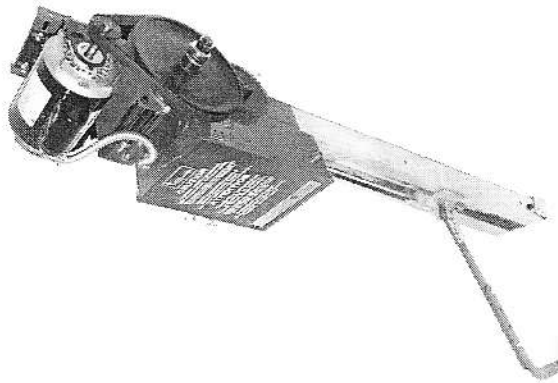




# MICANAN SYSTEMS INC.

## INSTALLATION AND INSTRUCTION MANUAL

MODELS: *PRO-APT/APTB*



### 2 YEAR WARRANTY

Model : \_\_\_\_\_

Serial # \_\_\_\_\_

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

Wiring Diagram: \_\_\_\_\_

June 2009

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OPTIONS	
MP00041-44	#40 Drive Chain
MP00023	Double V-belt reduction
MP00007	115 Volt control circuit
MP00096	Dual timer, wiring and sockets for red/green lights
MP00106	Dual timer, wiring and remote enclosure & red/green lights
PRO-PL	Separate control panel
MP00024	Trolley hoist Disconnect
MP00030,78-80	Dual Trolley Assembly
MP00035	Minimum Depth modification

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MP00030,78-80	Dual Trolley Assembly
MP00035	Minimum Depth modification

WARNING
DO NOT CONNECT TO ELECTRICAL POWER DURING INSTALLATION OR SERVICING OF OPERATOR

DO NOT CONNECT TO ELECTRICAL  
POWER DURING INSTALLATION  
OR SERVICING OF OPERATOR

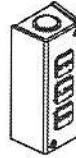
## IMPORTANT

FOR ANY QUESTIONS CONCERNING THE SAFETY OR  
OPERATION OF THIS OPERATOR PLEASE CONTACT  
MICANAN SYSTEMS AT 1-877-888-1116

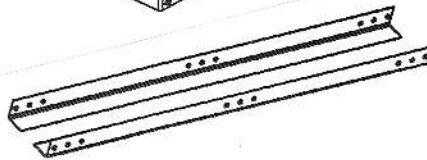
### VERIFICATION OF OPERATOR AND HARDWARE

Upon delivery of your MICANAN SYSTEMS heavy-duty apartment trolley door operator, please inspect the unit carefully for damage. Verify that operator horsepower, voltage, phase and amperage correspond to available power supply and door application. Check that along with your operator you have received the following standard hardware.

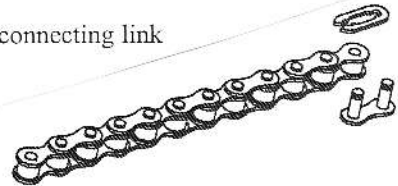
- 1 x OPEN/CLOSE/STOP 3-button control station:



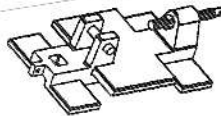
- 1 x Set of trolley tracks (door height + 2'6")



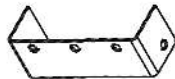
- 1 x #41 Drive chain package (door height x 2 + 5' 6" (1.65m)) c/w connecting link



- 1 x Trolley carriage and 3/8 take-up bolt assembly



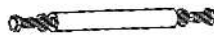
- 1 x Trolley track end bracket



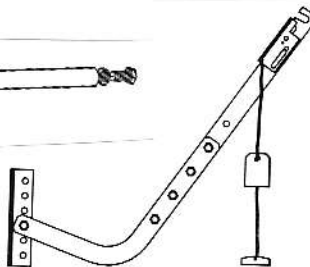
- 1 x Front idler c/w 41B12 sprocket



- 2 x Trolley spreader bars



- 1 x Trolley arm assembly



- 1 x Set of Warning signs



## PRO-APT, PRO-APT<sup>B</sup> SPECIFICATIONS

PRO-APT and PRO-APT<sup>B</sup> heavy-duty trolley operators are designed for high cycle standard lift overhead sectional garage doors. Model PRO-APT<sup>B</sup> is essentially the same as model PRO-APT with the exception that the PRO-APT<sup>B</sup> operator has a solenoid operated braking system.

**STANDARD OPERATOR WEIGHT:** 55-75 Lbs

**MOTOR:** Continuous duty 1725 RPM industrial type motor.

- Built-in overload protection (3-phase) or separate full overload protection (1-phase).
- Horsepower: 1/2HP, 3/4HP
- Voltage:
 

115V 1-phase	230V 3-phase
230V 1-phase	460V 3-phase
	575V 3-phase

**REDUCTION:** Primary: (5L) V-belt and pulleys (2" to 9" diameter)  
Secondary: #41 chain and sprockets

**OUTPUT SHAFT SPEED:** 120 RPM      **DOOR SPEED:** 12"/second

**BRAKE (Model PRO-APT<sup>B</sup>):** Solenoid actuated drum and brake shoe braking system to prevent coasting and maintain door position.

**WIRING TYPE (STANDARD):** T (Timer to close) wiring, momentary contact on open, close and stop. 1.5 sec time delay on reverse. Wired to accept reversing edge, radio control, photocells, loops and OPEN devices. Optional wiring for dual timer with red and green traffic lights

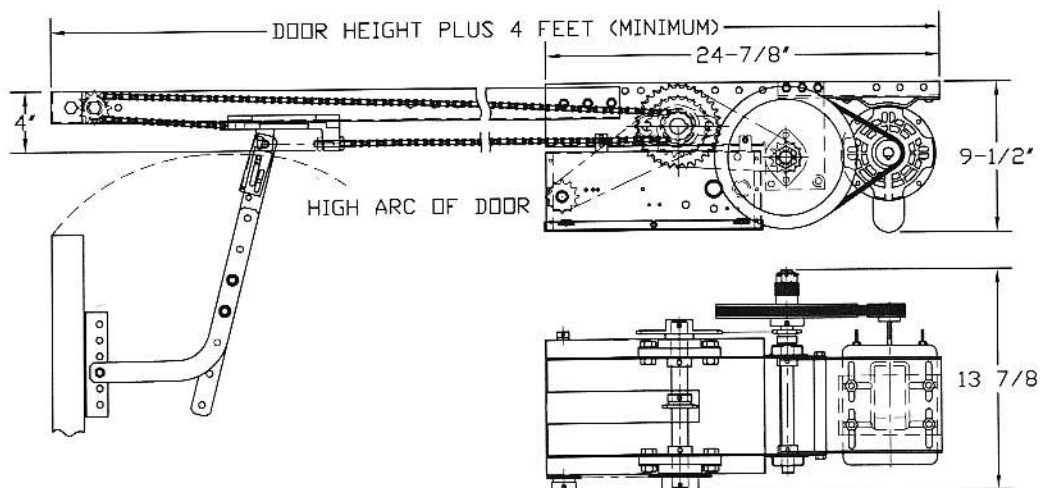
**TRANSFORMER:** 24VAC control circuit, supplies power to drive control relays with 15VA power available for external devices. 120VAC transformer supplied (50VA) for red/green traffic light option.

**LIMIT ADJUSTMENT:** 4 micro switches that control door travel. These limit switches are activated by fully adjustable screw type cams.

**EMERGENCY DISCONNECT:** Quick release disconnect door arm to allow person to disengage operator drive chain from door for manual operation.

**CLUTCH:** Adjustable friction clutch to minimize damage to door operator, door or vehicles when obstruction occurs.

### OPERATOR DIMENSIONS:



**SAFETY INSTRUCTIONS****WARNING**

TO REDUCE THE RISK OF INJURY OR DEATH:  
READ AND FOLLOW ALL INSTRUCTIONS

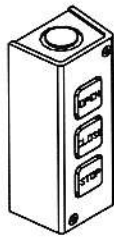
- Do not allow children to play with door.
- Before installation, be sure that operator is suited for type of door and application
- Connect a reversing device to prevent entrapment if door is located near pedestrian traffic.
- Place control device within clear sight of the door but at a minimum distance from the door so that user cannot reach moving door parts when operating.
- Outdoor external devices should have security features to prevent unauthorized operation of the door.
- Never cross under a moving door.
- Press the "OPEN" device or activate quick release disconnect device if a person is trapped under the door.
- Do not use disconnect mechanism or manually operate door unless power has been electrically disconnected.
- Keep doors properly maintained. Test door and service regularly. Have a qualified service person make repairs. *An unmaintained door system could cause injury or death.*
- The owner or users must understand the safety and operation of door system. Insure that this installation manual be located close to the door system.

**INSTALLATION INSTRUCTIONS****WARNING**

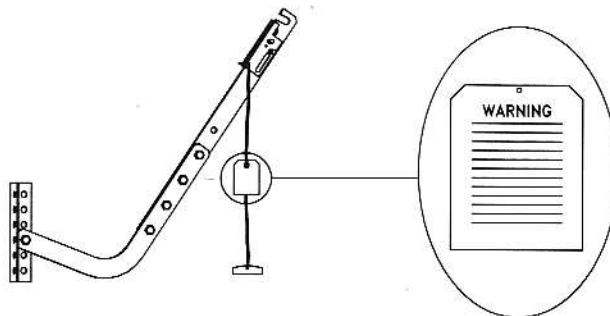
DO NOT INSTALL THIS OPERATOR  
BEFORE READING THIS MANUAL CAREFULLY.

Note: Installation of operator must be done by a qualified installer. Door must be properly installed and working smoothly. Remove all door locks prior to installation.

1. Install control station away from all moving door parts, within sight of the door and a minimum of 5 ft (1.5 m) from the ground.
2. Install entrapment warning sign next to control station.

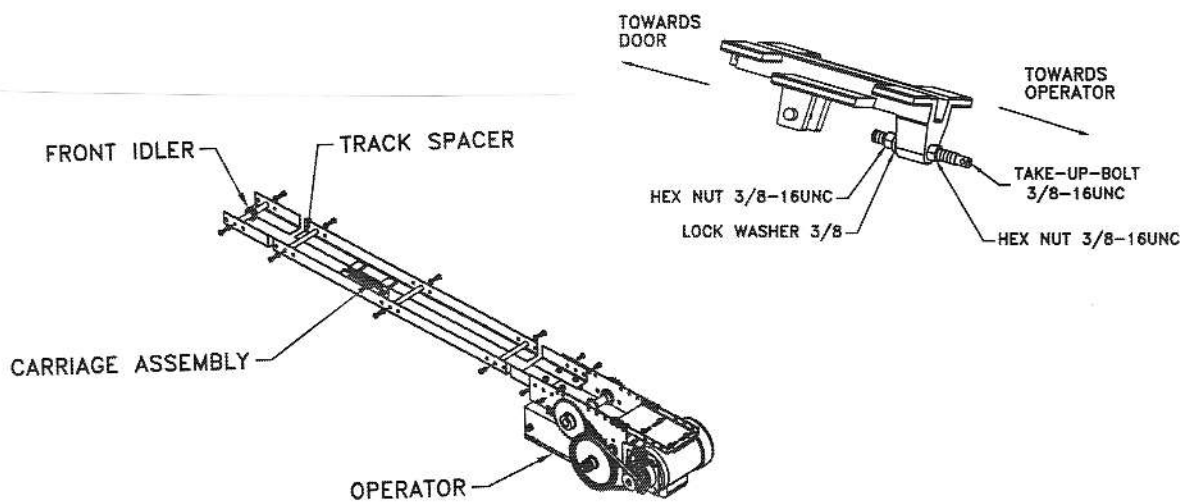


3. Do not remove emergency release tag attached to disconnect handle.

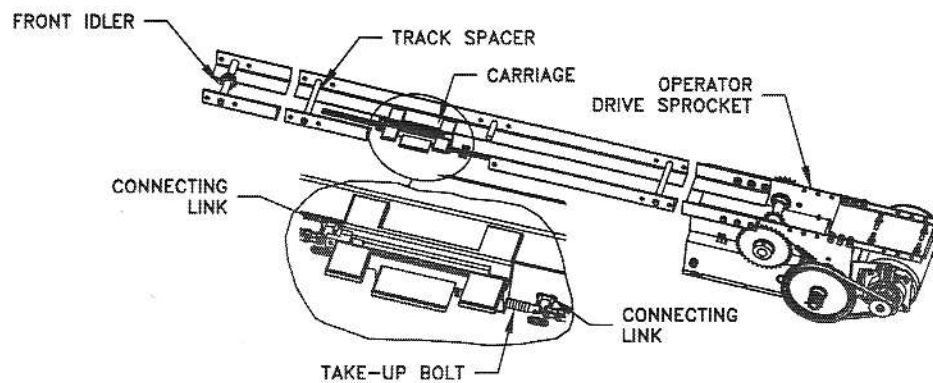


**PREPARATION:**

1. Lay out operator and trolley tracks on ground in front of door with door operator motor facing away from door.
2. Install track spacers evenly to track assembly.
3. Install 3/8" take-up bolt to carriage using two 3/8" hex nuts and lock washer provided.
4. Slide trolley carriage through end of tracks towards operator with take-up bolt facing operator.
5. Install front idler assembly to the second set of holes end of trolley tracks.
6. Bolt rail assembly to operator frame using four 3/8" x 3/4" bolts and 3/8" serrated hex nuts provided.



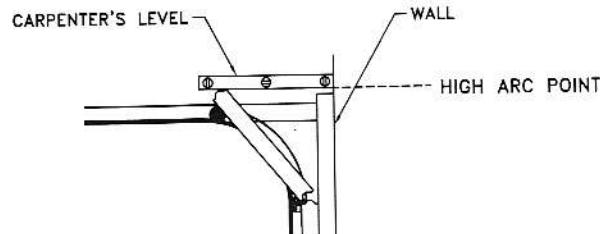
7. Attach one end of drive chain to carriage using connecting link provided. Run chain around front idler, over the track spacers, around drive sprocket and connect to take-up-bolt using connecting link provided. Adjust take-up-bolt so that chain sags approximately 3" (7.5 cm) at midpoint of tracks. Remove links from drive chain if necessary to make proper adjustment.



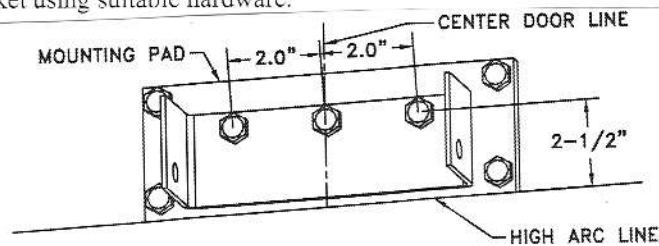
### WALL MOUNTING BRACKET AND OPERATOR INSTALLATION:

NOTE: Trolley type operators should generally be mounted directly over the center of the door and the trolley tracks should clear the tracks by 2-1/2" (6.5 cm). However, if interfering structures or other reasons do not allow for centered mounting, it is possible to install it up to 18" off-center for torsion spring doors.

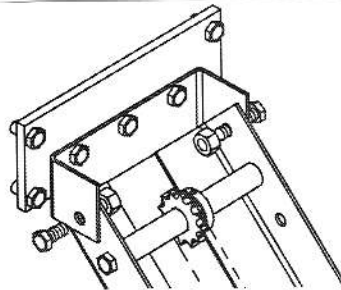
1. Locate the center of door by measuring door width and mark a vertical line above the door.
2. Determine the highest point of door travel by manually opening the door. Using a carpenter's level, project a line from where the top section of door reaches its highest point. Mark the spot where this line (high arc) intersects with the vertical line drawn earlier.



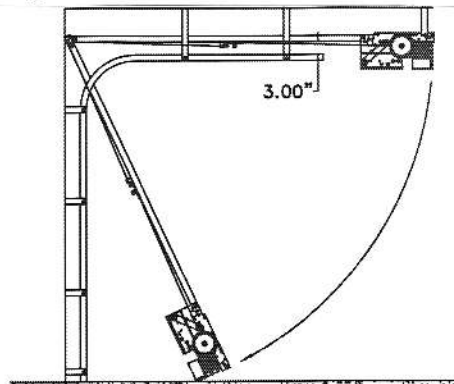
3. Mount a wood block or angle iron to the wall above the door opening as shown below. The wall mounting bracket has 3 holes for anchoring to wood block or angle iron. Bracket should be centered with door and positioned so that these holes are 2-1/2" (6.5 cm) above the high arc line of door. Secure wall mounting bracket using suitable hardware.



4. While allowing motor to rest on floor, raise front end of track assembly and secure (but not tighten) to wall mounting brackets with 3/8" bolts and nuts provided.

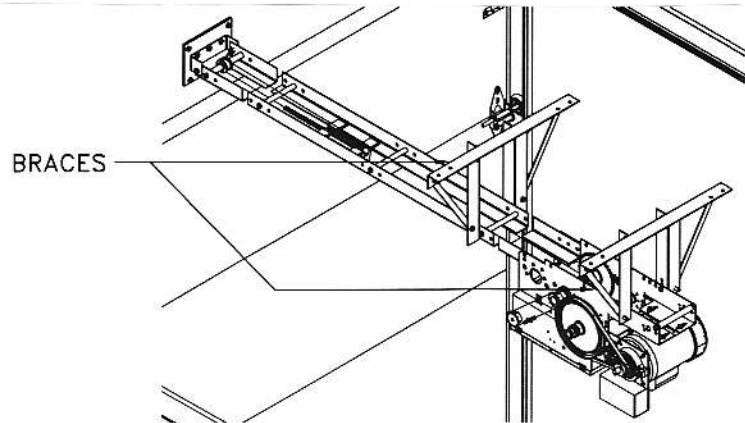


5. Swing the operator and track assembly above the level of the door tracks and temporarily secure in place with rope or chain. Carefully open door. Align operator and rails with center of door. Using the door as support, shim the operator so that there is 3" (7.5cm) clearance between door and bottom of operator. Tighten wall mounting bracket bolts.



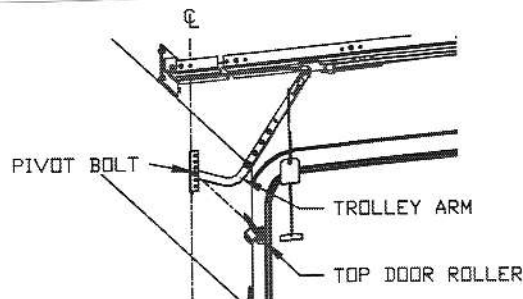


- Install hanging brackets (braces) from ceiling or structure to any of the five 3/8" holes located on operator frame. For tracks over 14' long it is recommended to install braces to the tracks at 4' (1.2m) to 5' (1.5m) from operator.

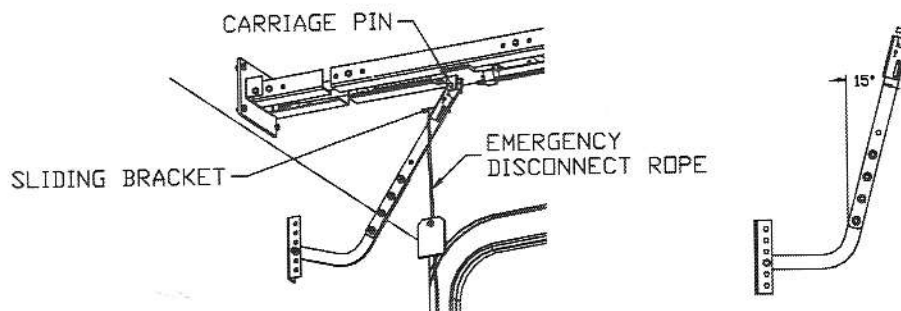


### TROLLEY ARM INSTALLATION

- Manually close door to fully closed position. Slide trolley carriage towards front idler and latch trolley arm to carriage spring pin by pulling on rope. When installed the open side of notch should face the door.
- Using 3/8" bolts and nuts provided, align the mounting holes of straight arm and curved arm so that pivot bolt on door bracket is in line with the top rollers of the door. Align door bracket with centerline of door and secure to door using suitable hardware.



- When properly installed the door arm should lean slightly away from door when door is fully closed.



- At this time, check all bolts for tightness.

## LIMIT SWITCH ADJUSTMENT

Adjustment of door travel is done by moving the limit cams on the threaded shaft. The position of the 4 limit switches are factory adjusted and should not be altered. The limit switches are:

- "Open" limit switch: End of door travel in the fully open position
- "Closed" limit switch: End of door travel in the fully closed position
- "Auxiliary Open" limit switch: Used for timer to close features
- "Advanced Closed" Limit switch: Used to prevent reversing device from reversing door when door is almost fully closed.

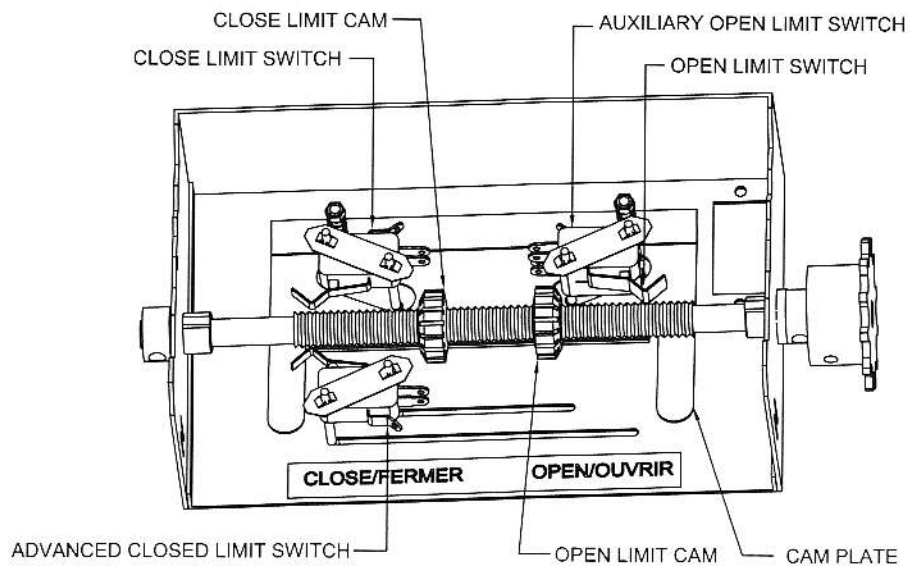
### WARNING

TO REDUCE THE RISK OF INJURY OR DEATH:

DO NOT ATTEMPT TO MAKE LIMIT SWITCH ADJUSTMENTS  
UNLESS POWER HAS BEEN ELECTRICALLY DISCONNECTED

To adjust door travel:

1. **Open cycle:** Depress cam plate and spin "Open" limit cam away from "Open" limit switch to increase door travel or spin "Open" limit cam towards the "Open" limit switch to decrease door travel. After each adjustment ensure that cam plate fully engages in slots of both limit nuts.
2. Adjust "Open" limit cam so that door stops at the desired fully open position.
3. **Close cycle:** Depress cam plate and spin "Close" limit cam away from "Close" limit switch to increase door travel or spin "Close" limit cam towards the "Close" limit switch to decrease door travel. After each adjustment ensure that cam plate fully engages in slots of both limit nuts.
4. Adjust "Close" limit cam so that door stops at the desired fully closed position.



## CONNECTION OF POWER SUPPLY AND CONTROL STATION

### WARNING

COMPARE AVAILABLE POWER SUPPLY VOLTAGE TO OPERATOR NAMEPLATE PRIOR TO ELECTRICAL CONNECTION. FAILURE TO CONNECT APPROPRIATE POWER SUPPLY VOLTAGE MAY CAUSE SERIOUS DAMAGE TO OPERATOR.

Refer to electrical diagrams inside control box cover or at the end of this manual prior to connection of power supply or control station.

### WARNING

TO REDUCE THE RISK OF INJURY OR DEATH:

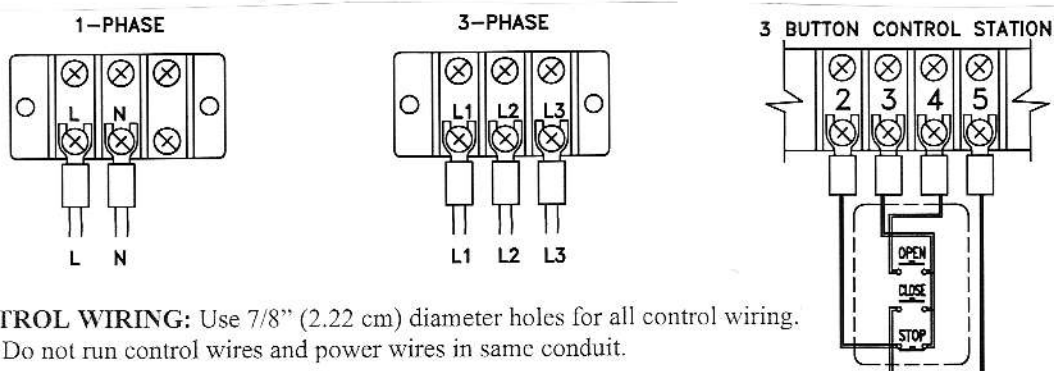
ALL ELECTRICAL CONNECTIONS SHOULD BE MADE BY A QUALIFIED SERVICE PERSON

DO NOT ATTEMPT TO MAKE ELECTRICAL CONNECTIONS TO OPERATOR UNLESS  
POWER SUPPLY HAS BEEN DISCONNECTED AT FUSE BOX

OPERATOR MUST BE CONNECTED IN ACCORDANCE TO LOCAL ELECTRICAL CODES  
AND GROUNDED TO GREEN GROUND LUG LOCATED INSIDE CONTROL BOX

**POWER WIRING:** Use 1-1/8" (2.85 cm) diameter holes for all power wiring.

1. Single phase: Connect single phase power supply to terminals L (line) and N (neutral) on three-pole power terminal strip.
2. Three-phase: Connect three phase power supply to terminals L1, L2 and L3 on three-pole power terminal strip.



**CONTROL WIRING:** Use 7/8" (2.22 cm) diameter holes for all control wiring.

Note: Do not run control wires and power wires in same conduit.

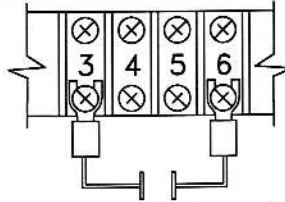
- Install control station within clear sight of door but away from all moving parts of door or hardware. Install Entrapment warning sign next to control station. Connect 3-button (open/close/stop) push button station to terminals 2, 3, 4 and 5. Refer to electrical diagram for connection of two 3-button stations.

**NOTE:** After electrical connections are made, manually move door to mid-position and, using the control station press the "Open" button for several seconds and then press the "Stop" button. If door did not move in correct direction verify wiring control station. For 3-phase operators, if door still moves in wrong direction reverse any two of the three incoming power supply leads to correct rotation.

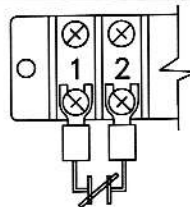
## CONNECTION OF A REVERSING EDGE DEVICE AND CONTROL ACCESSORIES

1. **Reversing Edge device** (must be normally open contact):

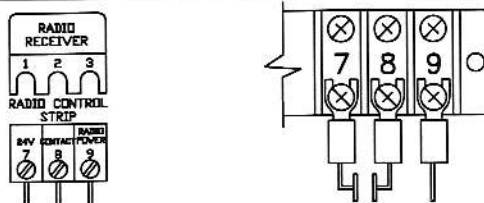
**Note:** If the door is controlled by any device or wired in such a manner that the door is not controlled by constant pressure on close then an appropriate reversing edge must be installed.



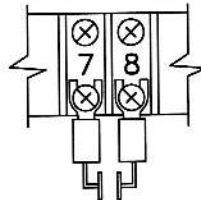
2. **External interlock:** Remove jumper between terminals 1 and 2 and wire interlock between these two terminals.



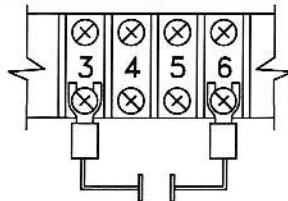
3. **Radio control receiver:** Wire standard radio receiver to separate radio strip on side of control box or to terminals 7, 8 and 9 on control terminal strip inside control box.



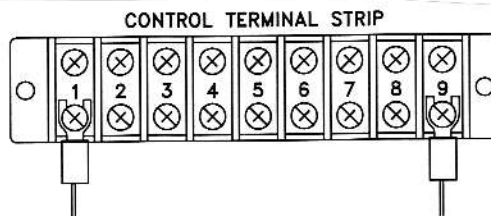
4. **Single button open device:** Wire to terminals 7 and 8 on control terminal strip.



5. **Loop detectors, photocells and other reversing devices:** Wire to terminals 3 and 6 on control terminal strip.

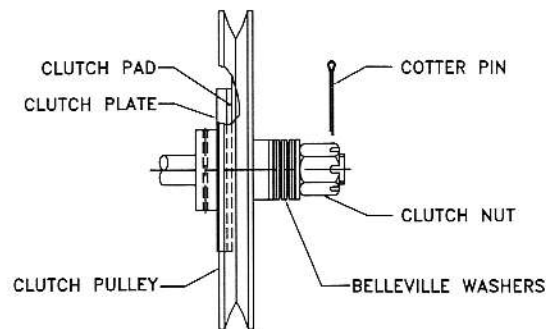


6. **24 Volt power:** Wire to terminals 1 and 9 on control terminal strip



## CLUTCH ADJUSTMENT

1. Remove cotter pin tapped to pulley.
2. Rotate clutch nut CCW (loosen) until there is insufficient tension to permit clutch to drive door.
3. Gradually tighten clutch nut until the tension on belleville washers is sufficient to permit clutch to drive door smoothly but will allow clutch to slip if door is obstructed. It should be possible to stop moving door by hand if clutch is properly adjusted.
4. Lock clutch nut in place by inserting cotter pin.



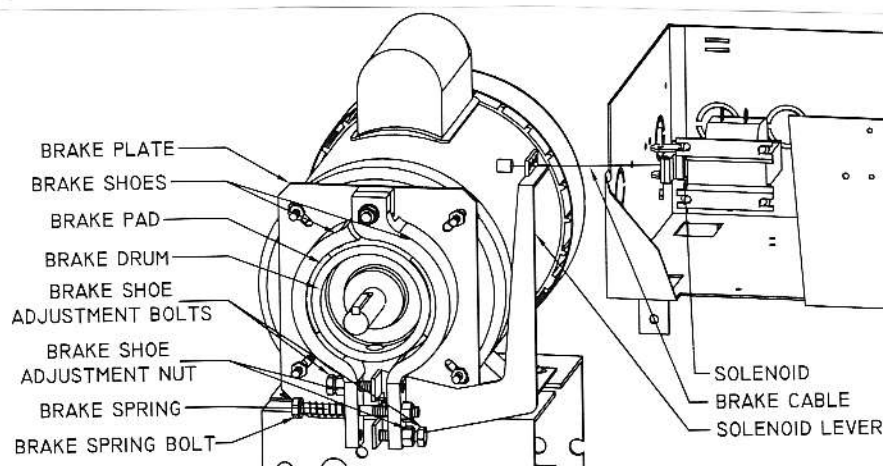
## BRAKE ADJUSTMENT (For model PRO-APT)

The brake adjustment is factory set and should only require minor adjustment after extensive use.

Verify brake adjustment by manually holding in solenoid plunger. When brake is properly adjusted, the brake shoe pads should make complete contact with brake drum with sufficient brake spring tension to stop and maintain door when solenoid is de-energized. When solenoid is energized, brake shoes should release from drum with sufficient clearance to avoid contact between shoes and drum.

To adjust brake tension, tighten (to increase) or loosen (to decrease) nylon lock nut on brake spring bolt. Observe solenoid during electrical testing of brake. Brake spring tension must be adjusted so that solenoid should pull and release smoothly and quietly. Too much or too little tension on brake spring may cause solenoid to burn out.

To adjust individual brake shoes, loosen nut on brake shoe adjustment bolt and adjust bolt. When properly adjusted, there should be a small clearance between adjustment bolt and solenoid bracket when solenoid is de-energized. When solenoid is energized, brake shoes should move away from drum with sufficient clearance to avoid friction between brake shoe pad and drum. After adjustments are made be sure to tighten nuts on brake shoe adjustment bolts.



## EMERGENCY MANUAL OPERATION

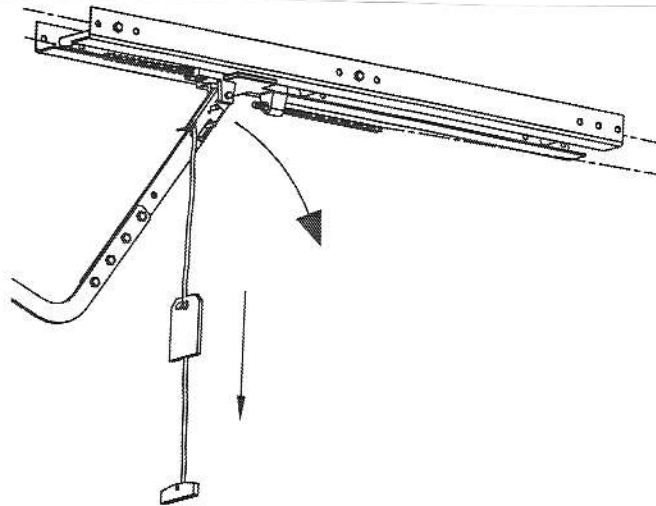
- The operator is equipped with a quick release disconnect system to manually operate door in case of emergency. This feature should not be used to manually operate a malfunctioning door.

### WARNING

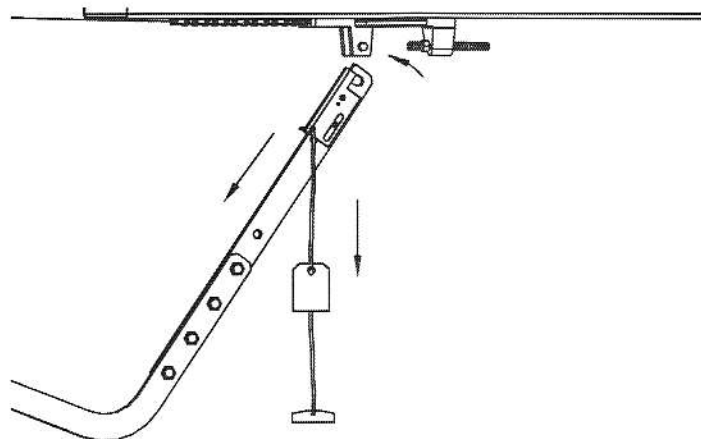
TO REDUCE THE RISK OF INJURY OR DEATH:

DO NOT ATTEMPT TO USE EMERGENCY DISCONNECT SYSTEM WHILE OPERATOR IS RUNNING.

TO AVOID BEING STRUCK BY DOOR ARM, DO NOT STAND DIRECTLY UNDER THE RELEASE ARM WHEN PULLING THE RELEASE CORD.



1. Pull the release cord downwards to disconnect trolley arm from carriage and manually operate door.
2. To reconnect door arm to carriage, pull emergency release cord and re-insert trolley arm to trolley carriage spring pin.



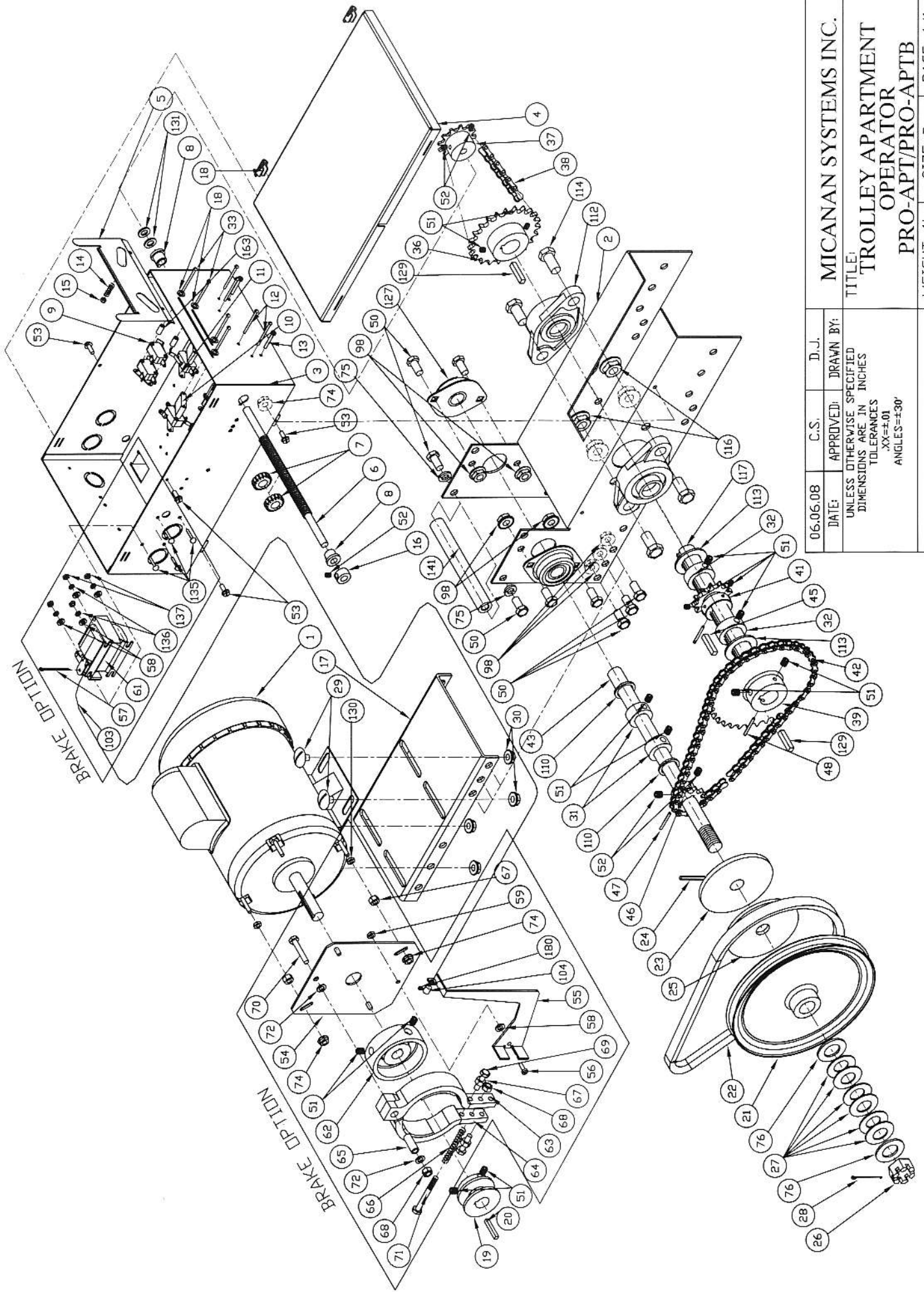
## OPERATOR MAINTENANCE

### WARNING

TO REDUCE THE RISK OF INJURY OR DEATH:  
DO NOT ATTEMPT TO SERVICE THE OPERATOR UNLESS  
POWER SUPPLY HAS BEEN DISCONNECTED

- Inspect manual function of the door every 3-months. Make sure that door runs smoothly. If door does not manually open or close freely, have a qualified service person make repairs. Do not attempt to electrically operate a malfunctioning door.
- Every 3 months:
  1. Verify that door area is kept clean. Remove any obstructions that would prevent proper door operation.
  2. Check for any excessive slack in chains. If chain adjustment is required verify and adjust limit switches, if necessary.
  3. Verify and adjust clutch and brake (Do not lubricate).
  4. Lubricate chains, bearings and limit shaft.
  5. Verify that motor, solenoid and operator runs smoothly and quietly. Verify that carriage runs smoothly on tracks.
- Every 6 months:
  1. Verify tightness of all fasteners and set screws.
  2. Verify that operator is properly secured.
  3. Inspect manual disconnect.
  4. Verify tension and condition of V-belt
- Every 12 months:
  1. Perform a complete service check.
  2. Verify that inside of control box is clean and that grounding wires, terminations and power terminations do not show signs of corrosion.
  3. Verify tightness of all terminal strip screws and electrical connections.
  4. Verify power supply, voltage of input terminals during operation.
  5. Verify that current consumption of operator corresponds to nameplate information



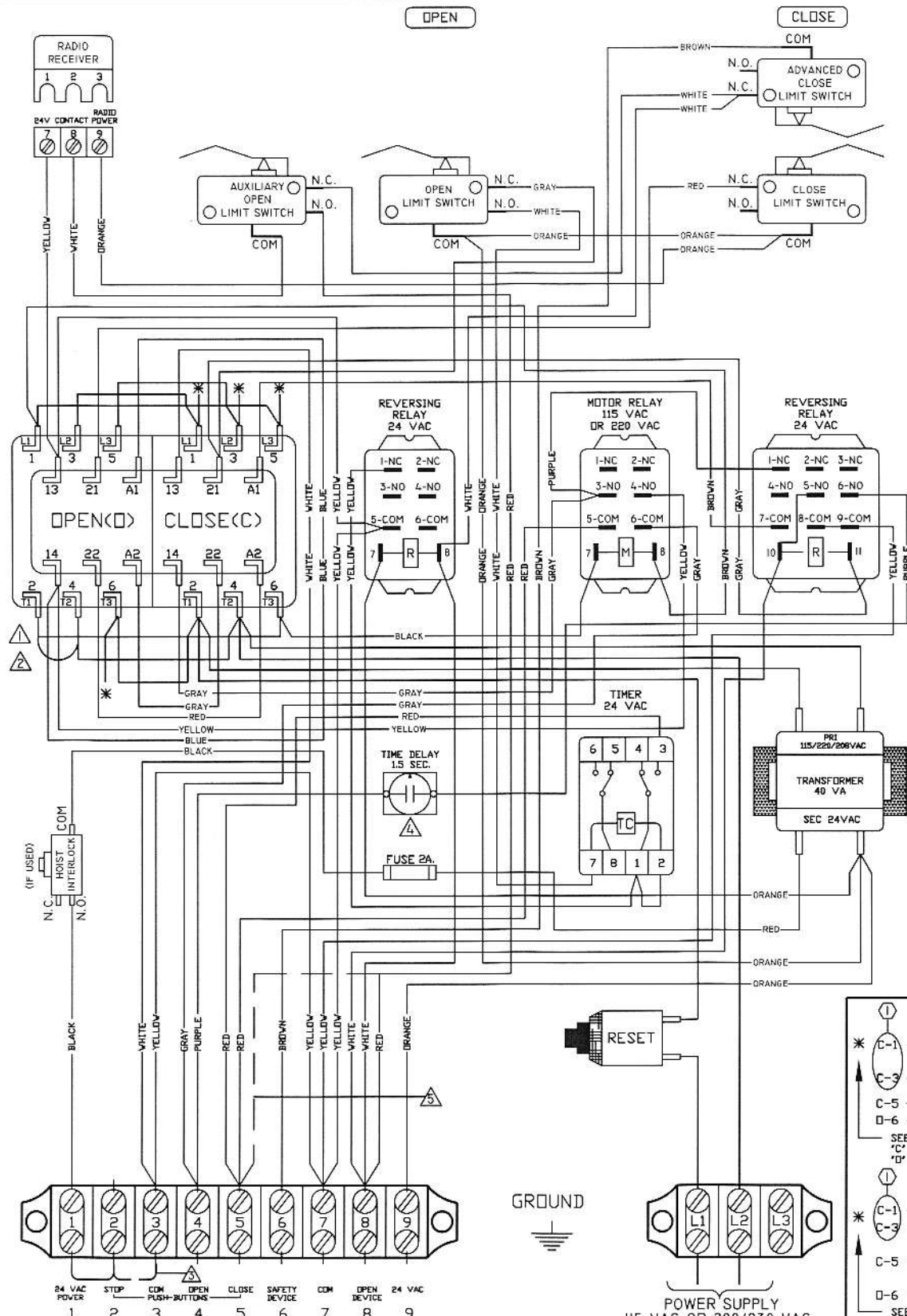


06.06.08	C.S.	D.J.	MICANAN SYSTEMS INC.
DATE:	APPROVED:	DRAWN BY:	TITLE:
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES .XX=±.01 ANGLES=±30°			PRO-APT/PRO-APT-B OPERATOR TROLLEY APARTMENT PRO-APT/PRO-APT-B
REVISION: A			WEIGHT: 16
			SIZE: B
			PAGE: 1/1
			CAD FILE: 3D-PROAPT-APT-B-XE
			SCALE: 1/16



# Replacement parts list PRO-APT/APTB

CODE	PART #	DESCRIPTION (PRO-APT)	PRO-APT	PRO-APT B
			QTY	CW BRAKE QTY
**	1	MOTOR	1	1
MM00286	2	FRAME PRO-APT MSI0290	1	1
MM00002	3	CONTROL BOX MSI0001	1	1
MM00001	4	CONTROL BOX COVER MSI0005	1	1
MM00024	5	CAM PLATE MSI0013	1	1
ME00001	6	LIMIT SHAFT 3/8-1/2 x 9.75"	1	1
MG00030	7	LIMIT CAM 1/2-20 UNF	2	2
MH00001	8	BRONZE T-BUSHING 3/8" ID	2	2
MK00004	9	LIMIT SWITCH	5	5
MJ00006	10	LIMIT SWITCH DOUBLE SPACER 3/4" LONG	3	3
MG00003	11	DOUBLE NUT FOR LIM-SW.	4	4
MF00003	12	R.H. PHILLIPS MACHINE SCREW 4-40 UNC x 1-1/2"	6	6
MF00004	13	R.H. PHILLIPS MACHINE SCREW 8-32 UNC x 1"	2	2
MG00001	14	CAM PLATE COMPRESSION SPRING (.178IDx.032GX.55L)	2	2
MG00007	15	HEX NYLON LOCK NUT 6-32UNC	2	2
MH00006	16	COLLAR 3/8" ID	1	1
MM00288	17	VERTICAL MOTOR MOUNT BRACKET PRO-APT (MSI0282)	1	1
MM00046	18	CONTROL BOX HINGE	2	2
MI00001	19	MOTOR PULLEY 5L 5/8" ID X 2" OD	1	1
ME00018	20	KEYWAY 3/16 SQ. x 1-1/4" LONG	1	1
MI00034	21	PULLEY 9" OD c/w bushing 3/4" ID	1	1
MI00006	22	V-BELT 5L-325	1	1
MJ00004	23	CLUTCH PLATE ALUMINIUM 3/4" ID	1	1
MQ00007	24	SPRING PIN 1/4" x 2" LONG	1	1
MJ00005	25	CLUTCH PAD 3/4" ID	1	1
MG00014	26	SLOTTED HEX NUT 3/4-24UNF	1	1
MG00004	27	BELLEVILLE WASHER 13/16 IDx1-3/16X1/8	6	6
MQ00002	28	COTTER PIN 1/8 x 2.5" LONG	1	1
MF00012	29	CARRIAGE BOLT 5/16-18UNC x 5/8"	4	4
MG00012	30	RIBBED HEX NUT 5/16-18UNC	4	4
MH00008	31	COLLAR 3/4" ID	2	2
MH00007	32	COLLAR 1" ID	2	2
MF00085	33	R.H. PHILLIPS MACHINE SCREW 4-40 UNC x 2"	2	2
MD00050	36	SPROCKET 410B23 X 1"	1	1
MD00005	37	SPROCKET 410B12 X 3/8"	1	1
MD00381	38	#410 ROLLER CHAIN 49 PITCH CW CONNECTING LINK	1	1
MD00059	39	SPROCKET 41B32 x 1"	1	1
MD00006	40	SPROCKET 41B10 x 3/4"	1	1
MD00007	41	DRIVE SPROCKET 41B12 X 1"	1	1
MD00382	42	#41 ROLLER CHAIN 51 PITCH DRIVE	1	1
ME00057	43	PRO-TBP INPUT SHAFT 3/4"x 12.775" no kw 1" thread	1	1
ME00017	45	KEYWAY 1/4" SQ. x 1-1/4" LG	1	1
MQ00016	47	SPRING PIN 3/16" x 1-1/4" Long	1	1
MQ00005	48	SPRING PIN 3/16" x 1-1/2" Long	2	2
MF00011	50	H.H. BOLT 3/8"-16UNC X 3/4" LONG	12	12
MQ00008	51	SET SCREW 5/16" -16	12	14
MQ00009	52	SET SCREW 1/4" -20	5	5
MF00046	53	H.H. SLOTTED SELF ROUNDING WASHER HEAD SCREW 10-32 UNF x 1/2"	5	5
MM00154	54	BRAKE PLATE HR MSI0186	1	1
MM00289	55	SOLENOID LEVER PRO-APT MSI0283	1	1
MF00005	56	R.H. PHILLIPS MACHINE SCREW 10-32 UNF x 5/8"	1	1
MQ00001	57	COTTER PIN 1/8 x 1.5"	1	1
MG00016	58	FLAT WASHER #10	5	5
MG00008	59	HEX NYLON NUT 10-32 UNF	1	1
MK00026	61 A	SOLENOID 120V	1 *	1 *
MK00027	61 B	SOLENOID 220V	1 *	1 *
MK00028	61 C	SOLENOID 260V	1 *	1 *
MK00029	61 D	SOLENOID 375V	1 *	1 *
MJ00003	62	BRAKE DRUM	1	1
MJ00001	63	BRAKE SHOE LEFT	1	1
MJ00002	64	BRAKE SHOE RIGHT	1	1
MH00002	65	MILD STEEL BUSHING 9/32ID x 13/32OD x1-1/16	1	1
MO00002	66	BRAKE COMPRESSION SPRING (5/16"ID-.05G-2.50L)	1	1
MG00006	67	HEX NUT 1/4-20UNC	6	6
MG00009	68	HEX NYLON LOCK NUT 1/4-20UNC	2	2
MF00028	69	HEX HEAD BOLT 1/4-20UNC x 1-1/4" (Full thread)	2	2
MF00029	70	HEX HEAD BOLT 1/4-20UNC x 1-3/4" (partial thread)	1	1
MF00044	71	HEX HEAD BOLT 1/4-20UNC x 4" (partial thread)	1	1
MG00017	72	1/4" FLAT WASHER	2	2
MG00010	74	RIBBED HEX NUT 10-32UNF	2	6
MG00018	75	LOCK WASHER 3/8"	2	2
MG00019	76	FLAT WASHER 13/16" I.D.x1.50D (3/4" SHAFT SIZE)	2	2
MG00013	98	RIBBED HEX NUT 3/8" - 16UNC	10	10
MR00007	103	BRAKE DISCONNECT CABLE 1/16" x 12" LONG	1	1
MQ00012	104	ADJUSTABLE CABLE STOPPER	1	1
MG00021	110	FLAT WASHER 7/8" ID x 1-1/8" OD	2	2
MH00015	112	FLANGE BEARING G.L 1" UCFL-205 16 2-HOLE	2	2
MG00020	113	FLAT WASHER 1-1/16" ID x 1-3/4" OD	2	2
MF00002	114	HEX HEAD BOLT 1/2" - 13UNC x 1-1/4" Long	4	4
MG00001	116	RIBBED HEX NUT 1/2" - 13UNC	4	4
ME00006	117	INTERMEDIARY SHAFT (PRO-HHD) 1" X 10-7/16	1	1
MH00099	127	PRECISION BEARING 3/4" CW ALUMINIUM HOUSING	2	2
ME00049	129	KEYWAY 1/4" SQ. x 3/4" LG	2	2
MG00063	130	HEX NUT 10-32	4	4
MG00053	131	FLAT WASHER 3/8" SAE	2	2
MF00015	135	ROUND HEAD PHILLIPS MACHINE SCREW 6-32 X 3/8"	4	4
MG00022	136	LOCK WASHER #6	4	4
MG00023	137	HEX NUT 6-32	4	4
ME00050	141	FRAME SUPPORT SHAFT 3/4" x 6" LONG	1	1
MG00051	163	SPACER 1/2" DIAMETER X 1/2" LONG	2	2
MG00093	179	FLAT WASHER #8	4	4
MQ00010	180	SET SCREW 10-24	1	1



FOR 220V:  
 ⚠ REMOVE BLACK WIRE FROM C6 AND PLACE ON O4. JUMPER NOT REQUIRED (PLEASE REMOVE)  
 ⚠ NOTE:  
 - MOTOR RELAY(M), TRANSFORMER AND SOLENOID (IF APPLICABLE) MUST BE 220V  
 - CIRCUIT BREAKER MUST BE APPROPRIATE AMPERAGE  
 - MOTOR MUST BE WIRED FOR 220V AS SHOWN ABOVE

⚠ IF STOP BUTTON NOT USED, ADD JUMPER BETWEEN 2 & 3

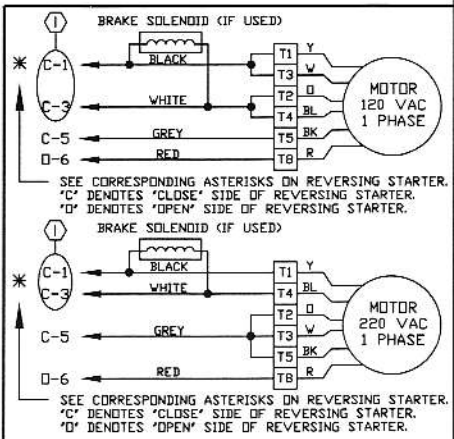
⚠ TIME DELAY UPON REVERSE (OPTIONAL)  
 IF 1.5 SEC TIME-DELAY UPON SAFETY REVERSE IS REQUIRED, REMOVE THE PURPLE WIRE FROM TERMINAL #4, AND CONNECT TO ONE END OF TIME-DELAY AND OTHER END, BACK TO TERMINAL #4.

⚠ TIMER TO CLOSE FUNCTION  
 AUTOMATIC TIMER TO CLOSE IS ACTIVATED WHEN DOOR IS FULL OPEN THIS OPERATOR LEAVES THE FACTORY WITH RADIO CONTROL TO OPEN ONLY AND REFRESH TIMER. IF RADIO CONTROL IS REQUIRED TO OPEN AND CLOSE, REMOVE RED WIRE FROM T88 AND PLACE ON T85.  
 NOTE: FOR SAFETY REASONS, MICANAN DOES NOT RECOMMEND THAT THE RADIO CONTROL CLOSE THE DOOR WHEN A TIMER IS USED.

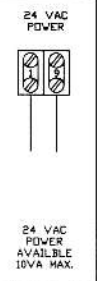
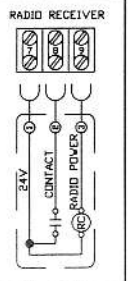
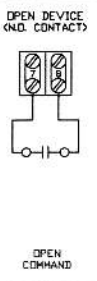
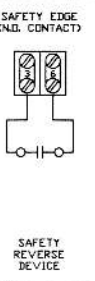
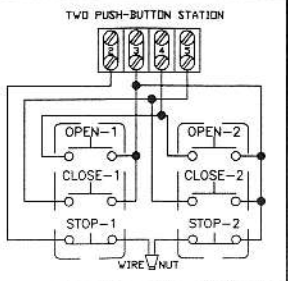
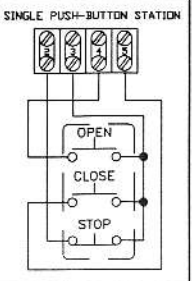
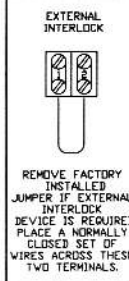
NOTE: MINIMUM 18 AWG WIRE MUST BE USED FOR FIELD CONNECTIONS.

⚠ WARNING  
 MICANAN STRONGLY RECOMMENDS THE USE OF ENTRAPMENT PROTECTION SYSTEMS WHEN B2 (MOMENTARY CONTACT) WIRING IS USED.

ⓘ NOTE:  
 TO REVERSE MOTOR DIRECTION INTERCHANGE BLACK AND WHITE WIRES ON REVERSING STARTER.

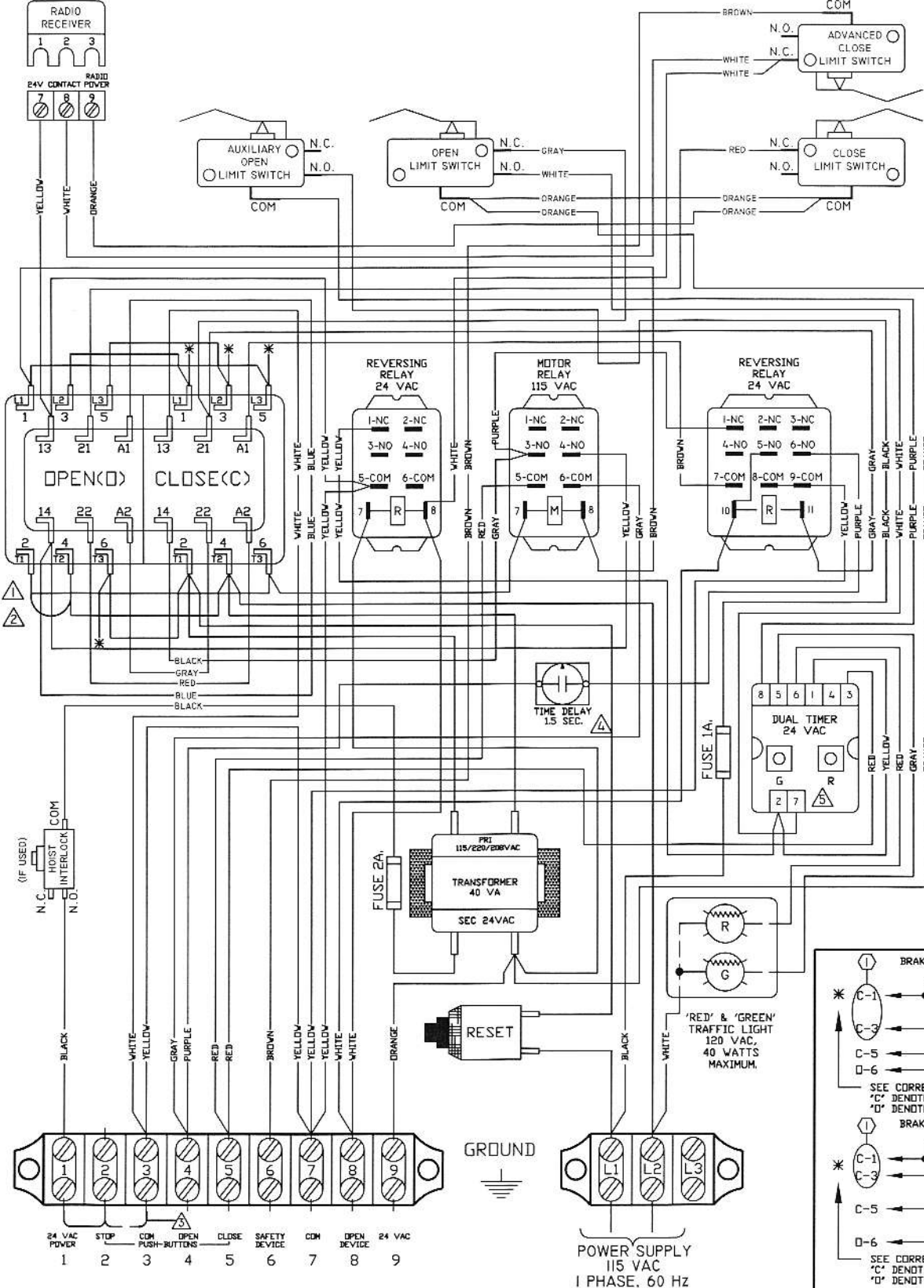


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OPEN

CLOSE



FOR 220V:  
 ⚠ REMOVE BLACK WIRE FROM C6 AND PLACE ON D4 JUMPER NOT REQUIRED (PLEASE REMOVE)  
 NOTE:  
 - MOTOR RELAY(M), TRANSFORMER AND SOLENOID (IF APPLICABLE) MUST BE 220V.  
 - CIRCUIT BREAKER MUST BE APPROPRIATE AMPERAGE.  
 - MOTOR MUST BE WIRED FOR 220V AS SHOWN ABOVE.

⚠ IF STOP BUTTON NOT USED, ADD JUMPER BETWEEN 2 & 3

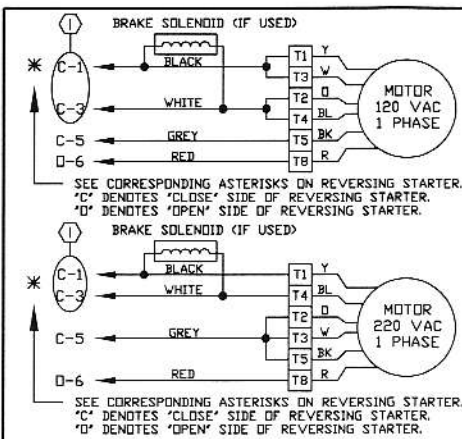
⚠ TIME DELAY UPON REVERSE (OPTIONAL)  
 IF 1.5 SEC TIME-DELAY UPON SAFETY REVERSE IS REQUIRED, REMOVE THE PURPLE WIRE FROM TERMINAL #4 AND CONNECT TO ONE END OF TIME-DELAY AND OTHER END, BACK TO TERMINAL #4.

⚠ TRAFFIC LIGHT SEQUENCE:  
 WHEN DOOR IS FULLY OPEN, GREEN LIGHT ON FOR AN ADJUSTABLE TIME SET BY 'GREEN' DIAL ON DUAL TIMER. AFTER GREEN LIGHT TURNS OFF, RED LIGHT TURNS ON FOR AN ADJUSTABLE PERIOD SET BY 'RED' DIAL ON DUAL TIMER. WHEN RED LIGHT TURNS OFF, DOOR CLOSES. ACTIVATION OF ANY SAFETY OR OPEN DEVICES WILL REFRESH THE TRAFFIC LIGHT SEQUENCE.

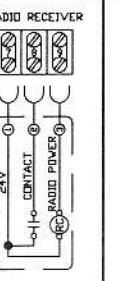
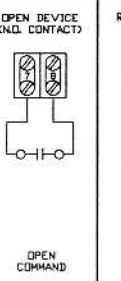
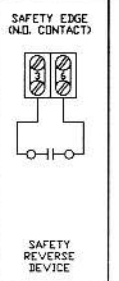
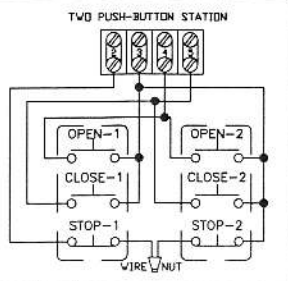
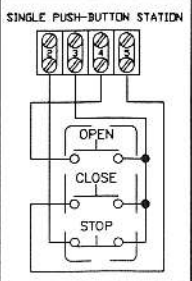
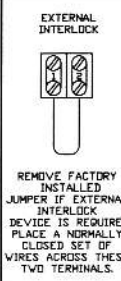
NOTE: MINIMUM 18 AWG WIRE MUST BE USED FOR FIELD CONNECTIONS.

⚠ WARNING  
 MICANAN STRONGLY RECOMMENDS THE USE OF ENTRAPMENT PROTECTION SYSTEMS WHEN B2 (MOMENTARY CONTACT) WIRING IS USED.

ⓘ NOTE:  
 TO REVERSE MOTOR DIRECTION INTERCHANGE BLACK AND WHITE WIRES ON REVERSING STARTER.

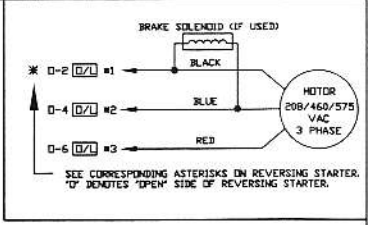
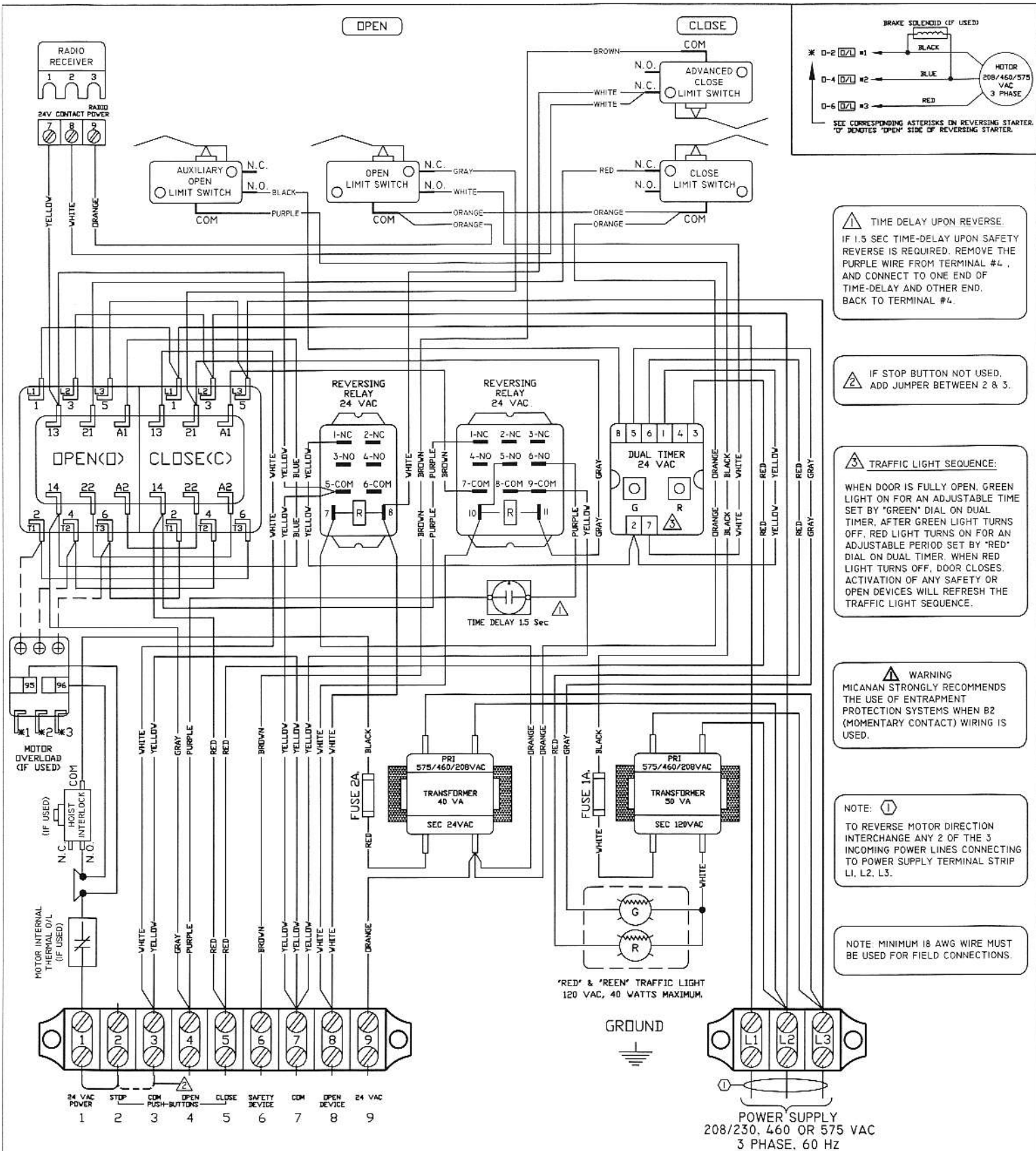


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**⚠ TIME DELAY UPON REVERSE.**  
 IF 1.5 SEC TIME-DELAY UPON SAFETY REVERSE IS REQUIRED, REMOVE THE PURPLE WIRE FROM TERMINAL #4, AND CONNECT TO ONE END OF TIME-DELAY AND OTHER END, BACK TO TERMINAL #4.

**⚠ IF STOP BUTTON NOT USED, ADD JUMPER BETWEEN 2 & 3.**

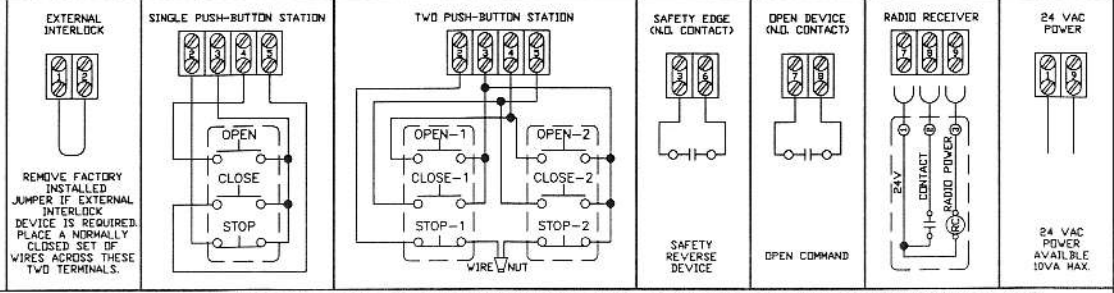
**⚠ TRAFFIC LIGHT SEQUENCE:**  
 WHEN DOOR IS FULLY OPEN, GREEN LIGHT ON FOR AN ADJUSTABLE TIME SET BY 'GREEN' DIAL ON DUAL TIMER, AFTER GREEN LIGHT TURNS OFF, RED LIGHT TURNS ON FOR AN ADJUSTABLE PERIOD SET BY 'RED' DIAL ON DUAL TIMER. WHEN RED LIGHT TURNS OFF, DOOR CLOSES. ACTIVATION OF ANY SAFETY OR OPEN DEVICES WILL REFRESH THE TRAFFIC LIGHT SEQUENCE.

**⚠ WARNING**  
 MICANAN STRONGLY RECOMMENDS THE USE OF ENTRAPMENT PROTECTION SYSTEMS WHEN B2 (MOMENTARY CONTACT) WIRING IS USED.

**NOTE: ①**  
 TO REVERSE MOTOR DIRECTION INTERCHANGE ANY 2 OF THE 3 INCOMING POWER LINES CONNECTING TO POWER SUPPLY TERMINAL STRIP L1, L2, L3.

**NOTE** MINIMUM 18 AWG WIRE MUST BE USED FOR FIELD CONNECTIONS.

**3- PHASE APARTMENT**  
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THE INFORMATION CONTAINED HEREIN IS PROPRIETARY TO MICANAN SYSTEMS INC. AND SHALL NOT BE REPRODUCED OR DISCLOSED OR USED FOR ANY DESIGN OR MANUFACTURE EXCEPT WHEN USER POSSESSES DIRECT WRITTEN AUTHORIZATION FROM MICANAN SYSTEMS INC.

## WARRANTY

MICANAN SYSTEMS warrants that materials and workmanship are free from defects for a period of two years from the date of invoice. Materials returned to Micanan deemed defective after examination will be returned at the option of Micanan with repaired, new or re-manufactured parts.

MICANAN SYSTEMS will not be responsible for any extra charges incurred in the process of returning defective material. All returned material must be received pre-paid or it will not be accepted.

This warranty is limited, and in lieu of all other warranty expressed or implied. There is no expressed liability due on the part of the seller.



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