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STREET FIGHTER II™

CHAMPION EDITION

Premier® Technology

INSTRUCTION MANUAL

CAPCOM™

STREET FIGHTER II™

CHAMPION EDITION

GAME #735

(3 BALL GAME)

INSTRUCTION MANUAL

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GAME PROM:	DISPLAY PROM:	SOUND PROMS:	
(TYPE 26C512)	(TYPE 27C020-25)	(TYPE 27C256)	(TYPE 27C020-25)
735/GPROM	735/DSPROM	735/DROM1	735/AROM1
		735/YROM1	735/AROM2

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.

Premier®
Technology

759 INDUSTRIAL DRIVE
BENSENVILLE, IL 60106
1-708-350-0400
TELEX 215009 PRMR
FAX: 1-708-350-1097

THE PREMIER HOTLINE
1-800-444-0761

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SUPPLEMENTAL ADDENDUM

ATTACH TO AND A PART OF
STREET FIGHTER II (GAME #735)
INSTRUCTION MANUAL

GAME AS SHIPPED VARIES FROM THE INSTRUCTION MANUAL AS PRINTED.

CORRECTED INSIDE FRONT COVER

Display prom type should be (TYPE 27C040-25)

CORRECTED PAGE 14

Altered global setting of step 48 as shown below in revised game prom 735/1 GPROM.

STEP						
47	GAME DIFFICULTY	VERY EASY	EASY	MEDIUM	HARD	VERY HARD
48	DEFEATING OPPONENTS	EASY	EASY	EASY	EASY	MEDIUM

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CORRECTED PAGE 25

FUSE	RATING	PART NO	USAGE	COIL/COLOR	SLEEVE
F26	2 AMP SLO-BLO	EL-7	LOWER PLAYBOARD FLIPPER	26646(BLUE)	5065

CORRECTED PAGE 56

Change Lower Playboard Flipper coil to part number A-26646. Also change F26 to a 2 amp Slo-Blo (EL-7) fuse.

CORRECTED PAGE 65

SW11 and SW12 part number changed to 22702.

CORRECTED PAGE 67

Item 13, Upper Left Ball Hole Kicker becomes Item 78, Part No. MA-1493.
Item F, Upper Playfield Flipper rubber has been deleted.
Item D, Part No. changed to 10221.
Item 73, Part No. changed to 26366.
Item 76, Flipper coil changed to Part No. 26646.

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ADDENDUM

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GAME AS SHIPPED VARIES FROM THE INSTRUCTION MANUAL AS PRINTED.

CORRECTED PAGE 15

C. ID NUMBERS
Two six digit numbers can be entered in permanent memory during this step. One is a GAME ID and the other is an ARCADE ID. These two ID's appear on all printouts. Also the GAME ID number will appear in the display on power-up. The left and right flipper buttons alter the digit value and the credit button enters the displayed value into memory and then proceeds to the next digit position.

CORRECTED PAGE 25

FUSE	RATING	PART NO	USAGE	COIL/COLOR	SLEEVE
F19	4 AMP SLO-BLO	EL-33	BOTTOM LEFT FLIPPER	29876(ORANGE)	5065

ADDED TO PAGE 26

SOLENOID COILS					
PART NUMBER	WHERE USED	RESISTANCE (OHMS)	NUMBER OF TURNS	WIRE GAUGE	WRAPPER COLOR
A-29876	FLIPPER (NEW UNIT)	2.36/202	560/3325	#23/#33	ORANGE

CORRECTED PAGE 56

Change Bottom Left Flipper coil to part number A-29876. Also change F19 to a 4 amp Slo-Blo fuse.

SYSTEM 3 OVERVIEW

System 3 contains many new features which improve game play and reliability. Some of these features are as follows:

1) New lithium battery provides data retention for a minimum of 5 years under normal operation and virtually eliminates battery leakage. Also a low battery warning is given in the displays when the voltage drops to the critical level.
2) New interlocking connector system for improved reliability.
3) Use of High Speed CMOS technology for low power consumption and cooler operation.
4) Improved solenoid driver reliability due to simplified circuitry and the use of Rugged Power MOSFETS.
5) Lamp short protection.
6) Switch matrix input protection.
7) Easy line voltage adjustment on location.
8) Improved bookkeeping functions.
9) New 128 x 32 Dot Matrix Display.
10) Capability for operators to enter their own messages in the attract mode.
11) Use of new SMART SWITCH tm technology which eliminates the use of contact points on switches. Therefore the need for cleaning dirty switches is eliminated.
12) Addition of a Tournament Mode switch which allows quick and easy way to replace current adjustment settings with special settings. This switch also provides an easy way to set the game for free play.

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 the insert lamp assembly, proceed as follows:

   UNLOCK THE LIGHTBOX BY TURNING THE KEY A QUARTER TURN CLOCKWISE.

   LIFT UP THE BACKGLASS RETAINING BOTTOM TRIM ABOUT 3/4" TO CLEAR THE "H" RETAINING CHANNEL ON THE TOP EDGE OF THE DISPLAY/SPEAKER PANEL, PIVOT OUT TOWARDS YOU AND SLIDE THE BACKGLASS DOWN AND OUT, CAREFULLY SET ASIDE.

   REMOVE THE "H" RETAINING CHANNEL, SLIDE THE PLEXIGLASS INSERT UP AND OUT, SLIDE UP AND REMOVE THE DISPLAY/SPEAKER PANEL AND LAY FACE DOWN ON THE CABINET.

   UNLOOSEN THE TWO WING NUTS ON THE LEFT SIDE AND PUSH THE LOCK SLIDE UPWARDS, THIS ALLOWS THE LIGHTBOX LAMP INSERT TO SWING OUT AND FOR GAINING ACCESS TO THE ELECTRONICS PANEL.

5. Secure the lightbox to the cabinet with the bolts and washers provided.

   TO REPLACE THE BACKGLASS, INSERT THE DISPLAY/SPEAKER PANEL, ENSURE THAT THE METAL TABS ON THE PANEL MATE INTO THE WOOD RETAINERS, SLIDE IN THE PLEXIGLASS PANEL AND INSERT THE "H" RETAINING CHANNEL.

   SLIDE THE BACKGLASS UP INTO THE LIGHTBOX, PIVOT INWARDS AND SLIDE DOWN INTO THE "H" CHANNEL, TURN THE KEY A QUARTER TURN COUNTER-CLOCKWISE TO LOCK THE LIGHTBOX.

6. Open the cabinet door and loosen the front moulding locking arm.

7. Remove the front moulding from the cabinet.

8. Slide the playfield glass toward you and remove it, carefully set aside.

9. Raise the playboard and pivot it upwards and back towards the lightbox, hold in place and insert the prop stick into the countersunk hole on the underside of the playfield.

   CAUTION!

   Use prop stick when servicing under the playfield.

10. Unravel and straighten out the power line cord located at the rear of the 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 A12J5, 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. 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.

9. Lower the playfield into the cabinet. Using the leg adjusters, level the playfield and set the pitch. Recommended pitch is 6°. For alternate settings, see illustration on facing page.

10. Plug the line-cord into a properly grounded 3-wire receptacle ONLY!

11. Refer to Section III to make all necessary game adjustments.

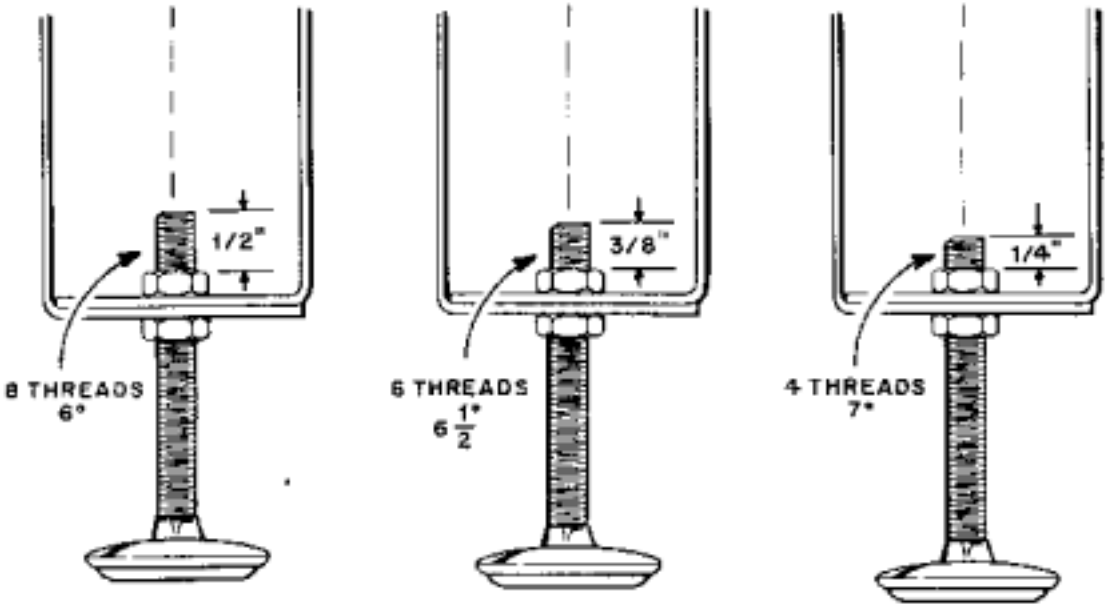
12. Re-install the playfield glass, front moulding and lock the cabinet door.

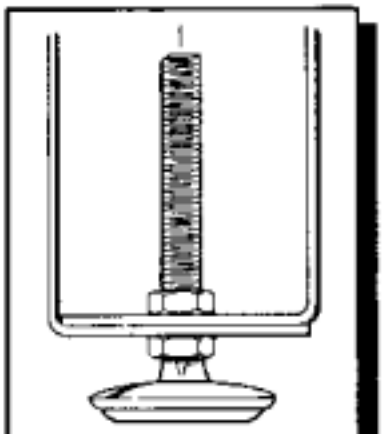
13. CAUTION! If this game has been subjected to extreme cold, allow to warm up to room temperature.

I. INSTALLATION

SET-UP PROCEDURE

TO ADJUST PLAYFIELD PITCH ANGLE
(REAR LEGS ONLY)





NOTE:
FRONT LEG ADJUSTERS MUST BE INSERTED TO THEIR MAXIMUM THREAD DEPTH AND SECURED WITH A NUT ON EACH SIDE OF THE LEG

WARNING

DO NOT TRANSPORT GAME WITH LIGHTBOX IN THE UPRIGHT (PLAYING) POSITION.
USE LATCH ONLY TO TEMPORARILY HOLD LIGHTBOX UPRIGHT WHILE ATTACHING THE LIGHTBOX TO THE CABINET.
SECURE THE LIGHTBOX TO THE CABINET WITH THE TWO BOLTS AND LOCKWASHERS PROVIDED.

C. COIN METER (OPTIONAL)

A +12vdc mechanical coin meter may be installed by the operator to count total coins accepted by the machine. The coin meter leads should be soldered to the lugs on the terminal strip mounted inside the front door on the right side (see Figure 1). If the coin meter is polarized, the positive lead (red) should be attached to the lug that has the cathode (banded) side of the diode attached to it otherwise the leads may be attached in any order. The COIN METER adjustment must be set to on and the following four adjustments should be set to the number of pulses (counts) required for each coin denomination used.

NOTE: Make sure that the GAME MODE adjustment is not set to either REPLAY + TICKETS or TICKETS ONLY (see Game Adjustments section).

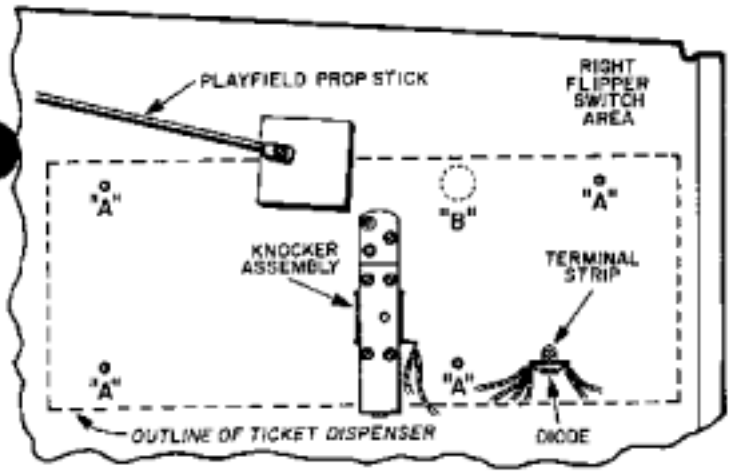


FIGURE 1.

D. TICKET DISPENSER (OPTIONAL)

This machine is equipped to easily interface to the Deltronic Labs #10001TY ticket dispenser with the outside mounting option. To install the dispenser, first locate the five partially drilled holes on the inside of the cabinet on the right side (see Figure 1). The four "A" holes are for mounting the cabinet with #10 X 1-1/4" carriage bolts. The "B" hole is for cable access to the unit. Drill the "A" holes out from the inside of the cabinet using a 13/64" drill bit. Drill the "B" hole out from the inside of the cabinet using a 1" drill bit. The GAME MODE adjustment is used to set whether to dispense a number of tickets along with each replay awarded (REPLAY + TICKETS) or to dispense a number of tickets in place of each replay awarded (TICKETS ONLY). The TICKETS TO AWARD adjustment is used to set the number of tickets to dispense for each replay awarded (see Game Adjustments section).

NOTE: Make sure that the COIN METER adjustment is set to off when using a ticket dispenser.

E. BILL ACCEPTOR (OPTIONAL)

A bill acceptor can be easily interfaced electrically to this machine. The two unused 522 (green-red-red) and 622 (blue-red-red) center chute switch wires should be attached to the switch output of the bill acceptor (see Cabinet/Front Door Schematic Diagram). The line voltage validator outlet located inside the cabinet on the right side can be used for supplying power to the unit. The CHUTE 3 UNITS adjustment can then be used to set the value of the bill being used. The bill acceptor models known to fit the door mechanically are Mars model VFM2 and Tekbilt model NV110. The Tekbilt model also requires an adapter plate.

F. COMMUNICATIONS ADAPTER (OPTIONAL)

A kit (MA-1940) may be purchased through your distributor which will allow the system to output Bookkeeping data to a serial printer.

II. GAME PLAY AND SCORING

*** GENERAL GAME FEATURES ***

GAME THEME:
* THE PLAYER IS A "STREET FIGHTER" WHO MUST DEFEAT 12 OPPONENTS BEFORE HE CAN FIGHT THE "GRAND MASTER". EACH TIME AN OPPONENT IS DEFEATED, THE PLAYER USES THE FLIPPER BUTTONS TO SELECT AN AWARD. THE AWARD CHOICES INCLUDE POINTS, FEATURE ROUNDS, ADDING LETTERS TO FEATURES, MULTIBALL, AND CAR CRUNCH.

MULTIBALL:
* GENERALLY PLAYED WITH 2 BALLS. ENTERED BY COMPLETING SAGAT BARRELS (ADJUSTABLE) OR BY CHOICE AFTER DEFEATING AN OPPONENT. THE OBJECTIVE IS TO SHOOT THE STROBING SHOTS FOR INCREASING POINT VALUES (ADJUSTABLE).

TORPEDO BONUS ROUND:
* A SPECIAL 3 BALL MULTIBALL AFTER ALL LETTERS IN T-O-R-P-E-D-O ARE COMPLETE. MOST SWITCHES INCREASE THE DISPLAYED TORPEDO BONUS (ADJUSTABLE). THE BONUS IS COLLECTED IN THE OUTHOLE AT END OF BALL.

  ONE NOTE: IF PLAYER'S 2nd BALL DOES NOT LOCK IN THE TOP LEFT HOLE, THEN IT WILL BE JUST 2 BALL MULTIBALL, NOT 3 BALL MULTIBALL.

CAR CRUNCH:
* COMPLETLY SMASH CAR TO COLLECT BIG POINTS (ADJUSTABLE). ENTERED BY CHOICE AFTER DEFEATING OPPONENT OR COMPLETING BLANKA AMBER SHOTS.

ROAMING NINJA ROUND:
* ENTERED BY CHOICE AFTER DEFEATING AN OPPONENT. TWO SHOTS ARE STROBING AND MOVE RANDOMLY AT TIME INTERVALS. MAKE STROBING SHOTS TO SCORE DISPLAYED POINTS (ADJUSTABLE).

COUNT-UP BONUS ROUND:
* ENTERED BY CHOICE AFTER DEFEATING AN OPPONENT. COLLECT BONUS BY SHOOTING STROBING OBJECTIVE.

1-2 PUNCH ROUND:
* ENTERED BY CHOICE AFTER DEFEATING AN OPPONENT. EARN AN EXTRA BALL BY SHOOTING THE STROBING BLANKA HOLE AND THEN THE STROBING KEN/RYU LOOP.

DOUBLE ROUND:
* ENTERED BY CHOICE AFTER DEFEATING AN OPPONENT. SHOOT ALL 4 FLASHING RED OBJECTIVES. EACH COMPLETE SCORES DISPLAYED POINTS. ALL COMPLETE DOUBLES ENTIRE SCORE.

MASTER ROUND (CHAMPION CHALLENGE):
* ENTERED AFTER ALL 12 OPPONENTS ARE DEFEATED. ALL OPPONENTS START STROBING AND ALL MUST BE DEFEATED BEFORE BALL DRAINS. ROUND COMPLETED SUCCESSFULLY SCORES BIG POINTS AND A SPECIAL (ADJUSTABLE).

OPENING PLUNGER SKILL SHOT:
* ANY NEW BALL IN PLAY WHEN NOT IN MULTIBALL OR TORPEDO ROUND WILL DISPLAY A PICTURE OF CHUN-LI THROWING HER BRACELET. THE PLAYER SHOULD TRY TO TIME HIS SHOT SO THAT THE PLUNGER IS RELEASED WHEN THE "SHOOT" MESSAGE APPEARS IN THE DISPLAY. THE STARTING VALUE FOR THE COUNTDOWN BONUS IS BASED UPON THE TIME THE BALL REACHES THE RIGHT WIRE RAMP OPTO.

LANE CHANGE:
* HITTING THE LEFT OR RIGHT FLIPPER ROTATES ANY LIT RED SPECIAL RETURN LANE OR OUTLANE LAMPS.

II. GAME PLAY AND SCORING

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*** PLAYFIELD FEATURES ***

POP BUMPER:
* SCORE 3,000.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.

LEFT KICKING RUBBER:
* SCORE 30.
* TOGGLE RED LAMP WHEN IN NORMAL PLAY.

RIGHT KICKING RUBBER:
* SCORE 300.
* TOGGLE RED LAMP WHEN IN NORMAL PLAY.

LEFT AND RIGHT RETURN ROLLOVERS:
* SCORE 10,000.
* AWARD SPECIAL WHEN LIT.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.

LEFT AND RIGHT OUTLANE ROLLOVERS:
* SCORE 100,000.
* AWARD SPECIAL WHEN LIT.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.

RIGHT SIDE SPOT TARGETS (2):
* SCORE 1,000.
* ADVANCE FIGHTER LEDs IF BOTH SPOTS COMPLETE. ALL SPECIAL LEDs COMPLETE WILL LIGHT AN OUTLANE OR RETURN LANE SPECIAL LAMP.

TOP SPOT TARGETS (3):
* SCORE 5,000 OR 50,000 WHEN LIT OR FLASHING.
* ALL 3 NOT LIT OR FLASHING STARTS THE CENTER EB TARGET FLASHING.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.

CENTER SPOT TARGETS #1 AND #3:
* SCORE 100.
* AWARD SPECIAL IF POP BUMPER FLASHING.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.

CENTER SPOT TARGET #2:
* SCORE 100 OR 10,000 WHEN FLASHING.
* AWARD EXTRA BALL WHEN FLASHING.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.

LEFT TROUGH HOLE (DHALSIM):
* SCORE 100,000.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.
* IN MULTIBALL, SCORE DISPLAYED POINTS IF STROBING.
* DEFEAT OPPONENT IF DHALSIM FLASHING.
* SCORE 2,000,000 IF AMBER LIT.

LEFT STARGATE RAMP:
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.
* IN MULTIBALL, SCORE DISPLAYED POINTS IF STROBING.
* DEFEAT OPPONENT IF ZANGIEF OR SAGAT FLASHING.
* SCORE 3,000,000 IF AMBER LIT.

II. GAME PLAY AND SCORING

LEFT STARGATE ROLLOVER:
* SCORE 10,000.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.
* IN MULTIBALL, SCORE DISPLAYED POINTS IF STROBING.
* DEFEAT OPPONENT IF SAGAT OR ZANGIEF FLASHING.
* IF STROBING DURING NORMAL PLAY OR AMBER LIT, REMOVE A BARREL FROM SAGAT DISPLAY (ADJUSTABLE). BEGIN MULTIBALL WHEN NO BARRELS REMAIN.

GUILE SCOOP:
* SCORE 100,000.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.
* IN MULTIBALL, SCORE DISPLAYED POINTS IF STROBING.
* DEFEAT OPPONENT IF GUILE FLASHING.
* ADD A LETTER TO G-U-I-L-E IF AMBER LIT OR STROBING DURING NORMAL PLAY. ALL LETTERS COMPLETE EARNS DISPLAYED AWARD.

LOWER LEFT UPKICKER:
* SCORE 200,000.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.
* IN MULTIBALL, SCORE DISPLAYED POINTS IF STROBING.
* DEFEAT OPPONENT IF E-HONDA FLASHING.
* ADD A LETTER TO T-O-R-P-E-D-O IF AMBER LIT OR STROBING DURING NORMAL PLAY. ALL LETTERS COMPLETE STARTS TORPEDO BONUS ROUND.

BOTTOM RIGHT UPKICKER:
* SCORE 200,000.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.
* IN MULTIBALL, SCORE DISPLAYED POINTS IF STROBING.
* IF AMBER LIT OR STROBING IN NORMAL PLAY, ADD A LETTER TO T-O-R-P-E-D-O OR SCORE DISPLAYED POINTS.
* DEFEAT OPPONENT IF BISON OR BALROG FLASHING.

TOP LEFT ROLLOVER:
* SCORE 100,000.

TOP RIGHT ROLLOVER:
* SCORE 100,000.
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.
* IN MULTIBALL, SCORE DISPLAYED POINTS IF STROBING.

RIGHT STARGATE RAMP:
* SCORE 100,000.
* IN MULTIBALL, SCORE DISPLAYED POINTS IF STROBING.

LEFT WIRE RAMP:
* IN NORMAL PLAY, SCORE 300,000.
* DEFEAT OPPONENT IF CHUN-LI OR VEGA FLASHING.
* SCORE DISPLAYED POINTS IF AMBER LIT.

TOP LEFT HOLE:
* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.
* IN MULTIBALL, SCORE DISPLAYED POINTS IF STROBING.

II. GAME PLAY AND SCORING

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* DEFEAT OPPONENT IF BLANKA FLASHING.

* TAKE A STEP TOWARD ENTERING CAR CRUNCH ROUND IF AMBER LIT OR STROBING DURING NORMAL PLAY.

TOP RIGHT HOLE:

* DEFEAT OPPONENT IF VEGA OR CHUN-LI FLASHING.

* MYSTERY AWARD IF AMBER LIT

OUTER BRACELET TARGET:

* SCORE 10,000.

* INCREASE TORPEDO BONUS WHEN IN TORPEDO ROUND.

* COLLECT BRACELET BONUS IF FLASHING.

INNER BRACELET TARGET:

* SCORE 100,000

* DOUBLE AND COLLECT BRACELET BONUS IF FLASHING.

KEN/RYU LOOP:

* SCORE DISPLAYED VALUE OR 10,000.

OUTHOLE:

* SCORE ANY ACCUMULATED TORPEDO ROUND BONUS.

III. TEST MODE

There are several functions accessible to the operator while in the test mode. These functions are Self-Test, Bookkeeping, Game Adjustments, and Utilities. Each of these functions will be explained in detail later in this section. To enter the test mode, the game must be in the attract mode (game over). Then depress the Test button located just inside the front door of the game. The operator will then be given a choice as to which function he wants to access. Use the left flipper button to choose (highlight) the function desired and then either the Test button or the right flipper button to enter the chosen function.

NOTE: The Test button may be held in to fast forward through the steps of a particular function.

To exit the test mode or change functions the Slam switch (front door) must be activated or the power must be turned off.

I. SELF-TEST

This function will allow the operator to test all the hardware related devices in the game. Each test is described below.

A. MEMORY TEST

This function tests all memory devices on the Control Board (A1). If all the devices pass the test an "OK" will be displayed. If a failure occurs, a description of the faulty component will be displayed. Then after a short period of time the Game Prom check sum will be displayed. The Credit button can be used to restart this test.

B. LAMP CHECK

This function will flash all the controlled lamps and flasher lamps continuously. This will allow the operator to easily check for and replace any burned out light bulbs.

C. LAMP MATRIX TEST

This test will allow the operator to single step through and check the operation of each lamp in the game. The left flipper button will decrement the active lamp number by one while the right flipper button will increment the active lamp number by one. The strobe number and the return number are combined to form the lamp number (strobe,return) which is shown in the display along with a description of the lamp. The Credit button can be used to restart this test. Only one lamp at a time should flash during this test.

D. RELAY AND SOLENOID TEST

This test will allow the operator to single step through and check the operation of each relay and solenoid driver in the game. The left and right flipper buttons are used to change the active driver number. The selected driver description and number will appear in the display. The Credit button is then used to activate the driver for a short time period. Solenoid #31 ("Q" relay) is always on during this test so as to provide power to devices such as the pop bumpers and kicking rubbers (see Playboard Schematic Diagram).

E. SWITCH MATRIX TEST

The first part of this test will report any inactive switches. If a switch has not been actuated in the course of the last 15 games the switch name and number will be displayed.
The second part of the test will allow the operator to test the operation of all the switches used in the game. If no switches are closed when this test is started, the message "ALL SWITCHES OPEN" will be displayed. If any switches are closed either before or after this test is started, the closed switch(s) name and number will be displayed. The strobe number and the return number are combined to form the switch number (strobe,return). The Credit button can be used to restart this test.

F. DISPLAY TEST

This test allows the operator to check the operation of the 128 x 32 dot matrix display. The right flipper button is used to advance this test. The first two steps check the different levels of display intensity.

Each block that appears on the display should be of lesser intensity than the one to the left of it. During the next four steps a diagonal pattern is stepped from left to right in the display. While in this part of the test every fourth pixel only in each row of dots should be lit. During the next eight steps another diagonal pattern is stepped from left to right in the display. While in this part of the test every eighth pixel only in each row of dots should be lit. The Credit button can be used to restart this test.

G. SOUND TEST

This test allows the operator to test the interface lines from the Control Board (A1) to the Sound Board (A6). Every time the right flipper button is pressed, a different tone should be heard from the Sound Board. During each tone, the sound line connection which is being tested will be shown in the display. After the tone stops the sound line which is being tested will still be kept at a low level (<.8v) until the right flipper button is pressed again or the Credit button is used to restart the test.

H. FRONT DOOR TEST

This test allows the operator to check the operation of the coin chutes used in the game. Utilizing this function will not affect any bookkeeping values. Each coin chute closure is categorized and shown in the display. The Credit button can be used to restart this test.

I. AUXILIARY DRIVER TEST

This test will allow the operator to single step through and check the operation of each driver transistor on the Auxiliary Driver Board (A11). The left and right flipper buttons are used to change the active driver number. The selected driver description and number will appear in the lower display. The Credit button is then used to activate the driver for a short time period.

II. BOOKKEEPING

The Test button is used to step through bookkeeping. The display will contain a description of each step, the step number, and two different bookkeeping values. The value in the leftmost column represents long term bookkeeping. The value in the rightmost column (in brackets) represents short term bookkeeping. These two values are provided so that the operator may compare recent performance with long term performance and then make any necessary game adjustments.

NOTE: The left column of steps 1 (earnings) and 17-20 (coin chute counts) will not be displayed unless the credit button is pressed during that active step number.

The left flipper button will allow the operator to reset all of the left (long term) and right (short term) bookkeeping values. The right flipper button will allow the operator to reset all of the right (short term) bookkeeping values only. If the R.BOOK AUTO-RESET adjustment is on, the right (short term) bookkeeping will automatically be reset after every 2000 plays (see Game Adjustments). Therefore, the operator does not need to reset the short term bookkeeping himself unless he prefers to follow his own procedure. Also, this feature will aid in adjusting the game payout percentage to the caliber of players in different locations. If there happens to be a major error in a long term bookkeeping value the word ERROR will appear to the right of that bookkeeping value. To correct this error the long term bookkeeping must be reset. A description of each bookkeeping step is given in the test mode flowchart.

III. GAME ADJUSTMENTS

This function allows the operator to make any adjustments to his game as necessary.

A. FACTORY SETTINGS

Upon entering the game adjustment section of bookkeeping, the operator is given a choice to load all factory settings or to single step through the game adjustments and adjust each section individually. If he chooses

to enter the factory settings by depressing the Credit button, he will also be given a choice of what language to load. By using the right flipper button he may choose the appropriate language and then depress the Credit button again to enter the settings. After the settings are loaded the display should show the message "FACTORY SETTINGS LOADED" for a short time and then proceed to game adjustment step 1. At any time during the previous steps the operator may either exit the test mode or depress the Test button to proceed immediately to game adjustment step 1.

WARNING
Loading the factory settings will affect all previous game adjustment settings. Therefore be careful when selecting this feature.

B. GAME ADJUSTMENT STEPS

Each time the Test button is pressed a description of the next step appears in the display along with the step number and the current status of that step. Unless otherwise specified, the left and right flipper buttons are used to change the possible selections in each step.

1) SCORE REPLAY LEVEL 1
2) SCORE REPLAY LEVEL 2
3) SCORE REPLAY LEVEL 3
Each Score Replay Level may be set by using the left flipper button to decrement the score and the right flipper button to increment the score. The Credit button can be used to load the factory setting for each individual level if desired. If the Auto-Percentaging adjustment is on, Replay Levels 2 & 3 can only be set to on or off. If Replay Level 2 is on, the score level will be set to two times Replay Level 1. If Replay Level 3 is on, the score level will be set to three times Replay Level 1. This allows the operator several combinations of levels in the Auto-Percentaging mode (i.e. 1, 1 & 2, 1 & 3, or 1 & 2 & 3).

4) HIGH GAME TO DATE 1
5) HIGH GAME TO DATE 2
6) HIGH GAME TO DATE 3
7) HIGH GAME TO DATE 4
8) HIGH GAME TO DATE 5
Each High Game To Date may be set by using the left flipper button to decrement the score and the right flipper button to increment the score. The Credit button can be used to load the factory setting for the displayed level and all those below it.
9) GAME PRICING
This step provides a choice of loading a standard setting for a particular country or a custom setting. When a standard setting is selected, the following steps (10-17) are skipped.

10) CHUTE 1 UNITS (L)
11) CHUTE 2 UNITS (R)
12) CHUTE 3 UNITS (C)
13) CHUTE 4 UNITS
14) UNITS REQUIRED FOR CREDIT
15) UNITS REQUIRED FOR BONUS
16) BONUS CREDITS
17) MINIMUM UNITS REQUIRED FOR CREDIT
Steps 10-17 are used if a custom setting is selected in step 9 (GAME PRICING). Steps 10-13 select the number of units that each chute is worth when a coin is dropped into that particular chute. The value entered for step 14 determines how many units must be accumulated for a credit to be issued on the game. Steps 15 and 16 determine how many units must be accumulated for any bonus credits to be issued. A value of zero entered for step 15 will disable the bonus feature. Step 17 indicates the number of units required before any credits are issued (see Coin Chute Setting Table for examples).

18) COIN METER
If set to ON, the pulses to be given for each of the four coin chutes can be defined so that the number of pulses for a given chute are in relation to the currency denomination. If set to OFF, steps 19-22 will be skipped.

19) CHUTE 1 PULSES
20) CHUTE 2 PULSES
21) CHUTE 3 PULSES
22) CHUTE 4 PULSES
The four steps above are used to set

III. TEST MODE

COIN CHUTE SETTING TABLE

Country	Coin Chutes Left 1	Right 2	Center 3	4	Plays/Coin(s)	Chute Adjustment Steps 10 11 12 13 14 15 16 17
USA	.25	.25	$1		1/.50, 2/.75, 3/$1	03 03 12 00 04 00 00 00
USA (Custom)					1/.50, 3/$1	01 01 04 00 02 04 01 00
					1/.25, 4/$1	01 01 04 00 01 00 00 00
					1/.25, 5/$1	01 01 04 00 01 04 01 00
Australia 1	.20	$1	$2	-	1/3x.20, 2/$1, 5/$2	02 10 20 00 05 20 01 00
Australia 2	.20	$1	$2	-	1/5x.20, 1/$1, 3/$2	01 05 10 00 05 10 01 00
Australia 3	.20	$1	$2	-	1/5x.20, 1/$1, 2/$2	01 05 10 00 05 00 00 00
Belgium	5Fr	20Fr	50Fr	-	1/20Fr, 2/40Fr, 3/50Fr	01 04 10 00 04 10 01 00
Canada	.25	$1	-	-	1/.50, 2/.75, 3/$1	03 12 00 00 04 00 00 00
Canary Islands	25P	100P	-	-	1/25P, 4/100 Pesetas	01 04 00 00 01 00 00 00
Denmark	1Kr	10Kr	-	-	1/3x1Kr, 4/10 Kroner	01 10 00 00 03 10 01 00
Finland	5Mka	1Mka	-	-	1/3x1 Markka, 2/5 Markkaa	10 02 00 00 05 00 00 00
France 1	1Fr	5Fr	10Fr	20Fr	1/3x1Fr, 2/5Fr, 5/10Fr	02 10 20 40 05 20 01 00
France 2	1Fr	5Fr	10Fr	20Fr	2/5Fr, 4/10Fr, 9/20Fr	02 10 20 40 05 40 01 10
France 3	1Fr	5Fr	10Fr	20Fr	1/5Fr, 3/10Fr, 7/20Fr	03 15 30 60 10 60 01 15
Germany 1	5DM	2DM	1DM	-	1/1DM, 2/2DM, 6/5 D-Mark	05 02 01 00 01 05 01 00
Germany 2	5DM	2DM	1DM	-	1/2DM,2/3DM,3/4DM,5/5DM	20 08 04 00 05 20 01 00
Germany 3	5DM	2DM	1DM	-	1/2DM, 3/5DM	05 02 01 00 02 05 01 00
Italy	500L	500L	-	-	1/2x500L,2/3x500L,3/4x500L	03 03 00 00 04 00 00 00
Japan	100Y	100Y	-	-	1/100 Yen, 3/2x100 Yen	01 01 00 00 01 02 01 00
New Zealand	$1	$2	-	-	1/$1, 3/$2	01 02 00 00 01 02 01 00
Norway	5Kr	10Kr	-	-	1/5Kr, 2/10 Kroner	01 02 00 00 01 00 00 00
Spain	500P	100P	-	-	1/100P, 6/500 Pesetas	05 01 00 00 01 05 01 00
Sweden	10Kr	5Kr	-	1Kr	1/5x1Kr, 1/5Kr, 2/10Kr	10 05 00 01 05 00 00 00
Switzerland	1Fr	5Fr	2Fr	-	1/1Fr, 3/2Fr, 7/5 Francs	01 07 03 00 01 00 00 00
United Kingdom 1	1£	50P	20P	10P	1/3x10P, 2/50P, 4/1 Pound	
United Kingdom 2	1£	50P	20P	10P	1/50P, 3/1 Pound	
Universal	-	-	-	-	1/1 Coin	01 01 00 00 01 00 00 00

the number of pulses to be issued for each of the four coin chutes.

23) COIN DOOR TYPE
This step provides a choice of loading a standard setting for a particular country or a custom setting. When a standard setting is selected, the following steps (24-28) are skipped.

24) COLLECTION TEXT
25) CHUTE 1 VALUE
26) CHUTE 2 VALUE
27) CHUTE 3 VALUE
28) CHUTE 4 VALUE
Step 24 is used to enter the name of the currency in use. The remaining four steps are used to set the monetary value of each coin chute.

29) 1 COIN BUY-IN BONUS
At the end of a game a 10-second timer is initialized allowing each player that participated in the previous game a chance to purchase 1 credit for each coin inserted.

30) GAME PERCENT PAYOUT
This step is used to set the game payout percentage used when the Auto-Percentaging adjustment is on. The value entered for this step is compared to the value calculated by dividing total replays by total plays (see Bookkeeping section). Total replays include all replays won from beating the score replay level, achieving a new high game to date, winning a playfield special, and all match replays.

When the GAME MODE adjustment is set to Add a Ball this setting refers to extra ball percentage rather than replay percentage. The value entered in this case will be compared to the value calculated by dividing total extra balls won by total plays (see Bookkeeping section).

31) MATCH PERCENT PAYOUT
This step is used to set the match payout percentage. If this step is set to zero, the match will be disabled.

NOTE: The resulting value from subtracting the value entered for this step from the value entered for the GAME PERCENT PAYOUT adjustment indicates what percentage is left for any other means of winning a replay during a game.

32) HIGH GAME REPLAYS
This step is used to set the number of replays to award when the highest game to date has been beaten.

33) MAXIMUM CREDITS
This step sets the maximum number of credits allowed on the game.

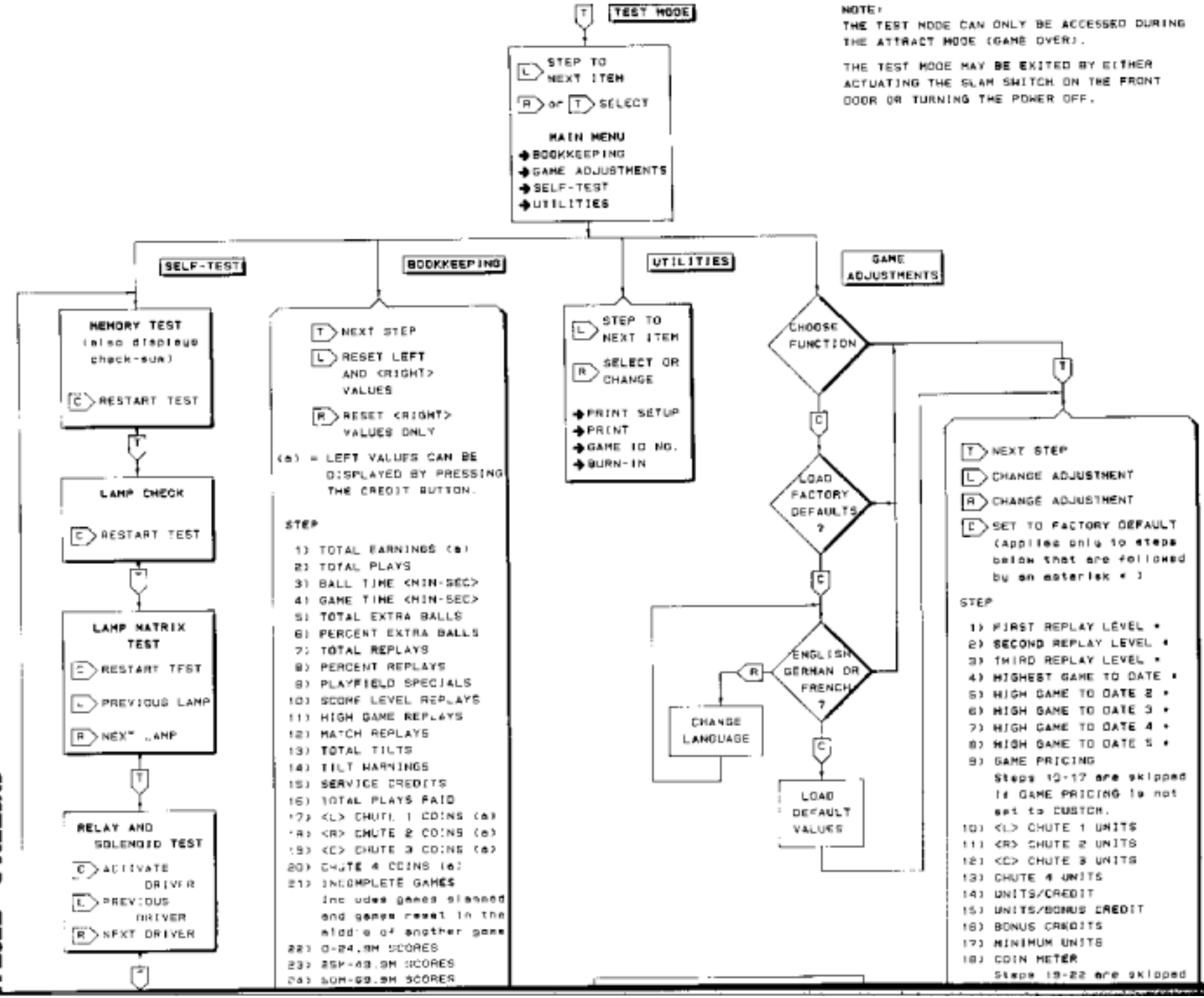
34) TILT WARNINGS
This step sets the number of tilts allowed before the current player's ball in play is terminated.

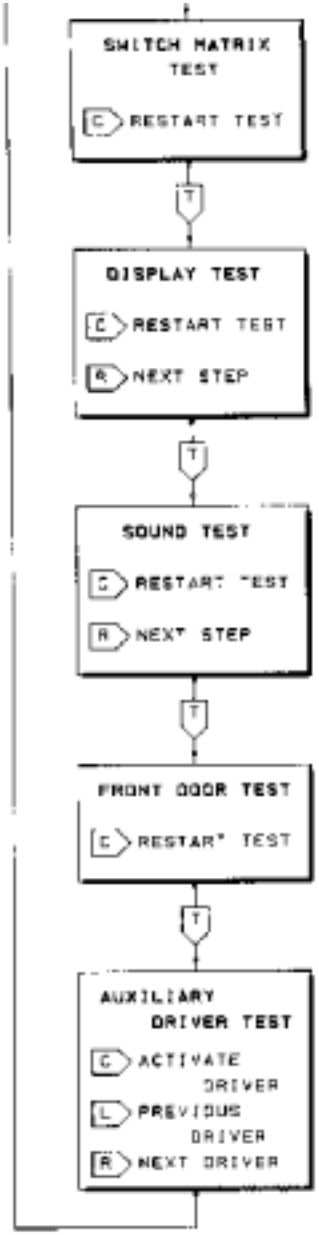
35) BALLS PER GAME
This step sets the game to 3-ball play or 5-ball play.

36) GAME MODE
This step allows the game to be played in Replay, Replay + Tickets, Tickets Only, Add a Ball, or Novelty mode. In Replay mode all Specials and replays are allowed. Replay + Tickets mode is the same as Replay mode with the addition of one or more tickets to be issued (TICKETS TO AWARD) along with each replay. In Tickets Only mode one or more tickets will be issued in place of each replay won. In Add a Ball mode all Score Level Replays and Playfield Specials award an extra ball in place of a replay. Also the Match and High Game To Date awards are disabled. However, after the Add a Ball mode is selected, the PLAYFIELD SPECIAL, MATCH PERCENT PAYOUT, and HIGH GAME REPLAYS adjustments may be individually set to whatever setting may be desired. In Novelty mode all Specials award 50,000,000 points, Extra Balls award 20,000,000 points and the Score Replay Levels, Match, and High Game to Date awards are disabled.

NOTE: If either the Replay + Tickets or Tickets Only setting is selected do not set the COIN METER setting to on.

37) TICKETS TO AWARD
This step allows the operator to set the number of tickets to award


T TEST MODE
NOTE:
THE TEST MODE CAN ONLY BE ACCESSED DURING THE ATTRACT MODE (GAME OVER).
THE TEST MODE MAY BE EXITED BY EITHER ACTUATING THE SLAM SWITCH ON THE FRONT DOOR OR TURNING THE POWER OFF.
L STEP TO NEXT ITEM
R or T SELECT
MAIN MENU
BOOKKEEPING
GAME ADJUSTMENTS
SELF-TEST
UTILITIES
SELF-TEST
MEMORY TEST (also displays check-sum)
C RESTART TEST
LAMP CHECK
C RESTART TEST
LAMP MATRIX TEST
C RESTART TEST
L PREVIOUS LAMP
R NEXT LAMP
RELAY AND SOLENOID TEST
C ACTIVATE DRIVER
L PREVIOUS DRIVER
R NEXT DRIVER
BOOKKEEPING
T NEXT STEP
L RESET LEFT AND <RIGHT> VALUES
R RESET <RIGHT> VALUES ONLY
(a) = LEFT VALUES CAN BE DISPLAYED BY PRESSING THE CREDIT BUTTON.
STEP
1) TOTAL EARNINGS (a)
2) TOTAL PLAYS
3) BALL TIME <MIN-SEC>
4) GAME TIME <MIN-SEC>
5) TOTAL EXTRA BALLS
6) PERCENT EXTRA BALLS
7) TOTAL REPLAYS
8) PERCENT REPLAYS
9) PLAYFIELD SPECIALS
10) SCORE LEVEL REPLAYS
11) HIGH GAME REPLAYS
12) MATCH REPLAYS
13) TOTAL TILTS
14) TILT WARNINGS
15) SERVICE CREDITS
16) TOTAL PLAYS PAID
17) <L> CHUTE 1 COINS (a)
18) <R> CHUTE 2 COINS (a)
19) <C> CHUTE 3 COINS (a)
20) CHUTE 4 COINS (a)
21) INCOMPLETE GAMES Includes games aborted and games reset in the middle of another game
22) 0-24.9M SCORES
23) 25M-49.9M SCORES
24) 50M-99.9M SCORES
UTILITIES
L STEP TO NEXT ITEM
R SELECT OR CHANGE
PRINT SETUP
PRINT
GAME ID NO.
BURN-IN
GAME ADJUSTMENTS
CHOOSE FUNCTION
C
LOAD FACTORY DEFAULTS ?
C
ENGLISH GERMAN OR FRENCH ?
R
CHANGE LANGUAGE
C
LOAD DEFAULT VALUES
T
T NEXT STEP
L CHANGE ADJUSTMENT
R CHANGE ADJUSTMENT
C SET TO FACTORY DEFAULT (applies only to steps below that are followed by an asterisk *)
STEP
1) FIRST REPLAY LEVEL *
2) SECOND REPLAY LEVEL *
3) THIRD REPLAY LEVEL *
4) HIGHEST GAME TO DATE *
5) HIGH GAME TO DATE 2 *
6) HIGH GAME TO DATE 3 *
7) HIGH GAME TO DATE 4 *
8) HIGH GAME TO DATE 5 *
9) GAME PRICING Steps 10-17 are skipped if GAME PRICING is not set to CUSTOM.
10) <L> CHUTE 1 UNITS
11) <R> CHUTE 2 UNITS
12) <C> CHUTE 3 UNITS
13) CHUTE 4 UNITS
14) UNITS/CREDIT
15) UNITS/BONUS CREDIT
16) BONUS CREDITS
17) MINIMUM UNITS
18) COIN METER Steps 19-22 are skipped



26) 80M-89.9M SCORES
27) 90M-99.9M SCORES
28) 100M-124.9M SCORE
29) 125M-149.9M SCORE
30) 150M-199.9M SCORES
31) 200M-299.9M SCORES
32) 300M-399.9M SCORES
33) 400M+ SCORES
34) FIRST REPLAY LEVEL
35) HIGHEST GAME TO DATE
36) LOWEST GAME TO DATE
37) 1-15 SEC. BALL TIME
38) 16-30 SEC. BALL TIME
39) 31-45 SEC. BALL TIME
40) 46-60 SEC. BALL TIME
41) 61 SEC.+ BALL TIME
42) % L OUTLANE DRAINS
43) % R OUTLANE DRAINS
44) ROLLOVER SPECIALS
45) WHITE SPOT SPECIAL
46) MASTER ROUND SPECIALS
47) 1-2 PUNCH ENTERED
48) 1-2 PUNCH EXTRA BALLS
49) MYSTERY EXTRA BALLS
50) HURRY-UP EXTRA BALLS
51) SPOT TARGET E.B.
52) GUILE COMPLETE E.B.
53) GUILE COMPLETE 50 MIL
54) ROAMING NINJA ENTERED
55) ROAMING NINJA COLLECT
56) DOUBLE ROUND ENTERED
57) DOUBLE ROUND COLLECT
58) TIMES IN CAR CRUNCH
59) CAR CRUNCH WON
60) TORPEDO COMPLETE
61) MULTIBALLS PLAYED
62) JACKPOTS COLLECTED
63) SUPER JACKPOTS
64) 1 DEFEAT
65) 2 DEFEATS
66) 3 DEFEATS
67) 4 DEFEATS
68) 5 DEFEATS
69) 6 DEFEATS
70) 7 DEFEATS
71) 8 DEFEATS
72) 9 DEFEATS
73) 10 DEFEATS
74) 11 DEFEATS
75) 12 DEFEATS

T PRESS TEST BUTTON
C PRESS CREDIT BUTTON
L PRESS LEFT FLIPPER BUTTON
R PRESS RIGHT FLIPPER BUTTON

18) CHUTE 1 PULSES
20) CHUTE 2 PULSES
21) CHUTE 3 PULSES
22) CHUTE 4 PULSES
23) COIN DOOR TYPE
Steps 24-28 are skipped if COIN DOOR TYPE is not set to CUSTOM.
24) COLLECTION TEXT
25) CHUTE 1 VALUE
26) CHUTE 2 VALUE
27) CHUTE 3 VALUE
28) CHUTE 4 VALUE
29) 1 COIN BUY-IN BONUS
30) GAME PERCENT PAYOUT
31) MATCH PERCENT PAYOUT
32) HIGH GAME REPLAYS
33) MAXIMUM CREDITS
34) TILT WARNINGS
35) BALLS PER GAME
36) GAME MODE
37) TICKETS TO AWARD
38) LANGUAGE
39) AUTO PERCENTAGING
40) REPLAY LIMIT
41) HIGH GAMES 2-5
42) ATTRACT SOUND
43) ATTRACT MESSAGE
Use the credit button to enter a message.
44) RIGHT BOOK AUTO-RESET
45) PLAYFIELD SPECIAL
46) REPLAY LEVEL BOOST
47) GAME DIFFICULTY
48) DEFEATING OPPONENTS
49) SUPER JACKPOT SCORING
50) TORPEDO ROUND SCORING
51) ROUNDS MASTER TIMER
52) MYSTERY EXTRA BALL
53) EB TARGET LIT TIME
54) LIGHT EB SPOT TARGET
55) SPECIAL LANES
56) ROAMING NINJA SCORING
57) 1-2 PUNCH ROUND TIME
58) DOUBLE ROUND TIME
59) LOOP SCORING
60) MYSTERY SPECIAL TIME
61) CAR CRUNCH SCORING
62) GUILE EXTRA BALL
63) HURRY-UP EXTRA BALL
64) 1-2 PUNCH EXTRA BALL
65) MASTER SPECIAL AWARD
66) BARREL ROUND
67) BALL TIME SAFETY

when a replay has been won. This setting will only apply when the GAME MODE is set to either Replay + Tickets, or Tickets Only.

38) LANGUAGE
This step allows the Test Mode steps to be displayed in English, German, or French.

39) AUTO-PERCENTAGING
If this step is set to on, the Score Replay Levels will be adjusted periodically so that the Game Percent Payout setting will match the actual Replay Percentage displayed in Bookkeeping.

NOTE: If the GAME MODE is set to Add a Ball, the Extra Ball Percentage in bookkeeping is used in place of the Replay Percentage.

40) REPLAY LIMIT
This step may be set to no limit or one per player per game.

41) HIGH GAMES 2-5
This step will determine if High Games to Date (2-5) will be saved or erased when power is turned off.

42) ATTRACT SOUND
This step determines whether or not sounds are enabled during the attract mode (game over).

43) ATTRACT MESSAGE
This step is used to enable or disable an operator message during the attract mode (game over). This step is also used to enter a user message into memory. To enter a message press the Credit button. The current message will be displayed and the cursor position will be indicated by the flashing character. If the current position is blank, a flashing directional arrow will appear. This type of arrow will indicate which direction the cursor will move if the Credit button is pressed. The Credit button is also used to select characters after they have been chosen using the left and right flipper buttons.

44) RIGHT BOOKKEEPING AUTO-RESET
If this step is set to on, all the short term bookkeeping steps (in brackets) will reset after 2000 plays. Otherwise they will not reset until 10,000 games have been played on the machine.

45) PLAYFIELD SPECIAL
When a playfield special is won, either a replay or an extra ball is awarded to the player based on the setting of this step.

46) REPLAY LEVEL BOOST
This step may be set anywhere from 0 to 99,000,000 in increments of 1,000,000. If set to zero, the boost is disabled. Otherwise the Replay Level will be increased by the boost value after completing a game where a player has won a replay and his skill level has been determined to be above average. The Replay Level will return back to its base level once all of the replays won have been played.

CAPCOM™

STREET FIGHTER II™

CHAMPION EDITION

OPERATOR ADJUSTMENT SETTINGS
(*** = FACTORY DEFAULT SETTING)

47) GAME DIFFICULTY
AUTOMATICALLY SETS VARIOUS ADJUSTMENTS LISTED BELOW IN STEPS 48 - 60. THE FINE-TUNE SETTING ALLOWS THE OPERATOR TO INDIVIDUALLY SELECT EACH ADJUSTMENT.

III. TEST MODE

STEP				(ENG.) ***	(FR./5 BALL) ***	
47	GAME DIFFICULTY	VERY EASY	EASY	MEDIUM	HARD	VERY HARD
48	DEFEATING OPPONENTS	EASY	EASY	EASY	MEDIUM	HARD
49	SUPER JACKPOT SCORING	EASY	EASY	MEDIUM	MEDIUM	HARD
50	TORPEDO ROUND SCORING	EASY	EASY	MEDIUM	HARD	HARD
51	ROUNDS MASTER TIMER	VERY EASY	EASY	MEDIUM	HARD	VERY HARD
52	MYSTERY EXTRA BALL	VERY EASY	EASY	MEDIUM	HARD	VERY HARD
53	EB TARGET LIT TIME	EASY	EASY	MEDIUM	MEDIUM	HARD
54	LIGHT EB SPOT TARGET	EASY	EASY	MEDIUM	HARD	HARD
55	SPECIAL LANES	EASY	EASY	EASY	EASY	HARD
56	ROAMING NINJA SCORING	EASY	EASY	EASY	MEDIUM	HARD
57	1-2 PUNCH ROUND TIME	EASY	EASY	MEDIUM	MEDIUM	HARD
58	DOUBLE ROUND TIME	EASY	EASY	MEDIUM	MEDIUM	HARD
59	LOOP SCORING	EASY	EASY	EASY	MEDIUM	HARD
60	MYSTERY SPECIAL TIME	EASY	EASY	MEDIUM	HARD	HARD

48) DEFEATING OPPONENTS
Selects the number of opponent lamps flashing for defeation.
EASY - 3
MEDIUM - 2
HARD - 1

49) SUPER JACKPOT SCORING
Affects the handling of super jackpot during multiball.
EASY - Maintains super jackpot for the rest of game.
MEDIUM - Once super jackpot is scored, restarts sequence at the start of next multiball.
HARD - Restarts sequence upon scoring super jackpot.

50) TORPEDO ROUND SCORING
Sets the bonus points increment.
EASY - 5 Million
MEDIUM - 3 Million
HARD - 2 Million

51) ROUNDS MASTER TIMER
Sets the speed of the timer during feature rounds.
VERY EASY - Slowest
EASY
MEDIUM
HARD
VERY HARD - Fastest

52) MYSTERY EXTRA BALL
Filters EXTRA BALL out of the mystery award when the EB% exceeds the following:
VERY EASY - 50%
EASY - 40%
MEDIUM - 30%
HARD - 20%
VERY HARD - 10%

53) EXTRA BALL TARGET LIT TIME
Sets the time the EB spot target flashes after lighting from the top spot targets.
EASY - No timeout
MEDIUM - Slow timeout
HARD - Fast timeout

54) LIGHT EXTRA BALL SPOT TARGET
Controls difficulty of lighting the extra ball spot target from the top 3 spot targets.
EASY - Lit to off.
MEDIUM - Lit to flashing to off.
HARD - All 3 lit to all 3 flashing to off.

55) SPECIAL LANES
EASY - Retains SPECIAL LEDs from ball to ball.
HARD - Start each ball with SPECIAL LEDs off.

56) ROAMING NINJA SCORING
Sets the point sequence for this feature round.
EASY - 5, 20, 50, & 100 million
MEDIUM - 5, 15, 35, & 70 million
HARD - 5, 10, 15, & 20 million

57) 1-2 PUNCH ROUND TIME
EASY - Most time
MEDIUM
HARD - Least time

58) DOUBLE ROUND TIME
EASY - Most time
MEDIUM
HARD - Least time

59) LOOP SCORING
Sets the maximum point limit for each rotation of the ball in the KEN/RYU loop.
EASY - 6 million
MEDIUM - 4 million
HARD - 2 million

60) MYSTERY SPECIAL TIME
Selects the time that the pop bumper flashes for special after mystery award.
EASY - Most time
MEDIUM
HARD - Least time

61) CAR CRUNCH SCORING
Sets the point sequence for complete destruction of the car.
EASY - 10, 20, & 50 million max.
*** MEDIUM - 5, 10, & 30 million max.
HARD - 3, 5, & 10 million max.

62) GUILE EXTRA BALL
Chooses if an EB is awarded for the first completion of G-U-I-L-E.
OFF - No, score points instead
*** ON - Yes, award EB

63) HURRY-UP EXTRA BALL
Selects if in flipper choice table.
OFF - No
*** ON - Yes

64) 1-2 PUNCH EXTRA BALL
Selects award.
OFF - Points
*** ON - Extra Ball

65) MASTER SPECIAL AWARD
Selects if a special is awarded for defeating the master.
OFF - No
*** ON - Yes

66) BARREL ROUND
Sets the number of times the amber Sagat shot must be made before earning Barrel multiball.
*** EASY - Less
HARD - More

67) BALL TIME SAFETY
Should a ball drain very quickly, it will be returned to the shooter based upon setting.
VERY EASY - Longest safety time
*** EASY
MEDIUM
HARD
VERY HARD - Shortest safety time

IV. UTILITIES

Use the left flipper button to choose (highlight) a function and then the right flipper button to select or change the value of the function. Each utility is described below.

A. PRINT

Bookkeeping - all values
Short Bookkeeping - first 8 values

B. PRINTER SET-UP

Type - NSM DATA or SERIAL
Baud Rate - 1200, 2400, 4800, 9600
Data - 7 bit or 8 bit
Parity - none, even, or odd

C. GAME ID NO.

A four digit number can be entered during this step which can be used as an ID number for a particular game. This ID number will appear in the display on power-up and also on all printouts. The left and right flipper buttons alter the digit value and the credit button enters the displayed value into memory and then proceeds to the next digit position.

D. BURN-IN

This function can be used to continuously exercise all the lamps and solenoids in the game.

V. TOURNAMENT MODE

The Tournament Mode switch provides a simple way to alter some of the normal game settings in order to provide for tournament play. The switch is located on a circut board just inside the front door of the game to the lower left. The game must be in a game over condition in order to recognize the switch changing states. When the switch is moved to the "ON" position with the front door open, four Tournament Mode adjustments will appear on the display. These adjustments can be altered by using the left flipper button to select the function and the right flipper button to alter the current setting. Once these settings have been chosen they will remain in permanent memory so that all that has to be done each subsequent time that tournament play is desired is to move the switch to the "ON" position. When the Tournament Mode settings are in effect they

override the normal Game Adjustment settings. When the switch is moved to the "OFF" position, all the normal Game Adjustment settings are back in effect.

NOTE: Even if the game will not be used for tournament play, this switch can be used to provide an easy way to set the game for FREE PLAY without affecting any other game settings by setting the remaining three Tournament Mode adjustments to "NORMAL".

Each Tournament Mode adjustment is described below.

*** = Factory Default Setting

1) FREE PLAY
*** OFF = Credits are required to start a game.
ON = A game may be started without any credits posted.

2) GAME FEATURES
*** NORMAL = Normal play.
TOURNAMENT =
Various game features are altered as described below in order to provide the same odds for all players.
a) The same red lamps flash in the Double Round.
b) The Mystery feature always adds two letters to G-U-I-L-E.

3) SPECIAL/REPLAY
*** NORMAL = Normal play.
POINTS =
Playfield Special awards 50,000,000 points. Match, High Game to Date, and Score Replay Level payouts are disabled.

4) EXTRA BALL
*** NORMAL = Normal play.
POINTS =
Extra Ball awards 20,000,000 points.

SERVICE SWITCH

This switch is actuated when the front door is closed. With the front door closed, all bookkeeping steps are incremented normally. When the front door is opened all bookkeeping steps are frozen at their current values. Any credits that are added with the front door open are recorded in the SERVICE CREDITS bookkeeping step.

SOUND ADJUSTMENTS

The speaker(s) output is controlled by the volume control located on a circuit board just inside the front door of the game to the lower left.

Turning the volume control counter-clockwise will decrease the volume. Turning it clockwise will increase the volume.

POST ADJUSTMENTS

There are no post adjustments on this game.

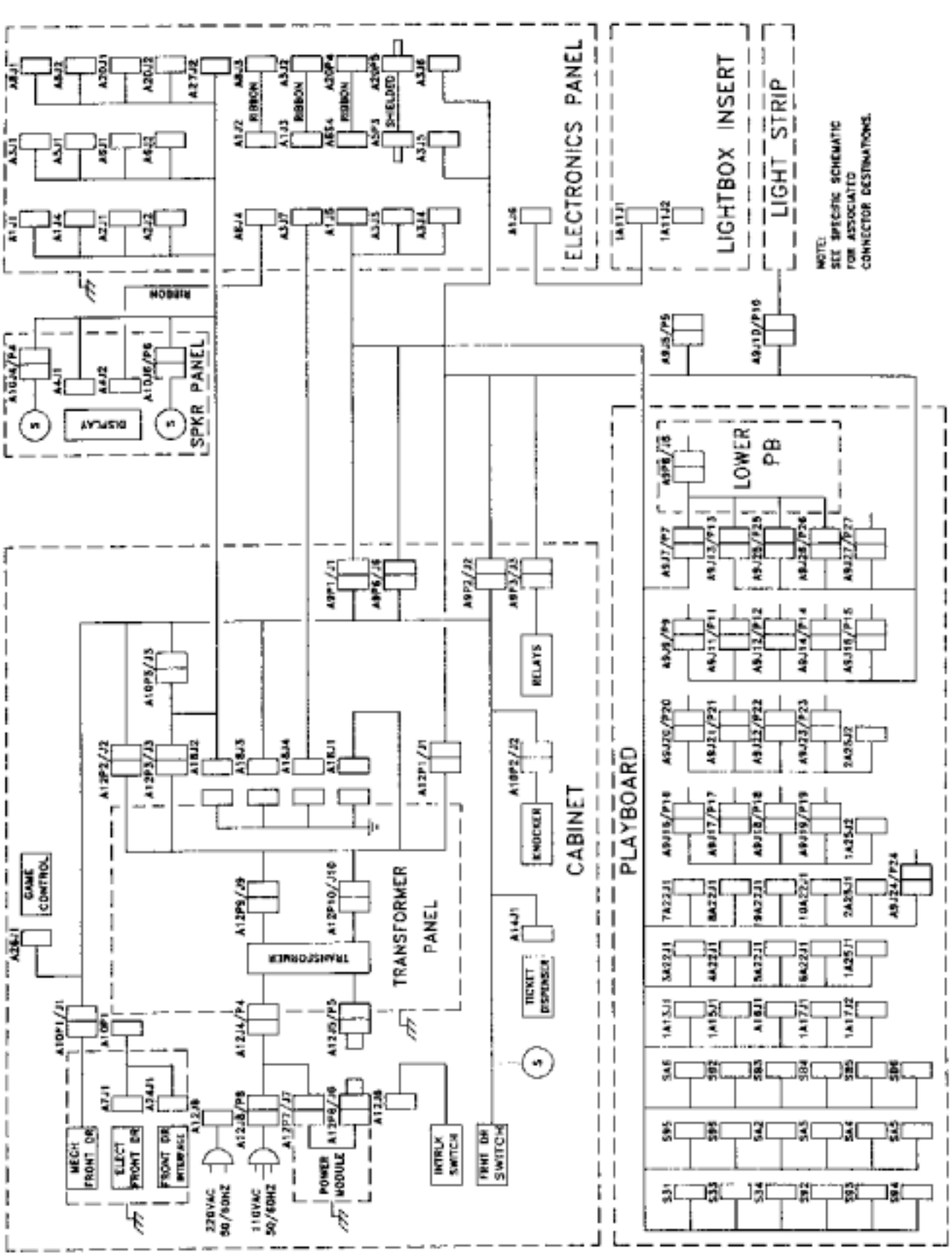


FIGURE 1. INTERCONNECTION DIAGRAM

IV. THEORY OF OPERATION

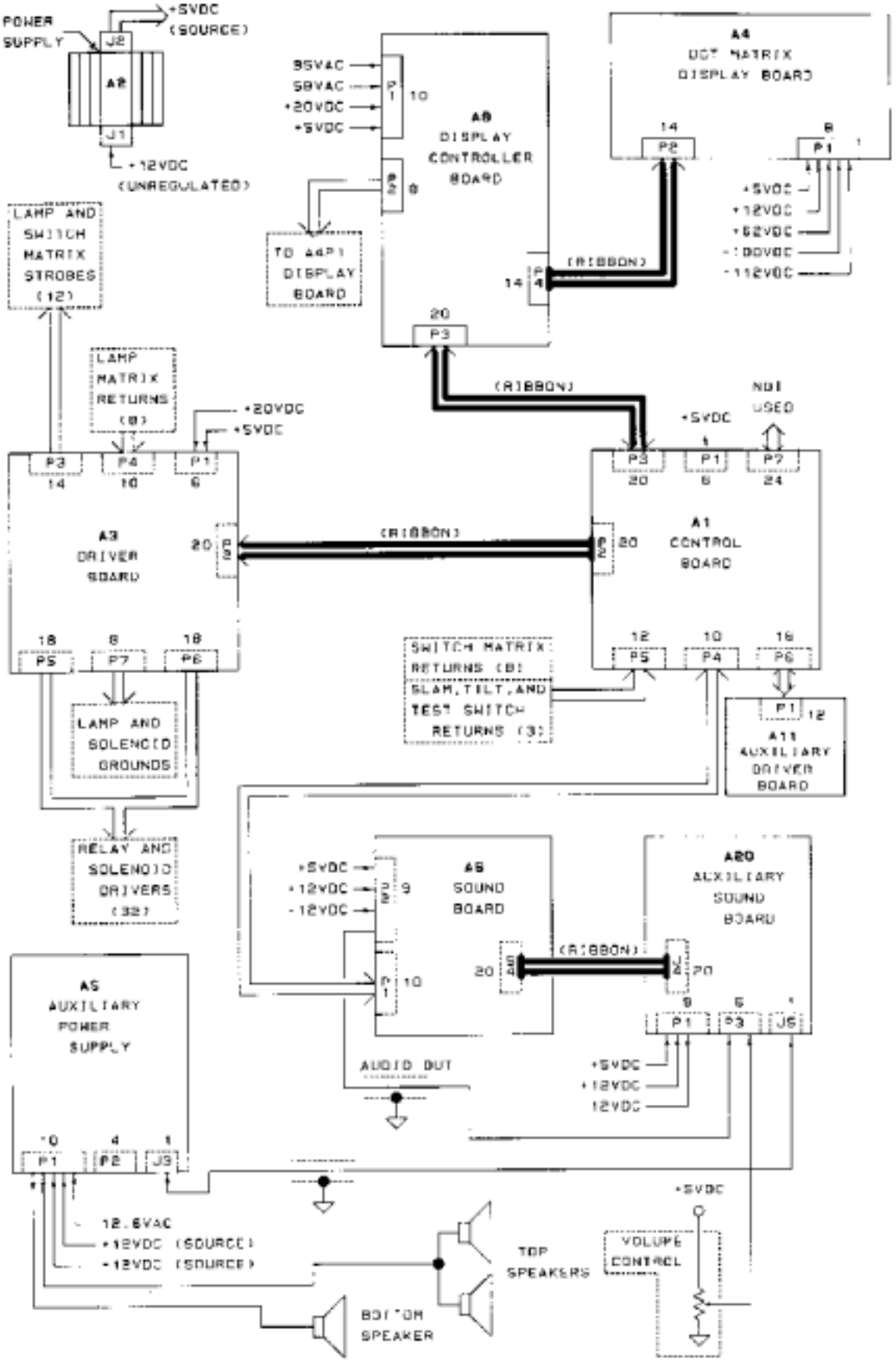


FIGURE 2. SYSTEM 3 BLOCK DIAGRAM

IV. THEORY OF OPERATION

A. CONTROL BOARD (A1)

The Control Board is supplied with 5vdc (A1P1) from the Power Supply (A2P2). The data contained in ram (U3) is kept valid when power is turned off by the lithium battery (BAT1) and controller (U6).

NOTE: When replacing either the battery, ram, or the controller there may be a message that appears in the display on power up the first time that indicates a low battery condition. If this occurs, turn the power off and back on again. The board should power up normally this time. If not, there is another problem on the board.

The Control Board can accomodate either a 27512 or a 27256 Eprom. JP1 must be installed for a 27512 or JP2 for a 27256 Game Prom. A 4 Mhz oscillator is configured using U17,R1,R2,C22,C23, and XTAL1. The oscillator output is then divided by 2 to a 2Mhz clock by U18 which is used as the input clock to the 65C02 (U1) microprocessor. The clock output of U1 (pin 39) is used as a sync signal for reading from or writing to the peripheral devices.

Two versatile interface adapters (U4,U5) are used to develop the necessary control signals for the system. The display connector (A1P3) is comprised of several signals. U4-15 and U4-17 are used as inputs to receive data from the Display Controller Board. Data is output to the Display Controller Board by U7 (BD0-BD7) and then latched by pulsing the DS0 line at U9-4. The output at DS1 (U9-5) is used to reset the Display Controller Board if it does not respond to data output by the Control Board.

The Driver Board connector (A1P2) contains all the signals necessary to operate the lamp and switch matrix strobes, the lamp matrix returns, and the solenoids. The lamp clear (LCLR), lamp strobe (LSTB), and lamp strobe data (LDATA) are generated by U4-12,U4-11, and U4-10 respectively. The appropriate lamp return data during each active lamp strobe is output by U7 and latched into U5 on the Driver Board by the lamp return data strobe (LDS). The solenoid data is output by U7 (BD0-BD7) and latched into the appropriate Driver Board device (U1-U4) by the solenoid strobes (SS0-SS3).

The switch matrix returns are input at A1P5, buffered by U19 and U20 and then input to U4. Discrete inputs are provided at A1P5 for the slam, tilt, and test switches.

The connection to the Sound Board (A1P4) is made up of eight sound data lines (SD0-SD7), a return line (SRET), and a reset line (MR).

A reset circuit is configured using U13,U14,R3, and C24. When power is applied to the system, the microprocessor reset pin (U1-40) is held low for approximately 10 milliseconds. The system can also be reset by pressing the switch (SW1) on the board. Whenever a reset occurs the master reset signal (MR) (U18-9) is held low until the display strobe (DSTB) becomes active. At this point the master reset goes high which enables the peripheral IC's on the Display Board and Driver Board to accept data.

A watchdog circuit is employed to monitor both the display digit strobe and the lamp strobe. This circuit is made up of U11,U12,U13,U16,R5,R6,R29, R32,R33,C20,C21,C28, and C29. If either the display strobe (DSTB) or the lamp strobe (LSTB) is missing for 330 milliseconds the system will be reset. The system will also be reset if the supply voltage drops below 4vdc. This voltage monitor is configured using U21,VR1,D1,D2,R34, and R35.

B. POWER SUPPLY (A2)

The transformer panel delivers 12vdc to the input of the power supply. The regulated output voltage should be set to 5vdc by using potentiometer R3. This voltage is then supplied to the Control Board (A1), Driver Board (A3), Display Board (A4), Sound Board

(A6), Display Controller Board (A8), and any other auxillary board which may require it.

C. DRIVER BOARD (A3)

Two voltages are supplied to this board at A3P1. The 5vdc is supplied from the Power Supply (A2) and the 20vdc is supplied from the transformer panel. The 20vdc is used to source the controlled lamps and the switch matrix. The Driver Board receives its data at A3P2 from the Control Board (A1P2). Solenoid data is latched into U1-U4. Lamp return data is latched into U5. Lamp and switch strobe data is shifted through U6 and U7. The comparators (U10,U11) are used to protect the MOSFETS (Q33-Q49). If a sensed input voltage exceeds the reference voltage (Vref), the corresponding MOSFET is turned off immediately following the lamp clear pulse (LCLR) supplied by U12 thus limiting the duty cycle. If the master reset signal (MR) is held low all lamps and solenoids will be disabled.

D. DISPLAY CONTROLLER (A8)

This board is comprised of the power supply section and the digital section. The power supply is used to generate the necessary voltages that are required to power the Display Board. All voltages are input at A8P1 and then output to the Display Board at A8P2.

The digital section controls the information which appears in the display and also the refresh of the display information. The clock circuit runs at 3.579 MHz and is divided by two through U5 and then fed to the microprocessor (U1-37) as the master clock. The LED on the board will flash if the microprocessor (U1) is running properly. A controller chip (U2) is used to refresh the Display Board independent from the code which is being executed by the microprocessor (U1). U1 uses the data bus during the phase 2 portion of the clock while U2 uses it during the phase 1 portion. The address lines from both U1 and U2 are multiplexed through U9-U11 to determine which device has control of the ram (U4). The necessary data is then output to the Display Board at A8P4. Data is both transmitted and received from the Control Board at A8P3. If the Control Board cannot successfully communicate with the Display Controller Board it will attempt to reset the Controller Board by sending a negative going signal on A8P3-14 (DS1).

E. DISPLAY BOARD (A4)

The Display Board consists of a 128 column X 32 row gas plasma display. The drive electronics located on the backside of the board convert low voltage serial data in to high voltage parallel data out for driving the display. The column drivers contain output latches so that column data for the following row can be entered while the present row is being displayed. All voltages required by the display are input at A4P1. All control signals needed to multiplex the display are input at A4P2. The Display Controller Board sends 128 bits of serial column data on the SDATA line for every row of display information. The data is shifted through the driver IC'c by the dot clock signal (DCLK). The column data for a particular row is then latched by the column latch (CLATCH) signal. The row clock (RCLK) signal is used to clock the row driver data (RDATA) through the row driver IC. There is only one active row at a time. Between rows the display enable (DE) signal is used to prevent the display from flickering.

F. SOUND BOARD (A6)

The Sound Board consists of two 6502 microprocessor systems, a dual DAC, an input port to receive commands from the system Control Board, and a low level audio output at A6P2-9 which is sent to the summing amplifier located on the Auxiliary Sound Board (A20) for amplification.

The Sound Board requires three supply voltages +5vdc, +12vdc, and -12vdc. In addition, a power-up reset signal is required from the Control Board. If a manual reset is desired, pressing SW2 will reset both processors.

IV. THEORY OF OPERATION

A 4MHz oscillator is configured with R11, R12, C14, C15, C22, XTAL1, and T1. This clock is then divided down by S1 into either a 2MHz or 1MHz clock signal for the processors N1 and T3. A 250 KHz clock signal from S1-11 is used by the programmable timer section consisting of N5, H5, T5, and K5.

Eight lines from the Control Board are input at A6P1 on the Sound Board and sent to the two input code latches A3 and B2. When any of these inputs goes low (except for A6P1-9 when JP7 is not installed) A2-8 goes high which causes the input code data to be latched into A3 and B2. Also at the same time the flip-flops contained in A4 are clocked which cause the IRQ input of each microprocessor to go low. The outputs of A4 will remain in the low state until each flip-flop is cleared by a signal from its associated microprocessor after each IRQ is processed.

The Sound Board is designed to accomodate different types of Eproms. Jumpers JP1, JP2, JP3, and JP4 should be set to their proper positions based on the density of the Eproms being used.

G. AUXILIARY SOUND BOARD (A20)

The Auxiliary Sound Board contains a sound generator YM2151 (U9) and a sound/speech generator MSM6295 (U1). Both of these IC's operate under the control of the T3 microprocessor on the master Sound Board (A6). The sound generator YM2151 responds to its commands by sending serial data to the YM3014 DAC (U10). The DAC then converts this data into an analog signal which is filtered through a series of op-amps and then sent to the main summing amplifier (U11).

A 74HCT74 IC (U6) is used to divide the 4 MHz clock signal present at A20P4-9 into both a 1 MHz and 2 MHz signal which is selectable via JP3 (2 MHz) or JP4 (1 MHz). This signal is then used as the master clock for the speech generator (U1). When the speech generator (U1) receives a command, it then retrieves its data from the Eproms (U4, U5). The analog output at pin 36 (DAO) is then sent through an active filter network and then to the main summing amplifier (U11).

The output of the main summing amplifier (U11-7) is input to a voltage controlled amplifier (VCA) (U13). The volume is controlled by a potentiometer located just inside the front door of the game. The potentiometer acts as a resistor divider which supplies a 0 to 5 volt signal to the VCA at U13-2. The output of the VCA is then sent to Auxiliary Power Supply (A5) for amplification.

H. SENSOR BOARD (A15)

This board is used to detect if any flipper is energized and then inputs the data to the Control Board to be processed. This board therefore eliminates the need for a second switch to be used on the flipper assembly itself. U1 is an optocoupler device which converts the input signal from the flipper circuit when energized to a signal which can be recognized by the Control Board as a valid switch closure.

I. OPTICAL INTERFACE (A25)

The optical interface assembly generates and receives the infrared light pulses needed to optically detect the ball breaking an infrared light beam. It also provides a visual indication that the interface assembly is functioning properly.

This method of detection transmits infrared light pulses from an opto LED to an opto phototransistor receiver. The LED light pulses are generated from a switch strobe that is buffered and current amplified by two sections of the LM339 voltage comparitor (output pins 1 & 2) and transistor Q2.

When no ball is present, the light pulses reach the opto receiver which passes the pulses 180 degrees out of phase with the switch strobe on to two additional sections of the comparitor (pins 9 & 10). Because the strobe pulses and receive pulses are out of phase, they cancel at resistors R1 & R3 and keep comparitor

V. GENERAL INFORMATION

A. PRINTED CIRCUIT BOARDS ARE DESIGNATED AS FOLLOWS:

A1 - Control Board
A2 - Power Supply
A3 - Driver Board
A4 - Dot Matrix Display
A5 - Auxiliary Power Supply
A6 - Sound Board
A8 - Display Controller
A11 - Auxiliary Driver Board
A13 - Resistor Board
A15 - Sensor Board
A16 - Filter Board
A17 - Diode Board
A20 - Auxiliary Sound Board
A22 - LED Board
A25 - Optional Interface Board
A26 - Games Controls Board

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

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.

C. FUSE AND COIL INFORMATION

TRANSFORMER PANEL

F1	Line Input	110V AC	8 Amp SLO-BLO
		220V AC	4 Amp SLO-BLO
F2	Primary Power	110V AC	5 Amp SLO-BLO
		220V AC	2-1/2 Amp SLO-BLO
F3	Display		3/8 Amp SLO-BLO
F4	Display		3/8 Amp SLO-BLO
F5	Power Supply		2-1/2 Amp SLO-BLO
F6	Controlled Lamps and Switches		10 Amp SLO-BLO
F7	Solenoids		8 Amp SLO-BLO
F8	Lightbox Illumination		15 Amp
F9	Playfield Illumination		10 Amp SLO-BLO
F10	Auxiliary Power Supply		3 Amp SLO-BLO
F11	Auxiliary Power Supply		3 Amp SLO-BLO

NOTE:
FUSE DESIGNATIONS F12 THRU F14 NOT USED.

V. GENERAL INFORMATION

PLAYBOARD FUSES, COILS/COLORS/SLEEVES

FUSE	RATING	PART NO.	USAGE	COIL/COLOR	SLEEVE
F15	1-1/2 AMP SLO-BLO	EL-24	POP BUMPER	16570 (GREEN)	5064
F16	1-1/2 AMP SLO-BLO	EL-24	LEFT KICKING RUBBER	5195 (WHITE)	5064
F17	1-1/2 AMP SLO-BLO	EL-24	RIGHT KICKING RUBBER	5195 (WHITE)	5064
F18	2 AMP SLO-BLO	EL-7	TOP LEFT FLIPPER	26646 (BLUE)	5065
F19	2-1/2 AMP SLO-BLO	EL-21	BOTTOM LEFT FLIPPER	25959 (RED)	5065
F20	2-1/2 AMP SLO-BLO	EL-21	BOTOM RIGHT FLIPPER	25959 (RED)	5065
F21	1 AMP SLO-BLO	EL-6	BOTTOM LEFT UPKICKER	26450 (PINK)	21411
			BOTTOM RIGHT UPKICKER	26450 (PINK)	21411
F22	1/2 AMP SLO-BLO	EL-20	BALL RELEASE	26451 (YELLOW)	5065
			OUTHOLE	26451 (YELLOW)	5065
			LEFT HOLE	26450 (PINK)	5064
			RIGHT HOLE	26450 (PINK)	5064
			CAR RESET	16890 (ORANGE)	- -
F23	1/2 AMP SLO-BLO	EL-20	LEFT PLUNGER GATE	26451 (YELLOW)	5064
F24	1/2 AMP SLO-BLO	EL-20	RIGHT PLUNGER GATE	26451 (YELLOW)	5064
F25	1 AMP SLO-BLO	EL-6	LEFT STARGATE	27643 (GREEN)	5064
			RIGHT STARGATE	27643 (GREEN)	5064
F26	1-1/2 AMP SLO-BLO	EL-24	LOWER PLAYBOARD FLIPPER	25959 (RED)	5065

V. GENERAL INFORMATION

D. COIL CHART

SOLENOID COILS					
PART NUMBER	WHERE USED	RESISTANCE (OHMS)	NUMBER OF TURNS	WIRE GAUGE	WRAPPER COLOR
A-19300	GENERAL PURPOSE	7.8	1075	#25	ORANGE
A-5195	GENERAL PURPOSE	12.3	1305	#26	WHITE
A-16570	GENERAL PURPOSE	15.5	1450	#27	GREEN
A-17876	GENERAL PURPOSE	24	1750	#28	TAN
A-26450	GENERAL PURPOSE	42	2400	#29	PINK
A-26451	GENERAL PURPOSE	65.8	3000	#30	YELLOW
A-26926	3-BANK RESET	32.8	2650	#27	BLUE
A-25959	FLIPPER (NEW UNIT)	3.85/202	720/3325	#24/#33	RED
A-26646	FLIPPER (NEW UNIT)	4.57/201	725/3470	#25/#33	BLUE
A-28740	FLIPPER (NEW UNIT)	6.02/207	790/3600	#26/#33	TAN
A-27642	FLIPPER (NEW UNIT)	9.1/203	950/3700	#27/#33	YELLOW
A-27643	FLIPPER (OLD UNIT)	11.4/202	960/3670	#28/#33	GREEN
A-27926	GENERAL PURPOSE	64.7	3475	#29	BLUE
RELAY COILS					
PART NUMBER	WHERE USED	RESISTANCE (OHMS)	NUMBER OF TURNS	WIRE GAUGE	WRAPPER COLOR
A-26452	DROP TAR. TRIP	137	2450	#35	PINK
A-16890	GENERAL PURPOSE	231	4000	#35	ORANGE

VI. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

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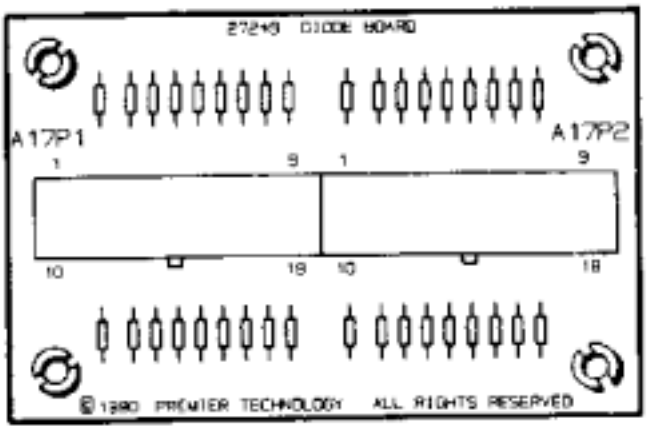
VI. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

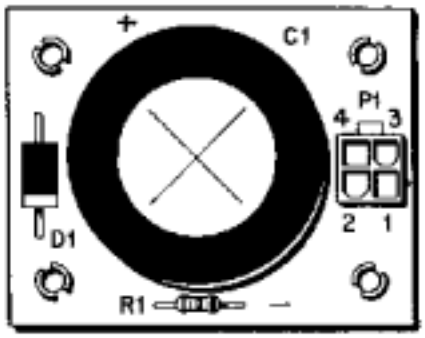
DIODE BOARD (A17) COMPONENT LOCATION



DIODE BOARD (A17) PARTS LIST

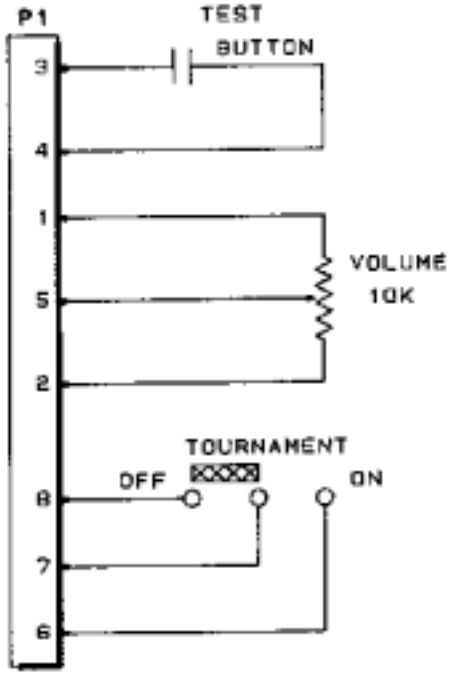
REFERENCE	DESCRIPTION	PART NUMBER
LA17	Diode Matrix Assembly	MA-1448
D1-D18	Diode, 1N4148	XD-261
P1, P2	Header, 18 Position	XD-916
R1-R4	Resistor, 220 OHM, 5%, 1/4W	XD-21
	Circuit Board Support (4)	23984

FILTER BOARD (A16) COMPONENT LOCATION

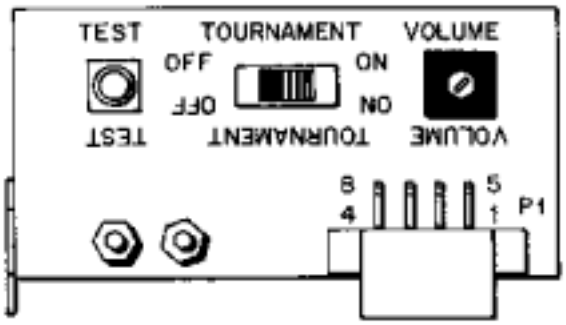


FILTER BOARD (A16) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	FILTER BOARD ASSEMBLY	MA-1745
C1	CAPACITOR, 2200UF, 100V	XD-923
D1	DIODE, 1N5401	XD-263
R1	RESISTOR, 24K OHM, 5%, 1/4W	XD-10
P1	HEADER, 4 POSITION	XD-909
	CIRCUIT BOARD SUPPORT (4)	23984

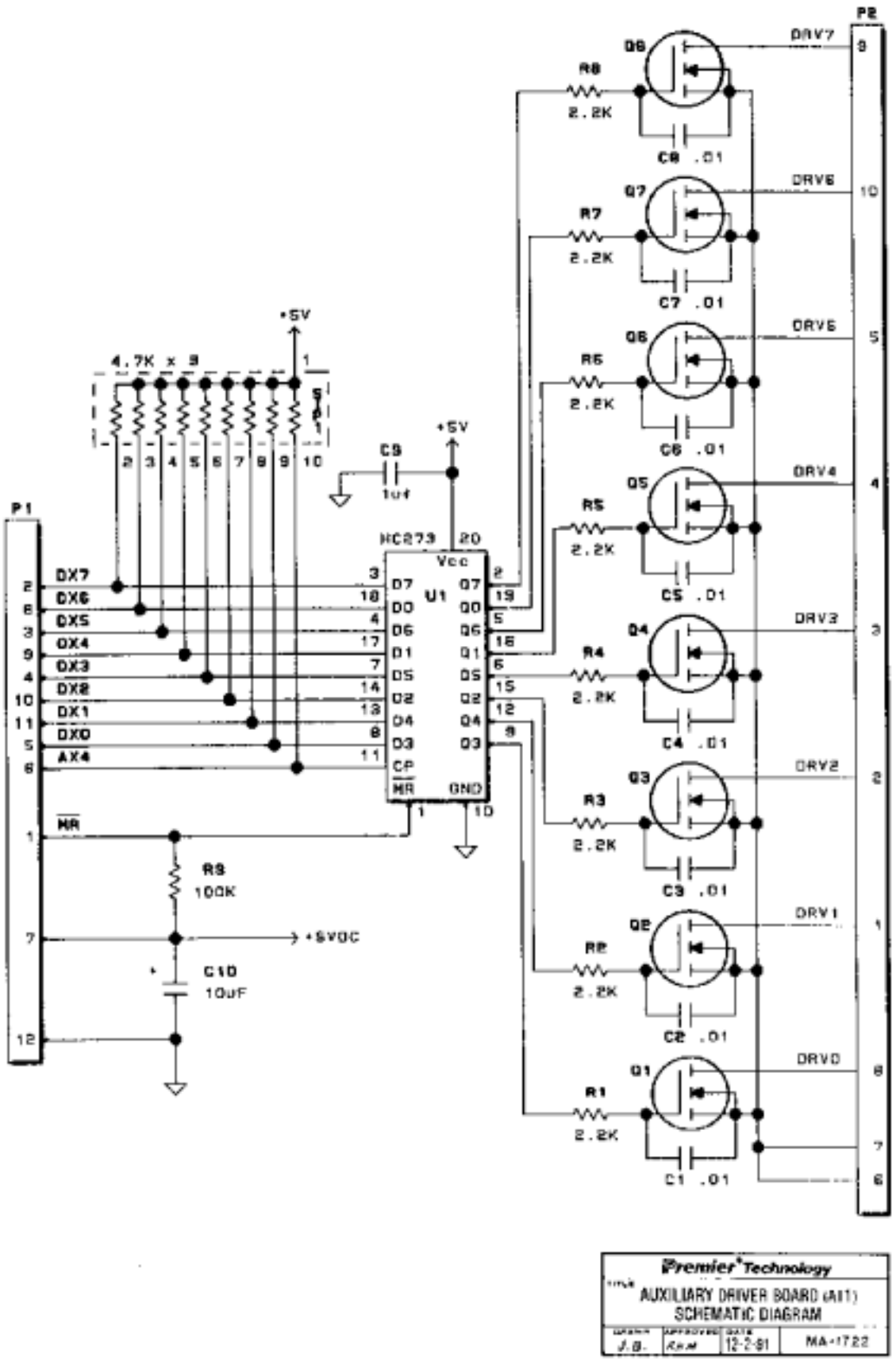


GAME CONTROLS BOARD (A26) COMPONENT LOCATION



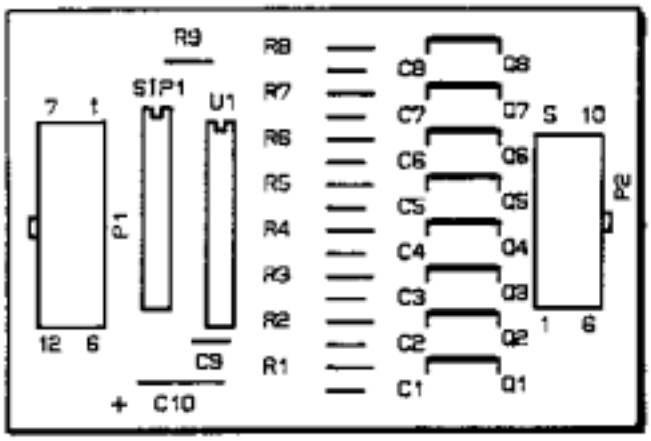
GAME CONTROLS BOARD (A26) PARTS LIST

DESCRIPTION	PART NUMBER
Game Controls Board (A26)	MA-1851
Potentiometer, 10K OHM, 20%, 15W	XD-1194
Pushbutton Switch	XD-897
Slide Switch	XD-1193
Header, 8 Position	XD-920
Mounting Bracket	28619
Key Cap, Yellow	XD-1198

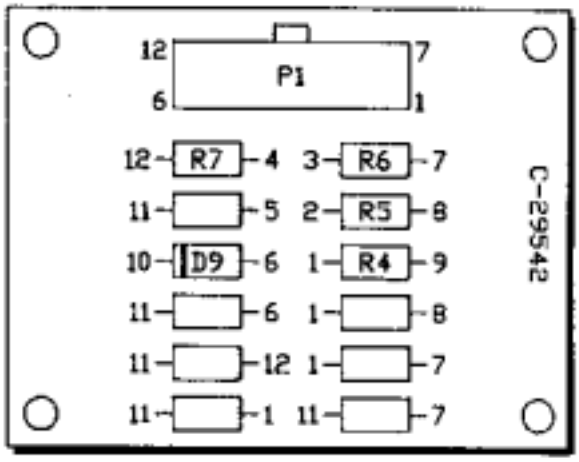


Premier Technology			
AUXILIARY DRIVER BOARD (AII) SCHEMATIC DIAGRAM			
J.B.	RHM	12-2-91	MA-1722

AUXILIARY DRIVER BOARD (A11) COMPONENT LOCATION



RESISTOR BOARD (A13) COMPONENT LOCATION



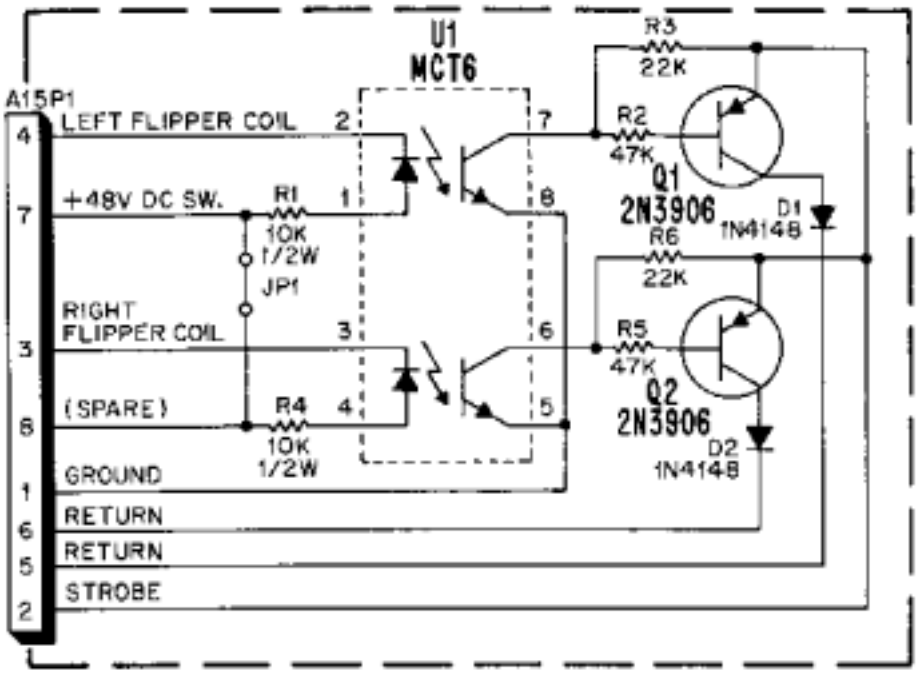
AUXILIARY DRIVER BOARD (A11) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Auxiliary, Driver Board, (A11)	MA-1722
C1-C9	Capacitor, .01UF, 10%, 50V	XD-698
C10	Capacitor, 10UF, 480%-20%,25V	XD-225
Q1-Q8	Transistor, MOSFET, 12N10L	XD-947
R1-R8	Resistor, 2.2K, OHM, 5%, 1/4W	XD-27
R9	Resistor, 100K OHM, 5%, 1/4W	XD-45
SIP1	Resistor Pack, 4.7 OHM X 9	XD-906
U1	IC,Octal "D" Flip-Flop, 74HC273	XD-949
P1	Header, 12 Position	XD-913
P2	Header, 10 Position	XD-912

RESISTOR BOARD (A13) PARTS LIST

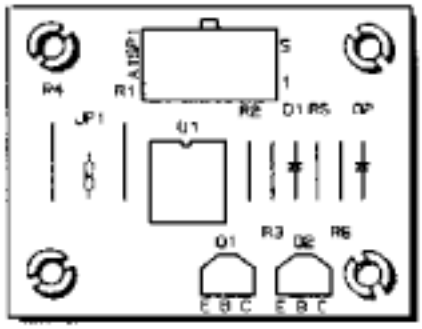
REFERENCE	DESCRIPTION	PART NUMBER
	RESISTOR BOARD (A13)	29643
D9	DIODE, 1N4004	XD-254
R6-R7	RESISTOR, 220 OHM,5%,1/4W	XD-21
P1	HEADER, 12 POSITION	XD-913
	SPACER,(4)	29984

VI. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



Premier Technology		
TITLE: SENSOR BOARD (A15) SCHEMATIC DIAGRAM		
DRAWN	APPROVED DATE 10-12-89	E-27041

SENSOR BOARD (A15) COMPONENT LOCATION

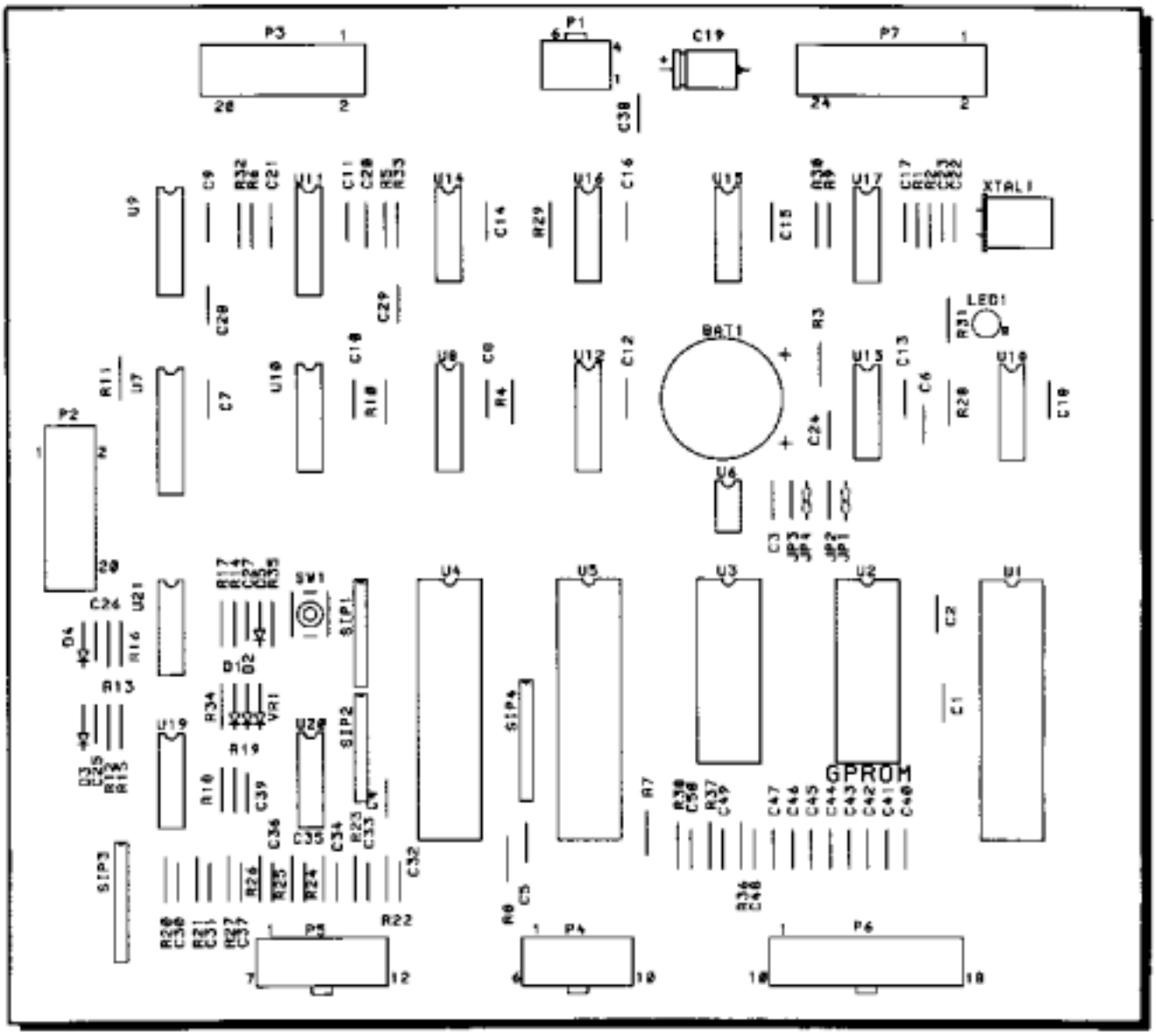


SENSOR BOARD (A15) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Sensor Board Assembly (A15)	MA-1330
D1,D2	Diode, 1N4148	30-261
JP1	Jumper, Resistor, 0 OHM	30-466
Q1,Q2	Transistor, 2N3906 (PNP)	30-588
R1,R4	Resistor, 10K Ohm, 5%, 1/2W	30-62
R5,R2	Resistor, 47K Ohm, 5%, 1/4W	30-30
R3,R6	Resistor, 22K Ohm, 5%, 1/4W	30-43
U1	IC, Optocoupler, MCT6	30-1000
A15P1	Header, 8 Position	30-931
	Spacer (4)	23984

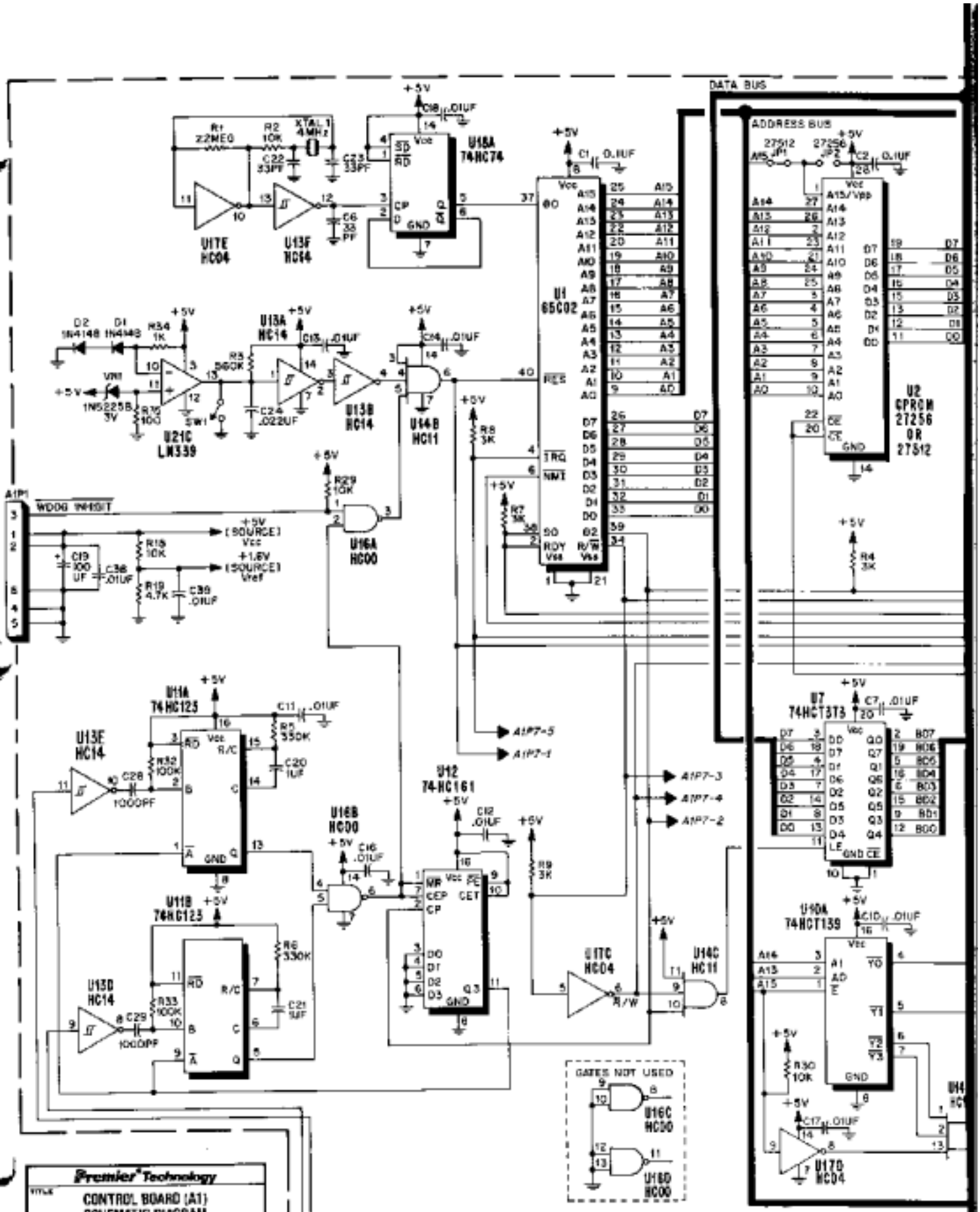
VI. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

CONTROL BOARD (A1) COMPONENT LOCATION



CONTROL BOARD (A1) PARTS LIST

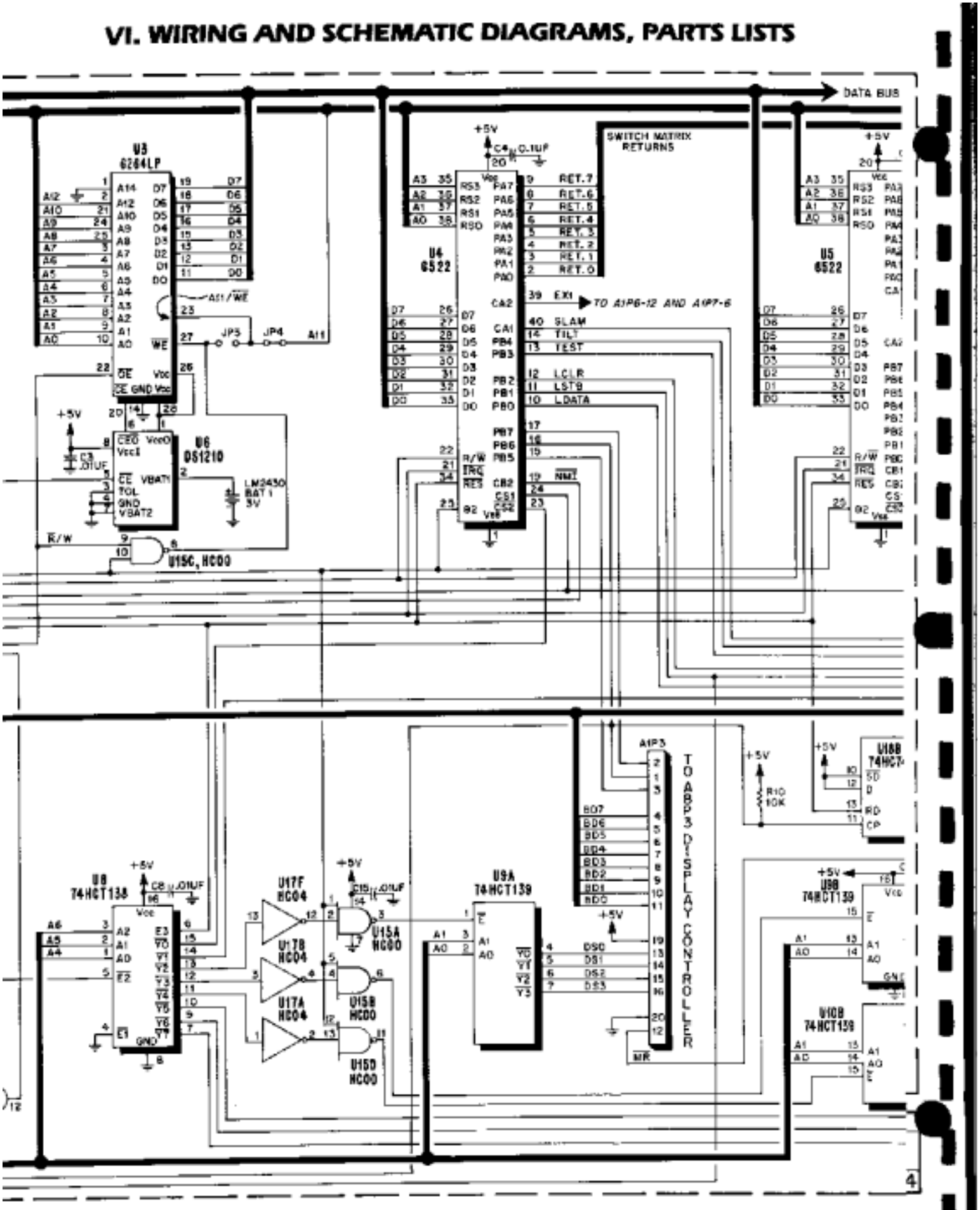
REFERENCE	DESCRIPTION	PART NUMBER
	Control Board Assembly (A1)	MA-1934
BAT 1	Lithium Battery, LM2430, 3V	XD-925
C1, C7-C18, C30-C50	Capacitor, .01UF, +80% -20%, 50V	XD-229
C2,C4 C5,C25,C27	Capacitor, 0.1UF, +80% -20%, 50V	XD-230
C6,C22,C23	Capacitor, 33PF, 10%, 50V	XD-696
C19	Capacitor, 1000UF, +80% -20%, 10V	XD-211
C20,C21	Capacitor, 1UF, 20%, 50V	XD-746
C24	Capacitor, .022UF, 10%, 50V	XD-873
C28,C29	Capacitor, 1000PF, 10%, 100V	XD-296
D1-D5	Diode, 1N4148	XD-261
LED 1	LED, MV5752 (Red)	XD-270
R1	Resistor, 22 MEGOHM, 5%, 1/4W	XD-74
R2,R10,R11 R18,R24,R30	Resistor, 10K OHM, 5%, 1/4W	XD-10
R3	Resistor, 560K OHM, 5%, 1/4W	XD-160
R5,R6	Resistor, 330K OHM, 5%, 1/4W	XD-47
R4,R7-R9	Resistor, 1K OHM, 5%, 1/4W	XD-23
R12-R14	Resistor, 2.2K OHM, 5%, 1/4W	XD-27
R15-R17	Resistor, 3.3K OHM, 5%, 1/4W	XD-36
R19-R27, R36-R38	Resistor, 4.7K OHM, 5%, 1/4W	XD-7
R31	Resistor 330 OHM, 5%, 1/4W	XD-34
R32-R33	Resistor, 100K OHM, 5%, 1/4W	XD-45
R34	Resistor, 1K OHM, 5%, 1/4W	XD-5
R35	Resistor, 100 OHM, 5%, 1/4W	XD-28
SIP1,SIP2	Resistor Pack, 10K OHM X 7, 5%, 1/4W	XD-926
SIP3,SIP4	Resistor Pack, 4.7K OHM X 8	XD-161
SW1	Switch, N.O.	XD-897
U1	IC, 65C02P2, CPU, 2MHZ	XD-927
U3	IC, 6264LP, 8K X 8, Static Ram	XD-781
U4,U5	IC,6522AP, Versatile Interface Adapter (VIA)	XD-929
U6	IC, DS1210, Non-Volatile Controller	XD-933
U7	IC, 74HCT373, Octal Latch	XD-931
U8	IC, 74HCT138, Decoder	XD-932
U9,U10	IC, 74HCT139, Dual Decoder	XD-933
U11	IC, 74HC123, Dual Multivibrator	XD-934
U12	IC, 74HC161, Binary Counter	XD-935
U13	IC, 74HC14, Schmitt Hex Inverters	XD-936
U14	IC, 74HC11, Triple "And" Gates	XD-937
U15,U16	IC, 74HC00, Quad "Nand" Gates	XD-787
U17	IC, 74HC04, Hex Inverters	XD-888
U18	IC, 74HC74, Dual "D" Flip-Flop	XD-939
U19,U20,U21	IC, LM339, Quad Comparators	XD-583
VR1	Zener Diode, 1N5225B, 3V, 5%	XD-269
XTAL1	Crystal, 4MHZ	XD-36e
A1P1	Header, 6 Position	XD-910
A1P2,A1P3	Header, 20 Position (Ribbon)	XD-940
A1P4	Header, 10 Position	XD-912
A1P5	Header, 18 Position	XD-916
A1P6	Header, 24 Position	XD-1201
A1P7	Jumper, Resistor, 0 OHM (2)	XD-469
	Socket, 28 Pin Dip	XD-536

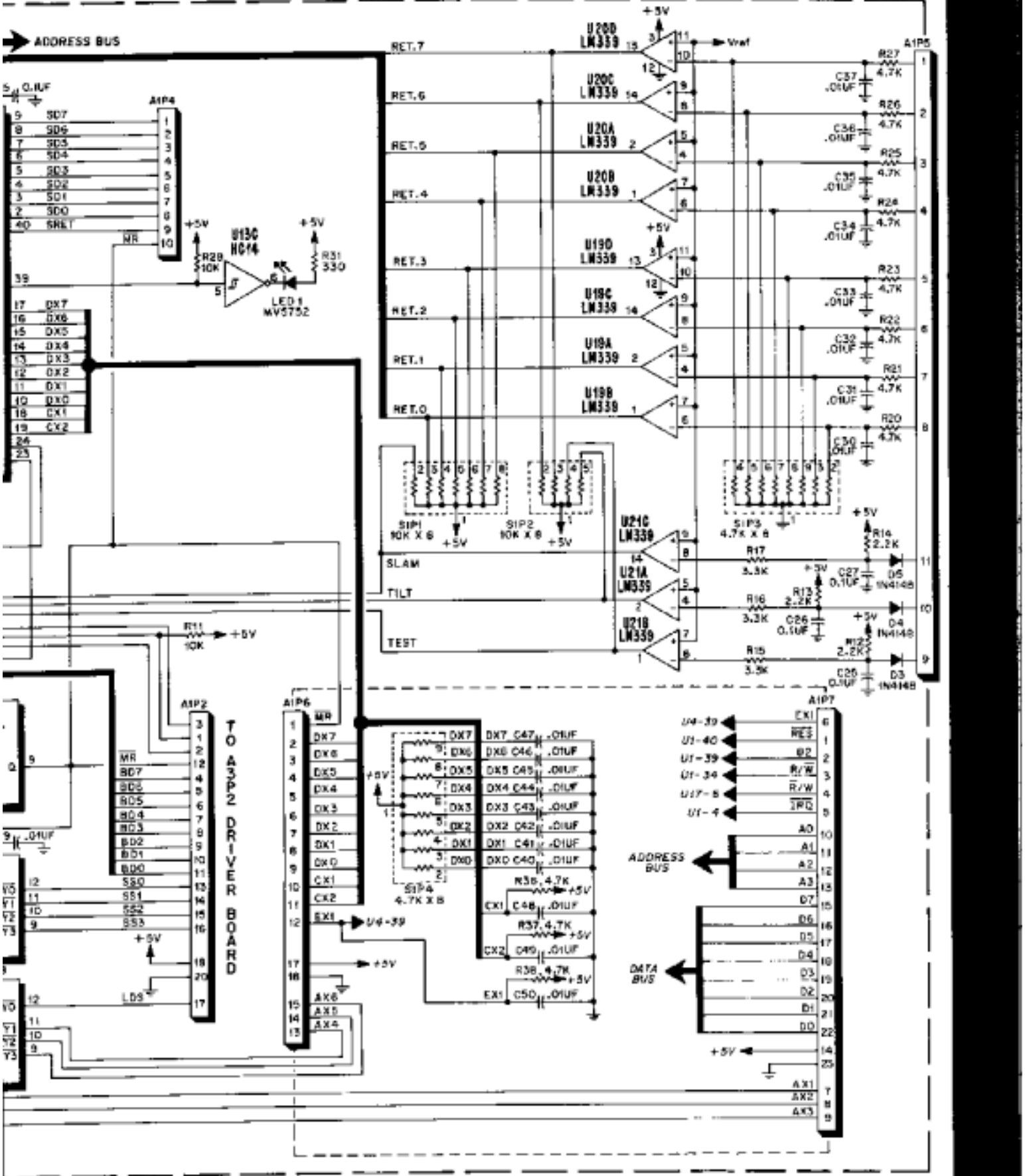


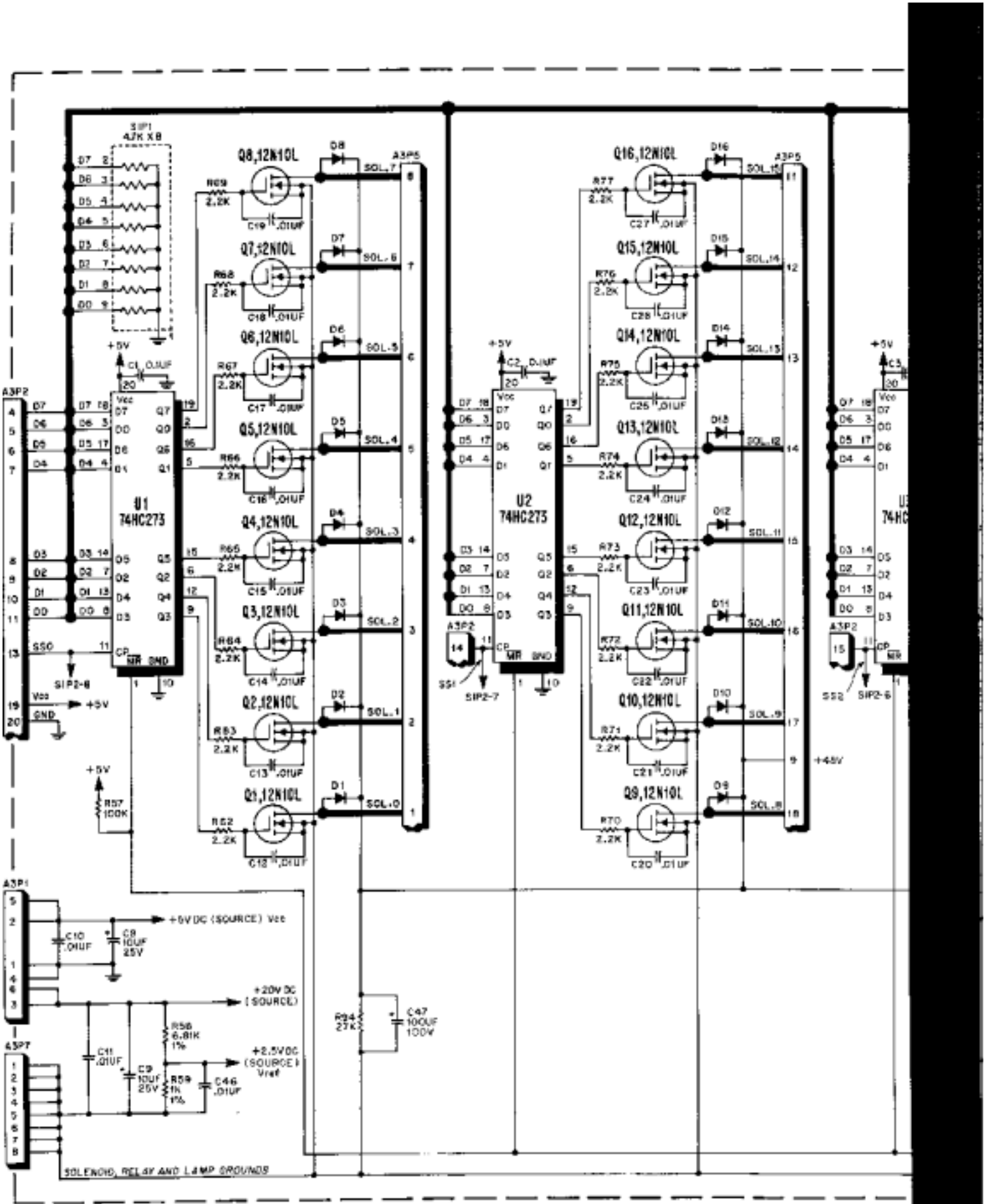
Premier Technology

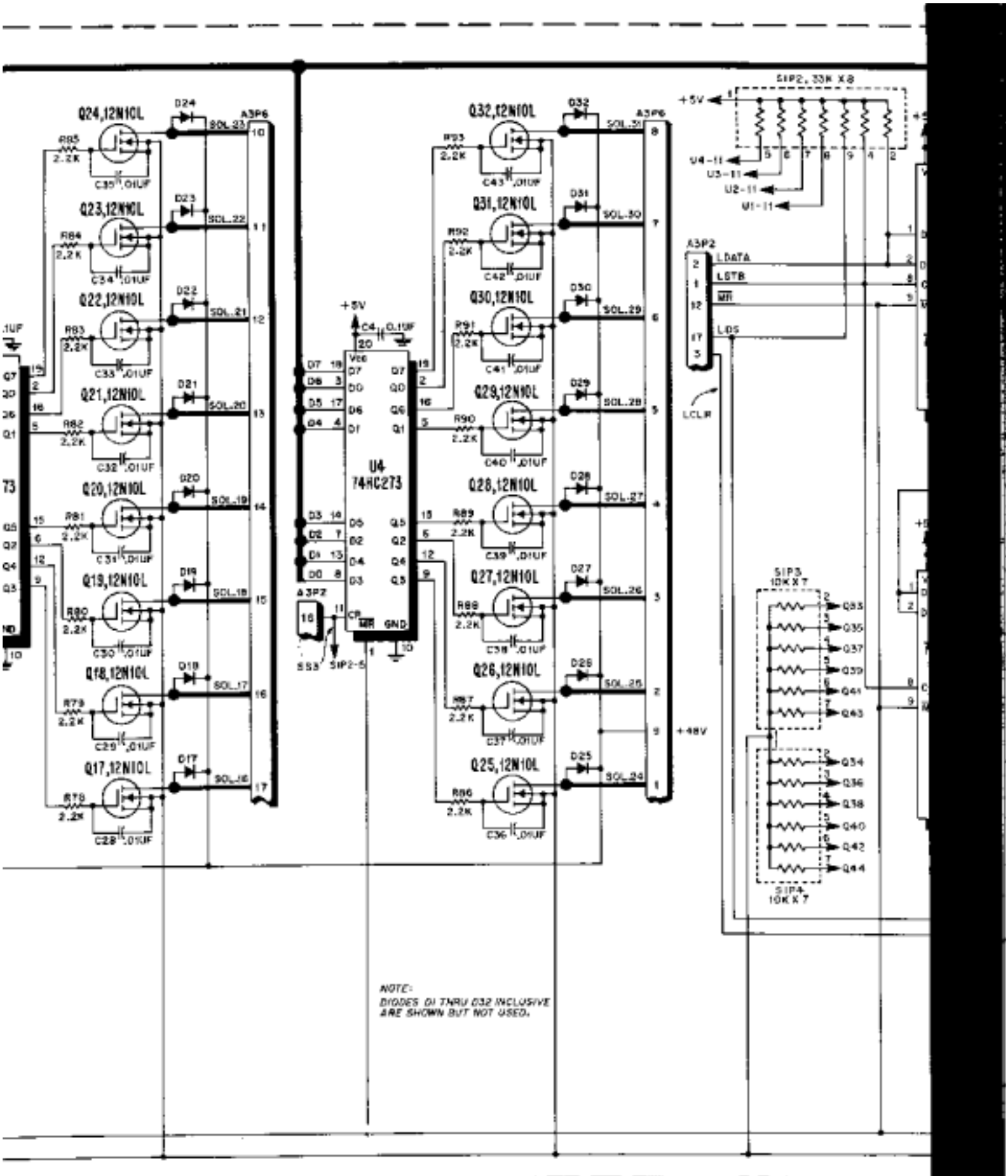
CONTROL BOARD (A1)
SCHEMATIC DIAGRAM

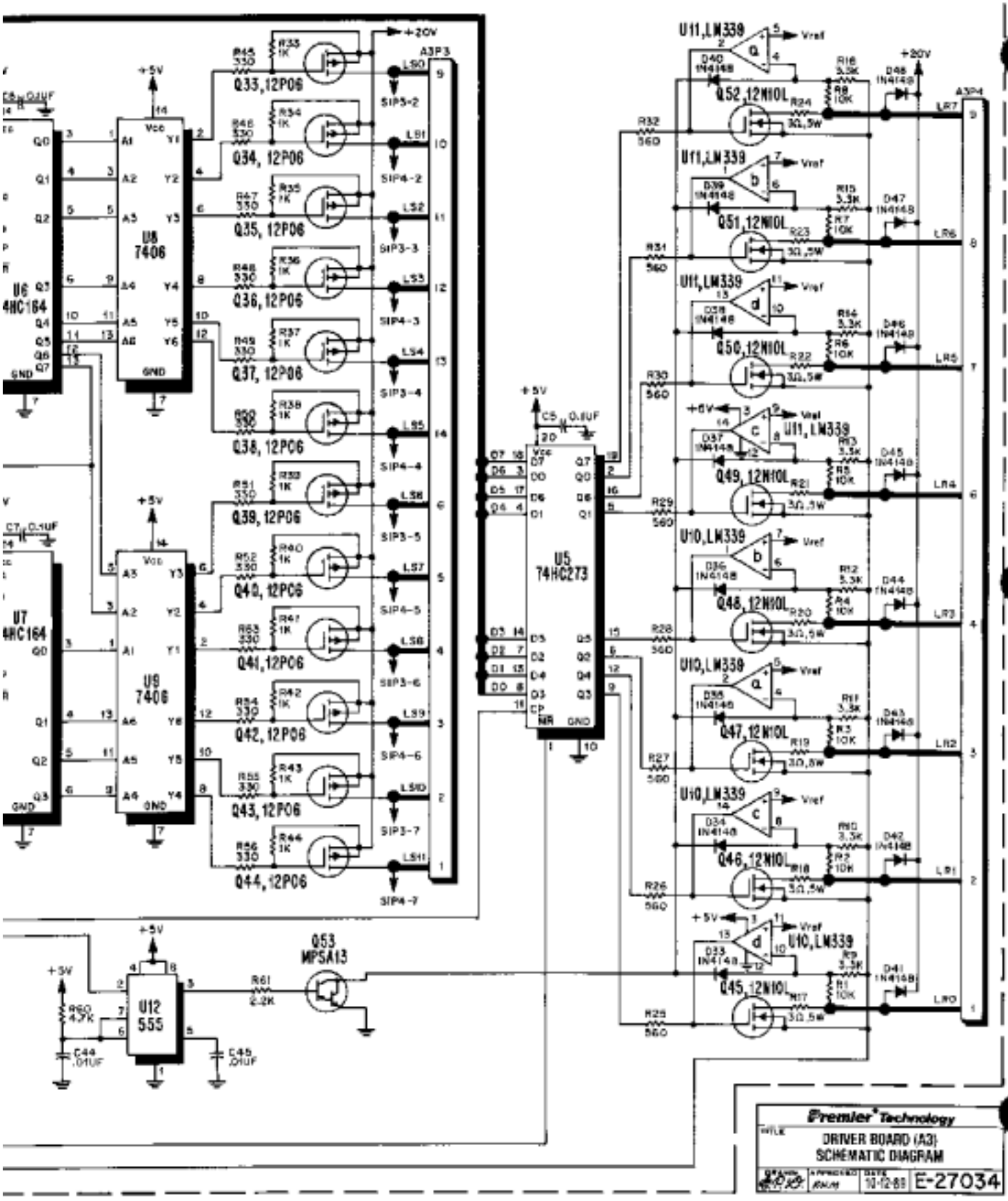
RHM 10-12-88 E-27033


DATA BUS
U3
6264LP
U4
6522
U5
6522
SWITCH MATRIX RETURNS
RET.7
RET.6
RET.5
RET.4
RET.3
RET.2
RET.1
RET.0
TO A1P6-12 AND A1P7-6
SLAM
TILT
TEST
LCLR
LSTB
LDATA
NMI
U6
DS1210
LM2450
BAT 1
3V
U15C, HC00
U8
74HCT138
U17F
HC04
U17B
HC04
U17A
HC04
U15A
HC00
U15B
HC00
U15D
HC00
U9A
74HCT139
U9B
74HCT139
U10B
74HCT138
U18B
74HCT
A1P3
TO A8P3 DISPLAY CONTROLLER
R10
10K
+5V


ADDRESS BUS
A1P4
SD7
SD6
SD5
SD4
SD3
SD2
SD1
SD0
SRET
MR
U13C HC14
R28 10K
R31 330
LED1 MV5752
DX7
DX6
DX5
DX4
DX3
DX2
DX1
DX0
CX1
CX2
RET.7
RET.6
RET.5
RET.4
RET.3
RET.2
RET.1
RET.0
U20D LM339
U20C LM339
U20A LM339
U20B LM339
U19D LM339
U19C LM339
U19A LM339
U19B LM339
Vref
A1P5
R27 4.7K
R26 4.7K
R25 4.7K
R24 4.7K
R23 4.7K
R22 4.7K
R21 4.7K
R20 4.7K
C37 .01UF
C36 .01UF
C35 .01UF
C34 .01UF
C33 .01UF
C32 .01UF
C31 .01UF
C30 .01UF
SIP1 10K X 8
SIP2 10K X 8
SIP3 4.7K X 8
SLAM
TILT
TEST
U21C LM339
U21A LM339
U21B LM339
R14 2.2K
R17 3.3K
R16 3.3K
R15 3.3K
R13 2.2K
R12 2.2K
C27 0.1UF
C26 0.1UF
C25 .01UF
D5 1N4148
D4 1N4148
D3 1N4148
R11 10K
A1P2
A1P6
A1P7
TO A3P2 DRIVER BOARD
SD7
SD6
SD5
SD4
SD3
SD2
SD1
SD0
SS0
SS1
SS2
SS3
LD5
DX7 C47 .01UF
DX6 C46 .01UF
DX5 C45 .01UF
DX4 C44 .01UF
DX3 C43 .01UF
DX2 C42 .01UF
DX1 C41 .01UF
DX0 C40 .01UF
SIP4 4.7K X 8
R36 4.7K
R37 4.7K
R38 4.7K
CX1 C48 .01UF
CX2 C49 .01UF
EX1 C50 .01UF
U4-39
U1-40
U1-39
U1-38
U17-5
U17-4
ADDRESS BUS
DATA BUS
AX1
AX2
AX3
AX4
AX5
AX6
+5V

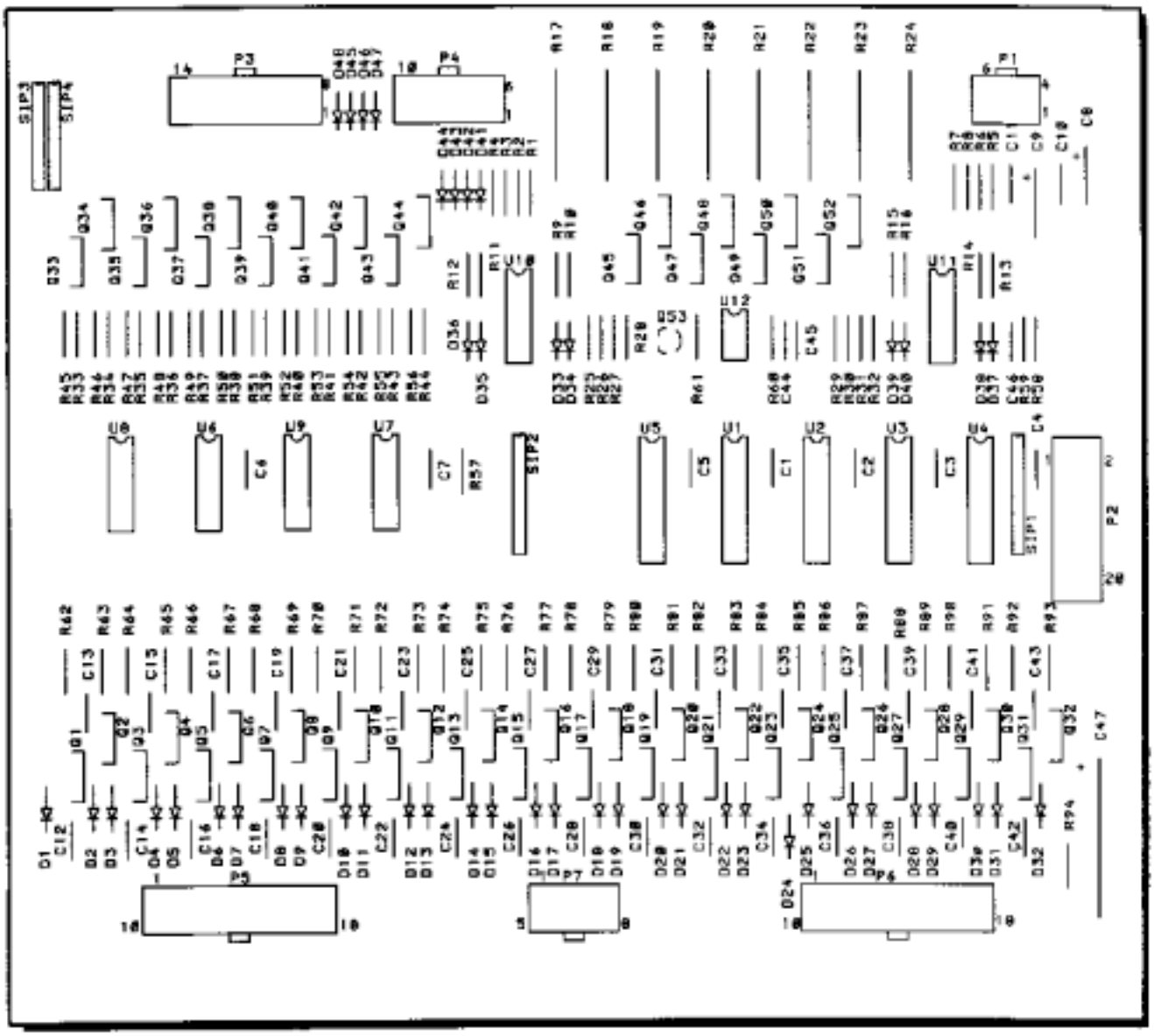

A3P1
4.7K X 8
U1
74HC273
U2
74HC273
Q8,12N10L
Q7,12N10L
Q6,12N10L
Q5,12N10L
Q4,12N10L
Q3,12N10L
Q2,12N10L
Q1,12N10L
Q16,12N10L
Q15,12N10L
Q14,12N10L
Q13,12N10L
Q12,12N10L
Q11,12N10L
Q10,12N10L
Q9,12N10L
A3P5
A3P2
A3P1
A3P7
+5V
+45V
SIP2-8
SIP2-7
SIP2-6
+5VDC (SOURCE) Vcc
+20V DC (SOURCE)
+2.5VDC (SOURCE) Vref
SOLENOID, RELAY AND LAMP GROUNDS


Q24,12N10L
Q23,12N10L
Q22,12N10L
Q21,12N10L
Q20,12N10L
Q19,12N10L
Q18,12N10L
Q17,12N10L
Q32,12N10L
Q31,12N10L
Q30,12N10L
Q29,12N10L
Q28,12N10L
Q27,12N10L
Q26,12N10L
Q25,12N10L
U4
74HC273
SIP2, 33K X8
SIP3
10K X 7
SIP4
10K X 7
A3P6
A3P2
LDATA
LSTB
MR
LDS
LCLR
+5V
+48V
NOTE:
DIODES D1 THRU D32 INCLUSIVE
ARE SHOWN BUT NOT USED.


U6 74HC164
U7 74HC164
U8 7406
U9 7406
U5 74HC273
U12 555
Q33,12P06
Q34, 12P06
Q35, 12P06
Q36,12P06
Q37, 12P06
Q38, 12P06
Q39, 12P06
Q40, 12P06
Q41,12P06
Q42, 12P06
Q43,12P06
Q44,12P06
Q53 MPSA13
Q52,12N10L
Q51,12N10L
Q50,12N10L
Q49,12N10L
Q48,12N10L
Q47,12N10L
Q46,12N10L
Q45,12N10L
U11,LM339
U10,LM339
+20V
+5V
SIP5-2
SIP4-2
SIP3-3
SIP4-3
SIP3-4
SIP4-4
SIP3-5
SIP4-5
SIP3-6
SIP4-6
SIP3-7
SIP4-7
Premier Technology
DRIVER BOARD (A3)
SCHEMATIC DIAGRAM
10-12-89
E-27034

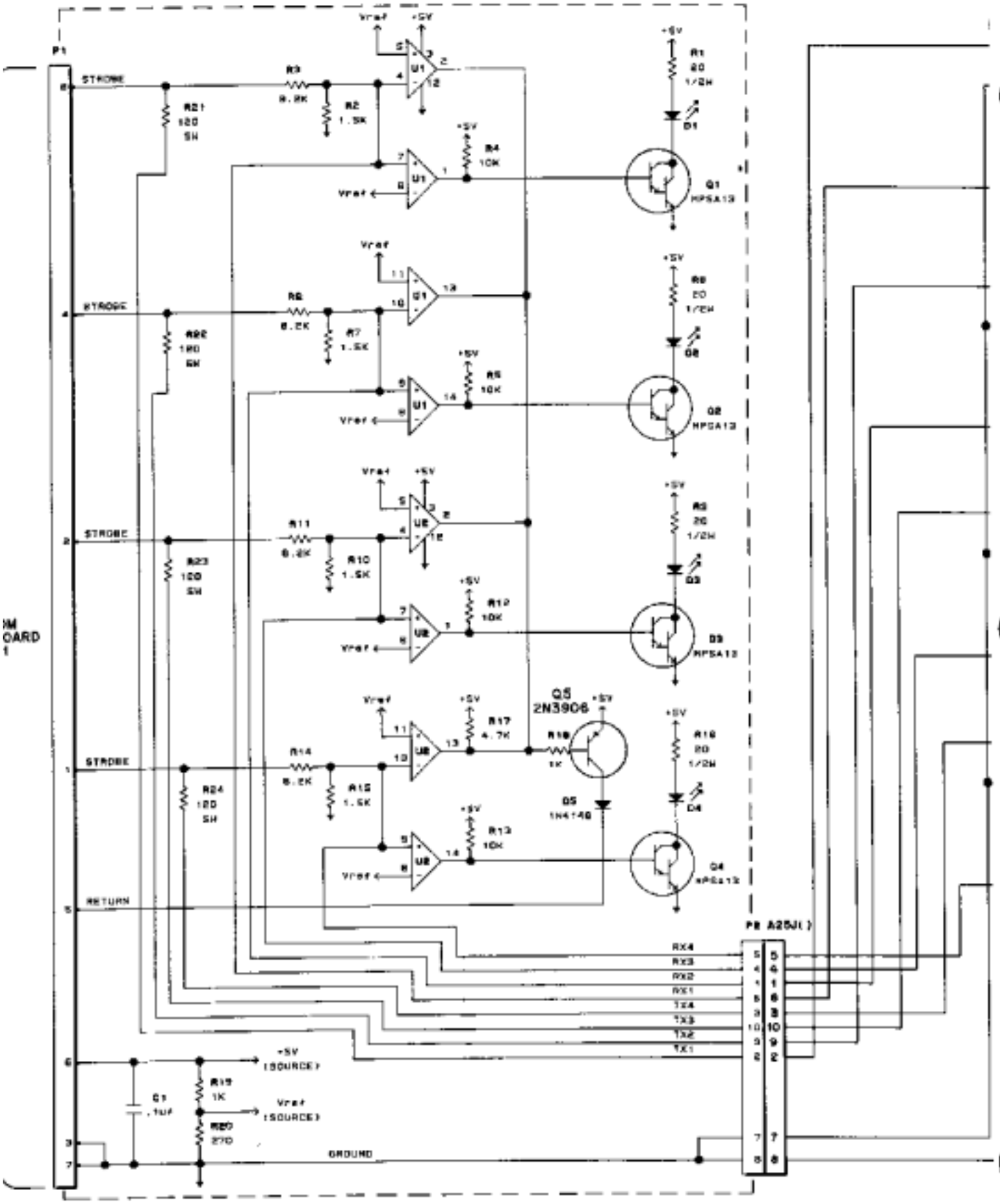
VI. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

DRIVER BOARD (A3) COMPONENT LOCATION



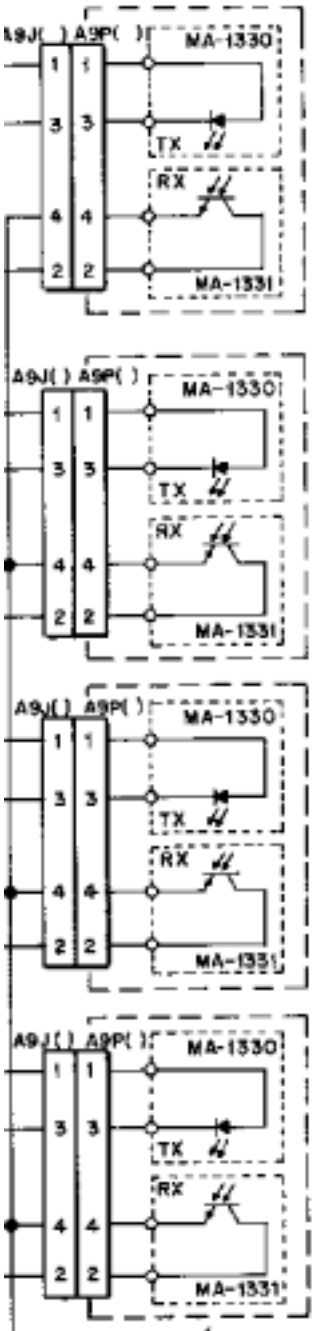
DRIVER BOARD (A3) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Driver Board Assembly (A3)	BA-1358
C1-C7	Capacitor, 0.1 UF, +80% -20%, 50V	XD-230
C8	Capacitor, 10UF, 20%, 25V	XD-127
C9	Capacitor, 100F, +80% -20%, 25V	XD-225
C10,C11	Capacitor, .01UF, +80% -20%, 50V	XD-228
C45,C48		
C12-C44	Capacitor, .01UF, 10%, 50V	XD-696
C47	Capacitor, 100UF, 20%, 100V	XD-958
D33-D48	Diode, 1N4148	XD-261
Q1-Q33, Q45-Q52,Q54	Transistor, RFP12N10L, OR IRL530, N-Channel MOSFET	XD-947
Q33-Q44	Transistor, RFP12P06, OR IRF9531, P-Channel MOSFET	XD-948
Q53	Transistor, MPSA13, Darlington	XD-304
R1-R8	Resistor, 10K Ohm, 5%, 1/4W	XD-18
R9-R16	Resistor, 3.3K Ohm, 5%, 1/4W	XD-38
R17-R24	Resistor, 3 Ohm, 5%, 5W	XD-942
R25-R32	Resistor, 560 Ohm, 5%, 1/4W	XD-38
R33-R44	Resistor, 1K Ohm, 5%, 1/4W	XD-5
R45-R56	Resistor, 330 Ohm, 5%, 1/4W	XD-34
R57	Resistor, 100K Ohm, 5%, 1/4W	XD-45
R58	Resistor, 6.81K Ohm, 1%, 1/4W	XD-943
R59	Resistor, 1K Ohm, 1%, 1/4W	XD-944
R60	Resistor, 4.7K Ohm, 5%, 1/4W	XD-7
R61-R63	Resistor, 2.2K Ohm, 5%, 1/4W	XD-27
R64	Resistor, 27K Ohm, 5%, 1/4W	XD-31
SIP1	Resistor Pack, 4.7K Ohm X 8,5%, 1/4W	XD-161
SIP2	Resistor Pack, 33K Ohm X 8,5%, 1/4W	XD-945
SIP3	Resistor Pack, 10K Ohm X 7,5%, 1/4W	XD-926
SIP4		
U1-U5	IC, Octal "D" Flip-Flops, 74HC273	XD-949
U6-U7	IC, Shift Register, 74HC164	XD-950
U8-U9	IC, Buffer, 7406	XD-85
U10-U11	IC, Quad Comparator, LM339	XD-163
U12	IC, Timer, NE555	XD-831
A3P1	Header, 6 Position	XD-810
A3P2	Header, 20 Position (Ribbon)	XD-940
A3P3	Header, 14 Position	XD-914
A3P4	Header, 10 Position	XD-912
A3P5, A3P6	Header, 18 Position	XD-816
A3P7	Header, 8 Position	XD-911



QUAD OPTICAL INTERFACE BOARD SCHEMATIC DIAGRAM

C DIAGRAMS, PARTS LISTS



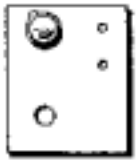
OPTO LED TRANSMITTER BOARD (TX) SCHEMATIC DIAGRAM

AND

OPTO PHOTOTRANSISTOR RECEIVER BOARD (RX) SCHEMATIC DIAGRAM

OPTO LED TRANSMITTER BOARD COMPONENT LOCATION

OPTO PHOTOTRANSISTOR RECEIVER BOARD COMPONENT LOCATION



OPTO LED TRANSMITTER BOARD PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Opto LED Transmitter Assembly	MA-1330
TX	Plastic Transmitter LED	XD-994

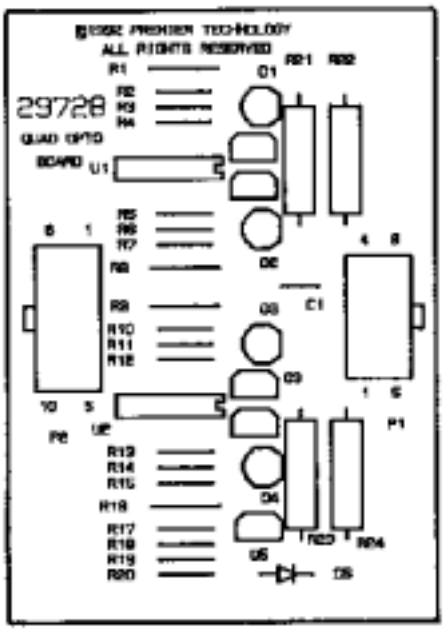
BRACKET AND OPTIC BOARD ASSEMBLIES REFERENCE			
PART NO.	CONNECTOR NO.	BRACKET NO.	LOCATION
MA-1667	A9P16	28038	LEFT TROUGH RAMP
MA-1667	A9P17	28038	RIGHT TROUGH RAMP
MA-1667	A9P18	28038	TOP LEFT RAMP
MA-1667	A9P19	28038	TOP RIGHT RAMP
MA-1930	A9P20	29749	CAR SMASHED
MA-1936	A9P21	29662	LEFT WIRE RAMP
MA-1931	A9P22	29662	CENTER WIRE RAMP
MA-1931	A9P23	29662	RIGHT WIRE RAMP

OPTO PHOTOTRANSISTOR RECEIVER BOARD PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Opto Phototransistor Receiver Assembly	MA-1331
RX	Plastic Phototransistor	XD-993

DESCRIPTION	PART NUMBER
BRACKET AND OPTIC BOARDS ASSEMBLY (DOES NOT INCLUDE WIRING HARNESS)	MA-1667
BRACKET AND OPTIC BOARDS ASSEMBLY (DOES NOT INCLUDE WIRING HARNESS)	MA-1930
BRACKET AND OPTIC BOARDS ASSEMBLY (DOES NOT INCLUDE WIRING HARNESS)	MA-1931
BRACKET AND OPTIC BOARDS ASSEMBLY (DOES NOT INCLUDE WIRING HARNESS)	MA-1936
OPTICAL SWITCH BRACKET	29018
OPTICAL SWITCH BRACKET	29662
OPTICAL SWITCH BRACKET	29749

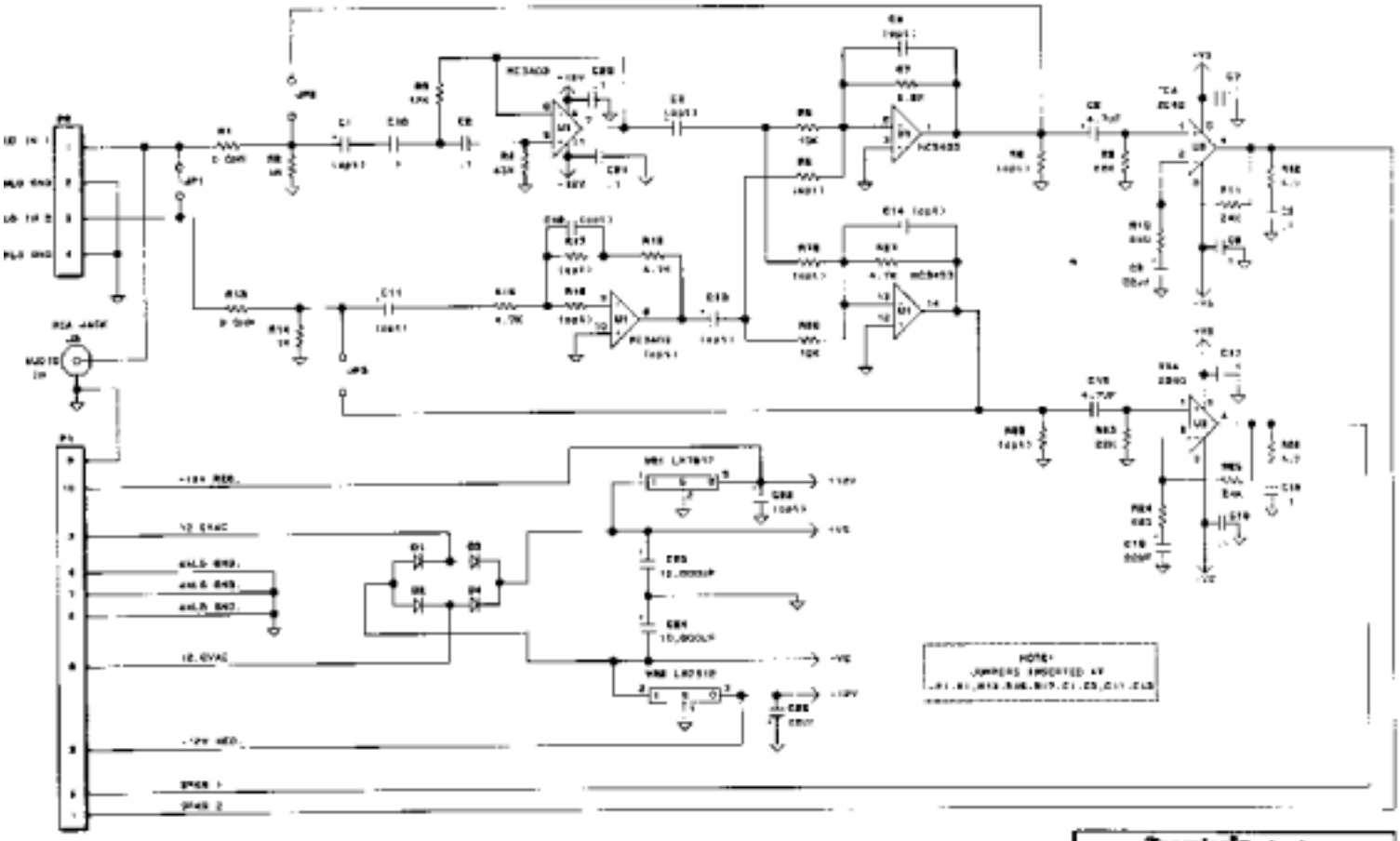
QUAD OPTICAL INTERFACE BOARD COMPONENT LOCATION



QUAD OPTICAL INTERFACE BOARD PARTS LIST

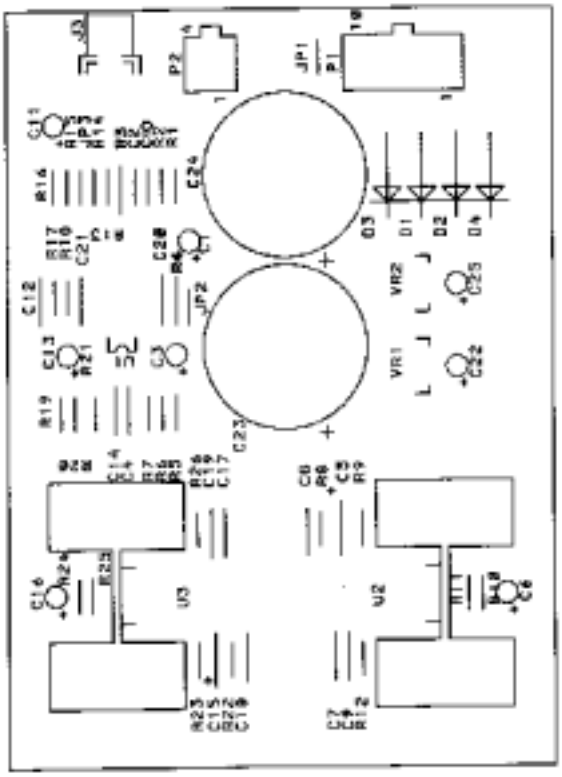
REFERENCE	DESCRIPTION	PART NUMBER
	QUAD OPTICAL INTERFACE BOARD (A16)	MA-1935
C1	CAPACITOR, 0.1UF, +80%-20%, 50V	XD-230
D1-D4	DIODE, MV5752, (LED,RED)	XD-270
D5	DIODE, 1N4148	XD-261
Q1-Q4	TRANSISTOR, NPN, MPS-A13	XD-364
Q5	TRANSISTOR, PNP, 2N2906	XD-588
R1,R8,R9,R16	RESISTOR,20 OHM,5%, 1/2W	XD-65
R2,R7,R10,R15	RESISTOR,1.5K OHM,5%,1/4W	XD-20
R3,R6,R11,R14	RESISTOR,8.2K OHM,5%,1/4W	XD-589
R4,R5,R12,R13	RESISTOR,10K OHM,5%,1/4W	XD-18
R17	RESISTOR,4.7K OHM,5%,1/4W	XD-7
R18,R19	RESISTOR, 1K OHM,5%,1/4W	XD-5
R20	RESISTOR, 270 OHM,5%,1/4W	XD-68
R21,R24	RESISTOR, 130 OHM,10%,5W	XD-1042
U1,U2	IC,QUAD COMPARITOR,LM339	XD-583
P1	HEADER,8 POSITION	XD-911
P2	HEADER,10 POSITION	XD-912
	SUPPORT,SRS-6-SM,(4)	23384

VI. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS



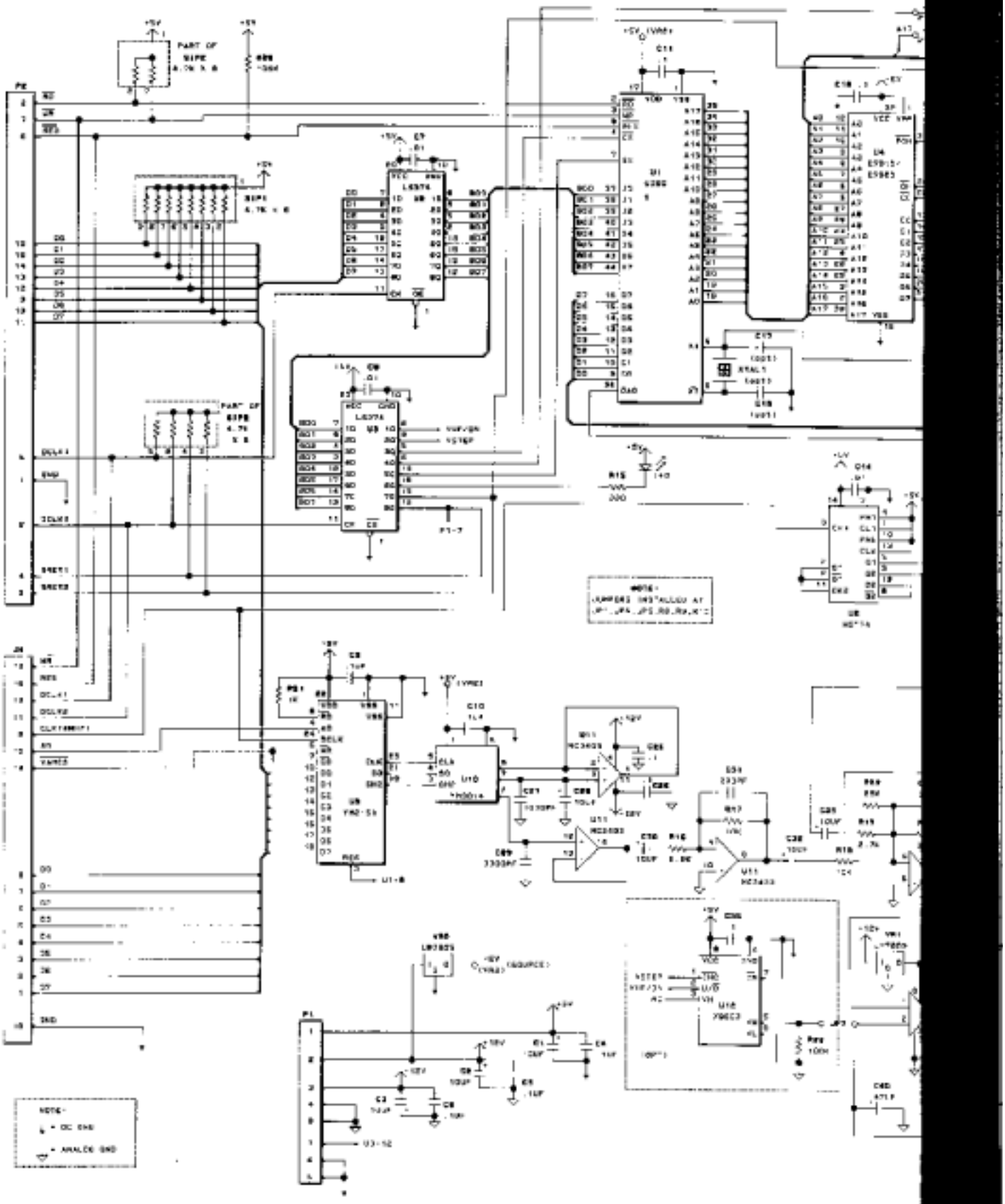
Premier Technology			
TITLE: AUXILIARY POWER SUPPLY (A5) SCHEMATIC DIAGRAM			
DRAWN: J.B.	APPROVED:	DATE: 4-8-92	MA-1772

AUXILIARY POWER SUPPLY (A5) COMPONENT LOCATION

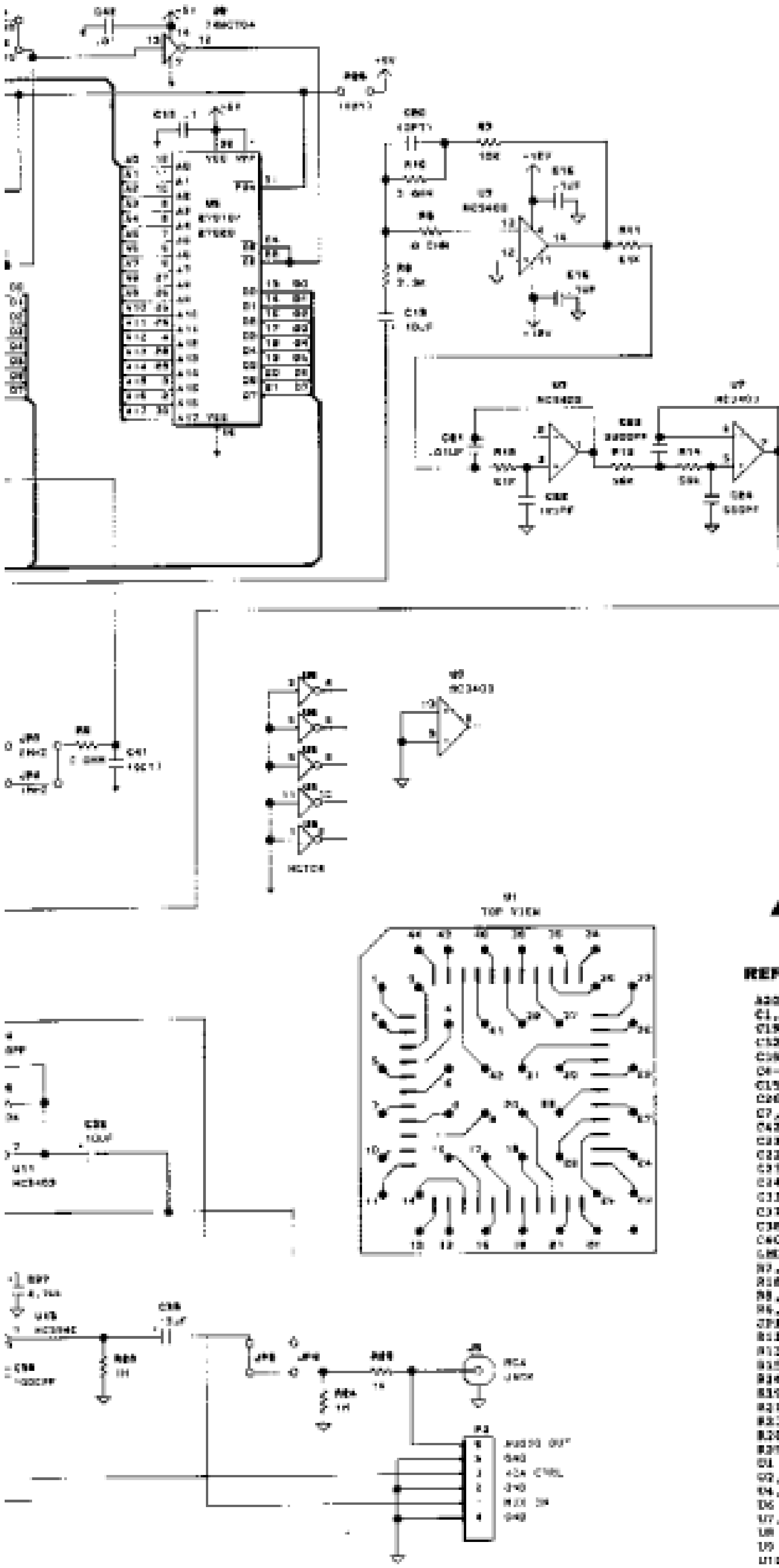


AUXILIARY POWER SUPPLY (A5) PARTS LIST

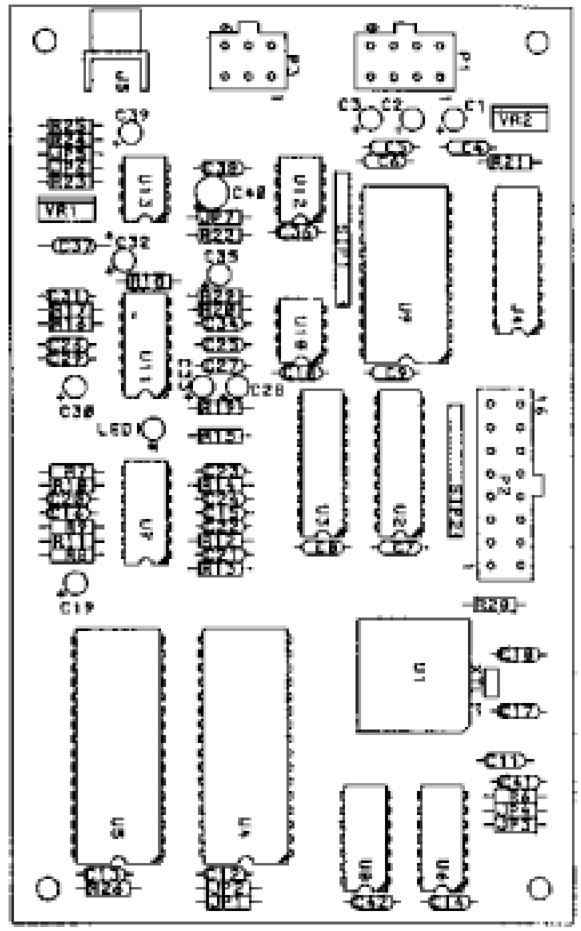
REFERENCE	DESCRIPTION	PART NUMBER
A5	AUXILLIARY POWER SUPPLY	MA-1772
C1,C3,C11, C13	CAPACITOR, 4.7UF, 10%, 10V	XD-469A
C2,C10	CAPACITOR, 0.1UF, 10%, 100V	XD-784
C5,C15	CAPACITOR, 4.7UF, 10%, 10V	XD-226
C6,C16,C25	CAPACITOR, 22UF, +80%-20%, 16V	XD-293
C7,C8,C9, C17,C18,C19, C20,C21	CAPACITOR, 0.1UF, +80%-20%, 50V	XD-230
C23,C24	CAPACITOR, 10,000UF, +80%-20%, 25V	XD-830
D1-D4	DIODE, 1N5401	XD-261
R1,R13,JP1, R16,R17	RESISTOR, 0 OHM, JUMPER	XD-469
R2,R14	RESISTOR, 1 MEGOHM, 5%, 1/4W	XD-604
R3	RESISTOR, 12K OHM, 5%, 1/4W	XD-9
R4	RESISTOR, 43K OHM, 5%, 1/4W	XD-15
R5,R20	RESISTOR, 10K OHM, 5%, 1/4W	XD-18
R7	RESISTOR, 6.8K OHM, 5%, 1/4W	XD-8
R8	RESISTOR, 2.2K OHM, 5%, 1/4W	XD-27
R9,R23	RESISTOR, 22K OHM, 5%, 1/4W	XD-42
R10,R24	RESISTOR, 680 OHM, 5%, 1/4W	XD-139
R11,R25	RESISTOR, 24K OHM, 5%, 1/4W	XD-10
R12,R26	RESISTOR, 4.7 OHM, 5%, 1/4W	XD-806
R15,R18,R21	RESISTOR, 4.7K OHM, 5%, 1/4W	XD-7
U1	IC, QUAD AMP, MC3403P	XD-953
U2,U3	IC, AUDIO AMPLIFIER, TDA2040	XD-1038
VR1	REGULATOR, +12V, LM7812CT	XD-1039
VR2	REGULATOR, -12V, LM7912CT	XD-130
J3	CONNECTOR, RCA	XD-1035
P1	HEADER, 10 POSITION	XD-912
	HEAT SINK	XD-1040



Premier Technology			
TITLE: AUXILIARY SOUND BOARD (A20) SCHEMATIC DIAGRAM			
J.B.	RWM	4-8-92	MA-1770



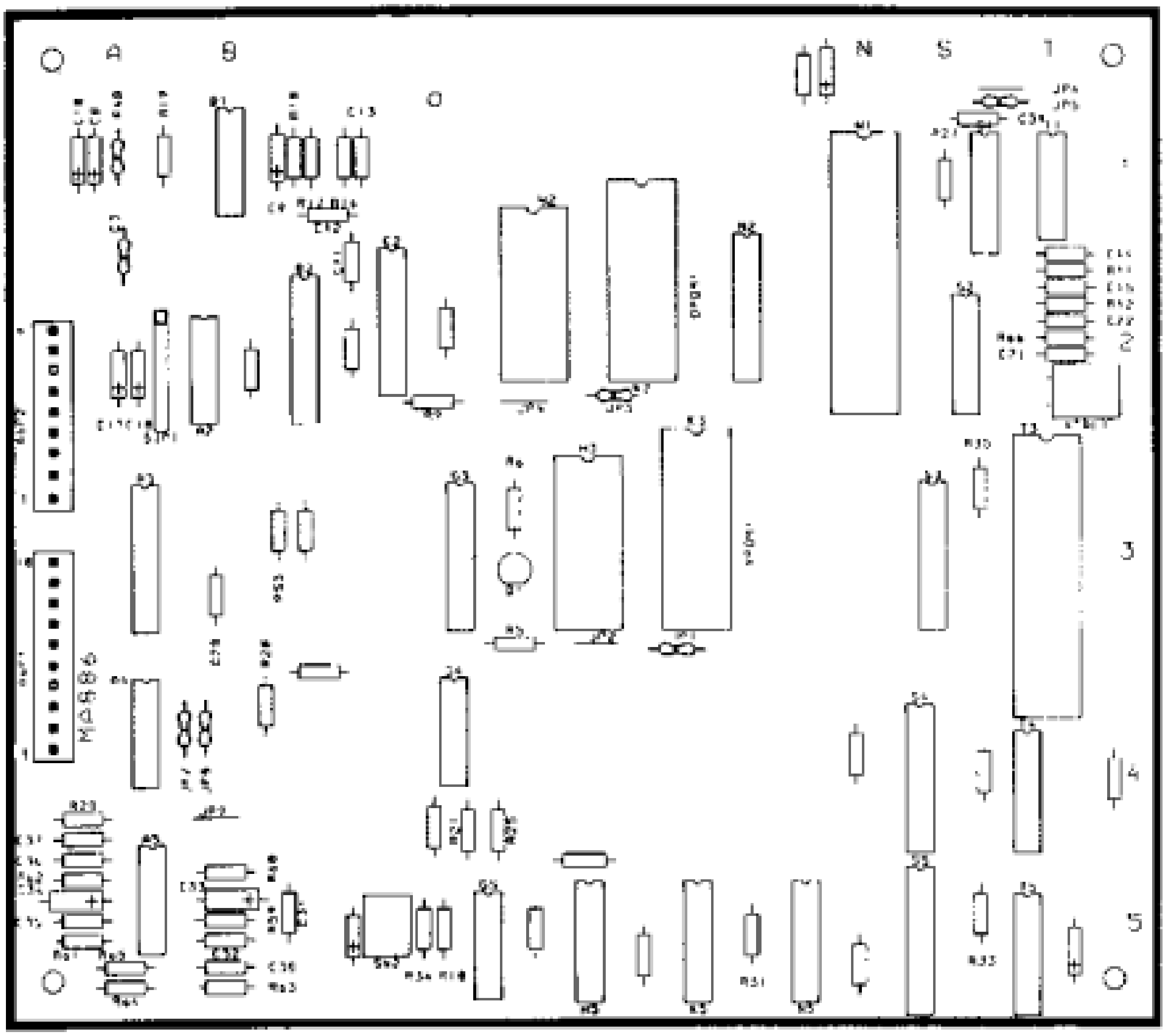
AUXILIARY SOUND BOARD (A20) COMPONENT LOCATION

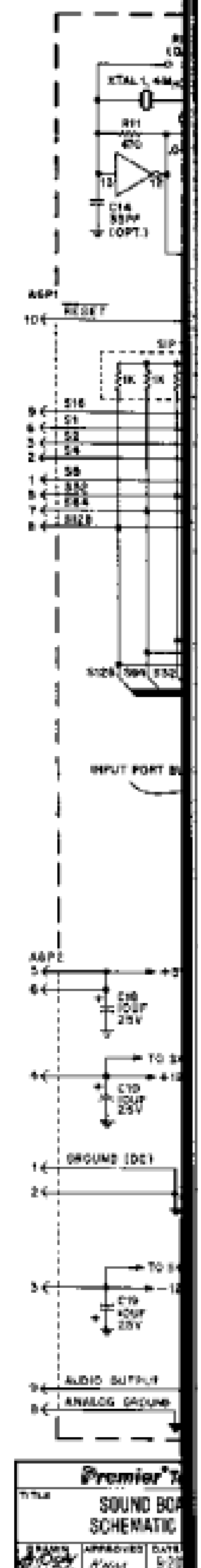


AUXILIARY SOUND BOARD (A20) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
A20	AUXILIARY SOUND BOARD	MA-1770
C1, C2, C3, C15, C24, C30, C32, C33, C35, C36	CAPACITOR, 10UF, +80%-20%, 16V	XO-1030
C4-C6, C9-C13 C15, C16, C25, C26, C36	CAPACITOR, 0.1UF, +80%-20%, 10V	XO-230
C7, C8, C14, C42	CAPACITOR, .01UF, +80%-20%, 50V	XO-229
C21	CAPACITOR, .001UF, 10%, 50V	XO-896
C22	CAPACITOR, 330PF, 10%, 50V	XO-1210
C23, C29	CAPACITOR, 3300PF, 10%, 100V	XO-608
C24	CAPACITOR, 560PF, 10%, 50V	XO-831
C31, C34	CAPACITOR, 330PF, 10%, 50V	XO-1033
C37	CAPACITOR, 4.7UF, 10%, 16V	XO-226
C38	CAPACITOR, 3600PF, 10%, 100V	XO-256
C40	CAPACITOR, 47UF, 10V	XO-237
LED	DIODE, MV5752, RED	XO-270
R7, R17, R18	RESISTOR, 10K OHM, 5%, 1/4W	XO-18
R8, R20	RESISTOR, 3.3K OHM, 5%, 1/4W	XO-18
R6, R9, R10, JP1, JP4, JP5	RESISTOR, 0 OHM, JUMPER	XO-440
R11, R12	RESISTOR, 51K OHM, 5%, 1/4W	XO 44
R13, R14	RESISTOR, 56K OHM, 5%, 1/4W	XO-771
R15	RESISTOR, 330 OHM, 5%, 1/4W	XO-14
R16	RESISTOR, 6.8K OHM, 5%, 1/4W	XO-8
R19	RESISTOR, 2.7K OHM, 5%, 1/4W	XO-6
R21, R26	RESISTOR, 1K OHM, 5%, 1/4W	XO-5
R23	RESISTOR, 1MEGOHM, 5%, 1/4W	XO-606
R28	RESISTOR, 100K OHM, 5%, 1/4W	XO-45
R29	RESISTOR, 22K OHM, 5%, 1/4W	XO-42
U1	IC, MSM6295, SPEECH CHIP	*XO-1023
U2, U3	IC, 74LS374, OCTAL "D" FLIP-FLOP	XO-46
U4, U5	IC, 27C010 (SPECIFIED PER GAME)	
U6	IC, 74HCT74, "D" FLIP-FLOP	XO-889
U7, U11	IC, MC3403P, QUAD AMP	XO-953
U8	IC, 74HCT04, HEX INVERTER	XO-1026
U9	IC, YM2151, SOUND CHIP	XO-982
U10	IC, YM3014, SERIAL DAC	XO-983
U13	IC, MC3340P, VCA, AMPLIFIER	XO-1028
J4	SOCKET, 28 PIN	XO-491
J5	JACK, RCA	XO-1035
P1	HEADER, 8 POSITION	XO-811
P2	HEADER, 6 POSITION	XO 810
U4, U5	SOCKET, 32 PIN	XO-1036
U9	SOCKET, 24 PIN	XO-829
	PCB ASSEMBLY, P/O *XO-1023	27522
VR1	IC, LM7805CT, REGULATOR	XO-1037
VR2	IC, 5V REGULATOR	XO-663

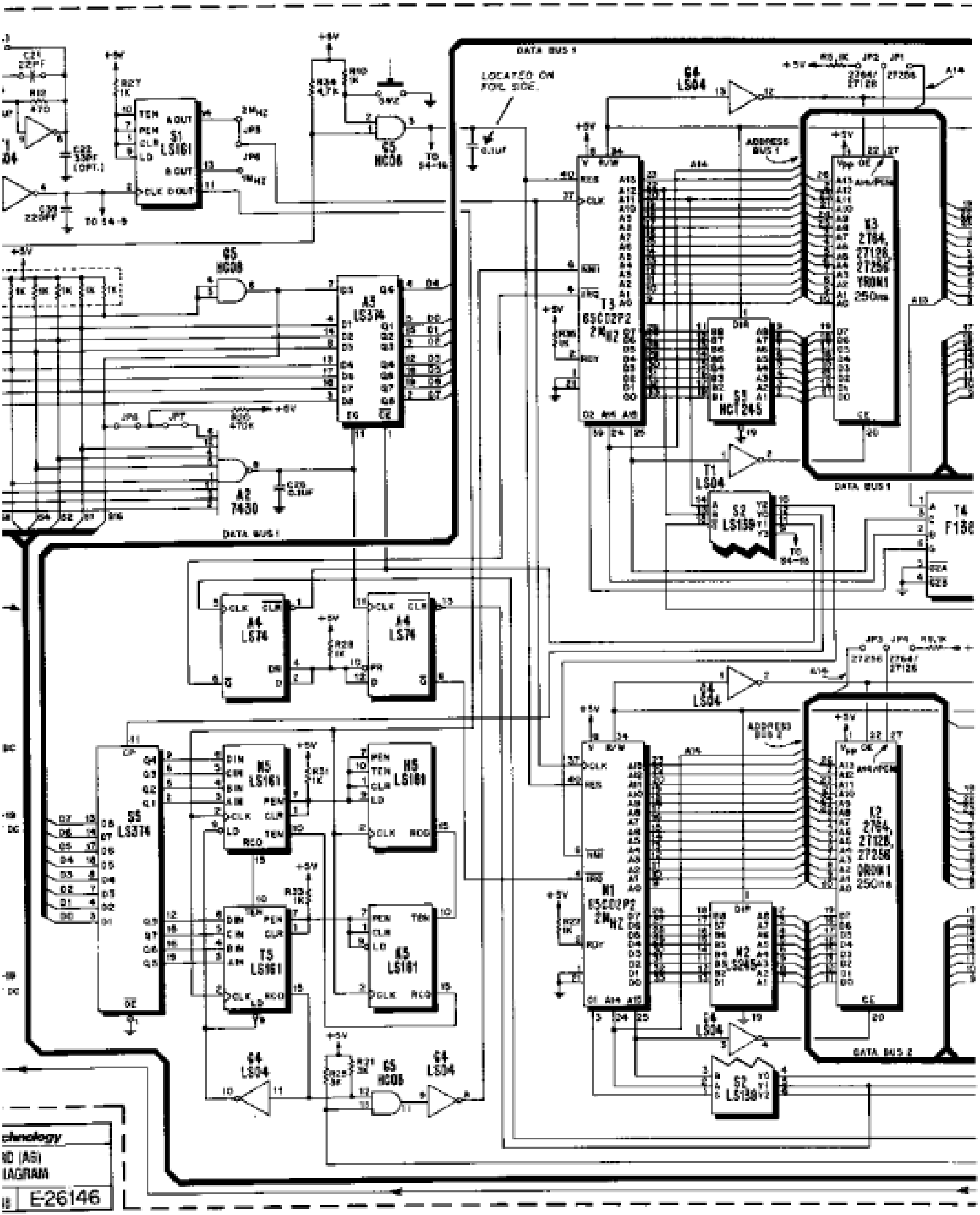
SOUND BOARD (A6) COMPONENT LOCATION

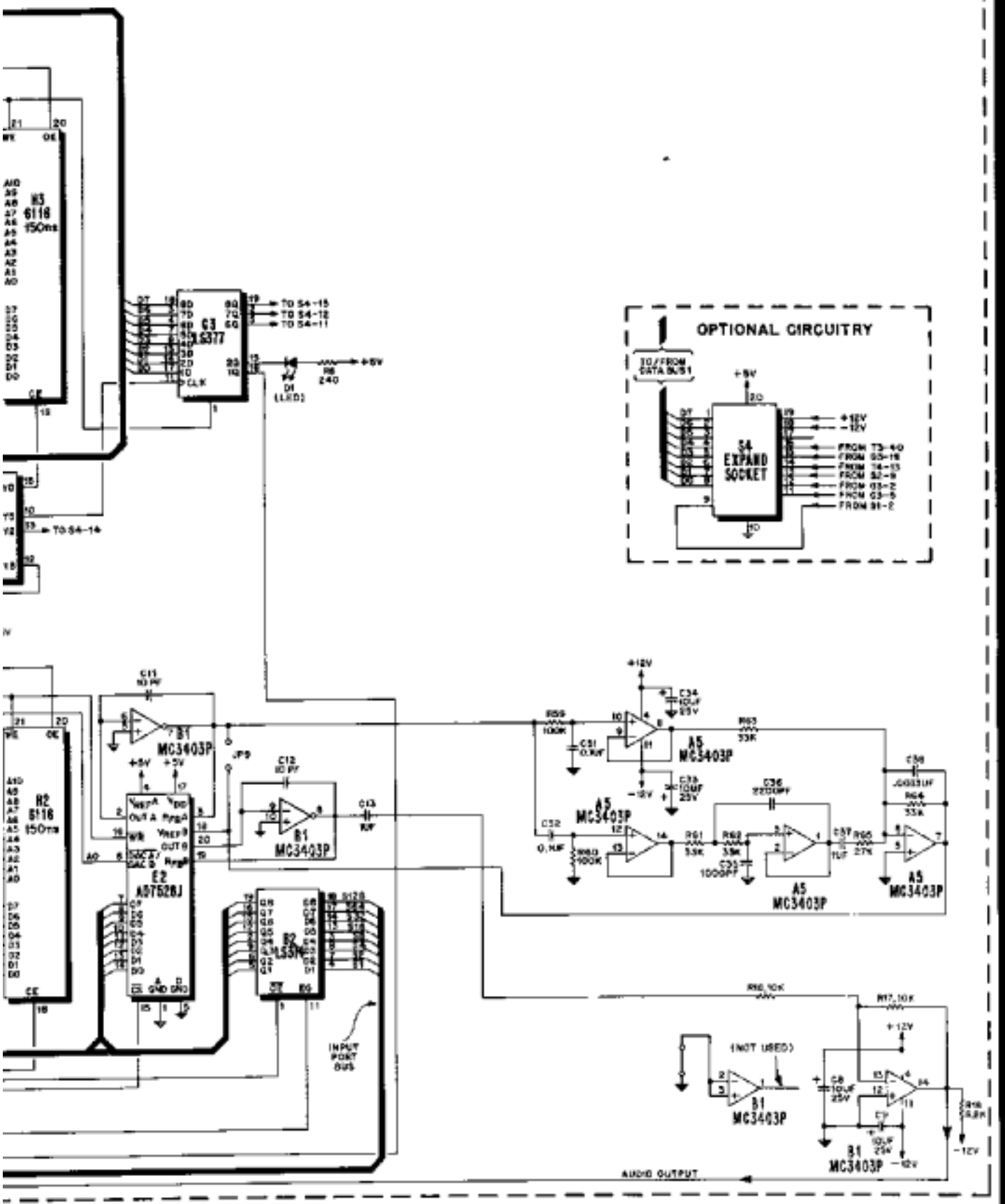


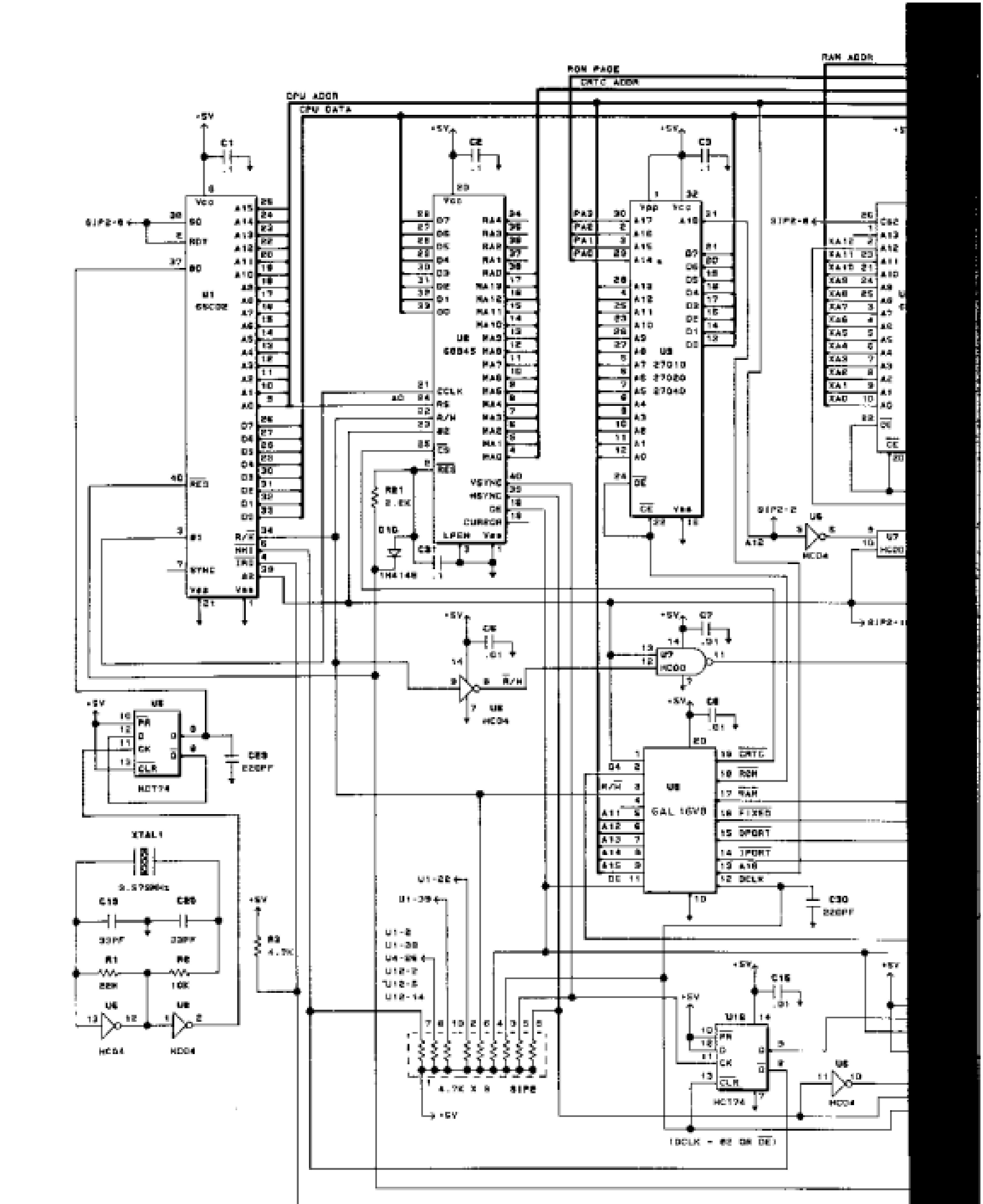


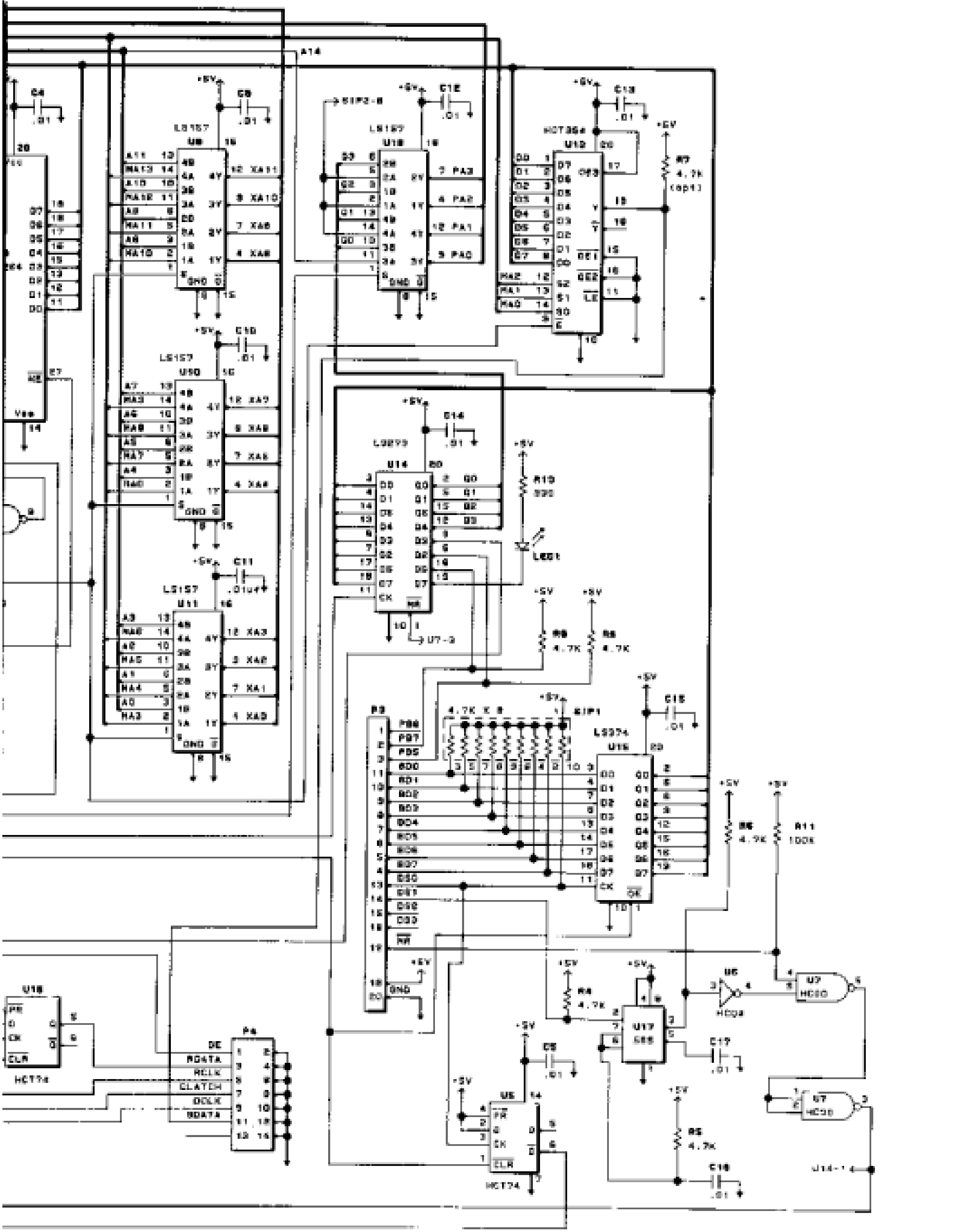
SOUND BOARD (A6) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	Sound Board Assembly (1A6)	MS-1429
C13,C37	Capacitor, 1UF, 20%, 50V (Non-polar)	XO-746
C8,C9,C10, C18,C19, C33,C34 AND THREE UNMARKED CAPACITORS	Capacitor, 10UF, 20%, 25V (Tantalum)	XO-327
C11,C12	Capacitor, 10UF, +80%-20%, 50V	XO-675
C14,C22	Capacitor, 33PF, 10%, 100V	XO-596
C15	Capacitor, .047UF, 20%, 50V	XO-628
C21	Capacitor, 22PF, 10%, 50V	XO-633
C26 AND FIFTEEN UNMARKED CAPACITORS	Capacitor, 0.1UF, +80%-20%, 50V	XO-330
C31,C32	Capacitor, 0.1UF, 10%, 100V	XO-784
C35	Capacitor, 1000PF, 10%, 100V	XO-396
C36	Capacitor, 2200PF, 10%, 100V	XO-240
C38	Capacitor, .0033UF, 10%, 100V	XO-680
C39	Capacitor, 330PF, 10%, 100V	XO-694
D1	Diode, MV5753, (LED, Red)	XO-270
R5,R9,R10, R27,R28,R31, R32,R35	Resistor, 1K Ohm, 5%, 1/4W	XO-5
R6	Resistor, 240 Ohm, 5%, 1/4W	XO-173
R11,R12	Resistor, 470 Ohm, 5%, 1/4W	XO-55
R21, R26	Resistor, 3K Ohm, 5%, 1/4W	XO-23
R16,R17	Resistor, 10K Ohm, 5%, 1/4W	XO-18
R18	Resistor, 6.8K Ohm, 5%, 1/4W	XO-8
R20,R34	Resistor, 4.7K Ohm, 5%, 1/4W	XO-7
R61-R64	Resistor, 33K Ohm, 5%, 1/4W	XO-42
R58,R60	Resistor, 100K Ohm, 5%, 1/4W	XO-45
R65	Resistor, 27K Ohm, 5%, 1/4W	XO-13
A2	IC, 7430, 8 Input NAND Gate	XO-443
A3,H2,H4	IC, 74LS374, Octal "D" Flip Flop	XO-96
A4	IC, 74LS74, Dual "D" Flip Flop	XO-434
A5, S1	IC, MC3403P, Quad Op-Amp	XO-583
E3	IC, AD7528JN, Multiplier DAC	XO-447
G3	IC, 74LS377, Octal "D" Flip Flop	XO-97
G4,T1	IC, 74LS04, Hex Inverter	XO-418
G5	IC, 74HC08, Quad 2 Input "AND" Gate	XO-872
H2,H3	IC, 6116LP-15, 2K X 8 RAM	XO-928
H4,S5,S6 S1,T5	IC, 74LS161, Synchronous Presettable Binary Counter	XO-440
K2,K3	IC, Specified Per Game	
M2	IC, 74LS245, Octal Bus Transceiver	XO-75
M1,T3	IC, 65C02P2 or 6502A, CPU XO-437 or	XO-853
S2	IC, 74LS139, Dual 1 of 4 Decoder	XO-419
G3	IC, 74HCT245, Octal Bus Transceiver	XO-851
T4	IC, 74F138, 1 of 8 Decoder	XO-1051
SIP 1	Resistor Pack 1K Ohm X 8	XO-493
SW2	Switch, Pushbutton	XO-897
XTAL 1	Crystal, 4 MHZ	XO-366
ASP1,ASP2	Connector (2)	XO-575
	28 Pin Dip Socket (3)	XO-536
	Jumper, Resistor, 0 OHM (7)	XO-489
	20 Pin Dip Socket	XO-491

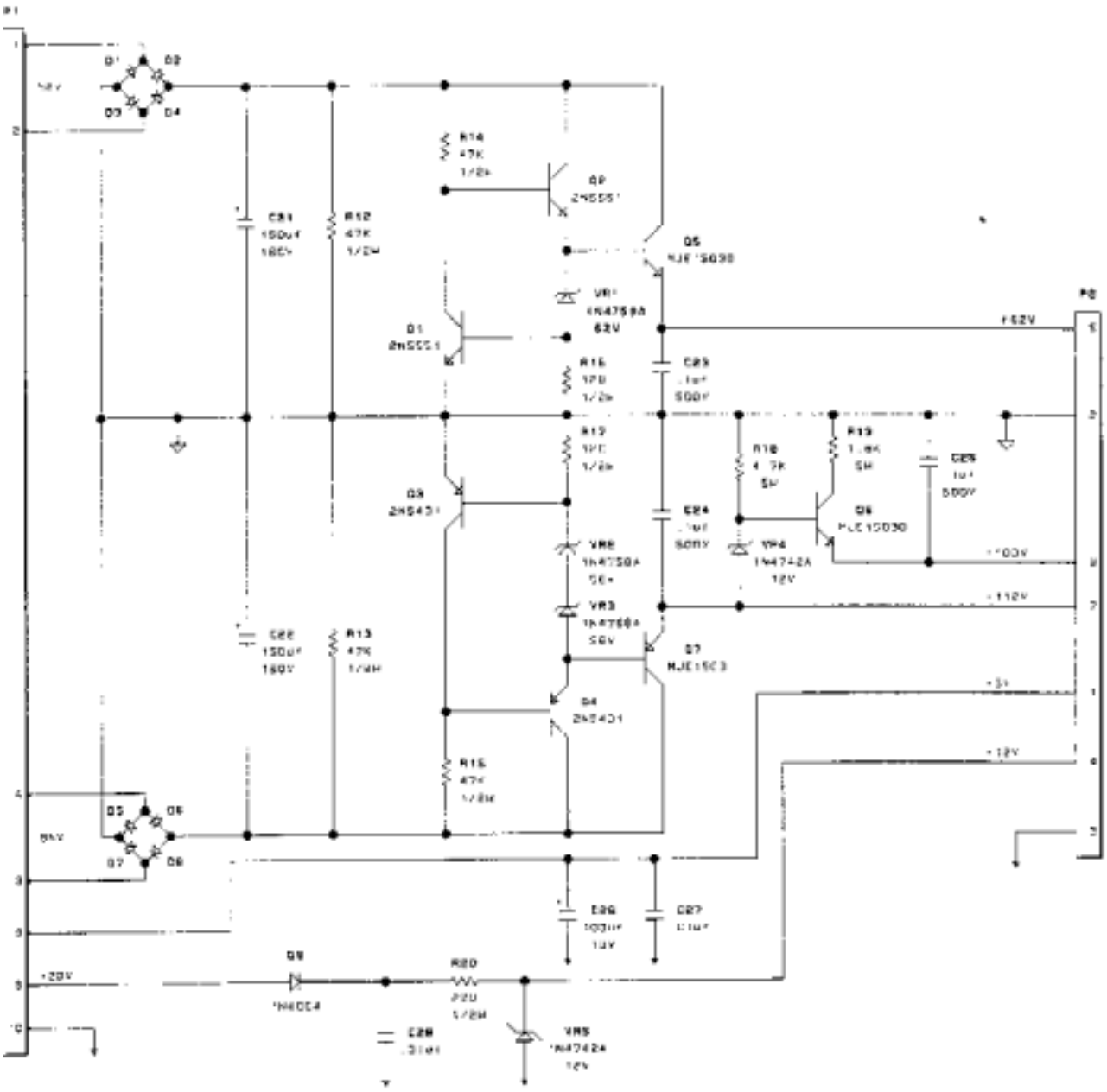

DATA BUS 1
DATA BUS 2
LOCATED ON FOIL SIDE.
ADDRESS BUS 1
ADDRESS BUS 2
65C02P2 2MHZ
LS374
LS161
LS74
LS04
HC08
7430
LS139
HCT245
2764, 27128, 27256
E-26146


OPTIONAL CIRCUITRY
S4 EXPAND SOCKET
MC3403P
AUDIO OUTPUT
INPUT PORT BUS
(NOT USED)


RAM ADDR
ROM PAGE
CRTC ADDR
CPU ADDR
CPU DATA
+5V
C1
C2
C3
M1
65C02
U2
6845
U3
27010
27020
27040
SIP2-6
SIP2-2
RB1
2.2K
D10
1N4148
C31
XTAL1
3.579MHz
C18
C29
33PF
R1
R6
22K
10K
HC04
HC74
HCT74
C28
220PF
R3
4.7K
U7
HC00
C6
C7
C8
GAL 16V8
CRTC
ROM
RAM
FIXED
OPORT
IPORT
A16
DCLK
C30
220PF
U1-26
U1-39
U1-2
U1-38
U4-26
U12-2
U12-5
U12-14
4.7K X 8
SIP2
C15
U12
HC174
(DCLK = Φ2 OR DE)

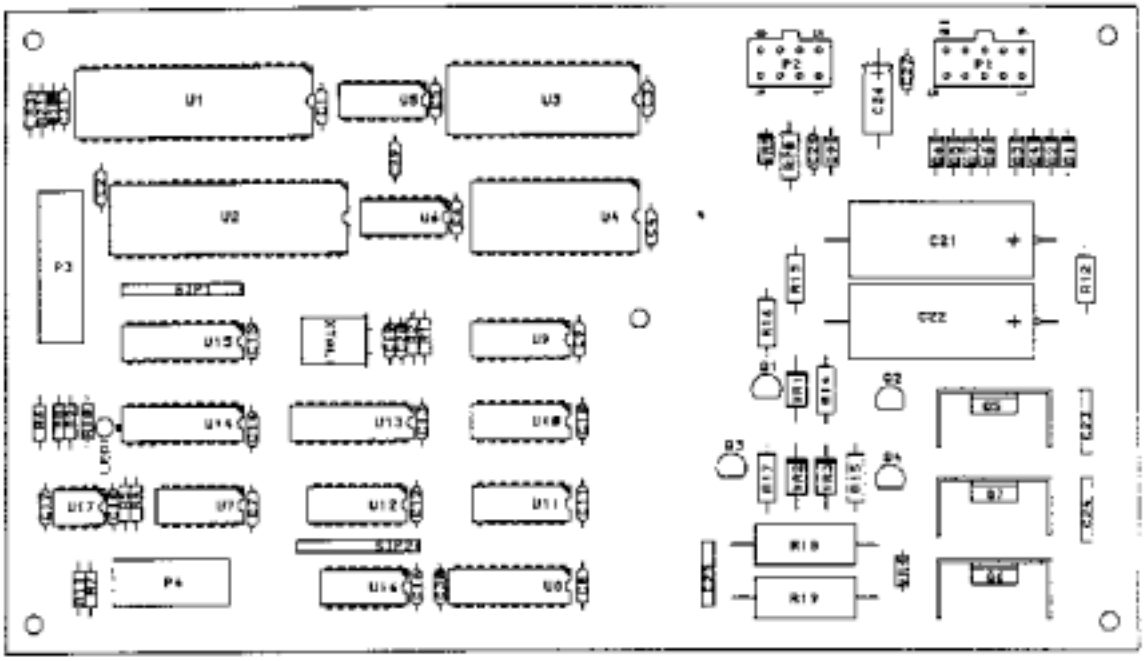


LS157
U8
LS157
U18
HCT384
U12
LS157
U9D
LS157
U11
LS273
U14
LED1
P3
LS374
U15
U16
HCT74
P4
DE
RDATA
RCLK
CLATCH
DCLK
RDATA
U17
555
U5
HC04
U7
HC00
U6
HCT74
R7
R13
R9
R8
R6
R11
100K
R4
R5
C4
C8
C12
C13
C10
C14
C11
C15
C17
C9
C16
A14
GND



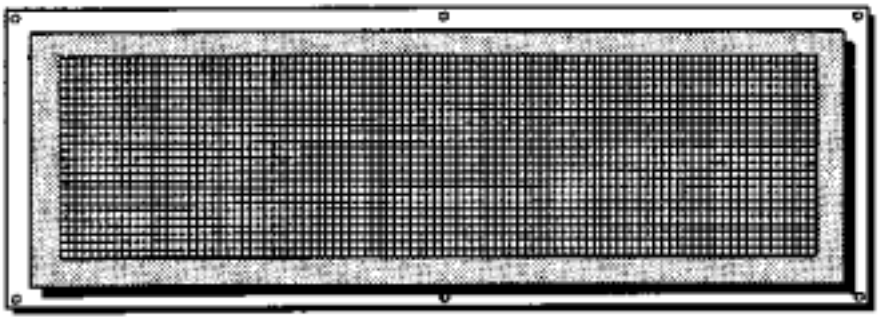
Premier Technology			
TITLE: DISPLAY CONTROLLER (A8) SCHEMATIC DIAGRAM			
DRAWN: C.S.	APPROVED: R.A.M.	DATE: 4-8-92	MA-1739

DISPLAY CONTROLLER (A8) COMPONENT LOCATION

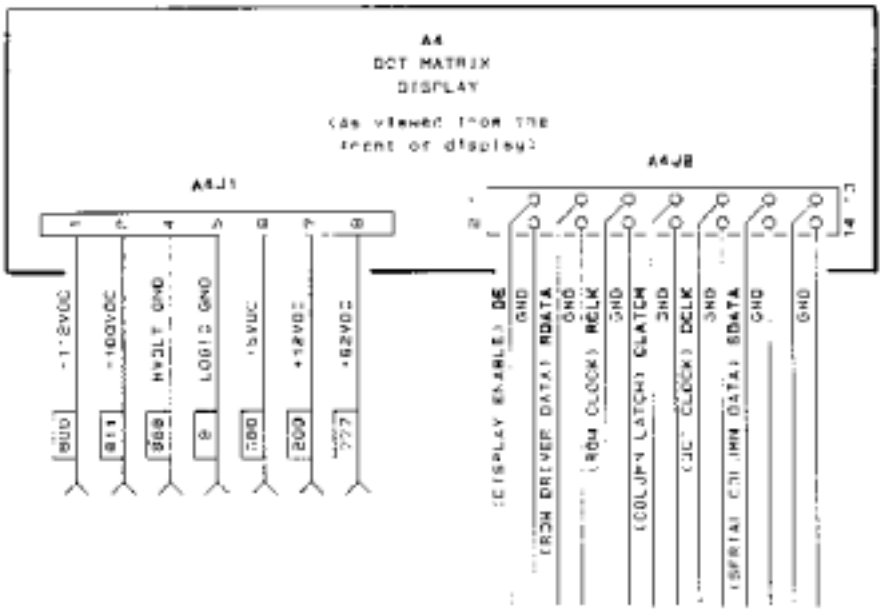


REFERENCE	DESCRIPTI
A8	DISPLAY
C1-C3	CAPACITO
C4-C18	CAPACITO
C27, C28	
C19, C20	CAPACITO
C21, C22	CAPACITO
C23, C25	CAPACITO
C26	CAPACITO
C29, C30	CAPACITO
C31	CAPACITO
D1-D9	DIODE, 1
D10	DIODE, 1
LED 1	DIODE, L
Q1, Q2	TRANSIST
Q3, Q4	TRANSIST
Q5, Q6	TRANSIST
Q7	TRANSIST
R1	RESISTOR
R2	RESISTOR
R3-R6, R8, R9	RESISTOR
R10	RESISTOR
R11	RESISTOR
R12-R15	RESISTOR
R16-R17	RESISTOR
R18	RESISTOR
R19	RESISTOR
R20	RESISTOR
R21	RESISTOR
SIP1, SIP2	RESISTOR
U1	IC, 65C0
U2	IC, 6884
U4	IC, 6264
U5,U16	IC, 74HC
U6	IC, 74HC
U7	IC, 74HC
U8	IC, GAL1
U9-U12	IC, 74LS
U13	IC, 74HC
U14	IC, 74LS
U15	IC, 74LS
U17	IC, NE55
VR1	DIODE, Z
VR2,VR3	DIODE, Z
VR4,VR5	DIODE, Z
XTAL1	CRYSTAL,
P1	HEADER,
P2	HEADER,
P3	HEADER,
P4	HEADER,
	HEATSINK
	SOCKET,
	SOCKET,

DOT MATRIX DISPLAY (A4)

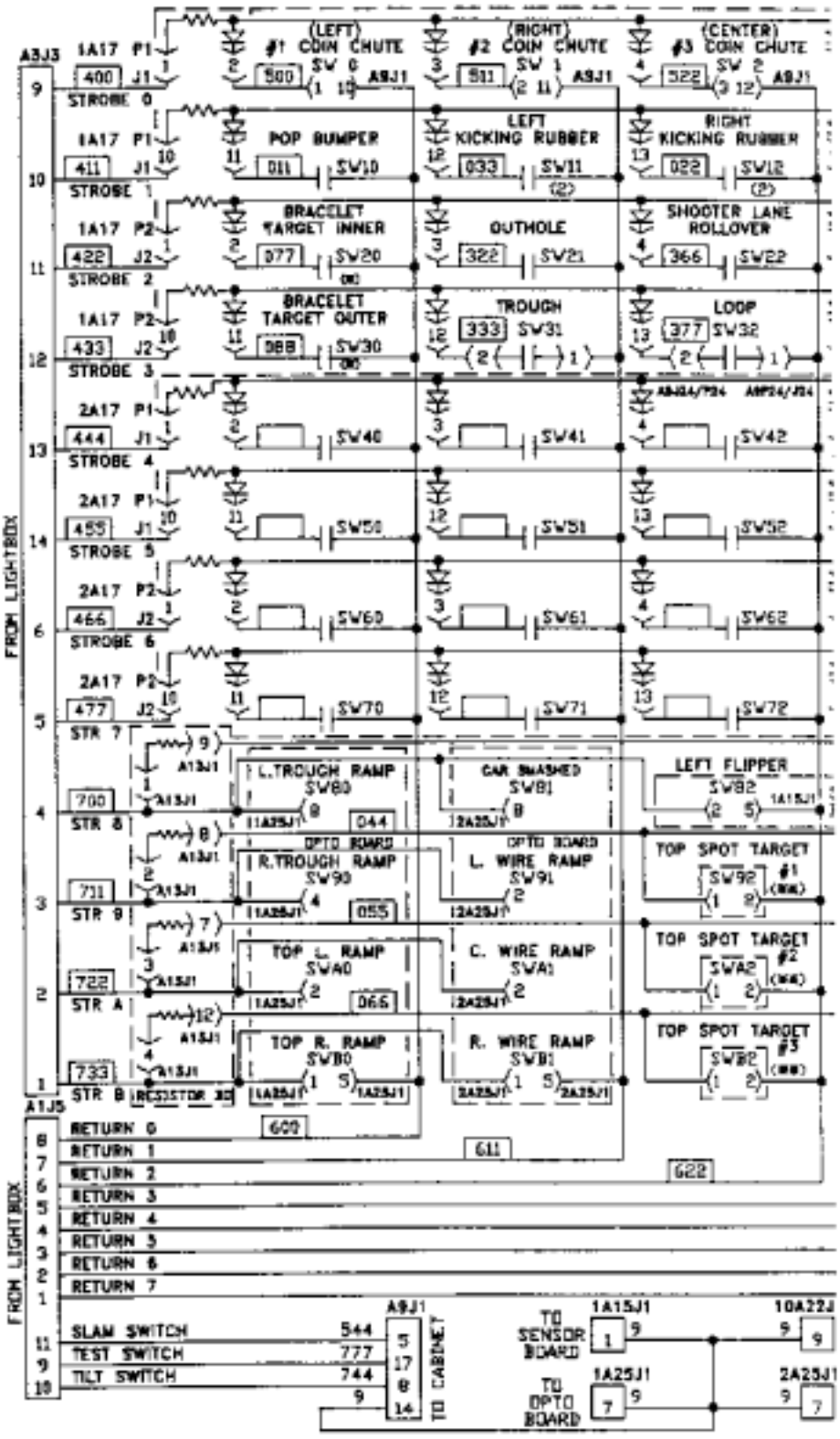


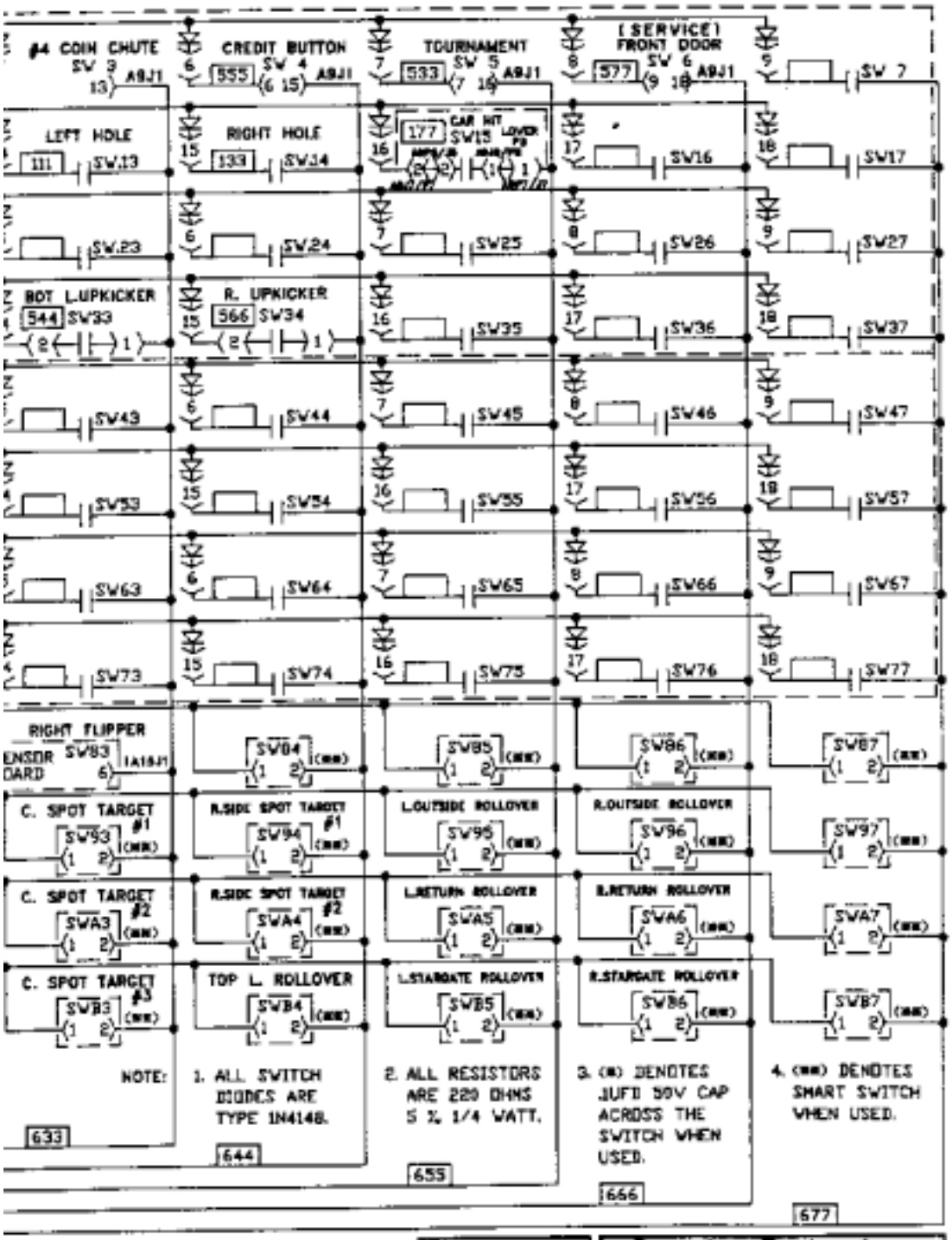
DESCRIPTION	PART NUMBER
DOT MATRIX DISPLAY	29191

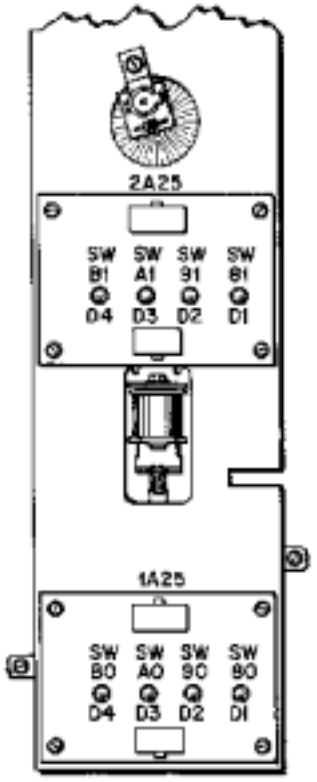


AY CONTROLLER (A8)
PARTS LIST

N	PART NUMBER
ONTROLLER	MA-1739
, 0.1UF, +80%-20%	XO-230
, .01UF, +80%-20%	XO-229
, 33PF, 10%, 100V	XO-896
, 150UF, 160V	XO-1133
, 0.1UF, 500V	XO-886
, 100UF, 10V	XO-211
, 220PF, 10%, 100V	XO-694
, 0.1UF, 100V	XO-784
4004	XO-254
4148	XO-261
D, RED, MV5752	XO-270
R, NPN, 2N5551	XO-1141
R, PNP, 2N5401	XO-1142
R, NPN, MJE15030	XO-1143
R, PNP, MJE15031	XO-1144
22 MEGOHM, 5%, 1/4W	XO-74
10K OHM, 5%, 1/4W	XO-18
4.7K OHM, 5%, 1/4W	XO-7
330 OHM, 5%, 1/4W	XO-34
100K OHM, 5%, 1/4W	XO-45
47K OHM, 5%, 1/4W	XO-1135
120 OHM, 5%, 1/4W	XO-1136
4.7K OHM, 5%, 5W	XO-1137
1.8K OHM, 5%, 1/4W	XO-1138
220 OHM, 5%, 1/4W	XO-185
2.2K OHM, 5%, 1/4W	XO-27
PACK, 4.7 OHM	XO-906
P2, CPU, 2MHZ	XO-927
, CONTROLLER	XO-1139
P, RAM STAT 8K X 8	XO-781
74, DUAL "D" FLIP-FLOP	XO-889
4, INVERTER	XO-888
0, QUAD "NAND" GATES	XO-782
V8-25L	U8-G
57, QUAD 1 OF 2 MULTIPLEXER	XO-390
354, 1 OF 8 MULTIPLEXER	XO-1140
73, OCTAL DATA LATCH	XO-94
74, OCTAL "D" FLIP-FLOP	XO-96
, TIMER	XO-631
NER, 1N4759A, 62V, 5%	XO-267
NER, 1N4758A, 56V, 5%	XO-1164
NER, 1N4742A, 12V, 5%	XO-257
3.579MHZ	XO-1166
0 POSITION	XO-912
POSITION	XO-911
0 POSITION, RIBBON	XO-940
4 POSITION, RIBBON	XO-1134
6038	XO-472
2 PIN	XO-1036
0 PIN	XO-491







MA-1925
QUAD OPTICAL INTERFACE BOARD(S)
SWITCH LOCATIONS

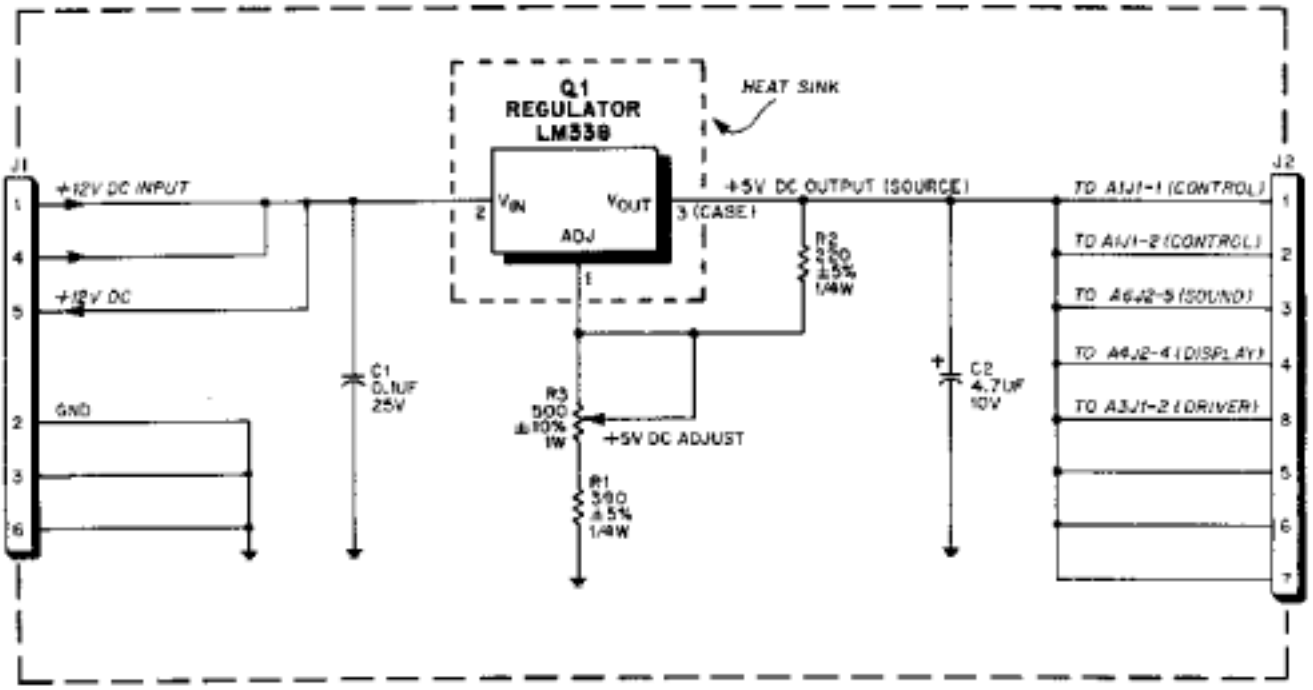
COLOR CODE			
0	BLACK	5	GREEN
1	BROWN	6	BLUE
2	RED	7	VIOLET
3	ORANGE	8	GRAY
4	YELLOW	9	WHITE

Premier Technology

TITLE: SWITCH MATRIX SCHEMATIC DIAGRAM

	RLM	11-12-92	29574

VI. WIRING AND SCHEMATIC DIAGRAMS, PARTS LISTS

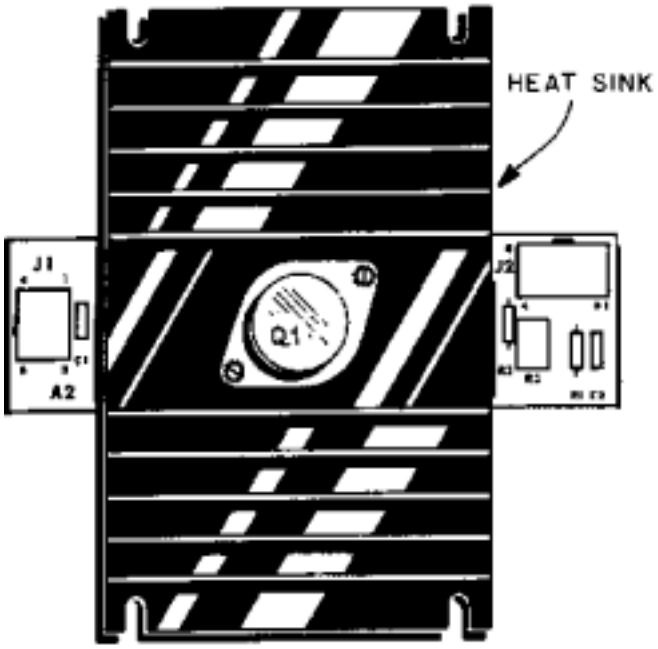


Premier Technology

TITLE: POWER SUPPLY (A2) SCHEMATIC DIAGRAM

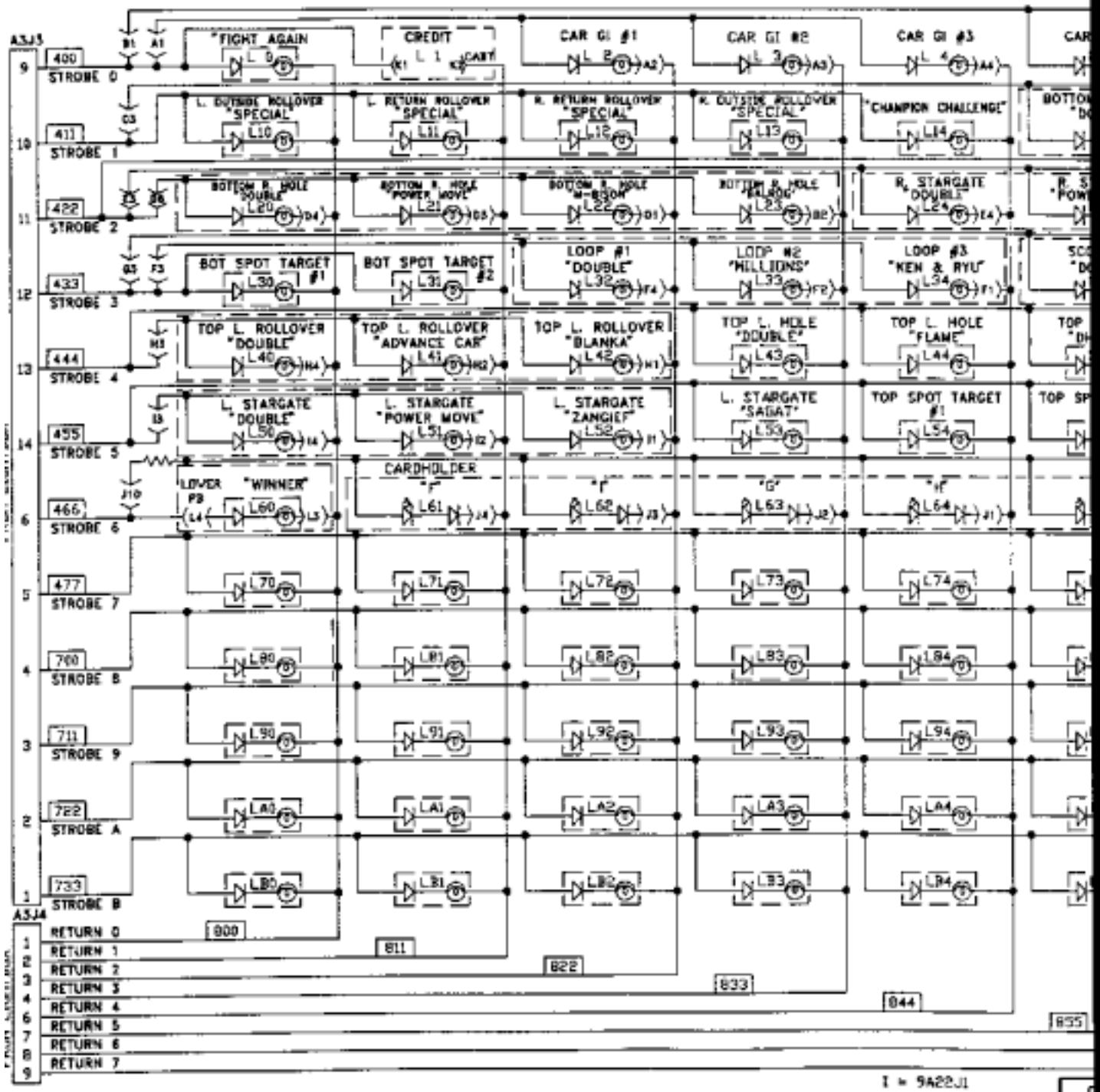
DRAWN | APPROVED | DATE: 12FEB85 | E-24441

POWER SUPPLY (A2) COMPONENT LOCATION



POWER SUPPLY (A2) PARTS LIST

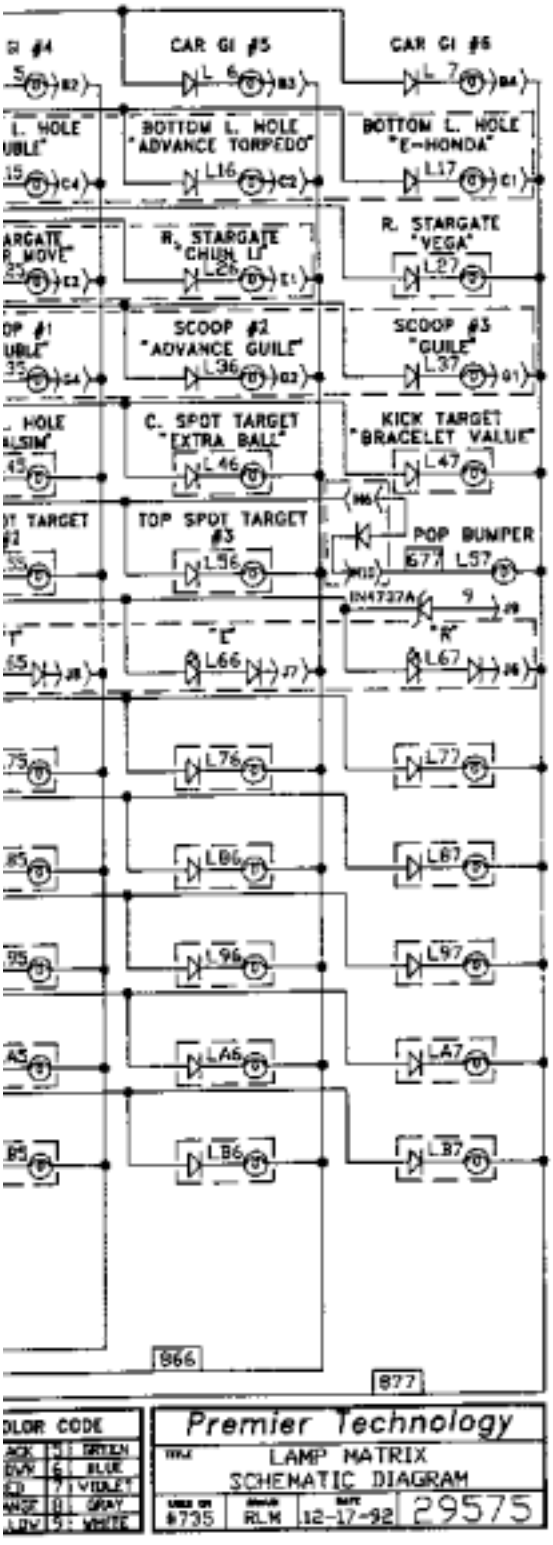
REFERENCE	DESCRIPTION	PART NUMBER
	Power Supply (A2)	MA-1369
C1	Capacitor, 0.1UF, +80% -20%, 50V	XU-230
C2	Capacitor, 4.7UF, 10% 10V	XU-228
J1	Header, 6 Position	XU-910
J2	Header, 8 Position	XU-911
Q1	Regulator, LM338, (5 Amp)	XU-839
R1	Resistor, 390 Ohm, 5%, 1/4W	XU-845
R2	Resistor, 220 Ohm, 5%, 1/4W	XU-21
R3	Resistor, (Pot) 500 Ohm, 10%, 1W	XU-112
	Heat Sink	XU-534
	Insulator (Regulator)	XU-532
	Insulator (Regulator)	XU-533

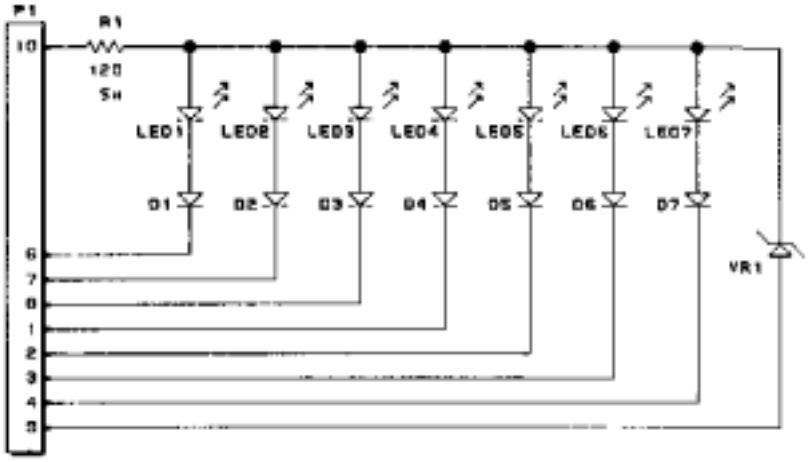


NOTE: 1. ALL LAMP DIODES ARE TYPE 1N4004.

2. ALL LAMPS ARE TYPE #44.

3. A = A9J25/P25
B = A9J26/P26
C = 3A22J1
D = 4A22J1
E = 5A22J1
F = 6A22J1
G = 7A22J1
H = 8A22J1
I = 9A22J1
J = 10A22J1
K = A9J6
L = A9J7/P7
M = A13J1



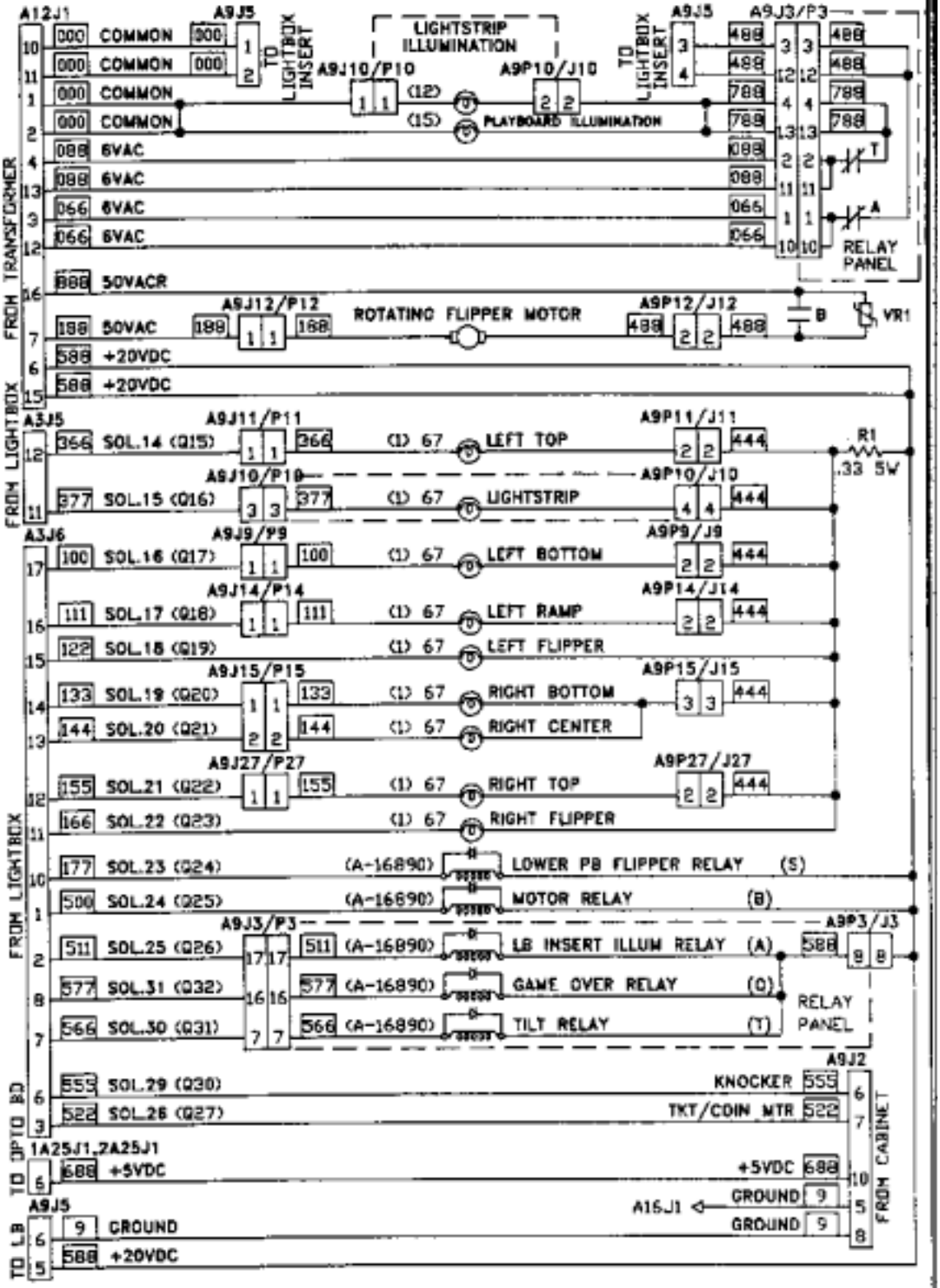


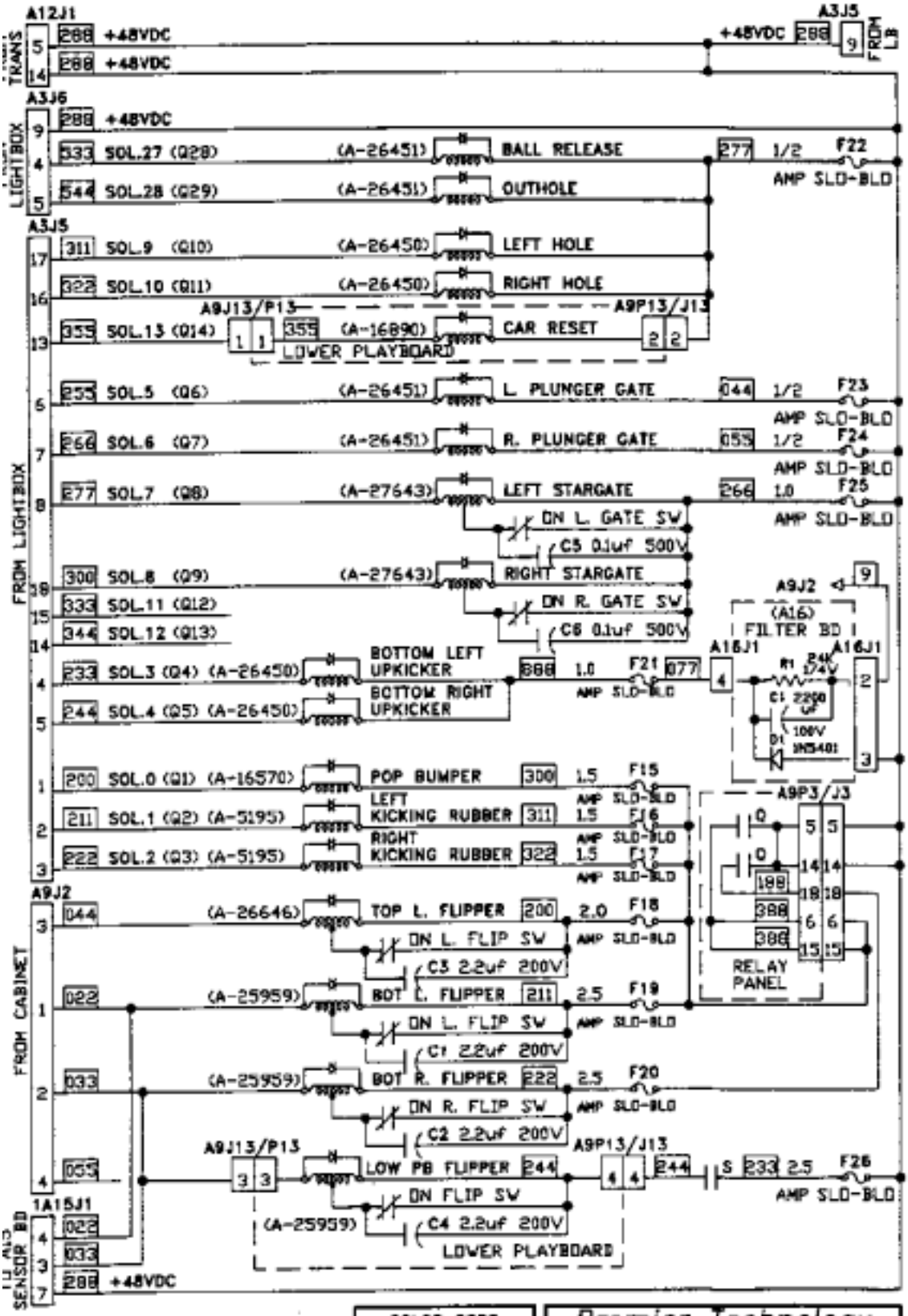
Premier Technology
LED BOARD (A22)
SCHEMATIC DIAGRAM
J.B.
12-7-91
MA-1721

LED BOARD (A22) COMPONENT LOCATION

LED BOARD (A22) PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER
	LED Board Assembly (A22)	MA-1721
D1-D7	Diode, IN4004	XD-254
LED 1-LED 7	Diode, LED, Red	XD-855
R1	Resistor, 120 OHM, 10%, 5W	XD-1042
VR1	Diode,Zener, 1N4737A, 7.5V	XD-844
P1	Header, 10 Position	XC-935


A12J1
COMMON
A9J5
TO LIGHTBOX INSERT
LIGHTSTRIP ILLUMINATION
A9J10/P10
A9P10/J10
(12)
(15)
PLAYBOARD ILLUMINATION
A9J3/P3
RELAY PANEL
6VAC
50VACR
50VAC
A9J12/P12
ROTATING FLIPPER MOTOR
A9P12/J12
+20VDC
FROM TRANSFORMER
FROM LIGHTBOX
A3J5
SOL.14 (Q15)
A9J11/P11
LEFT TOP
A9P11/J11
R1
.33 5W
SOL.15 (Q16)
LIGHTSTRIP
A9P10/J10
A3J6
SOL.16 (Q17)
A9J9/P9
LEFT BOTTOM
A9P9/J9
SOL.17 (Q18)
A9J14/P14
LEFT RAMP
A9P14/J14
SOL.18 (Q19)
LEFT FLIPPER
SOL.19 (Q20)
A9J15/P15
RIGHT BOTTOM
A9P15/J15
SOL.20 (Q21)
RIGHT CENTER
SOL.21 (Q22)
A9J27/P27
RIGHT TOP
A9P27/J27
SOL.22 (Q23)
RIGHT FLIPPER
SOL.23 (Q24)
(A-16890)
LOWER PB FLIPPER RELAY (S)
SOL.24 (Q25)
MOTOR RELAY (B)
SOL.25 (Q26)
LB INSERT ILLUM RELAY (A)
A9P3/J3
SOL.31 (Q32)
GAME OVER RELAY (G)
SOL.30 (Q31)
TILT RELAY (T)
SOL.29 (Q30)
KNOCKER
A9J2
FROM CABINET
SOL.26 (Q27)
TKT/COIN MTR
TO OPTO BD
1A25J1,2A25J1
+5VDC
GROUND
A16J1
TO LB
A9J5

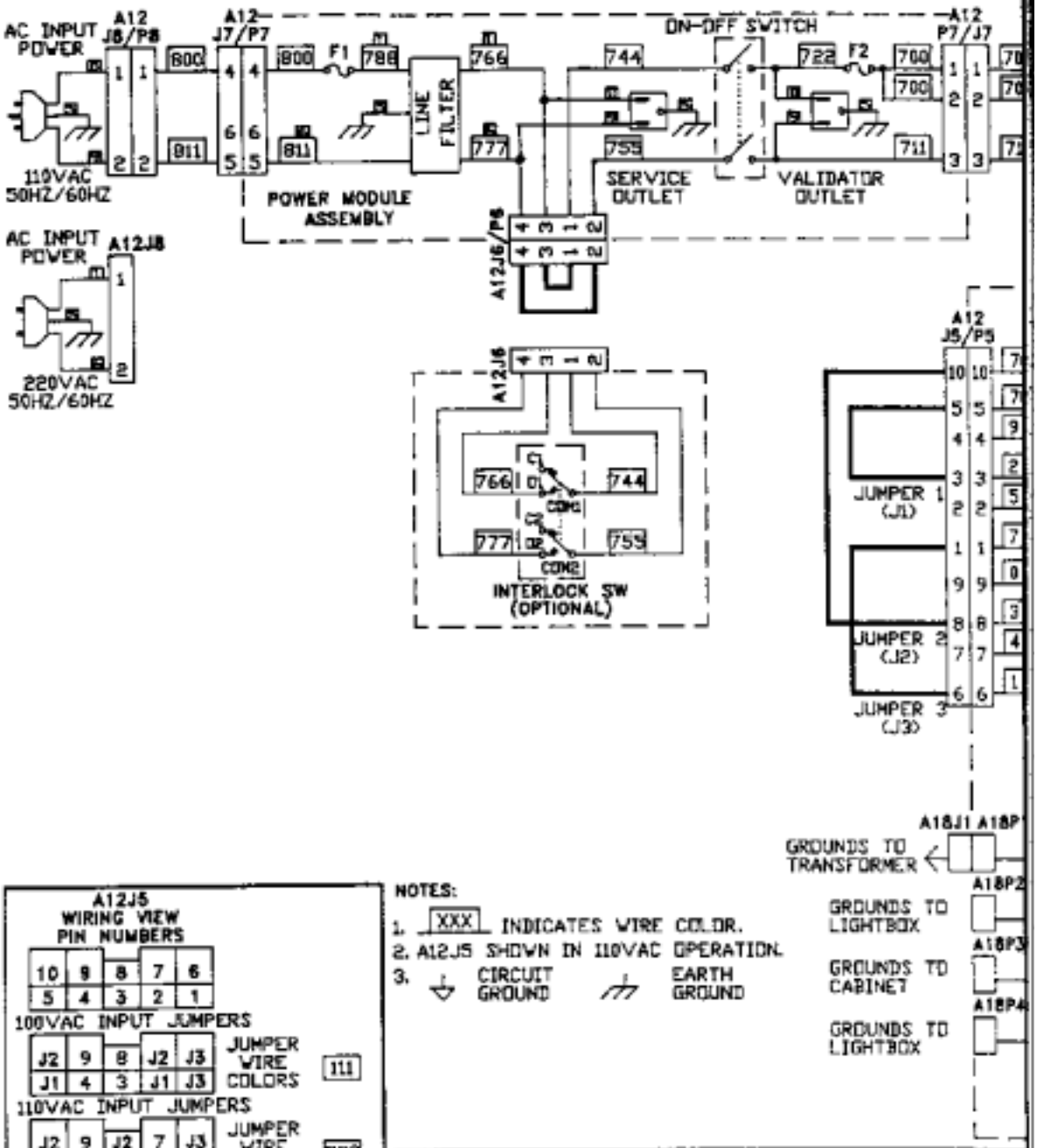


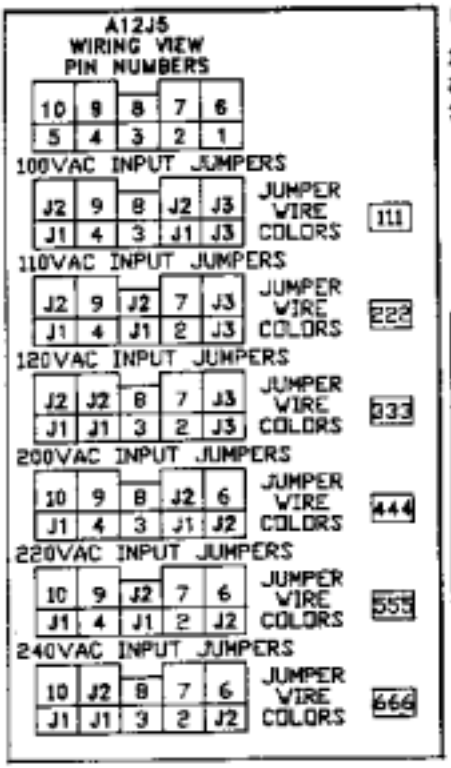
COLOR CODE			
0	BLACK	5	GREEN
1	BROWN	6	BLUE
2	RED	7	VIOLET
3	ORANGE	8	GRAY
4	YELLOW	9	WHITE

NOTE:
1. ALL DIODES ARE TYPE 1N4004.
2. UNLESS OTHERWISE SPECIFIED ALL LAMPS ARE TYPE 644.

Premier Technology

TITLE			
PLAYBOARD SCHEMATIC DIAGRAM			
#735	RLM	12-17-92	29576



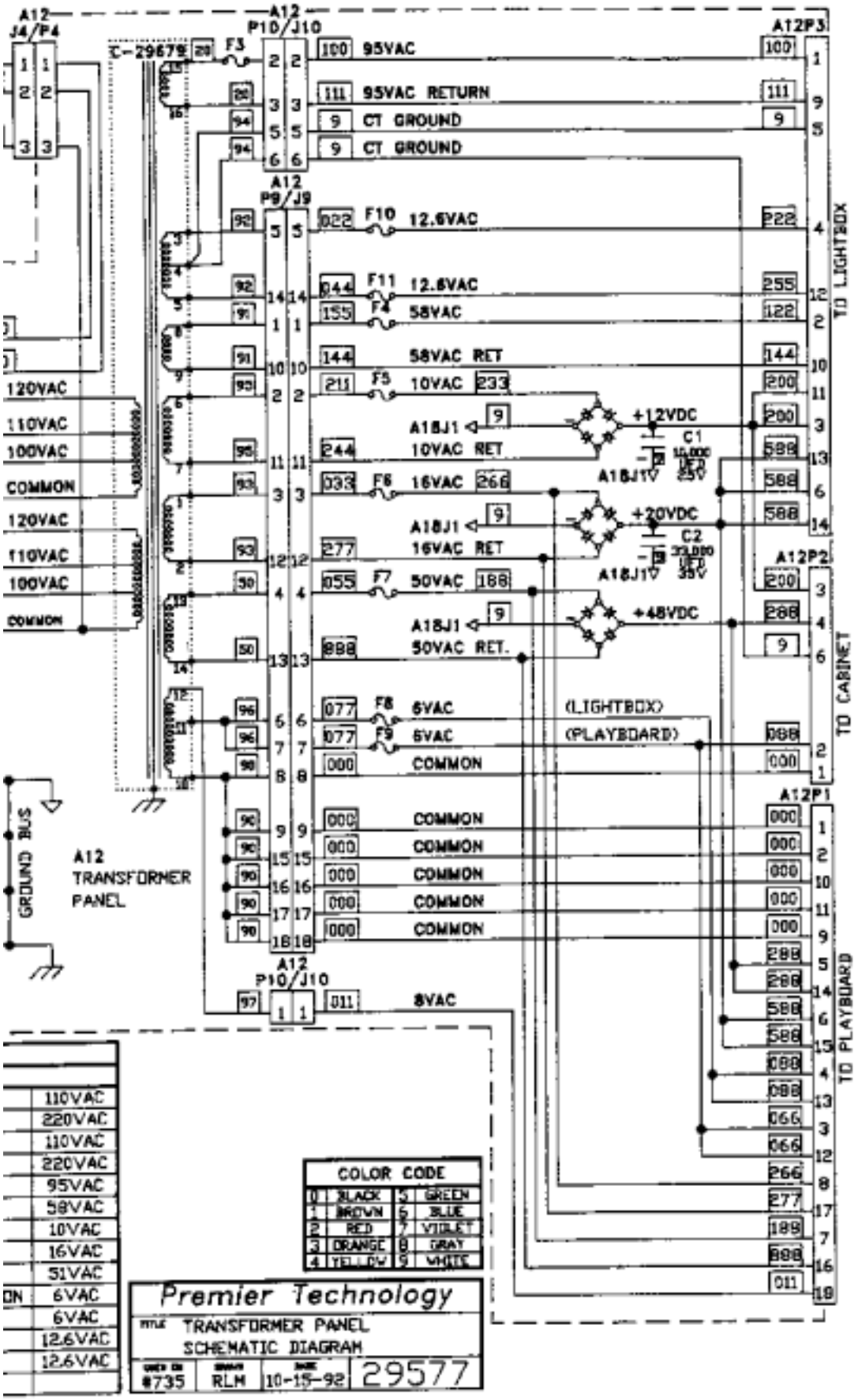


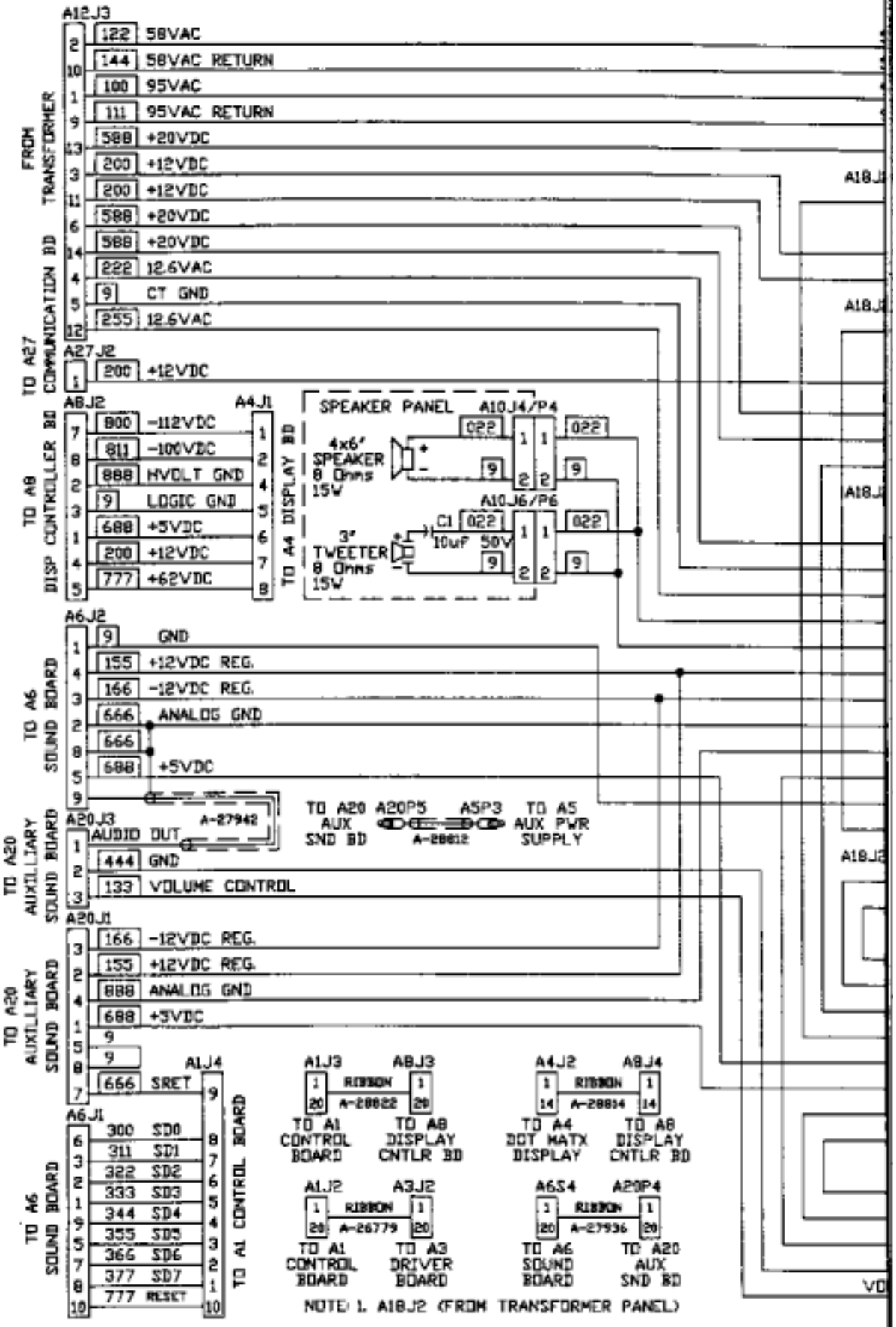
NOTES:

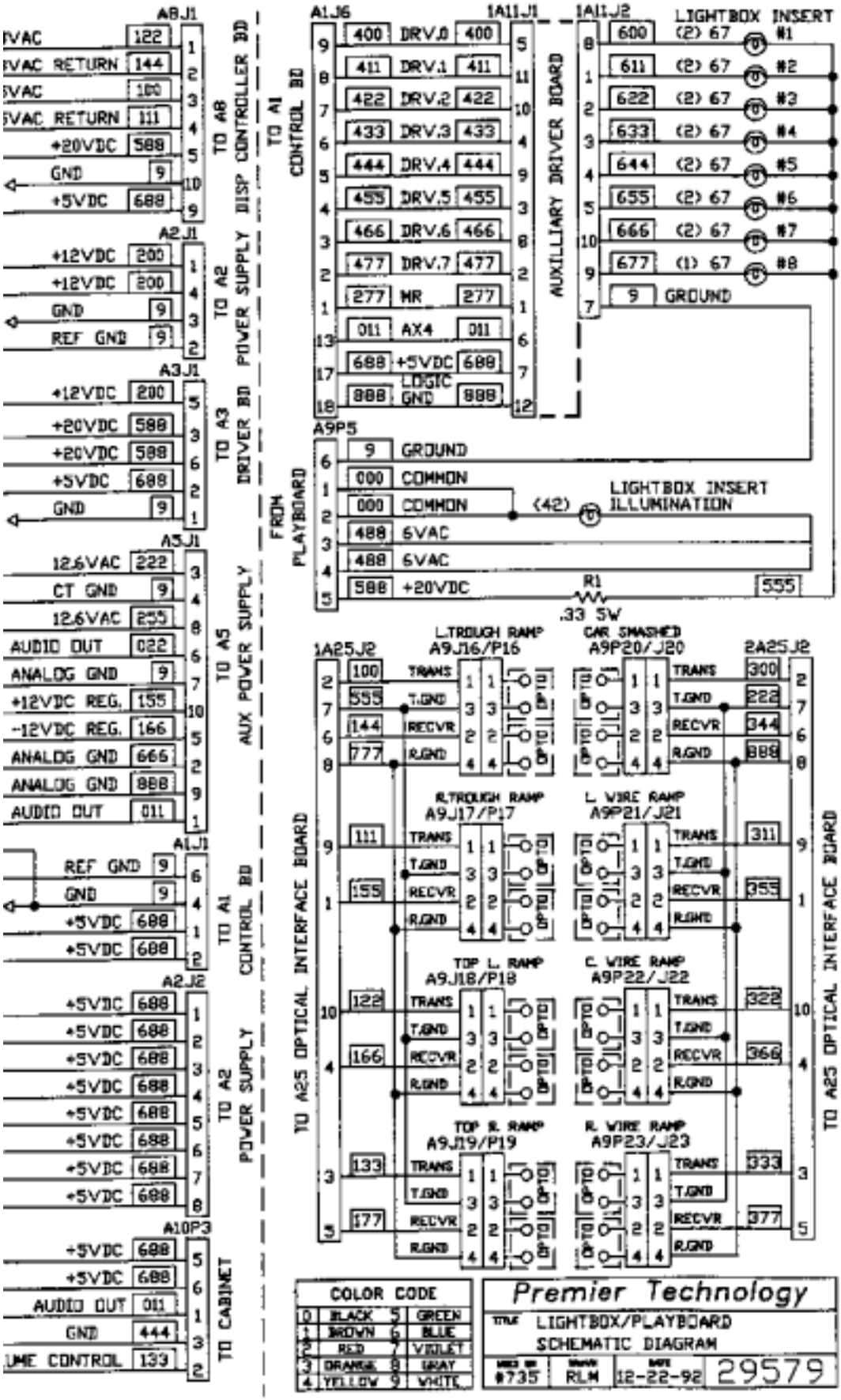
1. XXX INDICATES WIRE COLOR.
2. A12J5 SHOWN IN 110VAC OPERATION.
3. CIRCUIT GROUND EARTH GROUND

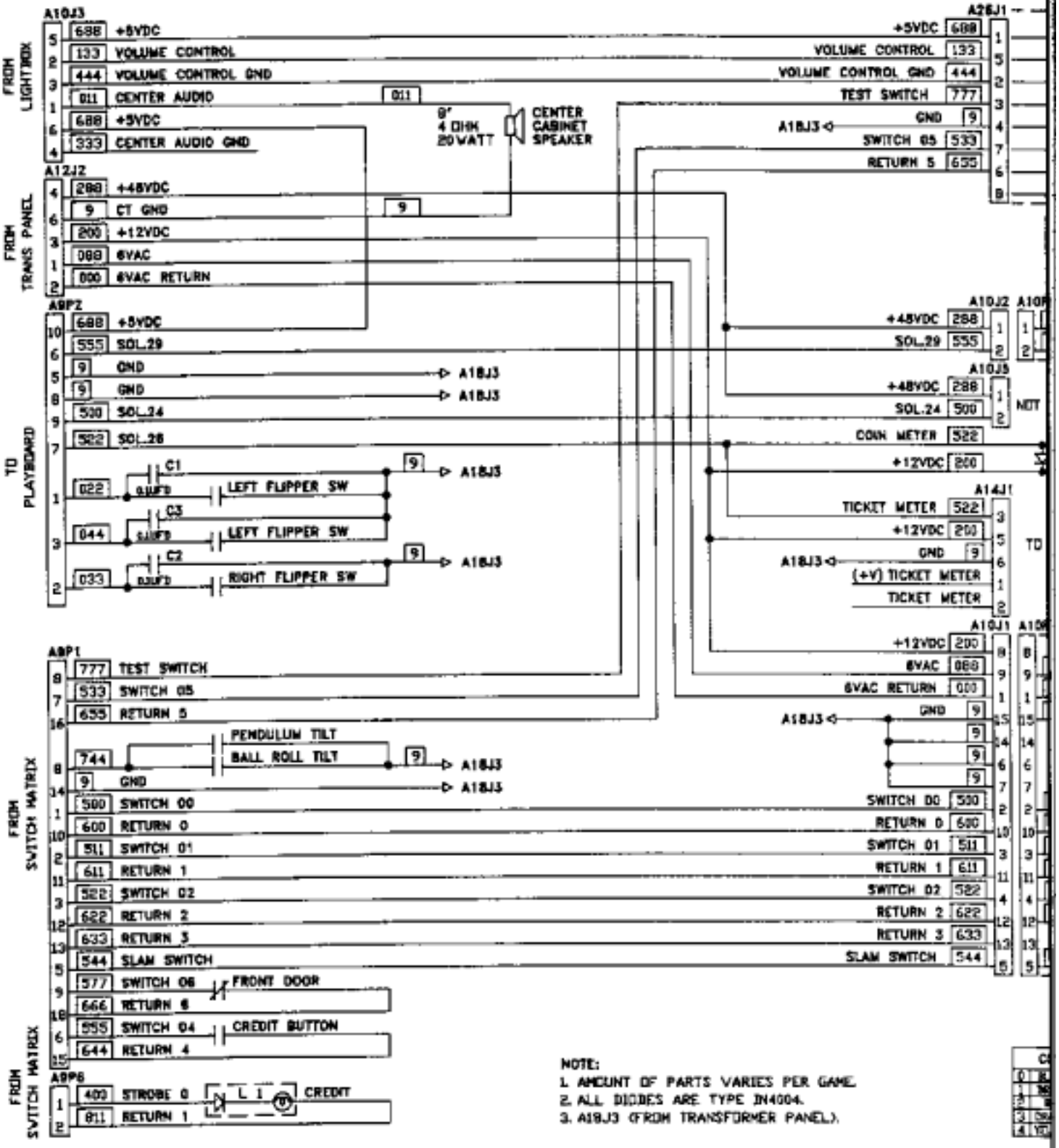
FUSE DESIGNATIONS TABLE

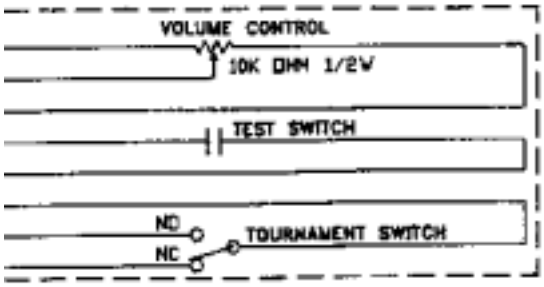
FUSE	RATING	PART NO.	USAGE
F1	8.0A SLO-BLO	EL26	LINE INPUT
	4.0A SLO-BLO	EL33	LINE INPUT
F2	5.0A SLO-BLO	EL8	PRIMARY POWER
	2.5A SLO-BLO	EL21	PRIMARY POWER
F3	3/8A SLO-BLO	EL31	DISPLAY
F4	3/8A SLO-BLO	EL31	DISPLAY
F5	2.5A SLO-BLO	EL21	POWER SUPPLY
F6	10A SLO-BLO	EL36	CONTROLLED LAMPS
F7	8.0A SLO-BLO	EL26	SOLENOIDS
F8	15A	EL25	LIGHTBOX INSERT ILLUMINAT
F9	10A SLO-BLO	EL36	PLAYFIELD ILLUMINATION
F10	3.0A SLO-BLO	EL9	AUXILLIARY POWER SUPPLY
F11	3.0A SLO-BLO	EL9	AUXILLIARY POWER SUPPLY
F12			

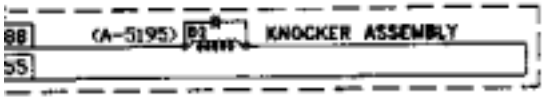

A12 J4/P4
A12 P10/J10
A12 P9/J9
A12P3
A12P2
A12P1
C-29679
F3
95VAC
95VAC RETURN
CT GROUND
CT GROUND
F10
12.6VAC
F11
12.6VAC
F4
58VAC
58VAC RET
F5
10VAC
10VAC RET
F6
16VAC
16VAC RET
F7
50VAC
50VAC RET.
F8
6VAC
F9
6VAC
COMMON
8VAC
120VAC
110VAC
100VAC
COMMON
120VAC
110VAC
100VAC
COMMON
A18J1
+12VDC
C1
A18J1
+20VDC
C2
A18J1
+48VDC
(LIGHTBOX)
(PLAYBOARD)
TO LIGHTBOX
TO CABINET
TO PLAYBOARD
GROUND BUS
A12
TRANSFORMER
PANEL
110VAC
220VAC
110VAC
220VAC
95VAC
58VAC
10VAC
16VAC
31VAC
6VAC
6VAC
12.6VAC
12.6VAC
COLOR CODE
0 BLACK
1 BROWN
2 RED
3 ORANGE
4 YELLOW
5 GREEN
6 BLUE
7 VIOLET
8 GRAY
9 WHITE
Premier Technology
TRANSFORMER PANEL
SCHEMATIC DIAGRAM
#735
RLM
10-15-92
29577

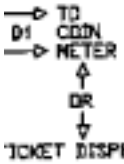

A12J3
FROM TRANSFORMER
122 58VAC
144 58VAC RETURN
100 95VAC
111 95VAC RETURN
588 +20VDC
200 +12VDC
200 +12VDC
588 +20VDC
588 +20VDC
222 12.6VAC
9 CT GND
255 12.6VAC
TO A27 COMMUNICATION BD
A27J2
200 +12VDC
TO A8 DISP CONTROLLER BD
A8J2
800 -112VDC
811 -100VDC
888 HVOLT GND
9 LOGIC GND
688 +5VDC
200 +12VDC
777 +62VDC
A4J1
TO A4 DISPLAY BD
SPEAKER PANEL
A10J4/P4
A10J6/P6
4x6" SPEAKER 8 Ohms 15W
3" TWEETER 8 Ohms 15W
C1 10uF 50V
022
A18J1
A18J2
A18J3
A6J2
TO A6 SOUND BOARD
9 GND
155 +12VDC REG.
166 -12VDC REG.
666 ANALOG GND
666
688 +5VDC
TO A20 AUXILLIARY SOUND BOARD
A20J3
AUDIO OUT
A-27942
444 GND
133 VOLUME CONTROL
TO A20 AUX SND BD
A20P5
A5P3
A-28612
TO A5 AUX PWR SUPPLY
A20J1
166 -12VDC REG.
155 +12VDC REG.
888 ANALOG GND
688 +5VDC
9
9
666 SRET
A1J4
TO A1 CONTROL BOARD
A6J1
300 SD0
311 SD1
322 SD2
333 SD3
344 SD4
355 SD5
366 SD6
377 SD7
777 RESET
A1J3
A8J3
RIBBON
A-28822
TO A1 CONTROL BOARD
TO A8 DISPLAY CNTLR BD
A4J2
A8J4
A-28814
TO A4 DOT MATX DISPLAY
A1J2
A3J2
A-26779
TO A3 DRIVER BOARD
A6S4
A20P4
A-27936
TO A6 SOUND BOARD
TO A20 AUX SND BD
NOTE 1. A18J2 (FROM TRANSFORMER PANEL)

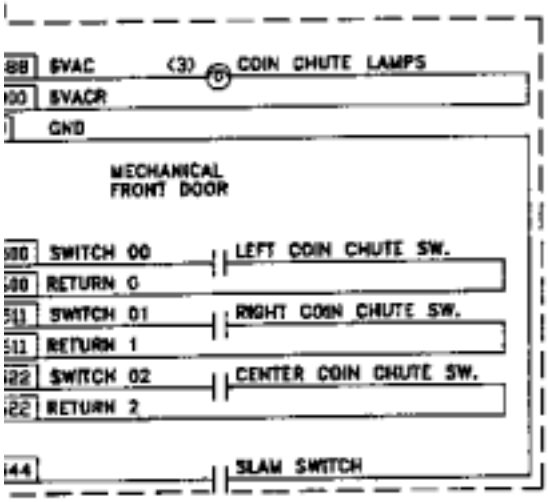

A8J1
VAC 122
VAC RETURN 144
VAC 100
VAC RETURN 111
+20VDC 588
GND 9
+5VDC 688
TO A8 DISP CONTROLLER BD
TO A1 CONTROL BD
A2J1
+12VDC 200
+12VDC 200
GND 9
REF GND 9
TO A2 POWER SUPPLY
A3J1
+12VDC 200
+20VDC 588
+20VDC 588
+5VDC 688
GND 9
TO A3 DRIVER BD
A5J1
12.6VAC 222
CT GND 9
12.6VAC 233
AUDIO OUT 022
ANALOG GND 9
+12VDC REG. 155
-12VDC REG. 166
ANALOG GND 666
ANALOG GND 888
AUDIO OUT 011
TO A5 AUX POWER SUPPLY
A1J1
REF GND 9
GND 9
+5VDC 688
+5VDC 688
TO A1 CONTROL BD
A2J2
+5VDC 688
+5VDC 688
+5VDC 688
+5VDC 688
+5VDC 688
+5VDC 688
+5VDC 688
+5VDC 688
TO A2 POWER SUPPLY
A10P3
+5VDC 688
+5VDC 688
AUDIO OUT 011
GND 444
LUME CONTROL 133
TO CABINET
A1J6
400 DRV.0 400
411 DRV.1 411
422 DRV.2 422
433 DRV.3 433
444 DRV.4 444
455 DRV.5 455
466 DRV.6 466
477 DRV.7 477
277 MR 277
011 AX4 011
688 +5VDC 688
888 LOGIC GND 888
1A11J1
1A11J2
AUXILLIARY DRIVER BOARD
600 (2) 67 #1
611 (2) 67 #2
622 (2) 67 #3
633 (2) 67 #4
644 (2) 67 #5
655 (2) 67 #6
666 (2) 67 #7
677 (1) 67 #8
9 GROUND
LIGHTBOX INSERT
A9P5
FROM PLAYBOARD
9 GROUND
000 COMMON
000 COMMON
(42)
LIGHTBOX INSERT ILLUMINATION
488 6VAC
488 6VAC
588 +20VDC
R1
.33 5W
555
L.TROUGH RAMP A9J16/P16
CAR SMASHED A9P20/J20
R.TROUGH RAMP A9J17/P17
L WIRE RAMP A9P21/J21
TOP L. RAMP A9J18/P18
C WIRE RAMP A9P22/J22
TOP R. RAMP A9J19/P19
R WIRE RAMP A9P23/J23
1A25J2
2A25J2
TRANS
T.GND
RECVR
R.GND
TO A25 OPTICAL INTERFACE BOARD
TO A25 OPTICAL INTERFACE BOARD
COLOR CODE
0 BLACK 5 GREEN
1 BROWN 6 BLUE
2 RED 7 VIOLET
3 ORANGE 8 GRAY
4 YELLOW 9 WHITE
Premier Technology
TITLE LIGHTBOX/PLAYBOARD SCHEMATIC DIAGRAM
#735 RLM 12-22-92 29579

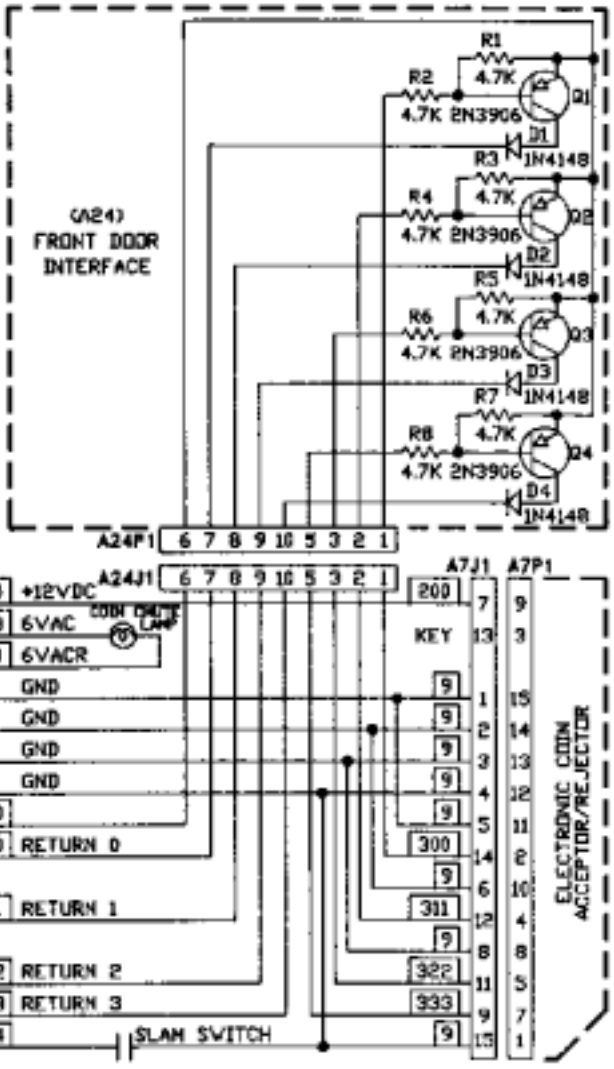

A10J3
FROM LIGHTBOX
688 +5VDC
133 VOLUME CONTROL
444 VOLUME CONTROL GND
011 CENTER AUDIO
688 +5VDC
333 CENTER AUDIO GND
011
9' 4 OHM 20 WATT
CENTER CABINET SPEAKER
A12J2
FROM TRANS PANEL
288 +48VDC
9 CT GND
200 +12VDC
088 6VAC
000 6VAC RETURN
9
A8P2
TO PLAYBOARD
688 +5VDC
555 SOL.29
9 GND
9 GND
500 SOL.24
522 SOL.26
022 C1 .1MFD LEFT FLIPPER SW
044 C3 .1MFD LEFT FLIPPER SW
033 C2 .1MFD RIGHT FLIPPER SW
9
A18J3
A8P1
FROM SWITCH MATRIX
777 TEST SWITCH
533 SWITCH 05
655 RETURN 5
744 PENDULUM TILT
BALL ROLL TILT
9 GND
500 SWITCH 00
600 RETURN 0
511 SWITCH 01
611 RETURN 1
522 SWITCH 02
622 RETURN 2
633 RETURN 3
544 SLAM SWITCH
577 SWITCH 06 FRONT DOOR
666 RETURN 6
555 SWITCH 04 CREDIT BUTTON
644 RETURN 4
A8P6
FROM SWITCH MATRIX
400 STROBE 0
011 RETURN 1
L1 CREDIT
A26J1
+5VDC 688
VOLUME CONTROL 133
VOLUME CONTROL GND 444
TEST SWITCH 777
A18J3 GND 9
SWITCH 05 533
RETURN 5 655
A10J2
+48VDC 288
SOL.29 555
A10J5
+48VDC 288
SOL.24 500
NOT
COIN METER 522
+12VDC 200
A14J1
TICKET METER 522
+12VDC 200
A18J3 GND 9
(+V) TICKET METER
TICKET METER
TO
A10J1
+12VDC 200
6VAC 088
6VAC RETURN 000
A18J3 GND 9
SWITCH 00 500
RETURN 0 600
SWITCH 01 511
RETURN 1 611
SWITCH 02 522
RETURN 2 622
RETURN 3 633
SLAM SWITCH 544
NOTE:
1. AMOUNT OF PARTS VARIES PER GAME.
2. ALL DIODES ARE TYPE IN4004.
3. A18J3 (FROM TRANSFORMER PANEL).

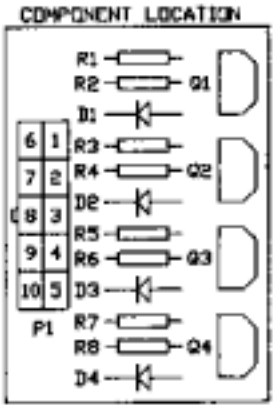












(A24)
FRONT DOOR INTERFACE
PARTS LIST

REFERENCE	DESCRIPTION	PART NO.
	FRONT DOOR INTERFACE ASSEMBLY	MA1645
D1-D4	DIODE, 1N4148	XD-261
Q1-Q4	TRANSISTOR, PNP, 2N3906	XD-588
R1-R8	RESISTOR, 4.7K OHM, 1/4W, 5%	XD-7
A24P1	HEADER,10 POSITION	XD-912
	SPACER (4)	23984

COLOR CODE			
0	BLACK	5	GREEN
1	BROWN	6	BLUE
2	RED	7	VIOLET
3	ORANGE	8	GRAY
4	YELLOW	9	WHITE

Premier Technology			
TITLE: CABINET/FRONT DOOR SCHEMATIC DIAGRAM			
#735	RLN	10-15-92	29578

Premier Technology			
TITLE: SCHEMATIC DIAGRAM ELECTRONIC FRONT DOOR-4 OUTPUT			
	RLN	09-20-91	28541

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POP BUMPER PARTS
EXPLODED VIEW.....69

UPKICKER
EXPLODED VIEW.....70

BALL HOLE KICKER PARTS
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LAMP IDENTIFICATION.....72

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EXPLODED VIEW.....73

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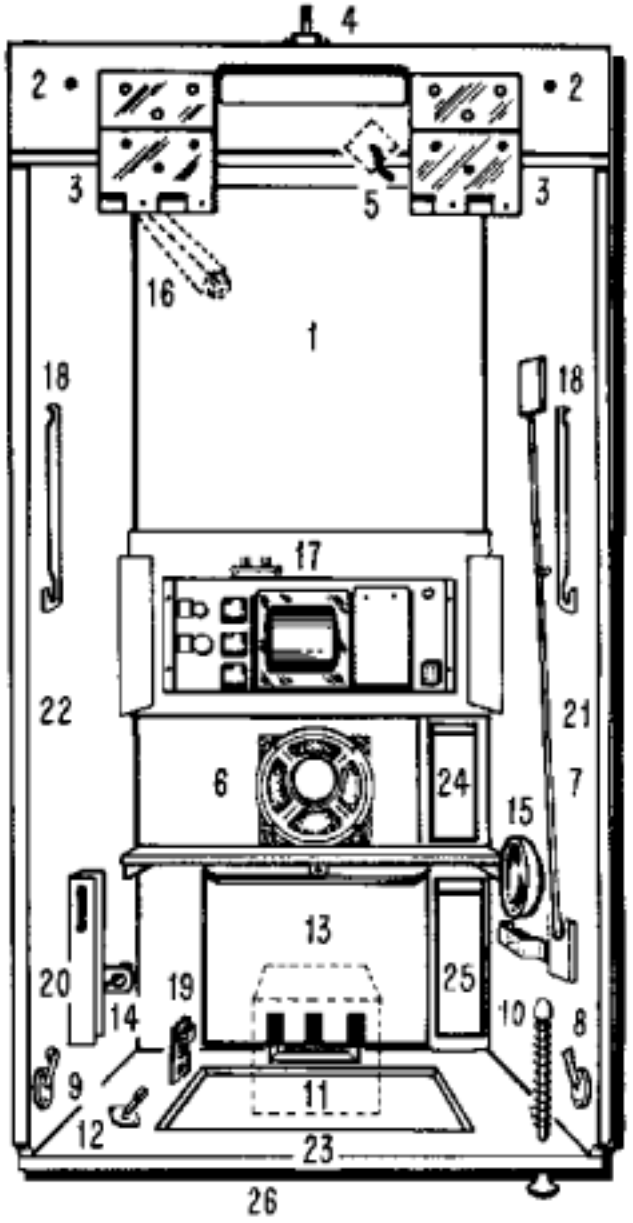
VII. PARTS INFORMATION

CABINET PARTS

ITEM	DESCRIPTION	PART NO.
1	Cabinet	29633-735
2	Lightbox Mounting Thumb Screw (2)	FA-162
	(Not Shown for Reference Only, Part of Lightbox Assembly)	
3	Butt Hinge (2)	26449
	(Attached to Lightbox)	
4	"U" Bolt (P/O Lightbox)	24650
	Latch Assembly (P/O Cabinet)	21969
5	Line Cord (Domestic)	23365
	Line Cord Cover Plate	23364
6	Speaker, 4 Ohm, 8"	28934
	Speaker Grille	28935
7	Prop Stick, Playfield	23940
8	Right Flipper Switch Assembly	
	(Switch with Bracket)	28974
	(Switch Only)	28963
9	Left Flipper Switch Assembly	
	(Switch with Bracket)	28973
	(Switch Only)	28962
10	Ball Shooter Assembly	26114
11	Front Door Assembly (Universal)	29105
	Cable Assembly	MA-1938
	Slam Switch (N/O)	26130
	6V DC Lamp, Wedge Base	FD-2
	Lampholder	FD-24
12	Replay Switch Assembly	18092
13	Cashbox	28032
	Cover	28062
14	Plumb Bob Tilt Switch Assembly	
	Strike Plate	358
	Carbon, Tilt Bob	MH-30
	Rod, Tilt	357
	Bracket	22043
	Clip	14653
15	Knocker Assembly	MA-12
	5" Ball Assembly (When Used)	27591
16	Cabinet Leg (4)	4337
	Leg Bolt (8)	3775
	3" Leg Adjuster (4)	MH-21
	3/8-16", Jam Nut (8)	FA-665
17	Transformer Panel Assembly	MA-1893
	Bridge Rectifier (3)	EL-42
	Capacitor, (10,000UF), 25V	XO-830
	Capacitor, (33,000UF), 35V	XO-957
	Fuse Cover	23805
	Fuse Holder and Cap F3	EL-78
	Fuse Block (8 Pole)	EL-10
	F3, 1/8 Amp, SLO-BLO	EL-31
	F4, 1/8 Amp, SLO-BLO	EL-31
	F5, 2.5 Amp, SLO-BLO	EL-21
	F6, 10 Amp, SLO-BLO	EL-36
	F7, 5 Amp, SLO-BLO	EL-26
	F8, 15 Amp	EL-25
	F9, 10 Amp, SLO-BLO	EL-36
	F10, 3 Amp, SLO-BLO	EL-9
	F11, 3 Amp, SLO-BLO	EL-9
	Transformer	29724
18	Cabinet Pivot Bracket (Left)	25658
	Cabinet Pivot Bracket (Right)	25657
19	Game Controls Board (A26)	MA-1851
20	Ball Roll Tilt	
	Housing and Switching Assembly	24394
	Switch	24393
21	Right Moulding (Not Shown)	28700
22	Left Moulding (Not Shown)	28701
23	Front Moulding (Not Shown)	16951
24	Relay Strip Assembly	MA-1872
	"Q" Relay	MA-1172
	"I" Relay	MA-25
	"A" Relay	MA-1021
25	Power Module Assembly (Domestic)	MA-1928
	Convenience Outlet (2)	18133
	Toggle Switch Plate	18769
	Double Throw Switch	23799
	Fuse Holder and Cap (2)	EL-78
	Line Filter	EL-50
	F1, 8 Amp SLO-BLO, 110V AC	EL-26
	4 Amp SLO-BLO, 220V AC	EL-33
	F2, 5 Amp SLO-BLO, 110V AC	EL-8
	2.5 Amp SLO-BLO, 220V AC	EL-21

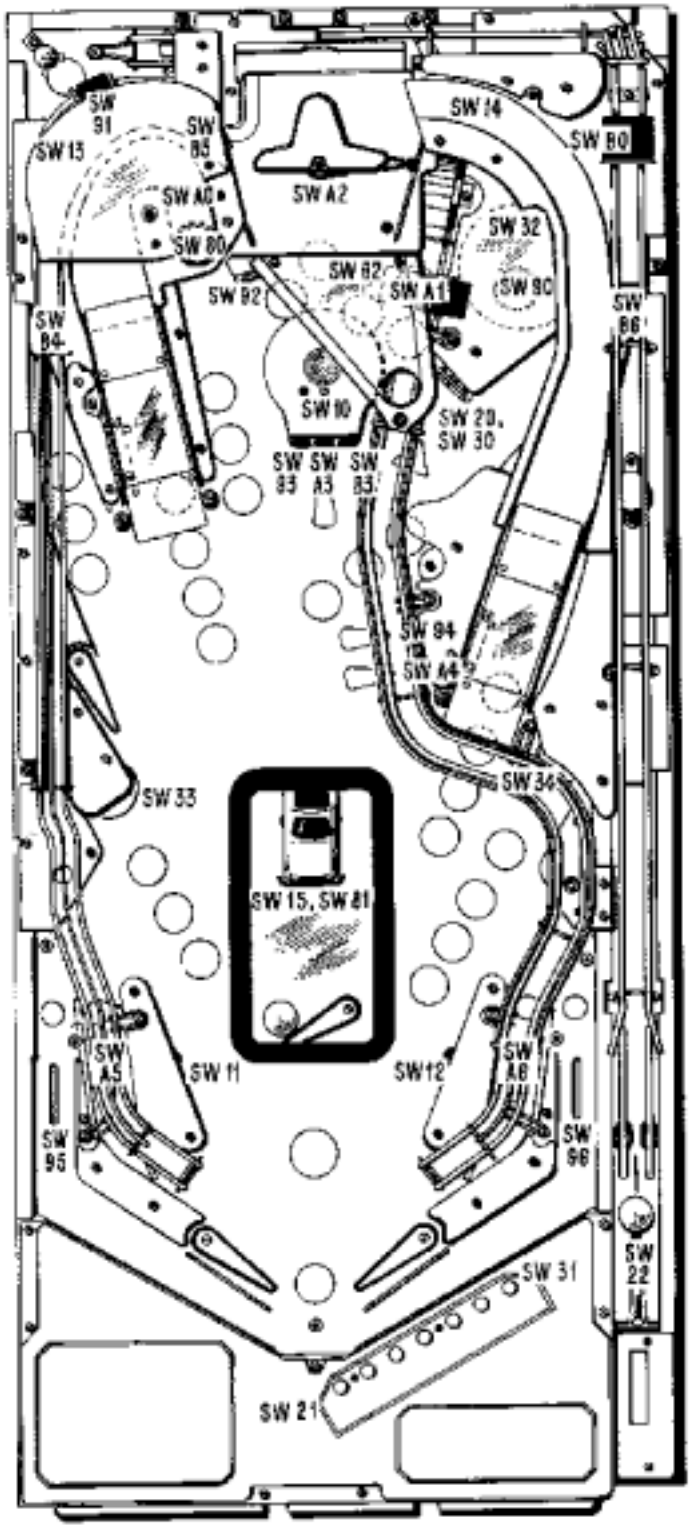
DIFFERENCES

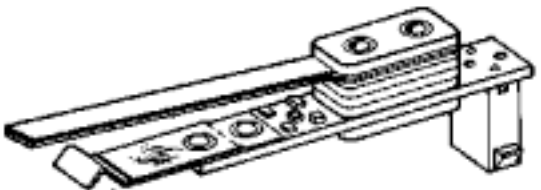
Power Module Assembly (Germany)	MA-1928A
Line Filter	EL-51
Capacitor, 0.47UF, 20%, 250V	XO-884
Power Module Assembly (Japan)	MA-1928B
On-Off Switch	25481



ITEM	DESCRIPTION	PART NO.
26	Lock Bar (Not Shown)	29759
	Lock Bracket (Not Shown)	29760
	Lock Bar Bracket (Not Shown)	29761

VII. PARTS INFORMATION





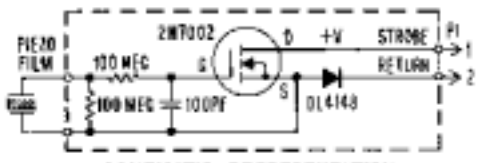
ROLLOVER TYPE
SMART SWITCH™
DO NOT ADJUST WIDE BEAM

SEE PAGE 22

PLAYBOARD SWITCH ASSIGNMENTS

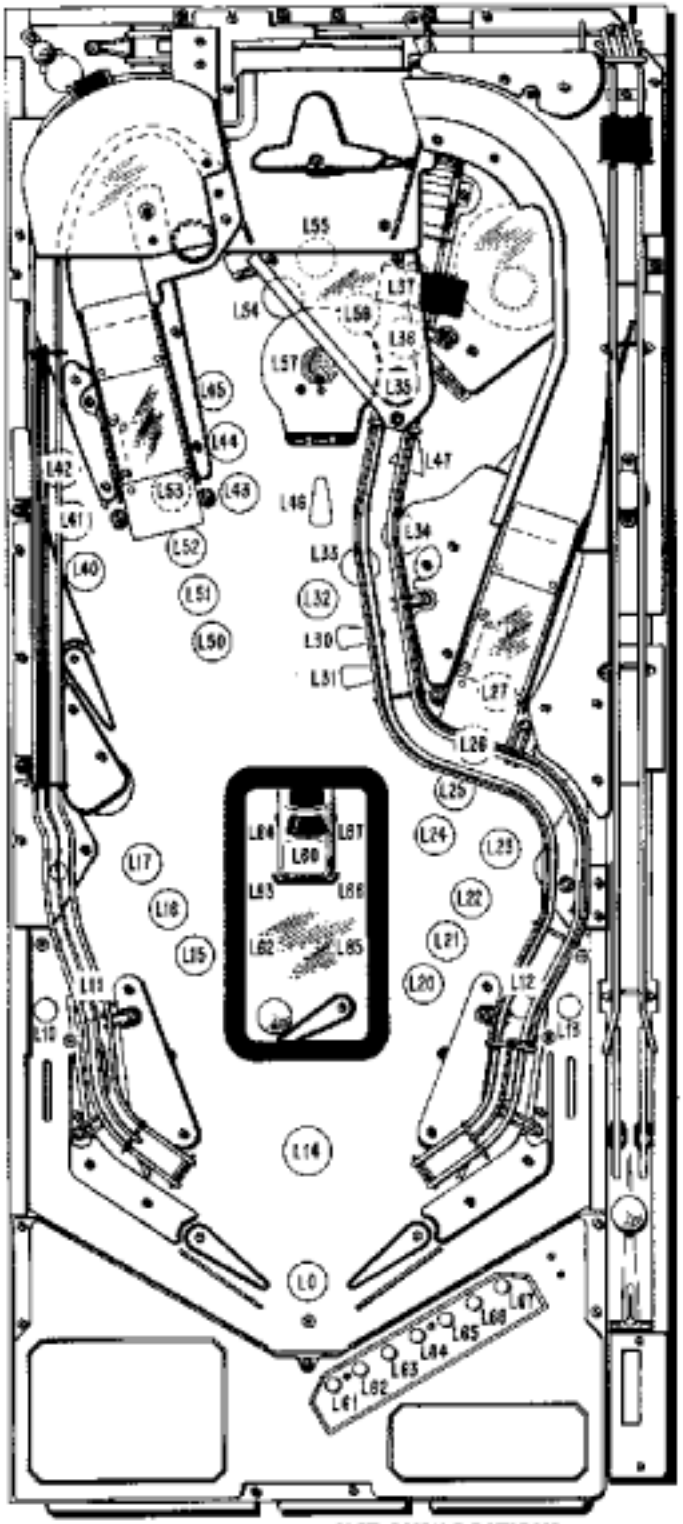
SWITCH MATRIX NUMBER	SWITCH ASSIGNMENT	PART NO.
SW0	LEFT COIN CHUTE (#1)	P/O FRONT DOOR
SW1	RIGHT COIN CHUTE (#2)	P/O FRONT DOOR
SW2	CENTER COIN CHUTE (#3)	P/O FRONT DOOR
SW3	COIN CHUTE (#4)	P/O ELECTRONIC DOOR
SW4	START CREDIT BUTTON	18092
SW5	TOURNAMENT	XO-1193
SW6	FRONT DOOR (SERVICE)	29305
SW7	(NOT USED)	
SW10	POP BUMPER	22705
SW11	LEFT KICKING RUBBER (2)	27701
SW12	RIGHT KICKING RUBBER (2)	27701
SW13	LEFT EOLE	18085
SW14	RIGHT HOLE	18085
SW15	CAR HIT	29739
SW16	(NOT USED)	
SW17	(NOT USED)	
SW20	BRACELET TARGET (INNER)	P/O 27544
SW21	OUTHOLE	26927
SW22	SHOOTER LANE ROLLOVER	25824
SW23		
THRU	(NOT USED)	
SW27		
SW30	BRACELET TARGET (OUTER)	P/O 27544
SW31	TROUGH	29346
SW32	LOOP	28923
SW33	BOTTOM LEFT UPKICKER	27667A
SW34	RIGHT UPKICKER	27667A
SW35		
THRU	(NOT USED)	
SW77		
SW80	LEFT TROUGH RAMP (OPTICAL INTERFACE)	MA-1925
SW81	CAR SMASHED (OPTICAL INTERFACE)	MA-1925
SW82	LEFT FLIPPER (SENSOR BOARD A15)	P/O MA-1334
SW83	RIGHT FLIPPER (SENSOR BOARD A15)	P/O MA-1334
SW84		
THRU	(NOT USED)	
SW87		
SW90	RIGHT TROUGH RAMP (OPTICAL INTERFACE)	MA-1925
SW91	LEFT WIRE RAMP (OPTICAL INTERFACE)	MA-1925
*SW92	TOP SPOT TARGET #1 (WHITE)	29099Z
*SW93	CENTER SPOT TARGET #1 (RED)	29104U
*SW94	RIGHT SIDE SPOT TARGET #1 (RED)	29099U
*SW95	LEFT OUTSIDE ROLLOVER	28625
*SW96	RIGHT OUTSIDE ROLLOVER	28625
SW97	(NOT USED)	
SWA0	TOP LEFT RAMP (OPTICAL INTERFACE)	MA-1925
SWA1	CENTER WIRE RAMP (OPTICAL INTERFACE)	MA-1925
*SWA2	TOP SPOT TARGET #2 (WHITE)	29764Z
*SWA3	CENTER SPOT TARGET #2 (WHITE)	29104Z
*SWA4	RIGHT SIDE SPOT TARGET #2 (RED)	29099U
*SWA5	LEFT RETURN ROLLOVER	28625
*SWA6	RIGHT RETURN ROLLOVER	28625
SWA7	(NOT USED)	
SWB0	TOP RIGHT RAMP (OPTICAL INTERFACE)	MA-1925
SWB1	RIGHT WIRE RAMP (OPTICAL INTERFACE)	MA-1925
*SWB2	TOP SPOT TARGET #3 (WHITE)	29104Z
*SWB3	CENTER SPOT TARGET #3 (RED)	29104U
*SWB4	TOP LEFT ROLLOVER	28625
*SWB5	LEFT STARGATE ROLLOVER	28625
*SWB6	RIGHT STARGATE ROLLOVER	28625
SWB7	(NOT USED)	

*SMART SWITCH™



SCHEMATIC REPRESENTATION

VII. PARTS INFORMATION



PLAYBOARD LAMP ASSIGNMENTS

LAMP NUMBER	LAMP ASSIGNMENT
L0	"FIGHT AGAIN"
L1	Credit (Front of Cabinet)
L2	Car GI #1
L3	Car GI #2
L4	Car GI #3
L5	Car GI #4
L6	Car GI #5
L7	Car GI #6
L10	Left Outside Rollover "SPECIAL"
L11	Left Return Rollover "SPECIAL"
L12	Right Return Rollover "SPECIAL"
L13	Right Outside Rollover "SPECIAL"
L14	"CHAMPION CHALLENGE"
L15	Bottom Left Hole "DOUBLE"
L16	Bottom Left Hole "ADVANCE TORPEDO"
L17	Bottom Left Hole "E-HONDA"
L20	Bottom Right Hole "DOUBLE"
L21	Bottom Right Hole "POWER MOVE"
L22	Bottom Right Hole "M-BISON"
L23	Bottom Right Hole "BALROG"
L24	Right Stargate "DOUBLE"
L25	Right Stargate "POWER MOVE"
L26	Right Stargate "CHUN LI"
L27	Right Stargate "VEGA"
L30	Bottom Spot Target #1
L31	Bottom Spot Target #2
L32	Loop #1 "DOUBLE"
L33	Loop #2 "MILLIONS"
L34	Loop #3 "KEN AND RYU"
L35	Scoop #1 "DOUBLE"
L36	Scoop #2 "ADVANCE GUILE"
L37	Scoop #3 "GUILE"
L40	Top Left Rollover "DOUBLE"
L41	Top Left Rollover "ADVANCE CAR"
L42	Top Left Rollover "BLANKA"
L43	Top Left Hole "DOUBLE"
L44	Top Left Hole "FLAME"
L45	Top Left Hole "DHALSIM"
L46	Center Spot Target "EXTRA BALL"
L47	Kicking Target "BRACELET VALUE"
L50	Left Stargate "DOUBLE"
L51	Left Stargate "POWER MOVE"
L52	Left Stargate "ZANGIEF"
L53	Left Stargate "SAGAT"
L54	Top Spot Target #1
L55	Top Spot Target #2
L56	Top Spot Target #3
L57	Pop Bumper
L60	Lower "WINNER"
L61	"I"
L62	"I"
L63	"G"
L64	"H"
L65	"T"
L66	"E"
L67	"R"

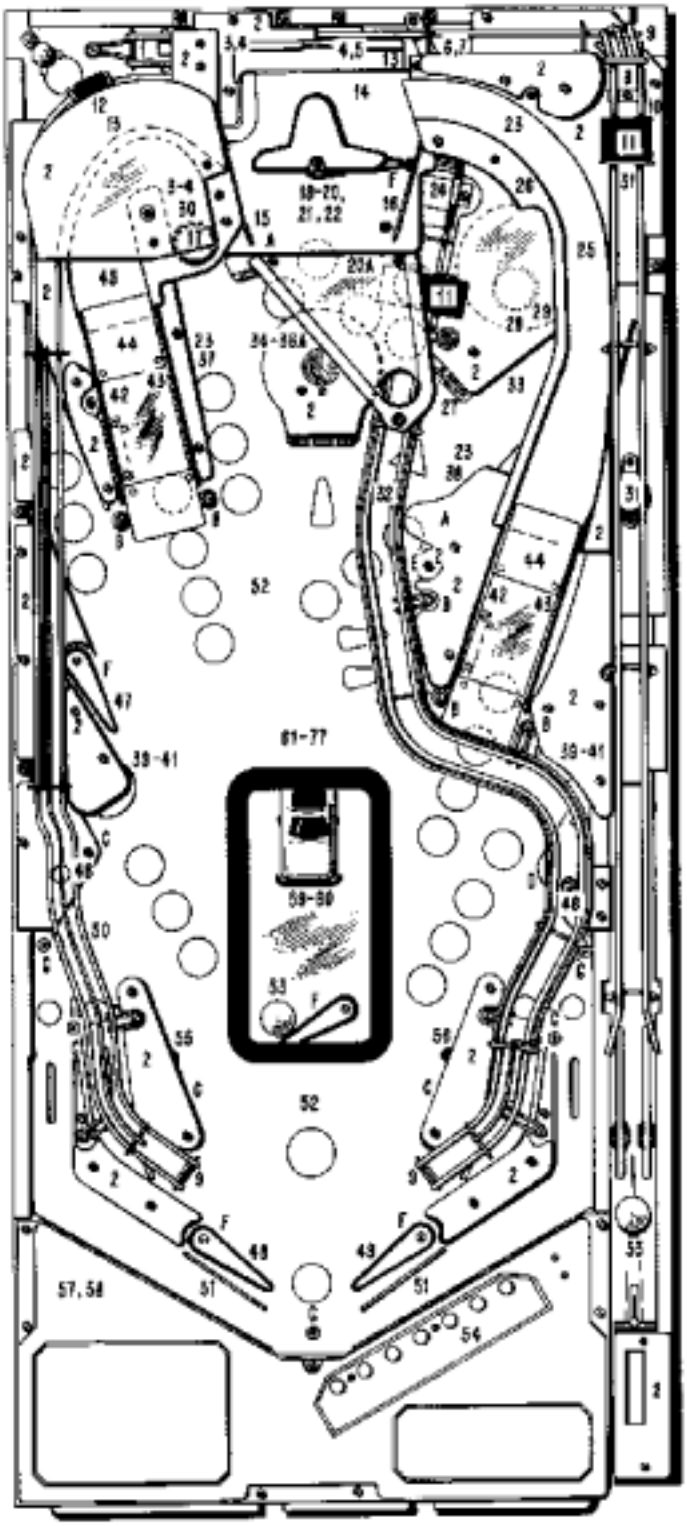
LAMP SOCKETS WITH DIODE BOARD	
TYPE	PART NO.
1-1/8" BRACKET	26621
1/2" BRACKET	26622
LAYDOWN	26623

SOLENOID, DRIVER FUNCTIONS/LOCATIONS

SOL.0	POP BUMPER	SOL.20	RIGHT CENTER, #67
SOL.1	LEFT KICKING RUBBER	SOL.21	RIGHT TOP, #67
SOL.2	RIGHT KICKING RUBBER	SOL.22	RIGHT FLIPPER, #47
SOL.3	BOTTOM LEFT UPKICKER	SOL.23	LOWER PLAYFIELD FLIPPER RELAY (A)
SOL.4	BOTTOM RIGHT UPKICKER	SOL.24	MOTOR RELAY (B)
SOL.5	LEFT PLUNGER GATE	SOL.25	LIGHTBOX INSERT TRIM. RELAY (A)
SOL.6	RIGHT PLUNGER GATE	SOL.26	TICKET COIN/METER #MANIF
SOL.7	LEFT STARGATE	SOL.27	BALL RELEASE
SOL.8	RIGHT STARGATE	SOL.28	OUTHOLE
SOL.9	LEFT HOLE	SOL.29	KNOCKER
SOL.10	RIGHT HOLE	SOL.30	TILT RELAY (T)
SOL.11	(NOT USED)	SOL.31	GAME OVER RELAY (G)
SOL.12	(NOT USED)	*DRV.0	#1, #67 (2)
SOL.13	CAR RESET	*DRV.1	#2, #67 (2)
SOL.14	TOP LEFT, #67	*DRV.2	#3, #67 (2)
SOL.15	RIGHTSHIP, #67	*DRV.3	#4, #67 (2)
SOL.16	LEFT BOTTOM, #67	*DRV.4	#5, #67 (2)
SOL.17	LEFT RAMP, #67	*DRV.5	#6, #67 (2)
SOL.18	LEFT FLIPPER, #47	*DRV.6	#7, #67 (2)
SOL.19	RIGHT BOTTOM, #67	*DRV.7	#8, #67

NOTE:
*LAMPS MOUNTED ON LIGHTBOX INSERT, SEE PAGE 72 FOR LOCATION.

VII. PARTS INFORMATION



PLAYBOARD PARTS INFORMATION

PARTS LIST

ITEM	DESCRIPTION	PART NO.
1	Wireform Ramp	29505
2	Plastic Shield Set 29691 and	29798
3	Ball Snubber	29763
4	Cellular Urethane Bumper	29828
5	Ball Snubber (2)	29762
6	Metal Shield	17300
7	Wireform Gate	26226
8	Wireform Ramp	29506
9	Polyurethane Bumper (3)	28274
10	Spacer	28104
11	Opto Switch and Support Bracket (2)	MA-1931
12	Opto Switch and Support Bracket	MA-1936
13	Ball Hole Kicker Assembly (2) (See Exploded View Illustation)	MA-1932
14	Upper Playfield Assembly	MA-1903
15	Ball Guide Ball	4832
16	Ball Guide Rail	29804
17	Spiral Ramp	29502
18	Motor Collar	25780
19	Bracket Assembly	29812
20	Revolving Flipper Assembly	29642
20A	Molded Ramp	29640
21	Revolving Flipper Motor, 50V AC, 120RPM	29587
22	Motor Mounting Bracket	29583
23	Opto Switch and Support Bracket (3)	MA-1667
24	Ball Scoop	25241
25	Molded Ramp Assembly	29707
26	Micro Switch Mounting and Bracket Assy.	29735
27	Metal Target Switch Assembly (See Exploded View Illustration)	29714
28	Ball Gate Assembly	23410
29	Gate Relay Wireform	20898
30	Opto Switch and Support Bracket	MA-1937
31	Plastic Dome, Clear (2)	25147P
32	Wireform Ramp	29507
33	Ball Deflector	21158
34	Dome Nut, Red	262936
35	Flanged Pop Bumper Body, White	268602
36	Pop Bumper Bracket and Coil Assembly (See Exploded View Illustration)	MA-1375
36A	Pop Bumper Switch and Bracket	22705
37	Molded Ramp Assembly (Underneath)	29653
38	Molded Ramp Assembly (Underneath)	29652
39	Ball Snubber (2)	27256
40	Polyurethane Bumper (2)	28504
41	Vertical Kicker Assembly (2) (See Exploded Illustration)	MA-1789
42	Left Ramp Fence and Stud (2)	29656
43	Right Ramp Fence and Stud (2)	29657
44	Plastic Ramp and Flags Assembly (2)	29654
45	Molded Ramp Assembly	29706
46	Ball Stop Plunger Assembly (2)	MA-1723
47	Mid-left Flipper Assembly	MA-1790A
	Flipper Coil	26646
	Flipper Switch	26439
	(See Exploded View Illustration)	
48	Lower Left Flipper Assembly	MA-1790
	Flipper Coil	25959
	Flipper Switch	26439
49	Lower Right Flipper Assembly	MA-1791
	Flipper Coil	25959
	Flipper Switch	26439
	(See Exploded View Illustration)	
50	Wireform Ramp	29508
51	Ball Snubber (2)	13798
52	Mylar Overlay	29723
53	Steel Ball, 1-1/16" Diameter (5)	21864
54	LED Board Assembly	MA-1721
55	Kicker Assembly	MA-1373
56	Kicker Assembly	MA-1083
57	Cardholder	29096-735
58	Molded Cardholder Cover and PCB	29708
59	Playboard Window	29541
60	Window Mylar Overlay	29741
61	Lower Playfield Assembly	MA-1904
62	Armature Spring	574
63	Coil	16890
64	Ball Deflector	21158
65	Spring (2)	25604
66	Ball Deflector	21158
67	Flipper, Shaft, Rubber Ring Assembly	28548
68	Spring (2)	25604
69	Car	29661
70	Spring Support Plate	29686
71	Car-Plexi Guard	29718
72	Micro Switch Acutator	29738
73	Micro Switch, Normal Open	29739
74	Car Bumper	29716
75	[NOT USED]	
76	Flipper Assembly	MA-1791B
	Flipper Coil	25959
	Flipper Switch	26418
77	Quad Optical Interface Board (2)	MA-1925

RUBBER RINGS

ITEM	DESCRIPTION	PART NO.
A	1" (2)	10219
B	BUMPER RUBBER, BLK. (5)	26648Y
C	3" (3)	10223
D	1-1/2"	10220
E	5/16"	10217
F	FLIPPER, BLACK (5)	28646
G	MINI-POST, SMALL (5)	14793

MISCELLANEOUS PARTS

DESCRIPTION	PART NO.
PLASTIC RIVET	MP-10
PLASTIC POST, 1", YEL.	11564T
PLASTIC SUPPORT POST	20635P
MINI-POST SCREW	14792
PLASTIC POST, 1-3/16", YEL.	11562T
HEX POST WITH GRIP	26531
"B" RELAY	MA-1738
"G" RELAY	MA-1924

ITEM	DESCRIPTION	PART NO.
	FLIPPER ASSEMBLY, LEFT SIDE (ILLUSTRATED)	MA-17990
	FLIPPER ASSEMBLY, RIGHT SIDE	MA-17991
1	8-32 X 1/2" OVAL HEAD MS	FA-77
2	FLAT RUBBER RING, RED OR BLACK	15151 OR 28546
3	FLIPPER	25972Y
4	FLIPPER SHAFT ASSEMBLY	26497
5	10-32 X 3/8" UNSLAND (3)	FA-80
6	FLIPPER SHAFT BEARING	25961
7	FRAME, LEFT SIDE (ILLUSTRATED)	29158
	FRAME, RIGHT SIDE	29157
8	SWITCH ASSEMBLY, LEFT SIDE (ILLUSTRATED)	26439
	SWITCH ASSEMBLY, RIGHT SIDE	26438
	CAPACITOR, 2.2UF, 200V	XR-955
9	SWITCH COVER	465
10	6-40 X 1/4" MMMS SEMS (2)	FA-1
11	8-32 X 3/8" MMMS SEMS (7)	FA-69
12	STOP STUD AND BRACKET ASSEMBLY	29154
13	SLAP-IN CORE	5065
14	COIL WITH DIODE (SEE SCHEMATIC DIAGRAM)	-----
15	SPRING WASHER	FA-605
16	COIL MOUNTING BRACKET	26356
17	LINK AND PLUNGER ASSEMBLY	25956
18	FLIPPER SPRING	3232
19	RETAINING RING	FA-682
20	FLIPPER LEVER ASSEMBLY, LEFT SIDE (ILLUSTRATED)	26014
	FLIPPER LEVER ASSEMBLY, RIGHT SIDE	26013
21	BRACKET	17184
22	#10 SPLIT LOCKWASHER (3)	FA-634

REPAIR NOTE:
BEFORE INSERTING ITEM 1,
PLACE ONE DROP OF SAF-T-LOK®
T70 THREAD LOCKING COMPOUND
INTO THE THREADED HOLE OF ITEM 4.

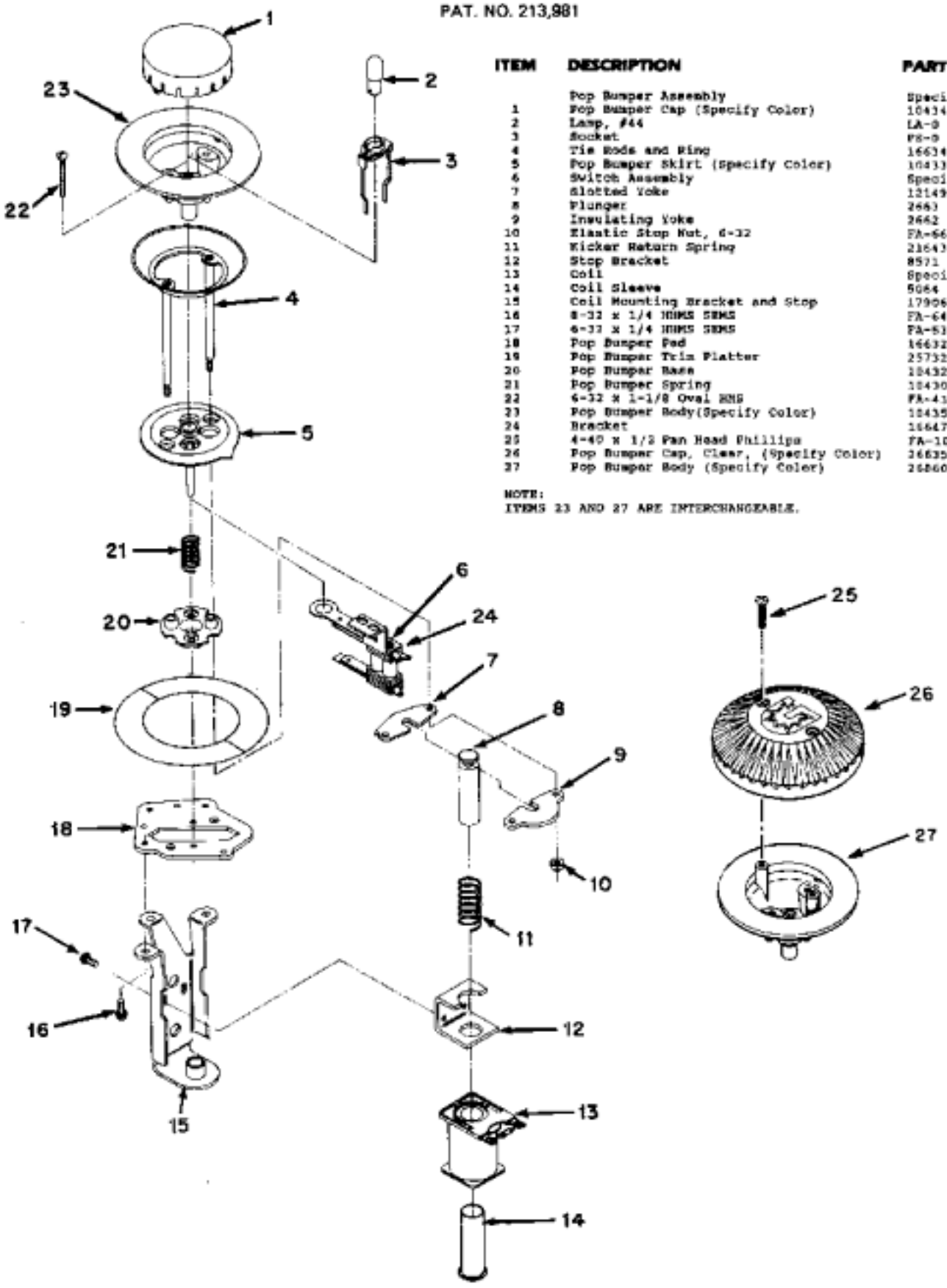
NOTE:
ITEMS 1 THRU 4 ARE NOT PART
OF THE FLIPPER ASSEMBLY.

NOTE:
SEE V. GENERAL INFORMATION, FOR
PLAYBOARD COILS/COLORS/SLEEVES CHART.

VII. PARTS INFORMATION

POP BUMPER PARTS

PAT. NO. 213,981

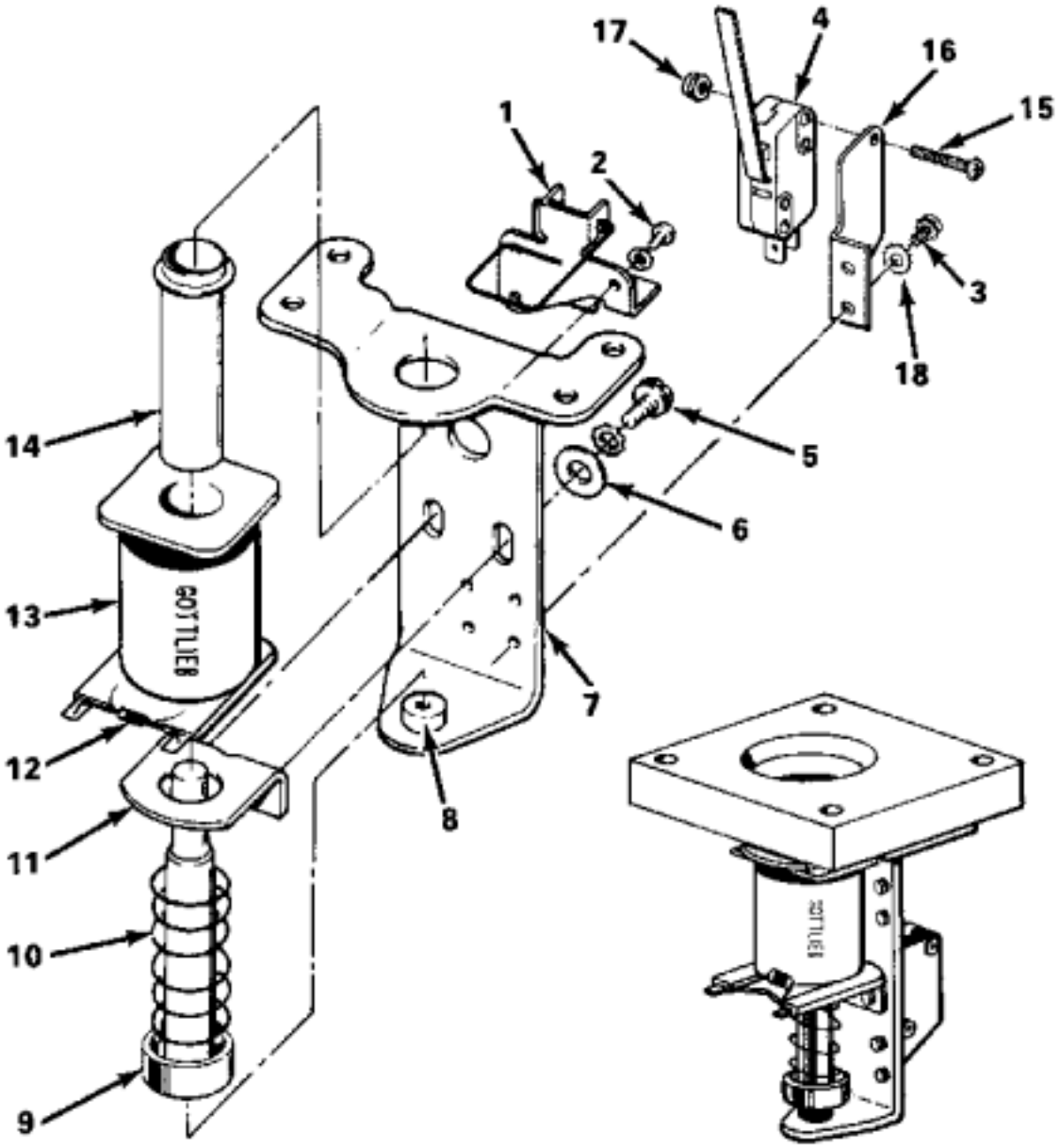


ITEM	DESCRIPTION	PART NO.
	Pop Bumper Assembly	Specify Game
1	Pop Bumper Cap (Specify Color)	10434
2	Lamp, #44	LA-9
3	Socket	PS-9
4	Tie Rods and Ring	16634
5	Pop Bumper Skirt (Specify Color)	10433
6	Switch Assembly	Specify Game
7	Slotted Yoke	12149
8	Plunger	2663
9	Insulating Yoke	2662
10	Elastic Stop Nut, 6-32	FA-660
11	Kicker Return Spring	21643
12	Stop Bracket	8571
13	Coil	Specify Game
14	Coil Sleeve	5064
15	Coil Mounting Bracket and Stop	17906
16	8-32 x 1/4 HHMS SEMS	FA-64
17	6-32 x 1/4 HHMS SEMS	FA-63
18	Pop Bumper Pad	16632
19	Pop Bumper Trim Platter	25732
20	Pop Bumper Base	10432
21	Pop Bumper Spring	10430
22	6-32 x 1-1/8 Oval HMS	FA-41
23	Pop Bumper Body(Specify Color)	10435
24	Bracket	16647
25	4-40 x 1/2 Pan Head Phillips	FA-108
26	Pop Bumper Cap, Clear, (Specify Color)	26835
27	Pop Bumper Body (Specify Color)	26860

NOTE:
ITEMS 23 AND 27 ARE INTERCHANGEABLE.

VII. PARTS INFORMATION

UPKICKER PARTS



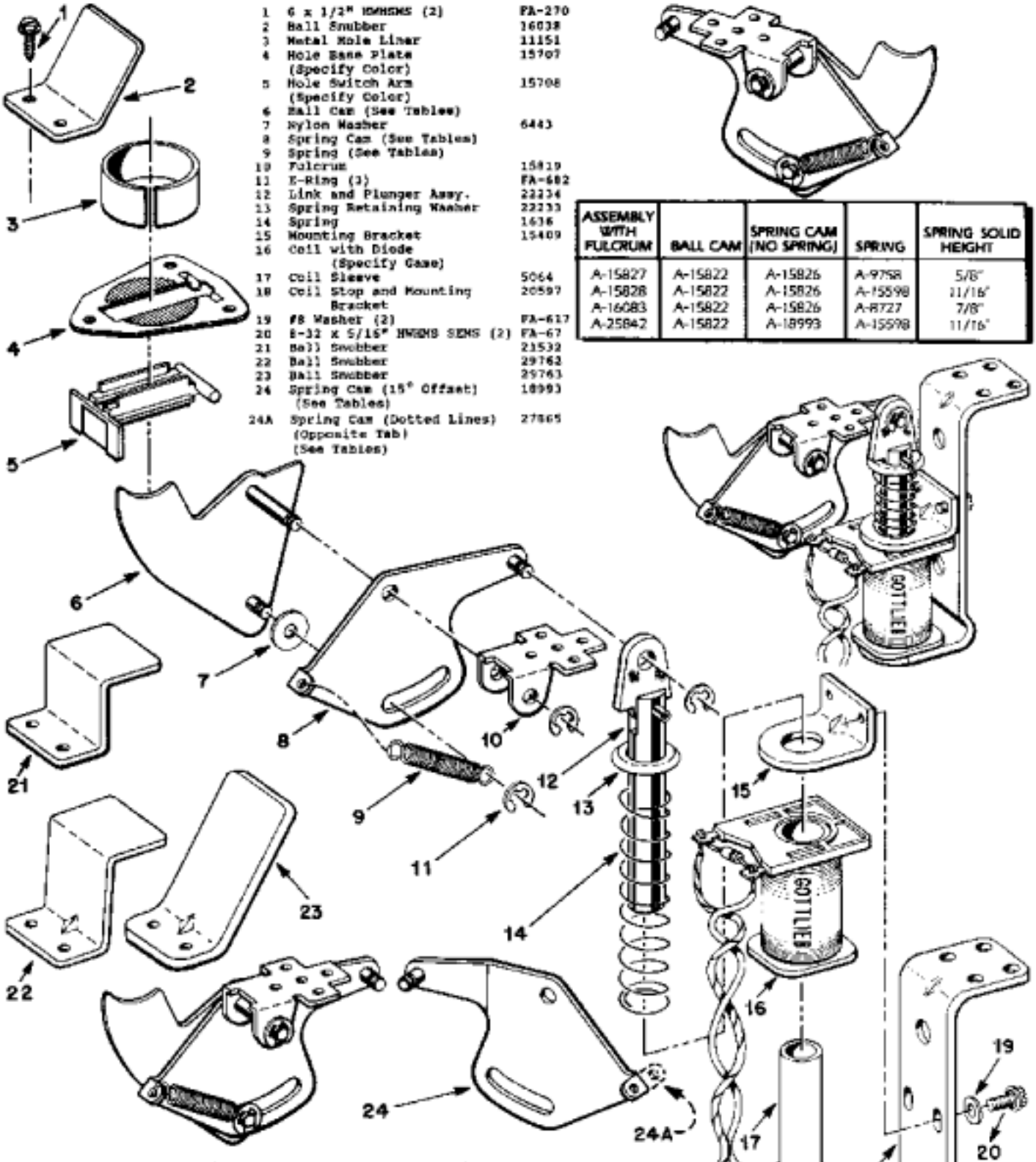
ITEM	DESCRIPTION	PART NO.
	UPKICKER ASSEMBLY	MA-1789
1	WIREFORM AND BRACKET	28953
2	RHMS-SEMS 6-32 X 3/16" (3)	FA-30
3	RHMS 5-40 X 1/4" SEMS (2)	FA-10
4	MICROSWITCH WITH ACTUATOR	27667A
5	BWHMS-SEMS 8-32 X 5/16"(2)	FA-67
6	#8 WASHER (2)	FA-617
7	FRAME	21416
8	RUBBER GROMMET	5240
9	PLUNGER AND TIP ASSEMBLY	21412
10	SPRING	26739
11	COIL MOUNTING BRACKET	15409
12	DIODE, 1N4004	XO-254
13	COIL	(SEE SCHEMATIC)
14	SLIP-IN-CORE	21411
15	PAN HEAD 4-40 X 5/8"(2)	FA-107
16	MICROSWITCH MOUNTING BRACKET	27870
17	ELASTIC STOP NUT, 4-40 (2)	FA-648
18	#5 EXTERNAL LOCKWASHER (2)	FA-630

VII. PARTS INFORMATION

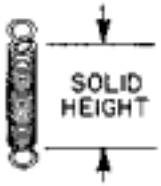
BALL HOLE KICKER PARTS

ITEM	DESCRIPTION	PART NO.
1	6 x 1/2" HWHSMS (2)	FA-270
2	Ball Snubber	16038
3	Metal Hole Liner	11151
4	Hole Base Plate (Specify Color)	15707
5	Hole Switch Arm (Specify Color)	15708
6	Ball Cam (See Tables)	
7	Nylon Washer	6443
8	Spring Cam (See Tables)	
9	Spring (See Tables)	
10	Fulcrum	15819
11	E-Ring (3)	FA-682
12	Link and Plunger Assy.	22234
13	Spring Retaining Washer	22233
14	Spring	1636
15	Mounting Bracket	15409
16	Coil with Diode (Specify Case)	
17	Coil Sleeve	5064
18	Coil Stop and Mounting Bracket	20597
19	#8 Washer (2)	FA-617
20	8-32 x 5/16" HWHMS SEMS (2)	FA-67
21	Ball Snubber	21532
22	Ball Snubber	29762
23	Ball Snubber	29763
24	Spring Cam (15° Offset) (See Tables)	18993
24A	Spring Cam (Dotted Lines) (Opposite Tab) (See Tables)	27865

ASSEMBLY WITH FULCRUM	BALL CAM	SPRING CAM (NO SPRING)	SPRING	SPRING SOLID HEIGHT
A-15827	A-15822	A-15826	A-9758	5/8"
A-15828	A-15822	A-15826	A-15598	11/16"
A-16083	A-15822	A-15826	A-8727	7/8"
A-25842	A-15822	A-18993	A-15598	11/16"

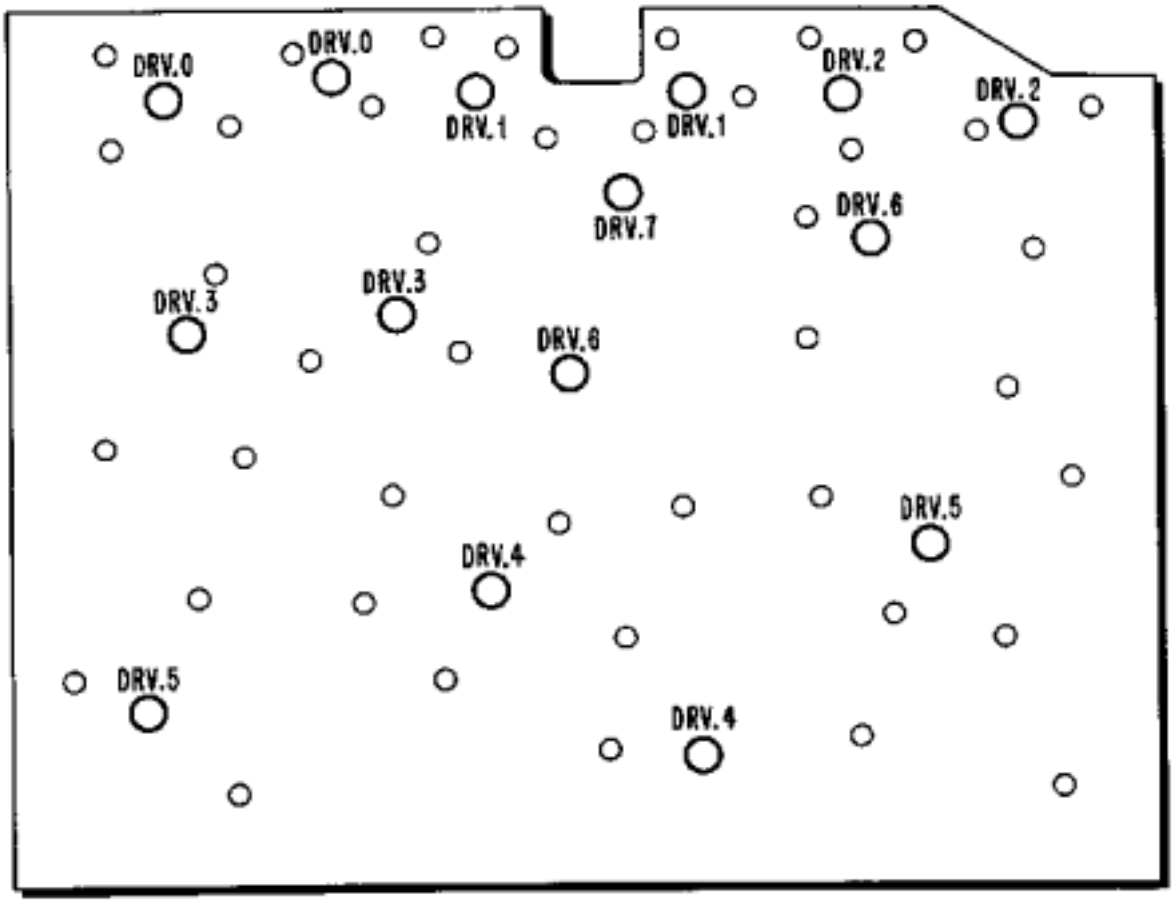


ASSEMBLY WITH FULCRUM	BALL CAM	SPRING CAM (NO SPRING)	SPRING	SPRING SOLID HEIGHT
A-16045	A-16044	A-16043	A-9758	5/8"
A-16085	A-16044	A-16043	A-8727	7/8"
A-16086	A-16044	A-16043	A-15598	11/16"
A-27866	A-15822	A-27865	A-9758	5/8"



VII. PARTS INFORMATION

LIGHTBOX INSERT LAMP IDENTIFICATION



DRIVER FUNCTIONS

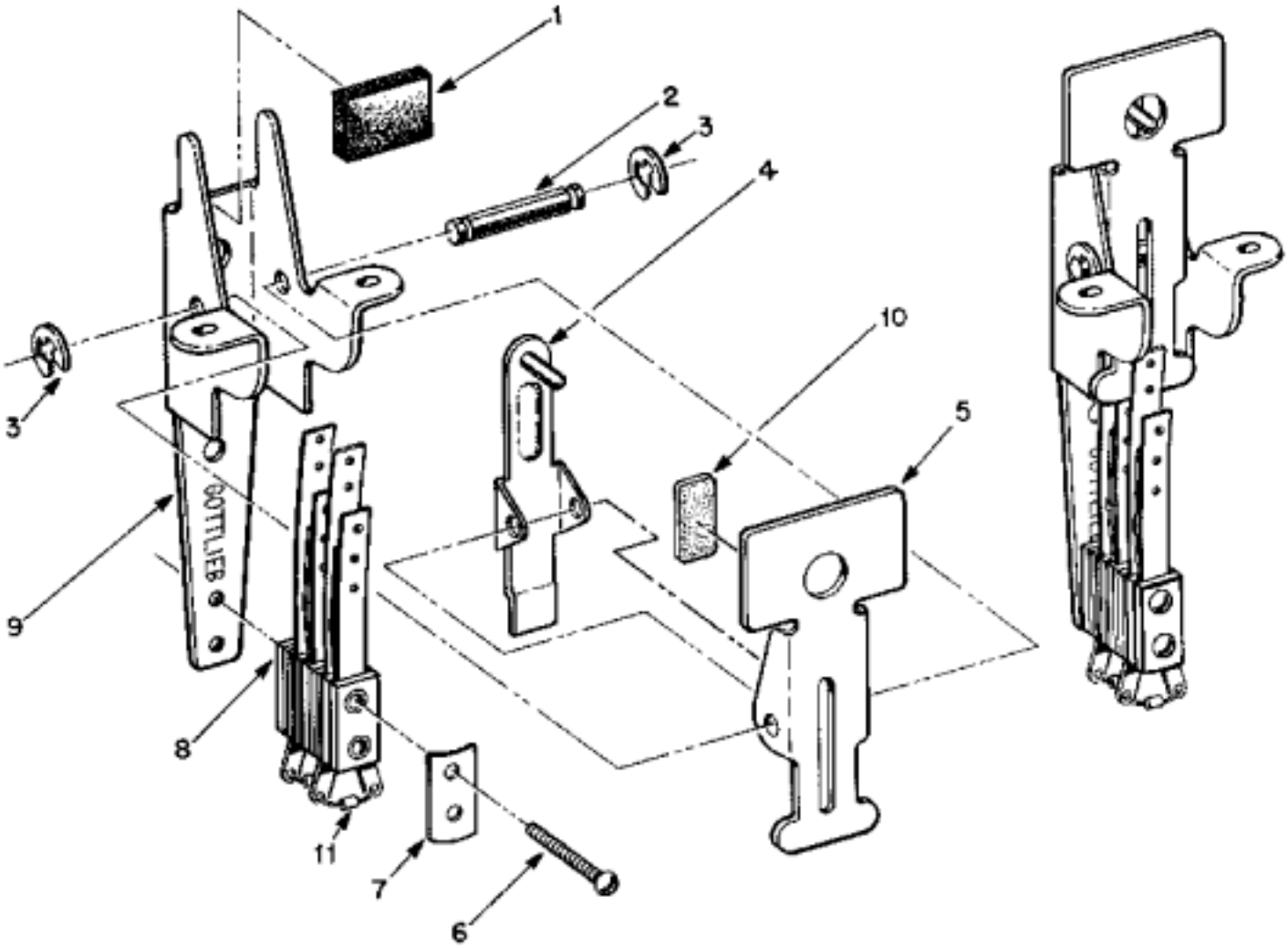
*DRV.0	#1, #67	(2)
*DRV.1	#2, #67	(2)
*DRV.2	#3, #67	(2)
*DRV.3	#4, #67	(2)
*DRV.4	#5, #67	(2)
*DRV.5	#6, #67	(2)
*DRV.6	#7, #67	(2)
*DRV.7	#8, #67	

NOTE:
1. *LAMPS ENABLED BY DRIVERS ON AUXILIARY BOARD.

2. LAMPS NOT DESIGNATED ARE GENERAL ILLUMINATION, TYPE #44.

VII. PARTS INFORMATION

TARGET ASSEMBLY



ITEM	DESCRIPTION	PART NO.
	TARGET ASSEMBLY	29714
1	RUBBER STRIP	242908
2	TARGET SHAFT	20211
3	E-RING (2)	FA-682
4	TARGET ARM SUB-ASSEMBLY	27443
5	TARGET ARM	27444
6	SCREW, #5-40X 1" RHMS, (2)	FA-4
7	SWITCH COVER	665
8	SWITCH ASSEMBLY	27544
9	TARGET HOUSING	29712
10	URETHANE BUMPER (2)	29758
11	CAPACITOR, 0.1UF, +80-20%, 50V,(2)	XC-230
	DECAL (NOT SHOWN)	29747

VII. PARTS INFORMATION

UNIQUE PARTS

The following denotes new parts and assemblies unique to STREET FIGHTER II, Game #735. Part Number prexified with an asterisk(*) will be illustrated or can be located on pages 28 thru 73. Numbers in parenthesis ( ) indicates multiple quantities.

PLAYBOARD

ITEM/DESCRIPTION	PART NO.
CARDHOLDER	*29096-735
SPIRAL RAMP	*29502
WIREFORM RAMP	*29505
WIREFORM RAMP	*29506
WIREFORM RAMP	*29507
WIREFORM RAMP	*29508
PLAYBOARD WINDOW	*29541
MOTOR MOUNTING BRACKET	*29583
REVOLVING FLIPPER MOTOR,50V AC, 120 RPM	*29587
NYLON BEARING (2)	*29627
REVOLVING FLIPPER ASSEMBLY	*29642
MOLDED RAMP ASSEMBLY (UNDERNEATH)	*29652
MOLDED RAMP ASSEMBLY (UNDERNEATH)	*29653
PLASTIC RAMP AND FLAPS ASSEMBLY (2)	*29654
LEFT RAMP FENCE AND STUD (2)	*29656
RIGHT RAMP FENCE AND STUD (2)	*29657
CAR	*29661
SPRING SUPPORT PLATE	*29686
MOLDED RAMP	*29690
PLASTIC SHIELD SET	*29691 AND *29798
MOLDED CARDHOLDER COVER AND PCB	*29704
FLAT RAIL	*29705
MOLDED RAMP ASSEMBLY	*29706
MOLDED RAMP ASSEMBLY	*29707
METAL TARGET SWITCH ASSEMBLY	*29714
CAR-PLEXI GUARD	*29718
MYLAR OVERLAY	*29723
MICRO SWITCH MOUNTING AND BRACKET ASSEMBLY	*29735
MICRO SWITCH ACUTATOR	*29738
MICRO SWITCH, NORMAL OPEN	*29739
WINDOW MYLAR OVERLAY	*29741
CELLULAR URETHANE BUMPER (3)	*29758
BALL SNUBBER (2)	*29762
BALL SNUBBER	*29763
SPOT TARGET (WHITE)	*29764Z
CAR BUMPER	*29769
BALL GUIDE RAIL	*29804
BRACKET ASSEMBLY	*29812
UPPER PLAYFIELD ASSEMBLY	*MA-1903
LOWER PLAYFIELD ASSEMBLY	*MA-1904
QUAD OPTICAL INTERFACE BOARD (2)	*MA-1925
OPTO SWITCH AND SUPPORT BRACKET (2)	*MA-1931
BALL HOLE KICKER ASSEMBLY (2)	*MA-1932
OPTO SWITCH AND SUPPORT BRACKET	*MA-1936

CABINET

CABINET SCREENED	*29633-735
TRANSFORMER	*29724
TRANSFORMER PANEL ASSEMBLY	*MA-1893
POWER MODULE ASSEMBLY (DOMESTIC)	*MA-1928
POWER MODULE ASSEMBLY (GERMANY)	*MA-1928A
POWER MODULE ASSEMBLY (JAPAN)	*MA-1928B
LOCK BAR	*29759
LOCK BRACKET	*29760
LOCK BAR BRACKET	*29761

LIGHTBOX

LIGHTBOX SCREENED	28750-735
SPEAKER PANEL SCREENED	28827-735
STYRENE (BACKGLASS ART)	28833-735
CONTROL BOARD ASSEMBLY	MA-1934

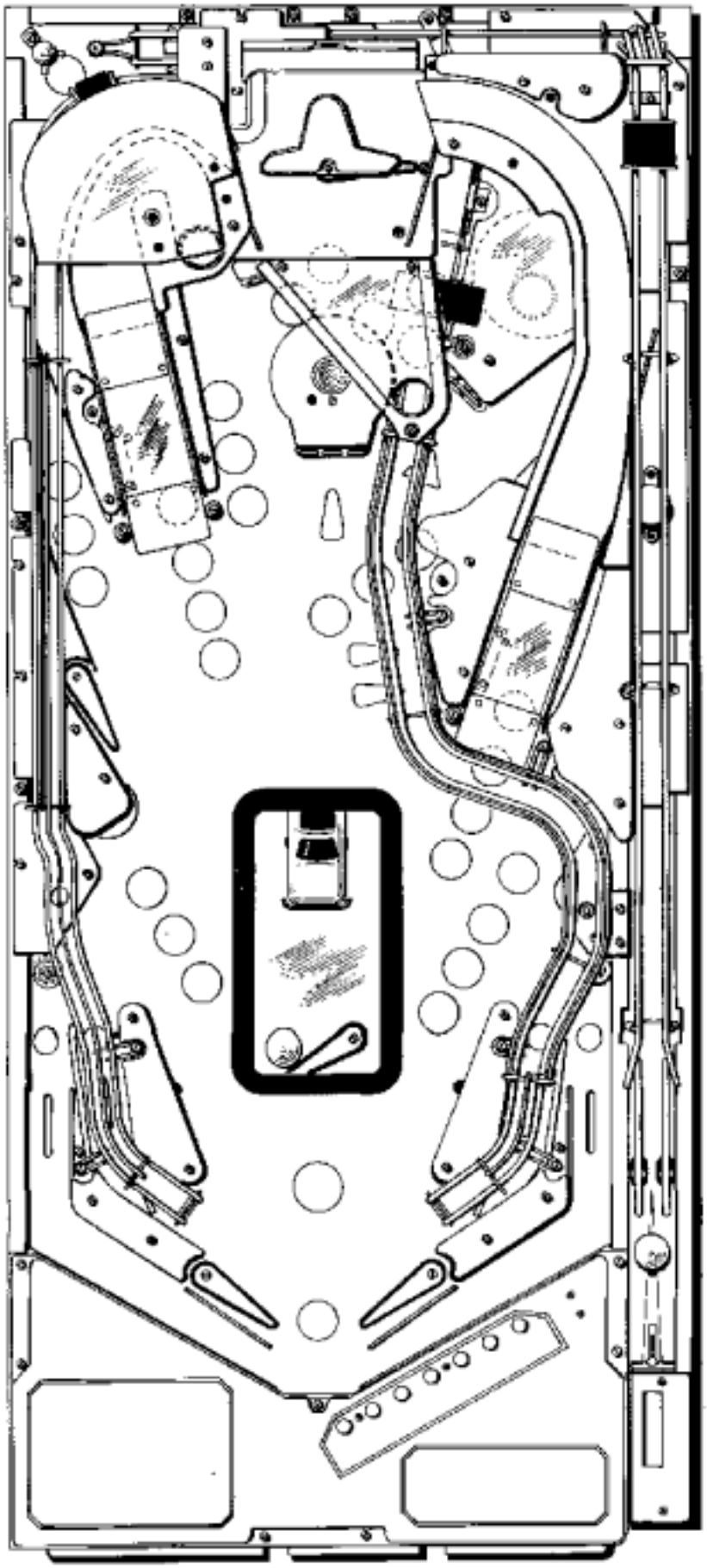
BASIC TROUBLESHOOTING GUIDE

CONDITION	POSSIBLE CAUSE
Game does not power up	* Line fuse (F1) blown * Primary fuse (F2) blown
Game does not power up but general illumination lamps light	* Power supply fuse (F5) blown
SWITCH SHORT message appears in display on power up	* Check for a voltage >0v shorted to switch return number shown in display * Bad Control Board (A1) * Bad Driver Board (A3)
Lightbox illumination lamps do not light	* Fuse (F8) blown
Playfield illumination lamps do not light	* Fuse (F9) blown
All controlled lamps, flash lamps, relays, and switches not working	* Fuse (F6) blown * Bad Driver Board (A3)
All controlled lamps work but some switches do not work	* Bad diode associated with the switch (contact point type switch only)
Some controlled lamps and some switches do not work	* Short circuit on associated strobe line on playfield * Bad Driver Board (A3)
Display not working (blank) but LED on Dot Matrix Controller Board (A8) is flashing	* Display fuse (F3) or (F4) blown * Bad Dot Matrix Display Board (A4) * Bad Display Controller Board (A8)
Display not working and LED on Control Board is flickering rapidly	* Bad Dot Matrix Controller Board (A8) * Bad Control Board (A1)
Display not working and LED on Dot Matrix Controller Board (A8) is glowing bright to dim	* Bad Dot Matrix Controller Board (A8)
A solenoid operated device does not work. (Pop Bumper, Kicker, etc.)	* Associated fuse on playfield is blown * Bad Driver Board (A3)
All flippers and solenoids do not work	* Solenoid fuse (F7) blown
A flipper coil overheats and burns	* End of stroke switch on flipper unit not opening when the flipper button is held in. * Shorted capacitor on flipper unit
Flipper chatters when flipper button is held in	* Open hold winding (small diameter wire) on flipper coil
No sound or speech	* Bad Auxiliary Power Supply fuse (F10 or F11) * Bad Auxiliary Power Supply Board (A5) * Bad Auxiliary Sound Board (A20) * Bad Sound Board (A6)
Some sounds or speech missing	* Bad Auxiliary Sound Board (A20) * Bad Sound Board (A6)
An optical switch does not work or works intermittently	* Misalignment of LED transmitter to receiver * Bad LED transmitter and/or receiver * Bad Optical Interface Board (A25)

IMPORTANT NOTICE

THIS SHIPMENT HAS BEEN CAREFULLY INSPECTED AND PROPERLY PACKED BEFORE LEAVING THE FACTORY.

WE CANNOT ASSUME RESPONSIBILITY FOR BREAKAGE THAT MAY OCCUR IN TRANSPORTATION. IF THIS SHIPMENT IS DAMAGED IN ANY WAY, IMMEDIATELY NOTIFY THE CARRIER AND FILE DAMAGE REPORT SO THAT A SATISFACTORY ADJUSTMENT CAN BE MADE BY THEM.



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