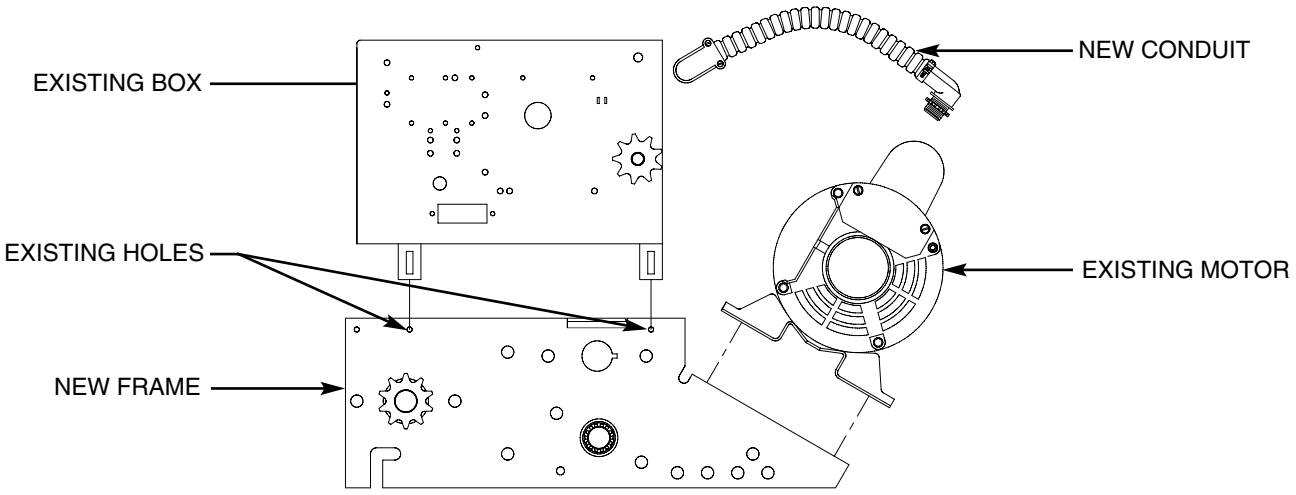
REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and discard.

Remove the four flanged hex screws securing the electrical box tabs to the motor frame and discard, carefully remove electrical box.

MOUNTING BOX TO NEW FRAME:
Place the electrical box on the new motor frame, aligning the slotted tabs on the box with their corresponding holes on the motor frame (see illustration). Attach the new electrical box using the (4) screws provided. Do not tighten screws at this time (Refer to illustration below).

Install the new limit chain and secure with master link. Slide the electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the electical box to the new motor frame by tightening the hex screws.

INSTALL NEW MOTOR WIRES/CONDUIT:
Connect the new conduit with the new motor wires to the motor and the electrical box. Be sure that the end with the stripped ends is going to the motor. Refer to the wiring diagrams supplied for connections. It may be necessary to remove unused wires from the conduit assembly depending on if a brake is used and phase.



Lift-Master
The Professional Line

Frame Assembly Replacement Kit for Model "GT" Operators

APPLICATION REQUIREMENTS:
Replacement of Frame and/or its components for a Grey Line Model GT Operator.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING MOTOR WIRES/CONDUIT:
Disconnect the Motor and brake wires from the electrical box. Remove the nut on the conduit connectors in the electrical box and set off to the side for reinstallation. Leave the other side of the conduit connected to the motor and brake.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and set aside for reinstallation.

Remove the hardware securing the electrical box to the mounting bracket and discard, carefully remove electrical box and set off to the side for reinstallation.

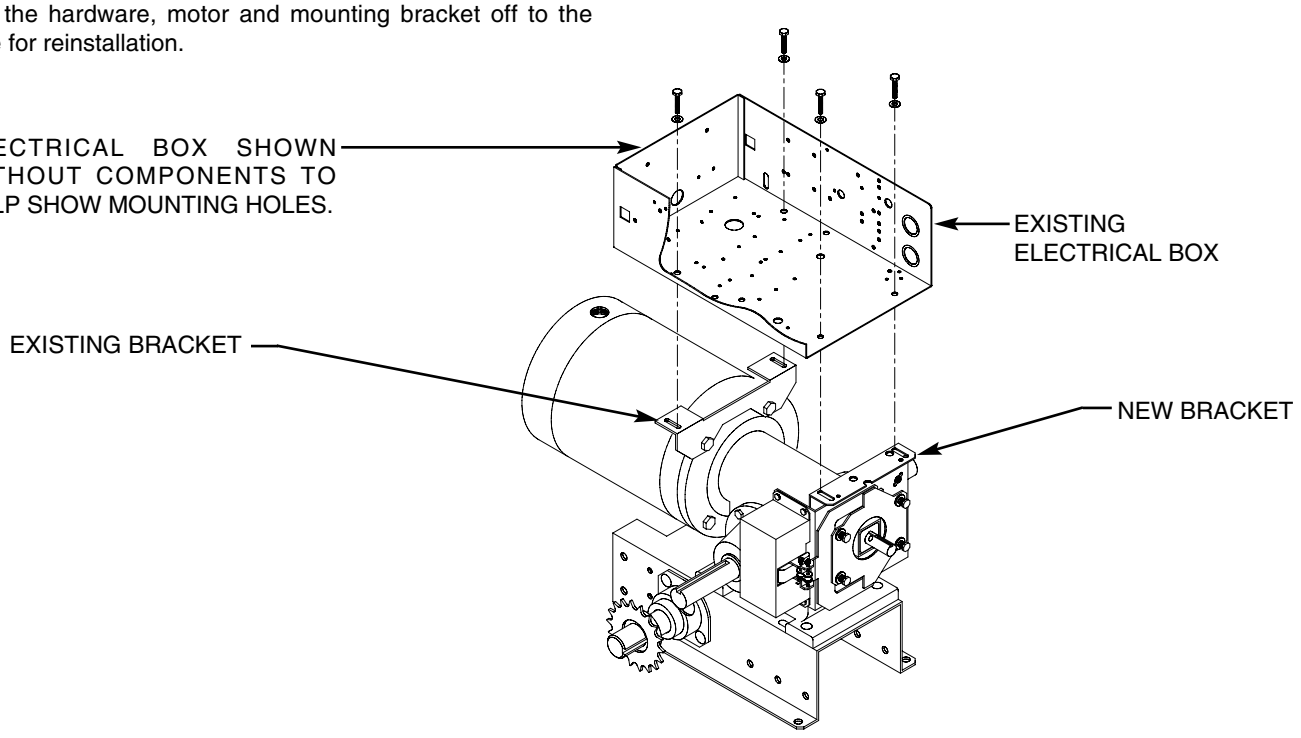
REMOVE EXISTING MOTOR and BRACKET:
Remove the hex bolts, lockwashers and flatwashers securing the motor, gear reducer and mounting bracket. Set the hardware, motor and mounting bracket off to the side for reinstallation.

MOUNTING MOTOR TO NEW FRAME:
Mount the existing motor and the mounting bracket to the new frame assembly in the same manner as they were removed from the old frame. Secure in place with the existing hardware.

MOUNTING BOX TO NEW FRAME:
Place the electrical box on the new motor frame, aligning the holes in the box with their corresponding slots on the frame mounting brackets (see illustration). Attach the electrical box using the hardware provided. Do not tighten screws at this time (Refer to illustration below).

Reinstall the existing limit chain and secure with master link. Slide the electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the electrical box to the new motor frame by tightening the hex screws.

INSTALL MOTOR WIRES/CONDUIT:
Connect the conduit with the motor and brake wires to the electrical box. Refer to the wiring diagrams supplied for connections.



Lift-Master
The Professional Line

Electrical Box Assembly Replacement Kit for Model "GT" Operators

APPLICATION REQUIREMENTS:
Replacement of Electrical Box and/or its components for a Grey Line Model GT Operators.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING MOTOR WIRES/CONDUIT:
Disconnect the motor wires from the electrical box and the motor. Pull the two blue/black wires that run to the brake out of the conduit that runs to the motor, leave the wires in the brake conduit. Discard the remaining motor wires, connectors and conduit. Disconnect the side of the brake conduit connected to the electrical box and and let it lay of to the side for reinstallation.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and set off to the side for reinstallation.

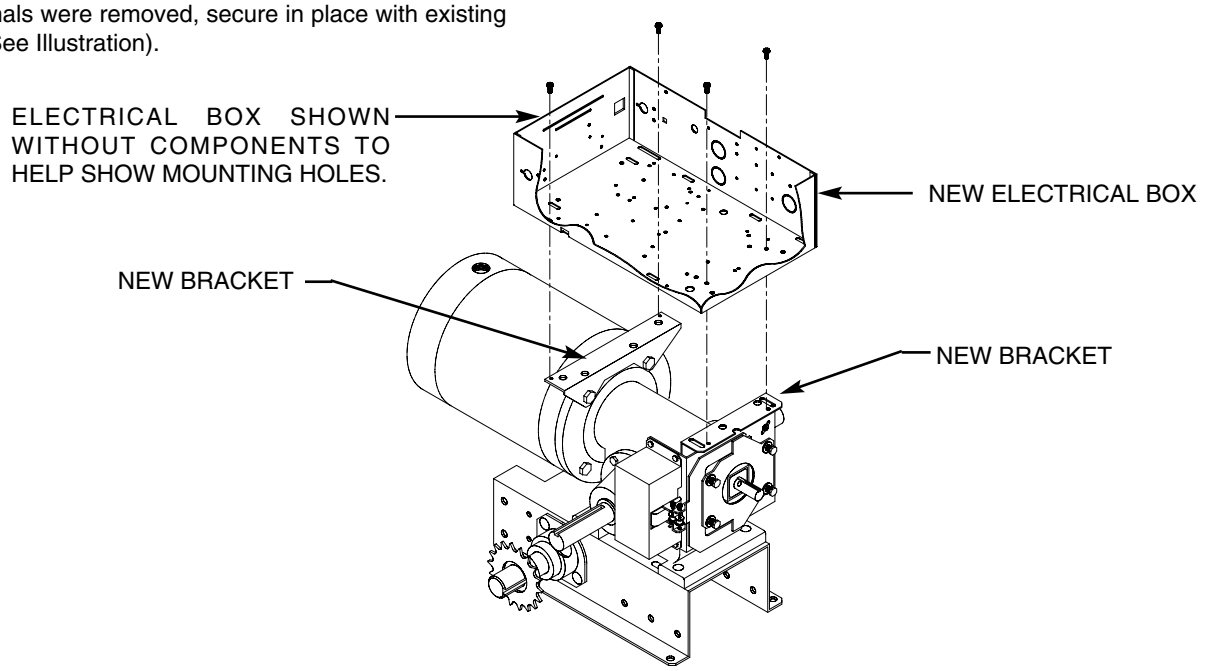
Remove the hardware securing the electrical box to the mounting brackets and discard, carefully remove electrical box.

INSTALL NEW BRACKETS:
Remove the two mounting brackets from the frame and discard. Mount the two new brackets in the same manner as the originals were removed, secure in place with existing hardware (See Illustration).

MOUNTING NEW ELECTRICAL BOX:
Place the electrical box on the mounting brackets, aligning the slots in the box with the holes in the mounting brackets (See Illustration). Attach the new electrical box using the (4) screws provided. Do not tighten screws at this time.

Install the existing limit chain and secure with master link. Slide the electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the electrical box to the new mounting brackets by tightening the hex screws.

INSTALL NEW MOTOR WIRES/CONDUIT:
Connect the new conduit to the electrical box. Reconnect the brake conduit to the electrical box, Feed the two brake wires through the new motor conduit. Refer to the wiring diagrams supplied for connections. It may be necessary to remove unused wires from the conduit assembly depending on horse power and phase.



Lift-Master
The Professional Line

Electrical Box Assembly Replacement Kit for Model "T" & "SD" Operators

APPLICATION REQUIREMENTS:
Replacement of Electrical Box and/or its components for a Grey Line Model T & SD Operators.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING MOTOR WIRES/CONDUIT:
Disconnect the Motor wires from the electrical box and the motor. Discard Motor wires, conduit and connectors.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and discard.

Remove the four flanged hex screws securing the electrical box tabs to the motor frame and discard, carefully remove electrical box.

MODIFYING EXISTING FRAME:
Locate the #10-32 Tapped Hole nearest the motor. Drill a #21 Drill .159" Dia. Hole 7-3/4" from the hole just located. Repeat same steps on opposite side. (See Figure 1).

MOUNTING NEW ELECTRICAL BOX:
Place the electrical box on the motor plate, aligning the tabs on the box with the holes just located in the step above (See Figures 1 & 2). Attach the new electrical box using the (4) screws provided. Do not tighten screws at this time.

Install the new limit chain and half link, secure with master link. Slide the electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the electrical box to the new motor plate by tightening the hex screws.

INSTALL NEW MOTOR WIRES/CONDUIT:
Connect the new conduit with the new motor wires to the motor and the electrical box. Be sure that the end with the stripped ends is going to the motor. Refer to the wiring diagrams supplied for connections. It may be necessary to remove unused wires from the conduit assembly depending on if a brake is used and phase.

FIGURE 1

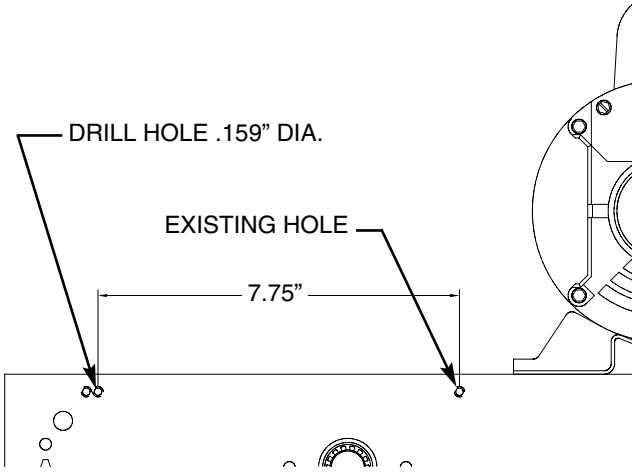
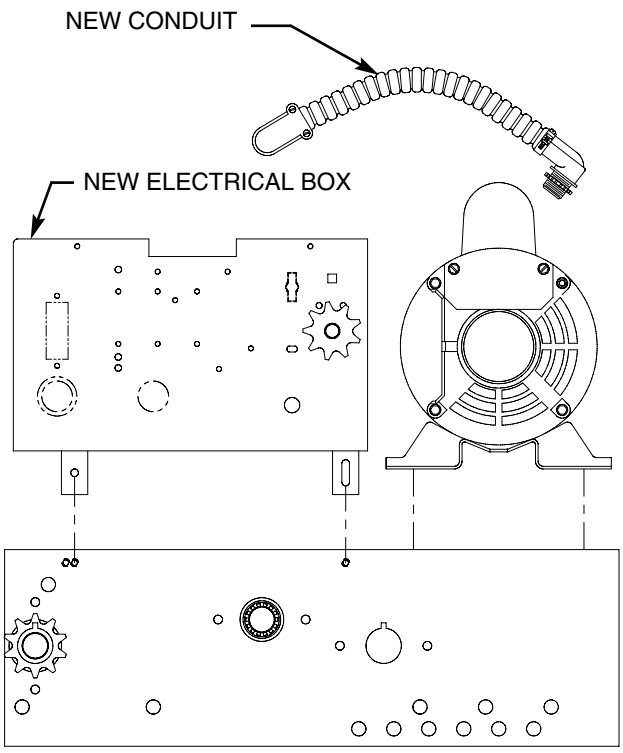


FIGURE 2



CHAMBERLAIN
LiftMaster
PROFESSIONAL

Electrical Box Assembly Replacement Kit for

Model GT Electro-Mechanical Operators

APPLICATION REQUIREMENTS:

Replacement of Electrical Box and/or its components for a Contactor-Relay Style Model GT Operator.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:

Remove the master link from the limit chain, remove the chain and set it aside. Open the electrical box cover. Disconnect the motor wires that pass into the electrical box.

Loosen the two screws of the conduit retaining clamp so that the length of conduit is freed. Remove the four flanged hex screws securing the electrical box to the gear reducer housing. Carefully remove the electrical box and set it aside (the motor wires should slide easily from the conduit).

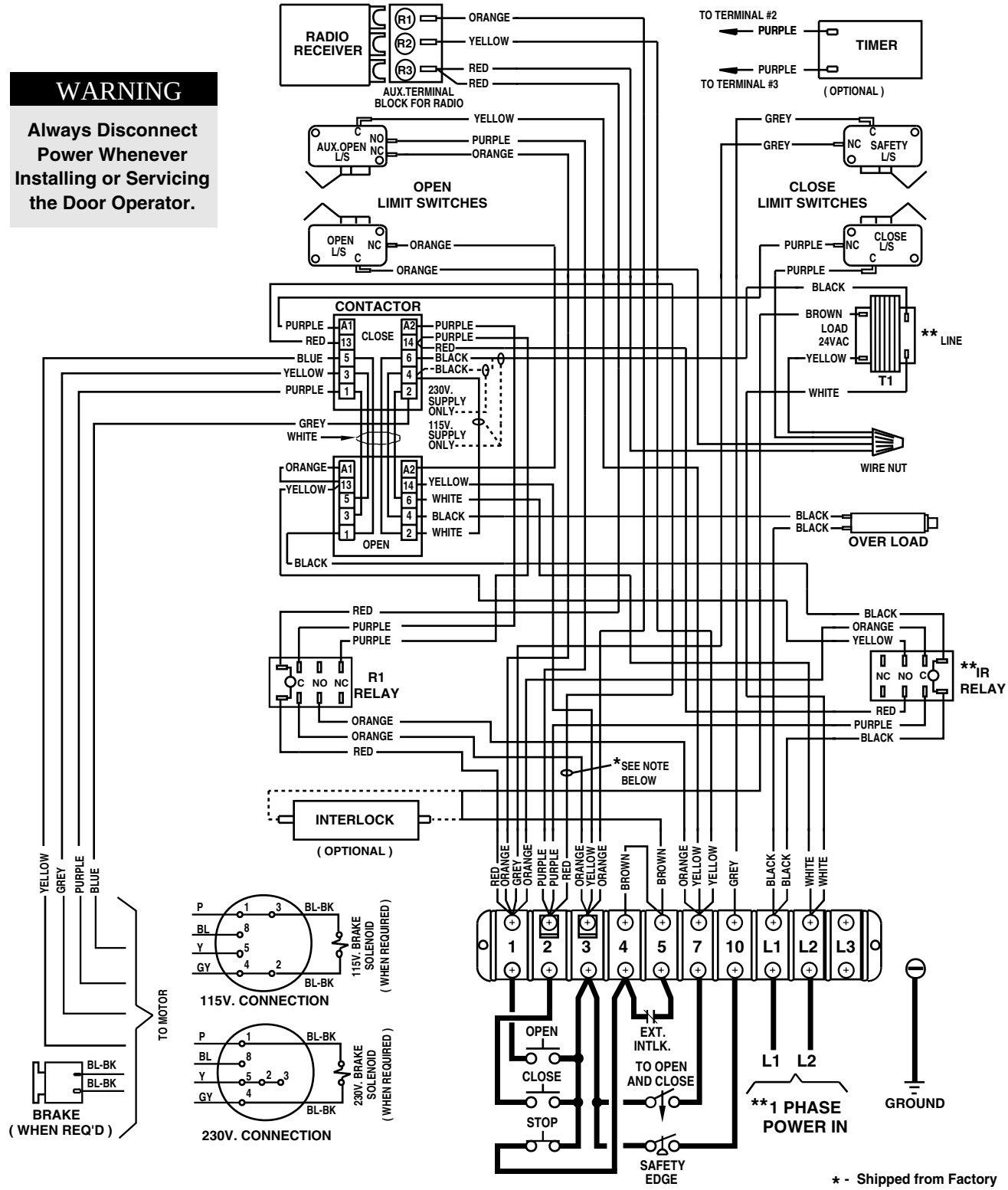
MOUNTING NEW BOX:

Place the new electrical box on the gear reducer housing, aligning the slots in the bottom of the box with the corresponding holes in the housing's mounting brackets (see illustration). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electrical box to the gear reducer housing by tightening the hex screws.

Reconnect the motor wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and close the electrical box cover. Restoring power completes the installation.

SINGLE PHASE WIRING DIAGRAM 1742-1



WARNING

Always Disconnect Power Whenever Installing or Servicing the Door Operator.

** - Transformer Primary & Relay Voltage same as Line Voltage.

TO REVERSE MOTOR DIRECTION INTERCHANGE PURPLE & GRAY WIRES.

* - Shipped from Factory

CLOSE CONTROL WIRING OPTIONS

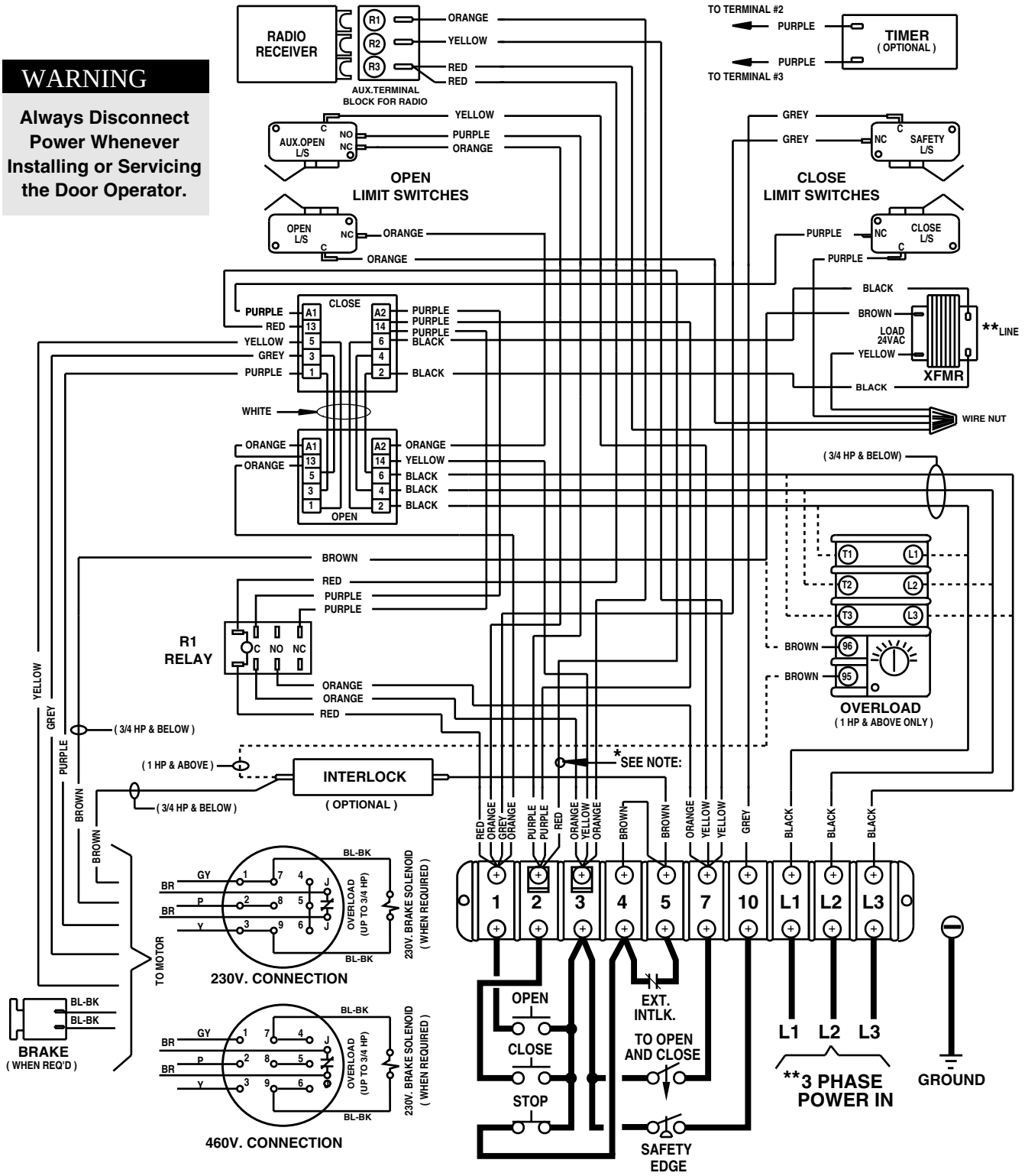
***C2 WIRING - Constant Presssure to Close**
RED WIRE ON TERMINAL #2 (Shipped from Factory)

B2 WIRING - Momentary Contact to Close
MOVE RED WIRE FROM TERMINAL #2 TO TERMINAL #3

THREE PHASE WIRING DIAGRAM 1742-3

WARNING

Always Disconnect Power Whenever Installing or Servicing the Door Operator.



** - Transformer Primary Voltage same as Line Voltage.

TO REVERSE MOTOR DIRECTION INTERCHANGE PURPLE & GRAY WIRES.

* - Shipped from Factory

CLOSE CONTROL WIRING OPTIONS

***C2 WIRING - Constant Presssure 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

01-12850A

Printed in Mexico

Electrical Box Assembly Replacement Kit for

Model GT Solid State Operators

APPLICATION REQUIREMENTS:

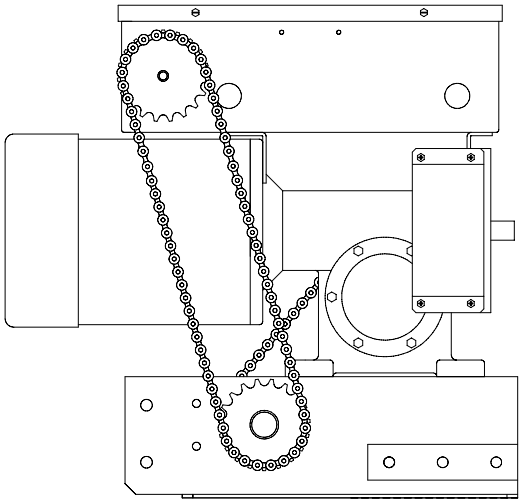
Replacement of Electrical Box and/or its components for a Solid State Control Model GT Operator.

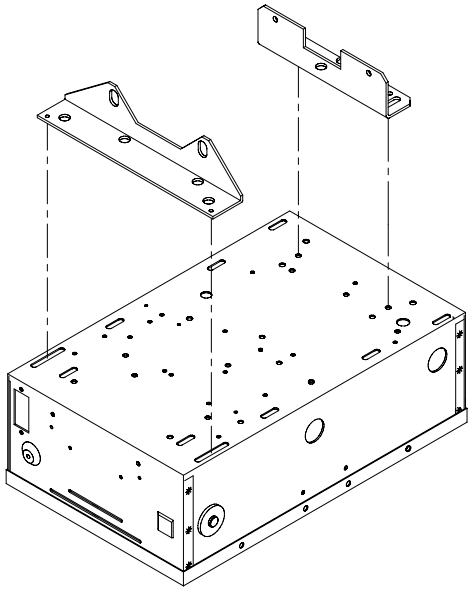
WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.





WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:

Remove the master link from the limit chain, remove the chain and set it aside. Open the electrical box cover. Disconnect the motor wires that pass into the electrical box.

Loosen the two screws of the conduit retaining clamp so that the length of conduit is freed. Remove the four flanged hex screws securing the electrical box to the gear reducer housing. Carefully remove the electrical box and set it aside (the motor wires should slide easily from the conduit).

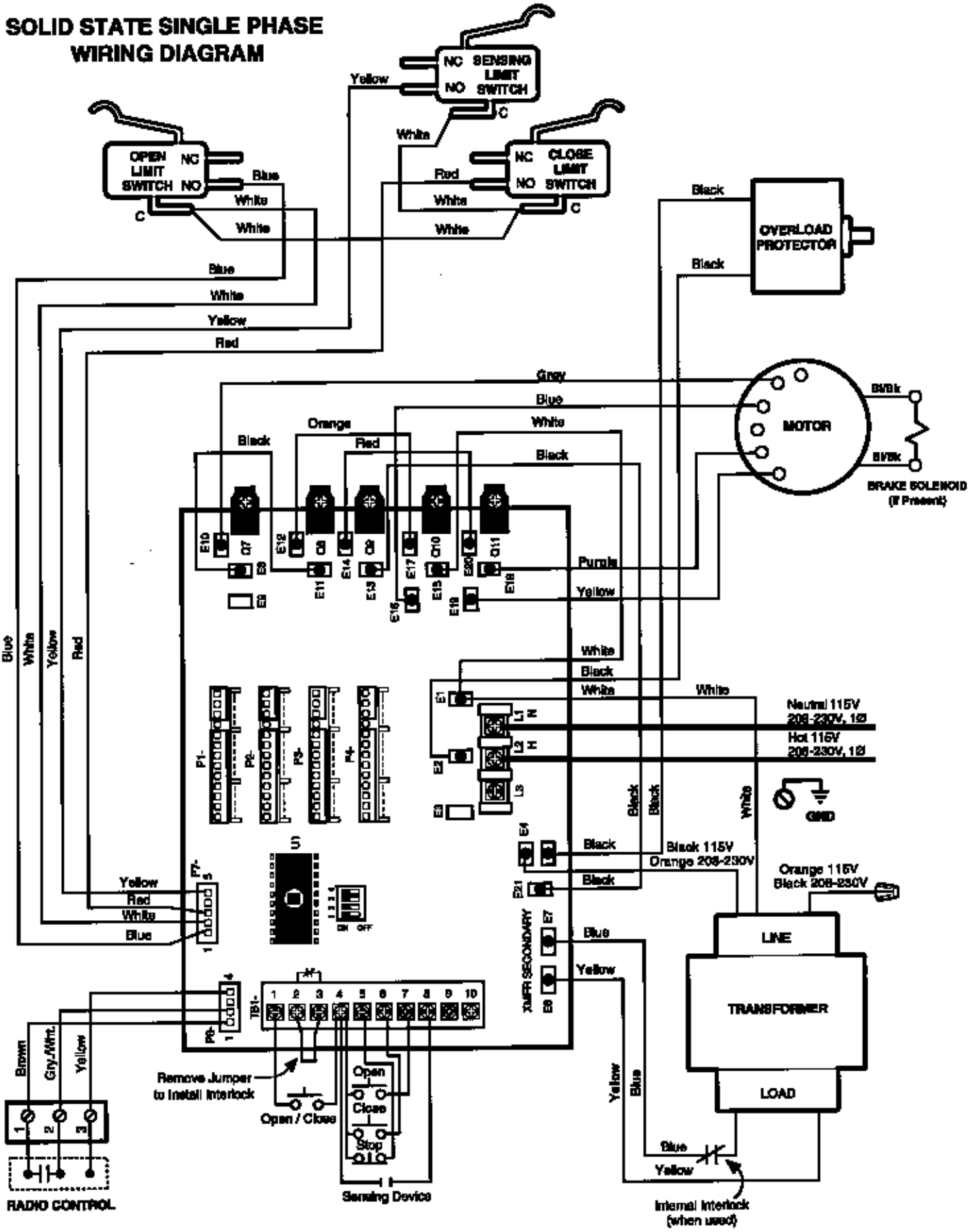
MOUNTING NEW BOX:

Place the new electrical box on the gear reducer housing, aligning the slots in the bottom of the box with the corresponding holes in the housing's mounting brackets (see illustration). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

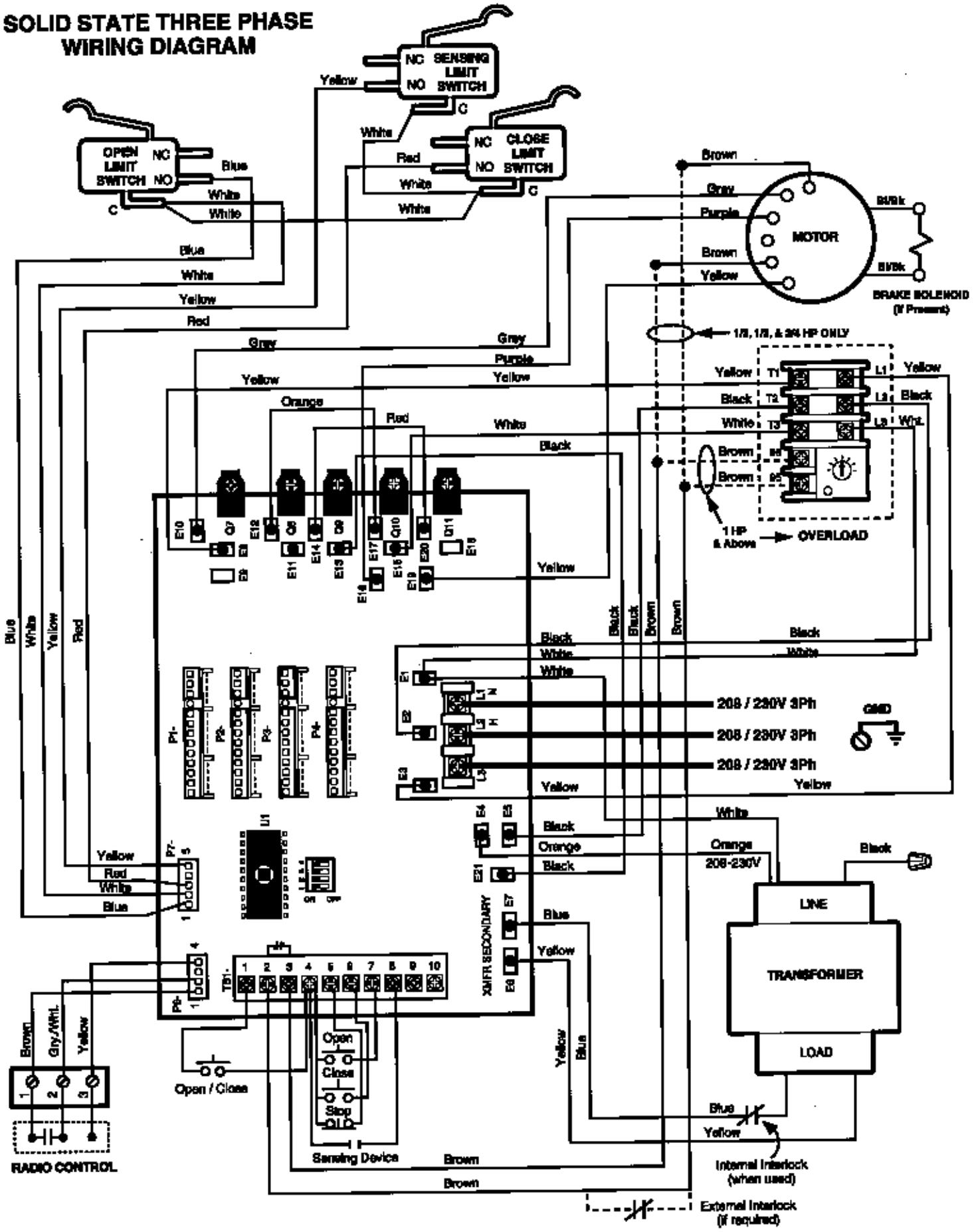
Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electrical box to the gear reducer housing by tightening the hex screws.

Reconnect the motor wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and close the electrical box cover. Restoring power completes the installation.

SOLID STATE SINGLE PHASE WIRING DIAGRAM



SOLID STATE THREE PHASE WIRING DIAGRAM



01-12851A

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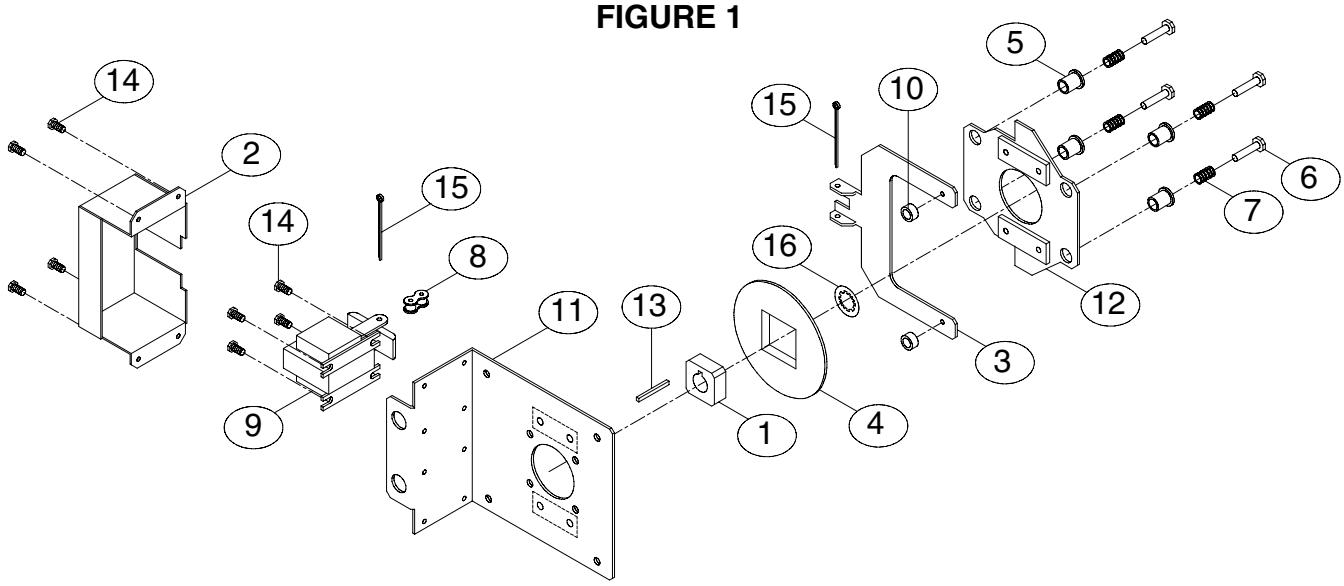
K75-12855 OR K75-12856 OR K75-12857
Brake Assembly Service Kit for Model T or GT Operators

APPLICATION REQUIREMENTS:
Replacement of Brake Assembly and/or its components for a Model T or GT Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	07-10179	Brake Hub	1
2	10-10187	Brake Solenoid Cover	1
3	10-10190	Brake Release Lever	1
4	10-10191	Brake Disc, Zinc Plated	1
5	11-10192	Spring Cup for Brake Assembly	4
6	11-10193	Brake Stud	4
7	18-10194	Spring, Compression x .875" Long	4
8	19-48001	Chain, #48 x 1 Pitch	1
9	22-120	Brake Solenoid, 115V	1
	22-240	Brake Solenoid, 230-460V	1
	22-575	Brake Solenoid, 575V	1
10	31-10186	Spacer, .20 I.D. x .31 Long	2
11	75-10180	Brake Mounting Plate Assembly	1
12	75-10184	Brake Pressure Plate Assembly	1
13	80-9001	Feather Key	1
14	82-WX10-08T	Screw, #10-32 x 1/2" Serrated Flange	8
15	86-CP04-112	Cotter Pin, 1/8" x 1-3/4" Zinc Plate	2
16	87-P-062	Push on Fastener, 5/8" Int. Star	1

FIGURE 1



INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

BEFORE BEGINNING, ENSURE REPLACEMENT BRAKE KIT IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE OLD BRAKE ASSEMBLY:
Refer to Figures 1 and 2 as necessary. Disconnect the solenoid wire fastons from the brake solenoid. Remove the nut securing the wire conduit to the back of the brake mounting plate. Pull the brake wires out through the hole in the brake plate.

Remove the cotter pins connecting the chain link between the solenoid and brake release lever. Remove the brake studs along with their spring cups and springs. Remove the brake pressure plate assembly, release lever, and spacers.

Remove the push on fastener from the gear reducer shaft. Slide the brake disk, hub, and key from the end of the shaft.

Remove the solenoid cover and the old brake solenoid. Remove the old brake mounting plate assembly.

INSTALL NEW BRAKE ASSEMBLY:
Install the new brake assembly by following the steps outlined above in reverse order, referring to Figures 1 and 2 and the Owner's Manual as necessary. Restoring power completes the installation.

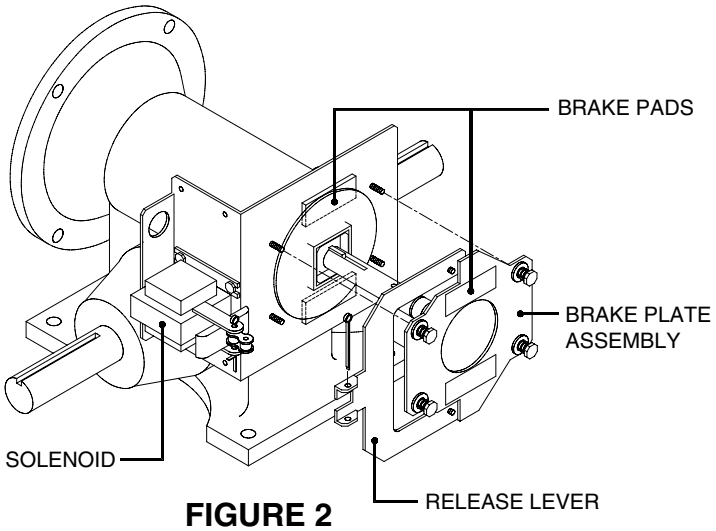


FIGURE 2

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The Professional Line

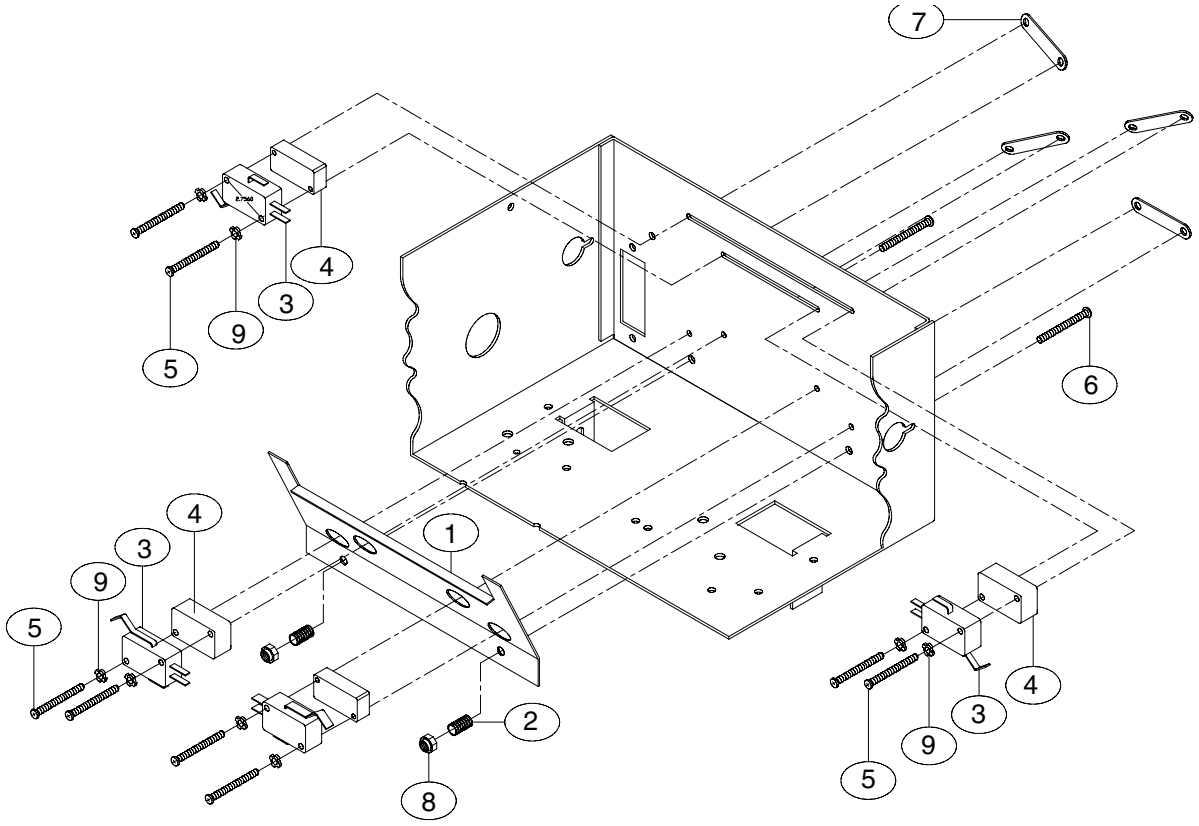
Limit Switch Assembly Replacement Kit for T-Line Operators

APPLICATION REQUIREMENTS:

Replacement of Limit Switch Assembly and/or its components for a Model T Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	10-10013	Depress Plate	1
2	18-10036	Spring, Depress Plate	2
3	23-10041	Limit Switch	4
4	31-12542	Standoff Switch	4
5	82-PX04-19	Screw, #4-40 x 1-3/8 Pan Head Phillips	8
6	82-PX06-16	Screw, #6-32 x 1 Pan Head Phillips	2
7	10-12806	Backup Plate Limit Sw Support	4
8	84-LH-06	Locknut #6-32	2
9	85-IG-04	Lockwasher, #4 Internal Tooth	8



INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING LIMIT ASSEMBLY:

Remove the eight 1-3/8" screws from the tinnerman nuts. Remove the limit switches and standoffs from the electrical box. Remove the two 1" screws from the locknuts. Remove the depress plate springs and the depress plate.

INSTALLING NEW LIMIT ASSEMBLY:

To install the new limit assembly, follow the steps outlined above in the reverse order, refering to the Owner's Manual when necessary.

Lift-Master
The Professional Line

Electrical Box Assembly Replacement Kit for
Model T Solid State Operators

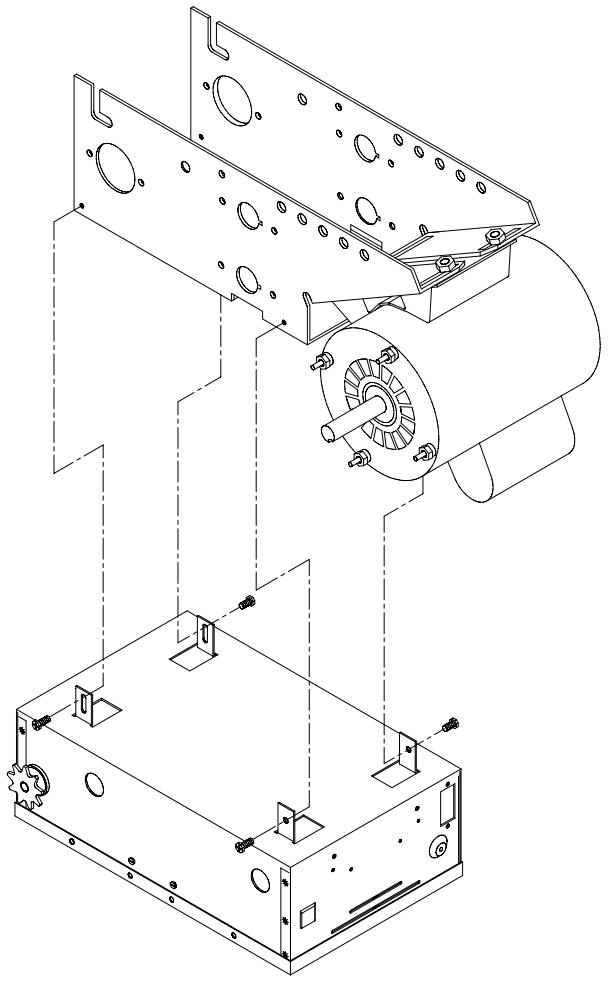
APPLICATION REQUIREMENTS:
Replacement of Electrical Box and/or its components for a Model T Solid State Operator.

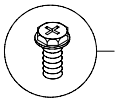
WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.





NOTE: ATTACH ELECTRICAL BOX TO MOTOR FRAME WITH SCREWS PROVIDED.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and place it aside. Disconnect the motor wires that pass into the electrical box.

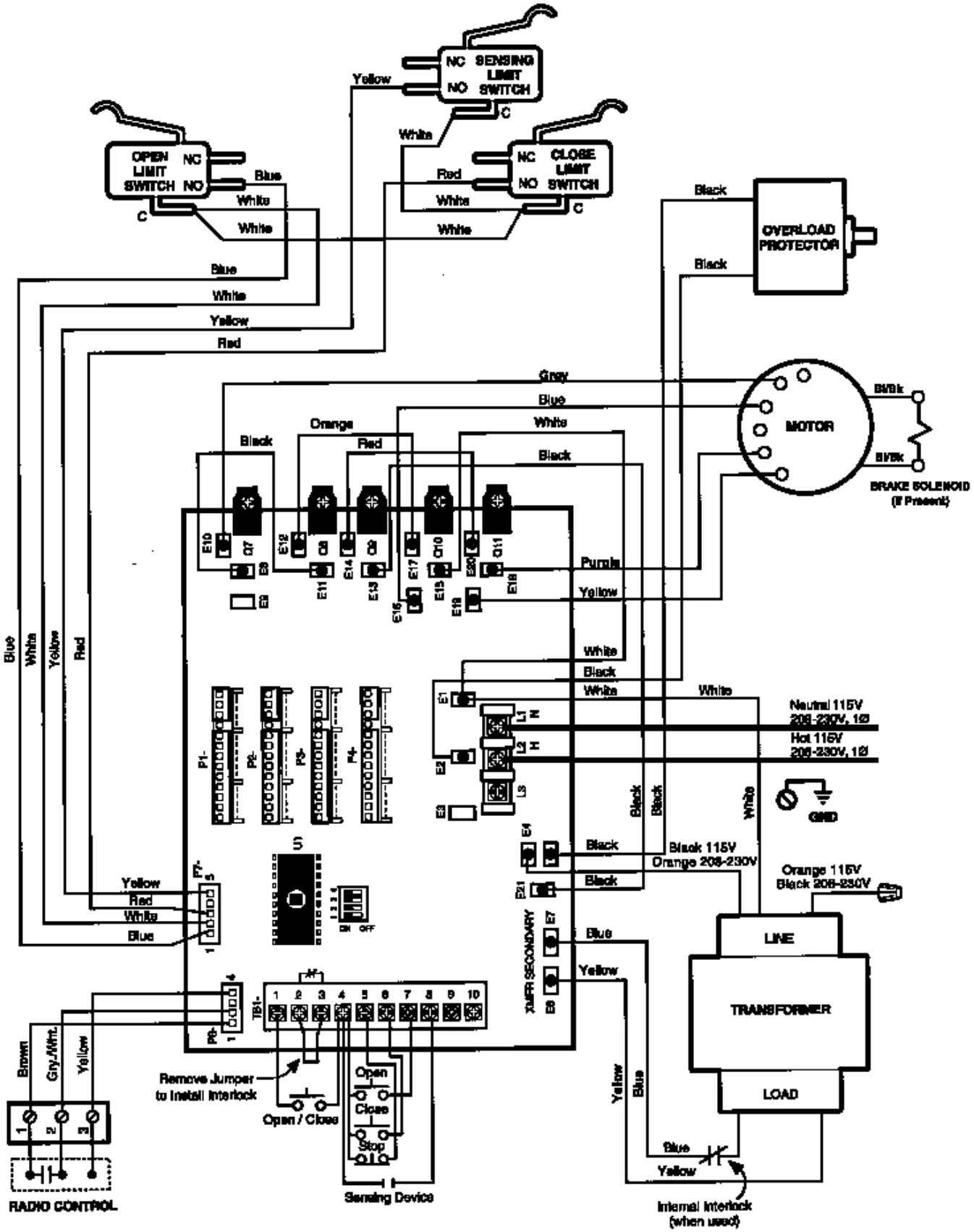
Remove the four flanged hex screws securing the electrical box to the motor frame and carefully remove the old box.

MOUNTING NEW BOX:
Place the new electrical box on the motor frame, aligning the slots in the box with their corresponding holes on the motor frame (see illustration). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

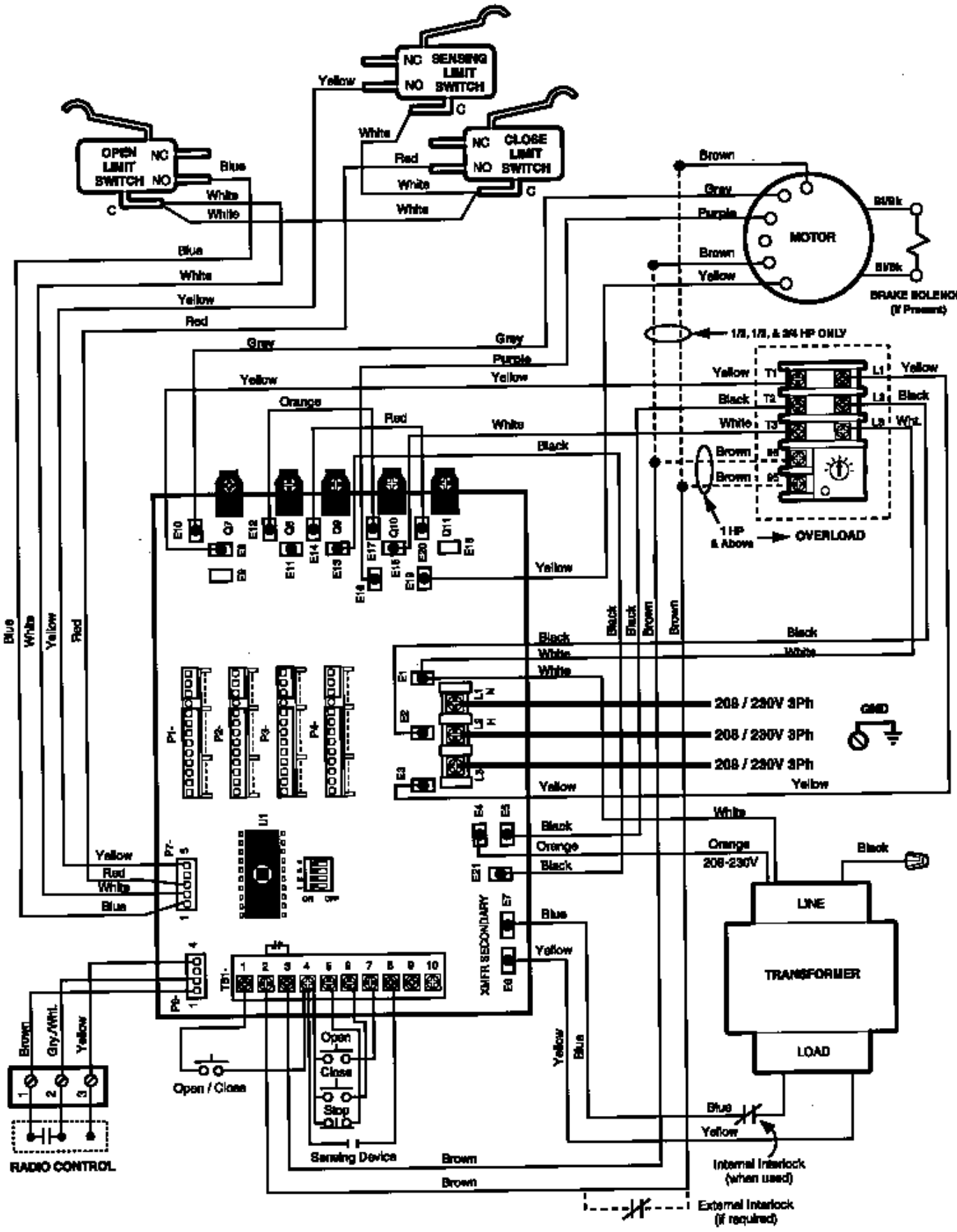
Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electical box to the motor frame by tightening the hex screws.

Reconnect the motor wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and replace the electrical box cover. Restoring power completes the installation.

SINGLE PHASE WIRING DIAGRAM SOLID STATE



THREE PHASE WIRING DIAGRAM SOLID STATE



01-12515B

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Lift-Master
The Professional Line

Electrical Box Assembly Replacement Kit for

Model T Electro-Mechanical Operators

APPLICATION REQUIREMENTS:

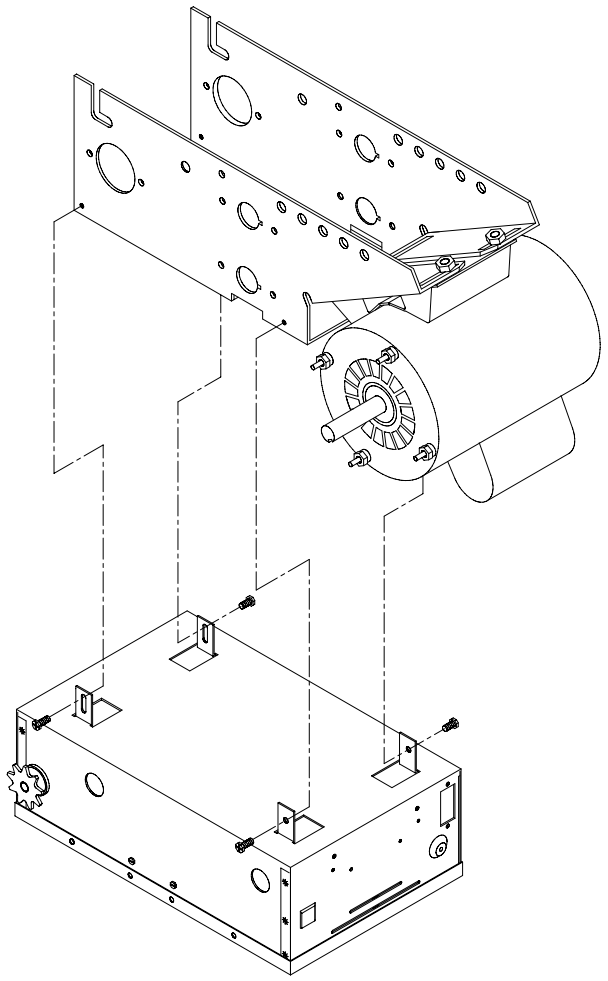
Replacement of Electrical Box and/or its components for a Model T Contactor-Relay style Operator.

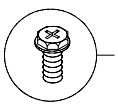
WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.





NOTE: ATTACH ELECTRICAL BOX TO MOTOR FRAME WITH SCREWS PROVIDED.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:

Remove the master link from the limit chain, remove the chain and place it aside. Disconnect the motor wires that pass into the electrical box.

Remove the four flanged hex screws securing the electrical box to the motor frame and carefully remove the old box.

MOUNTING NEW BOX:

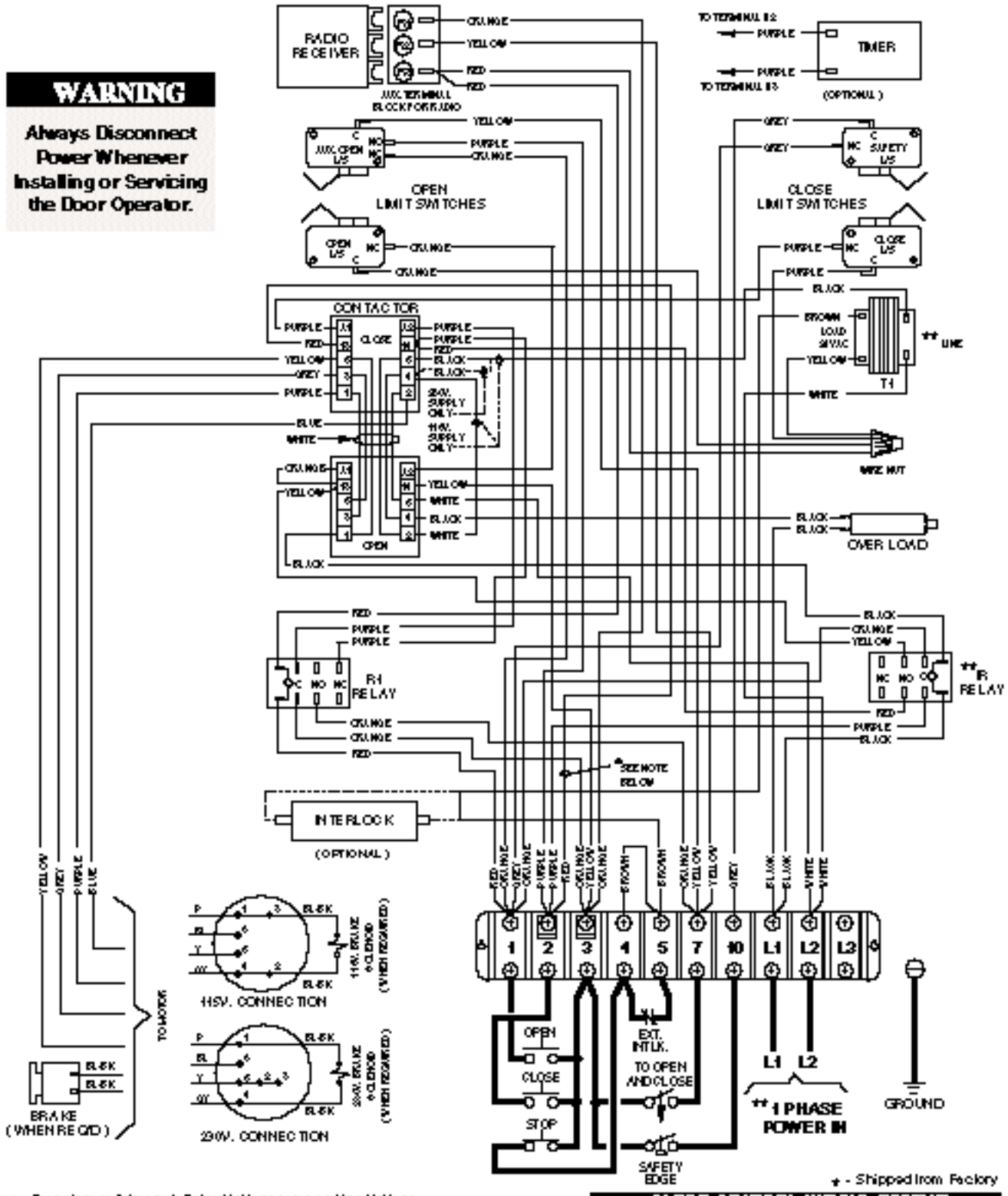
Place the new electrical box on the motor frame, aligning the slots in the box with their corresponding holes on the motor frame (see illustration). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electical box to the motor frame by tightening the hex screws.

Reconnect the motor wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and replace the electrical box cover. Restoring power completes the installation.

SINGLE PHASE WIRING DIAGRAM

1742-1



** - Transformer Primary & Relay Voltage same as Line Voltage.

* - Shipped from Factory

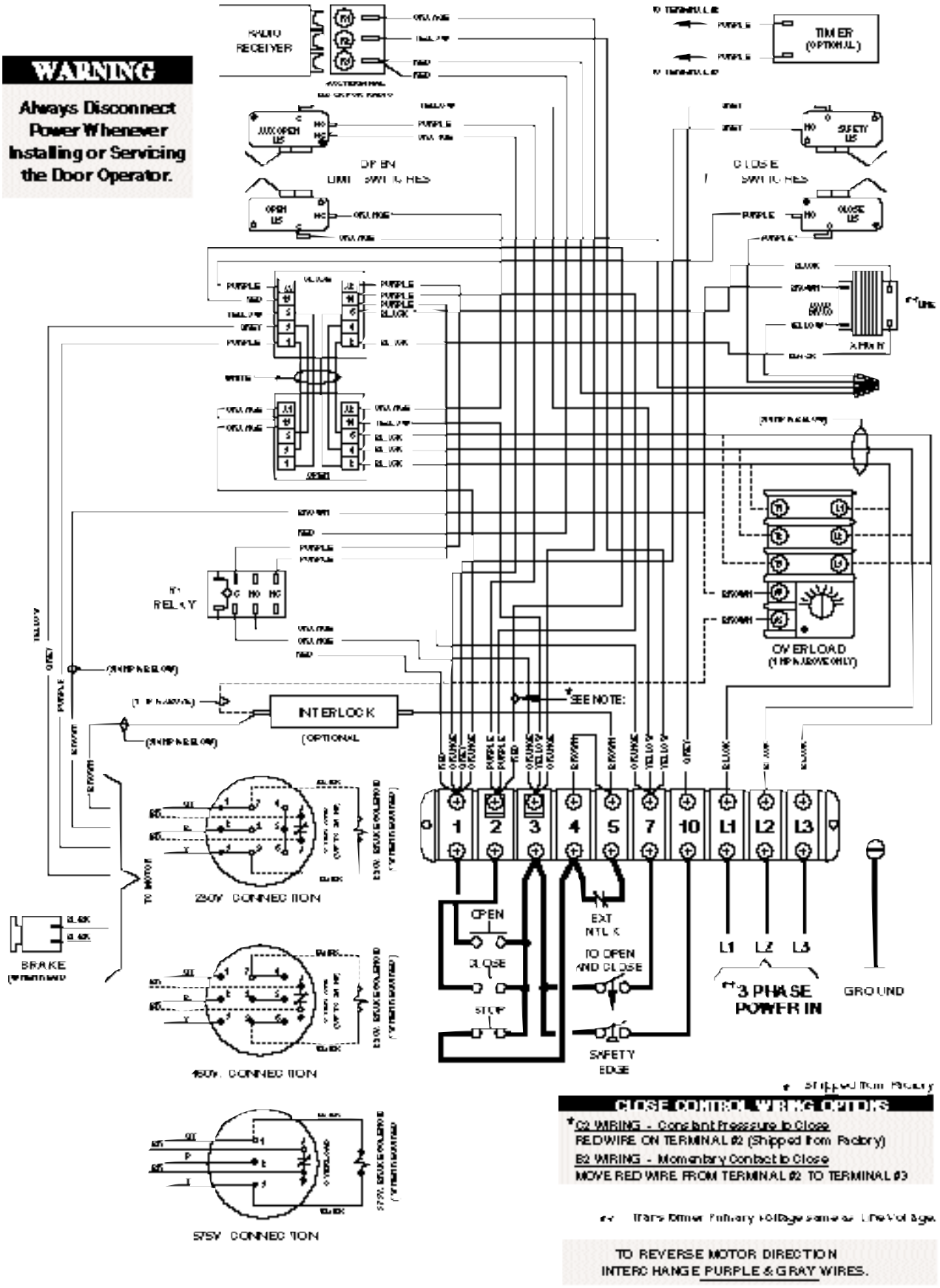
TO REVERSE MOTOR DIRECTION
INTERCHANGE PURPLE & GRAY WIRES.

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

THREE PHASE WIRING DIAGRAM 1742-3



01-12503B

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Lift-Master
The Professional Line

LGO Limit Switch Assy Replacement Kit K74-16420

APPLICATION REQUIREMENTS:
Replacement of Limit Switch and/or its components for a Model LGO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING LIMIT SWITCH ASSEMBLY:
Disconnect the wire connections to the limit switches. Remove the six screws from the nut plates. Remove the limit switches, internal grip washers and standoffs from the electrical box and discard.

Remove the two 1" screws from the locknuts. Remove the depress plate and depress plate springs and discard.

INSTALLING NEW LIMIT ASSEMBLY:
To install the new limit assembly, follow the steps outlined above in the reverse order. Reconnect the wires to the new limit switches.

WARNING

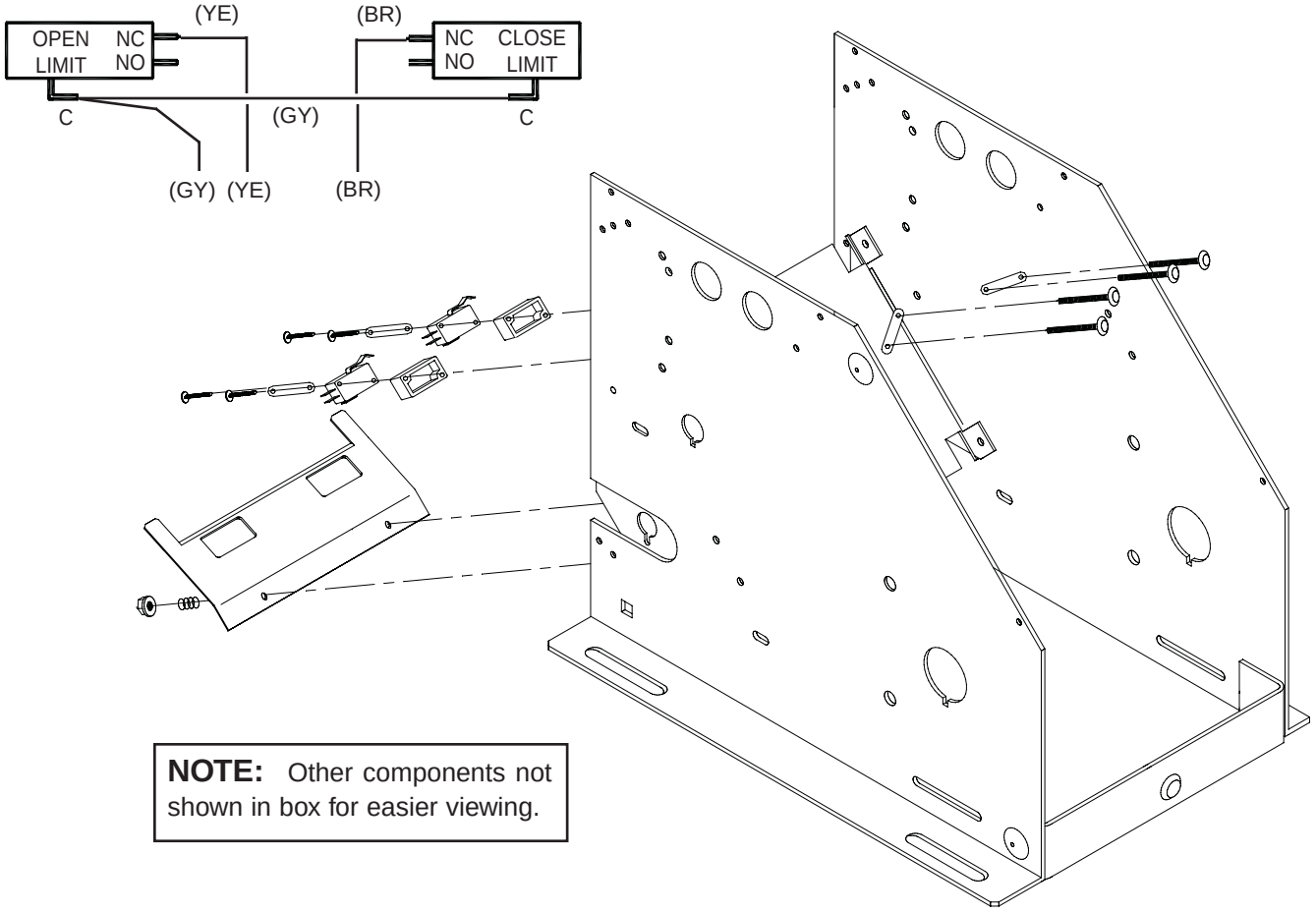
DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

WIRE CONNECTIONS

Refer to the illustration below and for complete wiring diagram see reverse side.



NOTE: Other components not shown in box for easier viewing.

Lift-Master
The Professional Line

LGO RPM Sensor Assy Replacement Kit K75-16426

APPLICATION REQUIREMENTS:
Replacement of RPM Sensor and/or its components for a Model LGO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING SENSOR ASSEMBLY:
Remove the cover from the operator. Disconnect the 4-wire connector from the RPM sensor. Remove the interrupter cup from the motor shaft. Un-click the RPM board assembly from the motor bracket.

INSTALLING NEW ASSEMBLY:
To install the new rpm sensor follow the steps outlined above in reverse order, referring to the Owner's Manual if necessary. Restoring power completes the installation.

WARNING

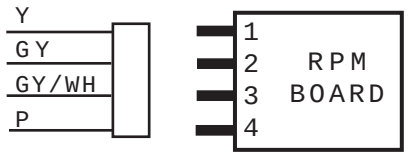
DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

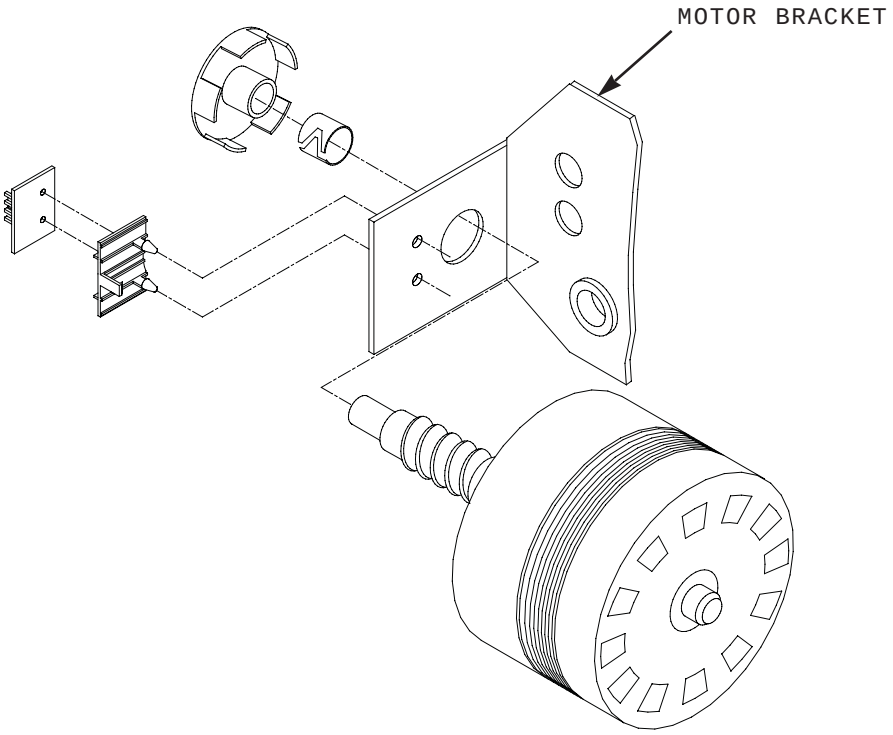
ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.

WIRING CONNECTIONS

For complete wiring diagram see reverse side



Wire harness



Assembly shown exploded for easier viewing of part locations.

Lift-Master
The Professional Line

SENSING EDGE CONNECTION KIT
P/N: LGOSE
Model: LGO

INSTALLING NEW SENSING EDGE SWITCH

NOTE: All the parts needed for the following steps are included in the Sensing Edge Connection Kit. For additional help refer to figures 1 and 2.

1. Open the access panel on the bottom of the operator by loosening the 2 screws.

2. Remove two screws and the nut plate holding the close limit switch to the operator, this is the switch with the brown and gray wires. Discard the nut plate.

3. Using the two screws you removed in step 2, assemble the adjustable bracket to the existing close limit switch.

4. Using the (2) 1/4" long pan head screws and internal grip washers, assemble the fixed bracket assembly with the new sensing edge switch to the adjustable bracket on the close limit switch. Do not fully tighten the screws at this time.

5. Refer to figure 2 and wire accordingly.

6. Be sure that all wiring is secured away from all moving parts with the cable ties supplied.

7. Re-connect power and adjust the edge limit switch so that it activates just before the close limit. Tighten the two adjusting screws from step 4.

NOTE: Failure to adjust the edge limit switch will cause false reversals.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.

FIGURE 2

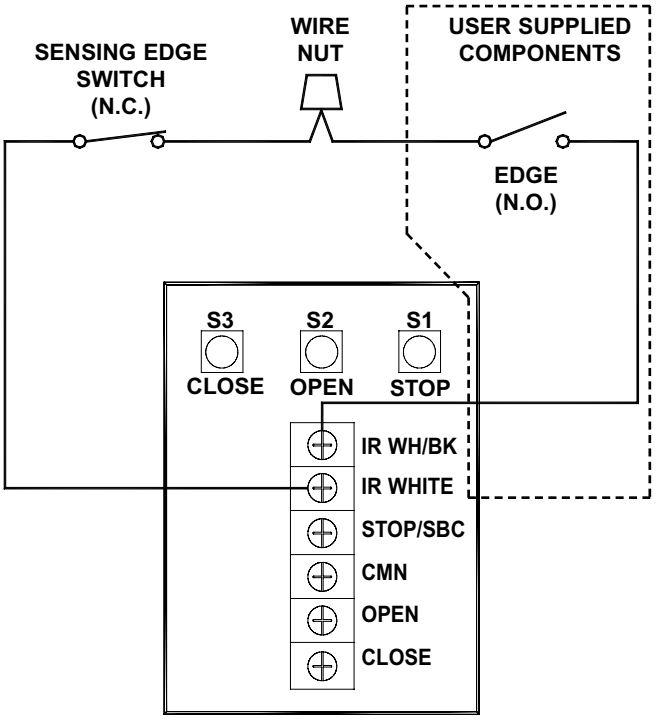
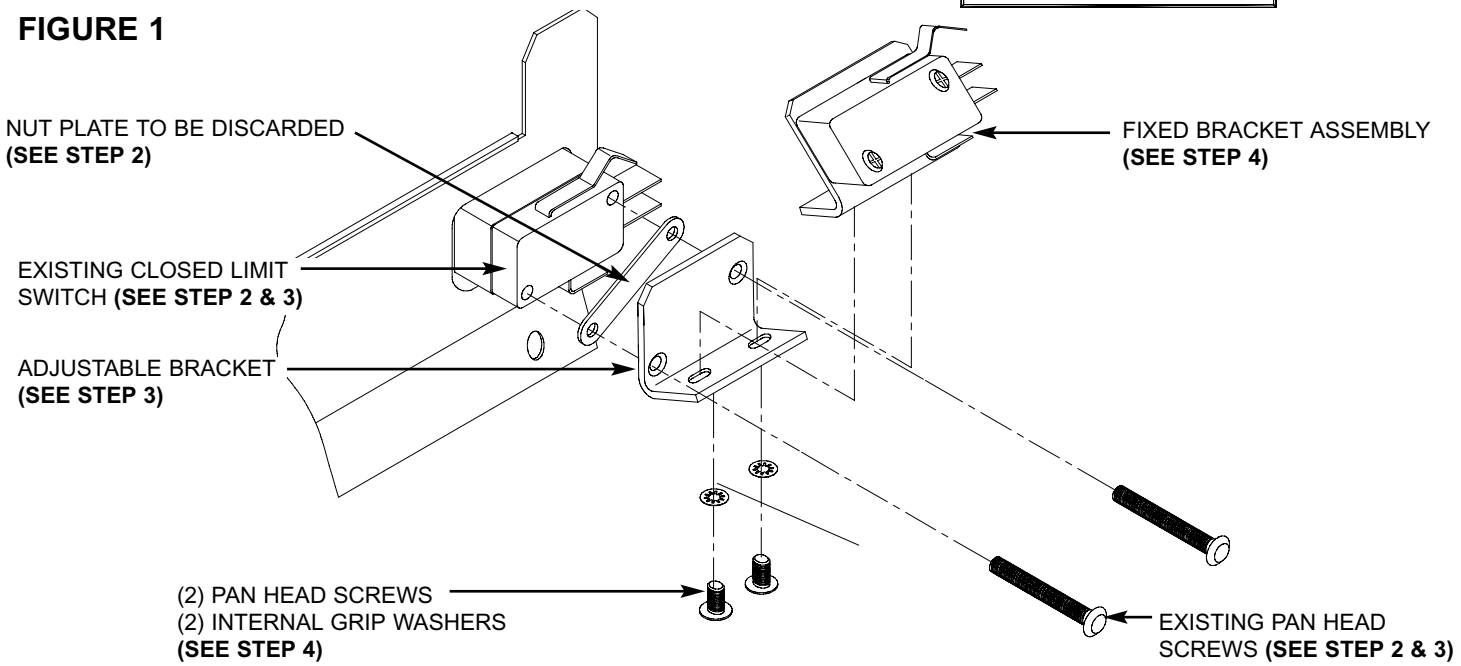


FIGURE 1



Lift-Master
The Professional Line

LGO Output Shaft Assy Replacement Kit K72-16422

APPLICATION REQUIREMENTS:

Replacement of Output Shaft and/or its components for a Model LGO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING OUTPUT SHAFT:

Remove the cover from the operator. Remove the master link from the reduction chain, remove the chain and place it aside. Remove the disconnect yoke. Remove the e-ring on the disconnect side and slide off the sprocket. Remove a second e-ring and the disconnect hub and spring, place all these parts aside. Remove the roll pin from the sprocket. Remove the e-ring, washers and bushing from each end of the shaft. Slide the shaft towards the disconnect side of the operator while holding the sprocket.

INSTALLING NEW OUTPUT SHAFT:

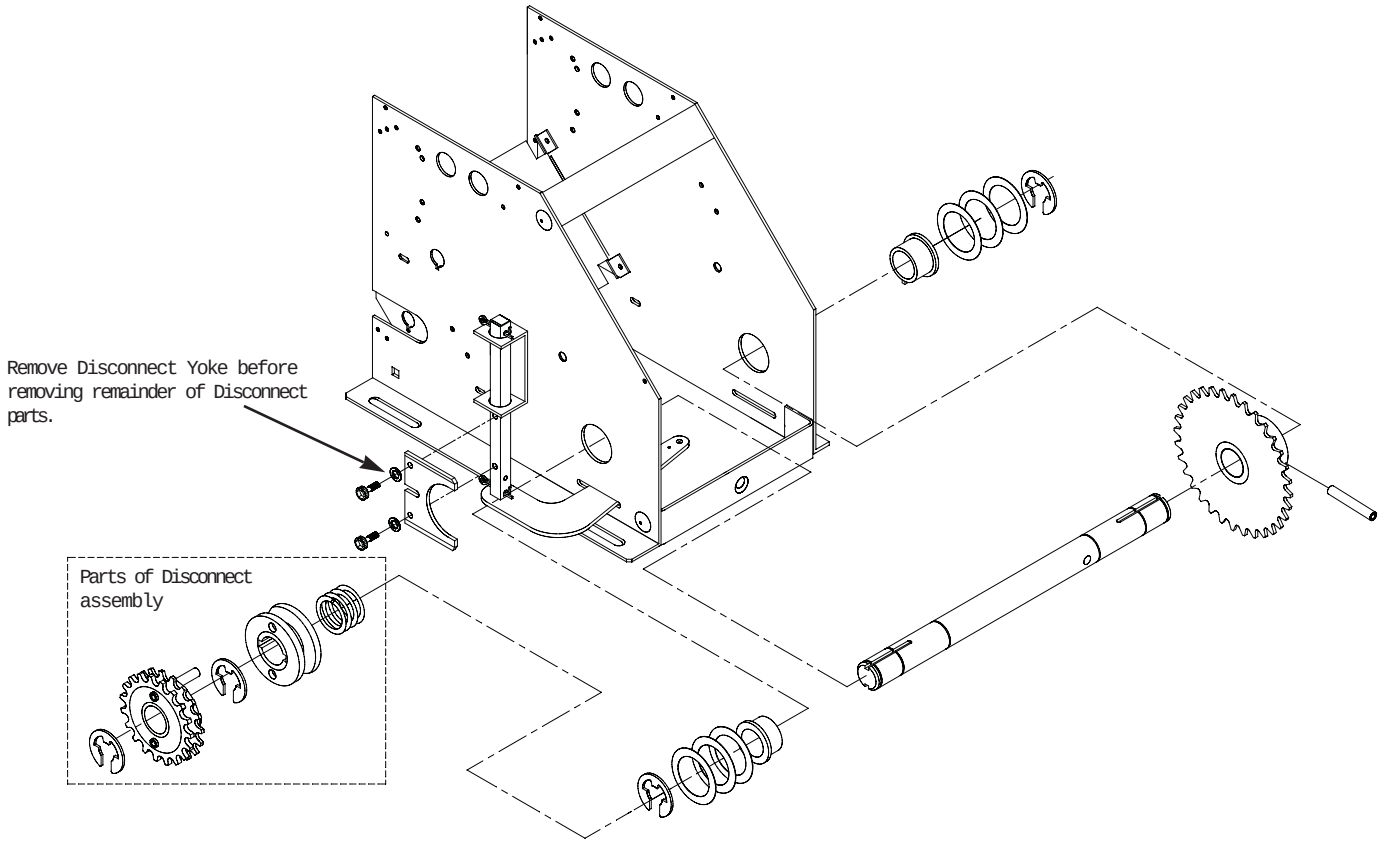
To install the new output shaft follow the steps outlined above in reverse order, referring to the Owner's Manual if necessary. Restoring power completes the installation.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.



Lift-Master
The Professional Line

LGO Disconnect Assy Replacement Kit K75-16423

APPLICATION REQUIREMENTS:

Replacement of Disconnect and/or its components for a Model LGO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING DISCONNECT ASSEMBLY:

Remove the master link from the output chain. Remove the disconnect yoke with the two socket head screws. Remove the E-ring holding the sprocket on, slide off the sprocket and remove the second E-ring holding the disconnect hub and spring in place. To remove the disconnect shaft assembly, remove the operator cover and then remove the two nuts holding the support bracket to the operator. Remove the disconnect chain cotterpin from the release lever and slide chain through the front hole. The disconnect assembly can now be removed from the operator

INSTALLING NEW DISCONNECT ASSEMBLY:

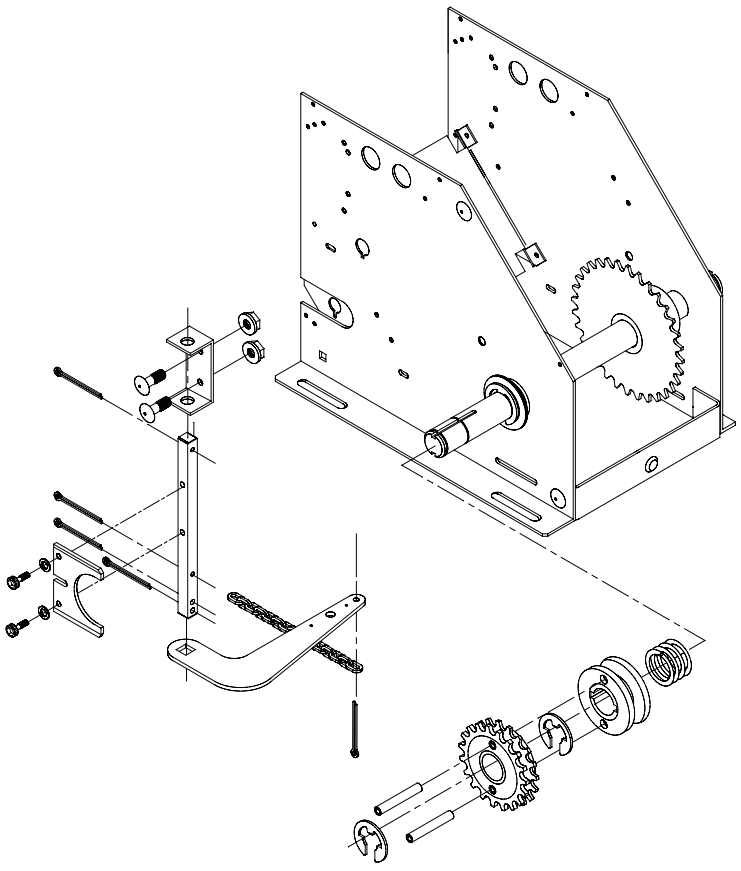
To install the new disconnect assembly, follow the steps outlined above in the reverse order.Refer to the owners manual and illustration below for more information.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.



Lift-Master
The Professional Line

LGO Motor Replacement Kit
K75-16424

APPLICATION REQUIREMENTS:
Replacement Motor kit and/or its components for a Model LGO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING MOTOR:
Remove the cover from the operator. Remove the interrupter cup from the motor shaft and place it aside. Remove the bushing attatched to the shaft. Remove the three nuts which hold the motor to the bracket and put aside. Disconnect the three motor wires. Slide motor out of the operator and remove the worm gear and roll pin.

INSTALLING NEW MOTOR:
To install the new motor follow the steps outlined above in reverse order, referring to the Owner's Manual if necessary. Restoring power completes the installation.

WIRING CONNECTIONS

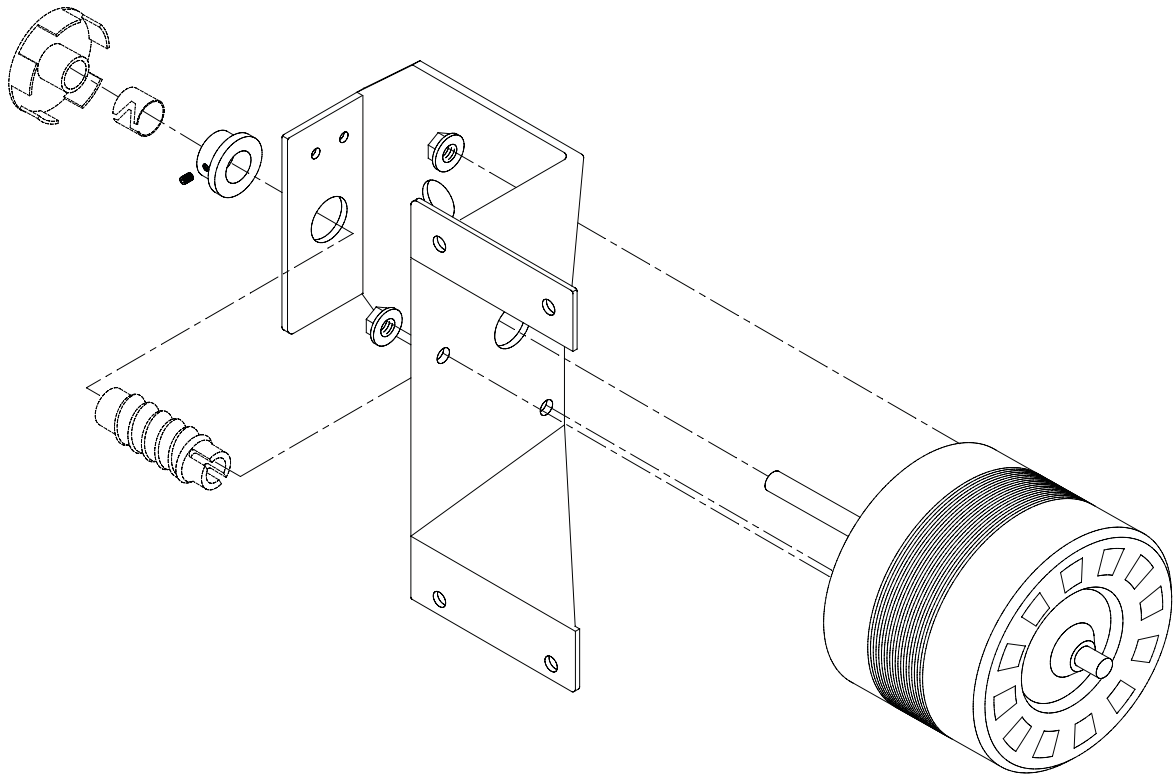
See reverse side for complete wiring diagram.

⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.



Lift-Master
The Professional Line

LGO Reduction Shaft Assy Replacement Kit for K72-16425

APPLICATION REQUIREMENTS:

Replacement of Reduction Shaft and/or its components for a Model LGO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING SHAFT:

Remove the cover from the operator. Remove the master link from the reduction chain, remove the chain and place it aside. Remove the three roll pins from the shaft (one on sprocket, and two in the gear). Remove e-ring from either end of the shaft and slide shaft out the other. To change the worm gear, remove the interrupter cup and bearing on the end of the motor shaft. Remove the three nuts holding the motor to the bracket. There is enough room to drop the motor down and slide the worm gear off the shaft.

INSTALLING NEW SHAFT:

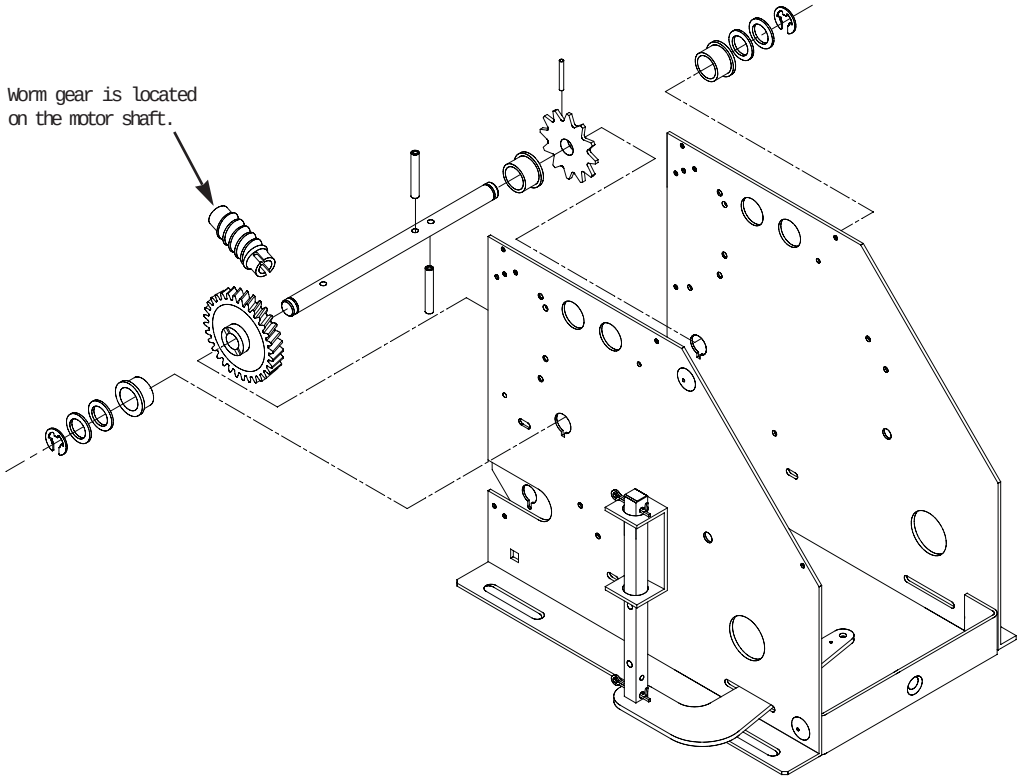
To install the new reduction shaft follow the steps outlined above in reverse order, referring to the Owner's Manual if necessary. Restoring power completes the installation.

⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.



Lift-Master
The Professional Line

Electrical Box Assembly Replacement Kit for 1/2 HP FDO-Line Operators

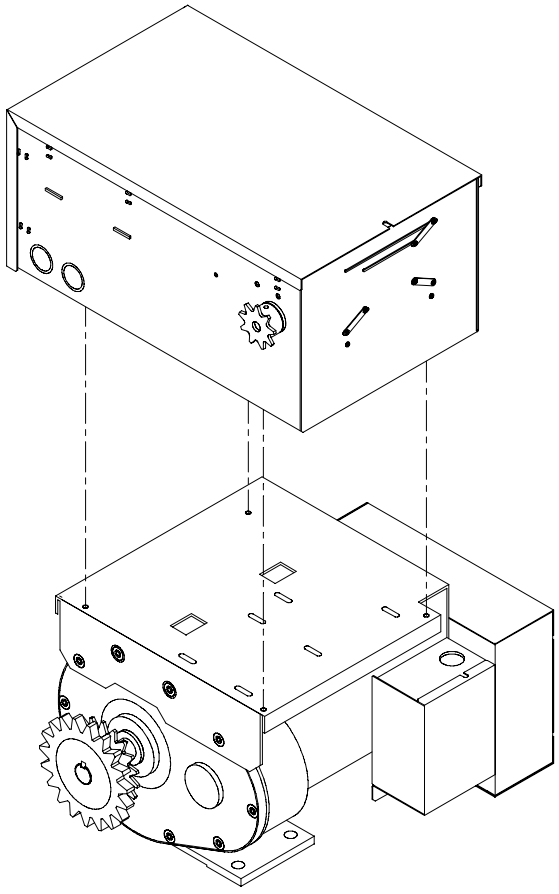
APPLICATION REQUIREMENTS:
Replacement of Electrical Box and/or its components for a Model 1/2HP FDO Operator.

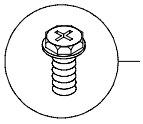
WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.





NOTE: ATTACH ELECTRICAL BOX TO MOTOR FRAME WITH SCREWS PROVIDED.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and place it aside. Disconnect the motor and brake wires that pass into the electrical box.

Remove the four flanged hex screws securing the electrical box to the motor frame and carefully remove the old box.

MOUNTING NEW BOX:
Place the new electrical box on the motor frame, aligning the slots in the box with their corresponding holes on the motor frame (see illustration). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electical box to the motor frame by tightening the hex screws.

Reconnect the motor and brake wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and replace the electrical box cover. Restoring power completes the installation.

Lift-Master
The Professional Line

Limit Shaft Assembly Replacement Kit for (DC) FDO-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Limit Shaft and/or its components for a Model (DC) FDO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING SHAFT:
Remove the cover from the electrical box. Remove the master link from the limit chain, remove the chain and place it aside. Remove the e-ring and the shims from the non-sprocket end of the limit shaft and remove the e-ring from each side of the rotating cup. To remove the limit shaft pull it out from the sprocket side, loosening the limit nuts as needed and slide off the rotating cup. Remove the flanged bearings from the electrical box.

INSTALLING NEW LIMIT SHAFT:
To install the new limit shaft follow the steps outlined above in reverse order, referring to the Owner's Manual if necessary. Restoring power completes the installation.

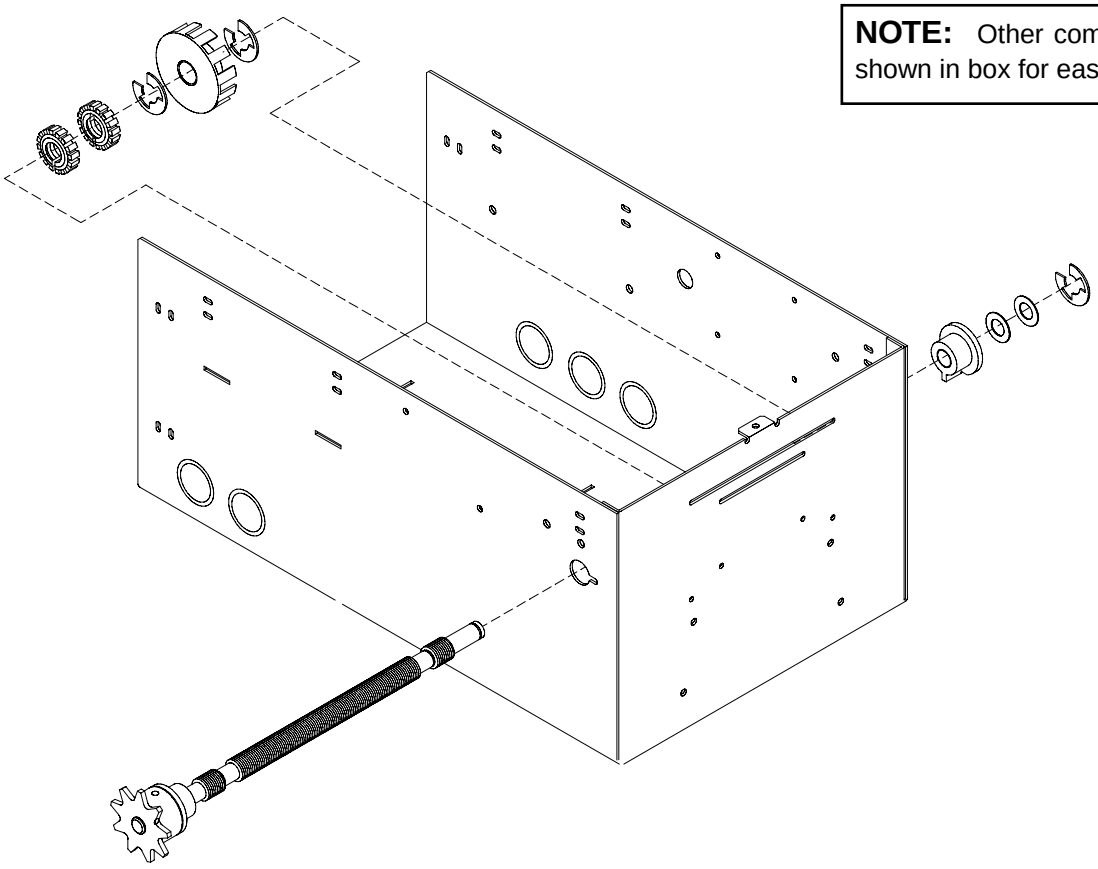
WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

NOTE: Other components not shown in box for easier viewing.



Lift-Master
The Professional Line

Limit Switch Assembly Replacement Kit for FDO-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Limit Switch and/or its components for a Model FDO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING LIMIT SWITCH ASSEMBLY:
Disconnect the wire connections to the limit switches. Remove the six screws from the nut plates. Remove the limit switches, internal grip washers and standoffs from the electrical box and discard.

Remove the two 1" screws from the locknuts. Remove the depress plate and depress plate springs and discard.

INSTALLING NEW LIMIT ASSEMBLY:
To install the new limit assembly, follow the steps outlined above in the reverse order. Reconnect the wires to the new limit switches, referring to the owners manual and illustration below.

NOTE: Other components not shown in box for easier viewing.

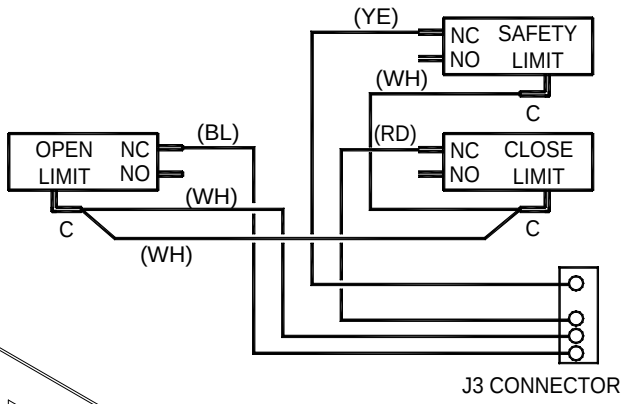
WARNING

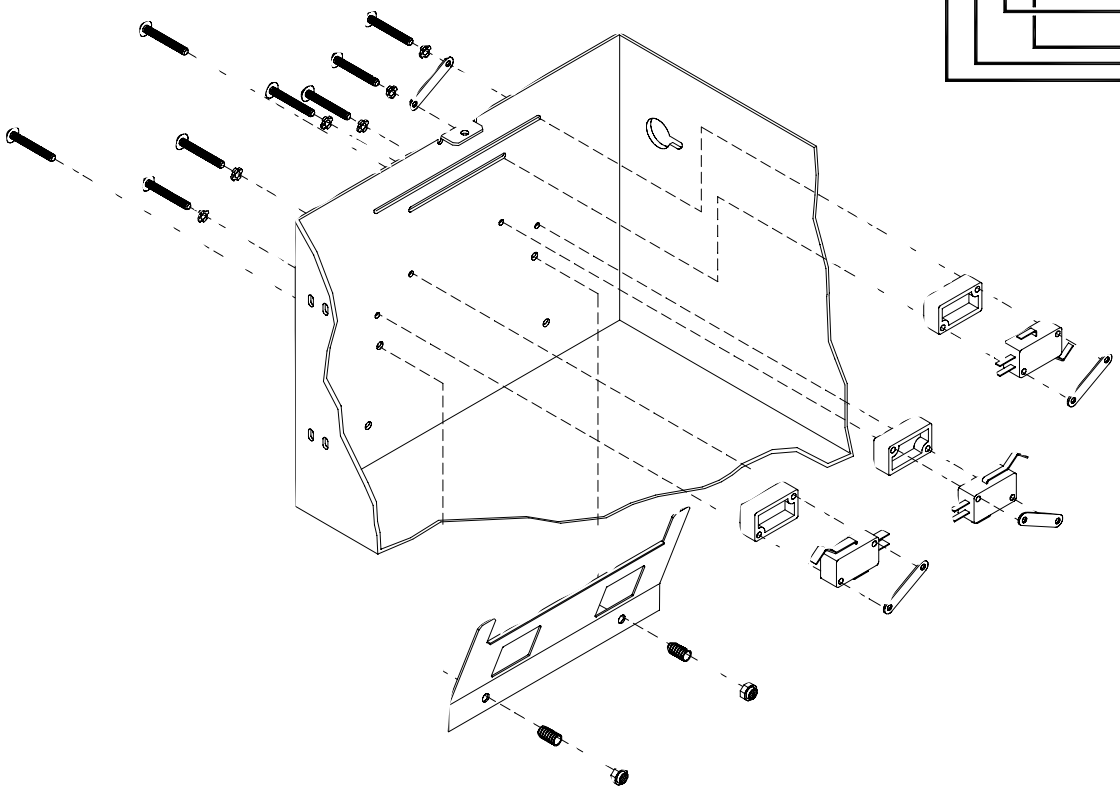
DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

WIRE CONNECTIONS





Lift-Master
The Professional Line

Brake Assembly Replacement Kit for 1 HP FDO-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Brake and/or its components for a Model 1 HP FDO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING BRAKE ASSEMBLY:
Disconnect the wire connections to the brake solenoid.

Remove the brake cover and locate the (4) flange nuts securing the brake assembly to the motor. Remove the four flange nuts and set off to the side. Remove the brake assembly and discard.

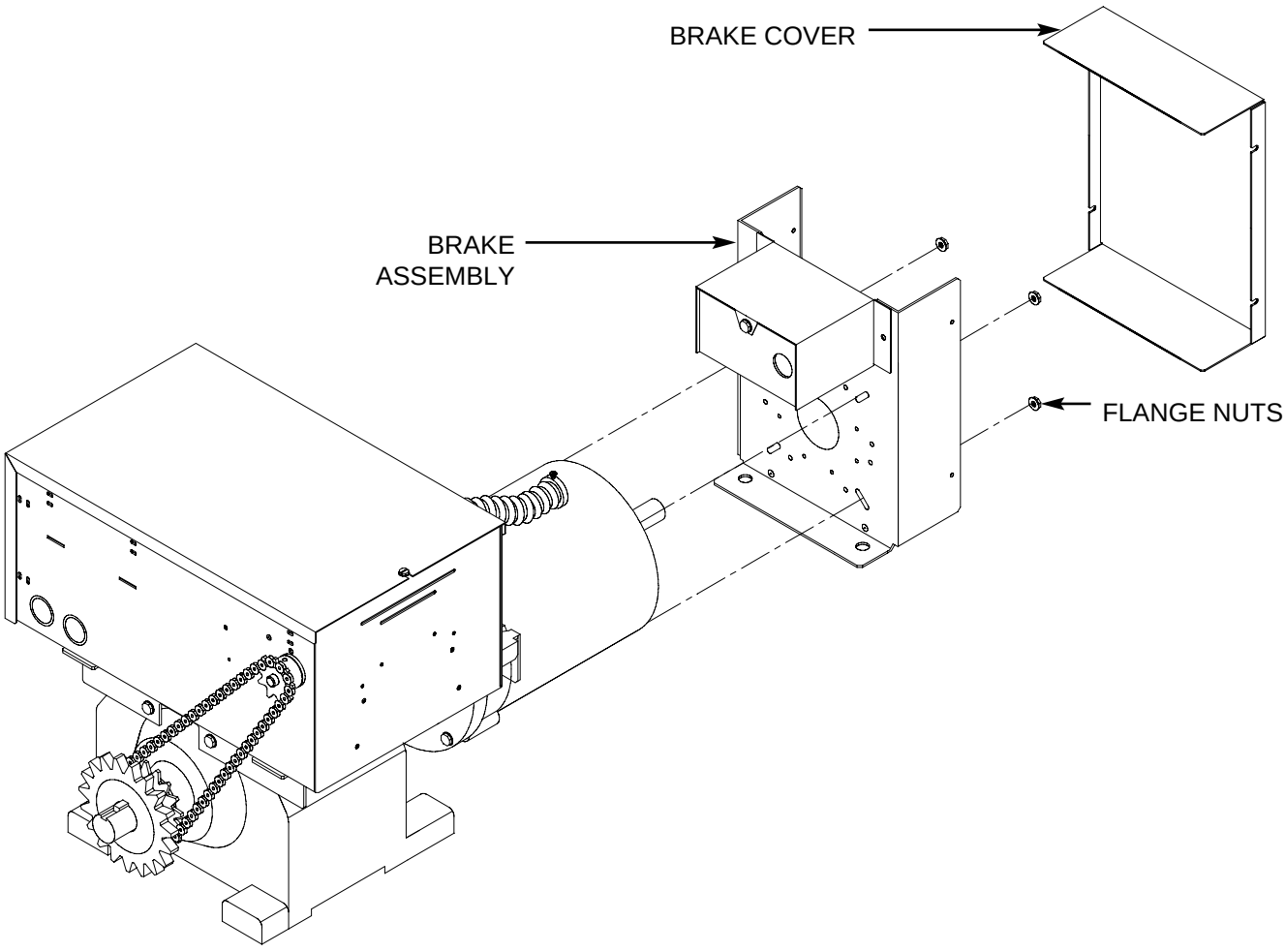
INSTALLING NEW BRAKE ASSEMBLY:
To install the new brake assembly, follow the steps outlined above in the reverse order. Reconnect the wires to the brake solenoid, referring to the owners manual and wiring diagrams on page 2 and 3.

WARNING

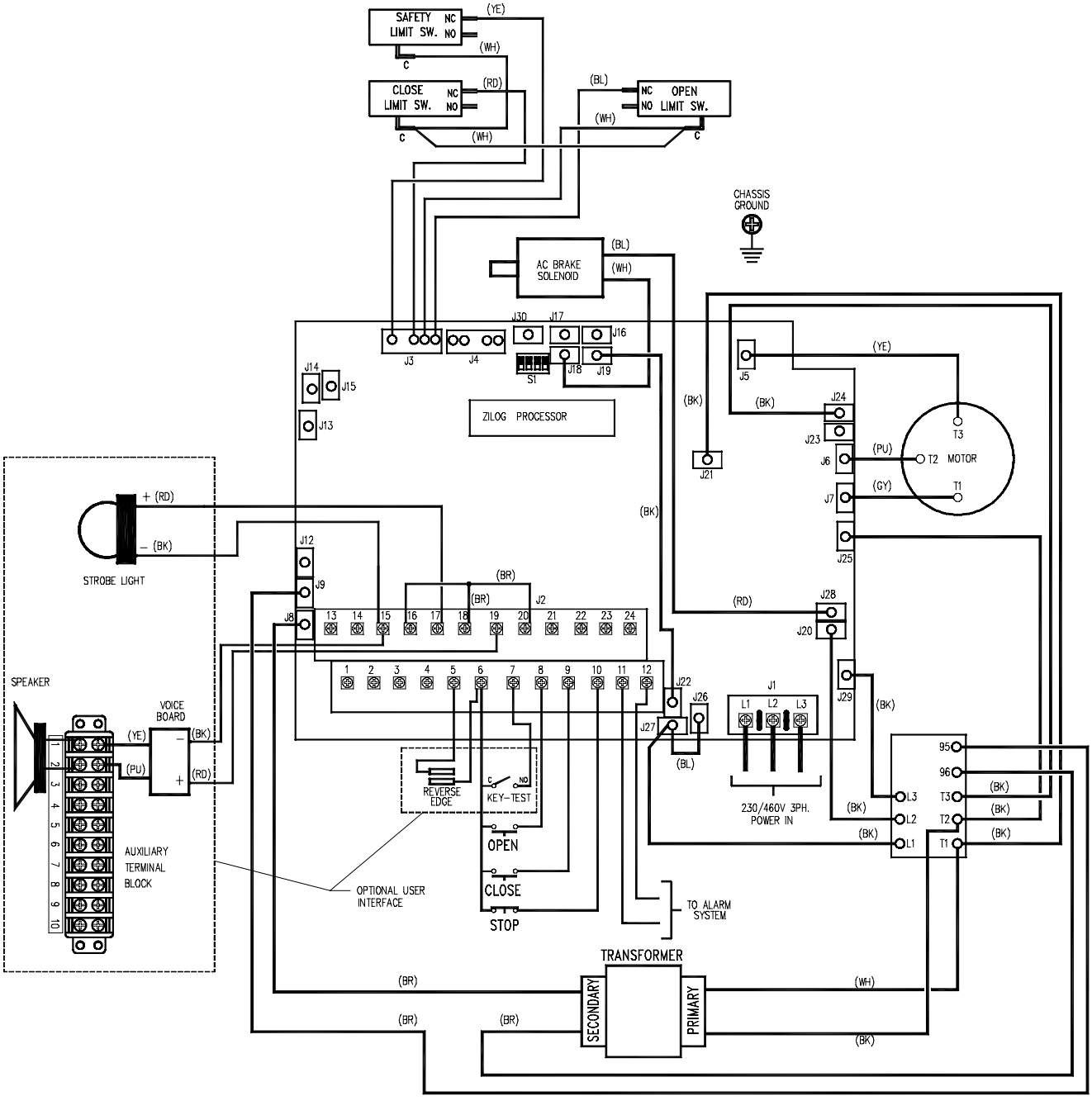
DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

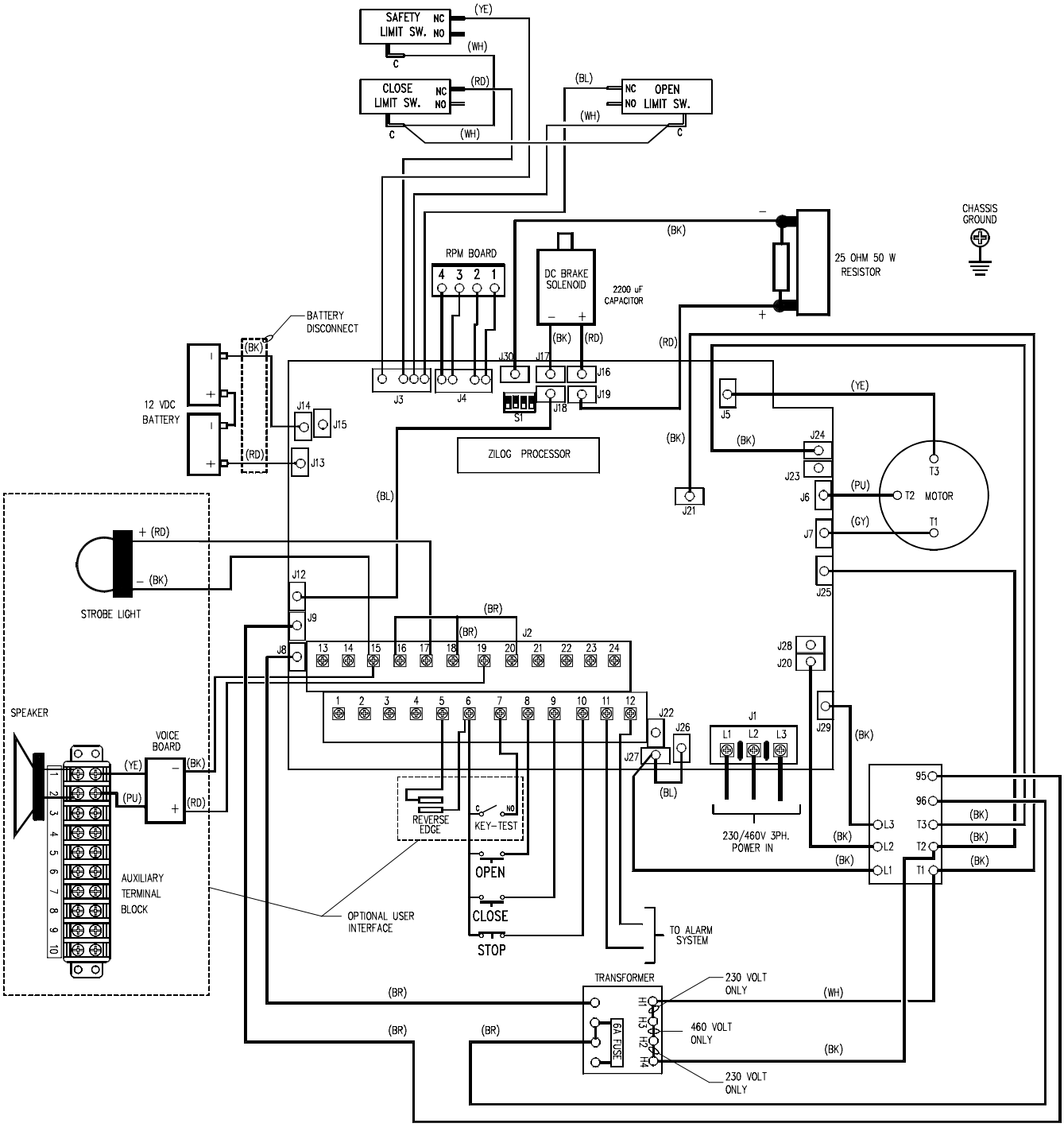
ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.



3 PHASE WIRING DIAGRAM (FDOA1023 & FDOA1043) 1849



3 PHASE WIRING DIAGRAM (FDOB1023 & FDOB1043) 1850



Lift-Master
The Professional Line

Motor Assembly Replacement Kit for 1/2 HP FDO-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Motor and/or its components for a Model 1/2 HP FDO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING MOTOR ASSEMBLY:
Disconnect the wire connections to the motor. Remove the brake cover and locate the (4) flange nuts securing the brake assembly to the motor. Remove the (4) flange nuts and the break assembly and set off to the side. Remove the (2) bolts securing the motor to the frame and lower the front of the motor and slide the motor from the frame.

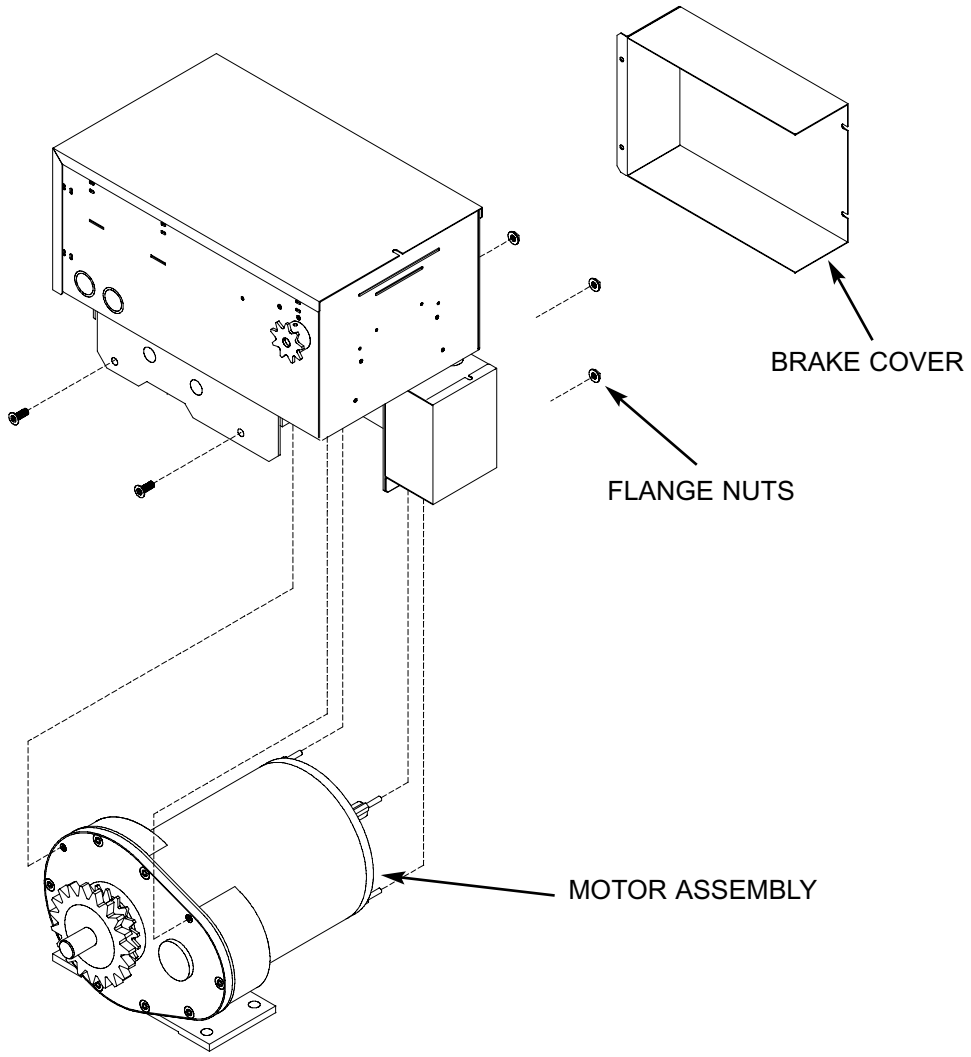
MOUNTING NEW MOTOR ASSEMBLY:
To install the motor assembly, follow the steps outlined above in reverse order. Reconnect the wires to the motor, referring to the owners manual and wiring diagrams on pages 2 and 3.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

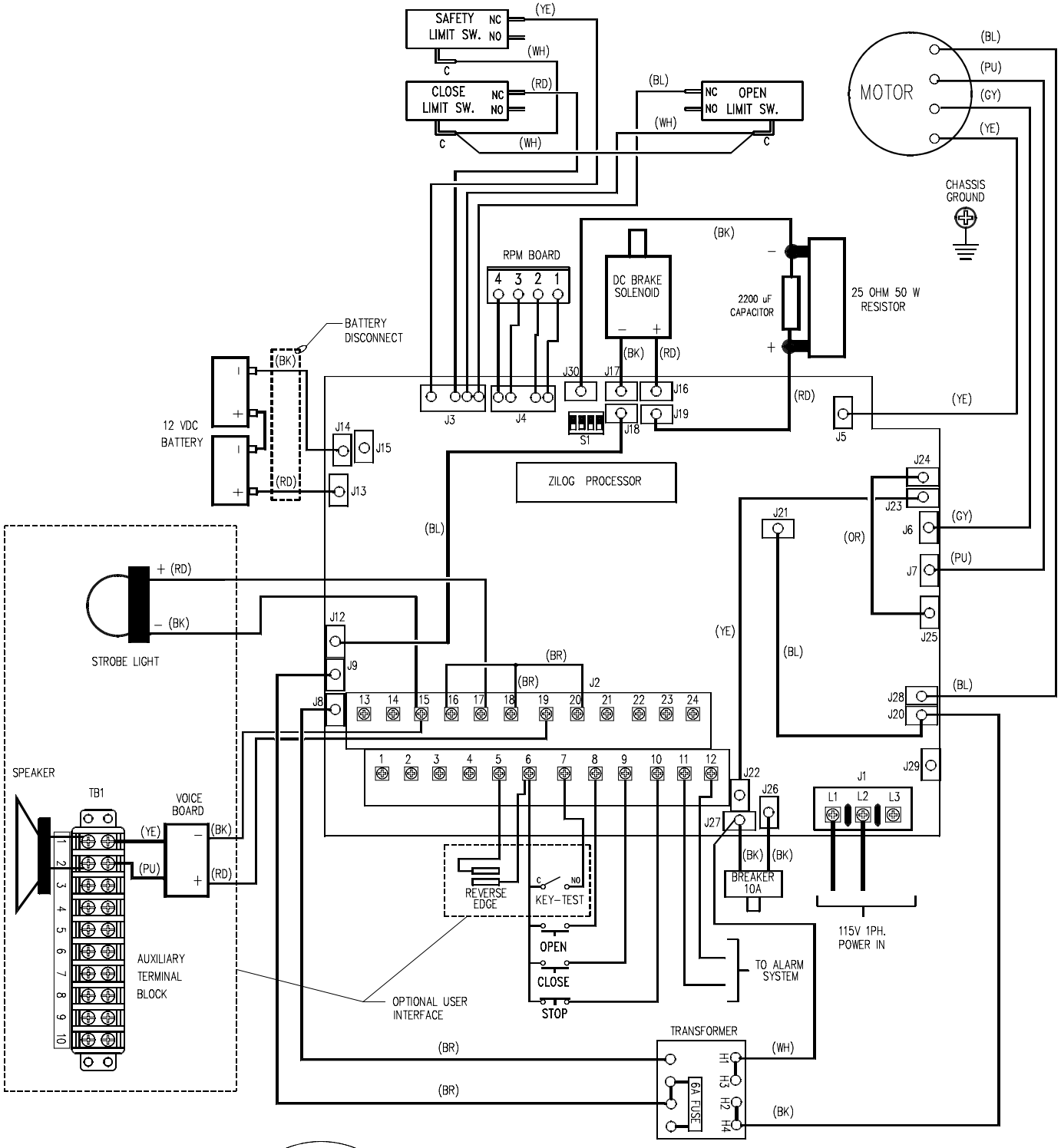
OPERATOR MUST BE PROPERLY GROUNDED AND CONNECTED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES. NOTE: THE OPERATOR SHOULD BE ON A SEPARATE FUSED LINE OF ADEQUATE CAPACITY.

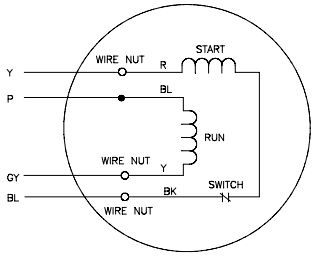
ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.



1 PHASE WIRING DIAGRAM (FDOB5011)

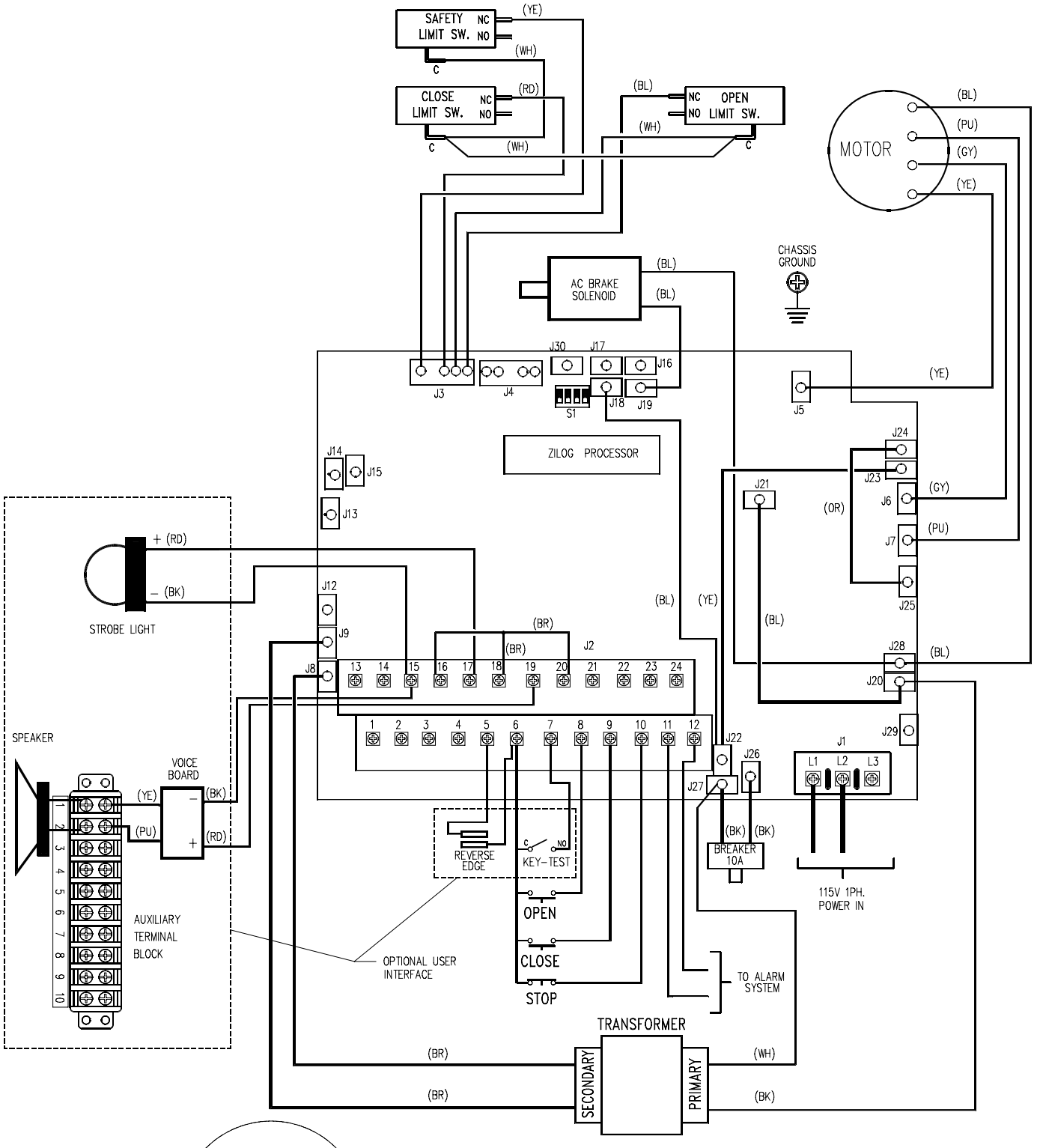
1846

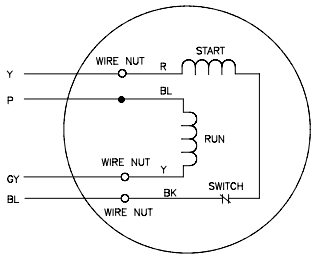




MOTOR CONNECTIONS

1 PHASE WIRING DIAGRAM (FDOA5011)





MOTOR CONNECTIONS

Lift-Master
The Professional Line

Motor Assembly Replacement Kit for 1 HP FDO-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Motor and/or its components for a Model 1 HP FDO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING MOTOR ASSEMBLY:
Disconnect the wire connections to the motor.

Remove the brake cover and locate the (4) flange nuts securing the brake assembly to the motor. Remove the (4) flange nuts and the brake assembly and set off to the side.

Remove the (4) hex bolts securing the motor to the gear reducer and set off to the side. Remove the old motor assembly and discard.

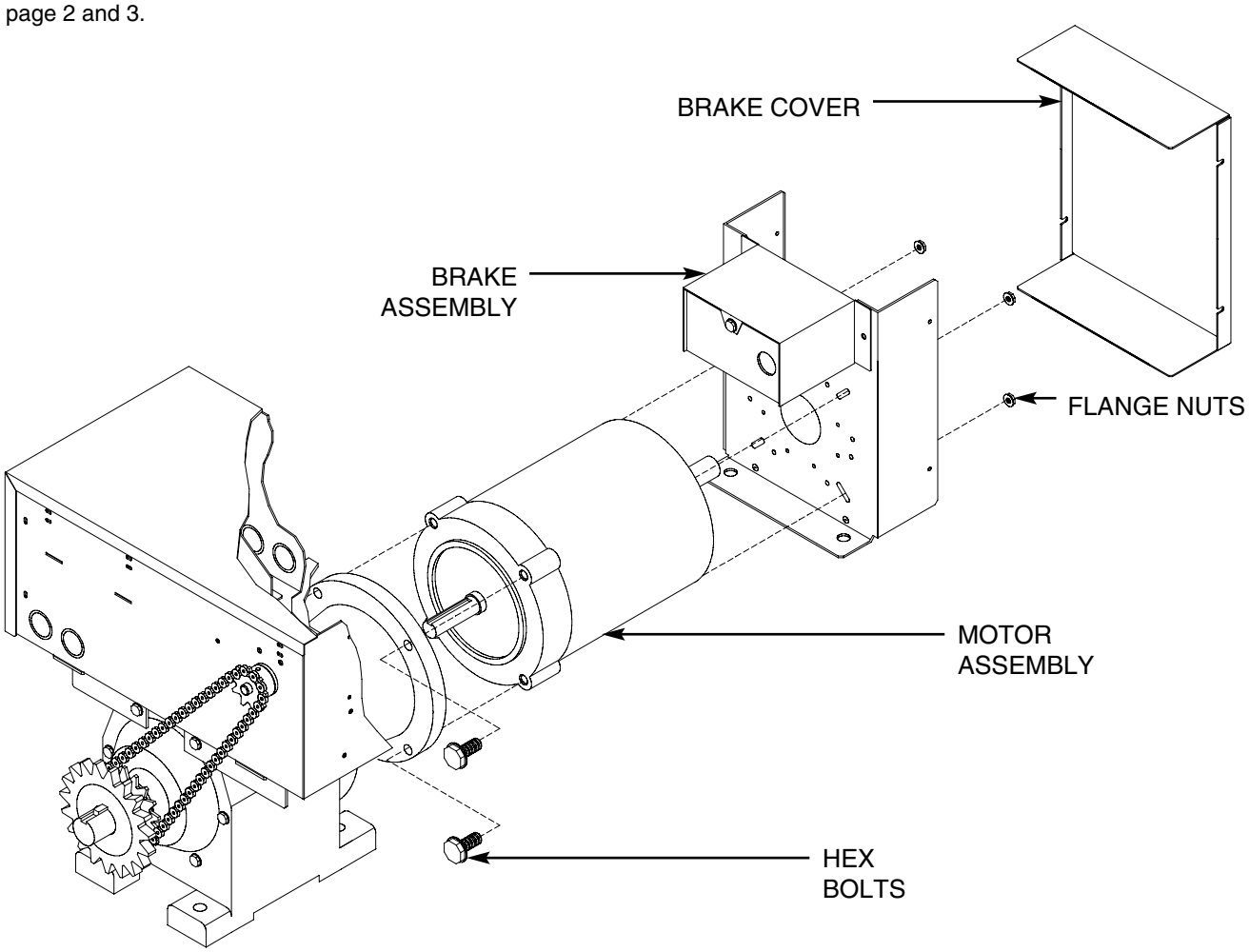
INSTALLING NEW MOTOR ASSEMBLY:
To install the motor assembly, follow the steps outlined above in the reverse order. Reconnect the wires to the motor, referring to the owners manual and wiring diagrams on page 2 and 3.

WARNING

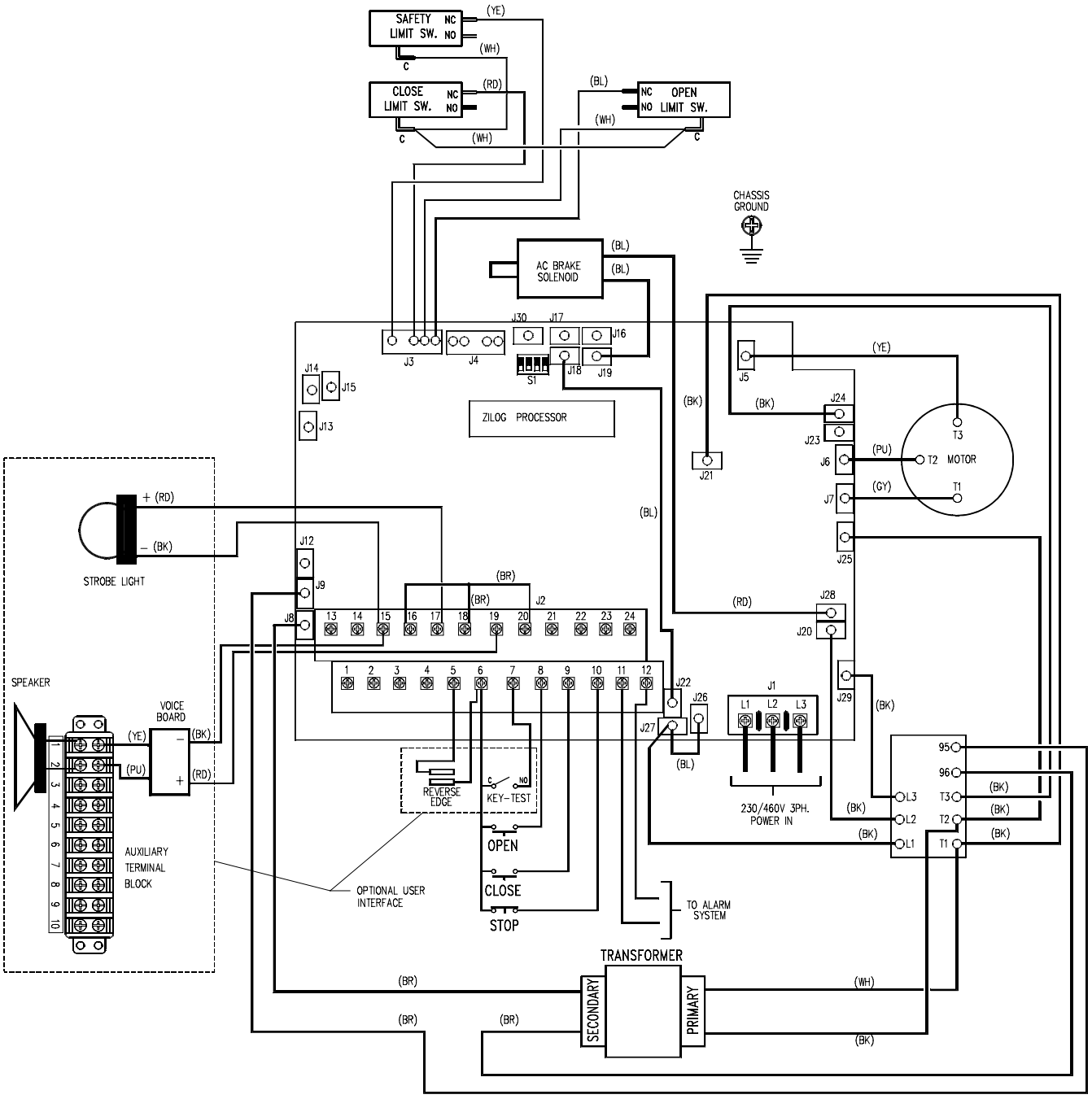
DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

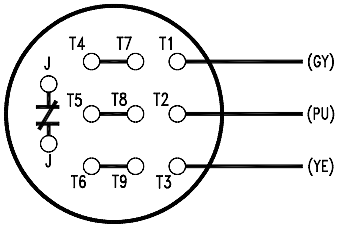
OPERATOR MUST BE PROPERLY GROUNDED AND CONNECTED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES. NOTE: THE OPERATOR SHOULD BE ON A SEPARATE FUSED LINE OF ADEQUATE CAPACITY.

ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.

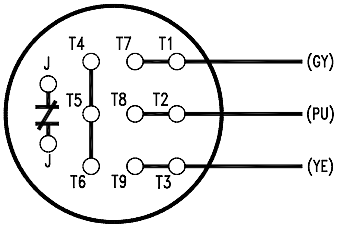


3 PHASE WIRING DIAGRAM (FDOA1023 & FDOA1043) 1849



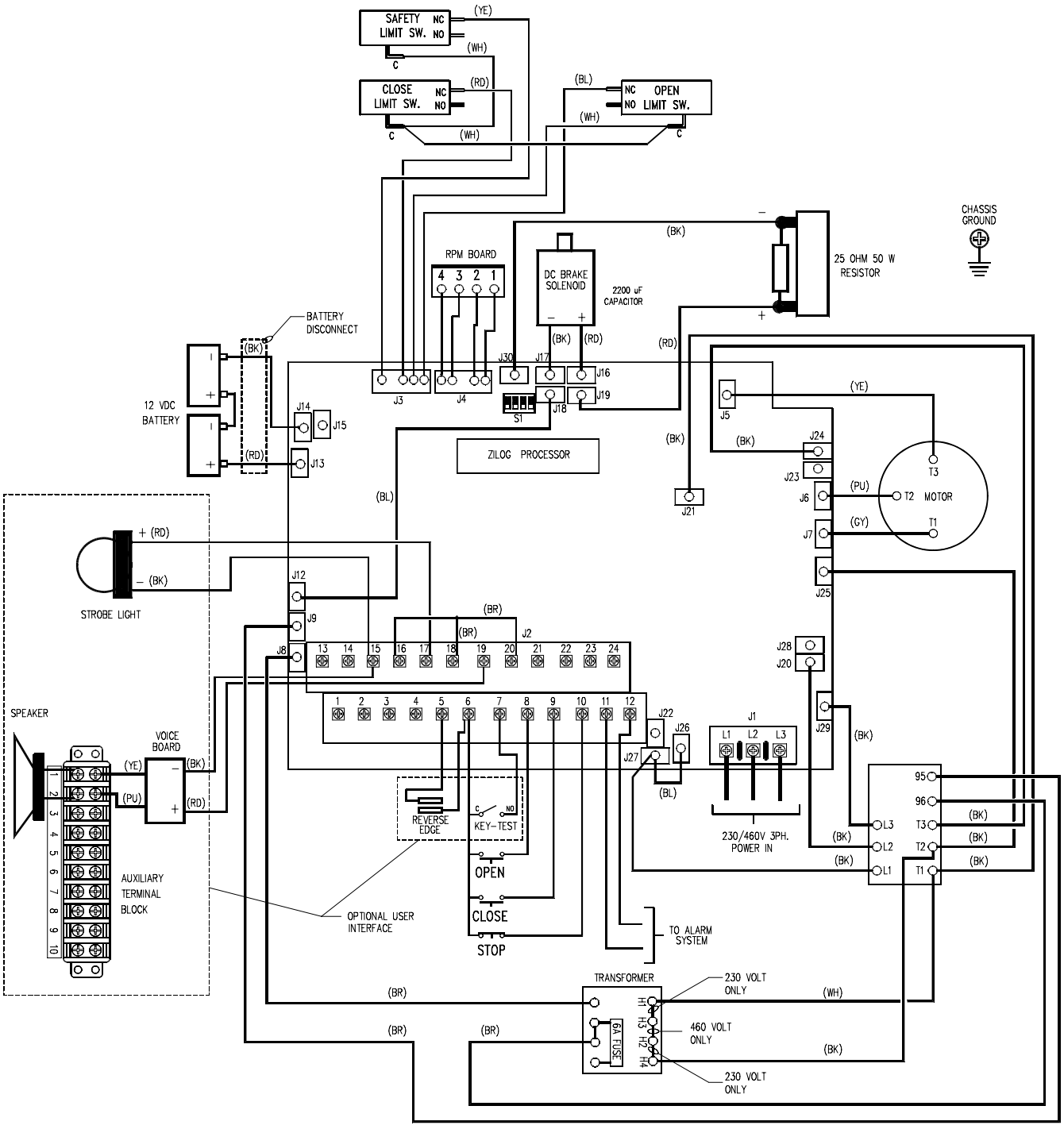


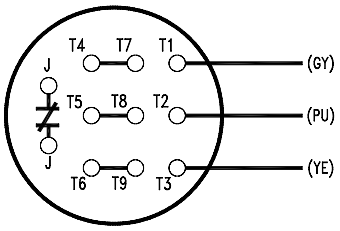
460V MOTOR CONNECTION



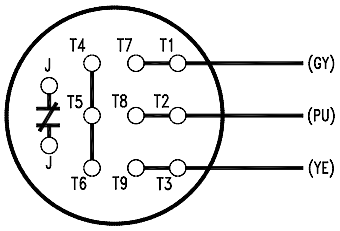
230V MOTOR CONNECTION

3 PHASE WIRING DIAGRAM (FDOB1023 & FDOB1043) 1850





460V MOTOR CONNECTION



230V MOTOR CONNECTION

Lift-Master
The Professional Line

Power Resistor Assembly Replacement Kit for FDO-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Power Resistor Assembly and/or its components for a Model FDO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING POWER RESISTOR:
Remove the cover from the electrical box. Remove the two wires connected to the resistor. Remove the two nuts and bolts securing the resistor to the electrical box.

INSTALLING NEW POWER RESISTOR:
To install the new power resistor follow the steps outlined above in reverse order. When reconnecting the two wires you will see a set of arrow on the capacitor mounted to the resistor, the arrows point to the negative (black) side of the resistor. Connect the red wire to the other side.

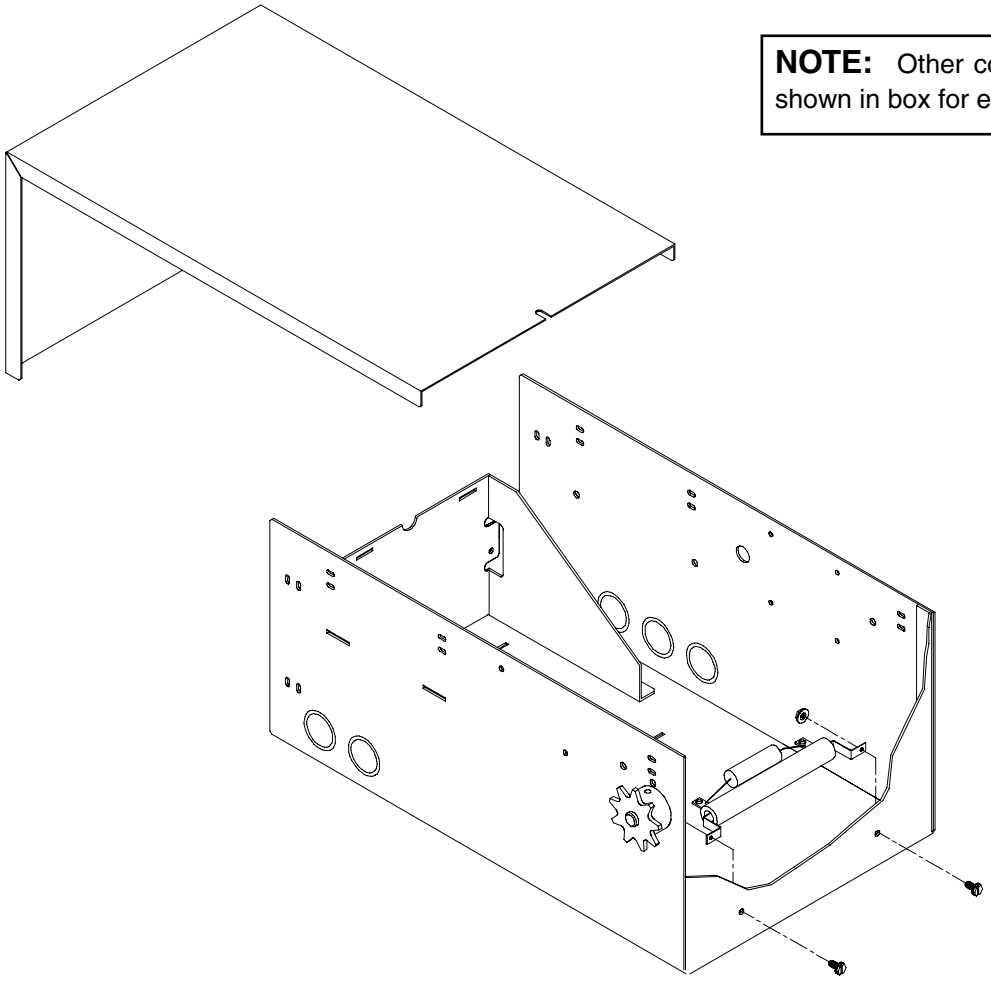
⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

NOTE: Other components not shown in box for easier viewing.



Lift-Master
The Professional Line

RPM Assembly Replacement Kit for FDO-Line Operators

APPLICATION REQUIREMENTS:
Replacement of RPM Sensor Assembly and/or its components for a Model FDO Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING RPM SENSOR:
Remove the cover from the electrical box. Remove the wires from the RPM board. Remove the e-ring from the back of the interrupter cup and slide the cup back as far as possible, do not loose the e-ring. Un-clip the RPM mounting base from the outside of the electrical box.

INSTALLING NEW RPM SENSOR:
To install the new RPM sensor follow the steps outlined above in reverse order, referring to the Owner's Manual if necessary. Restoring power completes the installation.

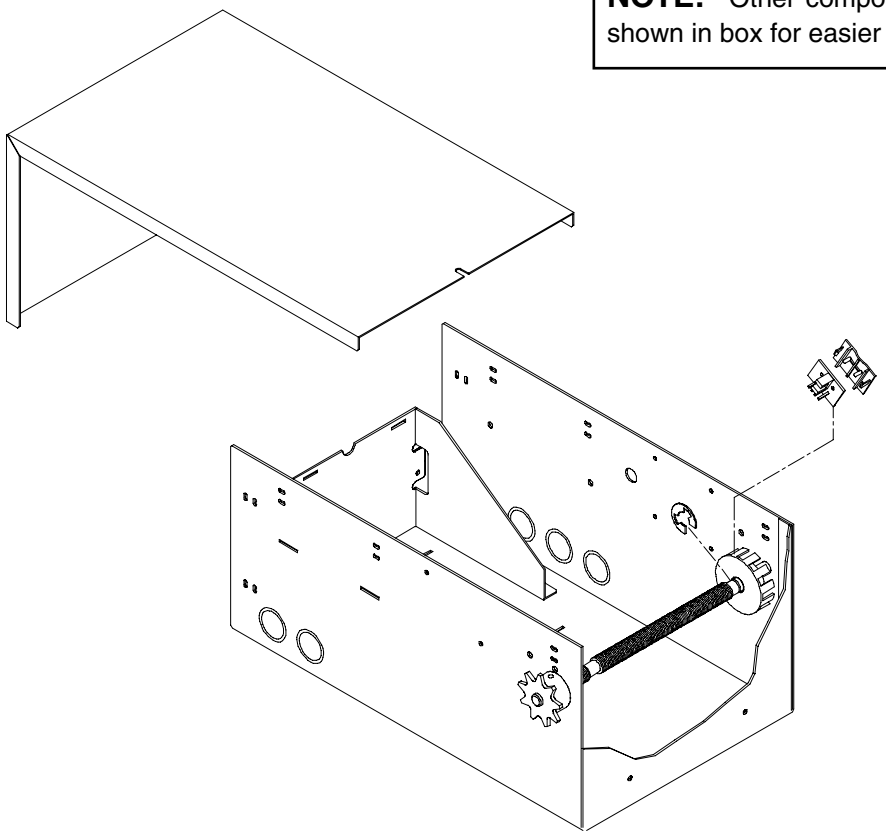
⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

NOTE: Other components not shown in box for easier viewing.



Lift-Master®
The Professional Line®

Clutch Adjustment Addendum
Models: EMT, EMJ and EMH

NOTE: Refer to addendum for Clutch Adjustment Instructions, disregard Clutch Adjustment Instructions on page 19 of the EMH/ EMJ manual and page 18 of the EMT manual. For all other installation instructions refer to owners manual shipped with operator.

CLUTCH ADJUSTMENT

Any accidents resulting from incorrect settings or maintenance operations are not the responsibility of Chamberlain. Safety of this operator can only be assured if these operations are performed by trained "LIFTMASTER" technicians.

All maintenance to the operator must not be performed until disconnecting the electrical power and locking-out the power via. the main/ emergency disconnect. All maintenance must be performed by trained "LIFTMASTER" technicians. If service is required contact your local LIFTMASTER dealer.

1. The clutch has been factory set to limit the dynamic force of the operator to 400N **(See Chart)**
2. Replace clutch pad when necessary.
3. Procedures to replace clutch pad:

3.1. Remove cotterpin from nut on the clutch shaft.

3.2. Back off clutch nut and remove.

3.3. Remove washer, spring, clutch pulley and clutch pad.

3.4. Install new clutch pad and replace components in reverse order.

3.5. Set the spring length to **X (See Chart)**. (Refer to figure 2)

3.6. Reinstall Cotterpin.

WARNING

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

DIMENSIONS FOR "X"	
EMT	EMJ/EMH
26.5mm (1.05")	29mm (1.14")

FIGURE 1

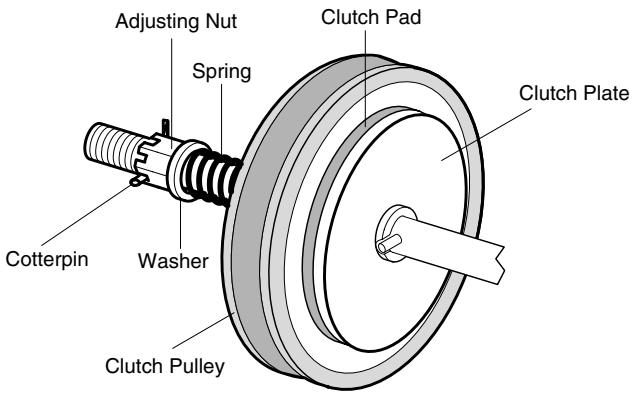
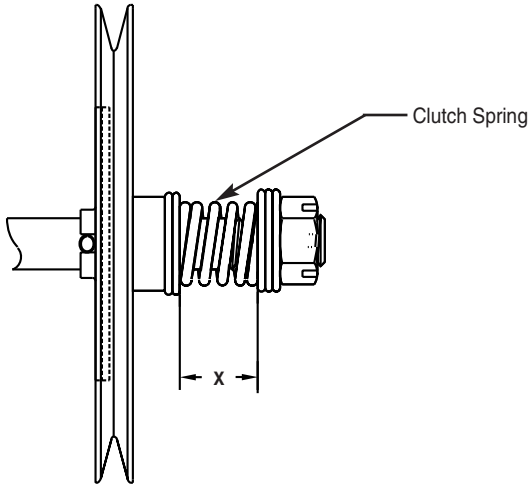


FIGURE 2



CHAMBERLAIN
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LockSensor Assembly Replacement Kit for H, J, HJ-Line Operators

APPLICATION REQUIREMENTS:

Replacement of Locksensor and/or its components for the Models H, J, HJ Operators.

INSTALLATION INSTRUCTIONS

NOTE: For additional help refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE LOCKSENSOR:

1.) Remove (3) wires from switch on Locksensor and leave for re-installation.

2.) Remove Locksensor from frame by removing (2) hex screws holding locksensor into place (Refer to figure 1).

INSTALLING NEW LOCKSENSOR:

1.) To install the new locksensor follow the steps outlined above in reverse order.

2.) Refer to page 2 for wiring instructions.

NOTE: Use existing wires, if necessary use new wires supplied.

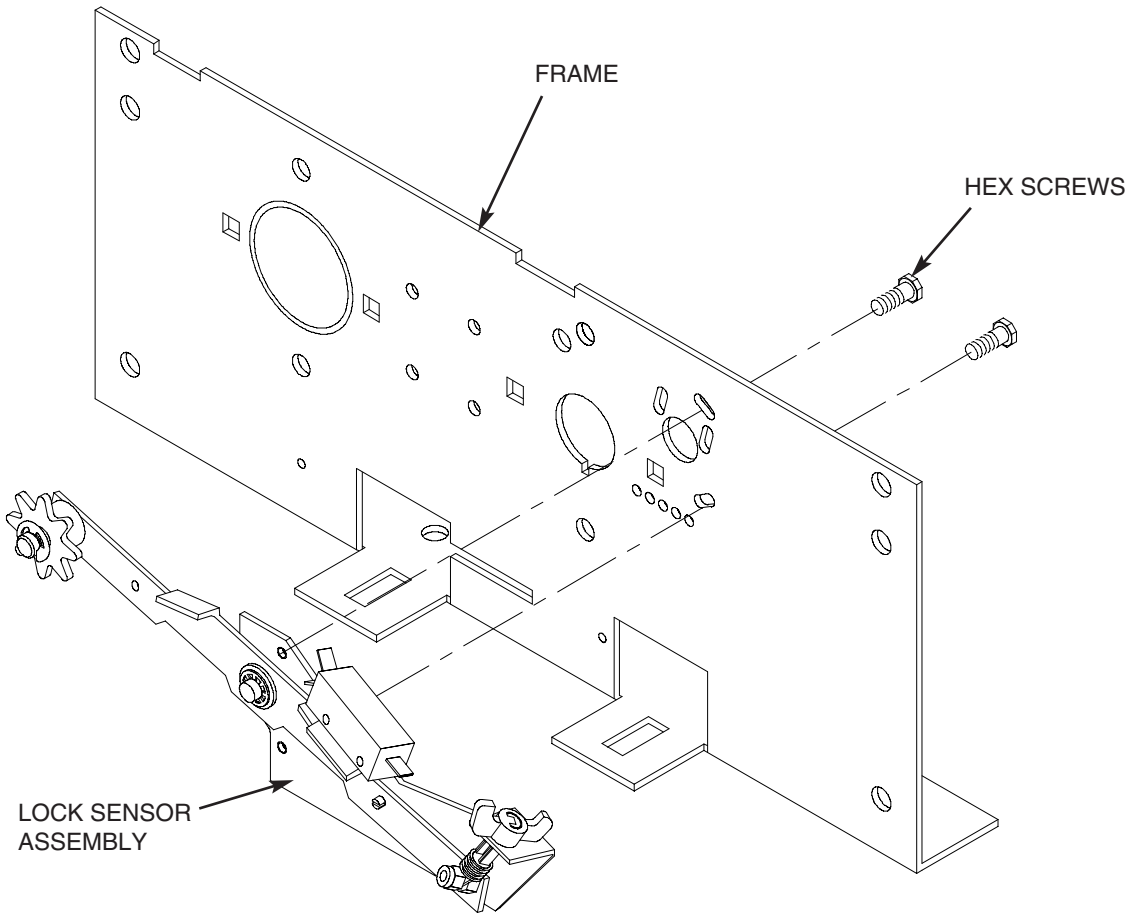
WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

FIGURE 1



REWIRE LOCKSENSOR

ELECTRO-MECHANICAL:

1.) Connect existing orange wire to **N.O.** on the switch.
2.) Connect existing red wire to **COM** on the switch.
3.) Connect existing yellow wire to **N.C.** on the switch.

LOGIC:

1.) Connect existing orange wire to **N.O.** on the switch.
2.) Connect existing white wire to **COM** on the switch.
3.) Connect existing red wire to **N.C.** on the switch.

LOCK SENSOR ADJUSTMENT

COURSE ADJUSTMENT

a. Release spring pressure on pivot arm by loosening wing nut.
b. Loosen but do not remove two mounting screws.
c. Fully tension final reduction chain and rotate lock sensor until switch is activated mode.
d. Tighten two mounting screws to secure lock sensor position.
e. Preform fine adjustment.

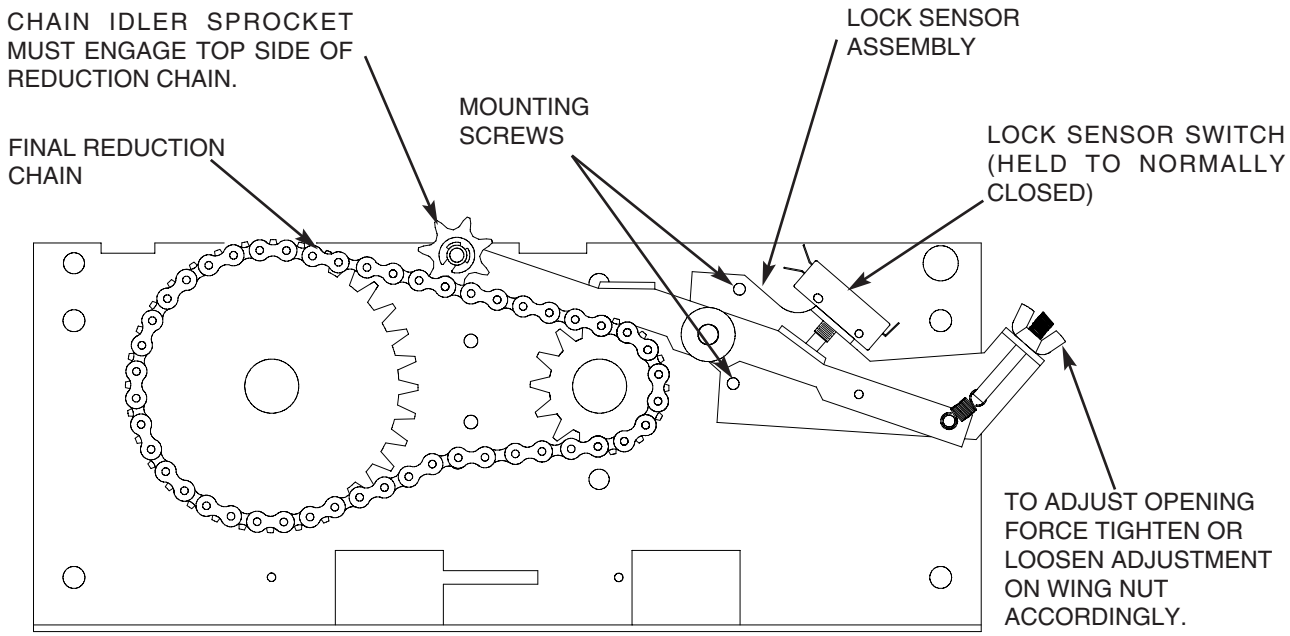
WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE ADJUSTING LOCK SENSOR.

FINE ADJUSTMENT

- To increase opening force, tighten wing nut.
- To decrease opening force, loosen wing nut.

FIGURE 2



MODEL HJ - CHASSIS DRIVE REPLACEMENT KIT

P/N 41K4342

1. Place operator on suitable working surface.
2. Loosen the four 5/16” motor mounting screws and slide motor towards electrical box.
3. Remove V-Belt and retain for reassembly.
4. Remove 8” pulley an clutch assembly. Be careful to note the order in which these parts must be reinstalled.
5. Disconnect limit chain master link and remove limit chain. Retain parts for assembly.
6. Remove four 5/16” motor plate mounting screws.
7. Remove four 5/16” electrical box mounting screws.
8. Carefully lift off electrical box and motor assembly. Be careful not to damage the motor flex conduit.
9. Reassemble in reverse order on new chassis drive assembly.
10. Tension V- Belt and tighten motor screws.

MODEL MJ - CHASSIS DRIVE RELACEMENT KIT

P/N 41K4344

1. Place operator on suitable working surface.
2. Remove motor cover, loosen motor mounting screws, and slide motor towards electrical box.
3. Remove V- Belt and retain for reassembly.
4. Remove 6” pulley and cluth assembly. Be careful to note the order in which these parts must be re installed.
5. Disconnect limit chain master link and remove limit chain. Retain parts for reassembly.
6. Remove four 5/16” electrical box mounting screws.
7. Remove motor mounting screws.
8. Carefully lift off electrical box and motor assembly. Be careful not to damage the motor cable.
9. Reassemble in reverse order on new chassis drive assembly.
10. Tension V - Belt and tighten motor screws.

INSTALL STANDOFFS ON TO MOTOR

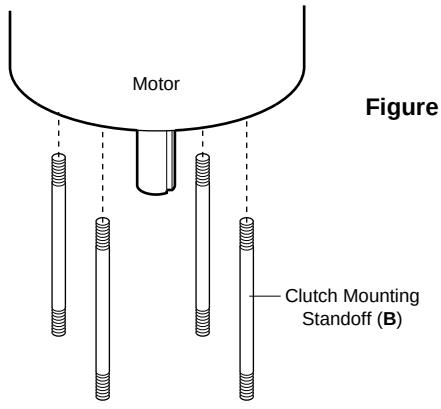


Figure 4

4. Insert threaded ends of clutch mounting standoffs into motor mounting holes (See Figure 4) and tighten.

INSTALL AND KEY SHAFT AND MOTOR

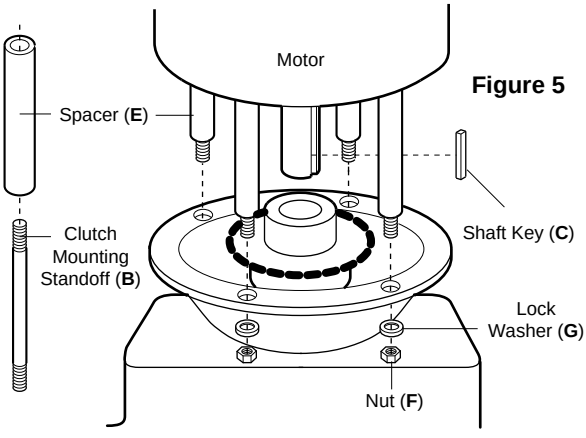


Figure 5

5. Install shaft key into motor keyway. Insert keyed shaft of motor into hub of clutch (Figure 5) and rotate to align key with hub keyway. Press motor to seat shaft fully in gear hub. Rotate motor to align standoffs with holes in flange. Insert spacer into standoff and tighten screw with lock washer.

ADJUST AND INSTALL COVER

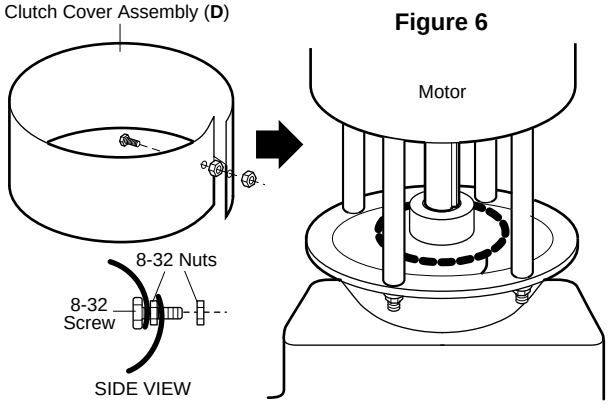


Figure 6

6. See CLUTCH ADJUSTMENT.

CLUTCH ADJUSTMENT INSTRUCTIONS

1. Center clutch between end of motor shaft and gear hub. Hold in position and tighten set screw in clutch hub. Shaft end of clutch should have a small amount of play where it contacts gear hub. (See Figure 6.)

2. Clutch assembly has been set for 1/2 h.p. motor by factory. For other size motors refer to the spring adjustment table. Use a 1-1/8" wrench to tighten nut the required amount then tighten set screw.

3. Apply power and attempt to open door. Stop power immediately if operator begins to slip. Loosen set screw and tighten clutch nut 1/4 turn. Tighten set screw and operate the door again. Should the operator continue to slip, repeat the procedure outlined above.

4. Remove outside #8-32 nut from cover assembly. Wrap guard around standoffs. Replace nut and tighten. (See Figure 6.)

Spring Adjustment Table

Number of turns to adjust from factory set (1/2 HP)										Torque in. lbs.
Turns / Hp	1/4	1/2	3/4	1	1-1/4	1-1/2	1-3/4	2	2-1/2	
1/2	Factory Set (1/2 turned)									16
3/4										24
1										30
1-1/2										45
2										55

Remarks: Either loosen or tighten the clutch nut with 1/4 turn increments. The clutch will require periodic inspection and adjustment.

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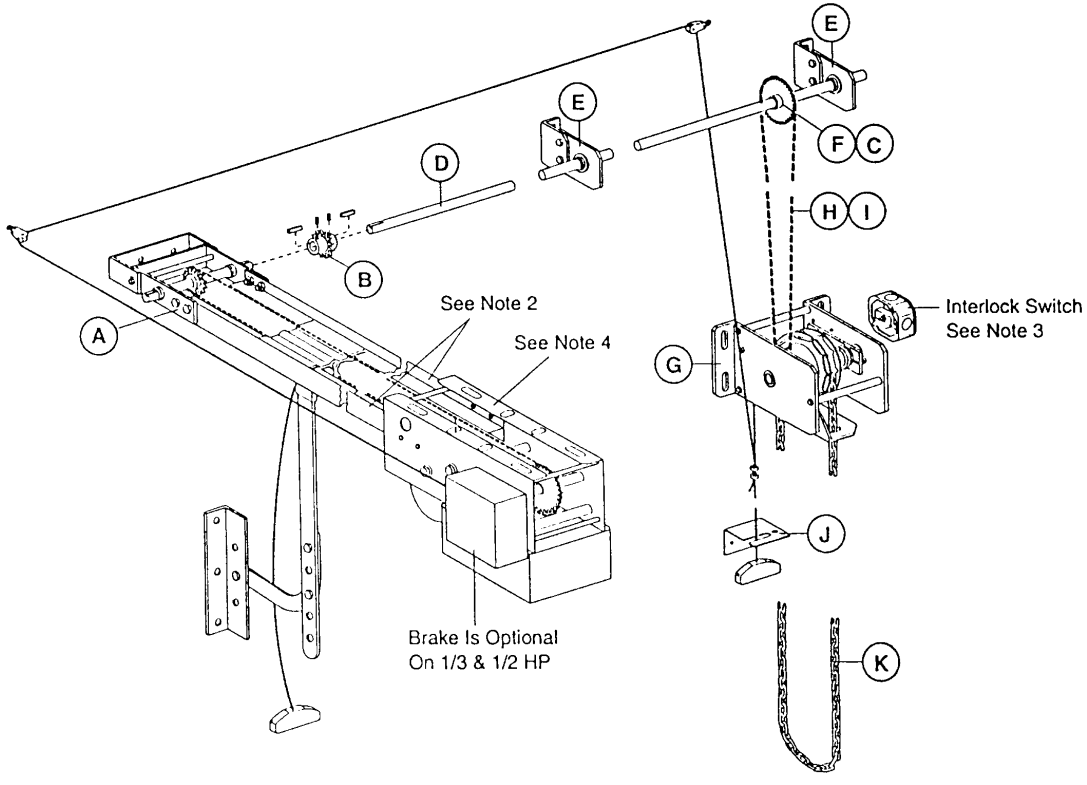
114A1481
Printed in Mexico

ASS'Y NO. 1A3365 TROLLEY HOIST MODIFICATION KIT
FOR 1/3 & 1/2 HP

NOTES: 1. Brake is optional on 1/3 & 1/2 HP models.
2. Rail and associated hardware furnished with operator.
3. Wire "N/O" and "C" terminals of the chain hoist interlock switch. Refer to connections for "External Interlock" in operator owner's manual.
4. Operator illustrated may vary depending on model purchased.

ITEM	QTY.	PART NO.	DESCRIPTION
A	1	1C4104	Drive Shaft Ass'y - 12"
B	1	1B3988	3/4" to 1" Shaft Coupling
C	1	23A0089	1/4" x 1" Keystock
D*	1	390240	1" Shaft Keyed
E	2	1B3454	Remote Hoist Bearing Ass'y
F	1	81B0087	41B40 x 1" Sprocket
G	1	1D4411	R.D.D.C.H.
H	1	1A4110	#41 x 4 Ft. Chain
I	1	109A0021	#41 Chain Master Link
J	1	12B0393	Chain/ Cable Keeper
K**	1	22A0014	Hand Chain

* [(Door Width ÷ 2) + 1']
** 2 Times Door Height Minus 4 Feet.



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PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

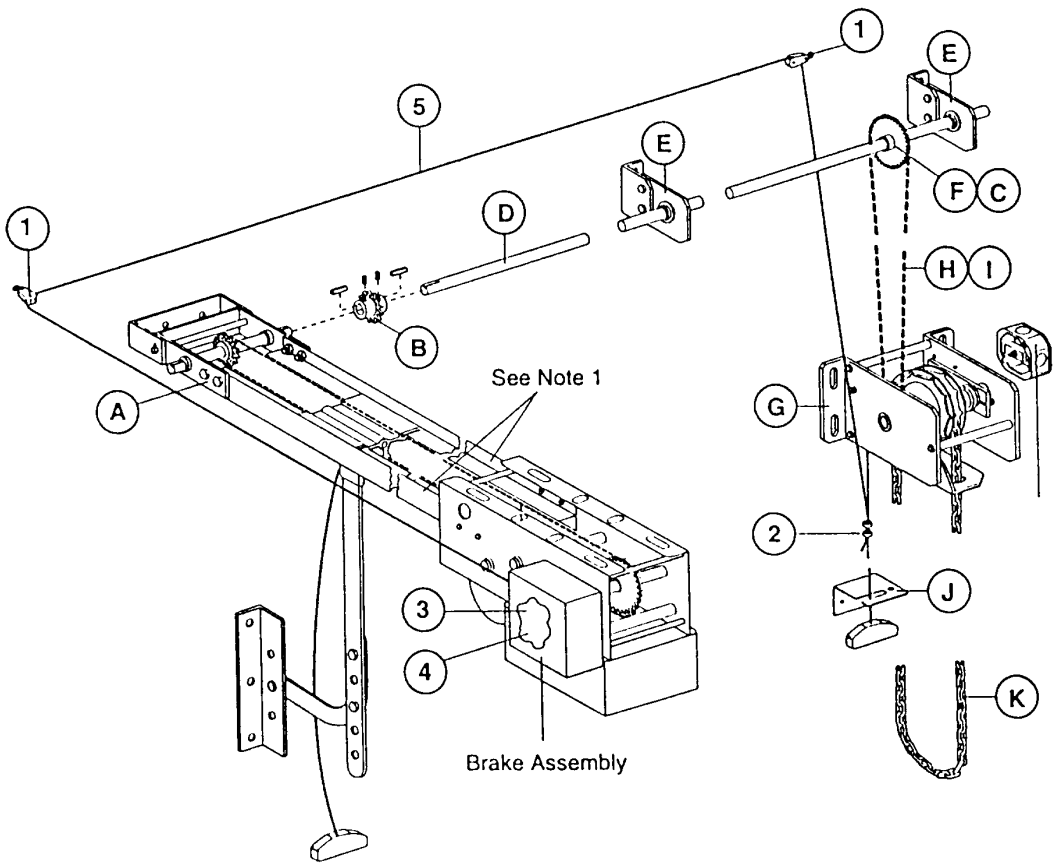
DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASS'Y NO. 1A3366 TROLLEY HOIST MODIFICATION KIT WITH BRAKE FOR 3/4 & 1 HP



ASS'Y NO. 1A3366 TROLLEY HOIST MODIFICATION WITH BRAKE (3/4 & 1 HP)

ITEM	QTY.	PART NO.	DESCRIPTION
A	1	1C3994	Drive Shaft Ass'y - 12"
B	1	1B3988	3/4" to 1" Shaft Coupling
C	1	23A0089	1/4" x 1" Keystock
D**	1	390240	1" Shaft Keyed
E	2	1B3454	Remote Hoist Bearing Ass'y
F	1	81B0087	41B40 x 1" Sprocket
G	1	1D4411	R.D.D.C.H.
H	1	1A4110	#41 x 4 Ft. Chain
I	1	109A0021	#41 Chain Master Link
J	1	12B0393	Chain/ Cable Keeper
K***	1	22A0014	Hand Chain

* [(Door Height x 1.5) + (Door Width÷ 2)]
** [(Door Width÷ 2) + 1']
*** 2 Times Door Height Minus 4 Feet.

ASS'Y NO. 1A4064 BRAKE DISCONNECT ASS'Y AND CABLE

ITEM	QTY.	PART NO.	DESCRIPTION
1	2	144A0033	Swivel Eye Pulley
2	2	2A3094	1/8" U-Bolt Clip
3	1	173A0023	Compression Sleeve
4	1	1A4063	Bracket & Spring Assembly
5*	1	026A0056	Wire Rope 3/32"
6	1	171A0429	10-32 x 3/4" Cap Screw
7	2	216A0185	#10 Flat Washer
8	1	133A0197	10-32 x 3/8" Hex Nut

NOTES:
1. Rail and associated hardware furnished with operator.
2. Wire "N/O" and "C" terminals of the chain hoist interlock switch. Refer to connections for "External Interlock" in operator owners manual.

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PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

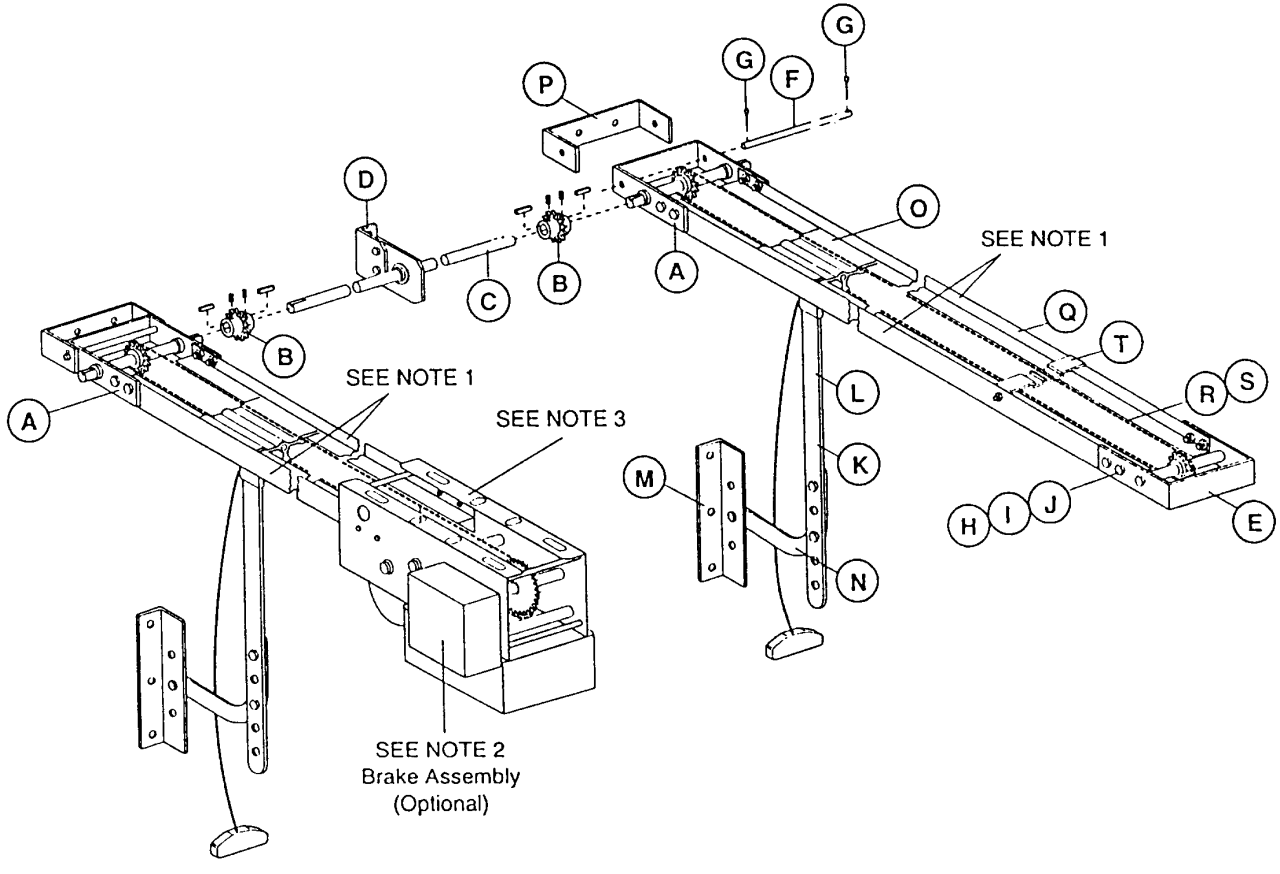
DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASS'Y NO. 1A3367-8 Through 22
DUAL TROLLEY MODIFICATION - 1/3 AND 1/2 HP



NOTES: 1. One set of trolley hardware is furnished with the operator.
Add one trolley hardware kit for proper door height and HP for total of 2 kits.
2. Brake is optional on 1/3 and 1/2 HP Models.
3. Operator illustrated may vary depending on model purchased.

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DOOR CONTR.	
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APP'D	**DWG.NO.**
PROJ. NO.	

ASS'Y NO. 1A3367-8 Through 22
DUAL TROLLEY MODIFICATION - 1/3 AND 1/2 HP

ITEM	QTY.	PART NO.	DESCRIPTION
A	2	1C4104	Idler Drive Ass'y - 12"
B	2	1B3988	3/4" to 1" Shaft Coupling
C*	1	390240	1" Shaft Keyed
D	1	1B3454	Remote Hoist Bearing Ass'y
E	1	1C4096	Idler Drive Assembly
F	1	181A0101	Pivot Shaft
G	2	146A0067	Cotter Pin
H	8	133A0029	3/8" - 16 Hex Head Nut
I	8	171A0343	3/8" - 16 Hex Head Bolt
J	8	216A0180	3/8" - Lock Washer
K	1	1A4024	Door Arm Mounting Kit
L	1	1C3681	Assembly Disconnect Arm
M	1	12B0526	Door Bracket
N	1	178B0045	Door Arm Curved
O	1	1B4001	Trolley Assembly
P	1	12C0480	Pivot Bracket

* [(Door Width ÷ 3) + 1']

Door Height (In Feet)	ITEM # KIT #	Q Rail	Q Qty.	R Chain Assembly	R Qty.	S #48 Chain Master Link	S Qty	T 1 Set Spacer Kit	T Qty.
8	1A3367-8	183C0137	2	1A3881	1	1A0995	1	1A4004	2
10	1A3367-10	183C0137-1	2	1A3882	1	1A0995	1	1A4004	2
12	1A3367-12	183C0137-2	2	1A3883	1	1A0995	1	1A4004	2
14	1A3367-14	183C0137-3	2	1A3884	1	1A0995	1	1A4004	3
16	1A3367-16	183C0138	2	1A3996	1	1A0995	1	1A4004	3
18	1A3367-18	183C0138-1	2	1A3997	1	1A0995	1	1A4004	3
20	1A3367-20	183C0138-2	2	1A3998	1	1A0995	1	1A4004	4
22	1A3367-22	183C0138-3	2	1A4399	1	1A0995	1	1A4004	4

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DOOR CONTR.

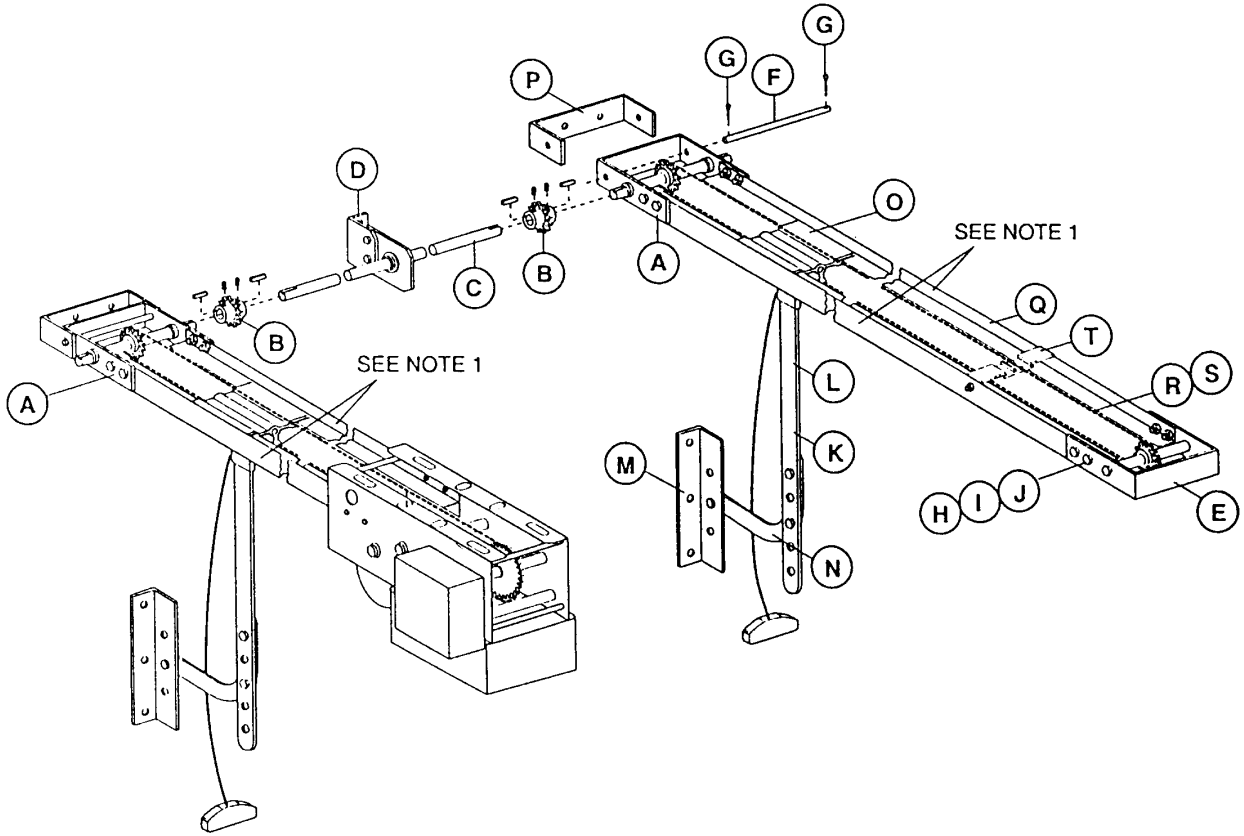
DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASS'Y NO. 1A3368-8 Through 22
DUAL TROLLEY MODIFICATION - 3/4 AND 1HP



NOTES: 1. One set of trolley hardware is furnished with the operator.
Add one trolley hardware kit for proper door height and HP for total of 2 kits.

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DRN.	**DATE**
CKD.	**SCALE: NONE**
APP'D	**DWG.NO.**
PROJ. NO.	

ASS'Y NO. 1A3368-8 Through 22
DUAL TROLLEY MODIFICATION - 3/4 AND 1HP

ITEM	QTY.	PART NO.	DESCRIPTION
A	2	1C3994	Idler Drive Ass'y - 12"
B	2	1B3988	3/4" to 1" Shaft Coupling
C*	1	390240	1" Shaft Keyed
D	1	1B3454	Remote Hoist Bearing Ass'y
E	1	1C4097	Idler Drive Assembly
F	1	181A0101	Pivot Shaft
G	2	146A0067	Cotter Pin
H	8	133A0029	3/8" - 16 Hex Head Nut
I	8	171A0343	3/8" - 16 Hex Head Bolt
J	8	216A0180	3/8" - Lock Washer
K	1	1A4024	Door Arm Mounting Kit
L	1	1C3681	Assembly Disconnect Arm
M	1	12B0526	Door Bracket
N	1	178B0045	Door Arm Curved
O	1	1B4001	Trolley Assembly
P	1	12C0480	Pivot Bracket

* [(Door Width ÷ 3) + 1']

Door Height (In Feet)	ITEM # Kit #	Q Rail	Q Qty.	R Chain Assembly	R Qty	S #41 Chain Master Link	S Qty	T 1 Set Spacer Kit	T Qty
8	1A3368-8	183C0137	2	1A4026	1	109A21	2	1A4005	2
10	1A3368-10	183C0137-1	2	1A4027	1	109A21	2	1A4005	2
12	1A3368-12	183C0137-2	2	1A4028	1	109A21	2	1A4005	2
14	1A3368-14	183C0137-3	2	1A4029	1	109A21	2	1A4005	3
16	1A3368-16	183C0138	2	1A4030	1	109A21	2	1A4005	3
18	1A3368-18	183C0138-1	2	1A4031	1	109A21	2	1A4005	3
20	1A3368-20	183C0138-2	2	1A4032	1	109A21	2	1A4005	4
22	1A3368-22	183C0138-3	2	1A4033	1	109A21	2	1A4005	4

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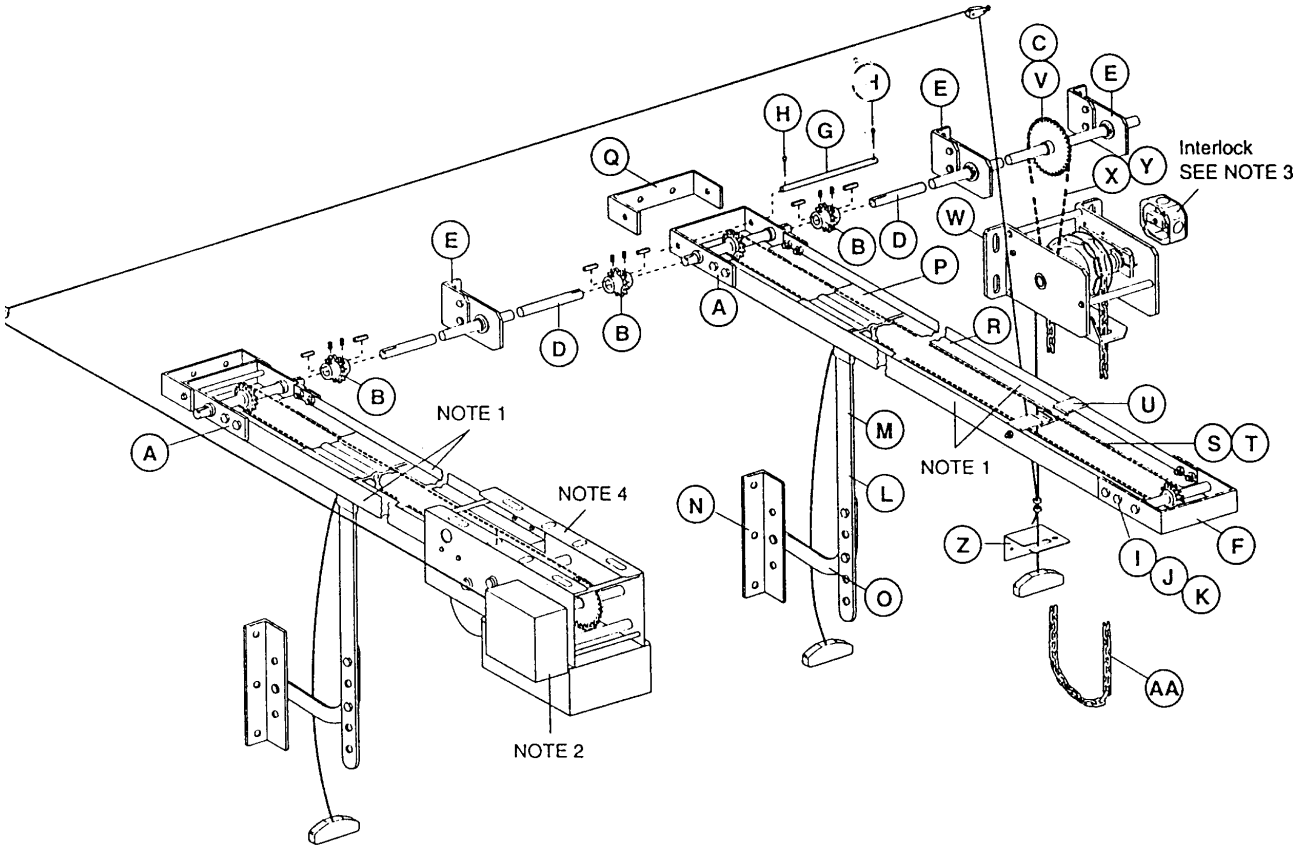
DOOR CONTR.
DRN. **DATE**
CKD. **SCALE: NONE**
APP'D **DWG.NO.**
PROJ. NO.

ASS'Y NO. 1A3369-8 Through 22
DUAL TROLLEY WITH HOIST MODIFICATION - 1/3 AND 1/2 HP



NOTES: 1. One set of trolley hardware is furnished with the operator.
Add one trolley hardware kit for proper door height and HP for total of 2 kits.
2. Brake and brake disconnect are optional on 1/3 and 1/2 HP models.
3. Wire "N/O" and "C" terminals of the chain hoist interlock switch. Refer to connections for "External Interlock" in operator owner's manual.
4. Operator illustrated may vary depnding on model purchased.

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PROJECT	
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DOOR CONTR.	
DRN.	**DATE**
CKD.	**SCALE: NONE**
APP'D	**DWG.NO.**
PROJ. NO.	

ASS'Y NO. 1A3369-8 Through 22
DUAL TROLLEY MODIFICATION - 1/3 AND 1/2 HP

ITEM	QTY.	PART NO.	DESCRIPTION
A	2	1C4104	Idler Drive Ass'y - 12"
B	3	1B3988	3/4" to 1" Shaft Coupling
C	1	23A0089	1/4" x 1" Key Stock
D*	2	390240	1" Shaft Keyed
E	3	1B3454	Remote Hoist Bearing Ass'y
F	1	1C4096	Idler Drive Assembly
G	1	181A0101	Pivot Shaft
H	2	146A0067	Cotter Pin
I	8	133A0029	3/8" - 16 Hex Head Nut
J	8	171A0343	3/8" - 16 Hex Head Bolt
K	8	216A0180	3/8" - Lock Washer
L	1	1A4024	Door Arm Mounting Kit
M	1	1C3681	Assembly Disconnect Arm
N	1	12B0407	Door Bracket
O	1	178B0045	Door Arm Curved
P	1	1B4001	Trolley Assembly
Q	1	12C0480	Pivot Bracket
V	1	81B0087	41B40 x 1" Sprocket
W	1	453748	R.D.D.C.H.
X	1	1A4110	#41 x 4 Ft. Chain
Y	1	109A0021	#41 Chain Master Link
Z	1	12B0393	Cable/Chain Keeper
AA*	1	350104	Hand Chain

* Cut one shaft to [(Door Width÷ 3) + 1']
  Cut one shaft to [(Door Width÷ 3) - 1']

** 2 Times Door Height Minus 4 Feet

ASSEMBLY NO. 1A4064 (OPTIONAL)
BRAKE DISCONNECT ASSEMBLY AND CABLE

ITEM	QTY.	PART NO.	DESCRIPTION
1	2	114A0033	Swivel Eye Pulley
2	2	2A3094	1/8" U - Bolt Clip
3	1	173A0023	Compression Sleeve
4	1	1A4063	Disconnect Bracket & Spring
5**	1	026A0056	Wire Rope 3/32"

*** [(Door Height x 1-1/2) + (Door Width x 2/3)]

Door Height (In Feet)	ITEM # -Kit #	R Rail	Qty.	S Chain Assembly	Qty	T #41 Chain Master Link	Qty	T 1 Set Spacer Kit	Qty
8	1A3369-8	183C0137	2	1A3881	1	1A0995	1	1A4004	2
10	1A3369-10	183C0137-1	2	1A3882	1	1A0995	1	1A4004	2
12	1A3369-12	183C0137-2	2	1A3883	1	1A0995	1	1A4004	2
14	1A3369-14	183C0137-3	2	1A3884	1	1A0995	1	1A4004	3
16	1A3369-16	183C0138	2	1A3996	1	1A0995	1	1A4004	3
18	1A3369-18	183C0138-1	2	1A3997	1	1A0995	1	1A4004	3
20	1A3369-20	183C0138-2	2	1A3998	1	1A0995	1	1A4004	4
22	1A3369-22	183C0138-3	2	1A3999	1	1A0995	1	1A4004	4

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PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

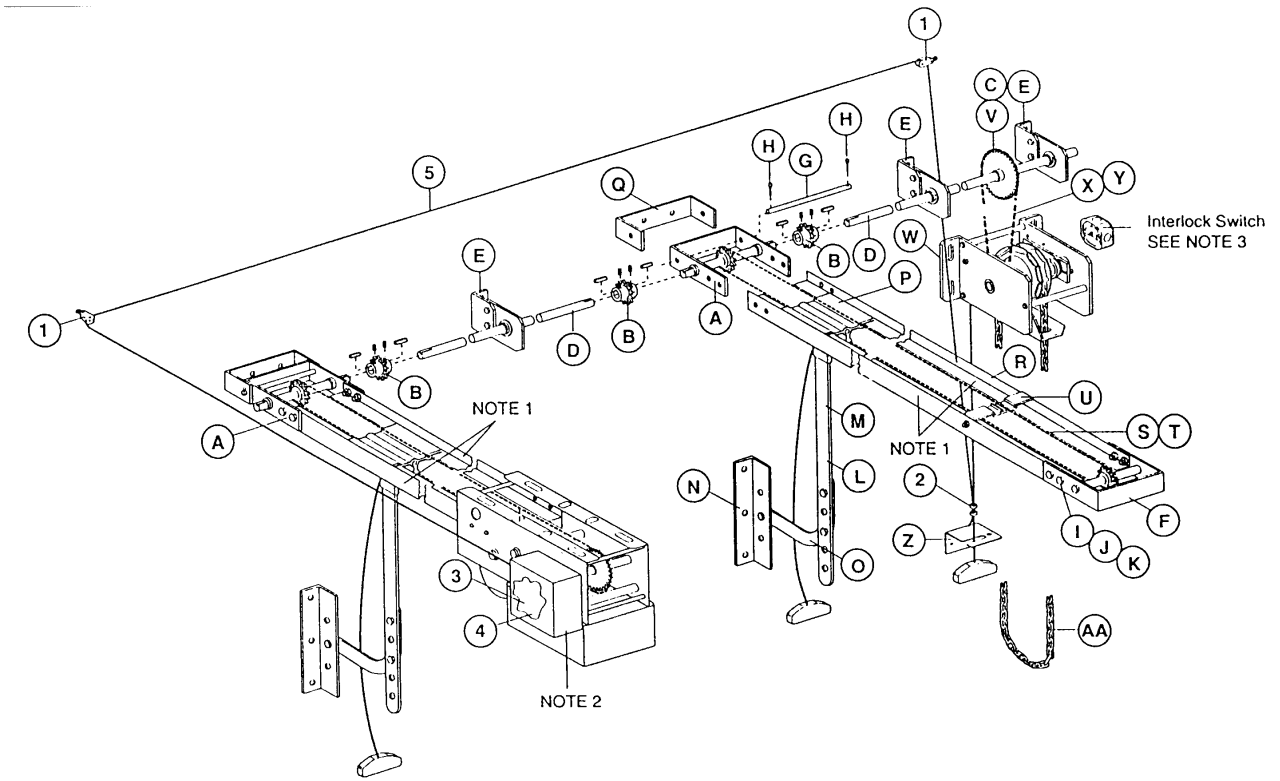
DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASS'Y NO. 1A3370-8 Through 22
DUAL TROLLEY WITH HOIST AND BRAKE - 3/4 AND 1 HP



NOTES: 1. One set of trolley hardware is furnished with the operator.
Add one trolley hardware kit for proper door height and HP for total of 2 kits.

2. 3/4 and 1 HP model shown. Brake is optional on 1/3 and 1/2 HP model.

3. Wire "N/O" and "C" terminals of the chain hoist interlock switch. Refer to connections for "External Interlock" in operator owner's manual.

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PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASSEMBLY NO. 1A3370-8 Through 22
DUAL TROLLEY WITH HOIST AND BRAKE- 3/4 AND 1 HP

ASSEMBLY NO. 1A4064
BRAKE DISCONNECT ASSEMBLY AND CABLE

ITEM	QTY	PART NO.	DESCRIPTION
1	2	144A0033	Swivel Eye Pulley
2	2	2A3094	1/8" U-Bolt Clip
3	1	173A0023	Compression Sleeve
4	1	1A4063	Disconnect Bracket & Spring
5*	1	026A0056	Wire Rope 3/32"

*[(Door Height x 1-1/2) + (Door Width x 2/3)]

** Cut one shaft to [(Door Width÷ 3) + 1']
Cut one shaft to [(Door Width÷ 3) - 1']

*** 2 Times Door Height Minus 4 Feet

ITEM	QTY.	PART NO.	DESCRIPTION
A	2	1C3994	Drive Shaft Ass'y - 12"
B	3	1B3988	3/4" to 1" Shaft Coupling
C	1	23A0089	1/4" x 1" Key Stock
D**	2	390240	1" Shaft Keyed
E	3	1B3454	Remote Hoist Bearing Ass'y
F	1	1C4097	Idler Shaft Assembly
G	1	181A0101	Pivot Shaft
H	2	146A0067	Cotter Pin
I	8	133A0029	3/8" - 16 Hex Head Nut
J	8	171A0343	3/8" - 16 Hex Head Bolt
K	8	216A0180	3/8" - Lock Washer
L	1	1A4024	Door Arm Mounting Kit
M	1	1C3681	Assembly Disconnect Arm
N	1	12B0526	Door Bracket
O	1	178B045	Door Arm Curved
P	1	1B4001	Trolley Assembly
Q	1	12C0480	Pivot Bracket
V	1	81B0087	41B40 x 1" Sprocket
W	1	1D4411	R.D.D.C.H.
X	1	1A4110	#41 x 4 Ft. Chain
Y	1	109A0021	#41 Chain Master Link
Z	1	12B0393	Chain/Cable Keeper
AA***	1	22A0014	Hand Chain

Door Height (In Feet)	ITEM # Kit #	R Rail	Qty.	S Chain Assemby	Qty	T #41 Chain Master Link	Qty	U 1 Set Spacer Kit	Qty
8	1A3370-8	183C0137	2	1A4026	1	109A0021	2	1A4005	2
10	1A3370-10	183C0137-1	2	1A4027	1	109A0021	2	1A4005	2
12	1A3370-12	183C0137-2	2	1A4028	1	109A0021	2	1A4005	2
14	1A3370-14	183C0137-3	2	1A4029	1	109A0021	2	1A4005	3
16	1A3370-16	183C0138	2	1A4030	1	109A0021	2	1A4005	3
18	1A3370-18	183C0138-1	2	1A4031	1	109A0021	2	1A4005	3
20	1A3370-20	183C0138-2	2	1A4032	1	109A0021	2	1A4005	4
22	1A3370-22	183C0138-3	2	1A4033	1	109A0021	2	1A4005	4

Lift-Master

PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

DRN. **DATE**

CKD. **SCALE: NONE**

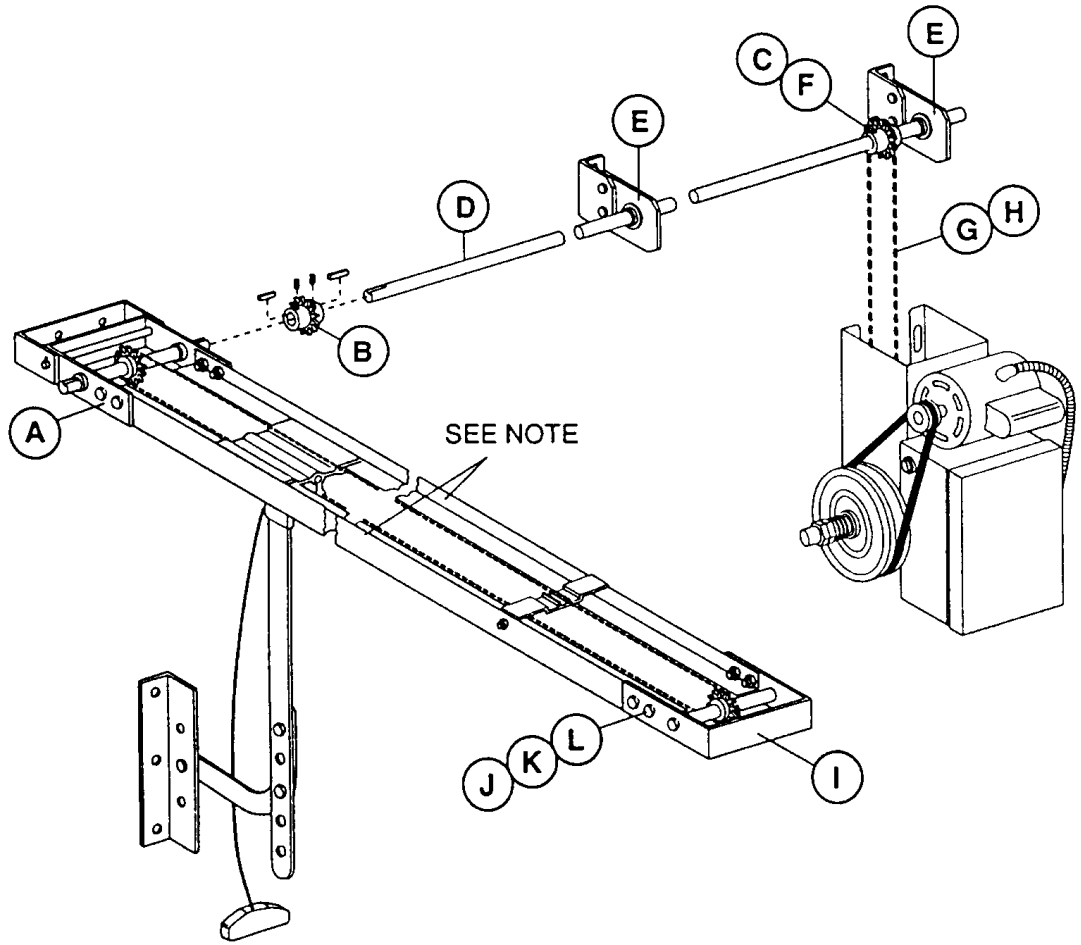
APP'D **DWG.NO.**

PROJ. NO.

ASSEMBLY NO. 1A3371 REMOTE TROLLEY POWERHEAD
FOR 1/3 AND 1/2 HP

ITEM	QTY.	PART NO.	DESCRIPTION
A	1	1C4104	Idler Drive Ass'y - 12"
B	1	1B3988	3/4" to 1" Shaft Coupling
C	1	23A0089	1/4" to 1" Key Stock
D*	1	390240	1" Shaft Keyed
E	2	1B3454	Remote Hoist Bearing Ass'y
F	1	81B0142	43B14 x 1" Sprocket
G	1	1A4119	#48 x 4 Ft. Chain
H	1	109A0011	#48 Chain Master Link
I	1	1C4096	Idler Shaft Assembly
J	4	133A0029	3/8" - 16 Hex Head Nut
K	4	171A0343	3/8" - 16 Hex Head Bolt
L	4	216A0180	3/8" Lock Washer

* [(Door Width ÷ 2) + 1']



NOTE: Rail and Hardware Furnished with Operator.

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DOOR CONTR.

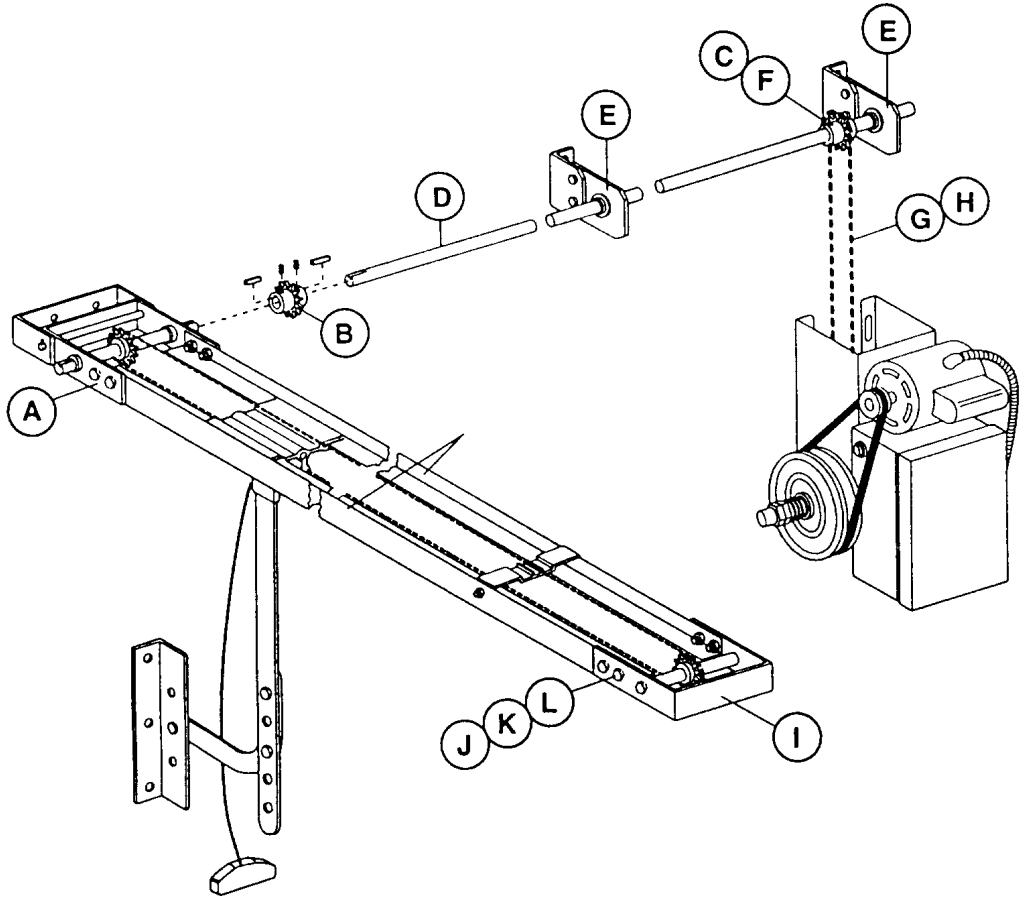
DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASSEMBLY NO. 1A3372 REMOTE TROLLEY POWERHEAD WITH BRAKE FOR 3/4 AND 1 HP



ITEM	QTY.	PART NO.	DESCRIPTION
A	1	1C3994	Idler Drive Ass'y - 12"
B	1	1B3988	3/4" to 1" Shaft Coupling
C	1	23A0089	1/4" to 1" Key Stock
D*	1	390240	1" Shaft Keyed
E	2	1B3454	Remote Hoist Bearing Ass'y
F	1	81B0084	41B14 x 1" Sprocket
G	1	1A4110	#41 x 4 Ft. Chain
H	1	109A0021	#41 Chain Master Link
I	1	1C4097	Idler Shaft Assembly
J	4	133A0029	3/8" - 16 Hex Head Nut
K	4	171A0343	3/8" - 16 Hex Head Bolt
L	4	216A0180	3/8" Lock Washer

* [(Door Width ÷ 2) + 1']

NOTE: Rail and Hardware Furnished with Operator.

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DOOR CONTR.

DRN. **DATE**

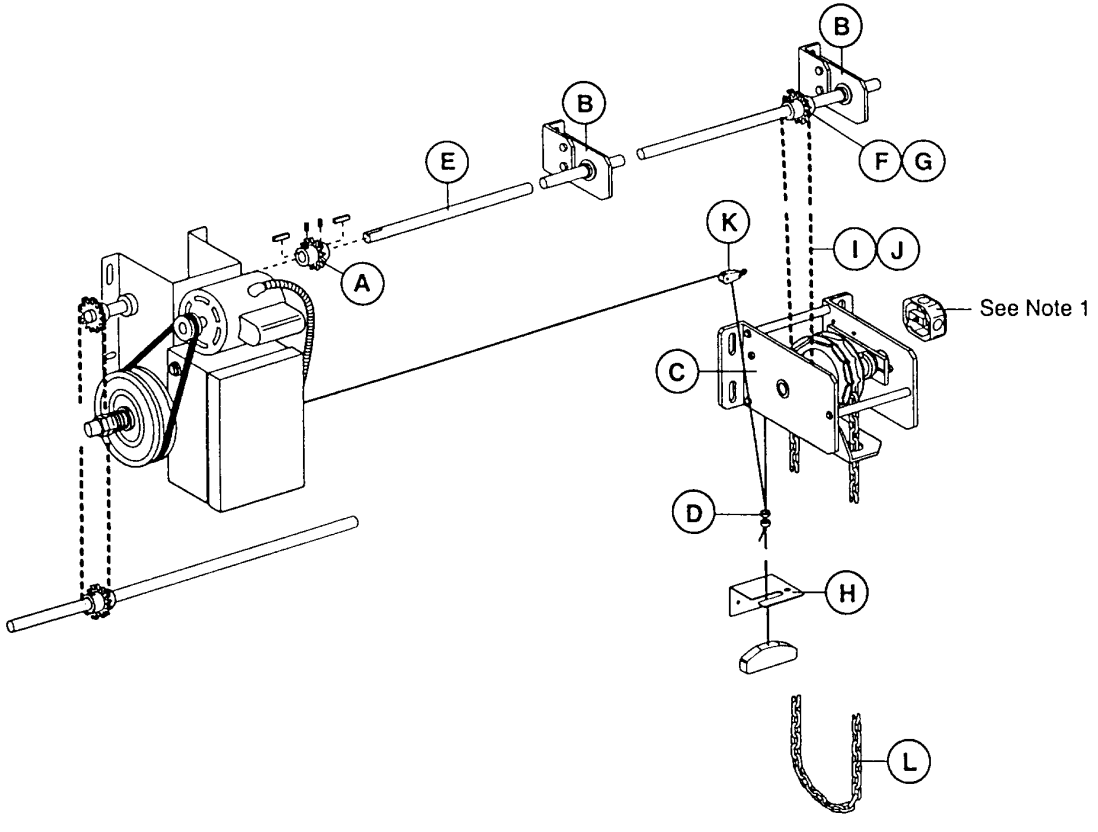
CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASSEMBLY NO. 1A3373
REMOTE HOIST FOR CENTER MOUNT BELT JACKSHAFT

NOTE: 1. Remove Jumper wire between operator terminals T4 and T5. Wire “N/O” and “C” terminals of the chain hoist interlock switch to terminals T4 & T5.



ITEM	QTY.	PART NO.	DESCRIPTION
A	1	1B4188	1” to 1” Shaft Coupling
B	2	1B3454	Remote Hoist Bearing Ass’y
C	1	1D3094	R.D.D.C.H.
D	2	2A3094	1/8” U-Bolt Clip
E*	1	390240	1” Shaft, Keyed
F	1	81B0084	41B14 x 1” Sprocket
G	1	23A0089	1/4” x 1” Key Stock
H	1	12B0393	Chain/Cable Keeper
I	1	1A4110	#41 x 4 Ft. Chain
J	1	109A0021	#41 Chain Master Link
K	1	144A0033	3/4” Tackle Pulley
L	1	22A0014	Hand Chain

* [(Door Width ÷ 2) + 1’]

** 2 Times Door Height Minus 4 Feet

Lift-Master

PROJECT

ARCHITECT

GEN’L. CONTR.

DOOR CONTR.

DRN. **DATE**

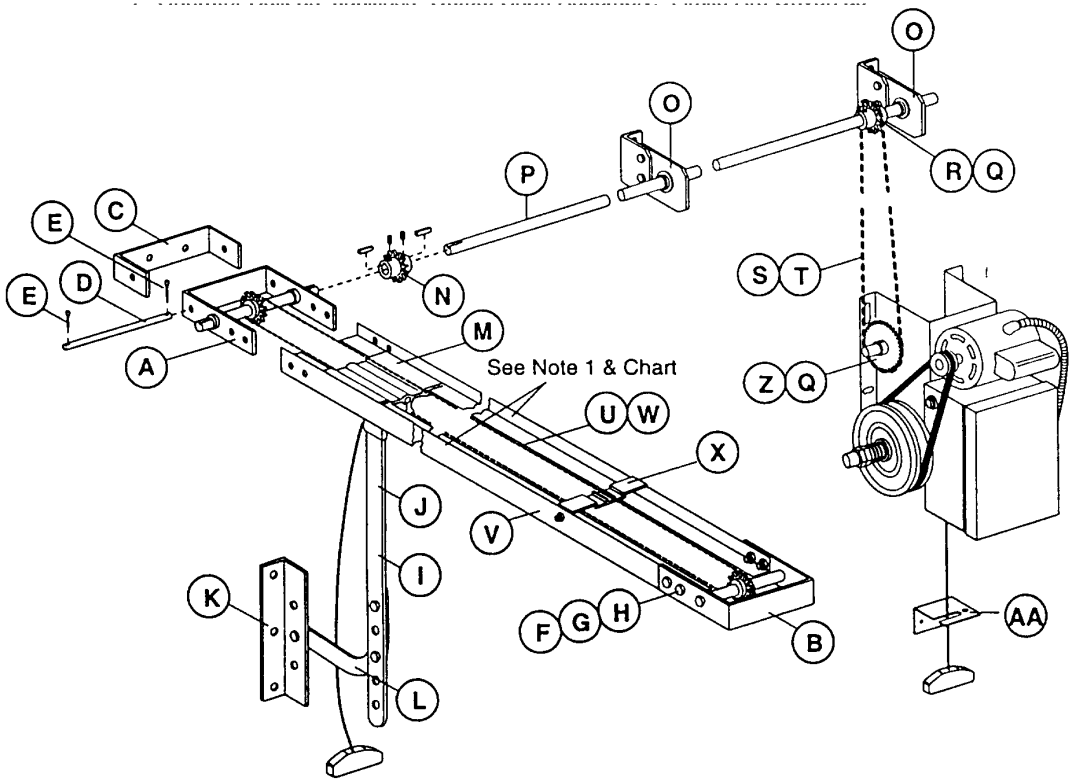
CKD. **SCALE: NONE**

APP’D **DWG.NO.**

PROJ. NO.

ASSEMBLY NO. 1A3374-8 Thru 22
BELT AUXILIARY TROLLEY FOR 1/3 & 1/2 HP

NOTE: 1. Order Trolley Hardware Kit for Appropriate Horsepower and Door Size.
2. Operator Built as “Jackless” Output Shaft Assembly. Limits Are Driven as “Trolley” Model. Disconnect Built into Operator as Standard. Chain Hoist is Optional on Operator.



ITEM	QTY.	PART NO.	DESCRIPTION
A	1	1C4101	Drive Shaft Ass’y - 12”
B	1	1C4096	Idler Shaft Assembly
C	1	12C480	Pivot Bracket
D	1	181A101	Pivot Shaft
E	2	146A0067	Cotter PIn
F	8	133A0029	3/8” - 16 Hex Nut
G	8	171A0343	3/8” - 16 Hex Head Bolt
H	8	216A0180	3/8” Lock Washer
I	1	1A4024	Door Arm Mounting Kit
J	1	1C3681	Ass’y Disconnect Arm
K	1	12B0526	Door Bracket
L	1	178B0045	Door Arm Curved
M	1	1B4001	Trolley Assembly
N	1	1B3998	3/4” to 1” Shaft Coupling
O	2	1B3454	Remote Hoist Bearing Ass’y
P*	1	390240	1” Shaft Keyed
Q	2	23A0089	1/4” x 1” Key Stock
R	1	81B0084	41B14 x 1” Sprocket
S	1	1A4110	#41 x 4 Ft. Chain
T	1	109A0021	#41 Chain Master Link
U	1	1A0995	#48 Master Link Kit
Z	1	81B0087	41B40 x 1” Sprocket
AA	1	12B0393	Chain/Cable Keeper

* [(Door Width ÷ 2) + 1’]

Door Height	ITEM #	V		W		X	
(In Feet)	KIT #	RAIL	QTY	CHAIN ASSEMBLY	QTY	SPACER KIT	QTY
8	1A3374-8	183C0137	2	1A3881	1	1A4004	2
10	1A3374-10	183C0137-1	2	1A3882	1	1A4004	2
12	1A3374-12	183C0137-2	2	1A3883	1	1A4004	2
14	1A3374-14	183C0137-3	2	1A3884	1	1A4004	3
16	1A3374-16	183C0138	2	1A3996	1	1A4004	3
18	1A3374-18	183C0138-1	2	1A3997	1	1A4004	3
20	1A3374-20	183C0138-2	2	1A3998	1	1A4004	4
22	1A3374-22	183C0138-3	2	1A3999	1	1A4004	4

Lift-Master

PROJECT

ARCHITECT

GEN’L. CONTR.

DOOR CONTR.

DRN. **DATE**

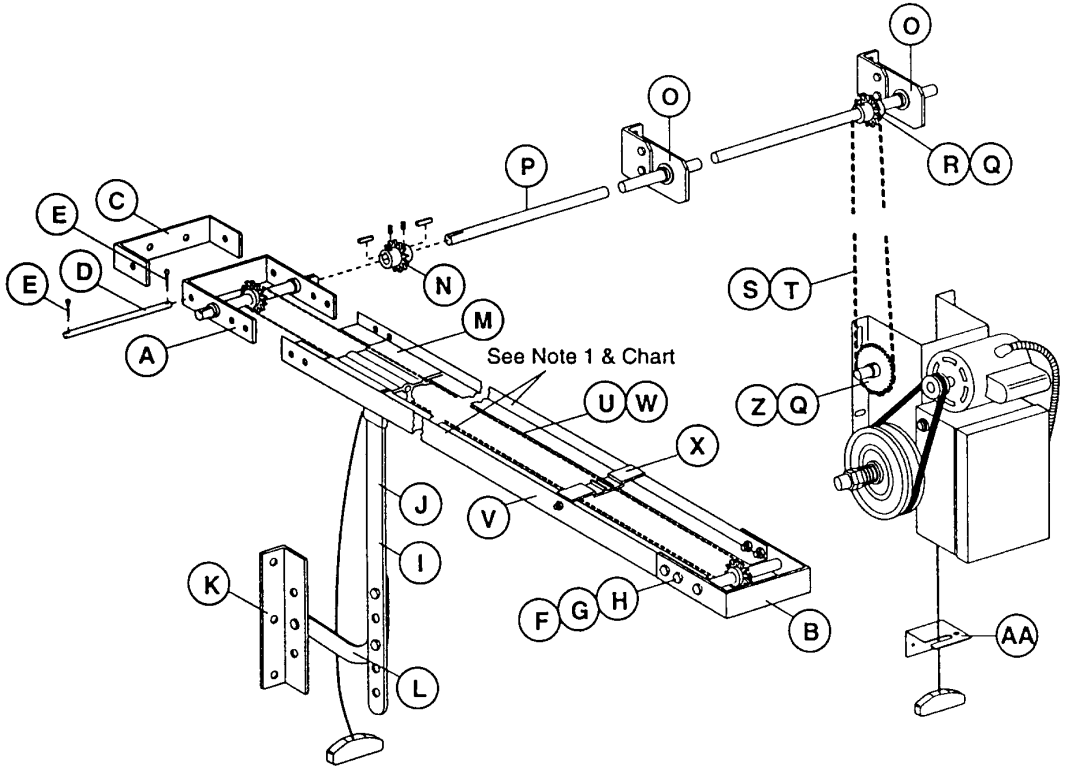
CKD. **SCALE: NONE**

APP’D **DWG.NO.**

PROJ. NO.

ASSEMBLY NO. 1A3375-8 Thru 22
BELT AUXILIARY TROLLEY FOR 3/4 & 1 HP

NOTE: 1. Order Trolley Hardware Kit for Appropriate Horsepower and Door Size.
2. Operator Built as "Jackless" Output Shaft Assembly. Limits Are Driven as "Trolley" Model. Disconnect Built into Operator as Standard. Chain Hoist is Optional on Operator.



ITEM	QTY.	PART NO.	DESCRIPTION
A	1	1C3994	Drive Shaft Ass'y - 12"
B	1	1C4097	Idler Shaft Assembly
C	1	12C480	Pivot Bracket
D	1	181A101	Pivot Shaft
E	8	146A0067	Cotter PIn
F	8	133A0029	3/8" - 16 Hex Nut
G	8	171A0343	3/8" - 16 Hex Head Bolt
H	8	216A0180	3/8" Lock Washer
I	1	1A4024	Door Arm Mounting Kit
J	1	1C3681	Ass'y Disconnect Arm
K	1	12B0526	Door Bracket
L	1	178B0045	Door Arm Curved
M	1	1B4001	Trolley Assembly
N	1	1B3998	3/4" to 1" Shaft Coupling
O	2	1B3454	Remote Hoist Bearing Ass'y
P*	1	390240	1" Shaft Keyed
Q	2	23A0089	1/4" x 1" Key Stock
R	1	81B0084	41B14 x 1" Sprocket
S	1	1A4110	#41 x 4 Ft. Chain
T	1	109A0021	#41 Chain Master Link
U	1	1A4034	#41 Master Link Kit
Z	1	81B0087	41B40 x 1" Sprocket
AA	1	12B0393	Chain/Cable Keeper

* [(Door Width ÷ 2) + 1']

Door Height (In Feet)	ITEM # KIT #	V RAIL	QTY	W CHAIN ASSEMBLY	QTY	X SPACER KIT	QTY
8	1A3375-8	183C0137	2	1A4026	1	1A4005	2
10	1A3375-10	183C0137-1	2	1A4027	1	1A4005	2
12	1A3375-12	183C0137-2	2	1A4028	1	1A4005	2
14	1A3375-14	183C0137-3	2	1A4029	1	1A4005	3
16	1A3375-16	183C0138	2	1A4030	1	1A4005	3
18	1A3375-18	183C0138-1	2	1A4031	1	1A4005	3
20	1A3375-20	183C0138-2	2	1A4032	1	1A4005	4
22	1A3375-22	183C0138-3	2	1A4033	1	1A4005	4

Lift-Master

PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

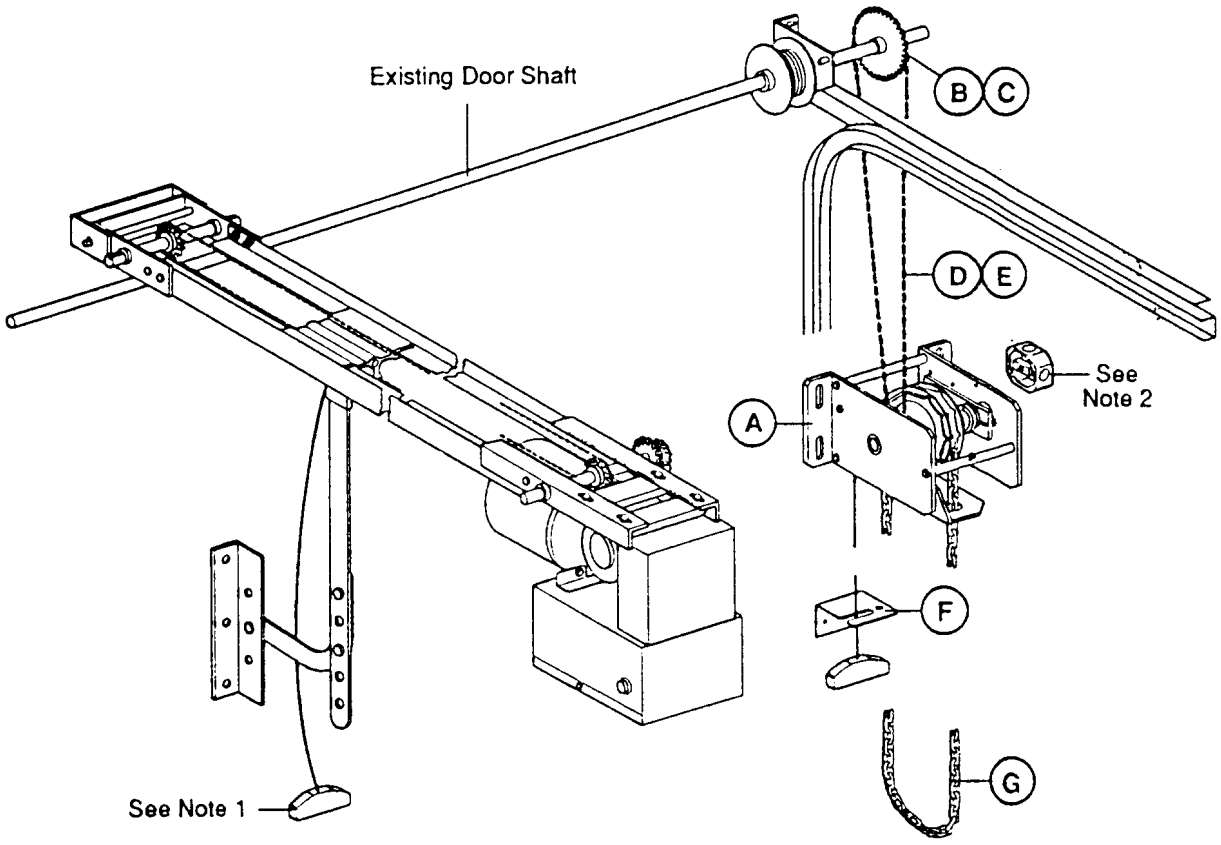
PROJ. NO.

ASS'Y NO. 1A3376 GT HOIST MODIFICATION KIT

NOTES: 1. To use chain hoist, this arm must be disengaged because the chain hoist cannot back wind the reducer on the operator.
2. Remove Jumper wire between operator terminals T4 and T5. Wire "N/O" and "C" terminals of the chain hoist interlockswitch to terminals T4 & T5.

ITEM	QTY.	PART NO.	DESCRIPTION
A	1	1D4411	R.D.D.C.H.
B	1	81B0087	41B40 x 1" Sprocket
C	1	23A0089	1/4" to 1" Keystock
D	1	1A4110	#41 x 4 Ft. Chain
E	1	109A0021	#41 Chain Master Link
F	1	12B0393	Chain/Cable Keeper
G*	1	22A0014	Hand Chain

* 2 Times Door Height Minus 4 Ft.



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PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

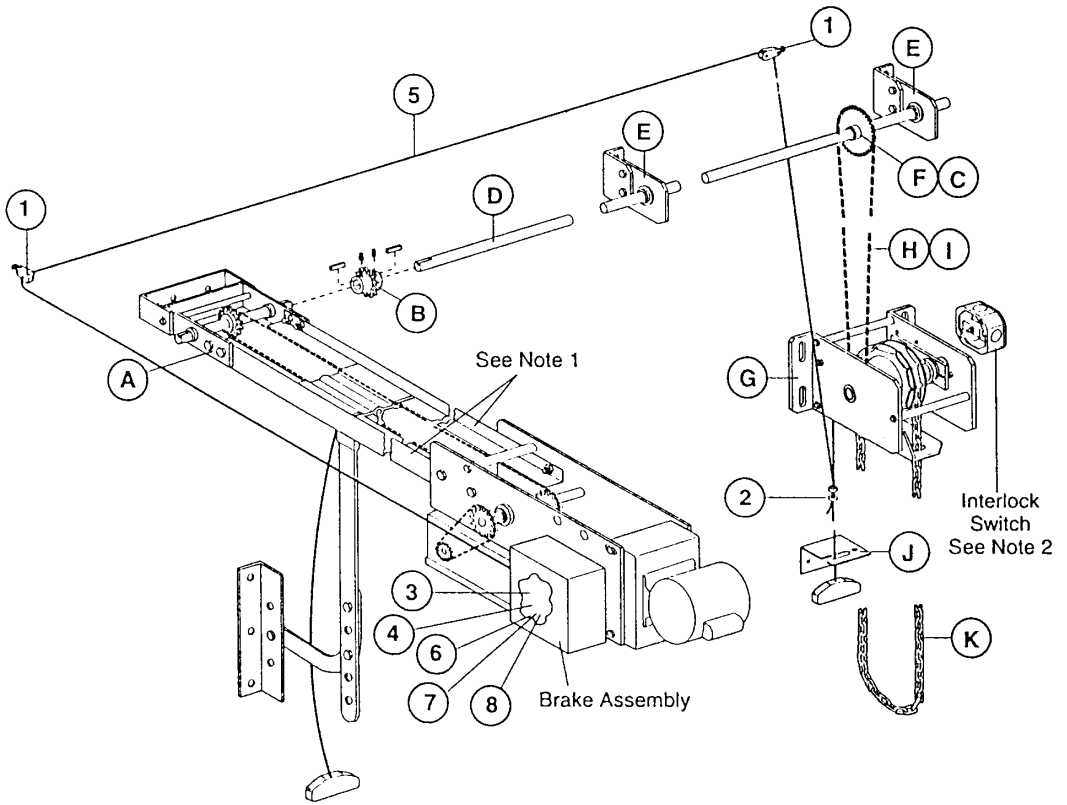
DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASS'Y NO. 1A4865 HTL TROLLEY HOIST MODIFICATION KIT WITH BRAKE FOR 3/4 & 1 HP



ASS'Y NO. 1A3366 TROLLEY HOIST MODIFICATION WITH BRAKE (3/4 & 1 HP)

ITEM	QTY	PART NO.	DESCRIPTION
A	1	1C3994	Drive Shaft Ass'y - 12"
B	1	1B3988	3/4" to 1" Shaft Coupling
C	1	23A0089	1/4" x 1" Keystock
D**	1	390240	1" Shaft Keyed
E	2	1B3454	Remote Hoist Bearing Ass'y
F	1	81B0087	41B40 x 1" Sprocket
G	1	1D4411	R.D.D.C.H.
H	1	1A4110	#41 x 4 Ft. Chain
I	1	109A0021	#41 Chain Master Link
J	1	12B0393	Chain/Cable Keeper
K***	1	22A0014	Hand Chain

* [(Door Height x 1.5) + (Door Width÷ 2)]

** [(Door Width ÷ 2) + 1']

*** 2 Times Door Height Minus 4 Feet

NOTES:
1. Rail and associated hardware furnished with operator.
2. Wire "N/O" and "C" terminals of the chain hoist interlock switch. Refer to connections for "External Interlock" in operator owner's manual.

ASS'Y NO. 1A4791 BRAKE DISCONNECT ASS'Y AND CABLE

ITEM	QTY	PART NO.	DESCRIPTION
1	2	144A33	Pulley
2	2	2A3094	U-Bolt
3	1	12B563	Cable Guide Bracket
4	1	13A61	Bushing
5	1	26A56	Wire Rope 3/32"
6	1	146A88	Cotter Pin
7	1	177B128	Extension Spring
8	1	173A23	Compression Sleeve
-	1	114A1823	Instuctions

Lift-Master

PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

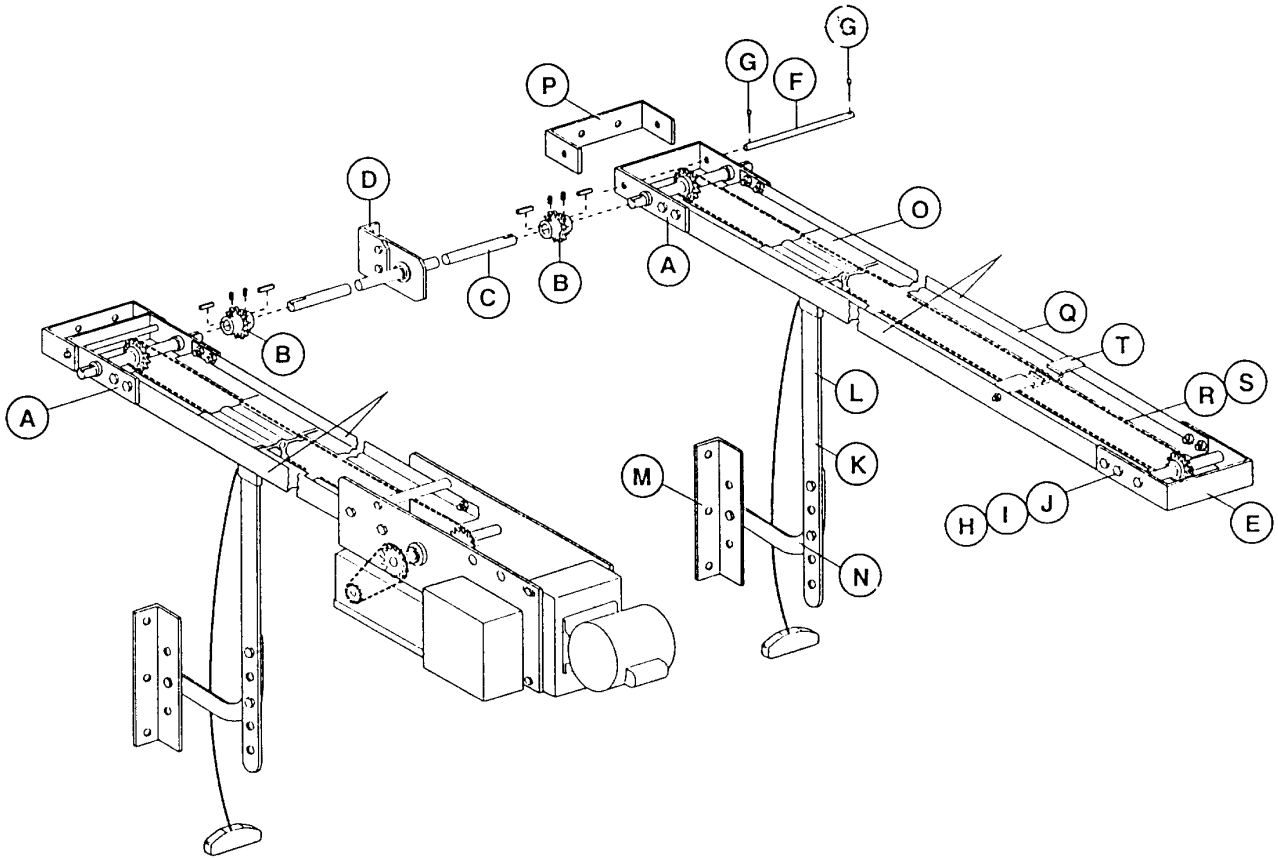
DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASSEMBLY NO. 1A4866-8 Through 22
HTL DUAL TROLLEY MODIFICATION - 3/4 & 1 HP



NOTE: 1. One set of trolley hardware is furnished with the operator.
Add one trolley hardware kit for proper door height and HP for total of 2 kits.

Lift-Master

PROJECT	
ARCHITECT	
GEN'L. CONTR.	
DOOR CONTR.	
DRN.	**DATE**
CKD.	**SCALE: NONE**
APP'D	**DWG.NO.**
PROJ. NO.	

ASSEMBLY NO. 1A4866-8 Through 22
HTL DUAL TROLLEY MODIFICATION - 3/4 & 1 HP

ITEM	QTY	PART NO.	DESCRIPTION
A	2	1C3994	Idler Drive Ass'y - 12"
B	2	1B3988	3/4" to 1" Shaft Coupling
C*	1	390240	1" Shaft Keyed
D	1	1B3454	Remote Hoist Bearing Ass'y
E	1	1C4097	Idler Drive Assembly
F	1	181A0101	Pivot Shaft
G	2	146A0067	Cotter Pin
H	8	133A0029	3/8" - 16 Hex Head Nut
I	8	171A0343	3/8" - 16 Hex Head Bolt
J	8	216A0180	3/8" - Lock Washer
K	1	1A4024	Door Arm Mounting Kit
L	1	1C3681	Assembly Disconnect Arm
M	1	12B0526	Door Bracket
N	1	178B0045	Door Arm Curved
O	1	1B4001	Trolley Assembly
P	1	12C0480	Pivot Bracket

* [(Door Width ÷ 3) + 1']

Door Height (In Feet)	ITEM # KIT #	Q Rail	Q Qty	R Chain Assembly	R Qty	S #41 Chain Master Link	S Qty	T 1 Set Spacer Kit	T Qty
8	1A3368-8	183C0137	2	1A4026	1	109A21	2	1A4005	2
10	1A3368-10	183C0137-1	2	1A4027	1	109A21	2	1A4005	2
12	1A3368-12	183C0137-2	2	1A4028	1	109A21	2	1A4005	2
14	1A3368-14	183C0137-3	2	1A4029	1	109A21	2	1A4005	3
16	1A3368-16	183C0138	2	1A4030	1	109A21	2	1A4005	3
18	1A3368-18	183C0138-1	2	1A4031	1	109A21	2	1A4005	3
20	1A3368-20	183C0138-2	2	1A4032	1	109A21	2	1A4005	4
22	1A3368-22	183C0138-3	2	1A4033	1	109A21	2	1A4005	4

Lift-Master

PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

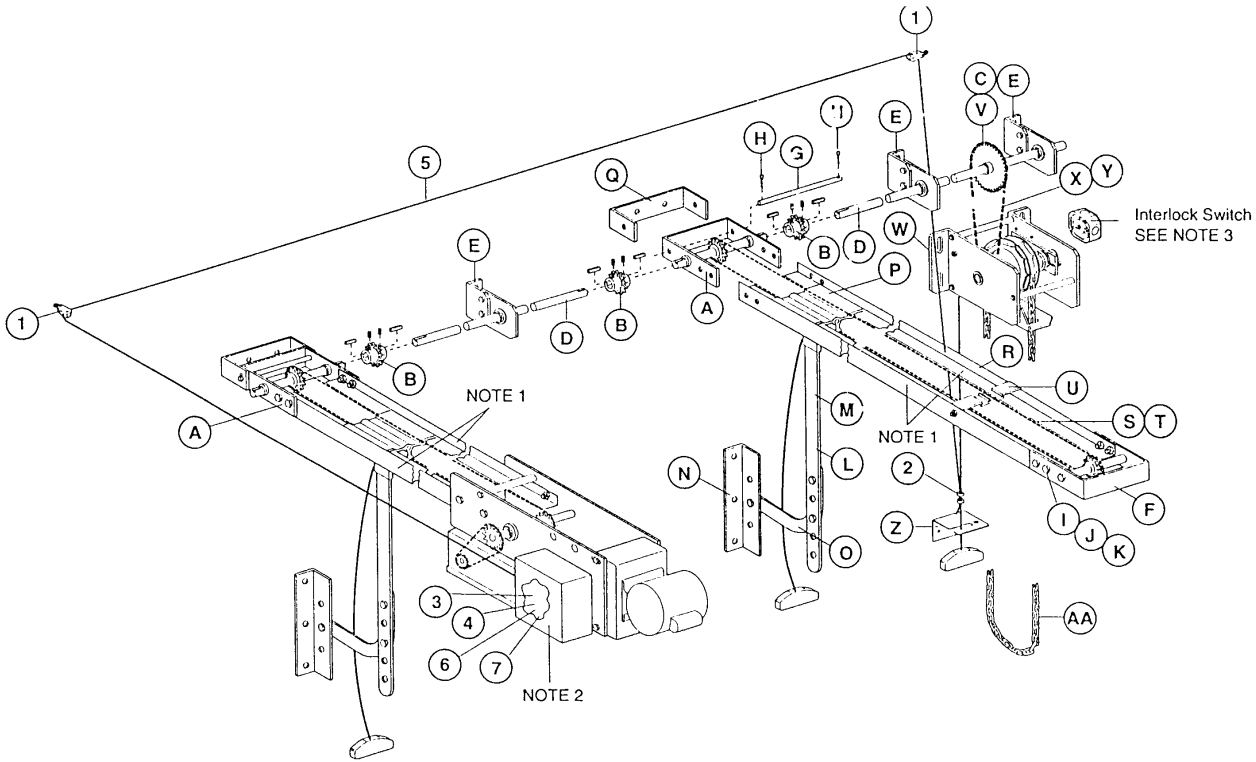
DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASSEMBLY NO. 1A4867-8 Through 22
HTL DUAL TROLLEY WITH HOIST AND BRAKE - 3/4 & 1 HP



NOTES: 1. One set of trolley hardware is furnished with the operator.
Add one trolley hardware kit for proper door height and HP for total of 2 kits.

2. 3/4 and 1 HP model shown. Brake is optional on 1/3 and 1/2 HP model.

3. Wire “N/O” and “C” terminals of the chain hoist interlock switch. Refer to connections for “External Interlock” in operator owner’s manual.

Lift-Master

PROJECT	
ARCHITECT	
GEN’L. CONTR.	
DOOR CONTR.	
DRN.	**DATE**
CKD.	**SCALE: NONE**
APP’D	**DWG.NO.**
PROJ. NO.	

ASSEMBLY NO. 1A4867-8 Through 22
HTL DUAL TROLLEY WITH HOIST AND BRAKE - 3/4 & 1 HP

ASSEMBLY NO. 1A4791
BRAKE DISCONNECT ASSEMBLY AND CABLE

ITEM	QTY	PART NO.	DESCRIPTION
1	2	144A0033	Swivel Eye Pulley
2	2	2A3094	1/8" U-Bolt Clip
3	1	173A0023	Compression Sleeve
4	1	13A0061	Bushing
5*	1	026A0056	Wire Rope 3/32"
6	1	12B0563	Cable Guide Bracket
7	1	146A0088	Cotter Pin
8	1	177B0128	Extension Spring
-	1	114A1823	Instructions

* [(Door Height x 1-1/2) + (Door Width x 2/3)]

** Cut one shaft to [(Door Width÷ 3) + 1']

Cut one shaft to [(Door Width÷ 3) - 1']

*** 2 Times Door Height Minus 4 Feet

ITEM	QTY	PART NO.	DESCRIPTION
A	2	1C3994	Drive Shaft Ass'y - 12"
B	3	1B3988	3/4" to 1" Shaft Coupling
C	1	23A0089	1/4" x 1" Key Stock
D**	2	390240	1" Shaft Keyed
E	3	1B3454	Remote Hoist Bearing Ass'y
F	1	1C4097	Idler Shaft Assembly
G	1	181A0101	Pivot Shaft
H	2	146A0067	Cotter Pin
I	8	133A0029	3/8" - 16 Hex Head Nut
J	8	171A0343	3/8" - 16 Hex Head Bolt
K	8	216A0180	3/8" - Lock Washer
L	1	1A4024	Door Arm Mounting Kit
M	1	1C3681	Assembly Disconnect Arm
N	1	12B0526	Door Bracket
O	1	178B0045	Door Arm Curved
P	1	1B4001	Trolley Assembly
Q	1	12C0480	Pivot Bracket
V	1	81B0087	41B40 x 1" Sprocket
W	1	1D4411	R.D.D.C.H.
X	1	1A4110	#41 x 4 Ft. Chain
Y	1	109A0021	#41 Chain Master Link
Z	1	12B0393	Chain/Cable Keeper
AA***	1	22A0014	Hand Chain

Door Height	ITEM #	Q		R		S		T	
	---			Chain		#41 Chain		1 Set	
(In Feet)	KIT #	Rail	Qty	Assembly	Qty	Master Link	Qty	Spacer Kit	Qty
8	1A3370-8	183C0137	2	1A4026	1	109A0021	2	1A4005	2
10	1A3370-10	183C0137-1	2	1A4027	1	109A0021	2	1A4005	2
12	1A3370-12	183C0137-2	2	1A4028	1	109A0021	2	1A4005	2
14	1A3370-14	183C0137-3	2	1A4029	1	109A0021	2	1A4005	3
16	1A3370-16	183C0138	2	1A4030	1	109A0021	2	1A4005	3
18	1A3370-18	183C0138-1	2	1A4031	1	109A0021	2	1A4005	3
20	1A3370-20	183C0138-2	2	1A4032	1	109A0021	2	1A4005	4
22	1A3370-22	183C0138-3	2	1A4033	1	109A0021	2	1A4005	4

Lift-Master

PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

PROJ. NO.

ASSEMBLY NO. 1A4867-8 Through 22
HTL DUAL TROLLEY WITH HOIST AND BRAKE - 3/4 & 1 HP

ASSEMBLY NO. 1A4791
BRAKE DISCONNECT ASSEMBLY AND CABLE

ITEM	QTY	PART NO.	DESCRIPTION
1	2	144A0033	Swivel Eye Pulley
2	2	2A3094	1/8" U-Bolt Clip
3	1	173A0023	Compression Sleeve
4	1	13A0061	Bushing
5*	1	026A0056	Wire Rope 3/32"
6	1	12B0563	Cable Guide Bracket
7	1	146A0088	Cotter Pin
8	1	177B0128	Extension Spring
-	1	114A1823	Instructions

* [(Door Height x 1-1/2) + (Door Width x 2/3)]

** Cut one shaft to [(Door Width÷ 3) + 1']

Cut one shaft to [(Door Width÷ 3) - 1']

*** 2 Times Door Height Minus 4 Feet

ITEM	QTY	PART NO.	DESCRIPTION
A	2	1C3994	Drive Shaft Ass'y - 12"
B	3	1B3988	3/4" to 1" Shaft Coupling
C	1	23A0089	1/4" x 1" Key Stock
D**	2	390240	1" Shaft Keyed
E	3	1B3454	Remote Hoist Bearing Ass'y
F	1	1C4097	Idler Shaft Assembly
G	1	181A0101	Pivot Shaft
H	2	146A0067	Cotter Pin
I	8	133A0029	3/8" - 16 Hex Head Nut
J	8	171A0343	3/8" - 16 Hex Head Bolt
K	8	216A0180	3/8" - Lock Washer
L	1	1A4024	Door Arm Mounting Kit
M	1	1C3681	Assembly Disconnect Arm
N	1	12B0526	Door Bracket
O	1	178B0045	Door Arm Curved
P	1	1B4001	Trolley Assembly
Q	1	12C0480	Pivot Bracket
V	1	81B0087	41B40 x 1" Sprocket
W	1	1D4411	R.D.D.C.H.
X	1	1A4110	#41 x 4 Ft. Chain
Y	1	109A0021	#41 Chain Master Link
Z	1	12B0393	Chain/Cable Keeper
AA***	1	22A0014	Hand Chain

Door Height	ITEM #	Q		R		S		T	
	----------			Chain		#41 Chain		1 Set	
(In Feet)	KIT #	Rail	Qty	Assembly	Qty	Master Link	Qty	Spacer Kit	Qty
8	1A3370-8	183C0137	2	1A4026	1	109A0021	2	1A4005	2
10	1A3370-10	183C0137-1	2	1A4027	1	109A0021	2	1A4005	2
12	1A3370-12	183C0137-2	2	1A4028	1	109A0021	2	1A4005	2
14	1A3370-14	183C0137-3	2	1A4029	1	109A0021	2	1A4005	3
16	1A3370-16	183C0138	2	1A4030	1	109A0021	2	1A4005	3
18	1A3370-18	183C0138-1	2	1A4031	1	109A0021	2	1A4005	3
20	1A3370-20	183C0138-2	2	1A4032	1	109A0021	2	1A4005	4
22	1A3370-22	183C0138-3	2	1A4033	1	109A0021	2	1A4005	4

Lift-Master

PROJECT

ARCHITECT

GEN'L. CONTR.

DOOR CONTR.

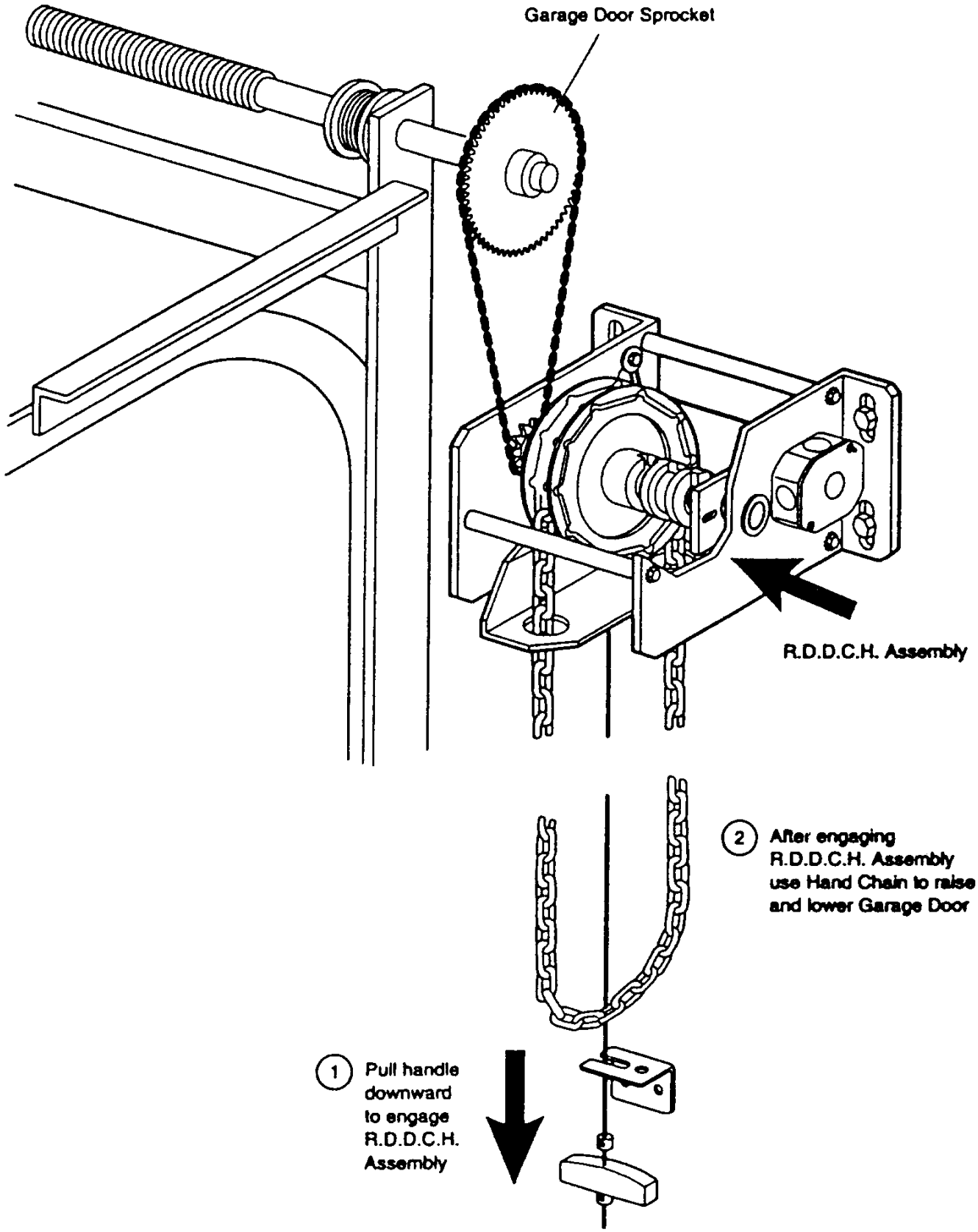
DRN. **DATE**

CKD. **SCALE: NONE**

APP'D **DWG.NO.**

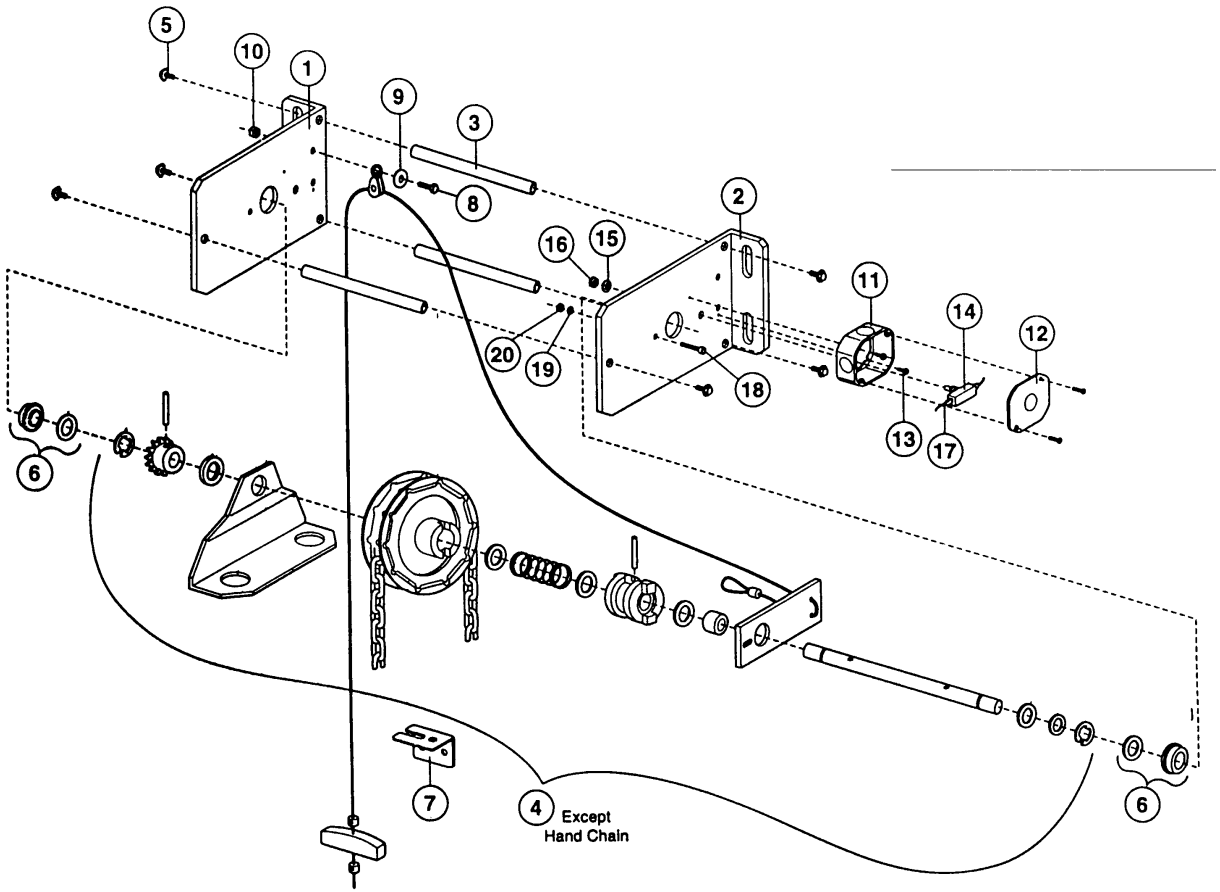
PROJ. NO.

1A4414
REMOTE REDUCED DRIVE CHAIN HOIST KIT



SERVICE PART LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	59C41	FRAME REMOTE HOIST LEFT	1	11	17B115	4" OCT BOX EXTENSION W/SCREWS	1
2	59C42	FRAME REMOTE HOIST RIGHT	1	12	31A406	4" OCT COVER	1
3	184B135	SPACER	3	13	171A375	SCREW #8 X 3/8	2
4	1D4410	REMOTE HOIST SHAFT ASS'Y.	1	14	180B107	SWITCH INTERLOCK	1
5	171A402	SCREW 5/16 SEMS	6	15	216A158	WASHER LOCK 3/8	1
6	1K4300	BEARING BALL 3/4" I.D. KIT	1	16	133A162	HEX NUT 3/8 - 32	1
7	12B393	CHAIN KEEPER	1	17	819BW0402Z1	WIRE ASSY. BLACK	2
8	171A396	BOLT 1/4-20	1	18	171A429	SCREW 10-32 X 3/4 HEX	1
9	216A2	WASHER	1	19	216A177	WASHER #10 LOCK	1
10	133A184	NUT 1/4-20	1	20	133A150	NUT 10-32	1



FOR INSTALLATION, PARTS AND SERVICE INFORMATION

Call our Toll Free Number - 1-800-528-6563
HOURS 7:00 to 3:30 p.m. (Mountain Std. Time)
MONDAY THROUGH SATURDAY

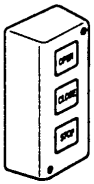
FINAL DRIVE SPROCKETS (DOOR)				
NEW P/N'S	**REV**	**DESCRIPTION**	**OLD LINK P/N'S**	**New P/N in BPCS**
15-40B19LGH	A	#40 with 19 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-5501	Yes
15-40B40LGH	A	#40 with 40 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-8004	
15-41B16LGH	A	#41 with 16 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-5014	
15-41B18LGH	A	#41 with 18 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-5016	Yes
15-41B20LGH	A	#41 with 20 TEETH 1BORE, 1/4 Key, (2)5/16-18 S.S.	15-5015	
15-41B32LGH	A	#41 with 32 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-7132	
15-41B48LGH	A	#41 with 48 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-7148	
15-41B48QGH	A	#41 with 48 TEETH 1-1/4 BORE, 1/4 Key, (2)5/16-18 S.S.	15-7149	
15-48B18QGH	A	#48 with 18 TEETH 1-1/4 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9009	
15-50B12LGH	A	#50 with 12 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9020	Yes
15-50B18LGH	A	#50 with 18 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9105	Yes
15-50B18QGH	A	#50 with 18 TEETH 1-1/4 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9103	
15-50B18TKK	A	#50 with 18 TEETH 1-1/2 BORE, 3/8 Key, (2)3/8-16 S.S.	15-9104	
15-50B24LGH	A	#50 with 24 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-6022	
15-50B24QGH	A	#50 with 24 TEETH 1-1/4 BORE, 1/4 Key, (2)5/16-18 S.S.	15-7000	
15-50B24QKK	A	#50 with 24 TEETH 1-1/4 BORE, 3/8 Key, (2)3/8-16 S.S.	15-1701	
15-50B35LGH	A	#50 with 35 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9036	
15-50B35QGH	A	#50 with 35 TEETH 1-1/4 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9037	
15-50B35TKK	A	#50 with 35 TEETH 1-1/2 BORE, 3/8 Key, (2)3/8-16 S.S.	15-9038	
15-50B40LGH	A	#50 with 40 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9106	
15-50B40NGH	A	#50 with 40 TEETH 1-1/8 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9032	
15-50B40PJH	A	#50 with 40 TEETH 1-3/16 BORE, 5/16 Key, (2)5/16-18 S.S.	15-9031	
15-50B40QGJ	A	#50 with 40 TEETH 1-1/4 BORE, 1/4 Key, (1)3/8-16 S.S.	15-9022	
15-50B40RJK	A	#50 with 40 TEETH 1-3/8 BORE, 5/16 Key, (2)3/8-16 S.S.	15-9035	
15-50B40RKK	A	#50 with 40 TEETH 1-3/8 BORE, 3/8 Key, (2)3/8-16 S.S.	15-9021	
15-50B40TKH	A	#50 with 40 TEETH 1-1/2 BORE, 3/8 Key, (2)5/16-18	15-9022-2	
15-50B40VKK	A	#50 with 40 TEETH 1-3/4 BORE, 3/8 Key, (2)3/8-16 S.S.	15-9108	
15-50B60QGK	A	#50 with 60 TEETH 1-1/4 BORE, 1/4 Key, (2)3/8-16 S.S.	15-8011	Yes
15-50B60RKK	A	#50 with 60 TEETH 1-3/8 BORE, 3/8 Key, (2)3/8-16 S.S.	15-8008	
15-50B60TKK	A	#50 with 60 TEETH 1-1/2 BORE, 3/8 Key, (2)3/8-16 S.S.	15-8006	
15-50B60VKK	A	#50 with 60 TEETH 1-3/4 BORE, 3/8 Key, (2)3/8-16 S.S.	15-8005	
15-50B60VMP	A	#50 with 60 TEETH 1-3/4 BORE, 1/2 Key, (2)1/2-13 S.S.	15-8007	
15-50B60YMP	A	#50 with 60 TEETH 2 BORE, 1/2 Key, (2)1/2-13 S.S.	15-8010	
15-60B12LGH	A	#60 with 12 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9044	
15-60B18LGH	A	#60 with 18 TEETH 1 BORE, 1/4 Key, (2)5/16-18 S.S.	15-9047	
15-60B18TKK	A	#60 with 18 TEETH 1-1/2 BORE, 3/8 Key, (2)3/8-16 S.S.	15-9049	
15-60B50TKK	A	#60 with 50 TEETH 1-1/2 BORE, 3/8 Key, (2)3/8-16 S.S.	15-9045	
15-80B9QGH	A	#80 with 9 TEETH 1-1/4 BORE, 1/4 Key, (2)5/16-18 S.S.	15-8012	
15-80B60YMP	A	#80 with 60 TEETH 2 BORE, 1/2 Key, (2)1/2-13 S.S.	15-8060	
ROLLER CHAIN, STANDARD				
NEW P/N'S	**REV**	**DESCRIPTION**	**OLD LINK P/N'S**	**New P/N in BPCS**
19-48ML	A	#48 MASTER LINK	19-9016-IP	Yes
19-41ML	A	#41 MASTER LINK	19-5048-1	Yes
19-40ML	A	#40 MASTER LINK	19-5040	
19-50ML	A	#50 MASTER LINK	19-9024	
19-60ML	A	#60 MASTER LINK	19-9047	
19-80ML	A	#80 MASTER LINK	19-9080	
19-48HL	A	#48 HALF LINK	19-9049	
19-41HL	A	#41 HALF LINK	19-5048-2	
19-40HL	A	#40 HALF LINK	19-5040-2	
19-50HL	A	#50 HALF LINK	19-9025	Yes

19-60HL	A	#60 HALF LINK	19-9048	
19-80HL	A	#80 HALF LINK	19-9080-1	
19-50106M	A	#50 CHAIN PACKAGE, 5-1/2 FT.	19-9023	
ROLLER CHAIN, NICKEL PLATED				
NEW P/N'S	**REV**	**DESCRIPTION**	**OLD LINK P/N'S**	**New P/N in BPCS**
19-N48ML	A	#48 MASTER LINK, NICKEL PLATED	19-9016-NP	Yes
19-N41ML	A	#41 MASTER LINK, NICKEL PLATED	19-5048-NP	Yes
19-N40ML	A	#40 MASTER LINK, NICKEL PLATED	19-5040-NP	
19-N50ML	A	#50 MASTER LINK, NICKEL PLATED	19-9024-NP	
19-N48HL	A	#48 HALF LINK, NICKEL PLATED	19-9049-NP	
19-N50HL	A	#50 HALF LINK, NICKEL PLATED	19-9025-NP	
HAND & SASH CHAIN				
NEW P/N'S	**REV**	**DESCRIPTION**	**OLD LINK P/N'S**	**New P/N in BPCS**
19-10929	A	Hand Chain	022A0014	Yes
19-10929-25	A	Hand Chain, 25ft		Yes
19-10929-29	A	Hand Chain, 29ft		Yes
19-8A	A	Sash Chain	19-9010-1	
19-8A-12	A	Sash Chain, 12ft	19-9010	Yes
DRIVE CHAIN PACKAGES				
MT OPERATOR				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	
19-48599	A	#48 CHAIN, 599 PITCHES, 10' DOOR	19-5810	
19-48695	A	#48 CHAIN, 695 PITCHES, 12' DOOR	19-5812	
19-48791	A	#48 CHAIN, 791 PITCHES, 14' DOOR	19-5814	
19-48887	A	#48 CHAIN, 887 PITCHES, 16' DOOR	19-5816	
T, GT, APT, SD, & GSD OPERATORS				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	
19-41719D	A	#41 CHAIN, 719 PITCHES, W/ (2) #41 ML NP, 12' DOOR	19-5112	
19-41815D	A	#41 CHAIN, 815 PITCHES, W/ (2) #41 ML NP, 14' DOOR	19-5114	
19-41911D	A	#41 CHAIN, 911 PITCHES, W/ (2) #41 ML NP, 16' DOOR	19-5116	
19-411007D	A	#41CHAIN, 1007 PITCHES, W/ (2) #41 ML NP, 18' DOOR	19-5118	
19-N41719D	A	#41 CHAIN, NP 719 PITCHES, W/ (2) #41 ML NP, 12' DOOR	19-5112-NP	
19-N41815D	A	#41 CHAIN, NP 815 PITCHES, W/ (2) #41 ML NP, 14' DOOR	19-5114-NP	
19-N41911D	A	#41 CHAIN NP, 911 PITCHES, W/ (2) #41 ML NP, 16' DOOR	19-5116-NP	
19-N411007D	A	#41CHAIN NP, 1007 PITCHES, W/ (2) #41 ML NP, 18' DOOR	19-5118-NP	
19-411103	A	#41 CHAIN, 1103 PITCHES, 20' DOOR	19-5120	
19-411199	A	#41 CHAIN, 1199 PITCHES, 22' DOOR	19-5122	
19-411295	A	#41 CHAIN, 1295 PITCHES, 24' DOOR	19-5124	
19-N48599D	A	#48 CHAIN NP, 599 PITCHES W/ (2) #41 ML NP, 10' DOOR	19-5810-NP	
19-N48695D	A	#48 CHAIN NP, 695 PITCHES W/ (2) #41 ML NP, 12' DOOR	19-5812-NP	
19-N48791D	A	#48 CHAIN NP, 791 PITCHES W/ (2) #41 ML NP, 14'DOOR	19-5814-NP	
19-N48887D	A	#48 CHAIN NP, 887 PITCHES W/ (2) #41 ML NP, 16' DOOR	19-5816-NP	
19-N48983D	A	#48 CHAIN NP, 983 PITCHES, W/ (2) #41 ML NP, 18' DOOR	19-5818-NP	
19-N481079	A	#48 CHAIN, 1079 PITCHES, 20' DOOR	19-5820	
19-N481175	A	#48 CHAIN, 1175 PITCHES, 22' DOOR	19-5822	
GT OPERATOR				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	

19-41719D	A	#41 CHAIN, 719 PITCHES, W/ (2) #41 ML NP, 12' DOOR	19-5112	
19-41815D	A	#41 CHAIN, 815 PITCHES, W/ (2) #41 ML NP, 14' DOOR	19-5114	
19-41911D	A	#41 CHAIN, 911 PITCHES, W/ (2) #41 ML NP, 16' DOOR	19-5116	
19-411007D	A	#41 CHAIN, 1007 PITCHES, W/ (2) #41 ML NP, 18' DOOR	19-5118	
19-N41719D	A	#41 CHAIN NP, 719 PITCHES, W/ (2) #41 ML NP, 12' DOOR	19-5112-NP	
19-N41815D	A	#41 CHAIN NP, 815 PITCHES, W/ (2) #41 ML NP, 14' DOOR	19-5114-NP	
19-N41911D	A	#41 CHAIN NP, 911 PITCHES, W/ (2) #41 ML NP, 16' DOOR	19-5116-NP	
19-N411007D	A	#41CHAIN NP, 1007 PITCHES, W/ (2) #41 ML NP, 18' DOOR	19-5118-NP	
19-411103	A	#41 CHAIN, 1103 PITCHES, 20' DOOR	19-5120	
19-411199	A	#41 CHAIN, 1199 PITCHES, 22' DOOR	19-5122	
19-411295	A	#41 CHAIN, 1295 PITCHES, 24' DOOR	19-5124	
MJ OPERATOR				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	
19-4119M	A	#41 CHAIN, 119 PITCHES W/ MASTER LINK	19-5105	Yes
J OPERATOR				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	
19-50106M	A	#50 CHAIN, 106 PITCHES W/ MASTER LINK	19-9023	Yes
MGJ OPERATOR				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	
19-4119M	A	#41 CHAIN, 119 PITCHES W/ MASTER LINK	19-5105	Yes
MH OPERATOR				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	
19-4119M	A	#41 CHAIN, 119 PITCHES W/ MASTER LINK	19-5105	Yes
H OPERATOR				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	
19-50106M	A	#50 CHAIN, 106 PITCHES W/ MASTER LINK	19-9023	Yes
GH OPERATOR				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	
19-50106M	A	#50 CHAIN, 106 PITCHES W/ MASTER LINK	19-9023	Yes
LGJ OPERATOR				
NEW NUMBER	**REV**	**DESCRIPTION**	**OLD NUMBER**	
19-4119M	A	#41 CHAIN, 119 PITCHES W/ MASTER LINK	19-5105	Yes

BASIC Hardware Kit for Model MT-1211 (with T-Rail)

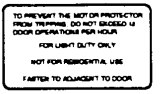
(Part # 1A3828)



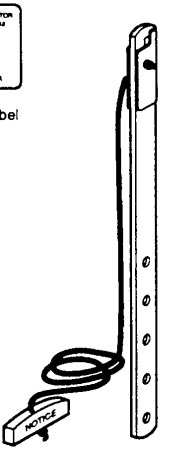
3-Button Station
180C0145

Owner's Manual
114A1348

Warning Placard
132A1923

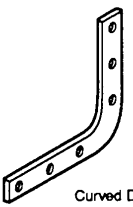


12 Cycle Motor Label
132A2016



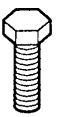
Trolley Disconnect Arm
1C3681

Door Bracket
12B0407



Curved Door Arm
178B0045

DOOR ARM HARDWARE (# 1A4024)



Hex Screw
5/16"- 18 7/8" (3)

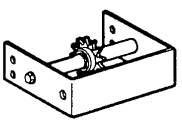
Hex Nut
5/16"- 18 (2)

Nylon Lock Nut
5/16"- 18 (1)

Lock Washer
5/16" (3)

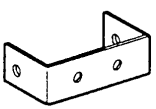
CUSTOM Hardware for Model MT-1211 (with T-Rail)

TROLLEY MOUNTING HARDWARE (# 1A4006)



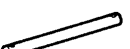
Idler Shaft Assembly (1)
1C3716

HEADER BRACKET ASSY. (# 41K4302)



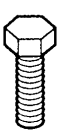
Header Mounting Bracket (1)

Cotter Pin (2)



Clevis Pin (1)

RAIL & CHAIN HARDWARE (# 1A3890)



Hex Screw
5/16"- 16 x 9/16" (10)

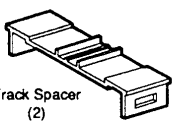
Hex Nut
5/16" - 16 (10)

Lock Washer
5/16" (10)

Rail Grease (1)

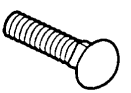
Master Link (2)

RAIL ASSEMBLY HARDWARE (# 1A4002)



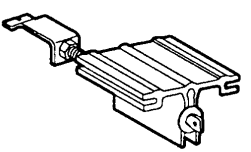
Track Spacer
(2)

Lock Nut
1/4"-20 (4)



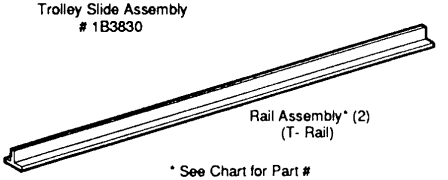
Carriage Bolt
1/4"- 1 (4)

Add One Additional Track Spacer for 14' Assembly (# 1A4004)



Trolley Slide Assembly
1B3830

Chain Pack* (1)



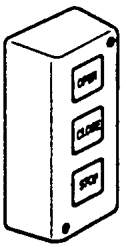
Rail Assembly* (2)
(T- Rail)

* See Chart for Part #

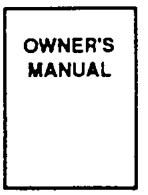
DOOR HEIGHT	CHAIN PART #	T-RAIL PART #
8'	1A3881	183CO135
10'	1A3882	183CO135-1
12'	1A3883	183CO135-2
14'	1A3884	183CO135-3

BASIC Hardware Kit for Model MT-1211 (with L-Rail)

(Part # 1A3828)

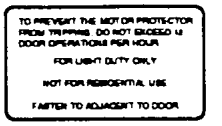


3 Button Station
180C0145

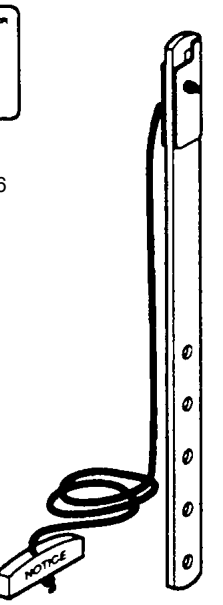


Owner's Manual
114A1348

Warning Placard #
132A 1923

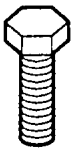

12 Cycle Motor
Label # 132A2016


Door Bracket
178B0045



Trolley Disconnect
Arm # 1C3681

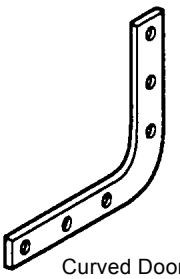
DOOR ARM HARDWARE (# 1A4024)


Hex Screw
5/16"- 18 7/8" (3)


Hex Nut
5/16"- 18 (2)

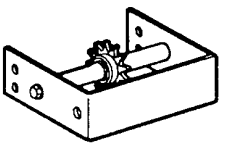

Nylon Lock Nut
5/16"- 18 (1)


Lock Washer
5/16" (3)

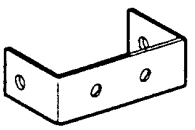

Curved Door Arm #
178B0045

CUSTOM Hardware for Model MT-1211 (with L-Rail)

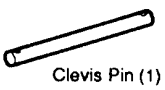
TROLLEY MOUNTING HARDWARE (# 1A4006)



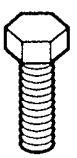
HEADER BRACKET ASSY. (# 41K4302)


Header Mounting Bracket (1)


Cotter Pin (2)

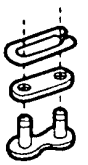

Clevis Pin (1)

RAIL & CHAIN HARDWARE (# 1A3890)


Hex Screw
5/16"- 16 x 9/16" (10)

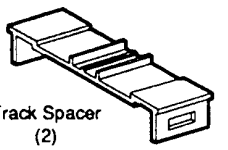

Hex Nut
5/16" - 16 (10)


Lock Washer
5/16" (10)

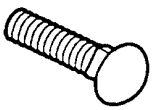

Master Link (2)


Rail Grease (1)

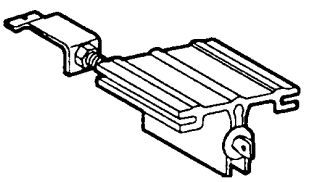
RAIL ASSEMBLY HARDWARE (# 1A4002)

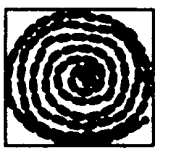

Track Spacer
(2)

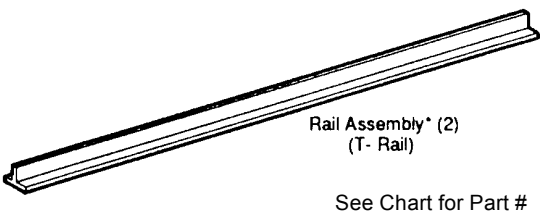

Lock Nut
1/4"-20 (4)


Carriage Bolt
1/4"- 1 (4)

Add One Additional Track Spacer for 14' Assembly (# 1A4004)




Chain Pack* (1)

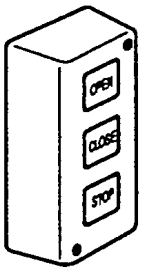

Rail Assembly* (2)
(T- Rail)

See Chart for Part #

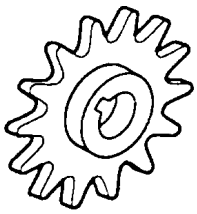
DOOR HEIGHT	CHAIN PART #	L-RAIL PART # (Optional)
8'	1A3881	183C0137
10'	1A3882	183C0137-1
12'	1A3883	183C0137-2
14'	1A3884	183C0137-3

BASIC Hardware Kit for Model MJ-1211 (#41 Chain)

(Part # 1A3827)

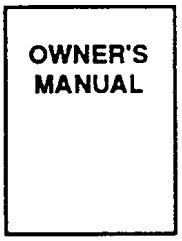


3-Button Station
(# 180C0145)

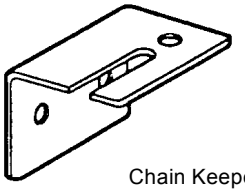


Drive Sprocket
41B14x1 (#81B0084)

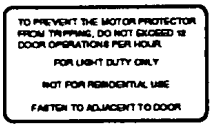
Key 1/4"x1/4"x1"
(#23A0089)



Owners Manual
(#114A1347)



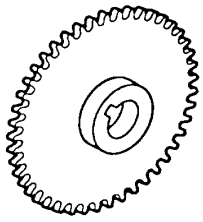
Chain Keeper
(#12B0393)



12 Cycle Motor Label
132A2016

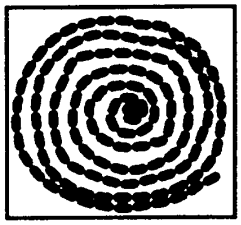
Warning Placard
(#132A 1923)

CUSTOM Hardware Kit for Model MJ-1211 (#41 Chain)

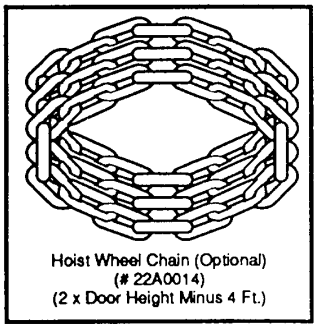


Door Sprocket
(See Chart Below)

Door Sprocket Key
(See Chart Below)



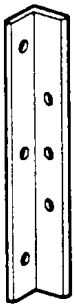
Drive Chain with Master Link
(See Chart Below)



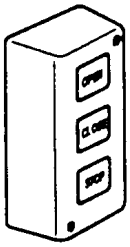
Hoist Wheel Chain (Optional)
(# 22A0014)
(2 x Door Height Minus 4 Ft.)

DOOR TYPE	SHAFT SIZE	KEY SIZE	DRIVE CHAIN SIZE	DRIVE CHAIN	QTY	DOOR SPROCKET TEETH	DOOR SPROCKET	QTY	KEY	QTY
SECTIONAL TAPERED DRUMS	1"	1/4"	#41	451839	1	40	81B0087	1	450419	1
STD. DRUMS	1"	1/4"	#41	451839	1	25	81B0070	1	450419	1
SHEET DOOR	N/A	N/A	#41	451839	2	N/A	N/A	N/A	N/A	N/A
ROLLING	1"	1/4"	#41	451389	1	60	81B0093	1	450419	1
	1-1/4"	1/4"	#41	451839	1	60	81b0094	1	450419	1

BASIC Hardware Kit for Model HT-2000 1/3&1/2 HP

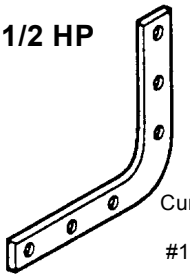


Door Bracket
12B0407

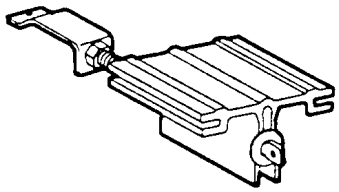


3 Button Station
180C0145

Warning Placard
132A1923

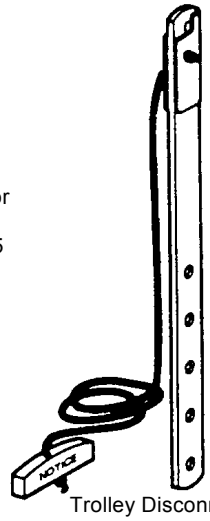


Curved Door
Arm
#178B0045



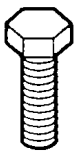
Trolley Slide
Assembly # 1B4001

Owner's Manual
#114A1402



Trolley Disconnect
Arm
1C3681

DOOR ARM HARDWARE (#1A4024)



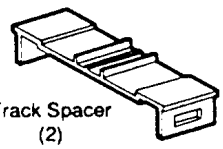
Hex Screw
5/16"- 18 x 7/8" (3)

Hex Nut
5/16"- 18 (2)

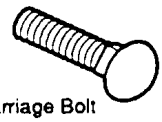
Nylon Lock Nut
5/16"- 18 (1)

Lock Washer
5/16" (3)

RAIL ASSEMBLY HARDWARE (# 1A4002)



Track Spacer
(2)

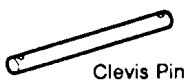


Carriage Bolt
1/4"- 1 1/2" (4)

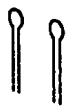
Lock Nut
3/8"-16 (4)

RAIL ASSEMBLY HARDWARE KIT (#1A4007)

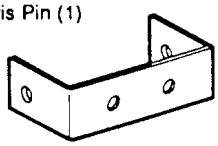
HEADER BRACKET ASSY. (41K4302)



Clevis Pin (1)

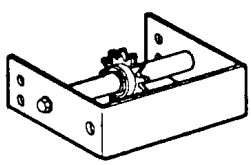


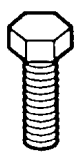
Cotter Pin (2)



Header Mounting Bracket (1)

IDLER SHAFT ASSEMBLY (# 1C3992)



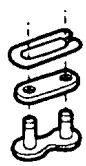


Hex Screw
3/8"- 16 x 9/16" (8)

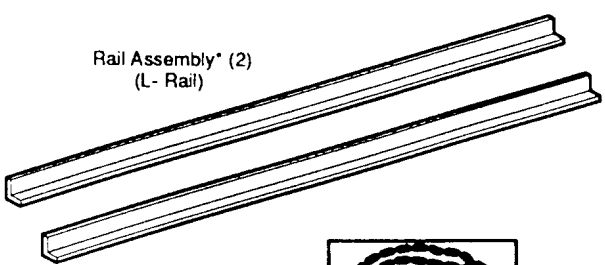
Hex Nut
3/8"-16 (8)

Lock Washer
3/8" (8)

Rail Grease (1)

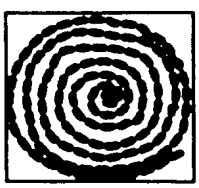


CUSTOM Hardware Kit for Model HT-2000-1/3 & 1/2 HP (#48 Chain)



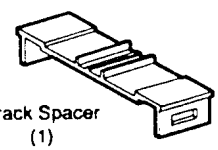
Rail Assembly* (2)
(L- Rail)

* See Chart for Part #

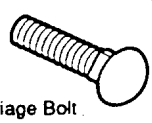


Chain Pack* (1)

RAIL ASSEMBLY HARDWARE (#1A4004)



Track Spacer
(1)



Carriage Bolt
1/4"- 1 1/2" (2)

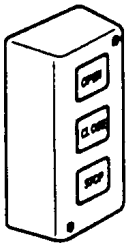
Lock Nut
3/8"-16 (2)

DOOR HEIGHT	RAIL#	QTY	CHAIN ASSEMBLY	QTY	SPACER KIT	QTY
8'	183C0137	2	1A3881	1		
10'	183C0137-1	2	1A3882	1		
12'	183C0137-2	2	1A3883	1		
14'	183C0137-3	2	1A3884	1	1A4004	1
16'	183C01378	2	1A3[illegible]6	1	1A4004	1
18'	183C0138-1	2	1A3[illegible]7	1	1A4004	1
20'	183C0138-2	2	1A3898	1	1A4004	2
22'	183C0138-3	2	1A3899	1	1A4004	2

BASIC Hardware Kit Model HT-2000 -3/4&1 HP (#41 Chain)

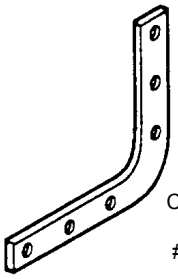
PART #1A4036

Door Bracket
12B0407

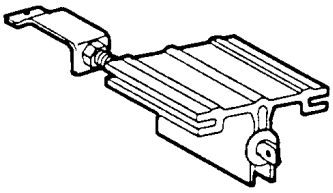


3 Button Station
180C0145

Warning Placard
132A1923

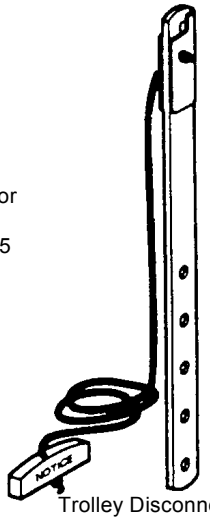


Curved Door
Arm
#178B0045



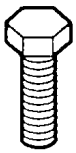
Trolley Slide
Assembly # 1B4001

Owner's Manual
#114A1402



Trolley Disconnect
Arm
1C3681

DOOR ARM HARDWARE (#1A4024)



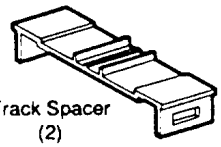
Hex Screw
5/16"- 18 x 7/8" (3)

Hex Nut
5/16"- 18 (2)

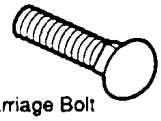
Nylon Lock Nut
5/16"- 18 (1)

Lock Washer
5/16" (3)

RAIL ASSEMBLY HARDWARE (# 1A4003)



Track Spacer
(2)

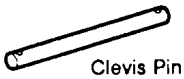


Carriage Bolt
1/4"- 1 1/2" (4)

Lock Nut
3/8"-16 (4)

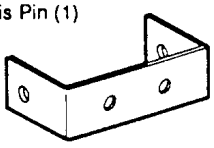
RAIL ASSEMBLY HARDWARE KIT (#1A4008)

HEADER BRACKET ASSY. (41K4302)



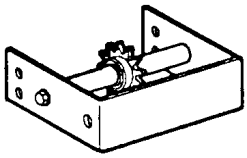
Clevis Pin (1)

Cotter Pin (2)

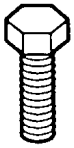


Header Mounting Bracket (1)

IDLER SHAFT ASSEMBLY (# 1C3992)



RAIL SCREW PACK (# 1A4014)



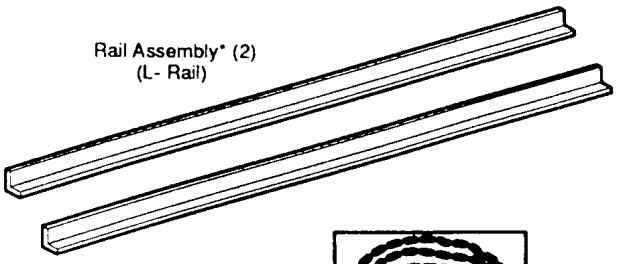
Hex Screw
3/8"- 16 x 9/16" (8)

Hex Nut
3/8"-16 (8)

Lock Washer
3/8" (8)

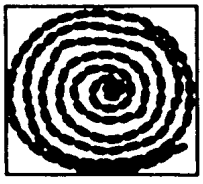
Rail Grease (1)

CUSTOM Hardware Kit for Model HT-2000-3/4 & 1 HP (#41 Chain)



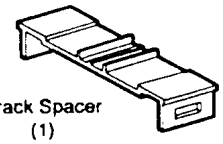
Rail Assembly* (2)
(L- Rail)

* See Chart for Part #

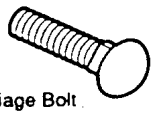


Chain Pack* (1)

RAIL ASSEMBLY HARDWARE (#1A4005)



Track Spacer
(1)



Carriage Bolt
1/4"- 1 1/2" (2)

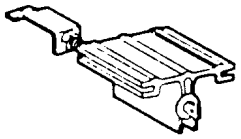
Lock Nut
3/8"-16 (2)

DOOR HEIGHT	RAIL#	QTY	CHAIN ASSEMBLY	QTY	SPACER KIT	QTY
8'	183C0137	2	1A4026	1		
10'	183C0137-1	2	1A4027	1		
12'	183C0137-2	2	1A4028	1		
14'	183C0137-3	2	1A4029	1	1A4005	1
16'	183C0138	2	1A4030	1	1A4005	1
18'	183C0138-1	2	1A4031	1	1A4005	1
20'	183C0138-2	2	1A4032	1	1A4005	2
22'	183C0138-3	2	1A4033	1	1A4005	2

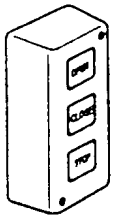
BASIC Hardware Kit for Model APT-2000-1/2 HP (#48 Chain)

(PART # 1A4036)

Warning Placard
132A1923

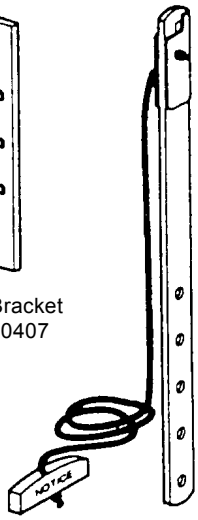


Trolley Slide Assembly
#1B4001



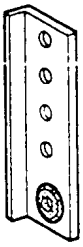
3-Button Station
#180C0145

Door Bracket
#12B0407



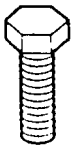
Trolley Disconnect Arm
1C3681

VIBRATION ISOLATION KIT (#1A4256)



Hex Nut
5/16"- 18 (2)

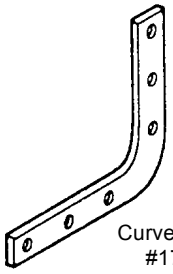
Lock Washer
5/16" (3)



Hex Screw
5/16" 18 x 7/8" (3)

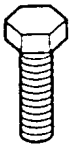
Vibration Isolation
Brackets (2)

Owner's Manual
#114A1440



Curved Door Arm
#178B0045

DOOR ARM HARDWARE (# 1A4024)



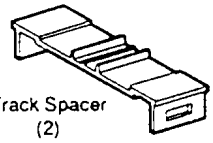
Hex Screw
5/16"- 18 x 7/8" (3)

Hex Nut
5/16"- 18 (2)

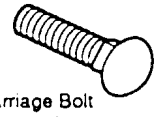
Nylon Lock Nut
5/16"- 18 (1)

Lock Washer
5/16" (3)

RAIL ASSEMBLY HARDWARE KIT (#1A4007)



Track Spacer
(2)

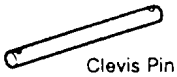


Carriage Bolt
1/4"- 1 1/2" (4)

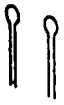
Lock Nut
3/8"-16 (4)

RAIL ASSEMBLY HARDWARE KIT (#1A4007)

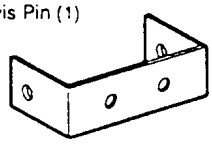
HEADER BRACKET ASSY. (#41K 4302)



Clevis Pin (1)

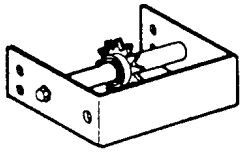


Cotter Pin (2)

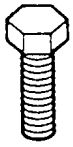


Header Mounting Bracket (1)

IDLER SHAFT ASSEMBLY (#1C3992)



RAIL SCREW PACK (#1A4014)

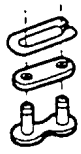


Hex Screw
3/8"- 16 x 9/16" (8)

Hex Nut
3/8"-16 (8)

Lock Washer
3/8" (8)

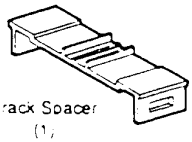
Rail Grease (1)



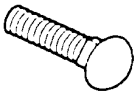
CUSTOM Hardware Kit for Model APT-2000-1/2 HP (#48 Chain)

Chain Pack* (1)

Rail Assembly* (2)
(L- Rail)



Track Spacer
(1)



Carriage Bolt
1/4"- 1 1/2" (2)

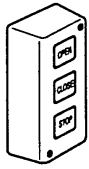
Lock Nut
3/8"-16 (2)

* See Chart for Part #

DOOR HEIGHT	RAIL#	QTY	CHAIN ASSEMBLY	QTY	SPACER KIT	QTY
8'	183C0137	2	1A3881	1		
10'	183C0137-1	2	1A3882	1		
12'	183C0137-2	2	1A3883	1		
14'	183C0137-3	2	1A3884	1	1A4004	1
16'	183C01378	2	1A3896	1	1A4004	1
18'	183C0138-1	2	1A3897	1	1A4004	1
20'	183C0138-2	2	1A	1	1A4004	2
22'	183C0138-3	2	1A	1	1A4004	2

BASIC Hardware Kit for Model HJ-2000 - 1/3, 1/2, 3/4 & 1 HP (# 50 Chain)

(Part # 1A3975)



3-Button Station
(# 180C0145)

Drive Sprocket
50B11 x 1
(# 81B0086)

Key
1/4" x 1/4" x 1"
(# 23A0089)

OWNER'S MANUAL

Owner's Manual
(# 114A1403)

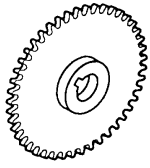
Chain Keeper
(# 12B0393)

WARNING

TO PREVENT ENTRAPMENT
DO NOT START DOOR DOWNWARD
UNLESS DOORWAY IS CLEAR

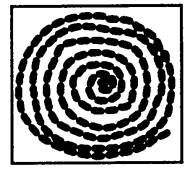
Warning Placard
(# 132A1923)

CUSTOM Hardware Kit for Model HJ-2000 - 1/3, 1/2, 3/4 & 1 HP (# 50 Chain)

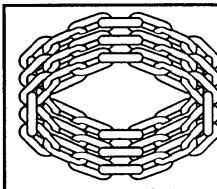


Door Sprocket
(See Chart Below)

Door Sprocket Key
(See Chart Below)



Drive Chain with Master Link
(See Chart Below)



Hoist Wheel Chain (Optional)
(# 22A0014)
(2 x Door Height Minus 4 Ft.)

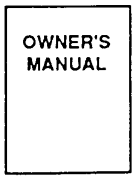
DOOR TYPE	SHAFT SIZE	KEY SIZE	DRIVE CHAIN SIZE	DRIVE CHAIN	QTY.	DOOR SPROCKET TEETH	DOOR SPROCKET	QTY.	KEY	QTY.
SECTIONAL TAPERED DRUMS	1"	1/4"	#50	350119	1	20	81B0083	1	450419	1
STD. DRUMS	1"	1/4"	#50	350119	1	11	81B0086	1	450419	1
SHEET DOOR* (See Note)	N/A	N/A	#41	451839	2	N/A	N/A	N/A	N/A	N/A
ROLLING	1"	1/4"	#50	350120	1	45	81B0095	1	450419	1
	1-1/4"	1/4"	#50	350120	1	45	81B0096	1	450419	1
	1-3/8"	5/16"	#50	350120	1	60	81C0097	1	450471	1
	1-1/2"	3/8"	#50	350120	1	60	81C0100	1	450465	1
	1-3/4"	3/8"	#50	350120	1	60	81C0101	1	450465	1

* NOTE: SUBSTITUTE DRIVE SPROCKET PART NUMBER 81B0084 (41B14 X 1") FOR #50 SPROCKET PROVIDED IN BASIC HARDWARE KIT.

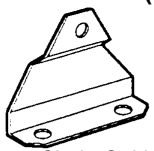
* NOTE: SUBSTITUTE DRIVE SPROCKET PART NUMBER 81B0084 (4b14X1") FOR #50 SPROCKET PROVIDED IN BASIC HARDWARE KIT.

BASIC Hardware Kit for Model GJ-3000 -1/2, 3/4, 1, 1-1/2 & 2 HP (#50 Chain)

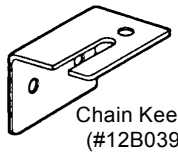
(Part # 1A4196)



Owner's Manual
(#114A1464)



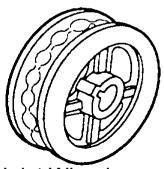
Chain Guide
(# 12 C0513)



Chain Keeper
(#12B0393)

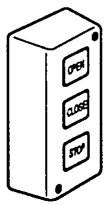
Warning Placard
(# 132A 1923)

E-Ring
(# 158A0053)

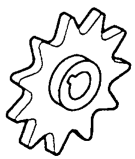


Hoist Wheel
(#1C3758)

Key
3/16"x1-1/4"
(#23A0091)



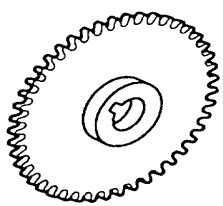
3 Button Station
(# 180C0145)



Drive Sprocket
50B11x1
(#81B0086)

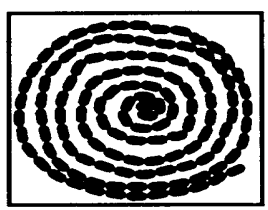
Key 1/4"x1/4" x1"
(# 23A0089)

CUSTOM Hardware Kit for Model GJ-3000-1/2, 3/4, 1, 1-1/2 &2HP (#50 Chain)

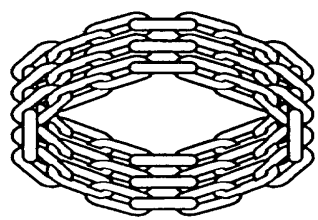


Door Sprocket
(See Chart Below)

Door Sprocket Key
(See Chart Below)



Drive Chain with Master Link
(See Chart Below)



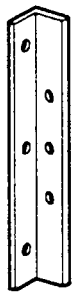
Hoist Wheel Chain (# 22A0014)
(2 x Door Height Minus 4 Ft.)

DOOR TYPE	SHAFT SIZE	KEY SIZE	DRIVE CHAIN SIZE	DRIVE CHAIN	QTY	DOOR SPROCKET TEETH	DOOR SPROCKET	QTY	KEY	QTY
SECTIONAL TAPERED DRUMS	1"	1/4"	#50	350119	1	20	81B0083	1	450419	1
STD. DRUMS	1"	1/4"	#50	350119	1	11	81B0086	1	450419	1
SHEET DOOR* (See Note)	N/A	N/A	#41	451839	2	N/A	N/A	N/A	N/A	N/A
Rolling	1"	1/4"	#50	350120	1	45	81B0095	1	450419	1
	1-1/4"	1/4"	#50	350120	1	45	81B0096	1	450419	1
	1-3/8"	5/16"	#50	350120	1	60	81C0097	1	450471	1
	1-1/4"	3/8"	#50	350120	1	45	81C0052	1	450465	1
	1-1/2"	3/8"	#50	350120	1	60	81C0100	1	450465	1
	1-3/4"	3/8"	#50	350120	1	60	81C0101	1	450465	1

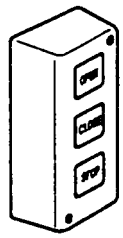
*NOTE: SUBSTITUTE DRIVE SPROCKET PART NUMBER 81B0084 (41B14X1") FOR #50 SPROCKET PROVIDED IN BASIC HARDWARE KIT.

BASIC Hardware Kit for Model GT-3000 - 1/2, 3/4 & 1 HP (#41 Chain)

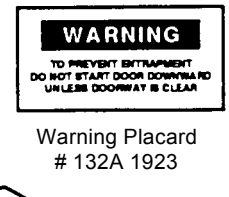
(Part #1A4036)



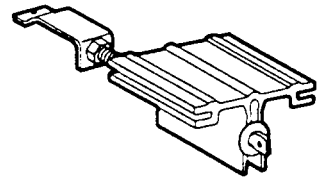
Door Bracket
12B0407



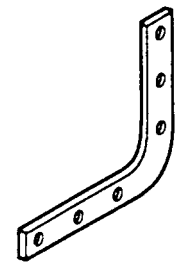
3 Button Station
180C0145



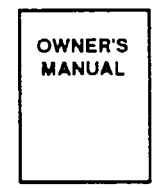
Warning Placard
132A 1923



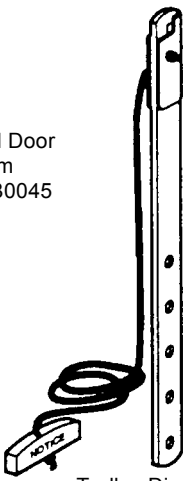
Trolley Slide Assembly
1 B4001



Curved Door
Arm
178B0045

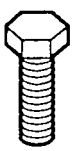


Owner's Manual
114A1540



Trolley Disconnect
1C3681

DOOR ARM HARDWARE (#1A4024)



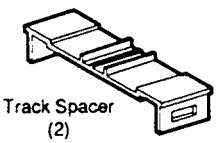
Hex Screw
5/16"- 18 x 7/8" (3)

Hex Nut
5/16"- 18 (2)

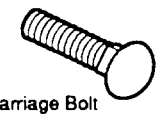
Nylon Lock Nut
5/16"- 18 (1)

Lock Washer
5/16" (3)

RAIL ASSEMBLY HARDWARE (# 1A4003)



Track Spacer
(2)

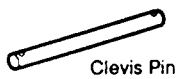


Carriage Bolt
1/4"- 1 1/2" (4)

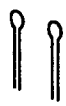
Lock Nut
3/8"-16 (4)

RAIL ASSEMBLY HARDWARE KIT (# 1A4008)

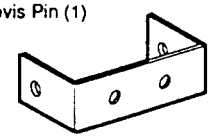
HEADER BRACKET ASSY. (#41K4302)



Clevis Pin (1)

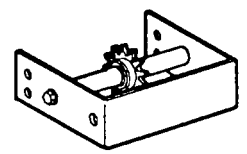


Cotter Pin (2)

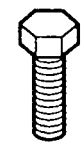


Header Mounting Bracket (1)

IDLER ASSEMBLY (#1C3993)



RAIL SCREW PACK (#1A4014)

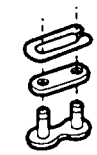


Hex Screw
3/8"- 16 x 9/16" (8)

Hex Nut
3/8"-16 (8)

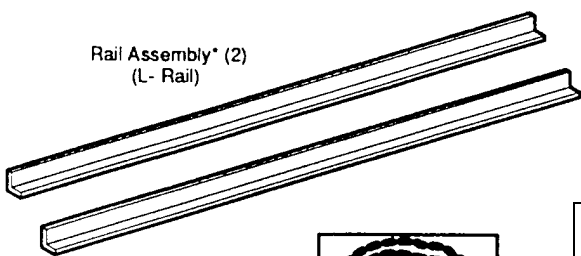
Lock Washer
3/8" (8)

Rail Grease (1)

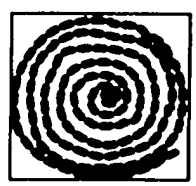


Master Link (2)
109A0021

CUSTOM Hardware Kit for Model GT-3000 -1/2, 3/4 &1 HP (#41 Chain)



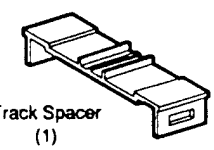
Rail Assembly* (2)
(L- Rail)



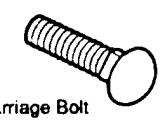
Chain Pack* (1)

* See Chart for Part #

RAIL ASSEMBLY HARDWARE (#1A4005)



Track Spacer
(1)



Carriage Bolt
1/4"- 1 1/2" (2)

Lock Nut
3/8"-16 (2)

DOOR HEIGHT	RAIL#	QTY	CHAIN ASSEMBLY	QTY	SPACER KIT	QTY
8'	183C0137	2	1A4026	1		
10'	183C0137-1	2	1A4027	1		
12'	183C0137-2	2	1A4028	1		
14'	183C0137-3	2	1A4029	1	1A4005	1
16'	183C0138	2	1A4030	1	1A4005	1
18'	183C0138-1	2	1A4031	1	1A4005	1
20'	183C0138-2	2	1A4032	1	1A4005	2
22'	183C0138-3	2	1A4033	1	1A4005	2

RECOMMENDED WIRE SIZE VS. CONTROL WIRE DISTANCE

WIRE GAUGE (AWG)	*CONTROL WIRE DISTANCE*	
	FEET	*METERS*
20	33	10.1
18	52	15.8
16	83	25.3
14	132	40.2
12	209	63.7
10	336	102.4
8	529	161.3
6	854	260.3

TO CALCULATE TOTAL WIRE RUN LENGTH, SUM ALL OF THE CONTROL DEVICE WIRE RUN LENGHTS IN THE CIRCUIT.

ie. Pushbutton distance + loop detector distance + sensing edge distance= Total control wire distance
25’ + 30’ + 30’ = 85’

A total control wire distance of 85’ requires 14 AWG wire.

IF THE DISTANCE IS OVER THE ABOVE YOU WILL WANT TO USE THE LONG DISTANCE MODUAL.

***ON THE SOLID STATE UNITS THE DISTANCE DOES NOT MATTER

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Brake Assembly Replacement Kit for FDC-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Brake and/or its components for a Model FDC Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING BRAKE ASSEMBLY:
Remove the master link from the limit chain, remove the chain and set off to the side. Disconnect the wire connections to the brake assembly connections in the electrical box.

Remove the four hex bolts securing the gear reducer to the interface hub and place them aside.

Remove the four socket head bolts securing the brake assembly to the interface hub. Slide the brake assembly off the extension shaft.

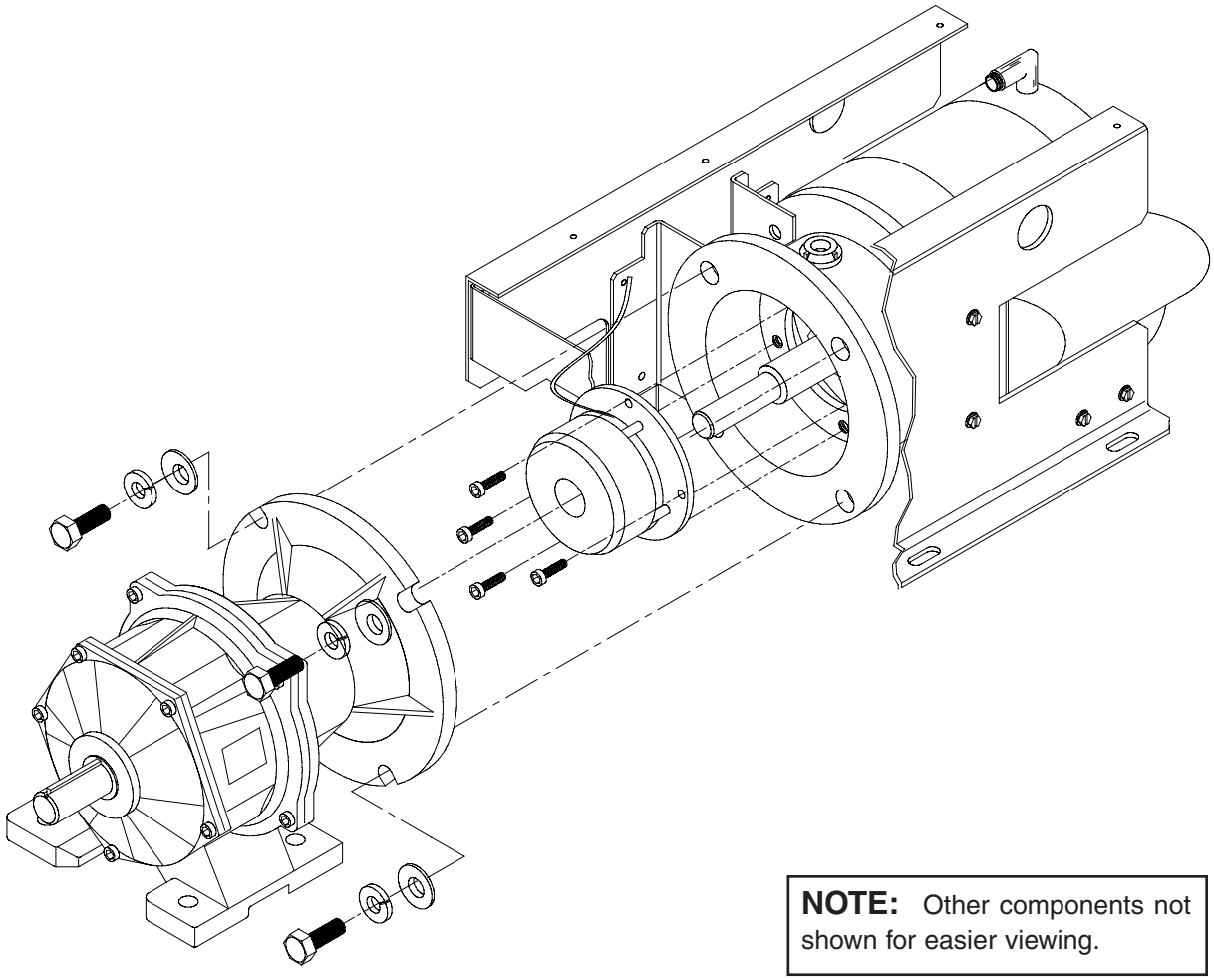
⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

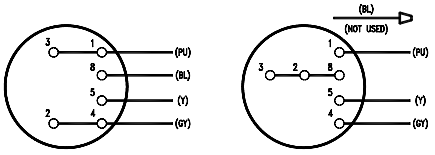
INSTALLING NEW BRAKE ASSEMBLY:
To install the brake assembly, follow the steps outlined above in the reverse order. Reconnect the wires to the brake assembly and electrical box, referring to the owners manual and wiring diagrams on page 2 and 3.



NOTE: Other components not shown for easier viewing.

1 PHASE WIRING DIAGRAM

1892

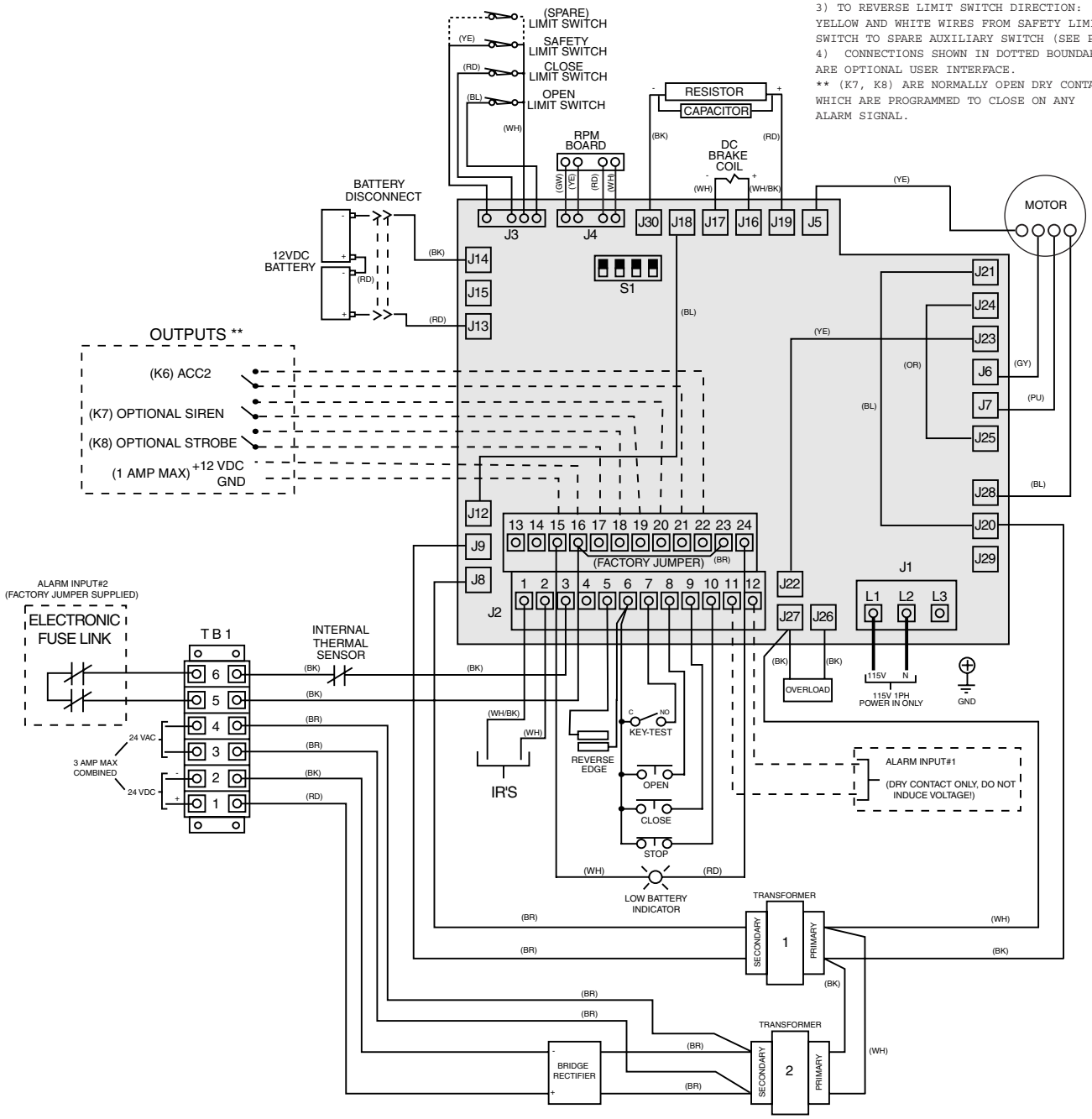


115V – 1PH
MOTOR CONNECTION

230V – 1PH
MOTOR CONNECTION

INTERNAL MOTOR CONNECTIONS

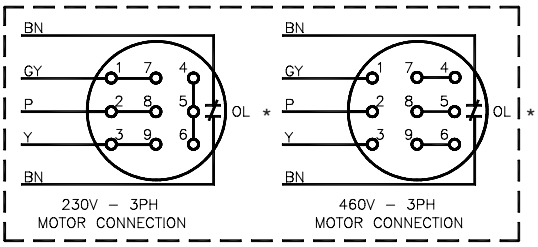
Notes:
1) See Owner s Manual for Dip Switch Functions and Programming Procedures
2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7 ON THE BOARD.
3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRES FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).
4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.
** (K7, K8) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.



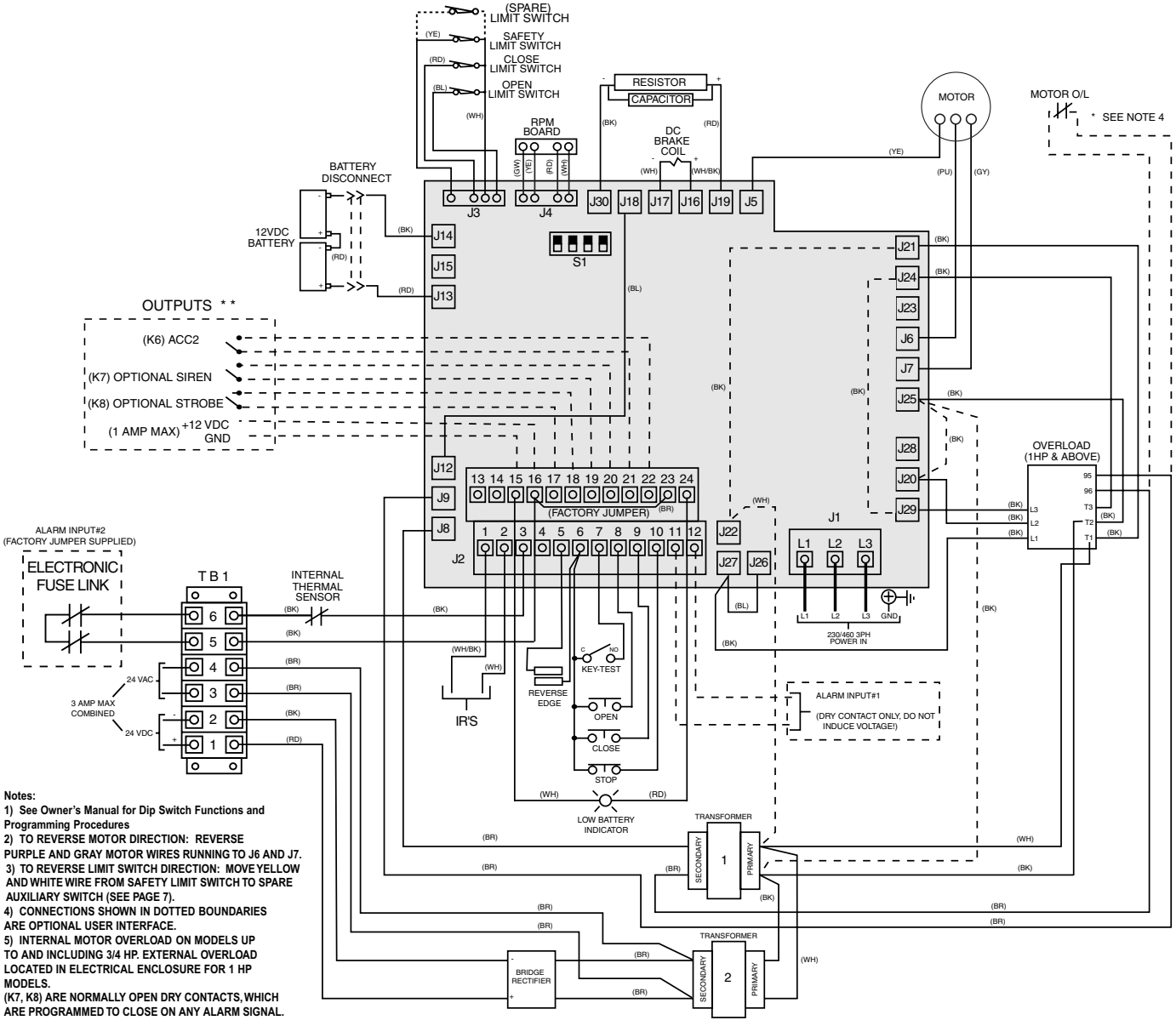
(SHOWN AS LEFT HAND UNIT)

3 PHASE WIRING DIAGRAM

1893



INTERNAL MOTOR CONNECTIONS



Notes:

1) See Owner's Manual for Dip Switch Functions and Programming Procedures

2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7.

3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRE FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).

4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.

*** 5) INTERNAL MOTOR OVERLOAD ON MODELS UP TO AND INCLUDING 3/4 HP. EXTERNAL OVERLOAD LOCATED IN ELECTRICAL ENCLOSURE FOR 1 HP MODELS.**

*** * (K7, K8) ARE NORMALLY OPEN DRY CONTACTS, WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.**

(SHOWN AS LEFT HAND UNIT)

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Electrical Box Assembly Replacement Kit for FDC-Line Operators

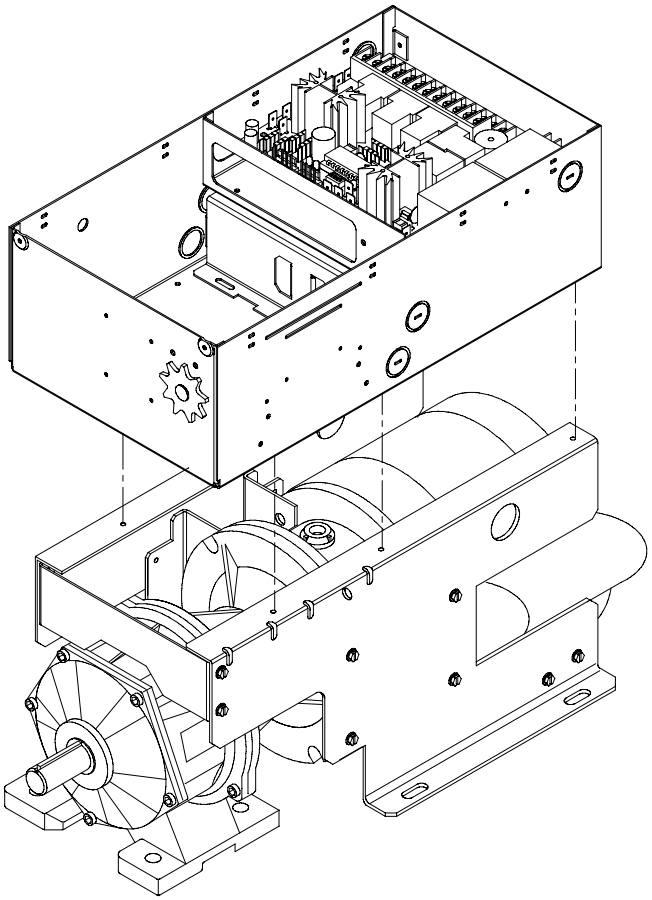
APPLICATION REQUIREMENTS:
Replacement of Electrical Box and/or its components for a Model FDC Operator.

⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.



NOTE: ATTACH ELECTRICAL BOX TO MOTOR FRAME WITH SCREWS PROVIDED.

⚠ WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and place it aside. Disconnect the motor and brake wires that pass into the electrical box.

Remove the six flanged hex screws securing the electrical box to the motor frame and carefully remove the old box.

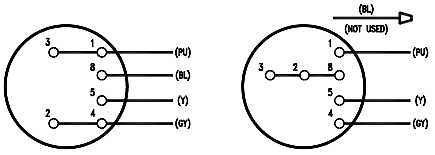
MOUNTING NEW BOX:
Place the new electrical box on the motor frame, aligning the slots in the box with their corresponding holes on the motor frame (see illustration). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electical box to the motor frame by tightening the hex screws.

Reconnect the motor and brake wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and replace the electrical box cover. Restoring power completes the installation.

1 PHASE WIRING DIAGRAM

1892

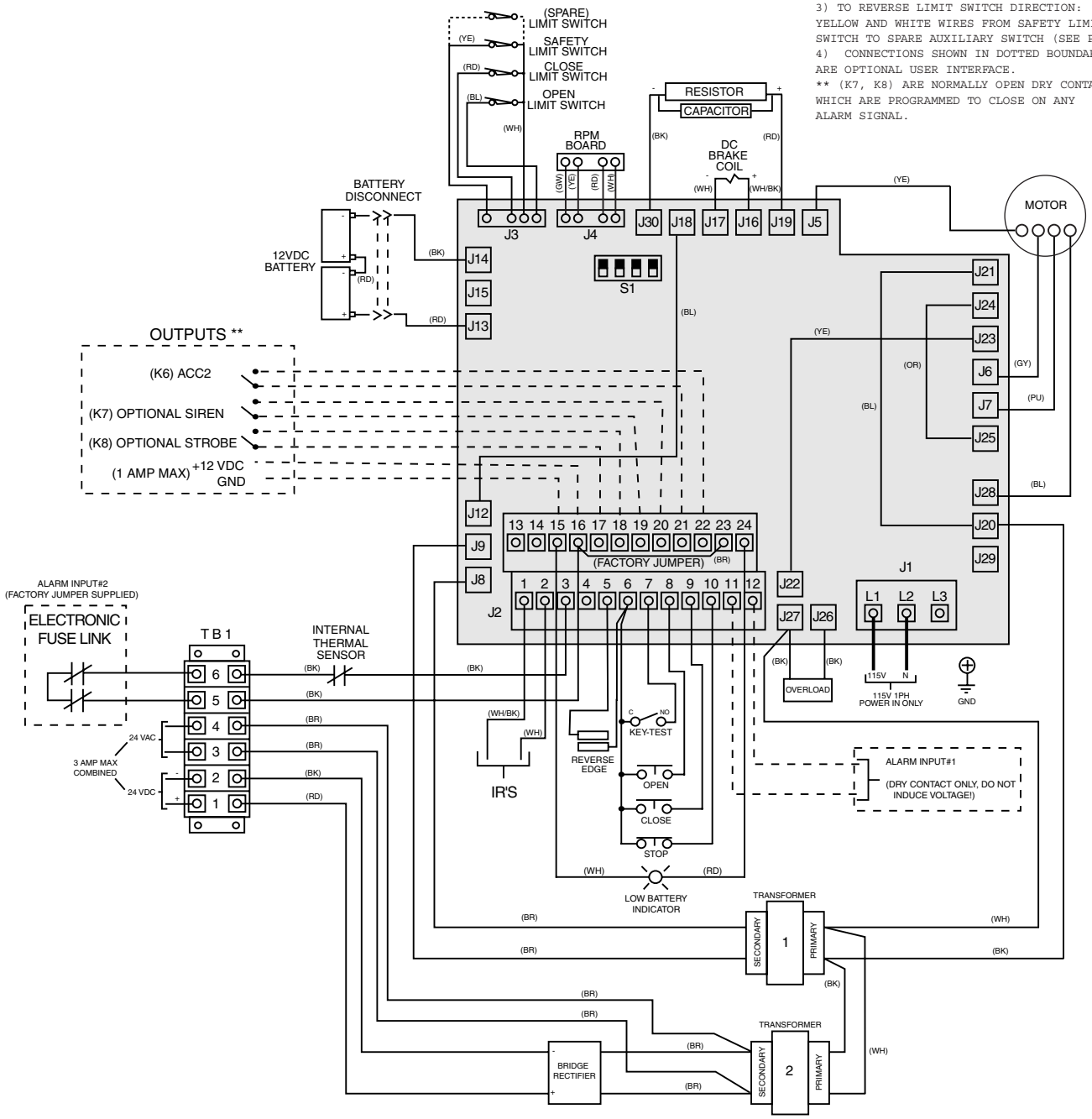


115V – 1PH
MOTOR CONNECTION

230V – 1PH
MOTOR CONNECTION

INTERNAL MOTOR CONNECTIONS

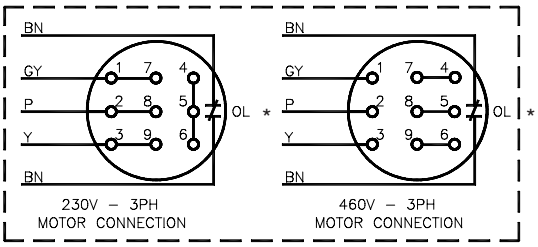
Notes:
1) See Owner s Manual for Dip Switch Functions and Programming Procedures
2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7 ON THE BOARD.
3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRES FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).
4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.
** (K7, K8) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.



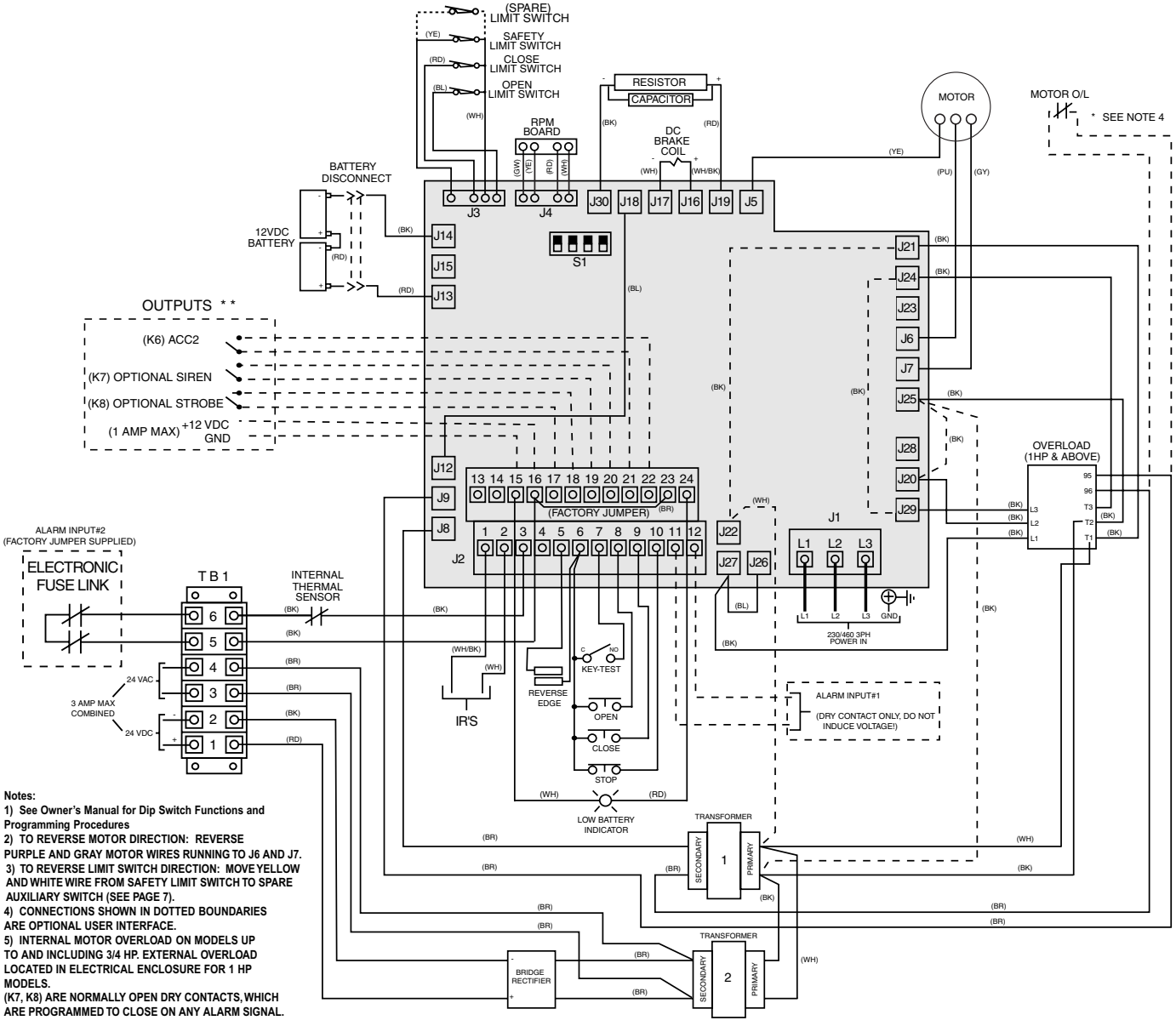
(SHOWN AS LEFT HAND UNIT)

3 PHASE WIRING DIAGRAM

1893



INTERNAL MOTOR CONNECTIONS



Notes:

1) See Owner's Manual for Dip Switch Functions and Programming Procedures

2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7.

3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRE FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).

4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.

*** 5) INTERNAL MOTOR OVERLOAD ON MODELS UP TO AND INCLUDING 3/4 HP. EXTERNAL OVERLOAD LOCATED IN ELECTRICAL ENCLOSURE FOR 1 HP MODELS.**

*** * (K7, K8) ARE NORMALLY OPEN DRY CONTACTS, WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.**

(SHOWN AS LEFT HAND UNIT)

01-16519A

MADE IN MEXICO

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FIRE DOOR CONTROLLER
PCB BOARD REPLACEMENT KIT

APPLICATION REQUIREMENTS:

Replacement of LMPLC Board for a Model FDC Operator.

INSTALLATION INSTRUCTIONS

1. REMOVING EXISTING BOARD

a) Remove all the ends of the wires connected to the existing board and neatly lay them over the side of the box. Leave jumper wires located on the board connected until new PCB board wiring.

b) Remove the (7) nylon nuts holding the PCB board to the box and hold for reassembly of new board.

c) Remove the screw holding the heat sink to the box and hold for reassembly of new board.

d) Remove PCB board from the box, leaving the existing standoffs in place.

2. INSTALLING NEW BOARD

a) Install the new Pcb board in the box using the old standoffs. Be sure to install in the same configuration as it was removed.

b) Secure the board in place with the (7) nylon nuts removed in step 1.

c) Secure the heatsink to the electrical box with the screw removed in step 1.

NOTE: For any additional help refer to assembly drawing below.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

3. PCB BOARD WIRING

1 PHASE OPERATORS

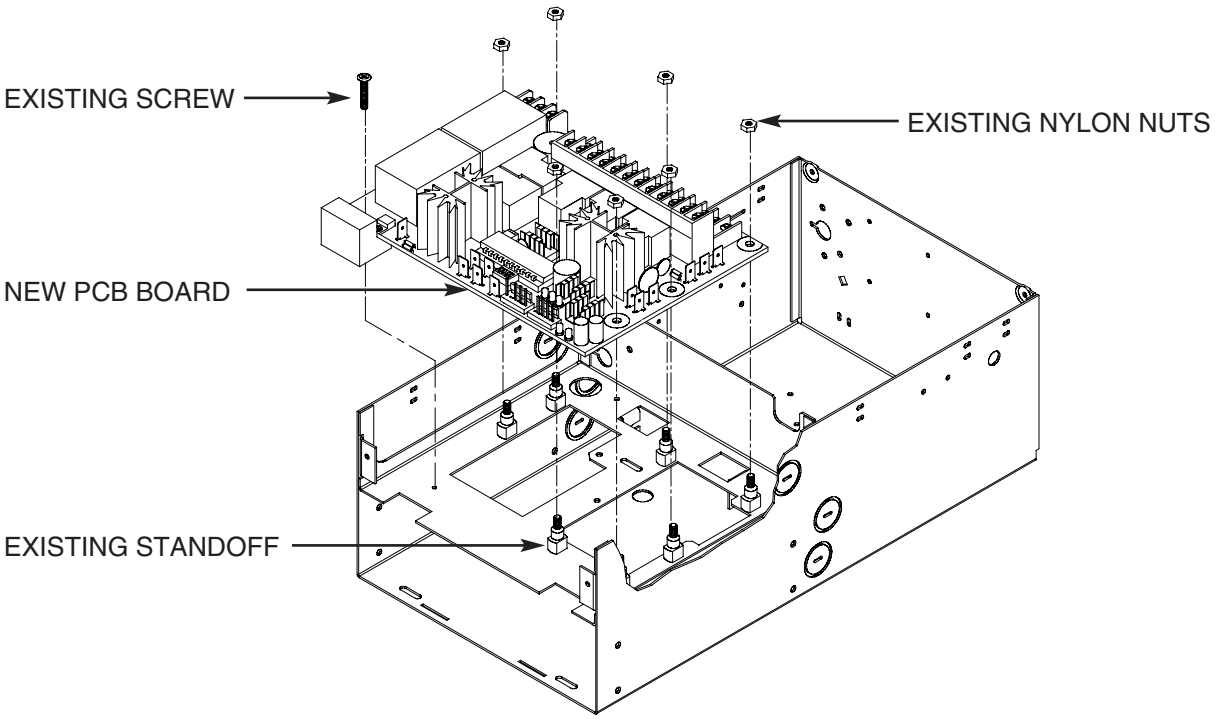
Refer to schematic on page 2 for rewiring of board.

3 PHASE OPERATORS

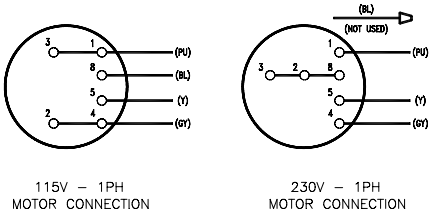
Refer to schematic on page 3 rewiring of board.

4. PROGRAM SETTINGS

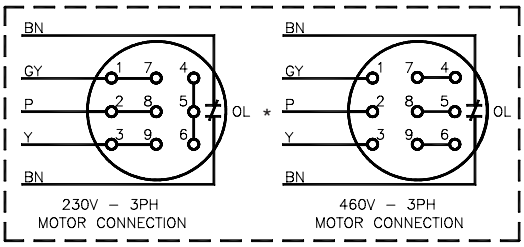
Follow instructions on page 4 for optional control settings.



1 PHASE WIRING DIAGRAM (FDC5011,FDC5021,FDC1011,FDC1021)

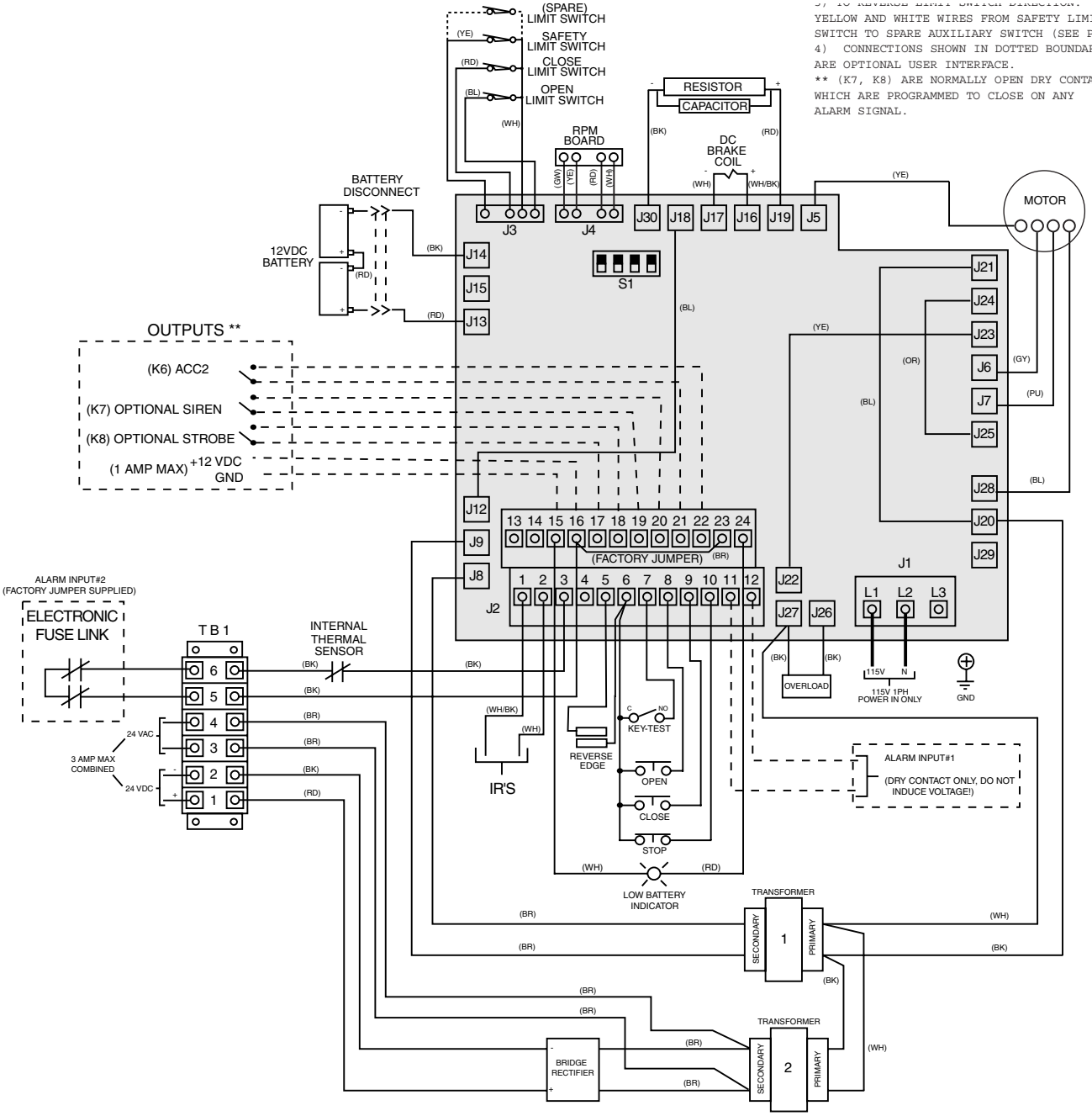


INTERNAL MOTOR CONNECTIONS



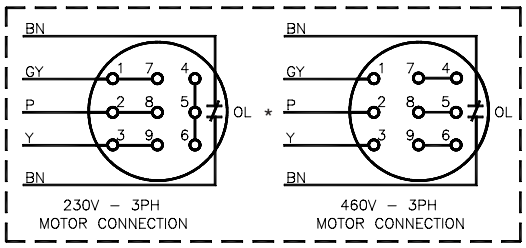
INTERNAL MOTOR CONNECTIONS

4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.
** (K7, K8) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.

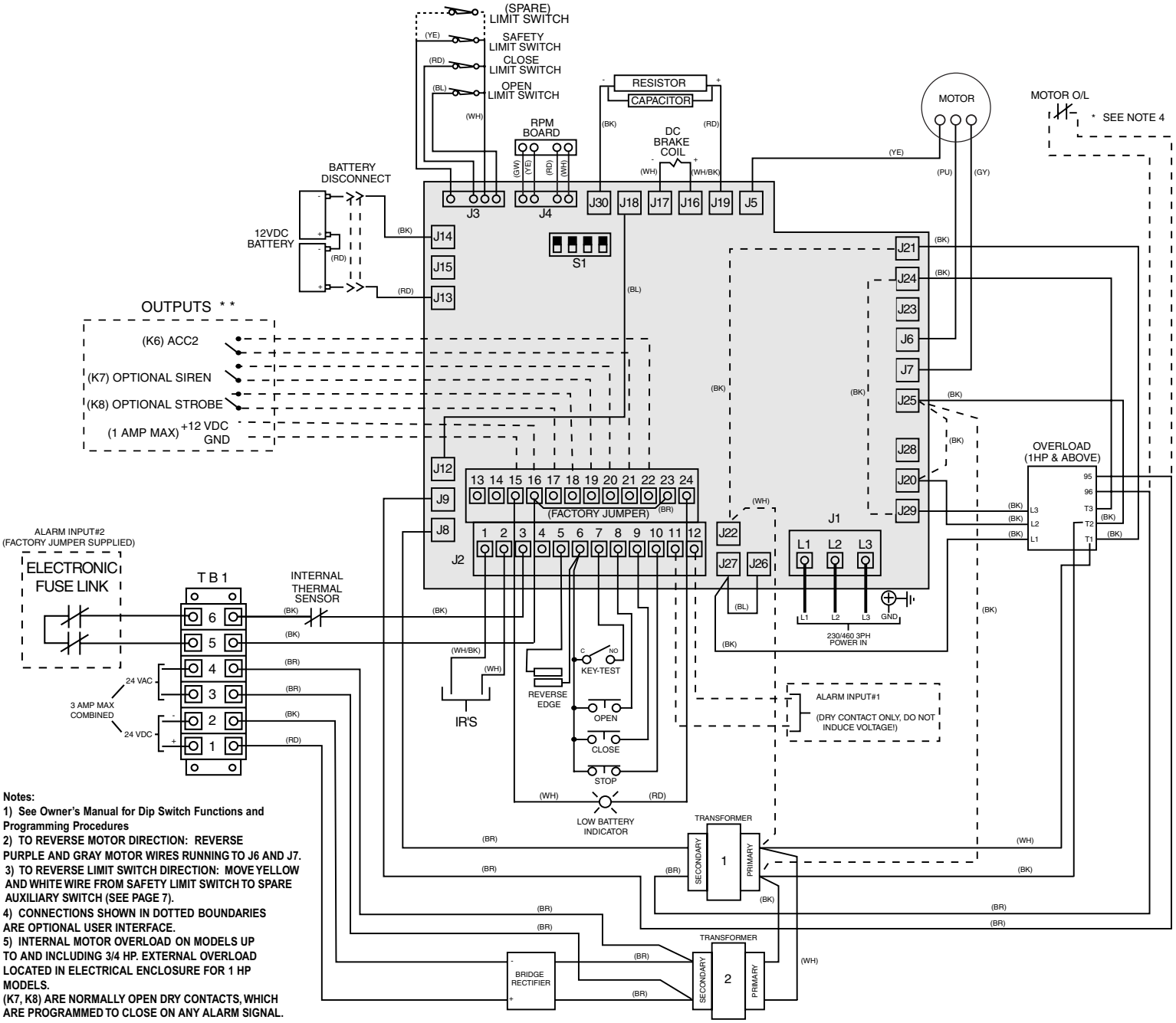


(SHOWN AS LEFT HAND UNIT)

3 PHASE WIRING DIAGRAM
(FDC5023,FDC5043,FDC1023,FDC1043) 1893



INTERNAL MOTOR CONNECTIONS



Notes:

1) See Owner's Manual for Dip Switch Functions and Programming Procedures

2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7.

3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRE FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).

4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.

*** 5) INTERNAL MOTOR OVERLOAD ON MODELS UP TO AND INCLUDING 3/4 HP. EXTERNAL OVERLOAD LOCATED IN ELECTRICAL ENCLOSURE FOR 1 HP MODELS.**

*** * (K7, K8) ARE NORMALLY OPEN DRY CONTACTS, WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.**

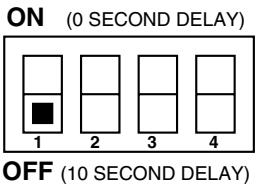
(SHOWN AS LEFT HAND UNIT)

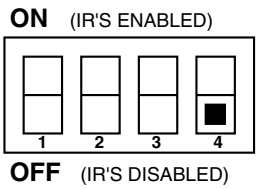
OPTIONAL CONTROL SETTINGS

NOTE: All functions are independent of each other and do not require other control settings to be set at any certain configuration. For dip switch location refer to illustration below. All switches are factory preset to the "OFF" position.

SI-1 ALARM DELAY TO CLOSE - Alarm Delay to Close is the time between when the operator first receives an active alarm signal and the door starts to close. (In Seconds)

SI-4 INFRARED EYES STATE - The operator will support LiftMaster Infrared Safety Photo Eyes when enabled, and ignore IR inputs when disabled.

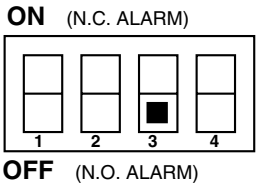


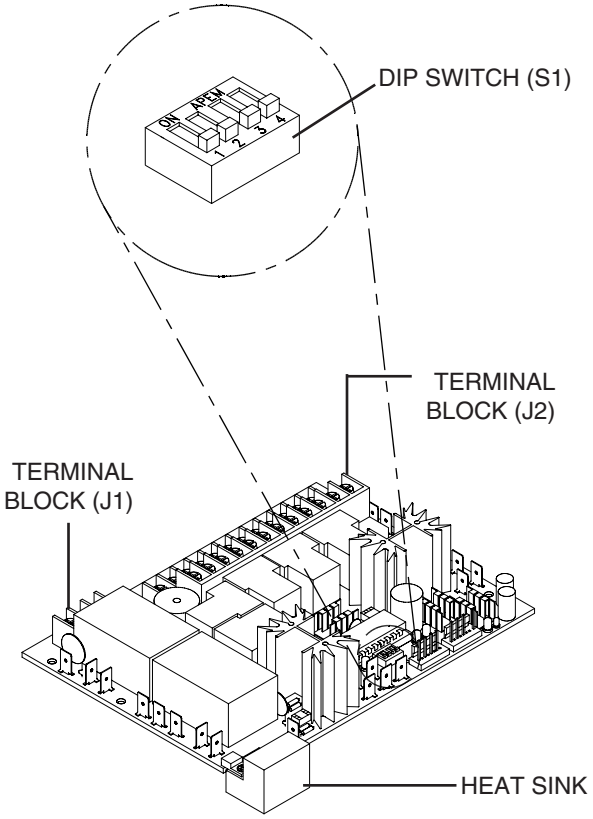


INSTALLER CONTROL SETTINGS

SI-2 FIRE DOOR MODE/CDO MODE - The operator only monitors alarm inputs when in the Fire Door Mode. The operator functions as a standard CDO with B2 wiring when in the CDO mode.

SI-3 ALARM STATE - The operator can accept either a normally open or normally closed dry contact alarm input. DO NOT INDUCE VOLTAGE!





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Interface Housing Assembly Replacement Kit for FDC-Line Operators

APPLICATION REQUIREMENTS:

Replacement of Interface Housing Assembly and/or its components for a Model FDC Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

THE OPERATOR MUST BE REMOVED FROM ITS MOUNTING , TO PERFORM THIS MAINTENANCE.

REMOVE EXISTING HOUSING ASSEMBLY:

Disconnect the wire connections to the brake and motor. Loosen the (6) screws holding the electrical box to the side frames. Loosen the limit chain, and remove the chain. Remove the (8) screws holding the side frames to the mounting brackets. Remove (4) screws holding the side frames to the rear mounting bracket, remove the bracket. Lift the entire frame assembly off the reducer/motor assembly. Remove the (4) bolts securing the motor to the adapter assembly, remove the motor. Remove the (4) bolts securing the reducer to the adapter, remove the adapter assembly. Remove the (4) socket head cap screws securing the brake to the adapter, remove the brake assembly.

MOUNTING NEW HOUSING ASSEMBLY:

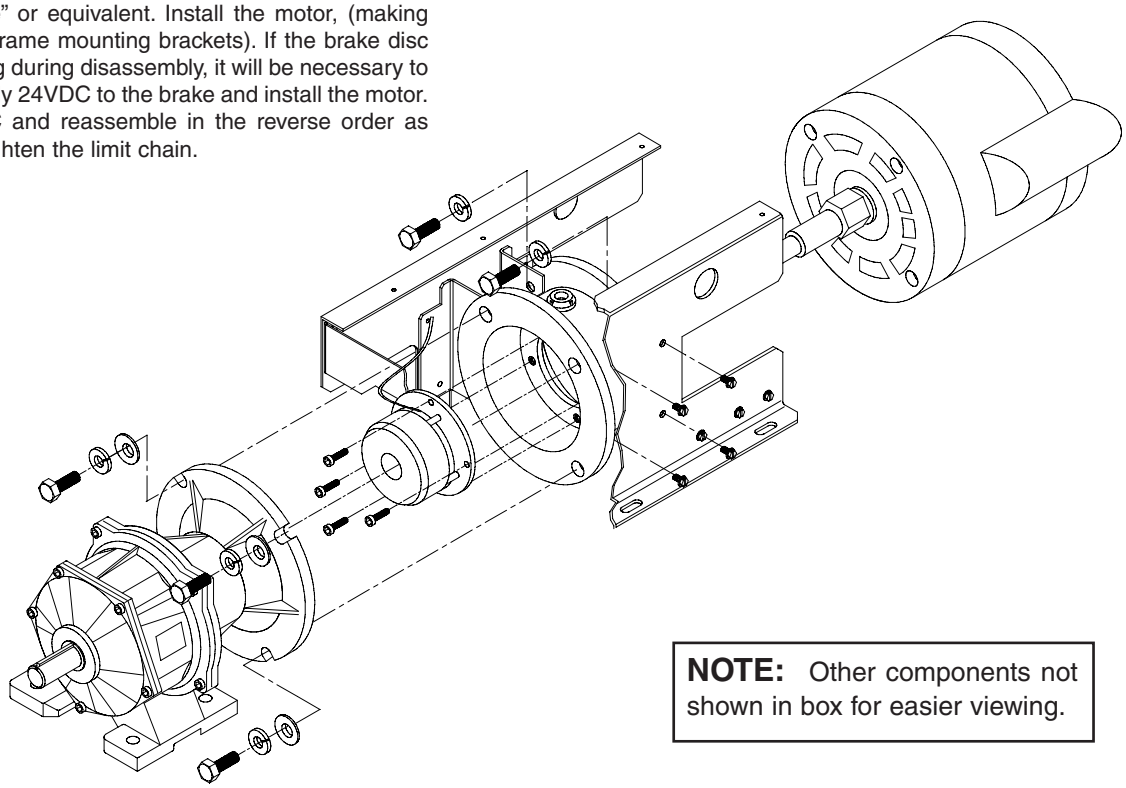
Install the brake assembly in the new housing using the original hardware, be sure to apply loctite #262 or equivalent to the (4) screws. Install the new housing to the reducer (making sure to include the frame mounting brackets at this time). Align the shaft keyway on the gear reducer input shaft with a flat side of the hexagon on the brake disc. Align the motor shaft key, and coat the motor shaft (not including the hexagon portion) with a light coat of "Never-sieze" or equivalent. Install the motor, (making sure to include the frame mounting brackets). If the brake disc was dislodged during during disassembly, it will be necessary to realign the disc. Apply 24VDC to the brake and install the motor. Remove the 24VDC and reassemble in the reverse order as above. Be sure to tighten the limit chain.

⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

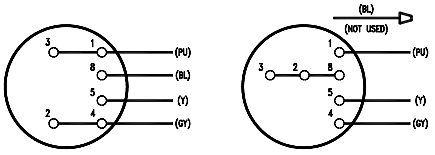
ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.



NOTE: Other components not shown in box for easier viewing.

1 PHASE WIRING DIAGRAM

1892

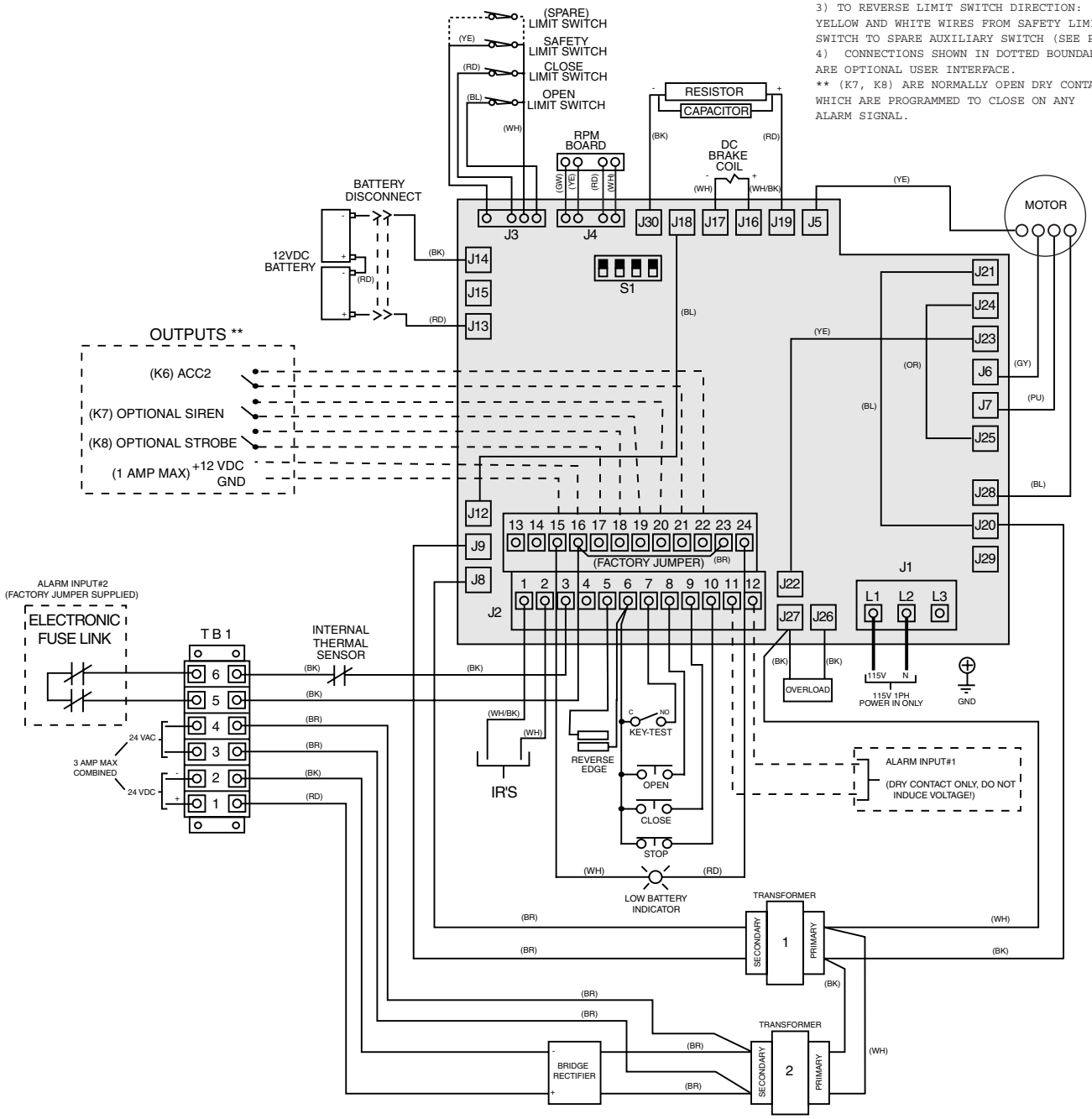


115V – 1PH
MOTOR CONNECTION

230V – 1PH
MOTOR CONNECTION

INTERNAL MOTOR CONNECTIONS

Notes:
1) See Owner s Manual for Dip Switch Functions and Programming Procedures
2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7 ON THE BOARD.
3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRES FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).
4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.
** (K7, K8) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.



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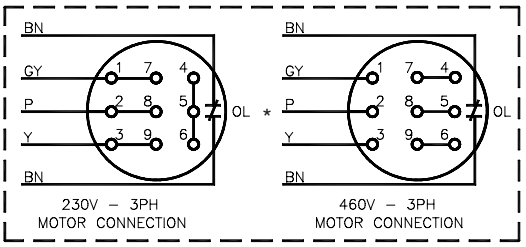
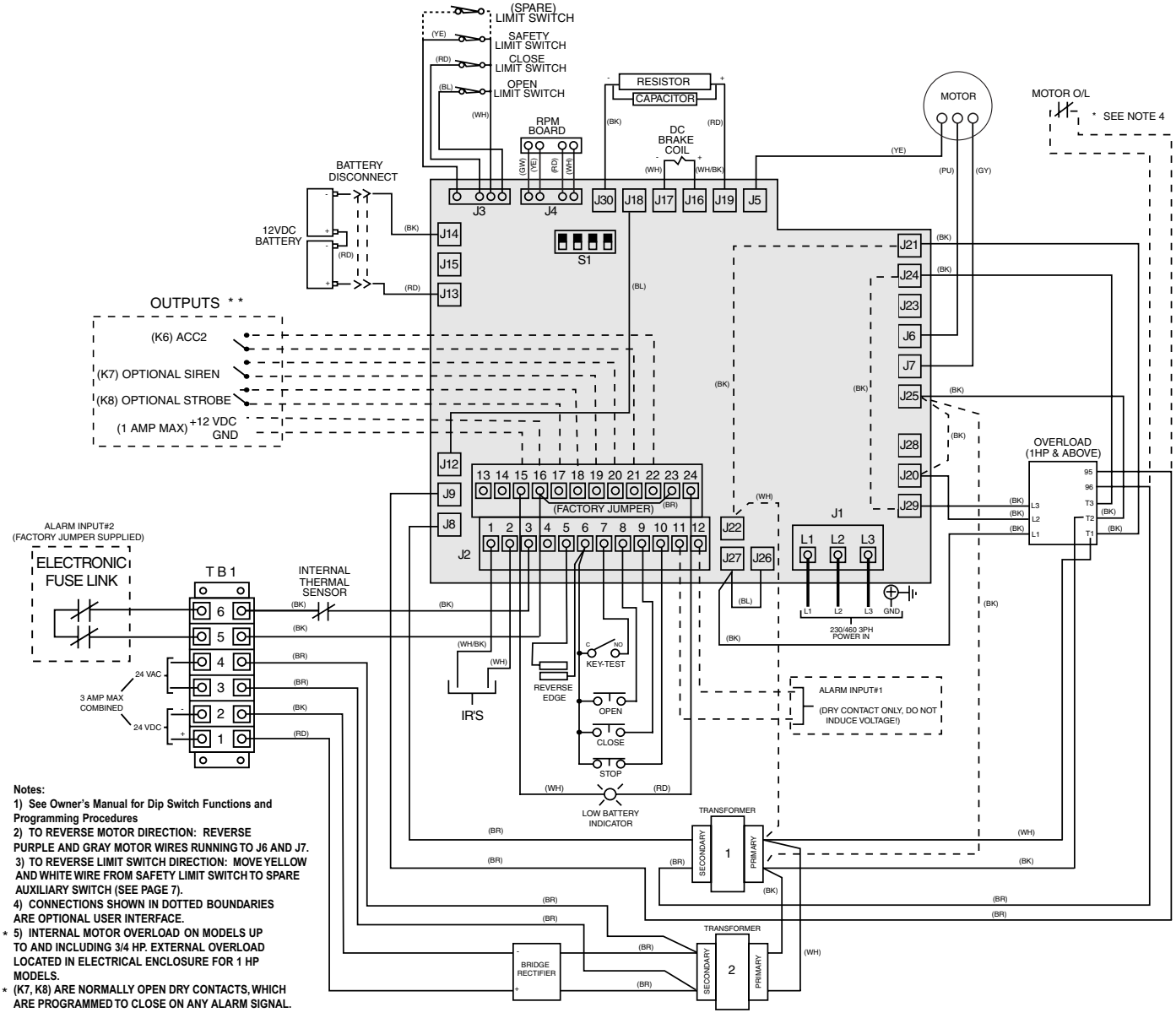
3 PHASE WIRING DIAGRAM

1893



INTERNAL MOTOR CONNECTIONS



Notes:

1) See Owner's Manual for Dip Switch Functions and Programming Procedures

2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7.

3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRE FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).

4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.

*** 5) INTERNAL MOTOR OVERLOAD ON MODELS UP TO AND INCLUDING 3/4 HP. EXTERNAL OVERLOAD LOCATED IN ELECTRICAL ENCLOSURE FOR 1 HP MODELS.**

*** * (K7, K8) ARE NORMALLY OPEN DRY CONTACTS, WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.**

(SHOWN AS LEFT HAND UNIT)

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Cam Assembly Replacement Kit for EGJ-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Cam and/or its components for a Model EGJ Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING CAM:

1. Remove (2) pan head screws securing conduit and bushing to reducer, place conduit and bushing to the side.

2. Remove (2) pan head screws securing the limit housing to the reducer, place limit housing to the side.

3. Remove hex nut securing cam assembly to reducer.

4. Remove all cams and cam washers from cam shaft.

⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

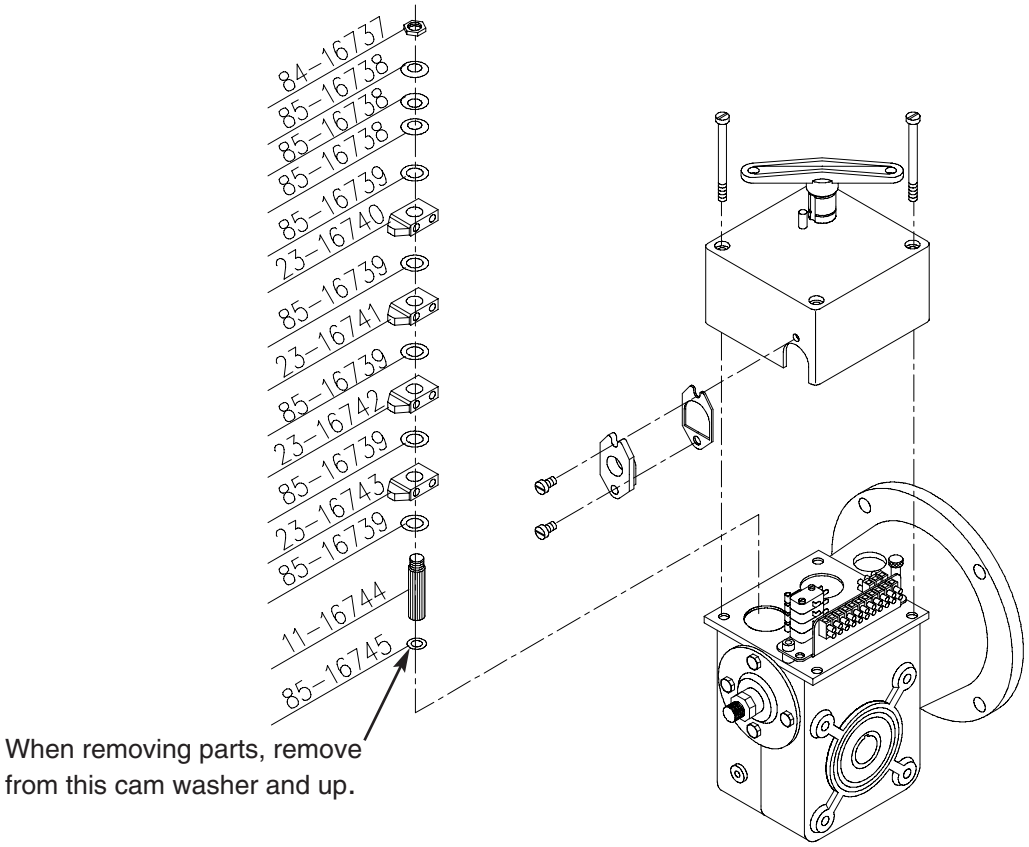
OPERATOR MUST BE PROPERLY GROUNDED AND CONNECTED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES. NOTE: THE OPERATOR SHOULD BE ON A SEPARATE FUSED LINE OF ADEQUATE CAPACITY.

ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.

5. Remove cam shaft and cam washer (see drawing for which parts are to be removed).

MOUNTING NEW CAM:

To install the new cam assembly, follow the steps outlined above in the reverse order (see drawing to see which parts were removed). Refer to the owners manual supplied with operator for additional help.



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Housing Assembly Replacement Kit for EGJ-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Housing and/or its components for a Model EGJ Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING HOUSING:

1. Remove (2) pan head screws securing conduit and bushing to reducer, place conduit and bushing to the side.

2. Remove (2) pan head screws securing the limit housing to the reducer, place limit housing to the side.

⚠ WARNING

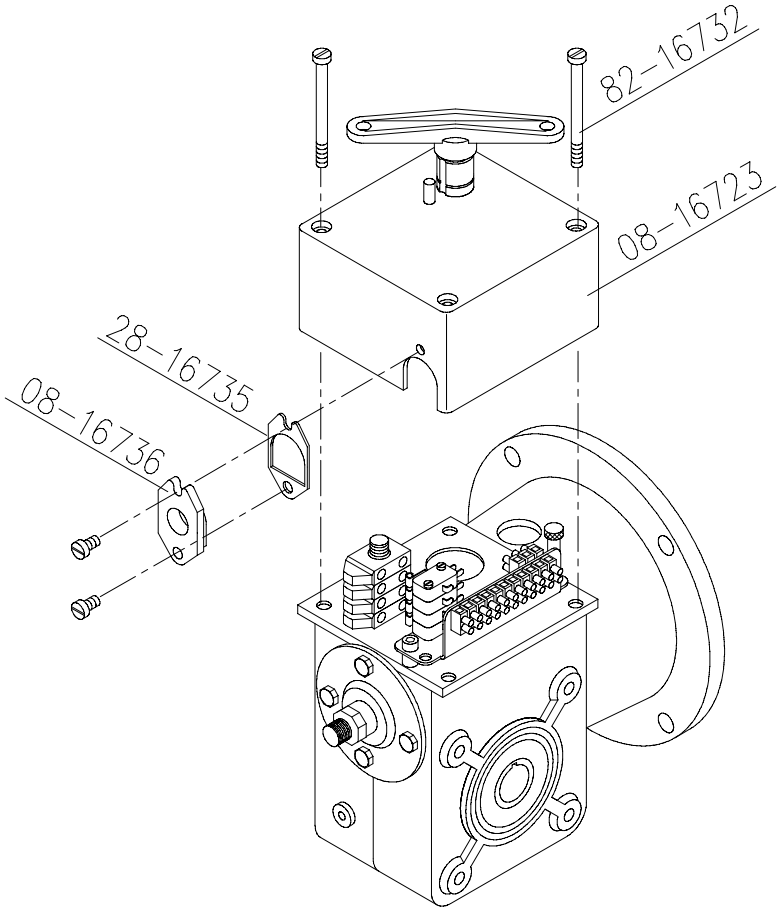
DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

MOUNTING NEW HOUSING:

To install the new housing assembly, follow the steps outlined above in the reverse order. Refer to the owners manual supplied with operator for additional help.



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Gear Reducer Assembly Replacement Kit for FDC-Line Operators

APPLICATION REQUIREMENTS:

Replacement of Gear Reducer Assembly and/or its components for a Model FDC Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING GEAR REDUCER ASSEMBLY:

Remove the limit chain from the gear reducer. Remove the (4) bolts securing the gear reducer to the interface housing and remove the reducer.

MOUNTING NEW GEAR REDUCER ASSEMBLY:

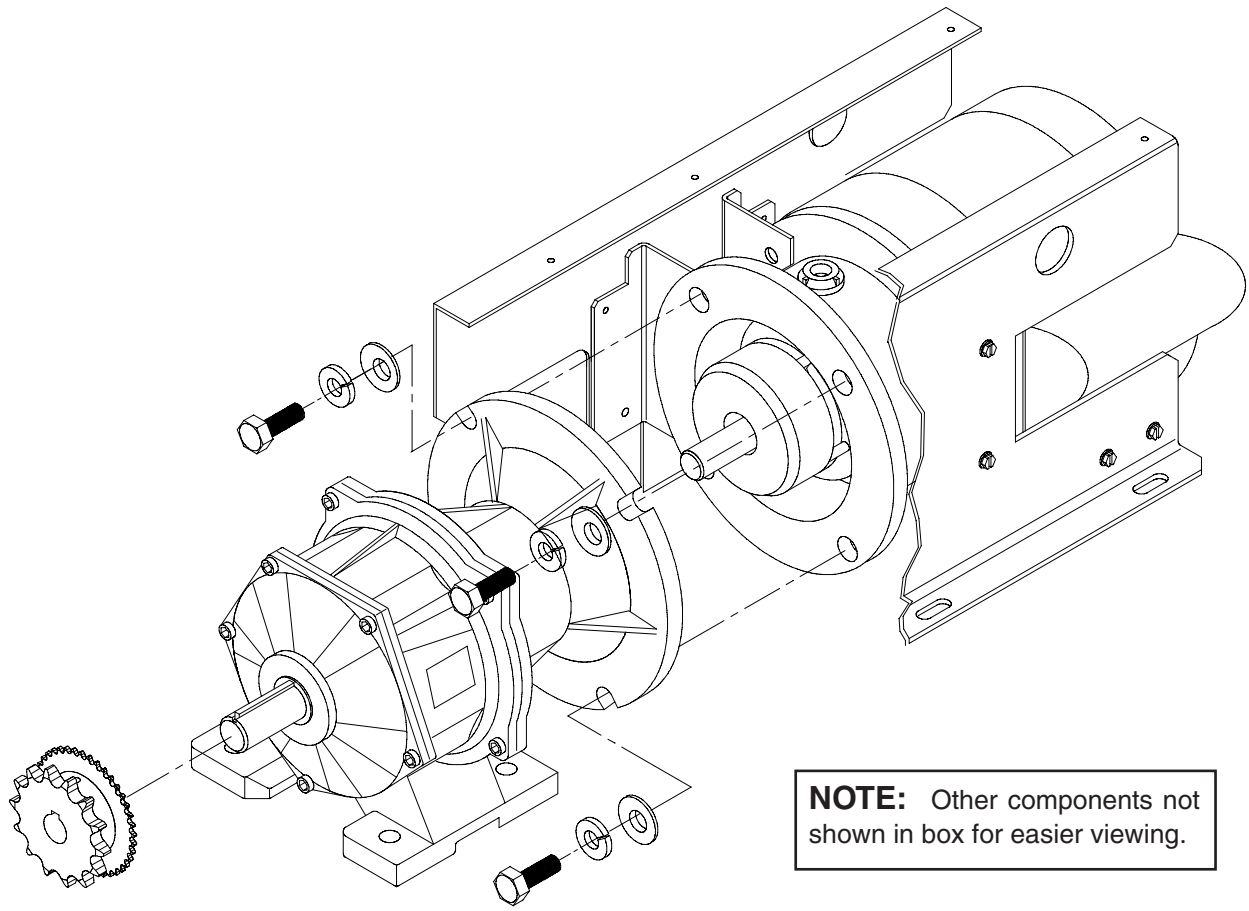
To install the gear reducer align the input shaft keyway with the key on the motor extension shaft. Install the (4) bolts to secure the reducer to the interface housing. Re-connect the limit chain.

⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.



NOTE: Other components not shown in box for easier viewing.

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Battery Replacement Kit for FDC-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Battery for a Model FDC Operator.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

WARNING

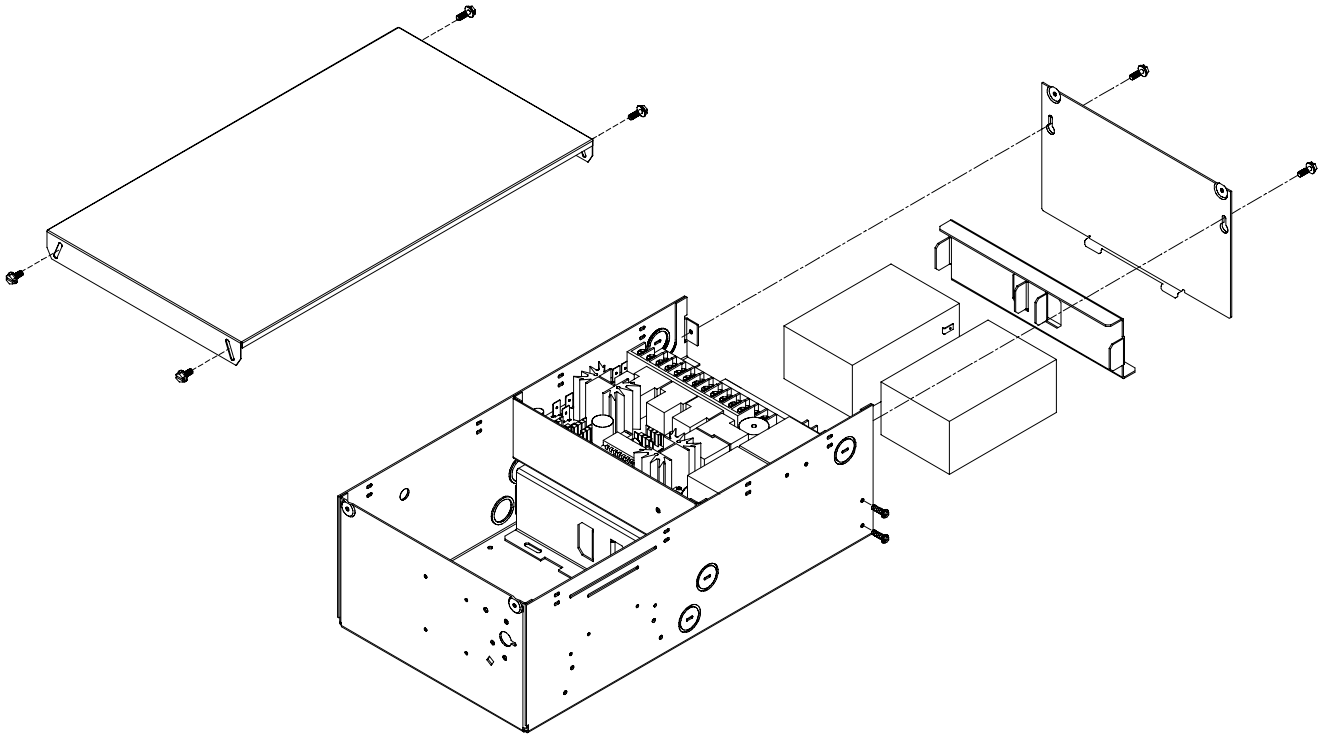
TO PREVENT ELECTRICAL SHOCK OR SHORTING OUT OF THE BATTERIES, AVOID MAKING CONTACT OF THE TERMINALS ON THE TWO BATTERIES.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING BATTERIES:
Remove the electrical box cover. Loosen the two screws holding the back plate to the electrical box, lift the plate straight up from the box and place aside. Remove the four screws on the sides of the electrical box holding the battery bracket in place. Remove the batteries from the electrical box and remove wires from the batteries.

MOUNTING NEW BATTERIES:
Slide the new batteries into electrical box making sure that they seat within the inside battery bracket. Re-connect the wires. When re-installing the battery plate, install the two lower screws and then push on the top of the plate and catch the two top screws. To install remainder of components follow the above steps in reverse order.



MADE IN MEXICO

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Limit Shaft Assembly Replacement Kit for FDC-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Limit Shaft and/or its components for a Model FDC Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING SHAFT:
Remove the cover from the electrical box. Remove the master link from the limit chain, remove the chain and place it aside. Remove the e-ring and the shims from the non-sprocket end of the limit shaft and remove the e-ring from each side of the rotating cup. To remove the limit shaft pull it out from the sprocket side, loosening the limit nuts as needed and slide off the rotating cup. Remove the flanged bearings from the electrical box and discard.

INSTALLING NEW LIMIT SHAFT:
To install the new limit shaft follow the steps outlined above in reverse order, referring to the Owner's Manual if necessary. Restoring power completes the installation.

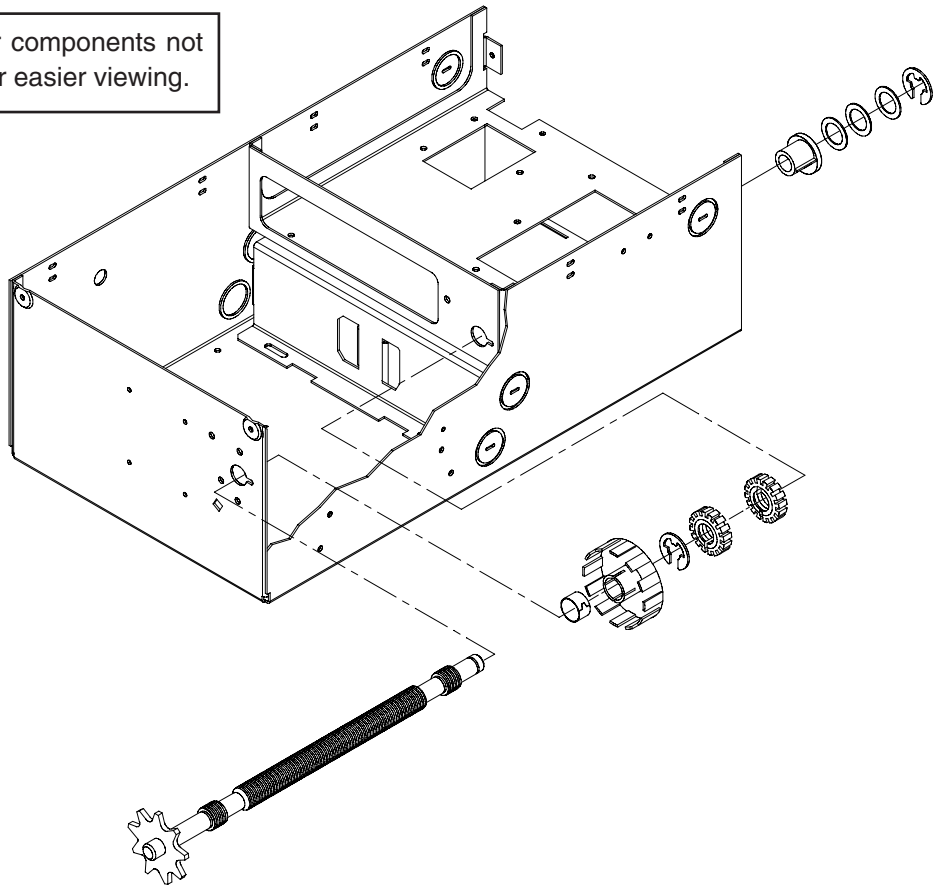
⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

NOTE: Other components not shown in box for easier viewing.



MADE IN MEXICO

CHAMBERLAIN
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PROFESSIONAL

Motor Assembly Replacement Kit for FDC-Line Operators

APPLICATION REQUIREMENTS:
Replacement of Motor and/or its components for a Model FDC Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING MOTOR ASSEMBLY:
Disconnect the wire connections to the motor. Remove the (4) bolts securing the motor to the interface housing and remove the motor from the frame. Loosen the (2) set screws from the extension shaft, slide off from the motor shaft and then remove the key from the motor shaft and set aside (these parts are not included with this kit). Remove the electrical fitting in the back of the motor and set it aside.

SETTING THE DEPTH OF THE EXTENSION SHAFT:
To set the extension shaft depth use the guage supplied with the motor kit. Place the guage flat against the face of the motor with the cutout on the motor shaft. Slide the extension shaft back until it is touching the guage. Insert the shaft key, with the step towards the motor. Apply loctite #262 or equivalent to the (2) set screws and tighten

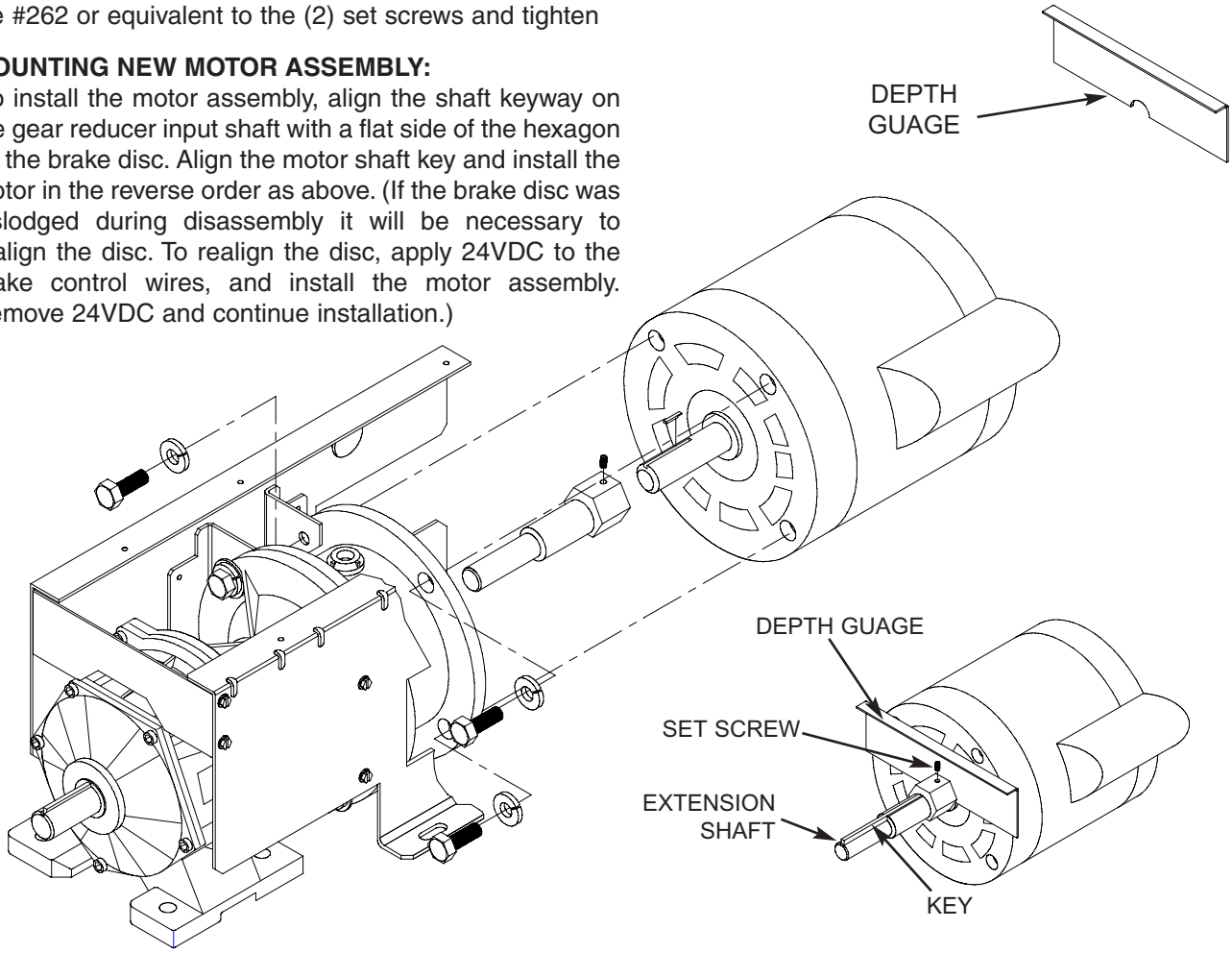
MOUNTING NEW MOTOR ASSEMBLY:
To install the motor assembly, align the shaft keyway on the gear reducer input shaft with a flat side of the hexagon on the brake disc. Align the motor shaft key and install the motor in the reverse order as above. (If the brake disc was dislodged during disassembly it will be necessary to realign the disc. To realign the disc, apply 24VDC to the brake control wires, and install the motor assembly. Remove 24VDC and continue installation.)

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

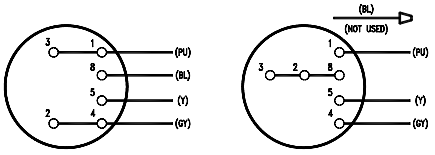
OPERATOR MUST BE PROPERLY GROUNDED AND CONNECTED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES. NOTE: THE OPERATOR SHOULD BE ON A SEPARATE FUSED LINE OF ADEQUATE CAPACITY.

ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.



1 PHASE WIRING DIAGRAM

1892

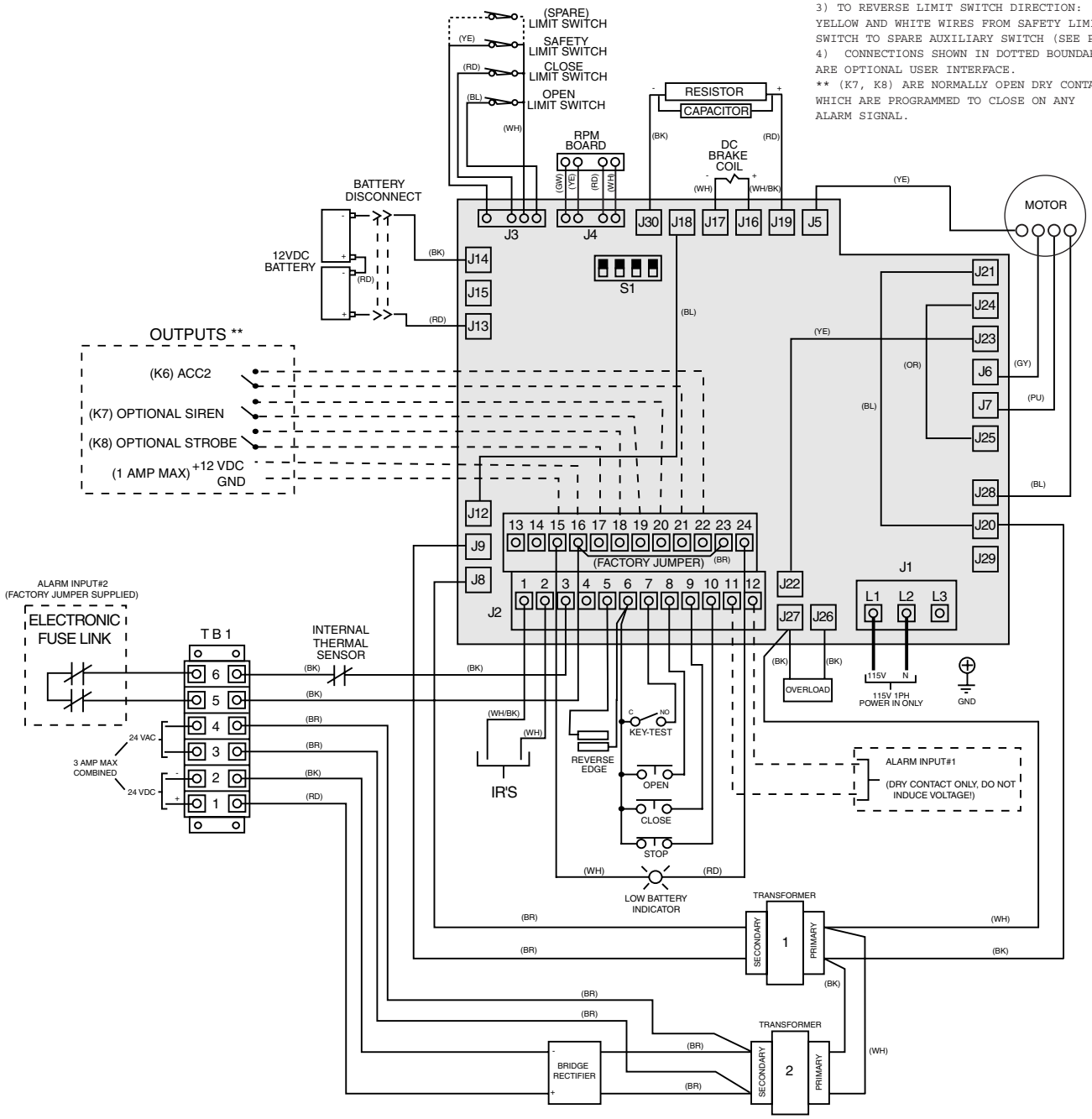


115V – 1PH
MOTOR CONNECTION

230V – 1PH
MOTOR CONNECTION

INTERNAL MOTOR CONNECTIONS

Notes:
1) See Owner s Manual for Dip Switch Functions and Programming Procedures
2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7 ON THE BOARD.
3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRES FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).
4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.
** (K7, K8) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.



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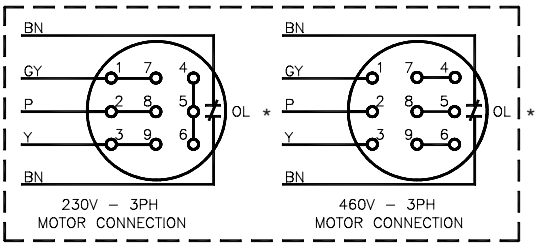
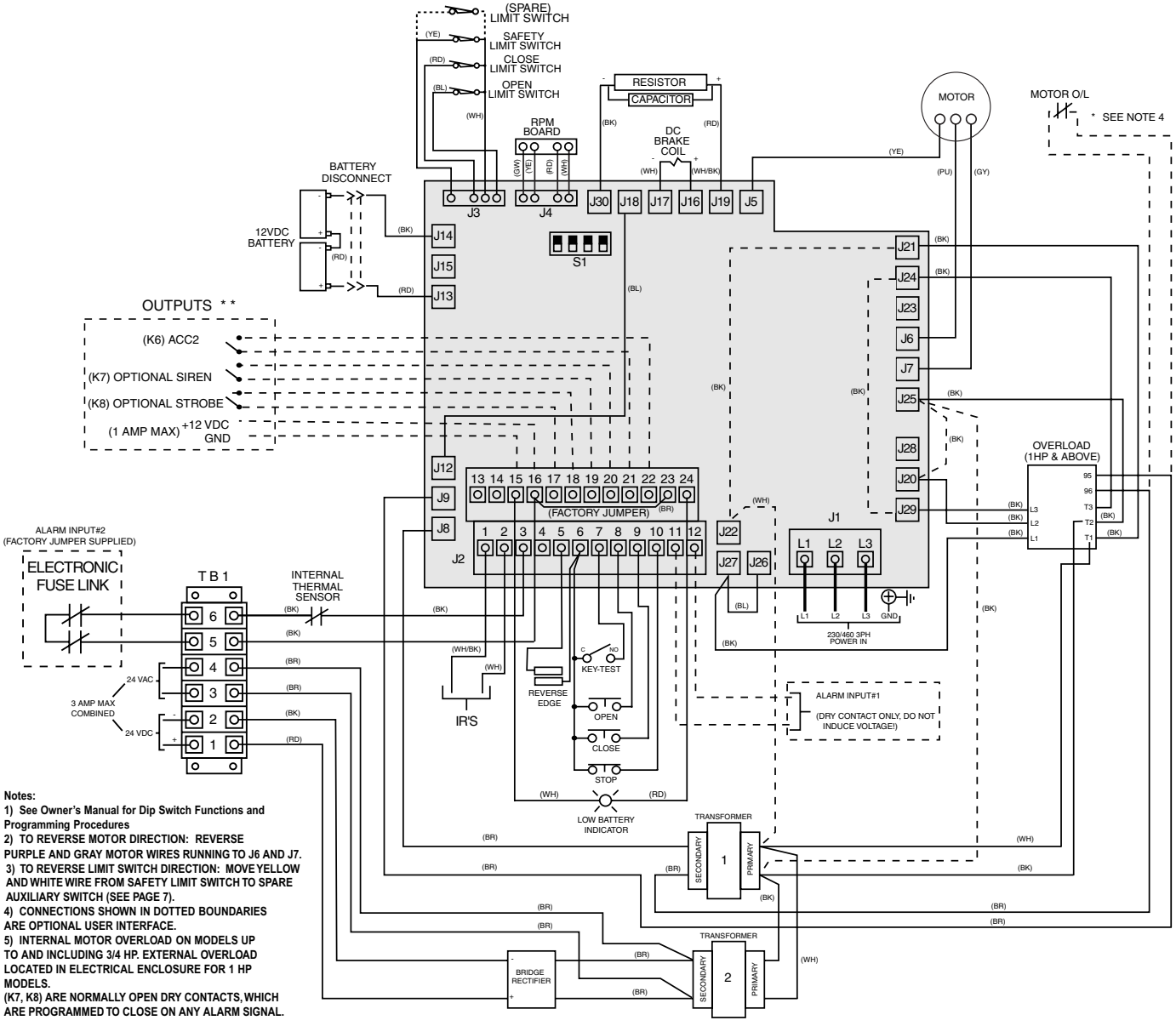
3 PHASE WIRING DIAGRAM

1893



INTERNAL MOTOR CONNECTIONS



Notes:

1) See Owner's Manual for Dip Switch Functions and Programming Procedures

2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7.

3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRE FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).

4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.

*** 5) INTERNAL MOTOR OVERLOAD ON MODELS UP TO AND INCLUDING 3/4 HP. EXTERNAL OVERLOAD LOCATED IN ELECTRICAL ENCLOSURE FOR 1 HP MODELS.**

*** * (K7, K8) ARE NORMALLY OPEN DRY CONTACTS, WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.**

(SHOWN AS LEFT HAND UNIT)

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RPM Assembly Replacement Kit for FDC-Line Operators

APPLICATION REQUIREMENTS:
Replacement of RPM Sensor Assembly and/or its components for a Model FDC Operator.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING RPM SENSOR:
Remove the cover from the electrical box. Remove the wires from the RPM board. Remove the e-ring from the back of the interrupter cup and slide the cup back as far as possible, do not loose the e-ring. Un-clip the RPM mounting base from the outside of the electrical box.

INSTALLING NEW RPM SENSOR:
To install the new RPM sensor follow the steps outlined above in reverse order, referring to the Owner's Manual if necessary. Restoring power completes the installation.

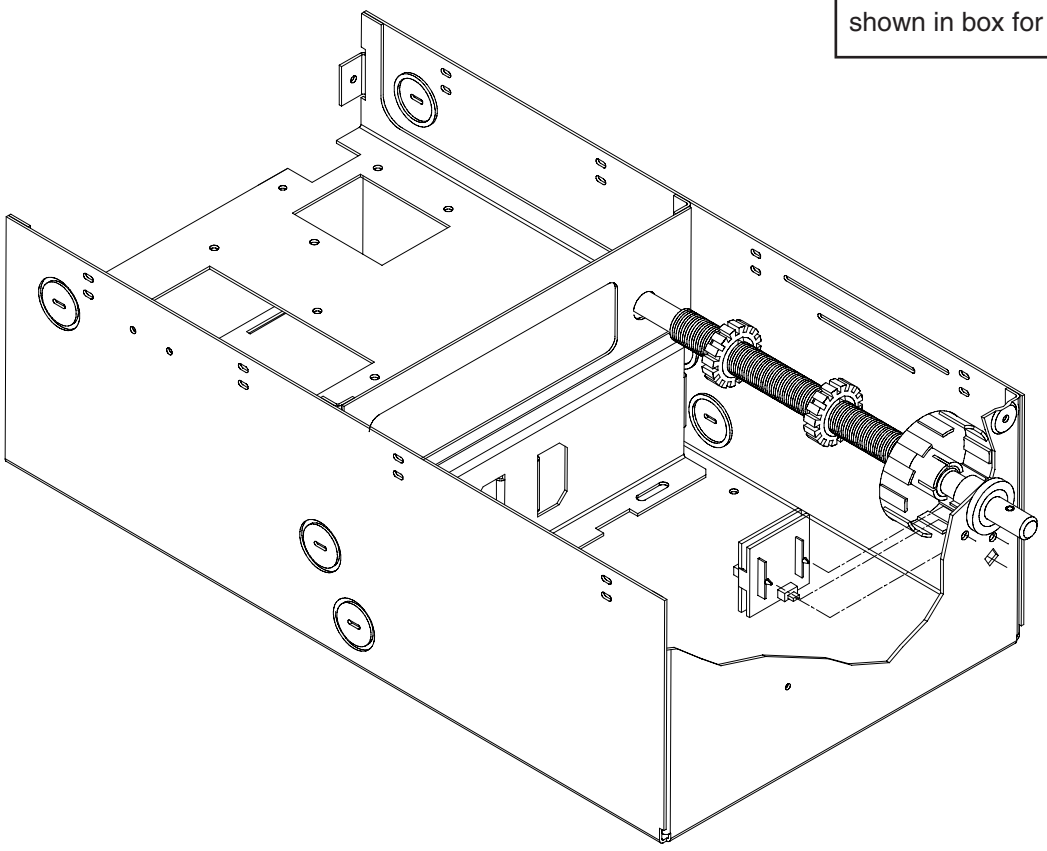
⚠ WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

NOTE: Other components not shown in box for easier viewing.



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LOGIC CONTROL VER. 2.0 Rev. B
PCB BOARD REPLACEMENT KIT

APPLICATION REQUIREMENTS:

This modification is available to models T, GT, APT, J, H, GH, SD and GSD standard door operators with Logic Control Board Version 2.0 or 2.0 Rev. B (L2).

FUNCTION:

Allows existing Logic Control Version 2.0 or 2.0 Rev. B board in field to be replaced with new Logic Control Version 2.0 Rev. B.

INSTALLATION INSTRUCTIONS

1. REMOVING EXISTING BOARD

a) Remove all the ends of the wires connected to the existing board and neatly lay them over the side of the box. Leave jumper wires located on the board connected until new PCB board wiring.

b) Remove the (9) nylon nuts holding the PCB board to the box and hold for reassembly of new board.

c) Remove the screw holding the heat sink to the box and hold for reassembly of new board.

d) Remove PCB board from the box, leaving the existing standoffs in place.

2. INSTALLING NEW BOARD

a) Install the new Pcb board in the box using the old standoffs. Be sure to install in the same configuration as it was removed.

b) Secure the board in place with the (9) nylon nuts removed in step 1.

c) Secure the heatsink to the electrical box with the screw removed in step 1.

NOTE: For any additional help refer to assembly drawing on page 6.

⚠ WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.

3. PCB BOARD WIRING

1 PHASE OPERATORS

Follow wiring directions on page 2, for additional help refer to the wiring diagram on page 3.

3 PHASE OPERATORS

Follow wiring directions on page 4, for additional help refer to the wiring diagram on page 5.

SINGLE PHASE WIRING

NOTE: For additional help with wiring refer to the wiring diagram on next page.

EXISTING WIRES

JUMPER WIRES

NOTE: Remove jumpers from original board and install them on new Logic Board as follows.

a. Reconnect the original orange wire with 1/4" faston and 1/4" faston with piggyback from pin **E19** to pin **E13**. Be sure to connect the end with the 1/4" faston with piggyback to pin **E19**.

b. Reconnect the original yellow wire from pin **E12** to pin **E4**.

c. Reconnect the original red wire from pin **E2** to pin **E5**.

d. (115 VOLT ONLY) Reconnect the original black wire from pin **E16** to pin **E18**.

PCB JUMPER

a. Set **P7** on **SINGLE PHASE**.

TRANSFORMER

a. Reconnect the original black wire that runs from the primary on the transformer to the piggy back of the orange wire on pin **E19**.

b. Reconnect the original white wire that runs from the primary on the transformer to pin **E14**.

c. Reconnect the original blue wire that runs from the secondary on the transformer to #12 on the **TB1** terminal block or interlock switch when present.

d. Reconnect the original yellow wire that runs from the secondary on the transformer to #13 on the **TB1** terminal block.

INTERLOCK SWITCH (WHEN PRESENT)

a. Reconnect the original blue wire that runs from the interlock to #12 on the **TB1** terminal block.

GROUND

a. Reconnect the original green wire that runs from the ground screw to pin **E9**.

LIMIT SWITCHES

a. Reconnect the original limit harness to the 4 pin terminal on the board marked **LIMIT SWITCHES**.

RPM SENSOR

a. Reconnect the original RPM harness to the 4 pin terminal on the board marked **RPM.**

RADIO

a. Reconnect the original radio harness to the 3 pin terminal on the board marked **RADIO.**

MOTOR

a. Reconnect the original grey wire from the motor to pin **E15**.

b. Reconnect the original blue wire from the motor to pin **E6**.

c. Reconnect the original purple wire from the motor to pin **E10**.

d. Reconnect the original yellow wire from the motor to pin **E17**.

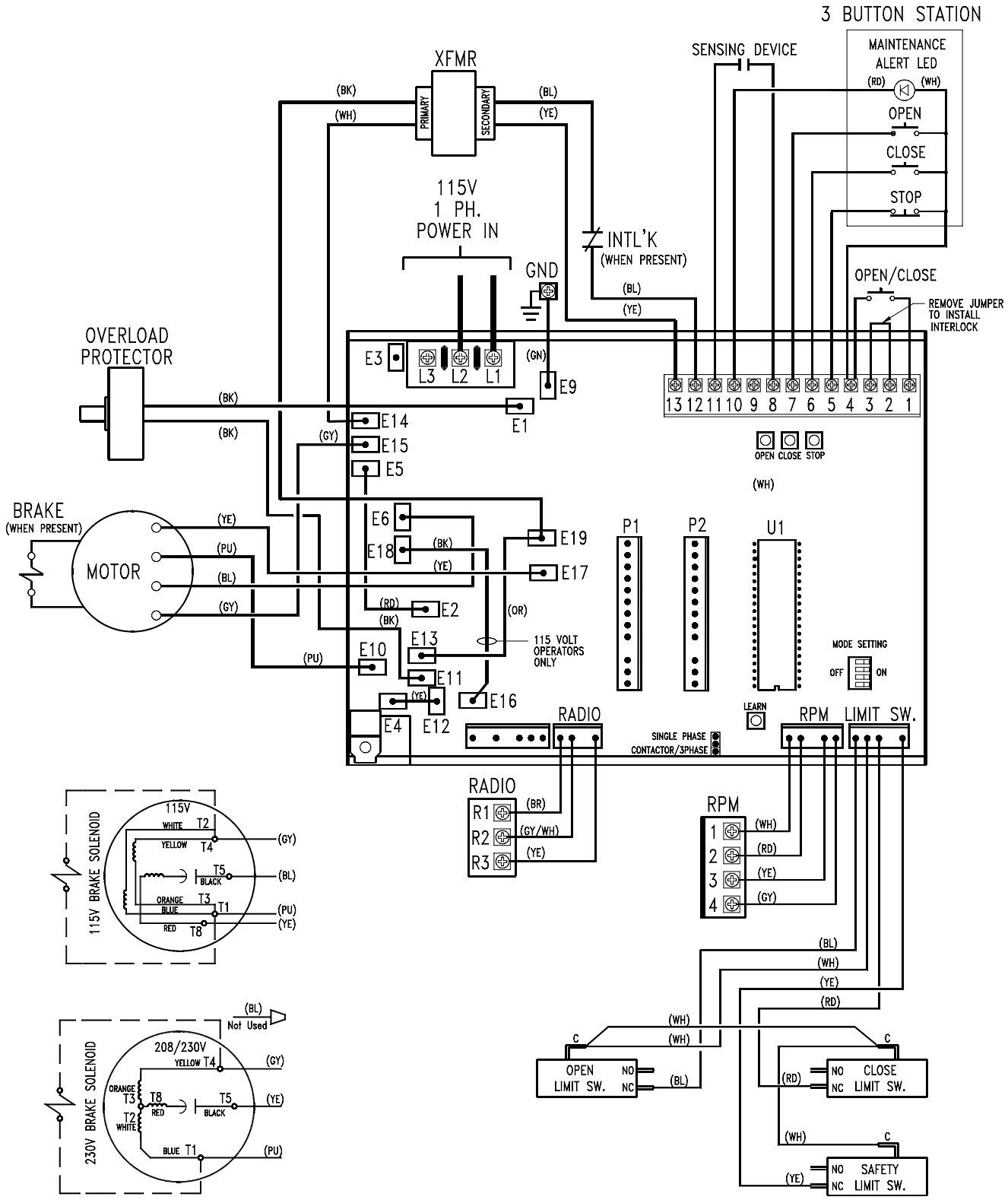
OVERLOAD

a. Reconnect one of the original black wires from the overload to pin **E11**.

b. Reconnect one of the original black wires from the overload to pin **E1**.

NOTE: For pushbuttons, sensing devices and power wiring refer to wiring diagram on next page.

SOLID STATE SINGLE PHASE WIRING DIAGRAM 1837-1



THREE PHASE WIRING

NOTE: For additional help with wiring refer to the wiring diagram on next page.

EXISTING WIRES

JUMPER WIRES

NOTE: Remove jumpers from original board and install them on new Logic Board as follows.

a. Connect the original orange wire from pin **E19** to pin **E13**.

d. Connect the original black wire from pin **E16** to pin **E18**.

PCB JUMPER

a. Set **P7** on **CONTACTOR/3PHASE**.

OVERLOAD (1 HP AND ABOVE ONLY)

a. Reconnect the original black wire that runs from **L2** on the overload to pin **E14**.

b. Reconnect the original white wire that runs from **L3** on the overload to pin **E3**.

c. Reconnect the original yellow wire that runs from **L1** on the overload to pin **E1**.

d. Reconnect the original yellow wire that runs from **T1** on the overload to pin **E11**.

e. Reconnect the original white wire that runs from **T3** on the overload to pin **E4**.

f. Reconnect the original black wire that runs from T**2** on the overload to pin **E2**.

g. Reconnect the original brown wire that runs from **95** on the overload to #3 on the **TB1** terminal block.

h. Reconnect the original brown wire that runs from **96** on the overload to #2 on the **TB1** terminal block.

TRANSFORMER

a. Reconnect the original black wire that runs from the primary on the transformer to the piggy back of the black wire on pin **E2**.

b. Reconnect the original white wire that runs from the primary on the transformer to pin **E12**.

c. Reconnect the original blue wire that runs from the secondary on the transformer to #12 on the **TB1** terminal block or interlock switch when present.

d. Reconnect the original yellow wire that runs from the secondary on the transformer to #13 on the **TB1** terminal block.

INTERLOCK SWITCH (WHEN PRESENT)

a. Reconnect the original blue wire that runs from the interlock to #12 on the **TB1** terminal block.

GROUND

a. Reconnect the original green wire that runs from the ground screw to pin **E9**.

LIMIT SWITCHES

a. Reconnect the original limit harness to the 4 pin terminal on the board marked **LIMIT SWITCHES**.

RPM SENSOR

a. Reconnect the original RPM harness to the 4 pin terminal on the board marked **RPM.**

RADIO

a. Reconnect the original radio harness to the 3 pin terminal on the board marked **RADIO.**

MOTOR

a. Reconnect the original grey wire from the motor to pin **E6**.

c. Reconnect the original purple wire from the motor to pin **E17**.

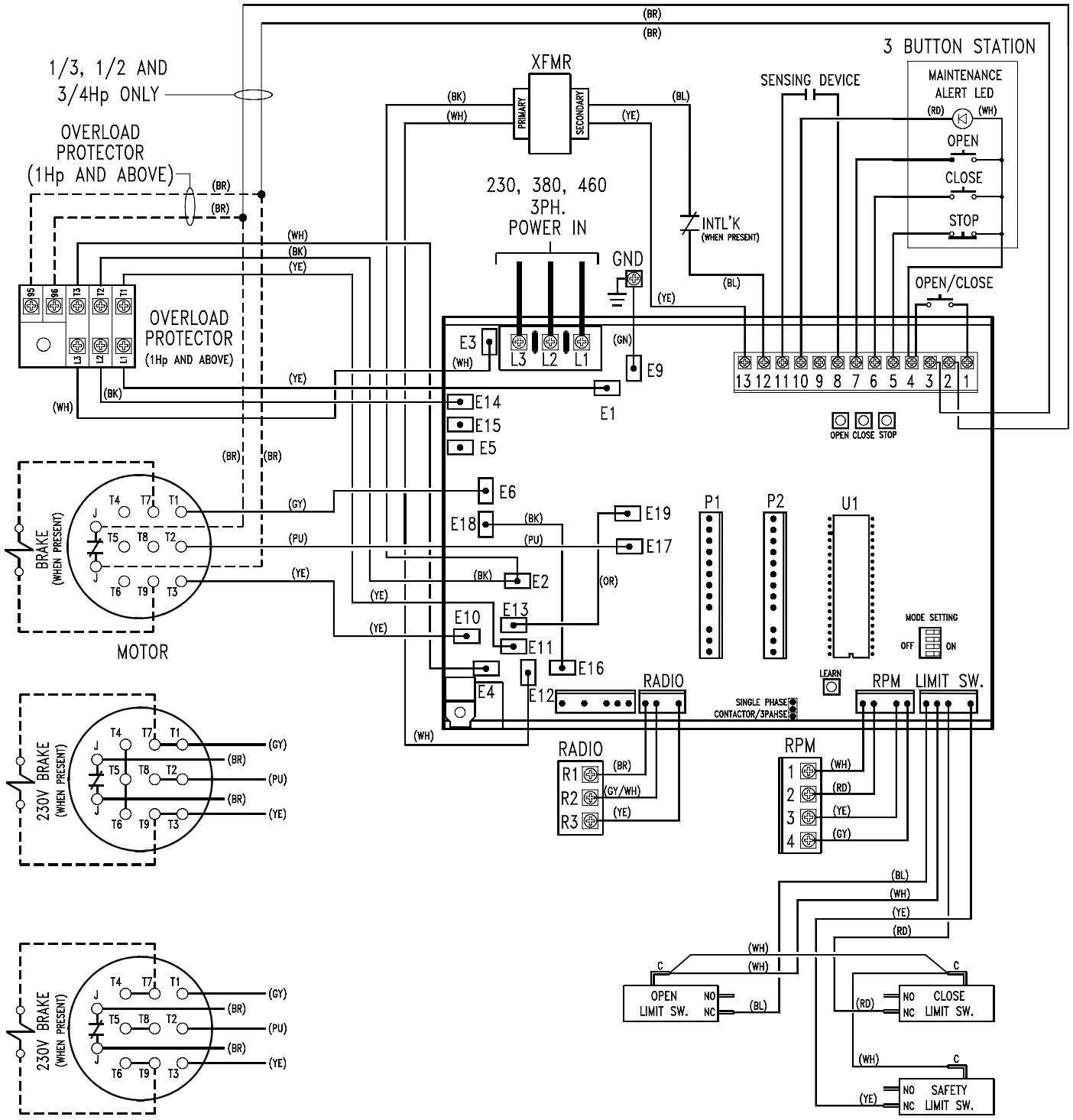
d. Reconnect the original yellow wire from the motor to pin **E10**.

e. **(1/3 to 3/4 HP ONLY)** Reconnect the original brown wire from the motor to #3 on the **TB1** terminal block.

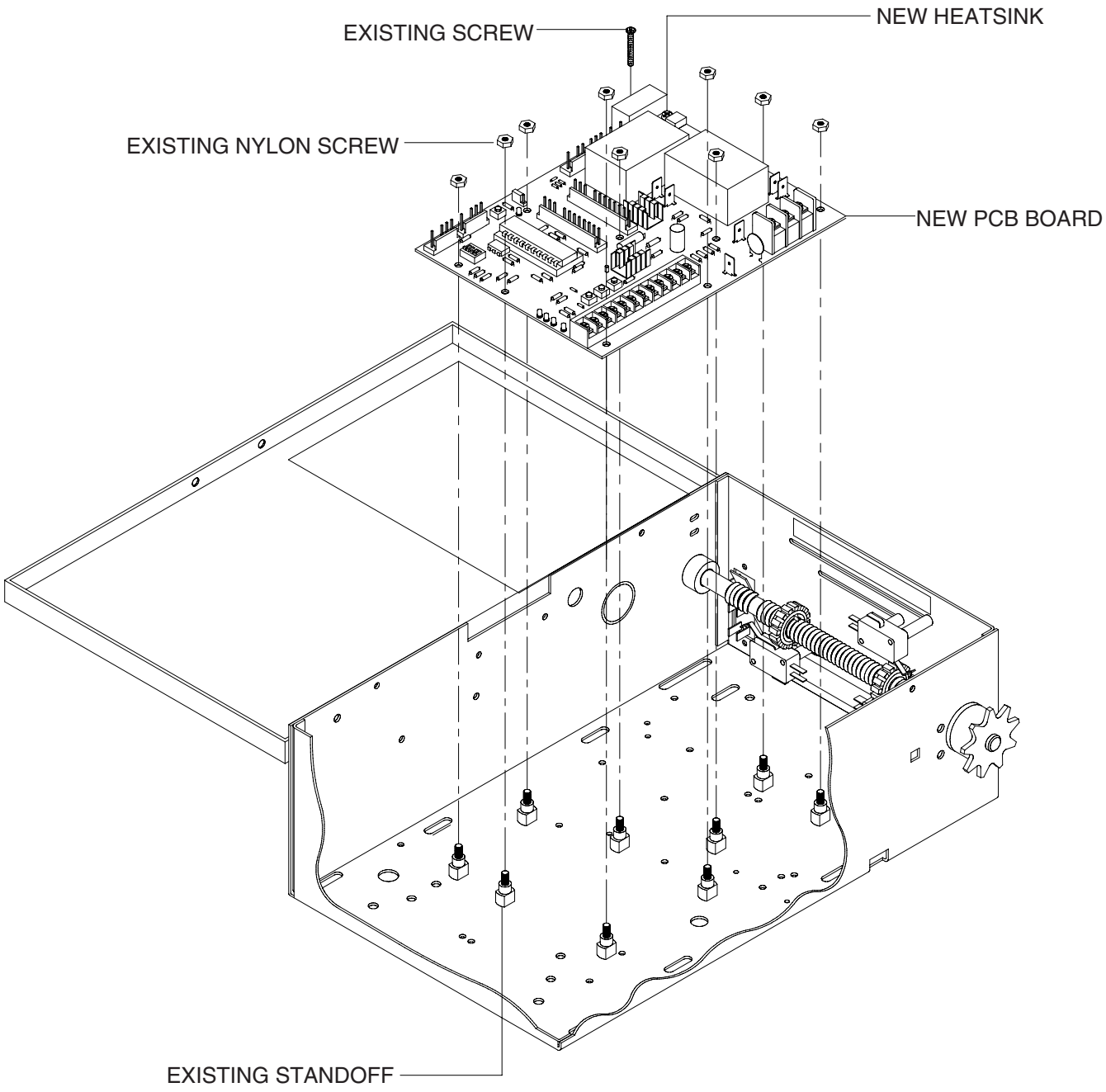
f. **(1/3 to 3/4 HP ONLY)** Reconnect the original brown wire from the motor to #2 on the **TB1** terminal block.

NOTE: For pushbuttons, sensing devices and power wiring refer to wiring diagram on next page.

SOLID STATE 3 PHASE WIRING DIAGRAM 1837-3



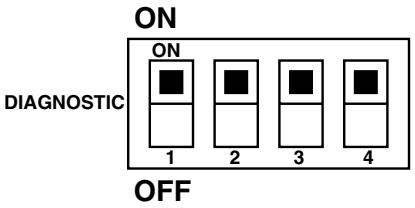
PCB REPLACEMENT ASSEMBLY



DIAGNOSTIC MODE & RPM LEARN

Diagnostic Mode
Set dip switch to diagnostic mode. The following diagnostic codes are applicable:

- Obstruction sensed = 2 flashes then pause
- Board Okay = Rapid Flash



Factory Memory Preset
Activate this mode to initialize the board's memory to the standard factory preset values. Set dip switch to diagnostic mode. Hold learn button down for 5 seconds. Diagnostic LED will go on then turn off when memory is clear. Sets values to the following:

Maximum run timer = 90 seconds
Timer to close = 0 seconds
Mid stop = Disabled
Maintenance Alert System = Disabled

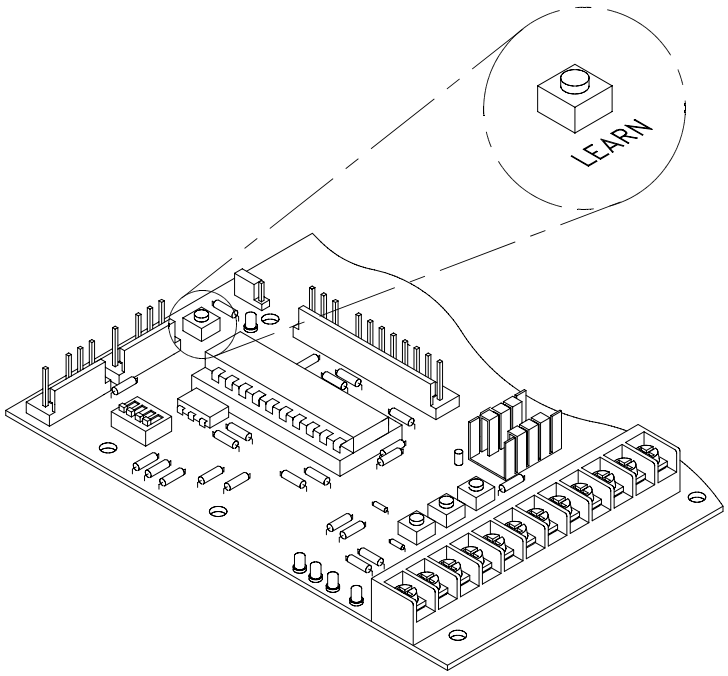
RPM Learn

NOTE: The RPM Learn should never have to be reset except in the case where the Motor or Logic Control board has been replaced and only if the motor doesn't have a start switch.

Set unit to any normal mode, B2 is suggested. Begin with the door in the open or closed position. Set the limit switches so the operator can run for at least 5 seconds continuously at a steady speed.

Press the open or close button to start the operator. While the operator is running, press the learn button on the board. The diagnostic LED will come on. Hold down the learn button continuously while the operator is running. When the diagnostic LED goes out, the steady-state RPM speed of the operator has been "learned" by the microprocessor. If the unit hits a limit switch, or the motor stops, or you release the button before the LED goes out (about 5 seconds), the RPM learn procedure will have to be repeated. (Refer to figure 1 for RPM Learn button location)

FIGURE 1

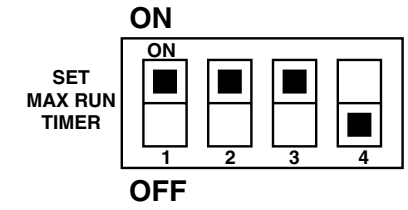


PROGRAM SETTINGS

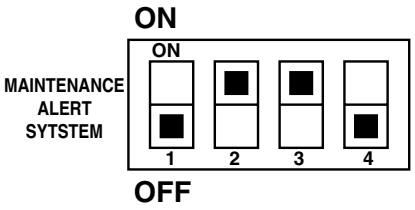
Logic Control Pushbuttons Open, Close, Stop
Open, Close and Stop buttons are mounted directly on the Logic Control board. This will provide easy programming ability and door control at the electrical box. (Refer to PCB illustration on page 15 for location)

Programmable Maximum Run Timer:
Any time a "closing" or "opening" door takes 10 seconds longer than its programmed normal cycle time, the door will stop. The factory default for maximum run time is 90 seconds.

Setting Maximum Run Timer:
Start with the door in the fully closed position. Set DIP switches to "set max run timer" mode. Press the open button. Allow the door to run to the open limit. Once the door has stopped, set DIP switches to the desired operating mode (B2,C2, D1, E2, T, TS, FSTS). The maximum run time is now set to the door's travel time + 10 seconds.

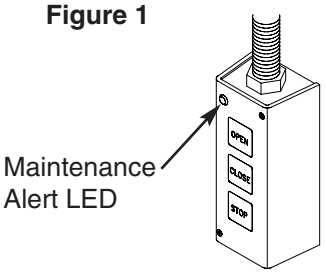


Maintenance Alert System
Set dip switch to set cycle counter mode. When the operator is in this mode the LED will flash the number of times in 5k increments the operator has cycled followed by a five second delay. (Refer to figure 1 for LED location on the pushbutton).



Press This Button	To Get This Result
Open	Adds 5,000 cycles to Maintenance Alert System Activation Counter
Close	Clears memory, sets Maintenance Alert System Activation Counter to 0 cycles.
Stop	Adds 10,000 cycles to Maintenance Alert System Activation Timer

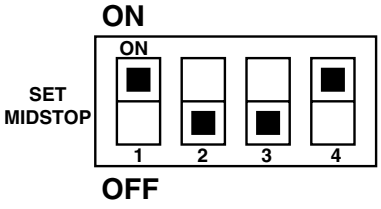
Figure 1



When the door has cycled the number of times you set, the Maintenance Alert System LED will flash once every second until the unit is serviced and the cycle counter is cleared.

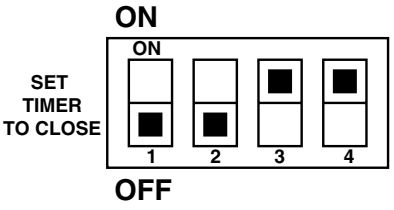
Programmable Mid-stop:
The system will learn a programmable Mid-Stop point and will stop at that point whenever the door is opened from a fully closed position.

Setting Mid-Stop:
Start with the door in the fully closed position. Set DIP switches to "set mid-stop" mode. Press the open button. When the door reaches the desired Mid point, press the stop button. Set DIP switches to the desired operating mode (B2, C2, T, TS, FSTS). Press the open button and allow the door to run to the open limit.



Clearing Mid-Stop:
Start with the door in the fully closed position. Set DIP switches to "set mid-stop" mode. Press the open button. Allow the door to run to the open limit. Set DIP switches to the desired operating mode (B2, C2, T, TS, FSTS).

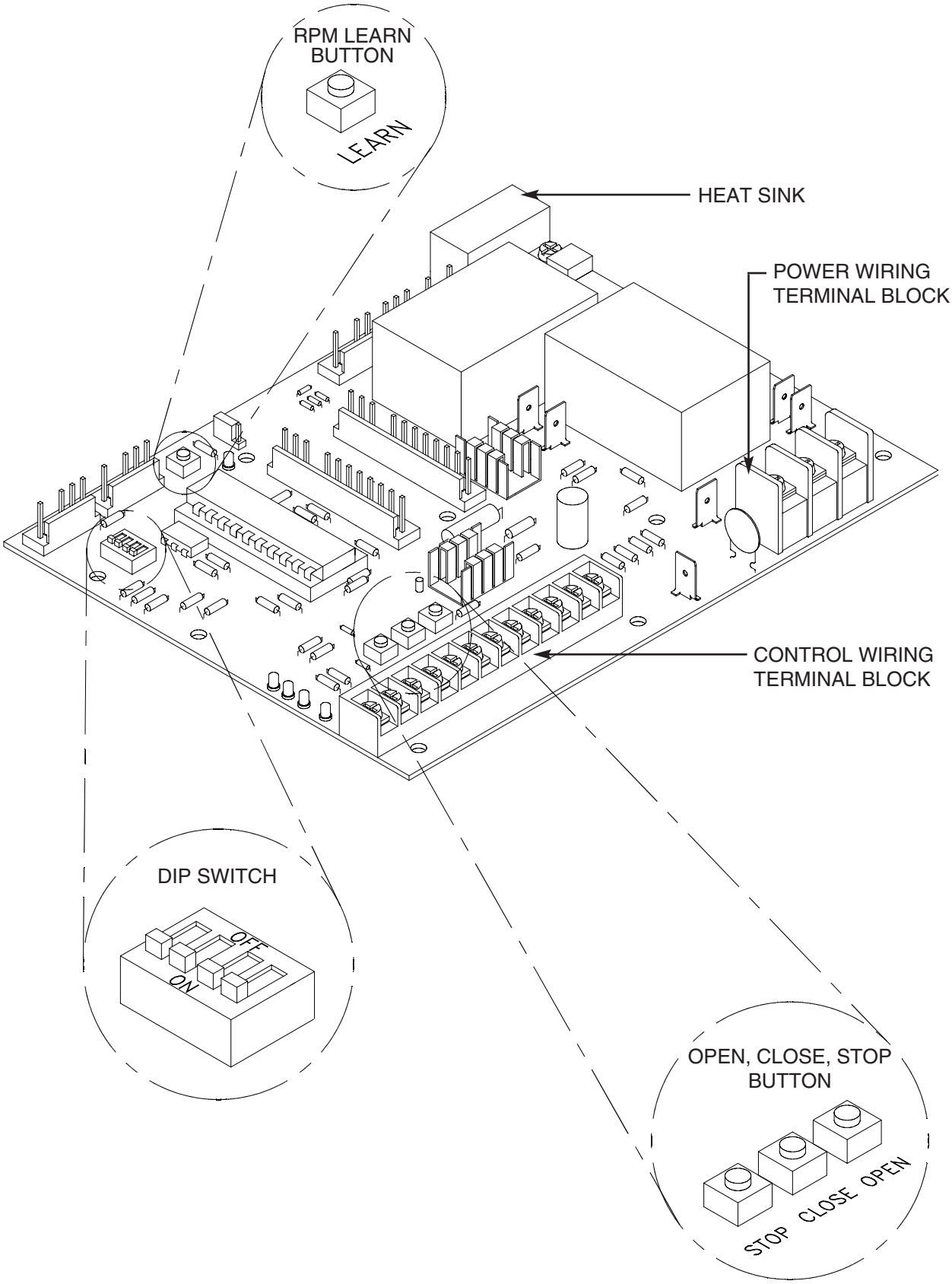
Set Timer to Close (CPSII Required)
Begin with the door in the closed position. Set dip switch to "Set Timer to Close".



Press This Button	To Get This Result
Open	Adds 5 seconds to countdown timer.
Close	Resets the timer to close to 0 seconds. Turns off electronic search for photo eyes after photo eyes have been intentionally removed.
Stop	Adds 5 seconds to "Red warning light before closing" time.
Single Button Control Station	Adds 60 seconds to countdown timer.

- The Maintenance Alert System LED will light when you press button.
- The Timer to Close only works in T, TS, and FSTS wiring modes with a CPSII.

PCB BOARD ILLUSTRATION



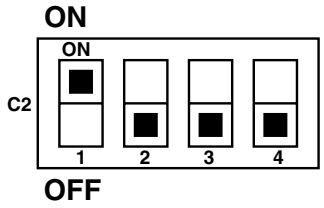
WIRING TYPES

All modes contain: Wiring for sensing devices to reverse. Wiring for failsafe reversing devices. Connection for electrical detection of clutch slippage. External interlocks and auxiliary devices. Open button override while door is traveling down.

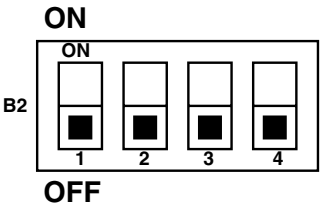
NOTE: Open, Close, and Stop buttons are located on the Logic Control board. This will provide programming ability and door control at the electrical box. (Refer to PCB illustration on page 15 for location)

WIRING TYPE **STATION**

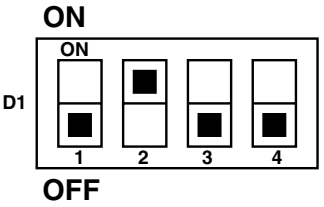
C2 3 Button, 3 Button Radio Control
Function: Momentary contact to open and stop with constant pressure to close, open override plus wiring for sensing device to reverse.



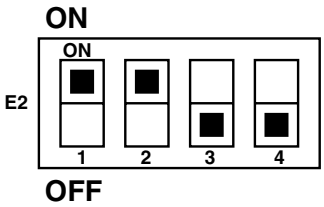
B2 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close and stop, plus wiring for sensing device to reverse and auxiliary devices to open and close with open override.



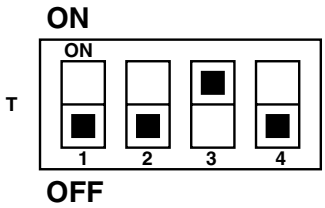
D1 2 Button, 3 Button Radio Control
Function: Constant pressure to open and close with wiring for sensing device to stop.



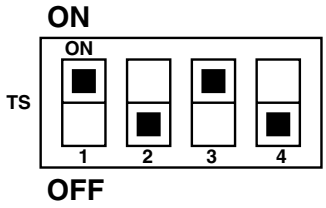
E2 2 Button, 3 Button Radio Control
Function: Momentary contact to open with override and constant pressure to close. Release of close button will cause door to reverse (roll-back feature) plus wiring for sensing device to reverse.



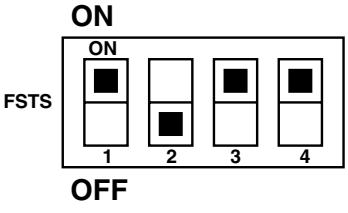
T* 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close, and stop, with open override and timer to close. Every device that causes door to open, except a reversing device, activates timer to close. Auxiliary controls can be connected to open input to activate the 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 Optional failsafe photo eyes to operate.)**



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 Optional failsafe photo eyes to operate.)**



FSTS Momentary button contact for open, close and stop. Radio controls allowing open, close and stop. User set midstop. User set timer to close, functional at open limit. The single button station opens the door and activates the timer to close, putting the operator in TS mode until the door reaches the down limit, or is stopped in travel. At which time the operator enters the B2 mode. A failsafe is required to operate in this mode. **(NOTE: Requires Optional failsafe photo eyes to operate.)**



NOTE:

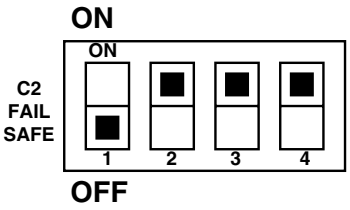
1. External interlocks may be used with all functional modes.
2. Auxiliary devices are any devices that have only one set of contacts. Examples are: photocell, loop detector, pneumatic or electrical treadles, residential radio controls, one button stations, pull cords, etc.
3. Open override means that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

FAILSAFE WIRING TYPES

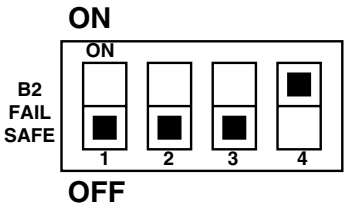
"Failsafe" self mounting wiring types: These wiring types require the use of self monitoring sensing devices. (The optional Lift Master CPSII photoeye package)

TYPE **STATION**

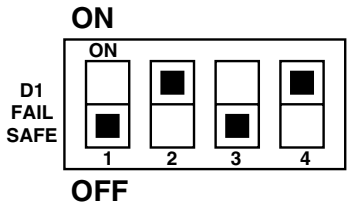
C2 Failsafe 3 Button, 3 Button Radio Control
Same functions as C2. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options on page 17.



B2 Failsafe 3 Button, 1 Button, 1 & 3 Button Radio Control
Same functions as B2. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options below.

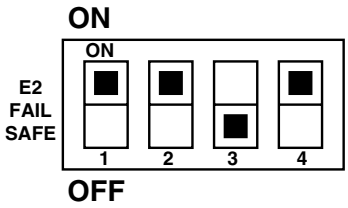


D1 Failsafe 2 Button, 3 Button Radio Control
Same functions as D1. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options below.



E2 Failsafe 2 Button, 3 Button Radio Control
Same functions as E2. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options below.

Failsafe Safety Device Options
To use the operator in any of the Failsafe wiring modes, or Timer to Close wiring modes, a LiftMaster failsafe safety device must be installed.



Timer to Close with Failsafe Safety Device
NOTE: The board will check attached Failsafe devices after setting the Timer to Close and activate them for the timer. If a failsafe device is added later the Timer to Close must be reentered to activate the new failsafe device.

LiftMaster Failsafe Safety Devices:

CPSII CPSII Option Board - NEMA 1 eyes included (Also can interface to 4 wire edge)

CPS-L NEMA 1 Direct Connect Eyes

CPS-LN4 NEMA 4 Direct Connect Eyes

MAINTENANCE SCHEDULE

- **For use with Maintenance Alert System.**
- **Check at the intervals listed in the following chart.**

ITEM	PROCEDURE	EVERY 3 MONTHS OR 5,000 CYCLES	EVERY 6 MONTHS OR 10,000 CYCLES	EVERY 12 MONTHS OR 20,000 CYCLES
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

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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

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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

CHAMBERLAIN®
LiftMaster®
PROFESSIONAL

LOGIC CONTROL VER. 2.0 Rev. B
RETRO FIT MODIFICATION

APPLICATION REQUIREMENTS:

This modification is available to models T, GT, APT, J, H, GH, SD and GSD standard door operators with Solid State Logic Control Board (L).

FUNCTIONS:

Allows an operator in the field to be upgraded from Logic Control Version 1.0 to Logic Control Version 2.0 Rev B.

MAINTENANCE ALERT SYSTEM (OPTIONAL):

The Maintenance Alert System allows the installer to set an internal Maintenance Cycle Counter. An LED on the 3-button station will signal when the set number of cycles is reached or when the opener requires immediate service. (Requires Optional Pushbutton With LED, P/N 02-103L)

INSTALLATION INSTRUCTIONS

NOTE: For additional help with the following steps refer to illustration on page 10.

REMOVE OLD BOARD

1. Remove all the ends of the wires connected to the existing board and neatly lay them over the side of the box.

2. Remove the (2) pem screws holding the PCB board to the box and set off to the side for reassembly of new board.

3. Remove the two screws holding the heat sink to the box and discard.

4. Remove PCB board from the box, leaving the existing spacers in place except the spacer shown in the assembly drawing on page 10.

REMOVE 3PH OVERLOAD (WHEN PRESENT)

1. Remove the white and black wires that run from the overload to PCB board and discard.

2. Remove the ends of the yellow wires that are attached to the PCB board, leave the wires attached to the overload.

2. Remove the overload from the box and hold for reassembly, discard mounting hardware.

INSTALL NEW BOARD

1. Install the Adapter plate assembly with the standoffs into the box using the existing spacers that held the original PCB board. After the plate is snapped in place reinstall the (2) pem screws removed in step 2.

⚠ WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.

2. Install the new PCB board onto the spacers on the adapter plate and secure in place with the nylon nuts supplied.

3. Secure the heatsink to the adapter plate using the #6-32 x 3/4" long pan head screw supplied.

REINSTALL 3PH OVERLOAD (WHEN PRESENT)

1. Reinstall the overload to the new adaptor plate using the (2) #8-32 x 5/8" long self tapping pan head screws supplied.

PCB BOARD WIRING

1 PHASE OPERATORS (GREY OPERATORS)

Follow wiring directions on page 2, for additional help refer to the wiring diagram on page 3.

3 PHASE OPERATORS (GREY OPERATORS)

Follow wiring directions on page 6, for additional help refer to the wiring diagram on page 7.

1 PHASE OPERATORS (BLACK OPERATORS)

Follow wiring directions on page 4, for additional help refer to the wiring diagram on page 5.

3 PHASE OPERATORS (BLACK OPERATORS)

Follow wiring directions on page 8, for additional help refer to the wiring diagram on page 9.

SINGLE PHASE WIRING FOR GREY OPERATORS (PRE 1997)

NOTE: The Following wiring directions and wiring diagram are for use with grey painted operators produced before 1997. For black painted operators refer to wiring directions and wiring diagram on pages 4 & 5.

PCB JUMPER
a. Set jumper **P7** on **SINGLE PHASE**.

NEW WIRES WIRES

TRANSFORMER
a. Locate the existing blue and yellow wire that run from the secondary on the transformer. Cut the ends off that have the fastons and splice those ends (these are the two ends that were removed from the old board). With the wire nuts supplied, connect the new blue and yellow wires, 12" long with 1/4" fork and stripped ends to the ends of the transformer wires just modified. Connect the blue wire to #12 and the yellow wire to #13 of the **TB1** terminal block.

NOTE: If an interlock is present, with the wire nut supplied connect the new blue wire, 12" long with the 1/4" faston and stripped end to the blue transformer wire modified above. Connect the blue wire to the interlock switch.

b. Locate the white wire that run from the primary on the transformer. Cut the end off that has the faston and splice (this is the end that was removed from the old board). With the wire nut supplied, connect the new white wire, 12" long with the 1/4" faston and stripped end to the end of the transformer wire just modified. Connect the white wire to pin **E14**.

GROUND
a. Locate the new green wire, 12" long with the #8 ring and 1/4" faston. Connect from pin **E9** on the board to the **GROUND SCREW** in the box.

JUMPER WIRES
a. Locate the new orange wire, 5" long with the 1/4" faston and 1/4" faston with piggyback. Connect the end with the 1/4" faston with piggyback to pin **E19** and the other end to pin **E13**.

b. Locate the new yellow wire, 3" long with the (2) 1/4" fastons. Connect from pin **E12** to pin **E4**.

c. Locate the new red wire, 5" long with the (2) 1/4" fastons. Connect from pin **E2** to pin **E5**.

d. Locate the new black wire, 5" long with the (2) 1/4" fastons. Connect from pin **E16** to pin **E18**.

NOTE: Any left over wires set off to the side. Once the operator has been tested and runs fine disguard wires.

EXISTING WIRES

INTERLOCK SWITCH (WHEN PRESENT)
a. Reconnect the original blue wire that runs from the interlock to #12 on the **TB1** terminal block.

LIMIT SWITCHES
a. Move the wires that are connected to the normally open terminals of the limit switches to the normally closed terminals of the limit switches.

b. Reconnect the original limit harness to the 4 pin terminal on the board marked **LIMIT SWITCHES**.

RADIO
a. Reconnect the original radio harness to the 3 pin terminal on the board marked **RADIO.**

NOTE: If the original radio harness is not long enough replace with the new harness supplied.

TRANSFORMER
a. Reconnect the original black wire that runs from the primary on the transformer to the piggy back of the orange wire on pin **E19**.

MOTOR
a. Reconnect the original yellow wire from the motor to pin **E15 (115V) or E17 (230V)**.

b. Reconnect the original orange wire from the motor to pin **E6 (115V) or E10 (230V)**.

c. Reconnect the original black wire from the motor to pin **E10 (115V) or E6 (230V)**.

d. Reconnect the original red wire from the motor to pin **E17 (115V) or E15 (230V)**.

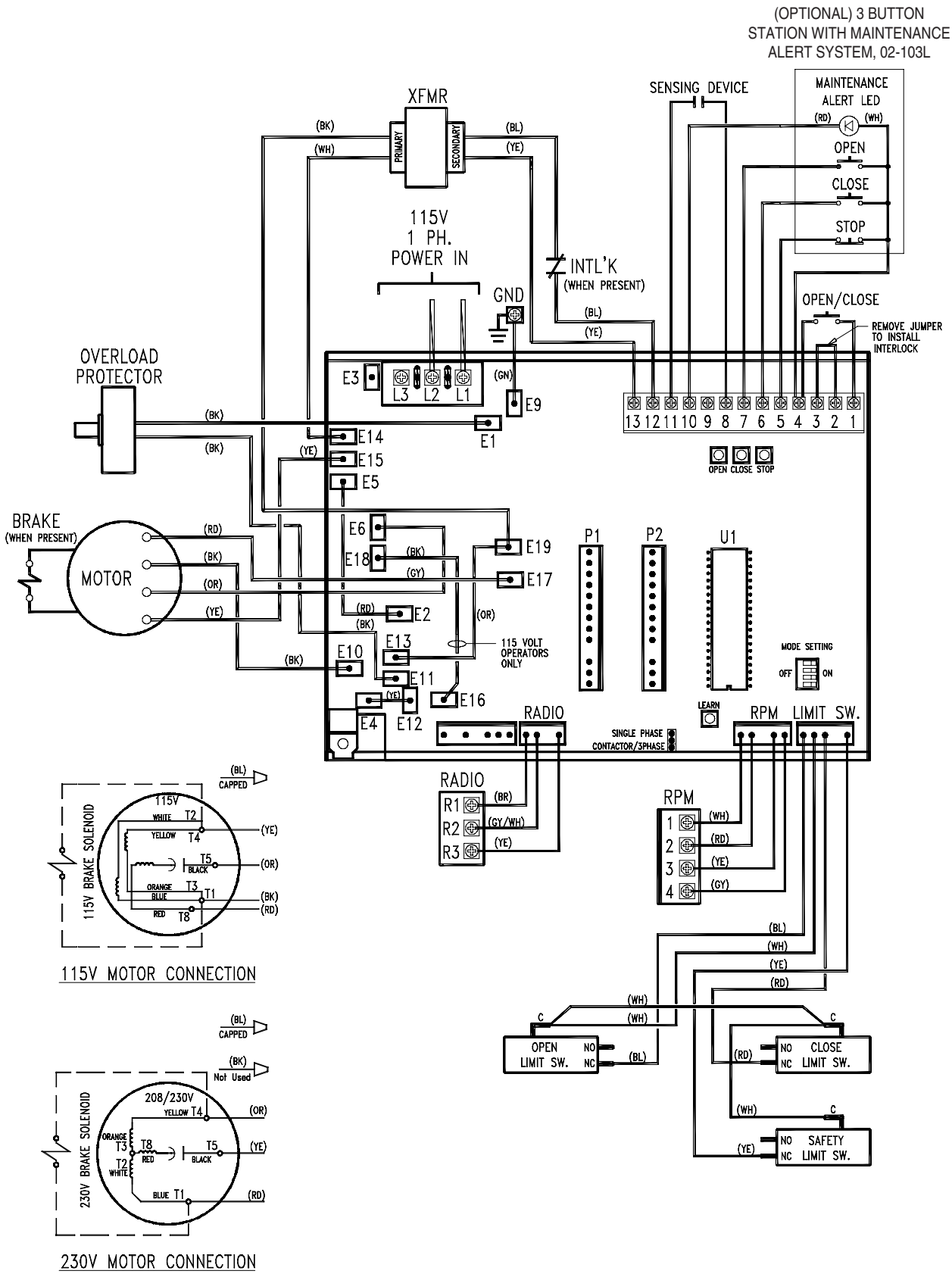
NOTE: If motor wires are not long enough, remove existing wires and replace with 50" wires supplied.

OVERLOAD
a. Reconnect one of the original black wires from the overload to pin **E11**.

b. Reconnect one of the original black wires from the overload to pin **E1**.

NOTE: For pushbuttons, sensing devices and power wiring refer to wiring diagram on next page.

SOLID STATE SINGLE PHASE WIRING DIAGRAM 1867-1



SINGLE PHASE WIRING FOR BLACK OPERATORS (1997 to Present)

NOTE: The Following wiring directions and wiring diagram are for use with black painted operators produced from 1997 to present. For grey painted operators refer to wiring directions and wiring diagram on pages 2 & 3.

PCB JUMPER

a. Set jumper **P7** on **SINGLE PHASE**.

NEW WIRES WIRES

TRANSFORMER

a. Locate the existing blue and yellow wire that run from the secondary on the transformer. Cut the ends off that have the fastons and splice those ends (these are the two ends that were removed from the old board). With the wire nuts supplied, connect the new blue and yellow wires, 12" long with 1/4" fork and stripped ends to the ends of the transformer wires just modified. Connect the blue wire to #12 and the yellow wire to #13 of the **TB1** terminal block.

NOTE: If an interlock is present, with the wire nut supplied connect the new blue wire, 12" long with the 1/4" faston and stripped end to the blue transformer wire modified above. Connect the blue wire to the interlock switch.

b. Locate the white wire that run from the primary on the transformer. Cut the end off that has the faston and splice (this is the end that was removed from the old board). With the wire nut supplied, connect the new white wire, 12" long with the 1/4" faston and stripped end to the end of the transformer wire just modified. Connect the white wire to pin **E14**.

GROUND

a. Locate the new green wire, 12" long with the 1/4" fork and 1/4" faston. Connect from pin **E9** on the board to the **GROUND SCREW** in the box.

JUMPER WIRES

a. Locate the new orange wire, 5" long with the 1/4" faston and 1/4" faston with piggyback. Connect the end with the 1/4" faston with piggyback to pin **E19** and the other end to pin **E13**.

b. Locate the new yellow wire, 3" long with the (2) 1/4" fastons. Connect from pin **E12** to pin **E4**.

c. Locate the new red wire, 5" long with the (2) 1/4" fastons. Connect from pin **E2** to pin **E5**.

d. Locate the new black wire, 5" long with the (2) 1/4" fastons. Connect from pin **E16** to pin **E18**.

INTERLOCK SWITCH (WHEN PRESENT)

a. Reconnect the original blue wire that runs from the interlock to #12 on the **TB1** terminal block.

NOTE: Any left over wires set off to the side. Once the operator has been tested and runs fine disguard wires.

EXISTING WIRES

LIMIT SWITCHES

a. Move the wires that are connected to the normally open terminals of the limit switches to the normally closed terminals of the limit switches.

b. Reconnect the original limit harness to the 4 pin terminal on the board marked **LIMIT SWITCHES**.

RADIO

a. Reconnect the original radio harness to the 3 pin terminal on the board marked **RADIO.**

TRANSFORMER

a. Reconnect the original black wire that runs from the primary on the transformer to the piggy back of the orange wire on pin **E19**.

MOTOR

a. Reconnect the original grey wire from the motor to pin **E15**.

b. Reconnect the original blue wire from the motor to pin **E6**.

c. Reconnect the original purple wire from the motor to pin **E10**.

d. Reconnect the original yellow wire from the motor to pin **E17**.

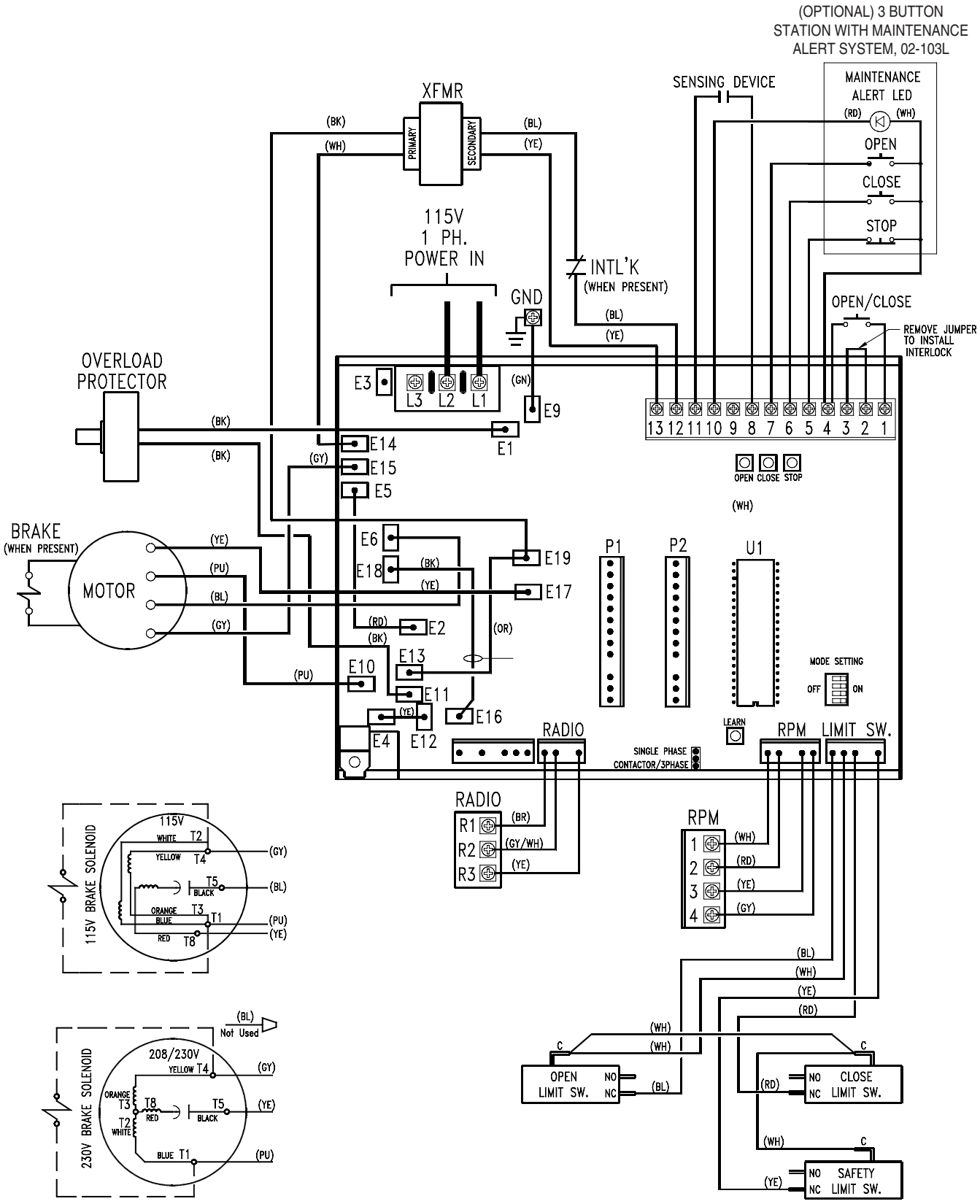
OVERLOAD

a. Reconnect one of the original black wires from the overload to pin **E11**.

b. Reconnect one of the original black wires from the overload to pin **E1**.

NOTE: For pushbuttons, sensing devices and power wiring refer to wiring diagram on next page.

SOLID STATE SINGLE PHASE WIRING DIAGRAM 1837-1



THREE PHASE WIRING FOR GREY OPERATORS (PRE 1997)

NOTE: The Following wiring directions and wiring diagram are for use with grey painted operators produced before 1997. For black painted operators refer to wiring directions and wiring diagram on pages 8 & 9.

PCB JUMPER
a. Set jumper **P7** on **CONTACTOR/3PHASE.**

NEW WIRES

TRANSFORMER
a. Locate the existing blue and yellow wire that run from the secondary on the transformer. Cut the ends off that have the fastons and splice those ends (these are the two ends that were removed from the old board). With the wire nuts supplied, connect the new blue and yellow wires, 12" long with 1/4" fork and stripped ends to the ends of the transformer wires just modified. Connect the blue wire to #12 and the yellow wire to #13 of the **TB1** terminal block.

NOTE: If an interlock is present, with the wire nut supplied connect the new blue wire, 12" long with the 1/4" faston and stripped end to the blue transformer wire modified above. Connect the blue wire to the interlock switch.

b. Locate the white wire that run from the primary on the transformer. Cut the end off that has the faston and splice (this is the end that was removed from the old board). With the wire nut supplied, connect the new white wire, 12" long with the 1/4" faston and stripped end to the end of the transformer wire just modified. Connect the white wire to pin **E12**.

GROUND
a. Locate the new green wire, 12" long with the 1/4" fork and 1/4" faston. Connect from pin **E9** on the board to the **GROUND SCREW** in the box.

JUMPER WIRES
a. Locate the new orange wire, 5" long with the (2) 1/4" fastons. Connect from pin **E19** to pin **E13**.

b. Locate the new black wire, 5" long with the (2) 1/4" fastons. Connect from pin **E16** to pin **E18**.

3 PHASE OVERLOAD (WHEN PRESENT)
a. Locate the new black wire, 12" long with the 1/4" fork and 1/4" faston with piggyback. Connect the end with the 1/4" faston with piggyback to pin **E2** and the other end to **T2** on the overload.

b. Locate the new black wire, 12" long with the 1/4" fork and 1/4" faston. Connect from pin **E14** to **L2** on the overload.

c. Locate the new white wire, 12" long with the 1/4" fork and 1/4" faston. Connect from pin **E4** to **T3** on the overload.

d. Locate the new white wire, 12" long with the 1/4" fork and 1/4" faston. Connect from pin **E3** to **L3** on the overload.

NOTE: Any left over wires set off to the side. Once the operator has been tested and runs fine disguard wires.

EXISTING WIRES

INTERLOCK SWITCH (WHEN PRESENT)
a. Reconnect the original blue wire that runs from the interlock to #12 on the **TB1** terminal block.

LIMIT SWITCHES
a. Move the wires that are connected to the normally open terminals of the limit switches to the normally closed terminals of the limit switches.

b. Reconnect the original limit harness to the 4 pin terminal on the board marked **LIMIT SWITCHES**.

RADIO
a. Reconnect the original radio harness to the 3 pin terminal on the board marked **RADIO.**

NOTE: If the original radio harness is not long enough replace with the new harness supplied.

TRANSFORMER
a. Reconnect the original black wire that runs from the primary on the transformer to the piggy back of the black wire on pin **E2**.

MOTOR
a. Reconnect the original yellow wire from the motor to pin **E6**.

b. Reconnect the original orange wire from the motor to pin **E17**.

c. Reconnect the original red wire from the motor to pin **E10**.

d. **(1/3 to 3/4 HP ONLY)** Reconnect the original black wire from the motor to #3 on the **TB1** terminal block.

e. **(1/3 to 3/4 HP ONLY)** Reconnect the original blue wire from the motor to #2 on the **TB1** terminal block.

f. **(1+ HP ONLY)** Reconnect the original black wire from the motor to **#95** on the overload.

g. **(1+ HP ONLY)** Reconnect the original blue wire from the motor to **#96** on overload.

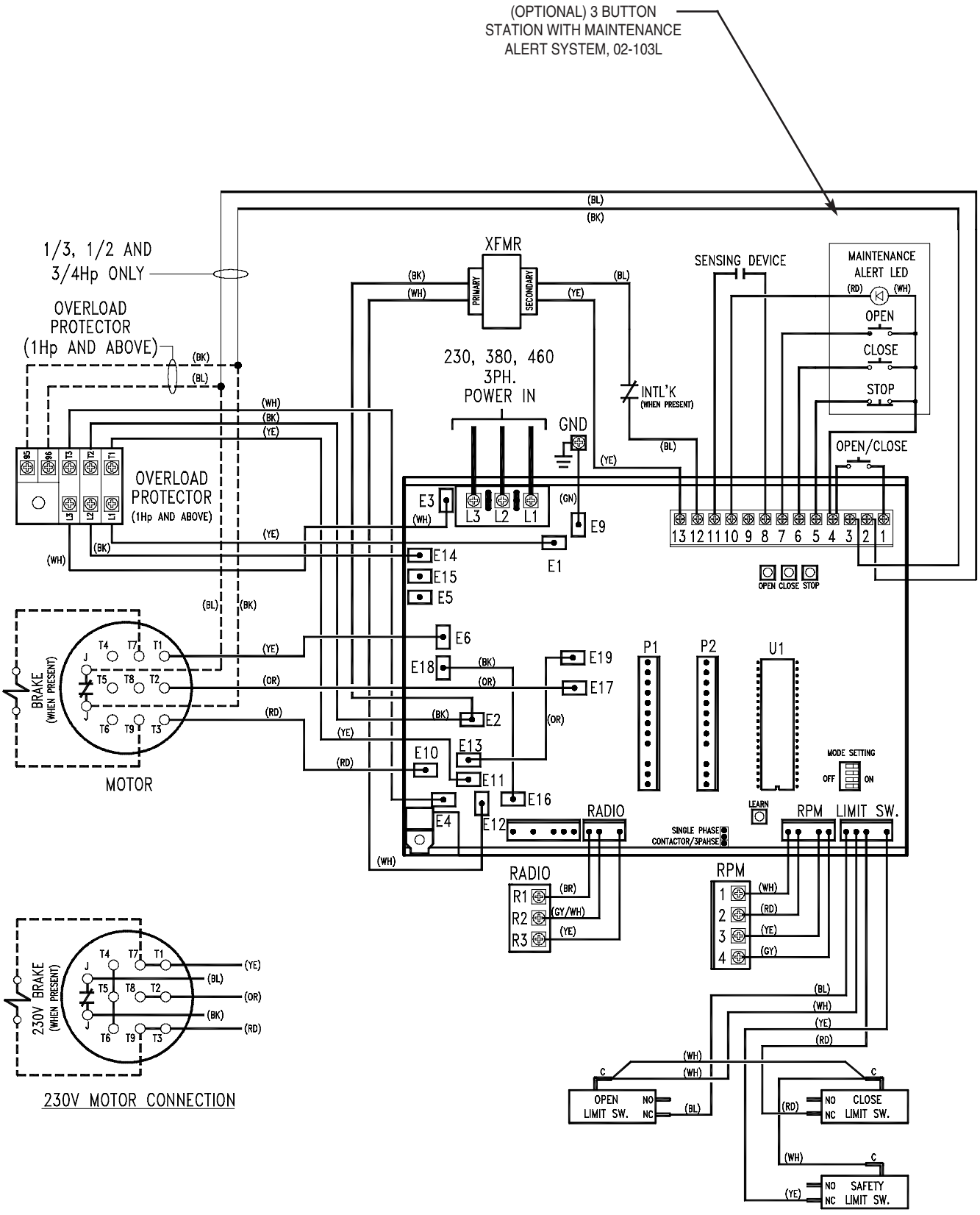
NOTE: If motor wires are not long enough, remove existing wires and replace with 50" wires supplied.

3 PHASE OVERLOAD (WHEN PRESENT)
a. Reconnect the original yellow wire from **T1** on the overload to pin **E11**.

b. Reconnect the original yellow wire from **L1** on the overload to pin **E1**.

NOTE: For pushbuttons, sensing devices and power wiring refer to wiring diagram on next page.

SOLID STATE 3 PHASE WIRING DIAGRAM 1867-3



THREE PHASE WIRING FOR BLACK OPERATORS (1997 to Present)

NOTE: The Following wiring directions and wiring diagram are for use with black painted operators produced from 1997 to present. For grey painted operators refer to wiring directions and wiring diagram on pages 6 & 7.

PCB JUMPER
a. Set jumper **P7** on **CONTACTOR/3PHASE.**

NEW WIRES

TRANSFORMER
a. Locate the existing blue and yellow wire that run from the secondary on the transformer. Cut the ends off that have the fastons and splice those ends (these are the two ends that were removed from the old board). With the wire nuts supplied, connect the new blue and yellow wires, 8" long with 1/4" fork and stripped ends to the ends of the transformer wires just modified. Connect the blue wire to #12 and the yellow wire to #13 of the **TB1** terminal block.

NOTE: If an interlock is present, with the wire nut supplied connect the new blue wire, 8" long with the 1/4" faston and stripped end to the blue transformer wire modified above. Connect the blue wire to the interlock switch.

b. Locate the white wire that run from the primary on the transformer. Cut the end off that has the faston and splice (this is the end that was removed from the old board). With the wire nut supplied, connect the new white wire, 8" long with the 1/4" faston and stripped end to the end of the transformer wire just modified. Connect the white wire to pin **E12**.

GROUND
a. Locate the new green wire, 8" long with the 1/4" fork and 1/4" faston. Connect from pin **E9** on the board to the **GROUND SCREW** in the box.

JUMPER WIRES
a. Locate the new orange wire, 5" long with the (2) 1/4" fastons. Connect from pin **E19** to pin **E13**.

b. Locate the new black wire, 5" long with the (2) 1/4" fastons. Connect from pin **E16** to pin **E18**.

3 PHASE OVERLOAD (WHEN PRESENT)
a. Locate the new black wire, 12" long with the 1/4" fork and 1/4" faston with piggyback. Connect the end with the 1/4" faston with piggyback to pin **E2** and the other end to **T2** on the overload.

b. Locate the new black wire, 12" long with the 1/4" fork and 1/4" faston. Connect from pin **E14** to **L2** on the overload.

c. Locate the new white wire, 12" long with the 1/4" fork and 1/4" faston. Connect from pin **E4** to **T3** on the overload.

d. Locate the new white wire, 12" long with the 1/4" fork and 1/4" faston. Connect from pin **E3** to **L3** on the overload.

NOTE: Any left over wires set off to the side. Once the operator has been tested and runs fine disguard wires.

NOTE: Any left over wires set off to the side. Once the operator has been tested and runs fine disguard wires.

EXISTING WIRES

LIMIT SWITCHES
a. Move the wires that are connected to the normally open terminals of the limit switches to the normally closed terminals of the limit switches.

b. Reconnect the original limit harness to the 4 pin terminal on the board marked **LIMIT SWITCHES**.

RADIO
a. Reconnect the original radio harness to the 3 pin terminal on the board marked **RADIO.**

TRANSFORMER
a. Reconnect the original black wire that runs from the primary on the transformer to the piggy back of the black wire on pin **E2**.

MOTOR
a. Reconnect the original grey wire from the motor to pin **E6**.

b. Reconnect the original purple wire from the motor to pin **E17**.

c. Reconnect the original yellow wire from the motor to pin **E10**.

d. **(1/3 to 3/4 HP ONLY)** Reconnect the original brown wire from the motor to #3 on the **TB1** terminal block.

e. **(1/3 to 3/4 HP ONLY)** Reconnect the original brown wire from the motor to #2 on the **TB1** terminal block.

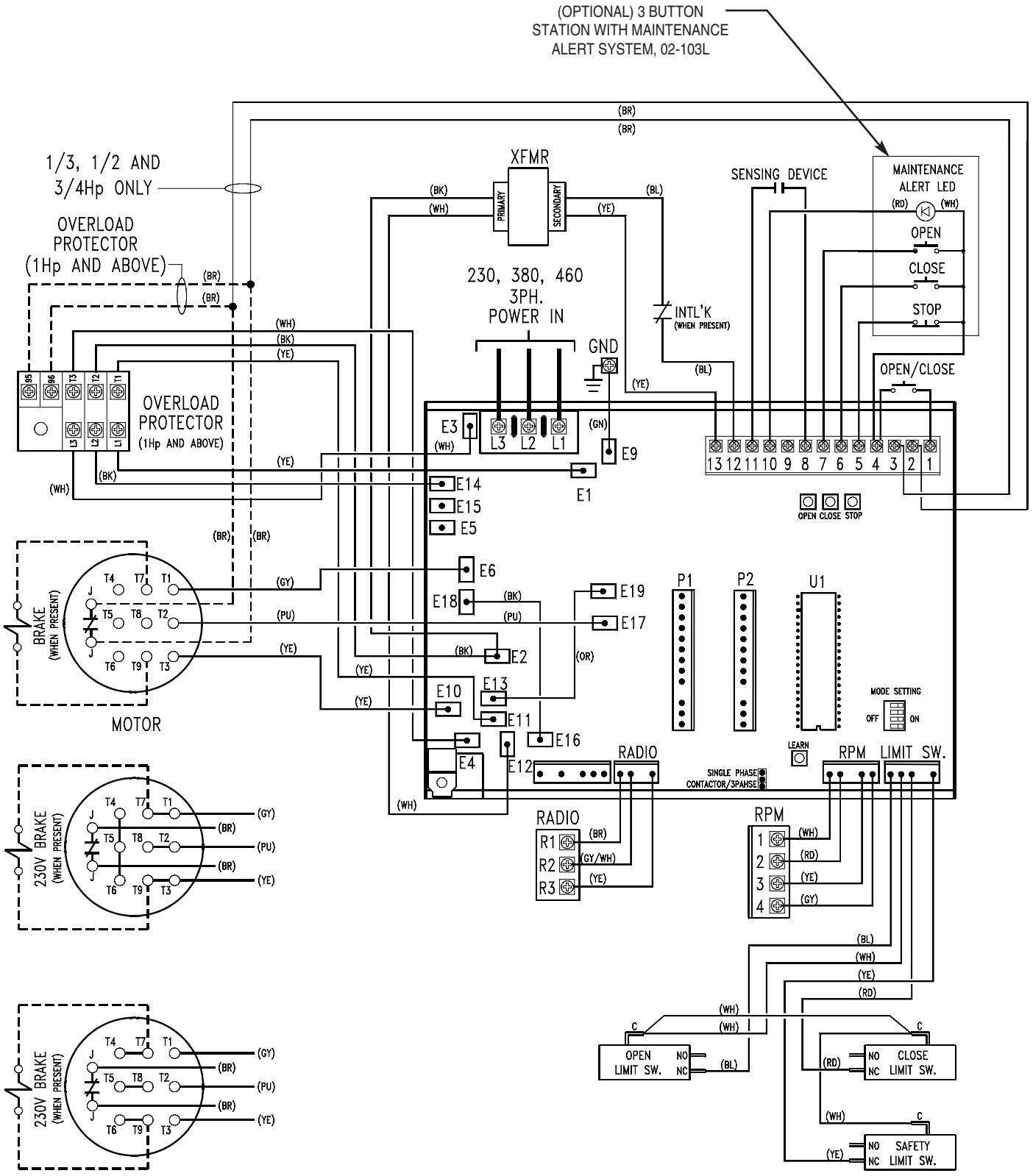
3 PHASE OVERLOAD (WHEN PRESENT)
a. Reconnect the original yellow wire from **T1** on the overload to pin **E11**.

b. Reconnect the original yellow wire from **L1** on the overload to pin **E1**.

INTERLOCK SWITCH (WHEN PRESENT)
a. Reconnect the original blue wire that runs from the interlock to #12 on the **TB1** terminal block.

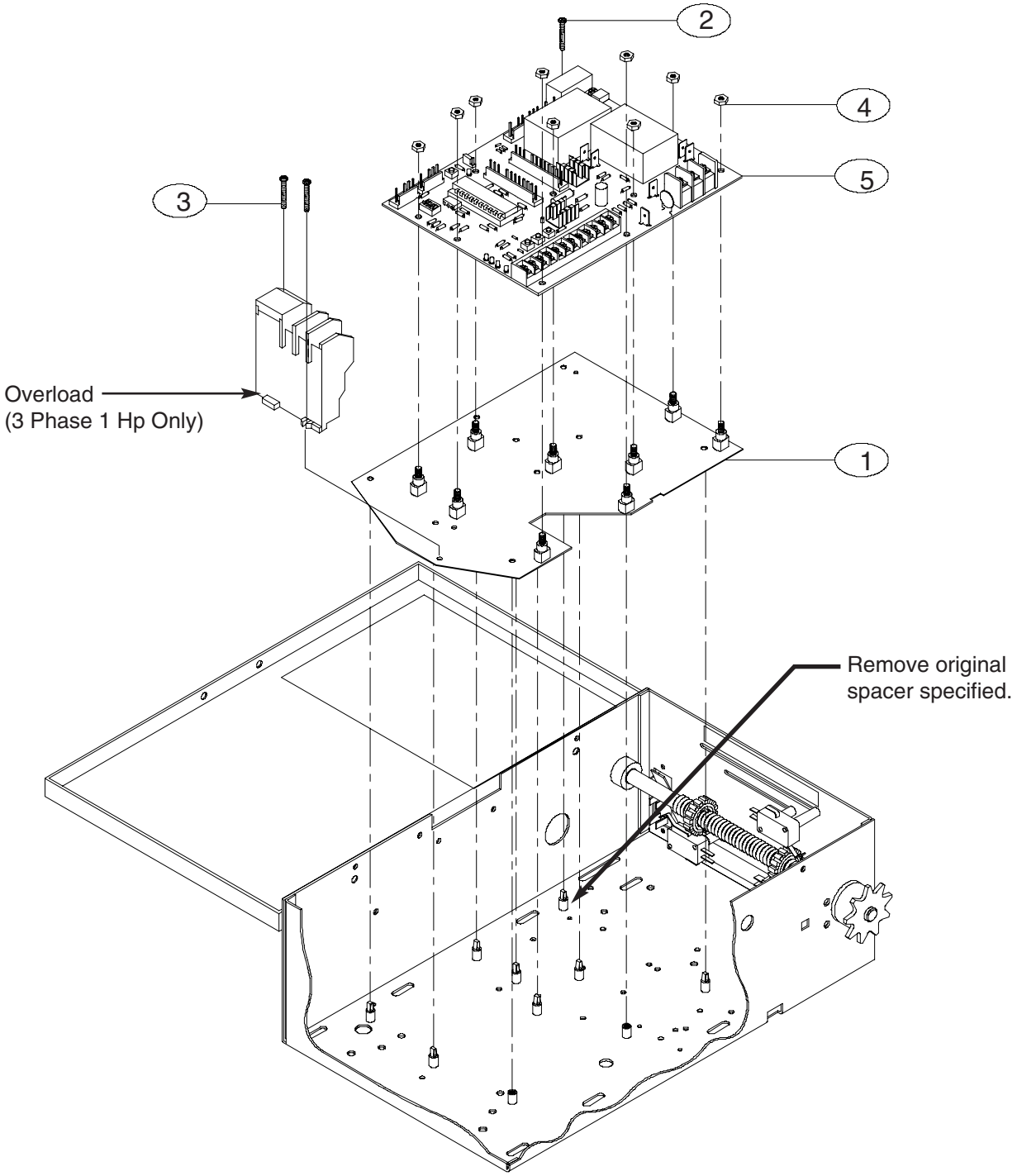
NOTE: For pushbuttons, sensing devices and power wiring refer to wiring diagram on next page.

SOLID STATE 3 PHASE WIRING DIAGRAM 1837-3



ADAPTER PLATE ASSEMBLY

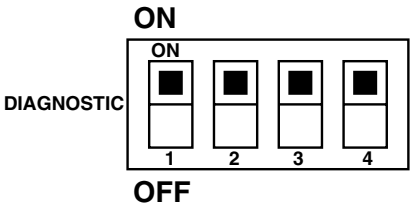
ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	75-15043	ADAPTER PLATE ASSEMBLY WITH STANDOFFS	1
2	82-PX06-12	SCREW, #6-32 X 3/4” PAN HEAD	1
3	82-PX08-10T	SCREW, #8-32 X 5/8” PAN HEAD	2
4	84-RH-06P	NUT, #6-32 NYLON	9
5	K79-13433	PCB ASSEMBLY, W/ HEATSINK	1



INITIALIZE BOARD MEMORY

Once the Logic Control Board has been installed it will have to be set to the standard factory preset values will have to be set. For programming and wiring type settings refer to the instructions on pages 11, 12, 14 & 15.

Factory Memory Preset
Activate this mode to initialize the board's memory to the standard factory preset values. Set dip switch to diagnostic mode. Hold learn button down for 5 seconds. Diagnostic LED will go on then turn off when memory is clear. Sets values to the following:

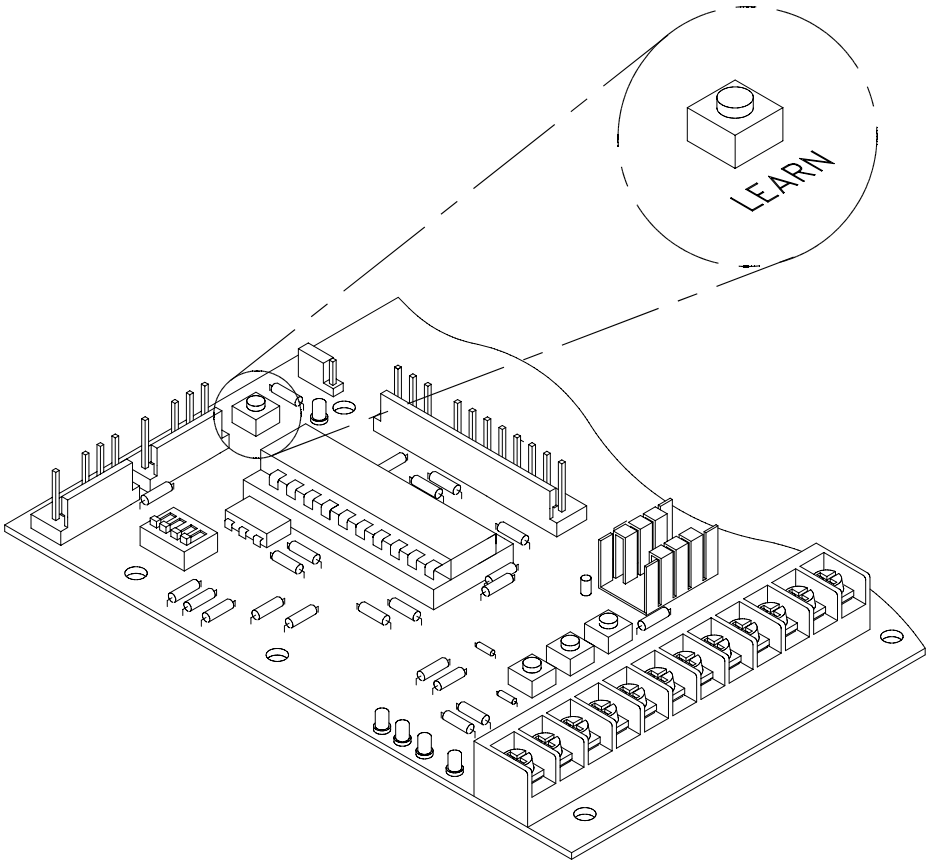


Maximum run timer = 90 seconds
Timer to close = 0 seconds
Mid stop = Disabled
Maintenance Alert System = Disabled

Diagnostic Mode
Set dip switch to diagnostic mode. The following diagnostic codes are applicable:

- Obstruction sensed = 2 flashes then pause
- Board Okay = Rapid Flash

FIGURE 1

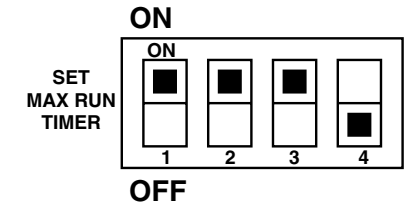


PROGRAM SETTINGS

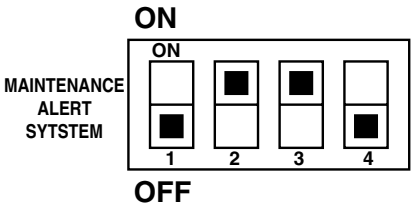
Logic Control Pushbuttons Open, Close, Stop
Open, Close and Stop buttons are mounted directly on the Logic Control board. This will provide easy programming ability and door control at the electrical box. (Refer to PCB illustration on page 15 for location)

Programmable Maximum Run Timer:
Any time a "closing" or "opening" door takes 10 seconds longer than its programmed normal cycle time, the door will stop. The factory default for maximum run time is 90 seconds.

Setting Maximum Run Timer:
Start with the door in the fully closed position. Set DIP switches to "set max run timer" mode. Press the open button. Allow the door to run to the open limit. Once the door has stopped, set DIP switches to the desired operating mode (B2,C2, D1, E2, T, TS, FSTS). The maximum run time is now set to the door's travel time + 10 seconds.

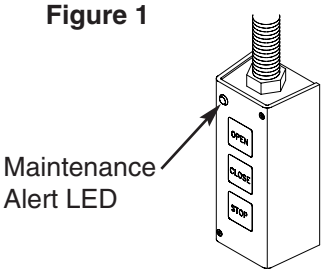


Maintenance Alert System
Set dip switch to set cycle counter mode. When the operator is in this mode the LED will flash the number of times in 5k increments the operator has cycled followed by a five second delay. (Refer to figure 1 for LED location on the pushbutton).



Press This Button	To Get This Result
Open	Adds 5,000 cycles to Maintenance Alert System Activation Counter
Close	Clears memory, sets Maintenance Alert System Activation Counter to 0 cycles.
Stop	Adds 10,000 cycles to Maintenance Alert System Activation Timer

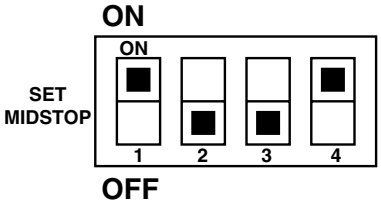
Figure 1



When the door has cycled the number of times you set, the Maintenance Alert System LED will flash once every second until the unit is serviced and the cycle counter is cleared.

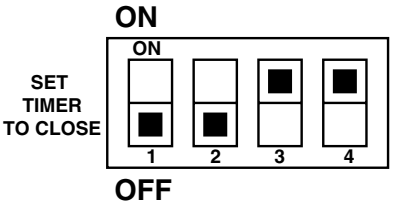
Programmable Mid-stop:
The system will learn a programmable Mid-Stop point and will stop at that point whenever the door is opened from a fully closed position.

Setting Mid-Stop:
Start with the door in the fully closed position. Set DIP switches to "set mid-stop" mode. Press the open button. When the door reaches the desired Mid point, press the stop button. Set DIP switches to the desired operating mode (B2, C2, T, TS, FSTS). Press the open button and allow the door to run to the open limit.



Clearing Mid-Stop:
Start with the door in the fully closed position. Set DIP switches to "set mid-stop" mode. Press the open button. Allow the door to run to the open limit. Set DIP switches to the desired operating mode (B2, C2, T, TS, FSTS).

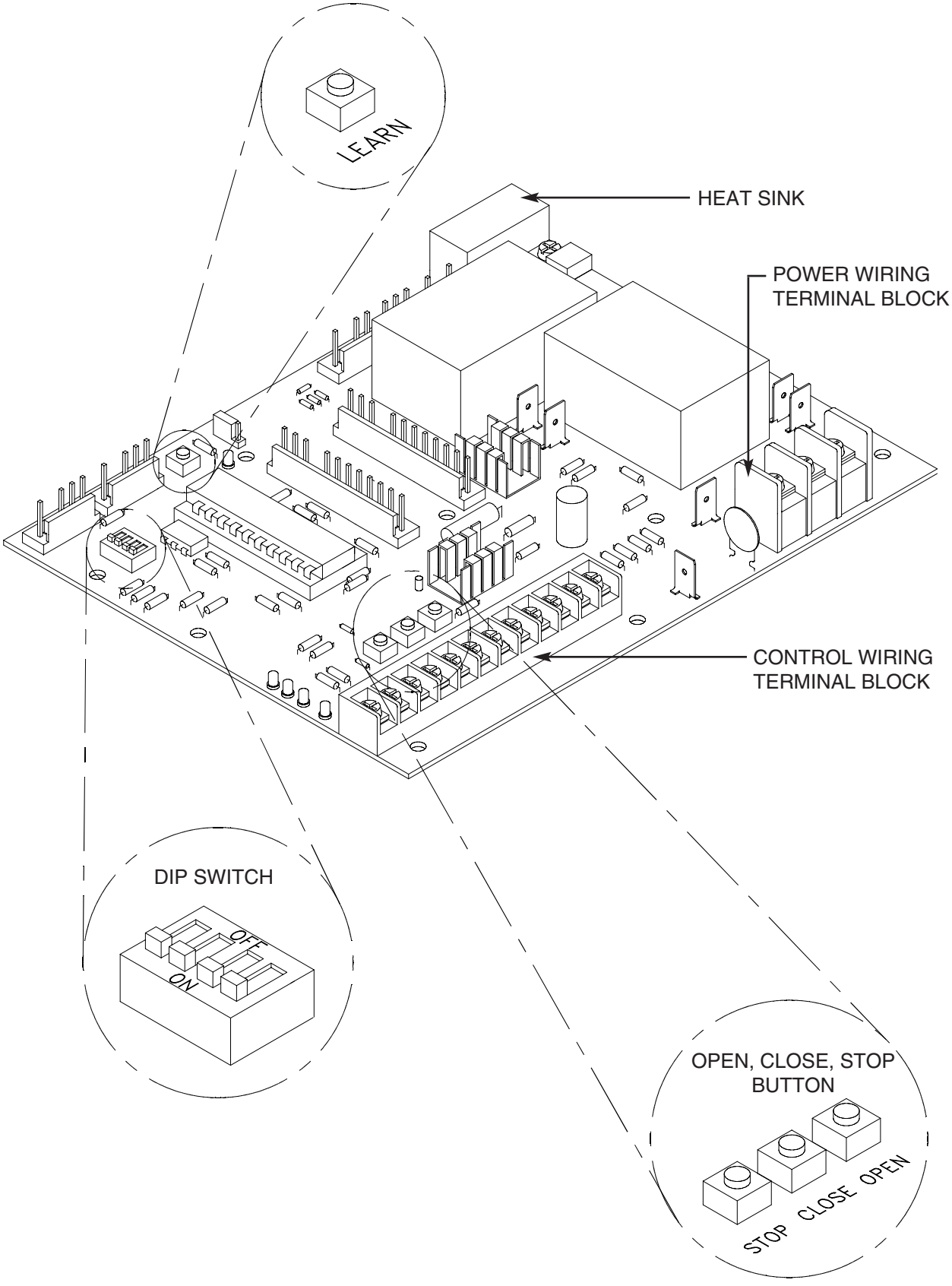
Set Timer to Close (CPSII Required)
Begin with the door in the closed position. Set dip switch to "Set Timer to Close".



Press This Button	To Get This Result
Open	Adds 5 seconds to countdown timer.
Close	Resets the timer to close to 0 seconds. Turns off electronic search for photo eyes after photo eyes have been intentionally removed.
Stop	Adds 5 seconds to "Red warning light before closing" time.
Single Button Control Station	Adds 60 seconds to countdown timer.

- The Maintenance Alert System LED will light when you press button.
- The Timer to Close only works in T, TS, and FSTS wiring modes with a CPSII.

PCB BOARD ILLUSTRATION



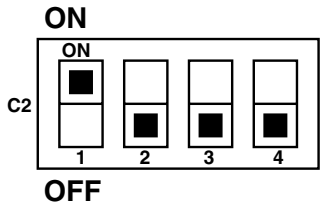
WIRING TYPES

All modes contain: Wiring for sensing devices to reverse. Wiring for failsafe reversing devices. Connection for electrical detection of clutch slippage. External interlocks and auxiliary devices. Open button override while door is traveling down.

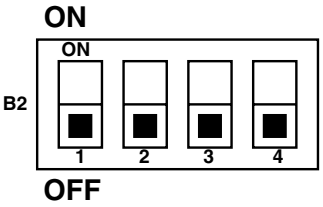
NOTE: Open, Close, and Stop buttons are located on the Logic Control board. This will provide programming ability and door control at the electrical box. (Refer to PCB illustration on page 15 for location)

WIRING TYPE **STATION**

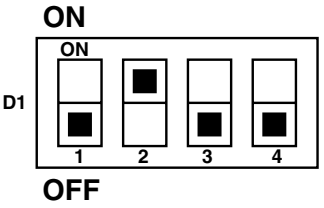
C2 3 Button, 3 Button Radio Control
Function: Momentary contact to open and stop with constant pressure to close, open override plus wiring for sensing device to reverse.



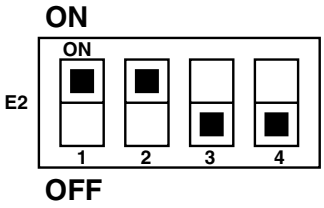
B2 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close and stop, plus wiring for sensing device to reverse and auxiliary devices to open and close with open override.



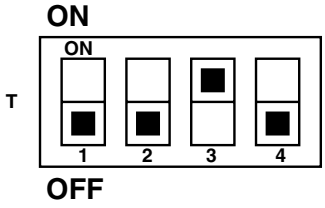
D1 2 Button, 3 Button Radio Control
Function: Constant pressure to open and close with wiring for sensing device to stop.



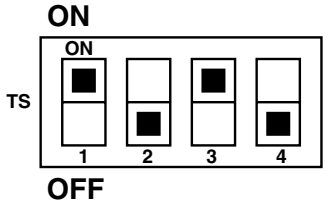
E2 2 Button, 3 Button Radio Control
Function: Momentary contact to open with override and constant pressure to close. Release of close button will cause door to reverse (roll-back feature) plus wiring for sensing device to reverse.



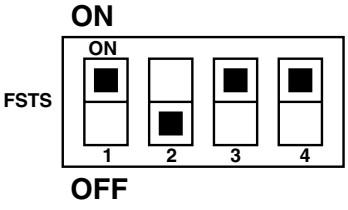
T* 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close, and stop, with open override and timer to close. Every device that causes door to open, except a reversing device, activates timer to close. Auxiliary controls can be connected to open input to activate the 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 Optional failsafe photo eyes to operate.)**



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 Optional failsafe photo eyes to operate.)**



FSTS Momentary button contact for open, close and stop. Radio controls allowing open, close and stop. User set midstop. User set timer to close, functional at open limit. The single button station opens the door and activates the timer to close, putting the operator in TS mode until the door reaches the down limit, or is stopped in travel. At which time the operator enters the B2 mode. A failsafe is required to operate in this mode. **(NOTE: Requires Optional failsafe photo eyes to operate.)**



NOTE:

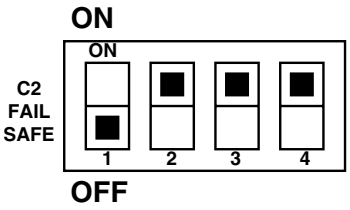
1. External interlocks may be used with all functional modes.
2. Auxiliary devices are any devices that have only one set of contacts. Examples are: photocell, loop detector, pneumatic or electrical treadles, residential radio controls, one button stations, pull cords, etc.
3. Open override means that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

FAILSAFE WIRING TYPES

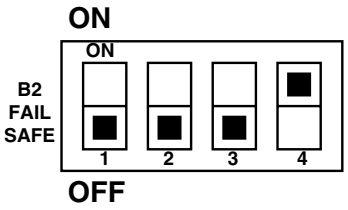
"Failsafe" self mounting wiring types: These wiring types require the use of self monitoring sensing devices. (The optional Lift Master CPSII photoeye package)

TYPE **STATION**

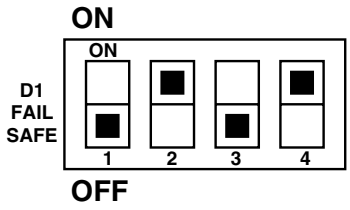
C2 Failsafe 3 Button, 3 Button Radio Control
Same functions as C2. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options on page 17.



B2 Failsafe 3 Button, 1 Button, 1 & 3 Button Radio Control
Same functions as B2. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options below.

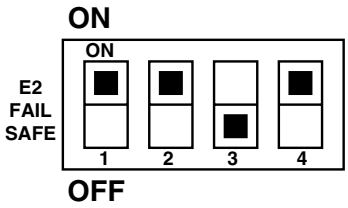


D1 Failsafe 2 Button, 3 Button Radio Control
Same functions as D1. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options below.



E2 Failsafe 2 Button, 3 Button Radio Control
Same functions as E2. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options below.

Failsafe Safety Device Options
To use the operator in any of the Failsafe wiring modes, or Timer to Close wiring modes, a LiftMaster failsafe safety device must be installed.



Timer to Close with Failsafe Safety Device
NOTE: The board will check attached Failsafe devices after setting the Timer to Close and activate them for the timer. If a failsafe device is added later the Timer to Close must be reentered to activate the new failsafe device.

LiftMaster Failsafe Safety Devices:

CPSII CPSII Option Board - NEMA 1 eyes included (Also can interface to 4 wire edge)

CPS-L NEMA 1 Direct Connect Eyes

CPS-LN4 NEMA 4 Direct Connect Eyes

MAINTENANCE SCHEDULE

- **For use with Maintenance Alert System.**
- **Check at the intervals listed in the following chart.**

ITEM	PROCEDURE	EVERY 3 MONTHS OR 5,000 CYCLES	EVERY 6 MONTHS OR 10,000 CYCLES	EVERY 12 MONTHS OR 20,000 CYCLES
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

CHAMBERLAIN
LiftMaster
PROFESSIONAL

LOGIC CONTROL VER. 2.0 Rev. B
CHIP REPLACEMENT KIT

APPLICATION REQUIREMENTS:

This modification is available to models T, GT, APT, J, H, GH, SD and GSD standard door operators with Logic Control Board Version 2.0 (L2).

FUNCTION:

Allows existing Logic Control Version 2.0 programmed chip in field to be replaced with new Logic Control Version 2.0 Rev. B programmed chip.

INSTALLATION INSTRUCTIONS

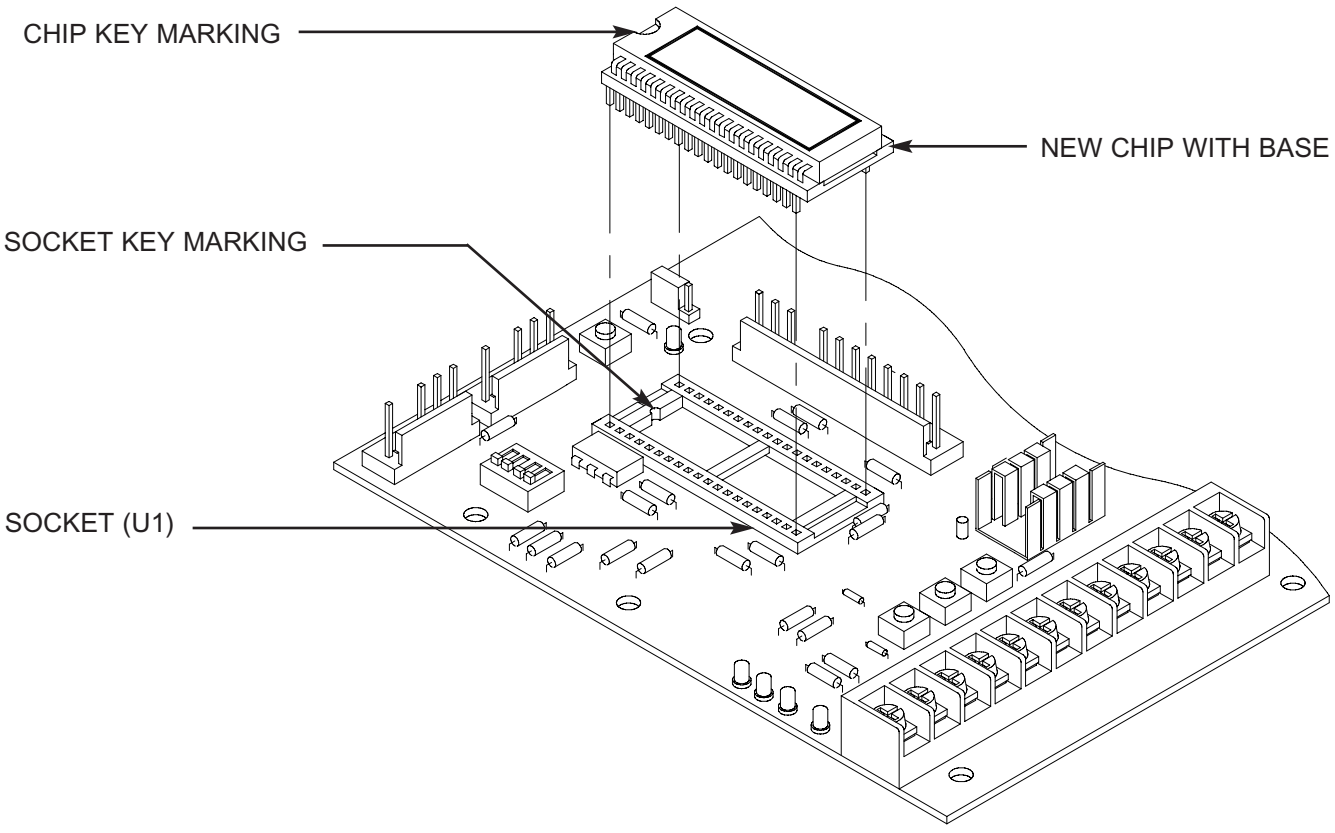
1. Carefully remove the programmed chip from **SOCKET U1** on the board, be sure not to damage the board in the process.

2. Insert new chip supplied into **SOCKET U1**, be sure that the key marking on the chip is on the same side as the key marking on the socket. For additional help with chip orientation refer to illustration below.

3. Refer to pages 2 thru 6 for programming instructions.

WARNING

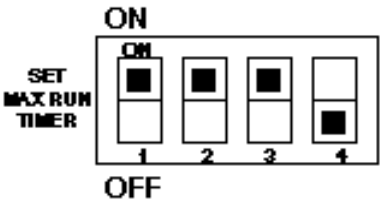
TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.



PROGRAM SETTINGS

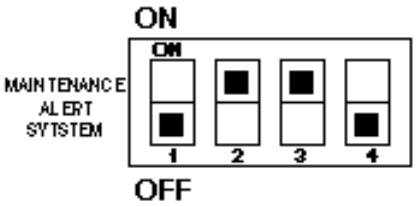
Logic Control Pushbuttons Open, Close, Stop
Open, Close and Stop buttons are mounted directly on the Logic Control board. This will provide easy programming ability and door control at the electrical box. (Refer to PCB illustration on page 15 for location)

Programmable Maximum Run Timer:
Any time a "closing" or "opening" door takes 10 seconds longer than its programmed normal cycle time, the door will stop. The factory default for maximum run time is 90 seconds.



Setting Maximum Run Timer:
Start with the door in the fully closed position. Set DIP switches to "set max run timer" mode. Press the open button. Allow the door to run to the open limit. Once the door has stopped, set DIP switches to the desired operating mode (B2,C2, D1, E2, T, TS, FSTS). The maximum run time is now set to the door's travel time + 10 seconds.

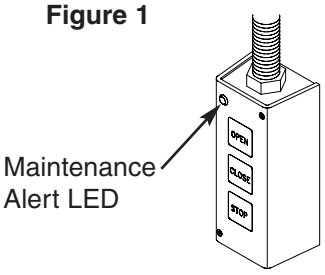
Maintenance Alert System
Set dip switch to set cycle counter mode. When the operator is in this mode the LED will flash the number of times in 5k increments the operator has cycled followed by a five second delay. (Refer to figure 1 for LED location on the pushbutton).



Press This Button	To Get This Result
Open	Adds 5,000 cycles to Maintenance Alert System Activation Counter
Close	Clears memory, sets Maintenance Alert System Activation Counter to 0 cycles.
Stop	Adds 10,000 cycles to Maintenance Alert System Activation Timer

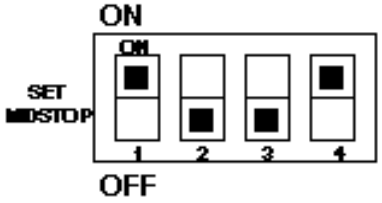
When the door has cycled the number of times you set, the Maintenance Alert System LED will flash once every second until the unit is serviced and the cycle counter is cleared.

Figure 1



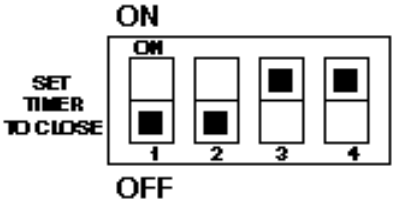
Programmable Mid-stop:
The system will learn a programmable Mid-Stop point and will stop at that point whenever the door is opened from a fully closed position.

Setting Mid-Stop:
Start with the door in the fully closed position. Set DIP switches to "set mid-stop" mode. Press the open button. When the door reaches the desired Mid point, press the stop button. Set DIP switches to the desired operating mode (B2, C2, T, TS, FSTS). Press the open button and allow the door to run to the open limit.



Clearing Mid-Stop:
Start with the door in the fully closed position. Set DIP switches to "set mid-stop" mode. Press the open button. Allow the door to run to the open limit. Set DIP switches to the desired operating mode (B2, C2, T, TS, FSTS).

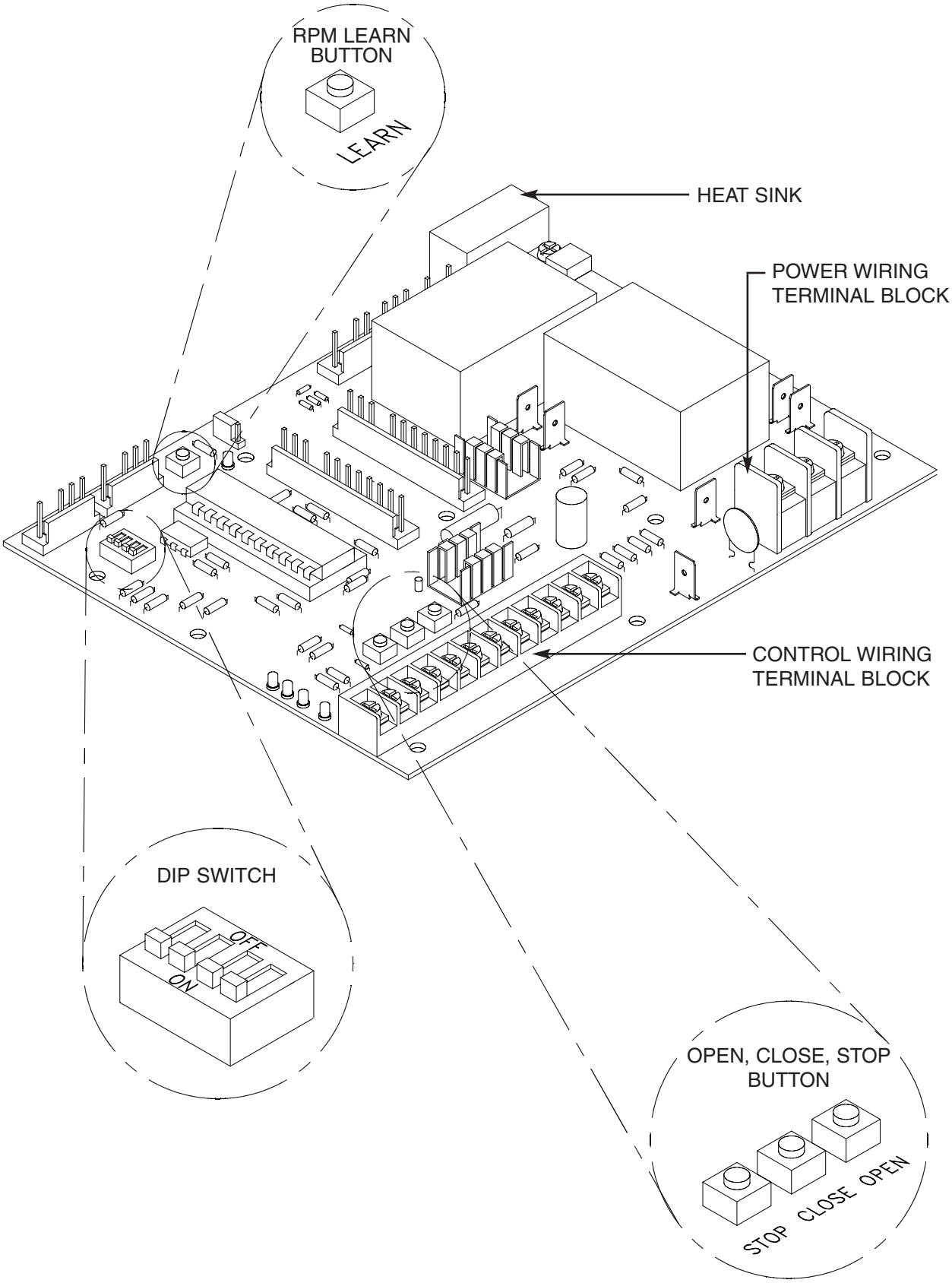
Set Timer to Close (CPSII Required)
Begin with the door in the closed position. Set dip switch to "Set Timer to Close".



Press This Button	To Get This Result
Open	Adds 5 seconds to countdown timer.
Close	Resets the timer to close to 0 seconds. Turns off electronic search for photo eyes after photo eyes have been intentionally removed.
Stop	Adds 5 seconds to "Red warning light before closing" time.
Single Button Control Station	Adds 60 seconds to countdown timer.

- The Maintenance Alert System LED will light when you press button.
- The Timer to Close only works in T, TS, and FSTS wiring modes with a CPSII.

PCB BOARD ILLUSTRATION



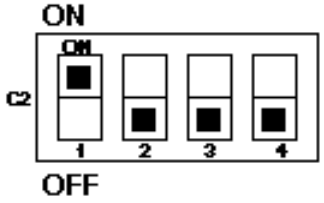
WIRING TYPES

All modes contain: Wiring for sensing devices to reverse. Wiring for failsafe reversing devices. Connection for electrical detection of clutch slippage. External interlocks and auxiliary devices. Open button override while door is traveling down.

NOTE: Open, Close, and Stop buttons are located on the Logic Control board. This will provide programming ability and door control at the electrical box. (Refer to PCB illustration on page 15 for location)

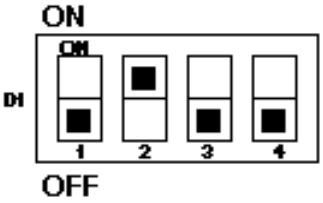
WIRING TYPE **STATION**

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.



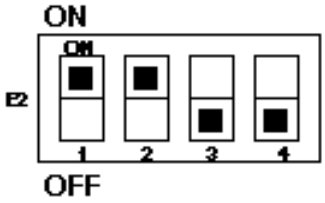
B2 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close and stop, plus wiring for sensing device to reverse and auxiliary devices to open and close with open override.

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



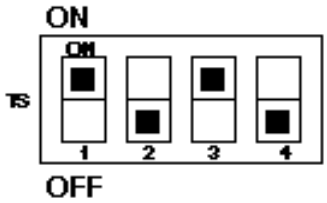
E2 2 Button, 3 Button Radio Control
Function: Momentary contact to open with override and constant pressure to close. Release of close button will cause door to reverse (roll-back feature) plus wiring for sensing device to reverse.

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 Optional failsafe photo eyes to operate.)**



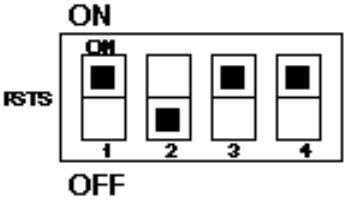
TS* 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close, and stop with open override and timer to close. Every device that causes door to open, including a reversing device, activates timer to close. Auxiliary controls can be connected to open input to activate the 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 Optional failsafe photo eyes to operate.)**

FSTS Momentary button contact for open, close and stop. Radio controls allowing open, close and stop. User set midstop. User set timer to close, functional at open limit. The single button station opens the door and activates the timer to close, putting the operator in TS mode until the door reaches the down limit, or is stopped in travel. At which time the operator enters the B2 mode. A failsafe is required to operate in this mode. **(NOTE: Requires Optional failsafe photo eyes to operate.)**



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.

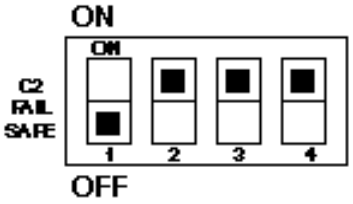


FAILSAFE WIRING TYPES

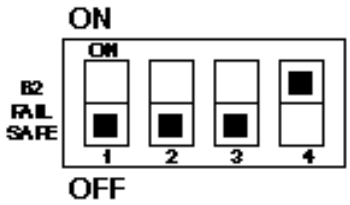
"Failsafe" self mounting wiring types: These wiring types require the use of self monitoring sensing devices. (The optional Lift Master CPSII photoeye package)

TYPE **STATION**

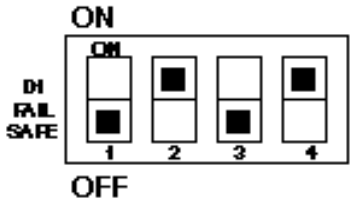
C2 Failsafe 3 Button, 3 Button Radio Control
Same functions as C2. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options on page 17.



B2 Failsafe 3 Button, 1 Button, 1 & 3 Button Radio Control
Same functions as B2. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options below.

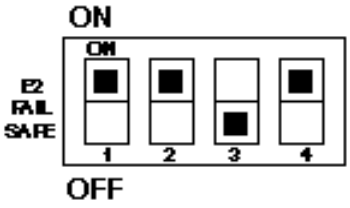


D1 Failsafe 2 Button, 3 Button Radio Control
Same functions as D1. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options below.



E2 Failsafe 2 Button, 3 Button Radio Control
Same functions as E2. Failsafe safety device must be installed to operate door. See Failsafe Safety Device Options below.

Failsafe Safety Device Options
To use the operator in any of the Failsafe wiring modes, or Timer to Close wiring modes, a LiftMaster failsafe safety device must be installed.



Timer to Close with Failsafe Safety Device
NOTE: The board will check attached Failsafe devices after setting the Timer to Close and activate them for the timer. If a failsafe device is added later the Timer to Close must be reentered to activate the new failsafe device.

LiftMaster Failsafe Safety Devices:

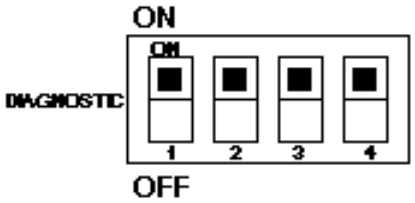
CPSII CPSII Option Board - NEMA 1 eyes included (Also can interface to 4 wire edge)

CPS-L NEMA 1 Direct Connect Eyes

CPS-LN4 NEMA 4 Direct Connect Eyes

DIAGNOSTIC MODE & RPM LEARN

Diagnostic Mode
Set dip switch to diagnostic mode. The following diagnostic codes are applicable:



- Obstruction sensed = 2 flashes then pause
- Board Okay = Rapid Flash

Factory Memory Preset
Activate this mode to initialize the board's memory to the standard factory preset values. Set dip switch to diagnostic mode. Hold learn button down for 5 seconds. Diagnostic LED will go on then turn off when memory is clear. Sets values to the following:

Maximum run timer = 90 seconds
Timer to close = 0 seconds
Mid stop = Disabled
Maintenance Alert System = Disabled

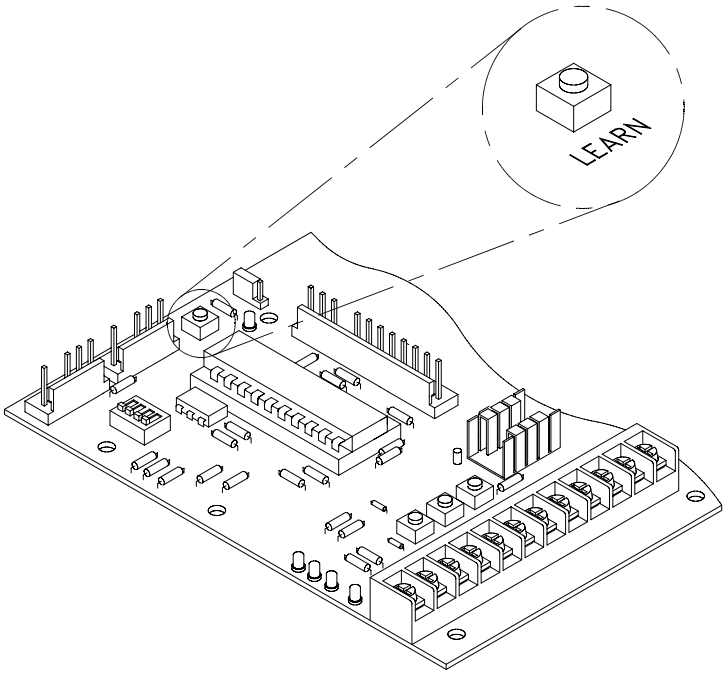
RPM Learn

NOTE: The RPM Learn should never have to be reset except in the case where the Motor or Logic Control board has been replaced and only if the motor doesn't have a start switch.

Set unit to any normal mode, B2 is suggested. Begin with the door in the open or closed position. Set the limit switches so the operator can run for at least 5 seconds continuously at a steady speed.

Press the open or close button to start the operator. While the operator is running, press the learn button on the board. The diagnostic LED will come on. Hold down the learn button continuously while the operator is running. When the diagnostic LED goes out, the steady-state RPM speed of the operator has been "learned" by the microprocessor. If the unit hits a limit switch, or the motor stops, or you release the button before the LED goes out (about 5 seconds), the RPM learn procedure will have to be repeated. (Refer to figure 1 for RPM Learn button location)

FIGURE 1



MAINTENANCE SCHEDULE

- **For use with Maintenance Alert System.**
- **Check at the intervals listed in the following chart.**

ITEM	PROCEDURE	EVERY 3 MONTHS OR 5,000 CYCLES	EVERY 6 MONTHS OR 10,000 CYCLES	EVERY 12 MONTHS OR 20,000 CYCLES
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.**

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Electronic Parts & Service Dept.
2301 N. Forbes Blvd., Suite 104
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CHAMBERLAIN
LiftMaster
PROFESSIONAL

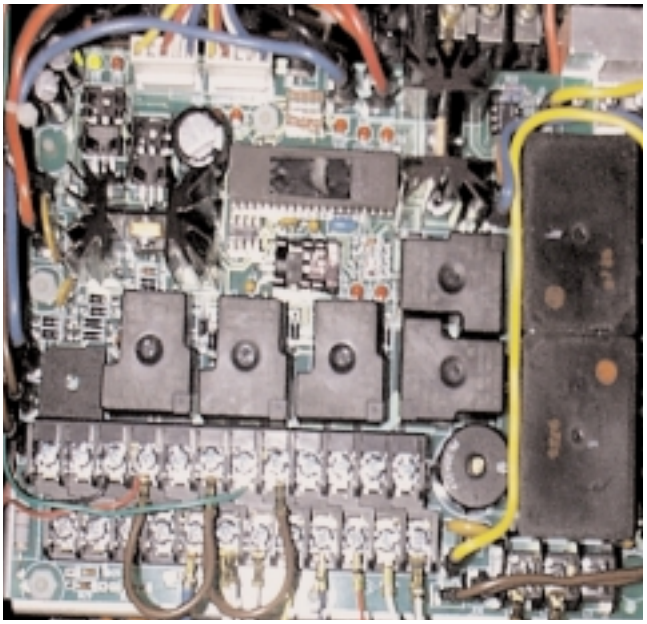
LMPLC

LiftMaster Programmable Logic Control Board

A Programmable Logic Control Board Available for Custom Door Automation Applications!

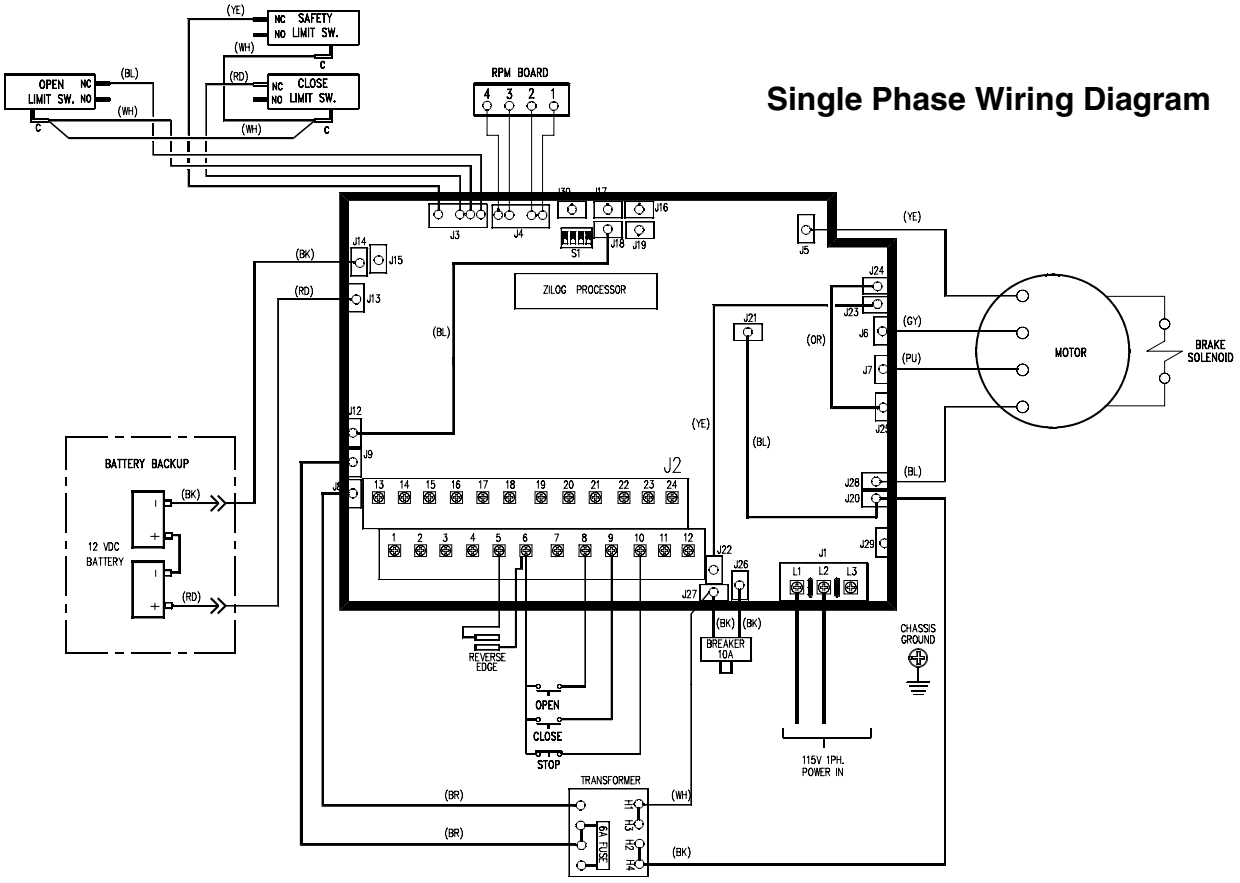
FEATURES:

- ❑ Application Specific Microprocessor Programming (16K OTP)
- ❑ Motor Control up to 475 Volts 2 HP
- ❑ RPM Input and monitoring
- ❑ Nema 4 Eyes Interface
- ❑ 24 Volt Battery Charging and Monitoring
- ❑ (5) 115 Volt accessory relays available
- ❑ Serial Port Logic Interface
- ❑ 16 Mode User Selectable Dip Switch
- ❑ Standard Commercial Door Inputs
- ❑ Two additional dry contact inputs
- ❑ UL approval by 3Q 1999
- ❑ Fits in any standard Logic 2 Electrical Box
- ❑ Industrial Temperature Range -40c to 65c



Board Assembly (7-3/4" x 5-7/8")

Single Phase Wiring Diagram



CHIP REPLACEMENT KIT
LMPLC BOARD

INSTALLATION INSTRUCTIONS

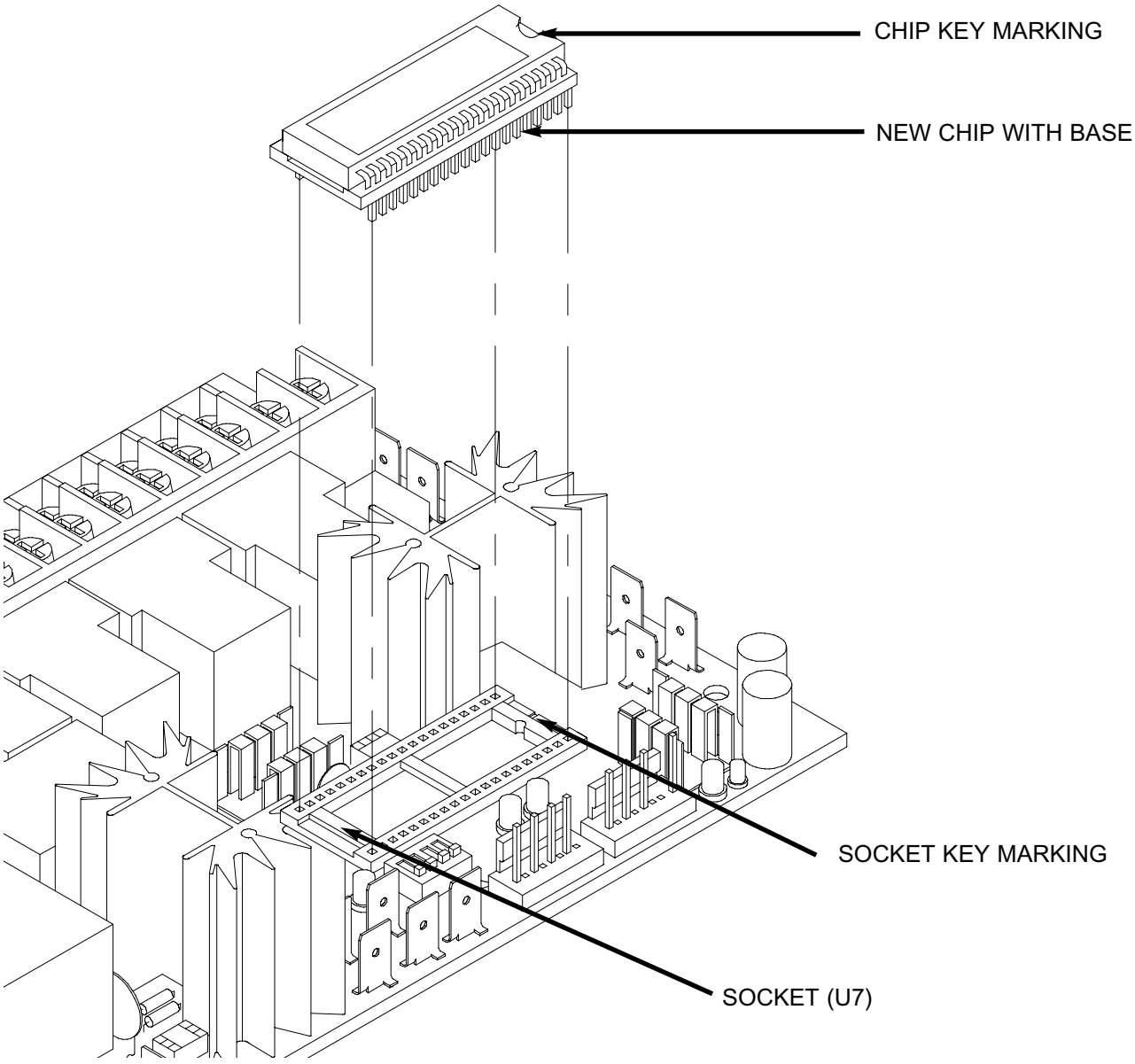
1. Carefully remove the programmed chip from **SOCKET U7** on the board, be sure not to damage the board in the process.

2. Insert new chip supplied into **SOCKET U7**, be sure that the key marking on the chip is on the same side as the key marking on the socket. For additional help with chip orientation refer to illustration below.

3. Refer to owners manual shipped with opertor for programming instructions.

WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.



CHAMBERLAIN

LiftMaster

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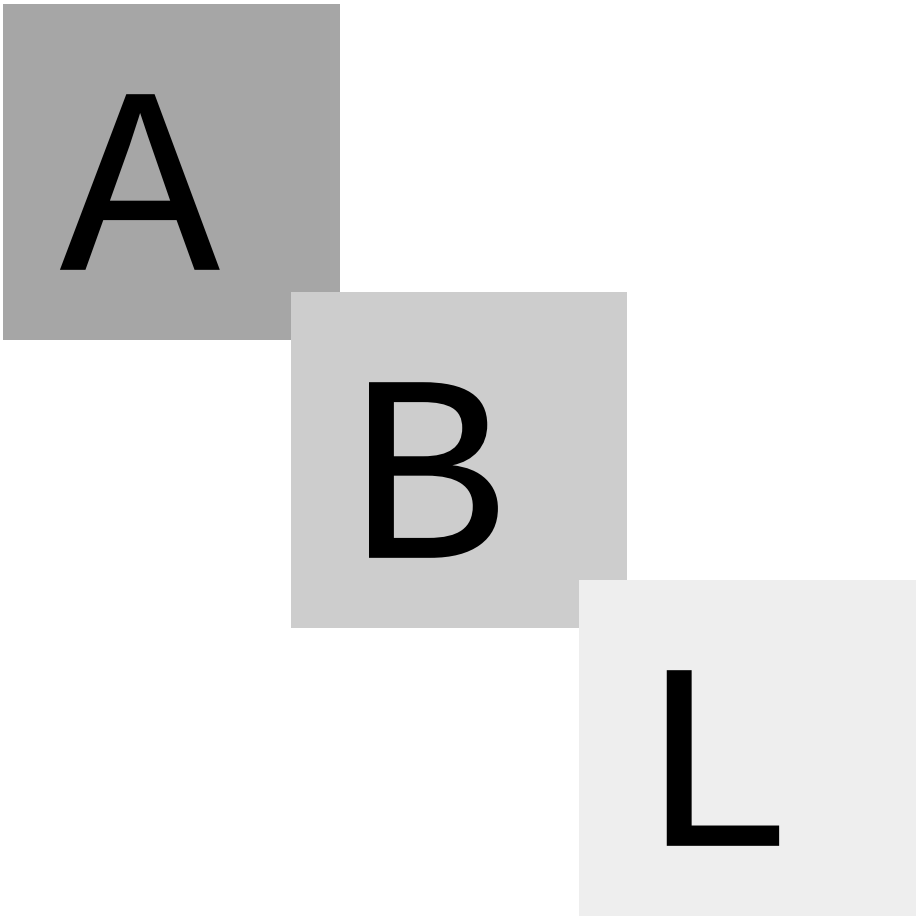
SERVICE KIT'S

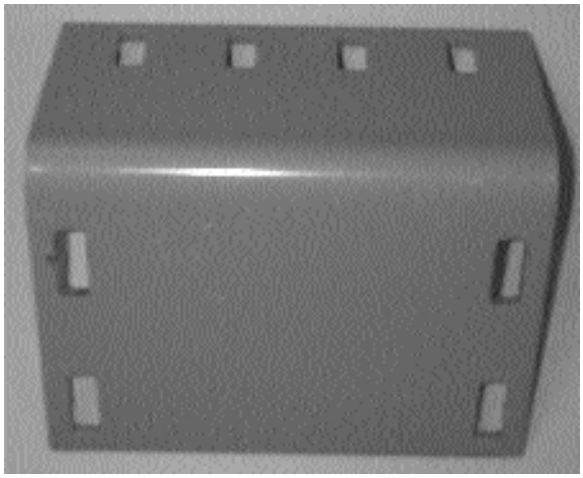
FOR
THE CHAMBERLAIN GROUP, INC.
ABL - COMMERCIAL DOOR OPERATORS



AB251

DESCRIPTION
Right Angle Mounting Bracket

APPLICATION
For Mounting to Rolling Door
Head Plate
Models ABG, ACG, H, J



AB260

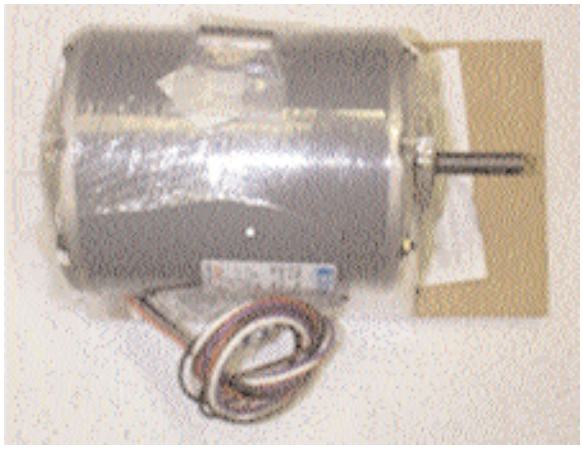
DESCRIPTION
Right Angle Mounting Bracket

APPLICATION
For Mounting to Rolling Door
Head Plate, Bent for Cornell
Models ABG, ACG, H, J

AB430

DESCRIPTION
1/2HP Split Phase Base Mount Motor

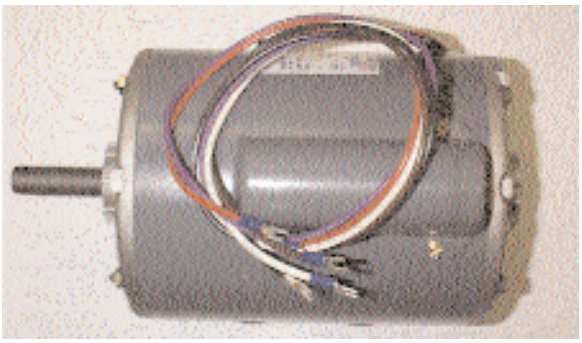
APPLICATION
Replacement Motor
Models JS, HS and TS
115 Volt Only



AB433

DESCRIPTION
1/3HP 1PH ODP Base Mount Motor

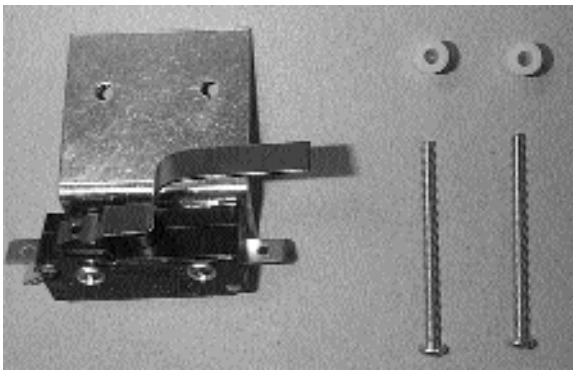
APPLICATION
Replacement Motor
Models JH, HH, TSE and TH
Specify 115 Volt or 230 Volt



AB551 & AB554

DESCRIPTION
Auxiliary Limit Switch (SPDT)

APPLICATION
For Additional SPDT
Contact @ Open or Close
Models ABG, ACG, H and V
Liftmaster 90-9210M



AB702

DESCRIPTION
10 FT 1-1/2” Trolley Track

APPLICATION
Model TS/TSE

AB703

DESCRIPTION
12 FT 1-1/2” Trolley Track

APPLICATION
Model TS/TSE

AB704

DESCRIPTION
14 FT 1-1/2” Trolley Track

APPLICATION
Model TS/TSE

AB705

DESCRIPTION
16 FT 1-1/2” Trolley Track

APPLICATION
Model TS/TSE

AB708

DESCRIPTION
12 FT 2” Trolley Track

APPLICATION
Model TH

AB709

DESCRIPTION
14 FT 2” Trolley Track

APPLICATION
Model TH

AB710

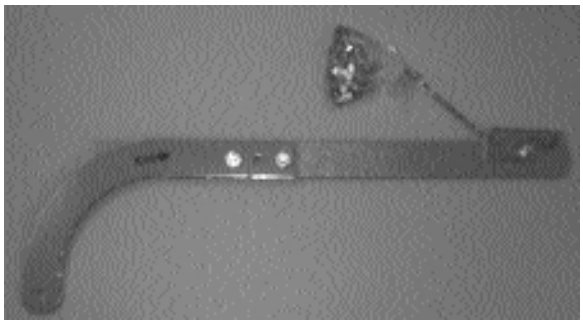
DESCRIPTION
16 FT 2” Trolley Track

APPLICATION
Model TH

AB713

DESCRIPTION
Door Arm Complete

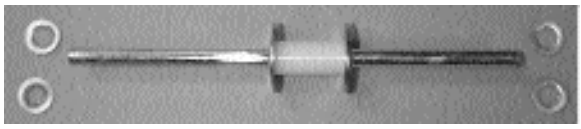
APPLICATION
Models TS/TSE/TH



AB720

DESCRIPTION
Trolley Drive Chain Support

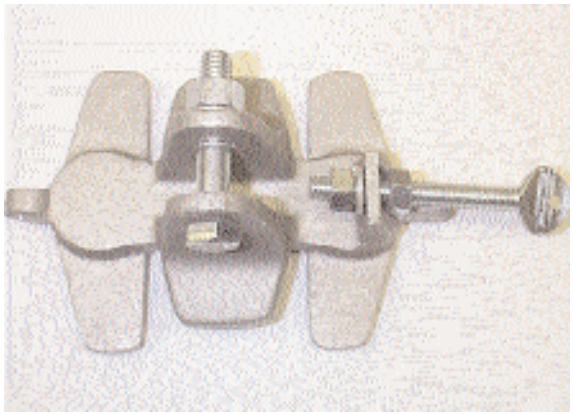
APPLICATION
To Support Drive Chain
Above Trolley Casting
Models TS/TSE/TH



AB721

DESCRIPTION
TS/TSE Trolley Casting Complete

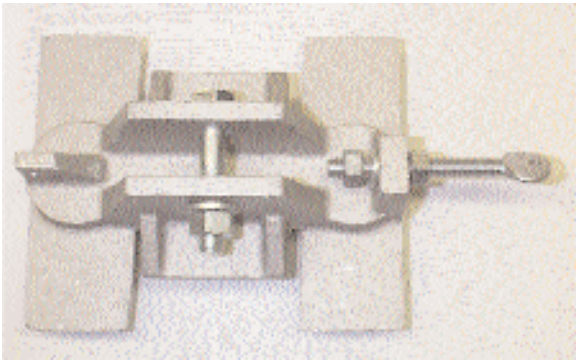
APPLICATION
Replacement Trolley Carriage
Models TS/TSE



AB722

DESCRIPTION
TH Trolley Casting Complete

APPLICATION
Replacement Trolley Carriage
Model TH



AB724

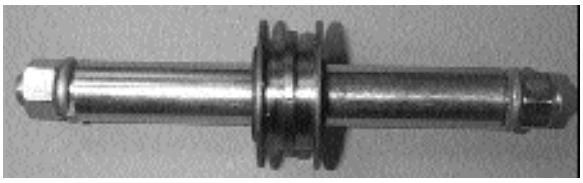
DESCRIPTION
ABG/H&J Limit Shaft Complete

APPLICATION
Replacement Limit Shaft
With Nuts, Bearings, Rings,
and Spring Washers

AB726

DESCRIPTION
TS/TSE Idler

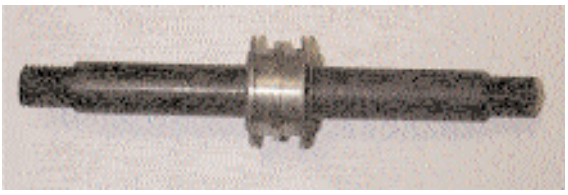
APPLICATION
Front Idler Shaft,
Sheave with Bearing
Clips, Nuts and Lock Washers



AB727

DESCRIPTION
TH Idler

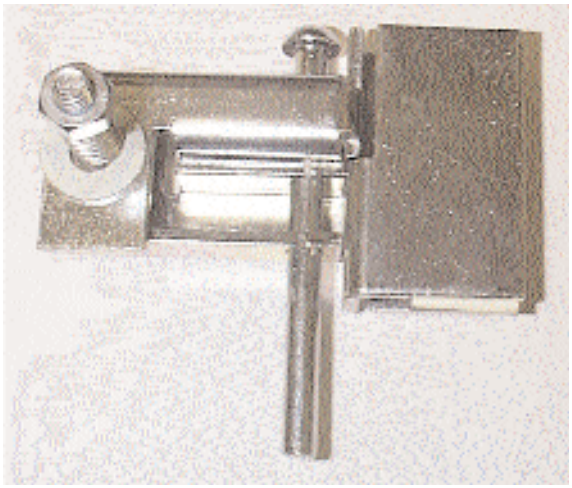
APPLICATION
Front Idler Shaft,
Sheave with Bearing
Clips, Nuts, Lock Washers
Model TH



AB728

DESCRIPTION
Brake Assembly (Pair)

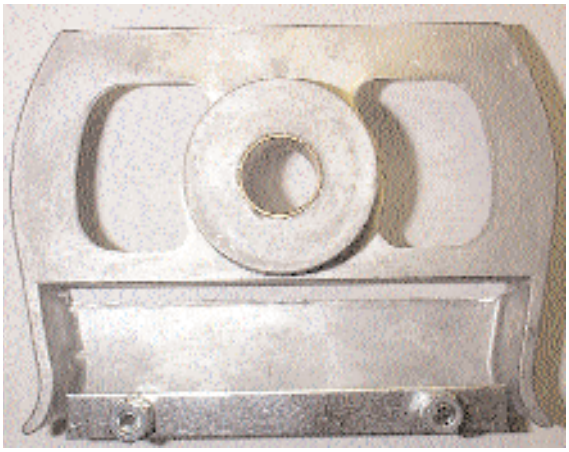
APPLICATION
Replacement Brakes
Models ABG and T



AB729

DESCRIPTION
Hand Chain Wheel Guard

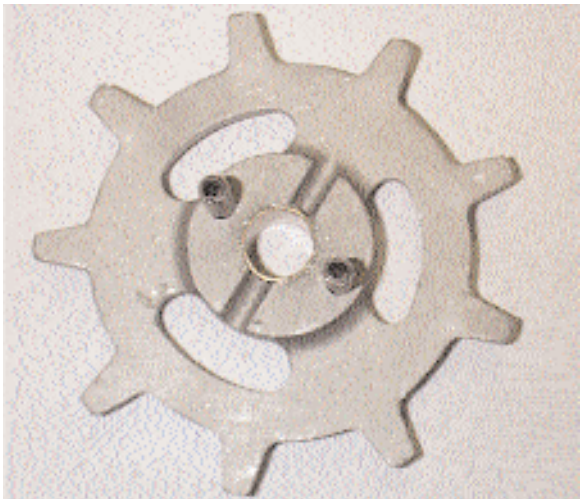
APPLICATION
Die Cast Guard For Hand
Chain Wheel
Models ABG, ACG, HS and HH



AB730

DESCRIPTION
Hand Chain Wheel- H

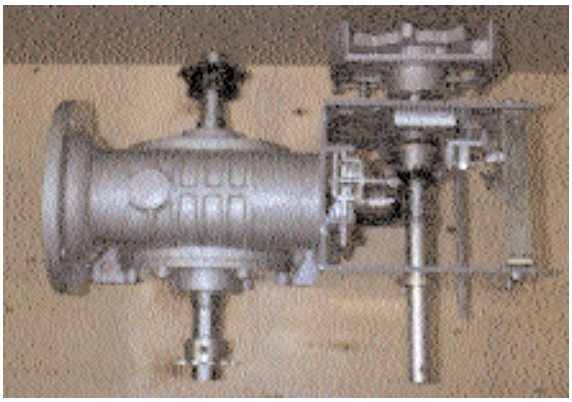
APPLICATION
Wheel with Engaging Pins
Model HS, HH



AB735

DESCRIPTION
D-70 Gearbox With Hand Chain Mechanism

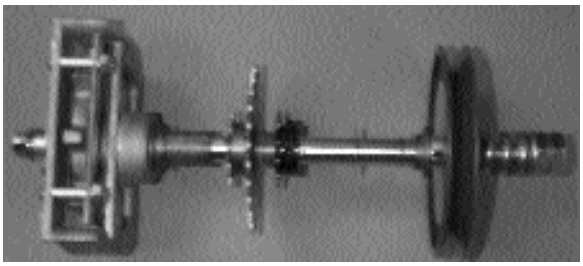
APPLICATION
Replacement Gearbox with Complete
Hand Chain Mechanism
Model ABG



AB740

DESCRIPTION
Primary Drive Shaft Complete

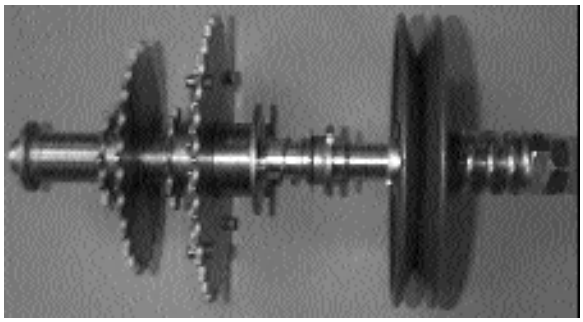
APPLICATION
Model H



AB741

DESCRIPTION
Primary Drive Shaft Complete

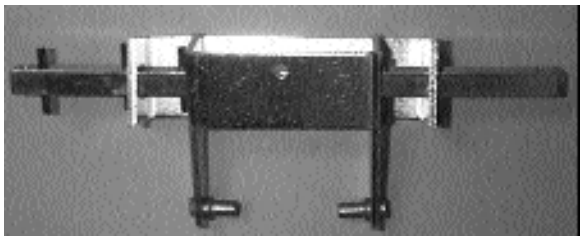
APPLICATION
Model J



AB742

DESCRIPTION
Shift Mechanism- H&J

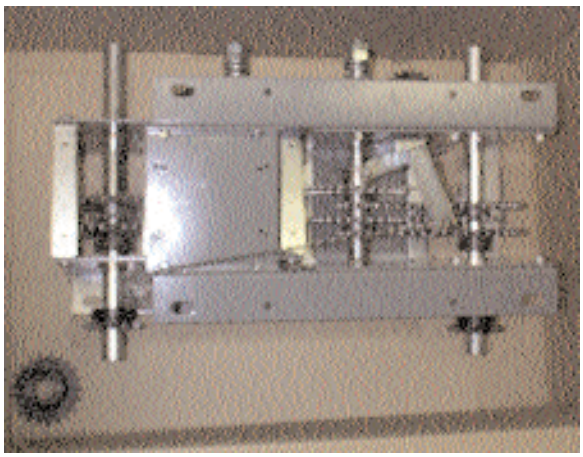
APPLICATION
Engages Hand Chain
Wheel (H)
Disengages Reduction
Mechanism (J)



AB745

DESCRIPTION
Model H Reduction Mechanism

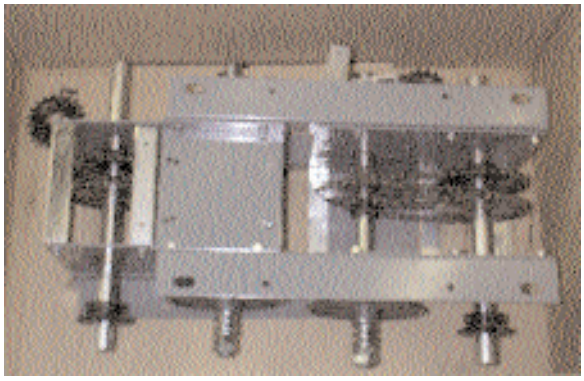
APPLICATION



AB746

DESCRIPTION
Model J Reduction Mechanism

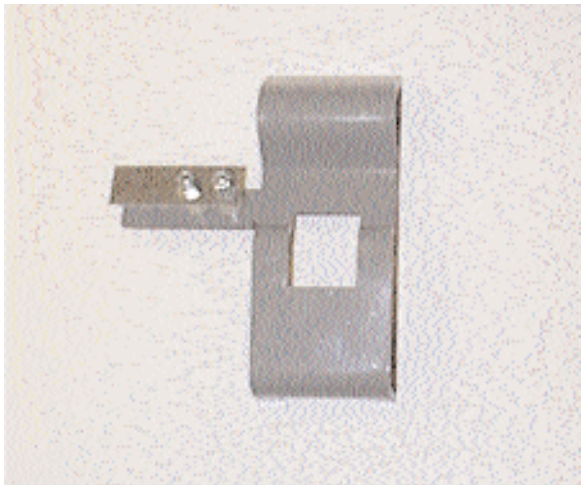
APPLICATION



AB750

DESCRIPTION
Manual Shift Frame Assembly

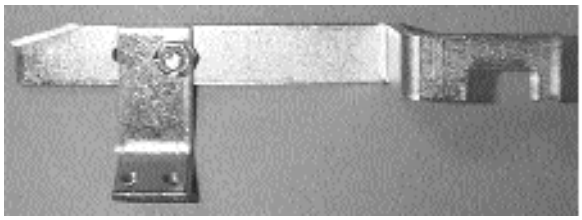
APPLICATION
Engages Hand Chain
Bevel Gears
Model ABG



AB751

DESCRIPTION
Brake Release Arm Assembly

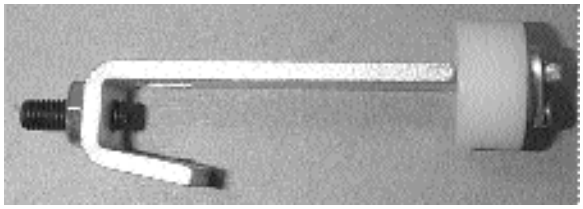
APPLICATION
Engages Hand Chain
Interlock Switch
Disengages Brake
Solenoid
Model ABG



AB752

DESCRIPTION
Internal Shifter Assembly

APPLICATION
ActivatesManual
Shift Frame (AB750)
Model ABG



AB753

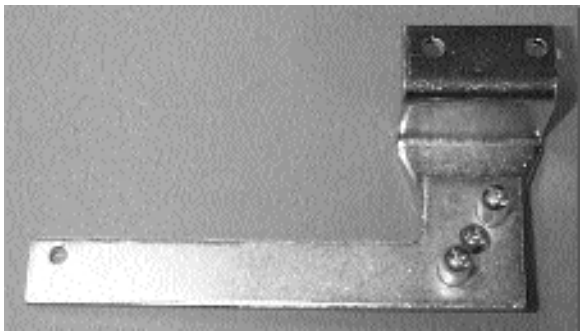
DESCRIPTION
Shift Lever Assembly

APPLICATION
Activates Internal Shifter (AB752)
Interface to Floor Level Hand
Mechanism Engaging Chain
Model ABG, ACG

AB754

DESCRIPTION
Brake Actuator Arm Assembly

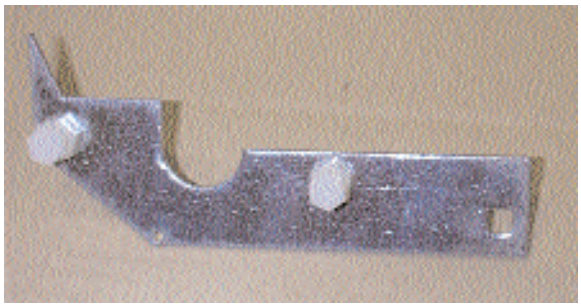
APPLICATION
Solenoid Connection
Mechanism to Engage/
Disengage Brakes (AB728)
Model ABG



AB758

DESCRIPTION
Shift Arm Assembly

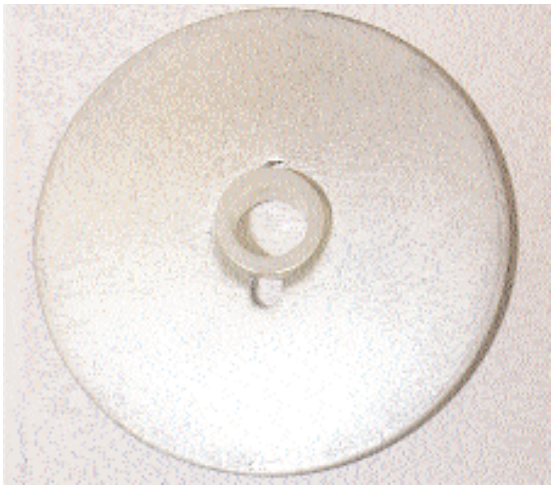
APPLICATION
Activates Manual Shift Frame
Model ACG



AB759

DESCRIPTION
4” Steel Disc

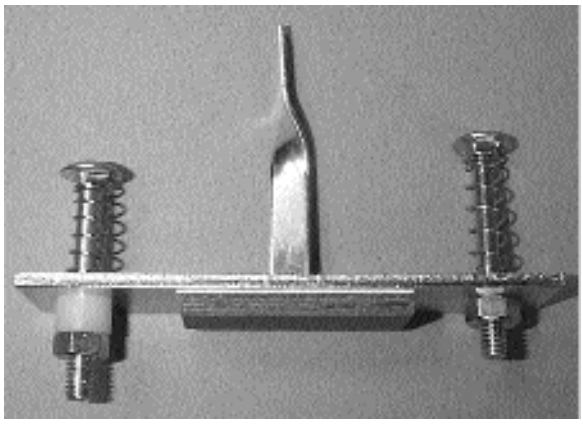
APPLICATION
-3/4” Bore H, J, T Clutch
-Brake Disc ACG



AB760

DESCRIPTION
Brake Plate Assembly

APPLICATION
Replacement Brake
Model ACG



HOW TO ORDER REPAIR PARTS

INSTALLATION AND SERVICE INFORMATION AVAILABLE
FROM THE TECHNICAL PARTS AND SERVICE CENTER
ARE AVAILABLE 5 DAYS A WEEK
(631)-467-2501
HOURS 8:30 TO 5:00 p.m. (Eastern Std. Time)
MONDAY Through FRIDAY

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.
2111 Lakeland Avenue
Ronkonkoma, NY 11779

CHAMBERLAIN®
LiftMaster®
PROFESSIONAL

REPLACEMENT KIT
1” PUSH RINGS
MODELS: H, J & HJ

WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING AND BE SURE DOOR IS IN CLOSED POSITION.

1. Remove door and limit chains and set off to the side.

2. Remove limit and drive sprockets from output shaft and set off to the side.

3. Install (1) new spacer to each end of the out put shaft with the concaved side facing in. Slide spacer on until it lays flush against existing push ring. (Refer to figures 1, 3, 4 & 5 for spacer orientation)

4. Install (1) new push-ring to each end of the out put shaft with the teeth facing out. Slide spacer on until it lays flush against new spacer. (Refer to figure 2, 3, 4 & 5 for push ring orientation)

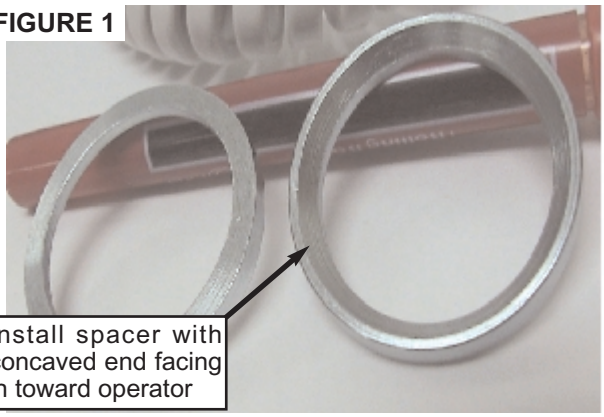
5. Repeat steps 3 & 4.

6. Reinstall limit and drive sprockets.

7. Reinstall door and limit chains.

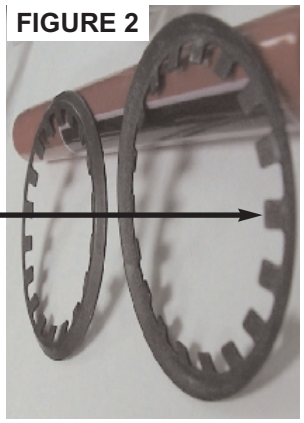
8. Apply power to operator and test.

FIGURE 1



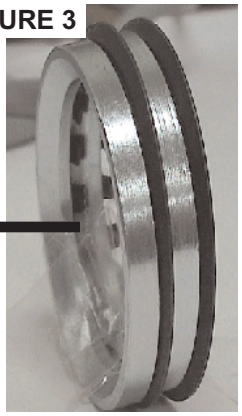
Install spacer with concaved end facing in toward operator

FIGURE 2



Install push-ring with teeth facing out away from operator

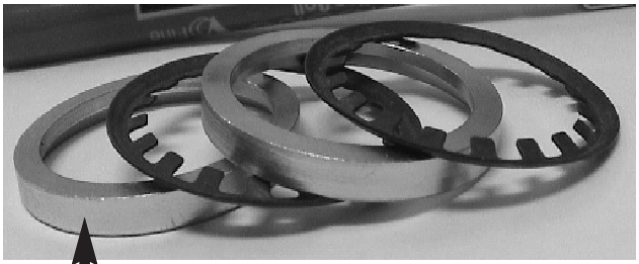
FIGURE 3



Install push-ring with teeth facing out away from operator

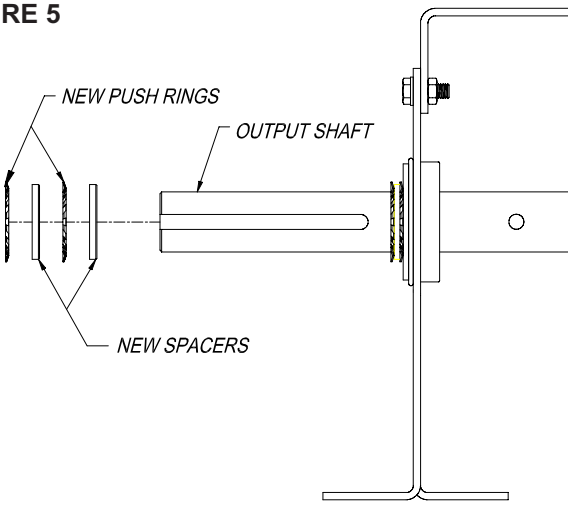
Notice the shape of the spacer (hallow) that goes against the existing ring retainer in the actual unit. This positioning is critical to the proper function of the ring retainer.

FIGURE 4



Parts should be positioned into each side of the shaft (after the sprockets and chain are removed) in the following order. With this spacer going first against the existing push ring in the unit (hallow side). Notice the position of the push rings and spacer.

FIGURE 5



CHAMBERLAIN®

LiftMaster®

PROFESSIONAL

Solenoid Wire Kit for FDOA-Line Operators K74-18571

APPLICATION REQUIREMENTS:

Wiring of Solenoid for FDOA Operators.

INSTALLATION INSTRUCTIONS

1. Remove red wire from terminal block J1 #24 and J16 on LMPLC board and discard.

2. Remove red wire from terminal block J1 #23 and cut off 10" of wire. Strip wire 3/16" then add 81-35201062 and connect to J16 on LMPLC board.

3. Install wire assembly 96-BK17-6G to terminal J17 (*Using terminal with male spade and female quick connect).

4. Disconnect the black wire from J30 and reconnect it to the wire assembly at J17.

5. Connect the opposite end of wire assembly 96-BK17-6G from J17 to terminal block J1 at terminal #23.

6. Install wire assembly 96-BK17-69 by connecting forked end to terminal block J1 at terminal #24, connect female quick connect end to board terminal J30.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.

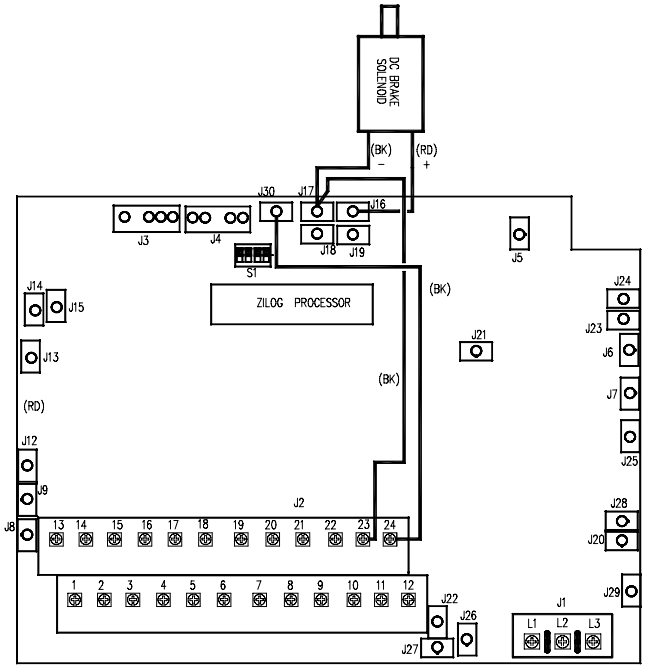
7. Reconnect power and run operator to test if solenoid functions.

8. Perform key switch test.

9. Tie off new wire assemblies and add new wiring diagram to electrical box cover.

10. Installation complete.

WIRE CONNECTIONS FOR SOLENOID KIT



CHAMBERLAIN
LiftMaster
PROFESSIONAL

Shaft Collar Modification
Model: H, J & HJ
71-HJASK

APPLICATION REQUIREMENTS:
These instructions are applicable for H, J, & HJ operators.

71-HJASK:

PART NUMBER	DESCRIPTION	QUANTITY
13-18691	SHAFT COLLAR W/ 2 SCREWS	2

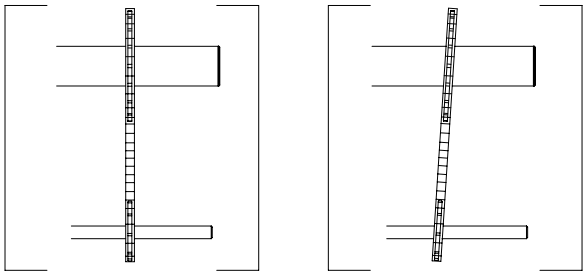
TOOL AND MATERIALS (ALL REQUIRED):
(1)- LOCTITE (#262)
(1)- 1/4" HEX HEAD ALLEN WRENCH

INSTALLATION INSTRUCTIONS

Installation of Shaft Collar Kit:

1. Close door and "Clamp-off" to restrict movement, remove tension from operator to door sprocket drive chain. Verify limit chain and three drive chains within chassis are all parallel and perpendicular to output shaft (See figure 1).

Figure 1



GOOD BAD

2. If necessary adjust shaft such that all internal chains are perpendicular to output shaft, and sprockets are aligned.

3. Adjust push nuts on both sides of operator so that shaft is retained in proper position.
Note: If during adjustment push nuts prove difficult to move, cut and remove push nuts.

4. Place Shaft Collar halves around shaft and engage leading threads of collar screws. Typical both sides of operator.

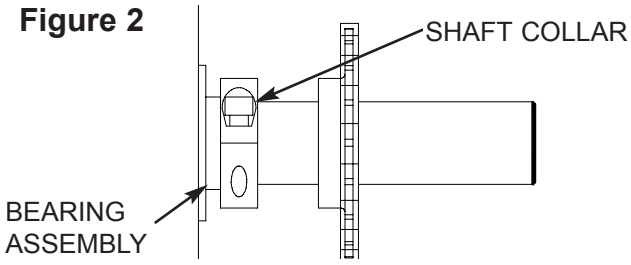
5. With shaft properly aligned, position shaft collars flush to outer face of bearing assembly (See figure 2). Be certain to remove all excessive side play in shaft assembly.

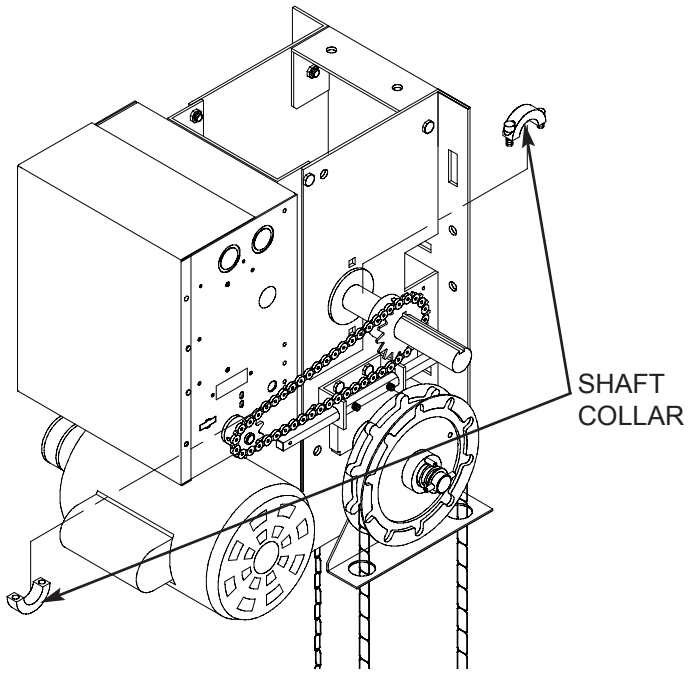
6. Apply loctite to collar threads and tighten evenly on both sides.

WARNING

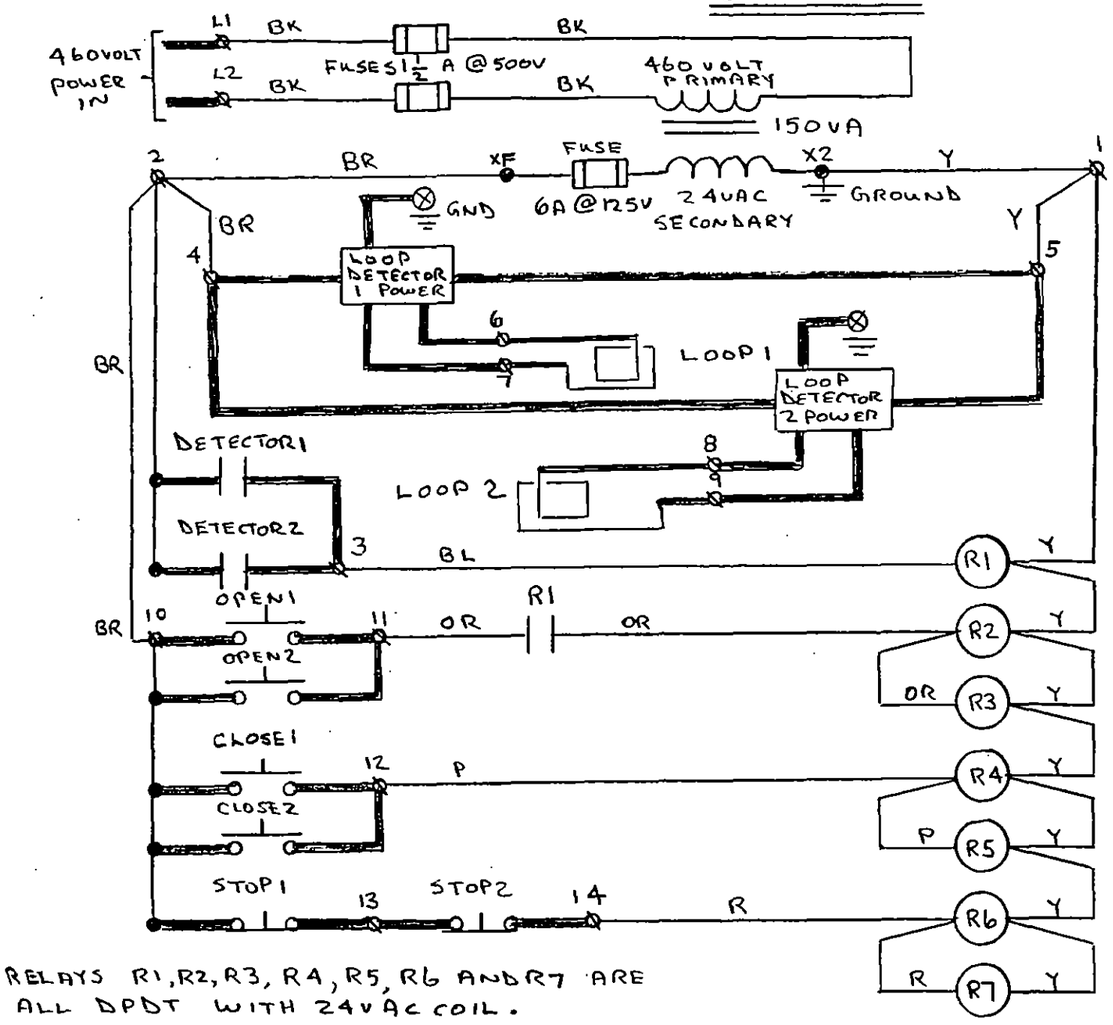
TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.

Figure 2

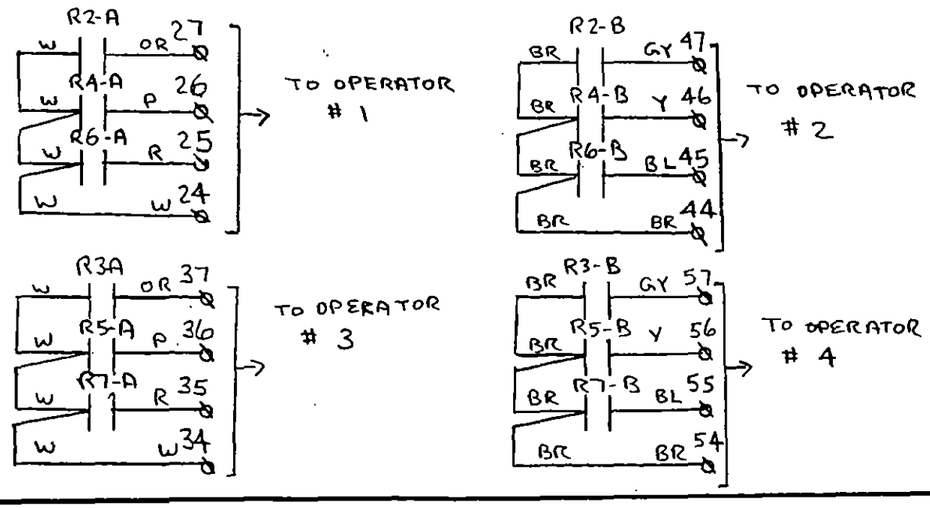




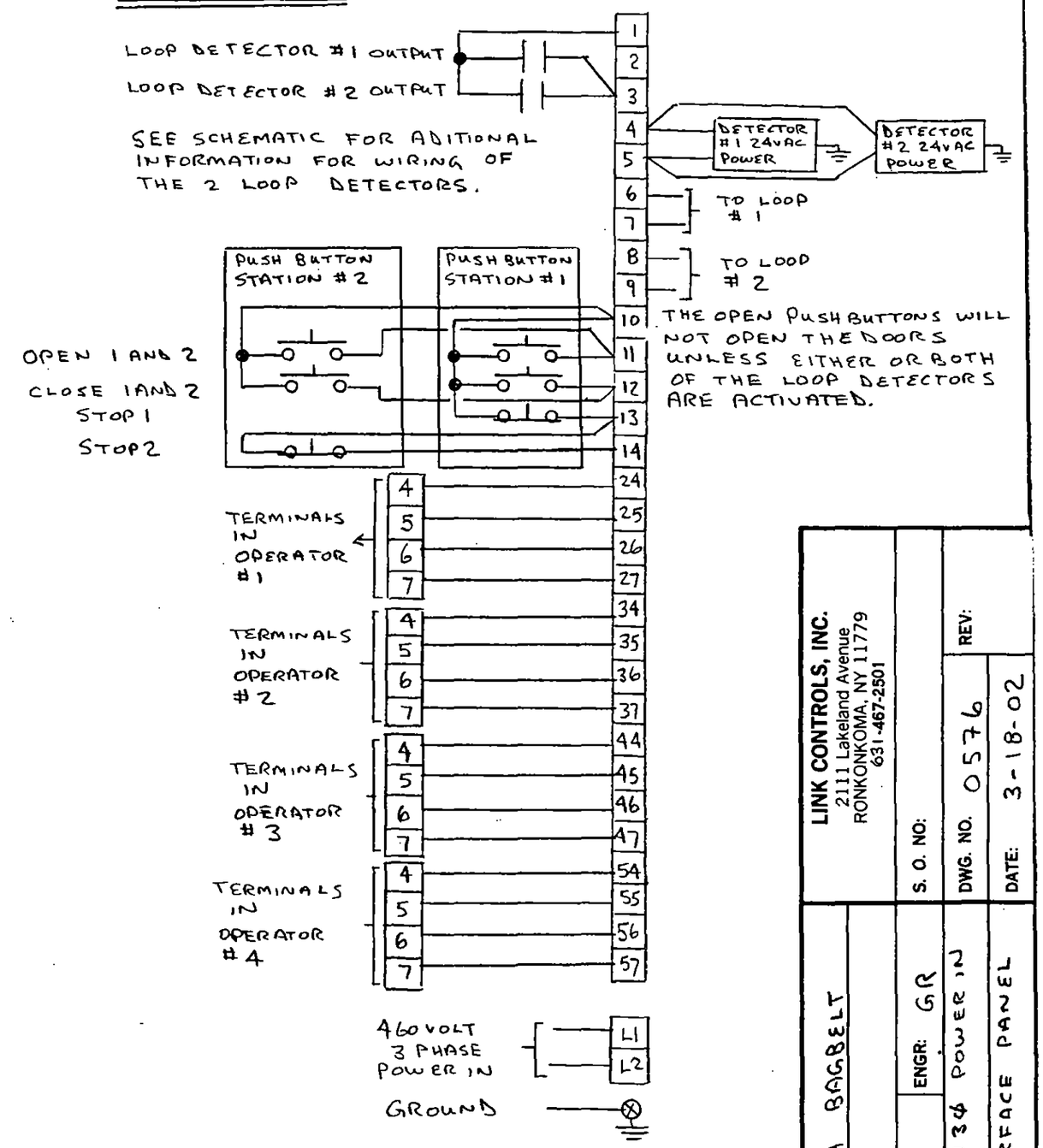
SCHEMATIC



RELAYS R1, R2, R3, R4, R5, R6 AND R7 ARE ALL DPDT WITH 24VAC COIL.



FIELD WIRING



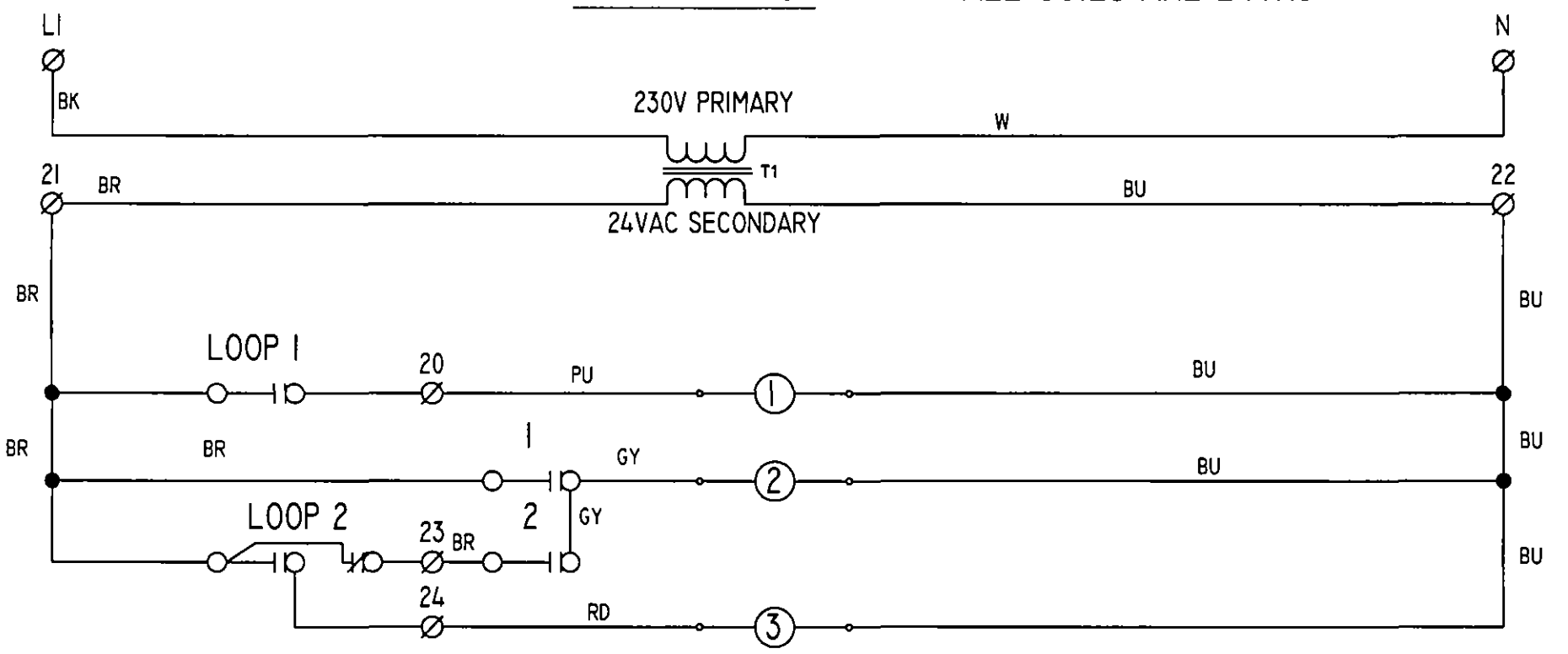
ATTENTION ELECTRICIAN: USE 16 GAUGE OR HEAVIER WIRE FOR ALL CONTROL CIRCUIT WIRING.
NOTE: CAUTION: THE PUSH BUTTONS WILL OPERATE ALL 4 DOORS AT THE SAME TIME.

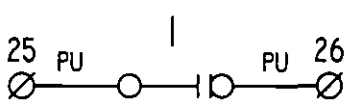
LINK CONTROLS, INC.
2111 Lakeland Avenue
RONKONKOMA, NY 11779
631-467-2501

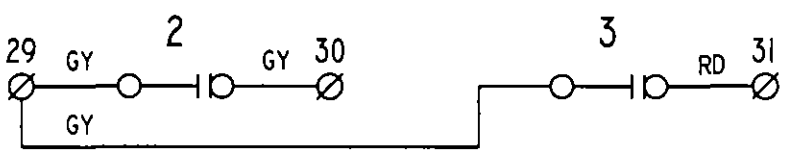
PROJ: PITA BAGBELT
CUST:
DFTSMN:
ENGR: GR
S. O. NO:
EQUIP: 460V 3Φ POWER IN
DWG. NO. 0576
REV:
TITLE: INTERFACE PANEL
DATE: 3-18-02

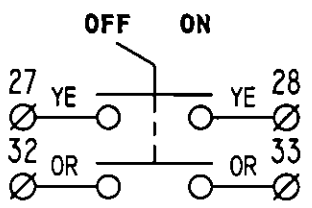
SCHEMATIC

ALL COILS ARE 24VAC

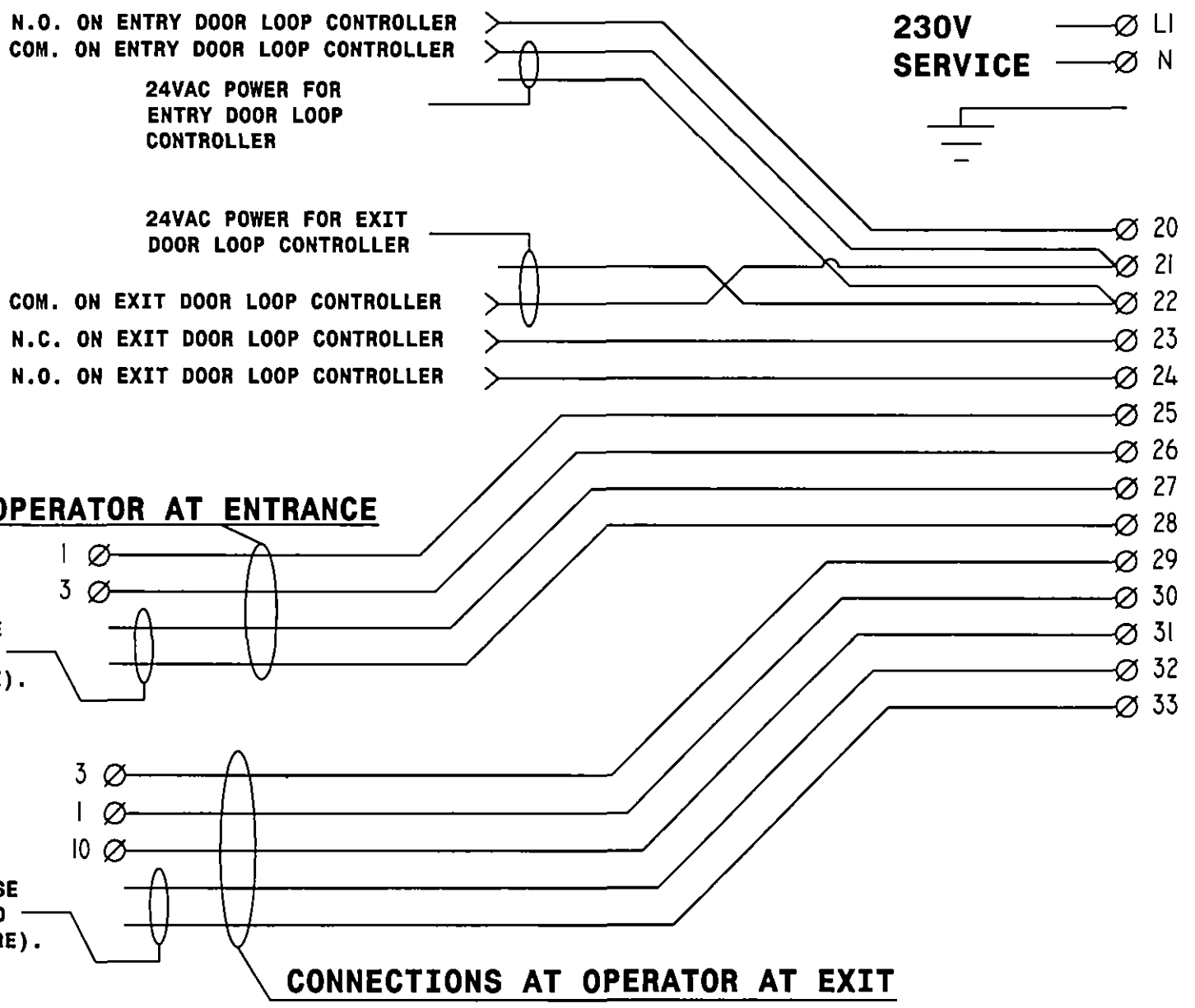








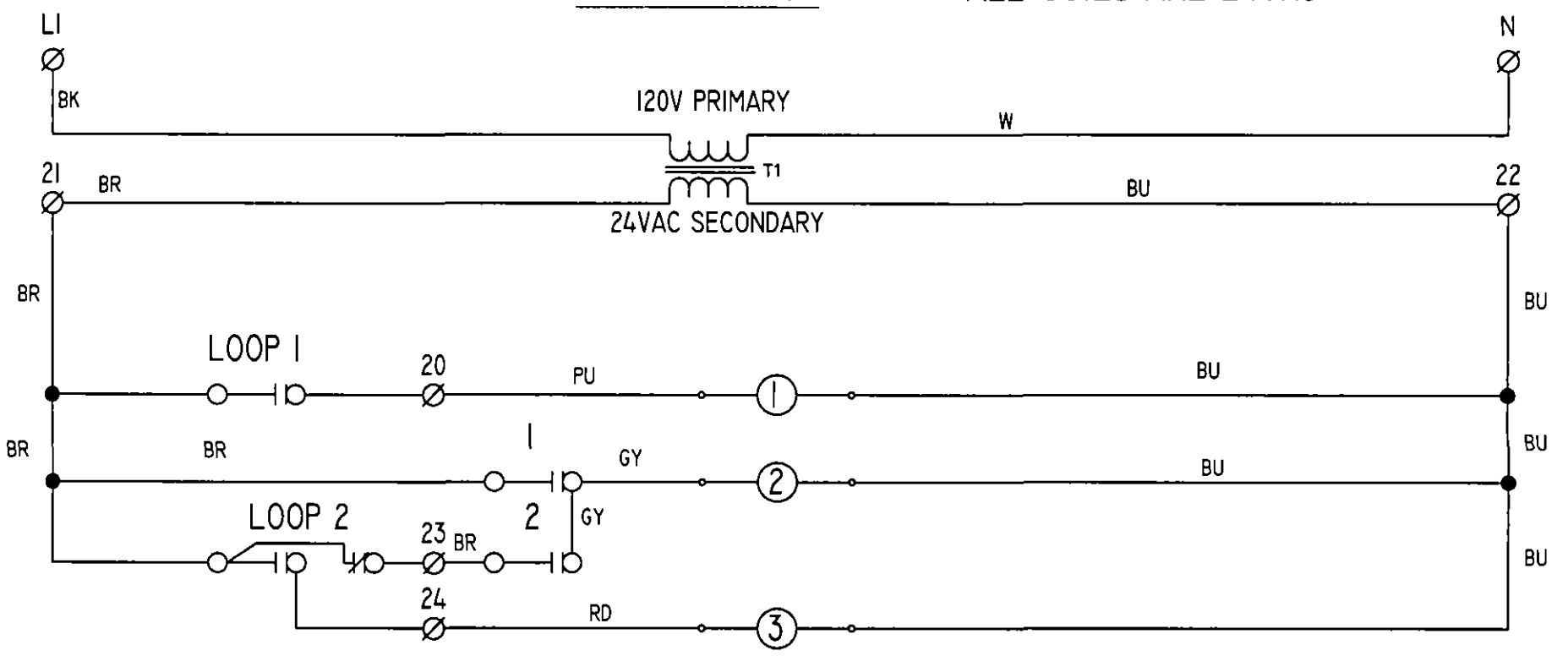
FIELD CONNECTIONS

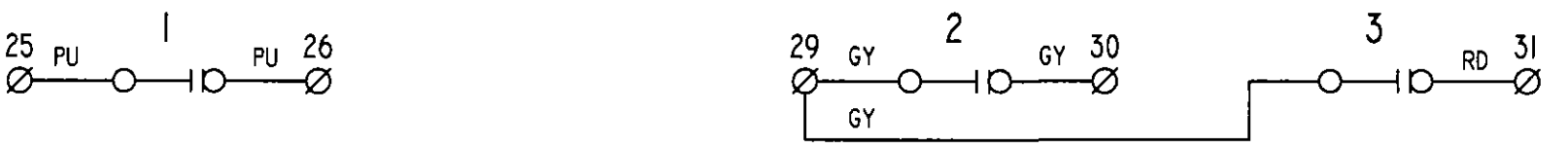


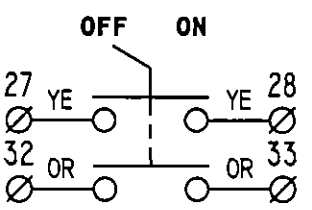
DFTSMN: I.D.	THE CHAMBERLAIN GROUP, INC. 845 Larch Ave, Elmhurst, IL 60126		LINK DOOR CONTROLS, INC. 2111 Lakeland Ave, Ronkonkoma, NY 11779
ENGR: I.D.			
CUST: CORNELL IRON WORKS		TITLE: CAR MAX LOOP COORDINATOR	
PROJ: CAR MAX WASH BAY		DWG. NO. 0577	PAGE 1 / 1
EQUIP: 90-MCCARMAX		DATE: 5 MARCH 2002	REV B

SCHEMATIC

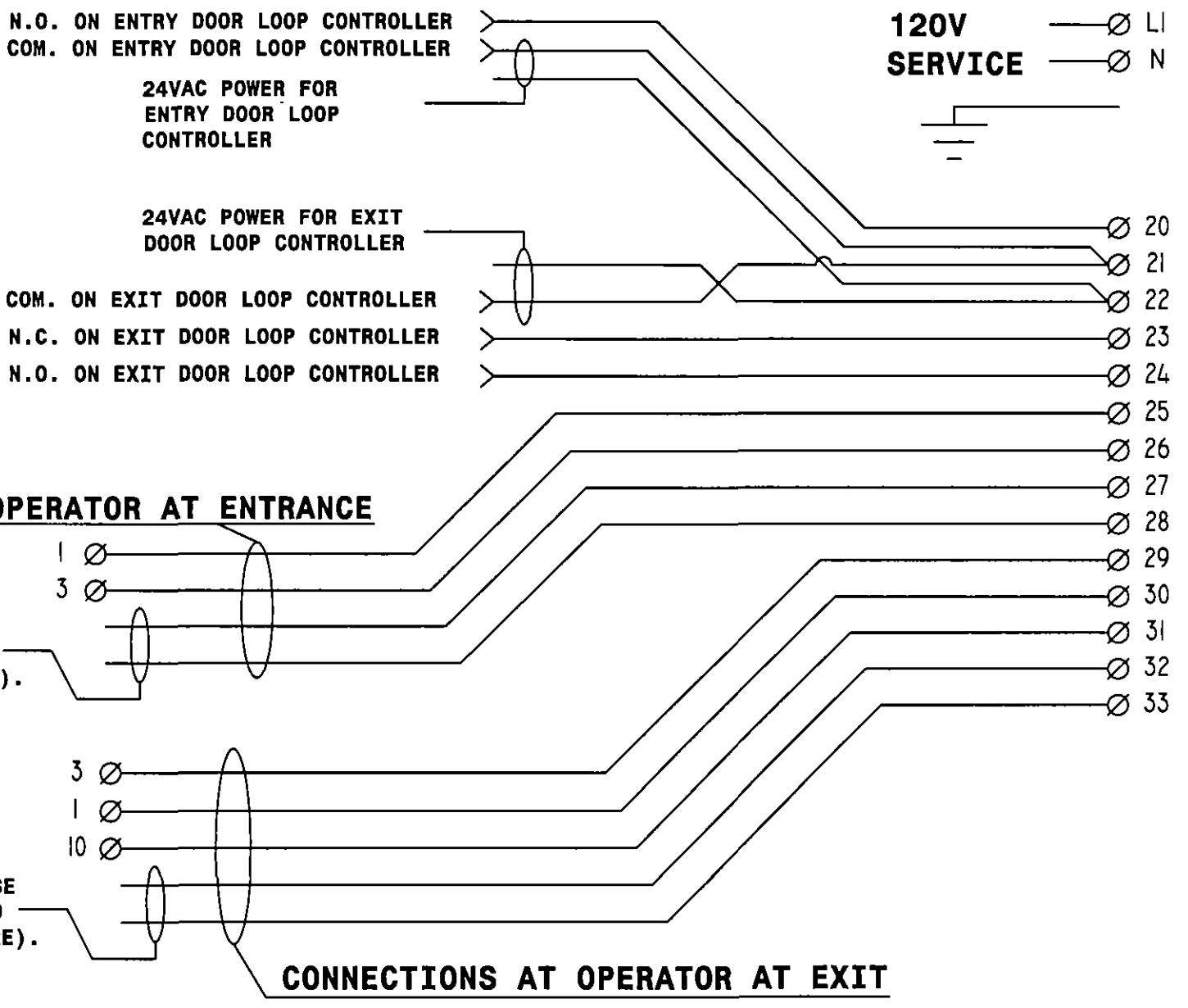
ALL COILS ARE 24VAC



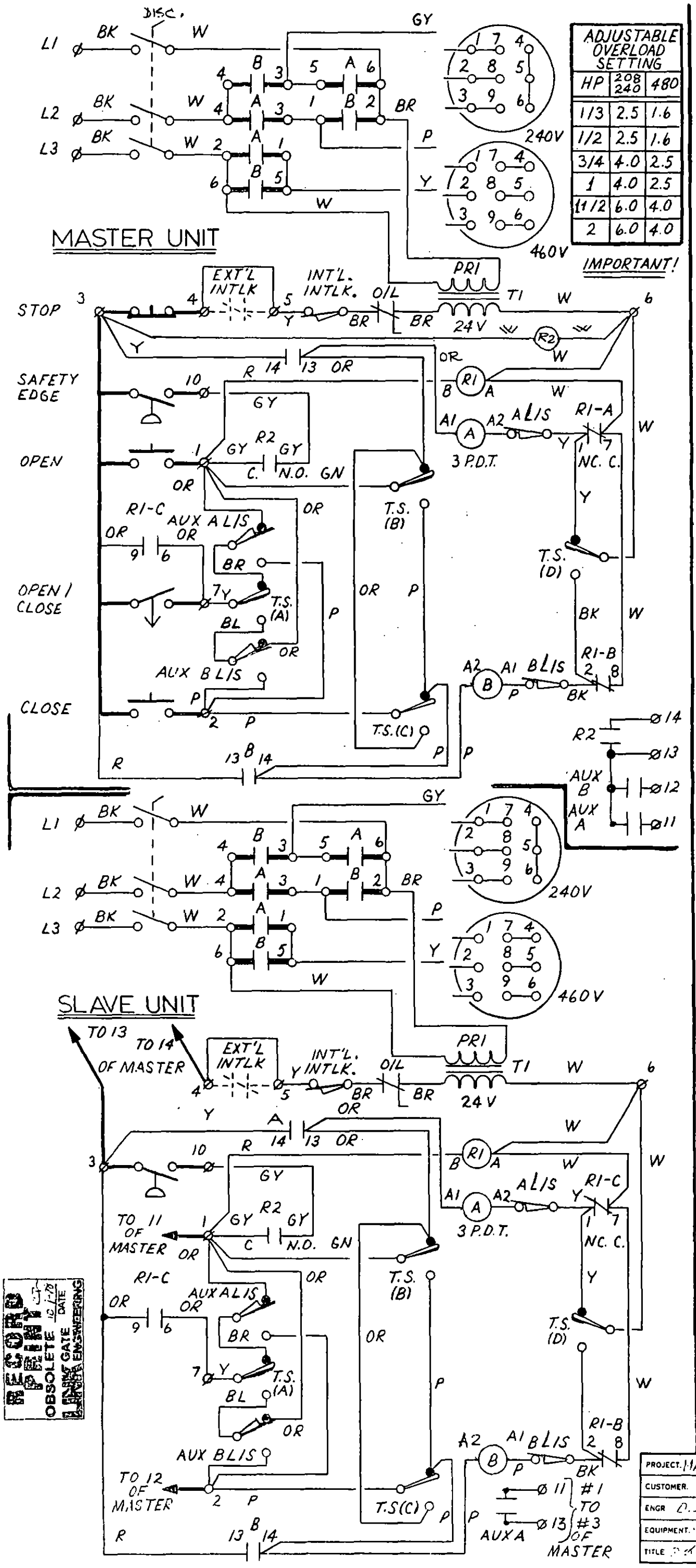


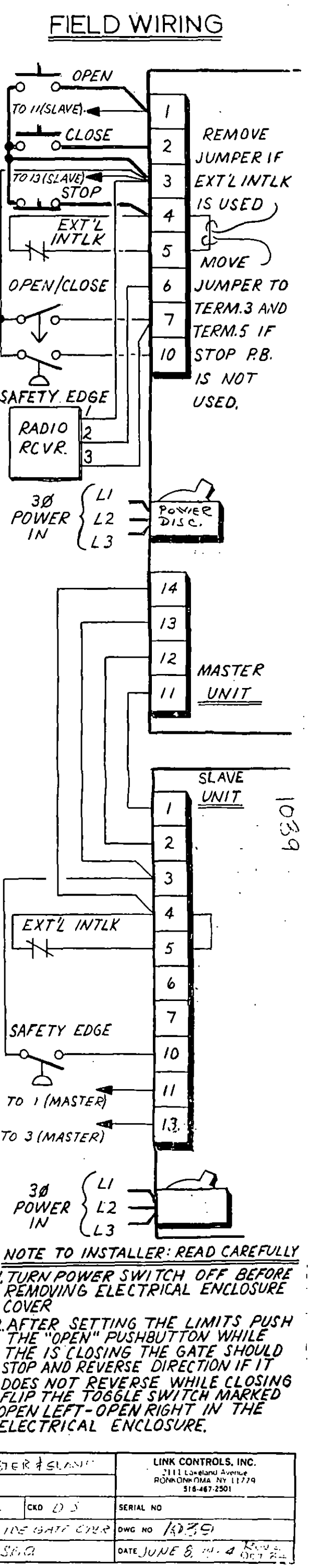


FIELD CONNECTIONS



DFTSMN: I.D.	THE CHAMBERLAIN GROUP, INC. 845 Larch Ave, Elmhurst, IL 60126 — LINK DOOR CONTROLS, INC. 2111 Lakeland Ave, Ronkonkoma, NY 11779		
ENGR: I.D.			
CUST: CORNELL IRON WORKS		TITLE: CAR MAX LOOP COORDINATOR	
PROJ: CAR MAX WASH BAY		DWG. NO. 0578	PAGE 1 / 1
EQUIP: 90-MCCARMAXIPH		DATE: 12 MARCH 2002	REV A





NOTE TO INSTALLER: READ CAREFULLY

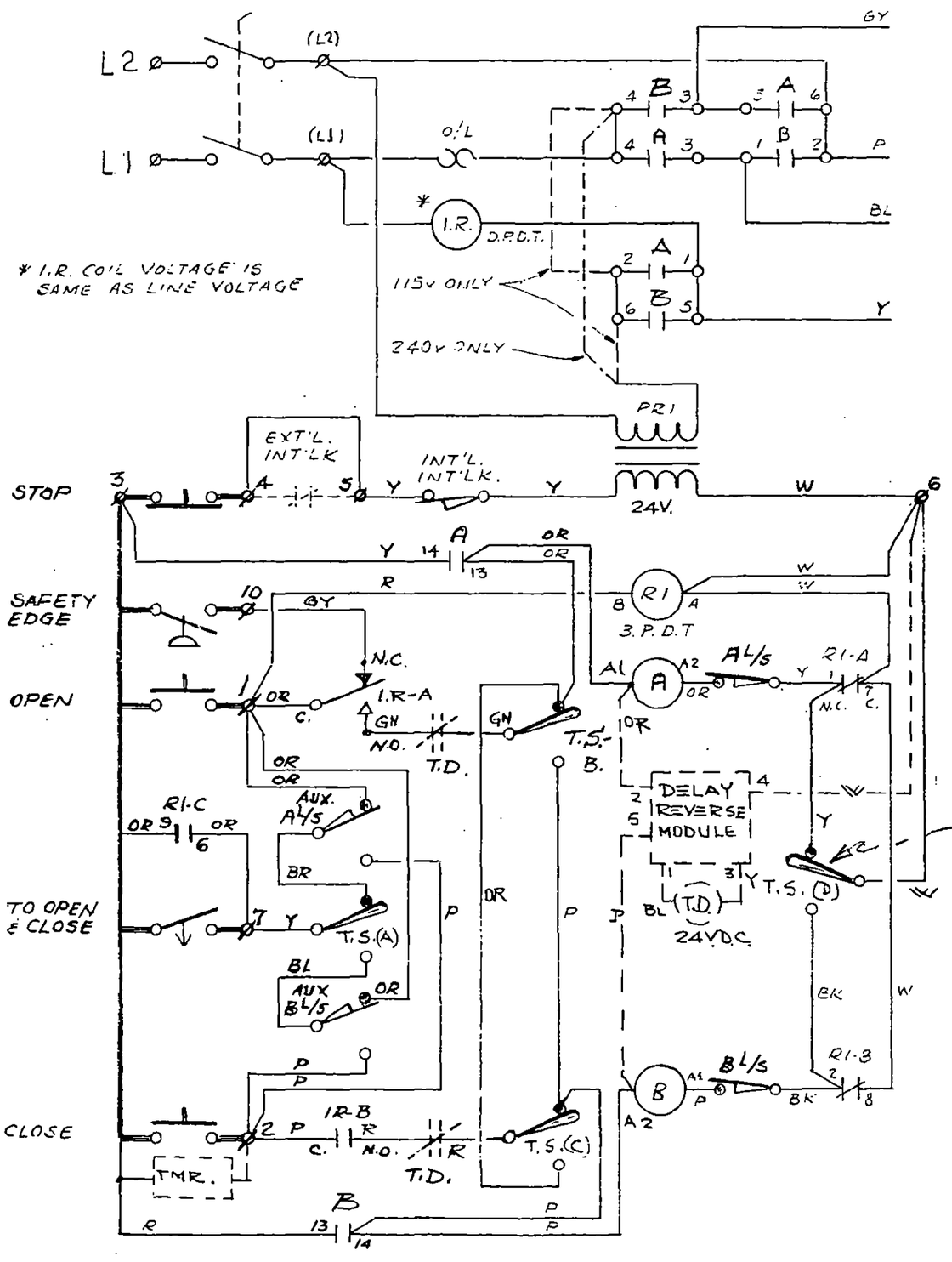
1. TURN POWER SWITCH OFF BEFORE REMOVING ELECTRICAL ENCLOSURE COVER
2. AFTER SETTING THE LIMITS PUSH THE "OPEN" PUSHBUTTON WHILE THE IS CLOSING THE GATE SHOULD STOP AND REVERSE DIRECTION IF IT DOES NOT REVERSE WHILE CLOSING FLIP THE TOGGLE SWITCH MARKED OPEN LEFT-OPEN RIGHT IN THE ELECTRICAL ENCLOSURE.

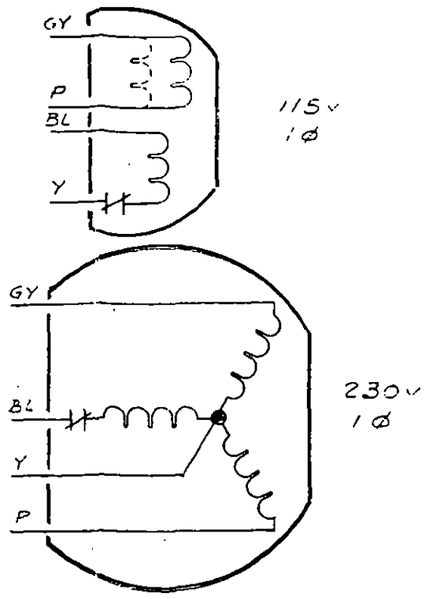
OBSOLETE 12-1-78 DATE
LINK GATE ENGINEERING

PROJECT. MASTER & SLAVE	LINK CONTROLS, INC. 2111 Lakeland Avenue RONKONKOMA NY 11779 516-467-2501
CUSTOMER.	
ENGR O.S. CKD O.S.	SERIAL NO
EQUIPMENT. SLIDE GATE CTRL	DWG NO 1039
TITLE P.C. SYS.	DATE JUNE 8, '77 Rev. Oct 24

1039

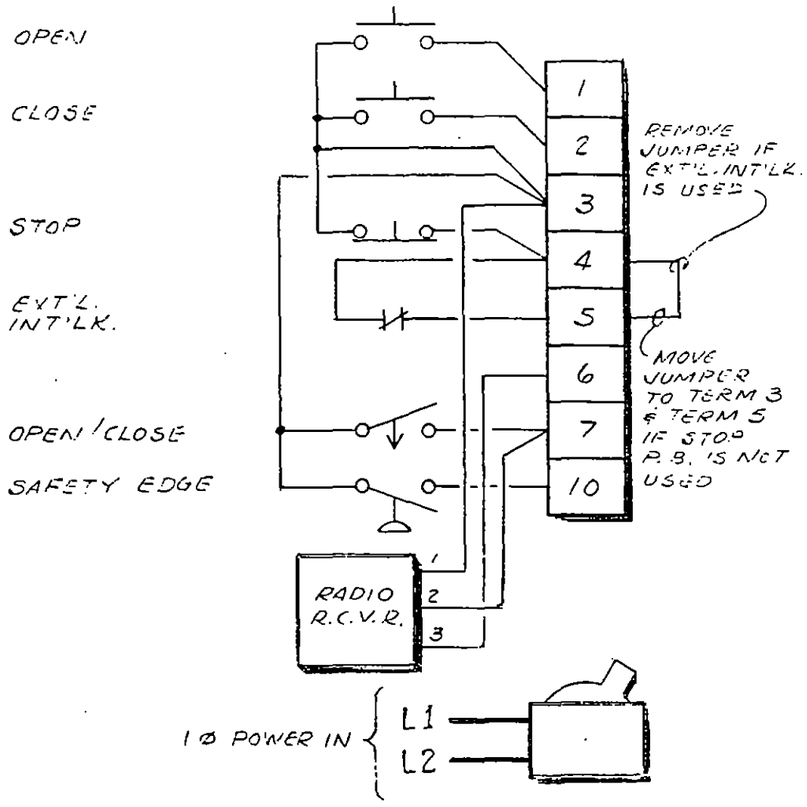
1039A





SEE MOTOR WIRING CHART DWG. No S-100 FOR SPECIFIC 1 ø MOTOR WIRING

FIELD WIRING



NOTE TO INSTALLER : READ CAREFULLY

1. TURN POWER SWITCH OFF BEFORE REMOVING ELECTRICAL ENCLOSURE COVER
2. AFTER SETTING THE LIMITS, PUSH THE "OPEN" PUSHBUTTON WHILE THE GATE IS CLOSING. THE GATE SHOULD STOP AND REVERSE DIRECTION. IF IT DOES NOT REVERSE WHILE CLOSING, FLIP THE TOGGLE SWITCH MARKED "OPEN LEFT - OPEN RIGHT" IN THE ELECTRICAL ENCLOSURE.

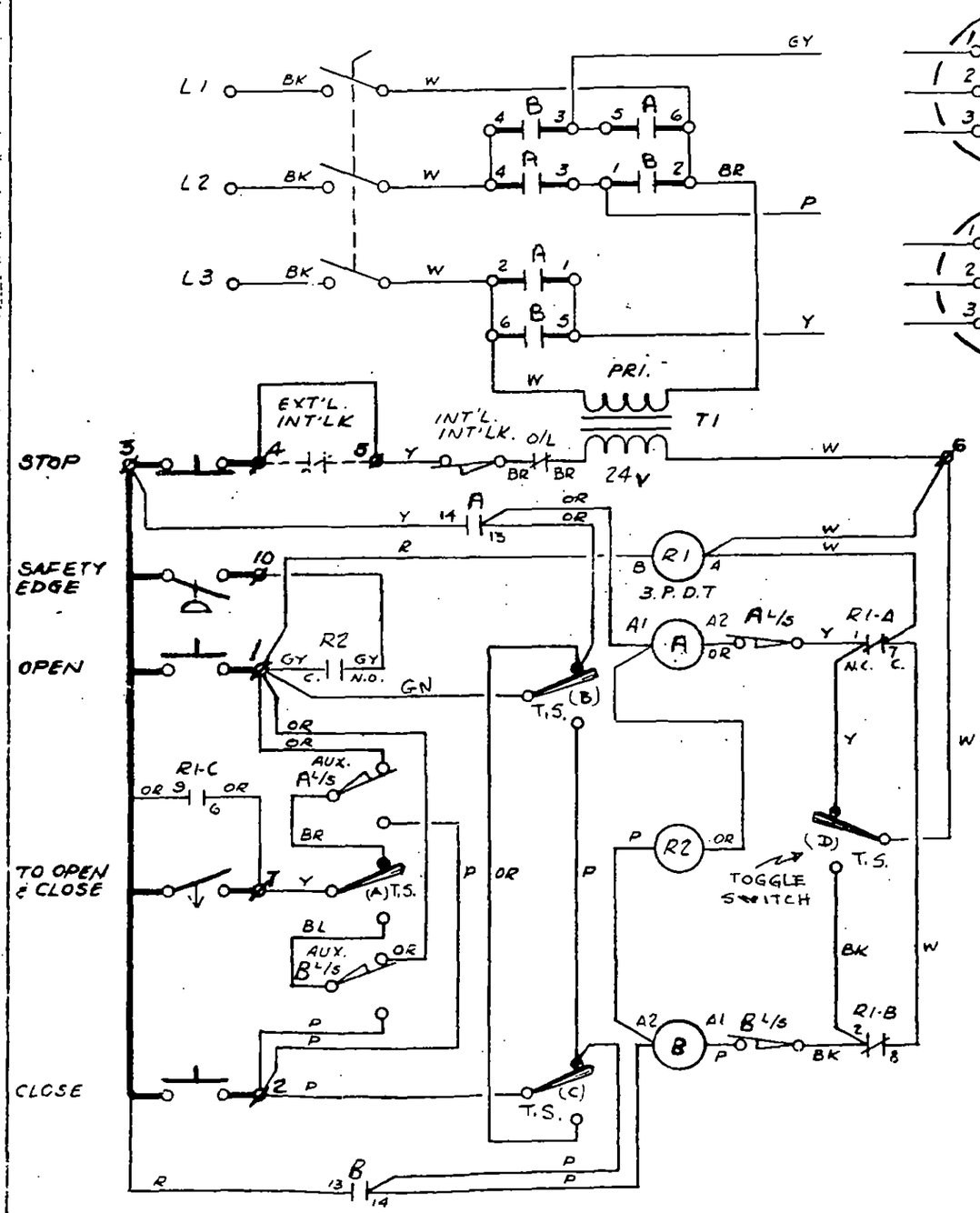
RECORD PRINT OBSOLETE 10-1-93 DATE LINK GATE ENGINEERING

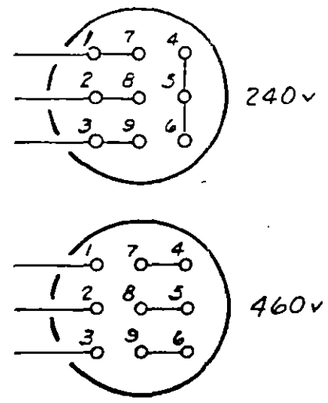
CHANGES MADE FROM U.S. PAT. # 4,132,035

PROJECT:		LINK CONTROLS, INC. 2111 Lakeland Avenue RONKONKOMA, NY 11779 516-467-2501
CUSTOMER:		
ENGR: SIBALIS	CKD: D.S.	SERIAL NO:
EQUIPMENT: SLIDE GATE OPER.		DWG. NO: 1039A
TITLE: 1 Ø, S.G.O.		DATE: MAY 24, 1984 REV C 4-12-85

REV2 - ADD T.D.

1039B

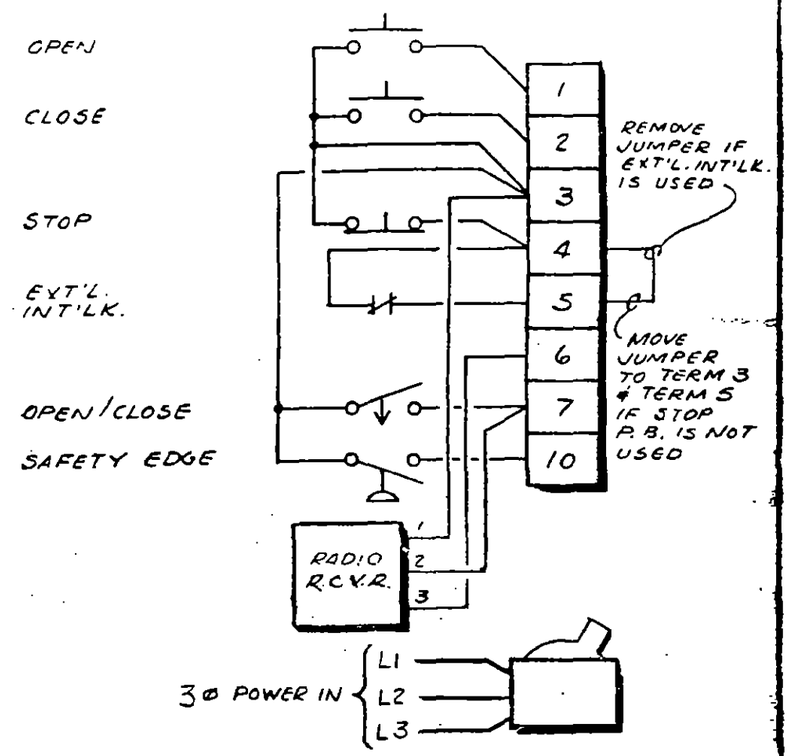




ADJUSTABLE OVERLOAD SETTING		
H.P.	208 240	480
1/3	2.5	1.6
1/2	2.5	1.6
3/4	4.0	2.5
1	4.0	2.5
1 1/2	6.0	4.0
2	6.0	4.0

IMPORTANT!

FIELD WIRING



NOTE TO INSTALLER : READ CAREFULLY

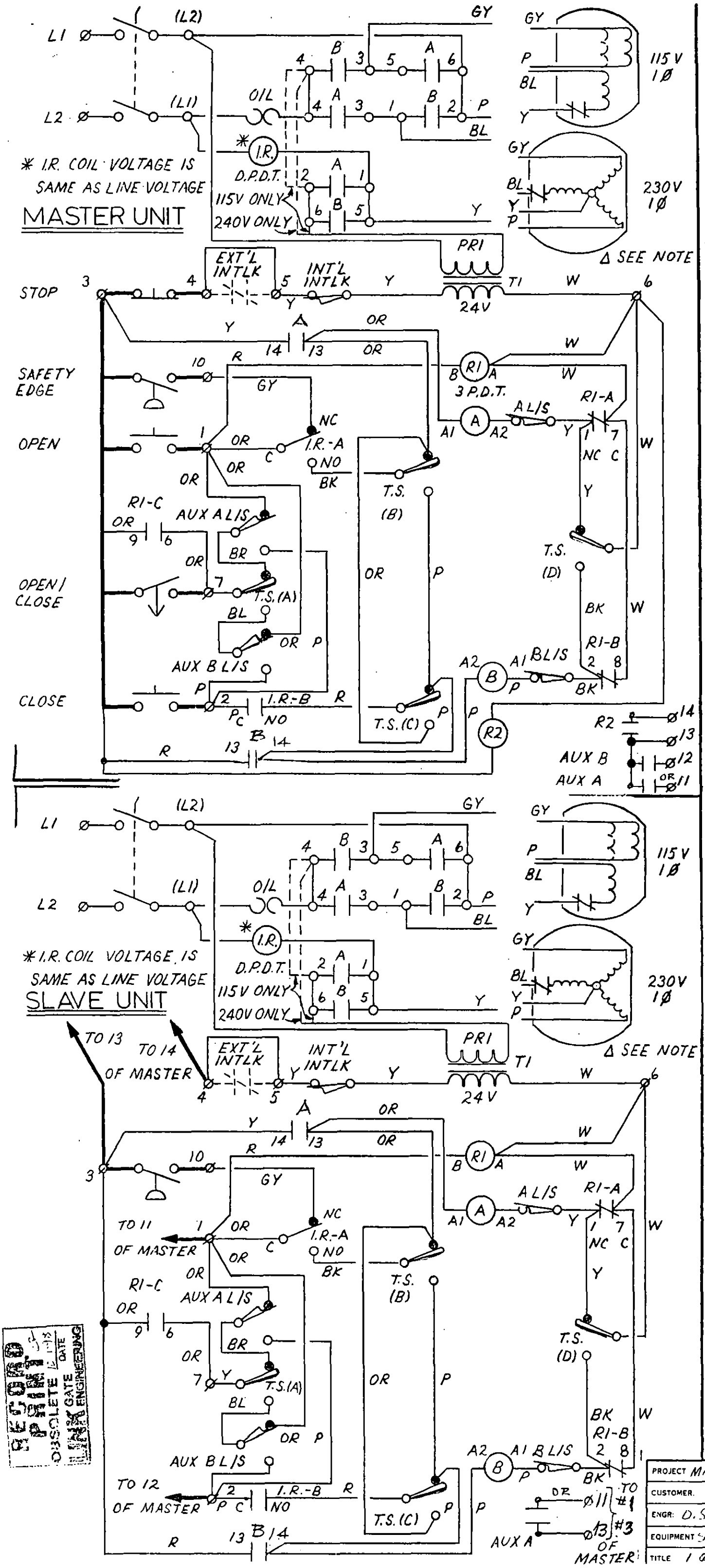
1. TURN POWER SWITCH OFF BEFORE REMOVING ELECTRICAL ENCLOSURE COVER
2. AFTER SETTING THE LIMITS, PUSH THE "OPEN" PUSHBUTTON WHILE THE GATE IS CLOSING. THE GATE SHOULD STOP AND REVERSE DIRECTION. IF IT DOES NOT REVERSE WHILE CLOSING, FLIP THE TOGGLE SWITCH MARKED "OPEN LEFT - OPEN RIGHT" IN THE ELECTRICAL ENCLOSURE.

RECORD PRINT
OBSOLETE 12-1-98 DATE
LINK GATE CONTROLS ENGINEERING

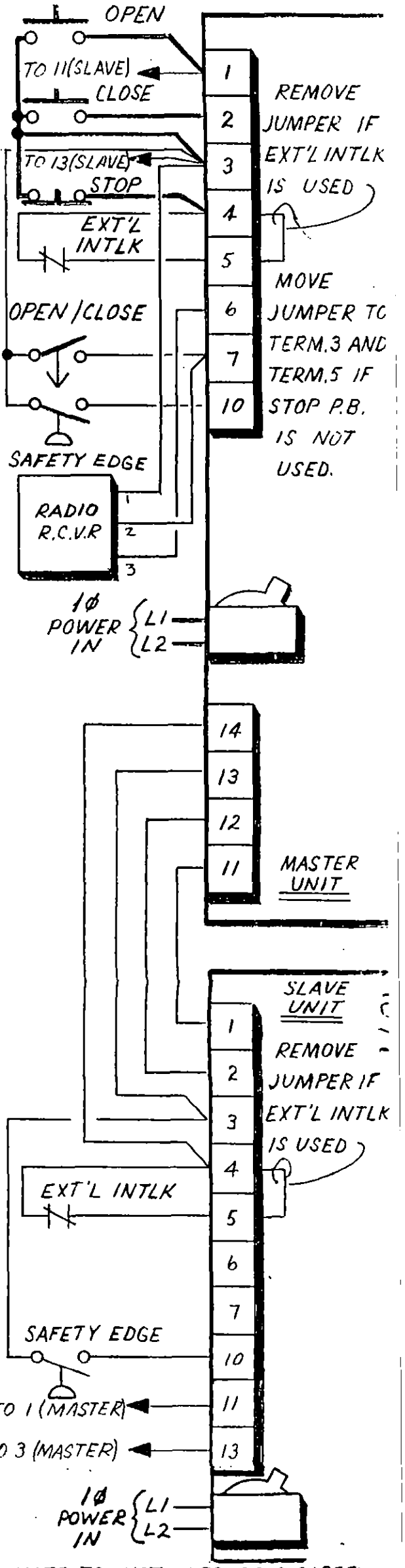
CHANGED WIRE FROM H1 TO T2 FROM GRAY TO ORANGE

U.S. PAT. # 4,134,050

PROJECT:		LINK CONTROLS, INC. 2111 Lakeland Avenue RONKONKOMA, NY 11779 516-467-2501
CUSTOMER:		
ENGR: D.S.	CKD: D.S.	SERIAL NO:
EQUIPMENT: SLIDE GATE OPER.		DWG. NO: 1039B
TITLE: 3 Ø S.G.O.		DATE: JUNE 8, 1984 REV'D



FIELD WIRING



NOTE TO INSTALLER: READ CAREFULLY

1. TURN POWER SWITCH OFF BEFORE REMOVING ELECTRICAL ENCLOSURE COVER
2. AFTER SETTING THE LIMITS PUSH THE "OPEN" PUSHBUTTON WHILE THE IS CLOSING THE GATE SHOULD STOP AND REVERSE DIRECTION IF IT DOES NOT REVERSE WHILE CLOSING FLIP THE TOGGLE SWITCH MARKED OPEN LEFT-OPEN RIGHT IN THE ELECTRICAL ENCLOSURE.

Δ SEE MOTOR WIRING CHART DWG NO. S-100 FOR SPECIFIC 1 Ø MOTOR WIRING

OBSOLETE DATE
LINA GATE ENGINEERING

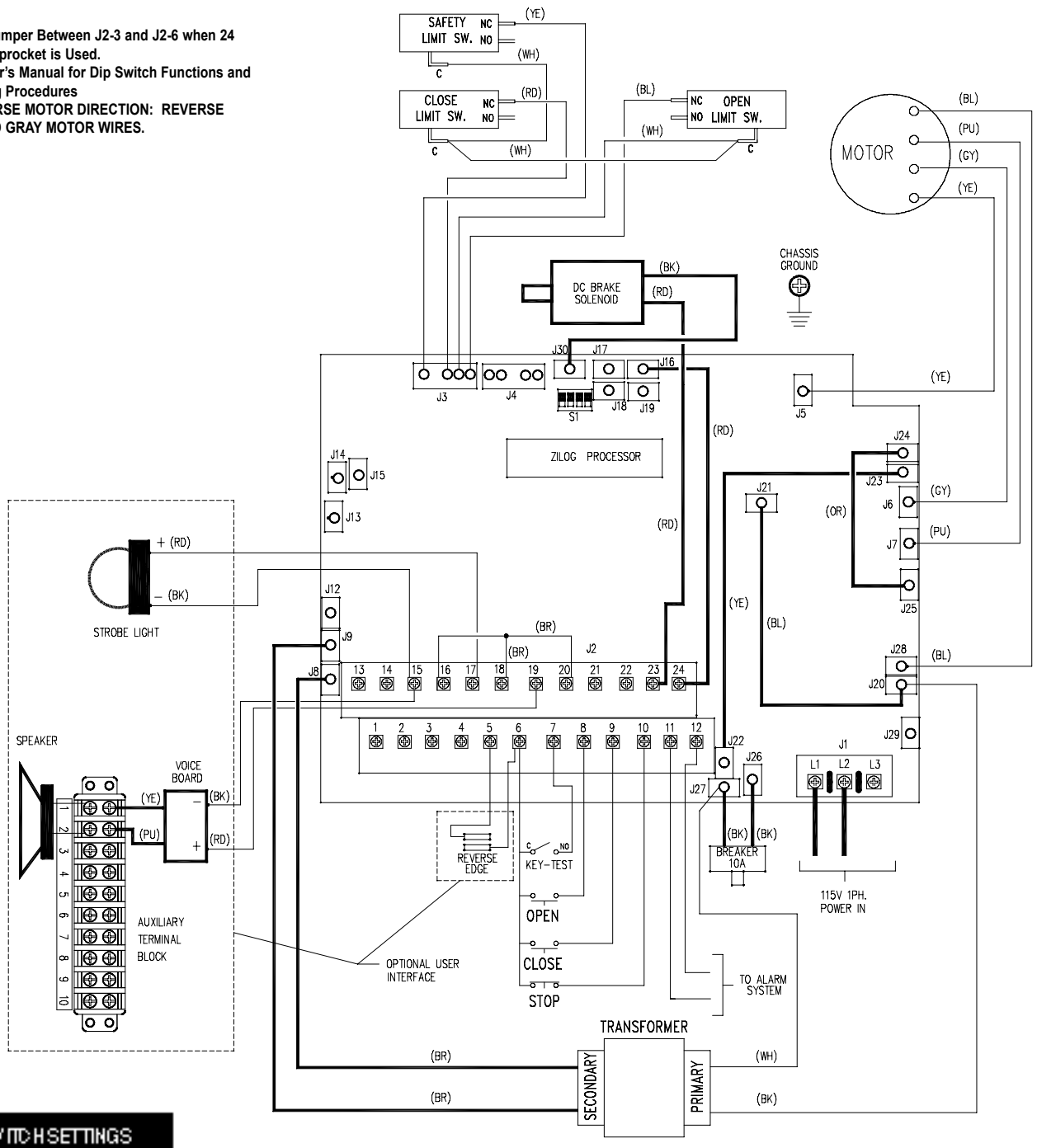
PROJECT MASTER & SLAVE		LINK CONTROLS, INC. 2111 Jericho Turnpike Commack, N.Y. 11725 516-462-2501
CUSTOMER.		
ENGR: D.S	CKD: D.S.	SERIAL NO
EQUIPMENT SLIDE GATE OPERATOR		DWG NO 1011 REV 1
TITLE 1 Ø S.G.O.		DATE. 29 AUG 84

FIRE DOOR OPERATOR

SINGLE PHASE WIRING DIAGRAM W/ BRAKE

1845

Note:
1) Place a Jumper Between J2-3 and J2-6 when 24 Tooth Door Sprocket is Used.
2) See Owner's Manual for Dip Switch Functions and Programming Procedures
3) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES.



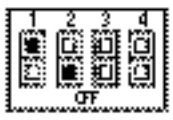
DIP SWITCH SETTINGS

TIMER TO CLOSE

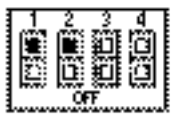
15 SECOND DELAY

30 SECOND DELAY

45 SECOND DELAY

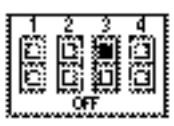


60 SECOND DELAY



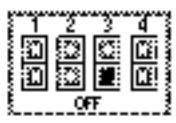
ALARM SYSTEM

N.C. ALARM



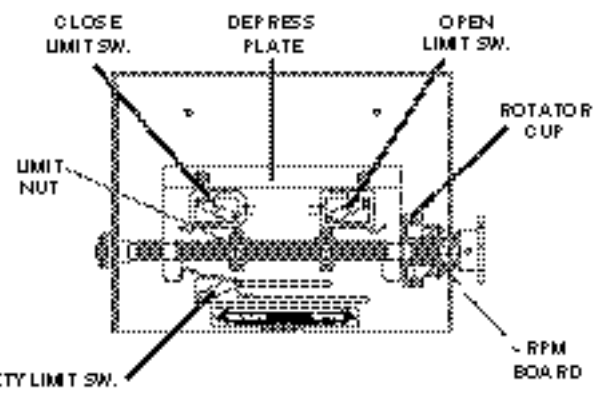
Must set DIP switch #3 (S1,3) to ON.

N.O. ALARM



Must set DIP switch #3 (S1,3) to OFF.

LIMIT SWITCH ADJUSTMENT



IMPORTANT: Refer to installation manual supplied with this operator, for additional instructions.

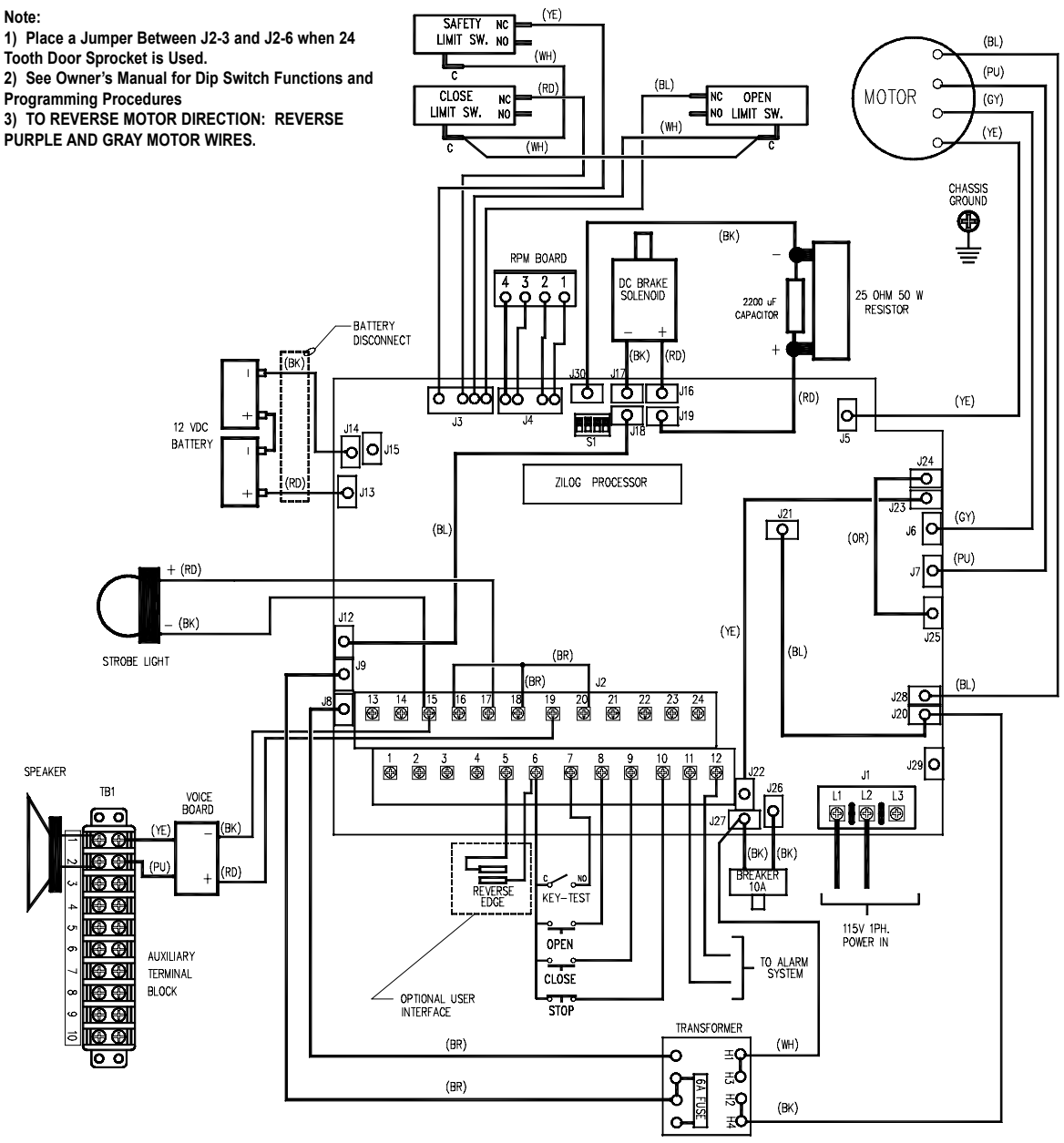
1. To adjust limit nuts depress retaining plate to allow nut to spin freely. After adjustment, release plate and ensure it seats fully in slots of worm nuts.
2. To increase door travel, split nut away from retainer. To decrease door travel, spin limit nut toward actuator.
3. Adjust open limit nut so that door will stop in open position with top bottom of the door even with top of door opening.
4. Repeat Steps 1 and 2 for close open. Adjust close limit nut so that actuator is engaged as door fully seats at the floor.

FIRE DOOR OPERATOR

SINGLE PHASE WIRING DIAGRAM W/ DC BRAKE

1846

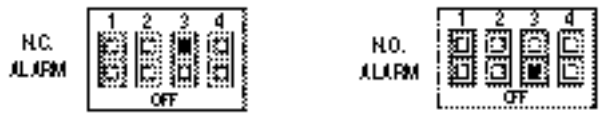
Note:
1) Place a Jumper Between J2-3 and J2-6 when 24 Tooth Door Sprocket is Used.
2) See Owner's Manual for Dip Switch Functions and Programming Procedures
3) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES.



DIP SWITCH SETTINGS

TIMER TO CLOSE

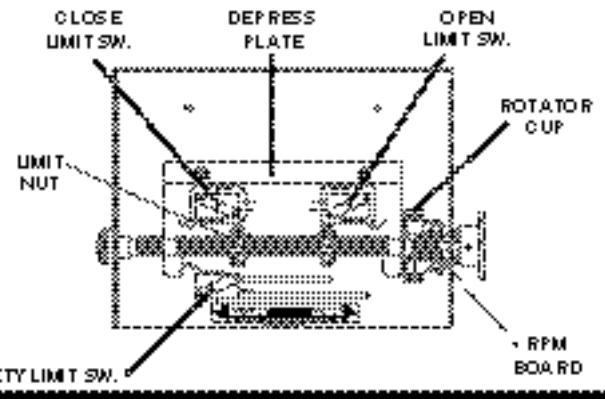
ALARM SYSTEM



Must set DIP switch #3 (S1,3) to ON.

Must set DIP switch #3 (S1,3) to OFF.

LIMIT SWITCH ADJUSTMENT



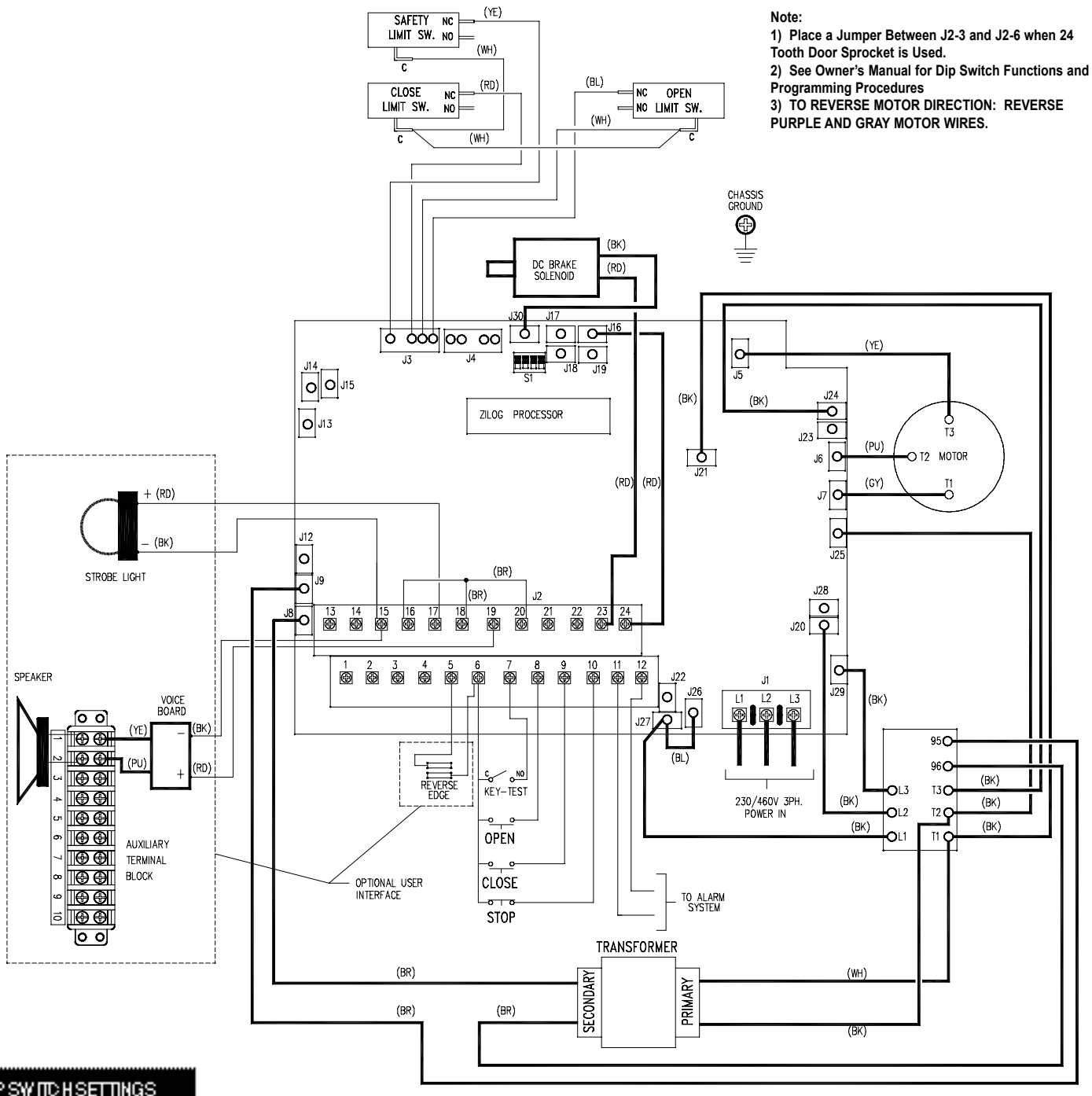
IMPORTANT: Refer to installation manual supplied with this operator, for additional instructions.

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 limit 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.

FIRE DOOR OPERATOR

THREE PHASE WIRING DIAGRAM W/ BRAKE

1849

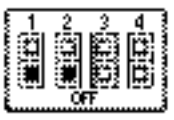


Note:
1) Place a Jumper Between J2-3 and J2-6 when 24 Tooth Door Sprocket is Used.
2) See Owner's Manual for Dip Switch Functions and Programming Procedures
3) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES.

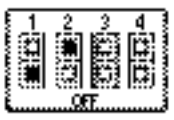
DIP SWITCH SETTINGS

TIMER TO CLOSE

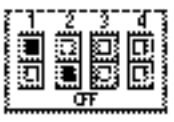
15 SECOND DELAY



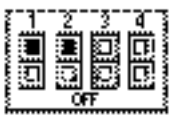
30 SECOND DELAY



45 SECOND DELAY

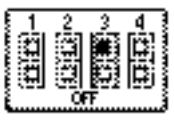


60 SECOND DELAY



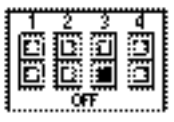
ALARM SYSTEM

N.C. ALARM



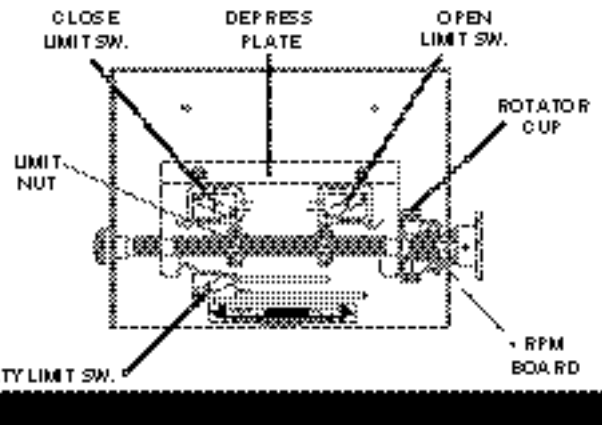
Must set DIPswitch #3 (S1,3) to ON.

N.O. ALARM



Must set DIPswitch #3 (S1,3) to OFF.

LIMIT SWITCH ADJUSTMENT



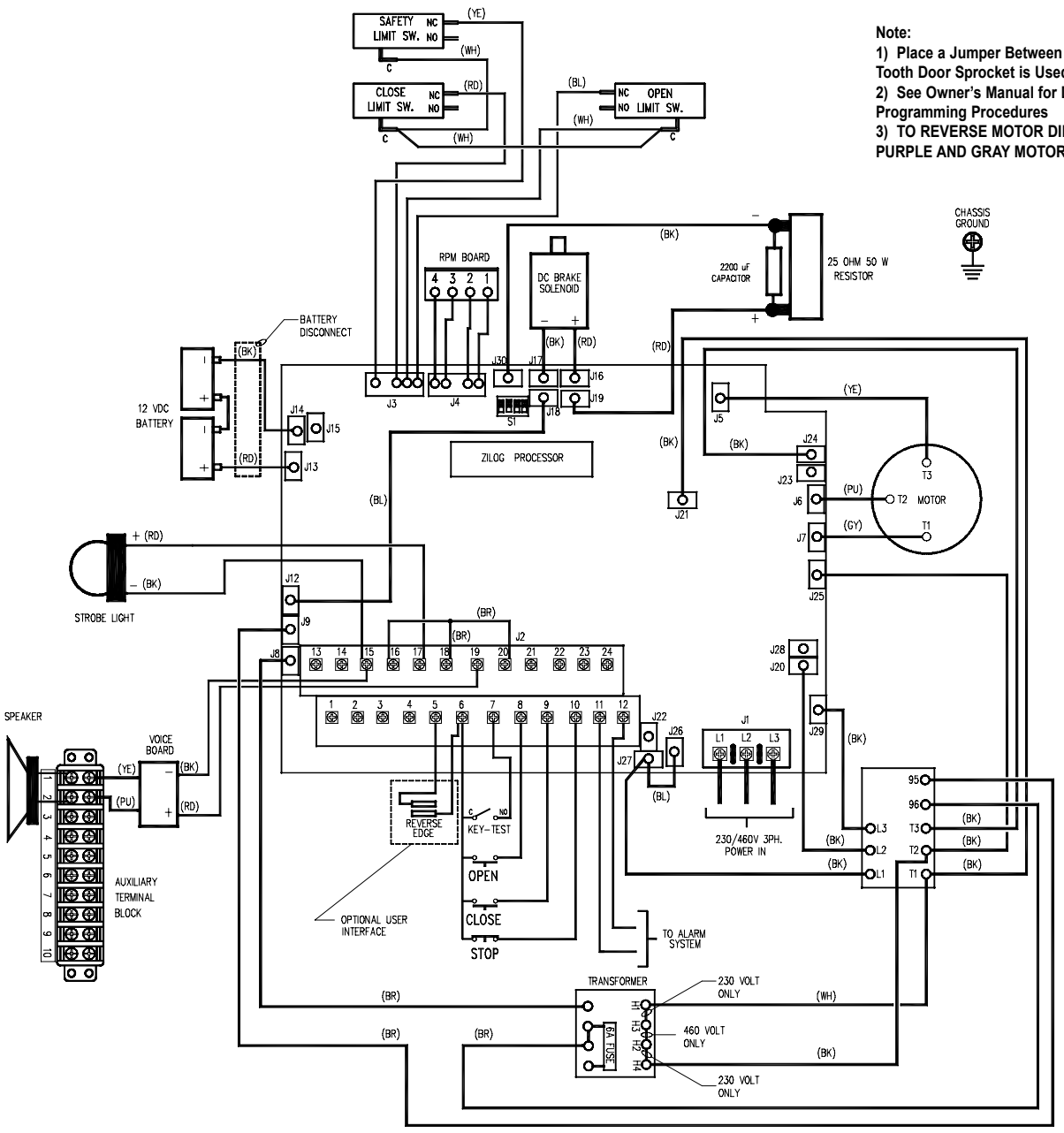
IMPORTANT! Refer to installation manual supplied with this operator, for additional instructions.

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 limit 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.

FIRE DOOR OPERATOR

THREE PHASE WIRING DIAGRAM W/ BRAKE

1850



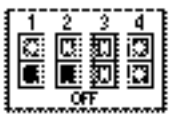
Note:

1) **Place a Jumper Between J2-3 and J2-6 when 24 Tooth Door Sprocket is Used.**
2) **See Owner's Manual for Dip Switch Functions and Programming Procedures**
3) **TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES.**

DIP SWITCH SETTINGS

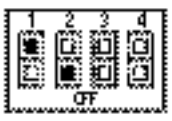
TIMER TO CLOSE

15 SECOND DELAY

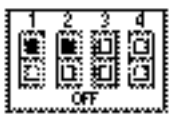


30 SECOND DELAY

45 SECOND DELAY

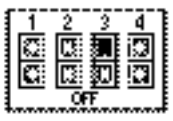


60 SECOND DELAY



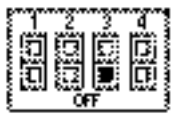
ALARM SYSTEM

N.C. ALARM



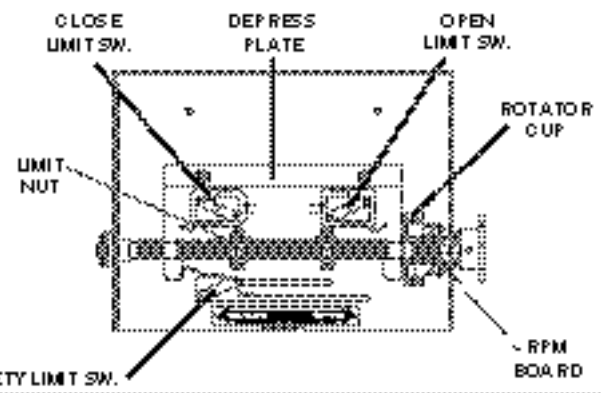
Must set DIPswitch #3 (S1,3) to ON.

N.O. ALARM



Must set DIPswitch #3 (S1,3) to OFF.

LIMIT SWITCH ADJUSTMENT



IMPORTANT: Refer to installation manual supplied with this operator, for additional instructions.

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 limit nuts.
2. To increase door travel, spin nut away from rotator. To decrease door travel, spin limit nut toward actuator.
3. Adjust open limit nut so that door will stop in open position with top 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.

P/N: 40-17934C.EPS
DESCRIPTION: COVER LABEL ARTWORK, (AC) FDO 3 PHASE W/ DC BRAKE
MATERIAL & ARTWORK: SEE SPECIFICATION DRAWING 40-17934

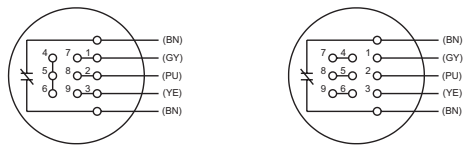
FIRE DOOR OPERATOR

THREE PHASE WIRING DIAGRAM W/ BRAKE (FDOA)

1936

230V - 3 PH
MOTOR CONNECTION

460V - 3 PH
MOTOR CONNECTION

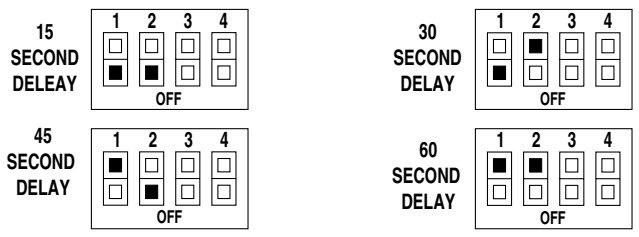


INTERNAL MOTOR CONNECTIONS

Note:
1) Place a Jumper Between J2-3 and J2-6 when 24 Tooth Door Sprocket is Used.
2) See Owner's Manual for Dip Switch Functions and Programming Procedures
3) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES.
4) For B2 Wiring Remove One End of Jumper From J2-3 and Connect to J2-16.

DIP SWITCH SETTINGS

TIMER TO CLOSE

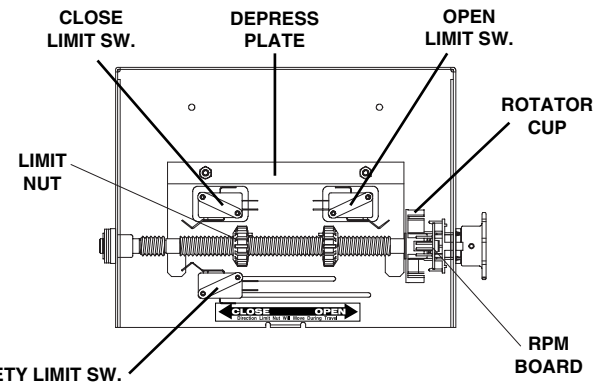


ALARM SYSTEM

Must set DIP switch #3 (S1,3) to ON.

Must set DIP switch #3 (S1,3) to OFF.

LIMIT SWITCH ADJUSTMENT



IMPORTANT: Refer to installation manual supplied with this operator, for additional instructions.

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.

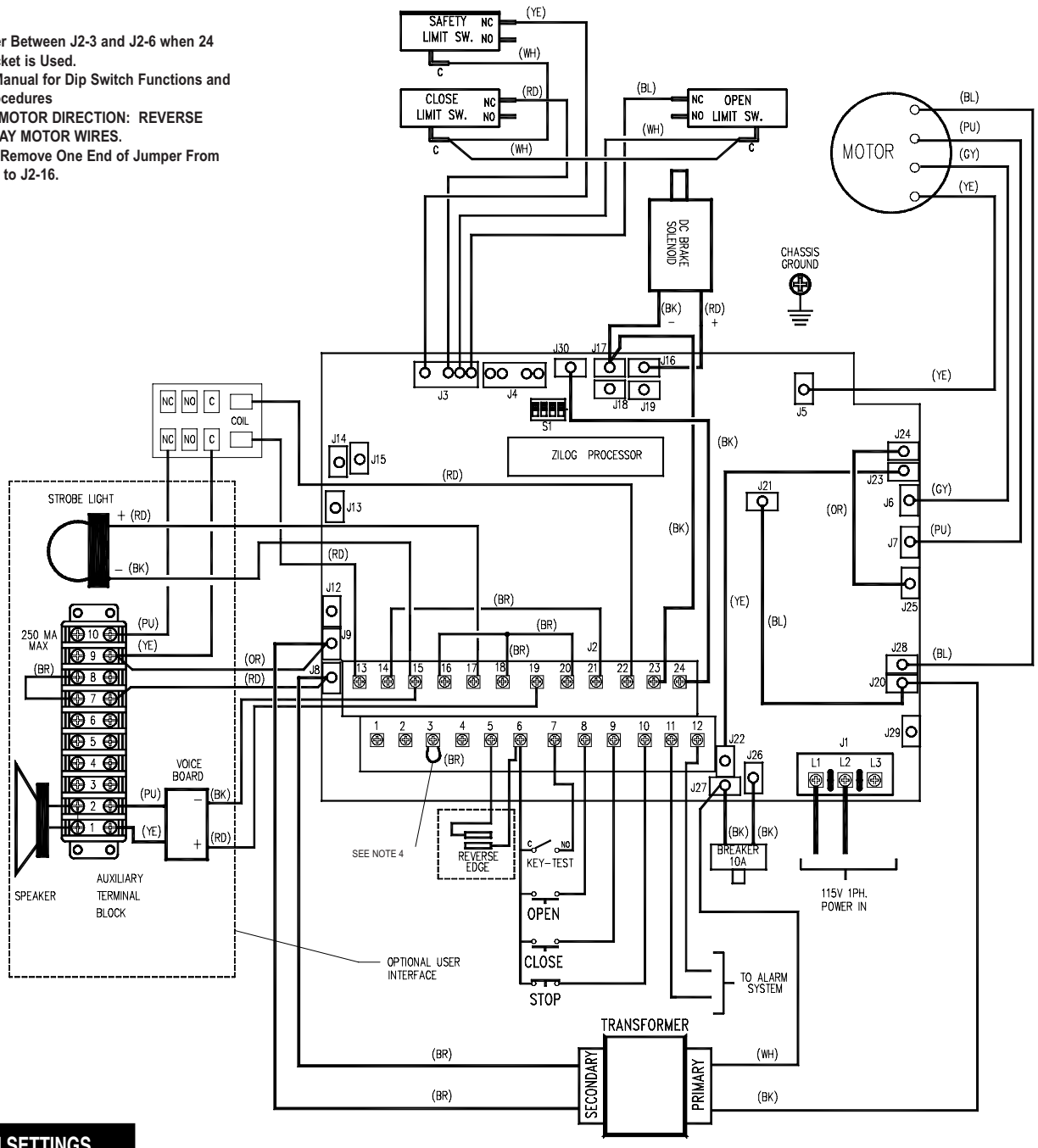
P/N: 40-17936C.EPS
DESCRIPTION: COVER LABEL ARTWORK, (AC) FDO 1 PHASE W/ DC BRAKE
MATERIAL & ARTWORK: SEE SPECIFICATION DRAWING 40-17936

FIRE DOOR OPERATOR

SINGLE PHASE WIRING DIAGRAM W/ BRAKE (FDOA)

1934

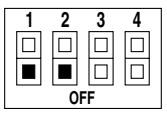
Note:
1) Place a Jumper Between J2-3 and J2-6 when 24 Tooth Door Sprocket is Used.
2) See Owner's Manual for Dip Switch Functions and Programming Procedures
3) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES.
4) For B2 Wiring Remove One End of Jumper From J2-3 and Connect to J2-16.



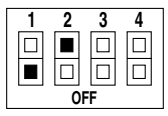
DIP SWITCH SETTINGS

TIMER TO CLOSE

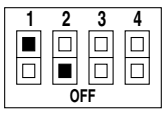
15 SECOND DELAY



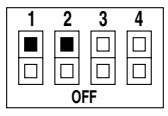
30 SECOND DELAY



45 SECOND DELAY

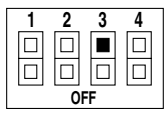


60 SECOND DELAY



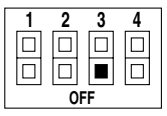
ALARM SYSTEM

N.C. ALARM



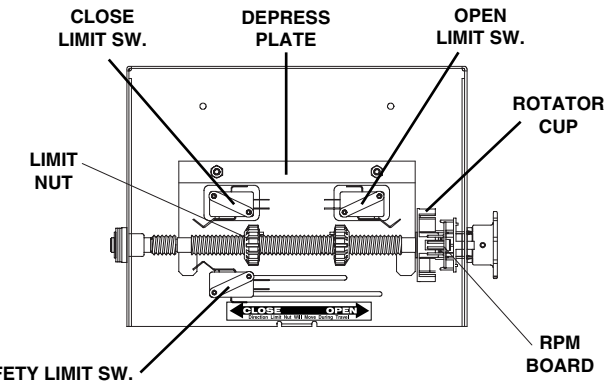
Must set DIP switch #3 (S1,3) to ON.

N.O. ALARM



Must set DIP switch #3 (S1,3) to OFF.

LIMIT SWITCH ADJUSTMENT



IMPORTANT: Refer to installation manual supplied with this operator, for additional instructions.

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.

FDOA OPERATORS							
PROGRAMMING REVISION NUMBER	**BRAKE TYPE**	**WIRING TYPE**	**REPLACEMENT MANUAL**	**REPLACEMENT CHIP**	**REPLACEMENT BOARD**	**WIRING DIAGRAM 1 SINGLE PH**	**WIRING DIAGRAM THREE PH**
06-FDOA-100	AC	B2	01-13708 REV E	K29-FDOA-105	K79-13493A-105	1845 REV C	1849 REV C
06-FDOA-101							
06-FDOA-102							
06-FDOA-103							
06-FDOA-104							
06-FDOA-105	DC		01-13708 REV J			1845 REV E	1849 REV E
06-FDOA-200		C2/B2	01-17933 REV D	K29-FDOA-300	K79-13493A-300	1934 REV A	1936 REV C
06-FDOA-300							

FDOB OPERATORS							
PROGRAMMING REVISION NUMBER	**BRAKE TYPE**	**WIRING TYPE**	**REPLACEMENT MANUAL**	**REPLACEMENT CHIP**	**REPLACEMENT BOARD**	**WIRING DIAGRAM 1 SINGLE PH**	**WIRING DIAGRAM THREE PH**
06-FDOA-100	DC	B2	01-13708 REV J	K29-FDOB-104	K79-13493B-104	1846 REV C	1850 REV C
06-FDOA-101							
06-FDOA-102							
06-FDOA-103							
06-FDOA-104							
06-FDOA-200		C2/B2	01-17933 REV D	K29-FDOB-300	K79-13493B-300	1935 REV B	1937 REV B
06-FDOA-300							

CHAMBERLAIN
LiftMaster
PROFESSIONAL

Chain Tensioner Kit
For Models H, J, and HJ
71-6023

APPLICATION REQUIREMENTS:
These instructions are applicable for H, J and HJ operators.

INSTALLATION INSTRUCTIONS

Installation of Chain Tensioner Kit:

1. Safely secure the door per the door manufacturer's maintenance instructions, disconnect the drive chain running from the operator drive sprocket to the door sprocket.

2. Unscrew set screws from spocket on output shaft and slide off sprocket.

3. Slide on the shaft collar then chain tensioner to output shaft.

4. Attach the other end of chain tensioner to door shaft and slide shaft collar on door shaft to hold tensioner in place.

5. Put the sprocket back on output shaft and tighten.

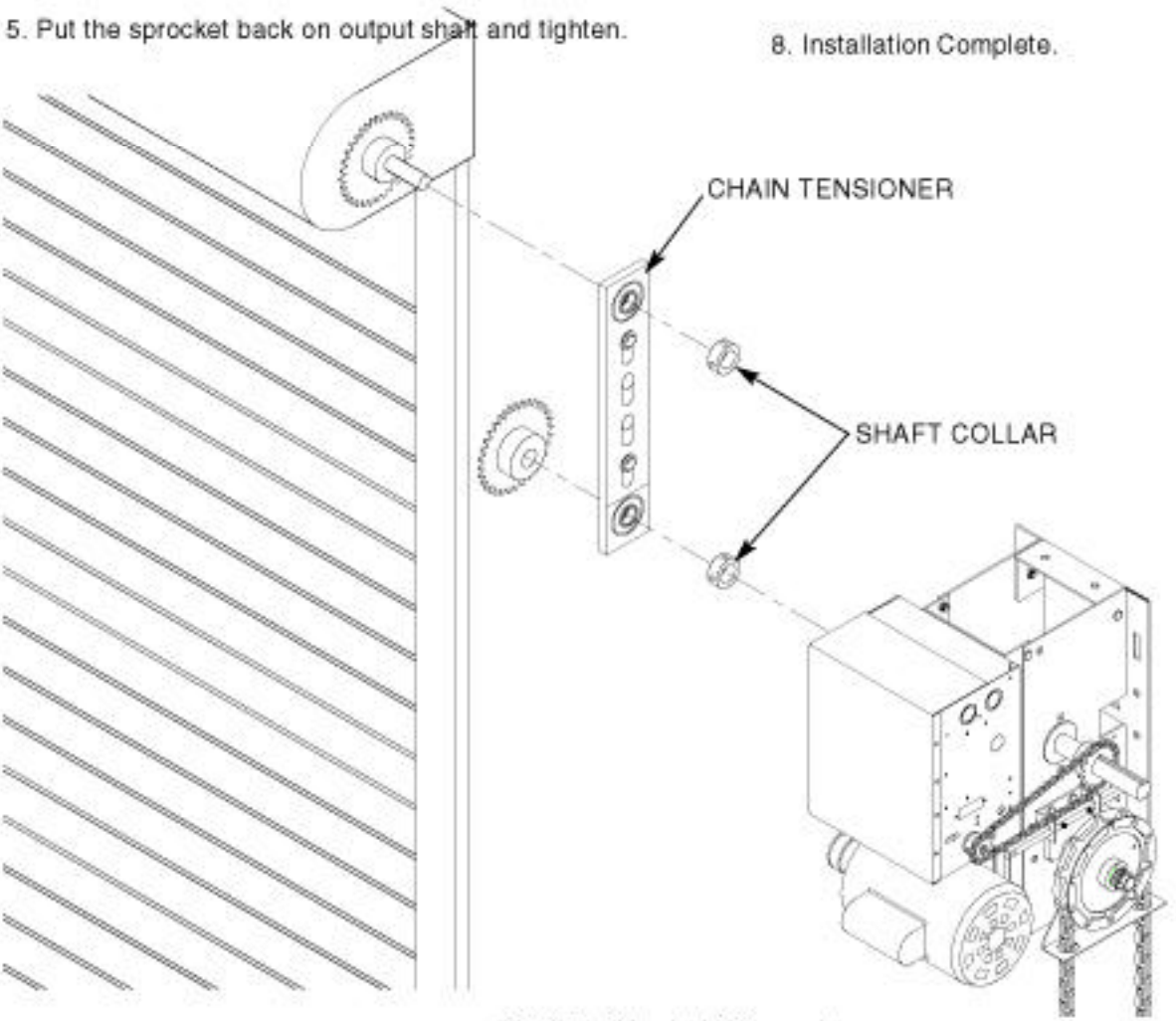
WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.

6. Connect chain back around the sprocket you removed it from.

7. Once the chain tensioner is in place, tighten the adjustment screws located on the chain tensioner. This will lock the tensioner in place and maintain desired chain tension between the operator drive sprocket and the door sprocket.

8. Installation Complete.



Lift-Master
The Professional Line

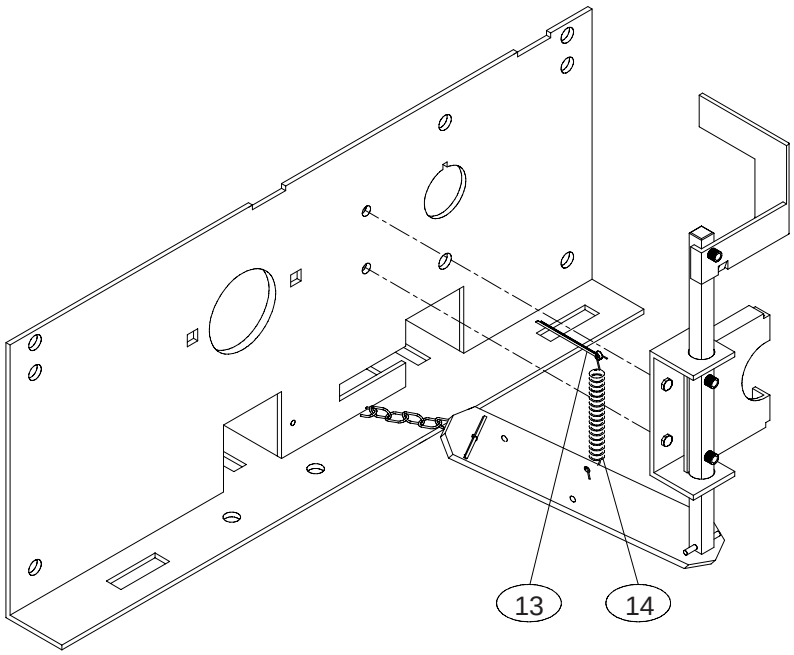
K75-12560
LH Disconnect Assembly Service Kit for Model H OR HJ Operators

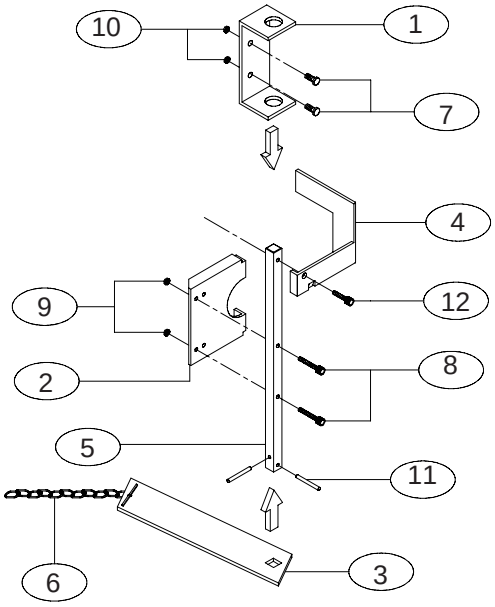
APPLICATION REQUIREMENTS:

Replacement of a Left Hand Disconnect Assembly and/or its components for a Model H or HJ Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	10-10707	Disconnect Support Bracket	1
2	10-10708	Yoke	1
3	10-10875	Disconnect Lever	1
4	10-10898-L	Interlock Switch Actuator	1
5	11-10878	Disconnect Shaft	1
6	19-8A-12	12 ft. Of Sash Chain	1
7	82-HN25-12	1/4-20 x 3/4 HEX HD CAP Screw	2
8	82-SH10-14	Screw 10-32 x 7/8”	2
9	84-FN-10	Serrated Flange Nut, #10-32	2
10	84-FN-25	Nut, 1/4-20 Serrated Flange	2
11	86-RP04-100	Roll Pin 1/8 x 1”	2
12	82-WS08-06T	Screw 8-32 x 3/8” slot	1
13	86-CP05-108	Cotterpin 5/32” x 1 1/2”	1
14	18-11007	Spring 2 1/2” x .312”	1





INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

NOTE: Refer to the Owner’s Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING ASSEMBLY:

Remove the two rollpins holding the disconnect lever in place. Remove the two 10-32 screws attaching the yoke to the disconnect shaft. Remove the yoke and set it aside. Slide the disconnect shaft up and out of the disconnect support bracket. Remove the disconnect lever and chain from the Motor Frame. Remove the disconnect support bracket by removing the two 1/4-20 cap screws.

INSTALLING NEW ASSEMBLY:

Attach the interlock switch actuator to the disconnect shaft with a 10-32 screw. To complete the installation, follow the steps outlined above in the reverse order, referring to the illustration and the Owner’s Manual if necessary. Restoring power completes the installation.

Lift-Master
The Professional Line

Electrical Box Assembly Replacement Kit for

Model H, J, OR HJ Solid State Operators

APPLICATION REQUIREMENTS:

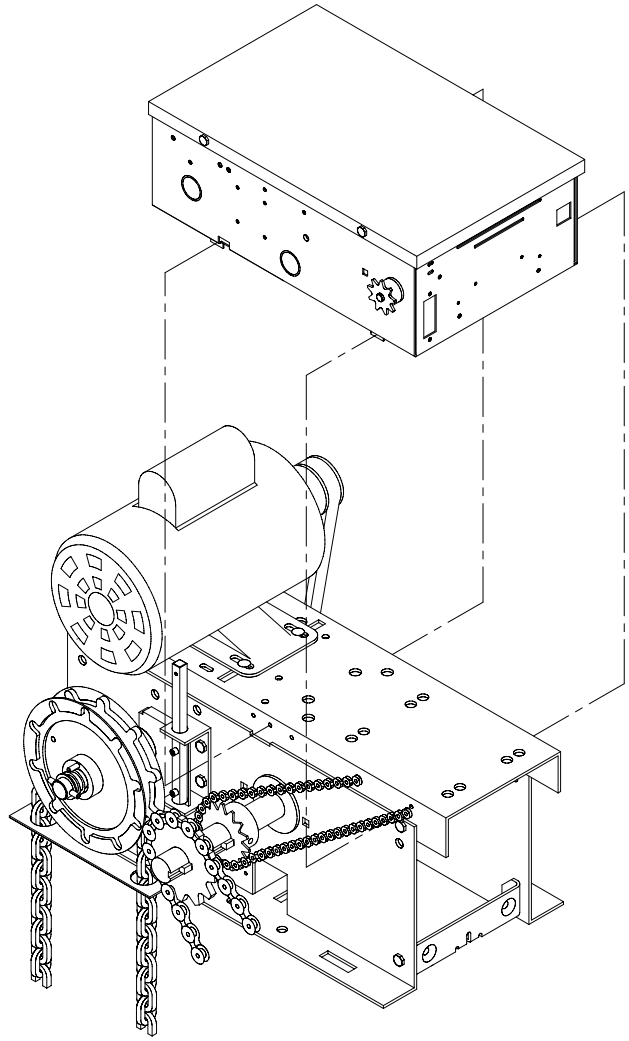
Replacement of Electrical Box and/or its components for a Solid State Control Style Operator.

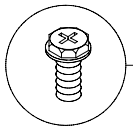
WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.





NOTE: ATTACH ELECTRICAL BOX TABS TO OUTSIDE OF MOTOR FRAME WITH SCREWS PROVIDED.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:

Remove the master link from the limit chain, remove the chain and place it aside. Disconnect the motor wires that pass into the electrical box.

Remove the four flanged hex screws securing the electrical box tabs to the motor frame and carefully remove the old box.

MOUNTING NEW BOX:

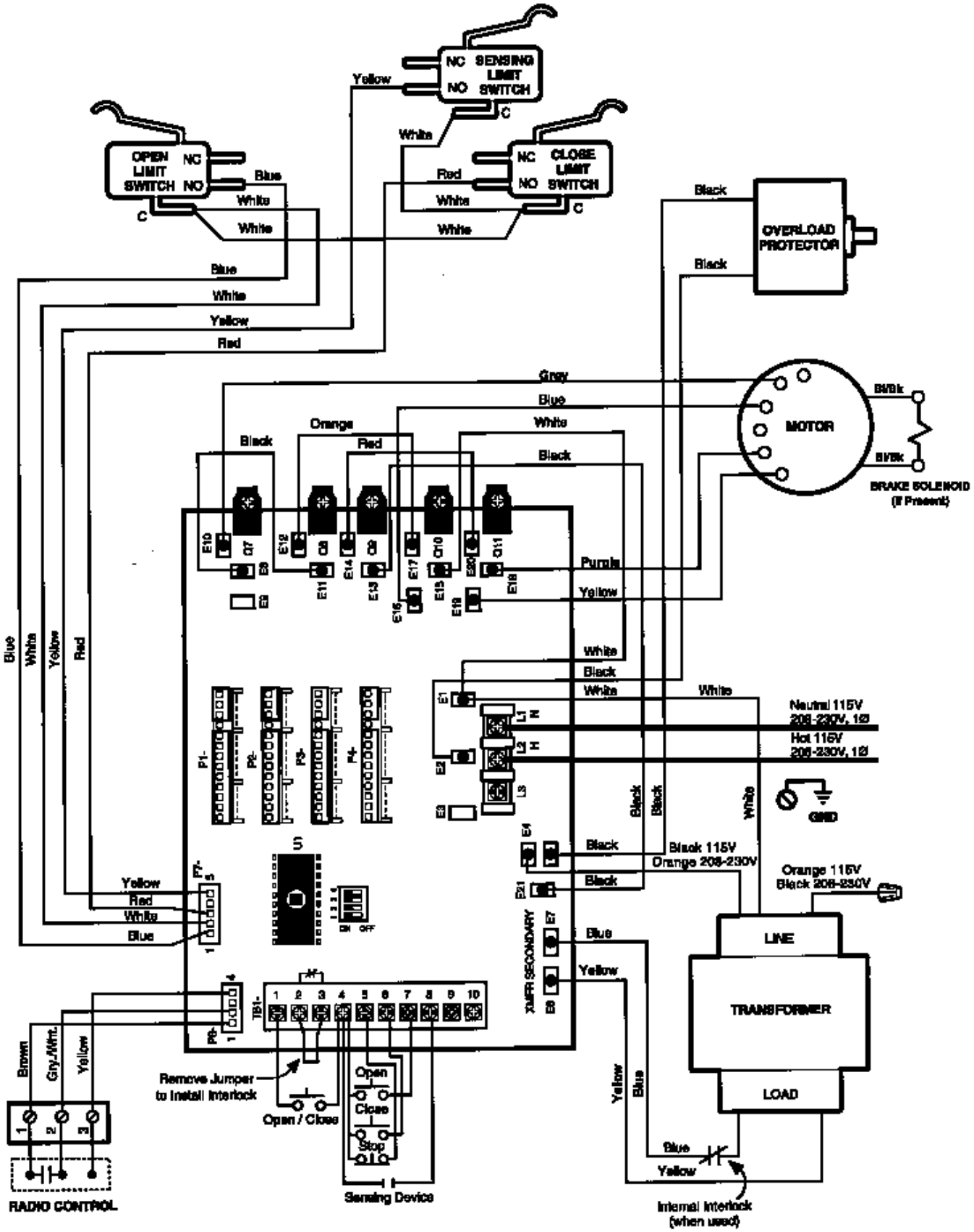
Ensure proper Right/Left handing of the Electrical Box Limit Sprocket.

Place the new electrical box on the motor frame, aligning the slotted tabs on the box with their corresponding holes on the motor frame (see illustration). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

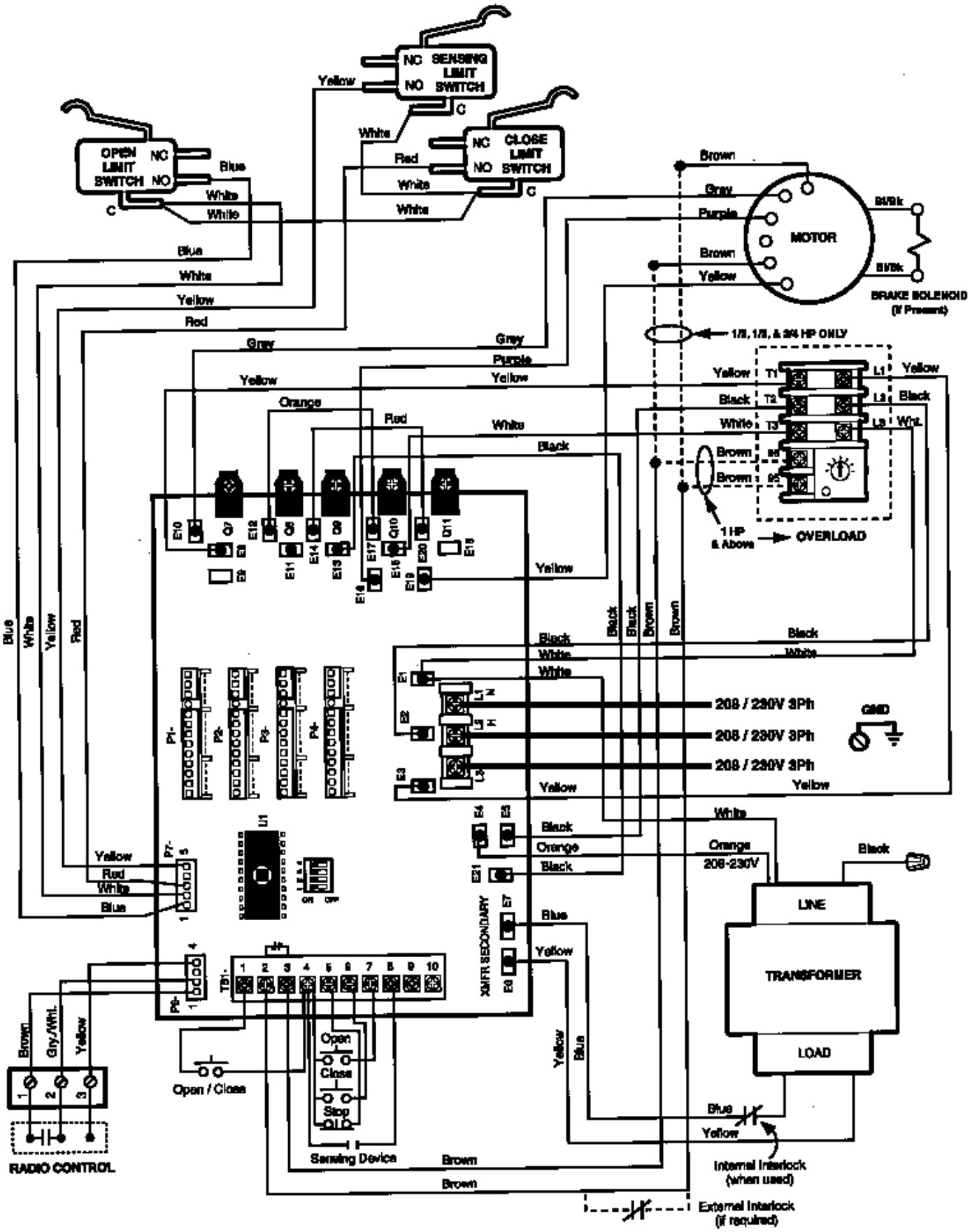
Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electical box to the motor frame by tightening the hex screws.

Reconnect the motor wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and replace the electrical box cover. Restoring power

SINGLE PHASE WIRING DIAGRAM SOLID STATE



THREE PHASE WIRING DIAGRAM SOLID STATE



01-12517B

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The Professional Line

Electrical Box Assembly Replacement Kit for

Model H, J, OR HJ Electro-Mechanical Operators

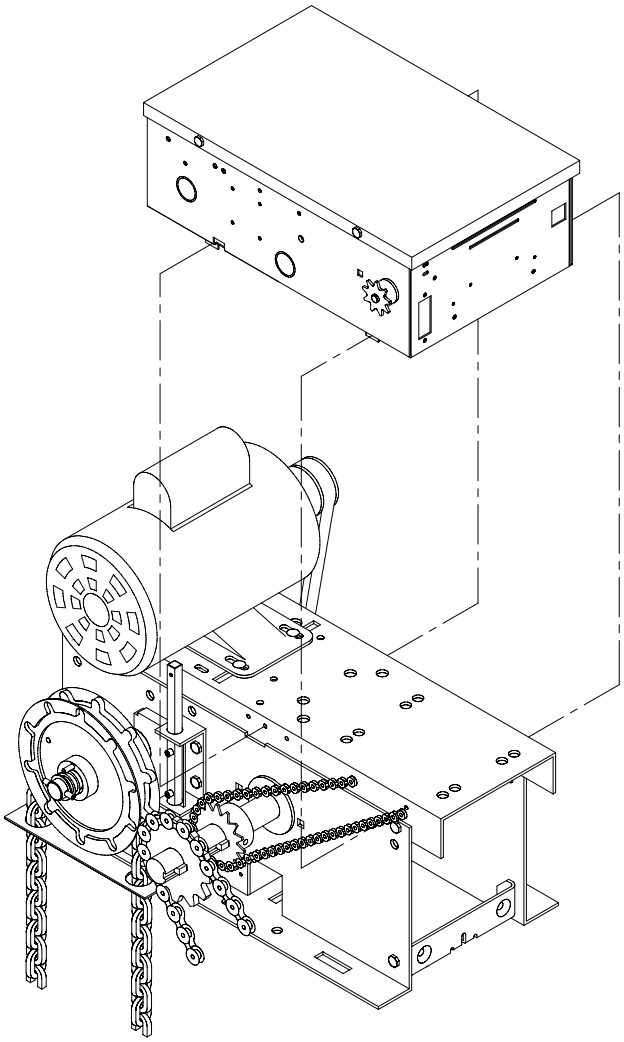
APPLICATION REQUIREMENTS:
Replacement of Electrical Box and/or its components for a Contactor-Relay Style Operator.

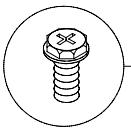
WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.





NOTE: ATTACH ELECTRICAL BOX TABS TO OUTSIDE OF MOTOR FRAME WITH SCREWS PROVIDED.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and place it aside. Disconnect the motor wires that pass into the electrical box.

Remove the four flanged hex screws securing the electrical box tabs to the motor frame and carefully remove the old box.

MOUNTING NEW BOX:
Ensure proper Right/Left handing of the Electrical Box Limit Sprocket.

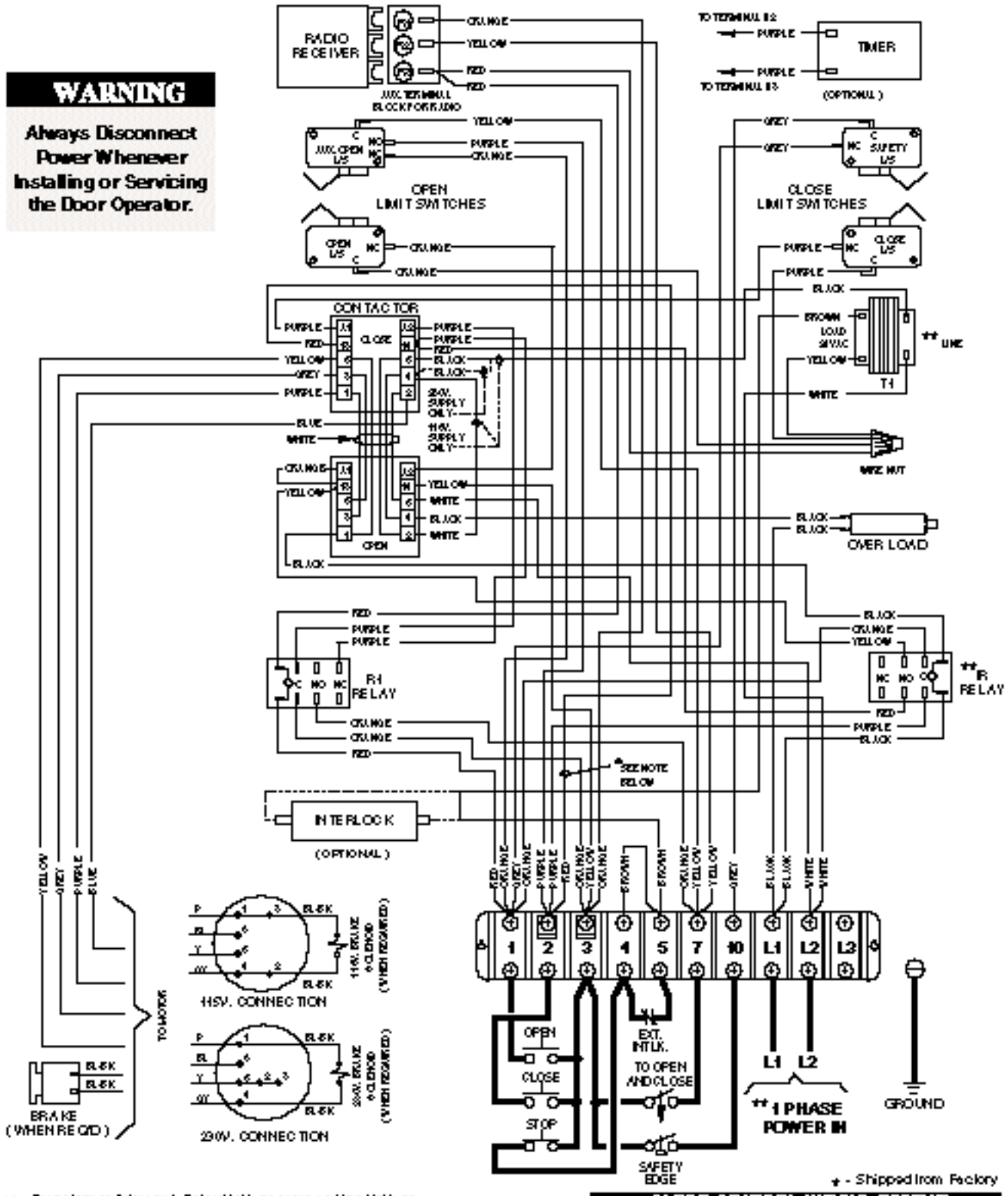
Place the new electrical box on the motor frame, aligning the slotted tabs on the box with their corresponding holes on the motor frame (see illustration). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electical box to the motor frame by tightening the hex screws.

Reconnect the motor wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and replace the electrical box cover. Restoring power completes the installation.

SINGLE PHASE WIRING DIAGRAM

1742-1



** - Transformer Primary & Relay Voltage same as Line Voltage.

* - Shipped from Factory

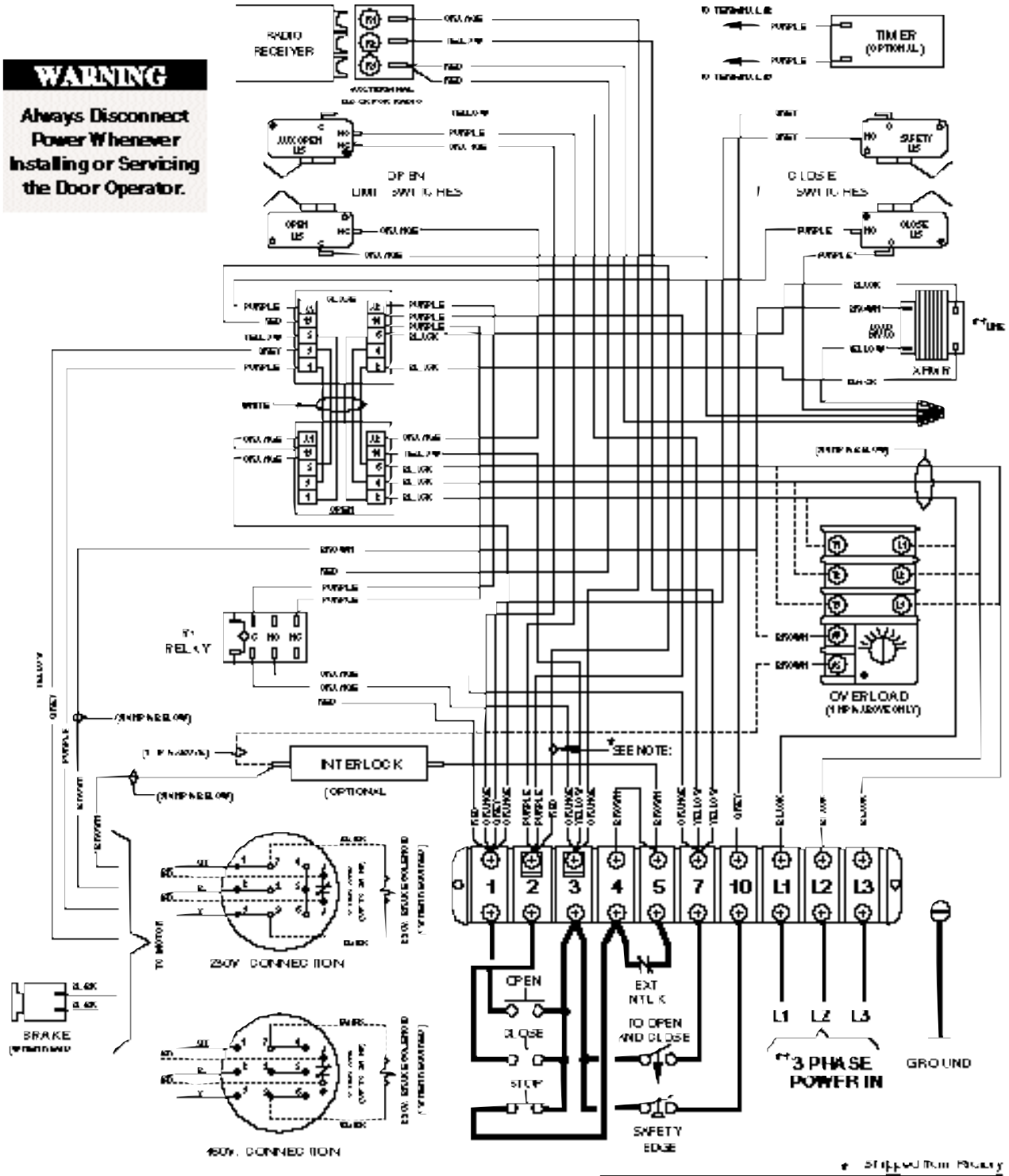
TO REVERSE MOTOR DIRECTION
INTERCHANGE PURPLE & GRAY WIRES.

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

THREE PHASE WIRING DIAGRAM 1742-3



01-12568B

Printed in Mexico

Lift-Master
The Professional Line

Electrical Box Assembly Replacement Kit for Model "H" & "J" Operators

APPLICATION REQUIREMENTS:
Replacement of Electrical Box and/or its components for a Grey Line Model H & J Operators.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING MOTOR WIRES/CONDUIT:
Disconnect the Motor wires from the electrical box and the motor. Discard Motor wires, conduit and connectors.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and discard.

Remove the four flanged hex screws securing the electrical box tabs to the motor frame and discard, carefully remove electrical box.

MODIFYING EXISTING MOTOR PLATE:
Locate the #10-32 Tapped Hole 1-3/4" from the end of the motor mounting frame. Drill a #21 Drill .159" Dia. Hole 7-3/4" from the hole just located. Repeat same steps on opposite side. (See Figure 1).

MOUNTING NEW ELECTRICAL BOX:
Place the electrical box on the motor plate, aligning the tabs on the box with the holes just located in the step above (See Figures 1 & 2). Attach the new electrical box using the (4) screws provided. Do not tighten screws at this time.

Install the new limit chain and secure with master link. Slide the electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the electrical box to the new motor plate by tightening the hex screws.

INSTALL NEW MOTOR WIRES/CONDUIT:
Connect the new conduit with the new motor wires to the motor and the electrical box. Be sure that the end with the stripped ends is going to the motor. Refer to the wiring diagrams supplied for connections. It may be necessary to remove unused wires from the conduit assembly depending on if a brake is used and phase.

FIGURE 1

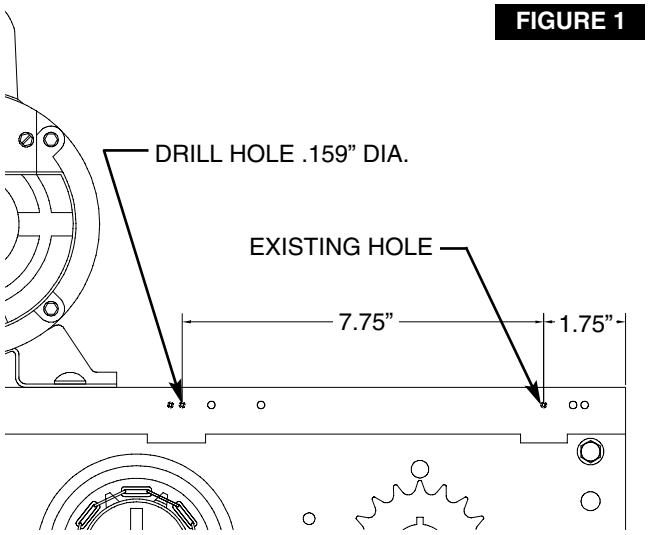
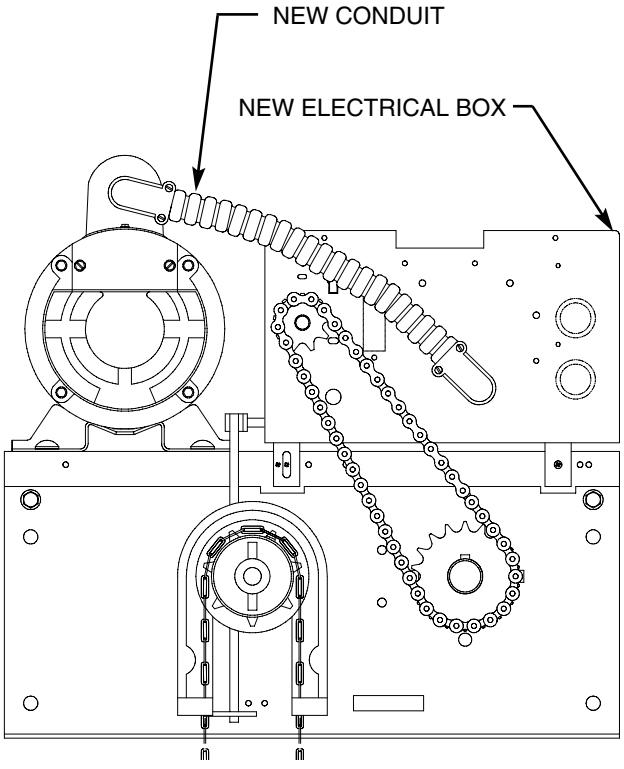


FIGURE 2



Electrical Box Assembly Replacement Kit for Model "H" & "J" Operators

APPLICATION REQUIREMENTS:

Replacement of Electrical Box and/or its components for a Grey Line Model H & J Operators.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING MOTOR WIRES/CONDUIT:

Disconnect the Motor wires from the electrical box and the motor. Discard Motor wires, conduit and connectors.

REMOVE EXISTING BOX:

Remove the master link from the limit chain, remove the chain and discard.

Remove the four flanged hex screws securing the electrical box tabs to the motor frame and discard, carefully remove electrical box.

MODIFYING EXISTING MOTOR PLATE:

Locate the #10-32 Tapped Hole 1-3/4" from the end of the motor mounting frame. Drill a #21 Drill .159" Dia. Hole 7-3/4" from the hole just located. Repeat same steps on opposite side. (See Figure 1).

MOUNTING NEW ELECTRICAL BOX:

Place the electrical box on the motor plate, aligning the tabs on the box with the holes just located in the step above (See Figures 1 & 2). Attach the new electrical box using the (4) screws provided. Do not tighten screws at this time.

Install the new limit chain and secure with master link. Slide the electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the electrical box to the new motor plate by tightening the hex screws.

INSTALL NEW MOTOR WIRES/CONDUIT:

Connect the new conduit with the new motor wires to the motor and the electrical box. Be sure that the end with the stripped ends is going to the motor. Refer to the wiring diagrams supplied for connections. It may be necessary to remove unused wires from the conduit assembly depending on if a brake is used and phase.

FIGURE 1

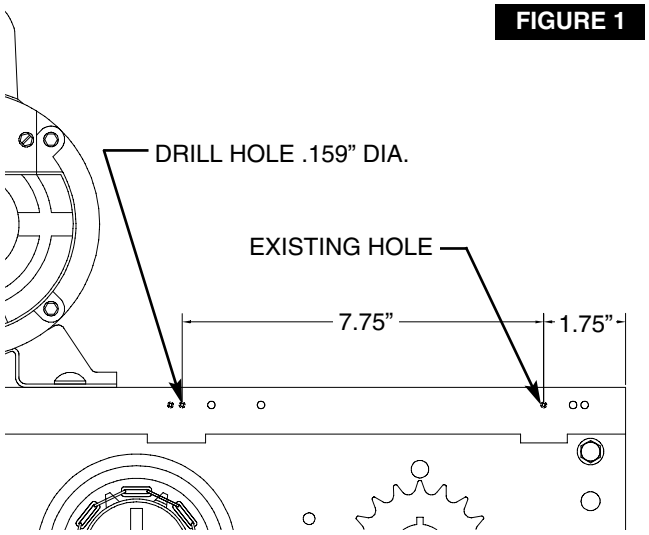
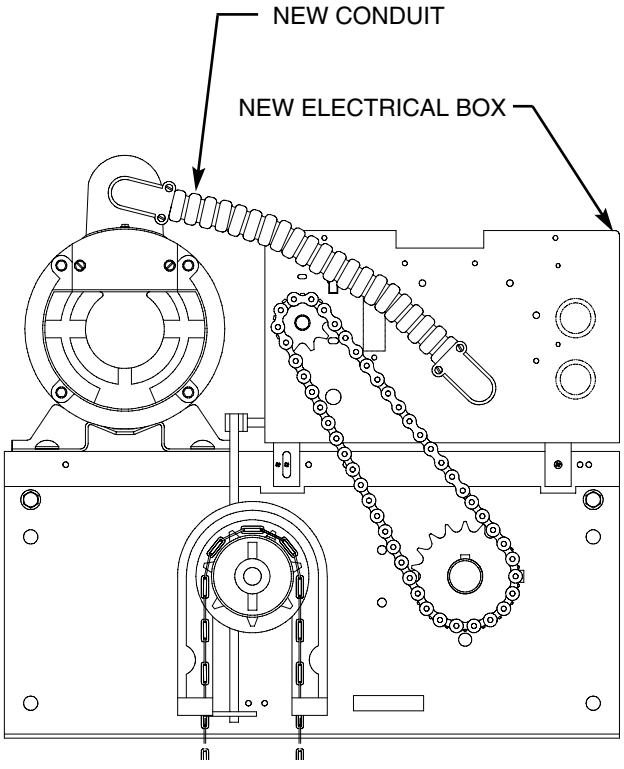


FIGURE 2



Lift-Master
The Professional Line

Frame Assembly Replacement Kit for Model "H" & "J" Operators

APPLICATION REQUIREMENTS:
Replacement of Frame and/or its components for a Grey Line Model H & J Operator.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING MOTOR WIRES/CONDUIT:
Disconnect the Motor wires from the electrical box and the motor. Set aside Motor wires, conduit and connectors for reinstallation.

REMOVE EXISTING MOTOR:
Remove the carriage bolts and flange nuts securing the motor to the frame and set off to the side for reinstallation. Remove the belt from the motor and also set to the side for reinstallation.

MOUNTING MOTOR TO NEW FRAME:
Mount the motor to the new frame in the same manner as it was removed above. Line up the belt on the two pulleys by adjusting the position of the motor pulley as needed.

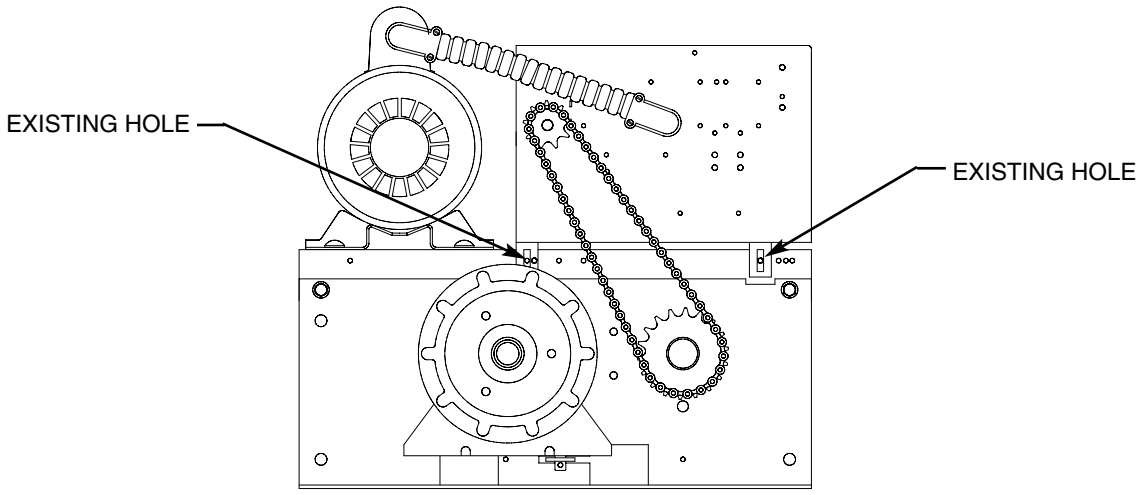
REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and discard.

Remove the four flanged hex screws securing the electrical box tabs to the motor frame and discard, carefully remove electrical box.

MOUNTING BOX TO NEW FRAME:
Place the electrical box on the new motor frame, aligning the slotted tabs on the box with their corresponding holes on the motor frame (see illustration). Attach the new electrical box using the (4) screws provided. Do not tighten screws at this time (Refer to illustration below).

Install the new limit chain and secure with master link. Slide the electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the electical box to the new motor frame by tightening the hex screws.

INSTALL MOTOR WIRES/CONDUIT:
Connect the conduit with the motor wires to the motor and the electrical box. Be sure that the end with the stripped ends is going to the motor. Refer to the wiring diagrams supplied for connections.



Lift-Master
The Professional Line

Output Shaft Replacement Kit
308116010JK
Used on Model J Operator

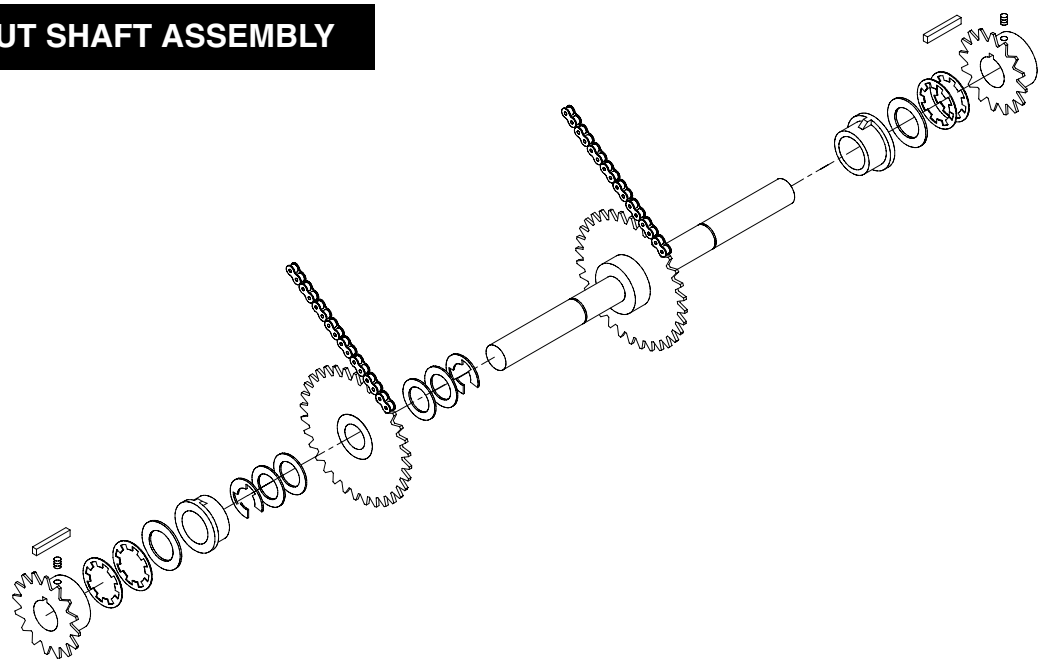
APPLICATION REQUIREMENTS:
This service kit is available for Link Grey Style J standard door operators.

FUNCTIONS:
This service kit allows Replacement of Link Grey Style Output Shaft and its components for a Model J Operator.

PACKING LIST:
Unpack kit to verify the parts listed below are included.

PART NUMBER	DESCRIPTION	QUANTITY
11-10879	OUTPUT SHFT H & J	1
12-10715	FLANGED BALL BEARING	2
15-10885	CLUSTER SPROCKET,48B3	1
15-48B18LGE	SPROCKET,48B18 x1"BOR	1
15-48B32LXX	SPROCKET,#48B32 x1"BO	1
15-50B12LGH	50B12x1BOREX 1/4 KEY	1
19-48047M	#48 CHAIN x47 LINKS W	2
80-206-10	SPACER 1.5"OD X 1.03 THICK	4
80-206-11	WASHER 1"I.D.X 1/16" THIN	2
80-207-19	KEY 1/4 X 1-1/2"LONG	2
82-NH31-06	SET SCREW,5/16"-18	2
86-RP08-200	ROLL PIN	1
87-E-100	E RING, 1" PLATED	2
87-P-100	PUSH RING, 1”	4

OUTPUT SHAFT ASSEMBLY



Output Shaft Replacement Kit
308116010HK
Used on Model H & HJ Operator

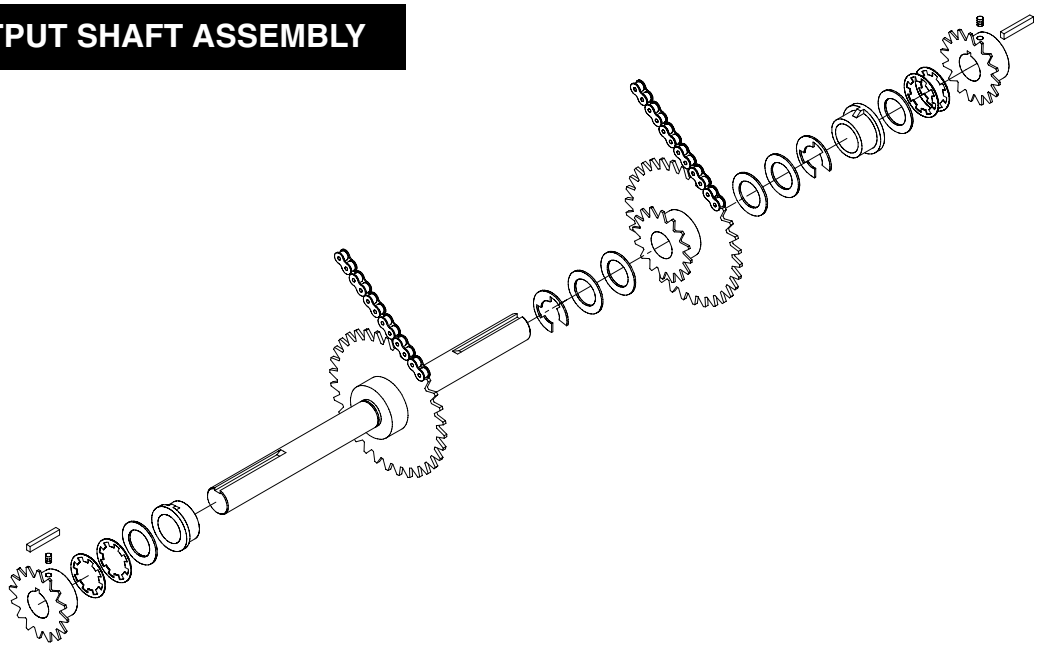
APPLICATION REQUIREMENTS:
This service kit is available for Link Grey Style H and HJ standard door operators.

FUNCTIONS:
This service kit allows Replacement of Link Grey Style Output Shaft and its components for a Model H and HJ Operator.

PACKING LIST:
Unpack kit to verify the parts listed below are included.

PART NUMBER	DESCRIPTION	QUANTITY
11-10879	OUTPUT SHFT H & J	1
12-10715	FLANGED BALL BEARING	2
15-10885	CLUSTER SPROCKET,48B3	1
15-48B18LGE	SPROCKET,48B18 x1"BOR	1
15-48B32LXX	SPROCKET,#48B32 x1"BO	1
15-50B12LGH	50B12x1BOREX 1/4 KEY	1
19-48047M	#48 CHAIN x47 LINKS W	2
80-206-10	SPACER 1.5"OD X 1.03 THICK	4
80-206-11	WASHER 1"I.D.X 1/16" THIN	2
80-207-19	KEY 1/4 X 1-1/2"LONG	2
82-NH31-06	SET SCREW,5/16"-18	2
86-RP08-200	ROLL PIN	1
87-E-100	E RING, 1" PLATED	2
87-P-100	PUSH RING, 1”	4

OUTPUT SHAFT ASSEMBLY



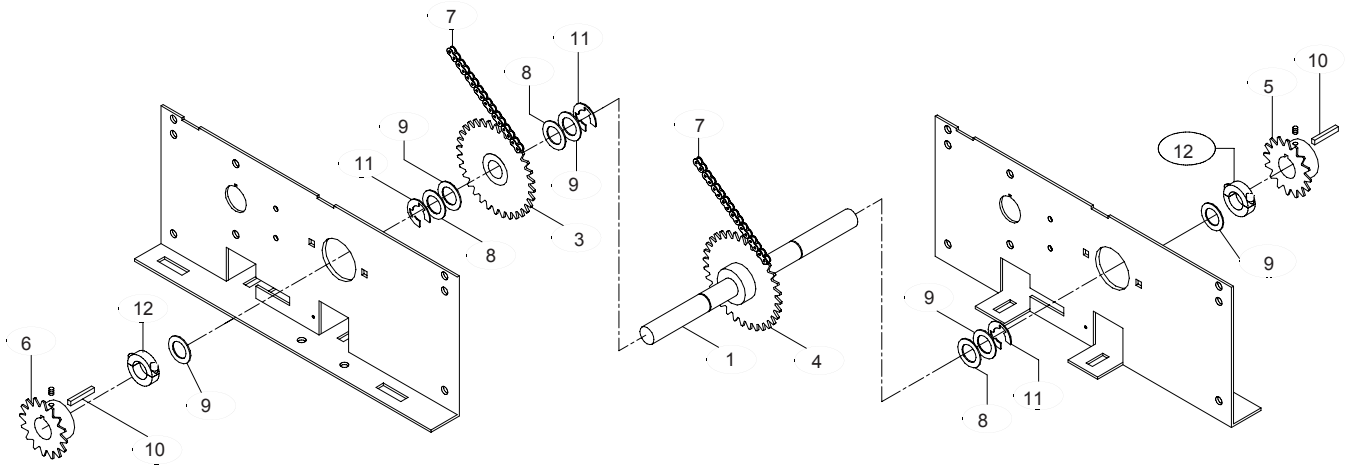
K72-12532
Output Shaft Assembly Service Kit for J-Line Operators

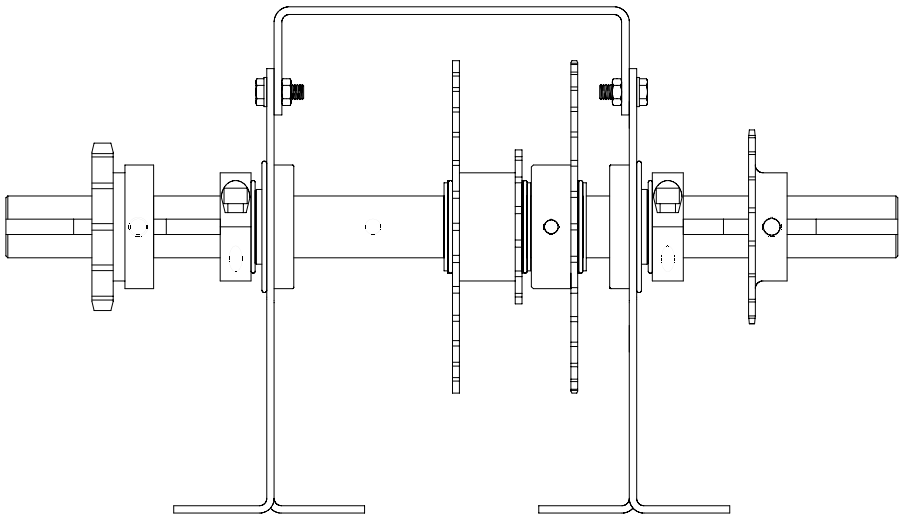
APPLICATION REQUIREMENTS:

Replacement of Output Shaft and/or its components for a Model J Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	11-10879	Output Shaft	1
2	12-10891	1” I.D. Ball Bearing	2
3	15-10885	48B32/48B14 Idler Sprocket Assembly	1
4	15-48B32LXX	48B32 Sprocket	1
5	15-48B18LGE	Sprocket, 48B18 LGE	1
6	15-50B12LGF	Sprocket, 50B12 LGF	1
7	19-48047M	#48 Chain 47P W/ML	2
8	80-206-10	Spacer 1-1/32 x 1-1/2 x 1/64	2
9	80-206-11	Spacer 1-1/16 x 1-1/2 x 1/16	5
10	80-207-19	Key 1/4 x 1/4 x 1-1/2	2
11	87-E-100	E Ring, 1” Plated	3
12	13-18691	Shaft Collar	2





END VIEW

INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING SHAFT:

Remove the master links from the limit and output chains. Remove the chains and set them aside. Remove the drive belt from the clutch and set it aside. Remove the four screws connecting the Motor Plate to the Motor Frame. Lift off the Motor Plate and set it aside.

Disconnect and remove the three interior chains connecting the clutch and output shafts. Remove all push on fasteners from the output shaft. Remove the output shaft limit sprocket by first loosening the set screw and then sliding it off the shaft along with its key. Loosen the set screw of the 48B32 sprocket.

Slide the output shaft out of the Motor Frame from the output sprocket side. The interior sprockets and shim washers will slide off the shaft as it is removed. Remove the two ball bearings from the Motor Frame.

INSTALLING NEW OUTPUT SHAFT:

Press the new ball bearings into the Motor Frame. Referring to the illustration above, attach new output sprocket to the new output shaft along with a key using the set screw. Do not fully tighten the set screw at this time. Refer to the illustration and the Owner's Manual as necessary for the remainder of the installation. Add the necessary shim washers. Slide the new output shaft into the Motor Frame, picking up the appropriate washers and sprockets in the reverse order from how they were removed before. Align the two interior sprockets by re-attaching the three lengths of chain connecting the clutch and output shafts. Tighten the 48B32 sprocket with its set screw and secure the combination sprocket with push on fasteners. Secure the new output shaft in the Motor Frame with the shaft collars and washers supplied and re-attach the Motor Plate.

Replace the limit chain and the drive belt. Restoring power completes the installation.

CHAMBERLAIN
LiftMaster
PROFESSIONAL

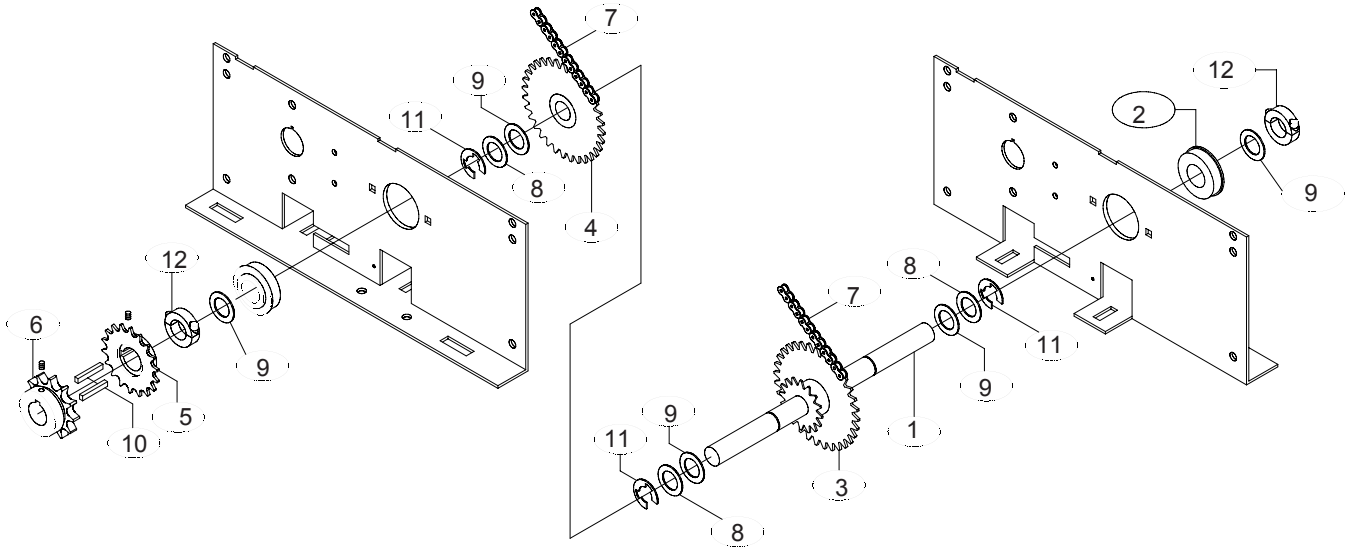
K72-12557
Output Shaft Assembly Service Kit for Model HJ Operators

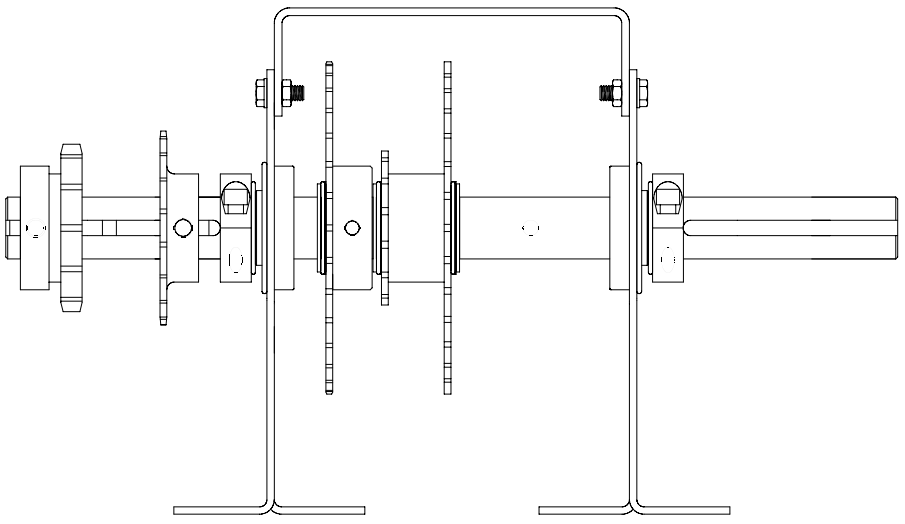
APPLICATION REQUIREMENTS:

Replacement of Output Shaft and/or its components for a Model HJ Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	11-10879	Output Shaft	1
2	12-10891	1” I.D. Ball Bearing	2
3	15-10885	48B32/48B14 Idler Sprocket Assembly	1
4	15-48B32LXX	48B32 Sprocket	1
5	15-48B18LGE	Sprocket, 48B18 x 1” Bore	1
6	15-50B12LGF	Sprocket, 50B12 x 1” Bore	1
7	19-48047M	#48 Chain 47P W/ML	2
8	80-206-10	Spacer 1-1/32 x 1-1/2 x 1/64	3
9	80-206-11	Spacer 1-1/16 x 1-1/2 x 1/16	5
10	80-207-19	Key 1/4 x 1/4 x 1-1/2	2
11	87-E-100	E-Ring, 1”	4
12	13-18691	Shaft Collar	2





END VIEW

INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING SHAFT:

Remove the master links from the limit and output chains. Remove the chains and set them aside. Remove the drive belt from the clutch and set it aside. Remove the four screws connecting the Motor Plate to the Motor Frame. Lift off the Motor Plate and set it aside.

Disconnect and remove the three interior chains connecting the clutch and output shafts. Remove all push on fasteners from the output shaft. Loosen the set screw of the 48B32 sprocket.

Slide the output shaft out of the Motor Frame from the output sprocket side. The interior sprockets and shim washers will slide off the shaft as it is removed. Remove the two ball bearings from the Motor Frame.

INSTALLING NEW OUTPUT SHAFT:

Press the new ball bearings into the Motor Frame. Referring to the illustrations on page 1, attach the new output and limit sprockets to the new output shaft along with their keys using the set screws provided. Do not fully tighten the set screws at this time. Refer to the illustration and the Owner's Manual as necessary for the remainder of the installation. Add the necessary shim washers. Slide the new output shaft into the Motor Frame, picking up the appropriate washers and sprockets in the reverse order from how they were removed before. Align the two interior sprockets by re-attaching the three lengths of chain connecting the clutch and output shafts. Tighten the 48B32 sprocket with its set screw and secure the combination sprocket with push on fasteners. Secure the new output shaft in the Motor Frame with the shaft collars and washers supplied and re-attach the Motor Plate.

Replace the limit and output chains, tightening the set screws of the sprockets once they are aligned properly. Replace the drive belt. Restoring power completes the installation.

CHAMBERLAIN
LiftMaster
PROFESSIONAL

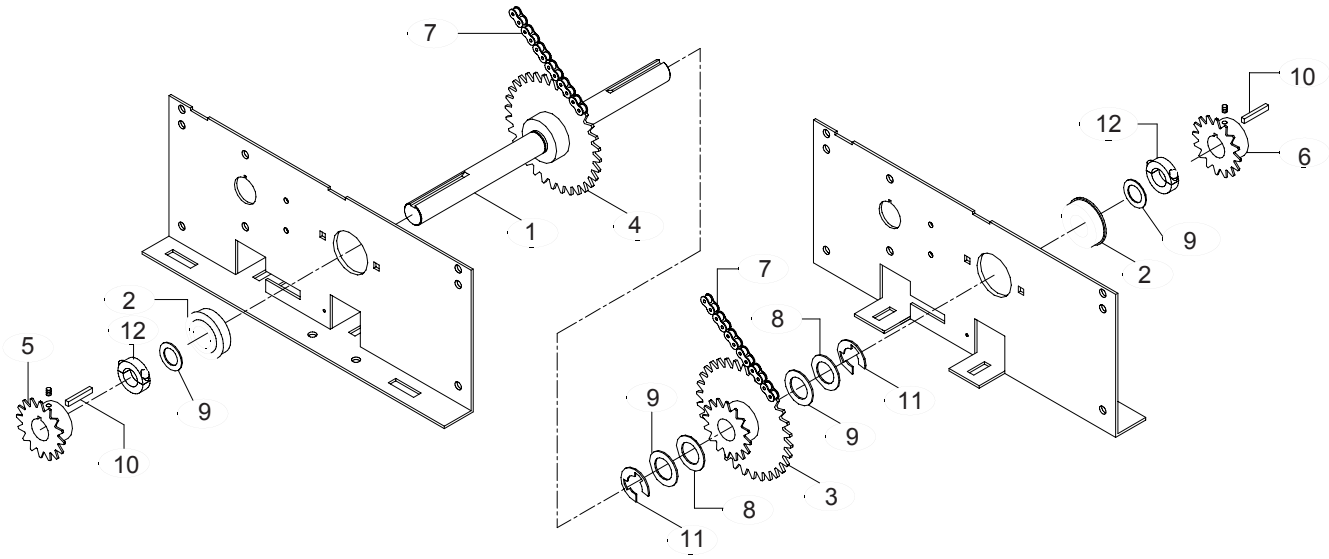
K72-12564
Output Shaft Assembly Service Kit for Model H Operators

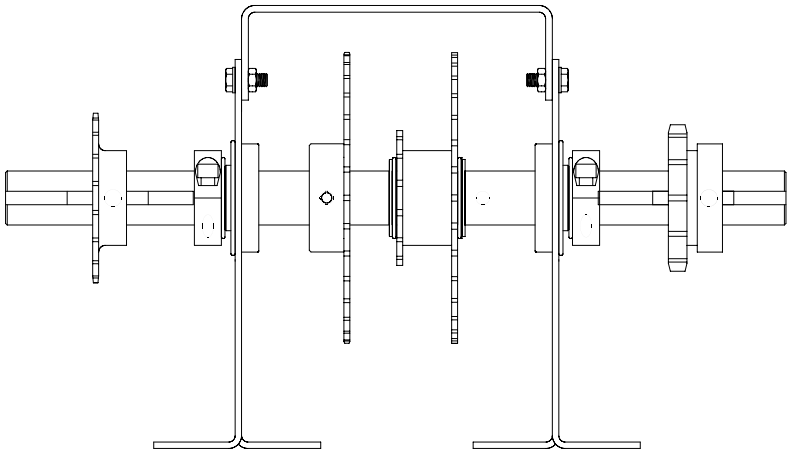
APPLICATION REQUIREMENTS:

Replacement of Output Shaft and/or its components for a Model H Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	11-10879	Output Shaft	1
2	12-10891	1” I.D. Ball Bearing	2
3	15-10885	48B32/48B14 Idler Sprocket Assembly	1
4	15-48B32LXX	48B32 Sprocket	1
5	15-48B18LGE	Sprocket, 48B18 LGE	1
6	15-50B12LGF	Sprocket, 50B12 LGF	1
7	19-48047M	#48 Chain 47P W/ML	2
8	80-206-10	Spacer 1-1/32 x 1-1/2 x 1/64	2
9	80-206-11	Spacer 1-1/16 x 1-1/2 x 1/16	4
10	80-207-19	Key 1/4 x 1/4 x 1-1/2	2
11	87-E-100	E-Ring 1” Plated	2
12	13-18691	Shaft Collar	2





END VIEW

INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

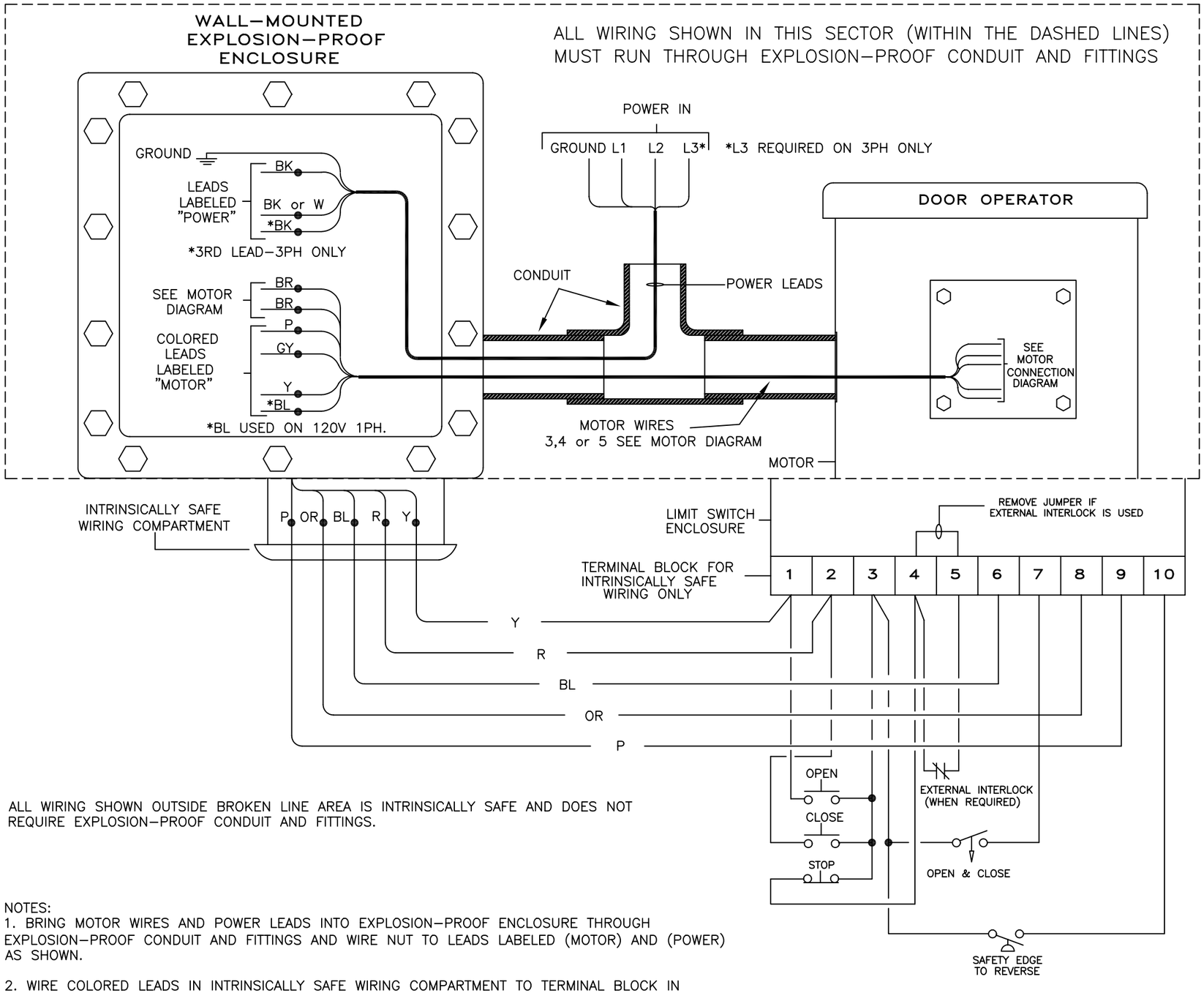
REMOVE EXISTING SHAFT:
Remove the master links from the limit and output chains. Remove the chains and set them aside. Remove the drive belt from the clutch and set it aside. Remove the four screws connecting the Motor Plate to the Motor Frame. Lift off the Motor Plate and set it aside.

Disconnect and remove the three interior chains connecting the clutch and output shafts. Remove all push on fasteners from the output shaft. Remove the output shaft limit sprocket by first loosening the set screw and then sliding it off the shaft along with its key. Loosen the set screw of the 48B32 sprocket.

Slide the output shaft out of the Motor Frame from the output sprocket side. The interior sprockets and shim washers will slide off the shaft as it is removed. Remove the two ball bearings from the Motor Frame.

INSTALLING NEW OUTPUT SHAFT:
Press the new ball bearings into the motor frame. Referring to the illustration above, attach new output sprocket to the new output shaft along with a key using the set screw. Do not fully tighten the set screw at this time. Refer to the illustration and the Owner's Manual as necessary for the remainder of the installation. Add the necessary shim washers. Slide the new output shaft into the Motor Frame, picking up the appropriate washers and sprockets in the reverse order from how they were removed before. Align the two interior sprockets by re-attaching the three lengths of chain connecting the clutch and output shafts. Tighten the 48B32 sprocket with its set screw and secure the combination sprocket with push on fasteners. Attach the new limit sprocket, aligning it before securing it in place with its set screw. Secure the new output shaft in the Motor Frame with the shaft collars and washers supplied and re-attach the Motor Plate.

Replace the limit chain and the drive belt. Restoring power completes the installation.



ALL WIRING SHOWN OUTSIDE BROKEN LINE AREA IS INTRINSICALLY SAFE AND DOES NOT REQUIRE EXPLOSION–PROOF CONDUIT AND FITTINGS.

NOTES:
1. BRING MOTOR WIRES AND POWER LEADS INTO EXPLOSION–PROOF ENCLOSURE THROUGH EXPLOSION–PROOF CONDUIT AND FITTINGS AND WIRE NUT TO LEADS LABELED (MOTOR) AND (POWER) AS SHOWN.

2. WIRE COLORED LEADS IN INTRINSICALLY SAFE WIRING COMPARTMENT TO TERMINAL BLOCK IN OPERATOR LIMIT SWITCH ENCLOSURE, AS SHOWN.

3. WIRE CONTROL DEVICES TO TERMINAL BLOCK IN OPERATOR LIMIT SWITCH ENCLOSURE AS SHOWN.

4. USE 16 GA. OR HEAVIER WIRE FOR ALL CONTROL WIRING.

5. THIS EQUIPTMENT, WHEN WIRED AS SHOWN, MEETS STANDARDS FOR CLASS I AND II, DIVISIONS I AND II, GROUPS D,F, AND G.

EXPLOSION–PROOF MOTOR CONNECTION DIAGRAMS
(EXPLOSION PROOF HARDWARE REQUIRED)

SINGLE PHASE

BALDOR		A.O. SMITH, DOERR, EMERSON, GE, LEESON	
115 VOLT 1PH.	230 VOLT 1 PH.	115 VOLT 1PH.	230 VOLT 1 PH.
1 – 3 – P 4 – GY 5 – Y 8 – BL J – 2	3 – P 2 – GY 5 – Y J – 8 4 – 1 NO BLUE WIRE	T2 – T4 – P P1 – GY T5 – Y T8 – BL T3 – P2	T2 – P T3 – GY T5 – Y T8 – P2 P1 – T4 NO BLUE WIRE

THREE PHASE

BALDOR		DOERR, EMERSON	
230 VOLT 3 PH.	460 VOLT 3 PH.	230 VOLT 3 PH.	460 VOLT 3 PH.
1 – 7 – P 2 – 8 – GY 3 – 9 – Y 4 – 10 5 – 11 6 – 12	1 – P 2 – GY 3 – Y 4 – 7 5 – 8 6 – 9 10 – 11 – 12 INSULATE INDIVIDUALLY	1 – 7 – P 2 – 8 – GY 3 – 9 – Y 4 – 14 5 – 15 6 – 16	1 – P 2 – GY 3 – Y 4 – 7 5 – 8 6 – 9 14 – 15 – 16 INSULATE INDIVIDUALLY
BALDOR WITH THERMOSTAT		**GE, LEESON**	
230 VOLT 3PH.	460 VOLT 3PH.	230 VOLT 3 PH.	460 VOLT 3 PH.
1 – 7 – P 2 – 8 – GY 3 – 9 – Y 4 – 5 – 6 J – BR J – BR	1 – P 2 – GY 3 – Y 4 – 7 5 – 8 6 – 9 J – BR J – BR	T1 – T7 – P T2 – T8 – GY T3 – T9 – Y T4 – P4 T5 – P5 T6 – P6	T1 – P T2 – GY T3 – Y T4 – T7 T5 – T8 T6 – T9 P4 – P5 – P6 INSULATE INDIVIDUALLY

NOTE:
REVERSE MOTOR BY INTERCHANGING THE PURPLE AND THE GRAY LEADS.

Y = YELLOW BL = BLUE
P = PURPLE GY = GRAY BR = BROWN

WARNING:

1. DO NOT RUN INTRINSICALLY SAFE WIRING IN CONDUIT WITH ANY OTHER WIRING.
2. DO NOT TAMPER WITH THIS UNIT OR USE ANY SUBSTITUTE REPLACEMENT COMPONENT, OR INTRINSIC SAFETY MAY BE IMPAIRED.
3. DO NOT CONNECT ANY DEVICES THAT GENERATE ELECTRICAL ENERGY OR THAT HAVE THEIR OWN POWER SOURCES TO THE INTRINSICALLY SAFE WIRING.

PROJECT: –

THE CHAMBERLAIN GROUP, INC.
845 Larch Ave, Elmhurst, IL 60126

CDO

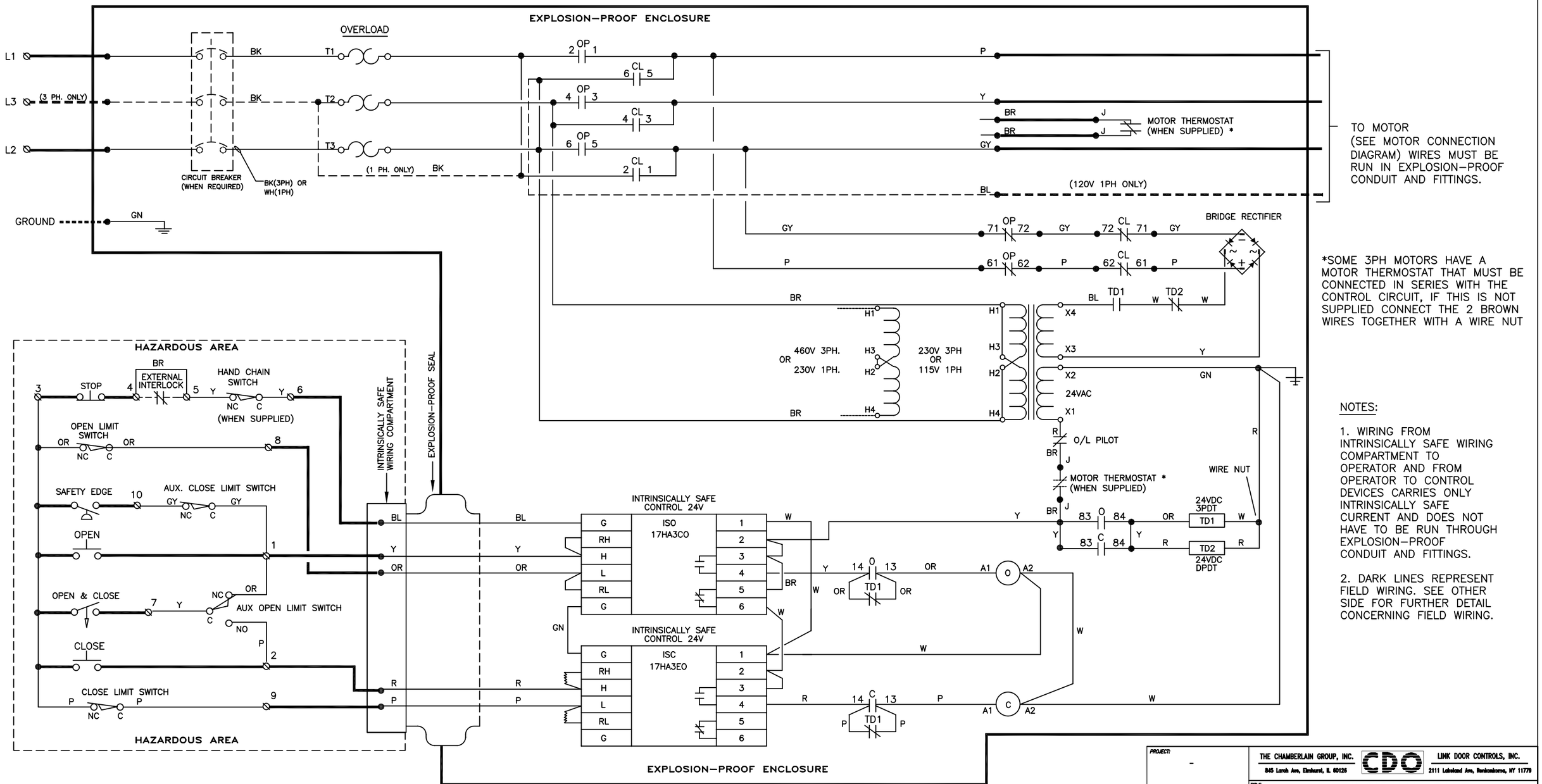
LINK DOOR CONTROLS, INC.
2111 Lakeland Ave, Ronkonkoma, NY 11779

TITLE: INTRINSICALLY SAFE DOOR OPERATOR

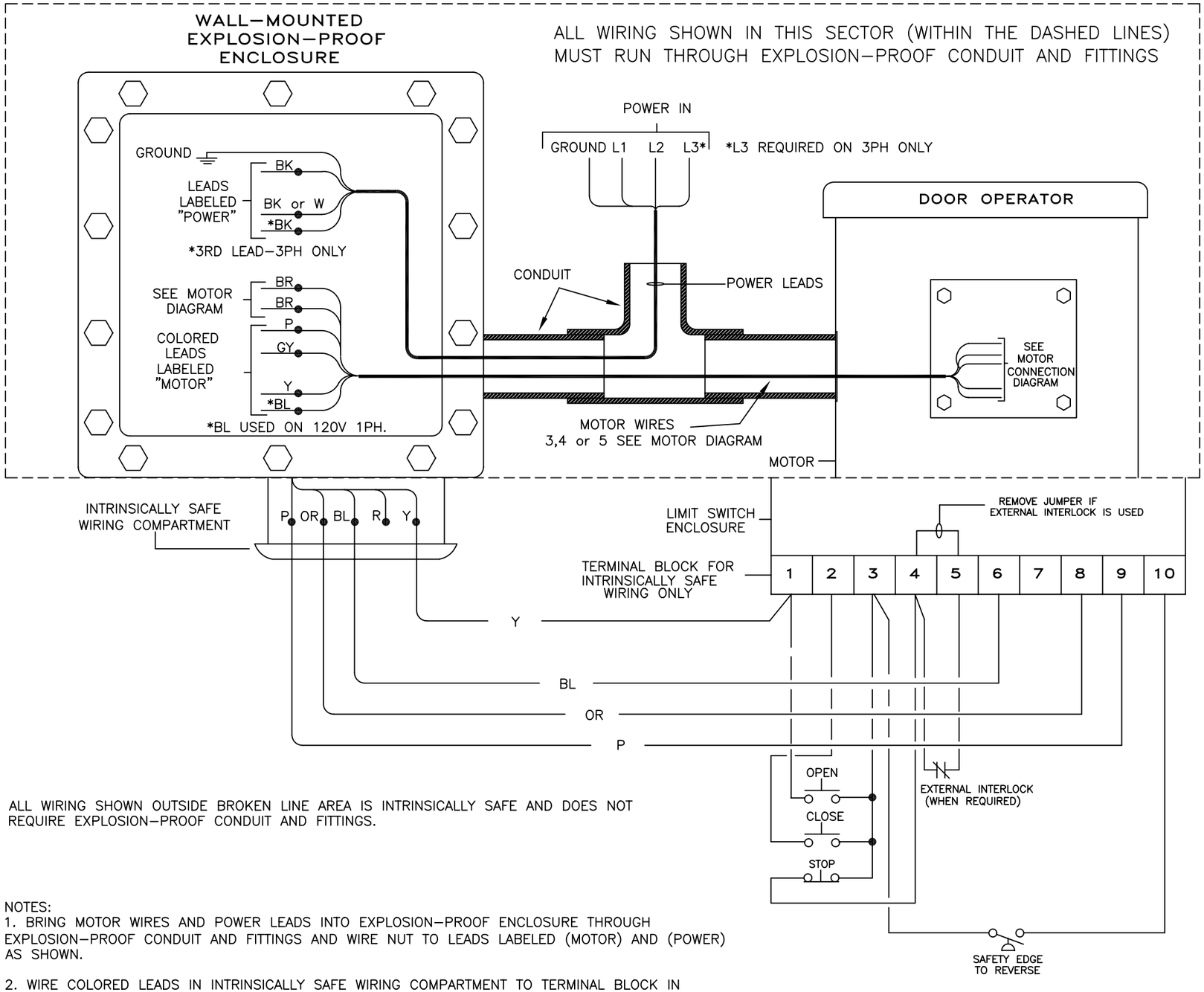
DRAWN BY:	DATE:
A.W.	9/12/02
ENGINEER: G.R.	DATE: –
APPROVED BY: –	DATE: –

DWG. NO. 03044 PAGE 1 OF 2

REL. DATE – ECN – REV B (P)



PROJECT: –	THE CHAMBERLAIN GROUP, INC. 845 Larch Ave, Elmhurst, IL 60126	CDO	LINK DOOR CONTROLS, INC. 2111 Lakeland Ave, Ronkonkoma, NY 11779
	TITLE: INTRINSICALLY SAFE DOOR OPERATOR		
DRAWN BY: A.W.	DATE: 9/12/02		
ENGINEER: G.R.	DATE: –	DWG. NO. 03044	PAGE 2 OF 2
APPROVED BY: –	DATE: –	REL. DATE: –	ECN: – REV: B (P)



ALL WIRING SHOWN OUTSIDE BROKEN LINE AREA IS INTRINSICALLY SAFE AND DOES NOT REQUIRE EXPLOSION–PROOF CONDUIT AND FITTINGS.

NOTES:
1. BRING MOTOR WIRES AND POWER LEADS INTO EXPLOSION–PROOF ENCLOSURE THROUGH EXPLOSION–PROOF CONDUIT AND FITTINGS AND WIRE NUT TO LEADS LABELED (MOTOR) AND (POWER) AS SHOWN.

2. WIRE COLORED LEADS IN INTRINSICALLY SAFE WIRING COMPARTMENT TO TERMINAL BLOCK IN OPERATOR LIMIT SWITCH ENCLOSURE, AS SHOWN.

3. WIRE CONTROL DEVICES TO TERMINAL BLOCK IN OPERATOR LIMIT SWITCH ENCLOSURE AS SHOWN.

4. USE 16 GA. OR HEAVIER WIRE FOR ALL CONTROL WIRING.

5. THIS EQUIPTMENT, WHEN WIRED AS SHOWN, MEETS STANDARDS FOR CLASS I AND II, DIVISIONS I AND II, GROUPS D,F, AND G.

EXPLOSION–PROOF MOTOR CONNECTION DIAGRAMS (EXPLOSION PROOF HARDWARE REQUIRED)

SINGLE PHASE

BALDOR		A.O. SMITH, DOERR, EMERSON, GE, LEESON	
115 VOLT 1PH.	230 VOLT 1 PH.	115 VOLT 1PH.	230 VOLT 1 PH.
1 – P 3 4 – GY 5 – Y 8 – BL J 2	3 – P 2 – GY 5 – Y J 8 4 1 NO BLUE WIRE	T2 – P T4 P1 – GY T5 – Y T8 – BL T3 P2	T2 – P T3 – GY T5 – Y T8 P2 P1 T4 NO BLUE WIRE

THREE PHASE

BALDOR		DOERR, EMERSON	
230 VOLT 3 PH.	460 VOLT 3 PH.	230 VOLT 3 PH.	460 VOLT 3 PH.
1 – P 7 2 – GY 8 3 – Y 9 4 10 5 11 6 12	1 – P 2 – GY 3 – Y 4 7 5 8 6 9 10 – INSULATE 11 – INDIVIDUALLY 12	1 – P 7 2 – GY 8 3 – Y 9 4 14 5 15 6 16	1 – P 2 – GY 3 – Y 4 7 5 8 6 9 14 – INSULATE 15 – INDIVIDUALLY 16
BALDOR WITH THERMOSTAT		**GE, LEESON**	
230 VOLT 3PH.	460 VOLT 3PH.	230 VOLT 3 PH.	460 VOLT 3 PH.
1 – P 7 2 – GY 8 3 – Y 9 4 5 6 J – BR J – BR	1 – P 2 – GY 3 – Y 4 7 5 8 6 9 J – BR J – BR	T1 – P T7 T2 T8 – GY T3 – Y T9 T4 P4 T5 P5 T6 P6	T1 – P T2 – GY T3 – Y T4 T7 T5 T8 T6 T9 P4 P5 – INSULATE P6 – INDIVIDUALLY

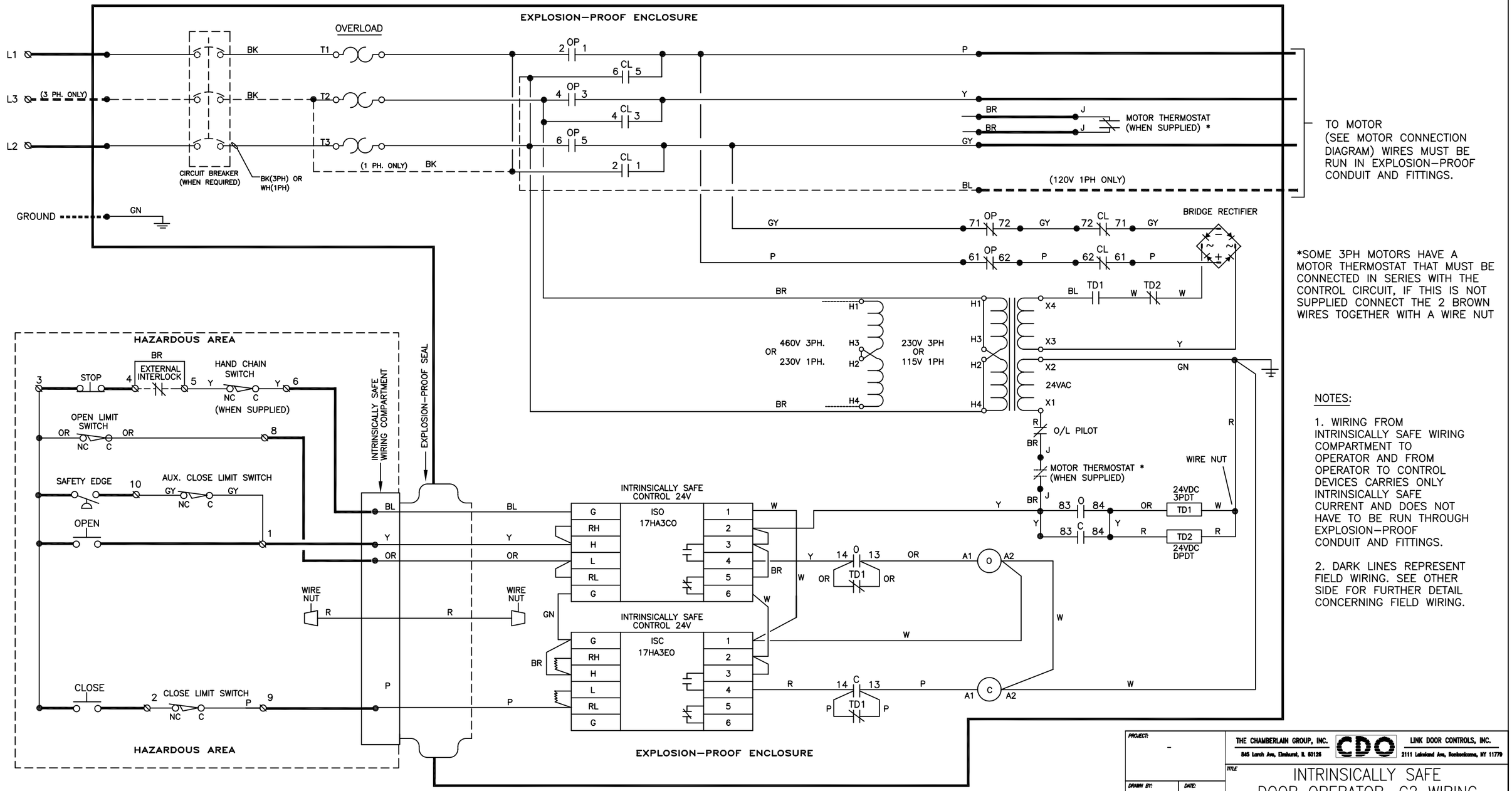
NOTE:
REVERSE MOTOR BY INTERCHANGING THE PURPLE AND THE GRAY LEADS.

Y = YELLOW BL = BLUE
P = PURPLE GY = GRAY BR = BROWN

WARNING:

1. DO NOT RUN INTRINSICALLY SAFE WIRING IN CONDUIT WITH ANY OTHER WIRING.
2. DO NOT TAMPER WITH THIS UNIT OR USE ANY SUBSTITUTE REPLACEMENT COMPONENT, OR INTRINSIC SAFETY MAY BE IMPAIRED.
3. DO NOT CONNECT ANY DEVICES THAT GENERATE ELECTRICAL ENERGY OR THAT HAVE THEIR OWN POWER SOURCES TO THE INTRINSICALLY SAFE WIRING.

PROJECT: –	THE CHAMBERLAIN GROUP, INC. 845 Larch Ave, Elmhurst, IL 60126	LINK DOOR CONTROLS, INC. 2111 Lakeland Ave, Ronkonkoma, NY 11779
	TITLE: INTRINSICALLY SAFE DOOR OPERATOR, C2 WIRING	
DRAWN BY: A.W. / DATE: 9/12/02		
ENGINEER: G.R. / DATE: –	DWG. NO. 03071	PAGE 1 OF 2
APPROVED BY: – / DATE: –	REL. DATE: – / ECN: –	REV: B (P)



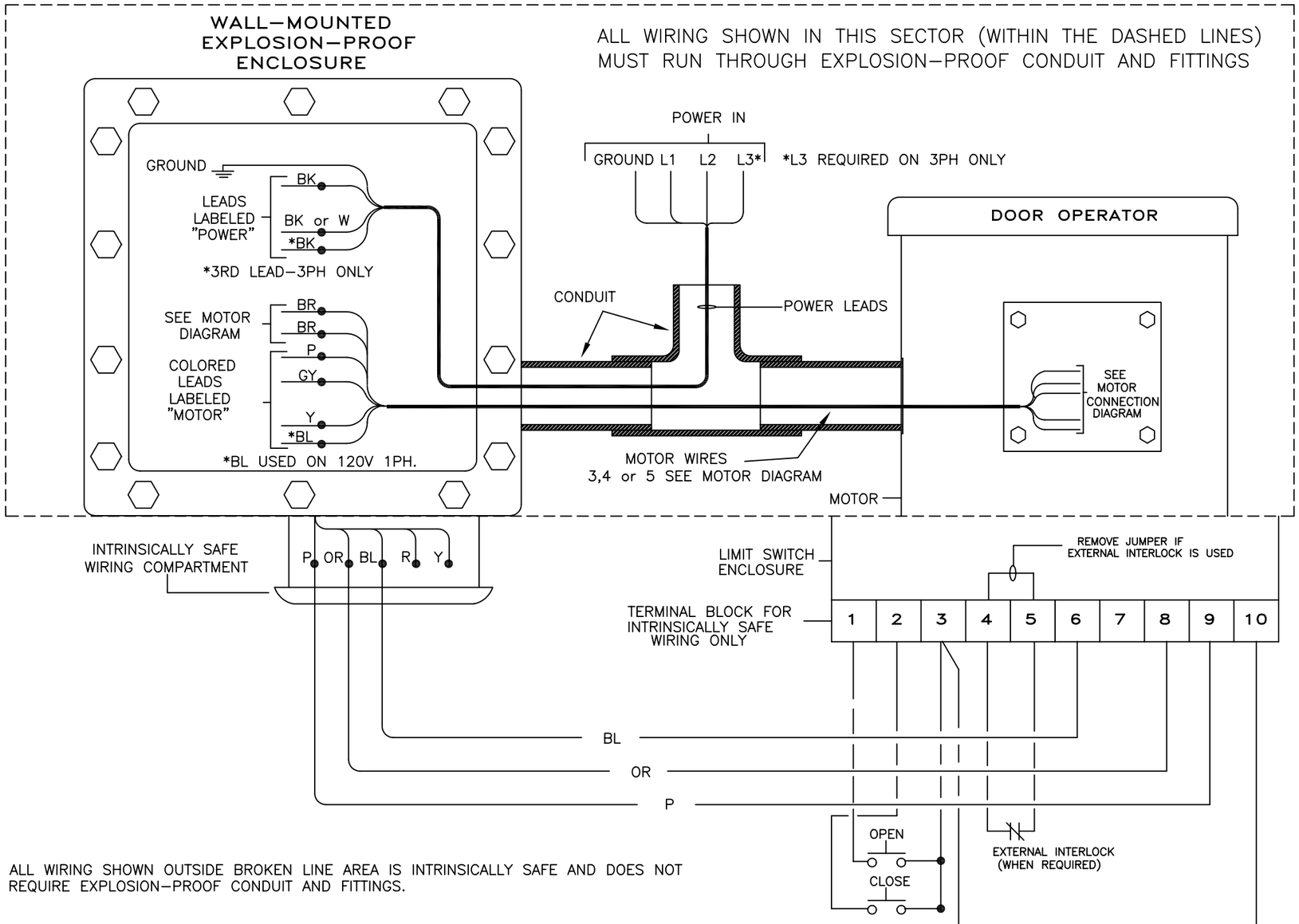
*SOME 3PH MOTORS HAVE A MOTOR THERMOSTAT THAT MUST BE CONNECTED IN SERIES WITH THE CONTROL CIRCUIT, IF THIS IS NOT SUPPLIED CONNECT THE 2 BROWN WIRES TOGETHER WITH A WIRE NUT

NOTES:

1. WIRING FROM INTRINSICALLY SAFE WIRING COMPARTMENT TO OPERATOR AND FROM OPERATOR TO CONTROL DEVICES CARRIES ONLY INTRINSICALLY SAFE CURRENT AND DOES NOT HAVE TO BE RUN THROUGH EXPLOSION–PROOF CONDUIT AND FITTINGS.

2. DARK LINES REPRESENT FIELD WIRING. SEE OTHER SIDE FOR FURTHER DETAIL CONCERNING FIELD WIRING.

PROJECT: –	THE CHAMBERLAIN GROUP, INC. 845 Larch Ave, Elmhurst, IL 60126	CDO	LINK DOOR CONTROLS, INC. 2111 Lakeland Ave, Ronkonkoma, NY 11779
	TITLE: INTRINSICALLY SAFE DOOR OPERATOR, C2 WIRING		
DRAWN BY: A.W.	DATE: 9/12/02		
ENGINEER: G.R.	DATE: –	DWG. NO. 03071	PAGE 2 OF 2
APPROVED BY: –	DATE: –	REL. DATE: –	ECN: – REV: B (P)



ALL WIRING SHOWN OUTSIDE BROKEN LINE AREA IS INTRINSICALLY SAFE AND DOES NOT REQUIRE EXPLOSION–PROOF CONDUIT AND FITTINGS.

NOTES:
1. BRING MOTOR WIRES AND POWER LEADS INTO EXPLOSION–PROOF ENCLOSURE THROUGH EXPLOSION–PROOF CONDUIT AND FITTINGS AND WIRE NUT TO LEADS LABELED (MOTOR) AND (POWER) AS SHOWN.

2. WIRE COLORED LEADS IN INTRINSICALLY SAFE WIRING COMPARTMENT TO TERMINAL BLOCK IN OPERATOR LIMIT SWITCH ENCLOSURE, AS SHOWN.

3. WIRE CONTROL DEVICES TO TERMINAL BLOCK IN OPERATOR LIMIT SWITCH ENCLOSURE AS SHOWN.

4. USE 16 GA. OR HEAVIER WIRE FOR ALL CONTROL WIRING.

5. THIS EQUIPTMENT, WHEN WIRED AS SHOWN, MEETS STANDARDS FOR CLASS I AND II, DIVISIONS I AND II, GROUPS D,F, AND G.

EXPLOSION–PROOF MOTOR CONNECTION DIAGRAMS (EXPLOSION PROOF HARDWARE REQUIRED)

SINGLE PHASE

BALDOR		A.O. SMITH, DOERR, EMERSON, GE, LEESON	
115 VOLT 1PH.	230 VOLT 1 PH.	115 VOLT 1PH.	230 VOLT 1 PH.
1 – P 3 4 – GY 5 – Y 8 – BL J 2	3 – P 2 – GY 5 – Y J 8 4 1 NO BLUE WIRE	T2 – P T4 P1 – GY T5 – Y T8 – BL T3 P2	T2 – P T3 – GY T5 – Y T8 P2 P1 T4 NO BLUE WIRE

THREE PHASE

BALDOR		DOERR, EMERSON	
230 VOLT 3 PH.	460 VOLT 3 PH.	230 VOLT 3 PH.	460 VOLT 3 PH.
1 – P 7 2 – GY 8 3 – Y 9 4 10 5 11 6 12	1 – P 2 – GY 3 – Y 4 7 5 8 6 9 10 INSULATE 11 INDIVIDUALLY 12	1 – P 7 2 – GY 8 3 – Y 9 4 14 5 15 6 16	1 – P 2 – GY 3 – Y 4 7 5 8 6 9 14 INSULATE 15 INDIVIDUALLY 16
BALDOR WITH THERMOSTAT		**GE, LEESON**	
230 VOLT 3PH.	460 VOLT 3PH.	230 VOLT 3 PH.	460 VOLT 3 PH.
1 – P 7 2 – GY 8 3 – Y 9 4 5 6 J – BR J – BR	1 – P 2 – GY 3 – Y 4 7 5 8 6 9 J – BR J – BR	T1 – P T7 T2 – GY T8 T3 – Y T9 T4 P4 T5 P5 T6 P6	T1 – P T2 – GY T3 – Y T4 T7 T5 T8 T6 T9 P4 INSULATE P5 INDIVIDUALLY P6

NOTE:
REVERSE MOTOR BY INTERCHANGING THE PURPLE AND THE GRAY LEADS.

Y = YELLOW BL = BLUE
P = PURPLE GY = GRAY BR = BROWN

WARNING:

1. DO NOT RUN INTRINSICALLY SAFE WIRING IN CONDUIT WITH ANY OTHER WIRING.
2. DO NOT TAMPER WITH THIS UNIT OR USE ANY SUBSTITUTE REPLACEMENT COMPONENT, OR INTRINSIC SAFETY MAY BE IMPAIRED.
3. DO NOT CONNECT ANY DEVICES THAT GENERATE ELECTRICAL ENERGY OR THAT HAVE THEIR OWN POWER SOURCES TO THE INTRINSICALLY SAFE WIRING.

PROJECT: –

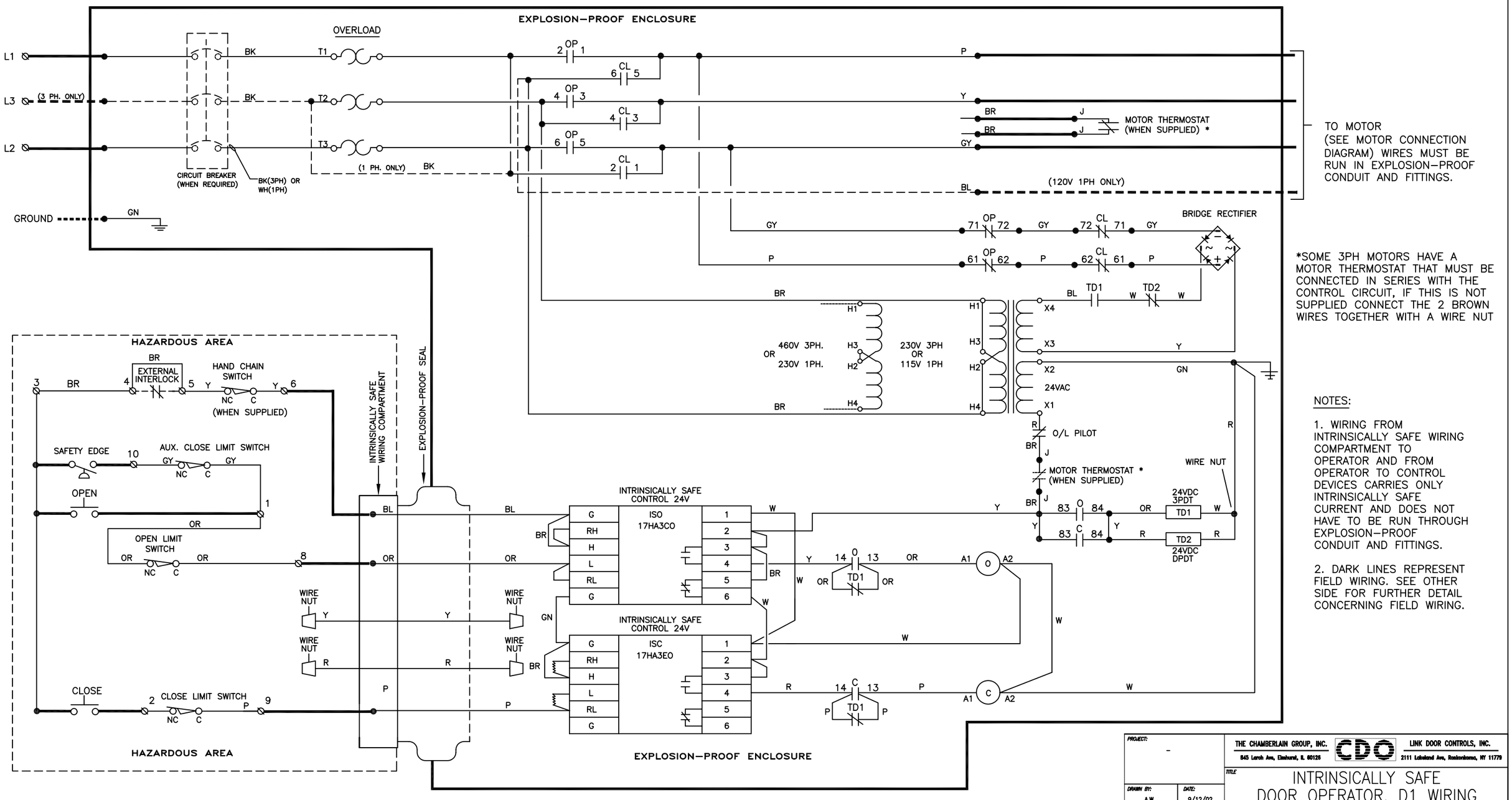
THE CHAMBERLAIN GROUP, INC. 845 Larch Ave, Elmhurst, IL 60126 — CDO — LINK DOOR CONTROLS, INC. 2111 Lakeland Ave, Ronkonkoma, NY 11779

TITLE: INTRINSICALLY SAFE DOOR OPERATOR, D1 WIRING

DRAWN BY:	DATE:
A.W.	9/12/02
ENGINEER: G.R.	DATE: –
APPROVED BY: –	DATE: –

DWG. NO. 03073 PAGE 1 OF 2

REL. DATE – ECN – REV B (P)



PROJECT: –	THE CHAMBERLAIN GROUP, INC. 845 Larch Ave, Elmhurst, IL 60126 — LINK DOOR CONTROLS, INC. 2111 Lakeland Ave, Ronkonkoma, NY 11779
	TITLE: INTRINSICALLY SAFE DOOR OPERATOR, D1 WIRING
DRAWN BY: A.W. — DATE: 9/12/02	DWG. NO. 03073 — PAGE 2 OF 2
ENGINEER: G.R. — DATE: –	
APPROVED BY: – — DATE: –	REL. DATE: – — ECN: – — REV: B (P)

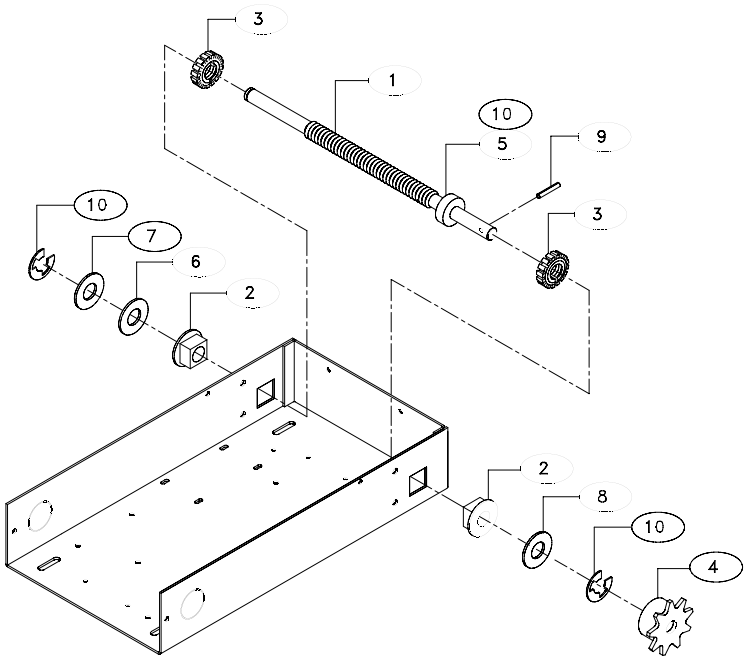
K72-12581
Limit Shaft Assembly Replacement Kit for LGJ Operators

APPLICATION REQUIREMENTS:

Replacement of Limit Shaft and/or its components for a Model LGJ Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	11-11425	Limit Shaft	1
2	12-10458	3/8” Bearing, Plastic Flange	2
3	13-10024	Limit Nut	2
4	15-48B07AXB	Sprocket, 48B07	1
5	75-13537	Magnet	1
6	80-10025	Washer, Shim, .050” THK.	1
7	80-10026	Washer, Shim, .010” THK.	1
8	80-10053	Washer, Shim, .030” THK.	1
9	86-RP04-012	Roll Pin, 1/8” Dia. x 3/4” Long	1
10	87-E-038	E Ring, 3/8”	3



INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

NOTE: Refer to the Owner’s Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING SHAFT:

Remove the master link from the limit chain, remove the chain and place it aside. Remove the electrical box cover. Remove the E-ring and the shim from the end of the limit shaft. To remove the limit shaft pull it out from the sprocket side, loosening the limit nuts as needed. Remove the flange bearings from the electrical box.

INSTALLING NEW LIMIT SHAFT:

To install the new limit shaft follow the steps outlined above in reverse order, referring to the Owner’s Manual if necessary. Restoring power completes the installation.

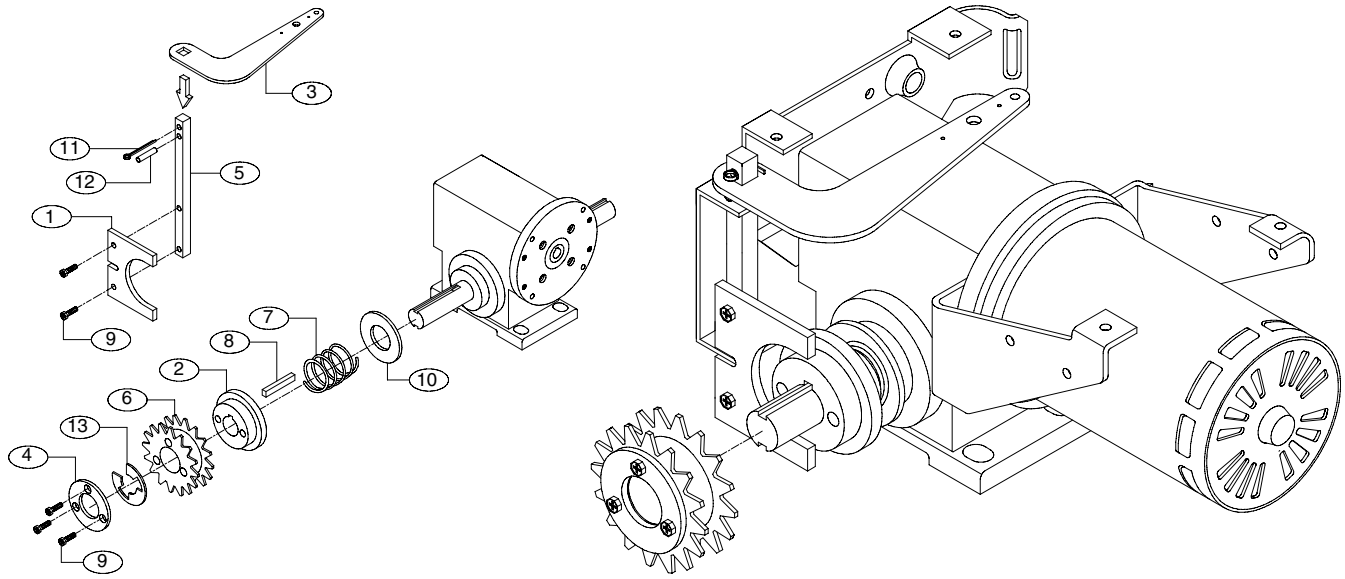
Lift-Master
The Professional Line

K75-12583
Disconnect Assembly Service Kit for Model LGJ Operators

APPLICATION REQUIREMENTS:
Replacement of Disconnect Assembly and/or its components for a Model LGJ Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	10-11023	Bevel Gear Yoke	1
2	10-11393	Disconnect	1
3	10-11394	Release Lever	1
4	10-11399	Retaining Plate	1
5	11-11424	Disconnect Shaft	1
6	15-11379	Sprocket, 48B14/41B14	1
7	18-11427	Compression Spring	1
8	80-207-19	Key, 1/4 x 1-1/2" Long	1
9	82-HX10-08T	Screw, #10-32 x 1/2" Hex	5
10	85-FW-75	Flatwasher, 3/4"	1
11	86-CP04-112	Cotter Pin 1/8" x 1-3/4" Long	1
12	86-RP04-100	Roll Pin, 1/8" DIA. x 1" Long	1
13	87-E-075	E Ring 3/4"	1



INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions.

REMOVE EXISTING ASSEMBLY:
Remove the master link from the limit chain, remove the chain and set it aside. Remove the electrical box cover. Disconnect the motor wires that pass into the electrical box.

Remove the four flanged hex screws securing the electrical box to the motor frame. Remove the box and set it aside.

Remove the three screws from the retaining plate. Remove the retaining plate, E ring, and combination sprocket from the end of the gear reducer shaft. Remove the screws securing the yoke to the disconnect shaft. Slide the old disconnect shaft up and out of the support bracket. Remove the disconnect, spring, and washer from the gear reducer shaft.

INSTALLING NEW ASSEMBLY:
Attach the release lever to the end of the new disconnect shaft with the cotter pin and roll pin as shown in the illust. Follow the steps outlined above in reverse order for the

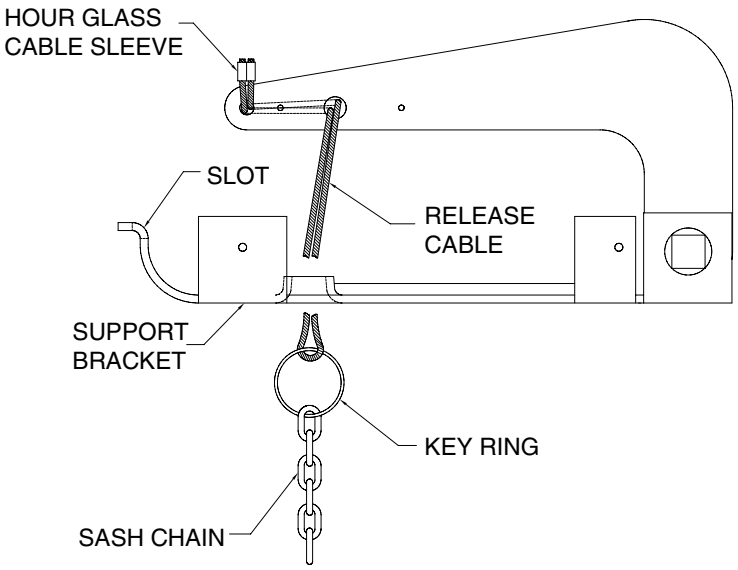
installation of the new disconnect assembly. Pass the release cable through the key ring, then through the release lever as shown in the illustration. Fasten the ends of the cable together with the hour glass cable sleeve. Attach one end of the sash chain to the key ring. For operators mounted motor end down, pass the cable through the key ring then through the outermost slot in the support bracket, then continue as described above.

To re-attach the electrical box, line up the slotted holes in the bottom of the box with the corresponding holes in the motor frame. Attach the box to the frame with the four hex screws. Do not tighten screws at this time.

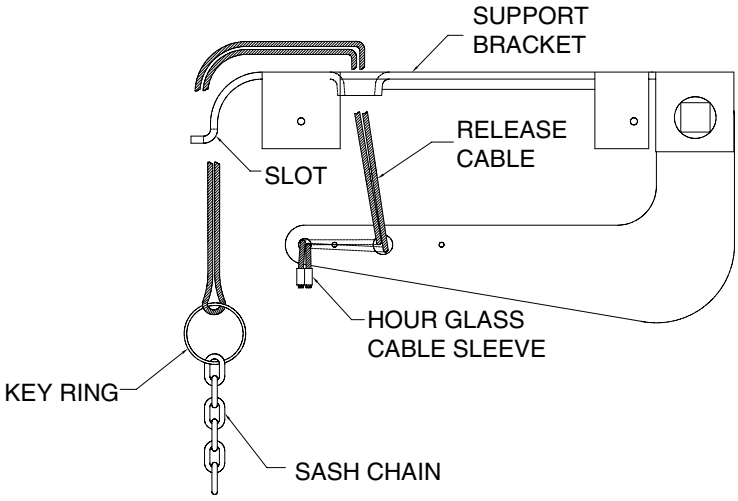
Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electrical box to the motor frame by tightening the hex screws.

Reconnect the motor wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and replace the electrical box cover. Restoring power completes the installation.

RIGHT HAND MOUNT
(MOTOR UP)



LEFT HAND MOUNT
(MOTOR DOWN)



Lift-Master
The Professional Line

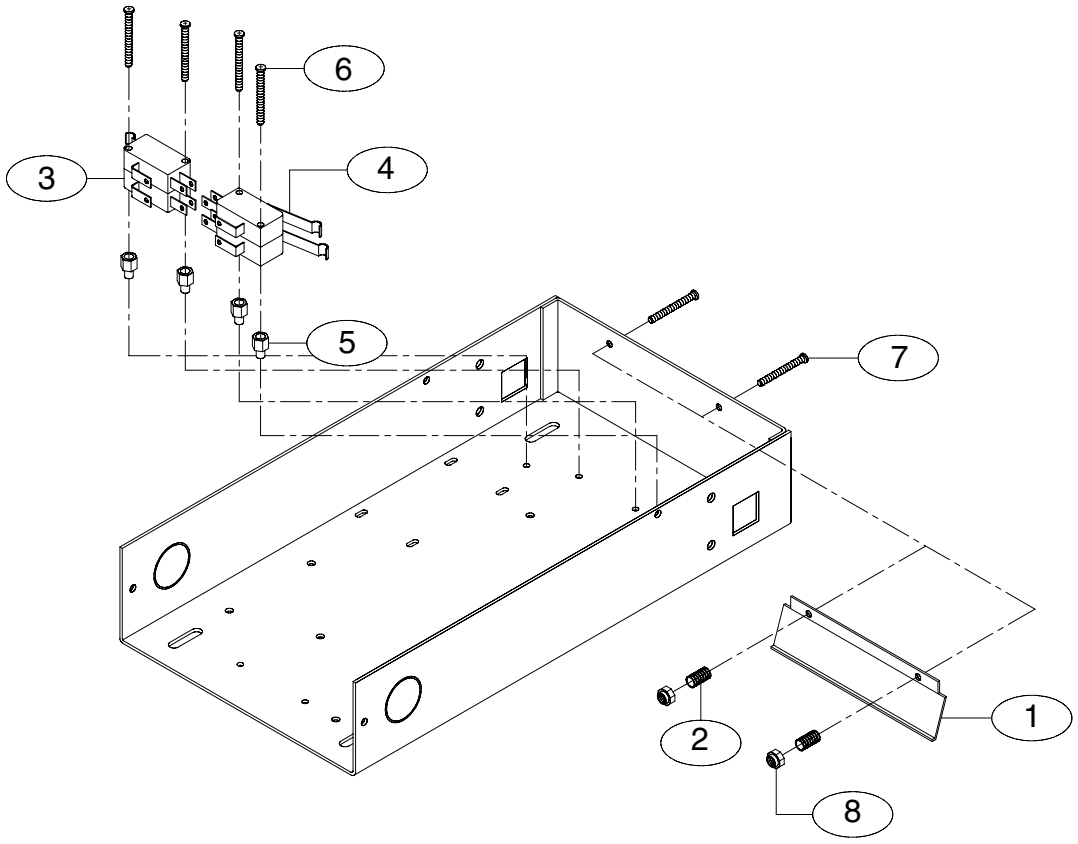
K75-12582
Limit Switch Assembly Service Kit for Model LGJ Operators

APPLICATION REQUIREMENTS:

Replacement of Limit Switch Assembly and/or its components for a Model LGJ Operator.

PACKING LIST:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	10-11391	Depress Plate	1
2	18-10036	Spring, Depress Plate	2
3	23-10041	Limit Switch	2
4	23-11442	Limit Switch	2
5	80-11446	Standoff, #4-40 Threaded x .19 Long	4
6	82-PX04-16	Screw, #4-40 x 1" Pan Head Ph	4
7	82-PX06-16	Screw, #6-32 x 1" Pan Head Ph	2
8	84-LH-06	Locknut #6-32	2



INSTALLATION INSTRUCTIONS

WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING LIMIT ASSEMBLY:

Remove the eight 1-3/8" screws from the tinnerman nuts. Remove the limit switches and standoffs from the electrical box. Remove the two 1" screws from the locknuts. Remove the depress plate springs and the depress plate.

INSTALLING NEW LIMIT ASSEMBLY:

To install the new limit assembly, follow the steps outlined above in the reverse order, refering to the Owner's Manual when necessary.

Lift-Master
The Professional Line

Electrical Box Assembly Replacement Kit for Model LGJ Operators

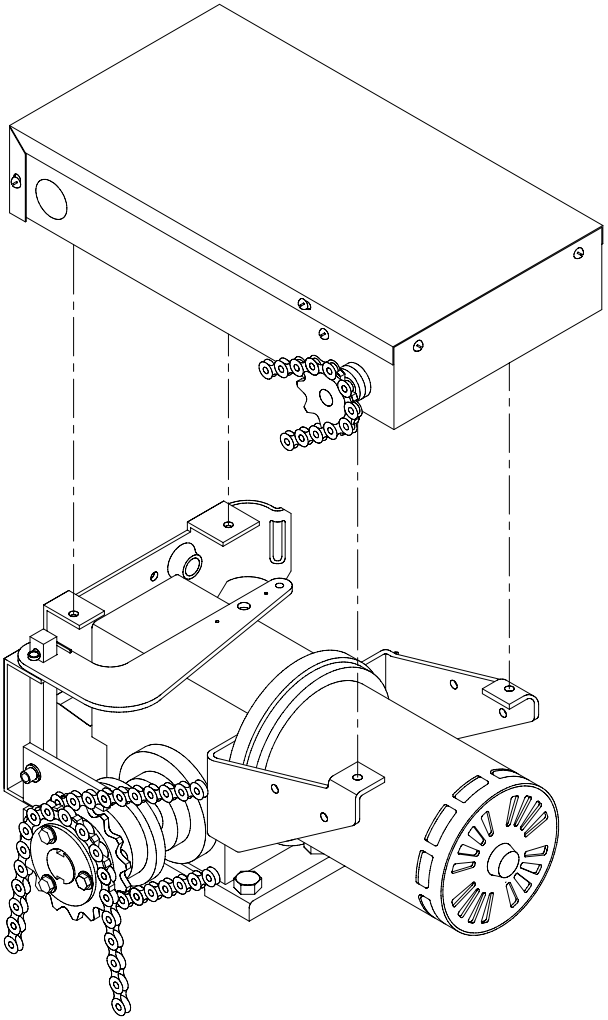
APPLICATION REQUIREMENTS:
Replacement of Electrical Box and/or its components for a Model LGJ Operator.

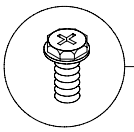
WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. IF NECESSARY REMOVE THE OPERATOR FROM ITS MOUNTED POSITION.

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.





NOTE: ATTACH ELECTRICAL BOX TO MOTOR FRAME WITH SCREWS PROVIDED.

WARNING

BEFORE BEGINNING, ENSURE REPLACEMENT ELECTRICAL BOX IS OF THE SAME POWER REQUIREMENTS AS EXISTING INCOMING POWER.

INSTALLATION INSTRUCTIONS

NOTE: Refer to the Owner's Manual supplied with the operator for all mounting and wiring instructions. You will be required to reset limit nuts after installation.

REMOVE EXISTING BOX:
Remove the master link from the limit chain, remove the chain and place it aside. Remove the electrical box cover. Disconnect the motor wires that pass into the electrical box.

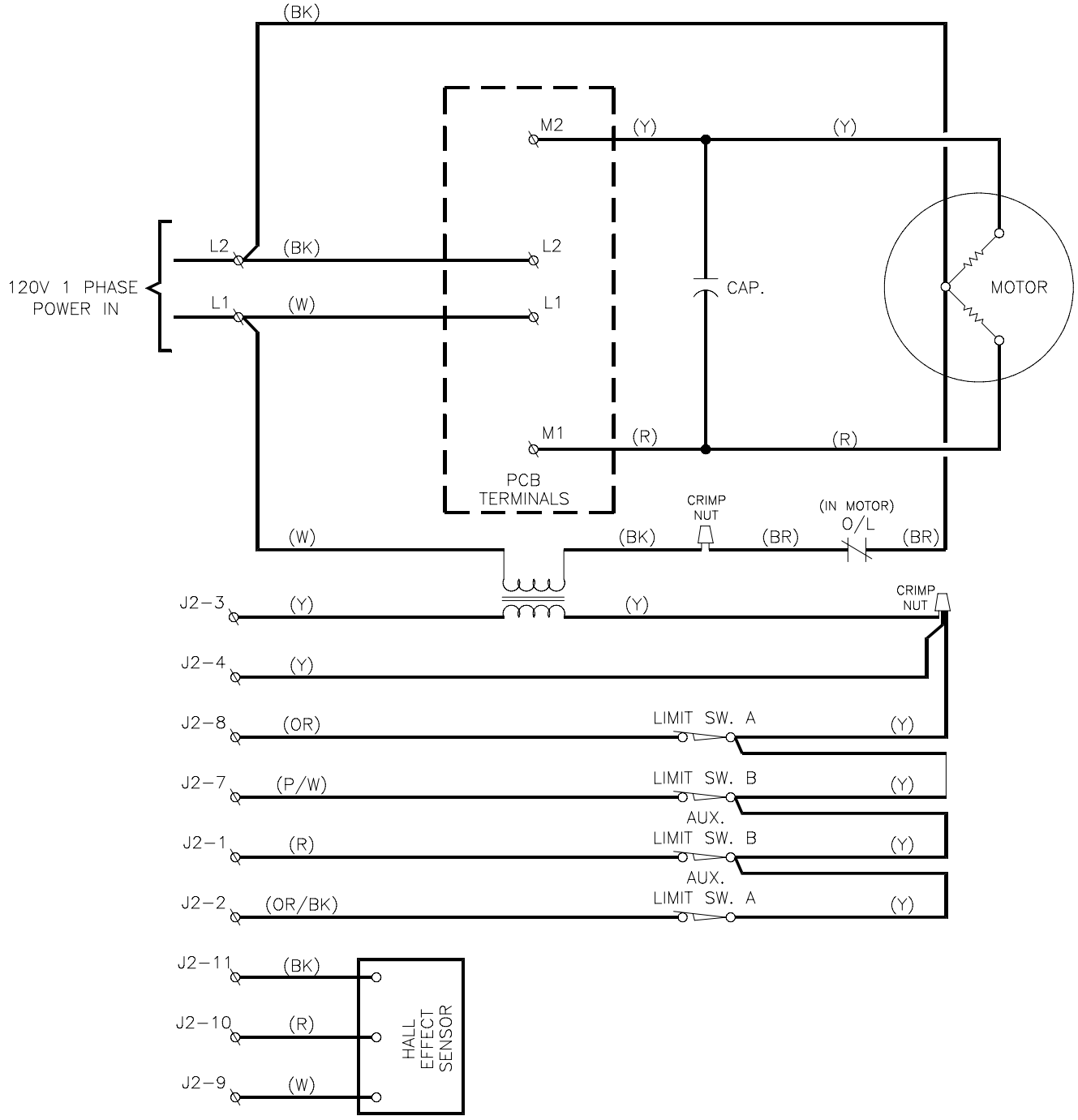
Remove the four flanged hex screws securing the electrical box to the motor frame and carefully remove the old box.

MOUNTING NEW BOX:
Place the new electrical box on the motor frame, aligning the slots in the box with their corresponding holes on the motor frame (see illustration). Attach the new electrical box using the screws provided. Do not tighten screws at this time.

Replace the limit chain and secure with master link. Slide the new electrical box in its slots until most of the slack in the limit chain is picked up, being careful not to over-tighten chain. Secure the new electical box to the motor frame by tightening the hex screws.

Reconnect the motor wires (as shown in the diagram inside electrical box cover or refer to Owners Manual) and replace the electrical box cover. Restoring power completes the installation.

SINGLE PHASE SCHEMATIC DIAGRAM for LGJ 1666

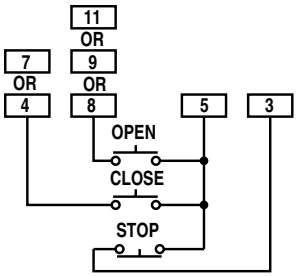


LGJ CONTROL CONNECTION DIAGRAM

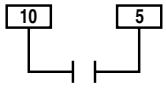
NUMBERED BOXES CORRESPOND WITH TERMINALS ON J1 CONNECTOR STRIP

If Neccessary, Remove The Connector Block From The Board To Secure Each Wire Connection

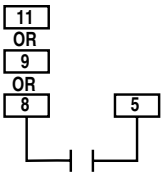
Connect field wires to any terminal number shown in the respective column. See control options below for explanation of how field control will function for each terminal number.



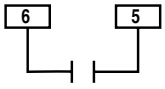
STANDARD 3 BUTTON CONTROL



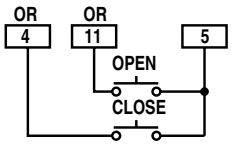
SENSING EDGE



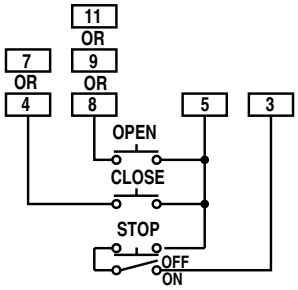
ANY OPEN CONTROL (SEE NOTE)



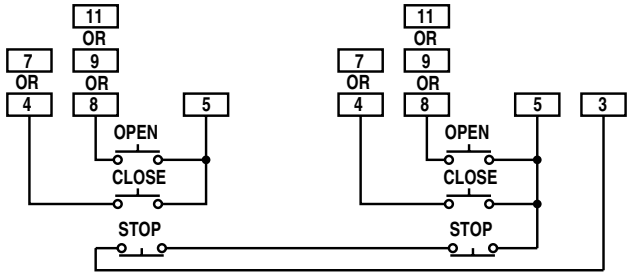
ANY OPEN & CLOSE CONTROL (SEE NOTE)



2 BUTTON CONTROL (SEE NOTE)

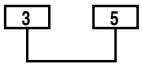


3 BUTTON CONTROL WITH KEYED LOCK-OUT



3 BUTTON CONTROL WITH MULTIPLE CONTROL STATIONS

IMPORTANT NOTE: **WHEN STOP BUTTON IS NOT USED, ADD A JUMPER FROM TERMINAL 3 TO TERMINAL 5.**



OPEN AND CLOSE CONTROL OPTIONS

WHEN CONNECTING AN OPEN CONTROL TO:

- 11 - Open control will require constant pressure to keep door moving.
- 9 - Open control will only require momentary contact and will set or reset timer to close.
- 8 - Open control will only require momentary contact and will NOT set or reset timer to close.

WHEN CONNECTING AN CLOSE CONTROL TO:

- 4 - Close control will require constant pressure to keep door moving.
- 7 - Close control will only require momentary contact. DO NOT add unless using an entrapment Protection device.

SWITCH ADJUSTMENTS

SWITCH #1 SETTINGS

MAXIMUM RUN TIME: 1 - ON: Maximum run time is 90 seconds.
OFF: Maximum run time is 45 seconds.

MAXIMUM RUN TIME: 2 - ON: CLOSE limit switch B
OFF: CLOSE limit switch A

MAXIMUM RUN TIME: 3 - OFF: (DO NOT ADJUST)
4 - OFF: (DO NOT ADJUST)
CONSULT FACTORY FOR ADJUSTEMENT

SWITCH #2 SETTINGS

TIMER TO CLOSE SWITCH SETTING:
O = ON F = OFF

SETTING 1 2 3 4	TIME	SETTING 1 2 3 4	TIME
O O O O	= Disabled	O O O F	= 72 sec
F O O O	= 2 sec	F O O F	= 88 sec
O F O O	= 3 sec	O F O F	= 107 sec
F F O O	= 13 sec	F F O F	= 126sec
O O F O	= 15 sec	O O F F	= 148 sec
F O F O	= 23 sec	F O F F	= 172 sec
O F F O	= 32.5 sec	O F F F	= 198 sec
F F F O	= 43.6 sec	F F F F	= 224 sec

01-12577B

Printed in Mexico

FDOA and FDOB ORIGINALLY LEFT THE FACTORY AS STATED BELOW

ECN #	DATE	DESCRIPTION	Reason for Change	Notes
98-0228	12/4/98	Initial Release of FDO- LMPLC PCB assy for production		
98-0277	5/1/98	Initial Release of FDO- FDO5011EB, FDO5011A, FDO1023A, FDO1043A, FDO1023EB, FDO1043EB, BOM and New Parts.		
98-0587	11/2/98			
99-0108	2/10/99	FDO BOM changes,Initial release of Manual 01-13708, New voice board accessory kit 90-FDOSV		Have complete manual Rev A
99-0426	6/28/99	Revised Manual 01-13708 (Rev C)- New Service Kits		Have complete Manual Rev C
99-0653	11/11/99	New Battery Tag, Removed transformer 21-3240-1 (100VA)and replace with 21-14355 (200VA)effecting FDO1023B and FDO1043B		
99-0735	12/14/99	Initial Release of Brake cover service kit 71-16451 (1HP)and 7 16452 (1/2HP) on FDOB operators to correct problem of plunger over traveling	The addition of 1/4-20 Hex Bolt (Stop Bolt) and Lock Nut and reworking Brake Cover to accept bolt, to stop over travel	
99-0751	12/29/99	**Problem Found** When the door reaches either limit, there is only a .5 second delay before it recognizes the next command. **Correction made** The new software will allow 1.3 to 1.5 second delay whenever the door is stopped at either limit.		Software change (FDOA-02 and FDOB-02)
00-0036	1/27/00	Revised Manual 01-13708 (Rev D)- Revised wiring schematics to reduce voltage spikes on FDOA operators as follows : 1) **From**: J22 to J18 (BL), **To**: J22 to J19 (BK), 2)**From**: AC Brake (BL) to J19, **To**: AC Brake (WH) to J18	These wiring changes were done to help bring the spike away from the microprocessor on FDOA operators with A/C solenoids.	Have complete Manual Rev D
00-0043	1/31/00	Initial Release of new FDO Chip Programing numbers: FDOA-100, FDOA-101, FDOA-102, FDOB-100, FDOB-101, FDOB-102. Initial Release of service kits K79-13493A and K79-13493B.		FDO Chip Program Number FDOA-102 and FDOB-102
00-0052	2/7/00	Initial Release of Left Hand Fire Door Operator for FDOA and I Revised software to correct brake functionality when stop button is not connected.		Software change (B Only) (FDOB-103)
00-0100	3/27/00	Changed fuse in BOM from 6 AMP(35-206) to 3 AMP(35-203). Changed battery harness wires from 16 GA. To 18 GA. For ease of crimping (95-BK10-18 & -19, 95-RD10-18 & -19)	UL Requirement for class two control circuit.	
00-0190	5/23/00	Revised Manual 01-13708 (Rev E)- Revised 1 and 3 Phase wiring schematics FDOA operators as follows : 1) **From**: J22 to J19(BK), **To**: J22 to J2-24(BK), 2)**From**: AC Brake (WH) to J18 **To**: AC Brake (WH) to J2-23. Revised software to prevent against Microprocessor Reset	These wiring changes were done to help bring the spike away from the microprocessor on FDOA operators with A/C solenoids.	Software change (A Only) (FDOA-104) Have complete Manual Rev E
00-0200	6/1/00	Revised Manual 01-13708 (Rev F)**Changing from an AC to a DC brake solenoid, on FDOA units.** Removed Key-Test-**FROM:** Optional user interface on wiring diagrams, **TO: Standard user interface** Initial release-Reworked brake hub(07-10179-2)		Change over to DC solenoids on FDOA Units Have complete manual Rev F FM Approval 7/25/00

00-0203	6/4/00	Initial release of DC Solenoid Plunger Stop Bracket 10-16719 Bracket used on FDO5011B, FDO1023B,FDO1043B. Removed .281 Diameter hole from (Cover, Brake Mechanism 10-14646 (FDO 1HP)) and Removed .281 Diameter hole from (Cover, Brake Mechanism 10-13355 (FDO 5011)). Removed stop bolt (82-HN25-22) and nut (84-FN-25) from BOM.		FM Approval 8/16/00
00-0206	6/29/00	Initial release of FDO Auxiliary Limit Switch: 90-9210F1(Aux Limits on Open or Close),90-9210F2(Aux Limits on Open and Close), K90-9210F1(KIT: Aux Limits on Open or Close),K90-9210F2(KIT: Aux Limits on Open and Close)	Modification	
00-0288	8/1/00	Initial Release of FDO Key Station 02-109FDO		
00-0337	9/11/00	FDO Auxiliary Limit Switch MOD. Redesign to use Model "H" Auxiliary Bracket (10-14179 REV C)		
00-0385	11/2/00	Initial Release of BOM for Motion Circuit #90-MOTFDO11 for FDO 115V Operator	Modification	
00-0406	10/23/2000	Revision to add Voice Board/Speaker/ Strobe and FDO Keystation as standard to FDOB operators. Initial Release of Voice Board Assy (74-17465) and Strobe/Speaker Kit (74-17464).	Minor change (Added how to wire voice board and showed exploded view)	Need Manual Rev G
00-0424	11/8/00	Revised Manual 01-13708 (Rev H)- Revised 1 and 3 Phase wiring schematics FDOA operators as follows : 1)**From**: J16 to J18(RD), **To**: J16 to J2-24(RD), 2)**From**: DC Brake (RD) to J19 **To**: DC Brake (RD) to J2-23.	These wiring changes were done to help bring the spike away from the microprocessor on FDOA operators with D/C solenoids.	Have complete manual Rev H
00-0491	12/18/00	Initial Release to fix problem of Operators running past the limits, at low voltage: 1) Instructions, Chip Replacement 01-17698. 2) Foam Conductive 04-17697. 3) Socket 40 Pin IC 29-17696. 4) Kit FDO A Chip K29-FDOA. 5) Kit FDO B Chip K29-FDOB. 6) Programming FDO A 06-FDOA-105. 7) Programmin FDO B 06-FDOB-104.		Software Change: (FDOA-105) (FDOB-104)
01-0056	2/15/01	Revised Manual 01-13708 (Rev J)- Added Motor Connection Diagrams to 3 Phase, 1 HP Operators		Have complete Manual Rev J
01-0073	3/2/01	Initial Release of**NEW** Manual (FDOA&B, C2/B2 Wiring) 01-17933 taking the place of Manual 01-13708. Initi Release of new Cover Labels: 40-17935 (FDOB 1PH),40-17936(FDOA 3PH),40-17937(FDOB 3PH),40-17934(FDOA 1PH). Initial Release of Programing (FDOA&B, C2/B2). Initial Release of Relay 24 VAC DPDT		Have complete manual Rev A Software Change: B2/C2 Wiring (FDOA-200) (FDOB-200)
01-0403	8/22/01	Revised Manual 01-17933 (REV B) and Cover Labels: 40-17935(FDOB 1PH),40-17936(FDOA 3PH),40-17937(FDOB 3PH),40-17934(FDOA 1PH), showing connections to 24VAC relay coil from J2-13 and J2-22.		Have complete manual Rev B
01-0483	10/8/01	Added MOV to DC Brake Solenoid 22-13028	TO STOP RESETTING OF MICROPROCESSOR	**Per QPR #366 This will prevent the solenoids from burning out.**
01-0486	10/8/01	Initial Release of**Official** C2/B2 FDOB Programining. (Seems there were two versions of FDOB-200)		Software change (B Only) (FDOB-300)

FDOA and FDOB ORIGINALLY LEFT THE FACTORY AS STATED BELOW

01-0537	10/31/01	Initial Release of Power ResistorAssembly (74-18609), Service Kit (K74-16438), AND INSTRUCTIONS (01-16356A)	Initially, production had some Power Resistors shipped out with the capacitors wired with the polarity wired in reverse. This effected the charging circuit. To fix matters, the Power Resistor Assembly was made available for quick change of units in the field.	
02-0138	3/4/02	Revised Manual 01-17933 (REV C) and Cover Labels: 40-17936(FDOA 3PH),40-17934(FDOA 1PH), showing new DC Soleniod wiring on FDOA operators: 1)**From**:DC Brake(BK) to J30, **To:** DC Brake(BK) to J17, 2)**From**:DC Brake(RD) to J2-23, **To**: DC Brake(RD) to J16, 3)**From**: J16 to J2-24(RD),**To**: J30 to J2-24(BK) 4)**Add:** J2-23 to J17 (BK) Initial Release of Installation Instructions for Solenoid Wiring (01-18572).	These wiring changes were done to help bring the spike away from the microprocessor on FDOA operators with D/C solenoids.	FDOA Operators Have complete Manual Rev C
02-0155	3/11/02	Initial Release of Aluminum Electrolytic Capacitor (29-18581) to temporary replace the MOV		
02-0230	4/11/02	Initial Release: 1)SVC KIT, FDOA Programmed Chip-K29-FDOA-300. 2)SVC KIT, FDOA Chip & Wiring- K74-FDOA-300. 3)SVC KIT, FDOA Chip, Wiring & Brake-K76-FDOA-300. Revised Manual 01-17933 (REV D) 1) Motor Current-**From:** 115 V = 8.2A, 230/460 V = 3.6/1.8A,**To**: See Motor Nameplate. Revised programming to FDOA-300 (C2 Problems in version 200: Door not dropping on alarm immediately in C2 mode. The brake would pull in as the door would drive down, then the brake would re-engage,hence turning off the motor.)		Software change (A Only) (FDOA-300) Have complete Manual Rev D
02-0286	5/10/02	Removed MOV From DC Brake Solenoid 22-13028 and Replaced with Diode(1N4002)		
02-0306	5/23/02	Remove FDO Keystation 02-109FDO from FDOA operators		
02-0340	6/5/02	Initial Release of FDOA DC Brake Solenoid Replacement Kit 71-FDOA-DC consisting of the following:1) Hardware Kit-77-18674, 2) Brake assembly-75-18673, 3) Label, 1PH Wiring-40-18673, 4) Label, 3PH Wiring-40-18674, 4) Instructions to convert from AC solenoid to DC solenoid on FDOA Operators W/AC Brakes-01-18672A.		
02-0375	6/24/02	Initial release of wiring diagram #9013, FDO Functional Test Panel	Test Panel	
02-0409	7/10/02	Revised Manual 01-17933 (REV E) and Cover Labels: 40-17935(FDOB 3PH),40-17937(FDOB 1PH) to show 3 Amp Fuse instead of 6 Amp Fuse.		Have complete manual Rev E
02-0538	10/14/02	Revised FDOA DC Brake Solenoid Replacement Kit 71-FDOA-DC by removing Spring 18-10194 and replacing with 18-10036. Revised instruction sheet 01-18672 to REV B to match the above.		

Sarasota

Quick Setup

1) Verify the input voltage on the back of the detector, (located just under the connector).

2) Terminate wiring harness to terminal strip for desired function (power, desired outputs, loop, etc.).

3) Connect harness to detector.

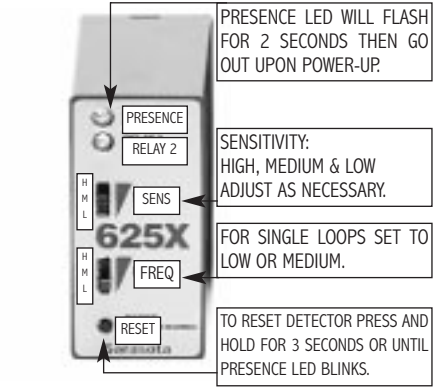
4) Verify power to the detector.

   * Presence LED should come ON and flash for 2 seconds, then go out.

5) Set sensitivity to medium.

6) Adjust frequency to Low for a single loop. For multiple loop applications set detectors to different frequencies.

7) Depress Reset button for 3 seconds, until presence LED flashes, release, now you are ready to operate.



Setup Details

1) Power is supplied to the unit on pins 1 & 2, (Black & White).

2) Ground the unit by taking pin 4, (Green) to the operator ground.

3) The most common hook-up is for using the presence relay, pins 5 & 6, (Yellow & Blue). The presence relay common, pin 5, (Yellow) is taken to the common of the terminal strip on the operator. The presence relay N.O. Normally Open pin 6, (Blue) is taken to the Open, Close, Hold Open etc. whatever function is to be performed.

4) For a second presence or pulse output, relay2, pins 3 & 9, (Orange & Red) are used. Relay2 N.O. pin 3, (Orange) is taken to the Open, Close, Hold Open etc. whatever function is to be performed. If a N.C. Normally Closed output is necessary use pin 11, (White/Red). Relay2 common pin 9, (Red) is taken to the common on the terminal strip of the operator.

5) The loop leads come into the detector on pins 7 & 8, (Gray & Brown), this is from the loop in the ground. These leads must be twisted all the way to the detector for proper operation (See diagram on page 13).

625X Definition of Outputs

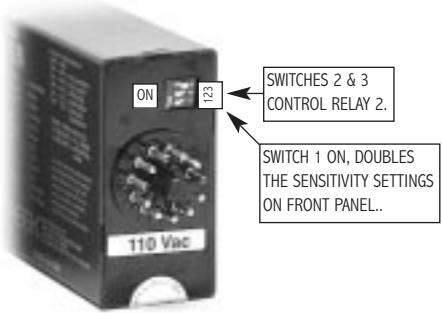
Presence means the relay will be energized the entire time a metal mass is within the field generated by the loop. The 625X has the ability to provide two presence outputs. Relay 1 is always presence (pins 5 & 6, yellow & blue wires).

Relay 2 (pins 3 & 9, Orange & Red wires) can be set for presence using the switches on the back panel. Set switch 3 to OFF and switch 2 to ON.

Pulse on entry means that relay 2 will be energized as soon as a metal mass enters the field generated by the loop. On the back panel set switch 3 to OFF and switch 2 to OFF. This pulse will last 125mS.

Pulse on exit means that relay 2 will be energized when a metal mass has left the loop. On the back panel set switch 3 to ON and switch 2 to OFF. This pulse will last 125mS.

Loop fault output means the relay will be energized if there is a current fault (open loop, shorted loop or greater than a 25% inductance change). On the back panel set switch 3 to ON and switch 2 to ON.



LOOP

CONSTANT PRESENCE (DETECT)
WHILE METAL IS OVER LOOP.

LOOP

MOMENTARY PULSE WHEN
METAL ENTERS THE LOOP.

LOOP

MOMENTARY PULSE WHEN
METAL LEAVES THE LOOP.

Sensitivity

Six sensitivity settings are available using the 3-position front panel slide switch and switch 1 on the back panel (See diagram on page 2).

SW1 = OFF (to the number side)
SW1 = ON (to the ON side)

SW1/OFF	SW1/ON
Max = 0.04%	Max = 0.02%
Med = 0.16%	Med = 0.08%
Min = 0.64%	Min = 0.32%

The above sensitivities are for the detect threshold when a vehicle enters the loop. The detector has a SENSITIVITY BOOST facility whereby the drop sensitivity decreases to half its numerical initial value (except 0.02 setting).

Always operate the detector on the lowest sensitivity possible while still detecting the desired vehicles. Construct the loop for your specific job. Remember the smallest side of the loop will determine how high off the ground you will be able to detect a vehicle. Your loop will have an effective field 1/2 to 2/3rds. of the smallest side of the loop. Example: A 6'x6' loop has a smallest side of 6' therefore your detector can reliably see a vehicle at 3' to 4' above the loop wires. A 6'x3' loop has a smallest side of 3' therefore your detector can reliably see a vehicle 1 $^{1}/_{2}$' to 2' above the loop wires.

Also remember your loop will sense metal off to the sides, not as far as above the loop. Do not install the loop too close to any moving metal. The detector does not know the difference between a vehicle and a metal door or gate. Keep your loop far enough away from any moving metal to avoid false detections, approximately 4'.

Trouble Shooting

Q: The detector LED blinks, and it won't detect anything.

A: A blinking LED is telling us there is a problem tuning to the loop. Open loop, shorted loop, bad connection to the harness, loop wires twisted around the entire loop not just the lead-in, not enough turns of wire around the loop.

Q: The detector won't let the door or gate down, it just reverses and goes back up.

A: The loop has been installed too close to the door. A loop detector does not know the difference between a vehicle and a moving, metal door. If turning down the sensitivity does not help, consult the factory or move the loop farther away from the door, at least 4'.

Q: The detector doesn't detect trucks.

A: The sensitivity is not high enough or the loop is too small. Generally a loop can 'sense' metal 1/2 to 2/3 the distance of the smallest side of the loop.

Q: The detector is erratic.

A: Detectors are very stable, if you see erratic behavior, check the loop for continuity and leakage to ground. Check for constant supply voltage. Check to see that the detector and operator are properly grounded. Check to see that the wiring harness is on tight.

Testing the Loop:

A good loop is critical for constant operation from your detector. When installing your loop take great care not to damage the insulation of the wire. Breaks in the insulation can cause the wire to act as a wick and pull in moisture corroding the wire itself and causing erratic operation from the detector. Cross-link polyethylene is the most popular insulation and is strongly recommended (XHHW), 16 or 18 gauge. If the lead-in is extremely long increase the wire size. The insulation must be able to withstand wear and abrasion from pavement shifting, moisture and attacks by solvents and oils, as well as withstand high temperature sealants. Stranded wire is recommended over solid wire because of its mechanical characteristics. Stranded wire is more likely to survive bending and stretching than solid wire.

Megging a loop and lead-in should have an insulation resistance to earth greater than 20M□, measured at 500 volts. One end of the loop goes to one lead from the 'meggar' and the other lead from the 'meggar' goes to a good ground. Also a series resistance of less than 10□ with a standard Ohm meter. If a problem with a loop is suspected try swapping the detector with a known good detector and see if the problem follows the detector or the loop.

625X Pin Connections

Pin	Function	Wire Color
1	120VAC (24VAC option)	Black
2	AC Neutral Common	White
3	Relay 2 N.O. (Normally Open)	Orange
4	Chassis Ground	Green
5	Presence Relay Common	Yellow
6	Presence Relay N.O. (Normally Open)	Blue
7	Loop	Gray
8	Loop	Brown
9	Relay 2 Common	Red
10	Presence Relay N.C. (Normally Closed)	White/Black
11	Relay 2 N.C. (Normally Closed)	White/Red

625B Pin Connections

Pin	Function	Wire Color
1	120VAC (24VAC option)	Black
2	AC Neutral Common	White
3	Not Used	
4	Chassis Ground	Green
5	Relay Common	Yellow
6	Relay N.O. (Normally Open)	Blue
7	Loop	Gray
8	Loop	Brown
9	Not Used	
10	Relay N.C. (Normally Closed)	White/Black
11	Not Used	

625X Specifications

Inductance range

18 to 1800 microhenries automatically tuned.

Frequency range

10 to 97 KHz.

Temperature range

-40°C to +85°C.

Outputs

Presence and relay2 are change over relay contacts rated at 250VAC, 5A, 150W/600VA max.

Lightning and Transient Protection

Zener diode protection from over voltage induced on loop and feeder leads. Flash over protection from loop to earth. Protection exceeds NEMA specification.

Supply power

120 or 24VAC, 12 or 24VDC.

Frequency

One of three operating frequency ranges can be selected with the front panel slide switch to eliminate crosstalk.

(cont.)

Reset

The reset button must be depressed for three seconds for automatic retune. If depressed for less than three seconds, it will show loop faults as described later.

Loop fault Indications:

If the 625X sees a loop fault (open loop, shorted loop or greater than a 25% inductance change), the presence LED will flash at a 16Hz rate. If the fault condition corrects itself, the presence LED and detector will resume normal operation. This historic fault can be displayed by depressing the reset button for less than three seconds. The presence LED will flash at a 16Hz rate to indicate a fault had occurred. When the reset button is released, the detector will resume normal operation within three seconds.

Presence time:

60 minutes standard.

Presence time options:

8 minutes, 16 minutes or permanent.

Dimensions:

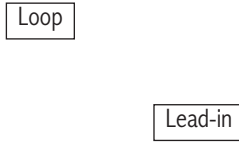
3"H x 1.5"W x 3.5"L excluding connector.

About the 625X

- Small size 3”H x 1.5”W x 3.5”L
- Failsafe or Failsecure outputs
- Increased sensitivity
- Six selectable sensitivities
- Easy to use controls
- Second relay output mode selectable
- - Pulse on Entry
- - Pulse on Exit
- - Second presence output
- - Loop fault output
- 120 or 24VAC input
- Automatic sensitivity boost
- Current and historical loop fault indicators
- Compatible with existing equipment
- Automatic tuning
- Consistent presence time
- Made in U.S.A.

About the 625B

- Small size 3”H x 1.5”W x 3.5”L
- Failsafe output only
- Increased sensitivity
- Six selectable sensitivities
- Easy to use controls
- Relay output mode selectable
- - Pulse on entry
- - Pulse on exit
- - Presence output
- - Loop fault output
- 120 or 24VAC input
- Automatic sensitivity boost
- Current and historical loop fault indicators
- Compatible with existing equipment
- Automatic tuning
- Consistent presence time
- Made in the U.S.A.


Loop
Lead-in

4 FOOT LOOP WIDTH				
LOOP SIZE (ft)	INDUCTANCE (µh)			
	1 TURN	2 TURN	3 TURN	4
TURN				
4 x 4	7	20	44	78
4 x 6	8	25	56	100
4 x 10	12	36	81	144
4 x 15	17	50	112	199
4 x 20	21	64	143	253
4 x 25	26	78	174	
4 x 30	30	91	204	
4 x 35	35	105	235	
4 x 40	39	119	266	
4 x 45	44	132		
4 x 50	49	146		
4 x 55	53	160		
4 x 60	58	174		
4 x 65	62	187		
4 x 70	67	201		
4 x 75	71	215		
4 x 80	76	228		
4 x 85	81	242		
4 x 90	85	256		
4 x 95	90	270		

Optimum range is between 70µh and 250µh

6 FOOT LOOP WIDTH				
LOOP SIZE (ft)	INDUCTANCE (µh)			
	1 TURN	2 TURN	3 TURN	4 TURN
6 x 4	8	25	56	100
6 x 6	10	31	70	124
6 x 10	14	43	96	171
6 x 15	19	58	129	229
6 x 20	24	72	161	286
6 x 25	29	87	194	
6 x 30	34	101	226	
6 x 35	38	116	259	
6 x 40	43	130		
6 x 45	48	145		
6 x 50	53	159		
6 x 55	58	173		
6 x 60	63	188		
6 x 65	67	202		
6 x 70	72	217		
6 x 75	77	231		
6 x 80	82	246		
6 x 85	87	260		
6 x 90	91	275		
6 x 95	96	289		
6 x 100	101	303		

Optimum range is between 70µh and 250µh

NOTES

Sarasota

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PEEK TRAFFIC

Sarasota

625B Parking Detector

- Small size 3”H x 1.5”W x 3.5”L
- Failsafe outputs
- Increased sensitivity
- Six selectable sensitivities
- Easy to use controls
- Relay output mode selectable
  - Pulse on entry
  - Pulse on exit
  - Presence output
  - Loop fault output
- 24VAC or 120VAC input
- Automatic sensitivity boost
- Current and historical loop fault indicators
- Compatible with existing equipment
- Automatic tuning
- Consistent presence time
- Made in U.S.A.

Peek Traffic - Sarasota is pleased to introduce the Model 625B inductive loop detector for the parking and access control markets. The Model 625B is the next step in a long line of Sarasota detectors spanning over forty years in detector manufacturing. Incorporating the time tested Sarasota detection techniques with state-of-the-art manufacturing has resulted in a new compact design that offers increased performance and compatibility with existing equipment.

The 625B is a single channel inductive loop vehicle detector designed to provide vehicle presence information required by gate operators, ticket spitters, card readers, etc. Although compact and lightweight, the 625B is designed to operate in the most demanding high volume access control installations in all environmental conditions.

It is a full performance detector that does not sacrifice features for the evolutionary reduction of size. One relay is available that is switch selectable for presence, pulse-on-entry, pulse-on-exit or a fault indication. Easy to use front panel slide switches provide positive identification of frequency and sensitivity settings.

Specifications

Inductance Range: 20 to 1800 microhenries
Automatically tuned

Frequency Range: 16 to 97 KHz

Temperature Range: -40˚C to +80˚C

Output: Presence - Change over relay contact.

Clean contact rated at 5A @ 120VAC or 30VDC.

Optional: Optically isolated contact 50VDC 50mA.

Lightning Protection: Zener diode protection from over voltage induced on loop and feeder leads. Flash over protection from loop to earth. Exceeds NEMA specification.

Supply Power: 24VAC or 120VAC available. VA Rating 1.2VA

Back Panel Mode Switch:

SW3		SW2		
OFF	+	OFF	=	Pulse on Entering the loop, 125mS ±25mS
ON	+	OFF	=	Pulse on Leaving the loop, 125mS ±25mS
OFF	+	ON	=	Presence Output
ON	+	ON	=	Loop Fault Output

Sensitivity: Six sensitivity settings are available using the 3-position front panel slide switch and switch 1 (SW1) on the back panel.

SW1 = OFF	SW1 = ON
MAX = 0.04%	MAX = 0.02%
MED = 0.16%	MED = 0.08%
MIN = 0.64%	MIN = 0.32%

Frequency: One of three operating frequency ranges can be selected with the front panel slide switch to eliminate crosstalk.

Reset: The Reset button must be depressed for three seconds for automatic retune. If depressed for less than three seconds, it will show loop fault as described below.

Loop Fault Indications: If the 625B sees a loop fault (open loop or shorted loop), the loop status LED will flash at a 16Hz rate. If the fault condition corrects itself, the loop status LED and detector will resume normal operation. This historic fault can be displayed by depressing the Reset button. The loop status LED will flash at a 16Hz rate to indicate a fault has occurred. When the Reset button is released, the detector will resume normal operation within three seconds.

Detector Failure Condition: Failsafe when supply or loop fails. Output falls in the detect state

Presence Time: 60 minutes standard. Options: 8, 16 minutes or permanent

Dimensions: 3”H x 1.5”W x 3.5”L excluding connector

Connections

Pin	Function	Wire Color
1	120 VAC (24 VAC option)	Black
2	AC Neutral Common	White
3	N/A	
4	Chassis Ground	Green
5	Relay Common	Yellow
6	Relay N.O.	Blue
7	Loop	Gray
8	Loop	Brown
9	N/A	
10	Relay N.C.	White/Black
11	N/A	

Contact is shown in the “NO VEHICLE PRESENT” condition with power applied and loop connected to the detector.

Ordering Information

Standard order as 625B
Input Supply - 24VAC or 120VAC
Failure Mode - Failsafe
Presence Time - 8, 16, 60 (standard) minutes or permanent

Operating Instructions

1. Verify the harness is wired per the connection chart and the input voltage is correct.
2. Set the Output Control (switches 3 and 2 on the back panel) to the desired function.
3. Set switch 1 on the back panel to the OFF position and SENS switch to MIN setting.
4. Plug in detector. It will automatically tune.
5. Observe vehicle detections on the LOOP STATUS LED. If vehicles are not detected, increase sensitivity until detection occurs.
6. If crosstalk with an adjacent loop occurs, use the FREQ switch to change the operating frequency.

Two Year Limited Warranty*

Peek Traffic, Inc. warrants this product against manufacturing defects in materials and workmanship for two years from date of shipment from the Peek Traffic, Inc. factory.

* For specific warranty information contact your local representative or Peek Traffic, Inc.

Peek is a subsidiary of Thermo Power, a Thermo Electron company

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1-800-245-7660
Fax: (941) 365-0837
www.peek-traffic.com

PEEK TRAFFIC

Sarasota

625X Detector

- Small size 3”H x 1.5”W x 3.5”L
- Failsafe or failsecure outputs
- Increased sensitivity
- Six selectable sensitivities
- Easy to use controls
- Second relay output mode selectable
  - Pulse on entry
  - Pulse on exit
  - Second presence output
  - Loop fault output
- 24 or 120VAC input
- Automatic sensitivity boost
- Current and historical loop fault indicators
- Compatible with existing equipment
- Automatic tuning
- Consistent presence time
- Made in U.S.A.

Peek Traffic - Sarasota is pleased to introduce the next generation detector, the Model 625X inductive loop detector for the parking and access control markets. The Model 625X is the next step in a long line of Sarasota detectors spanning over forty years in detector manufacturing. Incorporating the time tested Sarasota detection techniques with state of the art manufacturing has resulted in a new compact design that offers increased performance and compatibility with existing equipment.

The 625X is a single channel inductive loop vehicle detector designed for use in the access control market to provide vehicle presence information required by gate operators, ticket spitters, card readers, etc. Although compact and lightweight, the 625X is designed to operate in the most demanding high volume access control installations in all environmental conditions.

The 625X is a full performance detector that does not sacrifice features for the evolutionary reduction of size. Two outputs are available. One to provide the presence of a vehicle over the loop, the second is switch selectable to provide pulse on entry of the loop, pulse on exiting the loop, a second presence output or a loop fault output. Easy to use front panel slide switches provide positive identification of frequency and sensitivity settings.

Specifications

Inductance Range: 18 to 1800 microhenries
Automatically tuned

Frequency Range: 10 to 97 KHz

Temperature Range: -40˚C to +80˚C

Outputs: Presence and Relay2 are change over relay contacts rated at 250VAC, 5A, 150W/600VA max.
Optional: Optically isolated contact 50VDC 50mA

Lightning and Transient Protection: Zener diode protection from over voltage induced on loop and feeder leads. Flash over protection from loop to earth. Protection exceeds NEMA specification.

Supply Power: 24VAC or 120VAC available. VA Rating 1.2VA

Relay2 Output: Relay2 Output Control Switch on back panel

SW3		SW2	
OFF	+	OFF	= Pulse on Entering the loop, 125mS ±25mS
ON	+	OFF	= Pulse on Leaving the loop, 125mS ±25mS
OFF	+	ON	= Second Presence Output
ON	+	ON	= Loop Fault Output

Sensitivity: Six sensitivity settings are available using the 3-position front panel slide switch and switch 1 (SW1) on the back panel.

SW1 = OFF	SW1 = ON
MAX = 0.04%	MAX = 0.02%
MED = 0.16%	MED = 0.08%
MIN = 0.64%	MIN = 0.32%

Frequency: One of three operating frequency ranges can be selected with the front panel slide switch to eliminate crosstalk.

Reset: The Reset button must be depressed for three seconds for automatic retune. If depressed for less than three seconds, it will show loop faults as described below.

Loop Fault Indications: If the 625X sees a loop fault (open loop, shorted loop or greater than a 25% inductance change), the Presence LED will flash at a 16Hz rate. If the fault condition corrects itself, the Presence LED and detector will resume normal operation. This historic fault can be displayed by depressing the Reset button. The Presence LED will flash at 16Hz rate to indicate a fault has occurred. When the Reset button is released, the detector will resume normal operation within three seconds.

Detector Failure Conditions: Two factory set options are available.
1. Failsafe (Standard) when supply or loop fails.
   a. Presence output falls into detect state.
   b. Relay2 output falls in the quiescent state.
2. Failsecure when supply or loop fails.
   a. Presence output falls in the quiescent state.
   b. Relay2 output falls in the quiescent state.

Presence Time: 60 minutes standard. Options: 8, 16 minutes or permanent

Dimensions: 3”H x 1.5”W x 3.5”L excluding connector

Connections

Pin	Function	Wire Color
1	120 VAC (24 VAC option)	Black
2	AC Neutral Common	White
3	Relay2 N.O.	Orange
4	Chassis Ground	Green
5	Presence Relay Common	Yellow
6	Presence Relay N.O.	Blue
7	Loop	Gray
8	Loop	Brown
9	Relay2 Common	Red
10	Presence Relay N.C.	White/Black
11	Relay2 N.C.	White/Red

Contacts are shown in the “NO VEHICLE PRESENT” condition with power applied and loop connected to the detector.

Ordering Information

Standard order as 625X
Input Supply - 120 VAC or 24 VAC
Failure Mode - Failsafe or Failsecure
Presence Time - 8, 16, 60 (standard) minutes or permanent

Operating Instructions

1. Verify the harness is wired per the connection chart and the input voltage is correct.
2. Set the Relay2 Output Control (switches 3 and 2 on the back panel) to the desired function.
3. Set switch 1 on the back panel to the OFF position and SENS switch to MIN setting.
4. Plug in detector. It will automatically tune.
5. Observe vehicle detections on the PRESENCE LED. If vehicles are not detected, increase sensitivity until detection occurs.
6. If crosstalk with an adjacent loop occurs, use the FREQ switch to change the operation frequency.

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P.O. Box 2520 • Hazleton, PA 18201
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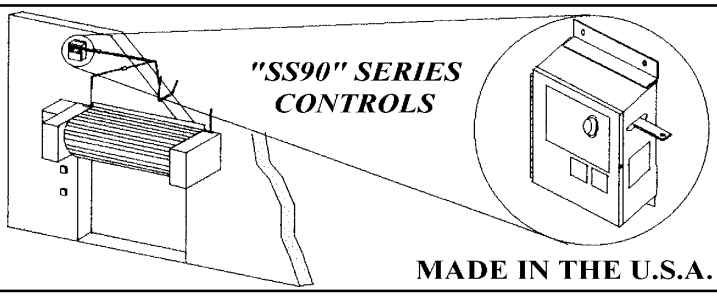


"SS90" MASTER-SLAVE APPLICATIONS BATTERY SUPPORTED PERFORMANCE

LISTED UL 99Y9 RELEASING DEVICE
LISTED C UL 99Y9 RELEASING DEVICE SYSTEME DE DEBRAYAGE

Applications Bulletin 0796RM

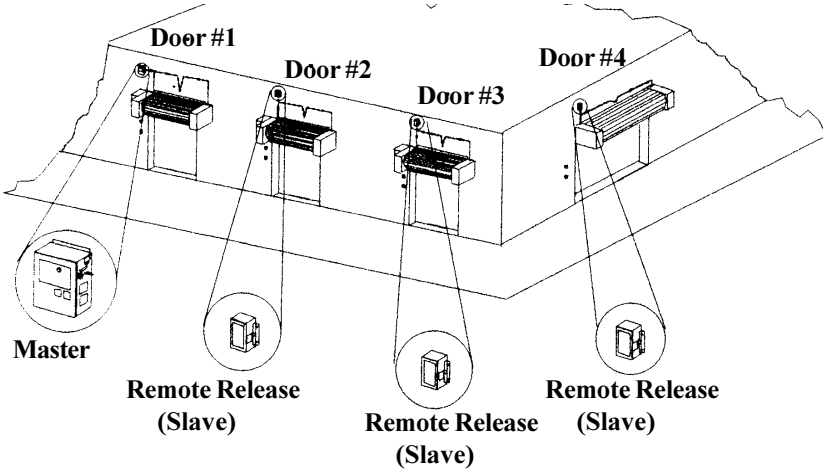
The "SS90" Remote Release and "SS90" Model B2 Master Release have been designed to address a multiple door installation, where simultaneous or sequentially delayed door closures occur in an emergency condition. The Master-Slave configuration allows a minimal amount of equipment to supply a host of performance features, reducing overall cost of equipment and labor.

The "SS90" B2 Master incorporates a battery charger, battery, two alarm circuits and annunciator capabilities, along with it's own integral release device. The "SS90" Remote releases are among the industry's smallest (6" x 4") Fail-Safe release devices and require only two wires between each unit and the Master for basic operation. The Remote Releases can be ordered with the Master to provide a controlled sequential closing sequence. The Master unit can support three Remote Releases, it's own integral release device and up to four smoke detectors. By installing an extra pair of conductors (4 conductor total) between the Master unit and Remote Release, each door can be fitted with an audible warning device (sounder or voice option), once again supported by the Master unit battery. The resulting four door, battery supported configuration, is unsurpassed in cost and system performance.

Note should be taken that the "SS90" B2 master unit and remotes do not have the limitations of similar equipment found in the industry. The typical maximum power loss delay of 2 minutes, high current requirements, mounting restrictions and vibration intolerance, common with most other equipment is of no concern when installing a Solid State Master/Slave system.

The cost effectiveness of installing a Master/Slave system becomes evident with an average unit cost equivalent to that of basic release devices, while receiving the benefit of power loss support lasting a *minimum of 24 hours. The unique features of these proprietary designs cannot be easily matched by costly special doors which may reset easily, but drop in a power loss causing risk of injury, or by assembling multiple control panels to form a similar configuration. Dollar for dollar the "SS90" Series Master/Slave configuration provides the industry's most comprehensive solution for a multiple door installation.

* Call or fax your factory representative for electrical specifications of the "SS90" B2 Master and "SS90" Remote Release. Power loss support varies with accessories used and number of remote units connected to master unit. Applications assistance is available upon request. Verify max allowable delays with local authority having jurisdiction.

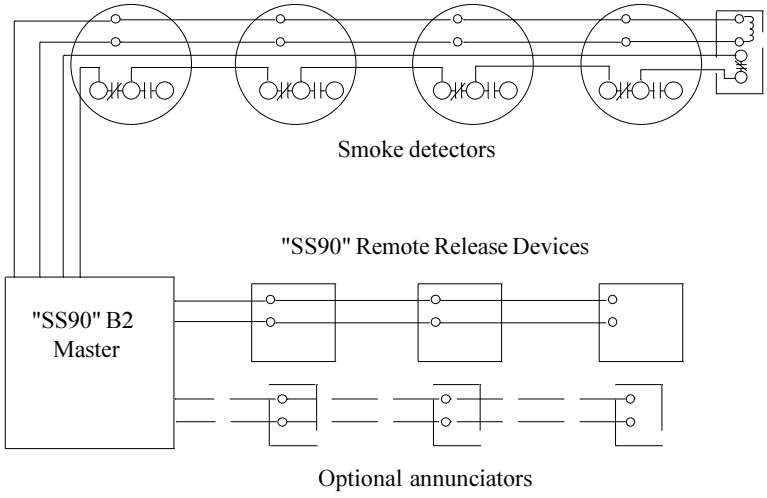


SPECIAL CONSIDERATIONS

As with all release device systems, maximum protection is provided when installed in accordance with factory specifications and used with a fusible link system.

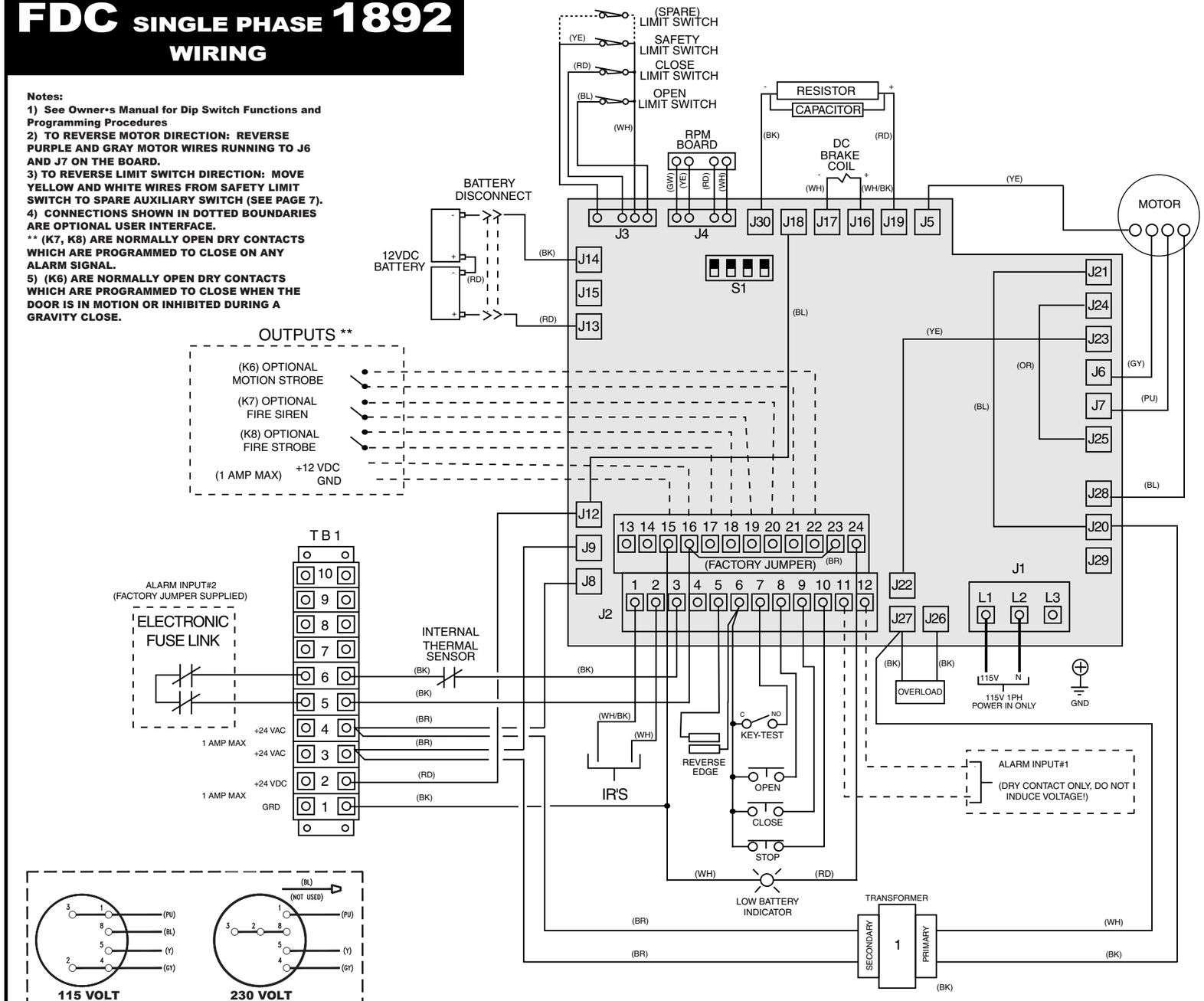
TYPICAL WIRING CONFIGURATION

From	- To	W/annunciator
Master	- Remote-18/2,	18/4
Master	- Smoke detector-18/4	18/4
Remote	- Remote-18/2	18/4



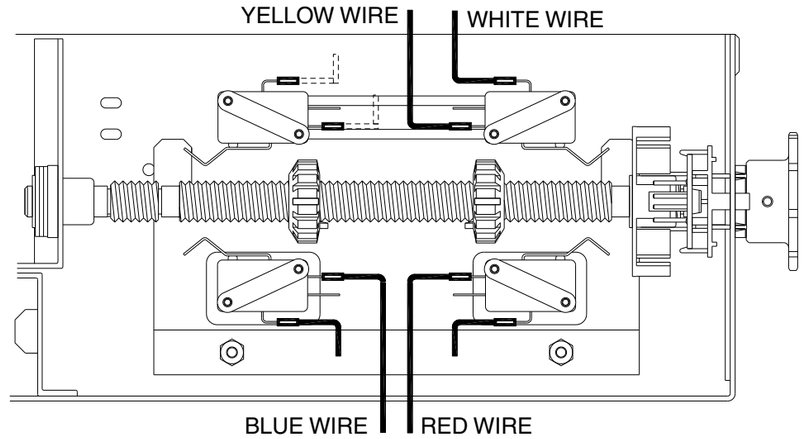
FDC SINGLE PHASE 1892 WIRING

Notes:
1) See Owner•s Manual for Dip Switch Functions and Programming Procedures
2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7 ON THE BOARD.
3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRES FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).
4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.
**** (K7, K8) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.**
5) (K6) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE WHEN THE DOOR IS IN MOTION OR INHIBITED DURING A GRAVITY CLOSE.



HANDING INSTRUCTIONS

(SHOWN AS LEFT HAND UNIT)



This unit was shipped from the factory for wall mounting the operator on the left side of the door. To change the handing of the operator follow the steps below.

REVERSE LIMIT DIRECTION
1) Swap the Red and Blue wires located on the normally closed contact of the Close and Open Limit Switches.
2) Relocate the Yellow and White wires on the Aux Close Limit Switch to the non-wired Limit Switch. (Yellow on the normally closed contact, White on the common contact).

REVERSE MOTOR DIRECTION
1) Swap Purple & Gray motor wires on the Motherboard at terminals J6 and J7.

DIP SWITCH SETTINGS

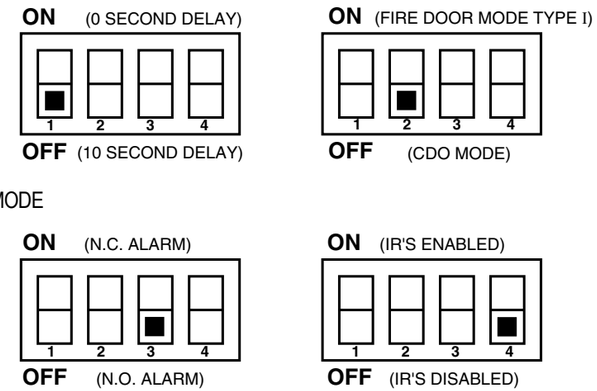
DIP SWITCH SETTINGS

SI-1 ALARM DELAY TO CLOSE

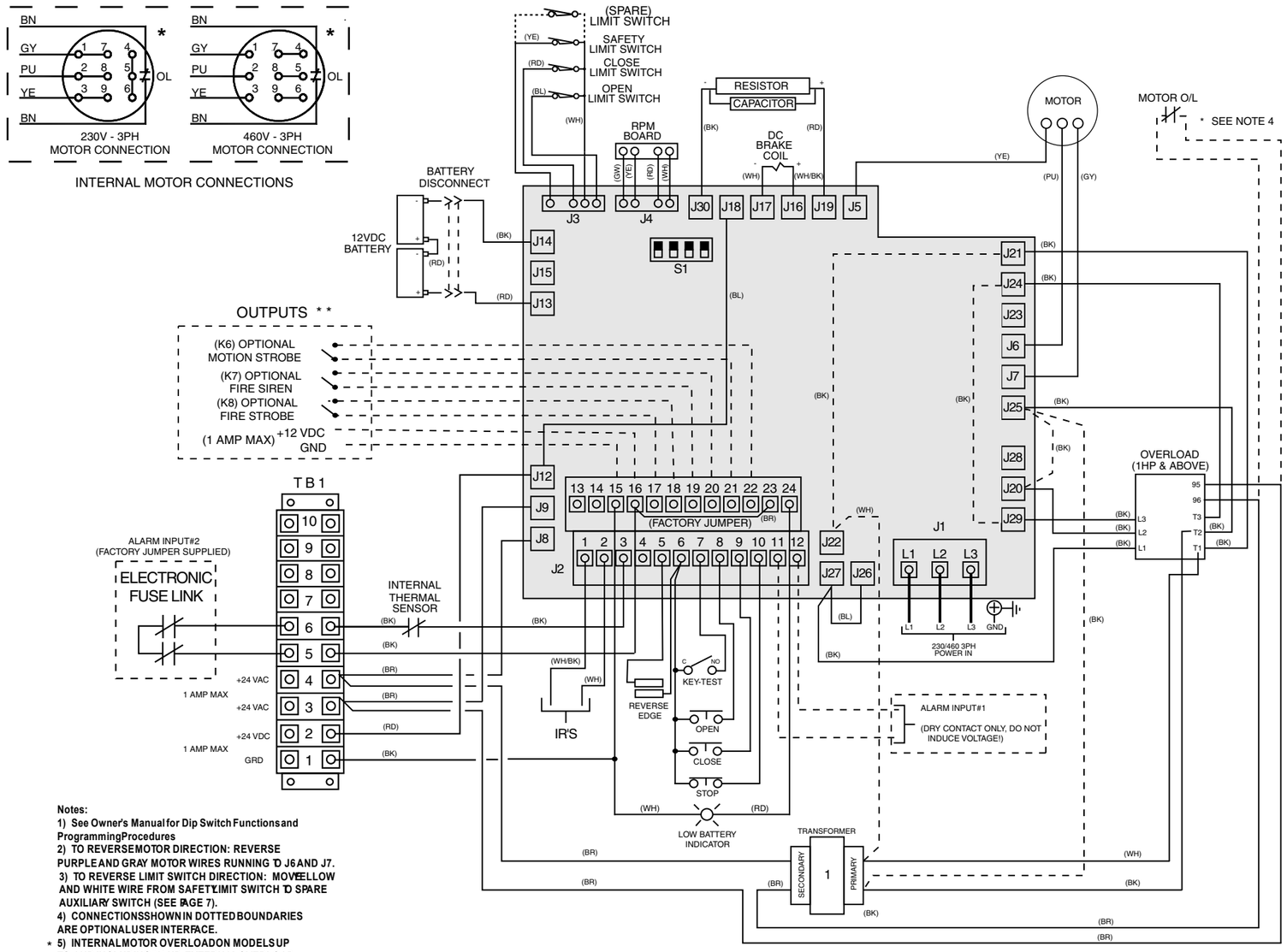
SI-2 FIRE DOOR MODE TYPE I/CDO MODE

SI-3 ALARM STATE

SI-4 INFRARED EYES STATE



FDC THREE PHASE 1893 WIRING



Notes:

1) See Owner's Manual for Dip Switch Functions and Programming Procedures
2) TO REVERSE MOTOR DIRECTION: REVERSE PURPLE AND GRAY MOTOR WIRES RUNNING TO J6 AND J7.
3) TO REVERSE LIMIT SWITCH DIRECTION: MOVE YELLOW AND WHITE WIRE FROM SAFETY LIMIT SWITCH TO SPARE AUXILIARY SWITCH (SEE PAGE 7).
4) CONNECTIONS SHOWN IN DOTTED BOUNDARIES ARE OPTIONAL USER INTERFACE.

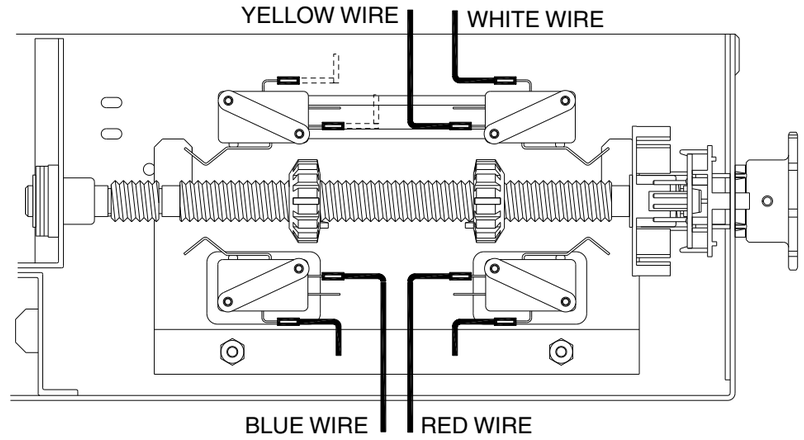
* 5) INTERNAL MOTOR OVERLOAD ON MODELS UP TO AND INCLUDING 3/4 HP. EXTERNAL OVERLOAD LOCATED IN ELECTRICAL ENCLOSURE FOR 1 HP MODELS.

* * (K7, K8) ARE NORMALLY OPEN DRY CONTACTS, WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.

6) (K6) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE WHEN THE DOOR IS IN MOTION OR INHIBITED DURING GRAVITY CLOSE.

HANDING INSTRUCTIONS

(SHOWN AS LEFT HAND UNIT)



This unit was shipped from the factory for wall mounting the operator on the left side of the door. To change the handing of the operator follow the steps below.

REVERSE LIMIT DIRECTION

1) Swap the Red and Blue wires located on the normally closed contact of the Close and Open Limit Switches.
2) Relocate the Yellow and White wires on the Aux Close Limit Switch to the non-wired Limit Switch. (Yellow on the normally closed contact, White on the common contact).

REVERSE MOTOR DIRECTION

1) Swap Purple & Gray motor wires on the Motherboard at terminals J6 and J7.

DIP SWITCH SETTINGS

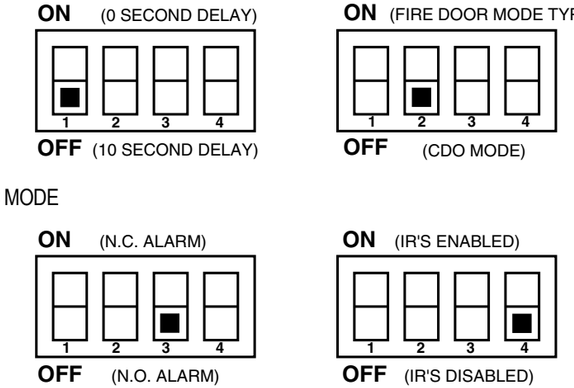
DIP SWITCH SETTINGS

SI-1 ALARM DELAY TO CLOSE

SI-2 FIRE DOOR MODE TYPE I/CDO MODE

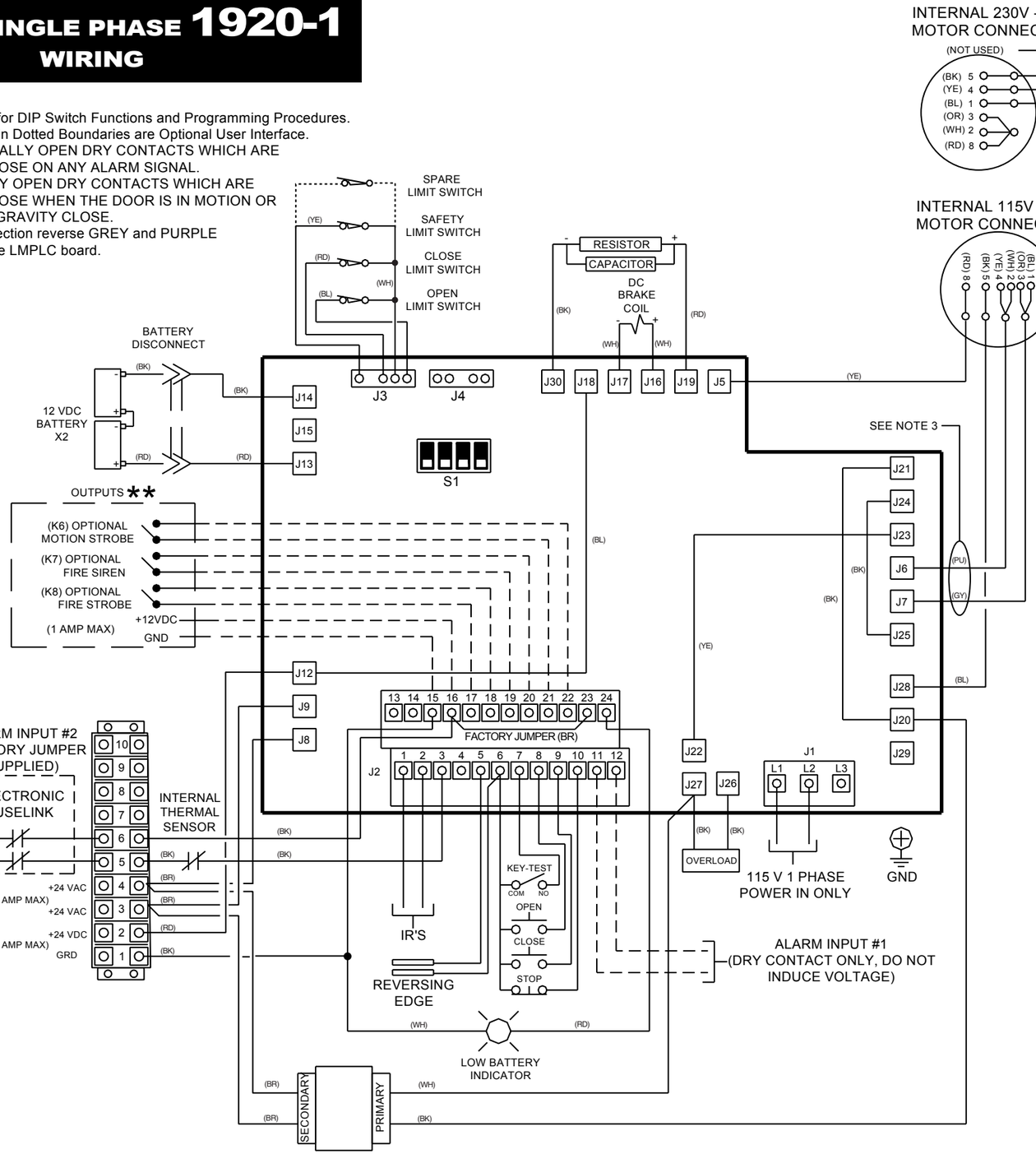
SI-3 ALARM STATE

SI-4 INFRARED EYES STATE



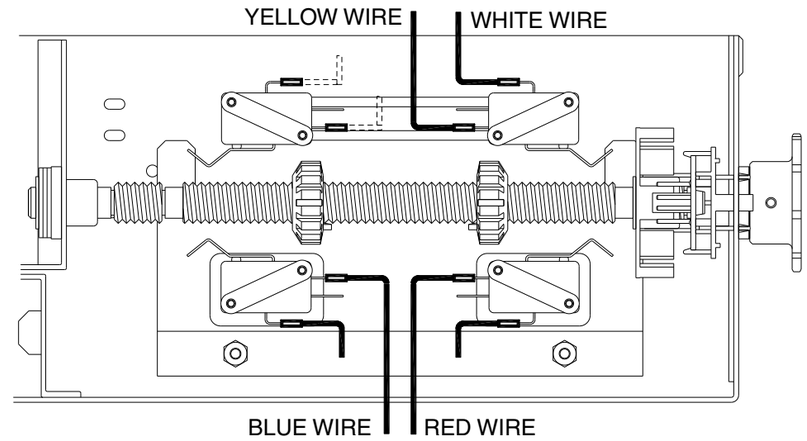
FDCL SINGLE PHASE 1920-1
WIRING

1. See owners manual for DIP Switch Functions and Programming Procedures.
2. Connections Shown in Dotted Boundaries are Optional User Interface.
** (K7, K8) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.
** (K6) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE WHEN THE DOOR IS IN MOTION OR INHIBITED DURING A GRAVITY CLOSE.
3. To reverse motor direction reverse GREY and PURPLE wires at J6 and J7 on the LMPLC board.



HANDING INSTRUCTIONS

(SHOWN AS LEFT HAND UNIT)



This unit was shipped from the factory for wall mounting the operator on the left side of the door. To change the handing of the operator follow the steps below.

REVERSE LIMIT DIRECTION

1) Swap the Red and Blue wires located on the normally closed contact of the Close and Open Limit Switches.
2) Relocate the Yellow and White wires on the Aux Close Limit Switch to the non-wired Limit Switch. (Yellow on the normally closed contact, White on the common contact).

REVERSE MOTOR DIRECTION

1) Swap Purple & Gray motor wires on the Motherboard at terminals J6 and J7.

DIP SWITCH SETTINGS

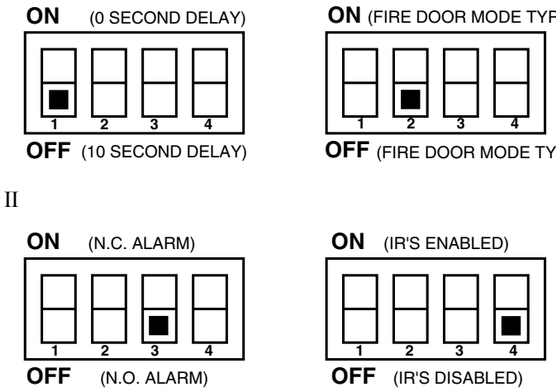
DIP SWITCH SETTINGS

SI-1 ALARM DELAY TO CLOSE

SI-2 FIRE DOOR MODE TYPE I/ TYPE II

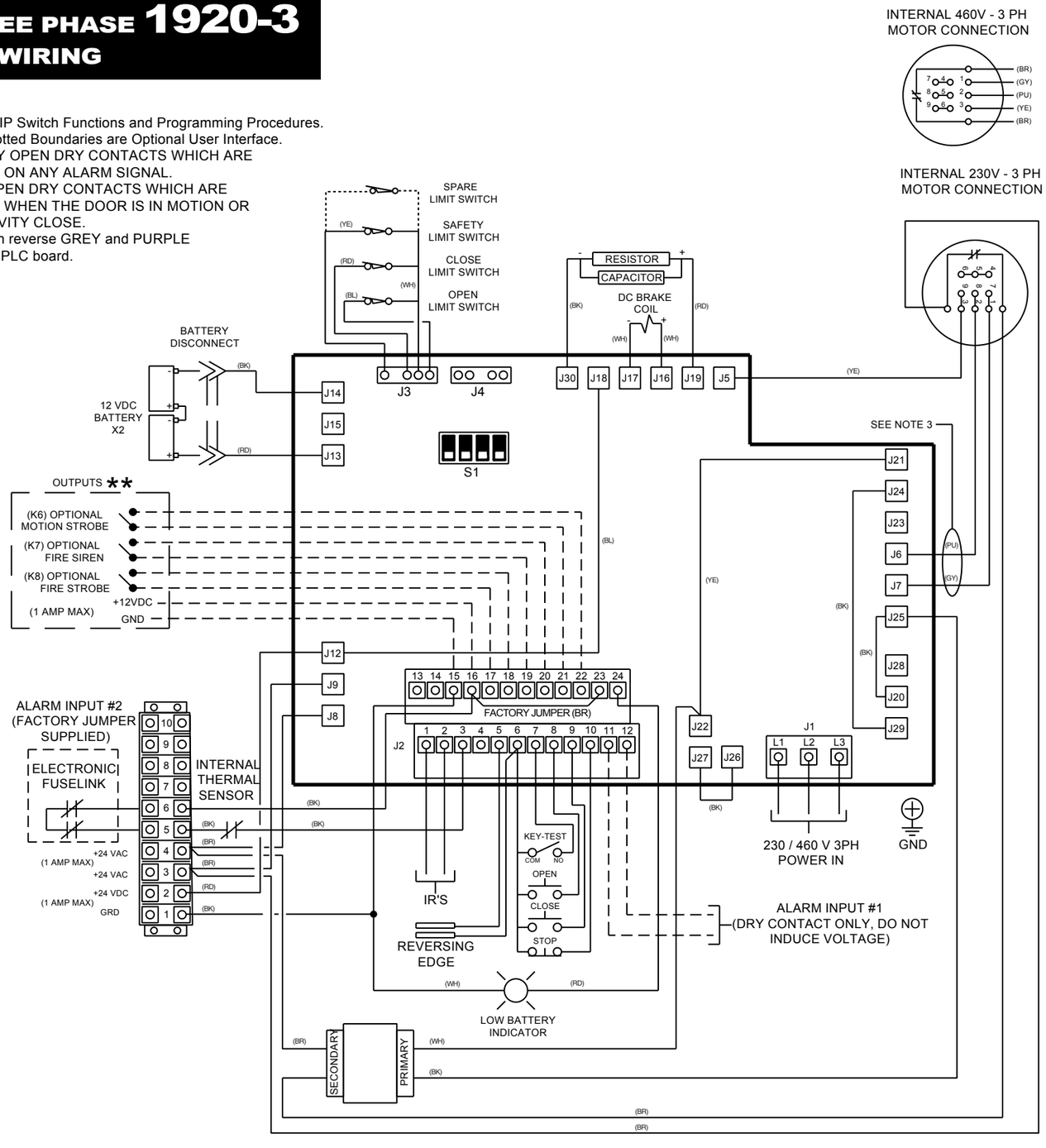
SI-3 ALARM MODE

SI-4 INFRARED EYES STATE



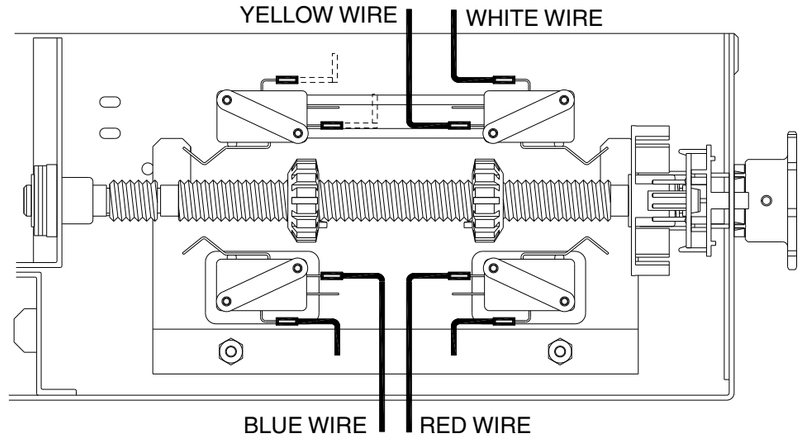
FDCL THREE PHASE 1920-3 WIRING

1. See owners manual for DIP Switch Functions and Programming Procedures.
2. Connections Shown in Dotted Boundaries are Optional User Interface.
** (K7, K8) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE ON ANY ALARM SIGNAL.
** (K6) ARE NORMALLY OPEN DRY CONTACTS WHICH ARE PROGRAMMED TO CLOSE WHEN THE DOOR IS IN MOTION OR INHIBITED DURING A GRAVITY CLOSE.
3. To reverse motor direction reverse GREY and PURPLE wires at J6 and J7 on the LMPLC board.



HANDING INSTRUCTIONS

(SHOWN AS LEFT HAND UNIT)



This unit was shipped from the factory for wall mounting the operator on the left side of the door. To change the handing of the operator follow the steps below.

REVERSE LIMIT DIRECTION

1) Swap the Red and Blue wires located on the normally closed contact of the Close and Open Limit Switches.
2) Relocate the Yellow and White wires on the Aux Close Limit Switch to the non-wired Limit Switch. (Yellow on the normally closed contact, White on the common contact).

REVERSE MOTOR DIRECTION

1) Swap Purple & Gray motor wires on the Motherboard at terminals J6 and J7.

DIP SWITCH SETTINGS

DIP SWITCH SETTINGS

SI-1 ALARM DELAY TO CLOSE

SI-2 FIRE DOOR MODE TYPE I/ TYPE II

SI-3 ALARM MODE

SI-4 INFRARED EYES STATE