EMB 1 (EMB 2000)

Spacemaster Systems

Electric
Movable Back Room Shelving

SERVICE MANUAL

July 1991

Reflector Hardware Corporation
1400 North 25th Avenue
Melrose Park, Illinois 60160

(708) 345-2500 - Illinois
800-345-9291 - Outside Illinois

Re-order: MANUAL-91A

TABLE OF CONTENTS

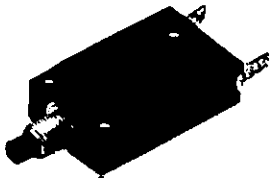
ILLUSTRATED PARTS LIST

DESCRIPTION	PART NUMBER
Floor Sweep Activator Light (Red)	7740068-00000
Emergency Light (Amber)	7740067-00000
Circuit Breaker 0.4 Amp	7740066-00000
Creaker Breaker 6 Amp	999201
Emergency Stop Switch (Red Button)	7740090-00000
Move Switch	7740065-00000
Sweep Switch	7740025-00000
Circuit Board Relay	7740096-00000
Circuit Board (Rev. 3)	7740086-00000
Circuit Board (Rev. 2) *	7740063-00000
Diode *	7740109-00000
Male Terminal (AMP .250 Ultra Fast)	9999503
Female Terminal (AMP .250 Ultra Fast)	9999504
Female Terminal (AMP .187 Ultra Fast)	9999501
AMP Housing (Male)	9999606
AMP Housing (Female)	9999607
AMP Contact (Male)	9999506
AMP Contact (Female)	9999508
Relay (Aux.) 5X849E (Rev. 3)	7740083-00000
Relay (Aux.) 5X846E (Rev. 2) *	7740077-00000
Transformer Assembly	7740093-00000
Master Link	7640346-00000
Chain-Roller (Chain 1/2-Pitch #40)	6120145-02732
Gear Motor	7740030-00000
Motor Contactor/Relay	7740082-00000
Drive Wheel Key	6120204-00100
Non-Drive Wheel Key	6120204-00200
Crimp Tool Manual Handle	AMP Part# 58074-1
Crimp Tool Head IDC	AMP Part# 58247-1
Extract Tool Type 2 20-16	AMP #305 183
#10 Serrated Ring Connector	9029839
Strain Relief Grommet	9029119

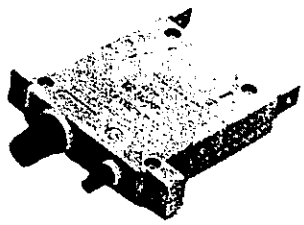
NOTE: Starred (*) not shown.

Floor Sweep
Activator Light (Red)
7740068-00000

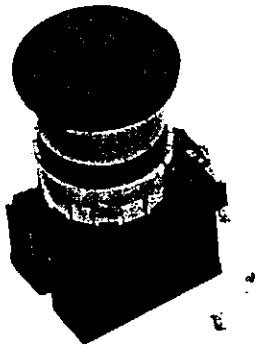
Emergency Light
(Amber)
7740067-00000



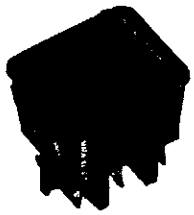
Circuit Breaker
.4 Amp
7740066-00000



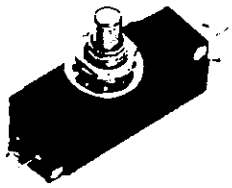
Circuit Breaker
6. Amp
999201



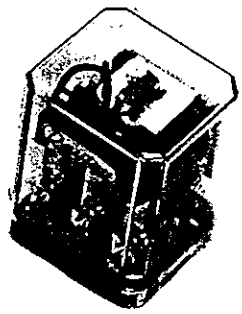
Emergency Stop Switch
(Red Button)
7740090-00000



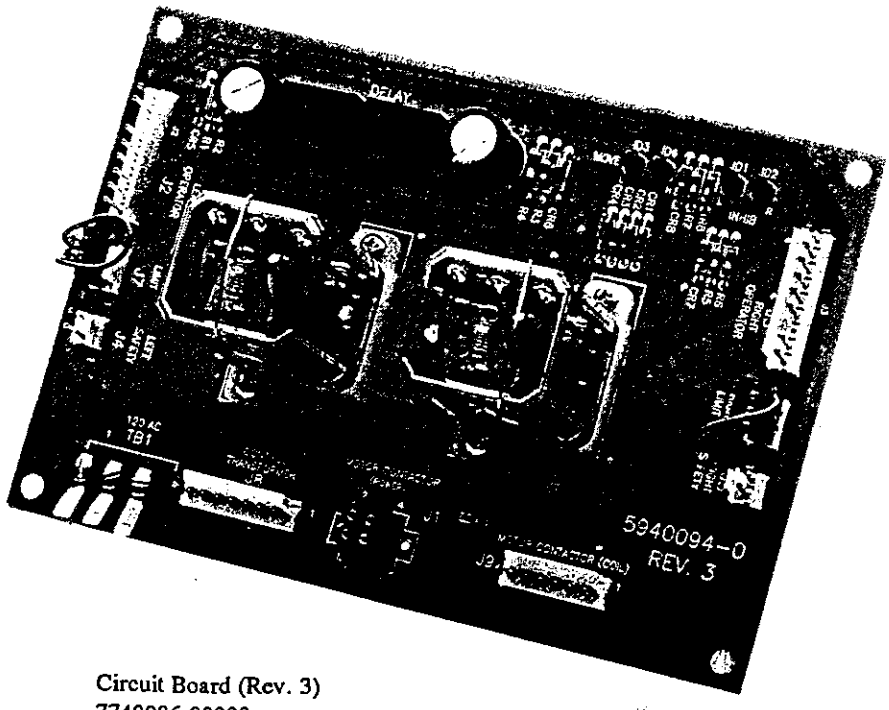
Move Switch
7740065-00000



Sweep Switch
7740025-00000



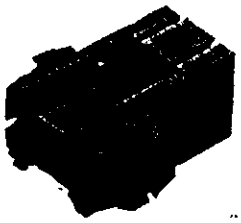
Circuit Board Relay
7740096-00000



Circuit Board (Rev. 3)
7740086-00000

Male Terminal
(Amp .250 Ultra Fast)
9999503

Female Terminal
(Amp .250 Ultra Fast)
9999504

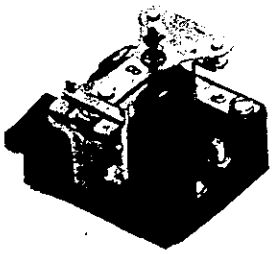


Amp Housing (Male)
9999606

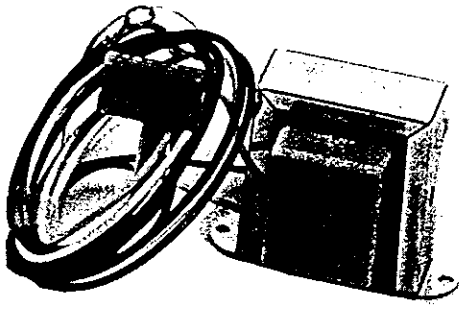
Amp Housing (Female)
9999607

Amp Contact (Male)
9999506

Amp Contact (Female)
9999508

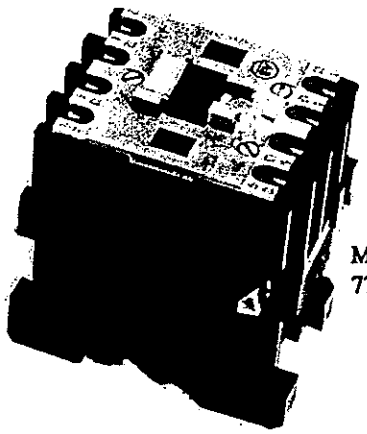


Relay (Aux.)
5X849E (Rev. 3)
7740083-00000

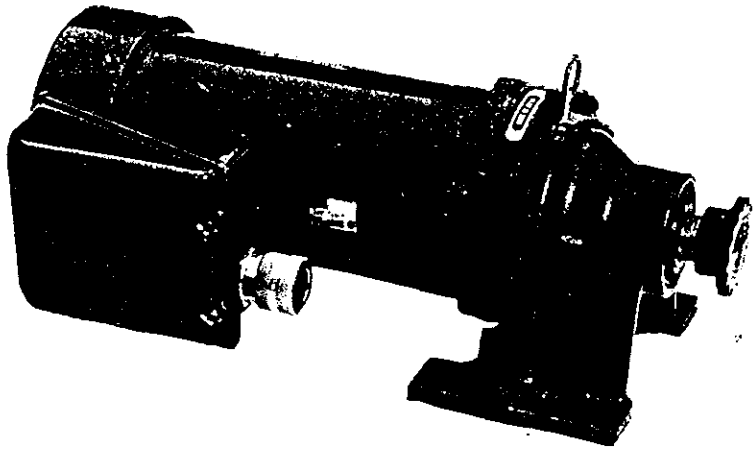


Transformer Assembly
7740093-00000

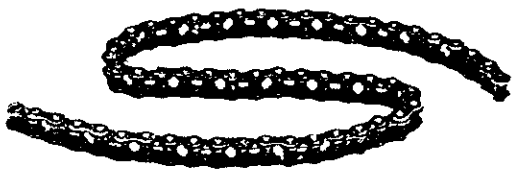
Master Link
7640346-00000



Motor Contractor Relay
7740082-00000



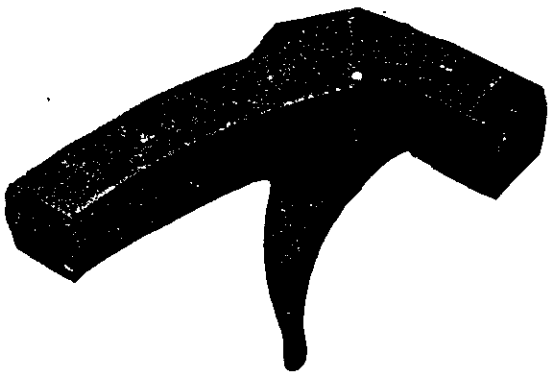
Gear Motor
7740030-00000



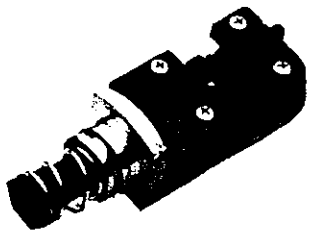
Chain - Roller
(Chain ½-Pitch #40)
6120145-02732

Drive Wheel Key
6120204-00100

Non-Drive Wheel Key
6120204-00200

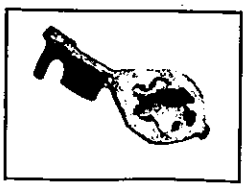


Crimp Tool Manual Handle
58074-1 (AMP Part No.)

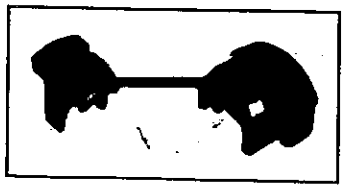


Crimp Tool Head IDC
58247-1 (AMP Part No.)

Extract Tool Type 2
Type 2 20-16
(AMP Part No. 305 183)



#10 Serrated Ring Connector
9029839



Strain Relief Grommet
9029119

INTRODUCTION

This Service Manual is designed to aid the owners of a Spacemaster Electric Movable Back Room Shelving System in understanding its operation and to become familiar with simple check points if the system fails to operate.

It is recommended that the user read this manual before attempting to operate the system. Please pay special attention to all the safety precautions noted. By following these simple precautions, you will enjoy a safe and reliable system.

Although reasonable care has been taken in the preparation of this manual to assure its technical correctness, no responsibility is assumed by Spacemaster Systems for any inaccuracies or their consequences. The information contained herein is subject to change without notice.

Spacemaster Systems

SYMPTOM #1

NO MOVEMENT LEFT OR RIGHT, AMBER LIGHT OFF.

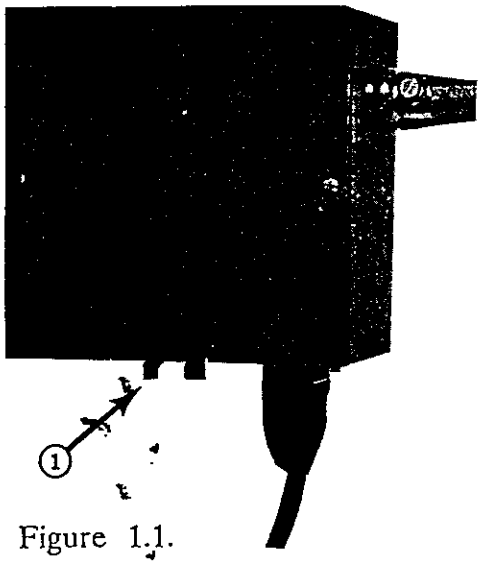


Figure 1.1.

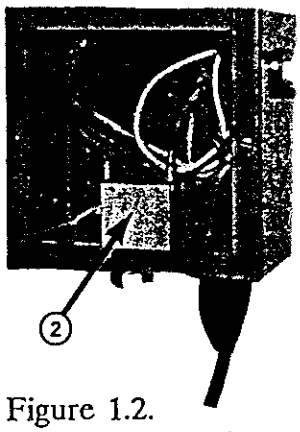


Figure 1.2.

STEP 1.1: Check circuit breaker at the main power box. Reset if necessary.

STEP 1.2: Check circuit breaker at the wall power box.

a.) Check reset switch by depressing black button [1], see Figure 1.1. If reset stays engaged then check the left and right move buttons at the front panel.

b.) If reset action trips circuit breaker see STEP 2; next, disconnect main power to system. Replace circuit breaker [2] with one from adjacent wall power box.

c.) If this works, replace defective circuit breaker [2], see Figure 1.2.

d.) If the circuit breaker continues to trip, check for a short in the system. See STEP 1.3.

STEP 1.3: Check power connection to circuit board at TB1 (120 VAC)[3].Check connections of space connectors to the cable itself on all ends. Do a continuity test for each wire from connector to connector. See Figures 1.3, 1.4, and 1.5.

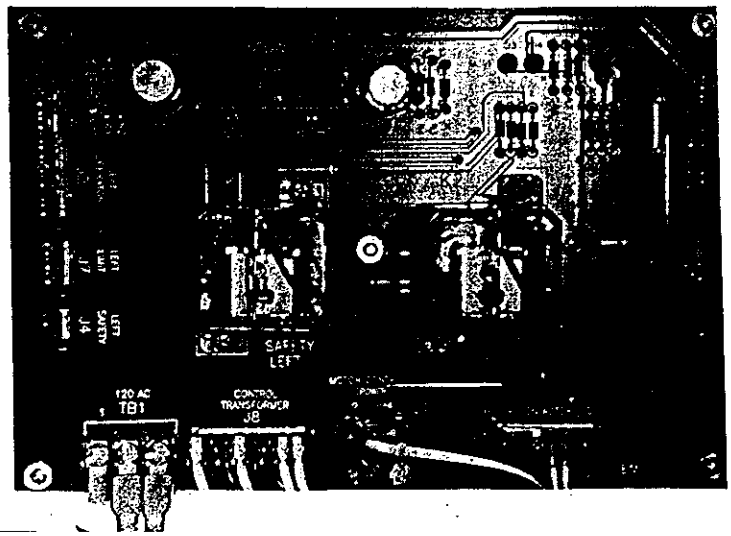
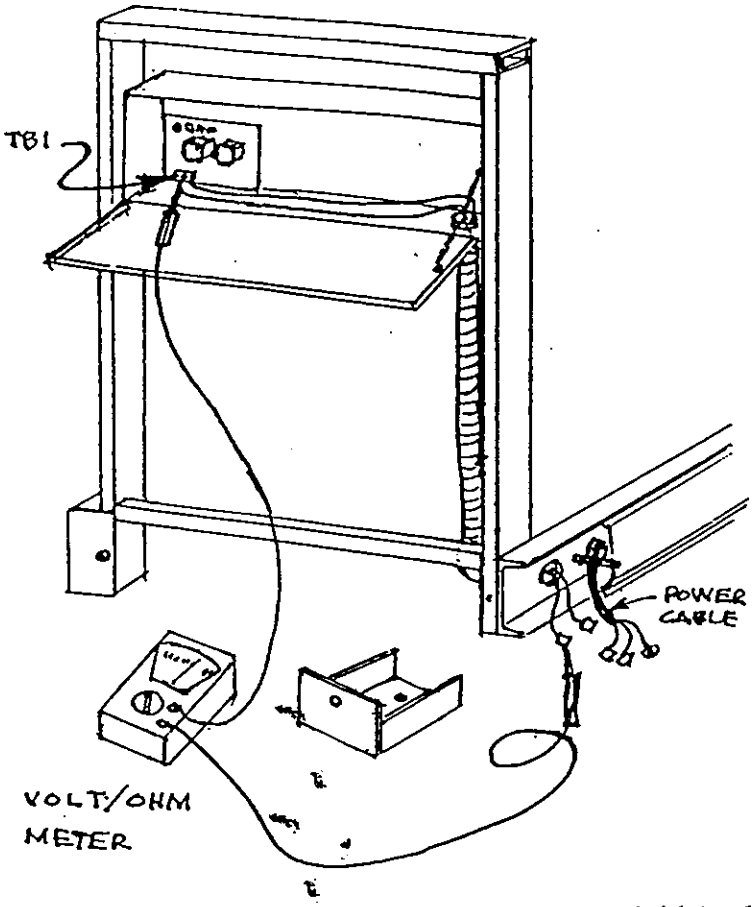
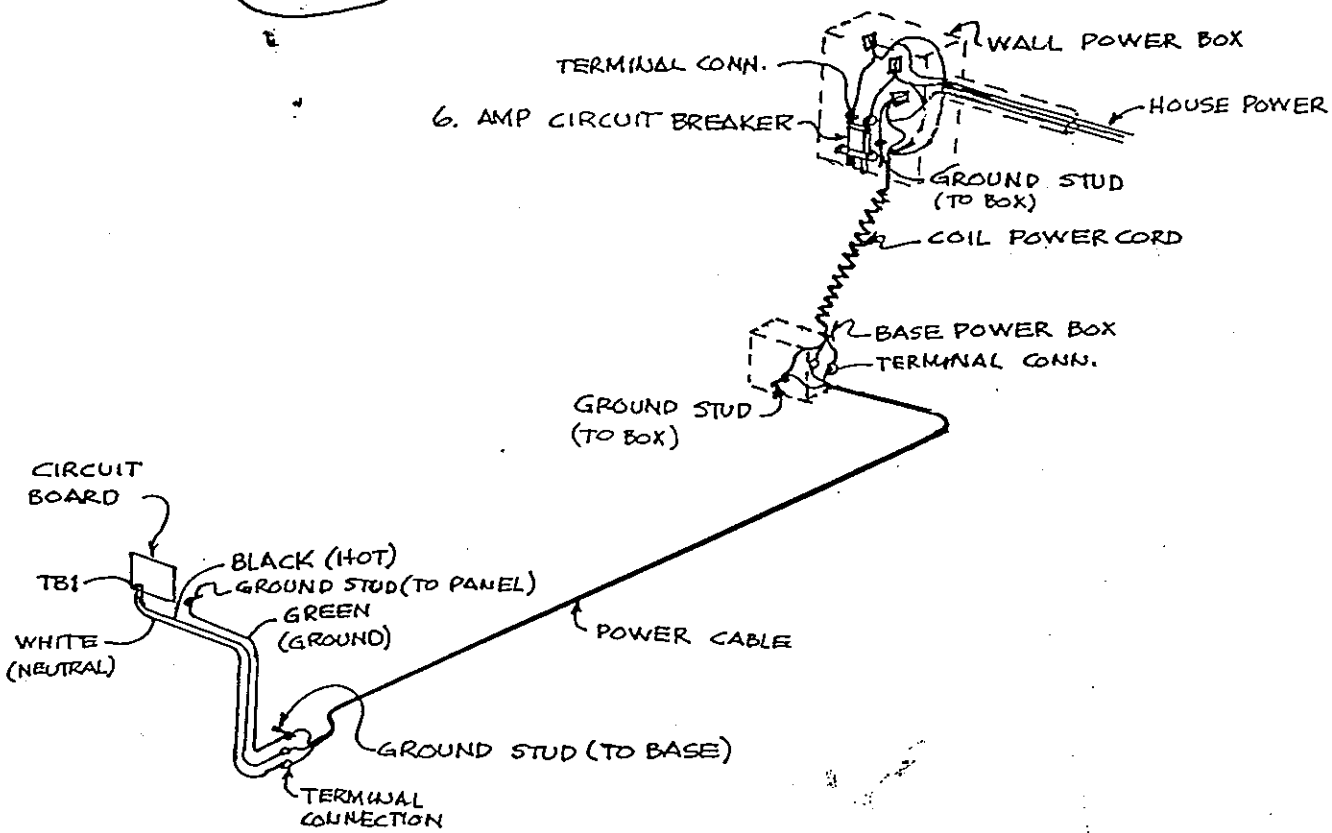


Figure 1.3



FIGURES 1.4 & 1.5



MAIN POWER WIRE DIAGRAM

SYMPTOM #2

NO MOVEMENT LEFT OR RIGHT, AMBER LIGHT ON, NO MOTOR SOUND.

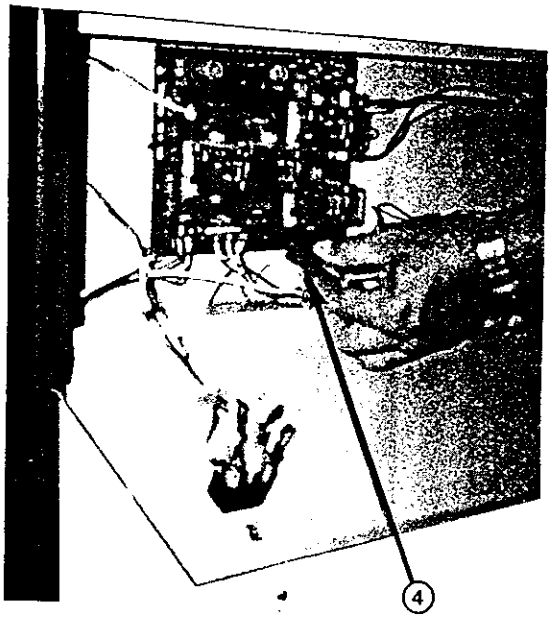


Figure 2.1.

STEP 2.1: Check motor contact J1 on board [4], see Figure 2.1.

STEP 2.2: Check motor plug in control box to motor plug [5] at base, see Figure 2.2. Do continuity check from pin to pin for each wire. If defective, replace the pin. *(Note: wire may be broken behind the pin under the plastic coating.)* See Illustration 2.2. If the wire harness checks out, go to STEP 2.3.

STEP 2.3: Check motor connections [5]. Unclip motor wire from base and check continuity of wires at motor by removing cover and undoing wire nuts. See Illustration 2.3. If this checks out, go to STEP 2.4.

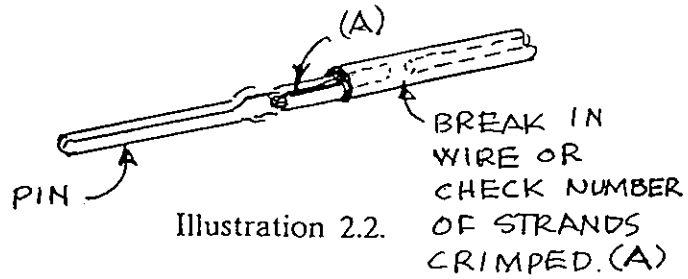


Illustration 2.2.

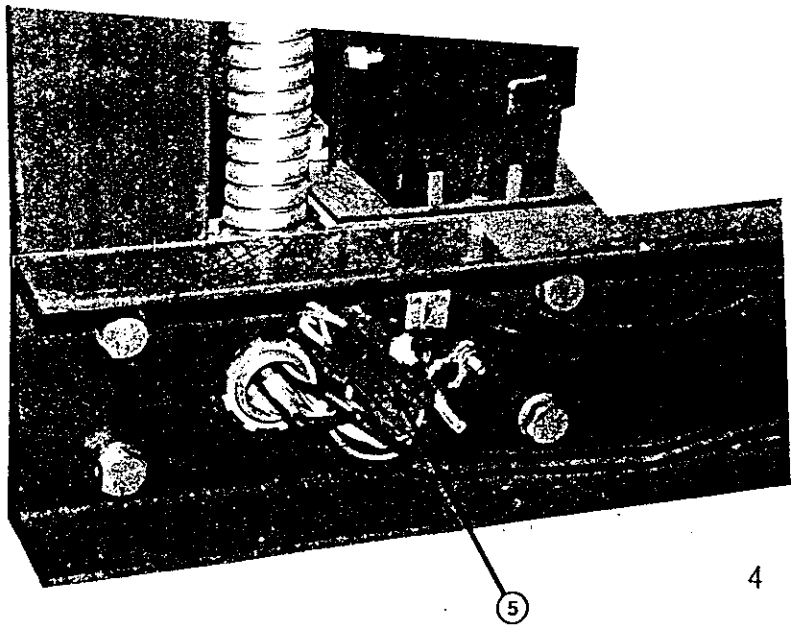


Figure 2.2.

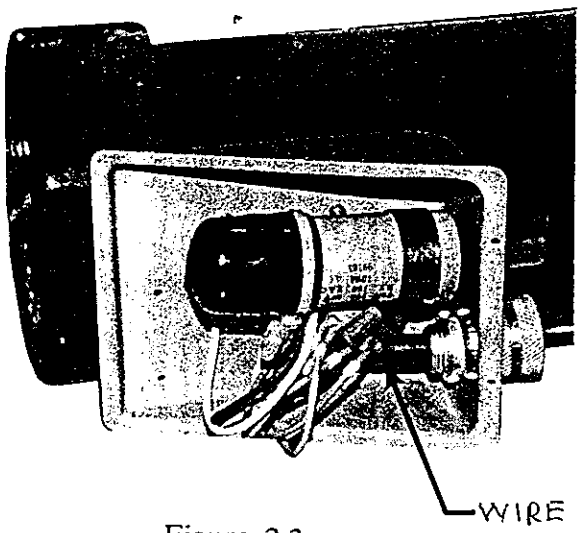


Figure 2.3.

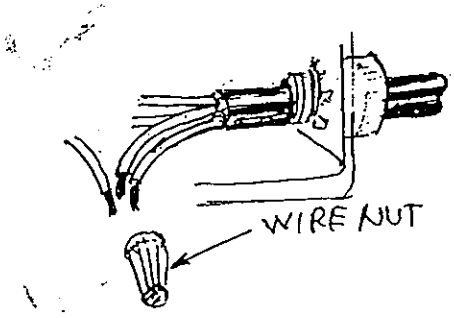


Illustration 2.3.

SYMPTOM #2 (Continued)

STEP 2.4: Check motor. Disconnect motor plug and hook it up to an adjacent unit to see if it runs. See Figure 2.4. If it does not run, replace motor.

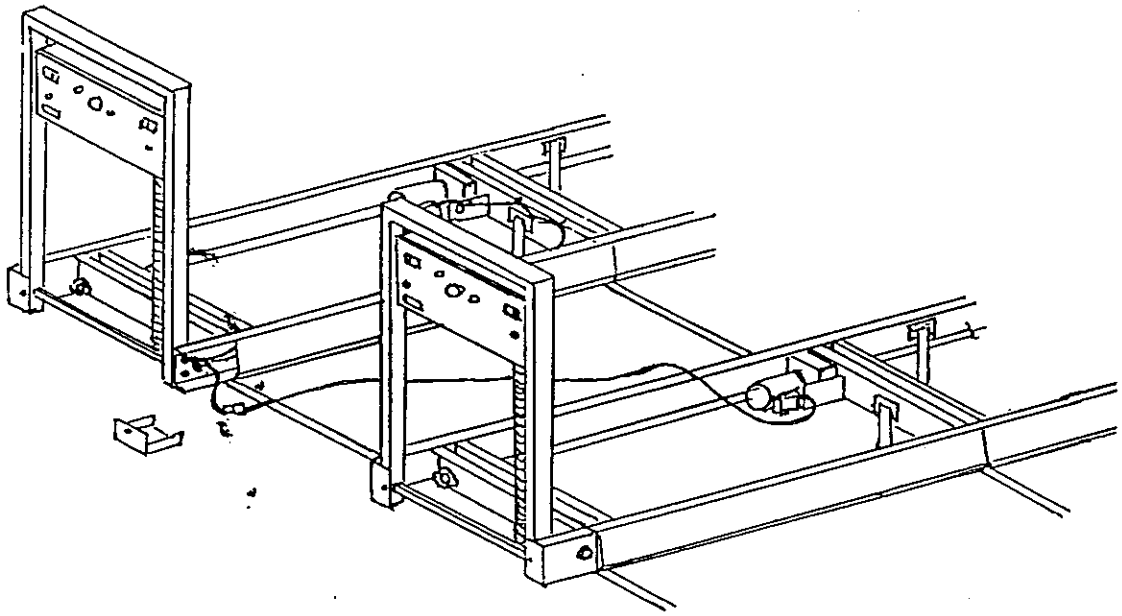


Figure 2.4

SYMPTOM #3

NO MOVEMENT LEFT OR RIGHT, AMBER LIGHT ON, MOTOR RUNS WHEN LEFT OR RIGHT MOVE SWITCH DEPRESSED.

STEP 3.1: Check chain and sprocket at motor. Loosen the four (4) motor mounting bolts. Loosen chain tension set screw and jamb nut. Slide motor toward tension adjustment nut and reconnect the chain with the master link. *(Note: Be sure backer plate and keeper are seated properly on the master link.)*

Readjust chain tension and re-tighten motor mounting bolts. Reset tension adjusting set screw and tighten jam nut. See Figure 3.1.

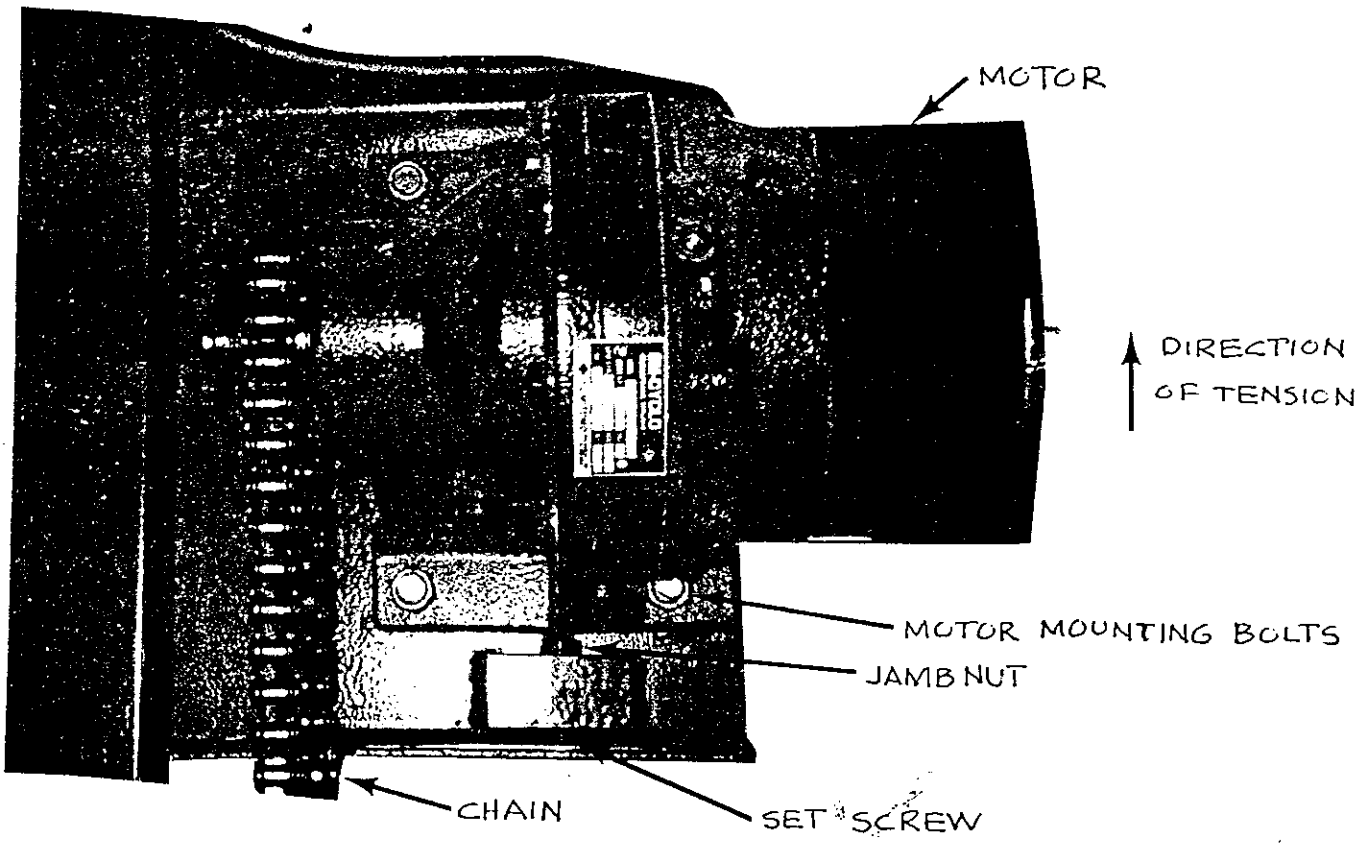


Figure 3.1.

SYMPTOM #4

NO MOVEMENT LEFT OR RIGHT, BOTH RED LIGHTS ON.

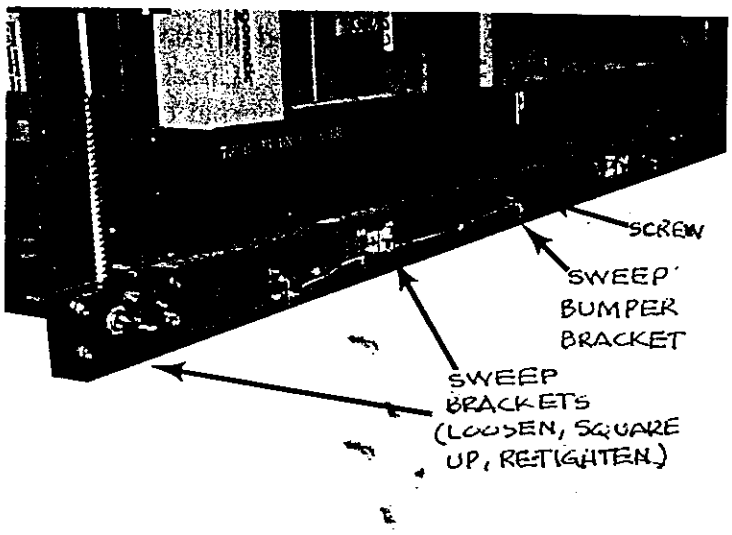


Figure 4.1.

STEP 4.1: Check floor sweeps on both sides for foreign objects (i.e. ladders, boxes, etc.). If clear, lift floor sweep to see if red light goes off. Adjust sweep brackets. Pry sweep bumper bracket out so that sweep switches clear sweep, re-tighten sweep bumper bracket mounting screw. See Figure 4.1. If this is not the cause, go to STEP 4.2.

STEP 4.2: Check left J4 and right J5 safety connection on the circuit board by removing both wires. Take a screw driver and jump across the exposed pins at J4/J5 and safety light should go out. If red light remains on, change safety left relay K1 and/or safety right relay K2 as required. If both red lights remain on, replace the circuit board. See Figure 4.2.

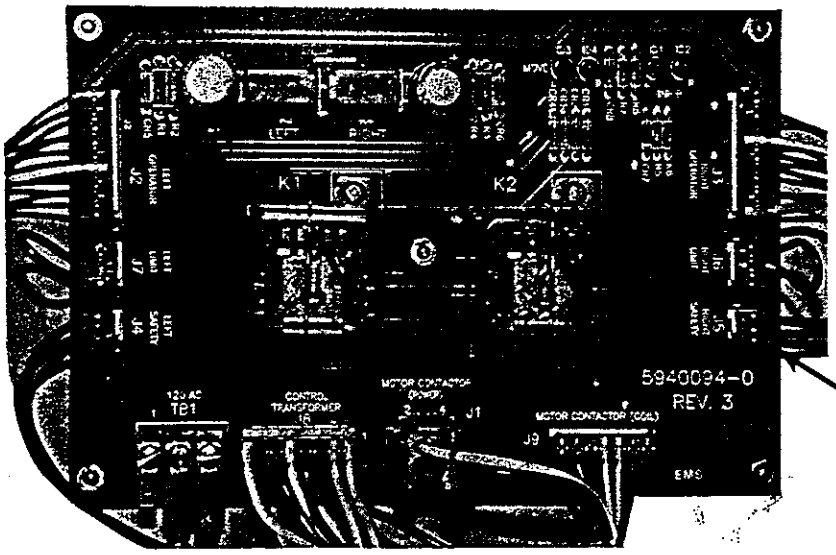


Figure 4.2.

SYMPTOM #4 (Continued)

STEP 4.3: If the red lights go off, then check all the sweep wire connections and switches for a short or a bad terminal connector. Start at the front and work your way to the back. See Figure 4.3. Check for cable stretch (an indication of internal cable damage), be sure that it is not being caught on the axle. See Safety Sweep Wire Diagram, Figure 4.4.

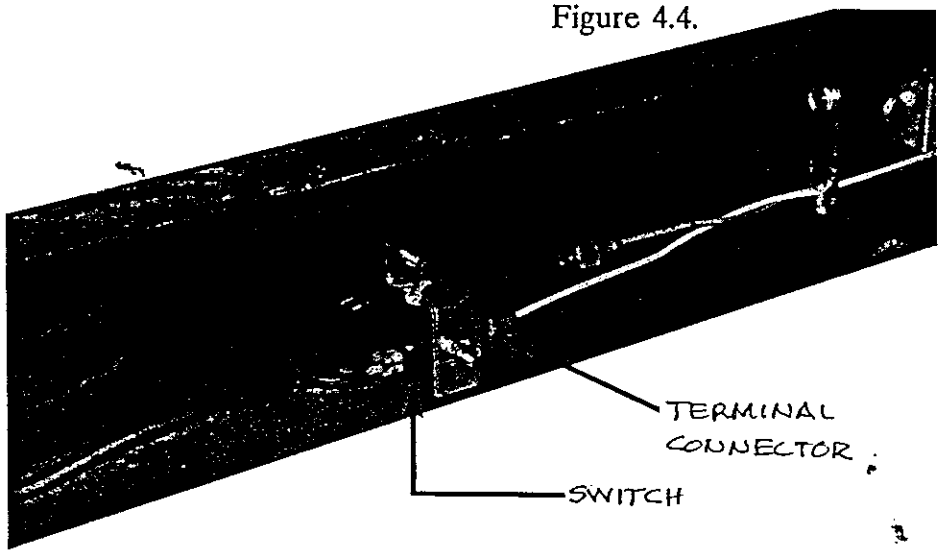


Figure 4.3.

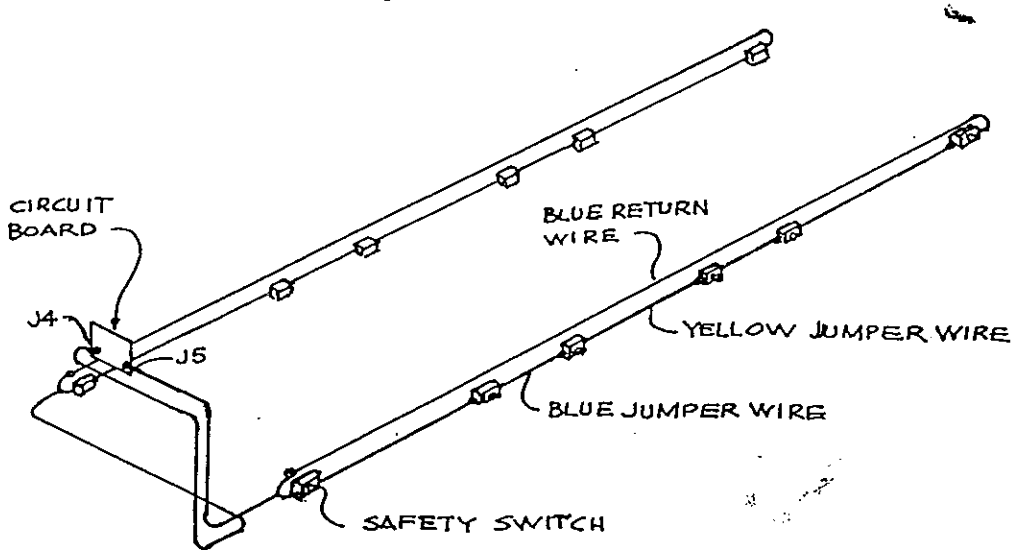


Figure 4.4

SAFETY SWEEP WIRE DIAGRAM

SYMPTOM #5

NO MOVEMENT LEFT, AMBER LIGHT ON, BOTH RED LIGHTS OFF.

STEP 5.1: Check move switch for left motion by pressing the override switch on the left motor contactor, see Figure 5.1. If movement occurs change the left move switch. If no movement, check continuity from J9 motor contactor coil on the circuit board to left move relay and through to motor. If this is not the cause, go to STEP 5.2.

STEP 5.2: Replace right move switch. Both switches are on a common circuit. Refer to **SYMPTOM #2.**, see Figure 5.2.

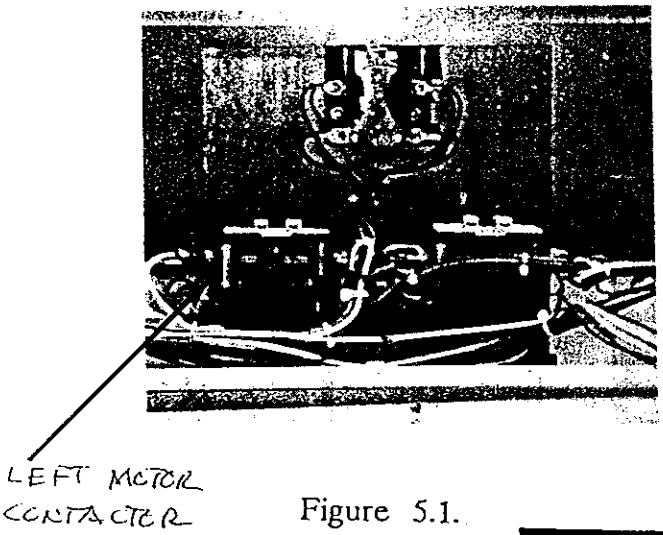


Figure 5.1.

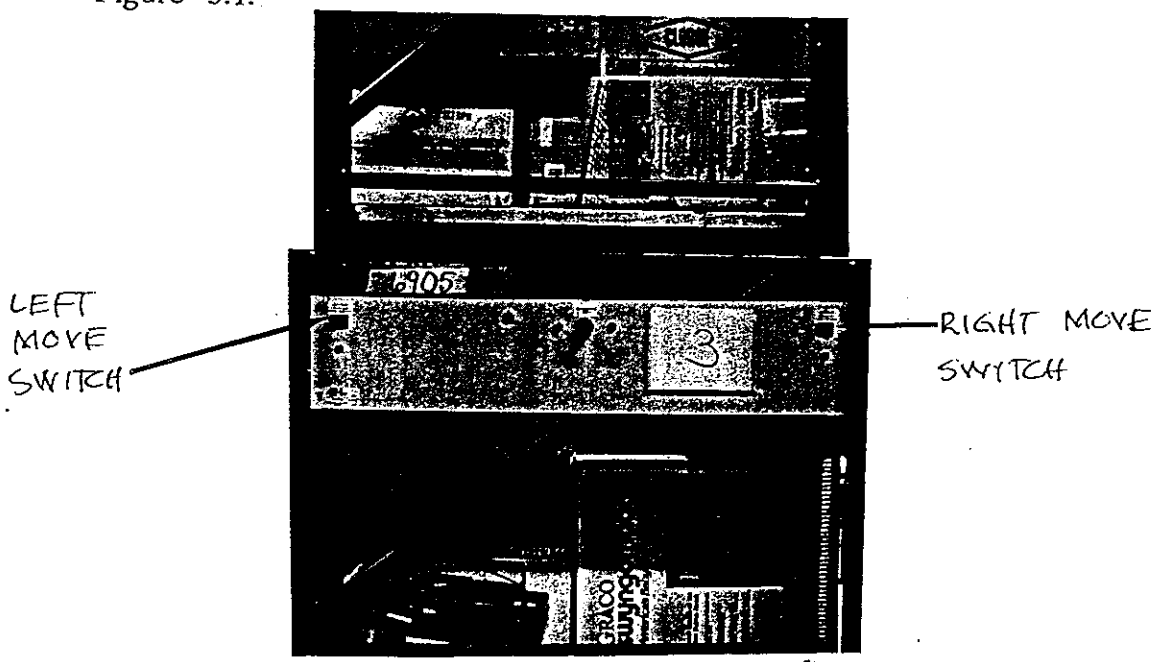


Figure 5.2.

SYMPTOM #6

NO MOVEMENT RIGHT, AMBER LIGHT ON, BOTH RED LIGHTS OFF.

STEP 6.1: Check move switch for right motion by pressing the override switch on the right motor contact, see Figure 6.1. If movement occurs change the right move switch. If no movement, check continuity from J9 motor contactor coil on the circuit board to right move relay and through to motor. If this does not work, go to STEP 6.2.

STEP 6.2: Replace left move switch. Both switches are on a common circuit. Refer to SYMPTOM #2., see Figure 6.2.

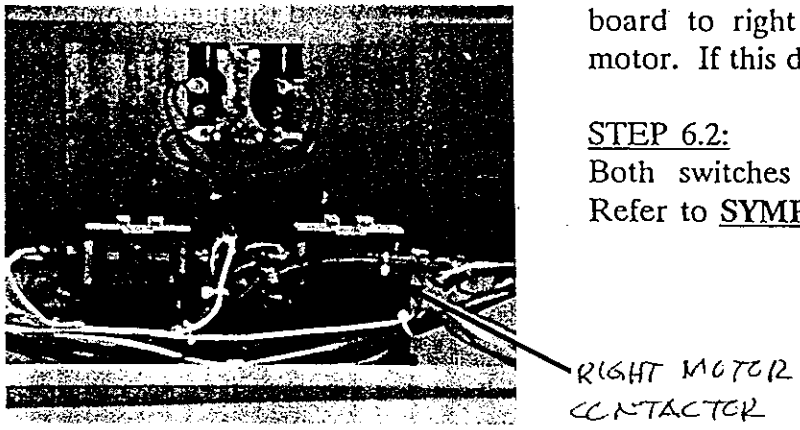


Figure 6.1.

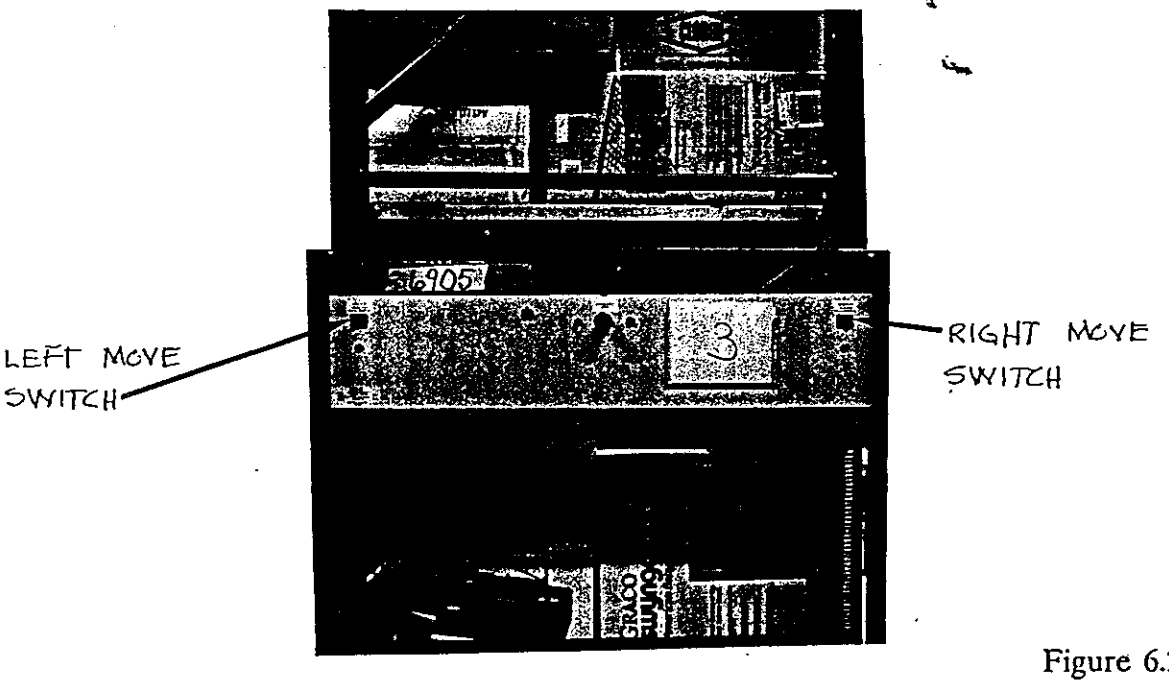


Figure 6.2.

SYMPTOM #7

NO MOVEMENT LEFT, AMBER LIGHT ON, LEFT RED LIGHT ON.

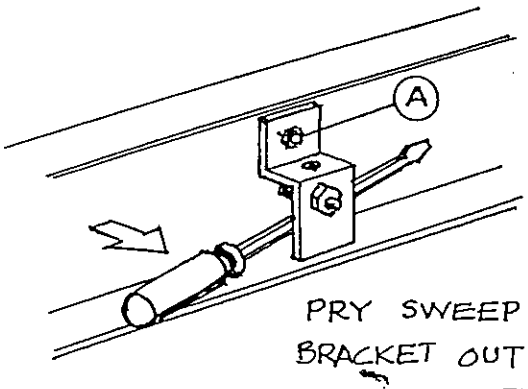
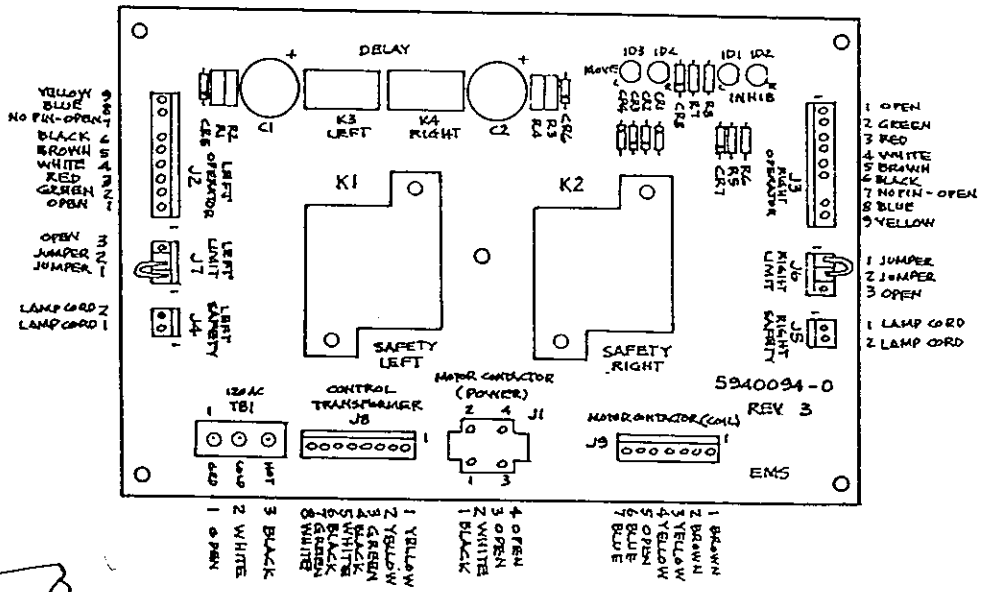


Figure 7.1

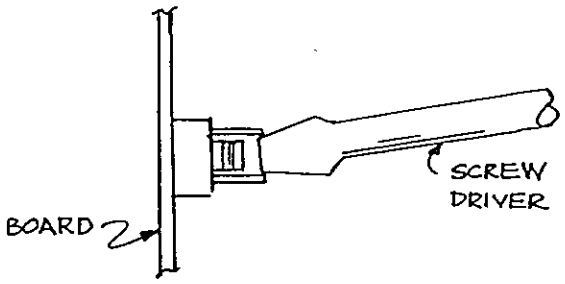
STEP 7.1: Check floor sweeps on both sides for foreign objects (i.e. ladders, boxes, etc.). If clear, lift floor sweep to see if red light goes out. Adjust sweep bumper bracket, see Figure 7.1. If this is not the cause, go to Step 7.2.

STEP 7.2: Check left safety connection J4 on the circuit board by removing J4 plug. Take a screw driver and jump across the exposed pins at J4 (see Figure 7.1a) and safety light should go out; proceed to Step 7.3. If red light remains on, change safety left relay K1. If red light still remains on, replace the circuit board. See Figure 7.2.



CIRCUIT BOARD

Figure 7.2

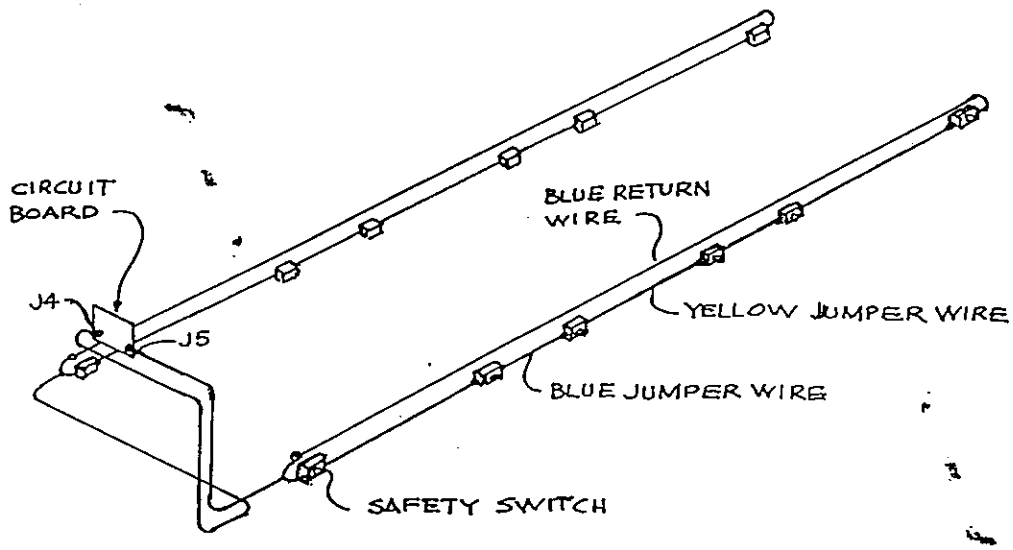


J4 / J5 CONNECTOR

Figure 7.1a

SYMPTOM #7 (Continued)

STEP 7.3: If the red lights go out, then check all the left sweep wire connections and switches for a short or a bad terminal connector. Start at the front and work your way to the back. See Safety Sweep Wire Diagram, Figure 7.3.

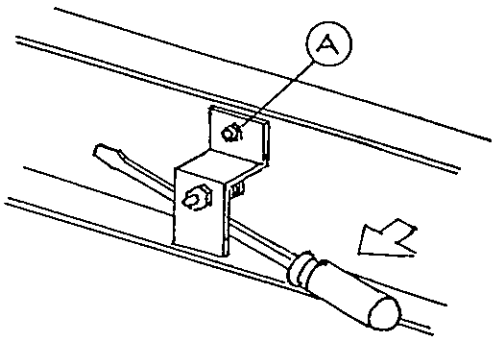


SAFETY SWEEP WIRE DIAGRAM

Figure 7.3

SYMPTOM #8

NO MOVEMENT RIGHT, AMBER LIGHT ON, RIGHT RED LIGHT ON.

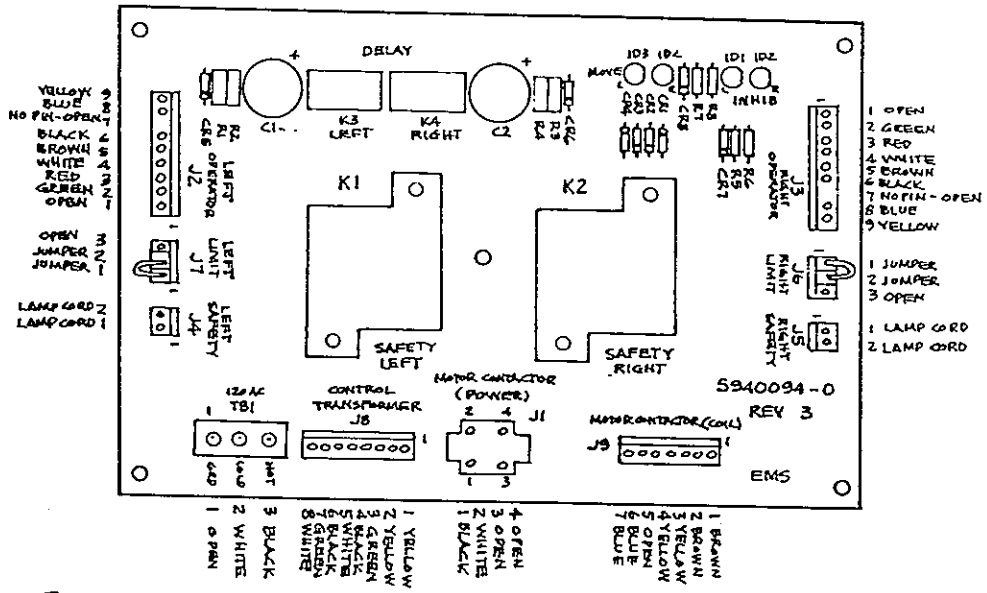


PRY SWEEP BUMPER BRACKET OUT WITH A LARGE SCREW DRIVER, RETIGHTEN MOUNTING BOLT (A).

Figure 8.1

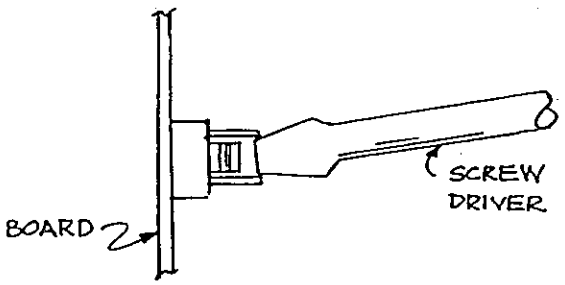
STEP 8.1: Check floor sweeps on both sides for foreign objects (i.e. ladders, boxes, etc.). If clear, lift floor sweep to see if red light goes out. Adjust sweep bumper bracket, see Figure 8.1. If this is not the cause, go to Step 8.2.

STEP 8.2: Check right safety connection J5 on the circuit board by removing J5 plug. Take a screw driver and jump across the exposed pins at J5 (see Figure 8.1a) and safety light should go out; proceed to Step 8.3. If red light remains on, change safety right relay K2. If red light still remains on, replace the circuit board. See Figure 8.2.



CIRCUIT BOARD

Figure 8.2

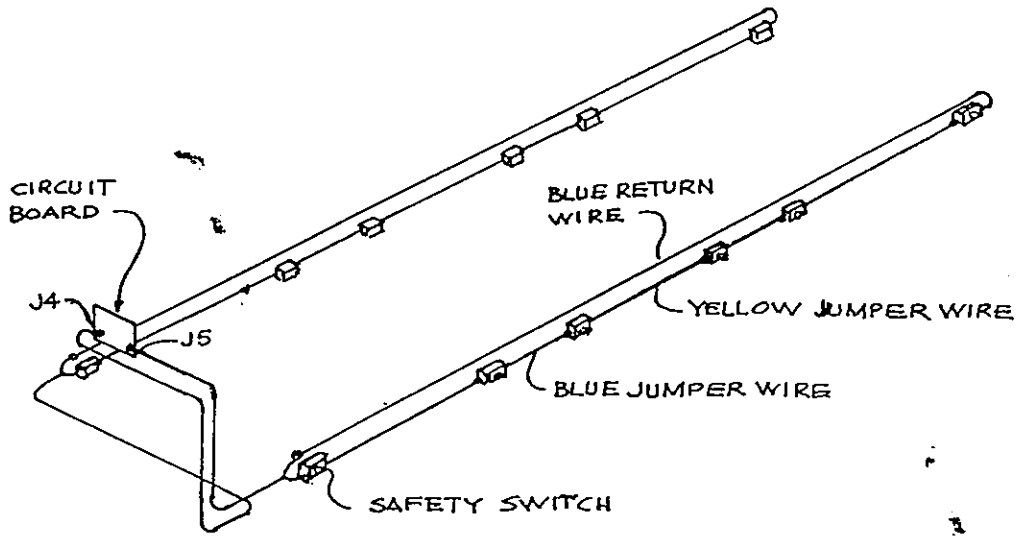


J4/J5 CONNECTOR

Figure 8.1a

SYMPTOM #8 (Continued)

STEP 8.3: If the red lights go out, then check all the right sweep wire connections and switches for a short or a bad terminal connector. Start at the front and work your way to the back. See Safety Sweep Wire Diagram, Figure 8.3.



SAFETY SWEEP WIRE DIAGRAM

Figure 8.3

SYMPTOM #9

AFTER PULLING EMERGENCY SWITCH ON, CIRCUIT BREAKER TRIPS AT WALL POWER BOX.

STEP 9.1: Check for grounding/shorting by disconnecting J1 motor contactor (power) and J8 control transformer from circuit board. Reset wall circuit breaker and reconnect J8 if wall circuit breaker holds, the problem will be on J1. Refer to SYMPTOM #1. If wall circuit breaker continues to trip, go to STEP 9.2.

STEP 9.2: Check for shorts on power cable from TB1 on the circuit board through all connections to wall box circuit breaker. See Figure 9.1. If circuit breaker continues to trip, go to STEP 9.3.

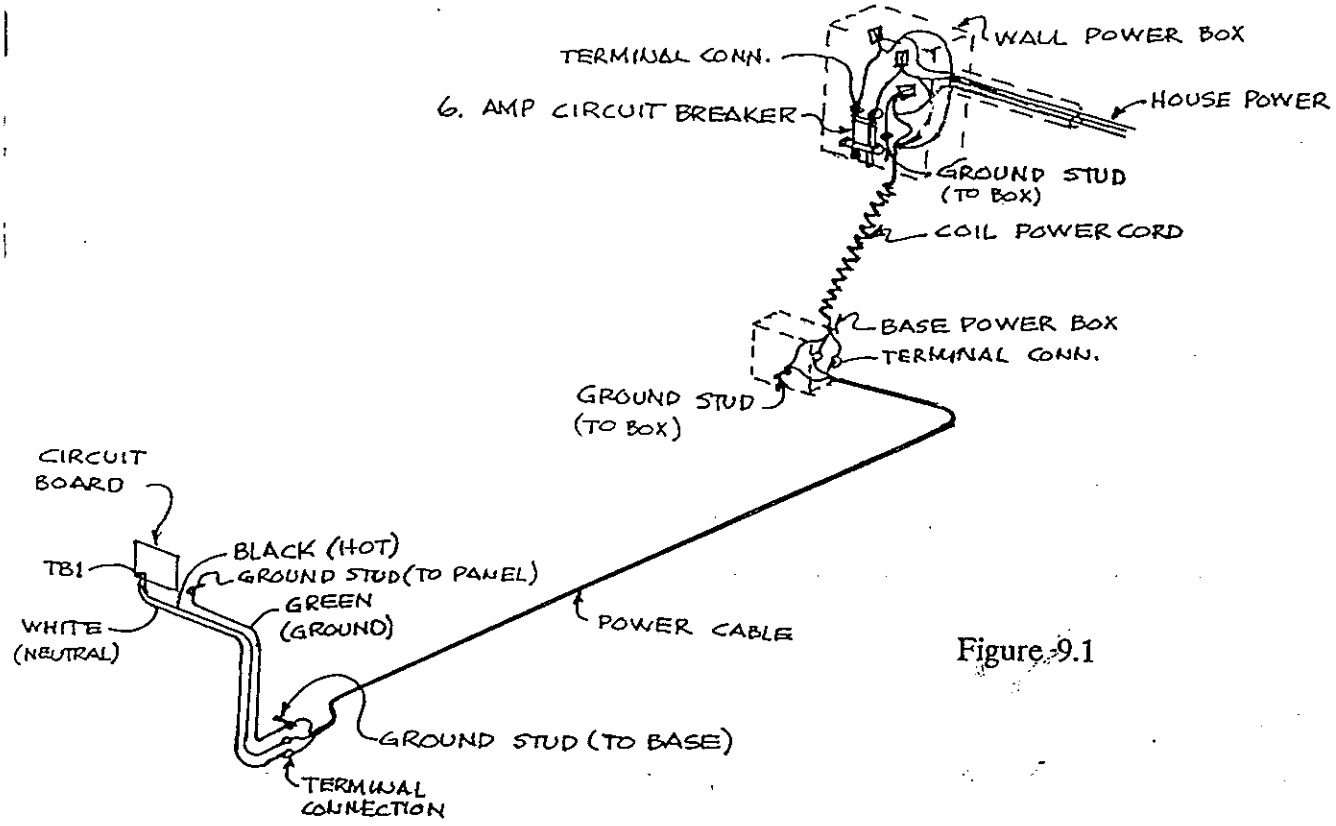
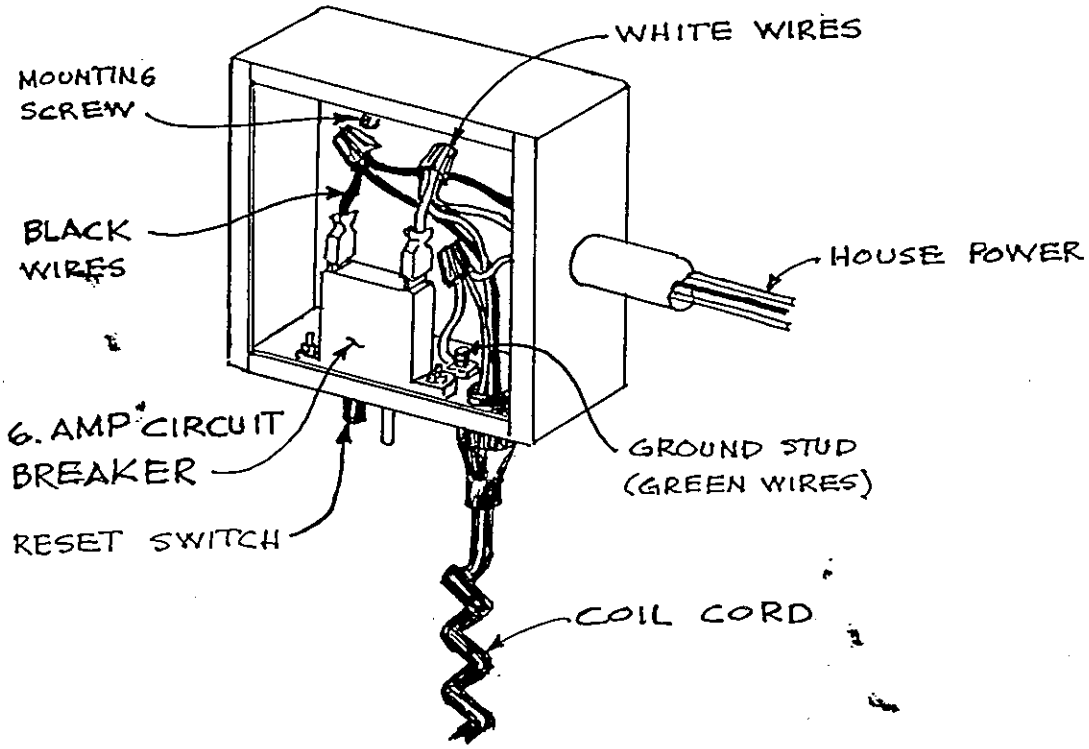


Figure 9.1

MAIN POWER WIRE DIAGRAM

SYMPTOM #9 (Continued)

STEP 9.3: Replace the wall box circuit breaker. See Figure 9.2.



WALL POWER BOX CONNECTION

Figure 9.2

SYMPTOM #10

A) AFTER PULLING EMERGENCY SWITCH ON, CIRCUIT BREAKER TRIPS AT CONTROL BOX.

B) CONTROL FRONT PANEL CIRCUIT BREAKER TRIPS IN 3 TO 5 SECONDS.

C) CONTROL PANEL CIRCUIT BREAKER TRIPS WHEN EITHER MOVE SWITCH DEPRESSED.

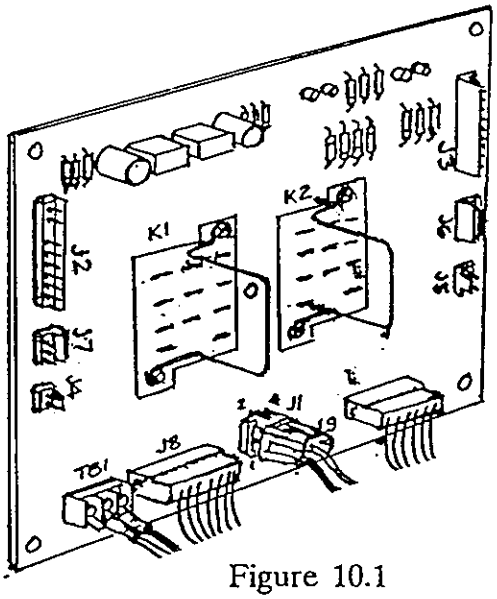


Figure 10.1

STEP 10.1: Check for grounding/shorting by disconnecting low voltage components on circuit board (i.e. relays K1 & K2, and plugs J2, J3, J4, J5, J6, and J7). See Figure 10.1.

STEP 10.1.1: Re-install each component one at a time. First dress the left side of the circuit board, activate left move switch. See Figure 10.1.1a. If this works without the circuit breaker tripping, then dress the right side of the circuit board. If any component trips the circuit breaker, replace it or repair it. See Figure 10.1.1b.

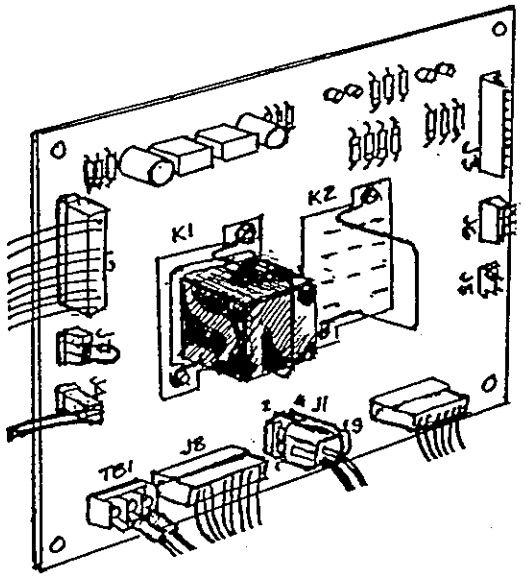
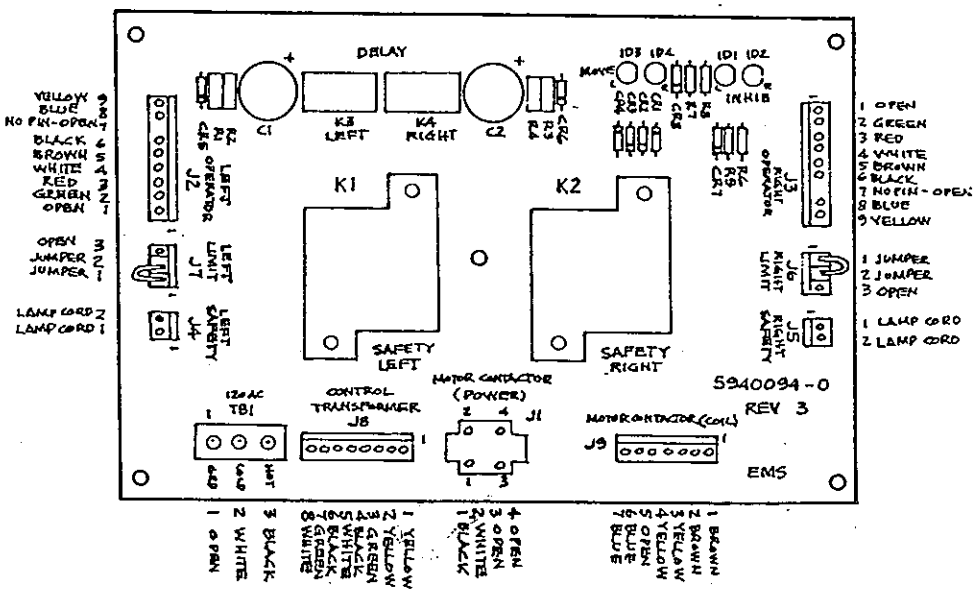


Figure 10.1.1a



CIRCUIT BOARD

Figure 10.1.1b

SYMPTOM #10 (Continued)

STEP 10.1.2: Replace K1 and/or K2 relays. If problem persists, go to 10.1.2.1.

STEP 10.1.2.1: Check the wires from J2 operator left and J3 operator right to their respective move switches. Make sure that none of these wires are grounding/shorting to any component in the control box itself. See Figure 10.1.2.1. If circuit breaker still trips out, see STEP 10.2.

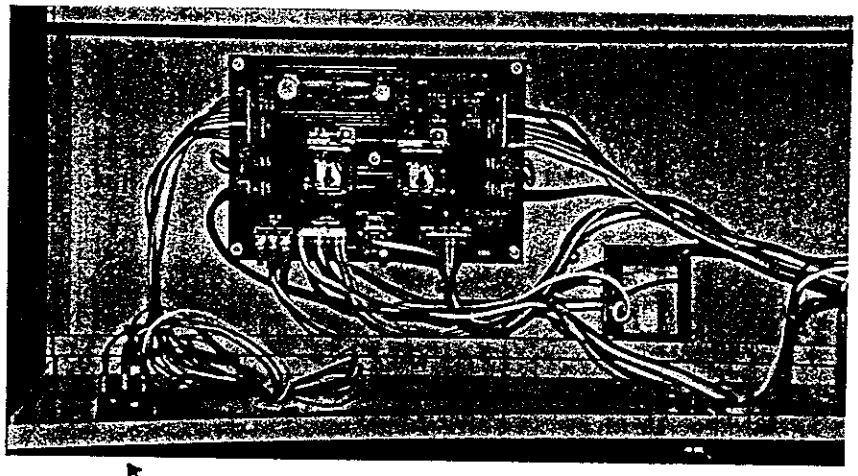


Figure 10.1.2.1.

SYMPTOM #10 (Continued)

STEP 10.2: Check circuit breaker on control box front panel.

STEP 10.2.1: Replace circuit breaker at control box front panel. See Figure 10.2.1. If problem persists, go to STEP 10.3.

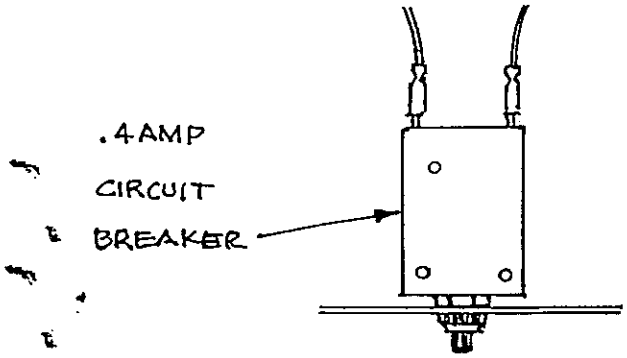


Figure 10.2.1

SYMPTOM #10 (Continued)

STEP 10.3: Check circuit board for short at center connection. Remove center nut, power up system. If problem still exists, turn power off at wall power box. Remove circuit board from troubled unit and replace it with a working circuit board from an adjacent unit. If this works, replace the circuit board. If the problem persists backtrack to STEP 10.1 and repeat procedure.

NOTE: There has been an incident where the circuit boards were switched and both units worked and/or the problem moves with the circuit boards. If this works, remove and re-solder diodes on both circuit boards. See Figure 10.3.

REMOVE CENTER NUT

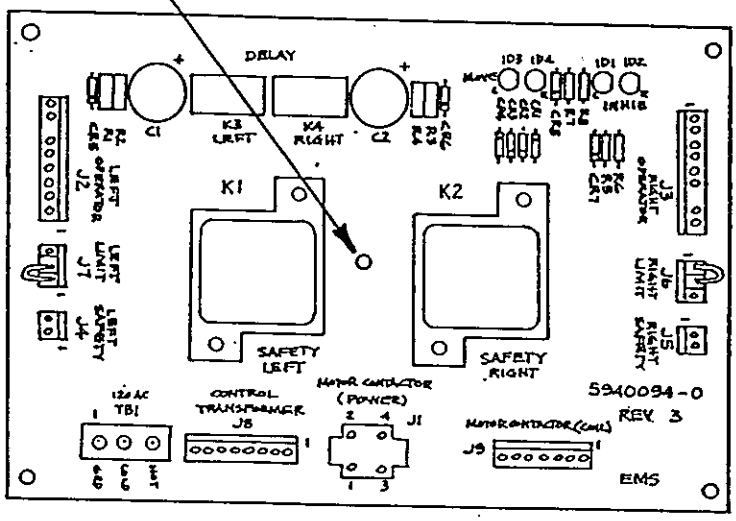


fig. 10.3

TURN BOARD OVER AND SOLDER DIODES CR1, CR2, CR3, CR4, CR5, CR6, CR7 AND CR8. RE-INSTALL BOARD.

SYMPTOM #11

WALL POWER BOX CIRCUIT BREAKER TRIPS IN 3 TO 5 SECONDS.

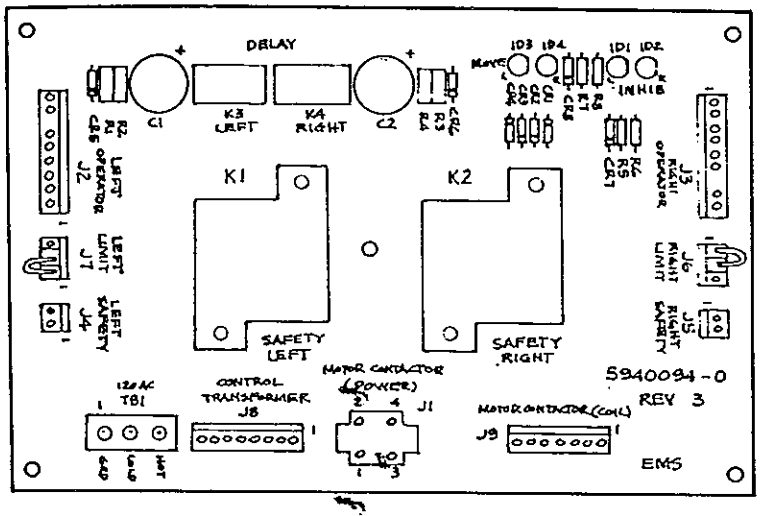
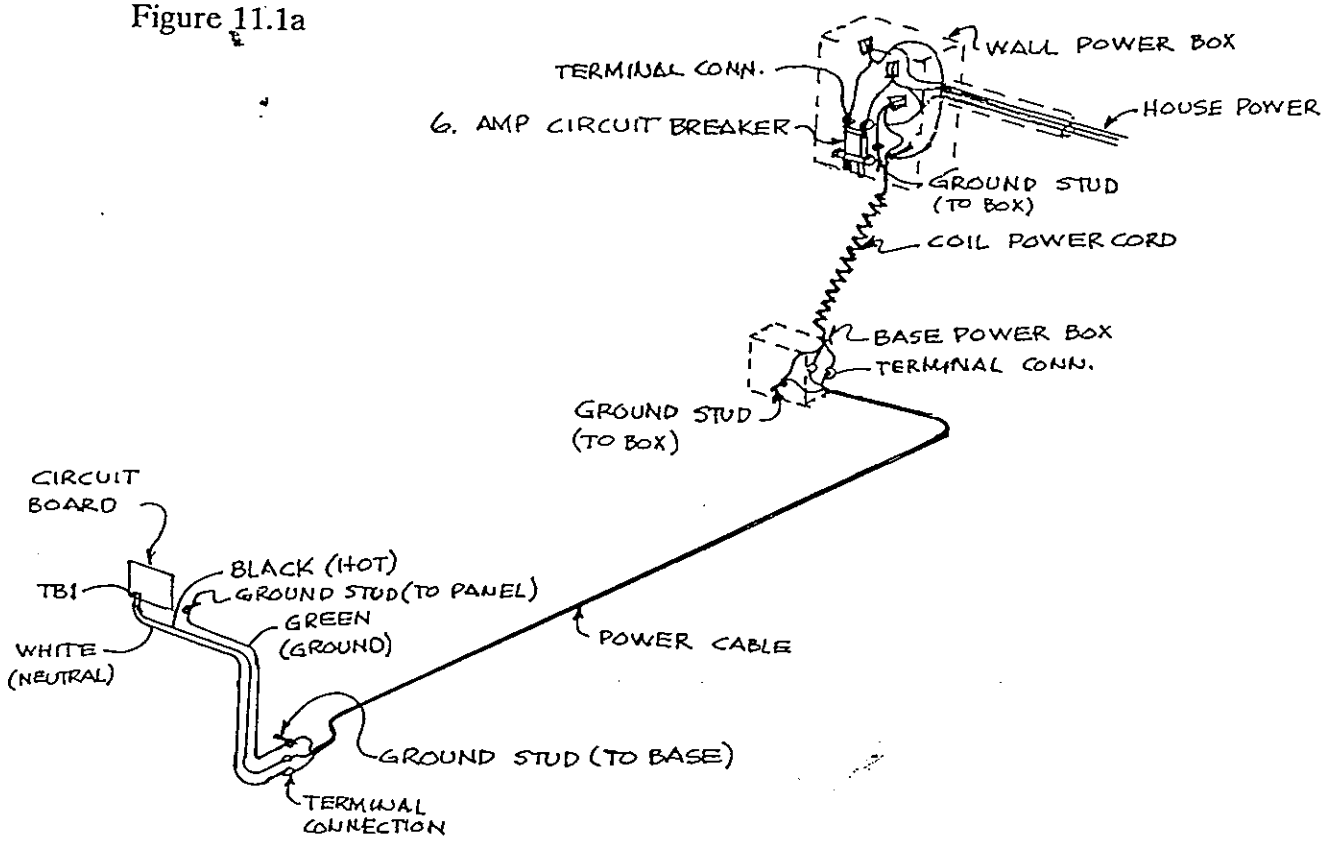


Figure 11.1a

STEP 11.1: Disconnect J1 motor and J8 control transformer connectors from the circuit board, see Figure 11.1a. Then activate reset on the wall box circuit breaker, if condition continues, check for ground/short from TB1 on the circuit board through power cable and connection in base and wall power boxes. See Figure 11.1b. If circuit breaker does not trip, then go to STEP 11.2.



MAIN POWER WIRE DIAGRAM

Figure 11.1b

SYMPTOM #11 (Continued)

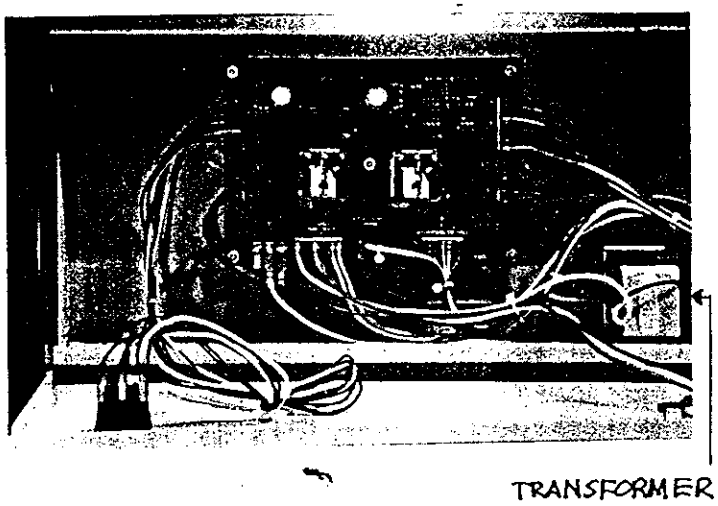


Figure 11.2.

STEP 11.2: Reconnect J8 control transformer connector on the circuit board. If condition continues, check for short in wire harness or transformer. Replace transformer if necessary. See Figure 11.2. If circuit breaker does not trip, then go to STEP 11.3.

STEP 11.3: Reconnect J1 motor connector to circuit board. If condition continues, check for shorts in all connector blocks to motor. Remove motor cover and check connections there. Be sure all wire nuts are secure before replacing cover. See Figure 11.3. If problem continues, replace motor.

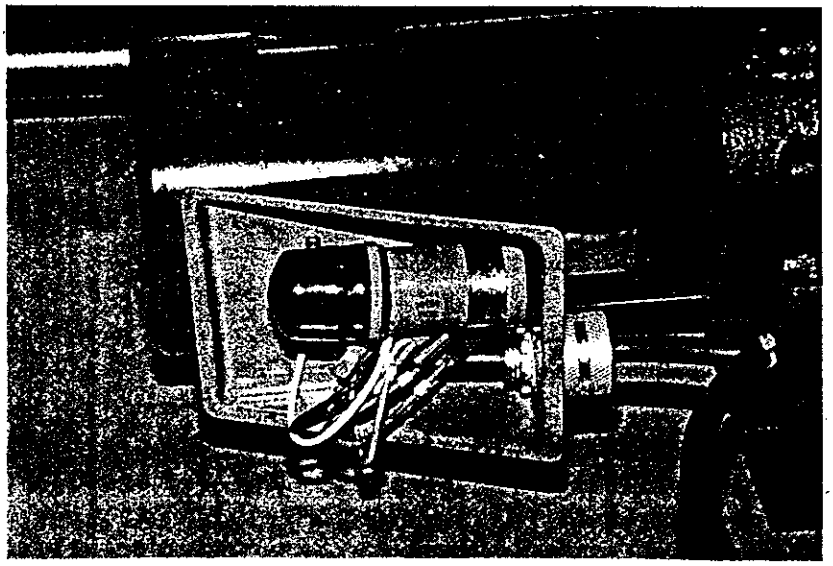


Figure 11.3.

SYMPTOM #12

WALL POWER BOX CIRCUIT BREAKER TRIPS WHEN EITHER MOVE SWITCH DEPRESSED.

STEP 12.1: Check if motor is mechanically bound. Check for debris on track caught under wheel(s). Try to push the unit. If unit can be moved, then motor is free.

STEP 12.2: Check voltage on both sides of auxiliary relay points. If there is a variance, turn power off and file corrosion off contact points (with burnishing tool), see Figure 12.1, then reapply power. The unit should move at its normal rate. If this does not work, go to STEP 12.3.

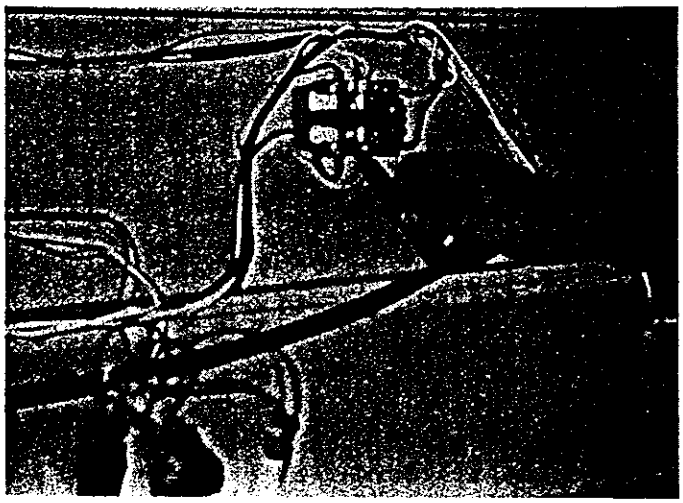


Figure 12.1

SYMPTOM #12 (Continued)

STEP 12.3: Check wall box circuit breaker, replace it with one from adjacent unit. If this works, replace it with a new unit. See Figure 12.2.

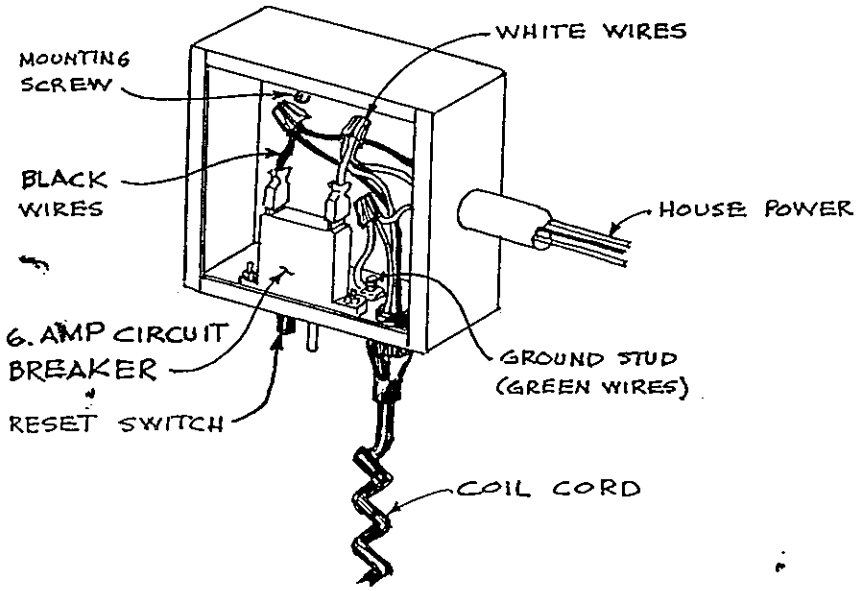
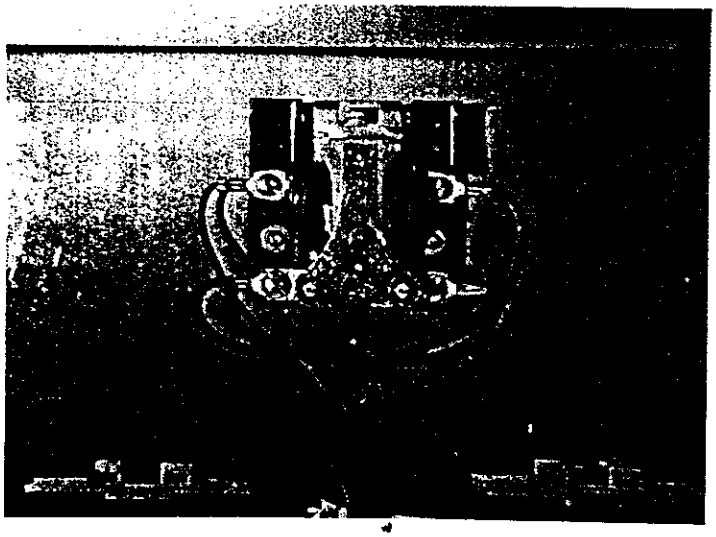


Figure 12.2

SYMPTOM #13

RELAY MAKES "BUZZING" SOUND.



STEP 13.1: Check the power auxiliary relay contactor to see if it is seated correctly. See Figure 13.1. If this continues replace auxiliary relay.

STEP 13.2: Check the safety relay by replacing the relay from an adjacent circuit board. If the problem continues, replace the circuit board. See Figure 13.2.

Figure 13.1.

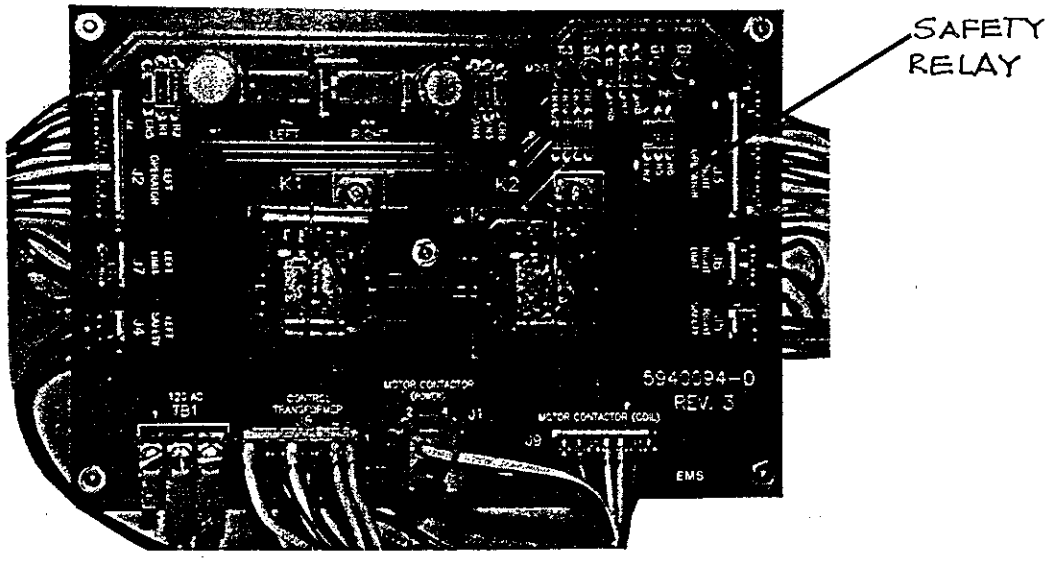
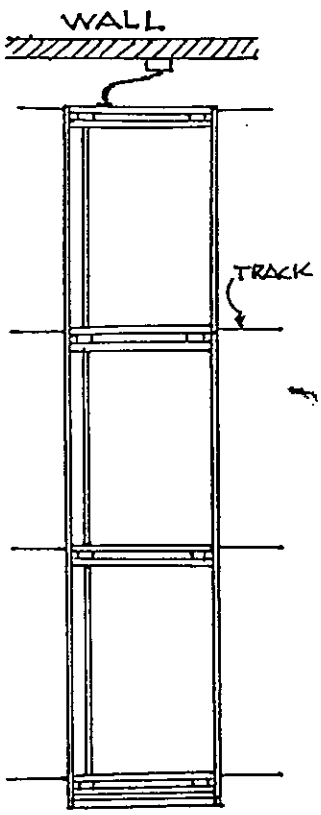


Figure 13.2.

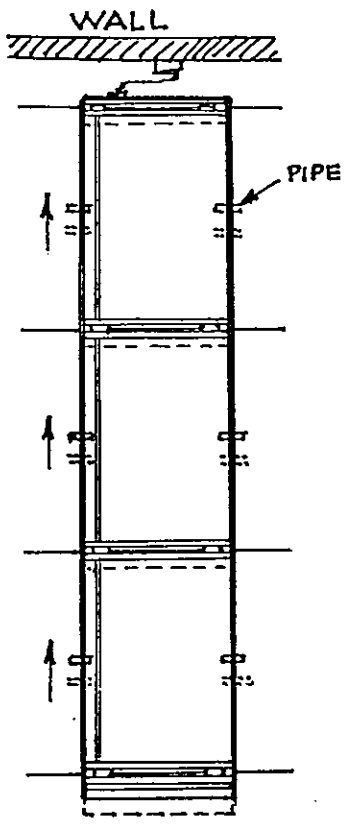
SYMPTOM #14

BASE UNIT DERAILS OFF THE TRACK.



UNIT OFF TRACK

Figure 14.1



UNIT PUT ON TRACK

Figure 14.2b

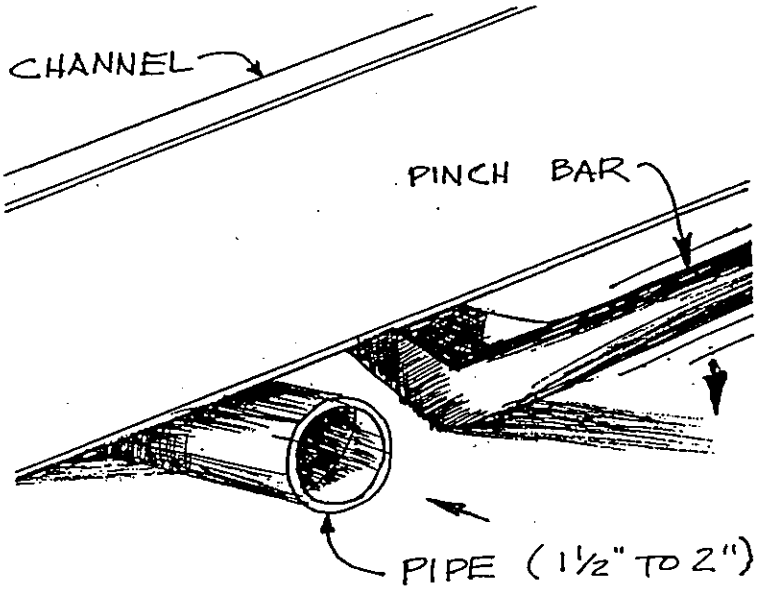


Figure 14.2a

STEP 14.1: Determine the cause, see Figure 14.1.

a.) Check if they are pulling or pushing unit with another unit at one of the corners. Look for chain or rope.

b.) Debris next to or on the tracks. Remove the cause.

c.) Product over-hanging from unit to unit. Advise management on a way to better reconfigure the loading.

STEP 14.2: Equipment needed to reset base on track --

Six (6) pieces of pipe of appropriate diameter, 6" to 12" long and a 5' long pinch bar with beveled edge on bottom. See Figure 14.2a and 14.2b to verify condition and procedures for reinstalling base on track.

Pry frame up near the center of channel and slip pipe under frame channel, see Figure 14.2a. Do this at six (6) locations. See Figure 14.2b. Push unit until wheels are centered over the track. Use the pinch bar to pry up enough to remove the pipe from under the frame channels closest to the wall. Place one set of wheels on the track at a time. Repeat this operation until all wheels are on their tracks.

SYMPTOM #15

MOTOR MAKES "CLANGING" OR "GRINDING" SOUND.

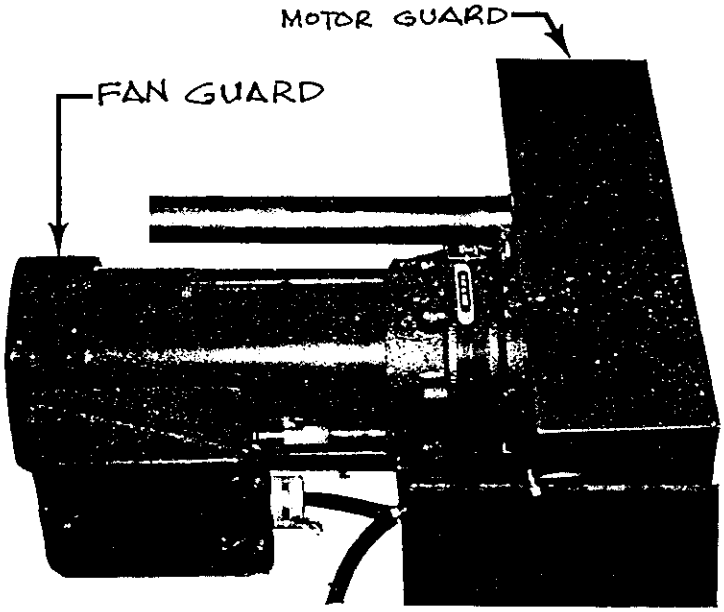


Figure 15.1.

STEP 15.1: Check the fan guard at the end of the motor. Remove the fan guard by removing the three (3) bolts as shown. Straighten the bent blade(s) to clear the fan guard or bend the fan guard to clear the fan blades. Re-install the fan guard. See Figure 15.1.

STEP 15.2: Remove the motor guard, inspect the chain for alignment and chain slack. See Figure 15.2. Adjust chain tension by loosening the four (4) motor mounting bolts and loosening the jamb nut. Turn the set-screw clockwise until the slack has been taken out of the chain. Tighten jamb nut and then retighten the four (4) motor mounting bolts.

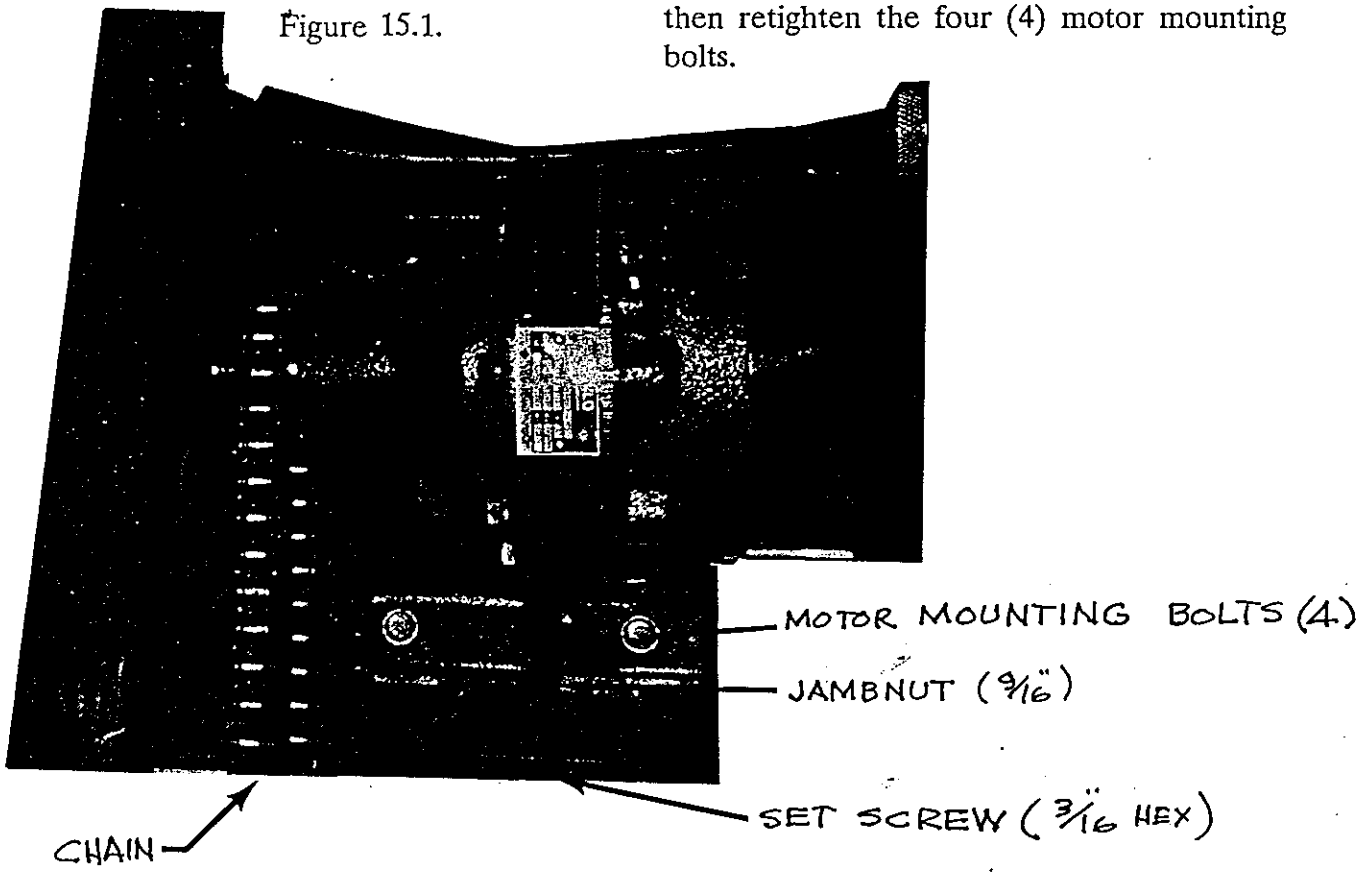


Figure 15.2.

SYMPTOM #16

UNIT MOVES VERY SLOWLY IN EITHER DIRECTION.

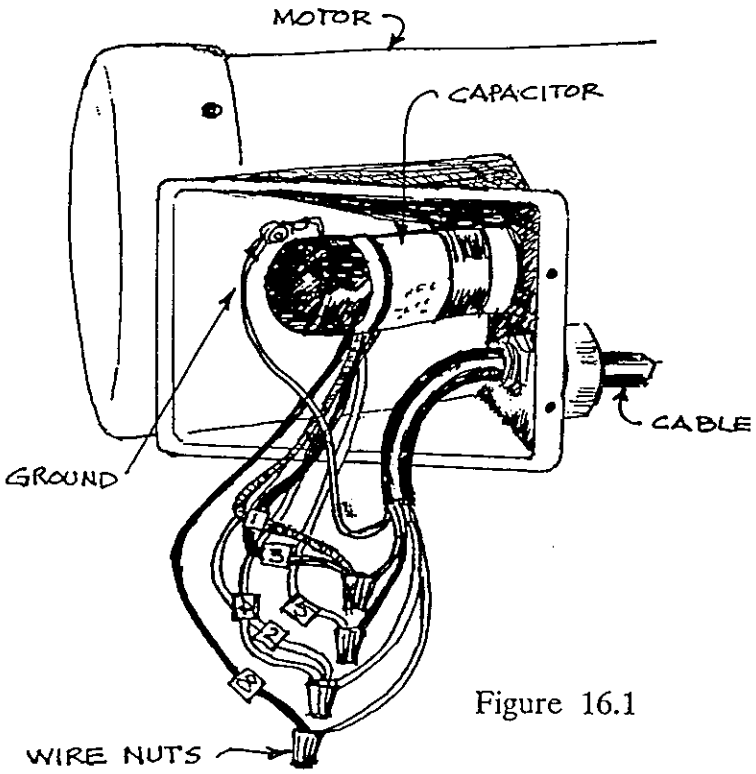


Figure 16.1

MOTOR COLOR		CABLE COLOR
1	RED	WHITE
3	BLUE	
5	WHITE	BLACK
2	BROWN	ORANGE
4	YELLOW	
8	BLACK	RED
	GREEN	GREEN

STEP 16.1: Check motor continuity throughout circuit, see Figure 16.1. Check the listed wire numbers and colors, from the motor to the power cable.

STEP 16.2: Remove motor cover to see if wire nuts are secure. If this checks out, go to STEP 16.3.

STEP 16.3: Check voltage on both sides of auxiliary relay points. If there is a variance, turn power off and file corrosion off contact points (with burnishing tool), then reapply power. See Figure 16.2. The unit should move at its normal rate.

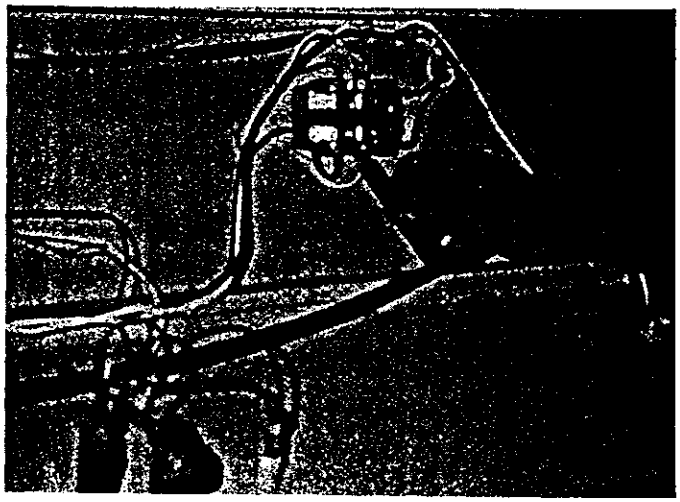
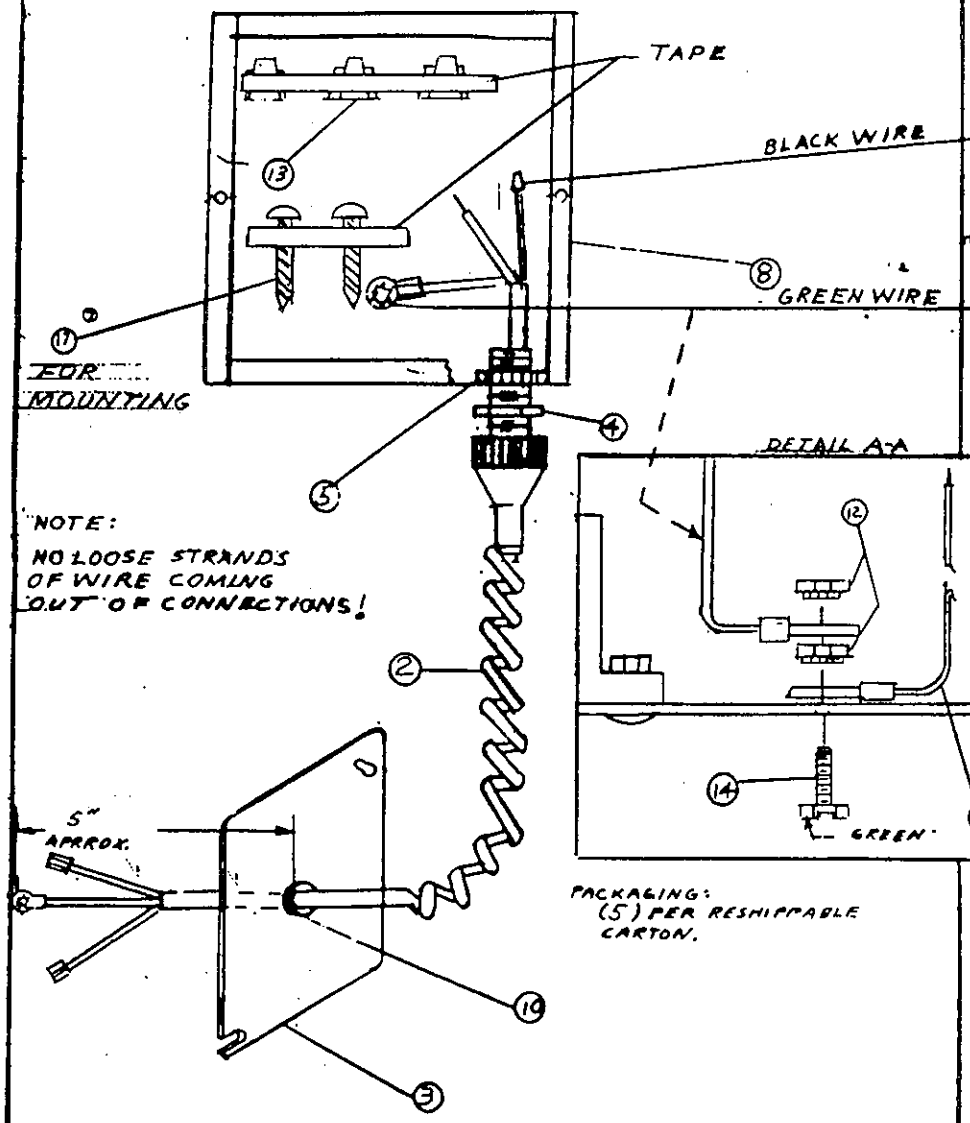


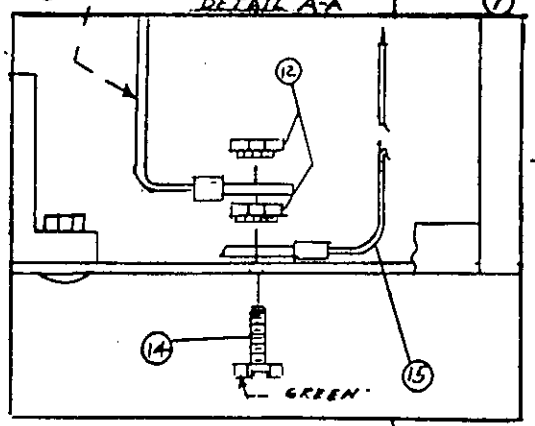
Figure 16.2.

Revision 1

INSTALLATION OF WIRES (BEFORE CIRCUIT BREAKER)

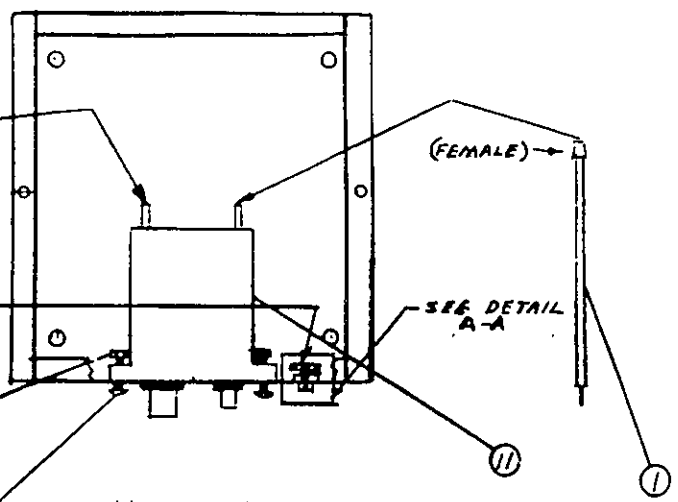


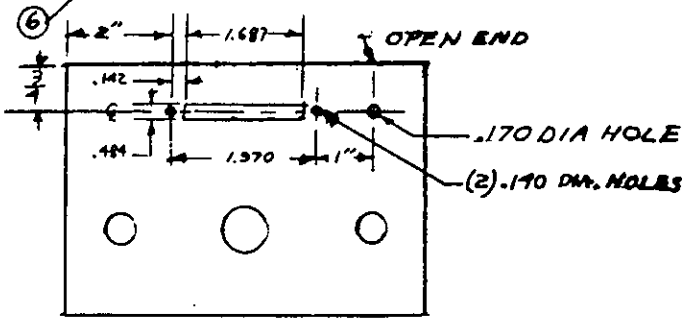
NOTE:
NO LOOSE STRANDS OF WIRE COMING OUT OF CONNECTIONS!



PACKAGING:
(5) PER RESHIPPABLE CARTON.

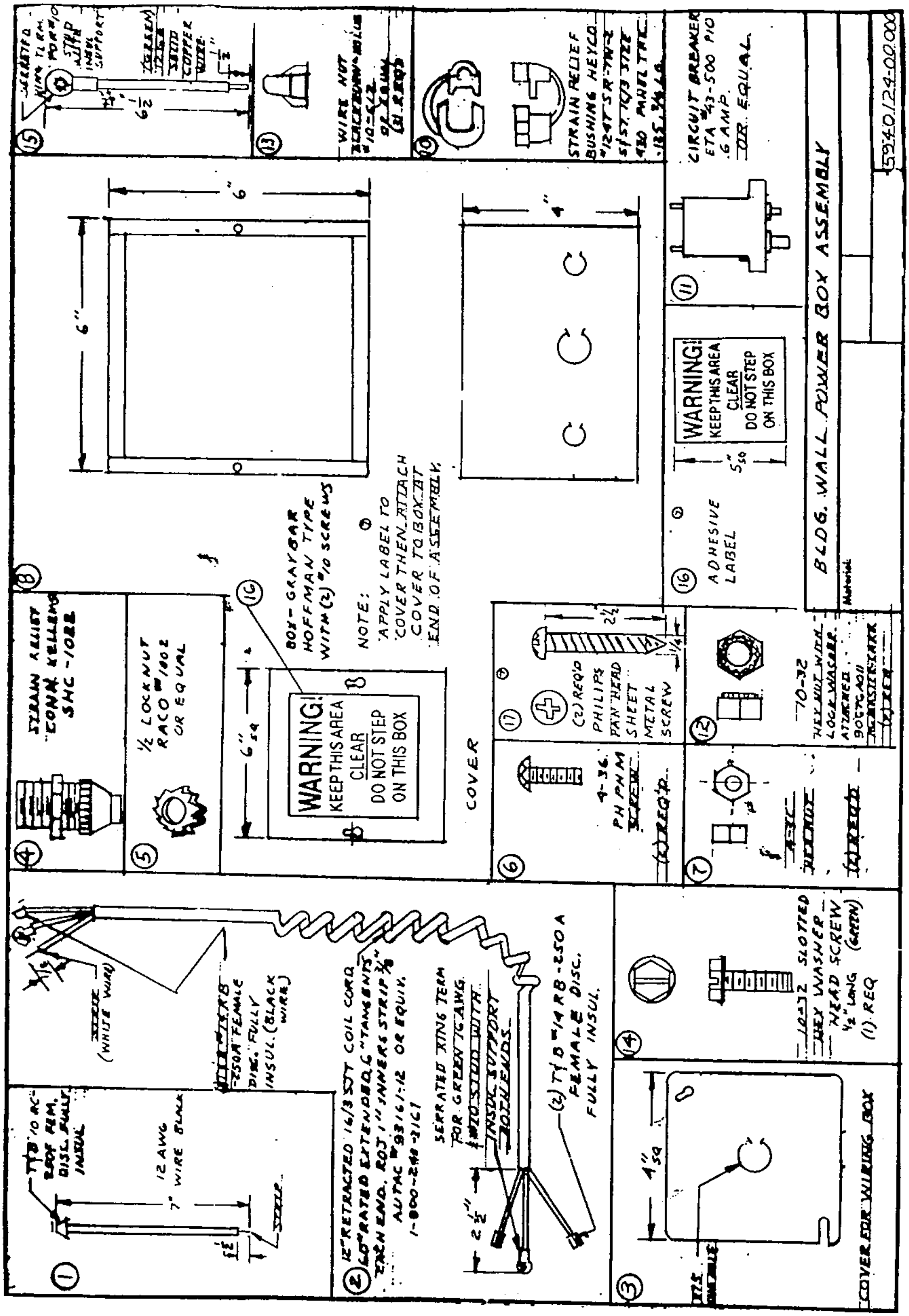
INSTALLATION OF CIRCUIT BREAKER

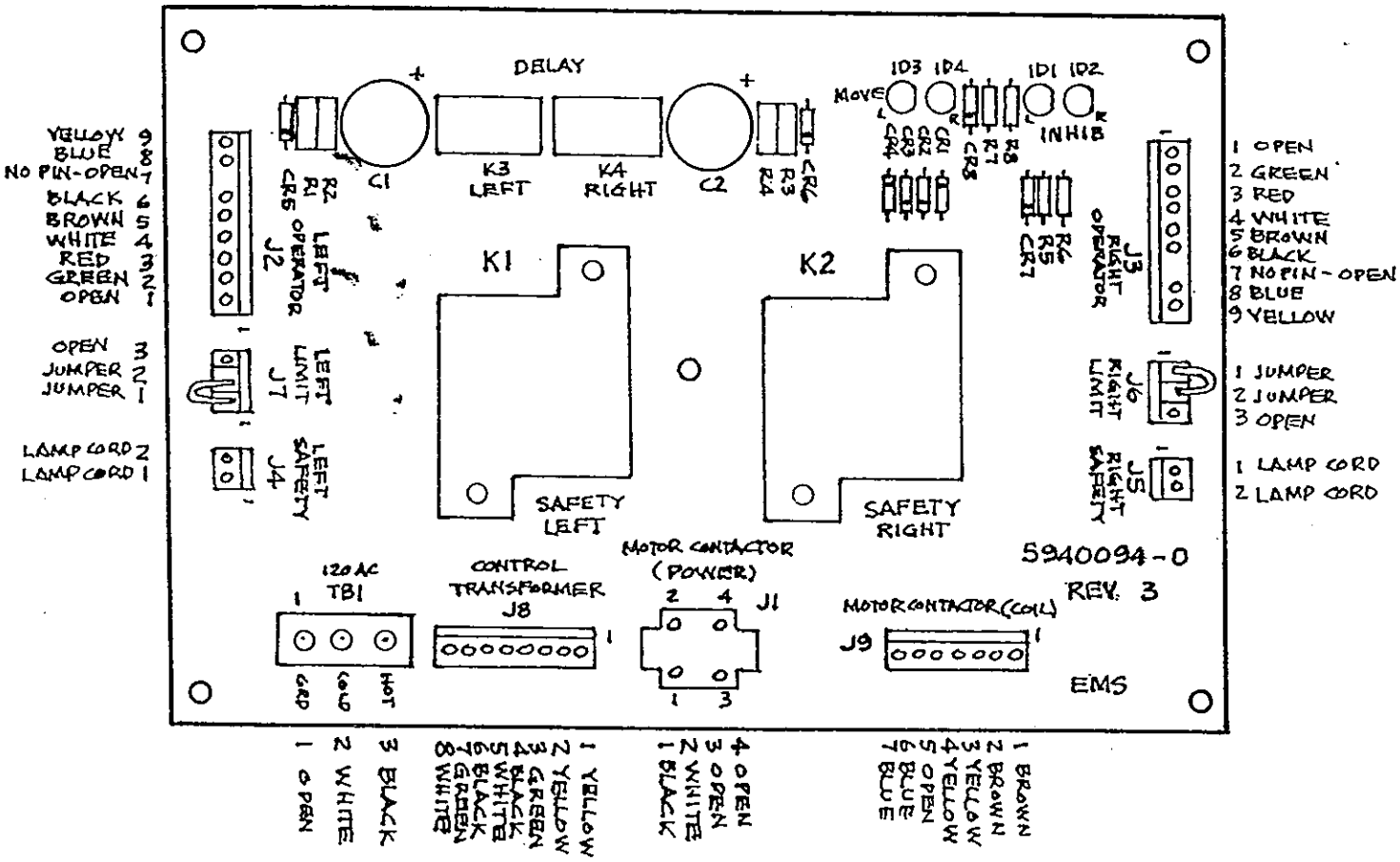




BOTTOM VIEW OF BOX SHOWING HOLES FOR CIRCUIT BREAKER

BLDG. WALL POWER BOX ASSEMBLY	
Material	5940124-00000

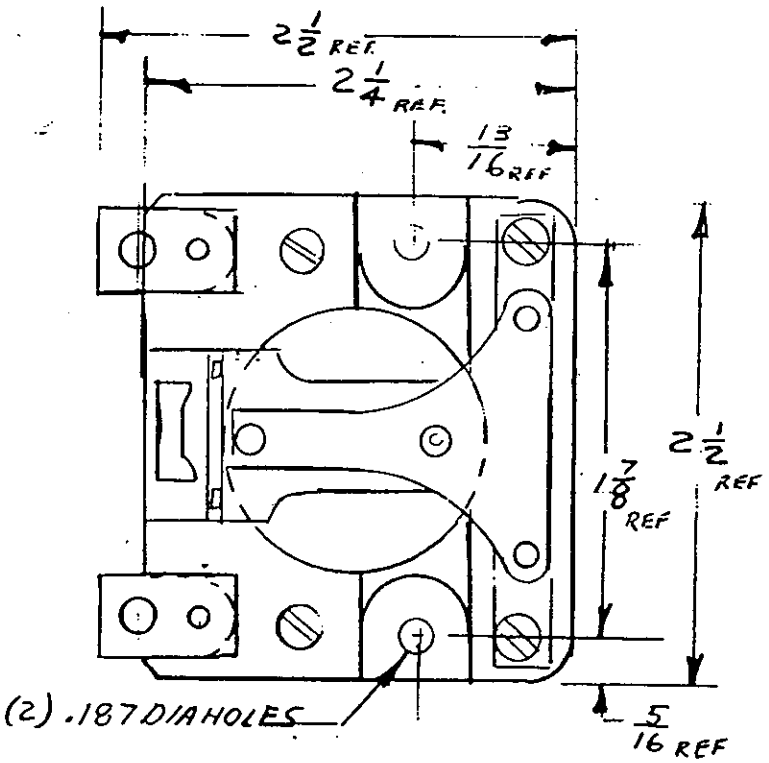

BLDG. WALL POWER BOX ASSEMBLY
5940124-00.000
WARNING!
KEEP THIS AREA
CLEAR
DO NOT STEP
ON THIS BOX
BOX - GRAYBAR
HOFFMAN TYPE
WITH (2) #10 SCREWS
NOTE:
APPLY LABEL TO
COVER THEN ATTACH
COVER TO BOX AT
END OF ASSEMBLY.
COVER
ADHESIVE
LABEL
CIRCUIT BREAKER
ETA #43-500 P10
6 AMP.
OR EQUAL
STRAIN RELIEF
BUSHING HEYCO
STRAIN RELIEF
CONN KELLEMS
SHC-1022
1/2 LOCKNUT
RACO #1002
OR EQUAL
(2) REQ'D
PHILIPS
PAN HEAD
SHEET
METAL
SCREW
4-36
PH PHM
SCREW
10-32
HEX NUT WITH
LOCK WASHER
10-32 SLOTTED
HEX WASHER
HEAD SCREW
1/2" LONG (GREEN)
(1) REQ
12 AWG
7" WIRE BLACK
SERRATED RING TERM
FOR GREEN 12 GAWG
(2) T/B #14RB-250A
FEMALE DISC.
FULLY INSUL.
AUTAC #9316/-12 OR EQUIV.
1-800-243-2161
COVER FOR WIRING BOX



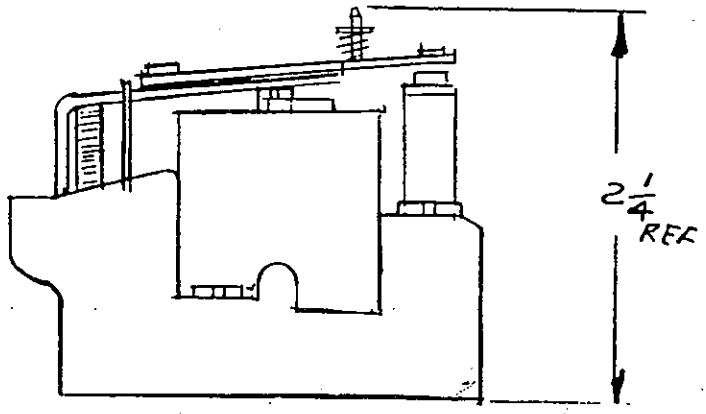
CIRCUIT BOARD

Revision

RELAY



DAYTON POWER RELAY
5PST-NO-DM
5X849E
24V AC. 60HZ

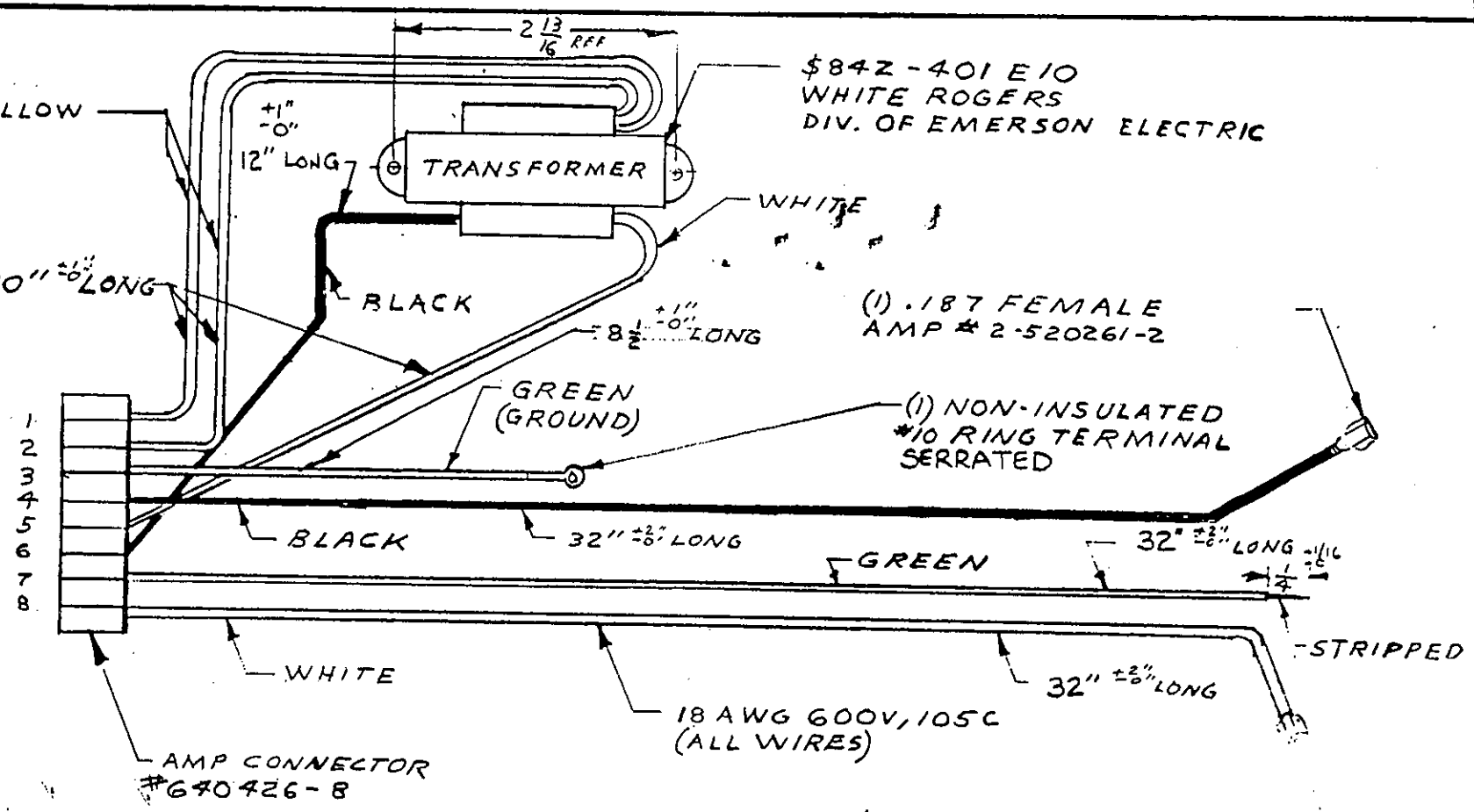


Material:		
		7740083-00000

Material:

Revision

TRANSFORMER WIRE ASSEMBLY



PACKAGING:
(100) PER CARTON

NOTE:
1. USE WIRE TIES AS REQ'D.
2. WIRES BLUE & RED NOT USED ARE TO BE CUTOFF & INSULATED.

774002-000

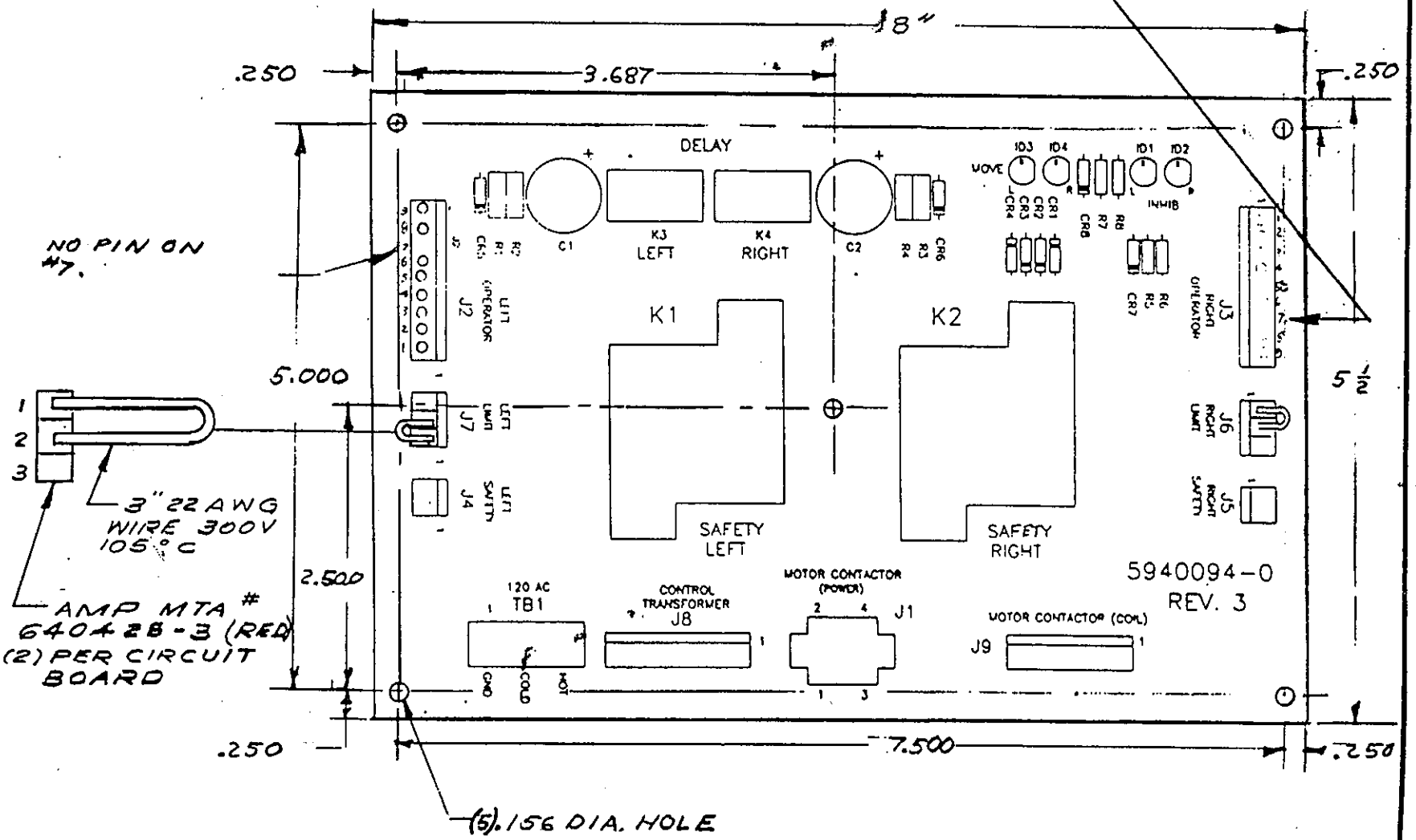
Material:

774008-00000

CIRCUIT BOARD

PURCHASED PART

NO PIN ON #7



NO PIN ON #7.

SHEET 3 OF 3 'B' SIZE

503693

evision

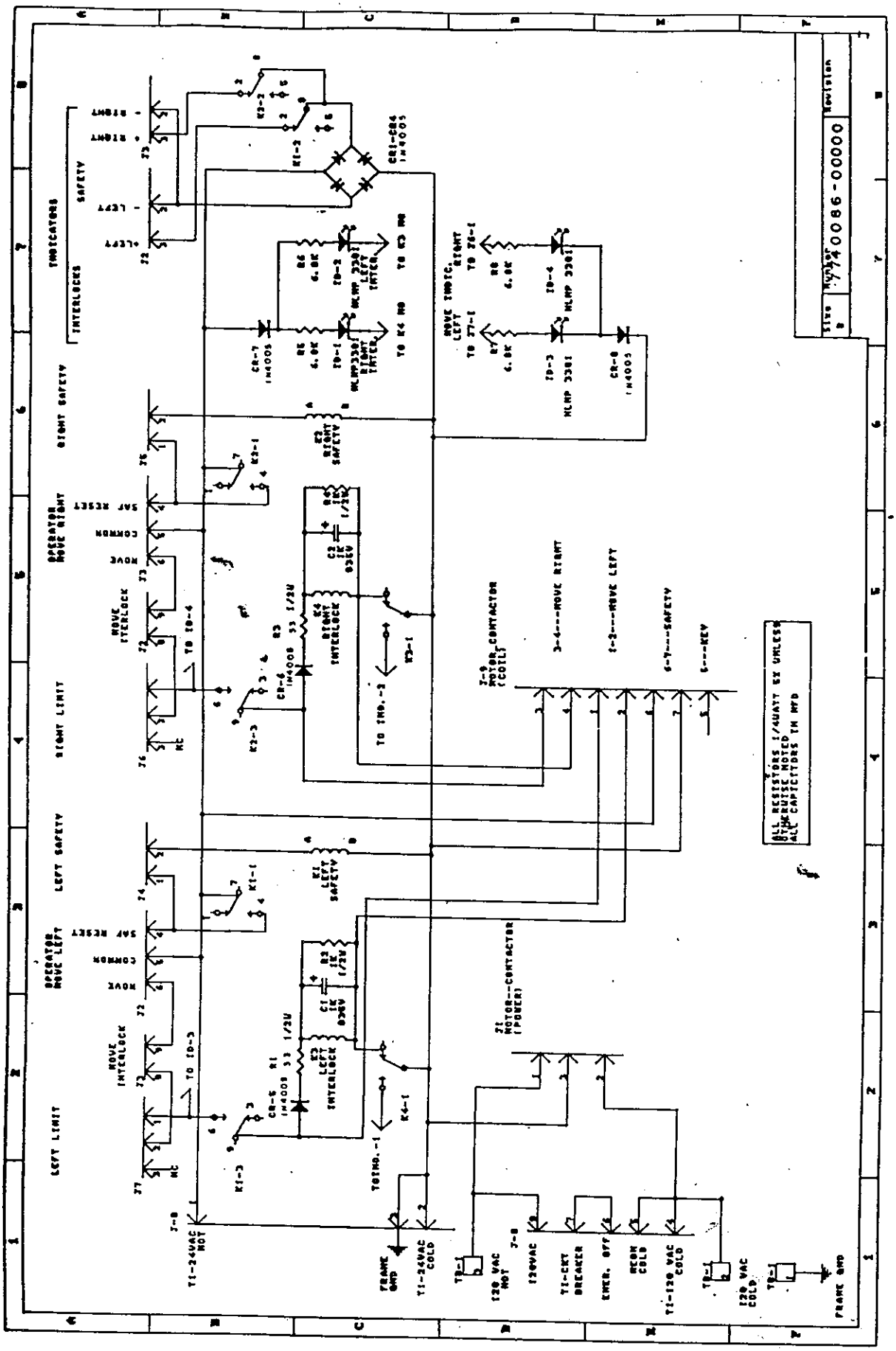
CIRCUIT BOARD (COMPONENTS)

SYMBOL	QUANITY	PART NO	DESCRIPTION
C1, C2	2.000	7740108-00000	CAPACITOR ELECTRO
CR1-CR8	8.000	7740109-00000	DIODE
ID1-ID4	4.000	7740098-00000	LED LAMP
J1	1.000	7740104-00000	SOCKET HEADER
J2, J3	2.000	7740099-00000	POST HEADER
J4, J5	2.000	7740103-00000	POST HEADER
J6, J7	2.000	7740102-00000	POST HEADER
J8	1.000	7740100-00000	POST HEADER
J9	1.000	7740101-00000	POST HEADER
K1, K2	2.000	7740096-00000	RELAY
~	2.000	7740095-00000	RELAY SOCKET
~	2.000	7740106-00000	RELAY HOLD DOWN SPRING
K3, K4	2.000	7740107-00000	RELAY
R1, R3	2.000	7740112-00000	RESISTOR 33 OHM
R2, R4	2.000	7740111-00000	RESISTOR 1.5K OHM
R5-R8	4.000	7740110-00000	RESISTOR 6.8K OHM
~	1.000	7740113-00000	PRINTED WIRING BOARD REV3
TB1	1.000	7740094-00000	TERMINAL BLOCK
~	2.000	7740105-00000	3-CIRCUIT CONNECTOR
~	2.000	7740097-00000	WIRE, 3"
~	4.000	E26154-24 ES4	SCREW, 6-32 PHPHM
~	4.000	7640531-00000	NUT, 6-32 NYLON

NOTE:
ALL PARTS RHC
TO SUPPLY.

Material:

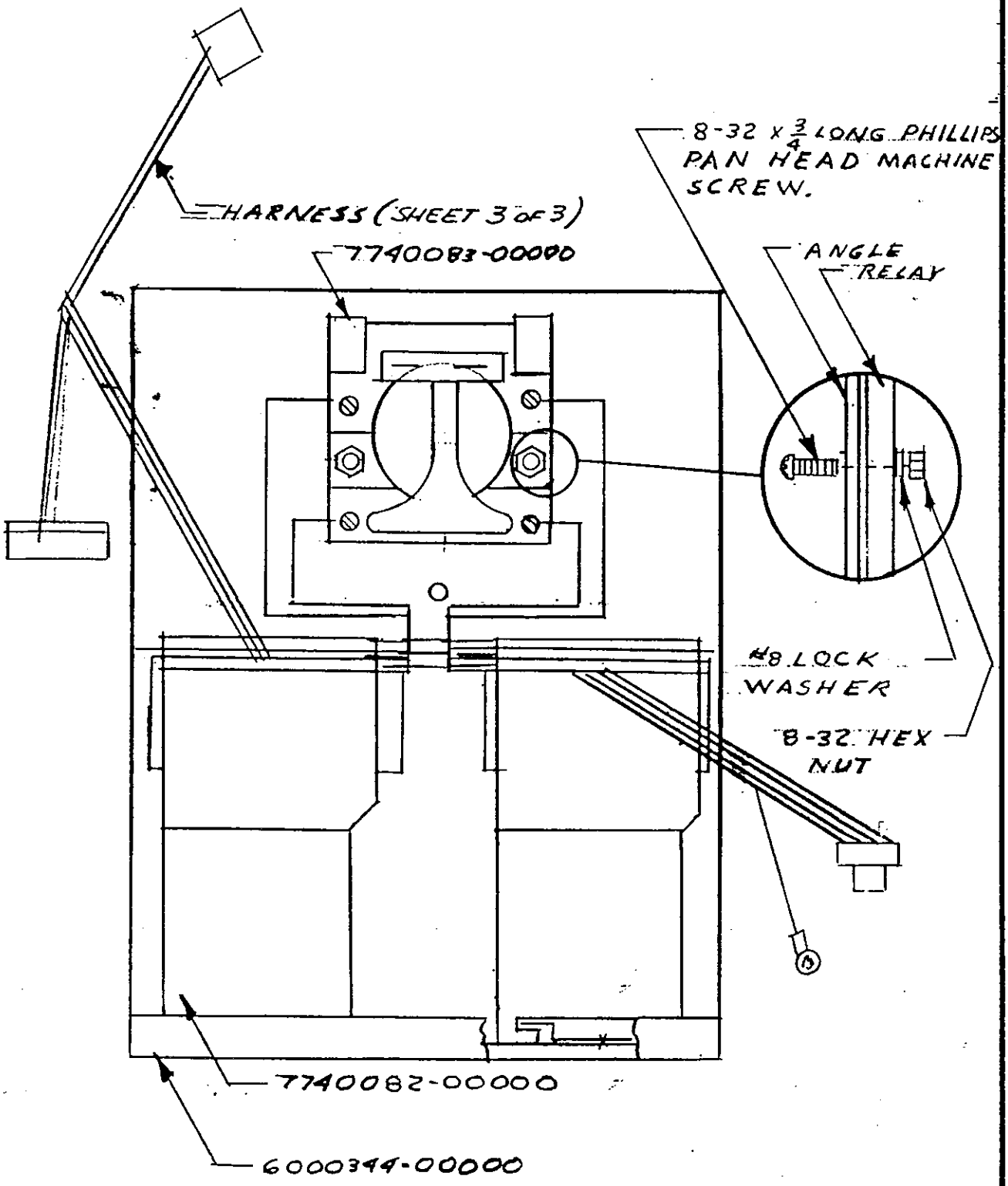
7740086-00000


INDICATORS
INTERLOCKS
SAFETY
RIGHT
LEFT
RIGHT SAFETY
OPERATOR MOVE RIGHT
SAF RESET
COMMON
MOVE
MOVE INTERLOCK
RIGHT LIMIT
LEFT SAFETY
OPERATOR MOVE LEFT
LEFT LIMIT
MOTOR CONTACTOR (COIL)
MOTOR--CONTACTOR (POWER)
3-4---MOVE RIGHT
1-2---MOVE LEFT
6-7---SAFETY
5---KEY
ALL RESISTORS 1/4WATT 5% UNLESS OTHERWISE NOTED
ALL CAPACITORS IN MFD
T1-24VAC HOT
T1-24VAC COLD
FRAME GND
120 VAC HOT
120VAC
T1-CKT BREAKER
ENER. OFF
RCON COLD
T1-120 VAC COLD
120 VAC COLD
FRAME GND
Size B
77400086-00000
Revision

503693

Revision

RELAY ASSEMBLY

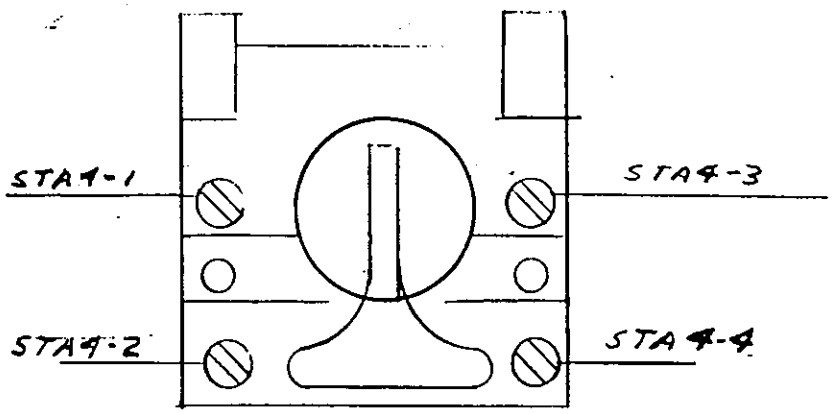


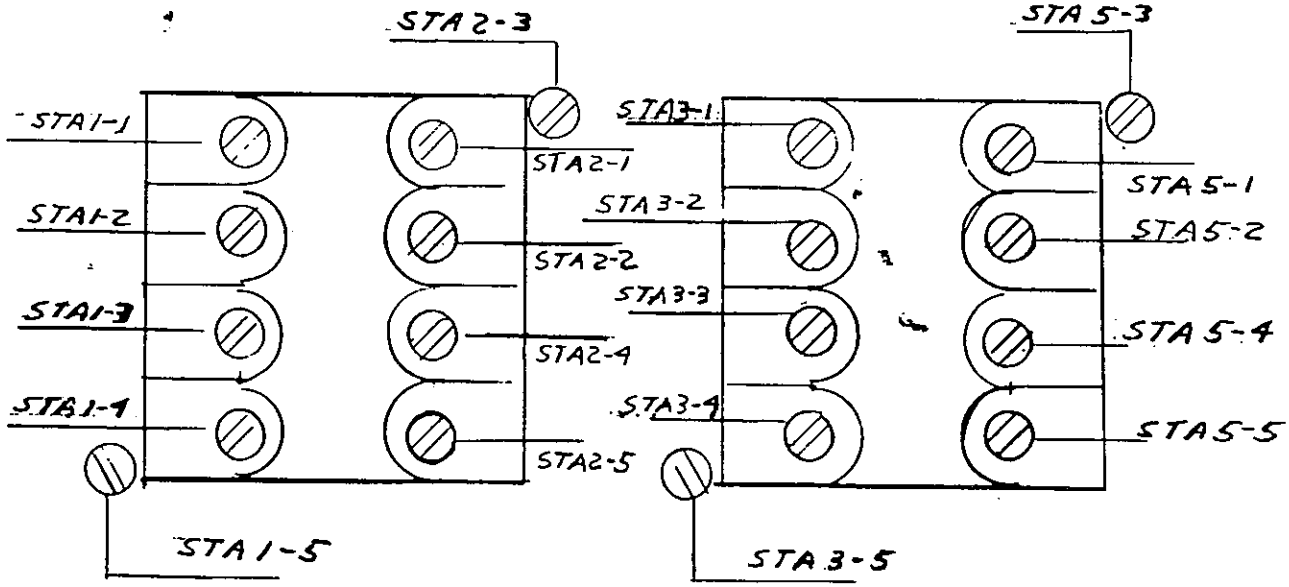
Material:

503693

Revision

RELAY ASSEMBLY (WIRE CONNECTIONS)

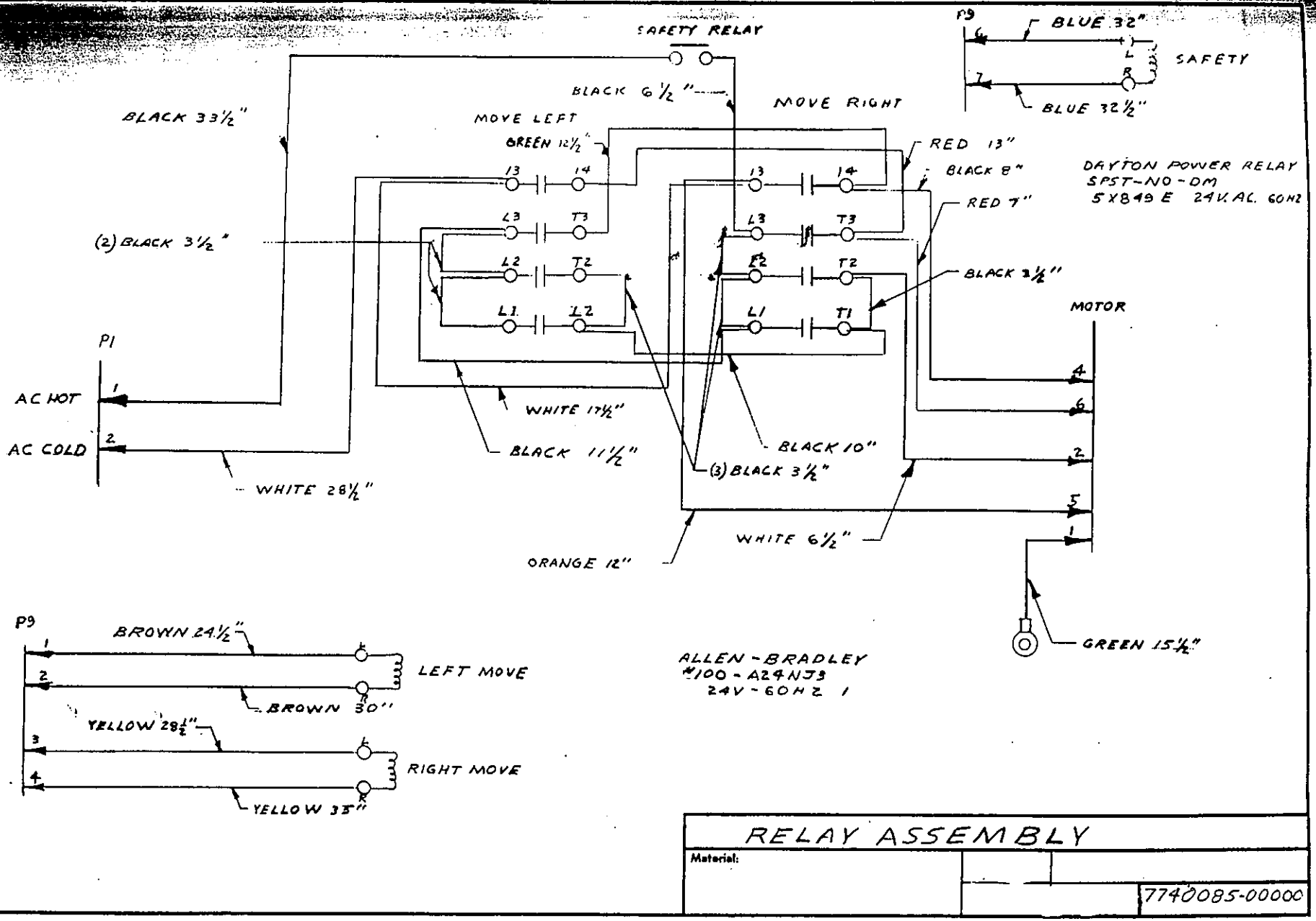




NOTE:
FOR WIRE LEAD REFERENCE
SEE SHEET 3 of 4 "D" SIZE

Material:

7710085-00000



RELAY ASSEMBLY

Material:

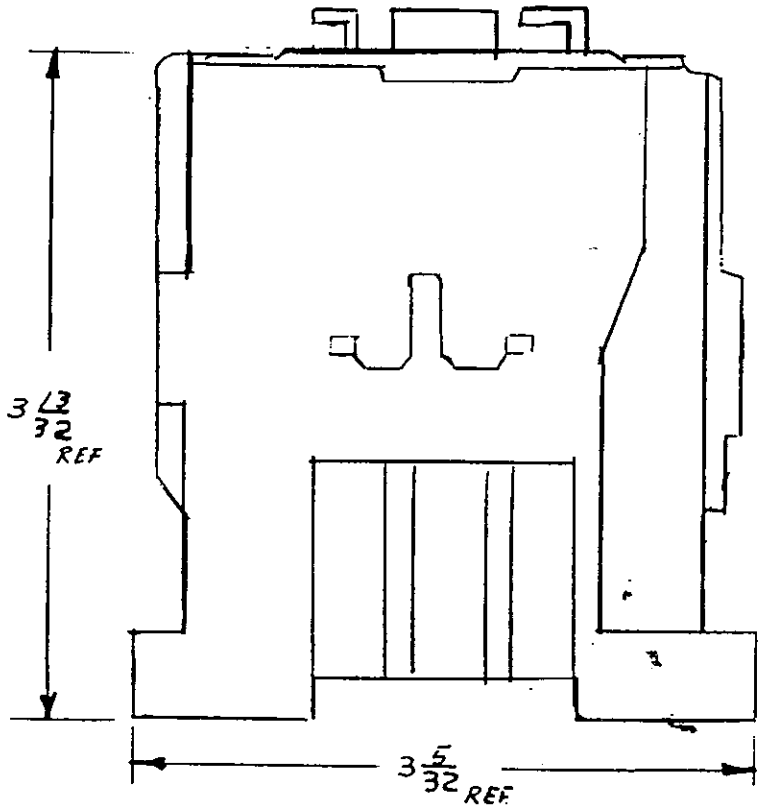
7740085-00000

503693

Revision

R

CONTACTOR

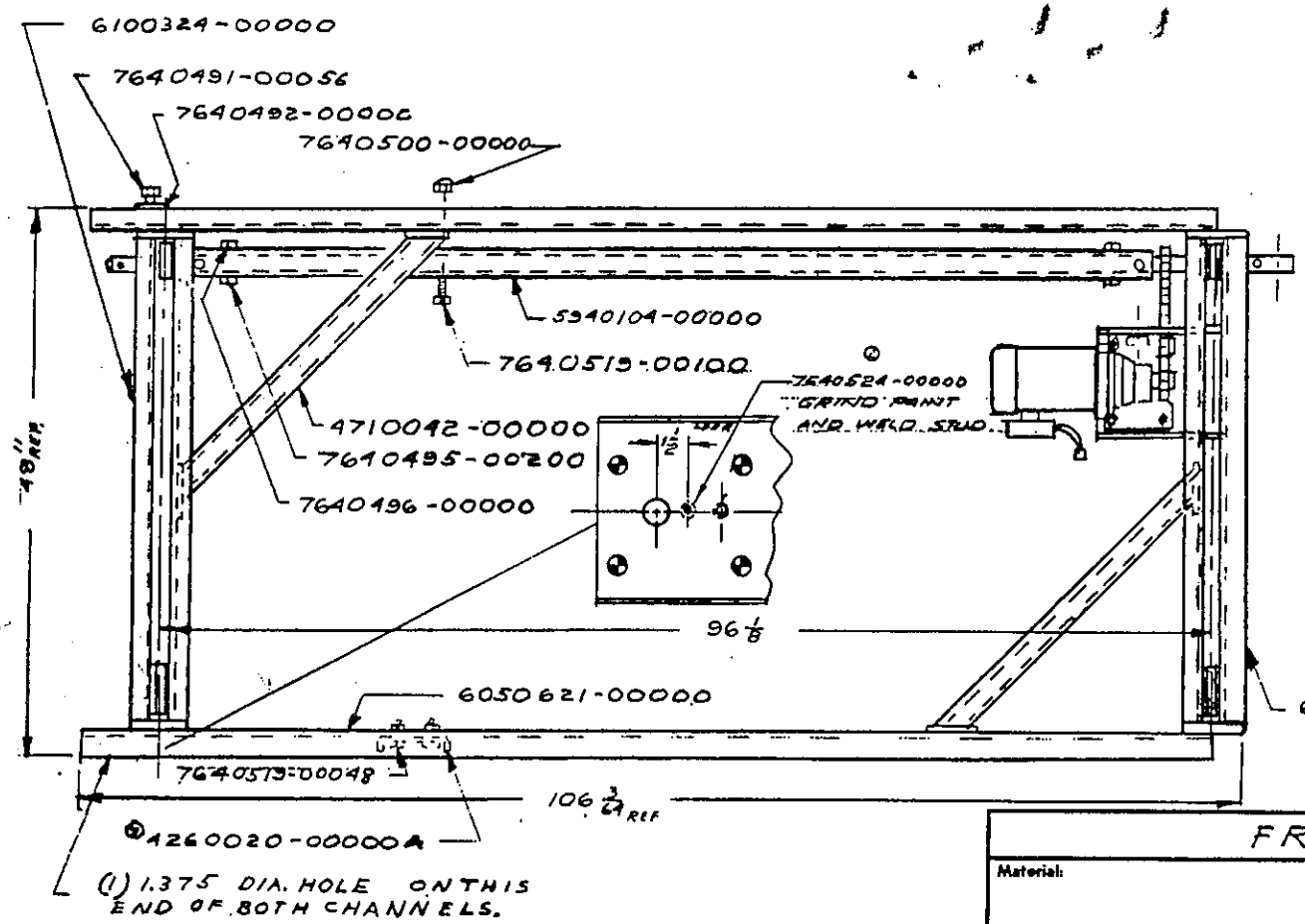


ALLEN-BRADLEY
#100-A24NJ3
24V-60HZ 1

Material:

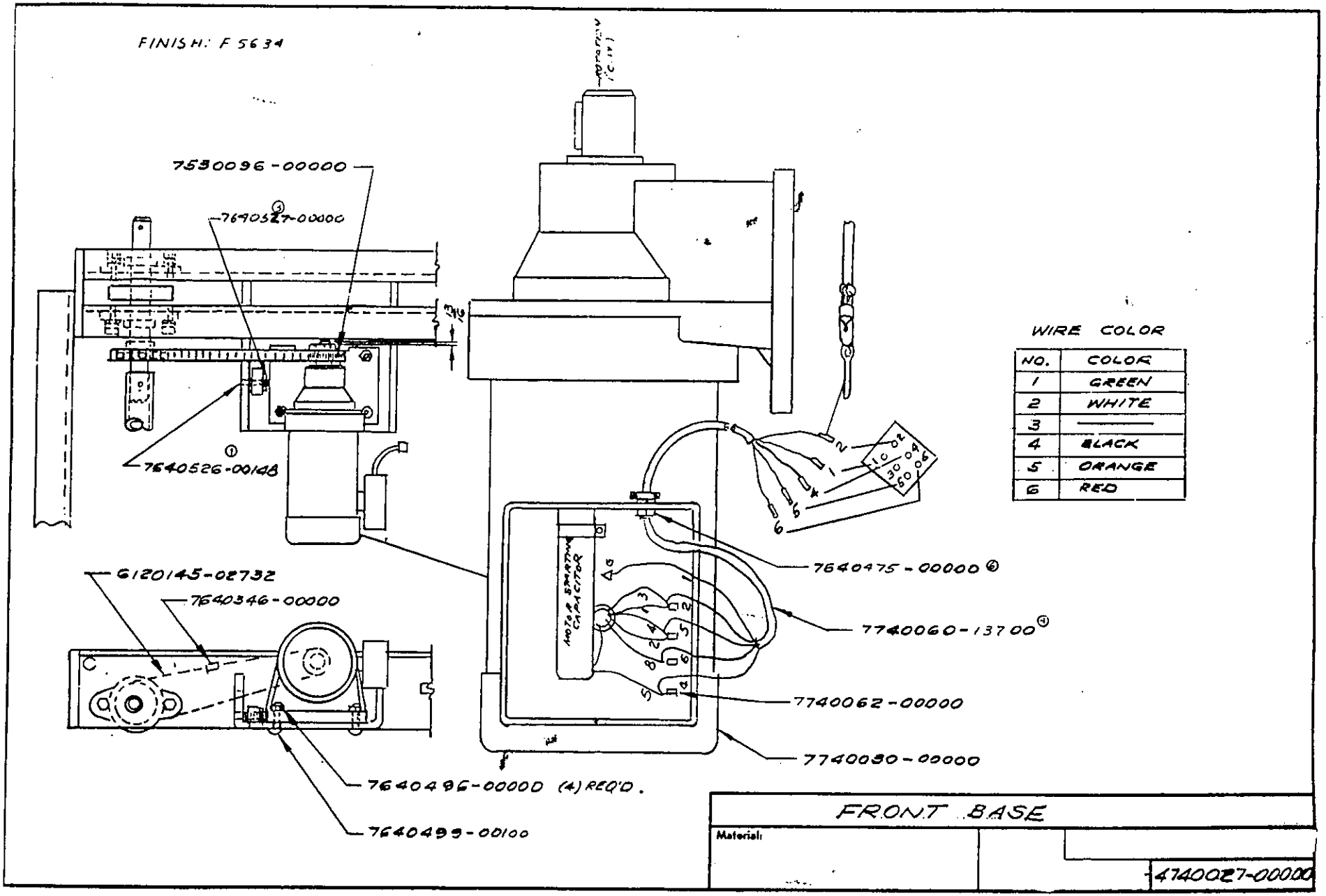
7740082-0000

FINISH - FS634



FOR MOTOR ASSEMBLY AND WIRING SEE SHEET 2 OF 2

FRONT BASE	
Material:	4740027-00000


FINISH: F 5634
7530096-00000
7690527-00000
7640526-00148
6120145-02732
7640346-00000
7640496-00000 (4) REQ'D.
7640499-00100
7640475-00000
7740060-13700
7740062-00000
7740030-00000
MOTOR STARTING CAPACITOR
WIRE COLOR
NO. COLOR
1 GREEN
2 WHITE
3 ——
4 BLACK
5 ORANGE
6 RED
FRONT BASE
Material:
4740027-00000