Film-Tech

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Projector Electronic Control

Automation

Mini-PEC

Instruction Manual

RAVEN LABS, inc

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TECHNICAL DATA

Power Requirments:

a) Mini-Pec Cabinet:
117 volts, 60Hz, 200 watts maximum

b) Projector Motor Switch Box SB-1000A.
117 volts, 60Hz, provide 20 Amp. circuit for each projector.

c) R1200-1 Exciter Supply
117 volts, 60Hz, 190 Watts

d) Circuits as required for Xenon or Arc rectifiers.

e) Circuits as required for house or field lights, etc.

GENERAL DESCRIPTION

The Mini-Pec automation equipment comprises the following equipment:

a) One Master Control Cabinet
Wall Mounting---12" X 16" X 7" Deep.

b) Two Projector Control Power Modules
Projector Mounting---7" X 11" X 3"

c) Two Power Module mounting brackets

d) Two Sen-Safe devices

e) Two control cables---prewired

The Mini-Pec equipment is a simple automation system adaptable to indoor and outdoor theatre. It performs the following functions:

Strikes Arc on incoming Lamp

Starts Motor on incoming Projector

Changes over Picture and Sound

Shuts off Outgoing Projector and Lamp

Provides filmbreak safety device

Provides Intermission function which will turn on: Field or House lights, start intermission music source, etc.

A terminal strip is provided which will supply logic information to such satellite equipment as:

Remote Status Box

Master Status Box

Intermission Music Control Module

Auditorium Function Control

INSTALLATION

The following steps should be followed in the installation of the Mini-PEC system.

1) Mount Master Control Cabinet on front wall within twenty running feet of the projectors to insure plug-in cables will be long enough. Where possible a location should be chosen which affords a view of the operating sides of both projectors as well as the screen.

2) Mount Exciter Supply as close to above cabinet as possible.

3) If 'Motor Start Boxes' have been ordered with the system, install them on each Moter Mounting Bracket; If not, connect Hubbell 7413 (supplied) as shown in diagram 5. Two wires connect to the AC line feed, and the remaining two connect to the motor itself.

4) With the upper magazines and fire rollers removed, install a Power Module on each projector as shown in Diagram 1.

5) Install the ' Sen-Safe ' rollers in the holes normally used to mount the lower standard fire roller. When mounted the swinging safety roller should be free to move from stop to stop without binding in any way. It must ride properly in the film path. On some older sound heads it may be necessary to cut out the front opening as shown in diagram 5.

IMPORTANT NOTE: CUE DETECTOR GROUNDING AND INSULATING FROM GROUND

For proper operation, the ' Sen-Safe ' assembly must be well grounded to the projector, and particularly to the Sound Head. The triggering of the Mini-PEC is by means of the foil cue strip; connecting the grounded sprockets, or rollers, of the Sound Head, with the insulated roller in the Sen-Safe. This GROUNDING may usually be accomplished by scraping the paint away from the mounting holes on the roller assembly. An ohmmeter should be used to check this connection between the Sen-Safe assembly and the sprockets and rollers in the Sound Head.

It is of course equally important that the insulated 'Sen-Safe' roller, or its' rear pickup shoe, have NO connection to ground (projector frame). This should also be checked with an ohmmeter - with the 'Sen-Safe- unplugged. See diagram 6.

If either of the above proceedures is incorrect --- the Mini-PEC will not trigger on the cue foil OR the unit will keep recycling.

6) The change-over should be wired and mounted. Cut the change-over wires to aproximately 3 feet and connect the 3 pin twist-lock (Type 7567) which is supplied with the power modules. The wide pin (grounding) should be connected to the common coil wire. The brass pin should connect to the close coil; the copper pin to the open coil. Only 117v AC change-overs should be used. Be sure mechanical action is free and smooth.

7) The Power Modules, which mount on the projector, contain a Hubbell twist connector for control of the Lamp House. Mating plug is supplied. Electrically it provides a switch closure when the motor starts, and opens when the motor stops. It is rated at 10 Amps, 220v AC. The circuit is used to close the auto-strike relay in a Xenon system, or operate the power relay in an Arc system.

NOTE The motors supplied with the Cinemeccanica (XeTRON) equipment are of the three phase capacitor start type, not the usual domestic type. These projectors require a special motor start box which will be supplied with the equipment. Instructions will be supplied with boxes.

8) Electrical connections should be made to Master Control Cabinet (No. 14 wire) as shown in diagram 2.

117v Ac to Term 1 & 2.
Exciter Lamp Proj. One to Term 3 & 4.
Exciter Supply to Term 5 & 6.
Exciter Lamp Proj. Two to Term 7 & 8.
Lights, Music source, etc. to Terminals 9 thru 14 as shown in diagram 7. AND DIAGRAM 2

9) Make pre-wire plug-in connections to Power Modules - Diagram 2.

a) Sen-Safe rollers
b) Changeovers
c) Motor Power Plugs
d) Lamphouse Connections
e) Control Cables (supplied) to the Master Control Cabinet.

NOTE All plugs are of diferent types to prevent incorrect plugging. The Two control cables supplied operate at 24v DC and amy be run in the open. For a neater appearance plastic Auto-Duct may be used, and the excess cable dressed inside. (Available in 18' kits) If it is desired to shorten the pre-wired control cables supplied -- experience has shown that it is safer to cut (remove) a section of the cable and re-solder color for color. Re-soldering the plug is dangerous.

TEST AND CHECKOUT PROCEEDURE

The following steps should be followed:

1) Place the 3 position 'Select' switch into 'Film' position (to the right), and 'Emergency Exciter' Auto-Manual switch into the Auto position. (up)

2) Turn on Power Switch. Machine 1 or Machine 2 pilot lamps should come on. Pressing 'Advance' push button should cause these pilots to switch back and forth. On the projector Power Modules one or more pilots should light, depending on the position of their switches.

   NOTE: 'Film' pilot lamp should NOT be lit; if it is, a short from one of the insulated Sen-Safe rollers to ground is indicated. This may be checked by un-plugging them from the Power Modules. This 'Film' pilot should only light (for 7 seconds) when a cue fiol passes through the Sen-Safe.

3) If one of the exciter lamps is on at this point, it should be possible to kill it by pressing the 'Exciter Kill' push button. Remember, the 'Exciter Selector' must be in the 'Auto' position. To test the exciter emergency functions (and correct wiring), throw right hand switch to 'Manual'. Moving left switch between Mach 1 and Mach 2 should cause those respective exciter lamps to light. After completion of this test be sure to return right switch to 'Auto' position!

4) Thread film through projector and around the right side of the floating Sen-Safe roller. Observe that the 'Load' pilot will go out, and 'Ready' pilot will light as this is done. (Safety Defeat switch should be down - this is only thrown up if it is desired to operate the projector without film, or in case of takeup trouble - it defeats the safety switch) Throw right hand 'Safety' switch to ON (up) and press RUN push button. Observe lower Sen-Safe roller, if it moves to far to the right on start it indicates that the lower takeup tension is not correct. Each projector should operate smoothly as the Run buttons are pressed and stop when the 'SAFETY' toggle switch is thrown to off.(down)

5) Next check the changeover function by pressing the 'X-Over' button on each projector. As each is pressed the changeover for that projector should open while

the other closes, and the exciter lamps should change back and forth.

6) The primary supply to the Lamphouse should now be turned on, and the 'Lamphouse Emergency' switch on the rear of the Power Module should be thrown UP - the lamp should light. Now with the 'Lamp Emergency' switch off (Down - its normal position), once again push the RUN push button - the lamp and motor should come on togeather.

7) The final test should be to check the system with film which has had the cue foil added as outlined in the section on 'Cue Foil Application. With film loaded and 'Select' switch in the 'Film' position:

   a) Press 'Advance' button and select Machine which is to be started. Be sure both exciters are off.

   b) Check that both Power Modules show the two green pilot lights - indicating that safety and Sen-safe switches are in the correct position. (Safety Defeat switch should be down)

   c) Press 'Start' button on Mini-PEC cabinet - Machine selected should run, and exciter lamp and changeover will operate after 7 seconds. At this time Machine selector pilot lamp will change to the other machine indicating that this will be the incomming machine on the cue foil passage.

   d) At changeover time cue foil passage through the Sen-Safe will cause other machine to start and changeover to occur.

   e) At any time after the changeovers have occured the 'Select' switch may be set to 'Intermission'. (Intermission pilot should light) On next cue foil passage, after 7 seconds, the operating machines dowser will close, exciter will go off, and Lamp and Motor will close down when film runs out. At this time auxiliary contacts will be operated on terminals 9 through 14 on TB-2, which can control such functions as field lights, music source, etc. Rating is 5 Amps at 117v AC. These contacts also swing over when exciter kill button is pressed (holding)

   f) The small terminal strip TB-1 is used to connect interface units such as, Auditorium Function Box, Remote Status Box, etc. Should it be desired to Start the Mini-PEC remotely, a single momentary contact push button (normally open) may be connected between terminals 1 and 2.

CUE FOIL APPLICATION

SEE DIAGRAM THREE -

Foil cue strips should be placed along both edges of the film on the BASE (non emulsion) side. Foil should cover completely from edges of film to edges of sprocket holes, and be a continuous strip without break from one end to the other. Length of strips should be approximately 14 inches with most sound heads. Operation of the Mini-Pec equipment is by electrical contact (which the foil strip supplies) between the lower sprocket in the sound head and the insulated roller in the Sen-Safe device. The Sen-Safe replaces the lower fire roller. If the film path length between these two points exceeds the foil length placed on the film, the Mini-Pec will not trigger; in which case a longer piece of foil should be used.

A suggested method of application would be: Place film on rewind table and wind to the section to which cue strips are to be applied. A smooth surface about 18 inches long should be provided (such as the smooth side of a piece of masonite) between the reels. Lay cue area of film on this surface with BASE side up. Temporarily fasten film down with masking tape to hold it in position. Holding roll of cue foil in hand, unroll a few inches at a time and apply it to film as shown in diagram 3. Cover the area between the sprocket holes and edge of film smoothly. When proper length has been completed cut off cleanly. Next, holding film down firmly, slice off excess foil which protrudes beyond film edge with a sharp razor blade. A second strip of foil may now be added to the other edge of film. Note: This second strip of foil is only a safety measure to insure contact in case of dirt and may be omitted at the operators discretion.

LIST OF DIAGRAMS

1. Power Module - Mounting
2. Connection Diagram - wiring
3. Cue strip placement
4. Soundhead Modification
5. Motor Start Wiring
6. Sen-Safe Roller Assembly
7. Auxiliary Contacts - Lights, Music Source, etc.

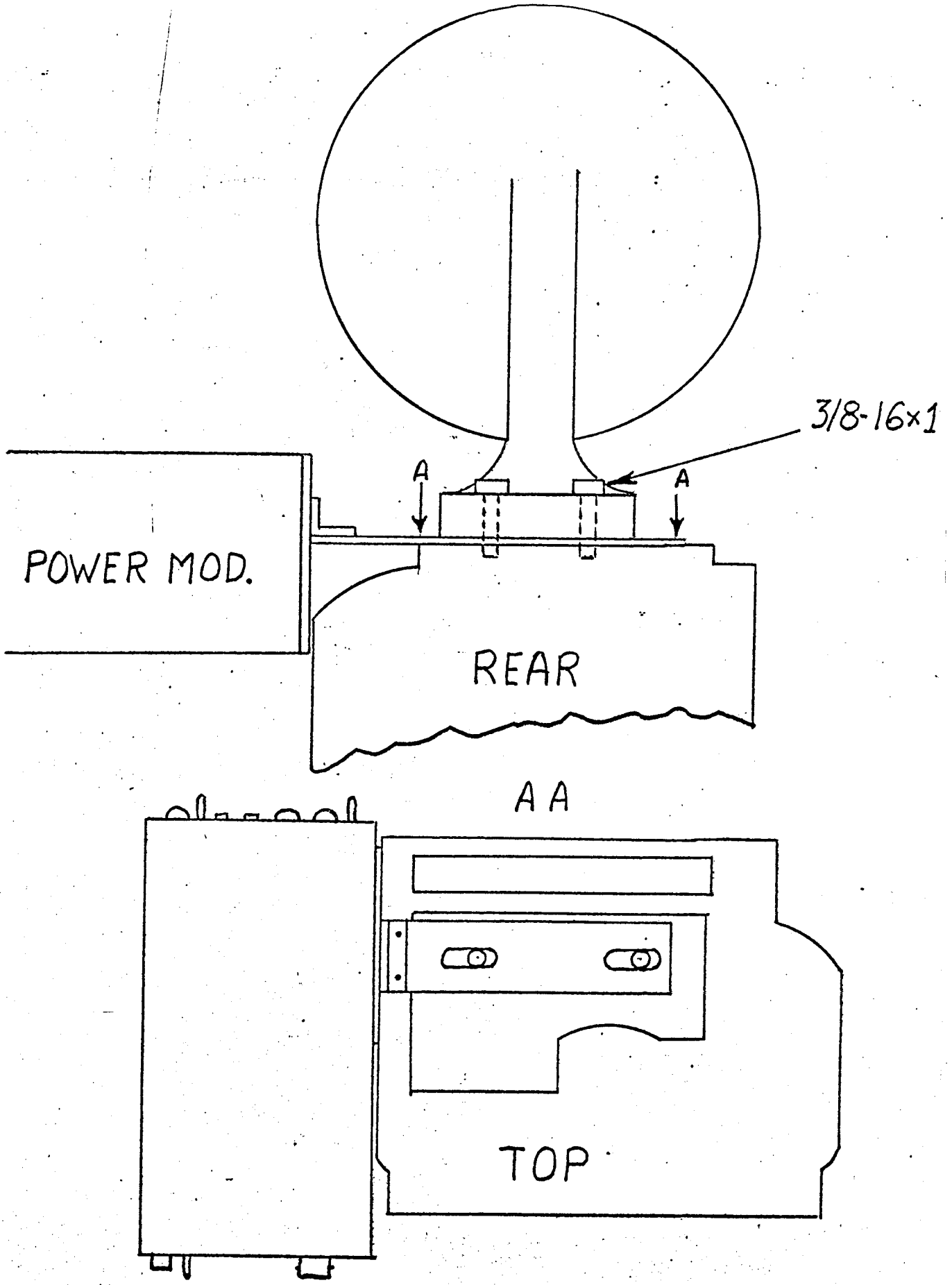


DIAGRAM 1

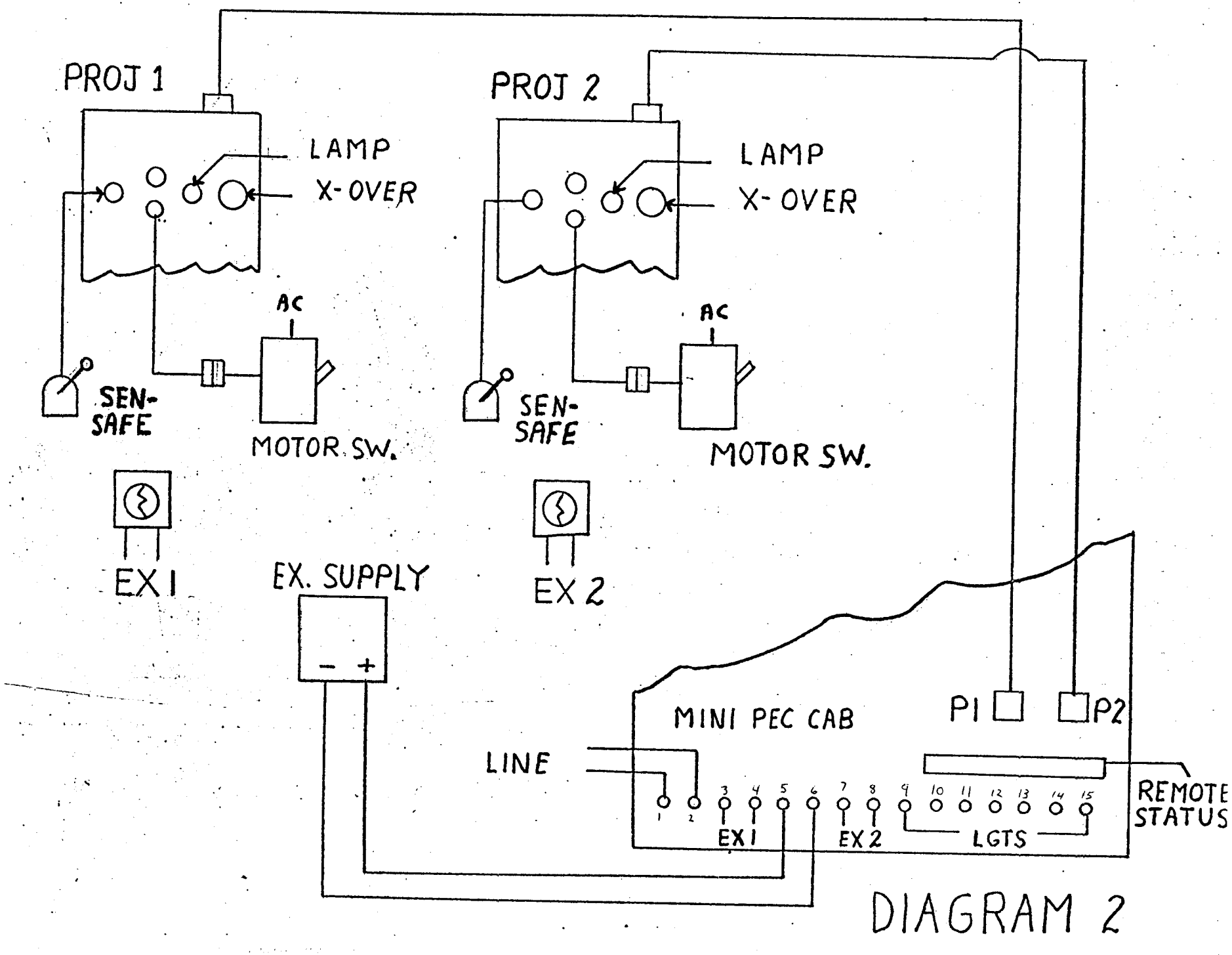
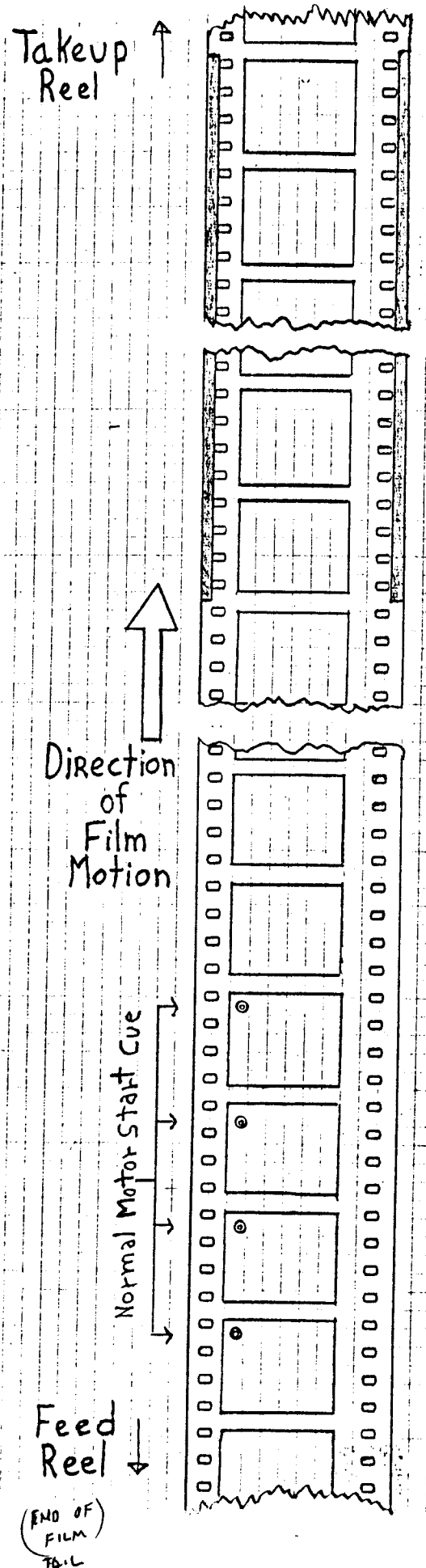

PROJ 1
LAMP
X-OVER
AC
SEN-SAFE
MOTOR SW.
EX 1
PROJ 2
LAMP
X-OVER
AC
SEN-SAFE
MOTOR SW.
EX 2
EX. SUPPLY
MINI PEC CAB
P1
P2
LINE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
EX 1
EX 2
LGTS
REMOTE STATUS

DIAGRAM 2



LENGTH OF CUE FOIL STRIPS SHOULD BE APPROXIMATELY 14 INCHES. SEE 'CUE FOIL APPLICATION' INSTRUCTION.

LENGTH OF CUE FOIL STRIPS FOR MODEL NC SEN/SAFE 3 to 4 inches

DISTANCE FROM NORMAL MOTOR START CUE TO END OF 'CUE FOIL STRIP' SHOULD BE APPROXIMATELY 33 INCHES (44 frames)

CUE FOIL STRIPS MUST BE ON BASE (non emulsion) SIDE OF FILM.

DIAGRAM 3

Note: On many sound-heads the safety roller fail safe can be removed without the cut-out being made

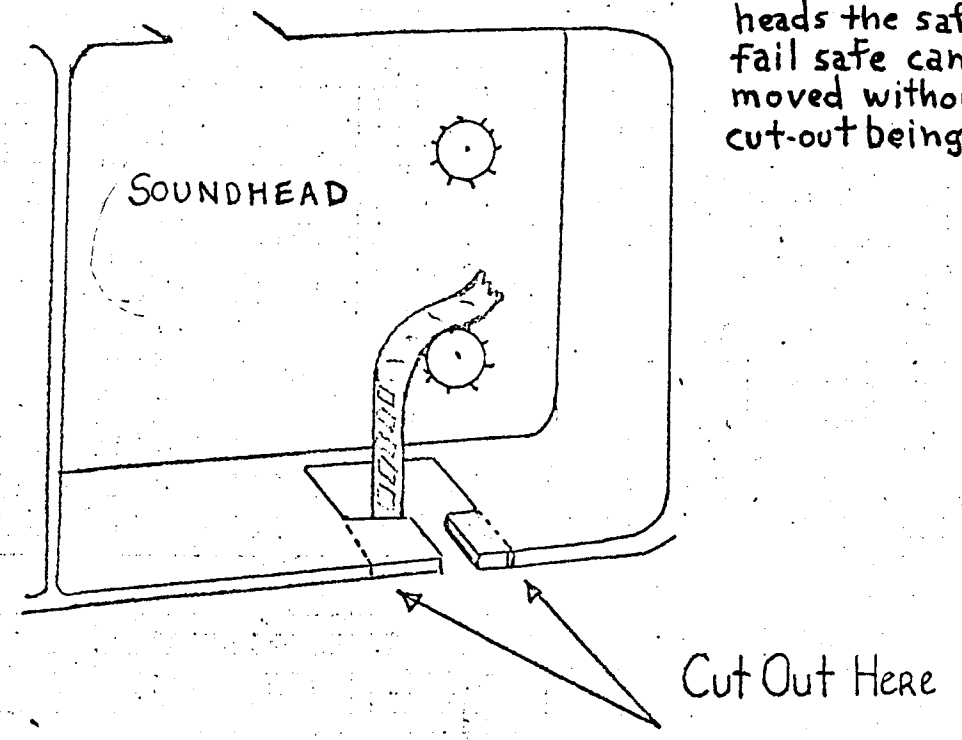


Diagram 4

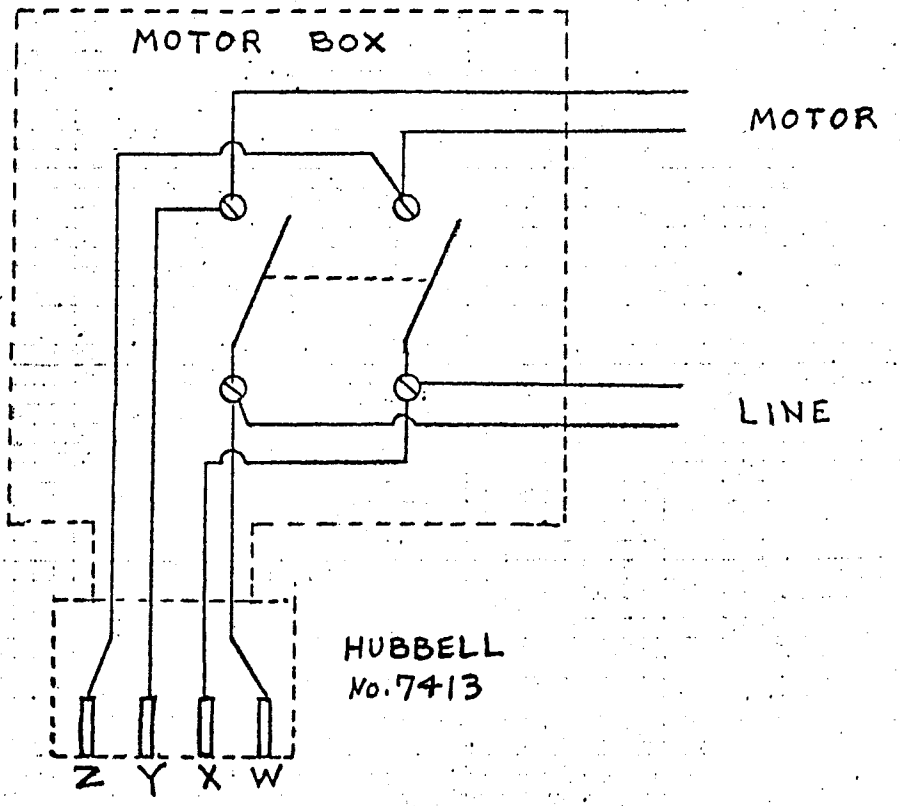
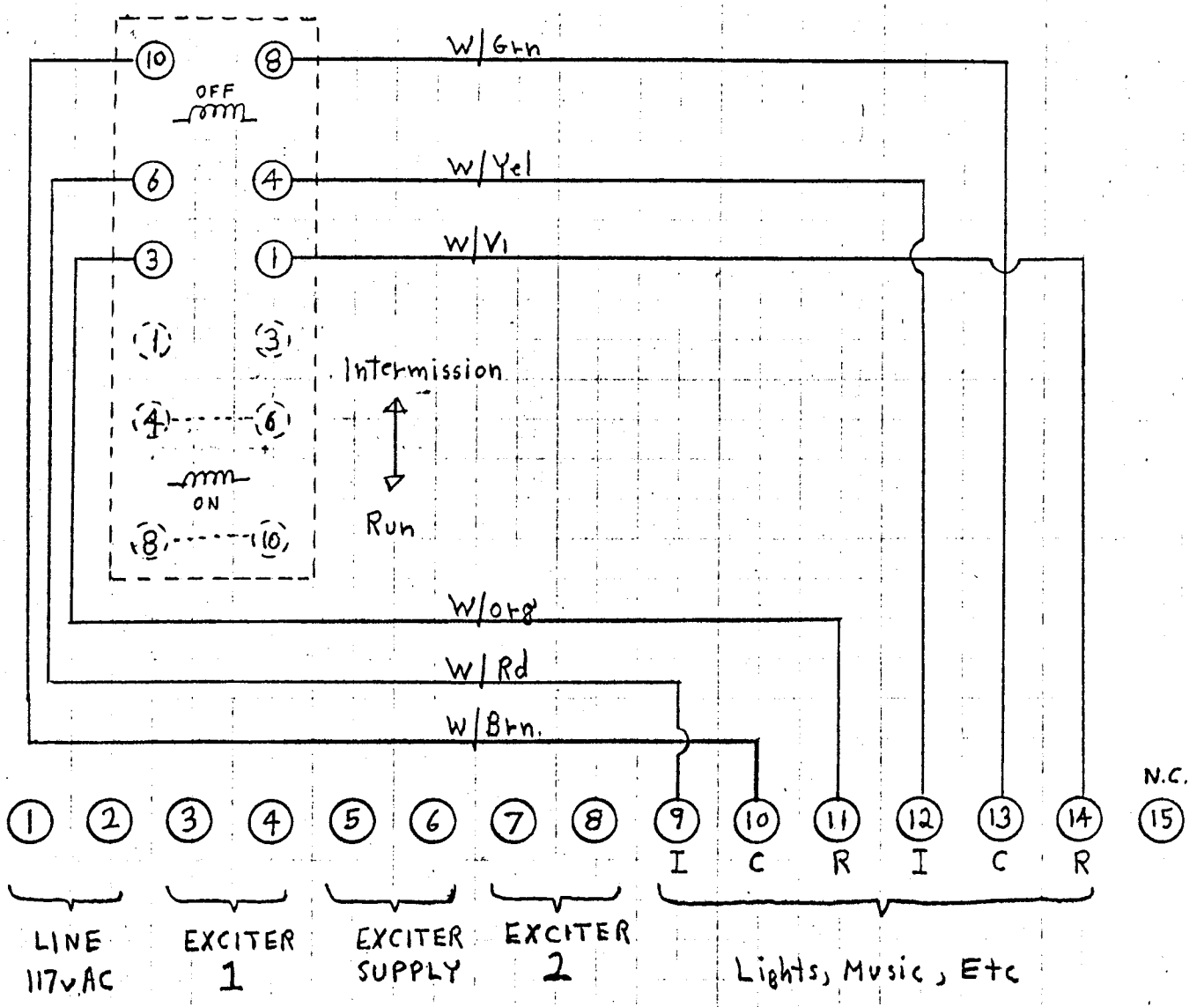


Diagram 5



ON INTERMISSION (exciters off):
Term 10 connects to Term 9
Term 13 connects to Term 12

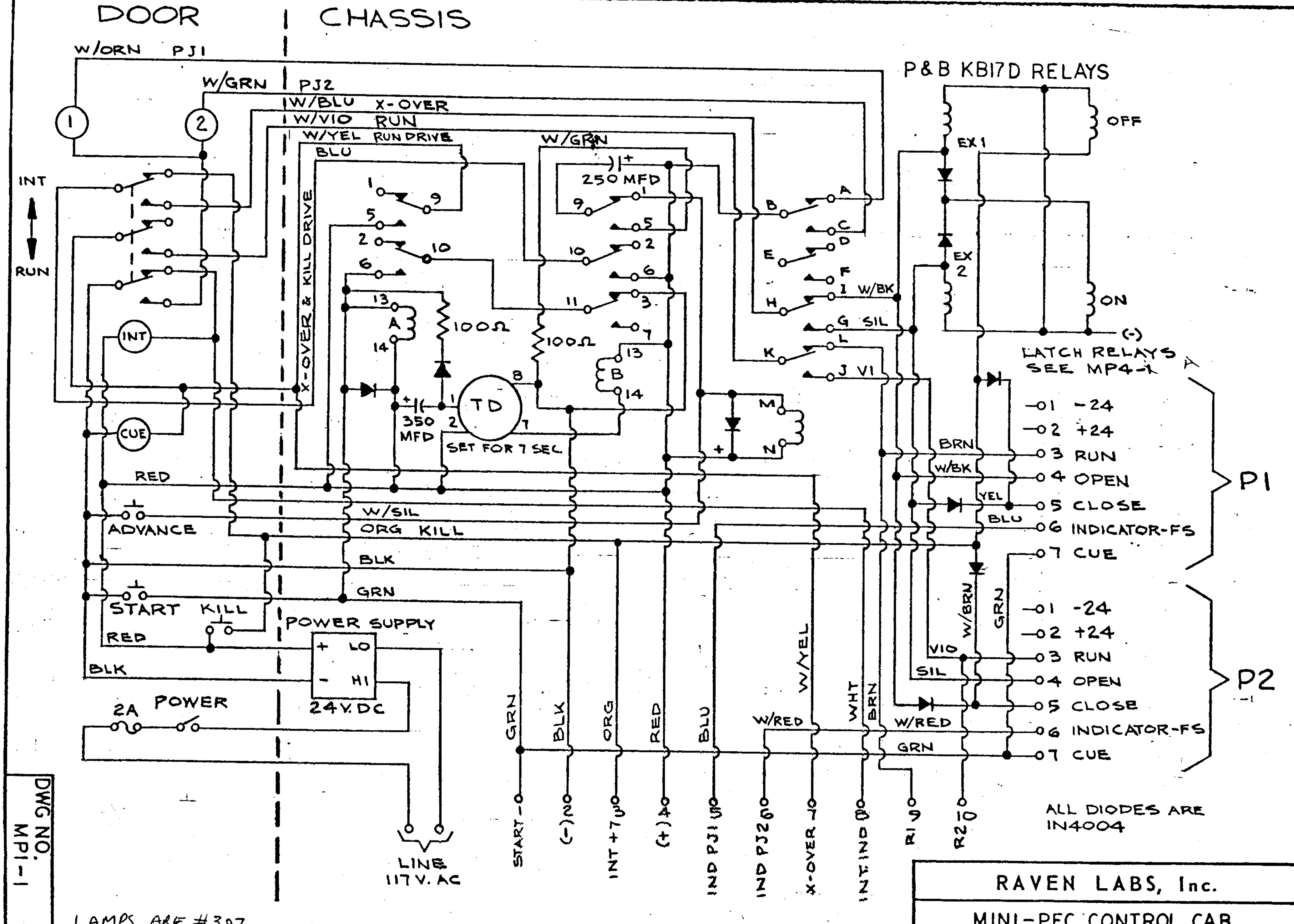
ON RUN (exciters off):
Term 10 connects to Term 11
Term 13 connects to Term 14

Rated - 5 Amps at 117v AC

Function is Double Pole Double Throw - Latching

Mini-PEC AUXILIARY CONTACTS DIAGRAM 7

MAIN CABINET TERMINAL STRIP



RAVEN LABS, Inc.

MINI-PEC CONTROL CAB.

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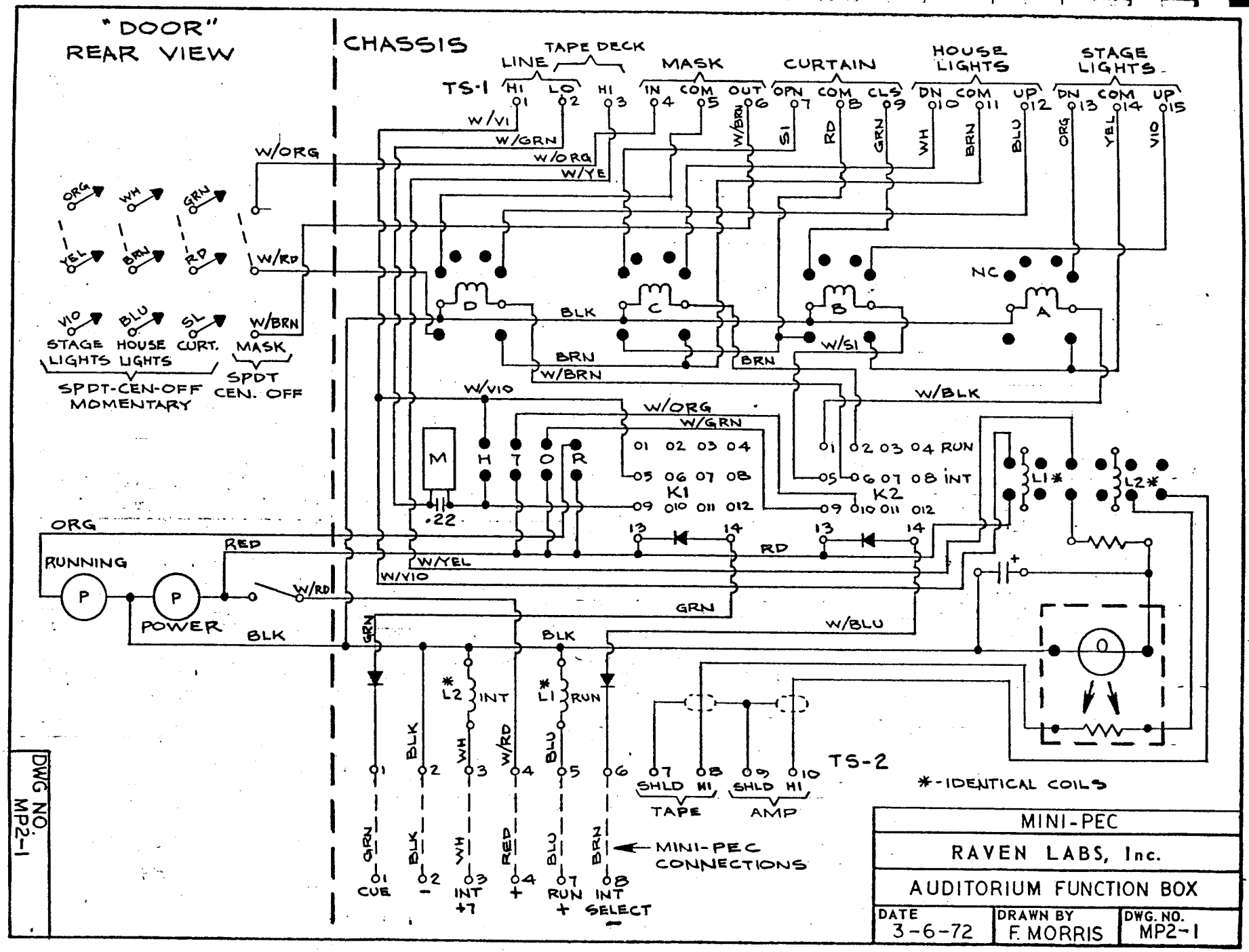
3-16-72	F. MORRIS	MP1-1

DWG NO. MP1-1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REAR VIEW
CHASSIS
TAPE DECK
LINE
MASK
CURTAIN
HOUSE LIGHTS
STAGE LIGHTS
TS-1
HI LO HI
IN COM OUT
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DN COM UP
DN COM UP
W/VI
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W/ORG
W/YE
W/BRN
SI
RD
GRN
WH
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BLU
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YEL
VIO
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YEL BRN RD
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STAGE LIGHTS
HOUSE LIGHTS
CURT.
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01 02 03 04
05 06 07 08
09 010 011 012
K1
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01 02 03 04 RUN
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L1*
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13 14
RD
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RUNNING
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P
POWER
W/RD
W/YEL
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GRN
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L2* INT
L1* RUN
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1 2 3 4 5 6
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07 08 09 010
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*-IDENTICAL COILS
GRN
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MINI-PEC CONNECTIONS
01 02 03 04 07 08
CUE
-
INT +7
+
RUN INT +
SELECT -
MINI-PEC
RAVEN LABS, Inc.
AUDITORIUM FUNCTION BOX
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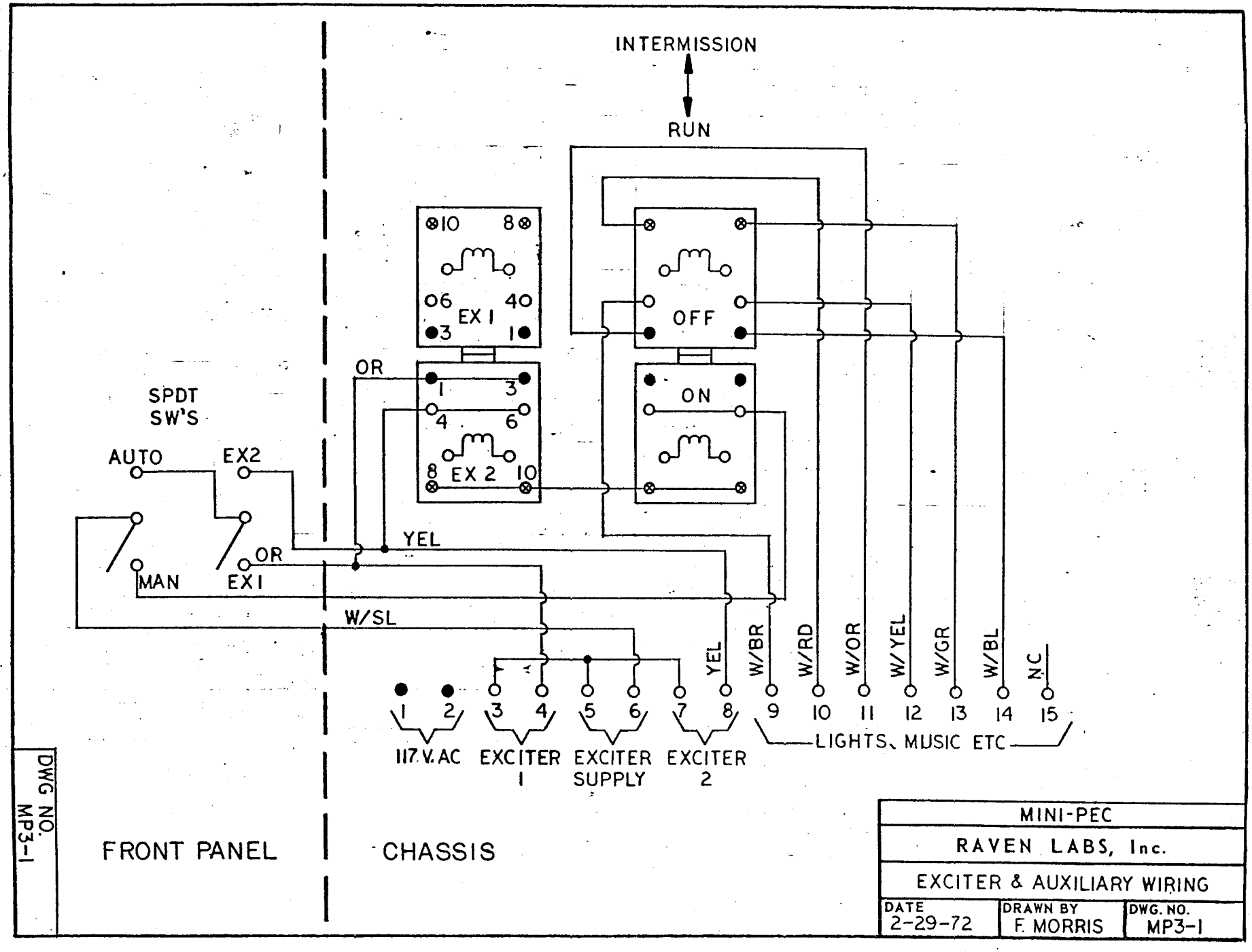
INTERMISSION
RUN
10
8
06
40
EX 1
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1
OFF
ON
OR
1
3
4
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8
EX 2
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SPDT
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AUTO
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EX1
OR
YEL
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YEL
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W/OR
W/YEL
W/GR
W/BL
N.C
117 V. AC
EXCITER 1
EXCITER SUPPLY
EXCITER 2
LIGHTS, MUSIC ETC
FRONT PANEL
CHASSIS
DWG NO. MP3-1
MINI-PEC
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EXCITER & AUXILIARY WIRING
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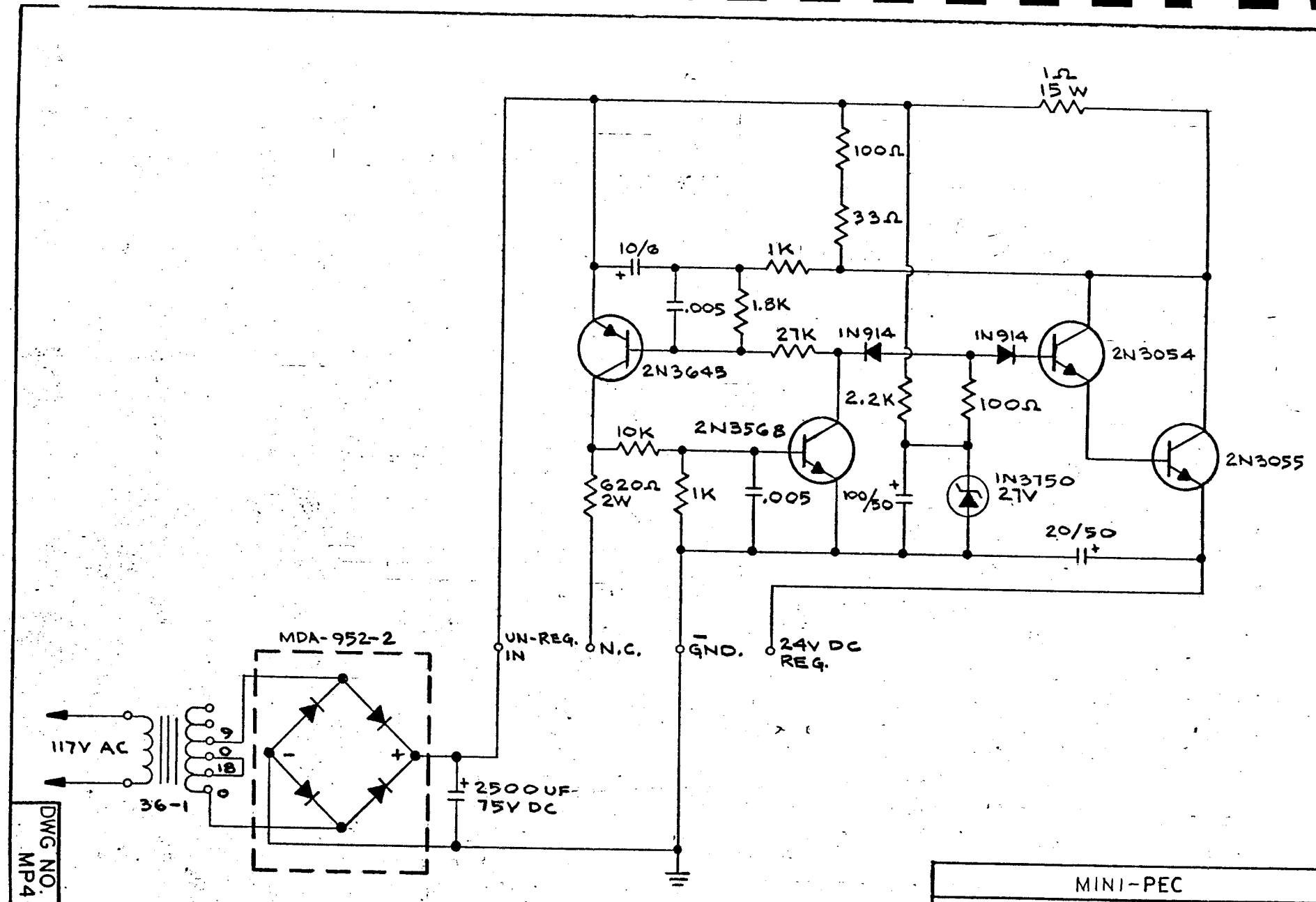
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15 W
100Ω
33Ω
10/6
1K
.005
1.8K
27K
IN914
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2N3645
2.2K
100Ω
10K
2N3568
2N3055
620Ω
2W
1K
.005
100/50
IN3750
27V
20/50
MDA-952-2
UN-REG. IN
N.C.
GND.
24V DC REG.
117V AC
9
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18
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36-1
+2500UF-
75V DC
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MINI-PEC
RAVEN LABS, Inc.
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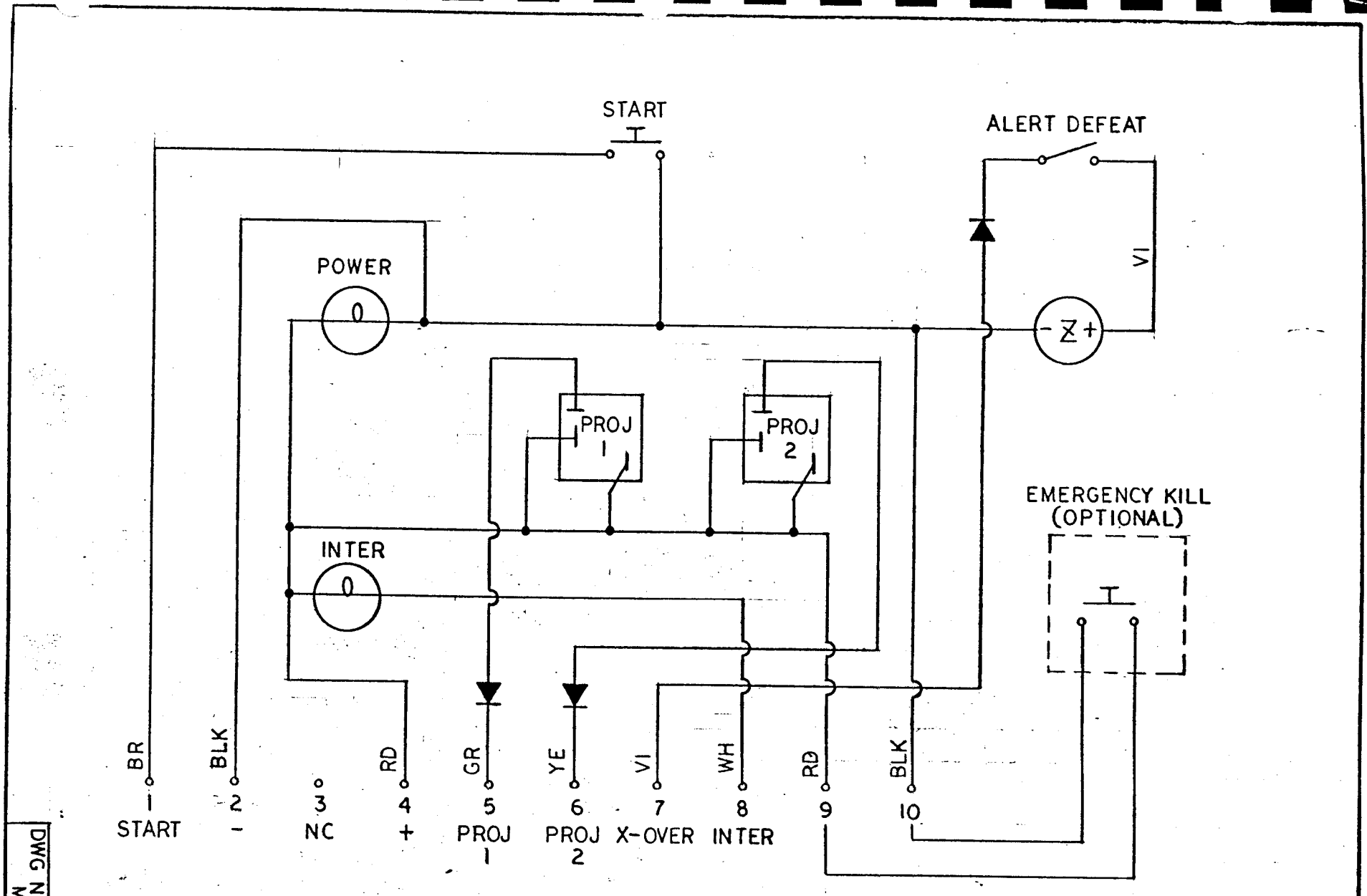

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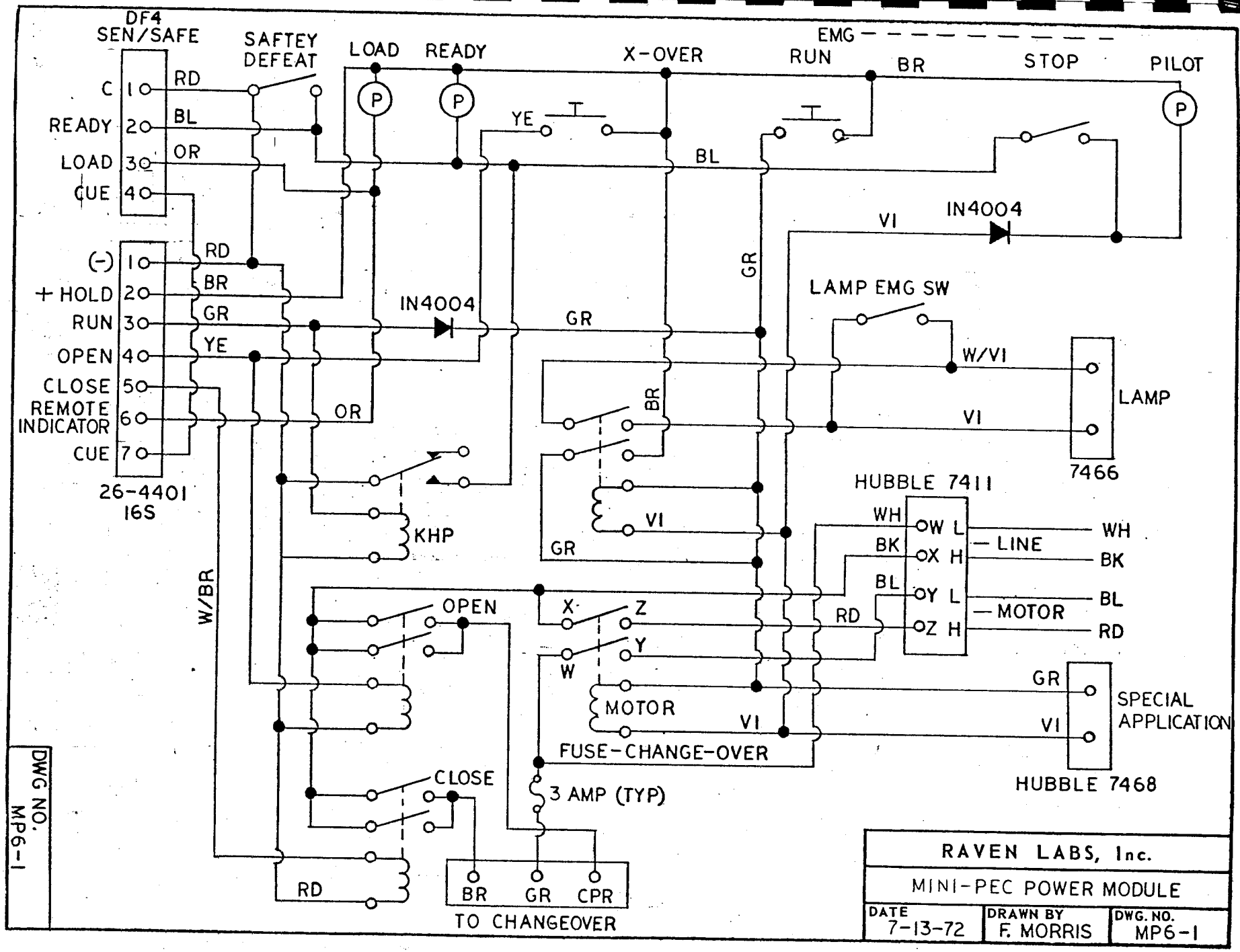

THIS UNIT IS MOUNTED ON EACH PROJECTOR

Form NTB-921

continued