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INSTRUCTION MANUAL

HOT SHOTS

(GAME #718)

(2 BALL GAME)

INSTRUCTION MANUAL

Applicable for all games.

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GAME PROMS:
718/PROM 1
718/PROM 2

SOUND PROMS:
718/DROM 1
718/YROM 1

NOTE: ANY PROM CHANGES DURING PRODUCTION WILL BE INDICATED BY A REVISION NUMBER FOLLOWING THE GAME NUMBER. CONSULT YOUR DISTRIBUTOR FOR ANY PROM CHANGE UPDATE.

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SYSTEM 80B OVERVIEW

System 80B contains three new circuit boards. These are the Alphanumeric Display, the Power Supply, and the Control Board Piggyback which is attached to the Control Board. The Alphanumeric Display takes the place of the Four and Seven Digit Displays used in System 80A games. The new Power Supply takes the place of the System 80A Power Supply. The Control Board Piggyback takes the place of ROMS (U2-U3) used in System 80A games.

Some of the new features of System 80B are:

- 1) Capability to display messages.
- 2) Enhanced bookkeeping and self-test.
- 3) Players can enter their initials if they achieve a high score.
- 4) Top five high scores are displayed in the attract mode.
- 5) Automatic Replay percentaging.

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference."

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I. INSTALLATION

A. SET-UP

1. Bolt the legs to the cabinet.
2. Lift lightbox into an upright position. Be sure none of the cables are crimped in between the lightbox and cabinet.
3. Engage the snap in the rear of the lightbox to the cabinet.
4. To remove the lightbox backglass and gain servicing access to the electronics panel and fluorescent lamp assembly, proceed as follows:

Unlock the lightbox by turning the key a quarter turn counter-clockwise, the hinged speaker panel grill will swing out toward you.

The backglass is held in place in the retaining groove at the bottom ledge of the lightbox and the wood retaining tabs on each side. Lift the backglass up about an inch, pull the bottom of the backglass toward you and slide it down past the two wood retaining tabs, carefully set aside.

To replace the backglass, slide the backglass up behind the wood retaining tabs and set down into the bottom retaining groove.

To secure the backglass, pivot the speaker panel grill towards the backglass and turn the key clockwise a quarter turn, the lightbox is now locked.

5. Secure the lightbox to the cabinet with the bolts and washers provided.
6. Open the cabinet door and loosen the front moulding locking arm.
7. Remove the moulding from the playfield.
8. Slide the cabinet glass toward you and remove it.
9. Raise the playboard, slide it forward and rest it on its support.
10. Unravel and straighten out the power line cord located at the rear of the pinball cabinet.
11. Proceed to "B. CHECK-OUT".

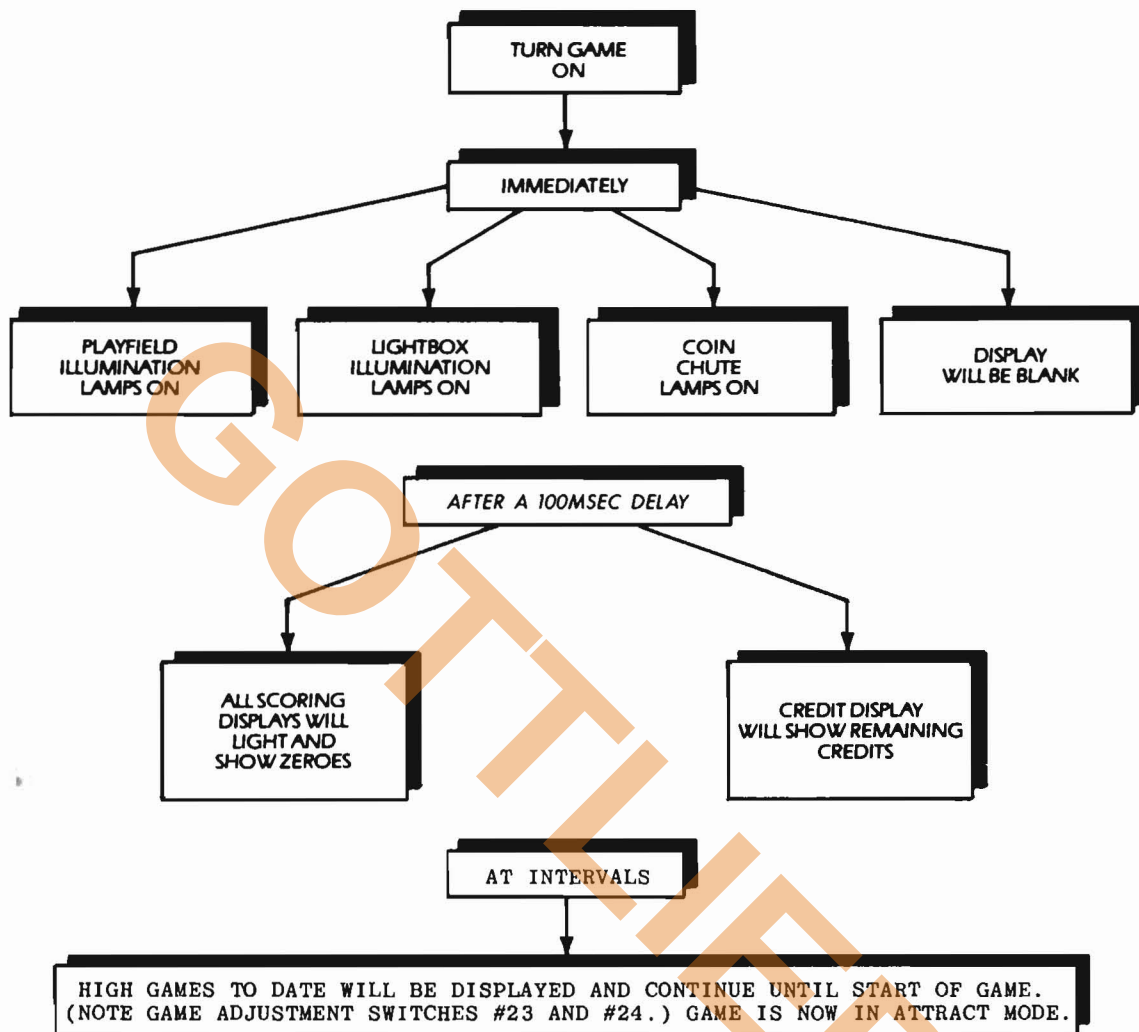
B. CHECK-OUT

1. Check that all cables are clear of moving parts.
2. Check for any loose wires.
3. Check switches for loose solder or other foreign matter.
4. Be certain all fuses are firmly seated.
5. Check transformer for any foreign matter across terminals.
6. Be sure that the Transformer Panel power input connector A12J7, corresponds to the supply voltage.
7. Check the setting of the normally open tilt switch on the underside of the playfield. One blade should be free-floating with a weight on the end.
8. Lower the playfield into the cabinet. Using the leg adjusters, level the playfield and set the pitch. Recommended pitch is $5-1/2^{\circ}$ - 6° .
9. The plumb-bob tilt can be adjusted by loosening the clip and raising the plumb-bob to increase its sensitivity, or lowering it to decrease its sensitivity.

The ball-roll tilt can be adjusted by loosening the front screw and raising the tilt bracket to increase sensitivity, or lowering it to decrease its sensitivity.
10. Reinstall the cabinet glass, front moulding and the lightbox assembly.
11. Plug the line-cord into a properly grounded 3-wire receptacle ONLY!
12. Refer to Section VI to make all necessary game adjustments.
13. CAUTION! If this game has been subjected to extreme cold, allow to warm up to room temperature.

II. INITIALIZATION, III. GAME OPERATION

II. INITIALIZATION



III. GAME OPERATION

A. GAME START

Two balls must be in the ball return trough to start a game.

1. Insert coins into coin chute.
 - a. Coin chute tune is played.
 - b. Total credits are displayed in the center of the lower display.
2. Press Credit Button to start game.
 - a. Credit tune is played.
 - b. Total credits displayed decrease by one.

3. All playfield features reset.

4. The first player score display flashes two zeros.

B. FIRST PLAYER

1. First player's score display flashes two zeros.
2. The other player's displays are now blank.
3. The ball-in-play is displayed in the center of the upper display.

III. GAME OPERATION

4. When the ball enters the outhole, any bonus earned is scored.

C. ADDITIONAL PLAYERS

1. Additional players are indicated by two zeros (not flashing) in each corresponding player's display.
2. After the maximum number of players are added, or no more credits remain, the Credit Button has no effect.
3. Additional players can be added anytime during the first ball in play.

D. EXTRA BALLS

1. When the SHOOT AGAIN lamp is lit, neither the player-up nor the ball-in-play changes when the ball enters the outhole.
2. Only one extra ball per ball-in-play is given.

E. TILT MODE

1. Tilting the game results in a loss of ball in play.
2. When the game is tilted, all the playfield lamps go off.
3. All accumulated bonus and bonus multipliers are lost.

F. SLAM MODE

1. If the normally open slam switch (located inside front door) is closed, the entire game is ended for all players.
2. The entire switch matrix is inactive for three seconds.
3. If the match feature exists (dependent on Switch #26), a replay can be won even if the game is slammed.
4. Game returns to the attract mode.

G. GAME OVER

1. A random match number appears in the ball-in-play display. If this number matches the last two digits in any player's score, a replay (dependent on SWITCH #26) is awarded.
2. The High Games To Date are periodically displayed, dependent on Switches #23 and #24. When the Highest Game To Date is beaten, an award (dependent on Switches #23 and #24) is given.
3. All of the drop targets will reset (when used).

IV. GAME PLAY AND SCORING



HOW TO PLAY

SHOOTER SKILL SHOT

- SCORES LIT VALUE OR DISPLAYED AWARD.

LEFT AND RIGHT KICKING RUBBERS

- SCORE 90.

POP BUMPER

- SCORE 1,000.

LEFT AND RIGHT FLIPPERS

- DISPLAY JACKPOT VALUE, TEDDY BEARS WON, AND CURRENT REPLAY LEVEL (AUTO-PERCENTAGING ONLY) WHEN BUTTON IS HELD.

RIGHT OUT ROLLOVER

- SCORE 20,000.
- WIN 2 TEDDY BEARS.

LEFT OUT ROLLOVER

- SCORE 20,000.
- SAVE BALL IF LIT.

LEFT AND RIGHT RETURN ROLLOVERS

- SCORE 5,000.

- IN MULTIBALL PLAY, LIGHT THE CENTER SPOT TARGET 200,000 LAMP FOR AN ADJUSTABLE TIME PERIOD.

- [5 BALL] SCORE 3,000.

#1 RIGHT RAMP ROLLUNDER

- SCORE 5,000.
- FREEZE BONUS COUNTDOWN FOR A TIME IF FLASHING OR LIT.
- ADVANCE JACKPOT 150,000 IF LIT.
- COLLECT JACKPOT IF LIT.
- [5 BALL] SCORE 3,000.

#2 RIGHT RAMP ROLLOVER

- SCORE 5,000.
- [5 BALL] SCORE 3,000.

LEFT RAMP ROLLUNDER

- SCORE 5,000.
- FREEZE BONUS COUNTDOWN FOR A TIME IF FLASHING OR LIT.
- IF PUMP BONUS LAMP IS LIT, SCORE AND ADVANCE THE AWARD.

RIGHT SIDE ROLLOVER

- SCORE 5,000.

IV. GAME PLAY AND SCORING

- LIGHT PUMP BONUS LAMP FOR A TIME IF IN 1 BALL.
- [5 BALL] SCORE 3,000.

LEFT SIDE ROLLOVER

- SCORE 5,000.
- LIGHT THE BALL SAVE LAMP FOR AN ADJUSTABLE TIME.
- [5 BALL] SCORE 3,000.

UPKICKER

- SCORE 5,000.
- FREEZE BONUS COUNTDOWN FOR A TIME IF FLASHING OR LIT.
- LOCK BALL IF LIT.

TOP SPOT TARGETS

- SCORE 10,000.
- WIN 1 TEDDY BEAR IF LIT.

LEFT AND RIGHT FREEZE SPOT TARGETS

- SCORE 3,000.
- FREEZE BONUS COUNTDOWN FOR A TIME IF FLASHING OR LIT.

T-E-D-D-Y SPOT TARGETS

- SCORE 5,000.
- SCORE 200,000 IF THE CENTER TARGET IS HIT WHILE LIT.
- "TEDDY" COMPLETE LIGHTS LOCK AND RESETS THE TOP ROLLOVER DROP TARGET.
- "TEDDY BEAR" COMPLETE SCORES AND ADVANCES ITS AWARD.

TOP ROLLOVER DROP TARGET

- SCORE 5,000.
- [5 BALL] SCORE 3,000.

BOTTOM ROLLOVER DROP TARGET

- SCORE 5,000.
- LIGHT THE "COLLECT JACKPOT" LAMP FOR AN ADJUSTABLE TIME PERIOD.
- [5 BALL] SCORE 3,000.

16 DROP TARGETS

- SCORE 3,000.
- COMPLETING 4 OF THE SAME COLOR LIGHTS THEIR ASSOCIATED COLORED LAMP SOLID.
- ALL 4 COLORS LIT SOLID SCORES AND ADVANCES THE DROP TARGET AWARD, RESETS THE BOTTOM ROLLOVER DROP TARGET, AND RESETS ALL 4 DROP TARGET BANKS.
- BANKS RESET INDIVIDUALLY WHEN THE 50,000 AWARD OR THE SPECIAL AWARD LAMPS ARE LIT.
- "TEDDY BEAR" COMPLETE SCORES AND ADVANCES ITS AWARD.

OUTHOLE

- SCORE 50,000 FOR EACH TEDDY BEAR WON.
- [5 BALL] SCORE 20,000 FOR EACH.

SPECIAL FEATURE

- IF A PLAYER HITS ALL 4 BLUE AND ALL 4 RED DROP TARGETS DOWN WITHOUT HITTING A YELLOW OR GREEN, OR HE HITS ALL 4 YELLOW AND ALL 4 GREEN TARGETS DOWN WITHOUT HITTING A BLUE OR RED, HE IS IMMEDIATELY AWARDED 10 SPECIALS.

BOZO FEATURE

- AT THE BEGINNING OF A PLAYER'S LAST BALL, IF HE HAS WON LESS THAN 4 TEDDY BEARS, HIS BALL WILL BEGIN WITH "EXTRA BALL" AND "ADD JACKPOT" LIT.

V. SOUND

VI. GAME ADJUSTMENTS

6

VI. GAME ADJUSTMENTS

B. SOUND ADJUSTMENTS

The speaker(s) output is controlled by the potentiometer mounted on a bracket located inside the cabinet next to the front door hinge.

Turning the potentiometer counter clockwise will decrease the volume. Turning it clockwise will increase the volume.

C. POST ADJUSTMENTS

The posts at the mouth of the right outlane can be positioned for liberal/conservative play. The smaller opening produces a more liberal game.

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VII. BOOKKEEPING AND SELF TEST

The circuitry in this game helps the Operator perform many Bookkeeping and Self/Test functions. These functions are accessed by the Self/Test Switch inside the front door.

Section VII A., details the Bookkeeping system, while Section VII B., details the Self/Test operation. The Flow Chart in Section VII D., gives the general order and function of both Bookkeeping and Self/Test steps.

A. BOOKKEEPING SYSTEM 80B

- See Flow Chart for Bookkeeping Assignments (1-15).

I. STEPPING THROUGH BOOKKEEPING

1. Press the SELF-TEST button inside the front door.

"TEST MODE" should appear in the upper display.

2. Press the SELF-TEST button again. Step 1 and its information will be displayed.
3. Pressing the SELF-TEST button will increment the bookkeeping step number and appropriate information will be displayed.

Pressing the SELF-TEST button after Step 15 will start the SELF-TEST function (Step 16-21). At this point Bookkeeping cannot be re-entered by pressing the SELF-TEST

button. To reenter, turn the game OFF/ON or activate the slam switch. The game will return to the attract mode. Then press the SELF-TEST button.

4. To exit from Bookkeeping at any time:

- a. Turn power OFF/ON or
- b. Open slam switch.

II. HOW TO SET BOOKKEEPING INFORMATION TO ZERO

1. For a Particular Bookkeeping Step

Applicable only to:

- Step 1 - Left chute coins
- Step 2 - Right chute coins
- Step 3 - Center chute coins

- a. Advance Bookkeeping so the step to be zeroed is displayed.
- b. Press the credit button. Notice information replaced by zeros.

2. Zeroing All Bookkeeping Steps

Except coin chutes (Steps 1,2 and 3), Auto-Percentaging setting (Step 6), Replay Levels (Steps 11-13), and Highest Game To Date Score (Step 14).

- a. Go to Step 15 (average playing time).
- b. Press the credit button! The message "Bookkeeping Cleared" will be displayed.
- c. Zeroing is complete.

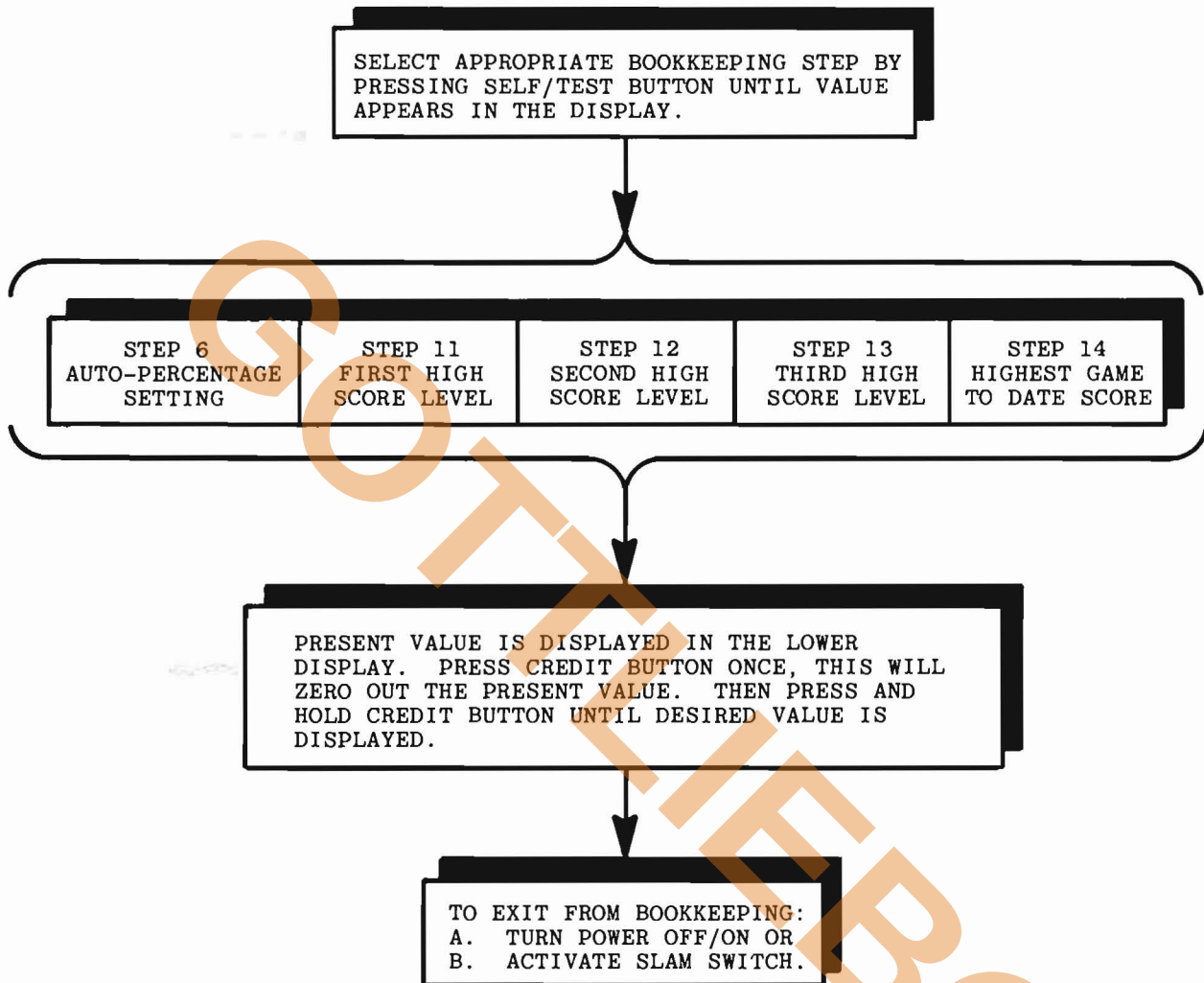
HOW TO USE AUTOMATIC REPLAY PERCENTAGING

Move Control Board switch #8 to the on position to enable Auto-Percentaging. Set the desired percent payout while in Step 6 of bookkeeping (See Page 9). When Auto-Percentaging is enabled, only the first High Score Replay Level is used. The second and third levels are ignored.

Periodically the first Replay Level will be adjusted by 100,000 points at a time. After 10,000 games have been played, the Total Plays (Step 4), Total Replays (Step 5), and Game Time (Step 15) bookkeeping values are reset to 0 (Refer to Page 10).

VII. BOOKKEEPING AND SELF TEST

III. HOW TO SET/RESET AUTO-PERCENTAGE SETTING, HIGH SCORE LEVELS OR HIGH GAME TO DATE SCORES.

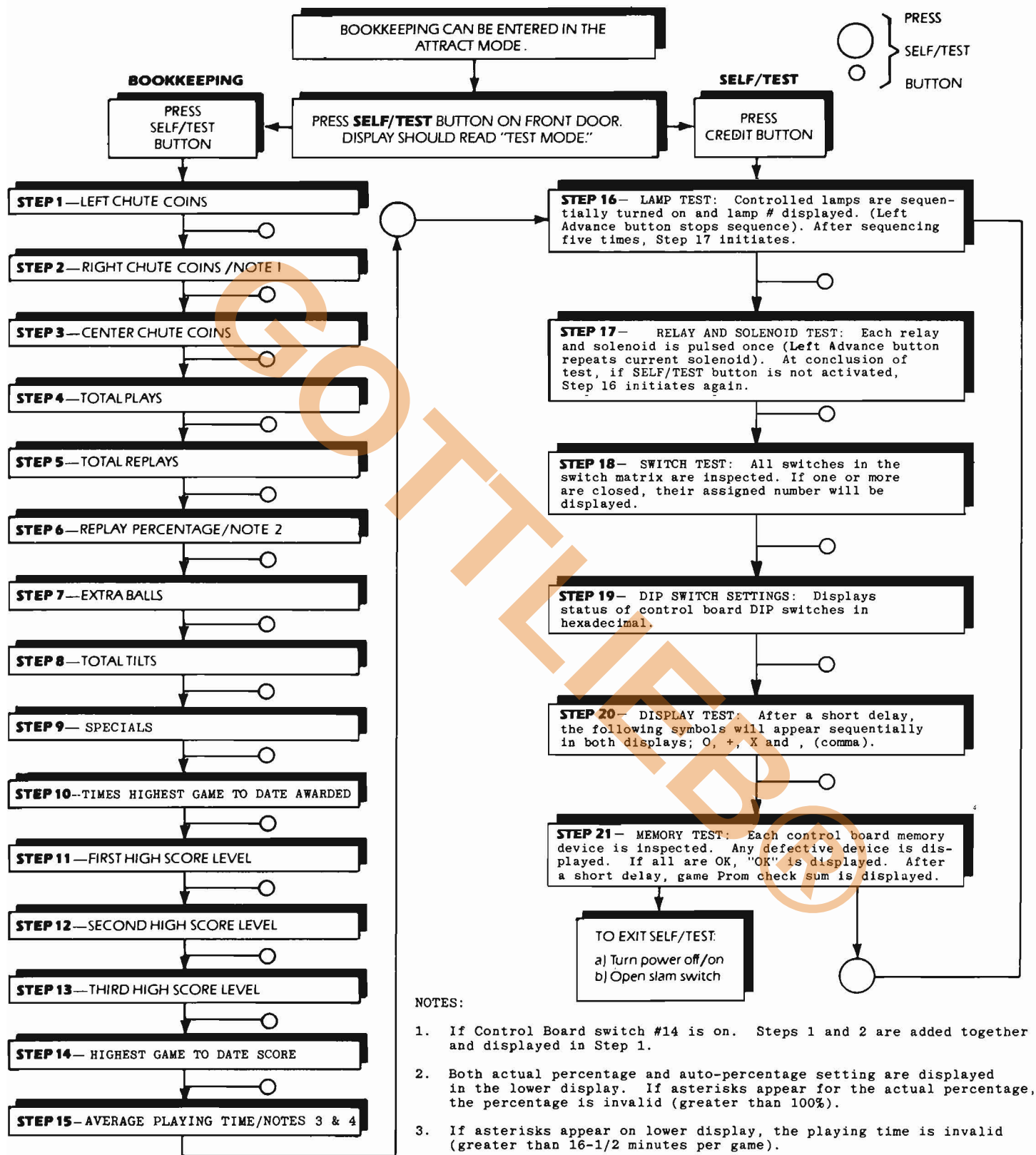


NOTES:

1. Step 11 must be a lower score than Step 12.
Step 12 must have a lower score than Step 13.
Otherwise, the scores will not be recognized.
2. If Step 12 or Step 13 is not desired, set those scores to zero.
3. If Step 14 is reset, all High Games to Date scores are reset.
4. High Score Levels may range from 100,000 to 9,900,000 in increments of 100,000.
5. Only the first High Score Level is used when auto-percentaging (switch 8) is enabled.

VII. BOOKKEEPING AND SELF TEST

B. FLOW CHART



NOTES:

1. If Control Board switch #14 is on. Steps 1 and 2 are added together and displayed in Step 1.
2. Both actual percentage and auto-percentage setting are displayed in the lower display. If asterisks appear for the actual percentage, the percentage is invalid (greater than 100%).
3. If asterisks appear on lower display, the playing time is invalid (greater than 16-1/2 minutes per game).
4. Pressing the credit button during this step will reset all book-keeping information except:
 - Steps 1 thru 3 - Coin chutes
 - Step 6 - Auto-percentage setting
 - Steps 11 thru 13 - Replay levels
 - Step 14 - Highest game to date

VII. BOOKKEEPING AND SELF TEST

C. SELF/TEST

- Steps 16 through 21 are SELF/TEST or game tests the operator can use for quick troubleshooting.
- All the tests are explained in the flow chart.
- To advance to the next test, press the SELF/TEST switch.
- Each test can be repeated by pressing the credit button.

- b. Solenoid Test-Each solenoid on the playfield is sequentially pulsed. The solenoid number displayed identifies which solenoid is being tested. The following chart lists solenoid assignments.

NUMBER DISPLAYED	ASSIGNMENT	A3 DRIVER BOARD TRANSISTOR ASSIGN. SEE SCHEMATIC
Sol.1	Blue 8 Bank	Q60
Sol.2	Red 8 Bank	Q57/Q58
Sol.3	Upkicker	Q54
Sol.4	Bot. Rollover bank	Q55
Sol.5	Yellow 8 bank	Q61/Q62
Sol.6	Green 8 Bank	Q63/Q64
Sol.7	Top Rollover Bank	Q56
Sol.8	Knocker Assembly	Q53
Sol.9	Outhole	Q59

STEP 16—LAMP TEST

- a. Lamp Test-Lamps are sequentially strobed. Lamp assignment numbers appear in the lower display.

The Left Advance button stops lamp sequencing for repeated flashing of active lamp. (Single Step Mode).

Lamp number (L9, L16, etc.) can be referenced to the Driver Board Schematic where the specific transistor for each lamp can be identified.

STEP 18—SWITCH TEST

- a. If all switches are open, "ALL SWITCHES OPEN" appears in the lower display. (Note: Slam switch is not part of this test.)
- b. If any switch(es) are closed, their corresponding matrix location will appear sequentially in the lower display.

STEP 19—DIP SWITCH SETTINGS

- a. The status of the Control Board (A1) switches appears in the lower display.

DISPLAYED HEXADECIMAL	DECIMAL	BINARY
0	0	0000
1	1	0001
2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
7	7	0111
8	8	1000
9	9	1001
A	10	1010
B	11	1011
C	12	1100
D	13	1101
E	14	1110
F	15	1111

STEP 17—RELAY AND SOLENOID TEST

- a. Relay Test-All relays are pulsed in the following order with their corresponding lamp driver number appearing in the lower display.

The left advance button stops sequencing for repeated activation of relay or solenoid. (Single Step Mode).

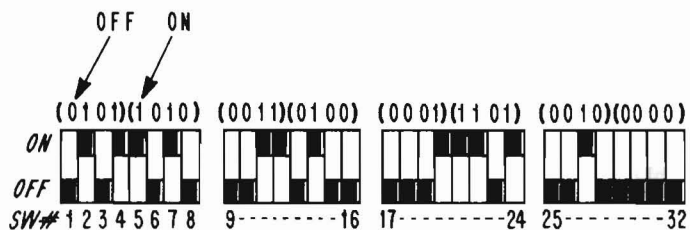
A3 Driver Board Transistor
Assignment (See Schematic)

Q (Game Over) Relay.....A3J3 PIN- $\bar{A}$ (Q1)
T (Tilt) Relay.....A3J3 PIN-B(Q2)
(Any other relays which may be used).

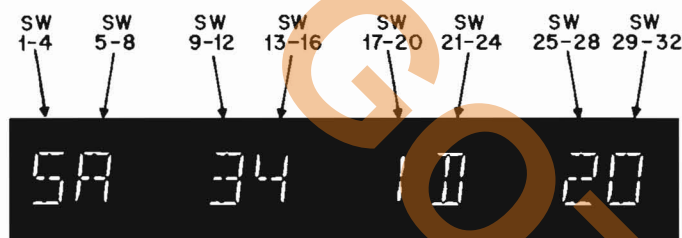
VII. BOOKKEEPING AND SELF TEST

CONTROL BOARD (A1) SWITCHES

EXAMPLE



DISPLAYED



Checking Switches

- 1) Switch all odd number switches to the ON position, and all even switches to the OFF position. Press credit button. Display should now show:



- 2) Switch all even numbered switches to the ON position and all odd switches to the OFF position. Press credit button. Display should now show:



STEP 20—DISPLAY TEST

After a short delay, the following characters will appear sequentially in all digit positions; O, +, X and , (comma).

STEP 21—MEMORY TEST

Each control based memory device is checked. If all are good, an "OK" will be displayed.

If a memory chip located on the A1 Control Board is defective, its number will be displayed. If no devices are found to be defective, "OK" is displayed in the lower display. Then after a short delay the Game Prom check sum will be displayed.

VIII. THEORY OF OPERATION

This section will cover only the differences between System 80A and System 80B. Figure 1 is a block diagram indicating the interconnections between the modules of System 80B.

A. CONTROL BOARD (A1)

The Piggyback Board eliminates the need for the ROMS (U2-U3) and the game prom (PROM 1) used in System 80A. The new game prom for each game is a 2764 EPROM labeled with the game number. This device is plugged into the Piggyback Board which is soldered into the Control Board.

The use of the Alphanumeric Display eliminates the need for Z19, Z21, Z22, Z23, Z24, Z25 (System 80A Display Control), and connector A1J3. The Control Board transmits information to the Display Board via a data bus (DATA 0 - DATA 7) and control lines (LD1, LD2, and RESET) from A1J2 to 1A4J1. The state of the LD1 and LD2 lines determine whether the upper or lower display tube receives the information on the data bus.

B. POWER SUPPLY (A2)

The new Power Supply develops a regulated +5V DC only and supplies it to the Control Board (VCC), Display Board (VSS), and Sound Board (VCC).

C. DISPLAY BOARD (A4)

This board takes the place of the four and seven digit displays used in System 80A games. During game play the upper display contains the scores of players one and two along with the ball in play (center). The lower display contains the scores of players three and four along with the amount of credits remaining (center). During Game Over the display information alternates between the scores from the previous game and the current High Games To Date.

The Display Board incorporates two vacuum fluorescent display tubes and three display controllers (U1-U2-U3). Each tube consists of a filament, grids (digits), and anodes (segments). U1 controls the digits of the upper display tube. U2 controls the digits of the lower display tube. U3 controls the segments of both tubes. When power is supplied to the game, the Control Board sends a negative going reset pulse to the base of Q1. This resets the display system. The digit information is multiplexed using an internal clock in U1 to control the refresh rate. This makes it appear as if all the digits are being enabled at once.

VIII. THEORY OF OPERATION

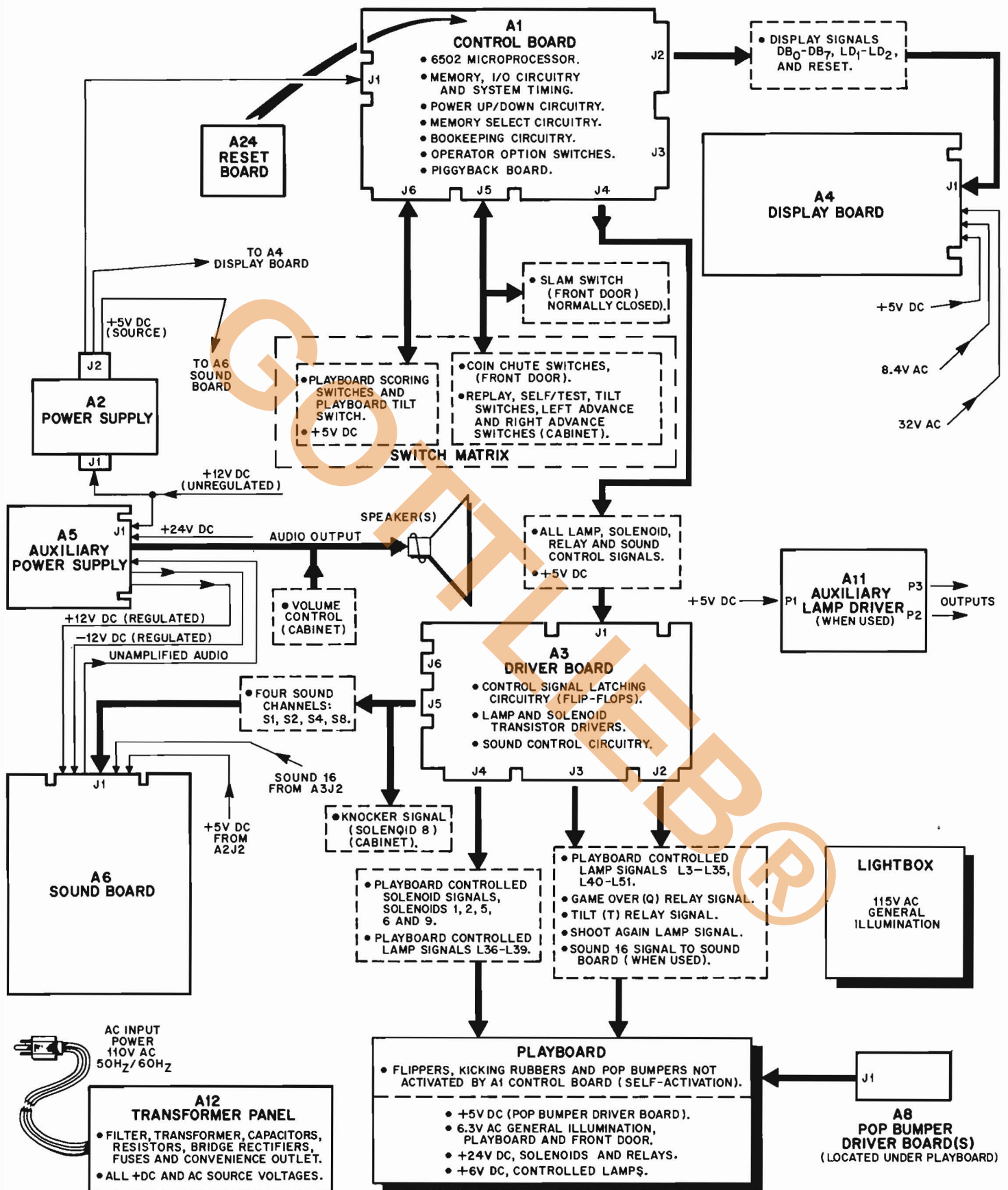


FIGURE 1. SYSTEM 80B BLOCK DIAGRAM

VIII. THEORY OF OPERATION

The Display Board is supplied with 32V AC from the transformer panel. Voltages VGG, VDD, and VCO are then developed from this input. The transformer panel also supplies 8.4V AC to the display tube filaments.

The filaments are biased 9.1V DC above VGG (VCO) by the zener diode VR1. Figure 2 shows the basic drive circuitry and waveform for a single digit and segment of the display.

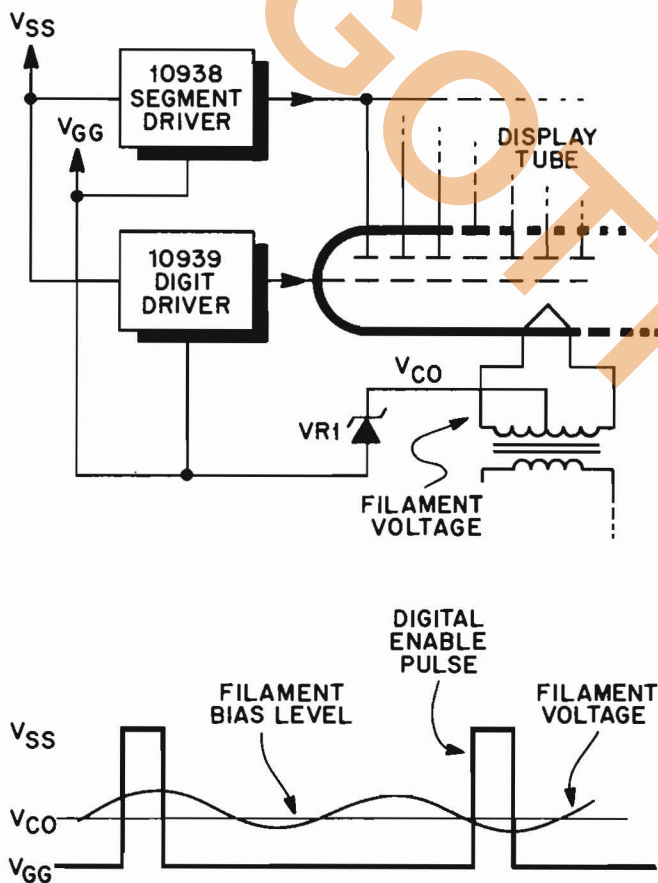


FIGURE 2. BASIC DRIVE CIRCUIT

D. SOUND BOARD (A6)

The MA-886-717 Sound Board consists of two 6502 microprocessor systems, a dual DAC, input ports to receive

commands from the game Control Board, and a low level audio output, which is sent to the MA-767 Auxiliary Power Supply Board for amplification.

The Sound Board requires three supply voltages: +5V DC, +12V DC and -12V DC. In addition a power up reset signal is required from the Control Board.

SYSTEM CLOCK

A 4 MHz oscillator is configured with R11, R12, C14, C15, C22, XTAL-1 and T1. This 4 MHz clock is divided by 4 to a 1 or 2 MHz clock for both processor's clock input, pin 37 of N1 and T3. A 250 KHz signal from S1 pin 11 is the clock for the programmable timer section consisting of N5, H5, T5 and K5, pin 2.

INPUT CODE LATCH SYSTEM

Eight input lines from the Control Board come in on A6P1 and are pulled up by S1P1 and sent to the two input code latches A3 and B2, one for each microprocessor system. A2, pin 8, becomes a logic high when any of its inputs are low. This output is connected to pin 11 of the input code latches (A3 and B2). A positive edge at pin 11 causes A3 and B2 to latch the data at their inputs. A2 pin 8 is also connected to the clock inputs of two flip flops, A4 pin 3 and A4 pin 11. When A2 pin 8 goes high, both flip flops are clocked, setting both $\bar{Q}$ outputs low. The $\bar{Q}$ outputs, A4 pin 6 and pin 8, are connected to both of the 6502's active low interrupt request lines, T3 and N1, pin 4. The $\bar{Q}$ outputs of A4 will stay low until the associated 6502 reads its input port therefore clearing the interrupt.

VIII. THEORY OF OPERATION

SYSTEM EPROMS

The sound board is designed to accommodate different types of EPROMS. Jumpers JP1, 2, 3 and 4 should be set to the proper position based on the EPROM being used, (See Schematic Diagram).

RESET

The Sound Board receives an external reset signal from A1J2 pin 24. This active low reset signal is pulled up by R34 and sent to G5, pin 1 (2-input AND gate). However, if a manual reset is desired, pushing switch SW2 will reset the processor.

MAIN SUMMER

The main summer consists of R13 through R17 and B1, pins 12, 13 and 14. B1 pin 14 is the main output

from the Sound Board, at A6P2 pin 9, and will swing plus or minus 5V peak to peak.

E. AUXILIARY SOUND BOARD (A20)

The Auxiliary Sound Board MA-1033 consists of a YM2151 (U1) sound generator, a YM3014 (U2) DAC, and a LM324 op-amp (U3). The master sound board (A6), controls the YM2151(U1) sound chip by sending commands via the data bus of the master sound board's T3 micro-processor. The YM2151 responds to these commands and serially sends sound data to the YM3014 DAC by means of the CLK, SD, and SH2 lines. The DAC converts this serial data into an analog signal which is buffered and amplified by U3, a LM324 op-amp. This analog signal is then sent back to the main summer of the master sound board (A6).

IX. GENERAL INFORMATION

A. PRINTED CIRCUIT BOARDS ARE DESIGNATED AS FOLLOWS:

A1 - Control Board
 A2 - Power Supply
 A3 - Driver Board
 A4 - Display Board
 A5 - Auxiliary Power Supply
 A6 - Sound Board
 A7 - Diode Board
 A8 - Pop Bumper Driver Board
 A11 - Auxiliary Lamp Driver
 A13 - Resistor Board
 A16 - Transistor Driver Board
 A17 - Diode Board
 A19 - Switching Diode Board
 A20 - Auxiliary Sound Board
 A22 -
 A24 - Reset Board

B. WIRE COLORS ARE SHOWN AS NUMBERS:

0 Black
 1 Brown
 2 Red
 3 Orange
 4 Yellow
 5 Green
 6 Blue
 7 Violet
 8 Gray
 9 White

For example, 688 is a BLUE-GRAY-GRAY striped wire.

Printed circuit board connectors will be labeled AX-JX. For example, A3-J4 is the connector J4 on the driver board (A3).

C. FUSES

TRANSFORMER PANEL FUSES

F1	Sound/Speech Power Supply (A6)...	12V AC	....	1/2 Amp
F2	Power Supply (A2).....	10V AC	....	6-1/4 Amp SLO-BLO
F3	Display.....	32V AC	....	1/4 Amp SLO-BLO
F4	Solenoids (+24V DC).....	28V AC	....	8 Amp SLO-BLO
F5	Controlled Lamps.....	8V AC	....	10 Amp SLO-BLO
F6	Playboard Illumination.....	6.3V AC	....	5 Amp SLO-BLO
F7	Lightbox Illumination.....	115V AC	....	1/2 Amp SLO-BLO
F8	Primary Power.....	110V AC	....	5 Amp SLO-BLO
		220V AC	....	2-1/2 Amp SLO-BLO
F9	Display Filament.....	8.4V AC	....	1 Amp
F9A	Display Filament.....	8.4V AC	....	1 Amp
F16	Motor.....	110V AC, 220V AC	....	1 Amp SLO-BLO
F20	Input Line.....	110V AC	....	8 Amp SLO-BLO
		220V AC	....	4 Amp SLO-BLO

PLAYBOARD FUSES

F10	Ball Release, Top Rollover Bank Trip, Bottom Rollover Bank Trip, Outhole.....	1 Amp SLO-BLO
F11	Upkicker.....	2 Amp SLO-BLO
F12	Bottom Left Shooter.....	2.5 Amp SLO-BLO
F13	Top Rollover Bank Reset, Bottom Rollover Bank Reset.....	1 Amp SLO-BLO
F14	Blue and Red Bank Reset, Yellow and Green Bank Reset.....	2 Amp SLO-BLO
F15	Pop Bumper.....	2 Amp SLO-BLO

IX. GENERAL INFORMATION

D. COIL CHART

SOLENOID COILS					
PART NUMBER	GENERAL USAGE	RESISTANCE (OHMS)	NUMBER OF TURNS	WIRE GAUGE	WRAPPER COLOR
A-1496	KICKING TARGET KICKING RUBBERS POP BUMPERS	2.95	635	#23	Yellow
A-4893	UP KICKER POP BUMPERS BALL KICKER	2.1	535	#22	Red
A-5194	UP KICKER GONG KICKING TARGETS POP BUMPERS	4.5	780	#24	Blue
A-5195	CONTACT KICKER KNOCKER HOLE KICKER	11.6	1305	#26	White
A-16570	HOLE KICKER, OUTHOLE	15.5	1450	#27	Green
A-17875	FLIPPERS	2.8/40	560/1100	#24/31	Yellow
A-17891	5 BANK RESET	3.35	850	#22	White
A-18102	3 BANK RESET, 7 BANK RESET USES 2	9.0	1430	#24	Red
A-18318	4 BANK RESET	6.7	1130	#24	Orange
A-19300	BALL KICKER	7.8	1075	#25	Orange
A-20095	SUPER FLIPPER	1.55/35.5	450/900	#22/31	Red
A-21741	UP KICKER	2.5	575	#23	Orange
A-24161	INTERMEDIATE FLIPPER	2.2/40	520/1050	#23/31	Blue
RELAY COILS					
A-16890	Q, T, AND COIN LOCKOUT RELAYS	231.0	4000	#35	Orange
A-20558	GATE RELAY	156.0	3400	#34	White
A-18642	MEMORY/ DROP TARGETS	58.0	1590	#33	White
A-19508	MEMORY/ DROP TARGETS	35.0	1250	#32	YELLOW

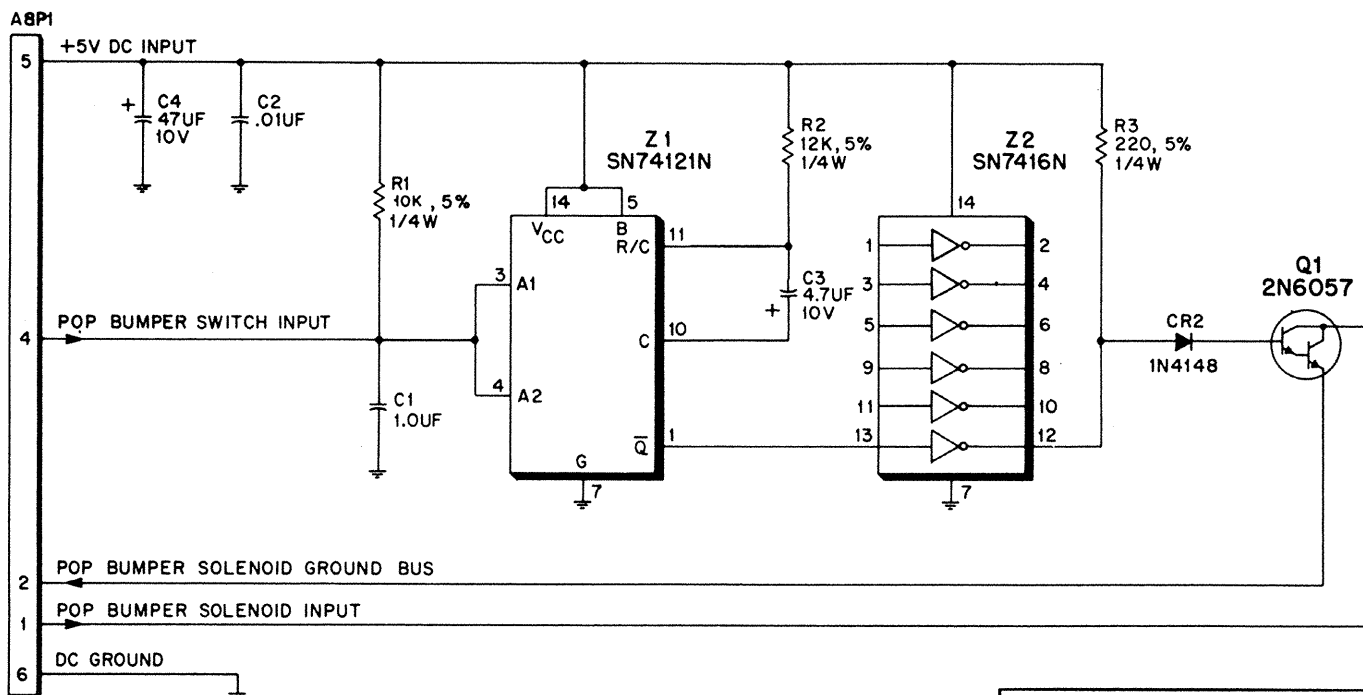
*Coils may vary from game to game. Check game manual for exact coil usage.

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

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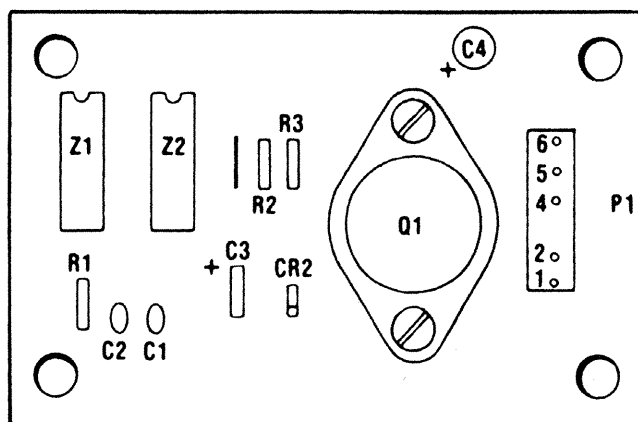
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X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



Premier Technology			
TITLE POP BUMPER DRIVER BOARD (A8)			
USED ON			
DRAWN E.P.S.	APPROVED AC	DATE 10-4-82	D-20923

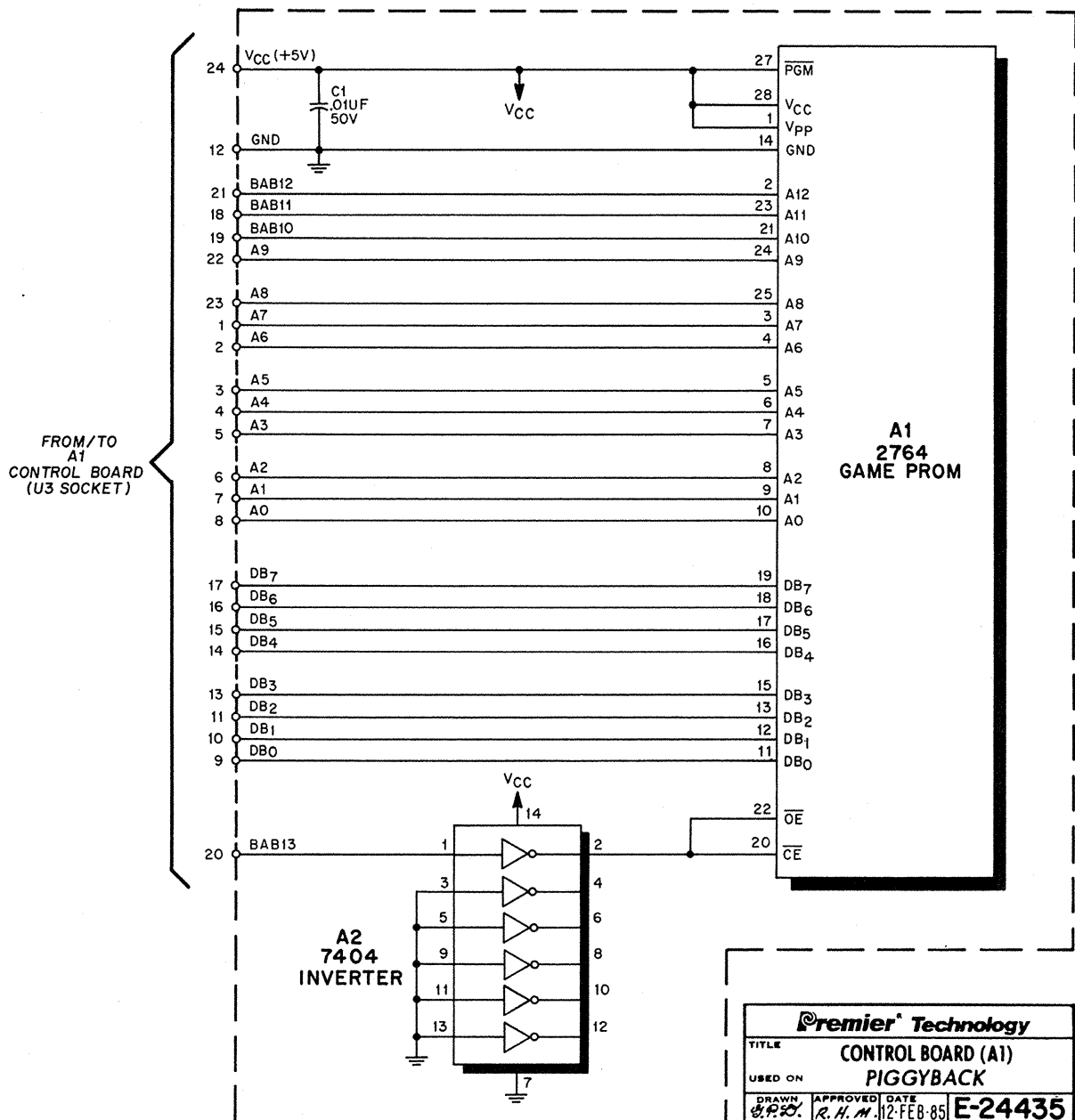
POP BUMPER DRIVER BOARD (A8) COMPONENT LOCATION



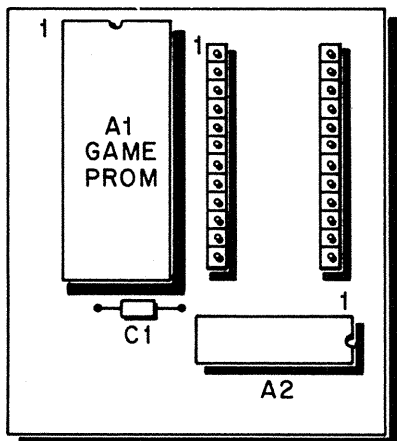
POP BUMPER DRIVER BOARD (A8) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	POP BUMPER DRIVER BOARD	A-19741
C1	Capacitor, 1 UF, 50V, Non-Polarized	XO-294
C2	Capacitor, .01 UF, 100V	XO-202
C3	Capacitor, 4.7 UF, 10%, 10V	
	Tantalum, Axial	XO-226
C4	Capacitor, 47 UF, 10V	XO-227
CR2	Diode 1N4148	XO-261
P1	Connector	XO-879
R1	Resistor, 10K ohm, 1/4W, 5%	XO-18
R2	Resistor, 12K ohm, 1/4W, 5%	XO-9
R3	Resistor, 220 ohm, 1/4W, 5%	XO-21
Q1	Transistor, Darlington 2N6057	XO-311
Z1	IC SN74121N	XO-417
Z2	IC SN7416N	XO-405

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



CONTROL BOARD (A1), PIGGYBACK COMPONENT LOCATION

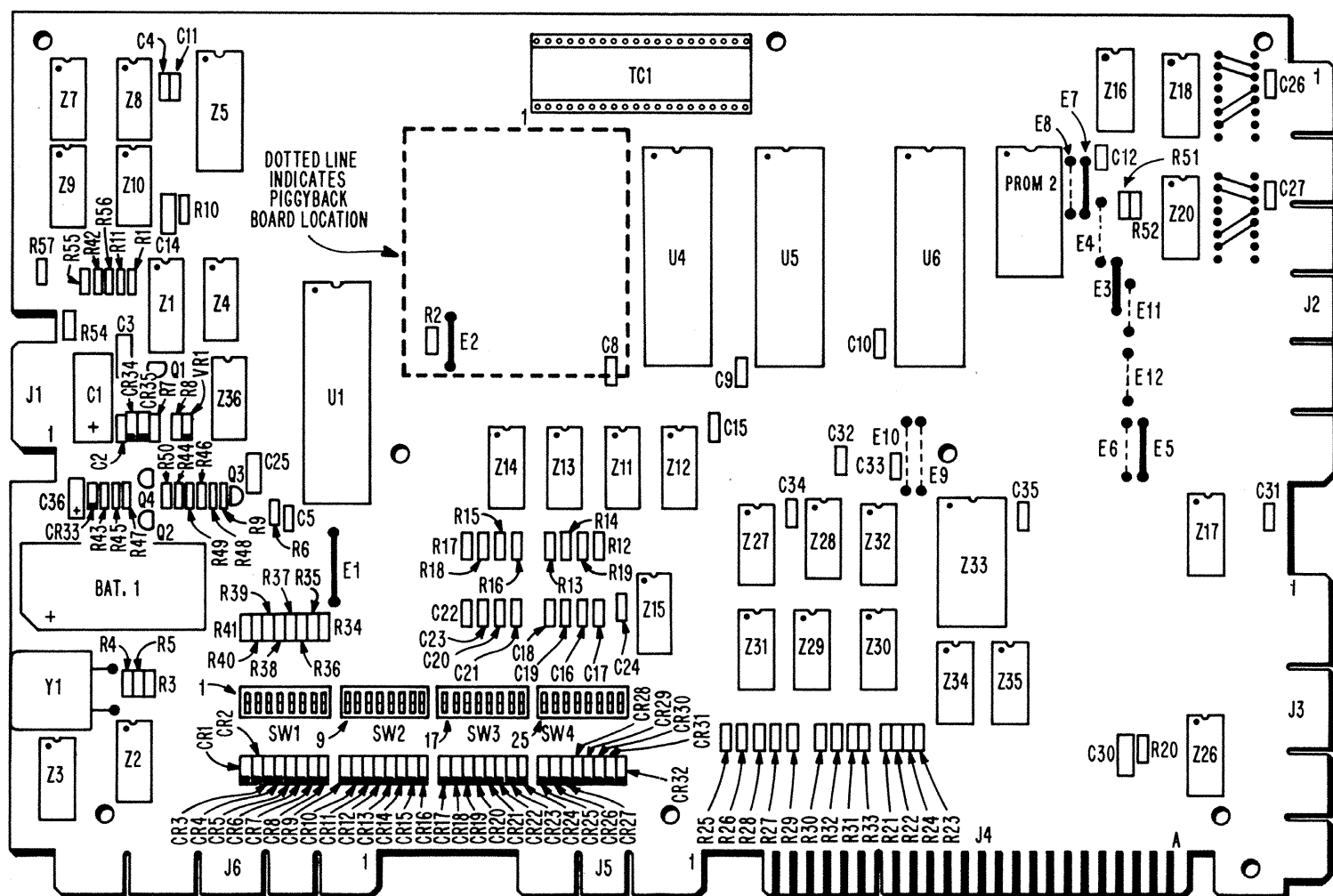


CONTROL BOARD (A1), PIGGYBACK PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
A1	Control Board (A1), Piggyback	MA689
A2	Game Prom, 2764	XO-489
	IC, 7404 Inverter	XO-402
C1	Capacitor, .01uF, +80% -20%, 50V	XO-229
	Socket, 28 Pin	XO-536

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

CONTROL BOARD (A1) COMPONENT LOCATION



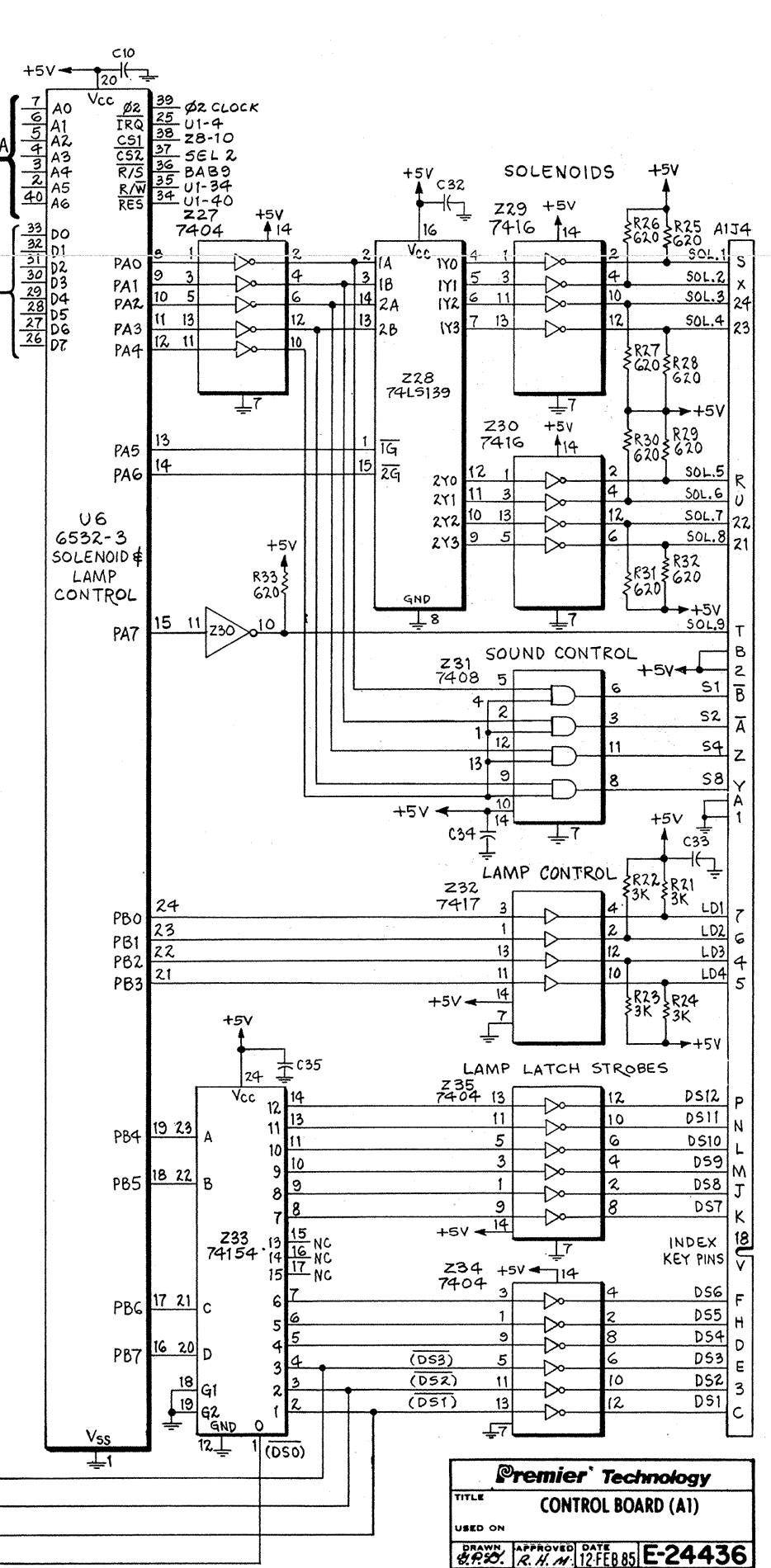
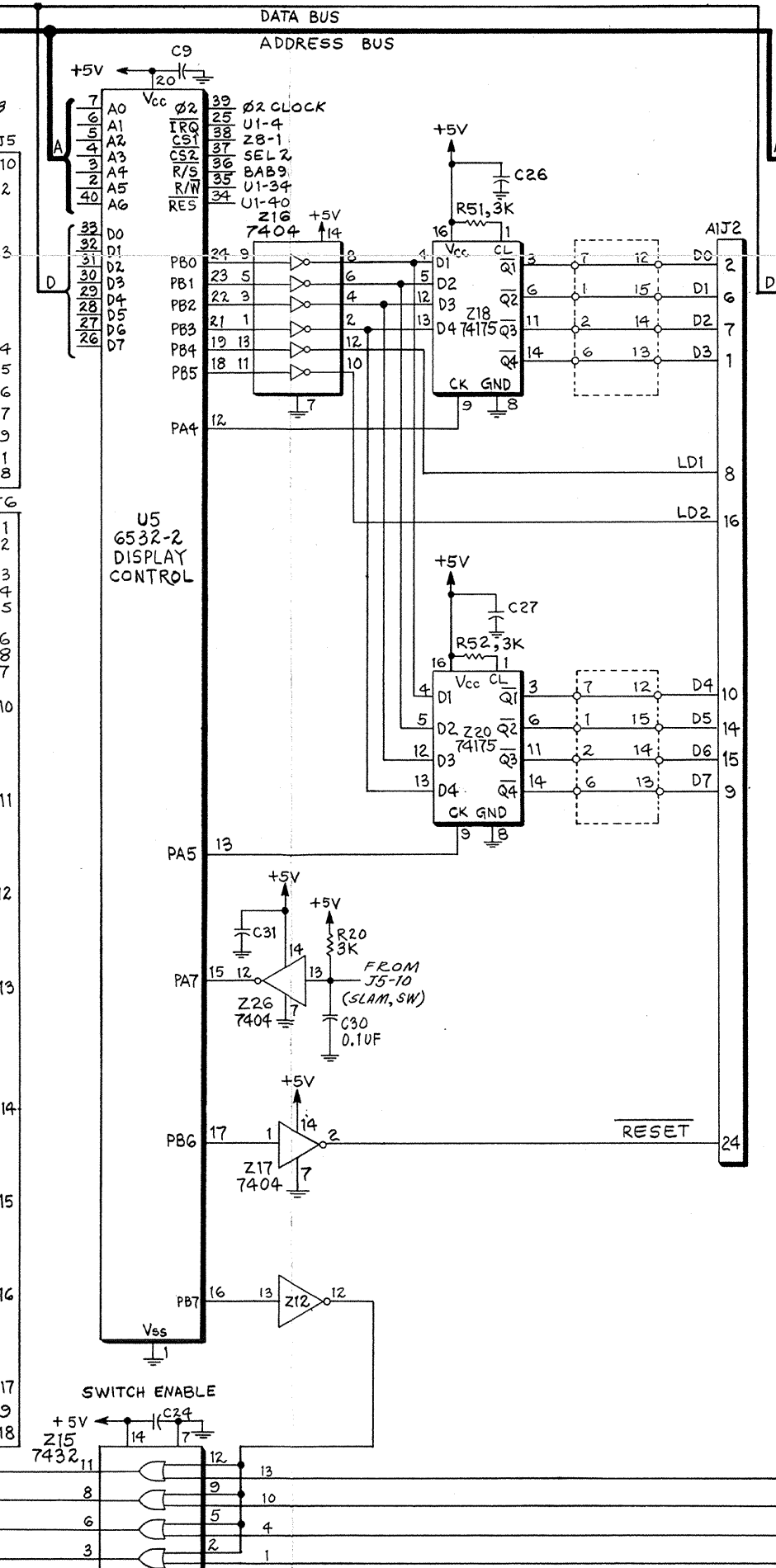
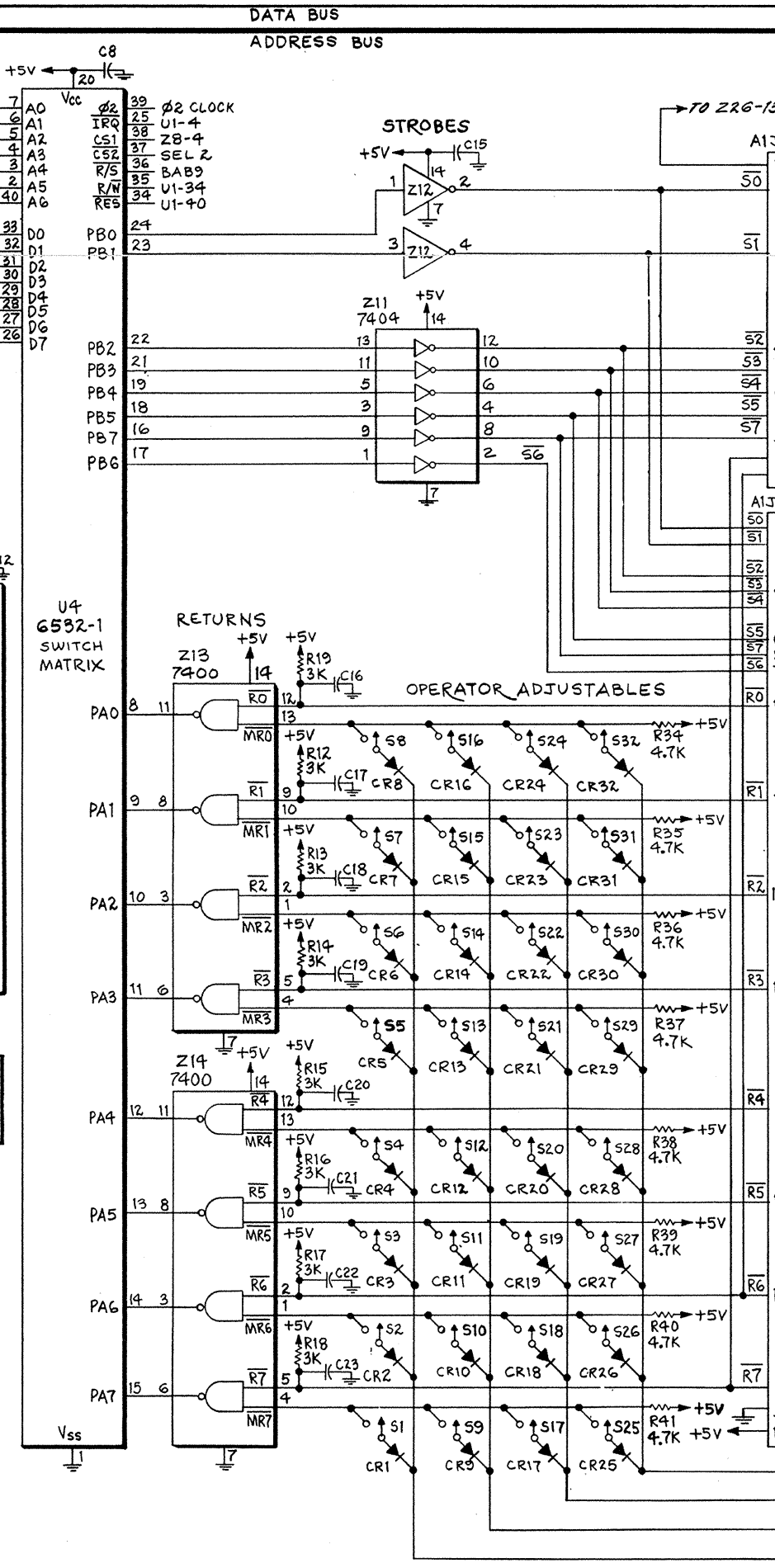
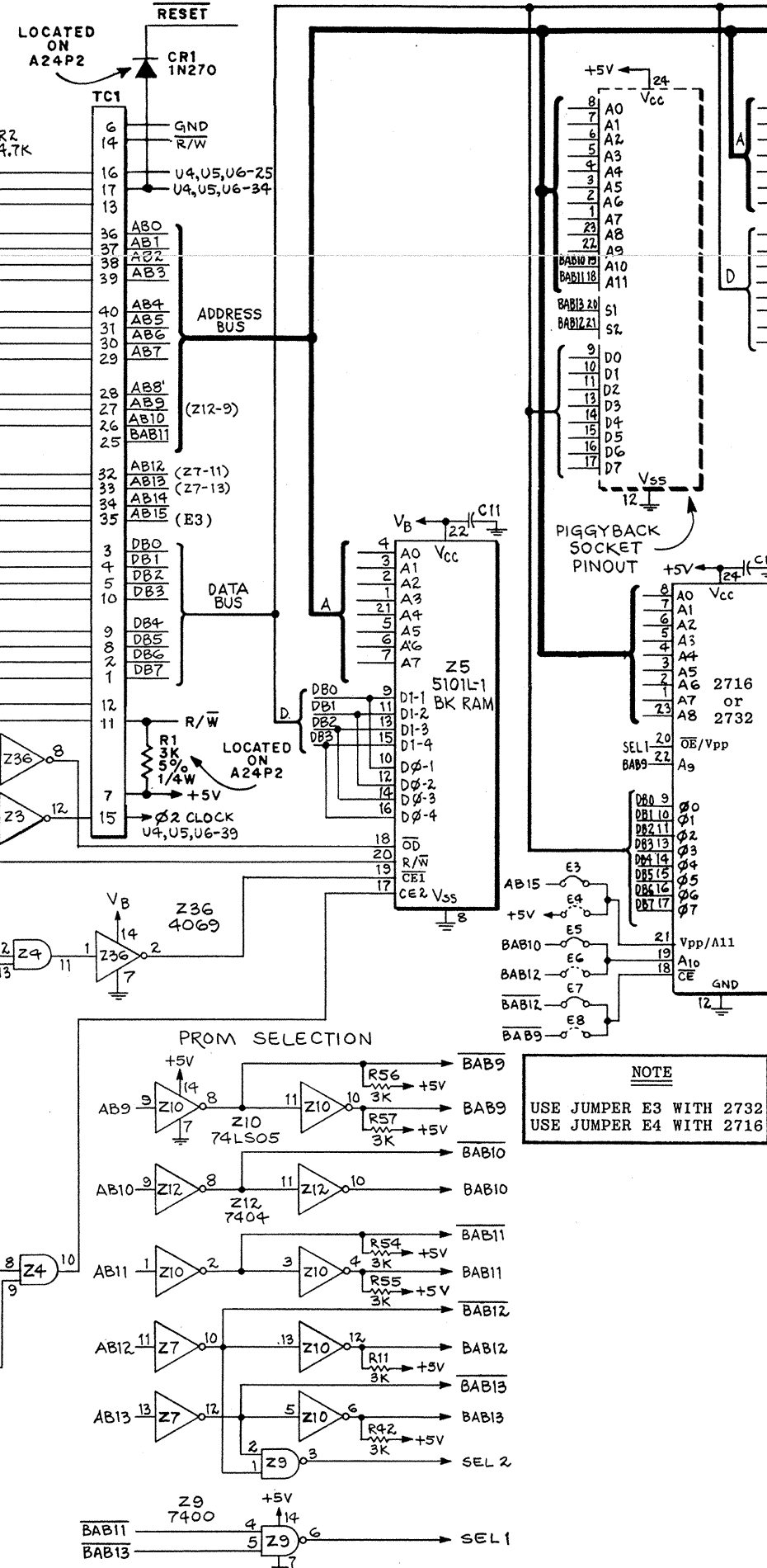
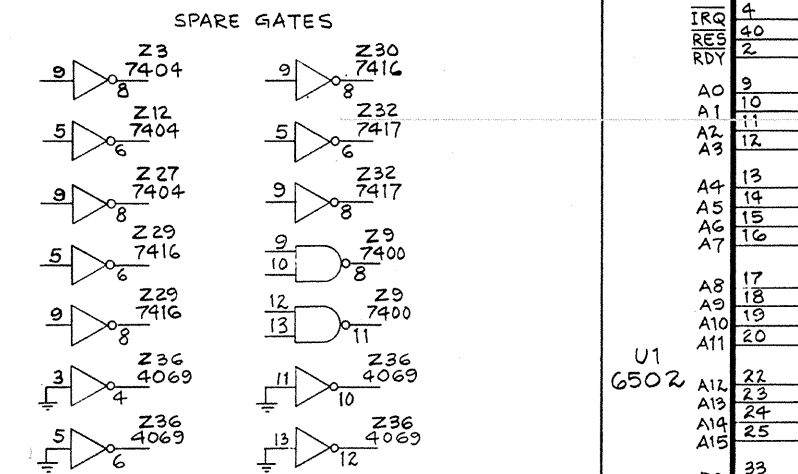
CONTROL BOARD (A1) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER	REFERENCE	DESCRIPTION	PART NUMBER
	CONTROL BOARD	MA-1133	R47	Resistor, 24K ohm, 5%, 1/4W	XO-10
Bat. 1	Battery-3.6V NI-CAD	XO-458	SW1-SW4	Dip Switch 1008-692	XO-505
C1	Capacitor, 100 mfd., 10V	XO-211	TC1	Socket, 40 Pin 640379-3	XO-530
C2, C4, C5,	Capacitor, .01 mfd., 50V	XO-229	U1	CPU R6502 P	XO-360
C8-C12,			U4, U5, U6	PRIOT R6532 P	XO-361
C15-C24,			VR1	Diode-3.0V, 5% 1N5225B or 1N5987B	XO-269
C26, C27,			Y1	Crystal, 3.579545 MHZ	XO-456
C31-C35			Z1	IC-Cmos-Dual 1 Shot SCL4528BE	XO-414
C3, C14, C25,	Capacitor, .1 mfd., 50V	XO-230	Z2	IC-Dual Flip Flop SN7474N	XO-423
C30			Z3, Z11, Z12,	IC-Hex Inverter SN7404N	XO-402
C36	10 mfd., 10V, TNT-AX CAP	XO-209	Z16, Z17,		
CR1-CR35	Diode, GP 1N4148	XO-261	Z26, Z27, Z34,		
Q1, Q4	Transistor-PNP MPS-A70	XO-309	Z35		
Q2, Q3	Transistor, NPN (Motorola) 2N4400	XO-313	Z4	IC-Cmos-Quad 2 Input	
R1, R6	Resistor, 3.0K ohm, 5%, 1/4W	XO-23		"And" SCL4081BE	XO-401
R11-R24			Z5	IC-Static Ram S5101-L	XO-356
R42, R45,			Z7	IC-Hex Inverter SN74LS04N	XO-418
R46, R48,			Z8	IC-2 Input "Nor" SN7402N	XO-421
R51, R52,			Z9, Z13, Z14	IC-2 Input "Nand" SN7400N	XO-420
R54-R57			Z10	IC-Open Collector Inverter SN74LS05N	XO-411
R2, R34-R41	Resistor, 4.7K ohm, 5%, 1/4W	XO-7	Z15	IC-2 Input "Or" SN7432N	XO-407
R3, R43, R49	Resistor, 5.6K ohm, 5%, 1/4W	XO-19	Z18, Z20	IC-"D" Flip Flop SN74175N	XO-410
R4, R5, R44	Resistor, 2.0K ohm, 5%, 1/4W	XO-14	Z33	IC-4-16 Decoder SN74154N	XO-409
R7	Resistor, 62 ohm, 5%, 1/4W	XO-3	Z28	IC-2 to 4 Decoder SN74LS139N	XO-419
R8, R50	Resistor, 180 ohm, 5%, 1/4W	XO-24	Z29, Z30	IC-Hex Inverter-OC/HV SN7416N	XO-405
R9	Resistor, 1K ohm, 5%, 1/4W	XO-5	Z31	IC-2 Input "And" SN7408N	XO-404
R10	Resistor, 2.7M ohm, 5%, 1/4W	XO-13	Z32	IC-Hex Buffer-OC SN7417N	XO-406
R25-R33	Resistor, 620 ohm, 5%, 1/4W	XO-4	Z36	IC-Cmos SCL4069B	XO-424
				Socket 24 Pin 640361-3	XO-529

CONTROL BOARD (A1), PIGGYBACK MA689

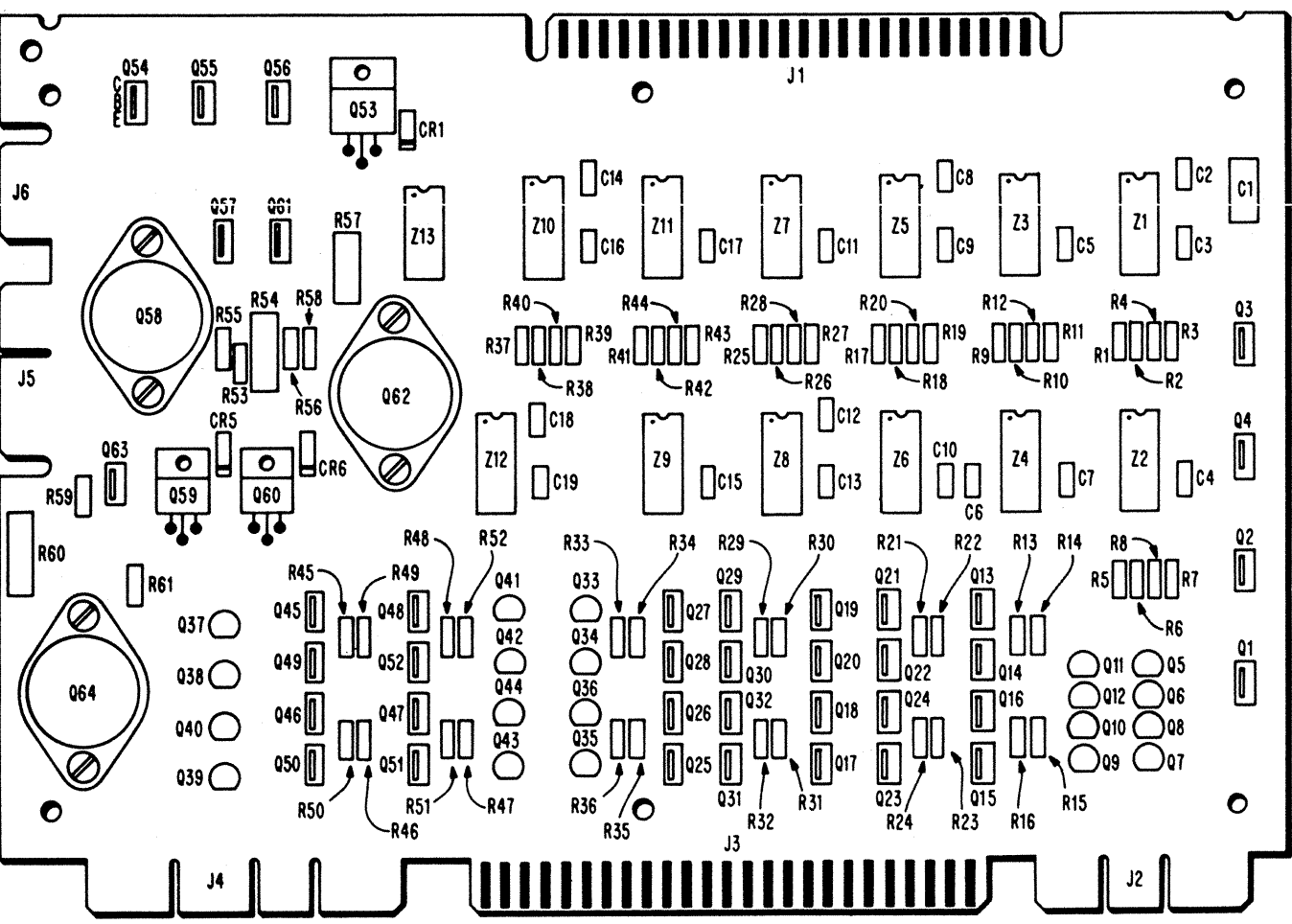
X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

NOTE: UNLESS OTHERWISE INDICATED;
1. RESISTORS ARE $\pm 5\%$, 1/4W.
2. CAPACITORS ARE .01UF, 50V.
3. DIODES ARE TYPE 1N4148.
4. REF. DESIGNATION Z6 NOT USED.



X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

DRIVER BOARD (A3) COMPONENT LOCATION

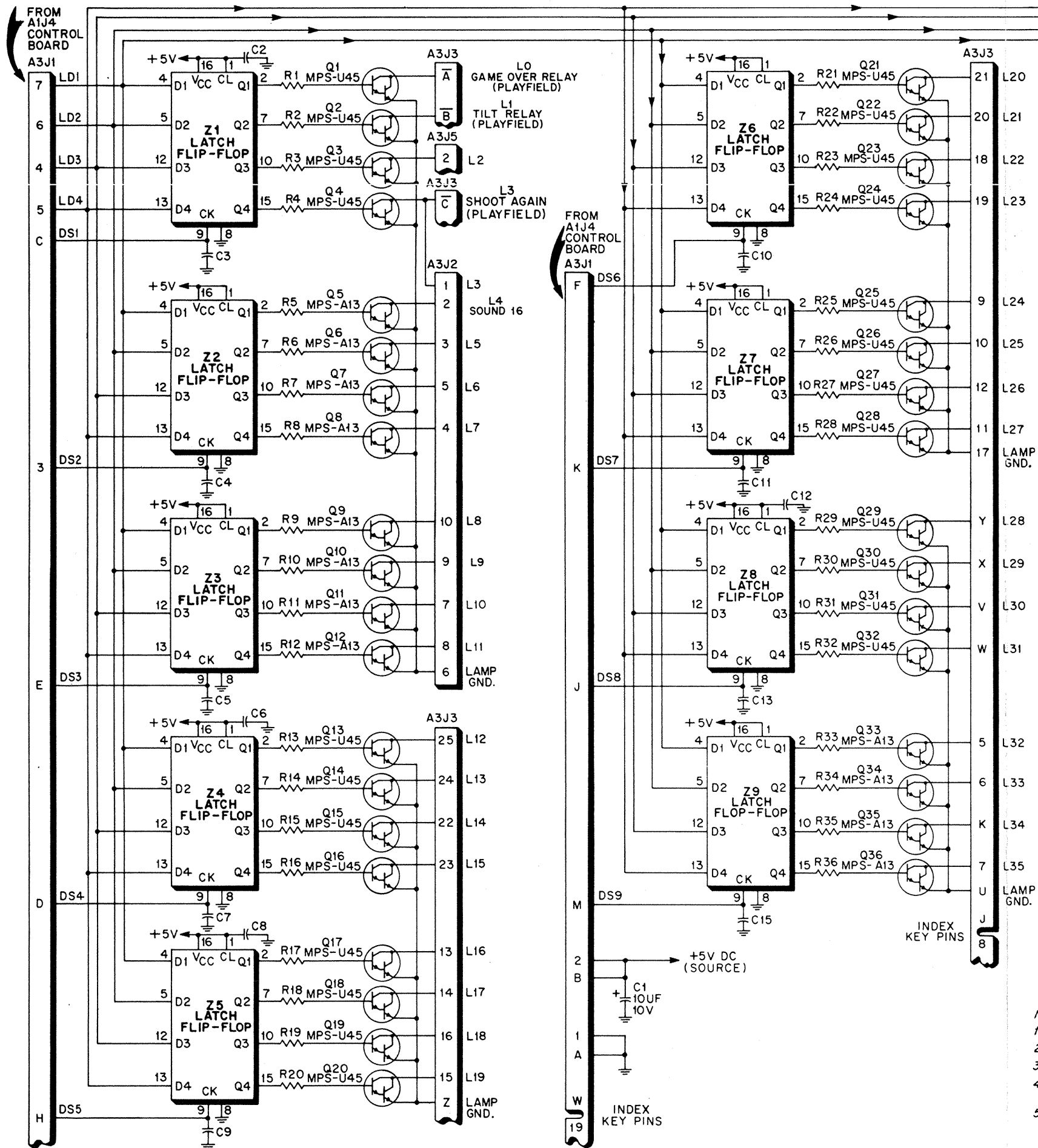


DRIVER BOARD (A3) PARTS LIST

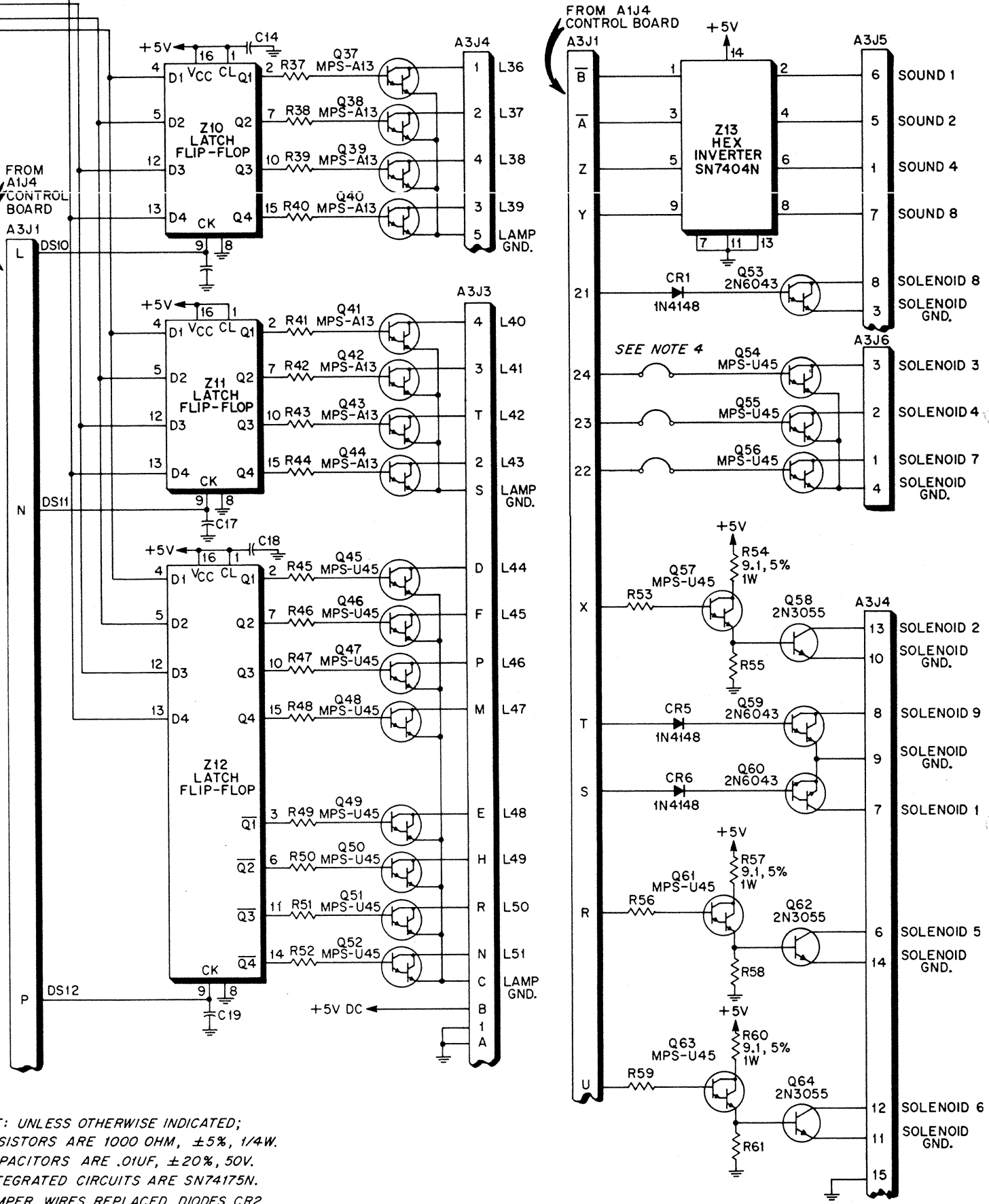
REFERENCE	DESCRIPTION	PART NUMBER
C1	DRIVER BOARD	MA-295
C2-C19	Capacitor, 10 mfd., 10V Tantalum	XO-209
CR1-CR6	Capacitor, 01 mfd., 50V Ceramic	XO-229
R1-R53, R61	Diode—Silicon 1N4148	XO-261
R55, R56, R58, R59	Resistor 10K ohm, 5%, 1/4W	XO-5
R54, R57, R60	Resistor, 91 ohm, 5%, 1W	XO-158
Q1-Q4, Q13- Q32, Q45-Q52, Q54-Q57, Q61, Q63	Transistor, NPN, Darlington MPS-U45	XO-306
Q5-Q12, Q33-Q44	Transistor, NPN, Darlington MPS-A13	XO-304
Q53, Q59, Q60	Transistor, NPN, Darlington 2N6043	XO-303
Q58, Q62, Q64	Transistor, NPN, 2N3055	XO-301
Z1-Z12	IC—Quad "D" Latch Flip Flop SN74175N	XO-410
Z13	IC—Hex Inverter SN7404N	XO-402
	Insulator—Thermalloy 43-03-4	XO-512

NOTE:
1. JUMPER WIRES REPLACED DIODES CR2,
CR3 AND CR4 FOR SYSTEM BOA AND BOB GAMES.
2. TRANSISTOR TYPES MPS-U45 AND
M5D-U45 ARE INTERCHANGEABLE.

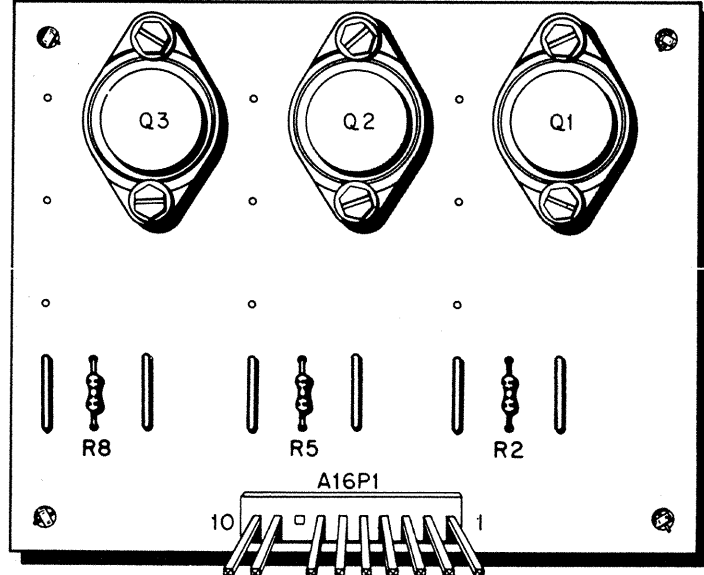
X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



NOTE: UNLESS OTHERWISE INDICATED;
1. RESISTORS ARE 1000 OHM, $\pm 5\%$, 1/4W.
2. CAPACITORS ARE .01UF, $\pm 20\%$, 50V.
3. INTEGRATED CIRCUITS ARE SN74175N.
4. JUMPER WIRES REPLACED DIODES CR2,
CR3 AND CR4 FOR SYSTEM BOA AND BOB GAMES.
5. TRANSISTOR TYPES MPS-U45 AND
M5D-U45 ARE INTERCHANGEABLE.



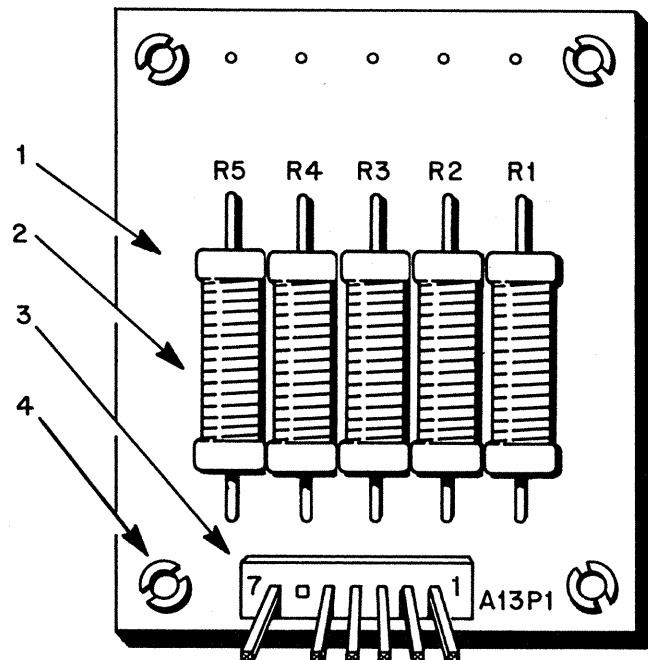
TRANSISTOR DRIVER BOARD (A16) COMPONENT LOCATION



TRANSISTOR DRIVER BOARD (A16) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Transistor Driver Board Assembly (1A16)	MA-1012
Q1, Q2	Transistor, MJ2955	XO-799
Q3	Transistor, 2N5879	XO-323
R2, R5, R8	Resistor, 4.7K Ohm, 5%, 1/4W	XO-7
P1	10 Position Connector	XO-879
	Circuit Board Support (4)	MP-40

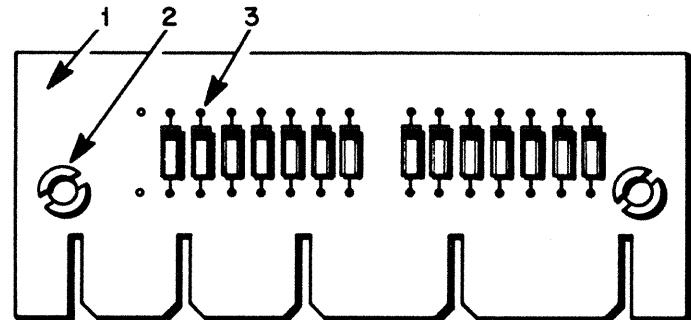
RESISTOR BOARD (A13)



RESISTOR BOARD (A13) PARTS LIST

ITEM	DESCRIPTION	PART NO.
1	Resistor Board Assembly (A13)	MA-1123
2	Resistor, 4 Ohm, 7W, 5%, WW (5)	XO-878
3	7 Position Connector (A13P1)	XO-879
4	Spacer (4)	23984

DIODE BOARD (A7)

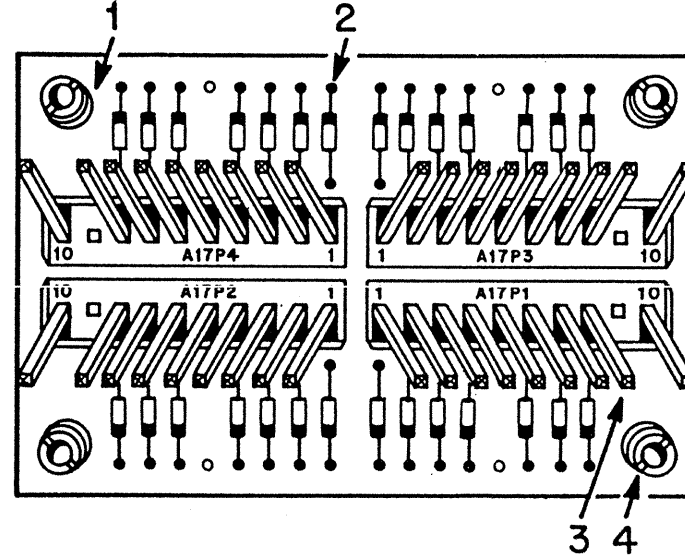


DIODE BOARD (A7) PARTS LIST

ITEM	DESCRIPTION	PART NO.
1	Diode Board Assembly (A7)	26091
2	Spacer (2)	23984
3	Diode, 1N270 (14)	XO-265

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

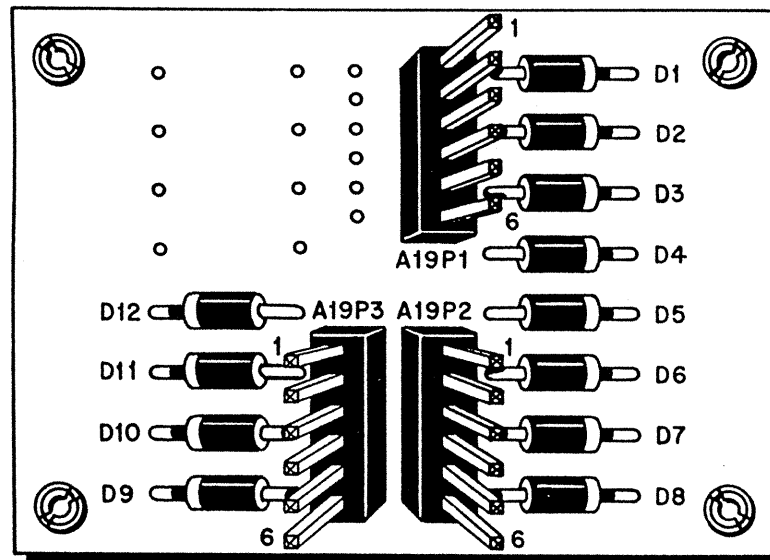
DIODE BOARD (A17)



DIODE BOARD (A17)

ITEM	DESCRIPTION	PART NO.
1	Diode Board Assembly (1A17)	MA-1216
2	Diode, 1N270 (28)	XO-265
3	10 Position Connector (4)	XO-879
4	Spacer (4)	23894

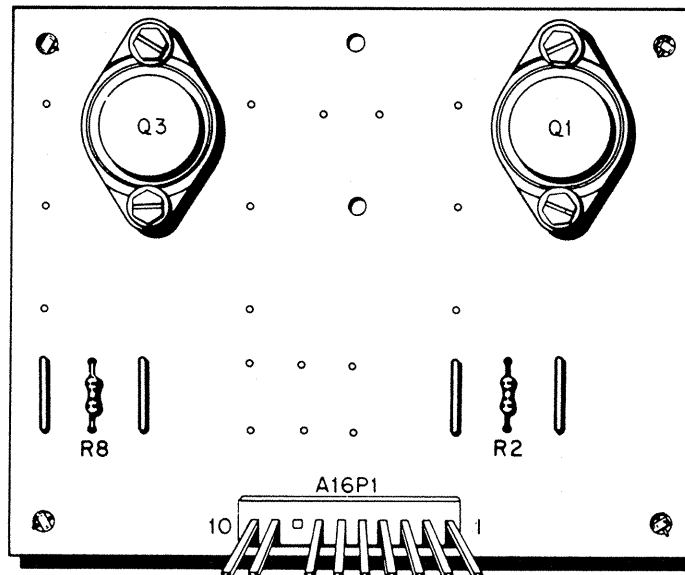
SWITCHING DIODE BOARD (A19)



SWITCHING DIODE BOARD (A19)

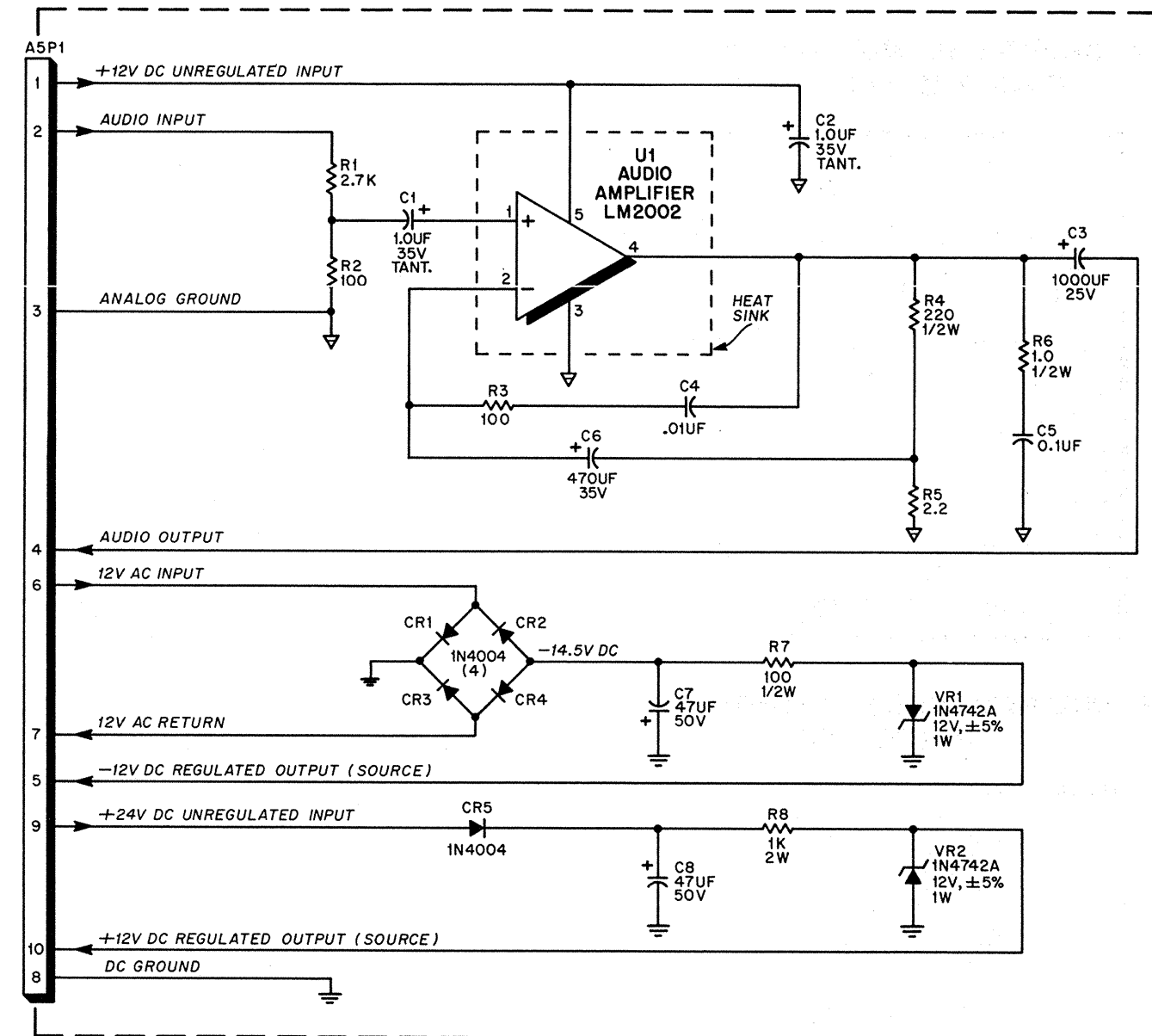
ITEM	DESCRIPTION	PART NO.
D1-D14	Switching Diode Assembly (1A19)	MA-1215
A19P1-A19P3	Diode, 1N5401 (12)	XO-263
	6 Position Connector (3)	XO-897
	Spacer (4)	23984

TRANSISTOR DRIVER BOARD (A16) COMPONENT LOCATION

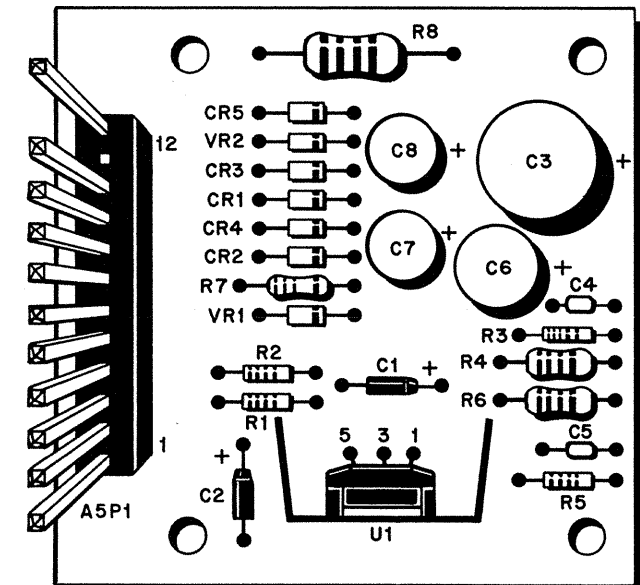


TRANSISTOR DRIVER BOARD (A16) PARTS LIST

REFERENCE	DESCRIPTION	PART NO.
	Transistor Driver Board Assembly (2A16)	MA-1079
Q1	Transistor, MJ2955	XO-799
Q3	Transistor, 2N5879	XO-323
R2, R8	Resistor, 4.7K Ohm, 5%, 1/4W	XO-7
P1	10 Position Connector	XO-879
	Circuit Board Support (4)	MP-40



AUXILIARY POWER SUPPLY (A5) COMPONENT LOCATION

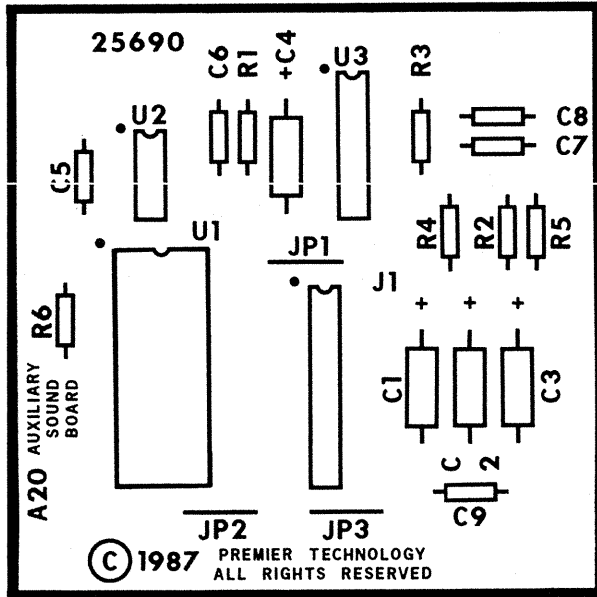


AUXILIARY POWER SUPPLY (A5) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Auxiliary Power Supply	MA-1017
C1, C2	Capacitor, 10UF, 10%, 35V, TANT	XO-715
C3	Capacitor, 1000UF, 25V	XO-874
C4	Capacitor, .01UF, +80% -20%, 50V	XO-229
C5	Capacitor, 0.1UF, +80% -20%, 50V	XO-230
C6	Capacitor, 470UF, 35V	XO-284
C7, C8	Capacitor, 47UF, 50V	XO-210
CR1-CR5	Diode, 1N4004	XO-254
R1	Resistor, 2.7K Ohm, 5%, 1/4W	XO-6
R2, R3	Resistor, 100 Ohm, 5%, 1/4W	XO-28
R4	Resistor, 220 Ohm, 5%, 1/2W	XO-185
R5	Resistor, 2.2 Ohm, 5%, 1/4W	XO-595
R6	Resistor, 1 Ohm, 5%, 1/2W	XO-593
R7	Resistor, 100 Ohm, 5%, 1/2W	XO-52
R8	Resistor, 1K Ohm, 5%, 2W	XO-627
U1	Audio Amplifier, LM2002	XO-550
VR1, VR2	Diode, Zener, 1N4742A, 12V, +5%, 1W	XO-257
	Heat Sink	XO-472
	12 Position Connector	XO-879

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

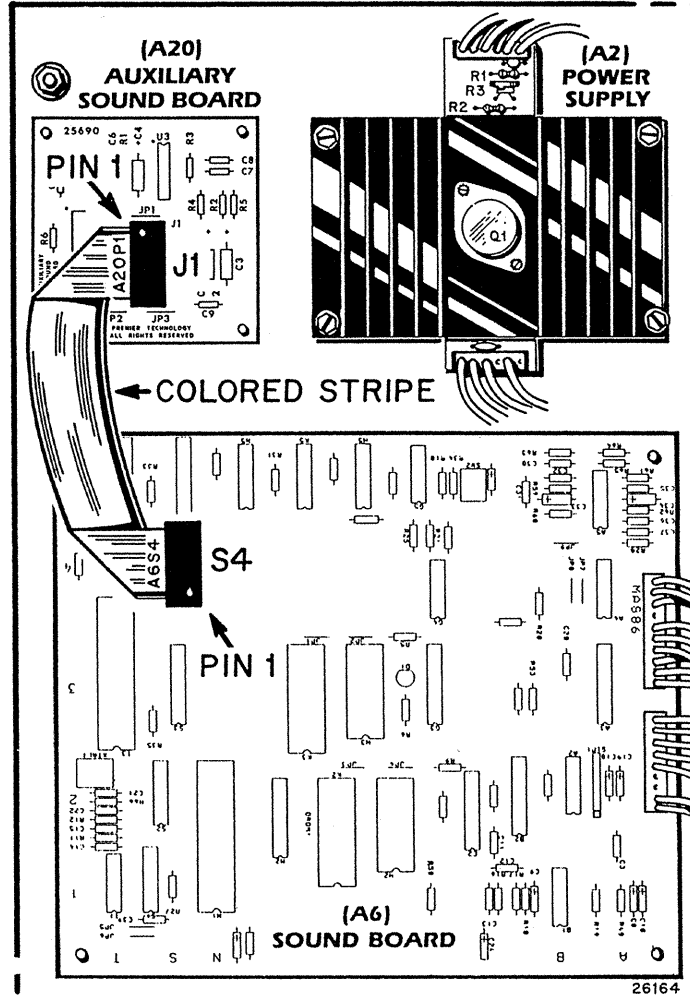
AUXILIARY SOUND BOARD (A20)
COMPONENT LOCATION



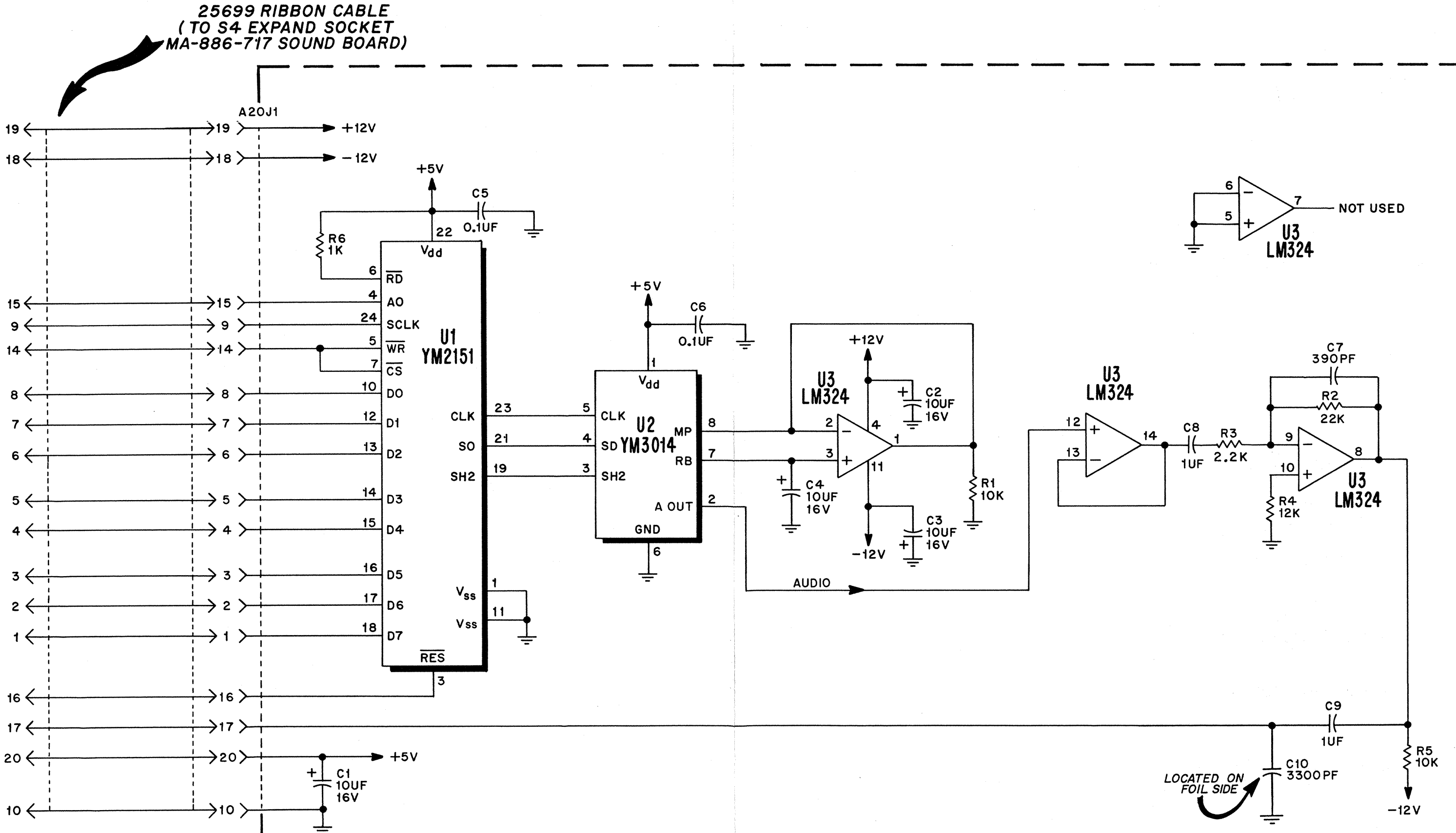
AUXILIARY SOUND BOARD (A20)
PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
C1-C4	AUXILIARY SOUND BOARD	MA-1033
C5, C6	CAPACITOR, 10UF, +80%-20%, 16V	XO-846
C7	CAPACITOR, 0.1UF, +80%-20%	XO-230
C8, C9	CAPACITOR, 390PF, 50V	XO-684
R1, R5	RESISTOR, 10K OHM, 5%, 1/4W	XO-18
R2	RESISTOR, 22K OHM, 5%, 1/4W	XO-42
R3	RESISTOR, 2.2K OHM, 5%, 1/4W	XO-27
R4	RESISTOR, 12K OHM, 5%, 1/4W	XO-9
R6	RESISTOR, 1K OHM, 5%, 1/4W	XO-5
U1	IC, SOUND CHIP, YM2151	XO-882
U2	IC, SERIAL DAC, YM3014	XO-883
U3	IC, QUAD AMP, LM324	XO-644
	JUMPER, 22 GAUGE (3)	XO-469
	SOCKET, 20 PIN DIP	XO-491
	SOCKET, 24 PIN DIP	XO-529
	RIBBON CABLE	25699
*C10	CAPACITOR, 3300PF, 10%, 100V * MOUNTED ON FOIL SIDE	XO-600

RIBBON CABLE ORIENTATION



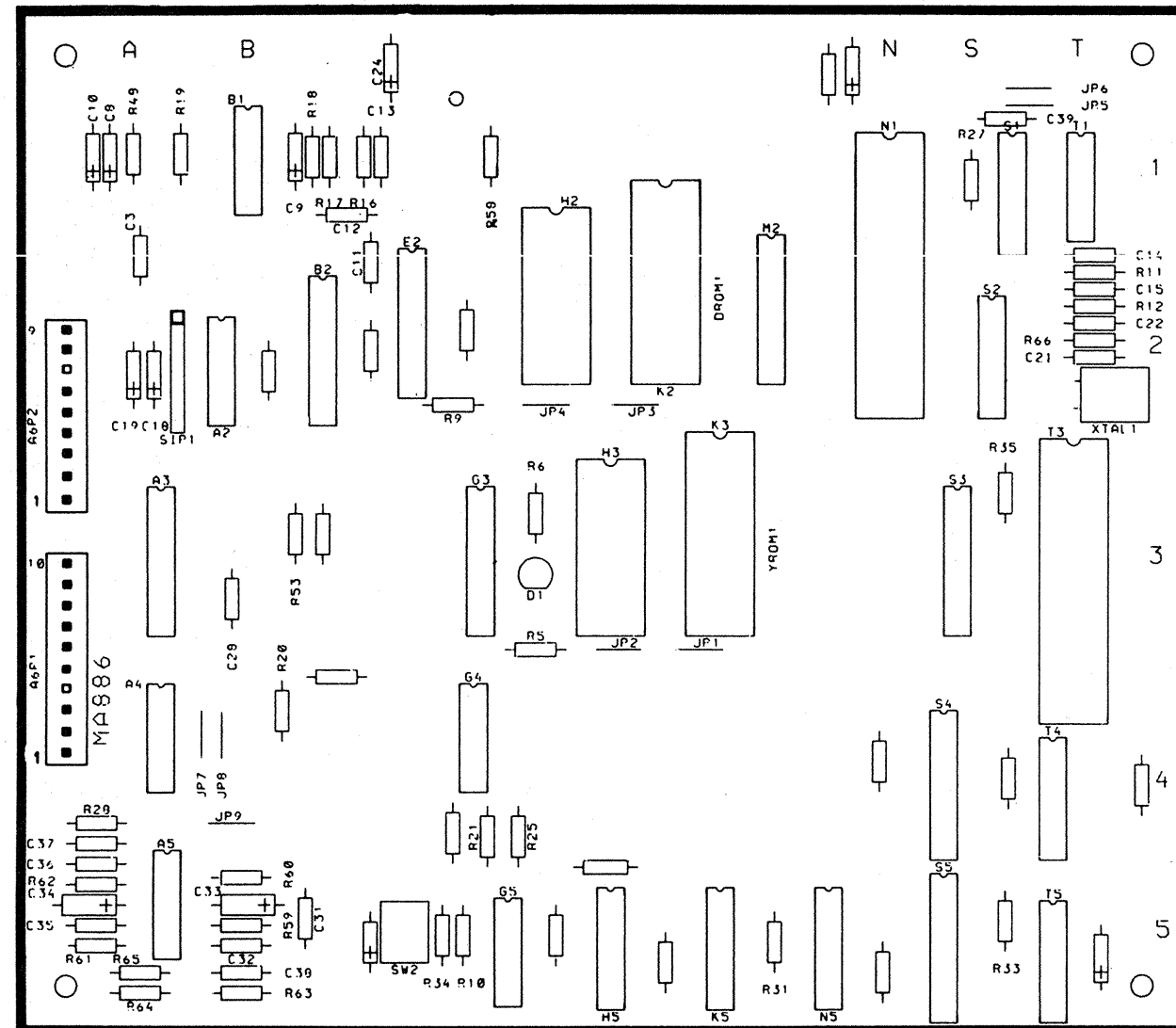
X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



Premier Technology		
TITLE		
AUXILIARY SOUND BOARD (A20)		
USED ON		
DRAWN	APPROVED	DATE
9/20/88	G.H.W.	9-20-88
E-26145		

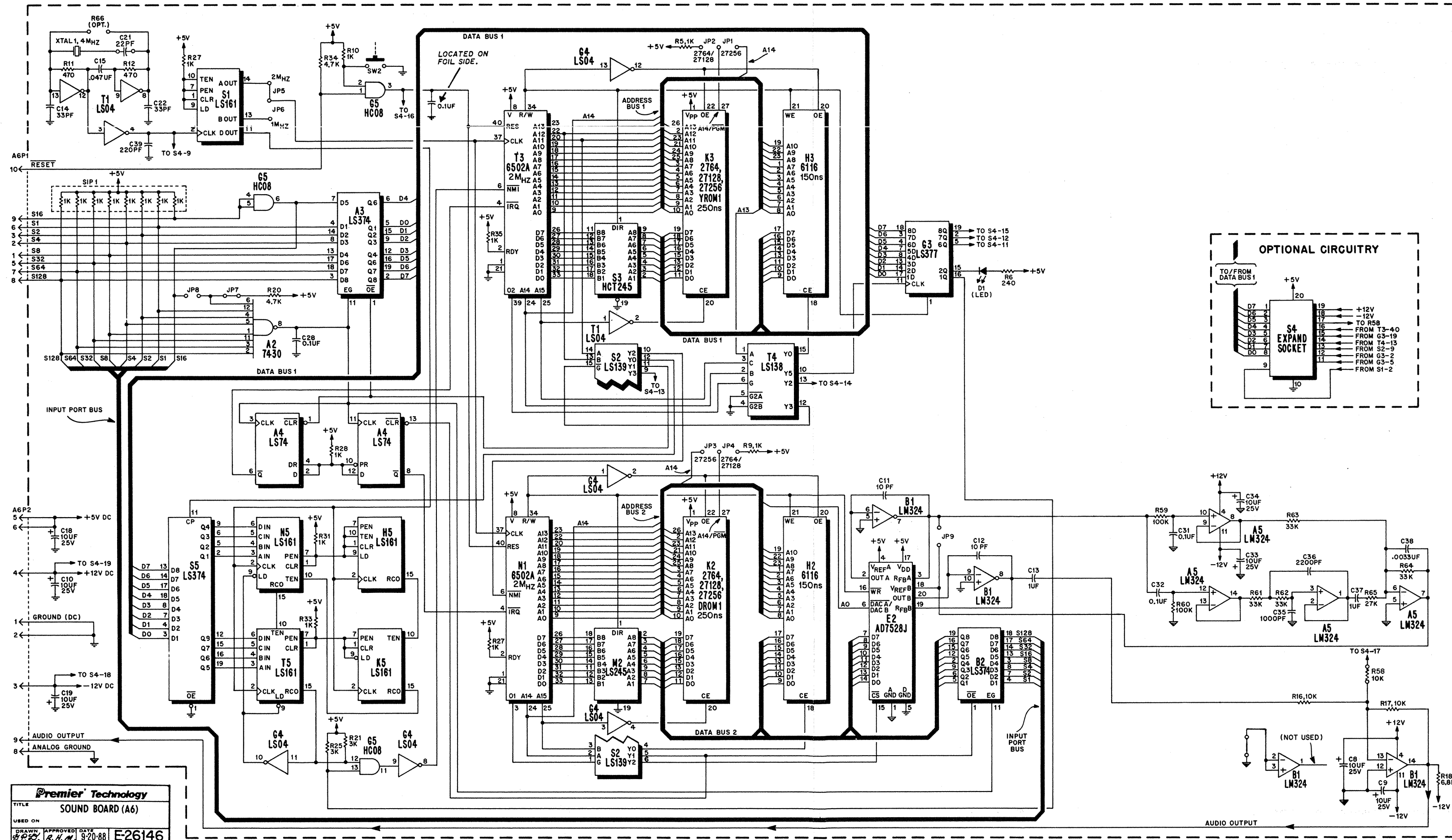
X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

SOUND BOARD (A6) COMPONENT LOCATION

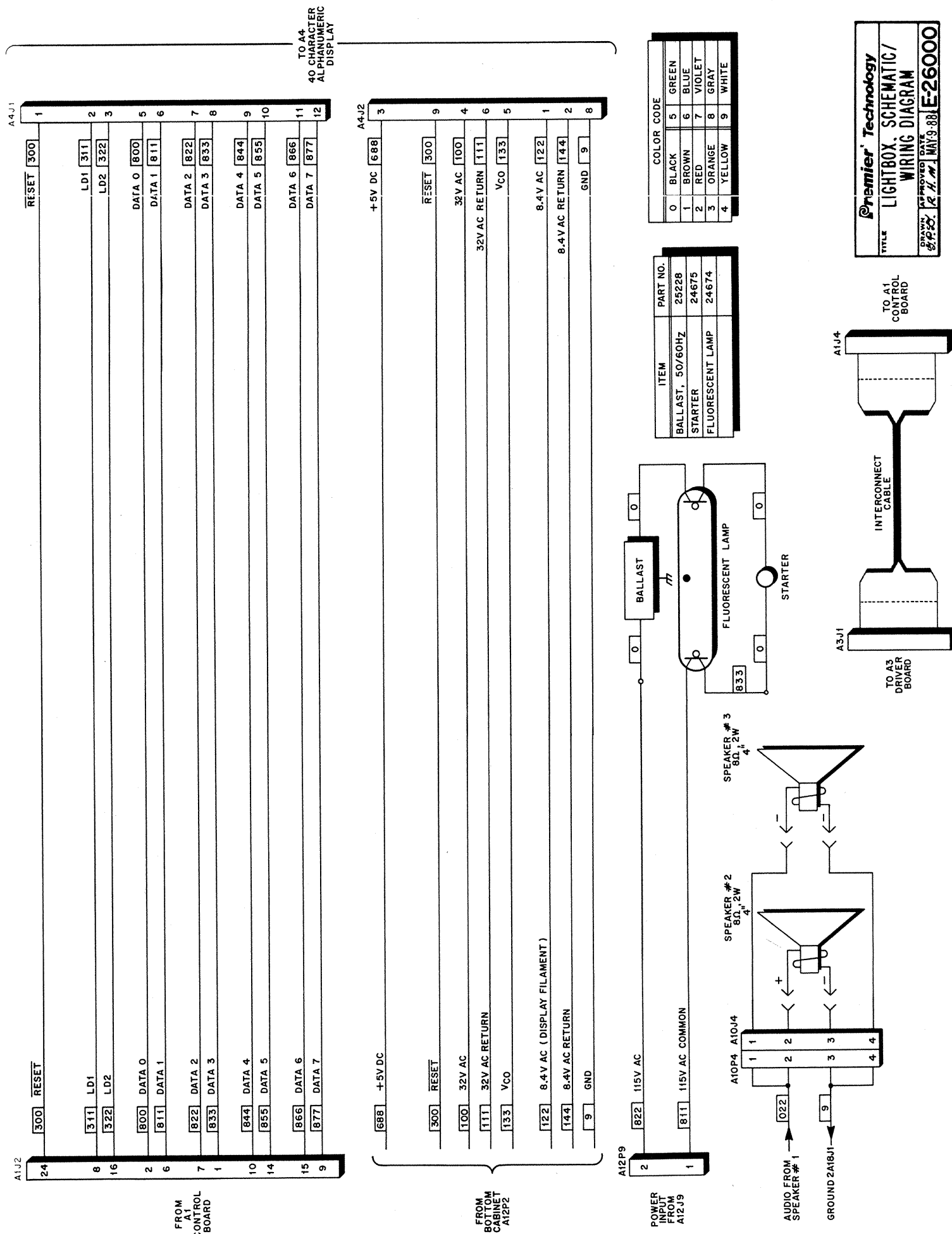


SOUND BOARD (A6) PARTS LIST

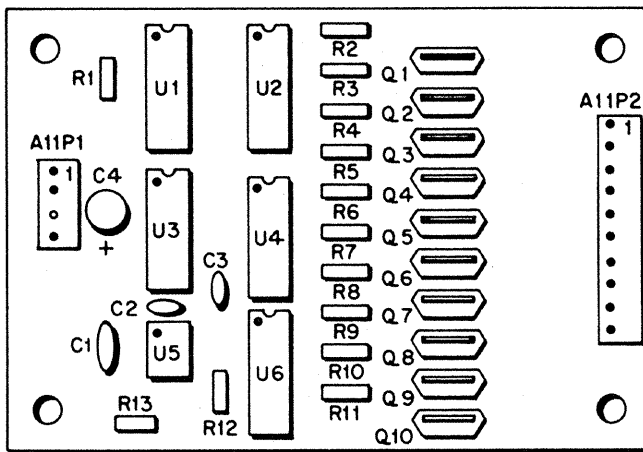
REFERENCE	DESCRIPTION	PART NUMBER	REFERENCE	DESCRIPTION	PART NUMBER
C13,C37	Sound Board Assembly	MA-866-718	R61,R62,R63,	Resistor, 33K Ohm, 5%, 1/4W	XO-43
C8,C9,C10	Capacitor, 1UF, 20% .50V(Non. Polar.)	XO-745	R64		
C18,C19,C24	Capacitor, 10UF, 20% 25V (Tantalum)	XO-127	R59,R60	Resistor, 100K Ohm, 5%, 1/4W	XO-45
C35,C34, AND THREE UNMARKED			R65	Resistor, 27K Ohm, 5%, 1/4W	XO-11
CAPACITORS			A2	IC, 7430, 8 Input NAND Gate	XO-643
C11,C12	Capacitor, 10PF, +80%-20%, 50V	XO-635	IC, 74LS374, Octal "D" Flip Flop		XO-198
C14,C22	Capacitor, 33PF, 10%, 50V	XO-896	A4	IC, 74LS274, Dual "D" Flip Flop	XO-434
C15	Capacitor, .047UF, 20%, 50V	XO-638	A5,B1	IC, LM324, Quad Op-Amp	XO-644
C21	Capacitor, 22PF, 10%, 50V	XO-633	E2	IC, 74X293, Multiplier DAC	XO-417
C28 AND FOURTEEN UNMARKED	Capacitor, 1UF, +80%-20%, 50V	XO-230	G3,N4	IC, 74LS377, Octal "P" Flip Flop	XO-97
CAPACITORS			G4,T1	IC, 74LS04, Hex Inverter	XO-418
C31,C32	Capacitor, 0.1UF, 10%, 50V	XO-784	IC, 74HC08, Quad 2 input "AND" Gate		XO-872
C35	Capacitor, 1000PF, 10%, 100V	XO-296	H2,H3	IC, 6116P-3, 2K x 1 RAM	XO-193
C36	Capacitor, 2200FF, 10%, 100V	XO-600	H5,K5,N5	IC, 74LS161, Synchronous Presettable Binary Counter	XO-440
C38	Capacitor, .0033UF, 10%, 100V	XO-600	S1,T2	IC, Specified Per Game	
D1	Capacitor, 220PF, 10%, 100V	XO-694	K2,K3	IC, 74LS245, Octal Bus Transceiver	XO-79
C39	Diode, MV552, (LED, Red)	XO-270	N1,T3	IC, 6502A, CPU	XO-893
H5,R9,R10, R27,R28,R31, R33,R35	Resistor, 1K Ohm, 5%, 1/4W	XO-5	S2	IC, 74LS139, Dual 1 of 4 Decoder	XO-419
R6	Resistor, 240 Ohm, 5%, 1/4W	XO-173	S3	IC, 74HC7245, Octal Bus Transceiver	XO-891
R11,R12	Resistor, 470 Ohm, 5%, 1/4W	XO-35	T4	IC, 74LS138, 1 of 8 Decoder	XO-437
R21,R25	Resistor, 3K Ohm, 5%, 1/4W	XO-23	S1P 1	Resistor Pack 8 x 1K Ohm	XO-493
R16,R17,R58	Resistor, 10K Ohm, 5%, 1/4W	XO-18	SW2	Switch, Pushbutton	XO-897
R18	Resistor, 6.8K Ohm, 5%, 1/4W	XO-8	XTAL 1	Crystal, 4 MHZ	XO-366
R20,R34	Resistor, 4.7K Ohm, 5%, 1/4W	XO-7	AP61,AP62	Connector (2)	XO-879
				28 Pin Dip Socket (2)	XO-536
				Jumper, 22 Gauge (7)	XO-469
				20 Pin Dip Socket	XO-491



X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



AUXILIARY LAMP DRIVER BOARD (A11) COMPONENT LOCATION

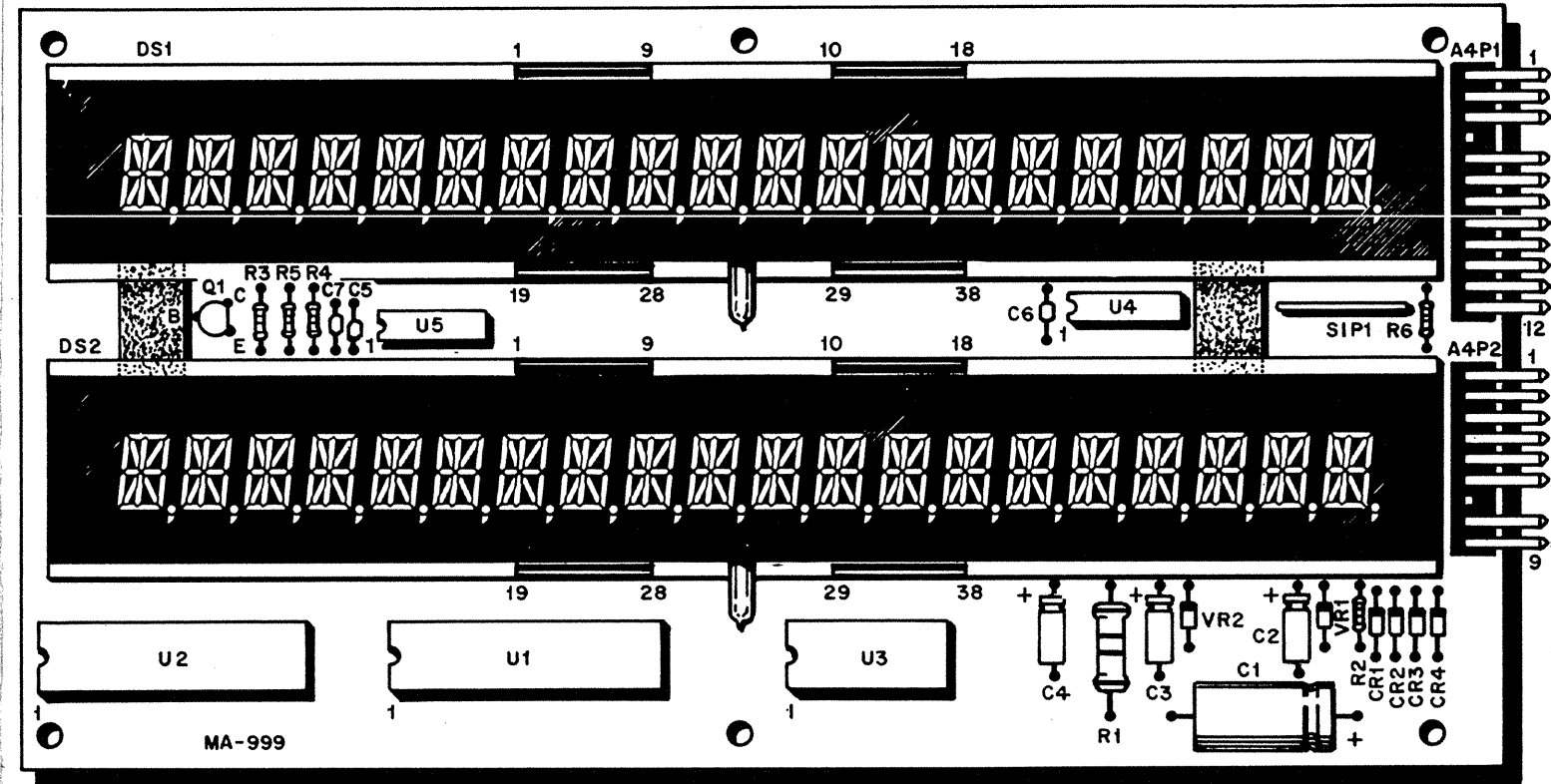


AUXILIARY LAMP DRIVER BOARD (A11) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	AUXILIARY LAMP DRIVER ASSEMBLY	MA-789
C1	CAPACITOR, .1 MFD, 100V	XO-626
C2-C3	CERAMIC RADIAL LEAD CAPACITOR, .01 MFD, 100V	XO-202
C4	RADIAL LEAD CAPACITOR, 47 MFD, 10V	XO-227
Q1-Q10	ELECTROLYTIC RADIAL LEAD TRANSISTOR, NSD-U45	XO-146
	PNP DARLINGTON	
R1,R12	RESISTOR, 3K OHM, 5%, 1/4 W	XO-23
R2-R11	RESISTOR, 12K OHM, 5%, 1/4W	XO-9
R13	RESISTOR, 680K OHM, 5%, 1/4W	XO-669
U1	I.C. 2-INPUT NAND, 7400	XO-420
U2, U6	I.C. INVERTER, 7405	XO-403
U3	I.C. DECADE COUNTER, 7490	XO-425
U4	I.C. DECODER, 7442	XO-426
U5	I.C. TIMER, NE555	XO-631
P2	10 POS. CONNECTOR	XO-879
P1	4 POS. CONNECTOR	XO-879

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

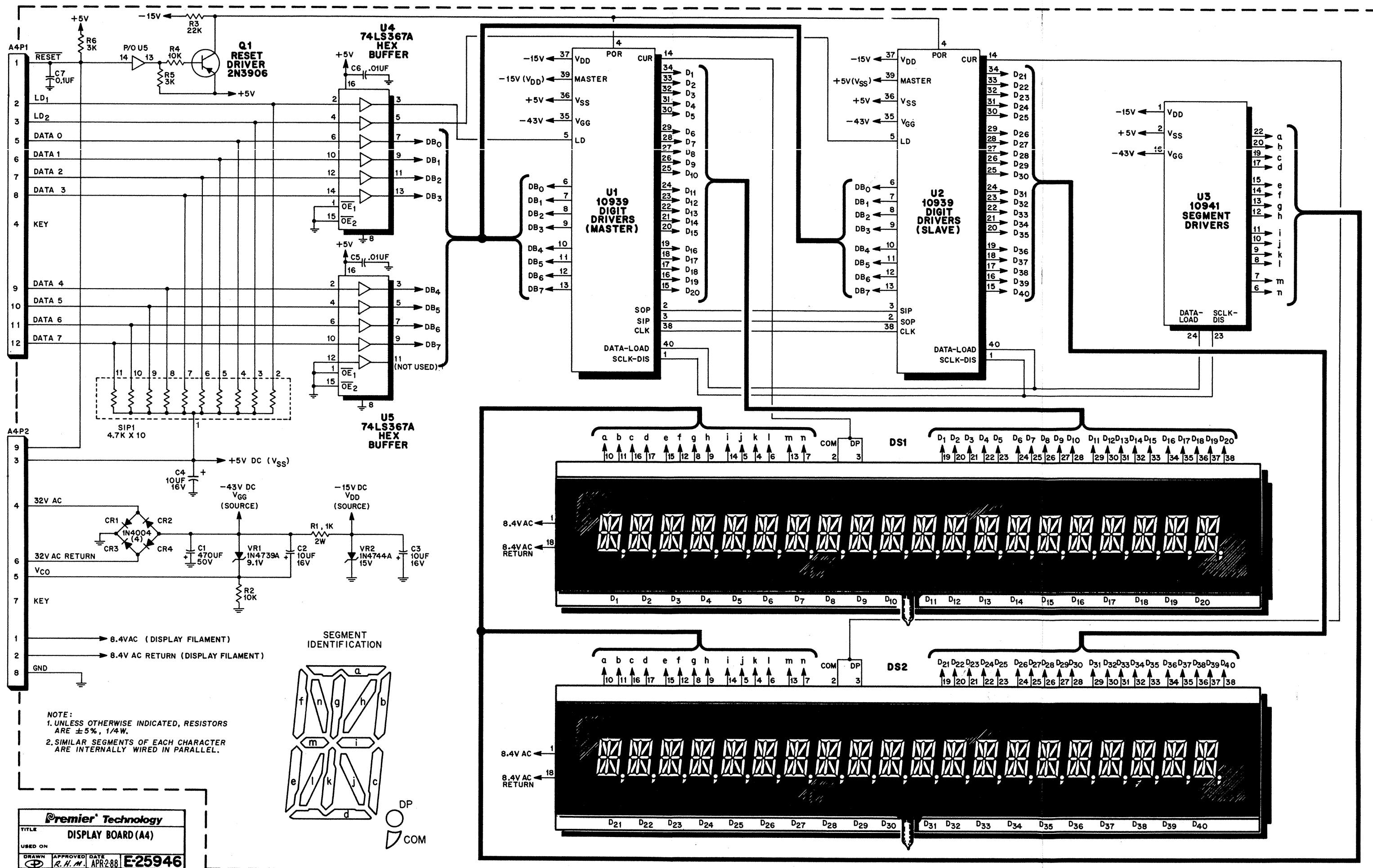
DISPLAY BOARD (A4) COMPONENT LOCATION



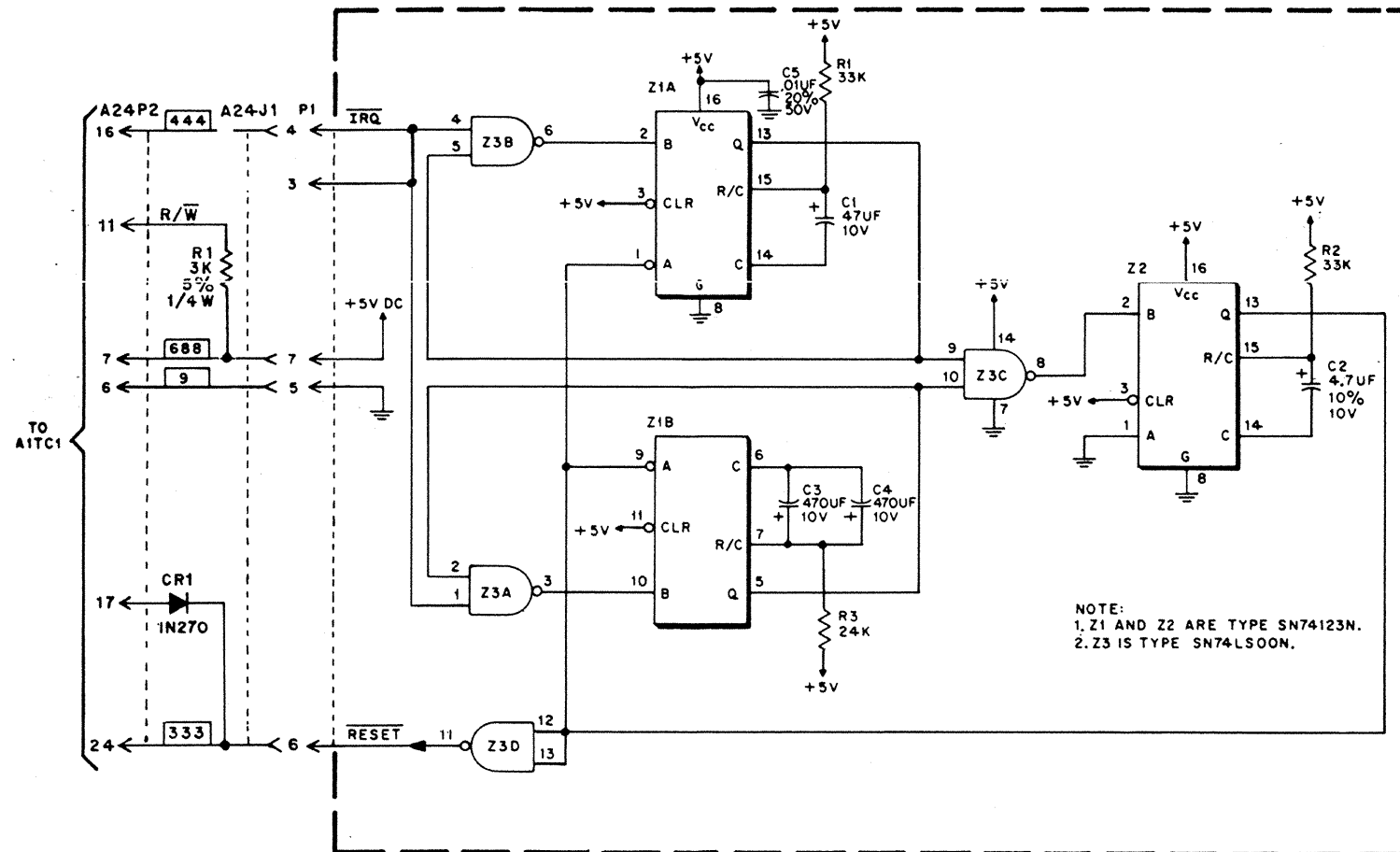
DISPLAY BOARD (A4) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Display Board Assembly	MA-999
C1	Capacitor, 470UF, 50V	XO-847
C2,C3,C4	Capacitor, 10UF, 16V, +80%-20%	XO-846
C5,C6	Capacitor, .01UF, +80%-20%	XO-229
C7	Capacitor, 0.1UF, +80%-20%	XO-230
CR1-CR4	Diode, 1N4004	XO-254
DS1,DS2	Display, Alphanumeric	XO-901
Q1	Transistor, PNP, Reset Driver, 2N3906	XO-588
R1	Resistor, 1K Ohm, 5%, 2 W, WW	XO-627
R2,R4	Resistor, 10K Ohm, 5%, 1/4 W	XO-18
R3	Resistor, 22K Ohm, 5%, 1/14 W	XO-42
R5,R6	Resistor, 3K Ohm, 5%, 1/4 W	XO-23
SI1P	Resistor Pkck, 11 Pin SIP, 4.7K Ohm x 10	XO-269
U1,U2	IC, Digit Drivers, 10939P	XO-841
U3	IC, Segment Drivers, 10941P	XO-842
U4,U5	IC, Hex Buffer, 74LS367A	XO-444
VR1	Diode, Zener, 9.1V, 1N4739A	XO-881
VR2	Diode, Zener, 15V, 1N4744A	XO-843
A4P1	12 Position Connector	XO-880-124
A4P2	9 Position Connector	XO-880-097
	Tape, Neoprene (2)	24290

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

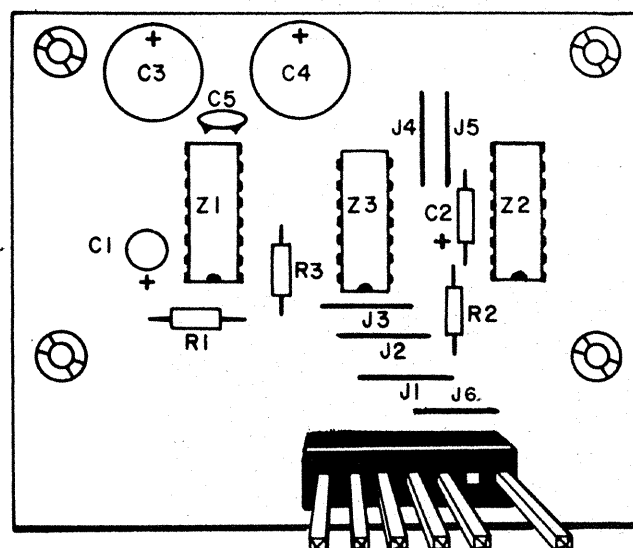


X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



Premier Technology			
RESET CIRCUIT BOARD			
USED ON			
DRAWN	APPROVED	DATE	
2/22	BAM	6 AUG 87	C-21063

**RESET BOARD (A24)
COMPONENT LOCATION**

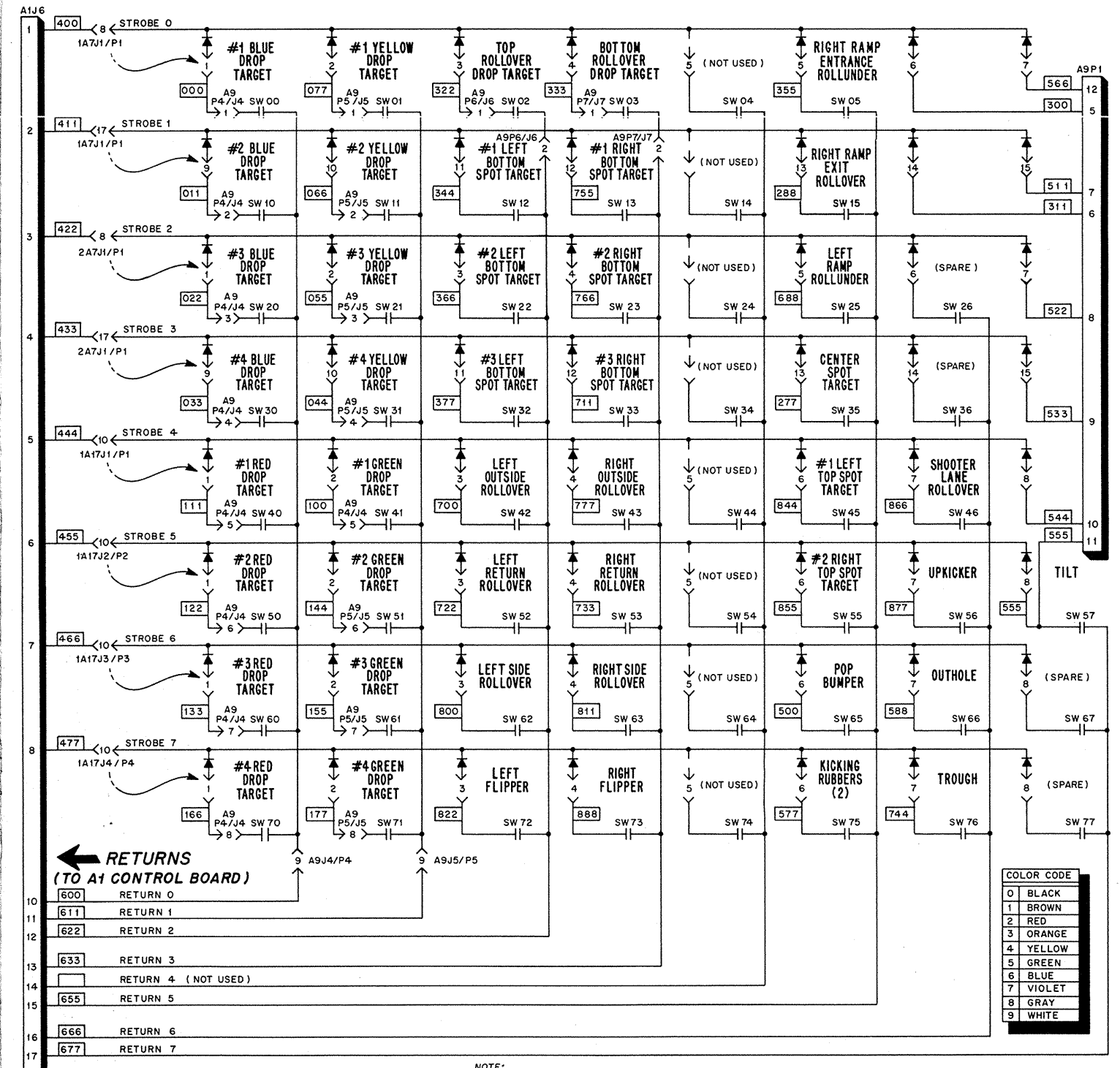


RESET BOARD (A24) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
R1, R2	Reset Board Assembly	MA-980
R3	Resistor 33K Ohm, 5%, 1/4W	XO-43
C1	Resistor 24K Ohm, 5%, 1/4W	XO-10
C2	Capacitor 47UF, 10V	XO-227
C3, C4	Capacitor 4.7UF, 10V	XO-226
C5	Capacitor 470UF, 10V	XO-214
Z1, Z2	IC, 74123N	XO-202
Z3	IC, 74LS00N	XO-398
A24P2/A24J2	Cable Assembly	XO-427
	7 Pin Connector	MA-796
		XO-879

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

**STROBES
(FROM A1 CONTROL BOARD)**



**RETURNS
(TO A1 CONTROL BOARD)**

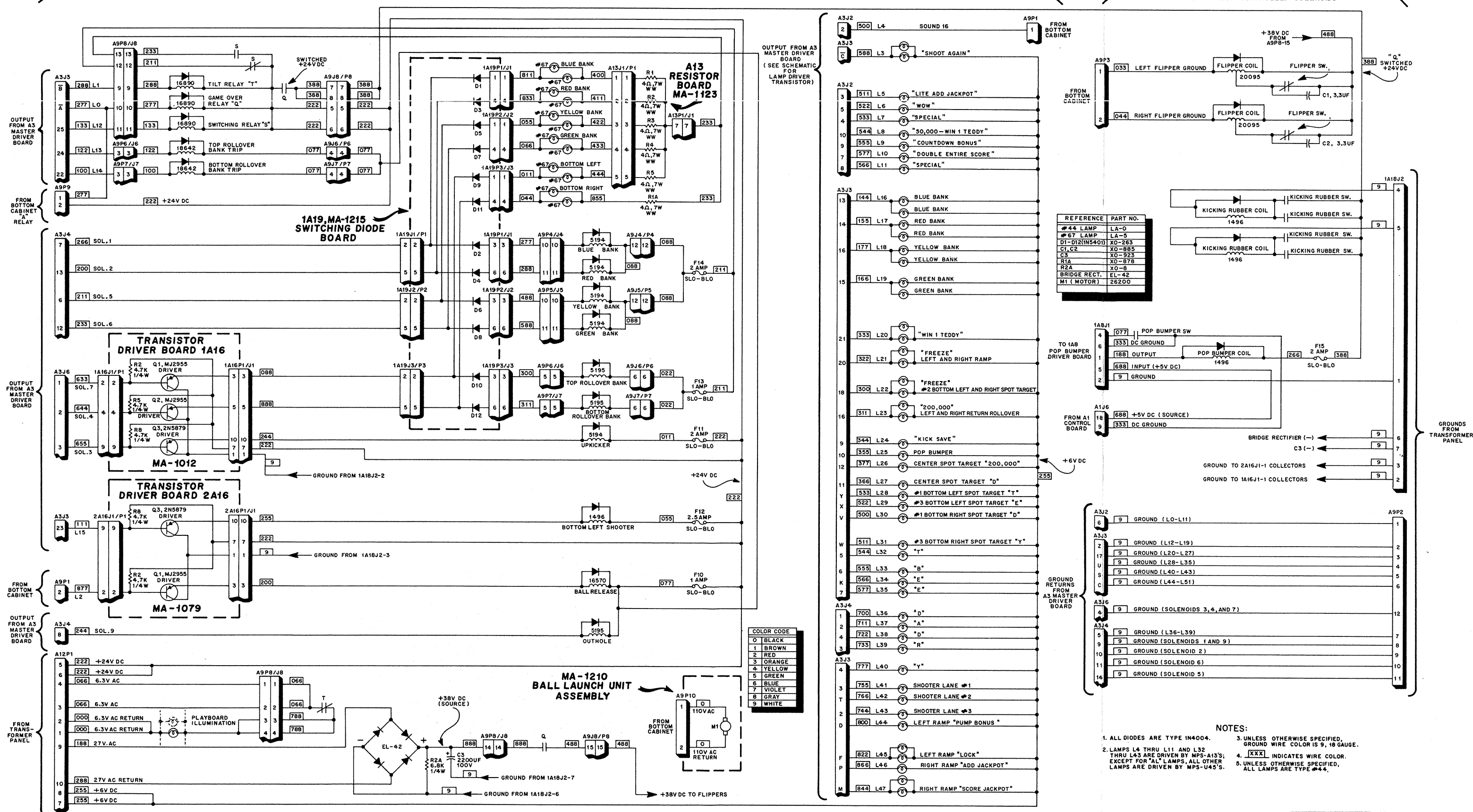
NOTE:
1. DIODES USED ARE TYPE 1N270.
2. DIODE BOARD ASSEMBLIES:
1A7 AND 2A7 PART NO.'S 26091
1A17 PART NO. MA-1216

Premier Technology			
SWITCH MATRIX			
GAME #718			
USED ON			
DRAWN	APPROVED	DATE	
2/22	R.H.M.	DEC-8-88	E-26248

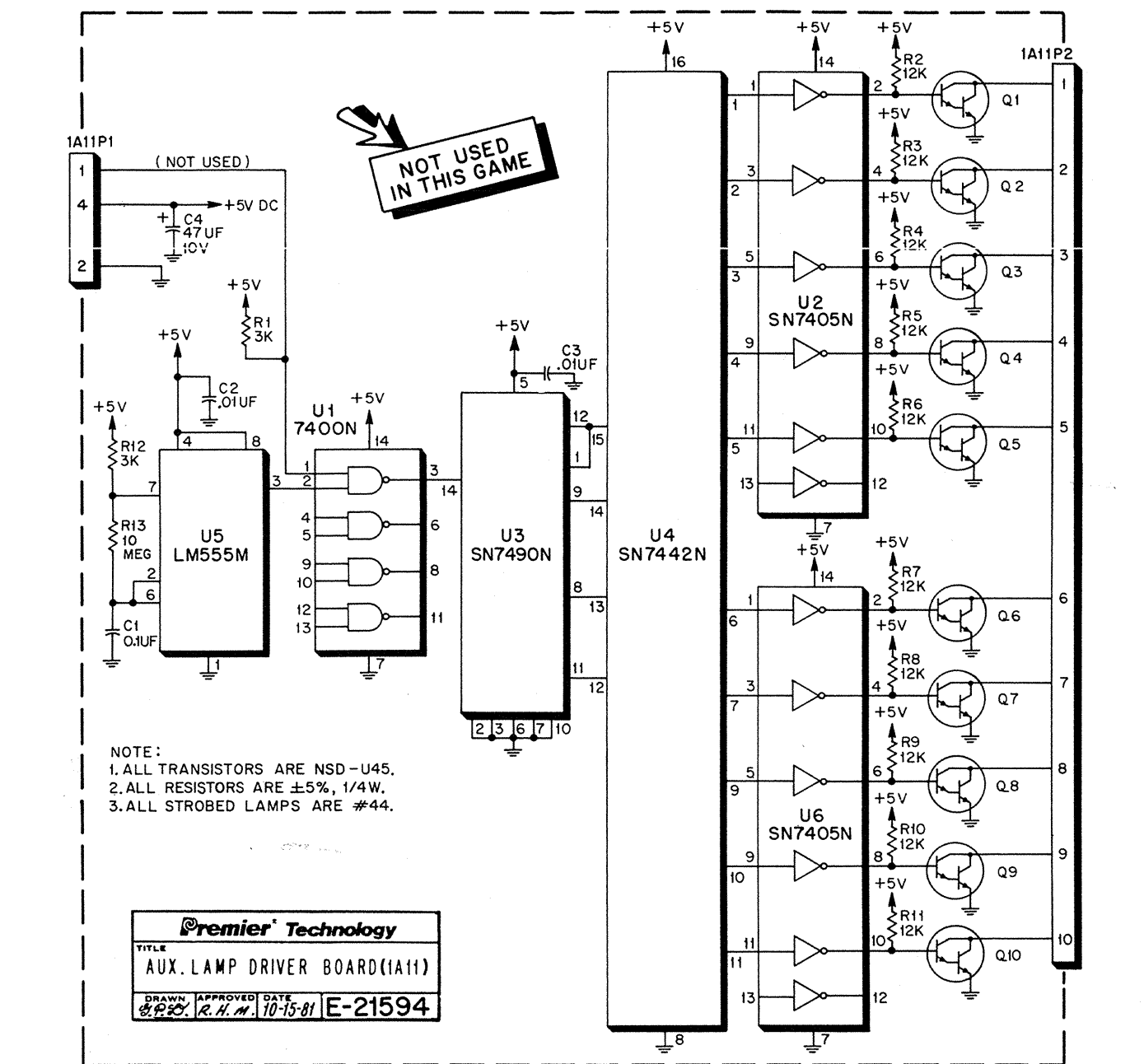
X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

PLAYBOARD CONTROLLED "SOLENOIDS AND ILLUMINATION"

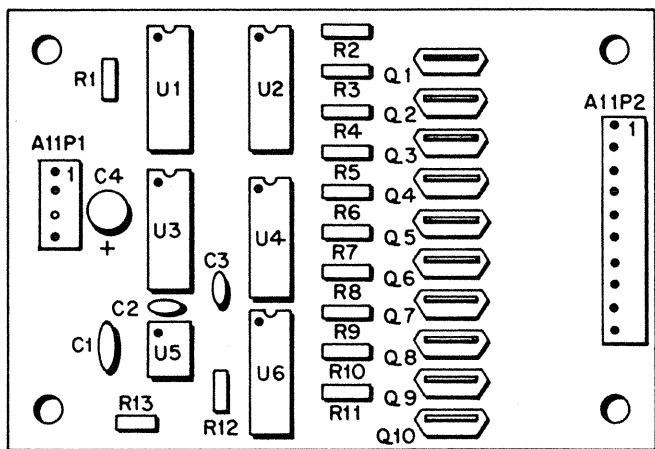
PLAYBOARD "NON-CONTROLLED" SOLENOIDS



X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



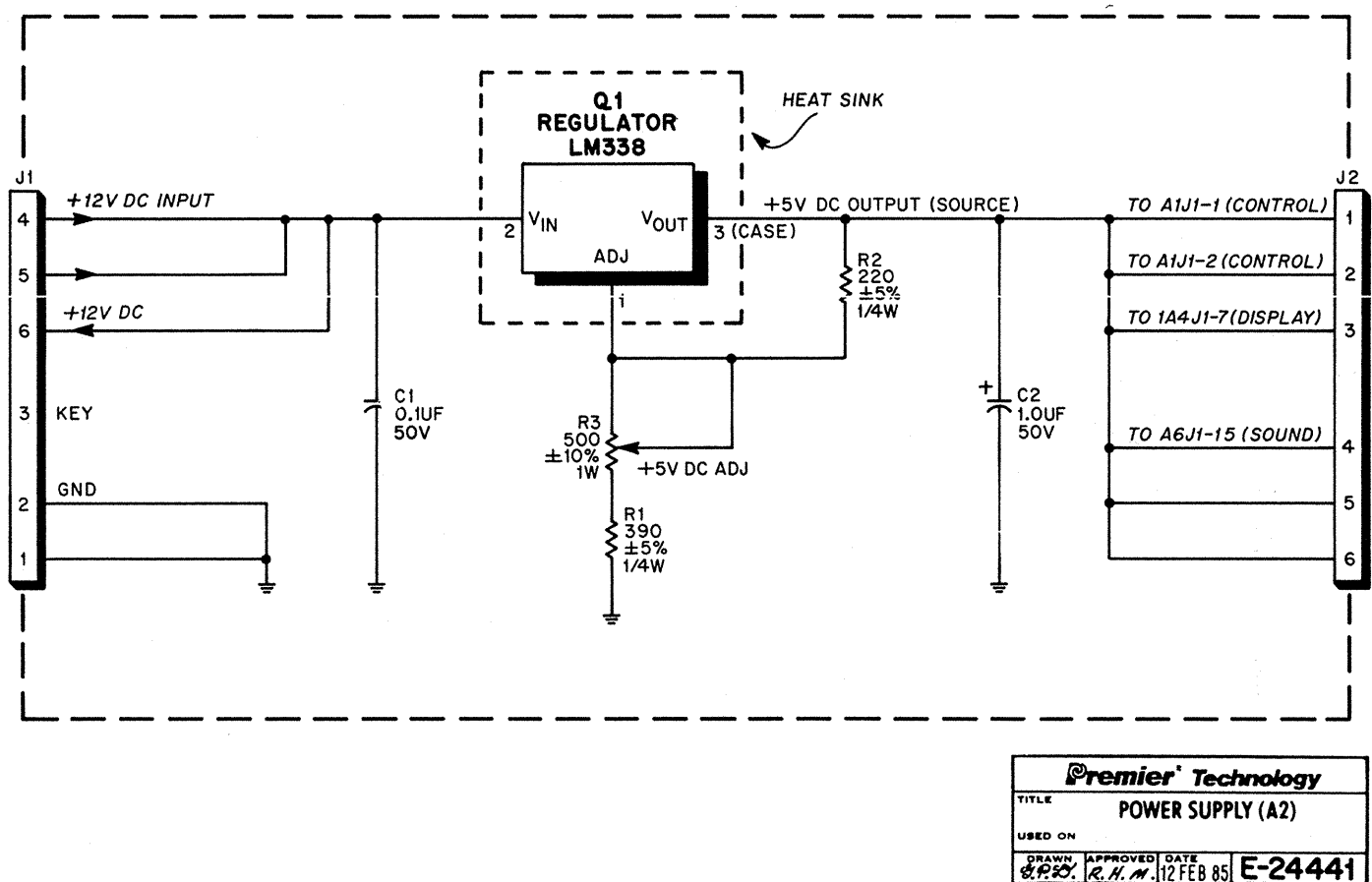
AUXILIARY LAMP DRIVER BOARD (A11) COMPONENT LOCATION



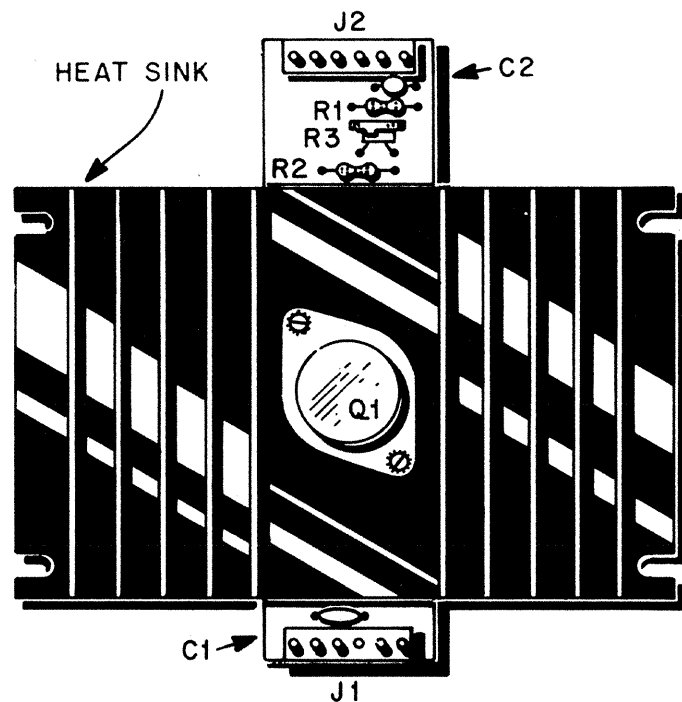
AUXILIARY LAMP DRIVER BOARD (A11) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	AUXILIARY LAMP DRIVER ASSEMBLY	MA-1169
C1	CAPACITOR, .1 MFD, 100V	XO-626
C2-C3	CERAMIC RADIAL LEAD CAPACITOR, .01 MFD, 100V	XO-202
C4	RADIAL LEAD CAPACITOR, 47 MFD, 10V	XO-227
Q1-Q10	ELECTROLYTIC RADIAL LEAD TRANSISTOR, NSD-U45 NPN DARLINGTON	XO-146
R1, R12	RESISTOR, 3K OHM, 5%, 1/4 W	XO-23
R2-R11	RESISTOR, 12K OHM, 5%, 1/4W	XO-9
R13	RESISTOR, 10Meg Ohm, 5%, 1/4W	XO-73
U1	I.C. 2-INPUT NAND, 7400	XO-420
U2, U6	I.C. INVERTER, 7405	XO-403
U3	I.C. DECADE COUNTER, 7490	XO-425
U4	I.C. DECODER, 7442	XO-426
U5	I.C. TIMER, NE555	XO-631
P2	10 POS. CONNECTOR	XO-879
P1	4 POS. CONNECTOR	XO-879

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



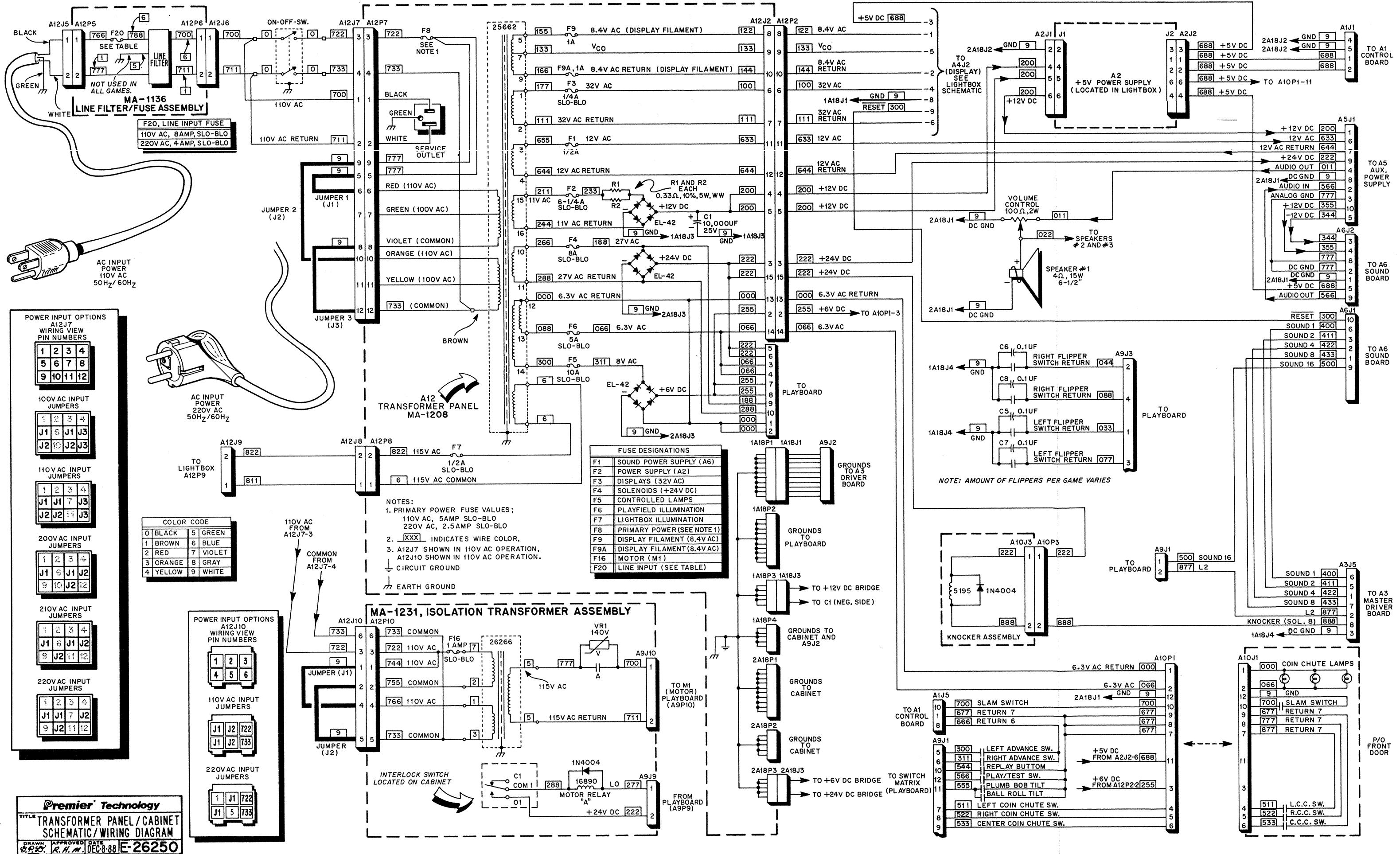
POWER SUPPLY (A2) COMPONENT LOCATION



POWER SUPPLY (A2) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Power Supply (A2)	MA-831
C1	Capacitor, 0.1UF, +80% -20%, 50V	XO-230
C2	Capacitor, 1UF, 10%, 50V	XO-217
J1, J2	Connector, 6 Pin	XO-879
Q1	Regulator, LM338, (5 Amp)	XO-839
R1	Resistor, 390 ohm, 5%, 1/4W	XO-845
R2	Resistor, 220 ohm, 5%, 1/4W	XO-21
R3	Resistor, (Pot) 500 ohm, 10%, 1W	XO-112
	Heat Sink	XO-534
	Insulator, (Regulator)	XO-522
	Insulator, (Regulator)	XO-523

X. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

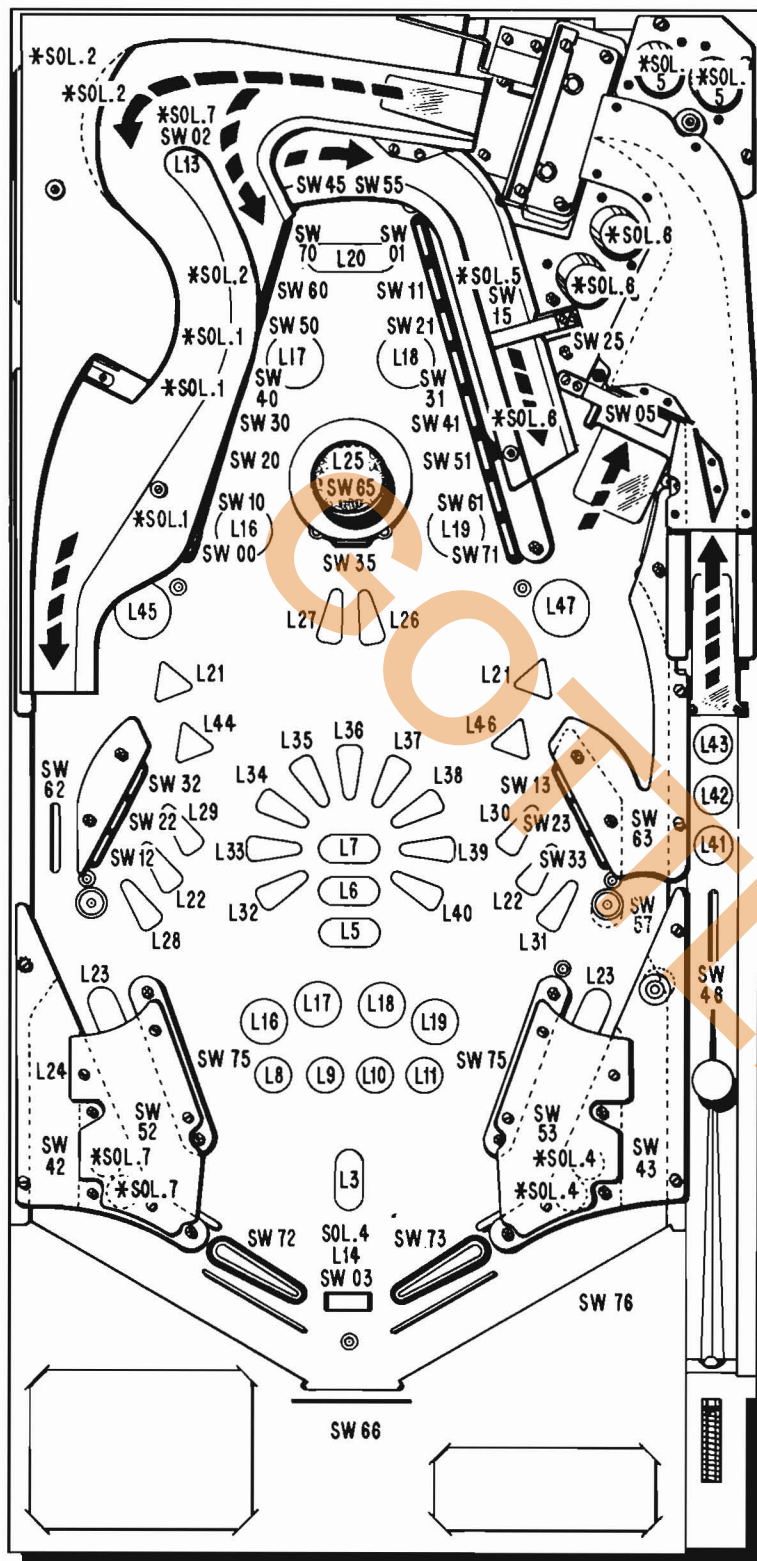


XI. PARTS INFORMATION

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XI. PARTS INFORMATION



NOTE:

1. L0 Enables Relay "Q", L1 Enables Relay "T",
L2 Enables Ball Release, L12 Enables Relay "S",
L13 Enables Top Rollover Bank Trip,
L14 Enables Bottom Rollover Bank Trip,
L15 Enables Bottom Left Shooter.
2. The Following Devices Are Dependent Upon
The State of the "S" Relay. (Identified by *
in illustration).

DEVICE	"S" OFF	"S" ON
Sol. 1	Blue 8 Bank	Blue Bank #67 (2)
Sol. 2	Red 8 Bank	Red Bank #67 (2)
Sol. 4	Bottom Rollover Bank	Bottom Right #67 (2)
Sol. 5	Yellow 8 Bank	Yellow Bank #67 (2)
Sol. 6	Green 8 Bank	Green Bank #67 (2)
Sol. 7	Top Rollover Bank	Bottom Left #67 (2)

PLAYBOARD SWITCH AND LAMP ASSIGNMENTS

LAMP NUMBER

LAMP ASSIGNMENT

L3	"Shoot Again"
L4	Sound 16
L5	"100,000"
L6	"Extra Ball"
L7	"Special"
L8	#1 Advance
L9	#2 Advance
L10	#3 Advance
L11	#4 Advance
L16	Blue Bank
L17	Blue Bank
L18	Red Bank
L19	Yellow Bank
L20	Yellow Bank
L21	Green Bank
L22	Green Bank
L23	"Freeze"
L24	Top Left and Right Spot Target
L25	"Freeze"
L26	Left and Right Ramp
L27	"Freeze"
L28	#2 Bottom Left and Right Spot Target
L29	"200,000"
L30	Left and Right Return Rollover
L31	Left Outside Rollover
L32	Pop Bumper
L33	Center Spot Target "200,000"
L34	Center Spot Target "D"
L35	#1 Bottom Left Spot Target "T"
L36	#3 Bottom Left Spot Target "E"
L37	#1 Bottom Right Spot Target "D"
L38	#3 Bottom Right Spot Target "Y"
L39	"T"
L40	"B"
L41	"E"
L42	"D"
L43	"A"
L44	"D"
L45	"R"
L46	"Y"
L47	Shooter Lane #1
L48	Shooter Lane #2
L49	Shooter Lane #3
L50	Left Ramp "Pump Bonus"
L51	Left Ramp "Lock"
L52	Right Ramp "Add Jackpot"
L53	Right Ramp "Score Jackpot"

SWITCH MATRIX NUMBER

SWITCH ASSIGNMENT

PART NO.

SW 00	#1 Blue Drop Target	25896
SW 01	#1 Yellow Drop Target	25896
SW 02	Top Rollover Drop Target	25894
SW 03	Bottom Rollover Drop Target	25894
SW 05	Right Ramp Entrance Rollunder	26336
SW 10	#2 Blue Drop Target	25896
SW 11	#2 Yellow Drop Target	25896
SW 12	#1 Left Bottom Spot Target Assy. (White)	25460Z
SW 13	#1 Right Bottom Spot Target Assy. (White)	25460Z
SW 15	Right Ramp Exit Rollover	25824
SW 20	#3 Blue Drop Target	25896
SW 21	#3 Yellow Drop Target	25896
SW 22	#2 Left Bottom Spot Target Assy. (Yel.)	25460T
SW 23	#2 Right Bottom Spot Target Assy. (Yel.)	25460T
SW 25	Left Ramp Rollunder	21137
SW 30	#4 Blue Drop Target	25896
SW 31	#4 Yellow Drop Target	25896
SW 32	#3 Left Bottom Spot Target Assy. (White)	25460Z
SW 33	#3 Right Bottom Spot Target Assy. (White)	25460Z
SW 35	Center Spot Target Assy. (White)	25460Z
SW 40	#1 Red Drop Target	25897
SW 41	#1 Green Drop Target	25897
SW 42	Left Outside Rollover	25824
SW 43	Right Outside Rollover	25824
SW 45	#1 Left Top Spot Target Assy. (Red)	26231U
SW 46	Shooter Lane Rollunder	25824
SW 50	#2 Red Drop Target	25895
SW 51	#2 Green Drop Target	25895
SW 52	Left Return Rollover	25824
SW 53	Right Return Rollover	25824
SW 55	#2 Right Top Spot Target Assy. (Red)	26231U
SW 56	Upkicker	21415
SW 57	Tilt (With Bracket)	9141
SW 60	#3 Red Drop Target	25895
SW 61	#3 Green Drop Target	25895
SW 62	Left Side Rollover	25824
SW 63	Right Side Rollover	25824
SW 65	Pop Bumper	21352
SW 66	Outchole (Assembly)	25825
SW 70	#4 Red Drop Target	25895
SW 71	#4 Green Drop Target	25895
SW 72	Left Flipper	26057
SW 73	Right Flipper	26056
SW 75	Kicking Rubbers, (Scoring) (2)	18808
	Actuating Switch and Bracket (4)	22224
SW 76	Trough	25824

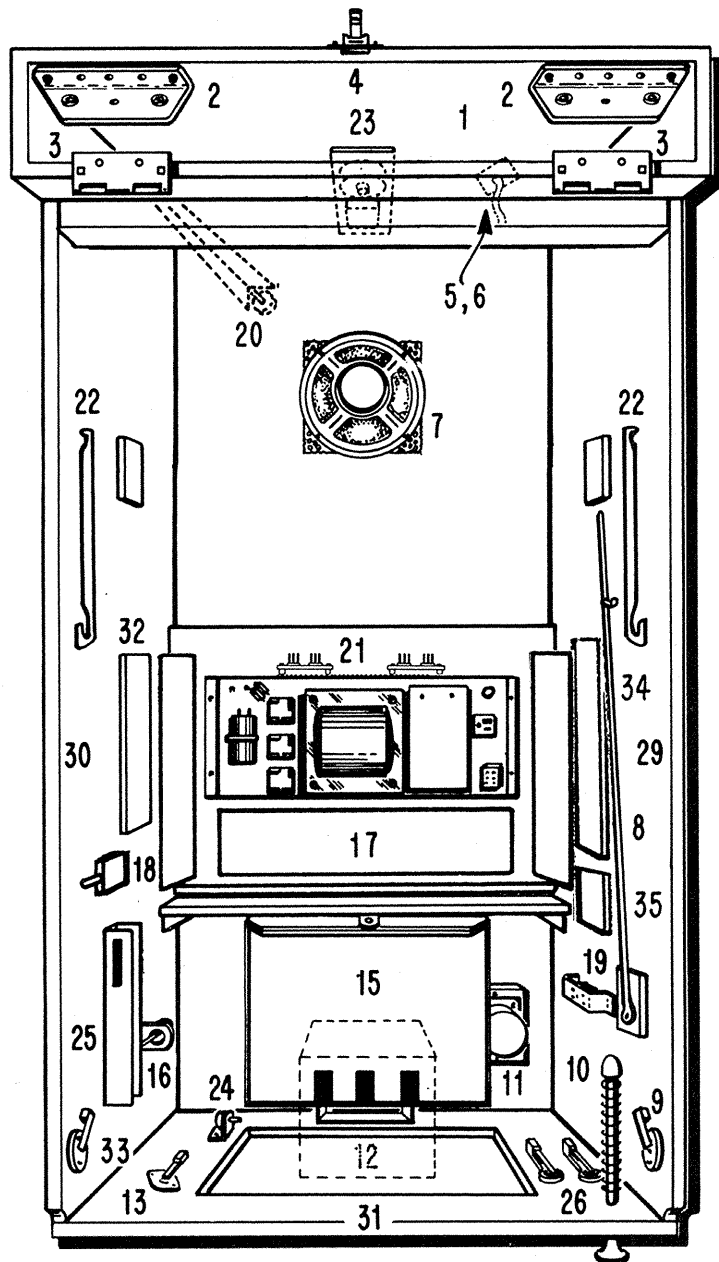
XI. PARTS INFORMATION

CABINET PARTS

ITEM DESCRIPTION

PART NO.

1. Cabinet	26274-718
2. Lightbox Mounting Bracket (2)	19916
Attaching Capscrew (2), Not Shown	FA-151
Lockwasher (2), Not Shown	FA-641
3. Butt Hinge, (Shown For Reference Only, P/O Lightbox Assy.) (2)	22734
4. "U" Bolt (P/O Lightbox)	24659
Latch Assembly (P/O Cabinet)	21969
5. Cable Assembly, Domestic (High Voltage)	MA-1228
6. Line Cord (Domestic)	23365
Line Cord Cover Plate	23364
7. Speaker, 4 Ohm, 15W, 6-1/2"	EL-83
Speaker Guard	20931
8. Prop Stick, Playfield	23940
9. Right Flipper Switch	26074
10. Ball Shooter Assembly	8835
11. Switch, On/Off	23799
Switch Plate (2)	18769
Switch Housing	15163
12. Front Door Assembly (Universal)	MA-688
Cable Assembly	MA-676
Slam Switch (N/O)	26130
6V DC Lamp, Wedge Base	FD-2
Frame, Door	FD-13
Three Chute Door	24159
Black Button Bezel	FD-14
Entry/Reject Button	FD-15
Button Spring	FD-16
Reject Flap	FD-17
Clamp, Frame	FD-18
Flat Lock and Cam Assembly	FD-19
Base Plate with Pivot and Stud	FD-20
Microswitch Bracket	FD-21
Clear Plastic Cover for Microswitch	FD-22
Coin Microswitch with Wire	FD-23
Lampholder	FD-24
Black Reject Bezel	FD-26
13. Replay Switch Assembly	18092
15. Cashbox	25309
Cover	25315
Liner (Small) (3)	24870
Liner (Large) (2)	24871
16. Plumb Bob Tilt Switch Assembly	358
Strike Plate	MH-30
Carbon, Tilt Bob	357
Rod, Tilt	22043
Bracket	14653
Clip	MA-1231
17. Isolation Transformer Assembly	26266
Transformer	EL-6
Fuse, F16, 1 Amp, SLO-BLO	XO-924
Varistor, VR1	MA-833
Motor Relay	XO-254
Diode, 1N4004	EL-66
18. Interlock Switch	MA-12
19. Klocker Assembly	MA-352
Bell Assembly (Gong) (When Used)	4337
20. Cabinet Leg (4)	3775
Leg Bolt (8)	MH-21
3" Leg Adjuster (4)	FA-665
3/8-16", Jam Nut (8)	MA-1208
21. Transformer Panel Assembly	EL-42
Bridge Rectifier (3)	MA-1220
Cable Assembly (Secondary)	XO-830
Capacitor, 10,000UF, 25V	EL-10
Fuse Block (8 Pos.)	23805
Fuse Cover	EL-78
Fuse Holder (F7 and F8) (2)	EL-28
Fuses	EL-29
F1, 1/2 Amp	EL-5
F2, 6-1/4 Amp, SLO-BLO	EL-26
F3, 1/4 Amp, SLO-BLO	EL-36
F4, 8 Amp, SLO-BLO	EL-8
F5, 10 Amp, SLO-BLO	EL-20
F6, 5 Amp, SLO-BLO	EL-8
F7, 1/2 Amp SLO-BLO	EL-21
F8, 5 Amp, SLO-BLO (110V AC)	EL-3
F8, 2.5 Amp, SLO-BLO (220V AC)	EL-3
F9, 1 Amp	EL-3
F9A, 1 Amp	25374
Ground Bus Assembly (2)	18133
Outlet, Service	XO-154
Resistor, 0.33 Ohm, 10%	25662
5W, Wire-Wound (2)	25658
Transformer	25657
22. Cabinet Pivot Bracket (Left)	
Cabinet Pivot Bracket (Right)	



ITEM DESCRIPTION

PART NO.

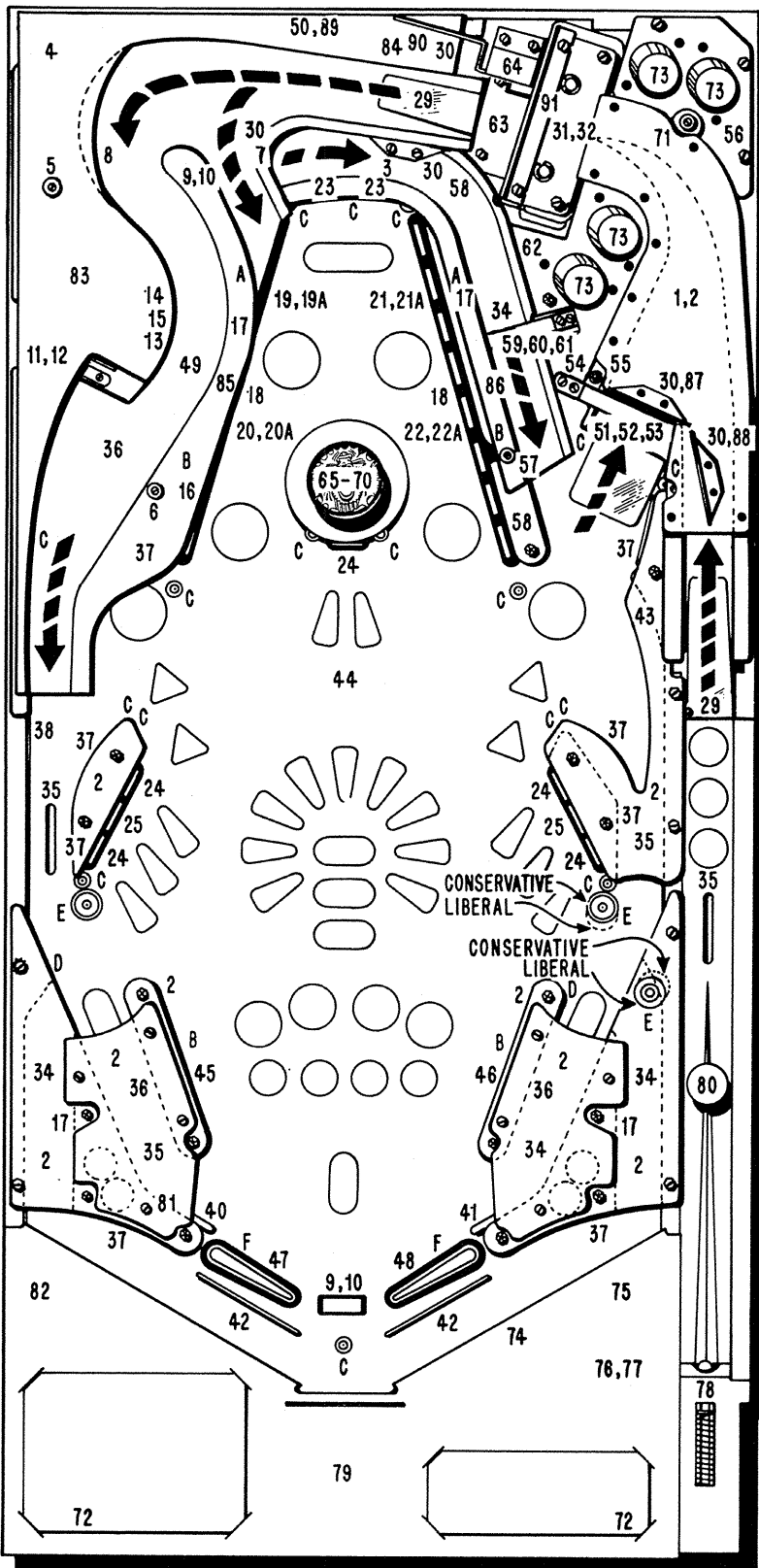
23. Line Filter Assembly	MA-1136
Fuse Holder	EL-78
F20, 8 Amp, SLO-BLO (110V AC)	EL-26
F20, 4 Amp, SLO-BLO (220V AC)	EL-33
Line Filter	EL-50
Line Filter (Germany)	EL-51
24. Mounting Bracket	24149
Control, Volume, 100 Ohm, 2W	XO-199
Switch, PLAY/TEST	EL-57
25. Ball Roll Tilt	
Housing and Switch Assembly	24394
Switch	24393
26. Button Holder and Switch (2)	23503
Pushbutton (2) (Black)	24293
28. Lightbox (Not Shown)	26082-718
29. Right Moulding (Not Shown)	22735
30. Left Moulding (Not Shown)	22736
31. Front Moulding (Not Shown)	16951
32. Mounting Board Assembly	MA-1217
A13 Resistor Board	MA-1123
1A19 Switching Diode Board	MA-1215
33. Left Flipper Switch	26075
34. Mounting Board Assembly	MA-1218
2A16 Transistor Driver Board	MA-1079
A8 Pop Bumper Driver Board	19741
35. Mounting Board Assembly	MA-1219
1A16 Transistor Driver Board	MA-1012

XI. PARTS INFORMATION

PLAYBOARD PARTS INFORMATION

PARTS LIST

ITEM	DESCRIPTION	PART NO.
1	Vacuum Form Ramp Assembly	26291
2	Plastic Shield Set	26230
3	Vacuum Form Ramp	26190
4	Vacuum Form Ramp	26197
5	Ramp Spacer	25705
6	Ramp Spacer	26260
7	Ramp Flap	26199
8	Flat Rail	26196
9	Rollover Drop Target Assembly (2)	MA-1016
10	Rollover Drop Target, White (2)	20892Z
11	Gate Shield	17300
12	Gate Wireform	22112
13	Ball Deflector	26173
14	Ball Guide Rail	3722
15	Ball Guide Rail	6931
16	Ball Guide Rail	4831
17	Ball Guide Rail (4)	13782
18	8 Position Drop Target Assembly (2)	MA-1209
19	Target Arm, Red (4)	1190SU
19A	Target Decal (4)	26242
20	Target Arm, Blue (4)	1190SW
20A	Target Decal (4)	26241
21	Target Arm, Yellow (4)	1190ST
21A	Target Decal (4)	26243
22	Target Arm, Green (4)	1190SS
22A	Target Decal (4)	26244
23	Spot Target Assembly, Red(2)	26231U
24	Spot Target Assembly, White (5)	25460Z
25	Spot Target Assembly, Yellow (2)	25460T
29	Ramp Flap (2)	26182
30	Ball Deflector (5)	21158
31	Ball Launch Assembly, (See Exploded View Assembly)	MA-1210
32	Wire Cage	26225
34	Rollover and Bracket Assembly (4)	4960
35	Rollover and Bracket Assembly (4)	4961
36	Ball Guide Rail (3)	4832
37	Ball Guide Rail (8)	6612
38	Flat Rail	26195
39	Flat Rail	26194
40	Ball Guide Rail	26183
41	Ball Guide Rail	26185
42	Ball Snubber (2)	13798
43	Flat Rail	26186
44	Mylar Overlay	26223
45	Kicker Assembly	MA-135A
46	Kicker Assembly	MA-135
47	Left Flipper Assembly Flipper Coil Flipper Switch	MA-1139C 20095 26056
48	Right Flipper Assembly Flipper Coil Flipper Switch	MA-1140D 20095 26056
49	Vertical Ball Kicker Assembly	21418
50	Playfield Ball Deflector	26263
51	Gate Shield	25150
52	Gate Wireform	25730
53	Rollunder Spring	25152
54	Siamese Post	17492
55	Ramp Spacer	26259
56	Plastic Rivet (19)	MP-10
57	Ramp Spacer	25395
58	Ball Guide Rail (2)	18070
59	Gate Shield	25300
60	Gate Wireform	26275
61	Rollunder Spring	25301
62	Ball Guide Rail	5977
63	Runway	26198
64	Ball Deflector	26281
65	Pop Bumper Cap, White	10434Z
66	Pop Bumper Decal	26245
67	Pop Bumper Skirt, White	10433Z
68	Pop Bumper Body, Socket, White	MA-27
69	Pop Bumper Trim Platter	25732
70	Pop Bumper Switch and Bracket Assembly	21352
71	Ramp Spacer	25666
72	Playboard Rest Brackets (2)	25663
73	Plastic Dome Hats, Clear (4)	25147P
74	Ball Return Unit Assembly	21622
75	Ball Return Gate Assembly	20607
76	Ball Return Fence	23855
77	Ball Return Gate Fence	23856
78	Ball Shooter Gauge	9767-718
79	Cardholder	25649-718
80	1-1/16" Steel Ball (2)	21864
81	Standoff, 1/4" (8)	MP-16
82	Kicker Assembly	21001
83	Vacuum Form Decal	26294
84	Vacuum Form Decal	26295
85	Vacuum Form Decal	26296
86	Vacuum Form Decal	26297
87	Ball Deflector Decal	26298
88	Ball Deflector Decal	26299
89	Playfield Ball Deflector Decal	26302
90	Ball Deflector Decal	26303
91	Ball Deflector Decal	26304



RUBBER RINGS

ITEM	DESCRIPTION	PART NO.
A	2-1/2" (2)	10222
B	2" (4)	10221
C	Mini-Post (18)	15705
D	Small Mini-Post(2)	14793
E	5/16" (3)	10217
F	Flipper, Red (2)	13151

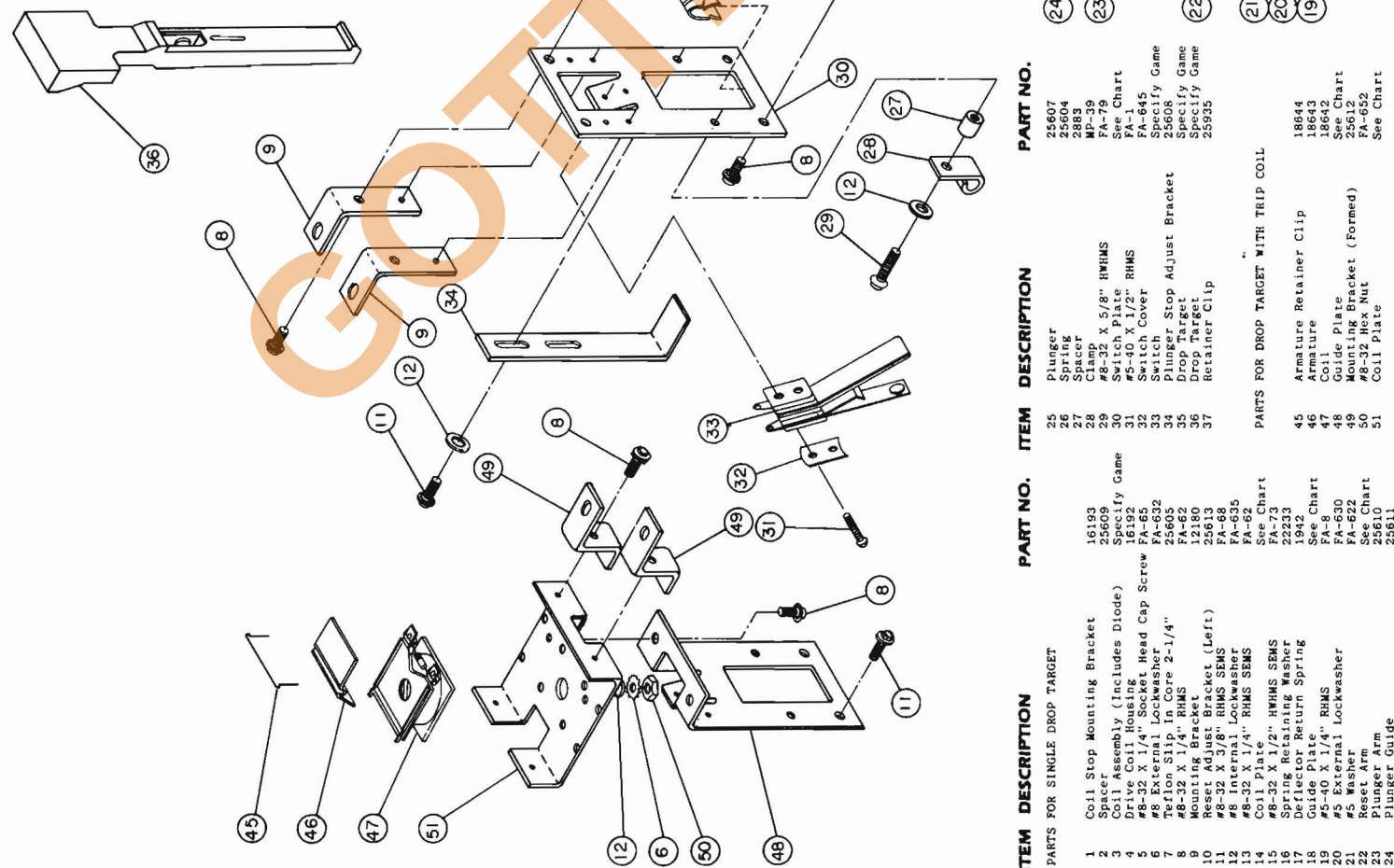
MISCELLANEOUS PARTS

DESCRIPTION	PART NO.
"Q" Relay	MA-1203
"T" Relay	MA-25
"S" Relay	MA-1052
Mini-Post Screw	14792
Plastic Support Post	20635P
Plastic Post 1"	11561P
Mini-Post Screw	25161

XI. PARTS INFORMATION

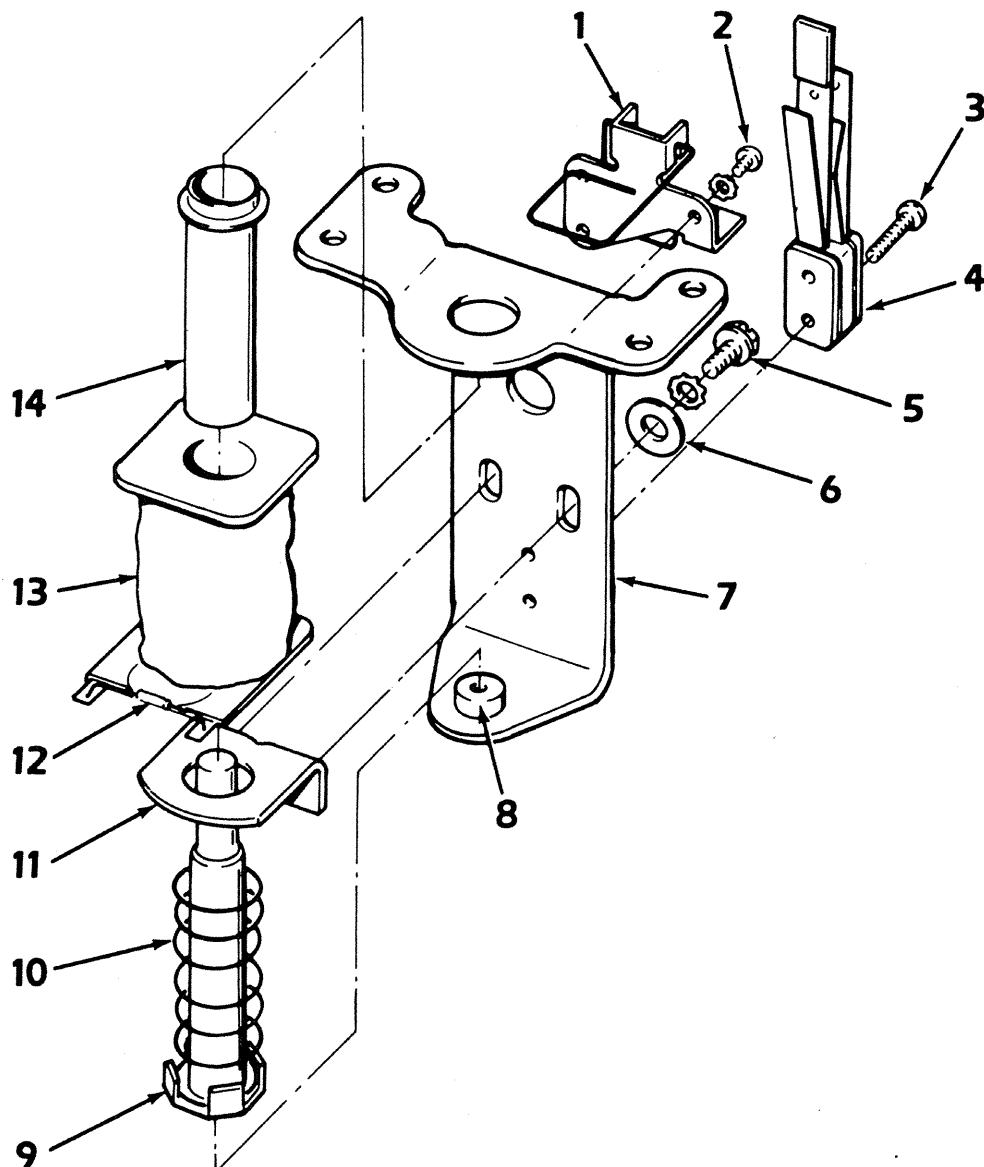
DROP TARGET PARTS

DROP TARGETS	WITHOUT TRIP COIL				WITH TRIP COIL			
	ITEM 14	ITEM 18	ITEM 22	ITEM 30	ITEM 48	ITEM 51		
	COIL PLATE	GUIDE PLATE	RESET ARM	SWITCH PLATE	COIL PLATE	GUIDE PLATE		
1	25618-1	25621-1	25615-2	25617-1	25619-1	25623-1		
(WITH TRIP COIL)	-----	25621-1	25615-2	25617-1	25619-1	25623-1		
2	25618-2	25621-2	25615-2	25617-2	25619-2	25623-2		
(WITH TRIP COIL)	-----	25621-2	25615-2	25617-2	25619-2	25623-2		
3	25618-3	25621-3	25615-3	25617-3	25619-3	25623-3		
(WITH TRIP COIL)	-----	25621-3	25615-3	25617-3	25619-3	25623-3		
4	25618-4	25621-4	25615-4	25617-4	25619-4	25623-4		
(WITH TRIP COIL)	-----	25621-4	25615-4	25617-4	25619-4	25623-4		
5	25618-5	25621-5	25615-5	25617-5	25619-5	25623-5		
(WITH TRIP COIL)	-----	25621-5	25615-5	25617-5	25619-5	25623-5		
6	25618-6	25621-6	25615-6	25617-6	25619-6	25623-6		
(WITH TRIP COIL)	-----	25621-6	25615-6	25617-6	25619-6	25623-6		
7	25618-7	25621-7	25615-7	25617-7	25619-7	25623-7		
(WITH TRIP COIL)	-----	25621-7	25615-7	25617-7	25619-7	25623-7		
8	25618-8	25621-8	25615-8	25617-8	25619-8	25623-8		
(WITH TRIP COIL)	-----	25621-8	25615-8	25617-8	25619-8	25623-8		



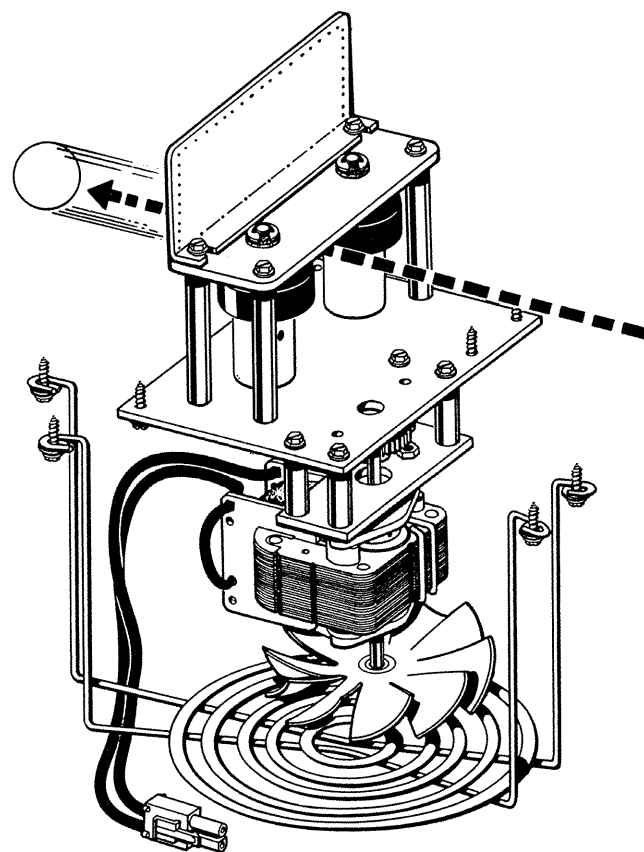
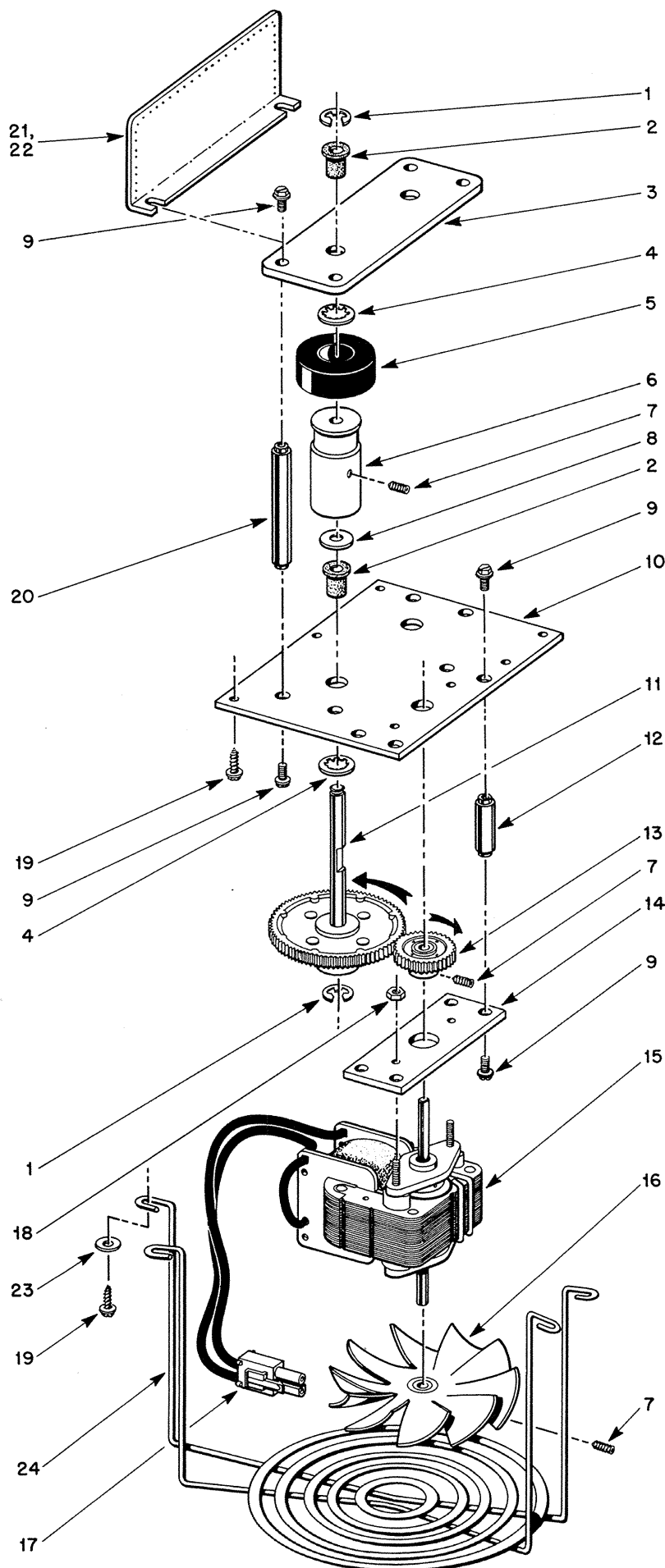
XI. PARTS INFORMATION

VERTICAL UPKICKER PARTS



ITEM	DESCRIPTION	PART NO.
	Upkicker Assembly	21418
1	Wire Form and Bracket	21414
2	Screw - RHMS 6-32 X 3/16" Lg. (3)	FA-30
3	Screw - RHMS 5-40 x 5/8" Lg.	FA-2
4	Switch	21415
5	Slotted Hex - WHMS 8-32 X 5/16" Lg.	FA-67
6	Standard Washer #8	FA-617
7	Coil Mounting Bracket	21416
8	Rubber Grommet	5240
9	Plunger Assembly	21412
10	Spring	1942
11	Coil Mounting Bracket	15409
12	Diode, 1N4004	XO-254
13	Coil	5194
14	Sleeve	21411

XI. PARTS INFORMATION **BALL LAUNCH ASSEMBLY**



ITEM	DESCRIPTION	PART NO.
1	Ball Launch Assembly	MA-1210
2	E-Ring (4)	FA-683
3	Oil Impregnated Bronze Bearing (4)	26214
4	Idler Plate	26213
5	Retaining Ring (4)	FA-689
6	Black Poly Wheel (2)	26201
7	Wheel Insert (2)	26202
8	8-32 x 5/16" Set Screw (4)	FA-81
9	Nylon Washer (2)	26217
10	8-32 x 3/8" HWHMS SEMS (16)	FA-69
11	Gear Plate	26211
12	Gear And Shaft Assembly (2)	26208
13	Motor Spacer (4)	26209
14	Gear and Insert Assembly	26205
15	Motor Mounting Plate	26212
16	Motor Assembly	26200
17	Motor Fan	26219
18	Connector, 2 Pin	PS-43
19	6-32 Hex Nut (2)	FA-651
20	8 x 5/8" HWH SMS (9)	FA-285
21	Idler Plate Spacer (4)	26210
22	Ball Deflector	26280
23	Ball Deflector Decal	26304
24	#10 Washer (4)	FA-618
	Wire Cage	*26225

NOTE

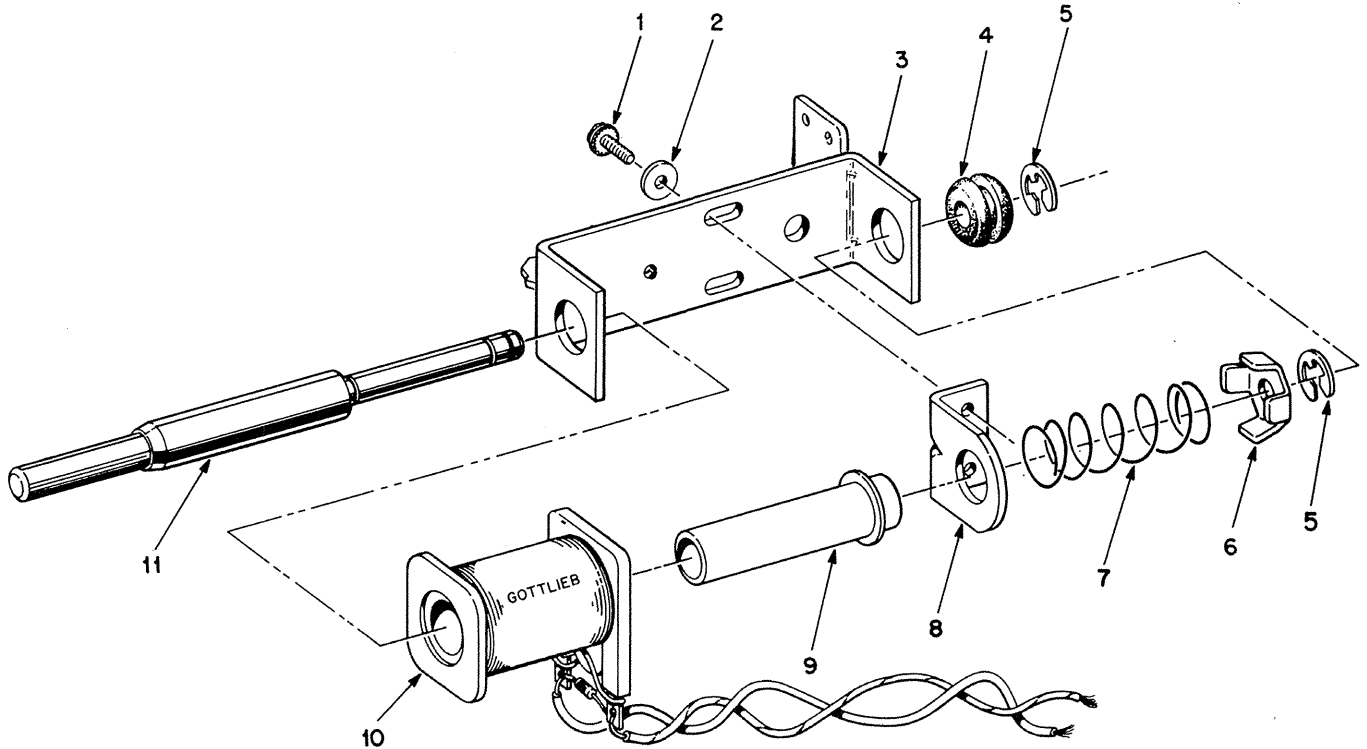
2,3,4	Idler Plate and Bearing Assembly	26216
2,4,10	Gear Plate and Bearing Assembly	26215
14,17,18	Part Of Motor Assembly	26200

*WIRE CAGE IS AN ACCESSORY TO
 BALL LAUNCH ASSEMBLY MA-1210

LUBRICATE MOTOR BEARINGS WITH
 10W 30 NON-DETERGENT OIL ONLY.

XI. PARTS INFORMATION

KICKER ASSEMBLY



ITEM	DESCRIPTION	PART NO.
	Kicker Assembly	21001
1	6-32 X 3/8" Rolok (2)	FA-45
2	#6 External Lockwasher (2)	FA-631
3	Mounting Bracket	21854
4	Rubber Grommet	21000
5	Retaining Ring (2)	FA-683
6	Stop Washer	2705
7	Kicker Return Spring	590
8	Coil Mounting Bracket	20559
9	Coil Sleeve	6087
10	Coil	1496
	Diode, 1N4004	XO-254
11	Coil Plunger	20998

XI. PARTS INFORMATION

UNIQUE PARTS

The following listing denotes new parts and assemblies unique to HOT SHOTS, Game #718. Part Number prefixed with an asterisk (*) will be illustrated or can be located on pages 29, 30, and 52 thru 58. Number in parenthesis () indicate multiple quantities.

PLAYBOARD

<u>DESCRIPTION</u>	<u>PART NO.</u>
BALL DEFLECTOR.....	*26173
RAMP FLAP (2).....	*26182
BALL GUIDE RAIL.....	*26183
BALL GUIDE RAIL.....	*26185
FLAT RAIL.....	*26186
VACUUM FORM RAMP.....	*26189
VACUUM FORM RAMP.....	*26190
FLAT RAIL.....	*26194
FLAT RAIL.....	*26195
FLAT RAIL.....	*26196
VACUUM FORM RAMP.....	*26197
RUNWAY.....	*26198
RAMP FLAP.....	*26199
MYLAR OVERLAY.....	*26223
WIRE CAGE.....	*26225
PLASTIC SHIELD SET.....	*26230
SPOT TARGET ASSEMBLY, RED (2).....	*26231
DROP TARGET DECAL, BLUE (4).....	*26241
DROP TARGET DECAL, RED (4).....	*26242
DROP TARGET DECAL, YELLOW (4).....	*26243
DROP TARGET DECAL, GREEN (4).....	*26244
POP BUMPER DECAL.....	*26245
RAMP SPACER.....	*26260
RAMP FLAP.....	*26261
RAMP GUARD.....	*26262
PLAYFIELD BALL DEFLECTOR.....	*26263
GATE WIREFORM.....	*26264
GATE WIREFORM.....	*26275
BALL DEFLECTOR.....	*26281
VACUUM FORM DECAL.....	*26294
VACUUM FORM DECAL.....	*26295
VACUUM FORM DECAL.....	*26296
VACUUM FORM DECAL.....	*26297
BALL DEFLECTOR DECAL.....	*26298
BALL DEFLECTOR DECAL.....	*26299
PLAYFIELD BALL DEFLECTOR DECAL.....	*26302
BALL DEFLECTOR DECAL.....	*26303
BALL DEFLECTOR DECAL.....	*26304
8 POSITION DROP TARGET ASSEMBLY (2).....	*MA-1209
BALL LAUNCH ASSEMBLY.....	*MA-1210
CAPACITOR, RESISTOR, RECTIFIER ASSEMBLY.....	*MA-1213

LIGHTBOX

<u>DESCRIPTION</u>	<u>PART NO.</u>
STYRENE (BACKLASS ART).....	26085-718
SOUND BOARD.....	MA-886-718

CABINET

<u>DESCRIPTION</u>	<u>PART NO.</u>
SWITCHING DIODE BOARD.....	*MA-1215
DIODE BOARD.....	*MA-1216
ISOLATION TRANSFORMER ASSEMBLY.....	*MA-1231
ISOLATION TRANSFORMER.....	26266
MOTOR RELAY "A".....	MA-833
VARISTOR, VRI, 140V.....	XO-924
GLASS STOP.....	26277

SERVICE NOTES

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