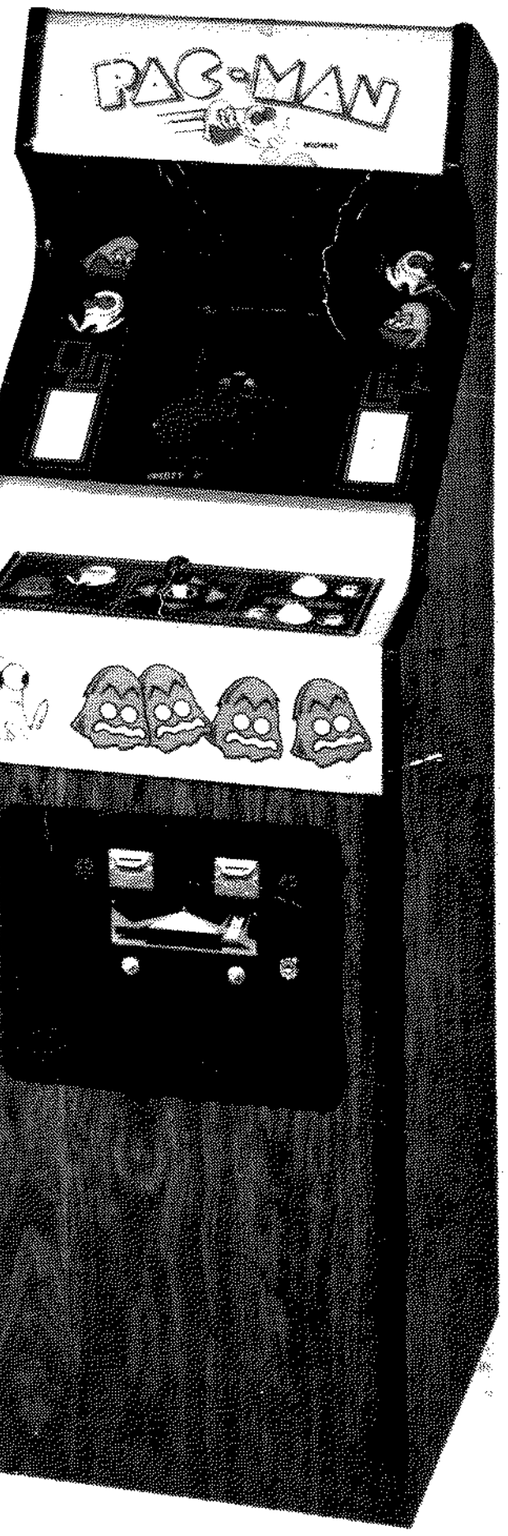
GAME NOS. 932, 933 & 934
DECEMBER, 1980

MIDWAY'S PAC-MAN PARTS AND OPERATING MANUAL

UP-RIGHT #932

COCKTAIL #933



MINI #934

MIDWAY MFG. CO.
A BALLY COMPANY
10750 WEST GRAND AVENUE
FRANKLIN PARK, ILLINOIS 60131
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FORM NO. 0932-00300-0000

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WARNING

THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.

GENERAL INSTRUCTIONS FOR "PAC-MAN" UPRIGHT AND MINI

INSTALLATION

1. Remove shipping cleats located on bottom of cabinet.
2. Install four (4) provided leg levelers to bottom of cabinet and level cabinet.
3. The power is controlled by a switch located on top of the cabinet. Additional taps have been provided on the transformer to compensate for fluctuating line voltage.

LINE VOLTAGE SAFETY SWITCH

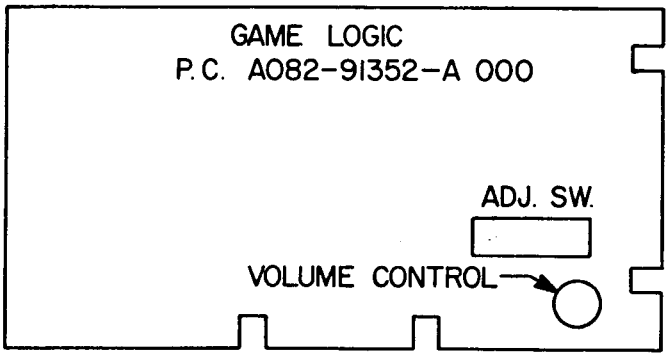
A line voltage safety switch has been provided for your protection. It is located on the right rear side of the cabinet in the back door area. When the back door is removed, it opens the circuit to the line voltage. To restore power (when servicing), pull switch fully out.

VOLUME CONTROL

The volume control pot is located on the Game Logic Board (P.C. A082-91352-A000). This pot controls the volume of all sounds and may be varied as desired by rotating pot control.

ADJUSTMENT SWITCHES

Located on Game Logic Board (P.C. A082-91352-A000) and may be adjusted as indicated on separate instruction card in back box area.



TO REMOVE CONTROL PANEL AND MONTOR DISPLAY GLASS

1. Open coin door.
2. Release two (2) clamps located below Control Panel on each side of cabinet.
3. Disconnect control panel jack.
4. Remove control panel.
5. Remove monitor display glass.

CREDIT PUSH BUTTON SWITCH

Located in cash box area and is readily accessible by opening coin door. This switch is provided as a test aid and awards one credit without advancing coin meter.

M051-00932-A003

WARNING: This equipment Generates, Uses and can Radiate Radio Frequency Energy and if not installed and used in accordance with the Instructions Manual, may cause interference to Radio Communications. As temporarily permitted by Regulation it has not been tested for compliance to Subpart J or Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a Residential Area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

GENERAL INSTRUCTIONS FOR "PAC-MAN" COCKTAIL TABLE

INSTALLATION

1. Remove shipping cleats located on bottom of cabinet.
2. Install four (4) provided leg levelers on bottom of cabinet and level cabinet.
3. The power is controlled by a switch located on the bottom of the cabinet. Additional taps have been provided on the transformer to compensate for fluctuating line voltage.

LINE VOLTAGE SAFETY SWITCH

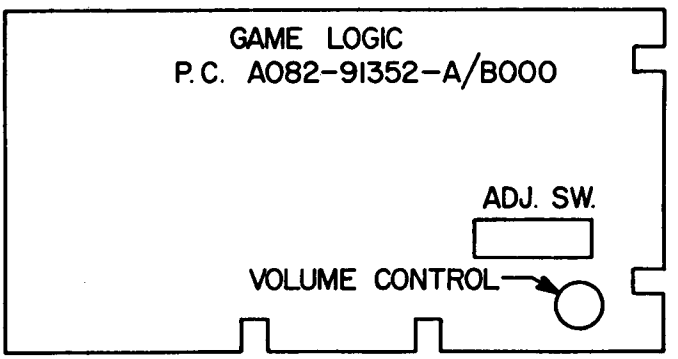
A line voltage safety switch has been provided for your protection. It is located in the cabinet on the left side of the coin door. When the coin door is opened the circuit to the line voltage is interrupted. To restore power (when servicing), pull switch fully out.

VOLUME CONTROL

The volume control pot is located on the Game Logic Board (P.C. A082-91352-A/B000). The pot controls the volume of all sounds and may be varied as desired by rotating pot control.

ADJUSTMENT SWITCHES

Located on Game Logic Board (P.C. A082-91352-A/B000) and may be adjusted as indicated on separate instruction card in back door area.



CREDIT PUSH BUTTON SWITCH

Located to right of cash box and is readily accessible by opening coin door. This switch is provided as a test aid and awards one credit without advancing coin meter.

TEST SLIDE

Located to right of cash box and is readily accessible by opening coin door. When placed in "ON" position, this switch indicates test mode.

GAME BOARD TEST

Place test slide switch in "ON" position. If game board is good, the following information will be displayed on the screen:

OK
Coin Adjustment Setting
Bonus Adjustment Setting
Number of PAC-MAN Per Game Setting
Game Version

RAM/ROM TEST

If any of the Rams or Roms are faulty, the following information will be displayed on the screen:

BAD ROM LOCATION CODE

Display	Location
M-Rom-0	6E
M-Rom-1	6F
M-Rom-2	6H
M-Rom-3	6J

BAD RAM LOCATION CODE

Display	Location
Bad V Ram-0	4K
Bad V Ram-1	4N
Bad C Ram-0	4L
Bad C Ram-1	4P
Bad W Ram-0	4M
Bad W Ram-1	4R

CONTROL PANEL AND COIN SWITCH TEST

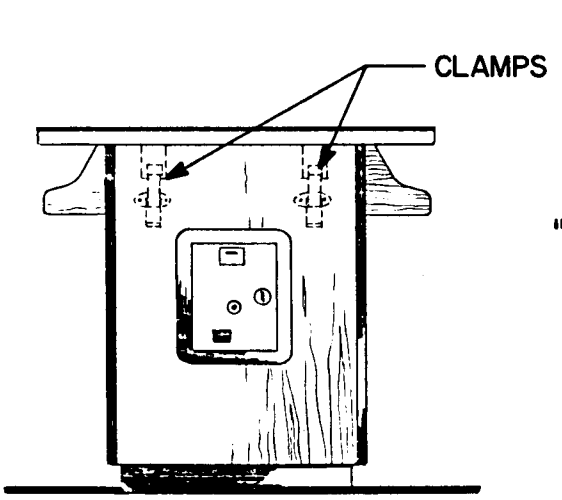
To verify operation of any switch, close switch in question. If switch is operating properly, a game sound will emit when closure is made.

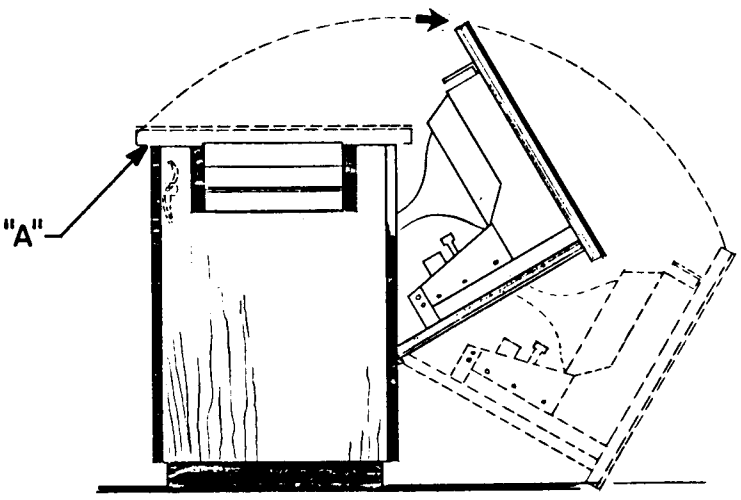
Caution: Be sure to return test switch to game mode when all tests are completed.

TO SERVICE MONITOR, GAME BOARD AND TRANSFORMER ASSY.

1. Open coin box door and release two (2) clamps indicated on sketch below.
2. Grasp monitor mounting panel at "A" and open as indicated in sketch below.

Caution: Due to the weight of the monitor extreme care must be exercised when opening cabinet for service.





MONITOR - GENERAL INSTRUCTIONS
Service Set-Up Procedure

NOTE: All monitors are equipped with automatic degaussing coils which effectively demagnetize the picture tube each time the monitor is turned on. The degaussing coils will operate any time the set is turned on after having been off for at least five minutes.

The degaussing effect is confined to the picture tube since the coils are mounted on the ferrous tube shield. Should any part of the chassis or cabinet become magnetized, it will be necessary to degauss the affected area by means of a manual degaussing coil. Move the coil slowly around the CRT face area, then slowly withdraw for a distance of six feet before disconnecting the coil from the AC power supply.

Normally little, if any adjustment should be necessary. However, when a picture tube, yoke or similar component is replaced, preliminary static convergence should be done before attempting purity adjustment, and so on.

Set up should be done in a north/south direction. Horizontal and vertical centering taps should be set to the centre position if a major component has been changed.

1.0 Purity

1.1 Loosen yoke retaining clamp (figure 2), remove adhesive material fixing wedges to CRT. Remove wedges completely and clean off dried adhesive from picture tube and wedges.

1.2 A small quantity of "nail polish" has been used to lock the purity convergence rings in place. This seal must be broken with a sharp tipped instrument before any adjustments are attempted. Some models also use a locking ring at either end of the purity and convergence rings. This must be loosened before adjustments are made. It goes without saying that upon completion of all adjustments, the lock must be reset and/or a dab of paint or nail polish must be re-applied to edge of rings to prevent movement.

1.3 Connect an appropriate signal source, eg: Electrohome RGB generator producting a white field plus individual red, green and blue fields.

1.4 Bring the long and short purity tab protrusions in line with each other to obtain near-zero magnetic field (figure 4) (In some cases bring the flat and indented tabs together to obtain zero field). Protrusions can then be vertical, horizontal or at any convenient angle to start.

1.5 Turn off the green and blue fields and adjust setup controls to produce a red field. (See fig. 3)

1.6 Pull the deflection yoke back so that a red band appears in the centre of the screen.

1.7 Spread the tabs apart as little as necessary and rotate both rings together to center the red band horizontally on the face of the CRT (approximate). (See Fig. 5)

1.8 Slide the yoke towards the bell of the picture tube slowly to obtain a uniform red field (pure in color) across the entire tube face. Juggle back and forth slightly as necessary. Lightly tighten yoke retaining clamp.

1.9 Momentarily switch on a cross-hatch signal and rotate yoke to level the pattern on the face of CRT.

1.10 Return generator to regain red raster.

1.11 Turn off red field and check for pure field for each of the green and blue fields. Reposition yoke if necessary to obtain optimum purity on all fields.

1.12 Tighten yoke retaining clamp to prevent yoke shift or rotation. (Do not install wedges at this time.)

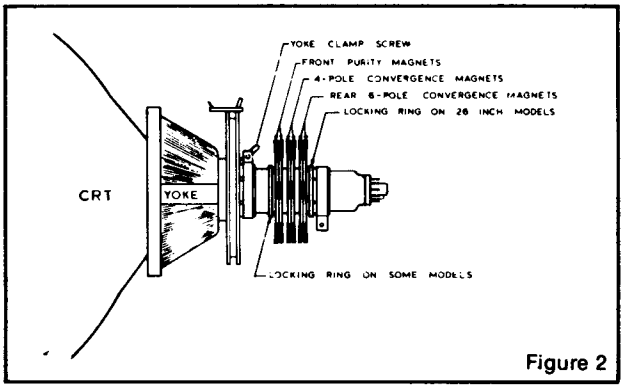


Figure 2

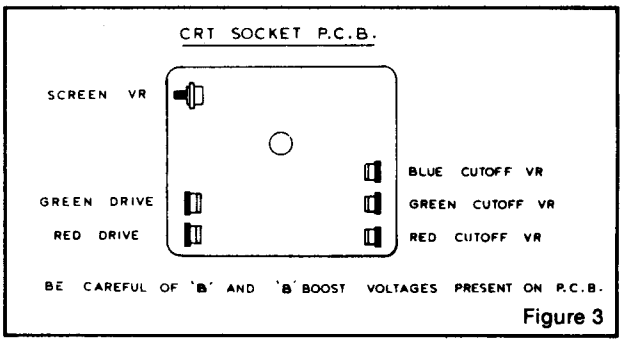


Figure 3

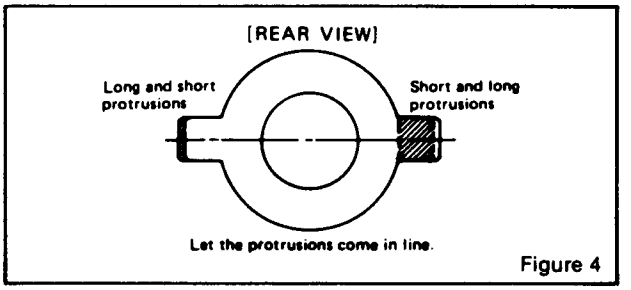


Figure 4

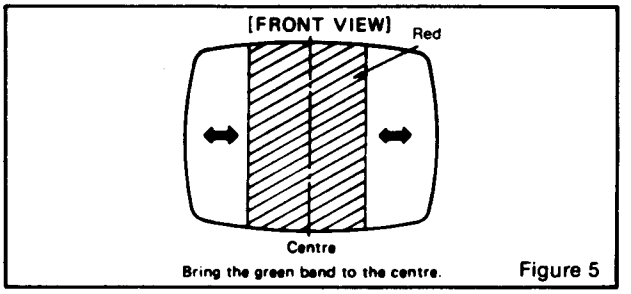


Figure 5

2.0 Static and Dynamic Convergence

NOTE: Static convergence is achieved by four magnets located on the neck, nearest the base of the picture tube, Fig. 2. The middle pair of magnetic rings are adjusted to converge the blue and red crosshatch lines. The rear pair of convergence rings (closest to the base of the picture tube) are adjusted to converge the magenta (blue/red) to the green crosshatch lines. Dynamic convergence is achieved by tilting the deflection yoke up-down and left-right.

2.1 Ensure that the controls misadjusted during purity setup (screen, cut-off, etc.) are set to give white balance. See 3.0 below.

2.2 Switch generator to the crosshatch pattern.

2.3 Adjust convergence around the edges of the picture tube by tilting the yoke up-down and left-right, and temporarily install one wedge at the top of the yoke or in a more optimum position. (Figures 8, 9, 10)

2.4 Turn off green input and turn on the red and blue input.

2.5 Rotate the 4-pole (middle) pair of magnets as a unit to minimize separation of the red and blue crosshatch lines around the center of the screen (Figure 6). Variation of the angle between the tabs adjusts convergence of red and blue. (Tilt yoke as required to converge red and blue at the edges as in 2.3 above.)

2.6 Turn on green input to obtain magenta (red/blue) and green crosshatch lines. Rotate the 6-pole (rear) pair of magnets as a unit to minimize separation of the magenta and green lines (figure 7). Vary angle between the two tabs and further rotate as a unit to finalize.

2.7 When converence of 3 colors is optimized (static in center and dynamic around edges) apply stripe of paint or nail polish to converence magnet rings to prevent movement. If applicable, tighten locking ring carefully.

2.8 Remove temporary wedge from yoke. Tilt yoke in up-down and left-right direction for best circumference convergence and install 3 wedges. (It is best to use 3 new wedges since they have adhesive backing. Simply pull off tape, slide wedge in place and press outer flap down firmly. For more permanency apply small quantity of silastic or similar material at junction of wedges and picture tube. Do not disturb while material is setting. (Order wedges by part number 39-1233-01).

3.0 White Balance (Grey Scale Tracking)

Refer to figure 3. Do the following in subdued light:

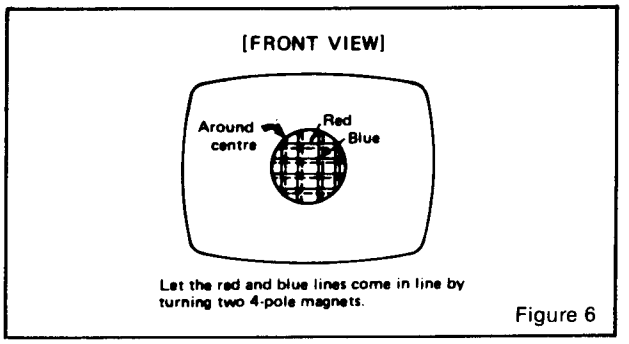
3.1 Note this adjustment can be accomplished with no signal connected; eg: input connector open or if a signal generator is connected, switch off all 3 inputs at the generator.

3.2 Set red and green drive controls to their mechanical center and turn the common G2 screen control and 3 cut-off controls to minimum (fully counterclockwise).

3.3 Slowly turn up G2 screen control until the first faint color appears, then back off to edge of visibility. Do not touch the associated cut-off control - it should stay fully CCW for the remaining set-up.

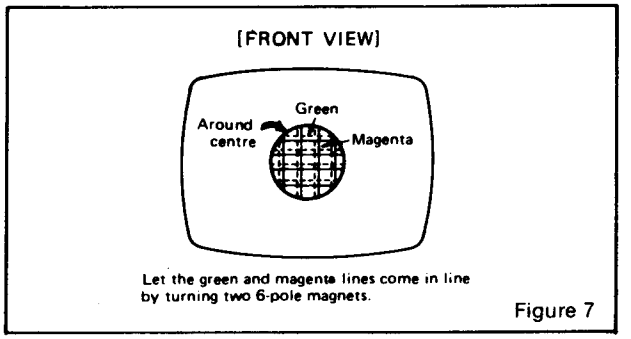
3.4 Slowly turn up the other two color cut-off controls in turn to match the first. This should result in the faintest grey.

3.5 Turn on the signal generator with all 3 inputs on. (a crosshatch pattern would be appropriate).



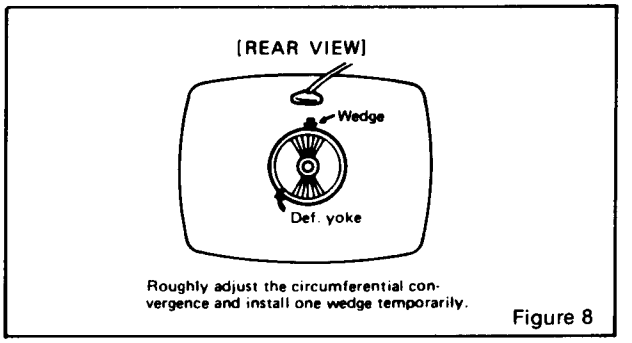
Let the red and blue lines come in line by turning two 4-pole magnets.

Figure 6



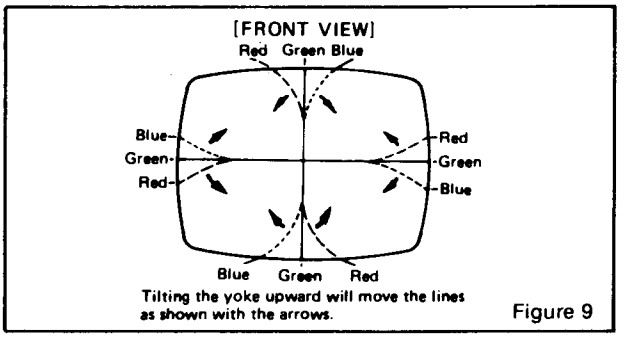
Let the green and magenta lines come in line by turning two 6-pole magnets.

Figure 7



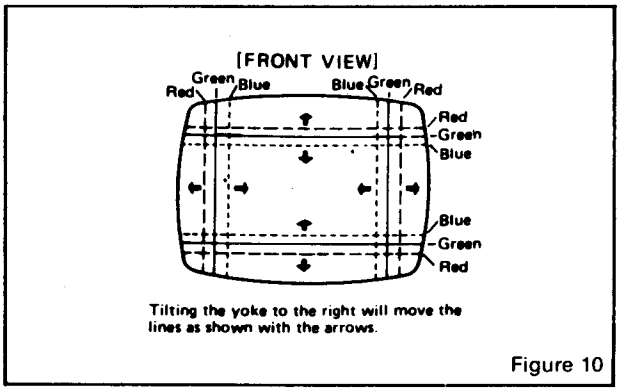
Roughly adjust the circumferential convergence and install one wedge temporarily.

Figure 8



Tilting the yoke upward will move the lines as shown with the arrows.

Figure 9



Tilting the yoke to the right will move the lines as shown with the arrows.

Figure 10

3.6 Adjust the red and green drive controls for "neutral white" on high white picture areas. Generally these controls will be left at mech. centre.

3.7 Note: When monitor is re-connected with the game the screen control (G2) may require a slight adjustment to obtain proper black level. (the black portion of picture just extinguished).

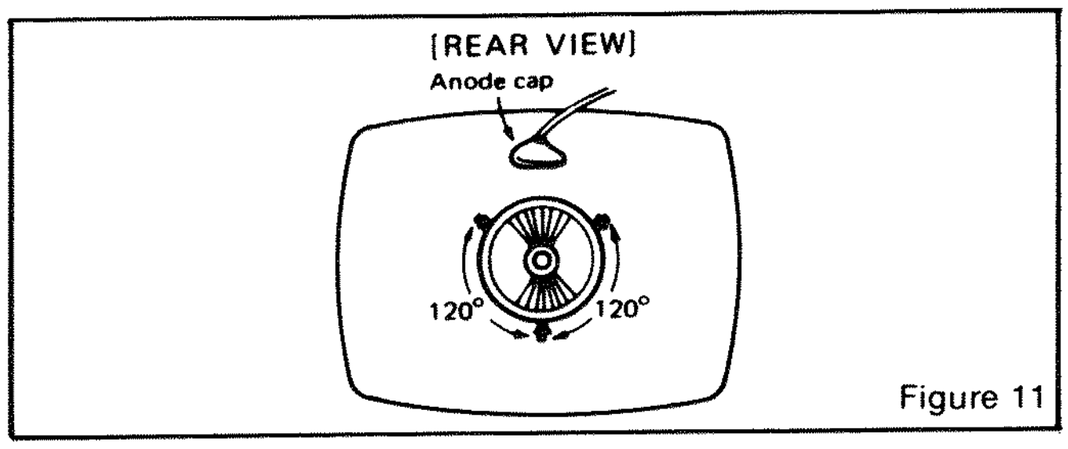


Figure 11

4.0 Power Supply

The regulated +B1 control (R909) has been factory adjusted and normally requires no adjustment. However, if any repairs have been made to the chassis it is recommended that this adjustment should be made.

a) Allow 5 minutes to warm up.
b) No signal applied.
c) Connect an accurate D.C. voltmeter to TP-91 or the emitter of X04 power regulator transistor.
d) Adjust R909 for 120V. (See fig. 1)

Note:

Should +B1 control be set too high, it may cause possible component damage. Use an accurate D.C. voltmeter to set B1 (B+).

5.0 Focus

Adjust focus control for best overall definition and picture detail an average signal applied. (Highlights should be favoured.)

6.0 Color Service Generator for G07 Monitor

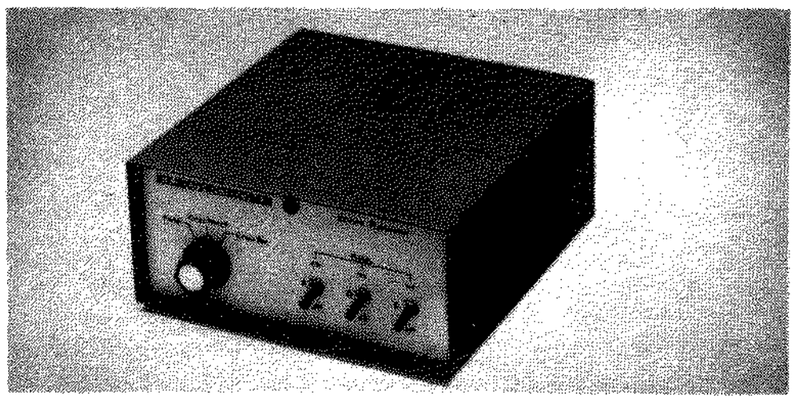
Electrohome has developed a color service generator that is specifically designed for use with the G07 color data monitor. It provides the monitor with both horizontal and vertical sync, as well as the following test patterns:

1) Fine cross-hatch pattern
2) Broad bar cross-hatch pattern
3) Complete field

Three color selection switches, red, green and blue, provide the ability to display the above patterns in the three primary colors as well as the three secondary colors.

This product may be ordered from:

Contracts Marketing
ELECTROHOME Electronics
809 Wellington St. North
Kitchener, Ontario
Canada N2G 4J6
Telephone: (519) 744-7111, Ext. 567



7.0 X-Ray Emission Check

7.1 Assure the power supply B1 is properly adjusted to 120V DC. See Item 4.0 (page 8)

7.2 Assure that the anode voltage does not exceed max. as per Item 2.0 page 4.

7.3 Assure that the high voltage hold down circuit is operating correctly. Use the following procedure.

a) Increase the B1 greater than 138.5V by shorting collector/emitter of the power regulator, X04.

b) Observe that the anode voltage (EHT) goes to 0. If the EHT does not go to 0, a fault must be located and repaired.

c) Remove short and set should return to normal operation. (Note, after the short is removed some monitors may not restart. In this case, remove power from monitor momentarily and normal operation will be restored.

Note:

The protector circuit consists of the components shown below in Fig. 13 with a circuit description.

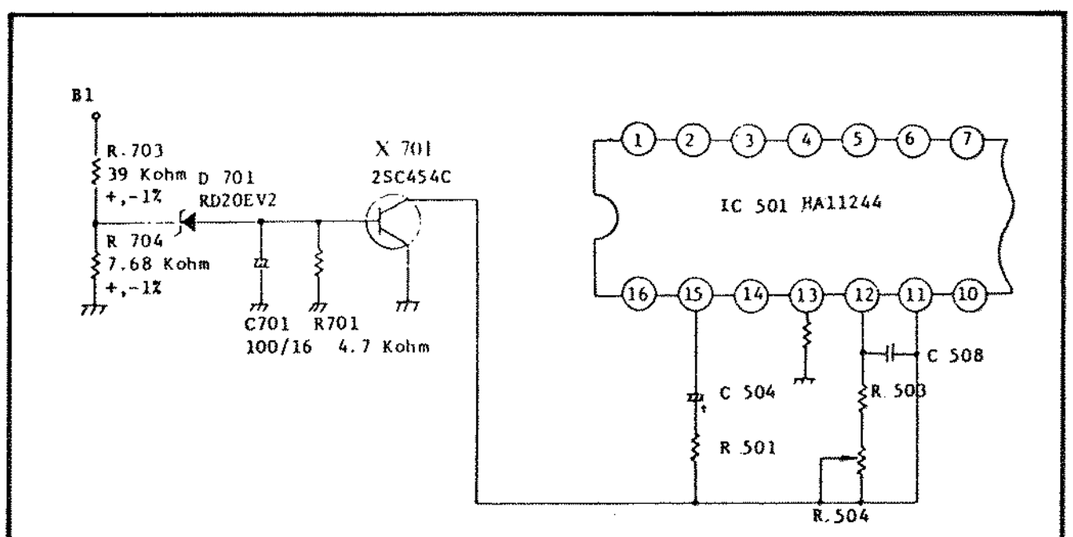


Figure 13

8.0 Circuit Diagram and Description of High Voltage Hold Down or Safety Circuit

8.1 Circuit Diagram of High Voltage Hold Down Circuit.

8.2 Operation of High Voltage Hold Down Circuit.

The high voltage hold-down circuit protects the high voltage circuit from dangerous voltage with short circuiting between emitter and collector of power regulating transistor.

The base voltage of X701 is increased when the B1 voltage is increased more than 138.5 V DC.

When the base of X701 is increased, a short is produced by X701 between pin 11 and ground of IC 501, shutting down the horizontal osc. and high voltage.

COLOR PURITY AND VERTICAL CENTERING ADJUSTMENT

For best results, it is recommended that the purity adjustment be made in the final monitor location. If the monitor will be moved, perform this adjustment with it facing west or east. The monitor must have been operating 15 minutes prior to this procedure and the faceplate of the CRT must be at room temperature.
The monitor is equipped with an automatic degaussing circuit. However, if the CRT shadow mask has become excessively magnetized, it may be necessary to degauss it with manual coil. Do not switch the coil OFF while the raster shows any effect from the coil.
Purity Magnets are used for Color Purity and V Centering Adjustment.
Purity Adjustment procedure is as follows.

1. Remove R-G-B signal from monitor.
2. Turn Green Cut off Control (VR404) on the Neck Board fully CCW.
   Turn Red and Blue Cut off Control (VR405) fully CW.
3. Pull the Deflection Yoke backward so that the Magenta belt will appear. (See Fig. 4)
4. Move the two Purity Magnets and bring the Magenta belt to the mechanical center of the screen (See Fig. 5) The vertical center position should be set VRS to —5/64" (—2 mm) as shown in Fig. 6.
   Insert service tip "N" on Neck circuit board to "S" on Vert./Horiz. circuit board (See Fig. 13). To check, use the Green raster at low intensity. Be sure to return the service tips to their original positions for the next check.
5. Push the Deflection Yoke forward gradually and fix it at the place where the Magenta screen becomes uniform throughout.
6. Turn Cut off Control, and Drive Control and confirm that each color is uniform.
7. If the color is not uniform, re-adjust it moving Purity Magnets slightly.
8. Move a pair of Purity Magnets at the same time (do not change the angle of the pair), and adjust the vert. center to center of screen.
9. Obtain the three colors and confirm whether white uniformity is balanced.
10. Insert the temporary wedge as shown in Fig. 5 and adjust the angle of Deflection Yoke.

STATIC CONVERGENCE ADJUSTMENT

A recently developed Deflection Yoke and Electron Guns construction has been used on this equipment in combination with In-Line Guns and Black Stripe Screen to make a barrel-type magnetic-field distribution for vertical deflection and a pin-cushion-type magnetic field for horizontal deflection with which a self-converging system can be obtained. This type is different from conventional unity-magnetic field distribution type deflection yoke. 4-Pole Magnets and 6-Pole Magnets are employed for static convergence instead of a Convergence Yoke.

1. A cross hatch signal should be connected to the monitor.
2. A pair of 4-Pole Convergence Magnets are provided and adjusted to converge the blue and red beams. When the Pole opens to the left and right 45° symmetrically, the magnetic field maximizes. Red and blue beams move to the left and right oppositely (See Fig. 7-a and 7-b). Variation of the angle between the tabs adjusts the convergence of red and blue vertical lines.
   When the both 4-Pole Convergence Magnet Tabs are rotated as a pair, the convergence of the red and blue horizontal lines is adjusted.
3. A pair of 6-Pole Convergence Magnets are also provided and adjusted to converge the magenta (red + blue) to green beams.
   When the Pole opens to the left and right 30° symmetrically, the magnetic field is maximized. Red and blue beams both move to the left and right (See Fig. 8-c and 8-d).
   Variation of the opening angle adjusts the convergence of magenta to green vertical lines. When both 6-Pole Convergence Magnet Tabs are rotated as a pair the convergence of magenta to green horizontal lines is adjusted.

PRECISE ADJUSTMENT OF DYNAMIC CONVERGENCE (See Fig. 10 and 11)

1. Feed a cross hatch signal to the monitor.
2. Insert the temporary wedge and fix Deflection Yoke so as to obtain the best circumference convergence (See Fig. 10 and 11).
   NOTE:
   The temporary wedges may need to be moved during adjustments.
4. Insert three rubber wedges to the position as shown in Fig. 9 to obtain the best circumference convergence.

NOTE:

1) Tilting the angle of the yoke up and down adjusts the crossover of both vertical and horizontal red and blue lines. See Fig. 10 (a) and (b).
2) Tilting the angle of the yoke sideways adjusts the parallel convergence of both horizontal and vertical lines at the edges of the screen. See Fig. 11-a and b.
3) Use three rubber wedges (thick and thin rubber wedges are used for a purpose).
4) The angle of each rubber wedges are shown in Fig. 9.
5) After three rubber wedges have been inserted, pull out the temporary wedge.
6) Fix the rubber wedges with chloroprene rubber adhesive.

BLACK AND WHITE TRACKING (With R/G.B. inputs grounded)

1. Set Black Level Control (VR201) to mid point.
2. Set Red and Blue Drive Controls (VR401 & VR402) to their mechanical center.
3. Set the G2 Screen Control (VR406) and the 3 Cut-off Controls (VR403, VR404, & VR405) to minimum (CCW).
4. Slowly turn up G2 screen control until the first faint color appears.
5. Slowly turn up the other two color cut-off controls in turn to match the first.
6. Remove ground from R/G/B/ inputs. Adjust Red and Blue Drive Controls (VR401 & VR402) for white screen.

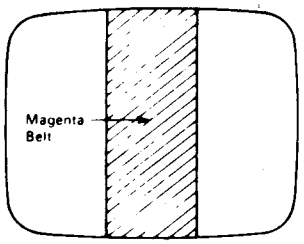


FIGURE 4

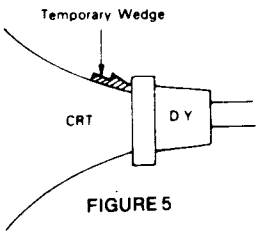


FIGURE 5

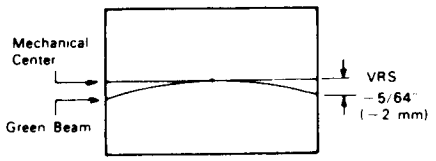
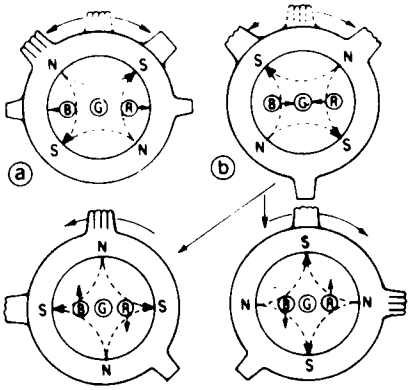
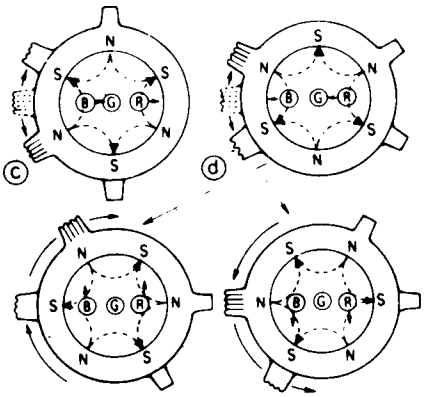


FIGURE 6



4-Pole Magnets and the Movement of Beams

FIGURE 7



6-Pole Magnets and the Movement of Beams

FIGURE 8

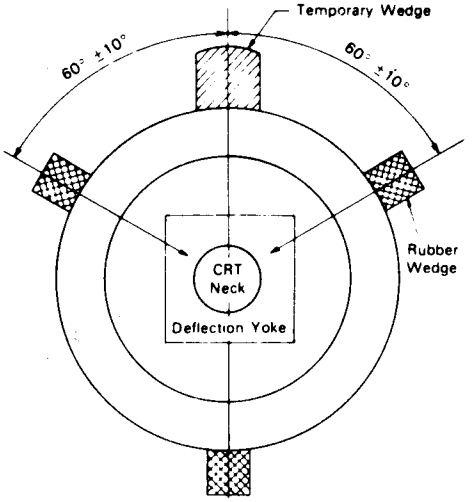
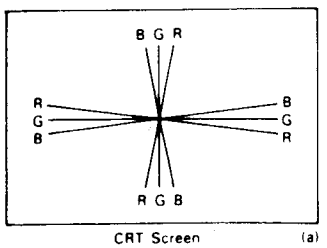
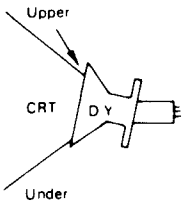


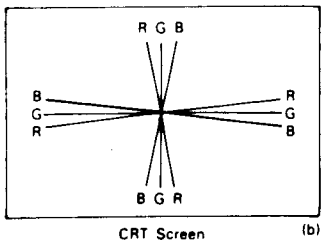
FIGURE 9



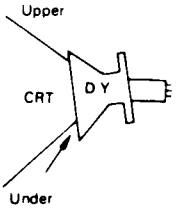
CRT Screen (a)



Insert Rubber Wedge from Upper Side

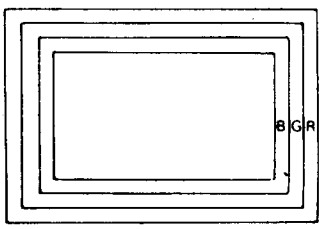


CRT Screen (b)

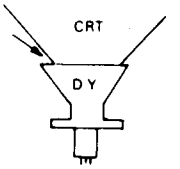


Insert Rubber Wedge from Lower Side

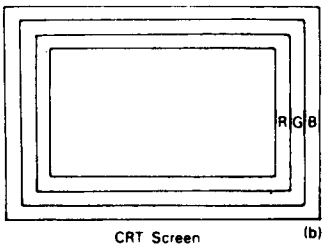
FIGURE 10



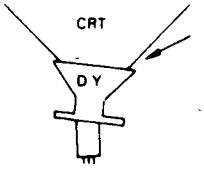
CRT Screen (a)



Insert Rubber Wedge from Left Side



CRT Screen (b)



Insert Rubber Wedge from Lower Side

FIGURE 11

METHOD OF PLAY			
SW. #1	SW. #2		
OFF	ON	1 COIN	1 PLAY
ON	OFF	1 COIN	2 PLAY
OFF	OFF	2 COINS	1 PLAY
ON	ON		FREEPLAY

NUMBER OF PACKMEN PER GAME		
SW. #3	SW. #4	
ON	ON	1 PACKMAN
OFF	ON	2 PACKMEN
ON	OFF	3 PACKMEN
OFF	OFF	5 PACKMEN

BONUS PACKMEN		
SW. #5	SW. #6	
ON	ON	BONUS PACKMAN AT 10,000
OFF	ON	BONUS PACKMAN AT 15,000
ON	OFF	BONUS PACKMAN AT 20,000
OFF	OFF	NO BONUS

SW. #7	SW. #8	
OFF	OFF	PLAY MODE
ON	OFF	RACK TEST
OFF	ON	LOCKS PICTURE

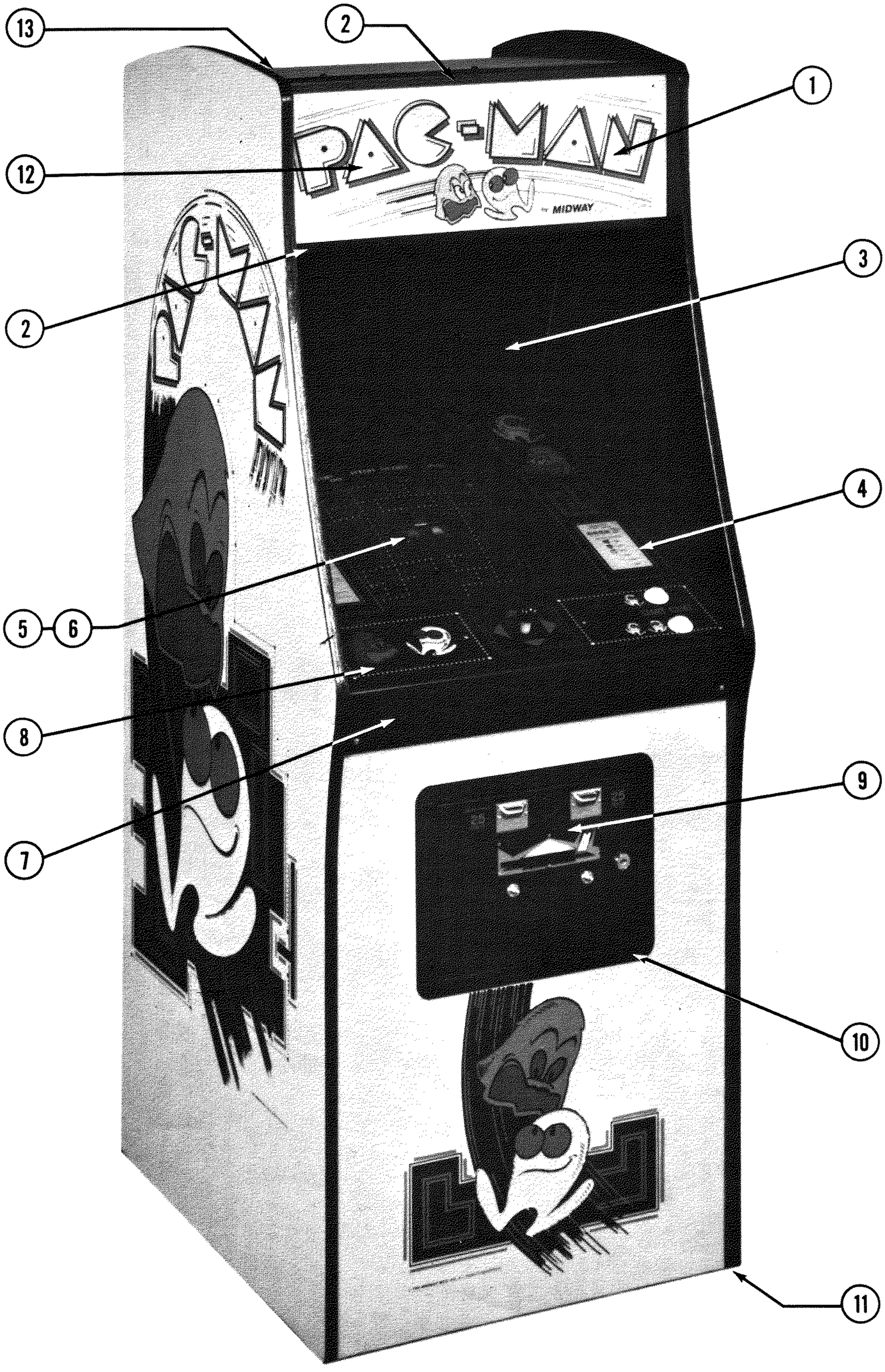
M051-00932-A035

ELECTRICAL BULLETIN: FOR ALL APPARATUS COVERED BY THE CANADIAN STANDARDS ASSOCIATION (CSA) STANDARD C22.2 NO. 1, WHICH EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED 2-PRONG ATTACHMENT PLUG.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR. UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

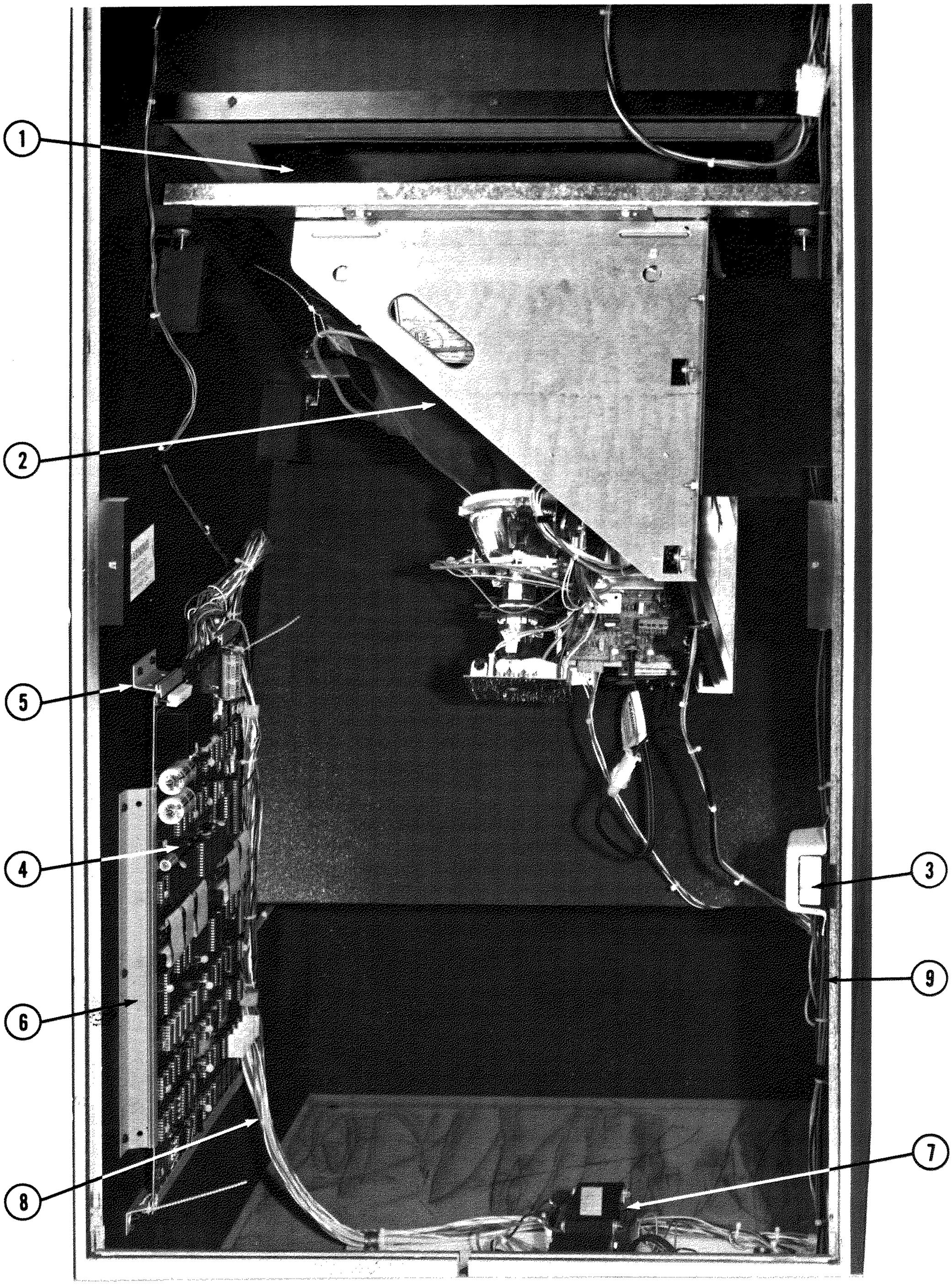
NO. 932 - PAC-MAN UP-RIGHT - PHOTOGRAPH



ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0932-00901-00XF	UPPER DECORATIVE PLEX—23'' x 9-1/16'' x 3/16''
2	0866-00103-00XF	PLEXI RETAINING BRKT. (2 REQ'D.)
	0017-00101-0066	#10 x 5/8 PHIL. PAN HD. SCREW (6 REQ'D.)
3	0017-00009-0393	BLACK SPEAKER GRILL W/4, 1-1/2'' SCREWS
	0017-00003-0187	6'' x 9'' SPEAKER 8 OHM, 9W.
4	0932-00900-00XF	MAIN DISPLAY GLASS - 23'' x 16-3/8'' x 3/16''
	M052-00050-0005	FOAM TAPE - 1/4 x 23'' LG.
5	A866-00064-0000	T.V. BEZEL & PLEXI ASSY.
6	0017-00003-0339	19'' COLOR MONITOR & CHASSIS W/YOKE - ELECTROHOME
7	0932-00100-00XF	CONTROL SHELF OVERLAY
	0017-00101-0639	#8-32 x 1-1/4 CARRIAGE BOLT (6 REQ'D.)
	0017-00104-0022	STL. FLAT WASHER (6 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT W/SEMS (6 REQ'D.)
	0017-00101-0775	#6 x 1/2 PHIL. PAN HD. SCR. (2 REQ'D.)
8	0932-00903-0000	DECORATIVE CONTROL PANEL
9	A090-00076-02BK	DOUBLE ENTRY COIN DOOR ASSY.
10	0090-00002-02BK	COIN DOOR FRAME
11	0017-00102-0048	3/8-16 x 2'' LEG LEVELER (4 REQ'D.)
	0017-00103-0026	3/8-16 HEX NUT (4 REQ'D.)
12	A866-00068-0000	DISPLAY LAMP BRKT. ASSY. (2 REQ'D.) LOCATED BEHIND ITEM # 1
	0866-00113-0000	SOCKET MTG. BRKT. (2 REQ'D)
	0017-00003-0135	LAMP SOCKET (2 REQ'D)
	0017-00003-0309	LAMP 12V., 25W. (2 REQ'D.)
	0017-00101-0626	#8-32 x 3/4 SLT. PAN HD. M.S. (4 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT W/SEMS (4 REQ'D.)
13	0586-00036-0000	ON-OFF SWITCH
	0567-00106-0100	SWITCH MTG. PLATE
	0017-00101-0025	#8 x 1/2 STL. HEX HD. WD. SCR. (4 REQ'D.)

NO. 932 - PAC-MAN UP-RIGHT - INTERIOR ACCESS PICTURE



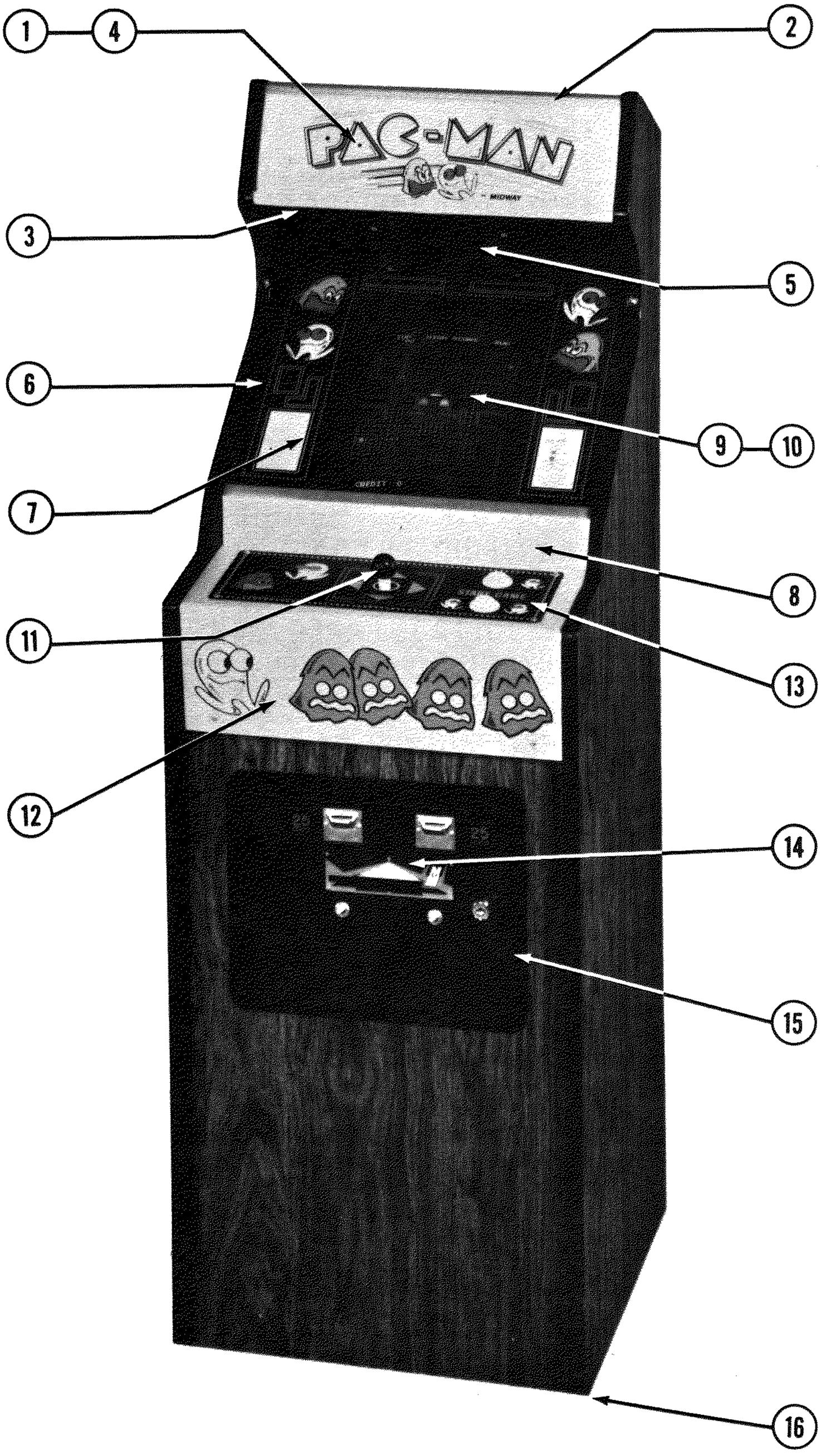
MIDWAY MFG. CO.
A BALLY COMPANY

NO. 932 - PAC-MAN UP-RIGHT - INTERIOR ACCESS PICTURE

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	A866-00064-0000	T.V. BEZEL & PLEXI ASSY.
2	A866-00202-0000	COLOR MONITOR & MTG. CHANNEL ASSY.
	0017-00101-0115	#8-32 x 2'' HEX MACH. SCR. (5 REQ'D.)
	0017-00101-0639	#8-32 x 1-1/4 CARRIAGE BOLT
	0017-00101-0628	#8-32 x 3/4 CARRIAGE BOLT (4 REQ'D.)
	0017-00104-0022	#8 WASHER (10 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT SEMS (10 REQ'D.)
3	A866-00035-00XF	INTERLOCK SW. BRKT. ASSY.
	0017-00032-0071	INTERLOCK SWITCH
4	A082-91375-B000	GAME LOGIC P.C. ASSY.
5	0624-00902-0300	P.C. SUPPORT BRKT. - 2-1/2 IN. (3 REQ'D.)
6	0624-00902-0100	P.C. SUPPORT BRKT. - 12 IN. (2 REQ'D.)
	0017-00101-0017	#6 x 1/2 BLK. SLT. HEX HD. SCR. (17 REQ'D.)
7	A932-00020-0000	TRANSFORMER BOARD ASSY.
8	A932-00005-0000	HIGH VOLTAGE CABLE ASSY.
	A932-00006-0000	LOW VOLTAGE CABLE ASSY.
	A932-00010-0000	CONTROL SHELF CABLE ASSY.
	A932-00019-0000	COIN DOOR CABLE ASSY.
9	A082-91109-C000	CREDIT MULTIPLIER BY-PASS P.C. BRD. ASSY.
		ADDITIONAL PARTS LIST
	0017-00009-0033	BASSICK CLAMP (2 REQ'D.)
	0603-00131-0000	STRIKE (2 REQ'D.)
	A866-00036-0000	TEST SWITCH & BRKT. ASSY. (MOUNTED ON BACK OF COIN DOOR)
	0017-00009-0477	CASH BOX-MOLDED
	A905-00026-0000	CASH BOX COVER ASSY.
	A624-00001-0000	CASH BOX GUIDE BRKT. ASSY.
	0624-00101-0000	CASH BOX GUIDE BRKT.
	0017-00101-0628	#8-32 x 3/4'' CARRIAGE BOLT (4 REQ'D.)
	0017-00104-0022	#8 WASHER (4 REQ'D.)
	0017-00103-0061	#8-32 LOCK NUT SEMS (4 REQ'D.)
	A097-00001-0000	LOCK ASSY. - BACK DOOR
	0017-00009-0490	VENT GRILL - 5-5/8'' SQ. (2 REQ'D.)
	0866-00905-0000	FISHPAPER SHIELD 4 IN. SQ.
	0866-00906-0000	FUSE SHIELD - TRANSFORMER BOARD

NO. 934 - PAC-MAN MINI - PHOTOGRAPH

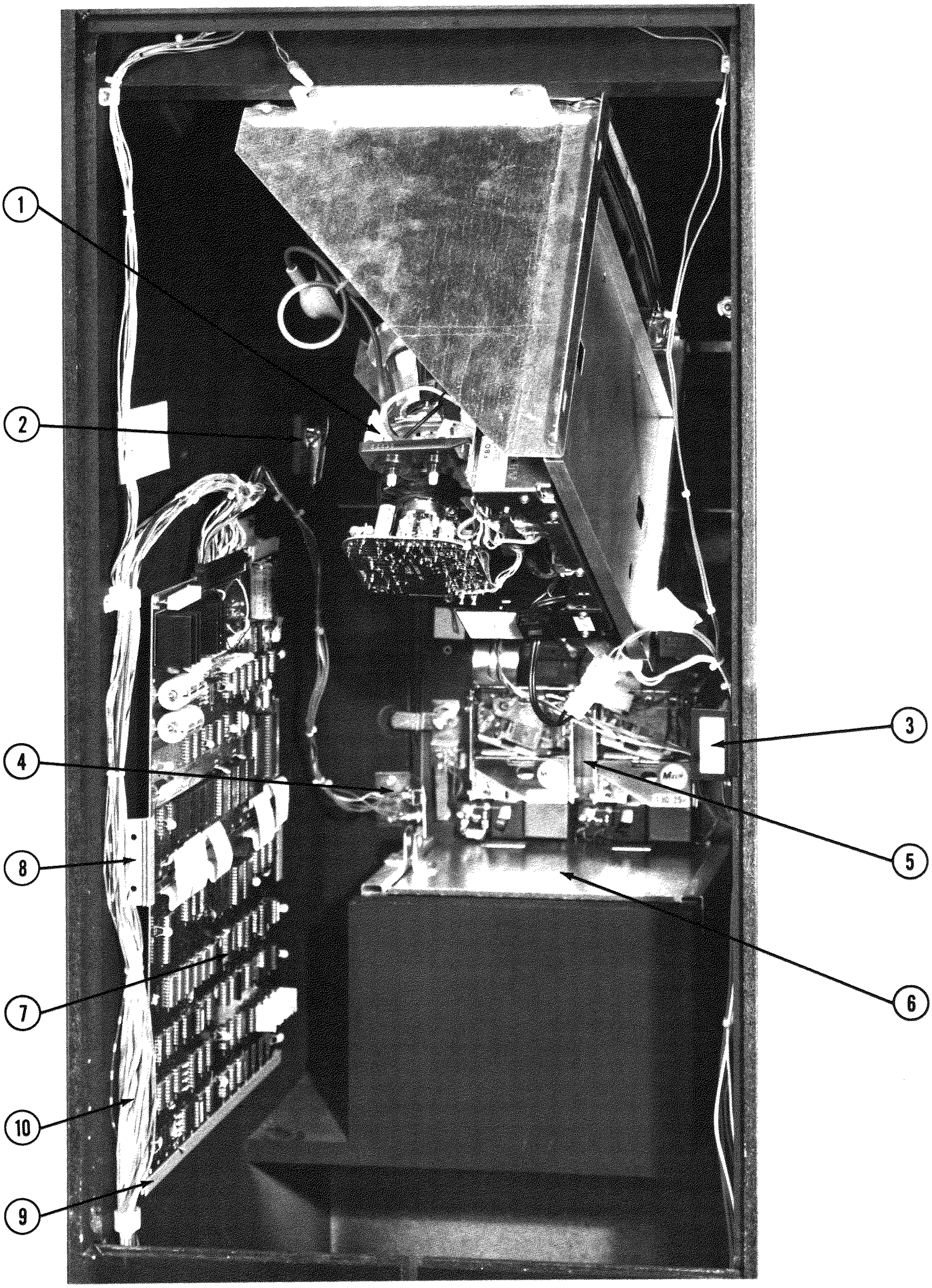


MIDWAY MFG. CO.
A BALLY COMPANY

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0934-00900-00XF	DISPLAY PLEXI (TOP) 17-3/16" x 5-3/4" x 3/16"
2	0905-00115-00XF	TOP BRACKET
3	0905-00116-00XF	BOTTOM BRACKET
	0017-00101-0117	#8 x 5/8 PHIL. TRS. HD. M.S. (6 REQ'D.)
	0017-00101-0789	#10-32 x 3/4 HEX BUTTON HD. SCR. (2 REQ'D.)
4	A934-00012-0000	INSERT ASSEMBLY
	0017-00003-0219	#194 WEDGE BASE LAMP 14V. 27A. (5 REQ'D.)
	0017-00031-0030	LIGHT SOCKET (5 REQ'D.)
5	A762-00028-0000	SPEAKER ASSY.
	0017-00009-0393	BLACK RECT. SPEACKER GRILL
	0017-00101-0642	#8-32 x 1-1/2 CARRIAGE BOLT (4 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT W/SEMS (4 REQ'D.)
6	0905-00903-0100	GLASS EDGE CHANNEL - 14-1/2" LG. (2 REQ'D.)
7	0934-00902-00XF	MAIN DISPLAY GLASS - 17-13/16" x 13-1/8" x 3/16"
8	0934-00100-0000	GLASS CLAMPING PLATE
	0017-00101-0789	#10-32 x 3/4 HEX BUTTON HD. SCR. (2 REQ'D.)
9	A934-00007-0000	T.V. BEZEL ASSY. W/GREY PLEXI
10	0017-00003-0340	13" COLOR DUAL SYNC. HORIZ. MONITOR & CHASSIS - ELECTROHOME
11	A932-00008-0000	CONTROL ASSEMBLY
12	0934-00101-00XF	CONTROL PLATE
	0017-00101-0117	#8 x 5/8 PHIL. TRS. HD. SCR. (2 REQ'D.)
13	0934-00904-0000	CONTROL SHELF OVERLAY
	0017-00101-0118	#8-32 x 1-1/8 CARRIAGE BOLT (4 REQ'D.)
	0017-00104-0030	#8 WASHER (4 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT W/SEMS (4 REQ'D.)
14	A090-00076-02BK	DOUBLE ENTRY COIN DOOR ASSY.
15	0090-00002-02BK	COIN DOOR FRAME
16	0017-00102-0048	3/8-16 x 2" LEG LEVELER (4 REQ'D.)
	0017-00103-0026	3/8-16 LEG LEVELER HEX NUT (4 REQ'D.)

NO. 934 - PAC-MAN MINI - INTERIOR ACCESS PICTURE



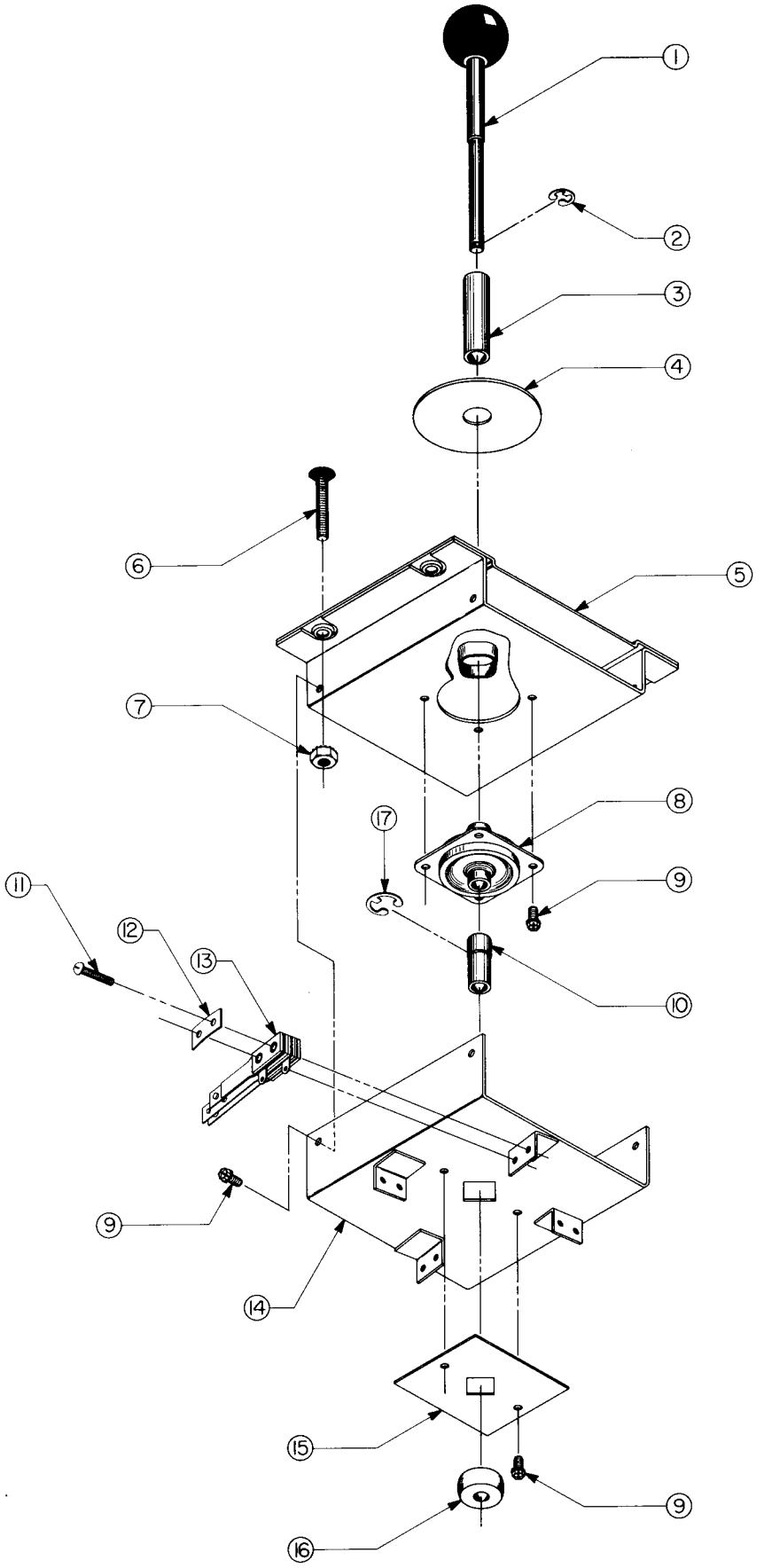
MIDWAY MFG. CO.
A BALLY COMPANY

NO. 934 - PAC-MAN MINI - INTERIOR ACCESS PICTURE

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0017-00003-0340	13" COLOR DUAL SYNC. HORIZ. MONITOR & CHASSIS - ELECTROHOME
	0017-00004-0022	304 DYMAX GROUND STRAP
	0017-00102-0013	1/4-20 x 1-1/4 CARRIAGE BOLT (2 REQ'D.)
	0017-00102-0028	1/4-20 x 2-1/2 CARRIAGE BOLT (2 REQ'D.)
	0017-00104-0014	PERIPHERY WASHER (4 REQ'D.)
	0017-00103-0018	1/4 - 20 HEX NUT (2 REQ'D.)
2	0017-00009-0033	BASSICK CLAMP (2 REQ'D.)
	0603-00131-00XF	STRIKE (2 REQ'D.)
	0017-00101-0028	#8 x 3/4 SLT. HEX HD. SCREW (8 REQ'D.)
3	A151-00026-0000	INTERLOCK SW. & BRKT. ASSY.
	0017-00101-0028	#8 x 3/4 SLT. HEX HD. SCR. (2 REQ'D.)
4	A866-00036-0000	TEST SWITCH BRKT. ASSY.
5	A090-00076-02BK	DOUBLE ENTRY COIN DOOR ASSY.
6	A905-00028-0000	CASH BOX ASSY. W/HANDLE
	A905-00026-0000	CASH BOX COVER ASSY.
	A624-00001-0000	CASH BOX GUIDE BRKT. ASSY.
	0624-00101-0000	CASH BOX GUIDE BRKT.
7	A082-91375-B000	GAME LOGIC BOARD ASSY.
8	0624-00902-0300	P.C. SUPPORT BRKT. - 2-1/2 IN. (3 REQ'D.)
9	0624-00902-0100	P.C. SUPPORT BRKT. - 12 IN. (2 REQ'D.)
10	A934-00009-0000	HIGH VOLTAGE CABLE ASSY.
	A934-00008-0000	LOW VOLTAGE CABLE ASSY.
	A934-00010-0000	CONTROL SHELF CABLE ASSY.
	A934-00013-0000	DISPLAY INSERT CABLE ASSY.
	A932-00019-0000	COIN DOOR CABLE ASSY.
		NOT SHOWN LIST
	A082-91109-C000	CREDIT MULT. BYPASS P.C. BRD. ASSY.
	A934-00011-0000	TRANSFORMER BOARD ASSY.
	0017-00032-0083	ON-OFF SWITCH
	0567-00106-0100	SWITCH MTG. PLATE
	0017-00101-0028	#8 x 3/4 SLT. HEX HD. SCR. (4 REQ'D.)
	0017-00009-0490	VENT GRILL - BOTTOM BACK DOOR (2 REQ'D.)
	0618-00117-0000	VENT GRILL - TOP BACK DOOR
	0017-00101-0015	#6 x 1/2 SLT. HEX HD. SCR. (4 REQ'D.)
	0934-00903-0000	PROTECTIVE BUBBLE - BACK DOOR
	0017-00101-0628	#8-32 x 3/4 CARRIAGE BOLT (10 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT W/SEMS (10 REQ'D.)
	A151-00029-0000	LOCK ASSY. - BACK DOOR

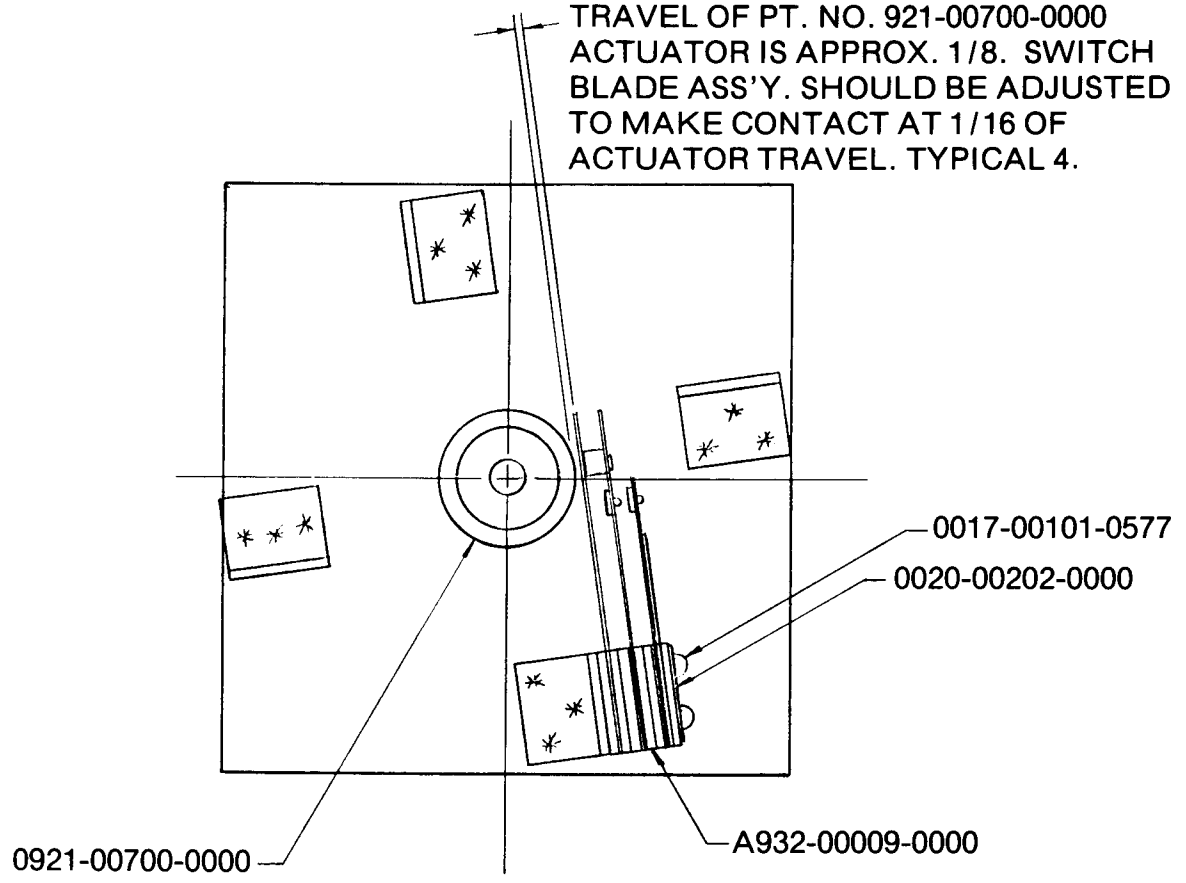
PAC-MAN - CONTROL ASSEMBLY



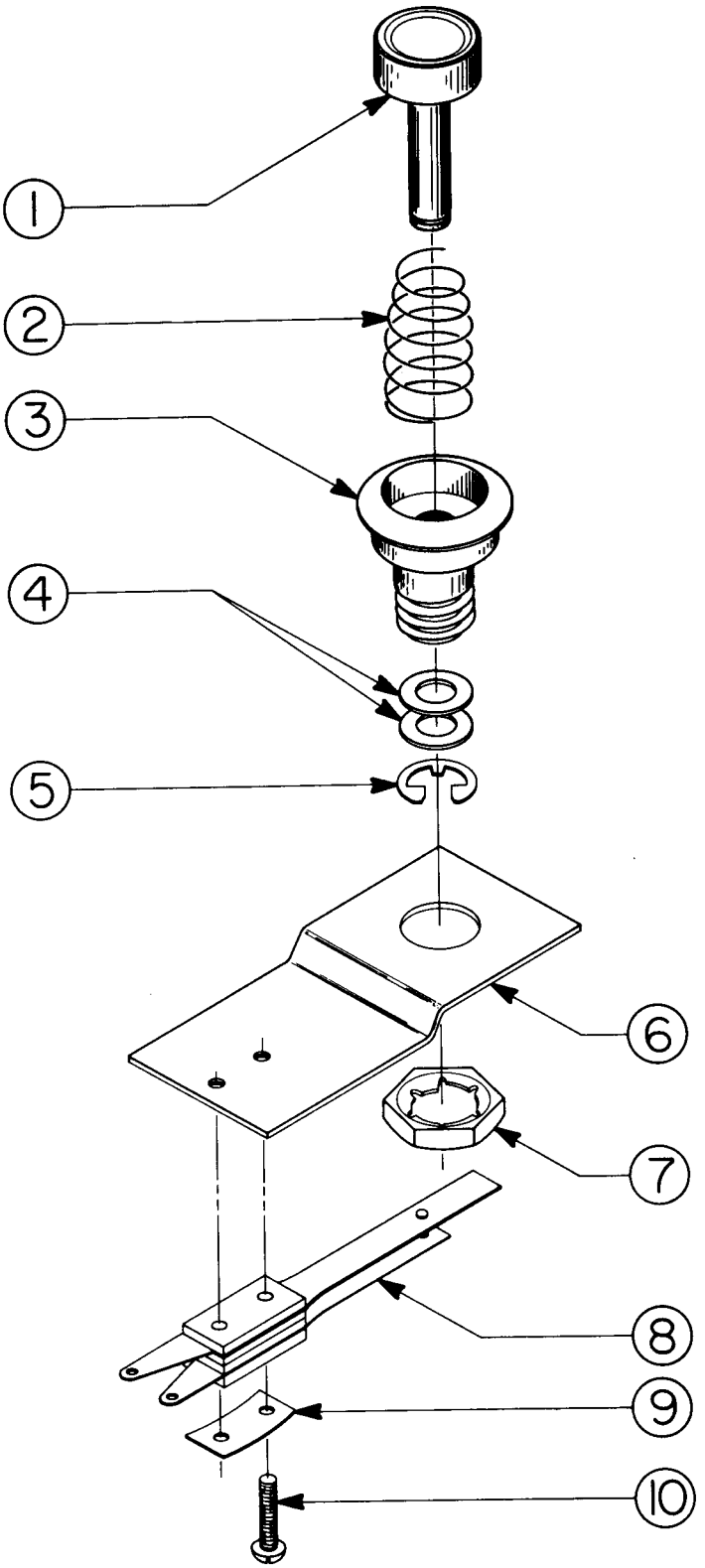
PAC-MAN - CONTROL ASSEMBLY

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	A921-00012-0000	SHAFT & BALL ASSY. - FIRST 3,000 GAMES
1	A932-00022-0000	SHAFT & BALL ASSY.
2	0017-00100-0025	1/4'' E-RING
3	0921-00702-0000	STOP SPACER
4	0921-00902-0000	SLIDE PLATE
5	A932-00011-00XF	SPOT WELD ASSY.
6	0017-00101-0713	#8-32 x 1'' SLT. FLAT HD. SCREW (4 REQ'D.)
7	0017-00103-0061	#8-32 HEX NUT W/SEMS (4 REQ'D.)
8	0932-00902-0000	GROMMET
9	0017-00101-0598	#8-32 x 5/16 SLT. HEX HD. M.S. (10 REQ'D.)
10	0921-00701-0000	SLEEVE
11	0017-00101-0528	#5-40 x 3/4 SLT. RND. HD. SCR. (8 REQ'D.)
12	0020-00202-0000	SWITCH PLATE (4 REQ'D.)
13	A932-00009-0000	SWITCH ASSEMBLY (4 REQ'D.)
14	A932-00012-00XF	STOP PLATE & SWITCH BRKT. ASSY.
15	0932-00904-0000	WEAR PLATE
16	0921-00700-0000	ACTUATOR
17	0017-00100-0115	7/16'' E-RING



NO. 932 & 934 PAC-MAN UP-RIGHT & MINI - PUSH BUTTON ASSY.

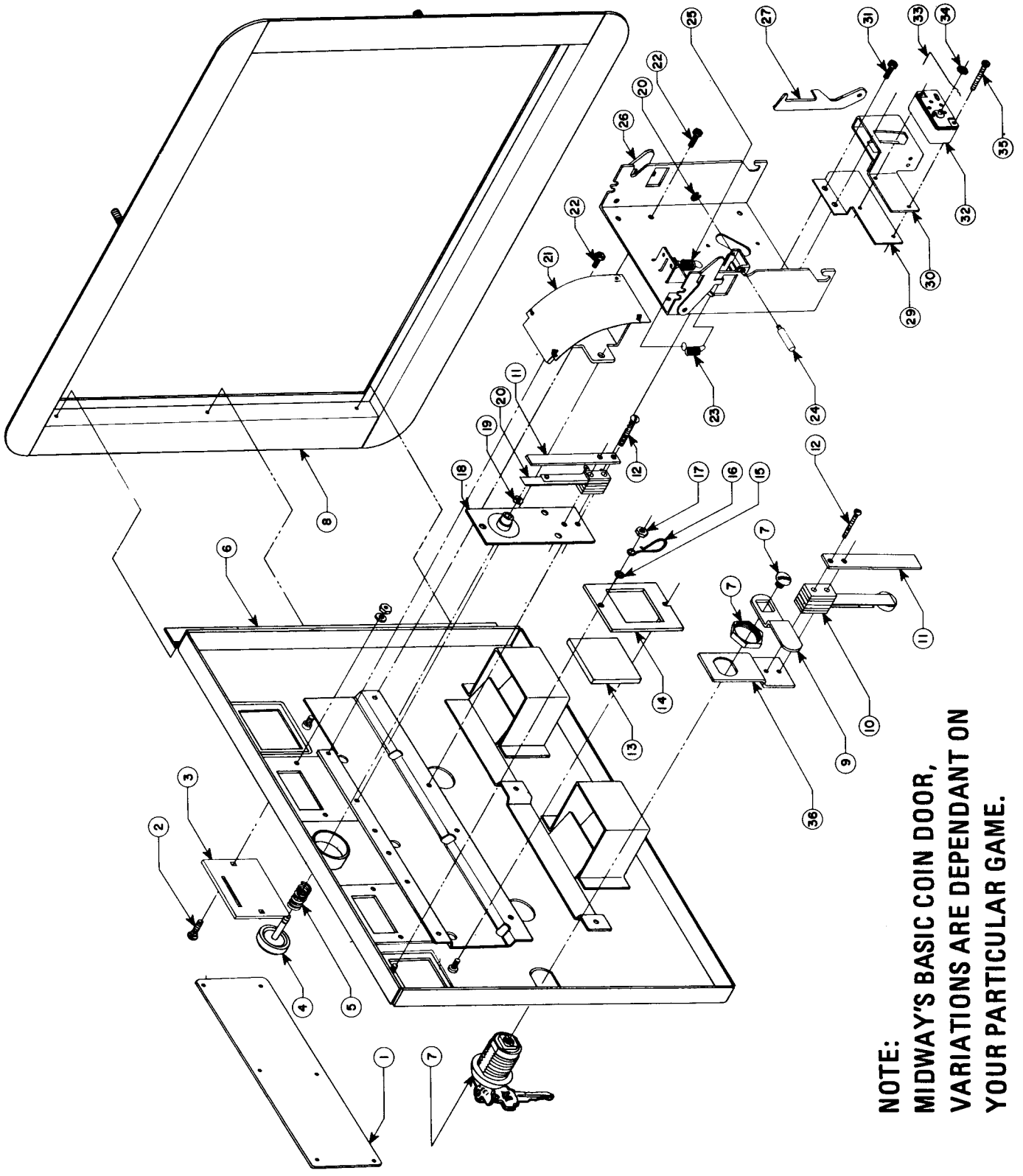


NO. 932 & 934 PAC-MAN UP-RIGHT & MINI - PUSH BUTTON ASSY.

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0017-00009-B384	RED BUTTON - MINI ONLY
1	0017-00009-0384	BUTTON
2	0010-00593-0000	SPRING
3	0017-00009-0376	BUTTON HOUSING
4	0017-00104-0028	FLAT WASHER (2 REQ'D.)
5	0017-00100-0025	E-RING
	A761-00014-0000	PUSH BUTTON ASSY. (FIRST 5 ITEMS) - MINI ONLY
	A739-00012-0000	PUSH BUTTON ASSY. (FIRST 5 ITEMS)
6	0586-00107-0000	MOUNTING BRKT.
7	0017-00103-0054	PAL NUT
8	A739-00016-0000	SWITCH ASSY.
9	0020-00202-0000	SWITCH PLATE
10	0017-00101-0526	#5-40 x 9/16 PHIL. HD. M.S. (2 REQ'D.)

NO. 932 & 934 PAC-MAN UP-RIGHT & MINI - FRONT DOOR ASSY.



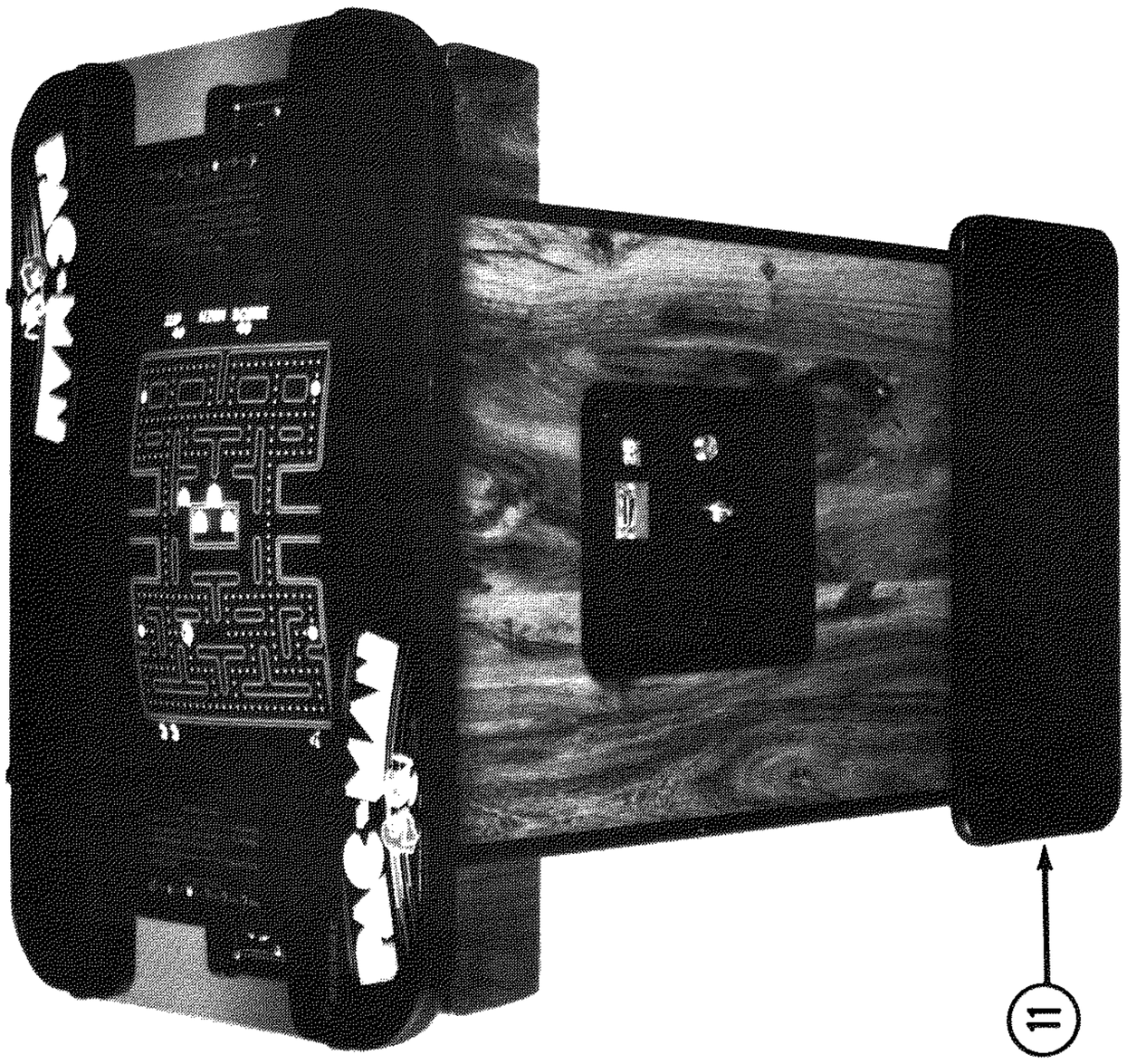
NOTE:
MIDWAY'S BASIC COIN DOOR,
VARIATIONS ARE DEPENDANT ON
YOUR PARTICULAR GAME.

NO. 932 & 934 PAC-MAN UP-RIGHT & MINI - FRONT DOOR ASSY.

ORDER BY PART NUMBER ONLY

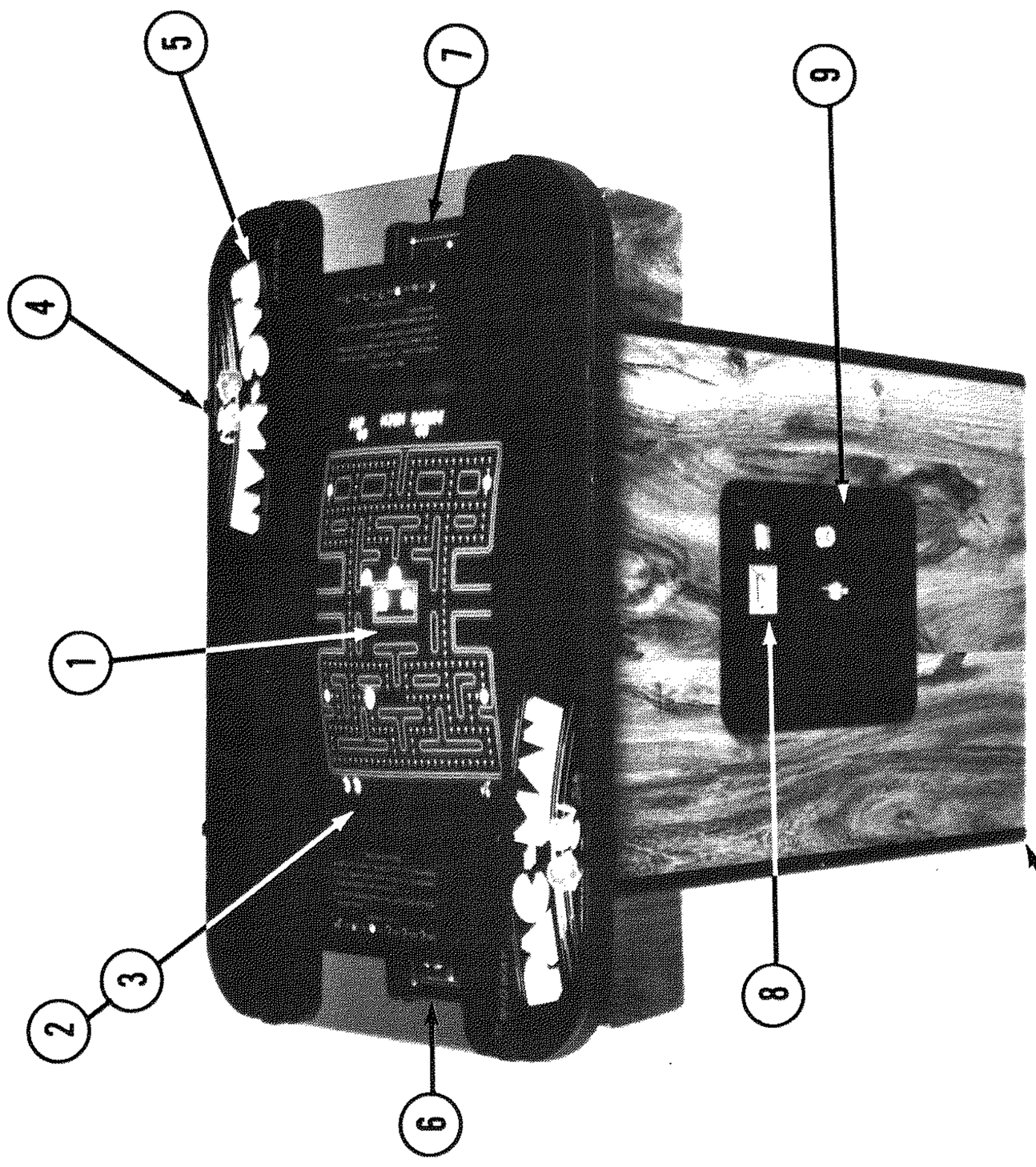
ITEM	PART Nº	DESCRIPTION
1	0090-00902-0000	DRESS PLATE
	0090-00902-0100	DRESS PLATE W/O BUTTON TO START GAME
2	0017-00101-0552	#6-32 x 1/4 CARRIAGE BOLT (2)
3	0090-00117-03XF	COIN ENTRY PLATE (25¢)
4	0090-00906-0000	PLASTIC START BUTTON
5	0010-00007-0000	COMPRESSION SPRING
6	A090-00020-2003	DOOR ASSY. DOUBLE ENTRY
7	0017-00005-0050	DOOR LOCK & KEY WITH SCREW & NUT
8	0090-00002-02BK	DOUBLE DOOR FRAME
9	0017-00005-0041	421 N.S. CAM
10	0090-00901-0000	DOOR SWITCH
	0090-00126-01XF	SWITCH BACKUP PLATE
12	0017-00101-0528	#5-40 x 3/4" LNG. M.S.
13	0090-00903-9500	25¢ WINDOW
14	0090-00143-0000	COIN PLEX RETAINER
15	0017-00104-0002	SPLIT LOCK WASHER
16	0017-00007-0019	KEY HOOK
17	0017-00103-0005	#6-32 HEX NUT
18	0090-00010-0000	SW. PLATE & OILLITE ASSY.
19	0017-00100-0018	"E" RING
20	0090-00131-0000	SWITCH
21	0090-00104-0000	TOP & BTM. COIN CHUTE W/BRKT. ASSY.
22	0017-00101-0598	#8 x 5/16 SCREW
23	0010-00181-0100	SPRING
24	0090-00129-00XF	PIVOT POST
25	0010-00134-0000	SPRING
26	0090-00008-0000	ACCEPTOR FRAME ASSY.
27	0093-00155-00XF	REJECTOR LEVER
28	0017-00100-0012	"E" RING
29	0090-00162-00XF	COIN SWITCH MTG. BRKT. - SMALL (AMERICAN)
29	0090-00163-00XF	COIN SWITCH MTG. BRKT. - LARGE
30	0017-00005-0203	COIN SWITCH CHUTE - SMALL (AMERICAN)
30	0017-00005-0204	COIN SWITCH CHUTE - LARGE
31	0017-00101-0555	#6-32 x 5/16 SCREW
32	0017-00005-0195	COIN SWITCH
33	0010-00599-0000	COIN SWITCH WIRE
34	0017-00007-0132	PUSH-ON RING (BLK.)
35	0017-00101-0698	#4-40 x 3/4 SCREW (2 REQ'D.)
36	0090-00128-00XF	SWITCH BRKT. - DOOR TILT
	A090-00061-0000	ANTI-STRING DEVICE ASSY. (REPLACES ITEM 30)
	A090-00064-0000	ANTI-PENNY DEVICE ASSY.

NO. 933 - PAC-MAN COCKTAIL - PHOTOGRAPH



With Extra Base Accessory
Raises cocktail model to height of 38" (96.5 cm) for upright play.

MIDWAY COCKTAIL TABLE MODELS
with Flip-Flop Screen for 2 players



"SIT-DOWN" STYLE
DIMENSIONS:
Height: 29" (74 cm)
Width: 32" (81.25 cm)
Depth: 22" (56 cm)

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0017-00003-0339	19" COLOR DUAL SYNC. HORIZ. MONITOR - ELECTROHOME
	A869-00007-00XF	MONITOR SUPPORT ASSY. - L.H.
	A869-00007-01XF	MONITOR SUPPORT ASSY. - R.H.
	0869-00114-00XF	SUPPORT ANGLE (2 REQ'D.)
	0017-00101-0023	#8 x 3/8 PHIL. TRS. HD. SCR. (10 REQ'D.)
2	0869-00902-0000	T.V. BEZEL
3	0869-00907-0000	PLEXI 15" x 18-3/4"
4	0775-00104-00XF	GLASS CLIP (8 REQ'D.)
	0017-00101-0017	#8 x 5/8 PHIL. TRS. HD. S.M.S. (16 REQ'D.)
5	0933-00900-00XF	GLASS TOP - 32" x 22" x 1/4"
6	0933-00901-0000	DECORATIVE CONTROL PANEL OVERLAY - PLAYER #1
	0933-00100-00XF	STEEL CONTROL PANEL - PLAYER #1
7	0933-00901-0100	DECORATIVE CONTROL PANEL OVERLAY - PLAYER #2
	0933-00100-01XF	STEEL CONTROL PANEL - PLAYER #2
	0017-00101-0341	#6 x 1/4 PHIL. TRS. HD. SCR (4 REQ'D. EACH)
	0017-00101-0620	#8-32 x 1/2 CARRIAGE BOLT (4 REQ'D. EACH)
	0017-00103-0061	#8-32 HEX NUT W/SEMS (4 REQ'D. EACH)
	0017-00032-0051	BUTTON SWITCH (2 REQ'D.) PLAYER #1 ONLY
	0921-00903-0000	LIGHT SHIELD (1 REQ'D. EACH)
	0017-00031-0044	LAMP SOCKET - WEDGE BASE (2 REQ'D. EACH)
	0017-00003-0219	#194 LAMP 14V. 27A. (2 REQ'D. EACH)
	0017-00101-0555	#6-32 x 5/16 SLT. HEX HD. SCR. (2 REQ'D. EACH)
8	A090-00078-00BK	SINGLE COIN DOOR ASSY.
9	0090-00002-01BK	COIN DOOR FRAME
10	0017-00102-0048	3/8-16 x 2" LEG LEVELERS (4 REQ'D.)
	0017-00103-0026	3/8-16 LEG LEVELER HEX NUTS (4 REQ'D.)
11	0933-00501-0000	WOOD PEDESTAL - OPTIONAL
		NOT SHOWN LIST
	0869-00901-00XF	HINGE (CABINET TOP)
	0017-00101-0672	#10-32 x 1-1/8 CARRIAGE BOLT (8 REQ'D.)
	0017-00104-0004	#10 WASHER (8 REQ'D.)
	0017-00103-0010	#10-32 HEX NUT (8 REQ'D.)
	0017-00003-0187	6" x 9" SPEAKER 8 OHM, 9W
	0017-00009-0393	BLACK SPEAKER GRILL
	0017-00101-0642	#8-32 x 1-1/2 CARRIAGE BOLT (4 REQ'D.
	0017-00103-0061	#8-32 HEX NUT W/SEMS (4 REQ'D.)

ORDER BY PART NUMBER ONLY

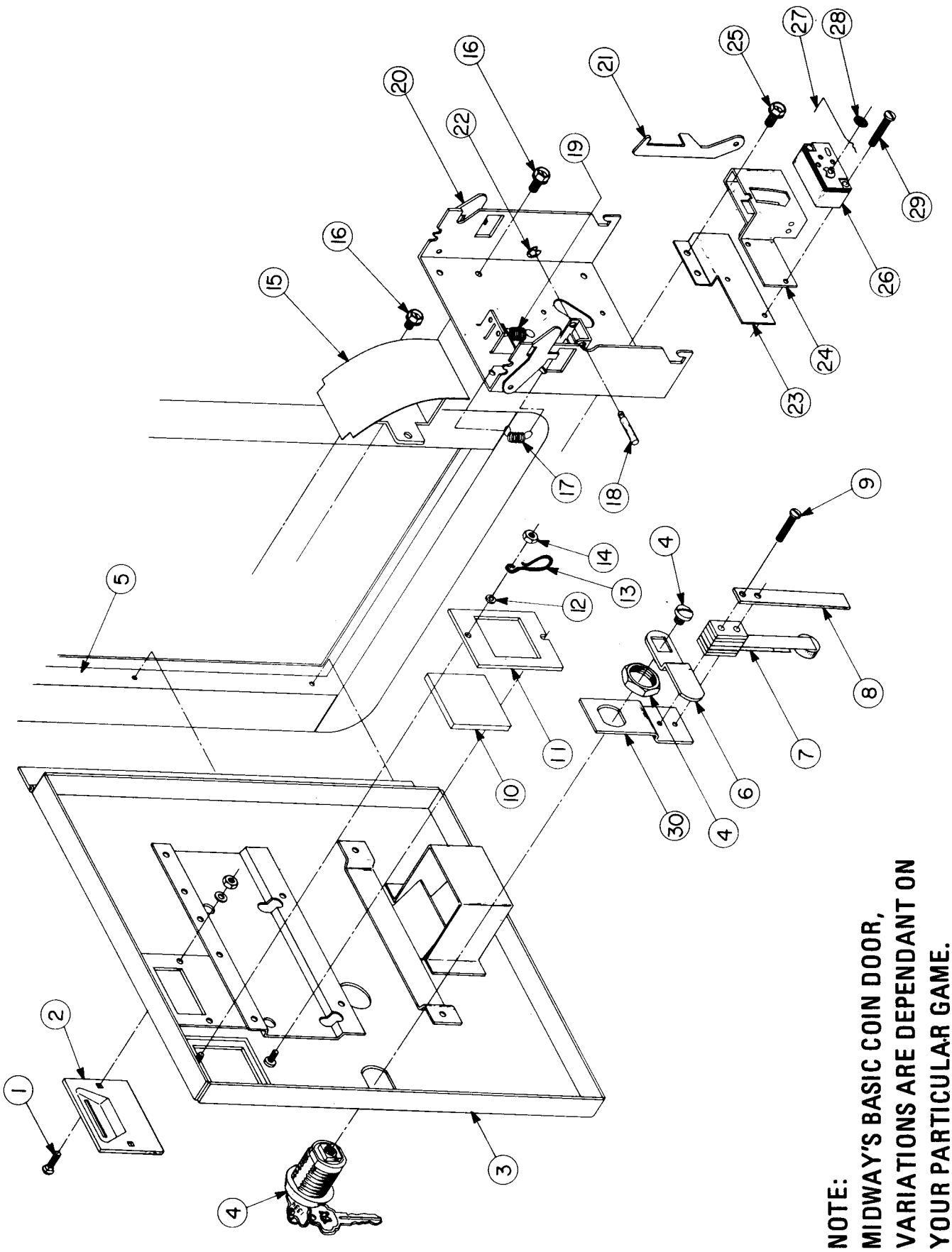
ITEM	PART Nº	DESCRIPTION
		FAN ASSY.
	0017-00003-0222	FAN
	0775-00110-00XF	FAN PLATE
	0749-00106-00XF	VENT SCREEN
	0017-00101-0347	#6-32 x 1/2 PHIL R.H.M.S. (4 REQ'D.)
	0017-00104-0009	#6 EXT. WASHER (4 REQ'D.)
	0017-00103-0005	#6-32 HEX NUT (4 REQ'D.)
	0017-00101-0026	#8 x 5/8 SLOT HEX HD. M.S. (4 REQ'D.)

NO. 933 - PAC-MAN COCKTAIL - ADDITIONAL PARTS LIST

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
	A749-00003-0000	COIN BOX ASSY.
	A627-00056-0000	COIN BOX COVER ASSY.
	A625-00024-0000	COIN BOX GUIDE BRKT. ASSY.
	0625-00117-0000	COIN BOX SIDE CHANNELS
	0017-00101-0628	#8-32 x 3/4 CARRIAGE BOLT (4 REQ'D.)
	0017-00103-0008	#8-32 HEX NUT
	A749-00005-0000	INTERLOCK SWITCH ASSY.
	0017-00101-0028	#8 x 3/4 HEX HD. S.M.S. (6 REQ'D.)
	0017-00032-0083	ON-OFF SWITCH
	0567-00106-0100	SWITCH MTG. PLATE
	0017-00009-0033	BASSICK CLAMP (2 REQ'D.)
	0017-00101-0026	#8 x 5/8 HEX HD. M.S. (4 REQ'D.)
	0610-00132-0000	STRIKE (2 REQ'D.)
	0017-00101-0028	#8 x 3/4 HEX HD. S.M.S. (4 REQ'D.)
	A866-00036-0000	TEST SWITCH BRKT. ASSY.
	0869-00908-0000	FISHPAPER SHIELD
	A082-91348-C000	CREDIT MULTIPLIER P.C. ASSY.
	A082-91375-B000	GAME LOGIC BRD. ASSY.
	0624-00902-0100	P.C. SUPPORT BRKT. - 12" (2 REQ'D.)
	0624-00902-0300	P.C. SUPPORT BRKT. - 2-1/2" (2 REQ'D.)
	0624-00902-0500	P.C. SUPPORT BRKT. - 6"
	0017-00101-0028	#8 x 3/4 HEX HD. M.S. (12 REQ'D.)
	0017-00104-0031	#8 WASHER (12 REQ'D.)
	A933-00008-0000	HIGH VOLTAGE CABLE ASSY.
	A933-00009-0000	LOW VOLTAGE CABLE ASSY.
	A933-00012-0000	COIN DOOR CABLE ASSY.
	A933-00011-0000	CONTROL SHELF CABLE ASSY. - PLAYER #2
	A933-00010-0000	CONTROL SHELF CABLE ASSY. - PLAYER #1
	A933-00013-0000	TRANSFORMER BOARD ASSY.
	0017-00009-0393	BLACK VENT GRILL (2 REQ'D.)
	0017-00101-0118	#8-32 x 1-1/8 CARRIAGE BOLT (8 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT W/SEMS (8 REQ'D.)

NO. 933 - PAC-MAN COCKTAIL - FRONT DOOR ASSY.



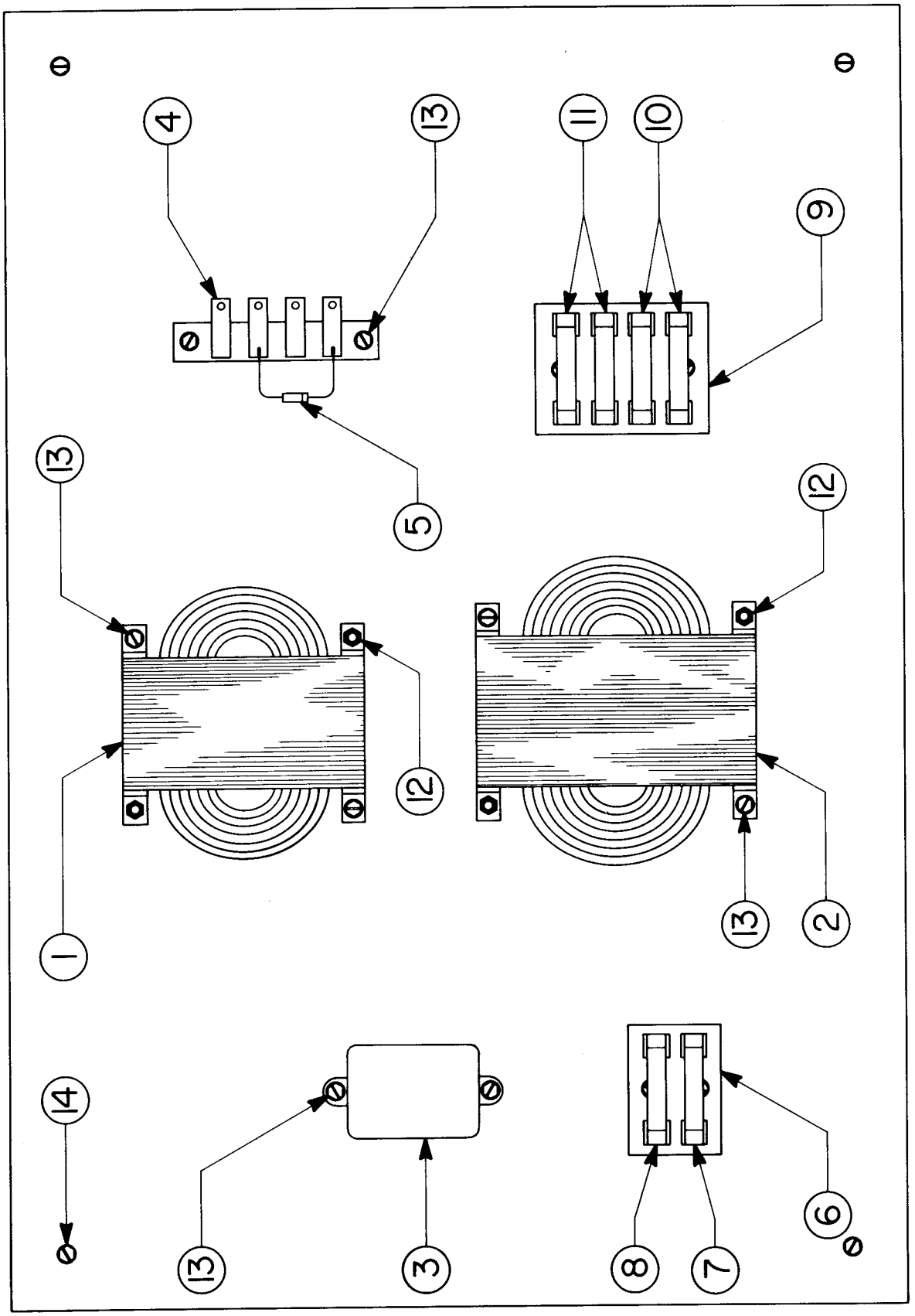
NOTE:
MIDWAY'S BASIC COIN DOOR,
VARIATIONS ARE DEPENDANT ON
YOUR PARTICULAR GAME.

NO. 933 - PAC-MAN COCKTAIL - FRONT DOOR ASSY.

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0017-00101-0552	#6-32 x 1/4 CARRIAGE BOLT (2 REQ'D.)
2	0090-00117-03XF	COIN ENTRY PLATE (25¢)
3	A090-00058-0000	DOOR ASSY. SINGLE ENTRY
4	0017-00005-0050	DOOR LOCK & KEY WITH SCREW & NUT
5	0090-00002-01BK	SINGLE DOOR FRAME
6	0017-00005-0041	421 N.S. CAM
7	0090-00901-0000	DOOR SWITCH
8	0090-00126-01XF	SWITCH BACKUP PLATE
9	0017-00101-0528	#5-40 x 3/4 LONG M.S. (2 REQ'D.)
10	0090-00903-9500	25¢ WINDOW
11	0090-00143-0000	COIN PLEX RETAINER
12	0017-00104-0002	SPLIT LOCK WASHER (2 REQ'D.)
13	0017-00007-0019	KEY HOOK
14	0017-00103-0005	#6-32 HEX NUT (2 REQ'D.)
15	0090-00104-0000	TOP & BOTTOM COIN CHUTE W/BRKT. ASSY.
16	0017-00101-0598	#8-32 x 5/16 SCREW (4 REQ'D.)
17	0010-00181-0100	SPRING
18	0090-00129-00XF	PIVOT POST
19	0010-00134-0000	SPRING
20	0090-00008-0000	ACCEPTOR FRAME ASSY.
21	0093-00155-00XF	REJECTOR LEVER
22	0017-00100-0012	E-RING
23	0090-00162-00XF	COIN SWITCH MTG. BRKT. - SMALL (AMERICAN)
23	0090-00163-00XF	COIN SWITCH MTG. BRKT. - LARGE
24	0017-00005-0203	COIN SWITCH CHUTE - SMALL (AMERICAN)
24	0017-00005-0204	COIN SWITCH CHUTE - LARGE
25	0017-00101-0555	#6-32 x 5/16 SCREW (2 REQ'D.)
26	0017-00005-0195	COIN SWITCH
27	0010-00599-0000	COIN SWITCH WIRE
28	0017-00007-0132	PUSH-ON RING (BLK.)
29	0017-00101-0698	#4-40 x 3/4 SCREW (2 REQ'D.)
30	0090-00128-00XF	SWITCH BRKT. - DOOR TILT
	A090-00061-0000	ANTI-STRING DEVICE ASSY. (REPLACES ITEM 24)
	A090-00064-0000	ANTI-PENNY DEVICE ASSY.

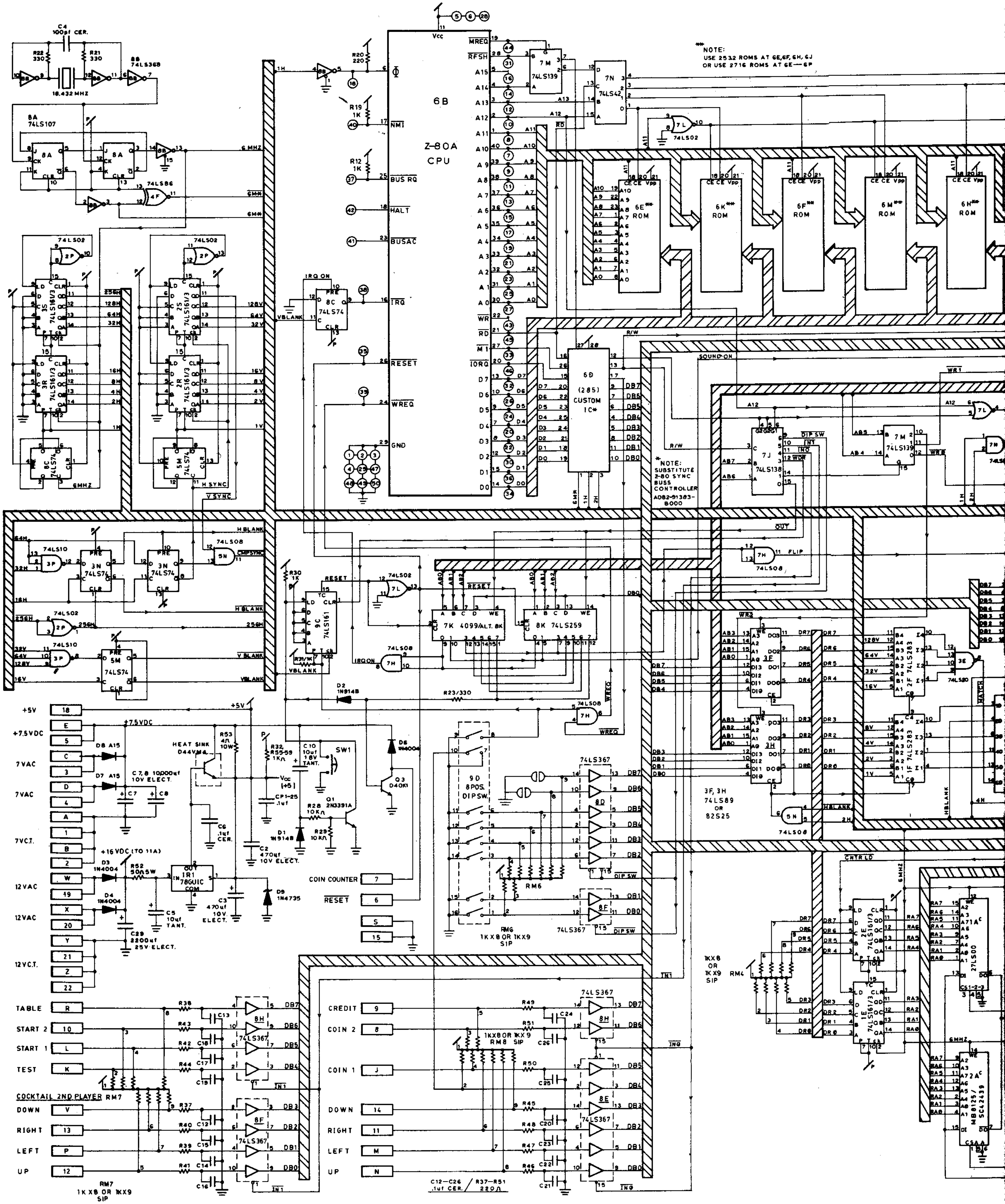
NO. 932 & 934 - PAC-MAN UP-RIGHT & MINI TRANSFORMER BOARD ASSEMBLY



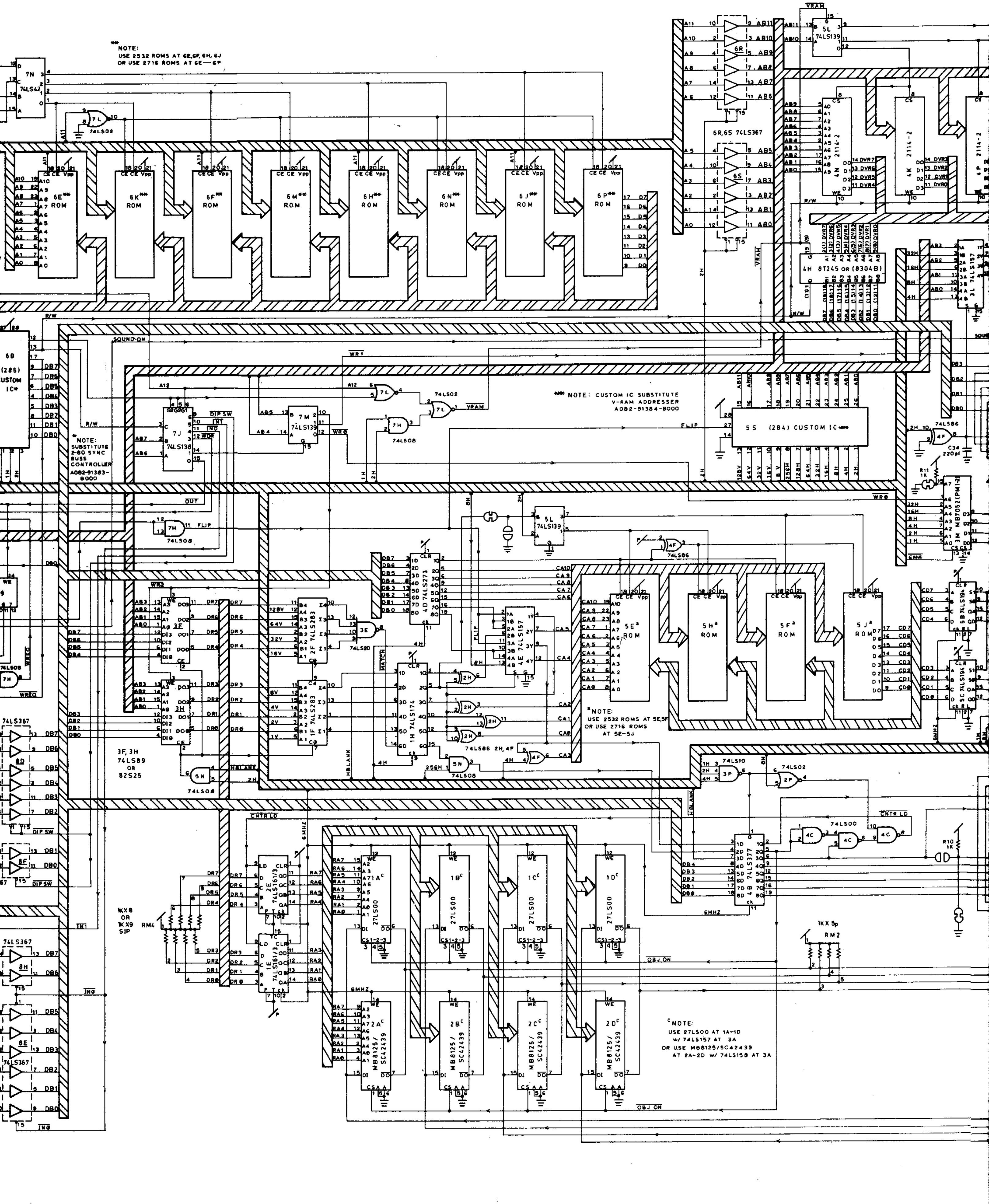
NO. 932 & 934 - PAC-MAN UP-RIGHT & MINI TRANSFORMER BOARD ASSEMBLY

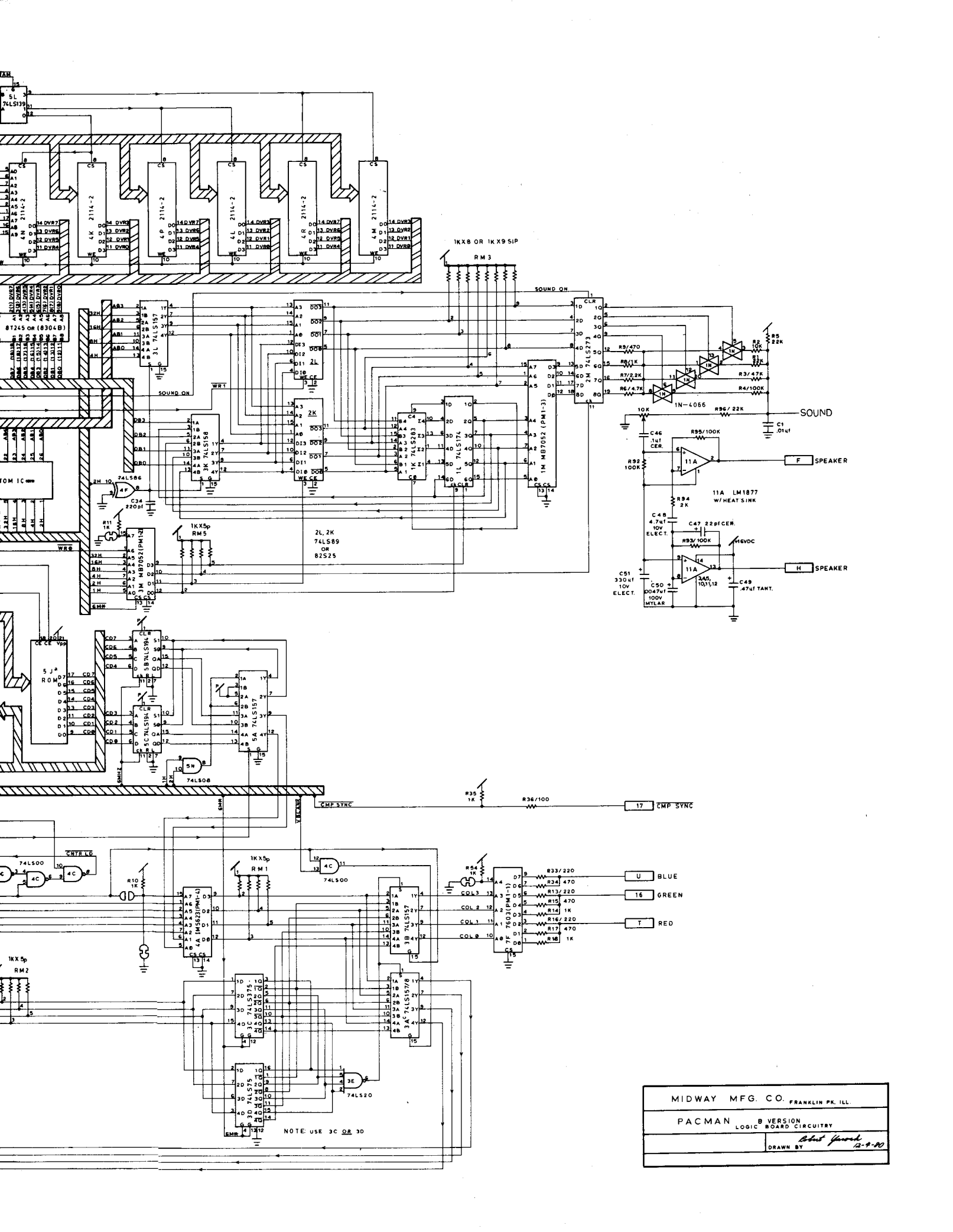
ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	MT00-00080-0000	TRANSFORMER - 110 VOLT
2	MT00-00081-0000	TRANSFORMER - 240 VOLT
3	0017-00003-0114	NOISE FILTER
4	A932-00024-0000	TERMINAL STRIP ASSY.
5	0064-030XX-XXPX	IN4004 400 V. DIODE
6	0720-00001-0200	2 POSITION FUSE CLIP
7	0017-00003-0004	FUSE 2A. SLO-BLO
8	0017-00003-0261	FUSE 1.5A. SLO-BLO
9	0720-00001-0400	4 POSITION FUSE CLIP
10	0017-00003-0169	FUSE 5A.(2 REQ'D.)
11	0017-00003-0001	FUSE 1A. (2 REQ'D.)
12	0017-00101-0637	#8-32 x 1-1/4 CARRIAGE BOLT (4 REQ'D.)
	0017-00103-0008	#8-32 HEX NUT (4 REQ'D.)
13	0017-00101-0014	#6 x 1/2 SLT. HEX HD. WD. SCR. (12 REQ'D.)
14	0017-00101-0018	#6 x 3/4 SLT. HEX HD. WD. SCR. (4 REQ'D.)
	A866-00049-0000	LINE CORD ASSY. - NOT SHOWN

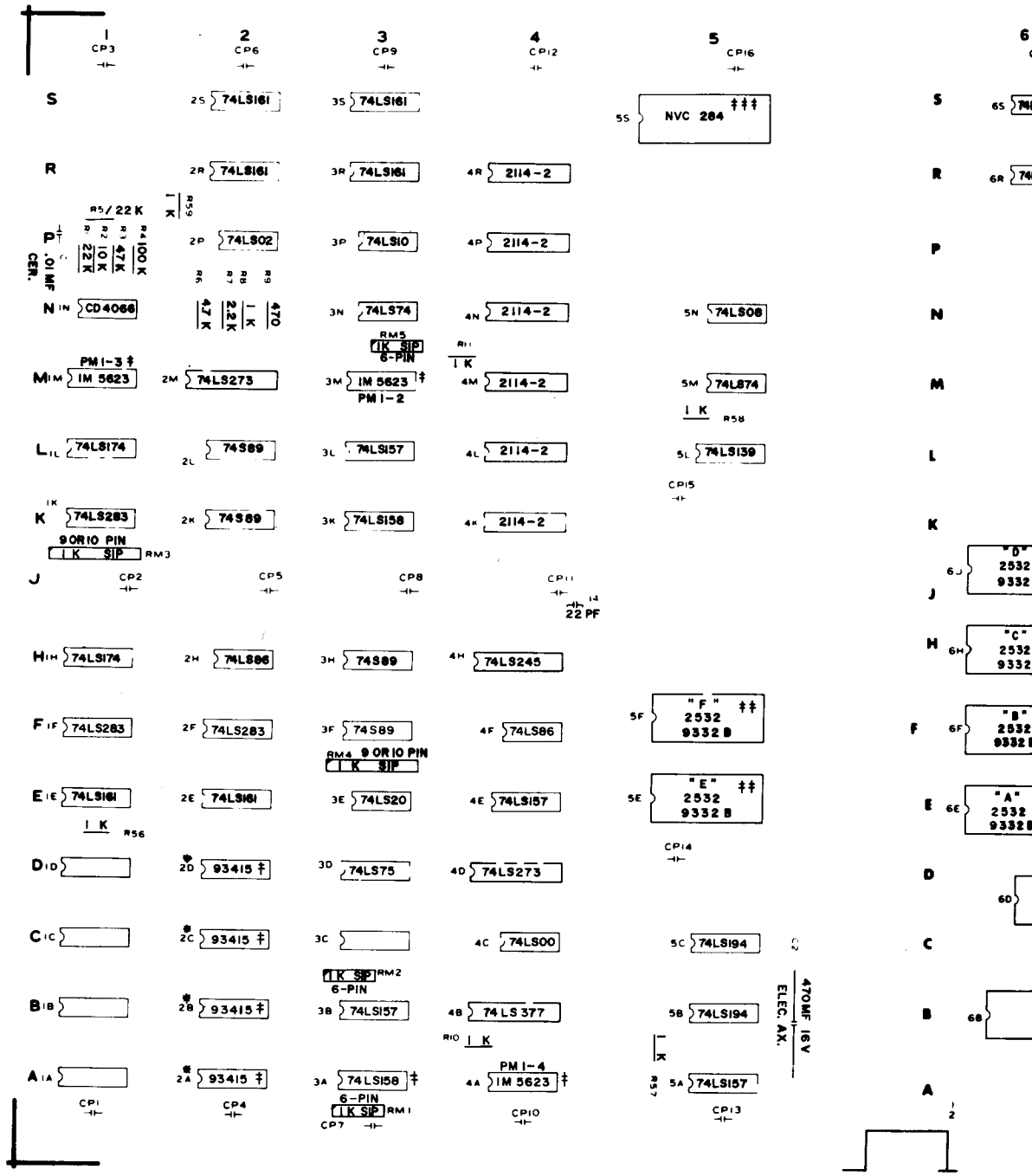


NOTE:
USE 2532 ROMS AT 6E,6F,6H,6J
OR USE 2716 ROMS AT 6E—6P
Z-80A
CPU
6B
18.432 MHZ
6D
(285)
CUSTOM
IC*
*NOTE:
SUBSTITUTE
Z-80 SYNC
BUSS
CONTROLLER
A082-91383-
B000
6E** ROM
6K** ROM
6F** ROM
6M** ROM
6H** ROM
7K 4099/ALT. 8K
8K 74LS259
3F, 3H
74LS89
OR
82S25
9D
8POS.
DIPSW.
SW1
HEAT SINK
D44VM4
1R1
78GU1C
COIN COUNTER
RESET
+5V
+7.5VDC
7VAC
7VC.T.
12VAC
12VC.T.
+16 VDC (TO 11A)
TABLE
START 2
START 1
TEST
COCKTAIL 2ND PLAYER RM7
DOWN
RIGHT
LEFT
UP
CREDIT
COIN 2
COIN 1
RM7
1K X8 OR 1KX9
SIP
RM6
1KX8 OR 1KX9
SIP
1KX8 OR 1KX9
RM8 SIP
1KX8
OR
1KX9
SIP
RM4
C12—C26 .1uf CER.
R37—R51 220Ω


**NOTE:
USE 2532 ROMS AT 6E, 6F, 6H, 6J
OR USE 2716 ROMS AT 6E — 6P
*** NOTE: CUSTOM IC SUBSTITUTE
V-RAM ADDRESSER
A082-91384-8000
*NOTE:
SUBSTITUTE
Z-80 SYNC
BUSS
CONTROLLER
A082-91383-8000
ªNOTE:
USE 2532 ROMS AT 5E, 5F
OR USE 2716 ROMS
AT 5E-5J
3F, 3H
74LS89
OR
82S25
1KX8
OR
1KX9
SIP
ᶜNOTE:
USE 27LS00 AT 1A-1D
W/ 74LS157 AT 3A
OR USE MB8125/SC42439
AT 2A-2D W/ 74LS158 AT 3A



MIDWAY MFG. CO. FRANKLIN PK. ILL.	
PACMAN B VERSION LOGIC BOARD CIRCUITRY	
	DRAWN BY Robert Yarosh 12-9-80



* RAM HEAT SINK ASSEMLY

NOTE 1: PLACE EITHER 74LS259 IN LOC. 8K
OR CD4099 IN LOC. 7K

UNMARKED CAPS ARE .1MF CER. AX.

RESISTOR UNIT = Ohm

‡ — 16 PIN SOCKET (9 PER)

‡‡ — 24 PIN SOCKET (6 PER)

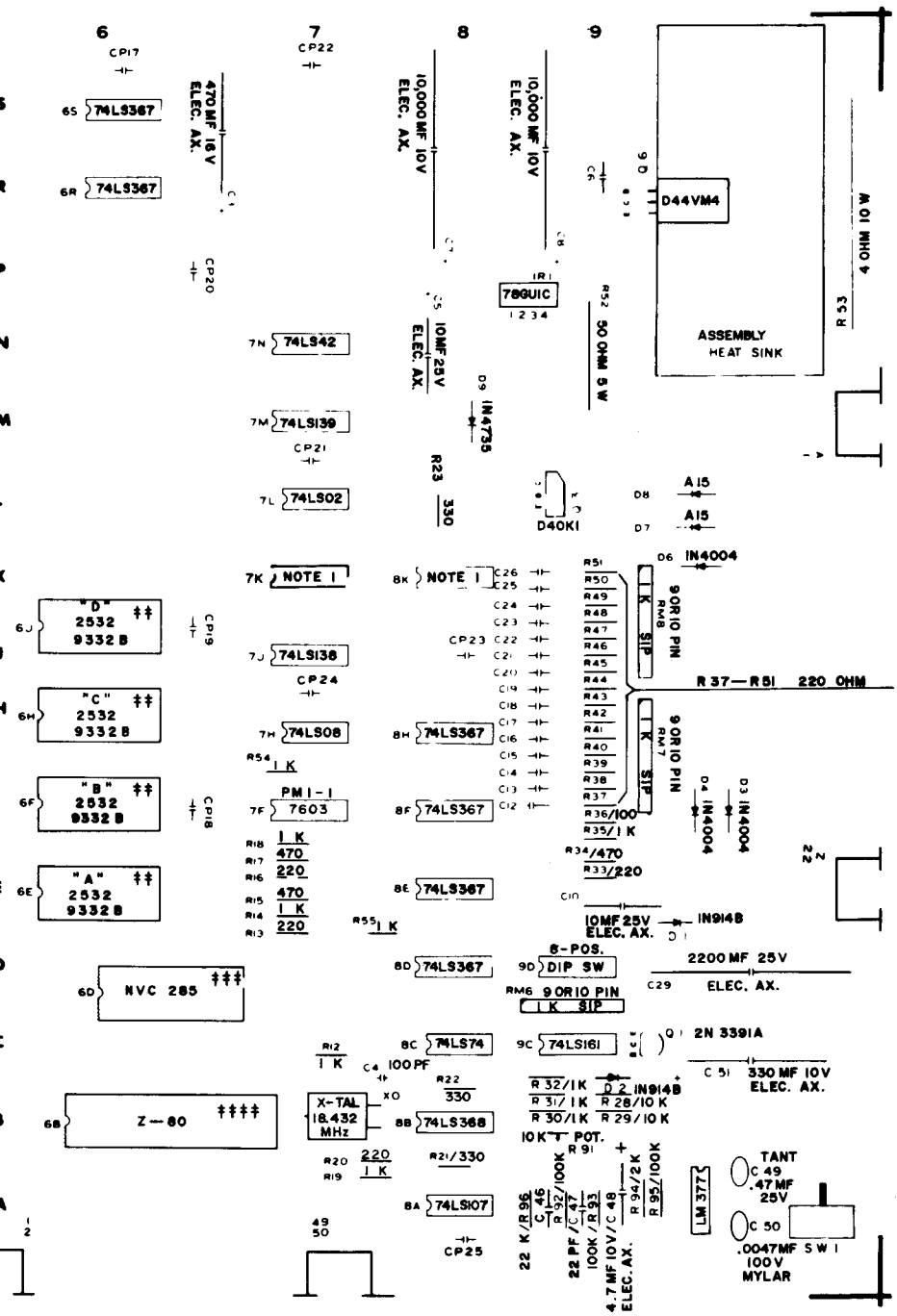
‡‡‡ — 28 PIN SOCKET (2 PER)

‡‡‡‡ — 40 PIN SOCKET (1 PER)

M051-0

DIM TOLE
UNLESS SP

SHEET
11



REVISIONS

M051-00932-A026

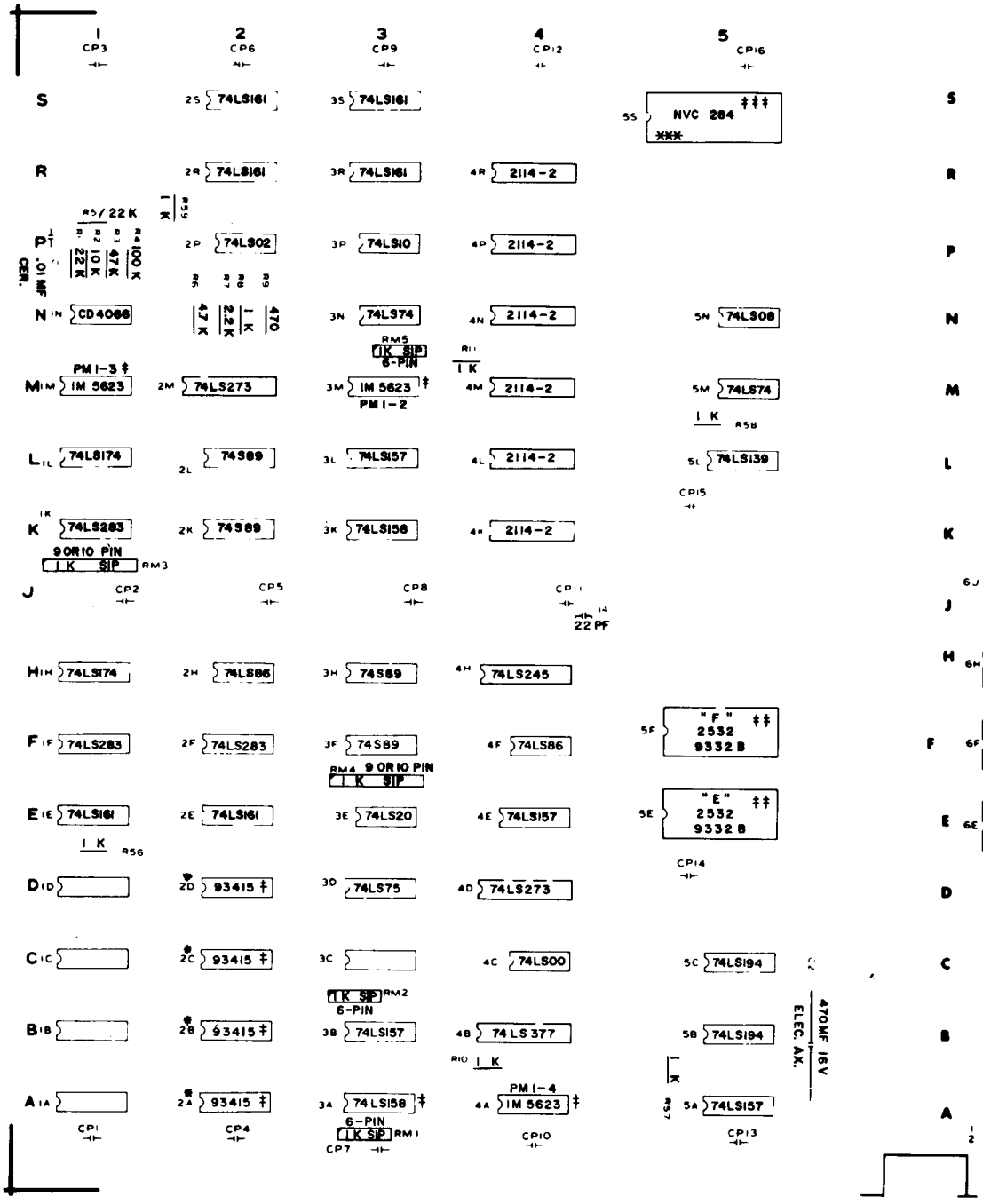
USED ON PAC-MAN "A"

NO REQ'D 1 PER

MIDWAY MFG. CO.

FRANKLIN PK ILL.

DO NOT SCALE DWG	HEAT TREAT	SCALE	
DIM TOLERANCES UNLESS SPECIFIED	DWN C.L.	MAT'L	ASSEMBLY DRAWING PAC—MAN
	CKD	FINISH	
	DATE 10/9/80		PART NO. A082-91375-A000



* RAM HEAT SINK ASSEMLY

NOTE 1: PLACE EITHER 74LS259 IN LOC. 8K
OR CD4099 IN LOC. 7K

UNMARKED CAPS ARE .1MF CER. AX.

RESISTOR UNIT = Ohm

‡ — 16 PIN SOCKET (9 PER)

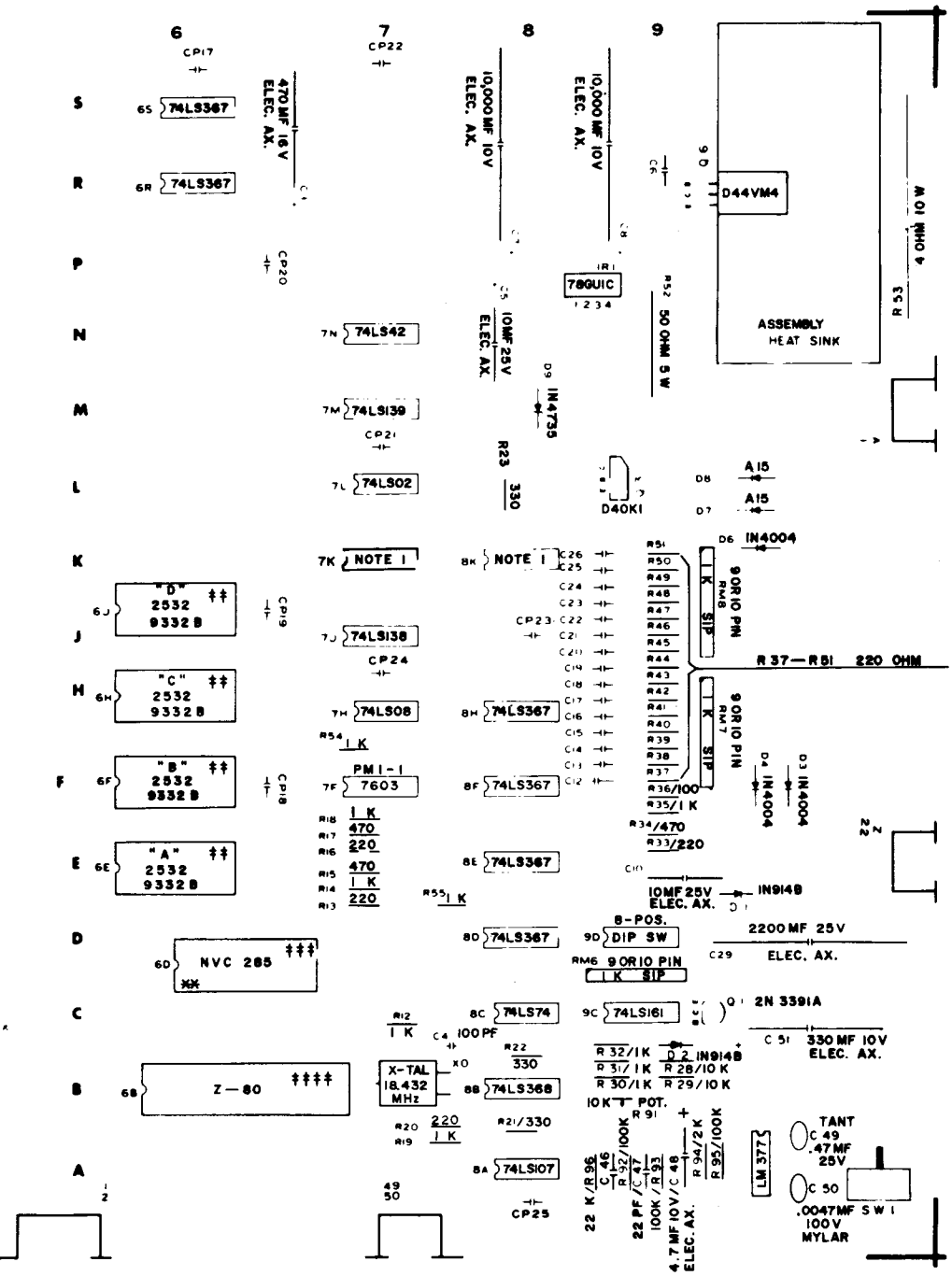
‡‡ — 24 PIN SOCKET (6 PER)

‡‡‡ — 28 PIN SOCKET (2 PER)

‡‡‡‡ — 40 PIN SOCKET (1 PER)

XX NOTE : THIS (A)

XXX NOTE : THIS (A)



NOTE : THIS LOCATION CAN UTLIZE EITHER
(A) CUSTOM CHIP NVC285 OR (B) PLUG IN P C A082-91383-B000 Z-80 SYNC BUSS CONTROLLER (285)

X NOTE : THIS LOCATION CAN UTLIZE EITHER
(A) CUSTOM CHIP NVC 284 OR (B) PLUG IN P C A082-91384-B000 V-RAM ADDRESSER (284)

REVISIONS		

M051-00932-B026

USED ON PAC-MAN "B"

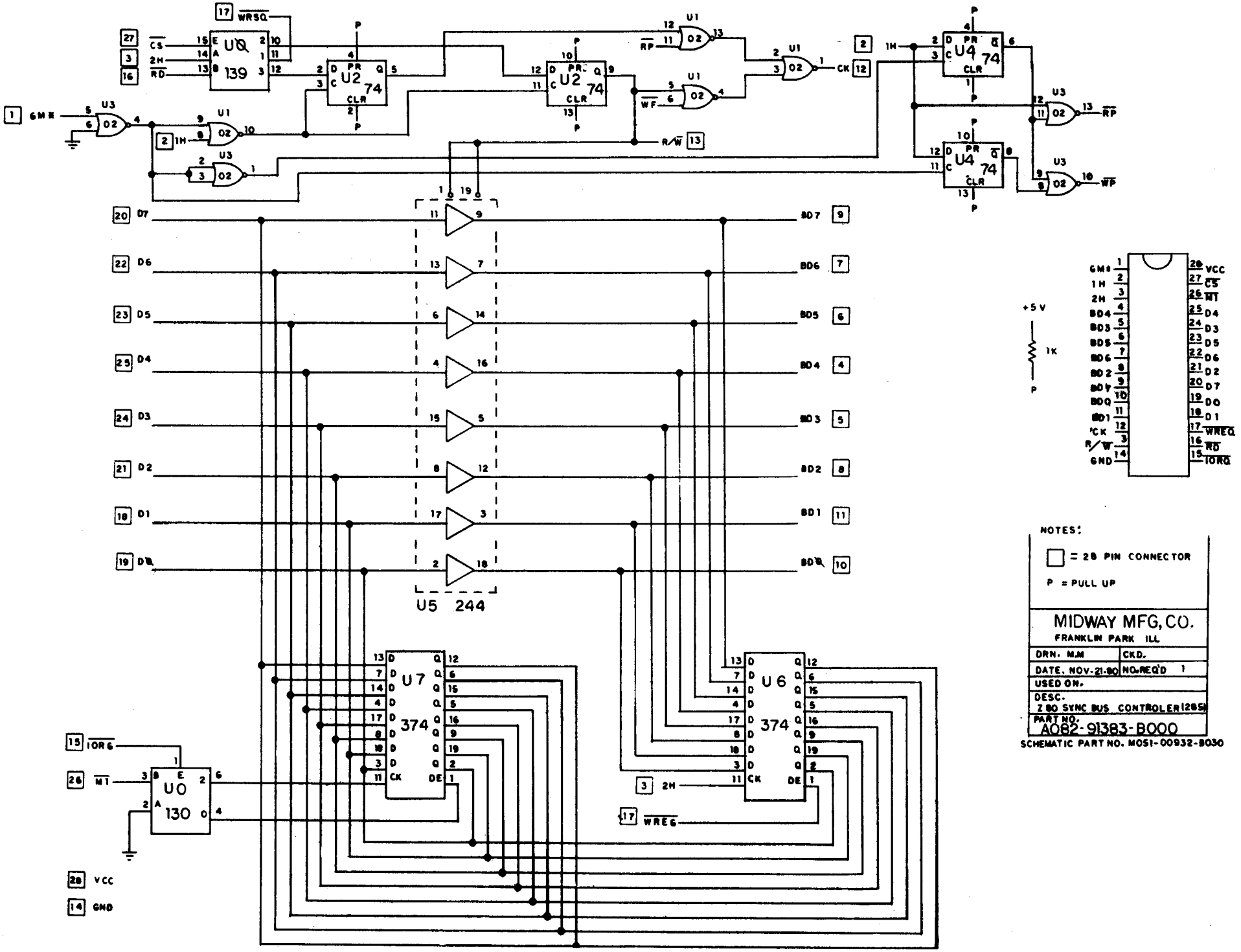
MIDWAY MFG. CO.
FRANKLIN PK ILL

DO NOT SCALE DWG	HEAT TREAT	SCALE	NO REQ'D 1 PER
DIM TOLERANCES UNLESS SPECIFIED	DWN C.L.	MAT'L	ASSEMBLY DRAWING PAC—MAN
	CHK	FINISH	PART NO. A082-91375-B000
	DATE 10/9/80		

GAME BOARD P.C.
PAC - MAN
P.C. A082 - 91375 - A000
B000

CHIP NUMBER	FUNCTION
74LS00	Quad 2 input Nand
74LS02	Quad 2 input Nor
74LS08	Quad 2 input And
74LS10	Triple 3 input Nand
74LS20	Dual 4 input Nand
74LS42	BCD to decimal decoder
74LS74	Dual "D" Flip-Flop
74LS75	Quad latch
74LS86	Quad 2 input exclusive or
74S89	64 Bit Ram 16 x 4
74LS107	Dual "JK" Flip-Flop
74LS138	3 to 8 line decoder
74LS139	Dual 2 to 4 line decoder
74LS157	Quad 2 to 1 line multiplexer
74LS158	Quad 2 to 1 line multiplexer inverting
74LS161	4 Bit binary counter
74LS174	Hex "D" Flip-Flop
74LS194	8 bit shift register
74LS245	Octal bus transceiver
74LS259	8 bit addressable latch
74LS273	Octal "D" Flip-Flop
74LS283	4 Bit full adder
74LS367	Hex bus driver
74LS368	Hex bus driver inverting
74LS377	Octal "D" Flip-Flop
Z80	CPU
LM377 - LM877	Dual audio amplifier

CHIP NUMBER	FUNCTION
NVC284	Custom V Ram Addresser
NVC285	Custom Z80 Sync buss controller
CD4066	Quad bilateral switch
2114	Ram 1K x 4
1M5623	Prom 256 x 4
7603	Prom 32 x 8
MCM 2532	Prom 4K x 8
SL 4239	Ram 1K x 1
93415	Ram 1K x 1
27LS00	Ram 1K x 1
MB 8125	Ram 1K x 1
CD 4099	8 bit addressable latch
N8T245	Octal bus transceiver
54LS174	Hex "D" Flip-Flop
MB7052	Prom 256 x 4
MB7051	Prom 32 x 8
8304	Octal bus transceiver
Additional Devices	
78GVIC	Voltage regulator
D44VM4	Transistor NPN
D40K1	Transistor NPN
2N3391	Transistor NPN
1N4004	Diode
A15	Diode
1N914B	Diode
1N4737	6.2V Zener diode
18.4320	Crystal



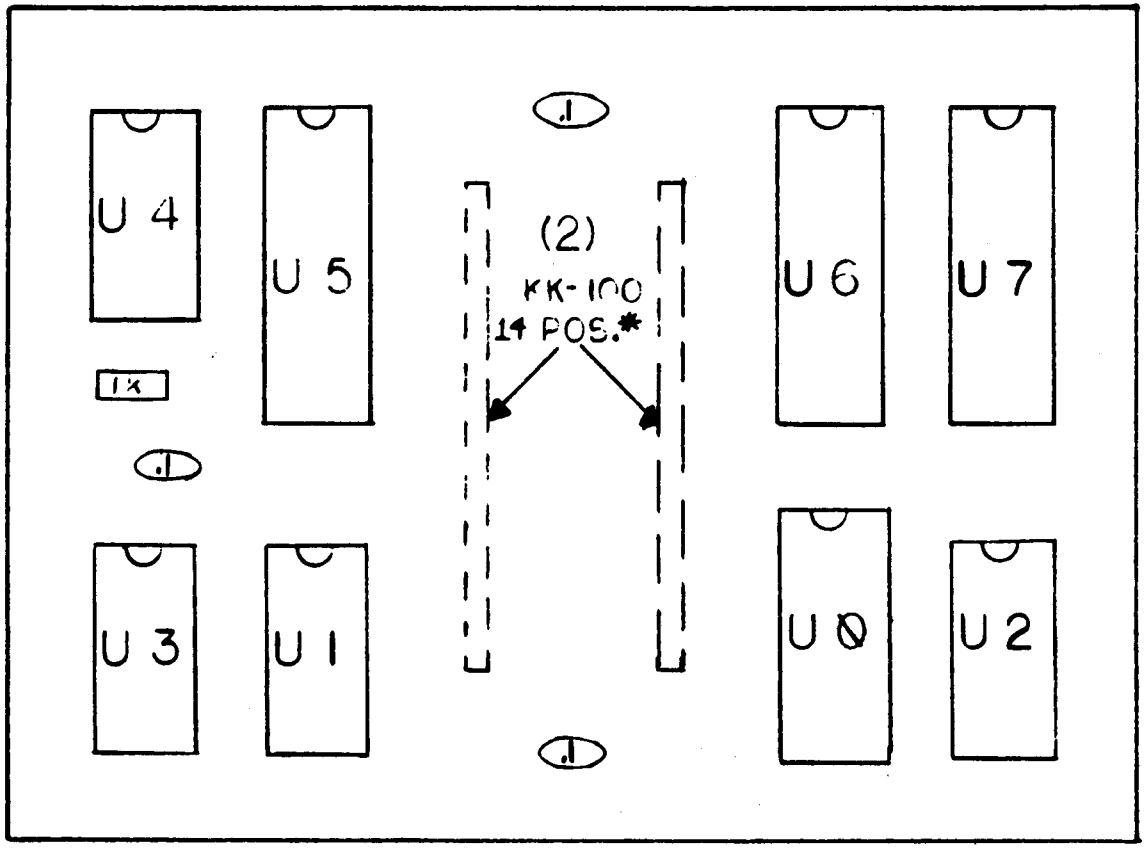
NOTES:

□ = 28 PIN CONNECTOR

P = PULL UP

MIDWAY MFG, CO. FRANKLIN PARK ILL	
DRN. M.M	CK'D.
DATE. NOV-21-80	NO. REQ'D 1
USED ON.	
DESC. Z 80 SYNC BUS CONTROLER (285)	
PART NO. A082-91383-B000	

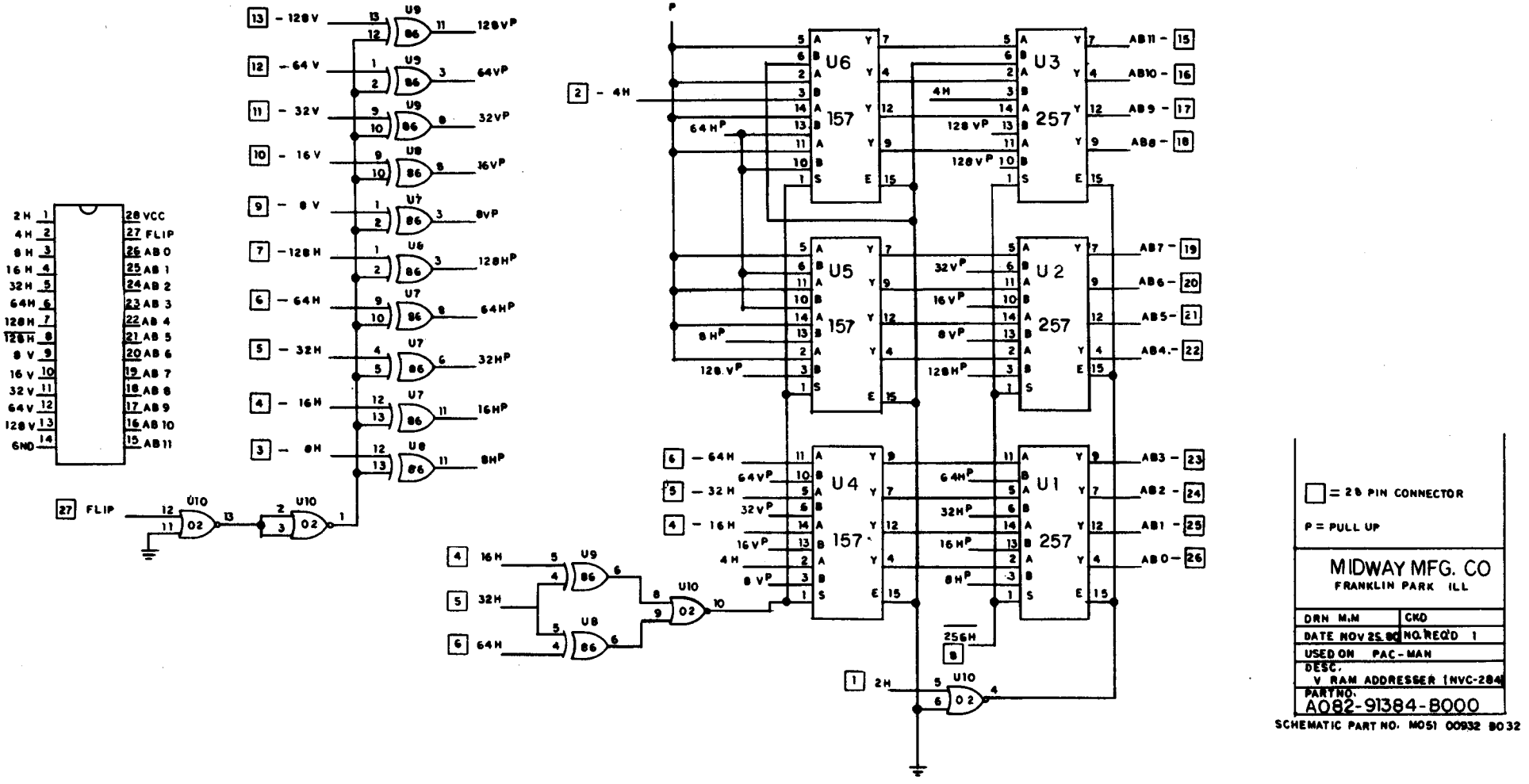
SCHEMATIC PART NO. MOS1-00932-B030



U0 - 74LS139
U1 - 74LS02
U2 - 74LS74
U3 - 74LS02
U4 - 74LS74
U5 - 74LS244
U6 - 74LS374
U7 - 74LS374
(3) - .1 MF 50v AX. CER.
(1) - 1K 1/4 w RESIS.
* MOUNTED ON SOLDER SIDE

M051-00932-8031

REVISIONS	
USED ON PAC-MAN	MIDWAY MFG. CO. FRANKLIN PK. ILL.
DO NOT SCALE DWG.	HEAT TREAT
SCALE	NO. REQ'D 1-PER
DIM. TOLERANCES UNLESS SPECIFIED CONCENTRICITY T.I.R. .003 FRACTIONAL ± 1/64 DECIMAL ± .005 HOLE DIA. +.002 -.000	DRN. M.M CKD. YS DATE 10-23-80
MAT'L.	FINISH
Z-80 SYNC BUSS CONTROLER(285) COMPONENT LAYOUT	PART NO. A082-91383-8000



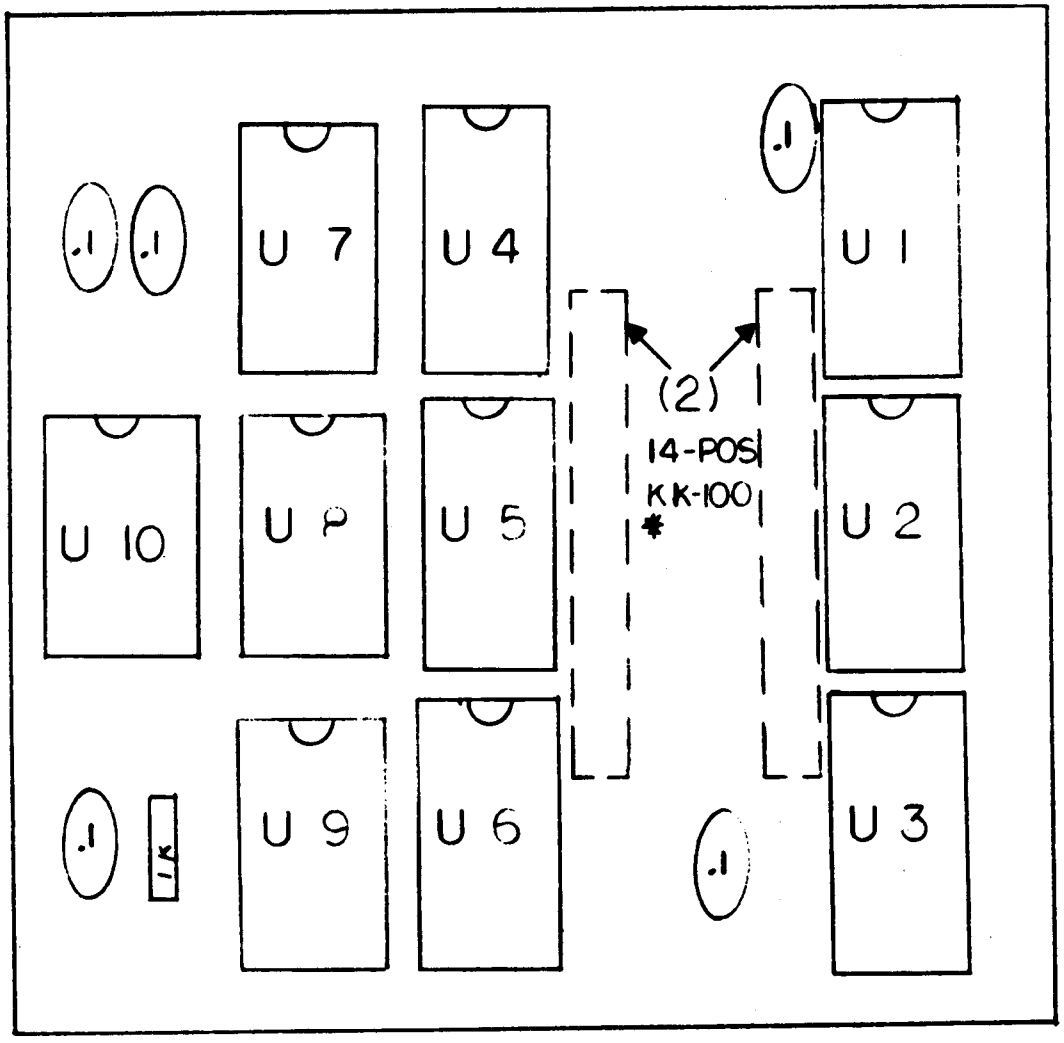
□ = 28 PIN CONNECTOR

P = PULL UP

MIDWAY MFG. CO
FRANKLIN PARK ILL

DRN M.M	CKD
DATE NOV 25 80	NO. REQ'D 1
USED ON PAC-MAN	
DESC. V RAM ADDRESSER (NVC-284)	
PART NO. A082-91384-B000	

SCHEMATIC PART NO. MOS1 00932 B032

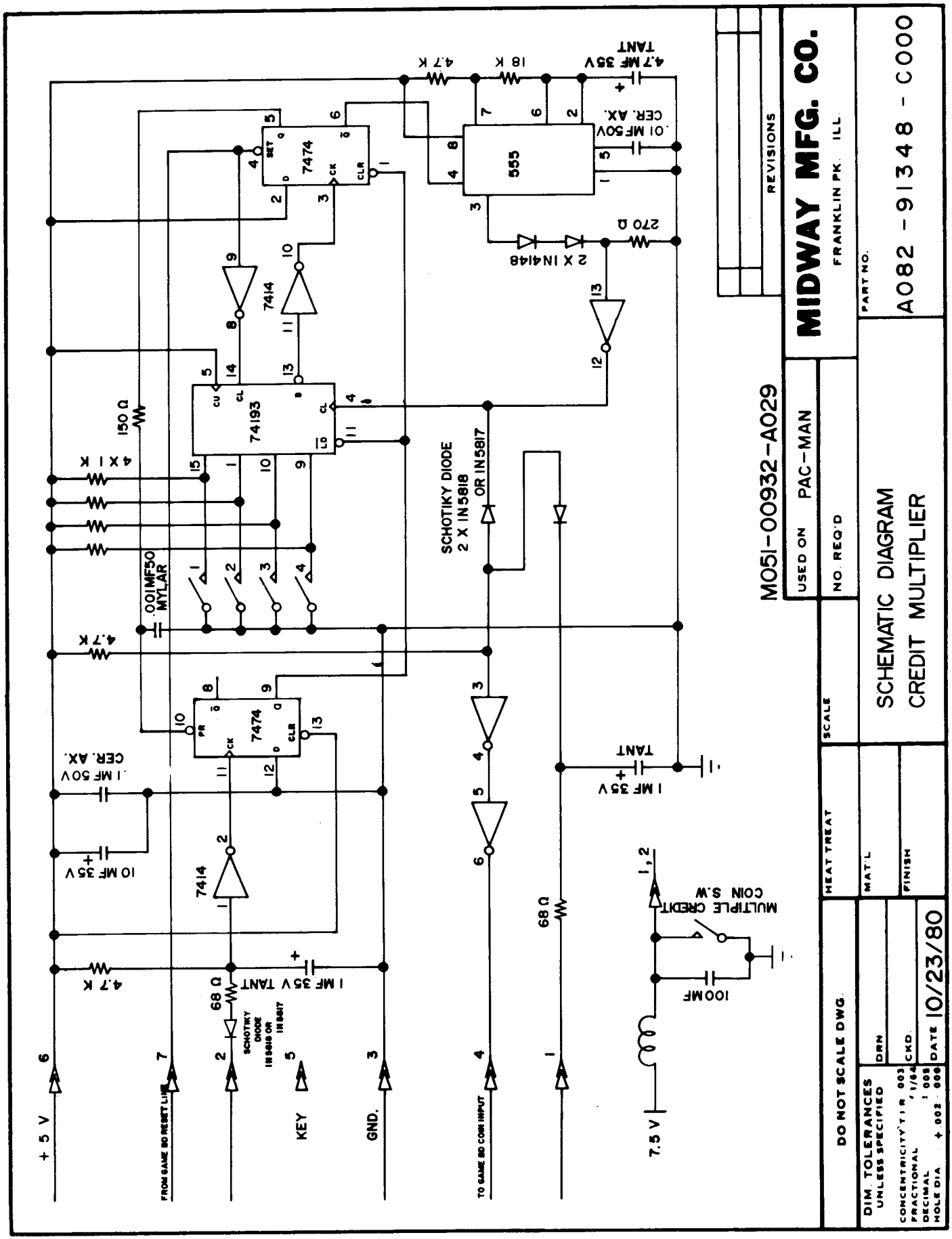


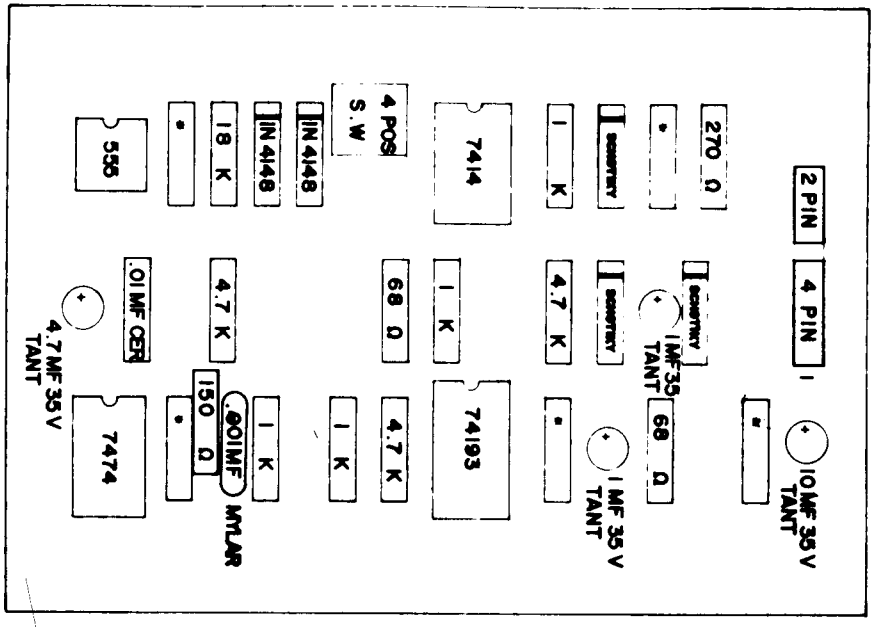
U1,U2,U3;-74LS257
U4,U5,U6,-74LS157
U7,U8,U9,-74LS86
U10 -74LS02
.1 MF 50V – (5)
AX CER
1K ¼w – (1)
(2)- 14-POS. KK-100
*MOUNTED ON
SOLDER SIDE

M051-00932-8034

REVISIONS

DO NOT SCALE DWG.	HEAT TREAT	SCALE	USED ON PAC-MAN NO. REQ'D 1-PER.	MIDWAY MFG. CO. FRANKLIN PK. ILL.
DIM. TOLERANCES UNLESS SPECIFIED CONCENTRICITY T.I.R. .003 FRACTIONAL ± 1/64 DECIMAL ± .005 HOLE DIA +.002–.000	DRN. MM CKD. DATE 10-27-80	MAT'L. FINISH	V-RAM ADDRESSER (284) COMPONENENT-LAY-OUT	PART NO. A082_9138 4_B000


MIDWAY MFG. CO.
FRANKLIN PK. ILL
SCHEMATIC DIAGRAM
CREDIT MULTIPLIER
A082-91348-C000
M051-00932-A029
PAC-MAN
REVISIONS
DO NOT SCALE DWG.
DIM. TOLERANCES UNLESS SPECIFIED
10/23/80
+5 V
KEY
GND.
7.5 V
555
7474
74193
7414
SCHOTIKY DIODE 2 X IN5818 OR IN5817
MULTIPLE CREDIT COIN S.W
100 MF
1 MF 35 V TANT
10 MF 35 V
.1 MF 50 V CER. AX.
.01 MF 50 V CER. AX.
.001 MF 50 MYLAR
4.7 MF 35 V TANT
2 X IN4148
270 Ω
150 Ω
68 Ω
18 K
4.7 K
4 X 1 K

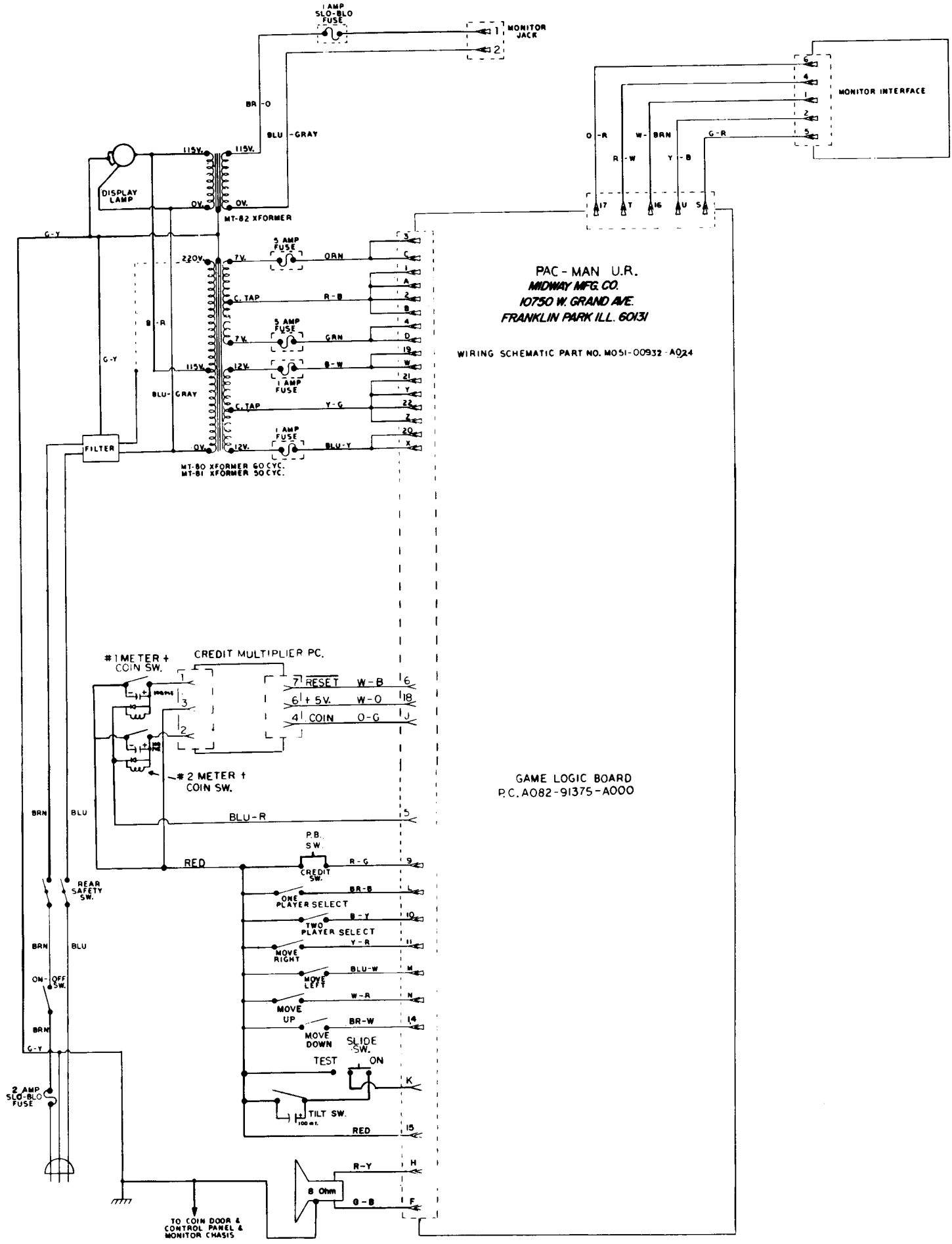


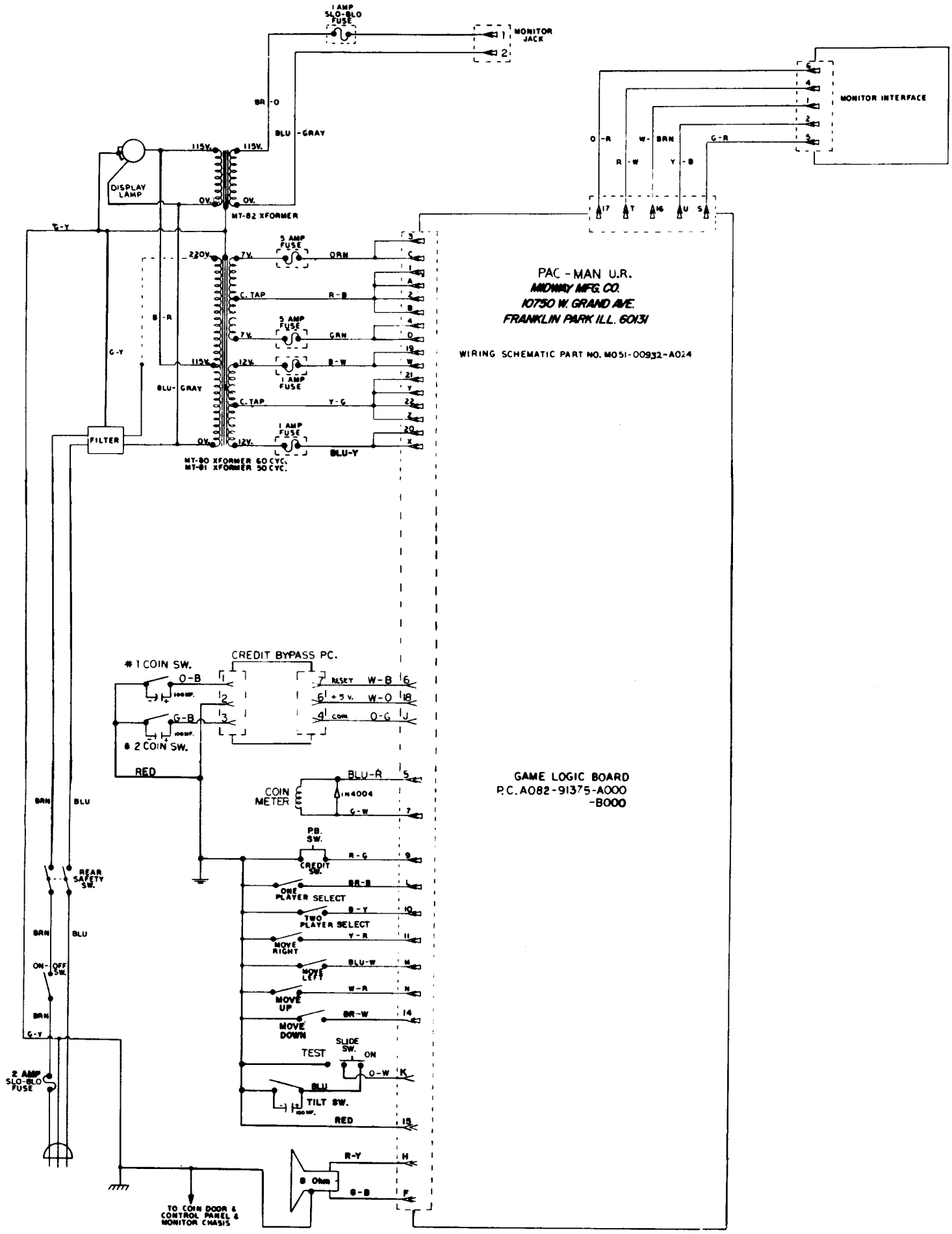
* 1 MF 50 V. CER. AX.

SCHOTIKY DIODE – IN5818 OR IN5817

M051-00932-A027

REVISIONS				
DO NOT SCALE DWG.	HEAT TREAT	SCALE	USED ON PAC-MAN	MIDWAY MFG. CO. FRANKLIN PK ILL.
DIM. TOLERANCES UNLESS SPECIFIED CONCENTRICITY T I R .003 FRACTIONAL ± 1/64 DECIMAL .005 HOLE DIA .002 .000	DRN CL	MAT'L	NO. REQ'D	ASSEMBLY DRAWING CREDIT MULTIPLIER P.C
	CKD	FINISH		PART NO. A082-91348-C000
	DATE 10/22/80			


1 AMP SLO-BLO FUSE
MONITOR JACK
MONITOR INTERFACE
BR-O
BLU-GRAY
115V.
OV.
DISPLAY LAMP
MT-82 XFORMER
G-Y
220V.
7V.
5 AMP FUSE
GRN
C. TAP
R-B
B-R
12V.
1 AMP FUSE
B-W
Y-G
BLU-Y
FILTER
MT-80 XFORMER 60 CYC.
MT-81 XFORMER 50 CYC.
O-R
W-BRN
G-R
R-W
Y-B
PAC-MAN U.R.
MIDWAY MFG. CO.
10750 W. GRAND AVE.
FRANKLIN PARK ILL. 60131
WIRING SCHEMATIC PART NO. M051-00932-A024
#1 METER + COIN SW.
CREDIT MULTIPLIER PC.
7 RESET W-B
6 +5V. W-O
4 COIN O-G
#2 METER + COIN SW.
GAME LOGIC BOARD
P.C. A082-91375-A000
BRN
BLU
BLU-R
RED
P.B. SW.
CREDIT SW.
R-G
REAR SAFETY SW.
ONE PLAYER SELECT
BR-B
TWO PLAYER SELECT
B-Y
MOVE RIGHT
Y-R
MOVE LEFT
BLU-W
MOVE UP
W-R
MOVE DOWN
BR-W
SLIDE SW.
TEST
ON
ON-OFF SW.
2 AMP SLO-BLO FUSE
TILT SW.
100 ct.
8 Ohm
R-Y
G-B
TO COIN DOOR & CONTROL PANEL & MONITOR CHASIS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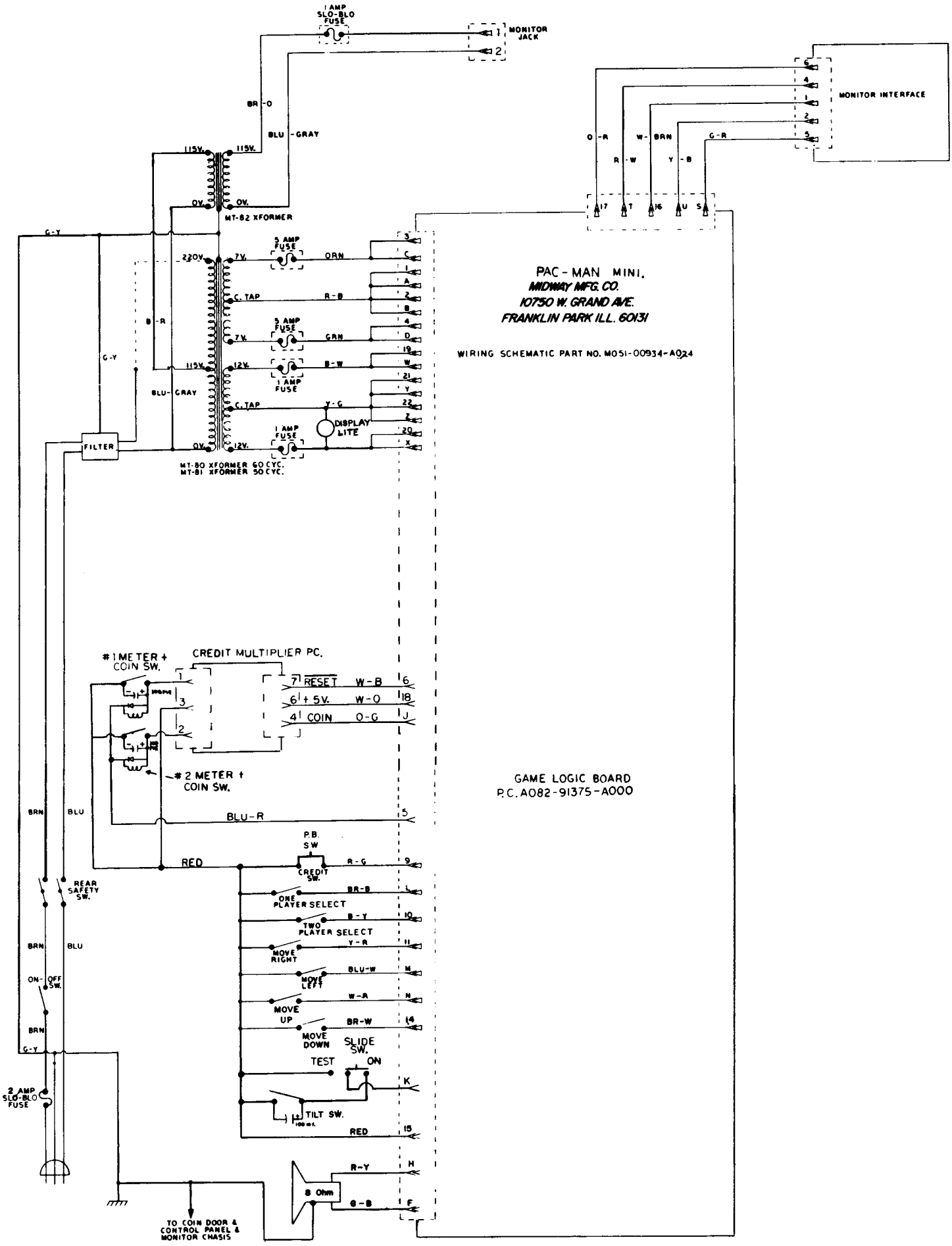
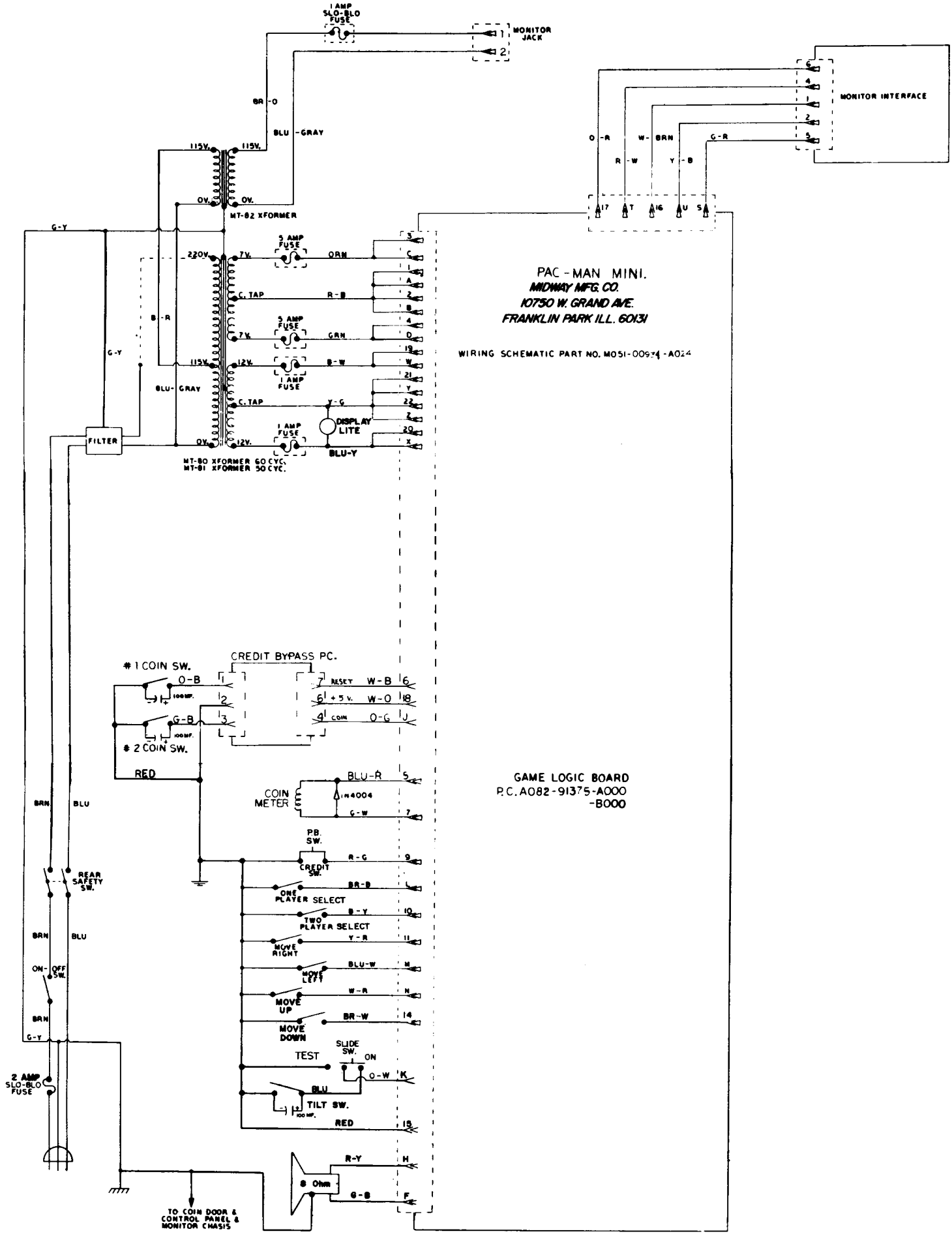
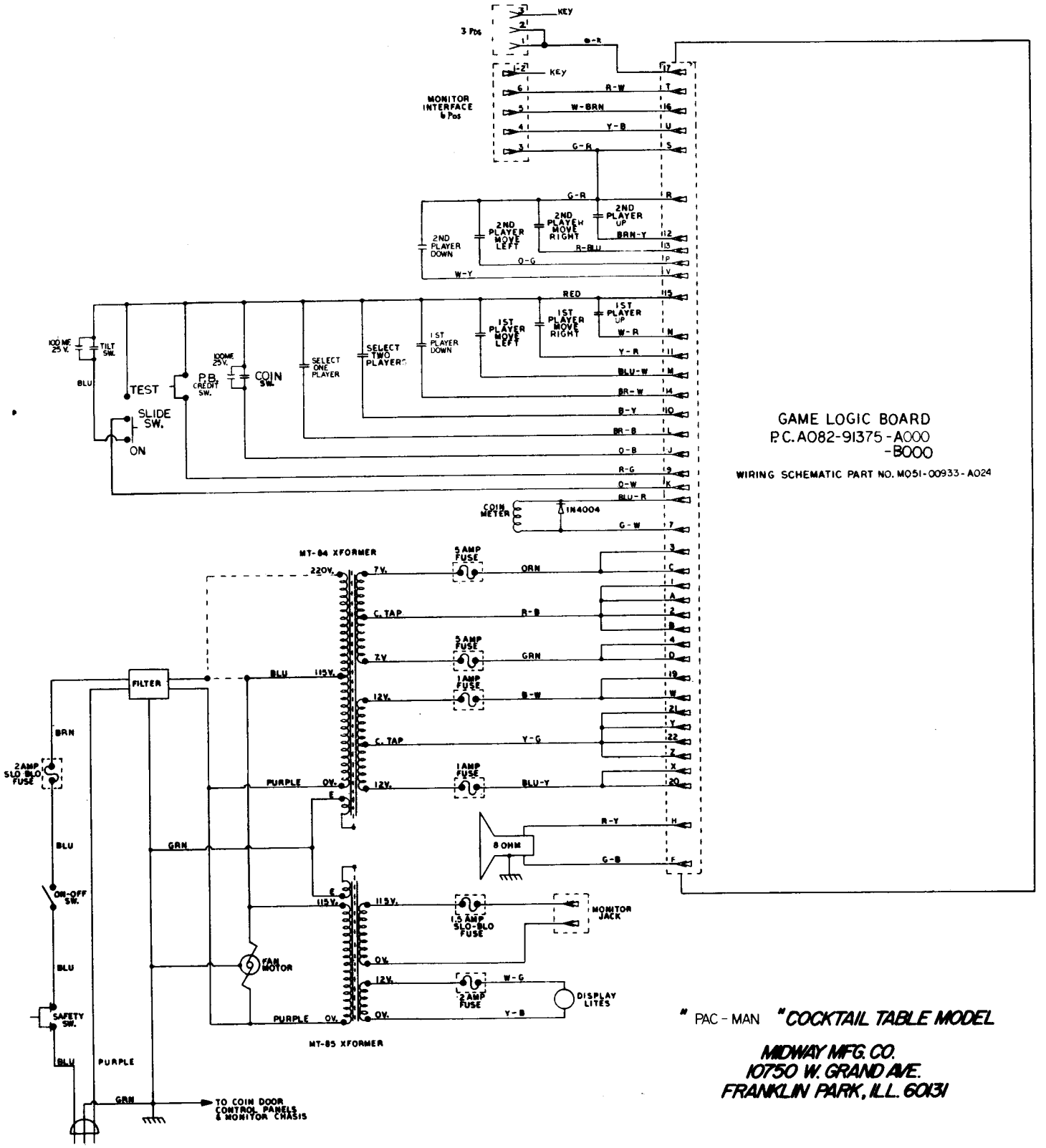
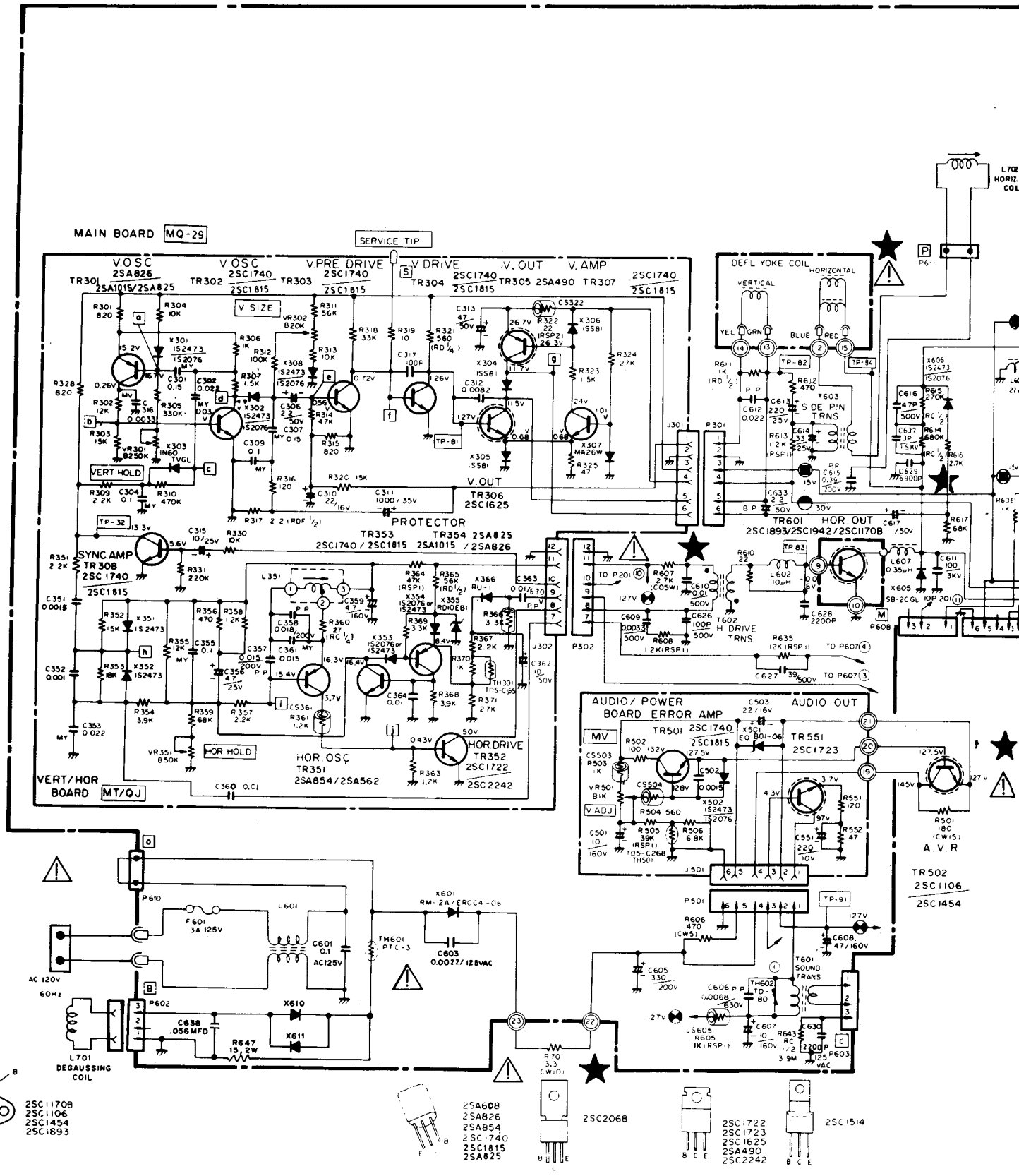
MONITOR JACK
MONITOR INTERFACE
BR-O
BLU-GRAY
115V.
0V.
DISPLAY LAMP
MT-82 XFORMER
5 AMP FUSE
220V.
7V.
ORN
C. TAP
R-B
12V.
B-W
1 AMP FUSE
Y-G
BLU-Y
FILTER
MT-80 XFORMER 60 CYC.
MT-81 XFORMER 50 CYC.
PAC-MAN U.R.
MIDWAY MFG. CO.
10750 W. GRAND AVE.
FRANKLIN PARK ILL. 60131
WIRING SCHEMATIC PART NO. M051-00932-A024
CREDIT BYPASS PC.
#1 COIN SW.
O-B
G-B
& 2 COIN SW.
RESET
W-B
+5 V.
W-O
COM
O-G
RED
BLU-R
COIN METER
1N4004
G-W
PB. SW.
CREDIT SW.
R-G
ONE PLAYER SELECT
BR-B
TWO PLAYER SELECT
B-Y
MOVE RIGHT
Y-R
MOVE LEFT
BLU-W
MOVE UP
W-R
MOVE DOWN
BR-W
TEST
SLIDE SW.
ON
O-W
TILT SW.
BLU
R-Y
8 Ohm
G-B
GAME LOGIC BOARD
P.C. A082-91375-A000
-B000
BRN
BLU
REAR SAFETY SW.
ON-OFF SW.
G-Y
2 AMP SLO-BLO FUSE
TO COIN DOOR & CONTROL PANEL & MONITOR CHASIS


1 AMP SLO-BLO FUSE
MONITOR JACK
MONITOR INTERFACE
BR-O
BLU-GRAY
115V.
0V.
MT-82 XFORMER
G-Y
220V.
5 AMP FUSE
7V.
ORN
C. TAP
R-B
B-R
12V.
B-W
1 AMP FUSE
Y-G
DISPLAY LITE
FILTER
MT-80 XFORMER 60 CYC.
MT-81 XFORMER 50 CYC.
O-R
W-BRN
G-R
R-W
Y-B
PAC-MAN MINI.
MIDWAY MFG. CO.
10750 W. GRAND AVE.
FRANKLIN PARK ILL. 60131
WIRING SCHEMATIC PART NO. M051-00934-A024
#1 METER + COIN SW.
CREDIT MULTIPLIER PC.
RESET W-B
+5V. W-O
COIN O-G
#2 METER + COIN SW.
BRN
BLU
BLU-R
RED
P.B. SW
CREDIT SW.
R-G
REAR SAFETY SW.
ONE PLAYER SELECT
BR-B
TWO PLAYER SELECT
B-Y
MOVE RIGHT
Y-R
MOVE LEFT
BLU-W
MOVE UP
W-R
MOVE DOWN
BR-W
SLIDE SW.
TEST
ON
ON-OFF SW.
2 AMP SLO-BLO FUSE
TILT SW.
8 Ohm
R-Y
G-B
TO COIN DOOR & CONTROL PANEL & MONITOR CHASIS
GAME LOGIC BOARD
P.C. A082-91375-A000

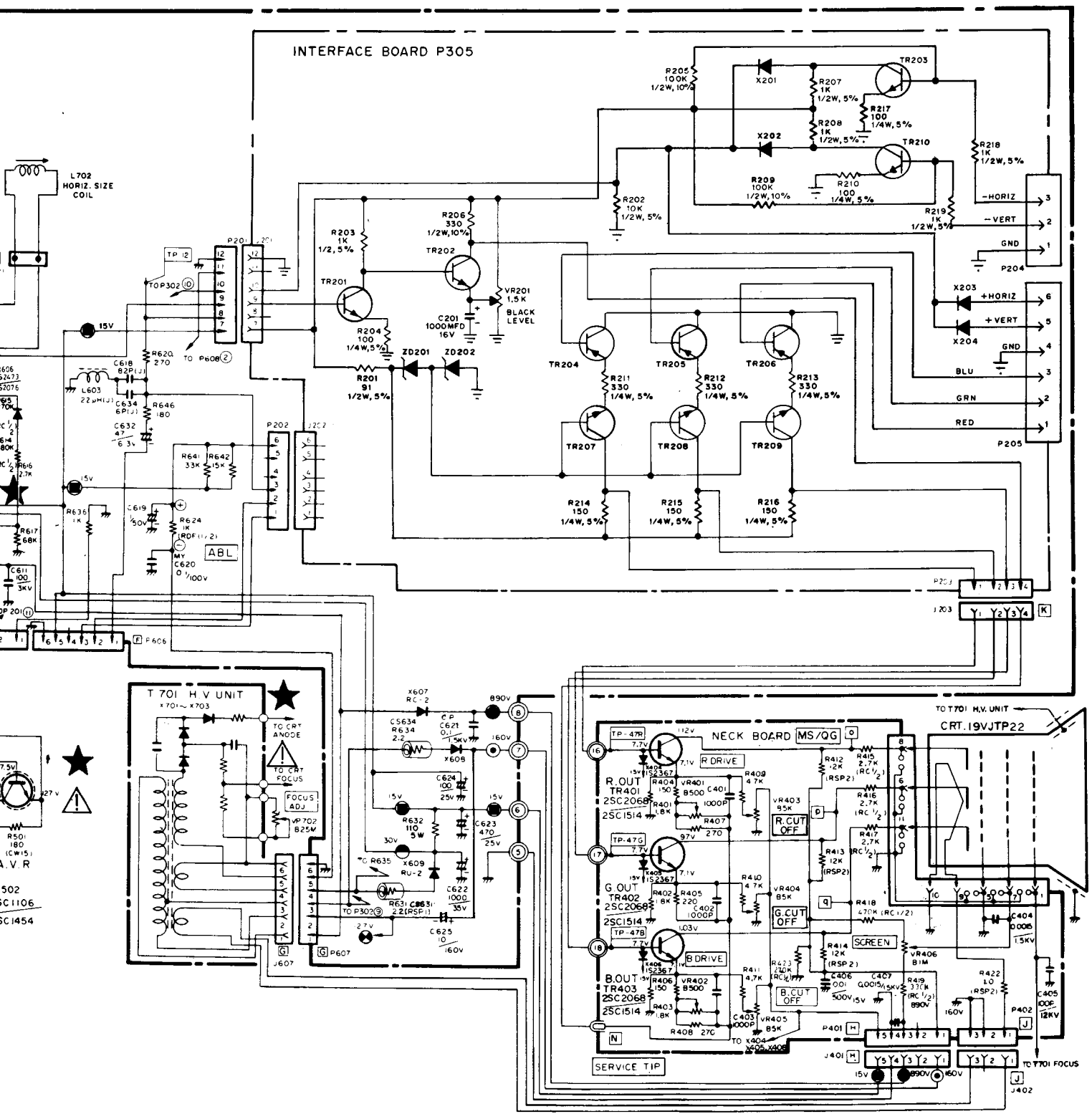

1 AMP SLO-BLO FUSE
MONITOR JACK
BR-O
BLU-GRAY
115V.
OV.
MT-82 XFORMER
MONITOR INTERFACE
O-R
W-BRN
G-R
R-W
Y-B
G-Y
220V.
7V.
5 AMP FUSE
GRN
C.TAP
R-B
B-R
12V.
B-W
1 AMP FUSE
BLU-GRAY
Y-G
DISPLAY LITE
BLU-Y
FILTER
MT-80 XFORMER 60 CYC.
MT-81 XFORMER 50 CYC.
PAC-MAN MINI.
MIDWAY MFG. CO.
10750 W. GRAND AVE.
FRANKLIN PARK ILL. 60131
WIRING SCHEMATIC PART NO. M051-00974-A024
CREDIT BYPASS PC.
#1 COIN SW.
O-B
G-B
#2 COIN SW.
RESET
W-B
+5 V.
W-O
COIN
O-G
RED
BLU-R
COIN METER
1N4004
G-W
GAME LOGIC BOARD
P.C. A082-91375-A000
-B000
BRN
BLU
REAR SAFETY SW.
ON-OFF SW.
PB. SW.
CREDIT SW.
R-G
ONE PLAYER SELECT
BR-B
TWO PLAYER SELECT
B-Y
MOVE RIGHT
Y-R
MOVE LEFT
BLU-W
MOVE UP
W-R
MOVE DOWN
BR-W
TEST
SLIDE SW.
ON
O-W
TILT SW.
2 AMP SLO-BLO FUSE
8 Ohm
R-Y
G-B
TO COIN DOOR & CONTROL PANEL & MONITOR CHASSIS


KEY
3 Pos
KEY
MONITOR INTERFACE 6 Pos
2ND PLAYER DOWN
2ND PLAYER MOVE LEFT
2ND PLAYER MOVE RIGHT
2ND PLAYER UP
1ST PLAYER DOWN
1ST PLAYER MOVE LEFT
1ST PLAYER MOVE RIGHT
1ST PLAYER UP
SELECT ONE PLAYER
SELECT TWO PLAYERS
P.B. CREDIT SW.
COIN SW.
TILT SW.
TEST
SLIDE SW.
ON
COIN METER
1N4004
MT-84 XFORMER
MT-85 XFORMER
FILTER
ON-OFF SW.
SAFETY SW.
FAN MOTOR
8 OHM
MONITOR JACK
DISPLAY LITES
TO COIN DOOR CONTROL PANELS & MONITOR CHASIS
GAME LOGIC BOARD
P.C. A082-91375-A000
-B000
WIRING SCHEMATIC PART NO. M051-00933-A024
" PAC-MAN "COCKTAIL TABLE MODEL
MIDWAY MFG. CO.
10750 W. GRAND AVE.
FRANKLIN PARK, ILL. 60131

19" COLOR MONITOR



NITOR SCHEMATIC DIAGRAM



K4606-5800

VERT/HOR BOARD (MT/QJ)

RESISTORS

Ref. No.	Part No.	Description
R301	203X6500-628	820 Ohm, ± 5%, 1/8W Carbon
R302	203X6500-902	12k Ohm, ± 5%, 1/8W Carbon
R303	203X6500-927	15k Ohm, ± 5%, 1/8W Carbon
R304	203X6500-886	10k Ohm, ± 5%, 1/8W Carbon
R305	203X6501-241	330k Ohm, ± 5%, 1/8W Carbon
R306	203X6500-645	1k Ohm, ± 5%, 1/8W Carbon
R307	203X6500-689	1.5k Ohm, ± 5%, 1/8W Carbon
R309	203X6500-724	2.2k Ohm, ± 5%, 1/8W Carbon
R310	203X6501-285	470k Ohm, ± 5%, 1/8W Carbon
R311	203X6501-065	56k Ohm, ± 5%, 1/8W Carbon
R312	203X6501-126	100k Ohm, ± 5%, 1/8W Carbon
R313	203X6001-326	10k Ohm, ± 5%, 1/8W Carbon
R314	203X6501-044	47k Ohm, ± 5%, 1/8W Carbon
R315	203X6500-628	820 Ohm, ± 5%, 1/8W Carbon
R316	203X6500-420	120 Ohm, ± 5%, 1/8W Carbon
R317	203X6206-441	2.2 Ohm, ± 5%, 1/2W Carbon
R319	203X6500-169	100 Ohm, ± 5%, 1/8W Carbon
R320	203X6500-927	15k Ohm, ± 5%, 1/8W Carbon
R321	203X6700-509	560 Ohm, ± 5%, 1/2W Carbon
R322	203X9100-121	22 Ohm, ± 5%, 2W M.O.
R323	203X6500-689	1.5K Ohm, ±5%, 1/8W Carbon
R324	203X6500-988	27k Ohm, ± 5%, 1/8W Carbon
R325	203X6500-326	47 Ohm, ± 5%, 1/8W Carbon
R328	203X6500-628	820 Ohm, ± 5%, 1/8W Carbon
R330	203X6500-886	10k Ohm, ± 5%, 1/8W Carbon
R331	203X6501-209	220k Ohm, ± 5%, 1/8W Carbon
R351	203X6500-724	2.2k Ohm, ± 5%, 1/8W Carbon
R352	203X6500-927	15k Ohm, ± 5%, 1/8W Carbon
R353	203X6500-944	18k Ohm, ± 5%, 1/8W Carbon
R354	203X6500-783	3.9k Ohm, ± 5%, 1/8W Carbon
R355	203X6500-902	12k Ohm, ± 5%, 1/8W Carbon
R356	203X6500-561	470 Ohm, ± 5%, 1/8W Carbon
R357	203X6500-724	2.2k Ohm, ± 5%, 1/8W Carbon
R358	203X6500-666	1.2k Ohm, ± 5%, 1/8W Carbon
R359	203X6501-088	68k Ohm, ± 5%, 1/8W Carbon
R360	203X5500-471	27 Ohm, ± 5%, 1/4W Comp.
R361	203X6000-998	1.2k Ohm, ± 5%, 1/8W Carbon
R363	203X6500-666	1.2k Ohm, ± 5%, 1/8W Carbon
R364	203X9014-988	47k Ohm, ± 5%, 1W M.O.
R365	203X6700-989	56k Ohm, ± 5%, 1/2W Carbon
R366	203X6001-148	3.3k Ohm, ±5%, 1/8W Carbon
R367	340X2222-734	2.2k Ohm, ± 5%, 1/2W Carbon
R368	203X6500-785	3.9k Ohm, ± 5%, 1/8W Carbon
R369	203X6500-762	3.3k Ohm, ± 5%, 1/4W Carbon
R370	302X6100-961	1k Ohm, ± 5%, 1/4W Carbon
R371	203X6104-751	2.7k Ohm, ± 5%, 1/4W Carbon
VR301	204X2122-093	Varistor, 250K Ohm, Vert. Hold
VR302	204X2114-065	Varistor, 20K Ohm, Vert. Size
VR351	204X2114-059	Varistor, 50K Ohm, Hor. Hold

CAPACITORS

C301	203X1100-928	0.15 uF, 50V, ± 10% Mylar
C302	203X1100-573	0.022 uF, 50V, ± 10% Mylar
C304	203X1100-858	0.1 uF, 50V, ± 10% Mylar
C306	203X0025-026	2.2 uF, 50V, Electrolytic
C307	203X1100-928	0.15 uF, 50V, ± 10% Mylar
C309	203X1100-858	0.1 uF, 50V, ± 10% Mylar
C310	203X0010-011	22 uF, 16V Electrolytic
C311	203X0020-099	1000 uF, 35V Electrolytic
C312	202X7000-469	0.0082 uF, 50V, ± 10% Ceramic
C313	203X0025-087	47 uF, 50V Electrolytic
C315	203X0015-082	10 uF, 25V Electrolytic
C316	203X1100-220	3300 uF, 50V, ± 10% Mylar
C317	202X8000-616	100 pF, 50V, ± 10% Ceramic
C351	202X7000-281	1500 pF, 50V, ± 10% Ceramic
C352	202X7000-247	1000 pF, 50V, ± 10% Ceramic
C353	203X1100-573	0.022 uF, 50V, ± 10% Mylar
C355	203X1100-858	0.1 uF, 50V, ± 10% Mylar
C356	203X0015-105	4.7 uF, 25V Electrolytic
C357	203X1201-013	0.015uF, 200V ± 10% PP
C358	203X1201-034	0.018 uF, 200V, ± 10% PP
C359	203X0040-013	4.7 uF, 160V Electrolytic
C360	202X7000-482	0.01 uF, 50V, ± 10% Ceramic
C361	203X1100-509	0.015 uF, 50V, ± 10% Mylar
C362	203X0025-058	10 uF, 50V Electrolytic
C363	203X1205-487	0.01 uF, 630V, ± 10% PP
C364	202X7000-482	0.01 uF, 50V, ± 10% Ceramic

SEMICONDUCTORS

TR301	200X4082-614	Transistor, 2SA826Q
TR302	200X3174-006	Transistor, 2SC1740Q
TR303	200X3174-006	Transistor, 2SA1740Q
TR304	200X3174-006	Transistor, 2SC1740Q
TR305	200X4049-081	Transistor, 2SA490YLBGLI
TR306	200X3162-538	Transistor, 2SC1625YLBGLI
TR307	200X3174-014	Transistor, 2SC1740R
TR308	200X3174-006	Transistor, 2SC1740Q
TR351	200X4085-415	Transistor, 2SA854Q
TR352	200X3172-208	Transistor, 2SC1722BKS
TR353	200X3174-006	Transistor, 2SC1740Q
TR354	200X4082-614	Transistor, 2SA826Q
X301	201X2010-144	Diode, (SI) IS2473-T72
X302	201X2010-144	Diode, (SI) IS2473-T72
X303	200X8000-026	Diode, (GE), IN60TVGL
X304	200X8010-165	Diode (SI) ISS81
X305	201X2010-165	Diode (SI) ISS81
X306	201X2010-165	Diode (SI) ISS81
X307	200X8010-102	Diode (SI) MA26W
X308	200X8010-094	Diode (SI) IS2473
X351	201X2010-144	Diode (SI) IS2473-T72
X352	201X2010-144	Diode (SI) IS2473-T72
X353	201X2010-144	Diode (SI) IS2473-T72
X354	201X2010-144	Diode (SI) IS2473-T72
X355	200X8220-851	Diode (Zener) RD10EBI
X366	200X8100-130	Diode (HS) RU-1 0.3 US

MISCELLANEOUS

J301	204X9300-958	Socket, 6 Pin
J302	204X9300-958	Socket, 6 Pin
P301	204X9601-195	Plug, 6 Pin
P302	204X9601-195	Plug, 6 Pin
TH301	201X0000-534	Thermistor

TRANSFORMERS & COILS

L351	201X5200-091	Coil, Horiz. Osc.

POWER BOARD (MV)

RESISTORS

R501	204X1725-052	180 Ohm, ± 10%, 15W WW
R502	203X6000-608	100 Ohm, ± 5%, 1/8W Carbon
R503	203X6000-960	1k Ohm, ± 5%, 1/8W Carbon
R504	203X6000-879	560 Ohm, ± 5%, 1/8W Carbon
R505	203X9014-965	39k Ohm, ± 5%, 1W M.O.
R506	203X6500-842	6.8k Ohm, ± 5%, 1/8W Carbon
R551	203X6500-420	120 Ohm, ± 5%, 1/8W Carbon
VR501	204X2050-001	Varistor Vert. Adj.

CAPACITORS

C501	203X0040-020	10 uF, 160V Electrolytic
C502	202X7000-281	1500 pF, 50V, ± 10% Ceramic
C503	203X0010-011	22 uF, 16V Electrolytic
C551	203X0005-046	220 uF, 10V Electrolytic

SEMICONDUCTORS

TR501	200X3174-006	Transistor, 2SC1740Q
△★TR502	200X3145-404	Transistor, 2SC1454
TR551	200X3172-305	Transistor, 2SC1723
X501	201X2230-042	Diode, (SI) Zener EQB01-06V
X502	201X2010-144	Diode, (SI) IS2473-T72

MISCELLANEOUS

J501	204X9300-958	Socket, 6 Pin
P501	204X9601-195	Plug, 6 Pin
TH501	201X0000-618	Thermistor

NECK BOARD (MS/QG)

Ref. No.	Part No.	Description
RESISTORS		
R401	203X6500-709	1.8k Ohm ± 5% 1/8W Carbon
R402	203X6500-709	1.8k Ohm ± 5% 1/8W Carbon
R403	203X6500-709	1.8k Ohm ± 5% 1/8W Carbon
R404	203X6500-447	150 Ohm ± 5% 1/8W Carbon
R405	203X6500-481	220 Ohm ± 5% 1/8W Carbon
R406	203X6500-447	150 Ohm ± 5% 1/8W Carbon
R407	203X6500-508	270 Ohm ± 5% 1/8W Carbon
R408	203X6500-508	270 Ohm ± 5% 1/8W Carbon
R409	203X6500-800	4.7k Ohm ± 5% 1/8W Carbon
R410	203X6500-800	4.7k Ohm ± 5% 1/8W Carbon
R411	203X6500-800	4.7k Ohm ± 5% 1/8W Carbon
R412	203X9104-809	12k Ohm ± 5% 2.0W Metal Oxide
R413	203X9104-809	12k Ohm ± 5% 2.0W Metal Oxide
R414	203X9104-809	12k Ohm ± 5% 2.0W Metal Oxide
R415	203X5601-313	2.7k Ohm ± 10% 1/2W Comp.
R416	203X5601-313	2.7k Ohm ± 10% 1/2W Comp.
R417	203X5601-313	2.7k Ohm ± 10% 1/2W Comp.
R418	203X5602-254	470k Ohm ± 10% 1/2W Comp.
R419	203X5602-185	330k Ohm ± 10% 1/2W Comp.
R422	203X9105-117	1.0 Ohm ± 10% 2W Metal Oxide
R423	203X5102-155	270k Ohm ± 5% 1/4W Carbon
VR401	204X2115-014	500 Ohm Varistor R Drive
VR402	204X2115-014	500 Ohm Varistor B Drive
VR403	204X2115-006	5k Ohm Varistor R Cutoff
VR404	204X2115-006	5k Ohm Varistor G Cutoff
VR405	204X2115-006	5k Ohm Varistor B Cutoff
VR406	204X2000-025	1M Ohm Varistor Screen
CAPACITORS		
C401	202X7000-247	1000 pF, 50V, 10% Ceramic
C402	202X7000-247	1000 pF, 50V, 10% Ceramic
C403	202X7000-247	1000 pF, 50V, 10% Ceramic
C404	202X7110-019	1500 pF, 2kV ± 10% Ceramic
C405	202X7150-018	100 pF, 12kV, ± 10% Ceramic
C406	202X7050-483	.01 uF, 500V, ± 10% Ceramic
C407	202X7110-019	1500 pF, 2kV ± 10% Ceramic
C408	202X8000-550	68 pF, 50V, ± 10% Ceramic
C409	202X8000-550	68 pF, 50V, ± 10% Ceramic
C410	202X8000-550	68 pF, 50V, ± 10% Ceramic
SEMICONDUCTORS		
TR401	200X3206-800	Transistor, 2SC2068, 2SC1514 (R output)
TR402	200X3206-800	Transistor, 2SC2068, 2SC1514 (G output)
TR403	200X3206-800	Transistor, 2SC2068, 2SC1514 (B output)
X404	201X2100-126	Diode, IS2367 (protector)
X405	201X2100-126	Diode, IS2367 (protector)
X406	201X2100-126	Diode, IS2367 (protector)
MISCELLANEOUS		
J401	206X5003-729	Socket, 5 Pin
J402	206X5003-983	Socket, 3 Pin
P401	204X9600-329	Plug, 5 Pin
P402	204X9600-254	Plug, 3 Pin

△★ 297X2000-072 HIGH VOLTAGE ASSEMBLY (T701)

△★R701	204X1625-058	3.3 Ohm, ± 10% 10W WW Resistor	
VR702	204X3901-125	Focus Control	
X701		Diode (SI HV)	Part of T701
X702		Diode (SI HV)	
X703		Diode (SI HV)	

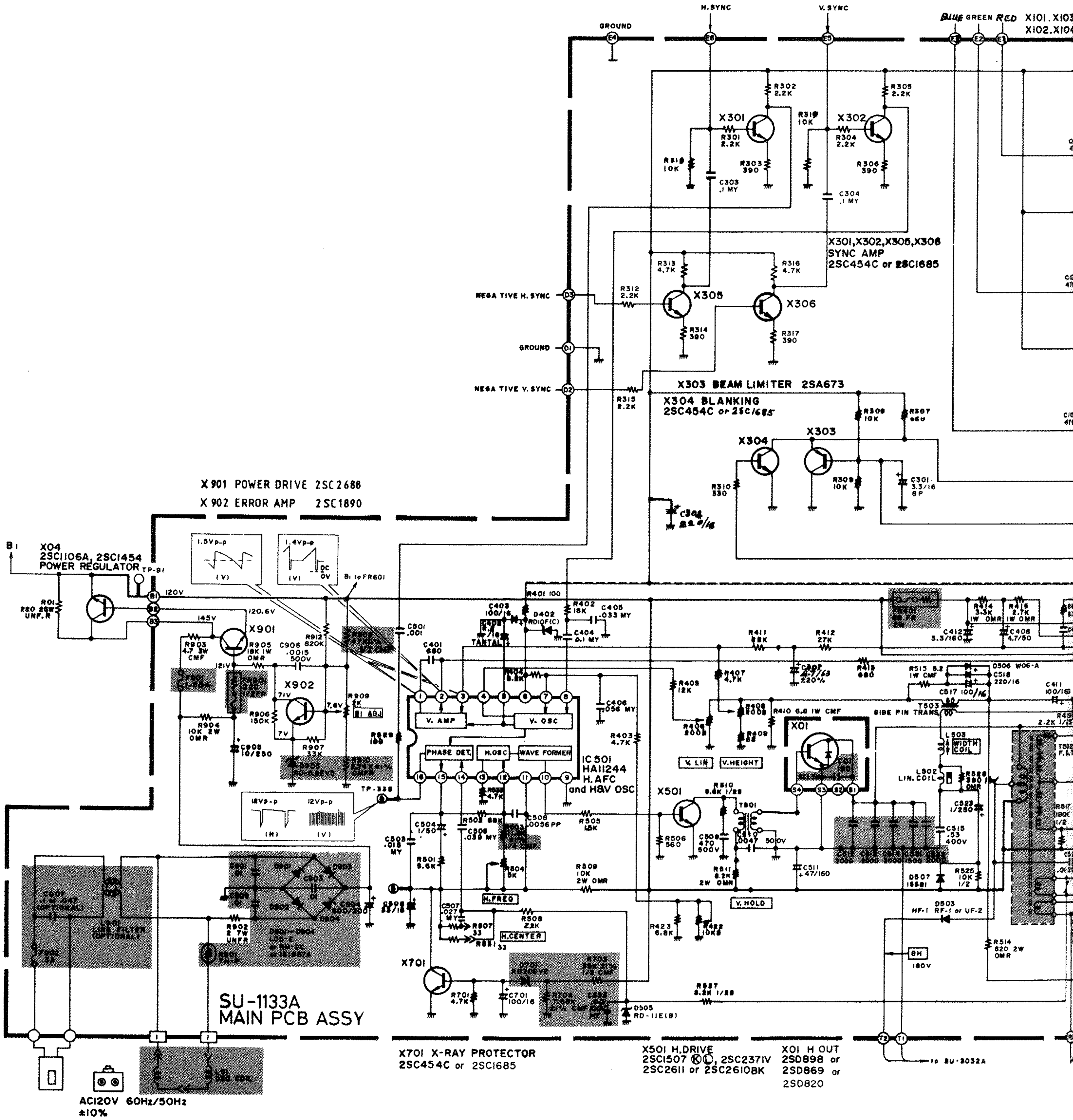
FINAL ASSEMBLY PARTS

△★88X-0129-506	19VJTP22 Pix Tube
38A5554-000	Assy. Purity Shld/Degaussing
205X9800-256	Lateral/Purity Assembly
△★202X1110-810	Yoke, Deflection
208X2000-946	CRT Socket
297X2000-072	HV Unit (T701)
6A0397	Plug, Line Cord
9A2753-003	Degaussing Coil (L701)

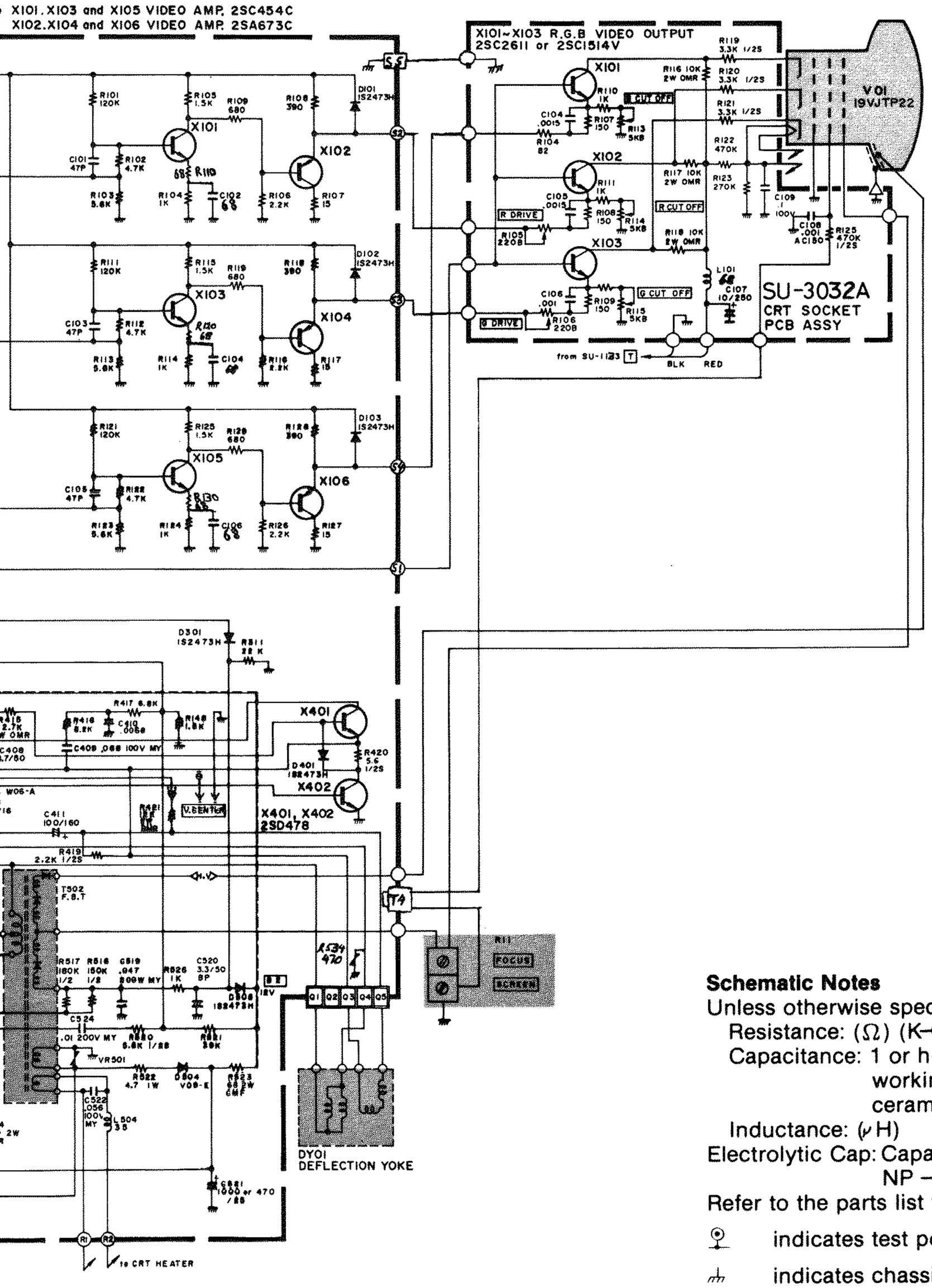
INTERFACE BOARD (P305)

(MODEL 19K4606)

Ref. No.	Part No.	Description
RESISTORS		
R201	340X3910-934	91 Ohm, 5%, 1/2W Carbon
R203	340X3102-934	1k Ohm, 5%, 1/2W Carbon
R204	340X2101-934	100 Ohm, 5%, 1/4W Carbon
R206	340X3331-944	330 Ohm, 10%, 1/2W Carbon
R207	340X3102-934	1k Ohm, 5%, 1/2W Carbon
R208	340X3152-934	1.5k Ohm, 5%, 1/4W Carbon
R209	340X2101-934	100 Ohm, 5%, 1/4W Carbon
R210	340X3102-934	1k Ohm, 5%, 1/2W Carbon
R211	340X2331-934	330 Ohm, 5%, 1/4W Carbon
R212	340X2331-934	330 Ohm, 5%, 1/4W Carbon
R213	340X2331-934	330 Ohm, 5%, 1/4W Carbon
R214	340X2201-934	200 Ohm, 5%, 1/4W Carbon
R215	340X2201-934	200 Ohm, 5%, 1/4W Carbon
R216	340X2201-934	200 Ohm, 5%, 1/4W Carbon
VR201	40X0590-017	1.5k Ohm, Black Level Control
CAPACITORS		
C201	45X0524-038	1000 uF, 16V Electrolytic
SEMICONDUCTORS		
TR201	86X0121-001	Transistor (NPN)
TR202	86X0121-001	Transistor (NPN)
TR203	86X0121-001	Transistor (NPN)
TR204	86X0066-001	Transistor (PNP)
TR205	86X0066-001	Transistor (PNP)
TR206	86X0066-001	Transistor (PNP)
TR207	86X0121-001	Transistor (NNP)
TR208	86X0121-001	Transistor (NPN)
TR209	86X0121-001	Transistor (NPN)
ZD201	66X0040-018	Diode, Zener, 6.8v, 5%, 0.5W
ZD202	66X0040-019	Diode, Zener, 3.9v, 5%, 0.5W
MISCELLANEOUS		
J201	204X9300-958	Socket, 6 Pin
J202	204X9300-958	Socket, 6 Pin
J203	206X5019-207	Socket, 4 Pin
P201	204X9601-195	Plug, 6 Pin
P202	204X9601-195	Plug, 6 Pin
P203	204X9600-845	Plug, 4 Pin
P205	6A0393-006	Plug, 6 Pin



H.SYNC
V.SYNC
GROUND
BLUE GREEN RED
X101.X103
X102.X104
X301
X302
X305
X306
X301,X302,X305,X306
SYNC AMP
2SC454C or 2SC1685
NEGA TIVE H. SYNC
GROUND
NEGA TIVE V. SYNC
X303 BEAM LIMITER 2SA673
X304 BLANKING
2SC454C or 2SC1685
X304
X303
X901 POWER DRIVE 2SC2688
X902 ERROR AMP 2SC1890
X04
2SC1106A, 2SC1454
POWER REGULATOR
TP-91
120V
120.6V
145V
X901
X902
B1 ADJ
V. AMP
V. OSC
PHASE DET.
H.OSC
WAVE FORMER
IC 501
HA11244
H.AFC
and H&V OSC
V. LIN
V.HEIGHT
X01
X501
SIDE PIN TRANS.
WIDTH COIL
LIN. COIL
H.FREQ
H.CENTER
V. HOLD
X701
SU-1133A
MAIN PCB ASSY
AC120V 60Hz/50Hz
±10%
X701 X-RAY PROTECTOR
2SC454C or 2SC1685
X501 H.DRIVE
2SC1507 ⓀⓁ, 2SC2371V
2SC2611 or 2SC2610BK
X01 H OUT
2SD898 or
2SD869 or
2SD820
to SU-3032A



Schematic Notes

Unless otherwise specified

Resistance: (Ω) (K→KΩ, M→MΩ), 1/4 (W) carbon resistor

Capacitance: 1 or higher→ (pF), less than 1→ (μF)
working voltage→ 50 (V)
ceramic capacitor

Inductance: (μH)

Electrolytic Cap: Capacitance Value (μF)/working voltage (V),
NP → non-polar (or bipolar) electrolytic cap.

Refer to the parts list for additional component information.

⊙ indicates test point connection

⏚ indicates chassis ground unless otherwise specified

Hz indicates cycles per second

For **safety** purposes (and continuing reliability)

⚠ replace all components marked with safety symbol with identical type.
NOTE: FR → fusible resistor

Parts identification on circuit boards:
e.g. SU1126A (R107 = R**1**107)
SU3030A (R113 = R**3**113)

00-4147-04
G07-CB0

REPLACEMENT PARTS LIST - ELECTROHOME 19'' MONITOR

Components identified by the ⚠ symbol in the PARTS LIST and on the Schematic have special characteristics important to safety.

DO NOT degrade the safety of the set through improper servicing.

Abbreviations for Resistors and Capacitors

Resistor			**Capacitor**		
C R	:	Carbon Resistor	C Cap.	:	Ceramic Capacitor
Comp. R	:	Composition Resistor	M Cap	:	Mylar Capacitor
OM R	:	Oxide Metal Film Resistor	E Cap.	:	Electrolytic Capacitor
V R	:	Variable Resistor	BP E Cap.	:	Bi-Polar (or Non-Polar) Electrolytic Capacitor
MF R	:	Metal Film Resistor			
CMF R	:	Coating Metal Film Resistor	MM Cap.	:	Metalized Mylar Capacitor
UNF R	:	Nonflammable Resistor	PP Cap.	:	Polypropylene Capacitor
F R	:	Fusible Resistor	MPP Cap.	:	Metalized PP Capacitor
			PS Cap	:	Polystyrol Capacitor
			Tan. Cap.	:	Tantal Capacitor

NOTE: When ordering replacement parts please specify the part number as shown in this list including part name, and model number. Complete information will help expedite the order.

Use of substitute replacement parts which do not have the same safety characteristics as specified, may create shock, fire or other hazards. For maximum reliability and performance, all parts should be replaced by those having identical specifications.

SERVICE REPLACEMENT PARTS LIST

Symbol	**Description**	**Part Number**
	Main P.C.B. Ass'y	SU-1133A
	CRT Socket P.C.B. Ass'y	SU-3032A
	Purity Shield Ass'y	07-220083-03

Outside of the P.C.B. Ass'y

Symbol	Description	Part Number
	Picture Tube 19"	17-7198-03
⚠	⚠Deflection Yoke	A29779-D = 21-141-01
	PC Magnet	A75034-B = 29-32-01
⚠	⚠Flyback Transf.	A29951-B
⚠	⚠HVR	A46600-A
R05	UNF Resistor 220Ω,25W K	QRF258K-221
C04	C Capacitor 150pF, AC1.5KV	QCZ0101-005
X01	Si. Transistor	2SD870
X02	Si. Transistor	2SC1106A
SC	Screw #8-⅜	31-610818-06
SC	Screw ¼ x ¾ Pix Tube Mtg. (4)	31-601418-12
WA	Pyramidal Lock Washer (4)	33-255-01
	Nut Retainer, Pix Tube Mtg. (4)	33-494-01
	Clip — P.C.B. Support	33-629-02
	Standoff	33-670-010R-02
	Wire Terminal (Gnd. Strap)	34-228-03
	Terminal Lug (Gnd.)	34-33-04
	Groundstrap Assy.	34-574-02
	Grounding Spring	35-212-03
	Wire Hook (Gnd. Strap)	35-3053-02
	Purity Shield Holddown Clamp	35-2348-01
	Support Brkt. RH	35-3890-01
	Support Brkt. LH	35-3890-02
	Chassis Base	38-449-02
	Yoke Wedge (3)	39-1233-01

Purity Shield Ass'y. Parts List

Symbol	Description	Part Number
	Degaussing Coil	21-1007-30
D911, D912	Rectifier 1 Amp 600V (2)	28-22-27
	Pin Terminal (2)	34-708-01
	Pin Terminal Housing	34-709-01
	Purity Shield (2 pcs.)	35-3847-01
	Purity Shield (2 pcs.)	35-3847-02
C911	Capacitor 100nF 10% 400V	48-171544-62
R921	Resistor, Wirewound 33Ω, 4W	42-113301-03
	Fire Retardent Term. Strip 4 Lug	34-492-09

CRT Socket P.C.B. Ass'y (SU-3032A) Parts List

Resistors

Symbol	Description	Part Number
R3105	V R 200	QVZ3234-022
R3106	V R 200	QVZ3234-022
R3113	V R 5K	QVZ3234-053
R3114	V R 5K	QVZ3234-053
R3115	V R 5K	QVZ3234-053
R3116	OM R 10KΩ2W J	QRG029J-103
R3117	OM R 10KΩ2W J	QRG029J-103
R3118	OM R 10KΩ2W J	QRG029J-103
R3119	Comp. R 3.3KΩ½W K	QRZ0039-332
R3120	Comp. R 3.3KΩ½W K	QRZ0039-332
C3121	Comp. R 3.3KΩ½W K	QRZ0039-332

Capacitors

Symbol	Description	Part Number
C3107	E Cap. 10uF 250V A	QEW53EA-106
C3108	C Cap. 1000pF DC1400V P	QCZ9001-102M

Coils

Symbol	Description	Part Number
L3101	Peaking Coil	QQL043K-101

Semiconductors

Symbol	Description	Part Number
X3101	Si. Transistor	2SC1514VC
X3102	Si. Transistor	2SC1514VC
X3103	Si. Transistor	2SC1514VC

Miscellaneous

Symbol	Description	Part Number
⚠	⚠CRT Socket	A76068

Main PCB Ass'y (SU-1133A) Parts List

Resistors

Symbol	Description	Part Number
R1406	V R 200Ω	QVZ3230-002
R1408	V R 200Ω	QVZ3230-002
R1410	CMF R 6.8Ω1W J	QRX019J-6R8
R1414	OM R 3.3KΩ1W J	QRG019J-332
R1415	OM R 2.7KΩ1W J	QRG019J-272
R1421	OM R 12KΩ2W J	QRG026J-123Z
R1422	V R 10KΩ	QVZ3230-014
⚠FR1401	⚠F R 68Ω2W K	QRH024K-680M
⚠R1503	⚠CMF R 11.8KΩ¼W +1%	QRV142F-1182
R1504	V R 5KΩ	QVZ3230-053
R1509	OM R 10KΩ2W J	QRG026J-103Z
R1512	OM R 8.2KΩ2W J	QRG026J-822Z
R1514	OM R 820Ω2W J	QRG026J-821Z
R1515	CMF R 8.2Ω1W J	QRX019J-8R2
R1522	CMF R 4.7Ω1W J	QRX019J-4R7
R1523	OM R 68Ω2W J	QRG026J-680Z
R1528	OM R 390Ω1W J	QRG019J-391
R1534	ZN R	ERZ-C05ZK471
VR1501	ZN R	ERZ-C05DK271
⚠R1703	⚠CMF R 39Ω½W +1%	QRV122F-3902
⚠R1704	⚠CMF R 7.68KΩ¼W +1%	QRV142F-7681
⚠R1901	⚠Posistor	A75414
R1902	UNF R 2Ω7W K	QRF076K-2R0
R1903	CMF R 4.7Ω3W J	QRX039J-4R7
R1904	OM R 10KΩ2W J	QRG026J-103Z
R1905	OM R 18KΩ1W J	QRG019J-183
⚠Q1908	⚠CMF R 47Ω½W +1%	QRV122F-470Z
⚠R1909	V R 2KΩ	QVP5A0B-023E
R1910	⚠CMF R 2.74KΩ¼W +1%	QRV142F-274I
⚠FR1901	⚠F R 220Ω½W K	QRH124K-221M

Capacitors

Symbol	Description	Part Number
C1301	BPE Cap. 3.3uF 50V A	QEN61HA-335Z
C1402	Tan. Cap. 2.2uF 16V K	QEE51CK-225B
C1407	E Cap. 4.7uF 6.3V A	QEW51JA-475
C1411	E Cap. 100uF 160V A	QEW52CA-107
C1412	E Cap. 3.3uF 160V A	QEW52CA-335
C1508	PP Cap. 5600uF 50V J	QFP31HJ-562
⚠C1512	⚠PP Cap. 2000pF DC1500V J	QFZ0082-202
⚠C1513	⚠PP Cap. 2000pF DC1500V J	QFZ0082-202
⚠C1514	⚠PP Cap. 2000pF DC1500V J	QFZ0082-202
C1515	PP Cap. 0.53uF DC1200V J	QFZ0067-534
C1520	BPE Cap. 3.3uF 50V A	QEN61HA-335Z
C1523	E Cap. 1uF 160V A	QEW62CA-105Z
C1524	M Cap. 0.1uF 200V K	QFM720K-104M
⚠C1531	⚠PP Cap. 2000pF DC1500V J	QFZ0082-202
⚠C1532	⚠PP Cap. 1500pF DC1500V J	QFZ0082-152
C1904	E Cap.	QEY0034-001
C1905	E Cap. 10uF 250V A	QEW52EA-106

Coils

Symbol	Description	Part Number
L1502	Linarity Coil	A39835
L1503	Width Coil	C30380-A
L1504	Heater Choke	C30445-A

Transformers

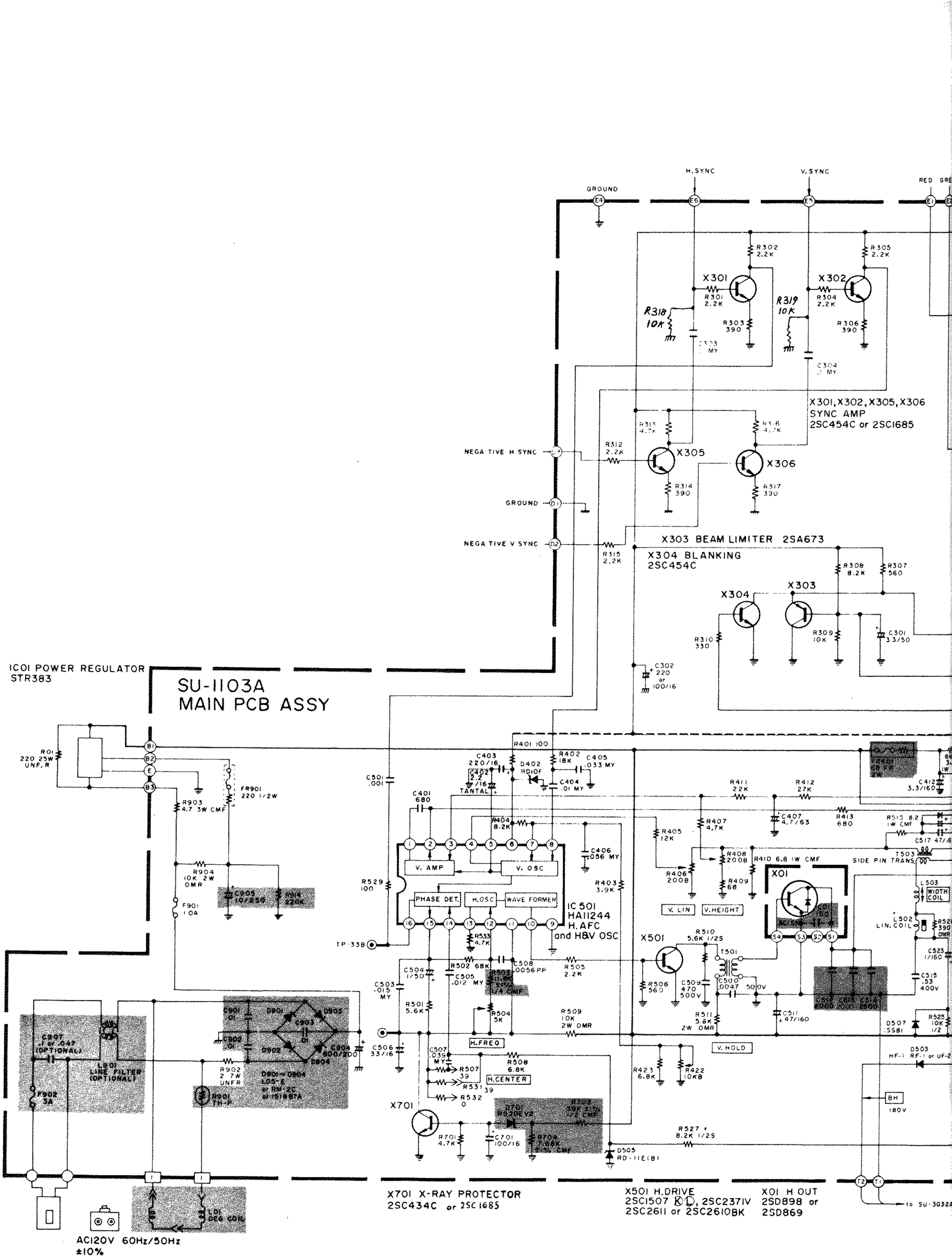
Symbol	Description	Part Number
T1501	Hor. Drive Transf.	A46022-BM
T1503	Side Pin Transf.	C39050-A

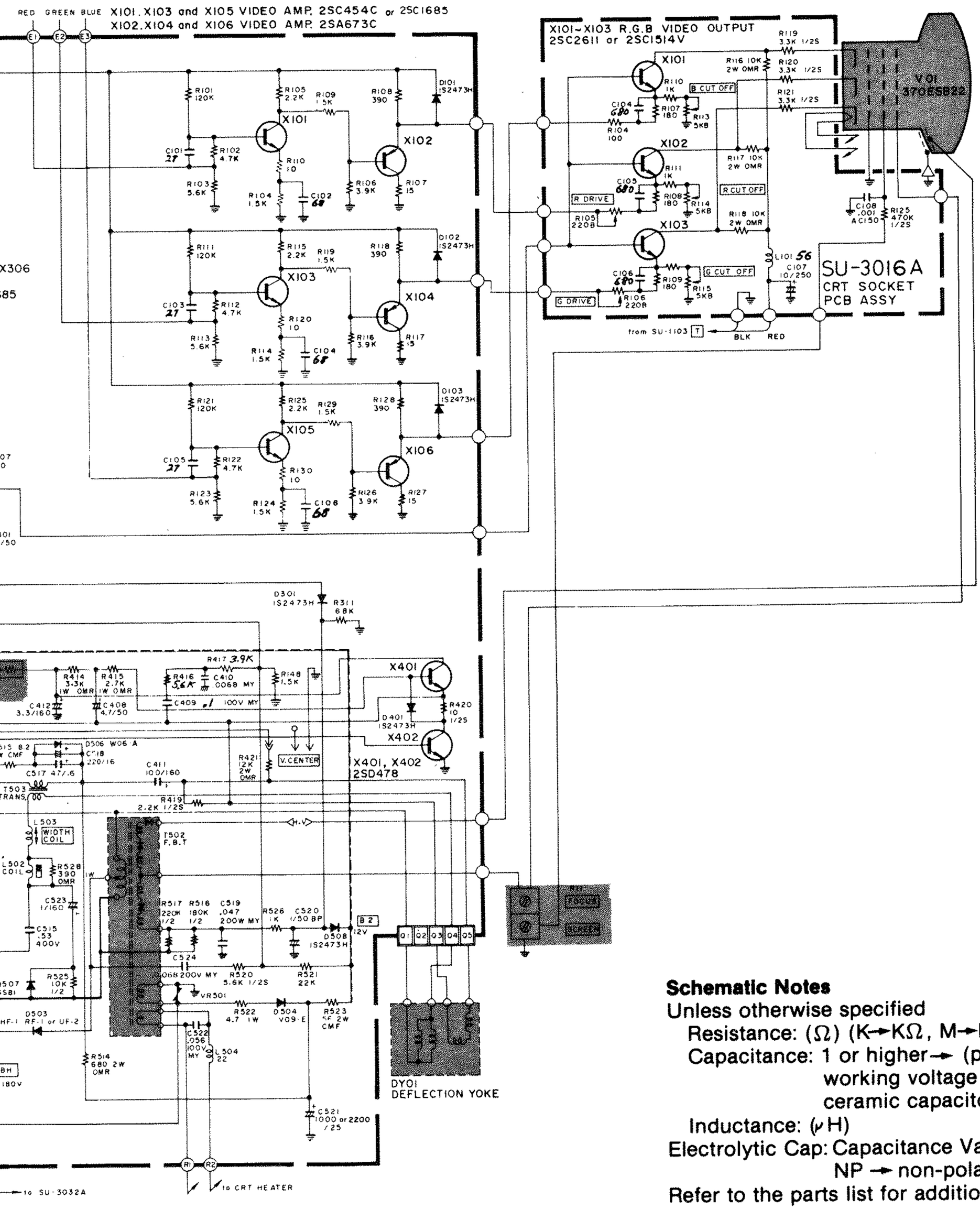
Semiconductors

Symbol	Description	Part Number
IC1501	IC	HA11244
X1101	Si. Transistor	2SC1685(R)
X1102	Si. Transistor	2SA673(C)
X1103	Si. Transistor	2SC1685(R)
X1104	Si. Transistor	2SA673(C)
X1105	Si. Transistor	2SC1685(R)
X1106	Si. Transistor	2SA673(C)
X1301	Si. Transistor	2SC1685(R)
X1302	Si. Transistor	2SC1685(R)
X1303	Si. Transistor	2SA673(C)
X1304	Si. Transistor	2SC1685(R)
X1305	Si. Transistor	2SC1685(R)
X1401	Si. Transistor	2SD478
X1402	Si. Transistor	2SD478
X1501	Si. Transistor	2SC2610BK
X1901	Si. Transistor	2SC2688 (K.L.M.)
X1902	Si. Transistor	2SC1890A (E.F.)
D1101	Si. Diode	W06A
D1102	Si. Diode	W06A
D1103	Si. Diode	W06A
D1301	Si. Diode	1SZ473H
D1401	Si. Diode	1SZ473H
D1402	Zener Diode	RD10F(C)
D1503	Si. Diode	HF-1
D1504	Si. Diode	V09E
D1505	Zener Diode	RD11E(B)
D1506	Si. Diode	W06A
D1507	Si. Diode	1SS81
D1508	Si. Diode	1SZ473H
⚠D1701	⚠Zener Diode	RD20EV2
⚠D1901	⚠Si. Diode	1S1887A
⚠D1902	⚠Si. Diode	1S1887A
⚠D1903	⚠Si. Diode	1S1887A
⚠D1904	⚠Si. Diode	1S1887A
⚠D1905	⚠Zener Diode	RD6.8EV3

Miscellaneous

Symbol	Description	Part Number
⚠F1901	⚠Fuse 1.25A	QMF53U1-1R25S
⚠F1902	⚠UL Fuse 3A	QMF66U1-3R0S


SU-1103A
MAIN PCB ASSY
H.SYNC
V.SYNC
GROUND
E4
E6
E5
E1
R302 2.2K
R305 2.2K
X301
X302
R301 2.2K
R304 2.2K
R318 10K
R319 10K
R303 390
R306 390
C303 .1 MY
C304 .1 MY
X301, X302, X305, X306
SYNC AMP
2SC454C or 2SC1685
R313 4.7K
R316 4.7K
R312 2.2K
X305
X306
R314 390
R317 390
NEGA TIVE H.SYNC
GROUND
NEGA TIVE V SYNC
D4
D1
D2
R315 2.2K
X303 BEAM LIMITER 2SA673
X304 BLANKING
2SC454C
R308 8.2K
R307 560
X304
X303
R310 330
R309 10K
C301 3.3/50
C302 220 or 100/16
IC01 POWER REGULATOR
STR383
B1
B2
E
B3
R01 220 25W UNF.R
FR901 220 1/2W
R903 4.7 3W CMF
R904 10K 2W OMR
C905 10/250
R906 220K
F901 10A
R902 2.7W UNFR
C901 .01
C902 .01
C903 .01
C904 400/200
D901
D902
D903
D904
D901~D904 LO5-E or RM-2C or 1S1887A
S901 TH-P
C907 .1 or .047 (OPTIONAL)
S01 LINE FILTER (OPTIONAL)
F902 3A
AC120V 60Hz/50Hz ±10%
R401 100
C403 220/16
C402 2.2 /16 TANTAL
D402 RD10F
R402 18K
C405 .033 MY
C404 .01 MY
C401 680
C501 .001
R404 8.2K
C406 .056 MY
R403 3.9K
R529 100
V. AMP
V. OSC
PHASE DET.
H.OSC
WAVE FORMER
IC 501 HA11244 H.AFC and H&V OSC
TP-33B
R533 4.7K
C504 1/50
C505 .012 MY
R502 68K
C508 .0056PP
R505 2.2K
C503 .015 MY
R501 5.6K
R504 5K
R509 10K 2W OMR
C506 33/16
H.FREQ
C507 .039 MY
R507 39
R508 6.8K
H.CENTER
R531 39
R532 0
X701
D701 RD20EV2
R701 4.7K
C701 100/16
R527 8.2K 1/2S
D505 RD-11E(B)
R411 22K
R412 27K
R407 4.7K
C407 4.7/63
R413 680
R405 12K
R406 200B
R408 200B
R409 68
R410 6.8 1W CMF
V. LIN
V.HEIGHT
X01
S4
S3
S2
S1
L503 WIDTH COIL
L502 LIN. COIL
X501
R510 5.6K 1/2S
T501
R506 560
C509 470 500V
C500 .0047 500V
R511 5.6K 2W OMR
C511 +47/160
V. HOLD
R423 6.8K
R422 10K B
R515 8.2 1W CMF
C517 47/6
T503 SIDE PIN TRANS.
C523 1/160
C515 .33 400V
D507 1SS81
R525 10K 1/2
D503 HF-1 RF-1 or UF-2
8H 180V
R423 6.8K
R422 10K B
X701 X-RAY PROTECTOR
2SC434C or 2SC1685
X501 H.DRIVE
2SC1507 K L, 2SC2371V
2SC2611 or 2SC2610BK
X01 H OUT
2SD898 or
2SD869
T2
T1
to SU-3032A



Schematic Notes

Unless otherwise specified

Resistance: (Ω) (K→KΩ, M→MΩ), 1/4 (W) carbon resistor

Capacitance: 1 or higher→ (pF), less than 1→ (μF)
working voltage→ 50 (V)
ceramic capacitor

Inductance: (μH)

Electrolytic Cap: Capacitance Value (μF)/working voltage (V),
NP → non-polar (or bipolar) electrolytic cap.

Refer to the parts list for additional component information.

⊙ indicates test point connection

⏚ indicates chassis ground unless otherwise specified

Hz indicates cycles per second

For **safety** purposes (and continuing reliability)

⚠ replace all components marked with safety symbol with identical type.
NOTE: FR → fusible resistor

Parts identification on circuit boards:
e.g. SU1126A (R107 = R**1**107)
SU3030A (R113 = R**3**113)

G07-FBO
00-4147-03

REPLACEMENT PARTS LIST - ELECTROHOME 13" MONITOR

Components identified by the ⚠ symbol in the PARTS LIST and on the Schematic have special characteristics important to safety.

DO NOT degrade the safety of the set through improper servicing.

Abbreviations for Resistors and Capacitors

Resistor			**Capacitor**		
C R	:	Carbon Resistor	C Cap.	:	Ceramic Capacitor
Comp. R	:	Composition Resistor	M Cap	:	Mylar Capacitor
OM R	:	Oxide Metal Film Resistor	E Cap.	:	Electrolytic Capacitor
V R	:	Variable Resistor	BP E Cap.	:	Bi-Polar (or Non-Polar) Electrolytic Capacitor
MF R	:	Metal Film Resistor			
CMF R	:	Coating Metal Film Resistor	MM Cap.	:	Metalized Mylar Capacitor
UNF R	:	Nonflammable Resistor	PP Cap.	:	Polypropylene Capacitor
F R	:	Fusible Resistor	MPP Cap.	:	Metalized PP Capacitor
			PS Cap	:	Polystyrol Capacitor
			Tan. Cap.	:	Tantal Capacitor

NOTE: When ordering replacement parts please specify the part number as shown in this list including part name, and model number. Complete information will help expedite the order.

Use of substitute replacement parts which do not have the same safety characteristics as specified, may create shock, fire or other hazards. For maximum reliability and performance, all parts should be replaced by those having identical specifications.

Symbol	**Description**	**Part Number**
	Main P.C.B. Ass'y	SU-1103A
	CRT Socket P.C.B. Ass'y	SU-3016A

Outside of the P.C.B. Ass'y

Symbol	**Description**	**Part Number**
⚠V01	⚠Picture Tube	370ESB22(E)
⚠DY01	⚠Deflection Yoke	C29123-V
	PC Magnet	A76366-A
	Wedge	C30006
	⚠Flyback Transf.	A19183-A
⚠R11	⚠Focus V R	A46606-A
⚠R05	UNF Resistor 220Ω, 25W. K	QRF258K-221
⚠C04	⚠C Capacitor 150 pF, AC1.5KV	QCZ0101-005
X01	Si. Transistor	2SD869
IC01	IC Regulator	STR383
L01	Degausing Coil	21-1007-31
	Degausing Coil Pin Terminal (2)	34-708-01
	Degausing Coil Pin Terminal Housing	34-709-01
	Groundstrap Ass'y.	34-697-04
	Groundstrap Wire Terminal	34-228-03
	Groundstrap Spring (2)	35-3560-01
BR	Support Bracket RH	35-3919-01
BR	Support Bracket LH	35-3919-02
SC	SCREW 10-½ Pix Tube Mtg. (4)	31-631018-08
WA	Pyramidal Lockwasher (4)	33-255-01
	Clip P.C.B. Support (2)	33-629-02
	Ground Lug	34-33-04
CH	Chassis Base	38-452-01

Main P.C.B. Ass'y (SU-1103A) Parts List

Resistors

Symbol	Description	Part Number
R1406	V R 200Ω	QVZ3230-022
R1408	V R 200Ω	QVZ3230-022
R1410	CMF R 6.8Ω1W J	QRX019J-6R8
R1414	OM R 3.3KΩ1W J	QRG019J-332
R1415	OM R 2.7KΩ1W J	QRG019J-272
R1421	OM R 12KΩ2W J	QRG029J-123
R1422	V R 10KΩ	QVZ3224-014H
⚠FR1401	⚠F R 68Ω2W K	QRH024K-680M
⚠R1503	⚠CMF R 11.8KΩ¼W +1%	QRV142F-1182
R1504	V R 5KΩ	QVZ3230-053
R1509	OM R 10KΩ2W J	QRG029J-103
R1511	OM R 5.6KΩ2W J	QRG029J-562
R1514	OM R 680Ω2W J	QRG029J-681
R1515	CMF R 8.2Ω1W J	QRX019J-8R2
R1522	CMF R 4.7Ω1W J	QRX019J-4R7
R1523	OM R 56Ω2W J	ORG029J-560
R1528	OM R 390Ω1W J	ORG019J-391
R1534	ZN R	ERZ-C05ZK471
VR1501	ZN R	ERZ-C05DK271
⚠R1703	⚠CMF R 39KΩ½W +1%	QRV122F-3902
⚠R1704	⚠CMF R 7.68KΩ¼W +1%	QRV142F-7681
⚠R1901	⚠Posistor	A75414
R1902	UNF R 2Ω7W K	QRF076K-2R0
R1903	CMF R 5.6Ω3W J	QRX039J-5R6
R1904	OM R 10KΩ2W J	QRG026J-103Z
⚠FR1901	⚠F R 220Ω½W K	QRH124K-221M

Capacitors

Symbol	Description	Part Number
C1402	Tan. Cap. 2.2uF 16V K	QEE51CK-225B
C1411	E Cap. 100uF 160V A	QEW52CA-107
C1412	E Cap. 3.3uF 160V A	QEW52CA-335
C1508	PP Cap. 5600pF 50V J	QFP31HJ-562
C1511	E Cap. 47uF 160V A	QEW52CA-476S
⚠C1512	⚠PP Cap. 2000pF DC1500V J	QFZ0082-202
⚠C1513	⚠PP Cap. 2000pF DC1500V J	QFZ0082-202
⚠C1514	⚠PP Cap. 2500pF DC1500V J	QFZ0082-252
C1515	PP Cap. 0.53uF DC1200V K	QFZ0067-534
C1520	BPE Cap. 1uF 50V A	QEN61HA-105Z
C1524	M Cap. 0.1uF 200V K	QFM72DK-682M
C1904	E Cap.	QEY0034-001
C1905	E Cap. 10uF 250V A	QEW52EA-106
⚠C1907	⚠MM Cap. 0.1uF AC150V Z	QFZ9008-104

Coils

Symbol	Description	Part Number
L1501	Peaking Coil	A75360-6
L1502	Liniarty Coil	A39934
L1503	Width Coil	C30380-A
L1504	Heater Choke	C30333-A
L1901	Line Filter	A39475-J

Transformers

Symbol	Description	Part Number
T1501	Hor. Drive Transf.	A46022-BM
T1503	Side Pin Transf.	C39050-A

Semiconductors

Symbol	Description	Part Number
IC1501	I.C.	HA11244
X1101	Si. Transistor	2SC1685(R)
X1102	Si. Transistor	2SA673(C)
X1103	Si. Transistor	2SC1685(R)
X1104	Si. Transistor	2SA673(C)
X1105	Si. Transistor	2SC1685(R)
X1106	Si. Transistor	2SA673(C)
X1301	Si. Transistor	2SC1685(R)
X1302	Si. Transistor	2SC1685(R)
X1303	Si. Transistor	2SA673(C)
X1304	Si. Transistor	2SC1685(R)
X1305	Si. Transistor	2SC1685(R)
X1401	Si. Transistor	2SD478
X1402	Si. Transistor	2SD478
X1501	Si. Transistor	2SC2610BK
X1701	Si. Transistor	2SC1685(P-S)
D1101	Si. Diode	W06A
D1102	Si. Diode	W06A
D1103	Si. Diode	W06A
D1301	Si. Diode	1S2473H
D1401	Si. Diode	1S2473H
D1402	Zener Diode	RD10F(C)
D1503	Si. Diode	HF-1
D1504	Si. Diode	V09E
D1505	Zener Diode	RD11E(B)
D1506	Si. Diode	W06A
D1507	Si. Diode	1SS81
D1508	Si. Diode	1S2473H
⚠D1701	⚠Zener Diode	RD20EV2
⚠D1901	⚠Si. Diode	1S1887A
⚠D1902	⚠Si. Diode	1S1887A
⚠D1903	⚠Si. Diode	1S1887A
⚠D1904	⚠Si. Diode	1S1887A

Miscellaneous

Symbol	Description	Part Number
⚠F1901	⚠Fuse 1A	QMF53U1-1R0S
⚠F1902	⚠UL Fuse 3A	QMF66U1-3R0S

CRT Socket P.C.B. Ass'y (SU-3016A) Parts List

Resistors

Symbol	Description	Part Number
R3105	V R 200Ω	QVZ3234-022
R3106	V R 200Ω	QVZ3234-022
R3113	V R 5KΩ	QVZ3234-053
R3114	V R 5KΩ	QVZ3234-053
R3115	V R 5KΩ	QVZ3234-053
R3116	OM R 10KΩ2W J	QRG029J-103
R3117	OM R 10KΩ2W J	QRG029J-103
R3118	OM R 10KΩ2W J	QRG029J-103
R3119	Comp. R 3.3KΩ½W K	QRZ0039-332
R3120	Comp. R 3.3KΩ½W K	QRZ0039-332
R3121	Comp. R 3.3KΩ½W K	QRZ0039-332

Capacitors

Symbol	Description	Part Number
C3107	E Cap. 10uF 250V A	QEW52EA-106
C3108	C Cap. 1000pF DC1400V P	QCZ9001-102M

Coils

Symbol	Description	Part Number
L3101	Peaking coil	QQL043K-101

Semiconductors

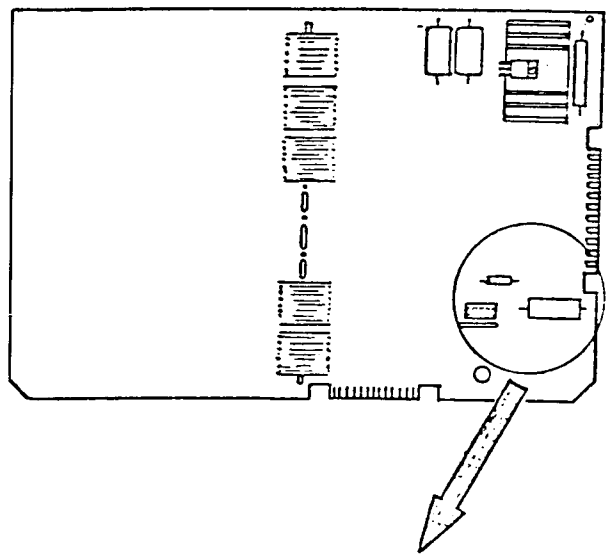
Symbol	Description	Part Number
X3101	Si. Transistor	2SC2611
X3102	Si. Transistor	2SC2611
X3103	Si. Transistor	2SC2611

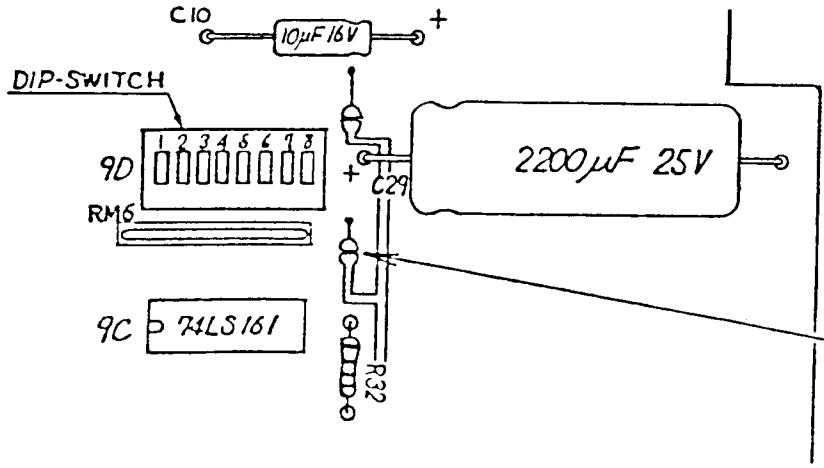
Miscellaneous

Symbol	Description	Part Number
⚠	⚠ CRT Socket	A75522

INSTRUCTIONS FOR MODIFICATION OF PAC-MAN GAME PCB

THE FOLLOWING ARE INSTRUCTIONS FOR MODIFYING PAC-MAN PCB SUCH THAT ① THE DEGREE OF DIFFICULTY OF THE GAME IS INCREASED.





① When this jumper pad is connected, the game becomes more difficult.

WARNING: THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTIONS MANUAL, MAY CAUSE INTERFERENCE TO RADIO COMMUNICATIONS. AS TEMPORARILY PERMITTED BY REGULATION IT HAS NOT BEEN TESTED FOR COMPLIANCE TO SUBPART J OR PART 15 OF FCC RULES, WHICH ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST SUCH INTERFERENCE. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE IN WHICH CASE THE USER AT HIS OWN EXPENSE WILL BE REQUIRED TO TAKE WHATEVER MEASURES MAY BE REQUIRED TO CORRECT THE INTERFERENCE.

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