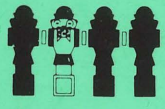
MIRCO

VOL. I
1011-9000
SLAM
1017-9000
SLAM

VIDEO GAMES
SERVICE MANUAL



MIRCO GAMES
DIVISION OF MIRCO, INC.
Manufacturers of Coin and Non-Coin Operated Amusement Games
1960 WEST NORTH LANE, PHOENIX, ARIZONA 85021
TELEPHONE (602) 997-5931

PN 496

VIDEO GAMES

SERVICE MANUAL

A Publication of Mirco Incorporated
Games Division

Congratulations on your purchase. We at Mirco Games take great pride in producing the finest in coin and non-coin operated amusement games on the market. Well maintained equipment will provide greater pleasure for your customers and increased profits for you. A thorough reading of this manual will clarify our Warranty and provide product knowledge and maintenance procedures.

This manual supercedes all
other manuals and warranties
expressed or implied therein.
(4-1-76)

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Some illustrations in this booklet are made possible by the use of the Motorola Service Manual 68P65130A70.

To order additional copies, see your local distributor, or write:

MIRCO GAMES DIVISION
Mirco Incorporated
1960 West North Lane
Phoenix, Arizona 85021

I WARRANTY

MIRCO warrants the Goods to be free from defects in material and workmanship under normal use and service for a period of twelve (12) months from the data of delivery on all parts except potentiometers, for which the warranty period is ninety (90) days from the data of delivery. MIRCO MAKES NO REPRESENTATIONS OR WARRANTIES CONCERNING THE EQUIPMENT WHETHER EXPRESS OR IMPLIED BY OPERATION OR OF FITNESS FOR ANY PARTICULAR PURPOSE, OR WITH RESPECT TO PATENT INFRINGEMENT, EXCEPT AS MAY BE SPECIFICALLY MADE HEREIN. MIRCO's obligation under its warranty herein is limited to the repair or replacement of such parts which have been returned to MIRCO's plant a Purchaser's expense and which examination shall disclose to MIRCO's satisfaction to have been so defective and to shipment of such repaired or replacement parts to the Purchaser f.o.b. the shipping point. This warranty does not apply to any of MIRCO's products which have been repaired or altered by un-authorized personnel or service facilities in any way or which have had the unit serial number altered or removed.

Upon acceptance of the Goods, the Purchaser agrees to assume all liability for any damages, and bodily injury which may result from the use or the misuse of others, and to hold MIRCO GAMES, INC., harmless from liability and claims arising out of the use of the Goods by any person.

Parts returned for service must contain the game model and serial numbers. Please use the red repair tag for this information. They also should be packaged to insure no damage is incurred during the shipment and shipped to 1960 West North Lane, Phoenix, Arizona, 85021. The original shipping carton is recommended.

II INSPECTION

Installation

1. IMPORTANT - Do not plug unit into wall power receptacle until inspection of game is completed.

2. Upon receipt of unit, check out immediately for damage. Mirco games are shipped in a carefully designed package intended to prevent shipping damage. However, if damage should occur a claim must be made with the carrier upon delivery of the game. Storage of packing material is recommended in the event reshipment of the game or a game part is desired.

Cleaning

IMPORTANT - UNPLUG GAME FROM POWER RECEPTACLE DURING CLEANING, INSPECTION, OR WHENEVER REPLACING A PART, TO PREVENT POSSIBLE ELECTRICAL SHOCK.

Top

Description - The top is of a one piece laminated formica. The surface is resistant to scratches. To help maintain the luster, occasional waxing will help. Scratches may be covered by using 'Old English' furniture polish.

Cleaning - The surface may be cleaned with any standard cleaner designed for this type of finish.

Outside Window

Description - The window used in the top is made of break resistant 3/16" flow tempered glass. The top surface is highly resistant to scratches and chips. Although scratching may result, shattering from a sharp blow is not likely.

Cleaning - Daily cleaning of the window may be accomplished using clear water and paper towels. Window cleaners may be used; however, overspray from these products will also remove wax or protective finish from the top. It is highly recommended that anti-static cleaner and a non-abrasive cloth be used.

Inside Window

Description - The tinted display window is made of break resistant acrylic plexiglass which is 16 to 20 times stronger than glass. Although scratching may result, shattering from a sharp blow is not likely.

Cleaning - Cleaning of the window may be accomplished by using any anti-static cleaner (such as Kleenmaster Brilliamize, made by Chemical Products Co., Omaha, Nebraska) and a soft non-abrasive cloth. If anti-static cleaners are not available, a mixture of Joy and water may be used. The window should be waxed with car wax (paste) after 15 to 20 cleanings. Hair-line scratches or spider webbing can be removed using Vestal Plus Polish (Vestal Laboratories, St. Louis, Missouri, 63110). CAUTION: Window or other ammonia cleaners must not be used.

Cabinet

Description - The outside surfaces of the cabinet are covered with a mar-resistant wood grained vinyl to insure long life and durability.

Cleaning - These finished cabinet surfaces may be cleaned with any standard cleaners designed for this type of finish. Deep scratches may be taken out using 'Old English' furniture polish.

Base

Cleaning - Mild soap and warm water should be used. The base may be touched up using brown enamel paint.

Picture Display Tube

Cleaning - May be accomplished with a damp (damp only) lintless towel. Do not apply liquid to tube - apply liquid to towel first, making sure it is only damp before attempting to clean tube.

Operation

1. Open front door with the key.

   To change end of game score point from 11 to 15:

   a. While you have the front door open push the metal tab (hanging down from the middle upper inside of the door jam) to the back. This will release the lid lock.

   b. While holding the tab back, push the lid open and lock into place with the lock-arm located at the rear right hand side of the game.

   c. Select game point of either 11 or 15 by moving switch on the 3700 circuit board on your back left (switch down for 11, upwards for 15). The switch is normally preset at the factory for 11 count.

   d. Unlock the lock-arm and carefully shut the lid, giving it a little downward push. Listen for a latching sound - it should now be locked in the down position. Give the lid a sharp pull upward to make sure it is locked before shutting the front door to the cabinet. Place game in final final location. Do not carry by top, use cabinet body.

2. To start game:

   a. Close and lock the front door. Connect to 110V 2-wire outlet only. Operation of unit not guaranteed if ungrounded 2-wire adapters are used.

NOTE: For those games placed in locations where 220VAC at 50Hz is required, the following is applicable. SW1 located on the monitor chassis must be placed in the 200V position. The power input cored must be converted for the same voltage and applicable power source plug.

IMPORTANT: All games are equipped with a safety interlock switch for your protection. The interlock switch allows AC power to the unit only when the door is closed and locked.

3. Selecting Mode:

   a. A play field should appear within moments on the display screen. Brightness, contrast and volume are preset at the factory. However, location, lighting and accoustics may vary, requiring readjustment of these controls (Ref. Fig. 1-1). It is recommended that adjustments other than the ones indicated be performed by a qualified technician.

   b. Select type of mode (i.e., player vs player or player versus game):

      Player vs Player

      Select Pro (small paddles) or Am (large paddles. Deposit one coin into the coin mechanism. This will display one (1) paddle for each player. Deposit a second coin for one additional paddle per player (for doubles). The first coin will cause the score to reset to 0-0. Push "To Start" button, game will commence immediately with a beginning serve tone.

      Player vs Game

      Deposit one coin for one (1) paddle for the challenger. Deposit a second coin for an additional paddle. The first coin will cause the score to reset to 0-0. Push "To Start" button - game will commence immediately with a beginning serve tone. For Am (large paddles) place knob into Am mode. (See Section VIII #3)

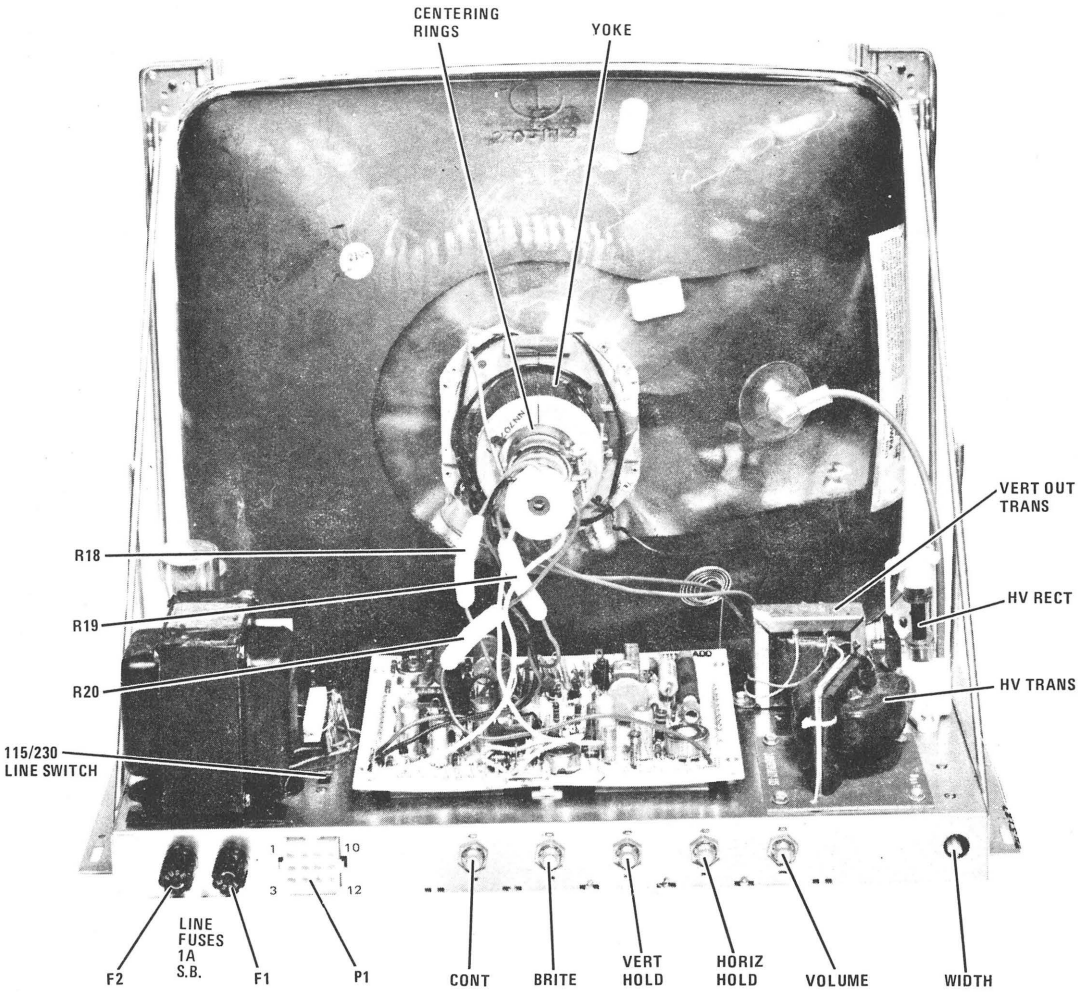
4. Free Game

A free game is available only in the player versus game mode. Upon the challenger winning, the free game light will come on.

a. Select mode
b. Push the "To Start" button for the second game. The free game light should remain on during the free game.
c. You cannot win a consecutive free game on top of the first free game. Only one free game is available per the original game.

NOTE: If the game does not operate properly, refer to the Troubleshooting Guide to determine the reason for the failure and steps that must be taken to correct operation.

NOTE: If game does not operate properly, refer to the Troubleshooting Guide to determine reason for failure and steps that must be taken to correct operation.



Chassis Component Location Rear View

FIGURE 1-1

III TROUBLESHOOTING GUIDE

IMPORTANT: UNPLUG GAME FROM POWER RECEPTACLE DURING CLEANING, INSPECTION, OR WHENEVER REPLACING A PART TO PREVENT ELECTRICAL SHOCK.

Normal Conditions

1. Partial numbers may be displayed prior to new game. Game should reset 0-0 upon insertion of a coin.

2. A tone will sound at pushing the "To Start" button after the insertion of a coin into the coin mechanism.

3. A tone should be sounded at every bounce and score of the ball. (The ball may be trapped along one of the boundaries emitting a constant tone while moving back and forth.)

4. There are two (2) speed-ups of the ball during play depending on how hard you hit the ball and at what angle in the Pro mode. (In Am mode there is only one speed-up)

5. Slight back and forth and/or up and down movement of paddle (ripping) in stationary position is okay; also, the amateur type paddle will collapse into the lower boundary.

Adjustments to be Made (if needed):

1. Game Points

   a. On the 3700 printed circuit board, there is a switch. In one position it will let the game continue to 11 points before ending; in the other, it will go to 15 (as expressed on Page 4).

2. Paddle Movement

   a. For paddles not going to the side of the playfield or stopping short of the wall, on the 3701 printed circuit board there is an adjustment potentiometer. See "Removal of Main Printed Circuit Boards" and Figure 2-1 (also Pages 24-27).

3. Picture

   a. Fuzziness can be adjusted on monitor from the brightness, contrast or focus controls. (See Page

   b. Vertical and horizontal holds are also adjusted on monitor chassis. (See Fig. 1-1)

Possible Computer Board Malfunctions

THE FOLLOWING MALFUNCATIONS WILL REQUIRE THE MAIN COMPUTER BOARDS TO BE REPLACED (See "Removal of Main Printed Circuit Boards", Page

1. Score Related - 3700 Board

   a. No reset to zero at beginning of game (either side or both)
   b. Partial and odd numbers (either side or both)
   c. Score does not display (either side or both)
   d. Score displayed continously (either side or both)
   e. Score erratic (either side or both)

2. Paddle Related - 3701 Board

   a. Four paddles for one coin
   b. Partial or odd paddles (either side or both)
   c. No paddles (either side or both) upon insertion of a coin (score of 0-0 may not appear)
   d. Two paddles for two coins
   e. (See "Miscellaneous Problems: Coin Mechanism Related")

3. Tone Related - 3701 Board

   a. An unusually long scoring tone (either side or both)
   b. An unusually short scoring tone (either side or both)
   c. No scoring tone (either side or both)

NOTE: Slight differences in length of score tone (up to 50%) do not indicate a board malfunction.

4. Free Game Related - 3700 Board

   a. Gives intermittant free game during regular game
   b. Gives free game, but no free game light (see "Replacement of Free Game Light")
   c. Gives free game light, but no free game
   d. Give no free game
   e. Free game light does not stay on during free game
   f. Paddles are removed after winning first game preventing play of free game
   g. Game will not end at score point during free game

5. Game Related

   In Player versus Machine mode - 3700 board:

   a. Backboard and guard appear but no right paddle
   b. Backboard, guard and right paddle appear but right inside paddle does not appear with insertion of second quarter
   c. Backboard does not appear
   d. Guard does not appear
   e. No goal in back wall
   f. Paddles disappear after winning free game

   In Player versus Player mode - 3700/3701 boards:

   a. First quarter does not give paddle on right side
   b. First quarter does not give paddle on left side
   c. Second quarter does not give paddle on left side
   d. Second quarter does not give left inside paddle
   e. Half or only part of any paddle displayed
   f. Top boundary missing all or in part
   g. Net missing

5. Game Related (continued)

   End of game - 3700 board

   a. Game ends on 1 or 5
   b. Game ends immediately after start
   c. Score reaches 11 or 15, then goes back to 10
   d. Games does not end when score on right reaches 11 or 15
   e. Game does not end when score on left reaches 11 or 15
   f. Game continues beyond 11 or 15

6. Play Field Related - 3700 board

   a. Multiple fields
   b. No net or partial net
   c. No video, but ball
   d. Fuzziness (See Figure 3-5 for focus control)
   e. Playfield light with black borders

7. Ball Related - 3700/3701 boards

   a. No balls
   b. Multiple balls
   c. Erratic balls, jerky balls
   d. Unusually high or low travel speeds
   e. No angle to rebound off a paddle
   f. Score doesn't change at time of win
   g. Does not go through goal (during Player versus Game mode)
   h. Fails to bounce off walls or paddles

8. High-Intensity LED's - 3700 board

   a. Under lid for the illumination of the coin acceptor. LED's test okay, but don't light. (See Page 24)

9. Coin-Operation - 3700 board

   a. Related problems with number of paddles appearing on playfield. (See Page 24)

10. Ball Speed Up - 3700 board

11. Pre-game Show - 3701 board

    a. Pre-game show (except ball)

12. Video Related - 3700/3701 boards

    a. *No picture or just a flash on screen at time of plugging in or unplugging from wall socket
    b. *White screen
    c. Ball and/or playfield in bad contrast
    d. Tube lights up, but no playfield
    e. Vertical or horizontal hold or contrast unadjustable from monitor chassis. See "Miscellaneous Parts to be Replaced, Monitor")

*Note: For (a) or (b) see "Miscellaneous Parts to be replaced (Monitor, (a) and (b), Pages 17 & 18. Check Q19, Q20 or IC1 first before Slam Boards.

Removal of Main Printed Circuit Boards

CAUTION: Unplug the game first!

1. Unplug the game
2. Unlatch lid and lock in the full open position
3. Located on your left are the Main Printed Circuit Boards. Pull each of the four plugs out by depressing both release tabs and pulling straight out. Carefully take the two (2) upper corners and pull the boards straight up and out, lay the boards on the Display Tube (using a soft cloth covering the tube to prevent scratches from the Printed Circuit Boards), with the component sides facing upward (see Figures 2-2 and 2-3).
4. Fill out red repair tag and mail broken boards and reapir tags to MIRCO.

MIRCO GAME REPAIR TAG
USE ONE TAG PER ITEM TO BE REPAIRED

MIRCO GAMES, INC.
Manufacturers of Coin and Non-Coin Operated Amusement Games
1960 WEST NORTH LANE, PHOENIX, ARIZONA 85021
TELEPHONE (602) 944-5578
ATTN: DAVE MASSEY
CUSTOMER SERVICE

NAME JOHN SMITH
ADDRESS 1402 THAT ST.
CITY-STATE ANYWHERE, U.S.A.
P.O. BOX NO. -0- ZIP CODE 99009

FILL IN INFORMATION PERTINENT TO ITEM TO BE REPAIRED:
GAME SERIAL NO. 430
MONITOR SERIAL NO. _____
MONITOR PANEL BOARD SERIAL NO. _____
5V-VS 102 POWER BOARD SERIAL NO. _____
COMPUTER BOARD SERIAL NO. 1011-3700 #580
(FOR COMPUTER BOARDS — PLEASE IDENTIFY BY CHECKING ONE OF THE FOLLOWING.)

☐ 3500 ☒ 3700 ☐ 3701 ☐ 3702 ☐ _____ OTHER

DESCRIPTION OF PROBLEM(S)
GAME WON'T RESET TO 0-0
ON FREE GAME, GOES TO 10-0
INSTEAD

(PLEASE REQUEST ADDITIONAL SHEETS AS NEEDED)
USE IN CONJUNCTION WITH MIRCO GAME ITEM TRANSFER TAG, IF NEEDED.

RETURN, IN CARE OF SAME

SAMPLE REPAIR TAG

Replacement of Main Printed Circuit Boards

Upon reinstallation of the Main Printed Circuit Board, make certain you slide it into the slots provided on either side of the game box interior. (see Figure 2-1)

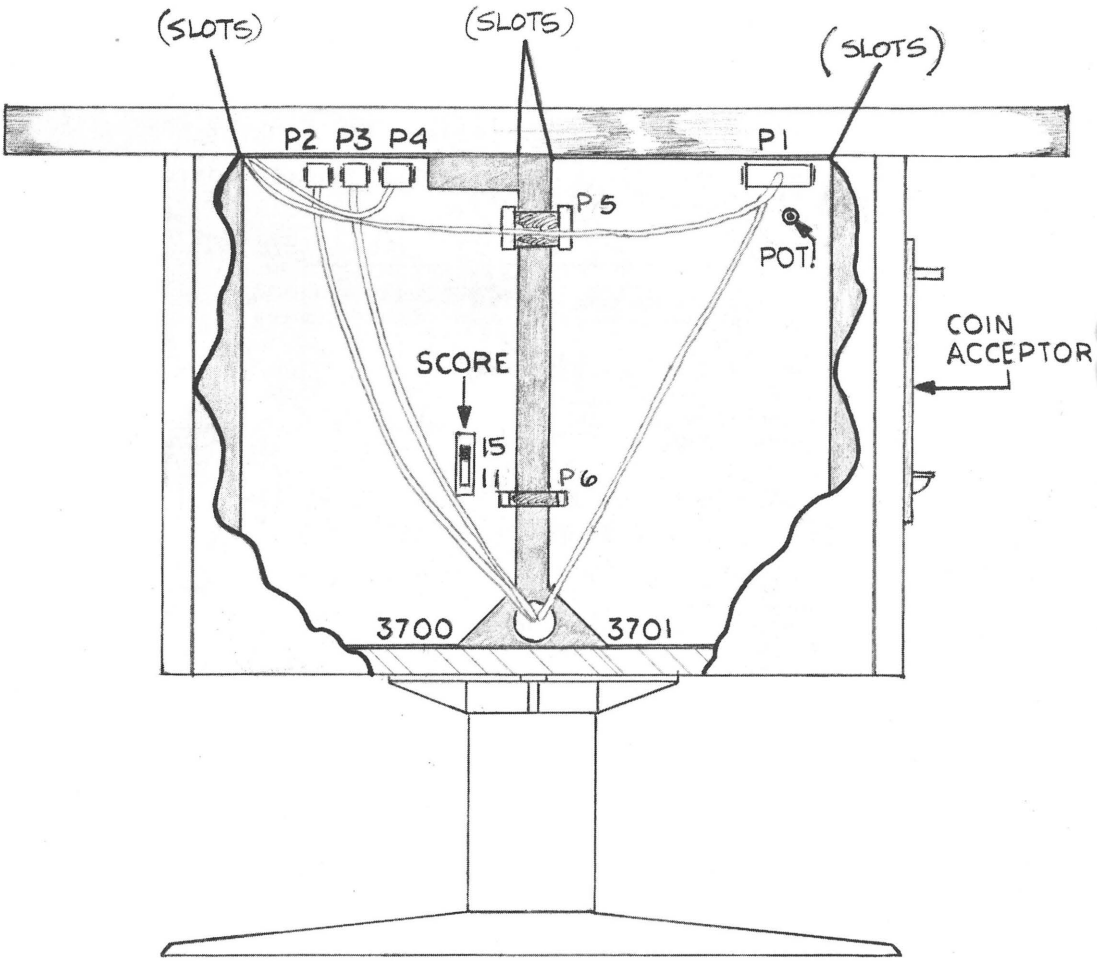
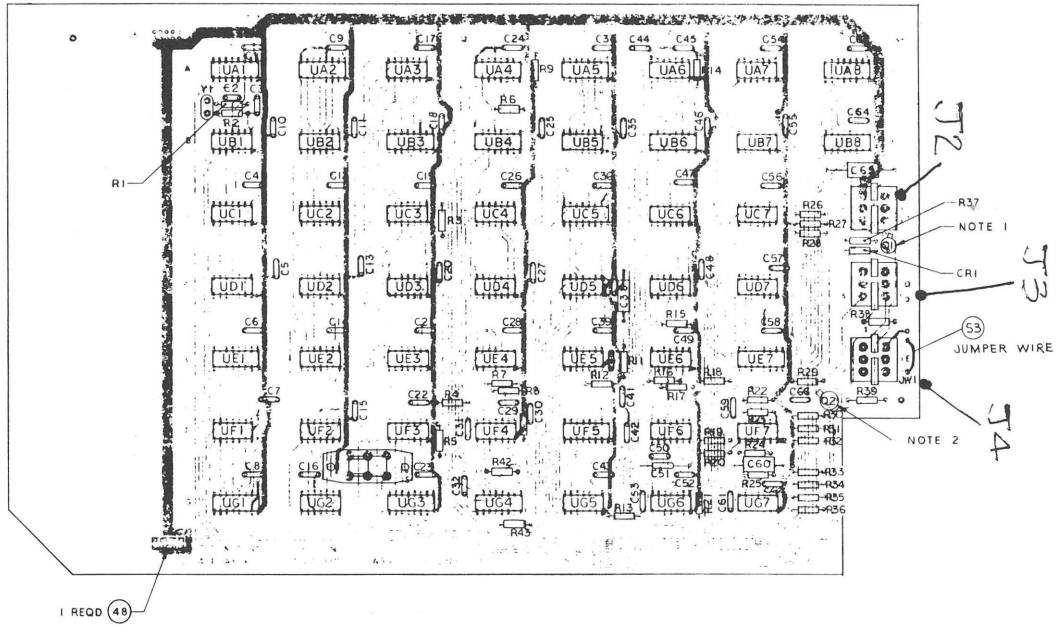


FIGURE 2-1

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1011-3700 COMPONENT SIDE

NOTES:
1. INSTALL ITEM 52 WITH Q1.
2. INSTALL ITEM 51 WITH Q2.

FOUR PLAYER JOY STICK NO I

NUMBER: 1011-3700 DATE: JUNE 23,75 KPY	ISSUE 3
REVISIONS	
REVISED & REDRAWN PER ECO FOR/3 JUN 23,75 KPY	3
DELETED R40 & R41. ADDED JUMPER WIRE. ECO 5025. 8/14/75 KPY	4

MIRCO GAMES INC.
PHOENIX, ARIZONA

FIGURE 2-2

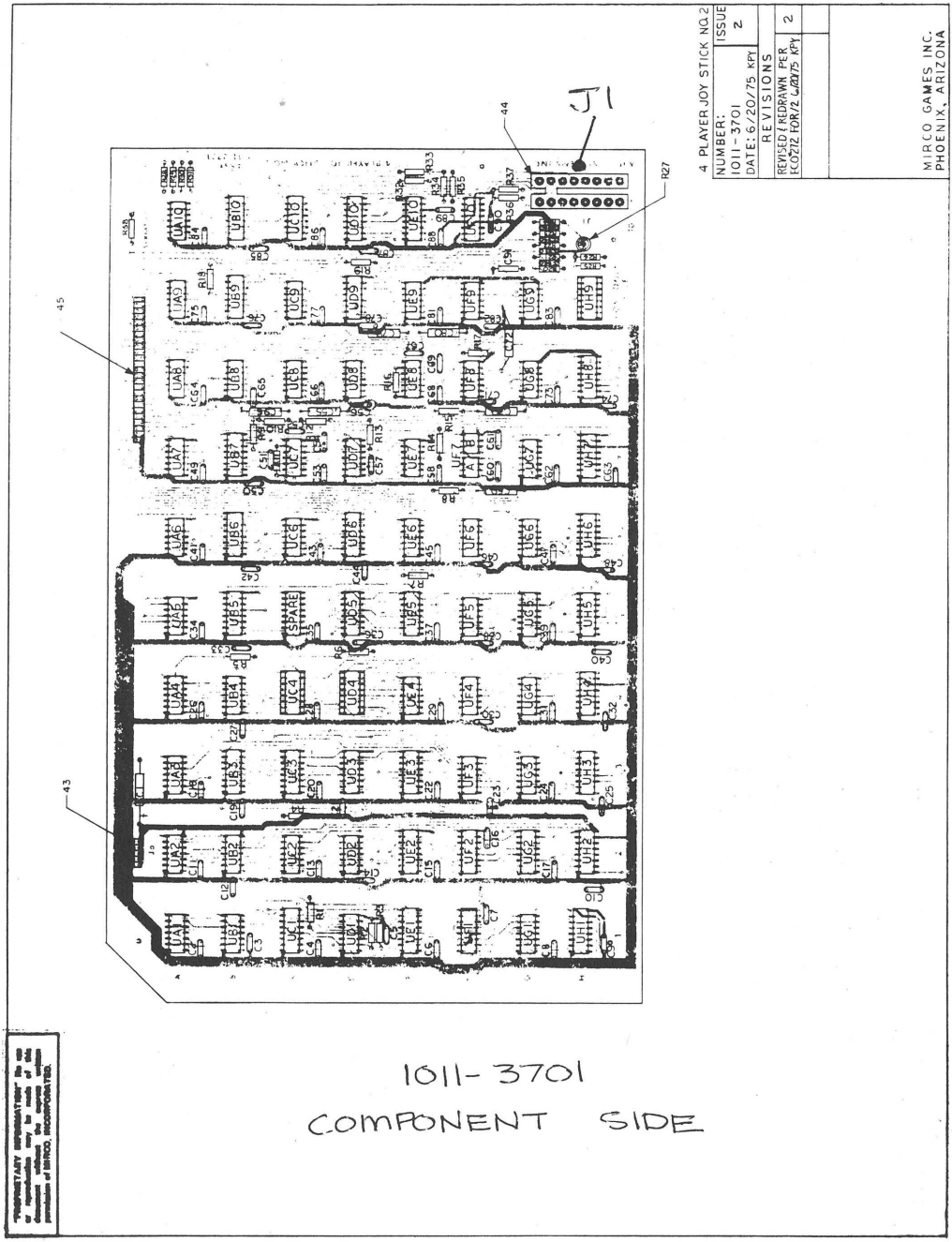

4 PLAYER JOY STICK NO.2
NUMBER: 1011-3701
ISSUE 2
DATE: 6/20/75 KPY
REVISIONS
REVISED (REDRAWN PER ECO712 FOR/2 6/2075 KPY
2
MIRCO GAMES INC.
PHOENIX, ARIZONA
J1
44
45
43
R27
1011-3701
COMPONENT SIDE

FIGURE 2-3

IV MISCELLANEOUS PARTS TO BE REPLACED OR REPAIRED (if the following problems exist)

Player Mode Switch

1. If the wires are not loose or shorting, circuit boards are okay, but still:

   a. Player versus Player is unobtainable
   b. Player versus Game is unobtainable
   c. Neither position will allow a game after money has been deposited

Control Potentiometers

1. If the wires are not loose or shorting, but:

   a. Paddles move erratically to rotation of levers
   b. Set screws may be loose on pots
   c. Pots may need replacing

Start Button

1. If the wires are not loose or shorting, but:

   a. Fails to start game after money has been deposited and switch has been depressed

Monitor

There are two boards in the monitor, a small plug-in 5V board located behind the big black transformer (henceforth referred to as the audio panel), and an 8" x 5½" board plugged into the chassis with a small bunch of wires from the same board plugged into the yoke of the picture tube (henceforth referred to as the monitor panel). (See Figures 3-1 and 3-2)

A. Monitor Chassis

1. A low 73V on monitor power supply will give you a reduced playfield (in size) or ripple throughout the playfield, or bars in the playfield.

2. No picture - check Q16 or audio panel

3. Contrast, brightness, verticle or horizontal holds, or volume is unadjustable or partially adjustable.

MISCELLANEOUS PARTS TO BE REPLACED (continued)

B. Audio Panel (See Figure 3-3)

1. A low 5V output will produce snow or haze

2. No picture or sound, check Q18, Q19, IC1 (or Q20 on chassis)

C. Monitor Panel (See Figures 3-4 and 3-5)

1. Adjustments to this panel should be done only by a qualified serviceman

D. C43 - Capacitor (See Figure 3-1)

1. If playfield has ripples or waves in it

E. C47 - Capacitor (See Figure 3-1)

1. If dark lines move slowly and horizontally through the playfield

F. Light Bulb

1. No sound, or weak sound (see Page,31) Figures 3-2, Item E 1, also see Page,31, #4)

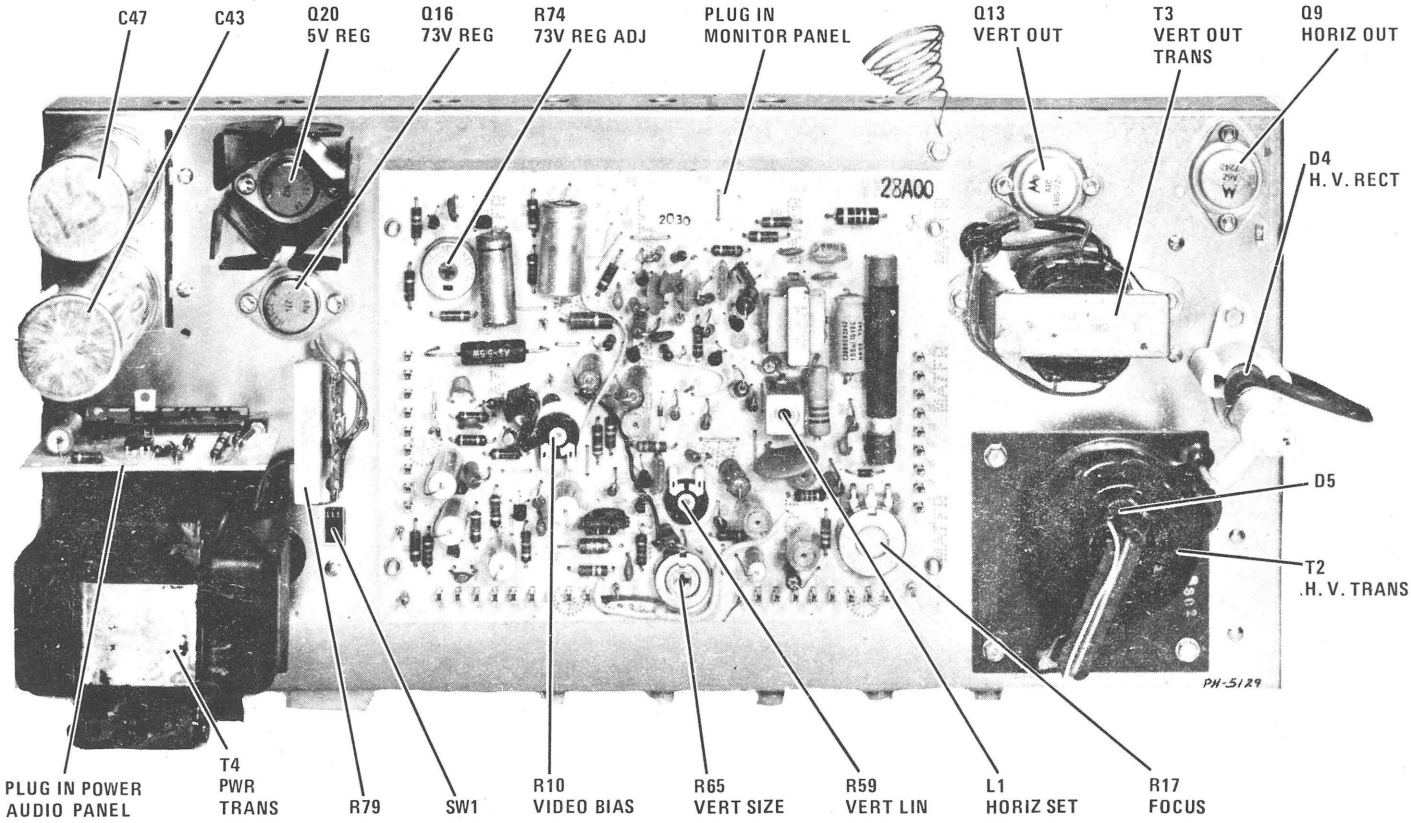
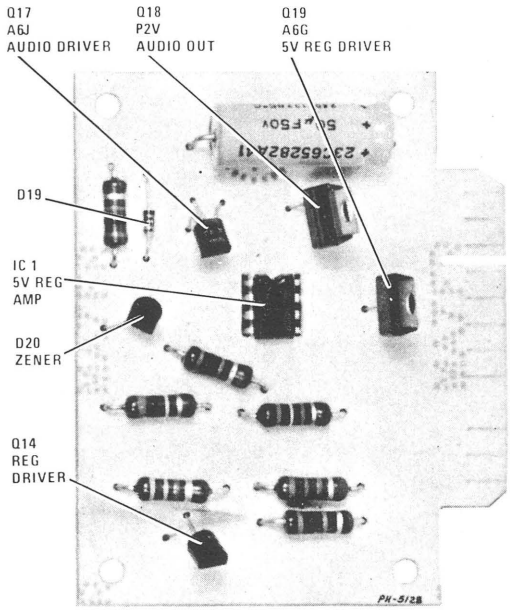
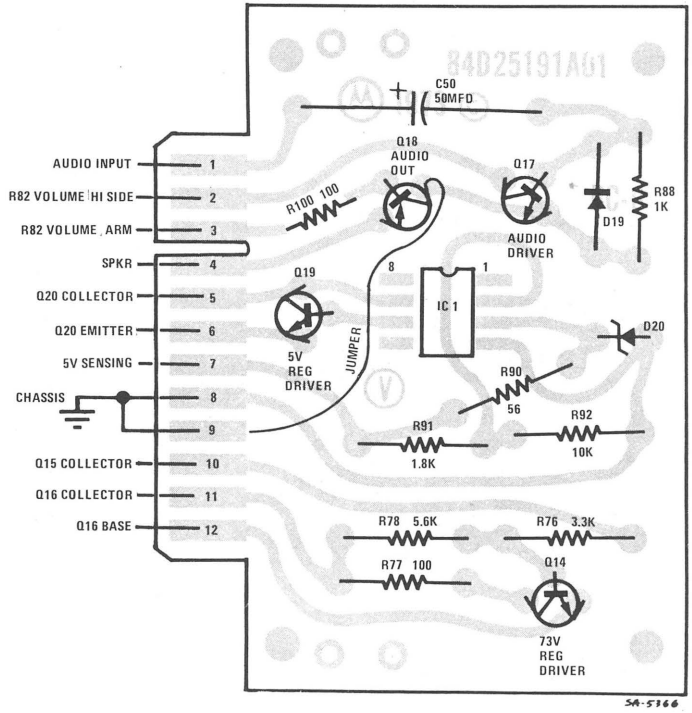


FIGURE 3-1

Chassis Component Location Top View





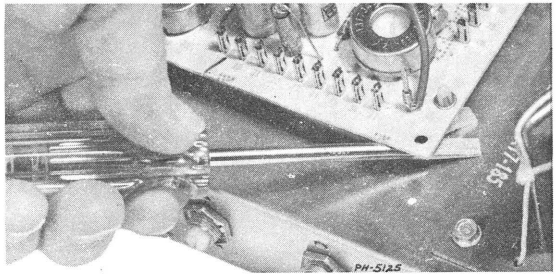
Top View *Circuit Side*

Power, Audio Panel Component Location

FIGURE 3-3

SERVICE NOTES

PANEL REMOVAL/INSTALLATION



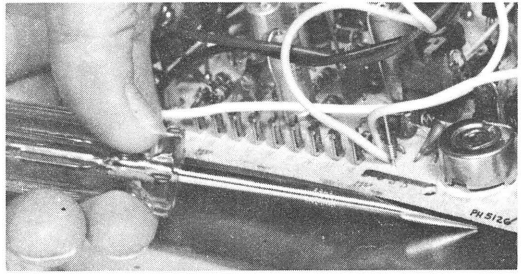
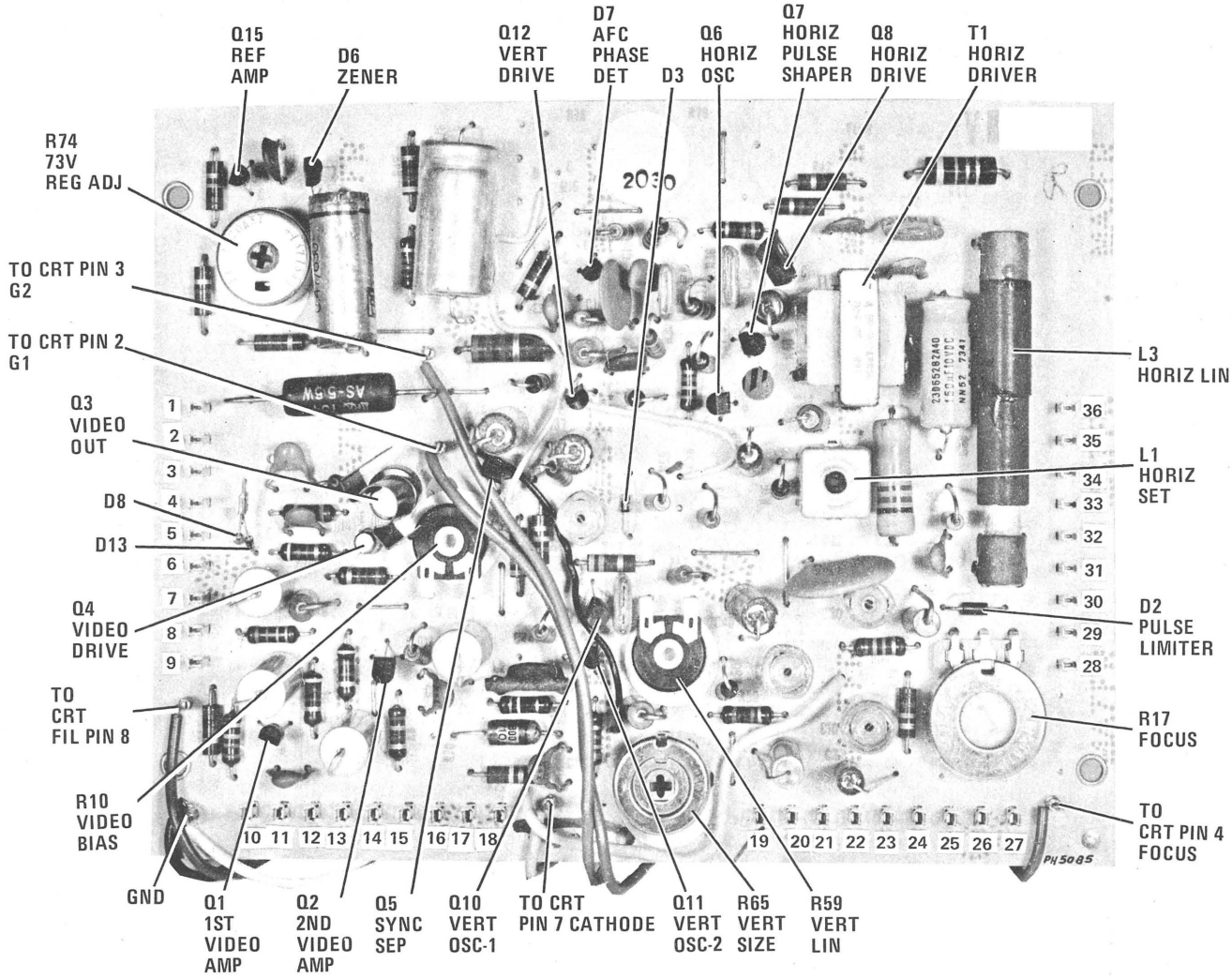


FIGURE 3-4

To prevent damage to the board or foil when removing the circuit panel it may be necessary to pry up slowly, IN STAGES around the edges as shown. Start at one corner and move all around the board keeping the screw driver tip against the chassis. When installing, apply pressure at the edges near the pins. Do not force down on the components.



Monitor Panel – Component Side

FIGURE 3-5

V MISCELLANEOUS PROBLEMS AND POSSIBLE SOLUTIONS

Coin Mechanism Related

1. Paddles don't appear, coins may be stuck in coin mechanism, or black wire on coin mechanism is loose.

2. Two paddles for two coins - check for loose wire on coin mechanism switch (blue or orange).

3. Two or four paddles appear on screen when game is first turned on: blue, orange, and black wires on the coin mechanism trip switch are shorting on coin box handle. Insulate coin box handle with electrical tape or put heat-shrinkable tubing on the contacts of the coin mechanism trip switch.

Audio Related

1. Score tone is fuzzy, may need speaker replacement.

2. Audio Panel may be failing (See Q18, Page 20)

3. Tone too loud or low, adjust on Monitor Chassis

4. No sound, see light bulb on underside of Monitor Chassis. (see Page 20)

5. No sound, see Q18 on Audio Panel

Free Game Related

1. No free game light, LED may be burned out.

Control Lever Related

1. Rotation of lever causes two or more paddles to move, potentiometer leads are probably shorted - inspect leads on controls.

2. No movement, bad potentiometer or see the set screws for possible looseness, or a wire may be broken (see Page 25)

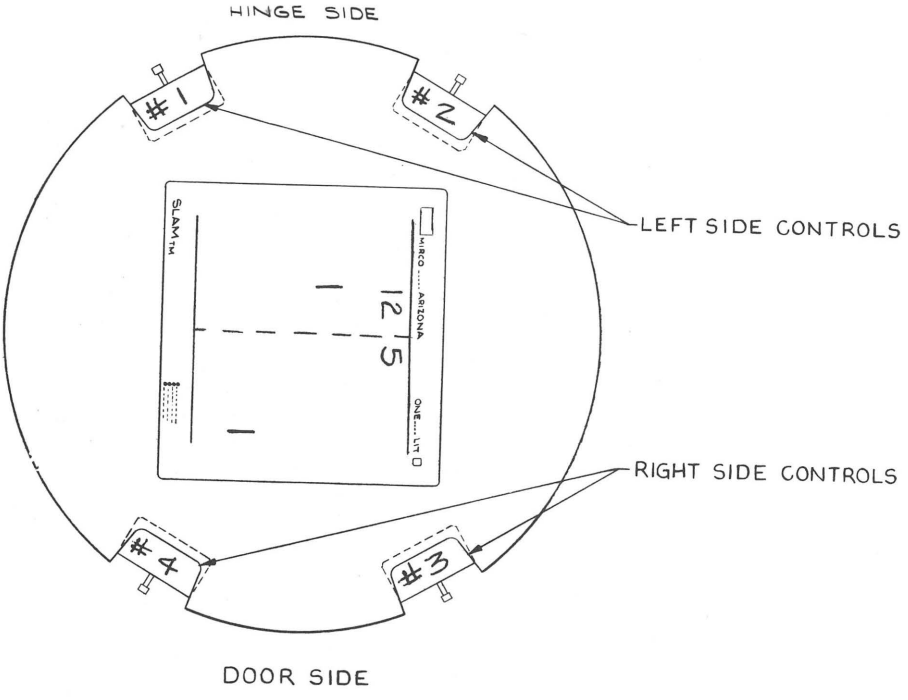


Figure 4-1
(top view)

These controls are wired in series. Therefore, if a wire breaks on any control, it will affect the rest of the controls left in that line; i.e., a wire breaks on #2, controls #3 and #4 will probably not operate horizontally or vertically. (Control #2 also may not work if two wires are broken.) Number 1 and #3 controls are your 25¢ controls, they get the most play and may be the major cause of control problems. Number 2 and #4 are your 50¢ controls.

The left hand side controls are <u>not</u> interchangeable with the right hand controls and vice versa, so when you order any spares, please indicate which control(s) you want.

Paddle Adjustment (against boundary)

1. Is for very small gaps
2. Is for larger gaps than 1/8"

1a. If a gap appears between a paddle and the lower boundary, adjust the 10k potentiometer (see Page 27 on the 1011-3701 logic board (located just under P1). Locate paddle to the bottom boundary, adjust the potentiometer until the paddle just touches the boundary.

2a. Calibration - Horizontal Pot Control

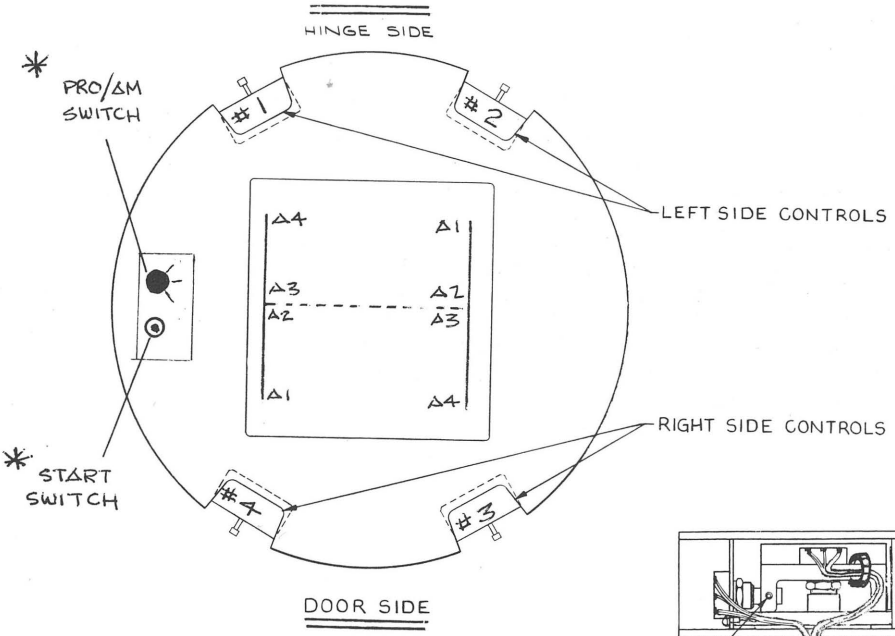
(See Page 27) Remove the housing containing slam control from the table top (but do not unplug it) by removing the two #2 Phillips screws. Remove the plastic housing from the control by removing the two 5/64" Allen Button Head screws. With the joy stick assembly held in left hand and game display set for four (4) players, loosen the set screws on the potentiomter shaft and manually turn the shaft until the paddle touches the boundary it was previously missing. Locate the control lever back to the point of the initial problem and tighten the set screws; i.e., #4 paddle was against the bottom boundary and up at the net (A-2 on Page 27) After adjustment of the pot shaft, push the lever up to A-2 and tighten set screws. Move the paddle around the court to see if it now hits all boundaries. Repeat as necessary.

2b. Calibration - Vertical Pot Control

The procedure is the same as horizontal except for the following:

10k pot on the 3701 board should be set to midway point before starting its calibration

10k pot is used to add to or subtract from the visual to mechanical balance



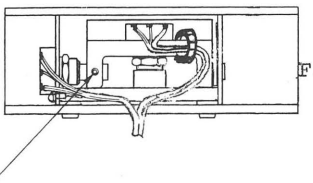


Fig.3

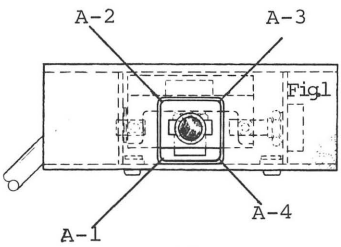
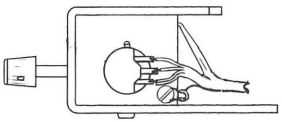


Fig1



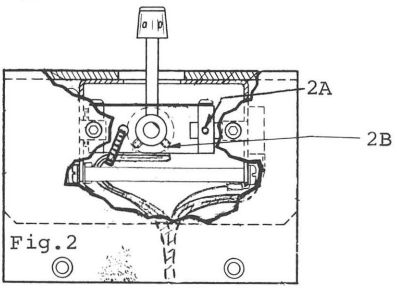


Fig.2

* = 1017-9000 MODELS ONLY

VI REPLACEMENT OF ANY ITEM IN THE GAME

For any item in your game that needs repair, we request that you fill out one (1) fluorescent red 'repair tag' per item with all the pertinent information and send us the 'repair tag(s)' along with the defective item(s).

All items in any particular game (boards, monitors, etc.) are to remain with the game in whcih they were originally installed, except in time of repair. All items sent to MIRCO will be repaired and returned with the assumption that the item will be replaced into the original game. This is of the utmost importance, as any deviation from this method will adversely affect the warranty.

VII REMOVAL OF PARTS

IMPORTANT: UNPLUG THE GAME FROM THE POWER RECEPTACLE DURING CLEANING, INSPECTION, OR WHENEVER REPLACING A PART TO PREVENT A POSSIBLE ELECTRICAL SHOCK

Top

1. Prior to the removal of the top, open up and remove the potentiometer controls, cables and free game and illumination lamps and cables.

2. Unscrew two screws holding the lid lock-arm to the top. Unscrews the ten screws holding the two hinges to the top.

Speaker

1. Using a small Phillips head screwdriver, remove the two screws diagonally placed on the speaker frame. Pull out.

Free Game Light

1. Remove two screws from retainer. Pull sideways, parallel to glass to remove. To replace, slide retainer sidways, parallel to glass and install two screws.

Monitor

1. Remove MP4 wire connector, pull monitor straight up and out. NOTE: Connector will come out only by depressing both release tabs. Also, it can be placed back into the monitor in only one way because of the connector mold.

Paddle Control Assembly

1. Open top
2. Remove two Phillips screws holding the black cover (containing the lever control) to the inside of the top.
3. Unplug the green multi-cable plug running to the control assembly.
4. Remove assembly from the lid (for calibration of control lever, see Page 26).

Illumination Lamps

1. For coin mechanism, remove plate inside the lid held on by two wood screws.

Game Mode Rotary Switch

1. Loosen nut holding switch to top
2. Push switch down or in and remove from inside
3. Separate switch from ground braid
4. Exchange wires from old switch to new switch one for one. If new switch is not available, mark location for reinstallation
5. Insert switch through ground braid, and place in panel
6. Install lock washer over switch and tighten nut (do not allow body of switch to rotate as nut is turned)

Start Switch

1. Twist switch body (under top) approximately 180° and pull down
2. Remove wires from switch terminals and connect to new switch one for one
3. Position switch in top
4. Twist switch body approximately 180° onto tab hanging down from the underside of the top. Let go of switch and it should be connected

Coin Mechanism

1. Remove ground braid from rear of frame
2. Remove mounting screws
3. Pull harness through front of door and change wires one for one to new mechanism
4. Connect wires to switch and position mechanism in door
5. Bolt in place and connect ground braid to rear of frame
6. Turn power on and check operation

VIII ADDITIONAL INFORMATION

1. A coin counter can be installed by connecting two purple wires lying by the speaker with butt-connectors on them, to either lead of the optional coin counter. Secure coin counter in an upright position on the floor left of the white pushbutton interlock switch.

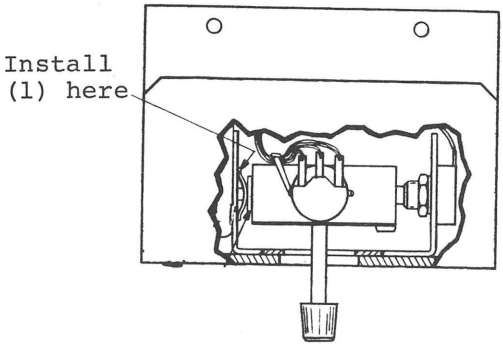
2. "Brightness" should be kept in the Off position (extreme counterclock wise) on the monitor. Use the control as illustrated in Figure 1-1. Bring the picture into focus using the contrast control (Figure 1-1). This process will increase the life of your tube.

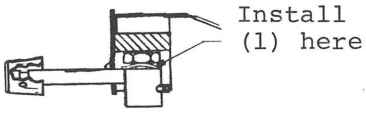
3. Player versus Game is in Pro mode, for Am insert quarters as usual, push "Push to Start" switch, turn mode switch to Am. This will give you double paddle size and slower speed.

4. E1 (Page , Figure 3-2) is a light bulb. For speaker protection, if this is burned out, you will get no sound. (It is normally "Off", only during tones does the bulb light up.)

5. To tighten control movement, install (2) wave washers per control. Part Number 7150-2501.

   Eight (8) washers are needed per game, one set (8) price is $.50.





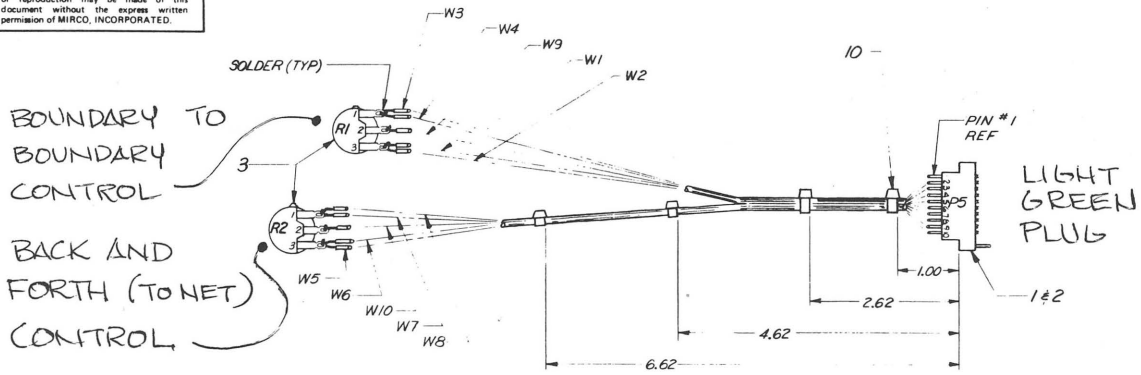
ADDITIONAL INFORMATION (continued)

Standard Repair Prices for Out of Warranty Games

Item	Description	Cost
1011-3700	8 Grid - Logic P.C. Board	$ 25.00
1011-3701	10 Grid - Logic P.C. Board	25.00
1011-3000	Slam Control Assembly	10.00
1011-0001	Monitor Panel P.C. Board	25.00
1011-0002	5 Volt Monitor P.C. Board	15.00
1011-XM501-10	Monitor	45.00

Shipping is to be paid both ways by the customer. This list of items and repair costs is subject to change without prior notification by MIRCO GAMES.

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WIRE LIST

WIRE NO.	COLOR	LENGTH ±.12	FROM	TO	FUNCTION
1	WHT/BK	10.00	P5-10	R1-3	HP-
2	WHT/BK	10.00	P5-9	R1-3	HP-
3	WHT/RD	10.00	P5-8	R1-1	HP+
4	WHT/RD	10.00	P5-7	R1-1	HP+
5	RED	11.00	P5-6	R2-3	VP+
6	RED	11.00	P5-5	R2-3	VP+
7	BLACK	11.00	P5-4	R2-1	VP-
8	BLACK	11.00	P5-3	R2-1	VP-
9	YELLOW	10.00	P5-2	R1-2	VL
10	ORANGE	11.00	P5-1	R2-2	HL

NOTES:
1. STRIP ALL WIRES .18 AT POT END, STRIP ALL WIRES .12 AT CONN. END.
2. WIRE LENGTHS ARE ACTUAL DIMENSIONS BEFORE STRIPPING.
3. SCALE: NONE
4. TOL: .XX= ±.03

CABLE ASSY, JOY STICK

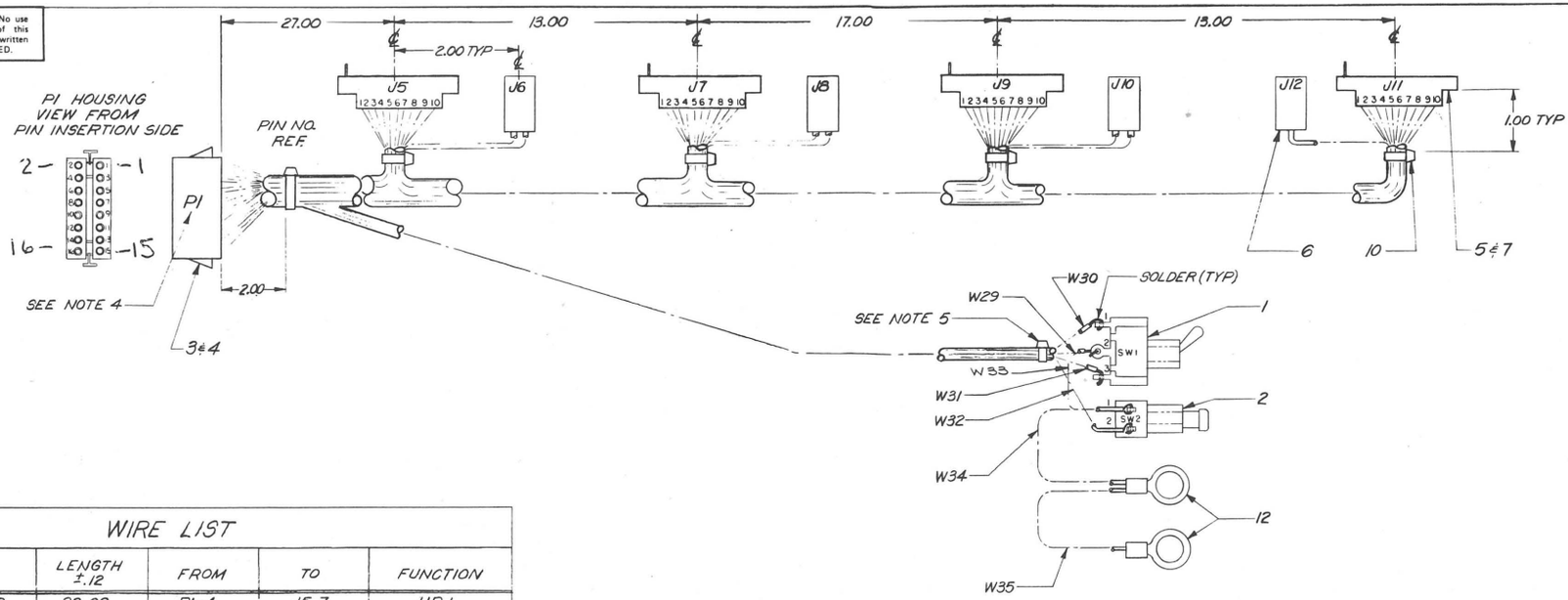
NUMBER	ISSUE
1011-0206	1
DATE: 4.10 75/C.M.	

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PHOENIX, ARIZONA

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WIRE LIST

WIRE NO.	COLOR	LENGTH ±.12	FROM	TO	FUNCTION
1	WHT/RED	28.00	P1-4	J5-7	HP+
2	WHT/RED	15.00	J5-8	J7-7	HP+
3	WHT/RED	19.00	J7-8	J9-9	HP+
4	WHT/RED	15.00	J9-10	J11-10	HP+
5	WHT/BLK	28.00	P1-16	J5-9	HP-
6	WHT/BLK	15.00	J5-10	J7-9	HP-
7	WHT/BLK	19.00	J7-10	J9-7	HP-
8	WHT/BLK	15.00	J9-8	J11-8	HP-
9	RED	28.00	P1-2	J5-5	VP+
10	RED	15.00	J5-6	J7-6	VP+
11	RED	19.00	J7-5	J9-3	VP+
12	RED	15.00	J9-4	J11-4	VP+
13	BLACK	28.00	P1-14	J5-3	VP-
14	BLACK	15.00	J5-4	J7-4	VP-
15	BLACK	19.00	J7-3	J9-5	VP-
16	BLACK	15.00	J9-6	J11-6	VP-
17	WHT/ORG	28.00	P1-11	J5-1	HL
18	ORANGE	28.00	P1-6	J5-2	VL
19	WHT/BRN	41.00	P1-9	J7-1	HLM
20	BROWN	41.00	P1-8	J7-2	VLM
21	WHT/YEL	58.00	P1-7	J9-1	HR
22	YELLOW	58.00	P1-10	J9-2	VR
23	WHT/GRN	71.00	P1-1	J11-1	HRM
24	GREEN	71.00	P1-12	J11-2	VRM
*25	BLACK	28.00	P1-15	J6	GND
26	BLACK	15.00	J6	J8	GND
27	BLACK	19.00	J8	J10	GND
28	BLACK	15.00	J10	J12	GND
*29	BLACK	80.00	P1-15	SW1-2	GND
30	WHITE	80.00	P1-5	SW1-1	PLAYER VS GAME
31	VIOLET	80.00	P1-3	SW1-3	PLAYER VS PLAYER
32	GRAY	83.00	P1-13	SW2-2	N.O.
33	BLACK	3.00	SW1-2	SW2-1	GND
34	BLACK	4.00	SW2-1	TERM	GND
35	BLACK	4.00	TERM	TERM	GND

NOTES:
1. STRIP ALL WIRES .18 EXCEPT J5, J7, J9 AND J11.
2. WIRE LENGTHS ARE ACTUAL DIMENSIONS BEFORE STRIPPING.
* 3. W25 & W29 ARE TWO WIRES CRIMPED ON ONE CONTACT PIN.
4. MARK "P1" ON HOUSING WITH INDELIBLE INK, APPROX. AS SHOWN.
5. INSTALL CABLE TIES AS REQ'D.
6. STRIP ALL WIRES .12 FOR J5, J7, J9 AND J11.
7. SCALE: NONE

ORIGINAL

JOY STICK CONTROL CABLE

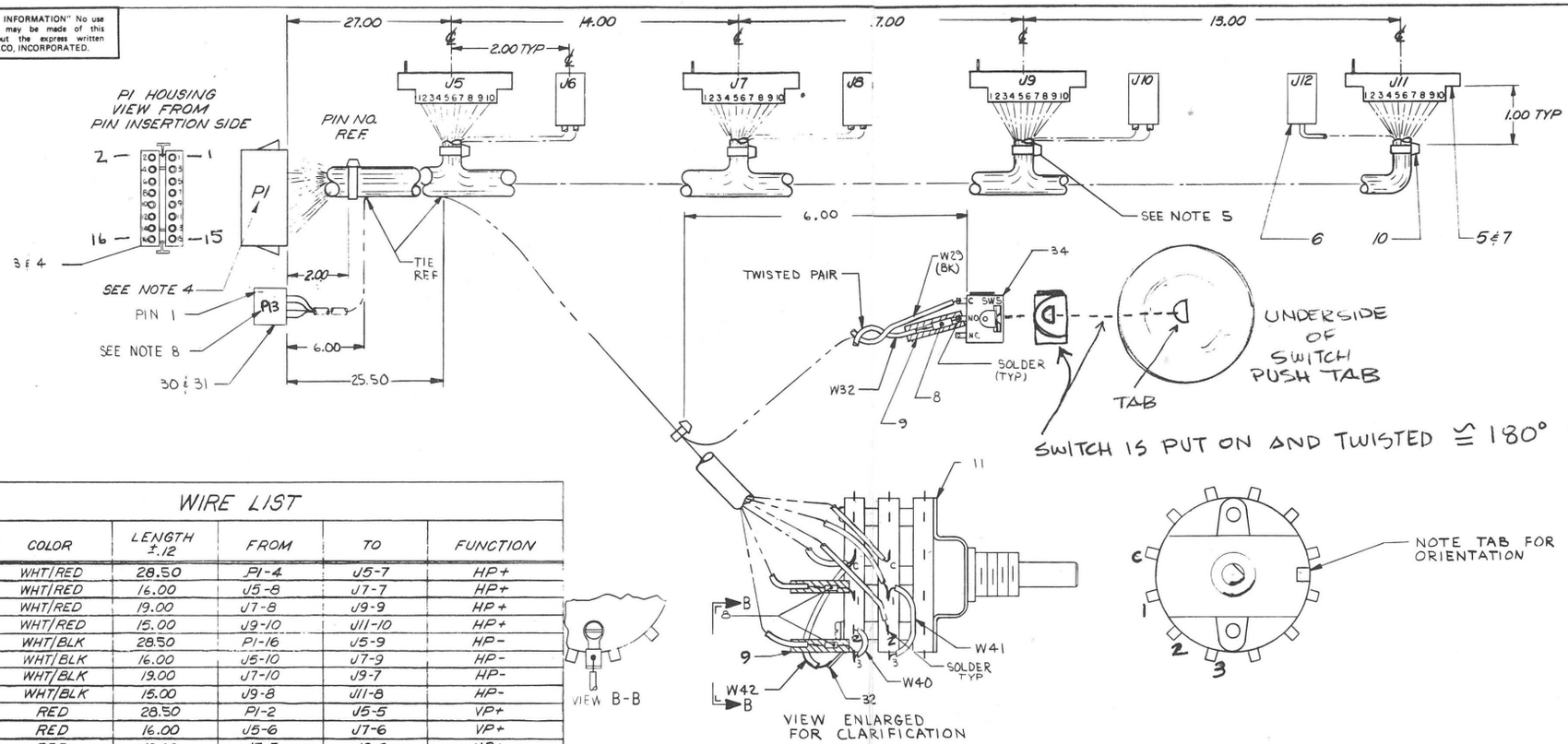
NUMBER	ISSUE
1011-0202 DATE: 4-11-75/C.M.	1

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WIRE LIST

WIRE NO.	COLOR	LENGTH ±.12	FROM	TO	FUNCTION
1	WHT/RED	28.50	P1-4	J5-7	HP+
2	WHT/RED	16.00	J5-8	J7-7	HP+
3	WHT/RED	19.00	J7-8	J9-9	HP+
4	WHT/RED	15.00	J9-10	J11-10	HP+
5	WHT/BLK	28.50	P1-16	J5-9	HP-
6	WHT/BLK	16.00	J5-10	J7-9	HP-
7	WHT/BLK	19.00	J7-10	J9-7	HP-
8	WHT/BLK	15.00	J9-8	J11-8	HP-
9	RED	28.50	P1-2	J5-5	VP+
10	RED	16.00	J5-6	J7-6	VP+
11	RED	19.00	J7-5	J9-3	VP+
12	RED	15.00	J9-4	J11-4	VP+
13	BLACK	28.50	P1-14	J5-3	VP-
14	BLACK	16.00	J5-4	J7-4	VP-
15	BLACK	19.00	J7-3	J9-5	VP-
16	BLACK	15.00	J9-6	J11-6	VP-
17	WHT/ORG	28.50	P1-11	J5-1	HL
18	ORANGE	28.50	P1-6	J5-2	VL
19	WHT/BRN	42.00	P1-9	J7-1	HLM
20	BROWN	42.00	P1-8	J7-2	VLM
21	WHT/YEL	59.00	P1-7	J9-1	HR
22	YELLOW	59.00	P1-10	J9-2	VR
23	WHT/GRN	72.00	P1-1	J11-1	HRM
24	GREEN	72.00	P1-12	J11-2	VRM
*25	BLACK	29.00	P1-15	J6	GND
26	BLACK	16.00	J6	J8	GND
27	BLACK	19.00	J8	J10	GND
28	BLACK	15.00	J10	J12	GND
*29	BLACK	44.00	P1-15	SW5-C	GND
30	WHITE	36.00	P1-5	SW3-3	PLAYER VS GAME
31	VIOLET	36.00	P1-3	SW3-1	PLAYER VS PLAYER
32	GRAY	44.00	P1-13	SW5-N.O.	N.O.
~~33~~	~~BLACK~~	~~5.00~~	~~SW1-2~~	~~SW2-1~~	~~GND~~
~~34~~	~~BLACK~~	~~4.00~~	~~SW2-1~~	~~TERM~~	~~GND~~
~~35~~	~~BLACK~~	~~4.00~~	~~TERM~~	~~TERM~~	~~GND~~
36	BLACK	38.00	P13-4	SW3-C	GND
37	BLUE	38.00	P13-1	SW4-2	VS GAME.L
38	WH/GY	38.00	P13-2	SW4-1	PRO/AM OUT
39	WH/BL	38.00	P13-3	SW4-C	PLAYER VS GAME

NOTES:
1. STRIP ALL WIRES .18 EXCEPT J5, J7, J9 AND J11.
2. WIRE LENGTHS ARE ACTUAL DIMENSIONS BEFORE STRIPPING.
* 3. W25 & W29 ARE TWO WIRES CRIMPED ON ONE CONTACT PIN.
4. MARK "P1" ON HOUSING WITH INDELIBLE INK, APPROX. AS SHOWN.
5. INSTALL CABLE TIES AS REQ'D.
6. STRIP ALL WIRES .12 FOR J5, J7, J9 AND J11.
7. SCALE: NONE
8. MARK "P13" AS SHOWN WITH INDELIBLE INK.

WIRE LIST

WIRE NO	COLOR	LENGTHS ±.12	FROM	TO	FUNCTION
40	BLACK	.50	SW3-2	SW3-3	JUMPER
41	BLACK	.75	SW4-1	SW4-3	JUMPER
42	BLACK	2.00	SW3-C	SOLDER LUG	GND

PRO/AM MODIFIED
JOY STICK CONTROL CABLE

NUMBER	ISSUE
1017-0202	7
DATE: 4-1175/C.M	

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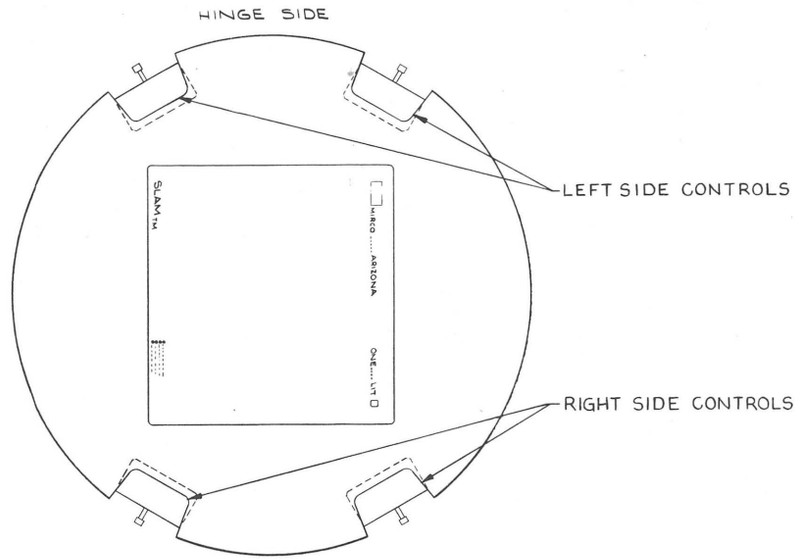
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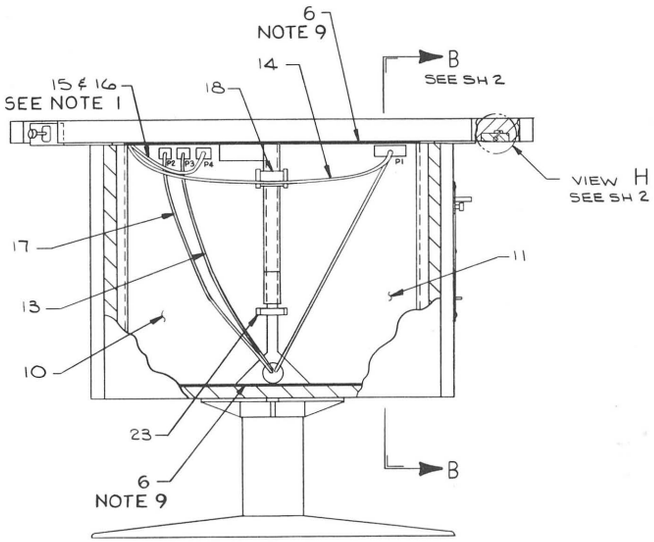
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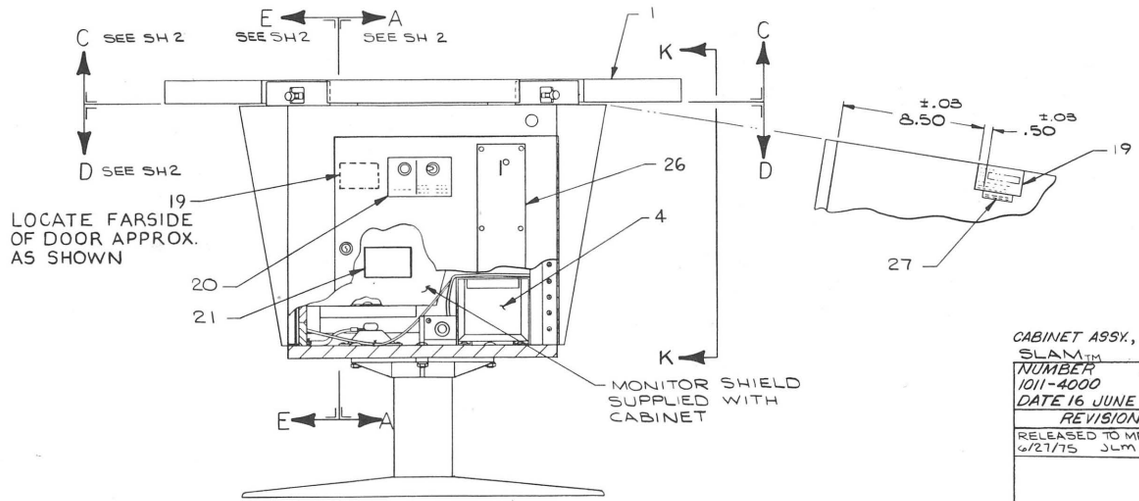
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NOTES:

1. LED CABLE ASSY. (ITEM 16) CONTACTS TO BE INSERTED INTO P4 HOUSING (ITEM 15) AS FOLLOWS: BLK WIRE TO P4-1, BLK WIRE TO P4-3 AND RED WIRE TO P4-2.
2. WHEN MOUNTING LEDS (VIEW H) (ITEM 15), PUSH LEDS THRU HOLES AFTER ADDING BUSHING AND RETAINER. BEND LEADS TO FIT ROUTING. CAUTION: LEADS ARE BRITTLE, CARE MUST BE TAKEN.
3. TO MOUNT INTERLOCK ASSY. (ITEM 9), SLIDE REAR OF COVER UNDER PRE-ADJUSTED SCREWS (AS SHOWN IN SECTION D-D) AND MOUNT FRONT USING ACCESS HOLES.
4. IF COIN COUNTER OPTION IS USED, CRIMP TWO BUTT CONNECTORS (VIO WIRES) TO BLK WIRES ON COUNTER. MOUNT COUNTER TO WALL OF CABINET USING TWO NO. 8 SHEET METAL SCREWS, 1/2 LONG.
5. ITEM 24 MUST BE TIGHT AGAINST INTERLOCK SWITCH. TERMINAL CANNOT BE EXPOSED.
6. INSTALL CABLES APPROX. AS SHOWN AND FASTEN IN PLACE WITH TIES (ITEM 22). STAPLE TIES TO CABINET.
7. DO NOT TRAP WIRES BETWEEN CABINET AND DOOR.
8. PLACE ITEMS 38 AND 39 IN COIN BOX PRIOR TO SHIPPING.
9. CUT ITEM 6 IN 18 INCH LENGTHS AND STICK TO ITEM 1 AS SHOWN.
10. MOUNT THE GROUND TERMINALS IN BETWEEN THE SWITCHES AND THE DOOR.
11. CUT ITEM 7 IN 1 INCH LENGTHS AND STICK TO ITEM 12 AS SHOWN.
12. FINAL ADJUSTMENT OF THESE CONTROLS SHALL BE DONE IN THE FIELD.
13. JOY STICK CONNECTORS SHALL BE MARKED RIGHT OR LEFT SIDE AT SUB ASS'Y. LEVEL.
14. SCALE: 1/4







CABINET ASSY, SLAM™

NUMBER	ISSUE
1011-4000	1

DATE 16 JUNE JLM

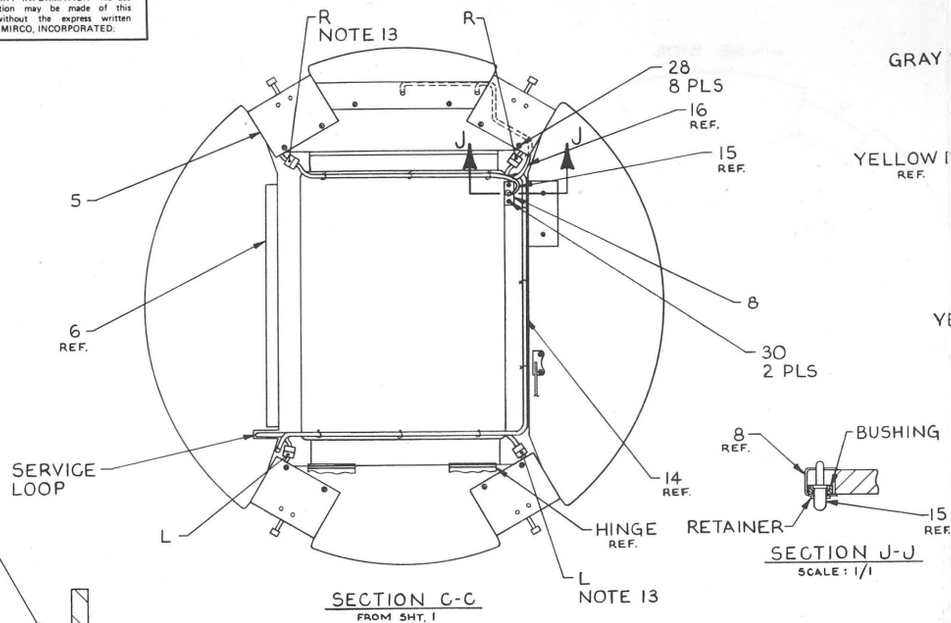
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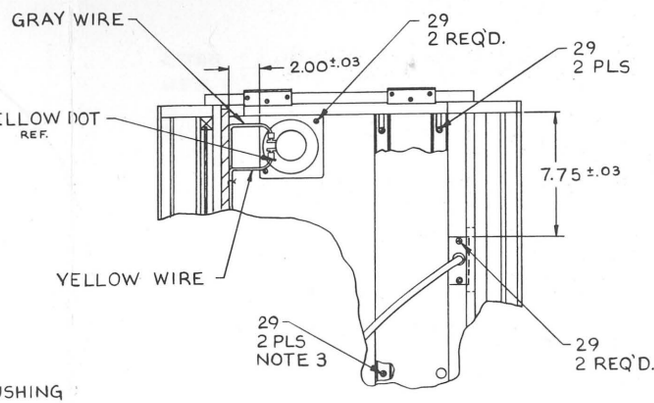
SHEET 1 OF 2

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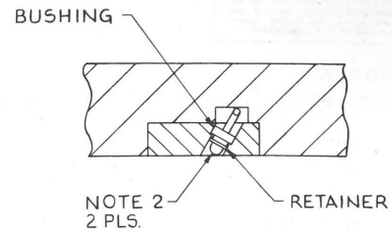


SECTION C-C
FROM SHT. 1

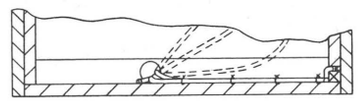
SECTION J-J
SCALE: 1/1



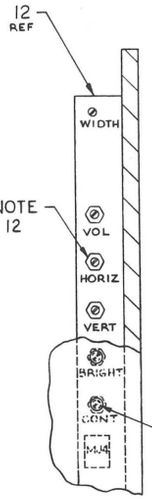
PARTIAL SECTION D-D
FROM SHT. 1



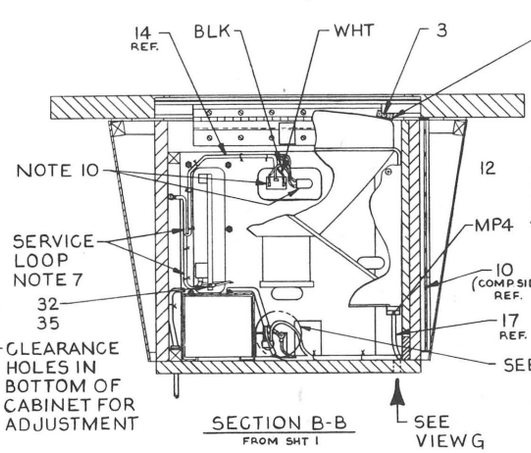
VIEW H
FROM SHT. 1
SCALE 1/1



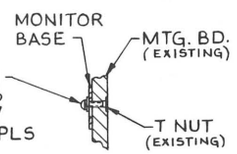
PARTIAL SECTION E-E
FROM SHT. 1



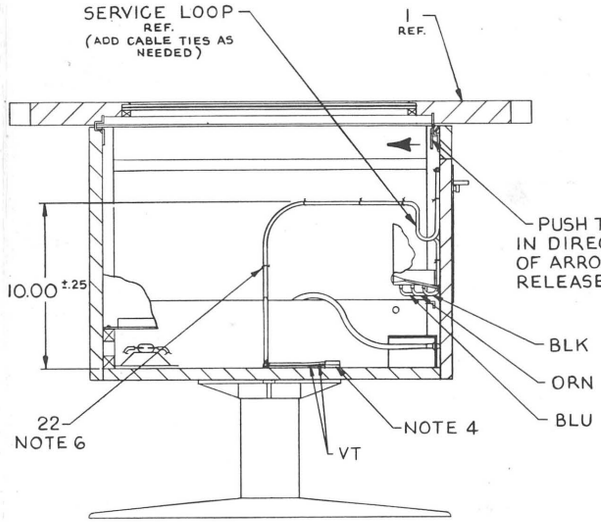
VIEW G
SCALE: 1/2



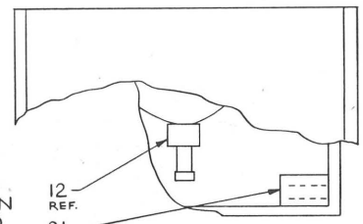
SECTION B-B
FROM SHT 1



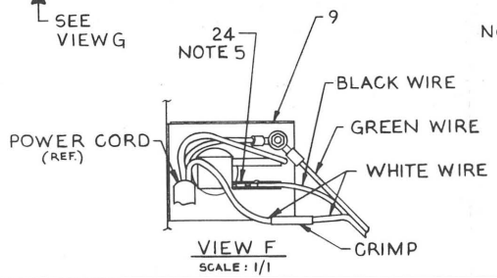
MONITOR MTG.
DETAIL
SCALE: 1/1



SECTION A-A
FROM SHT. 1



PARTIAL VIEW K-K
FROM SHT. 1

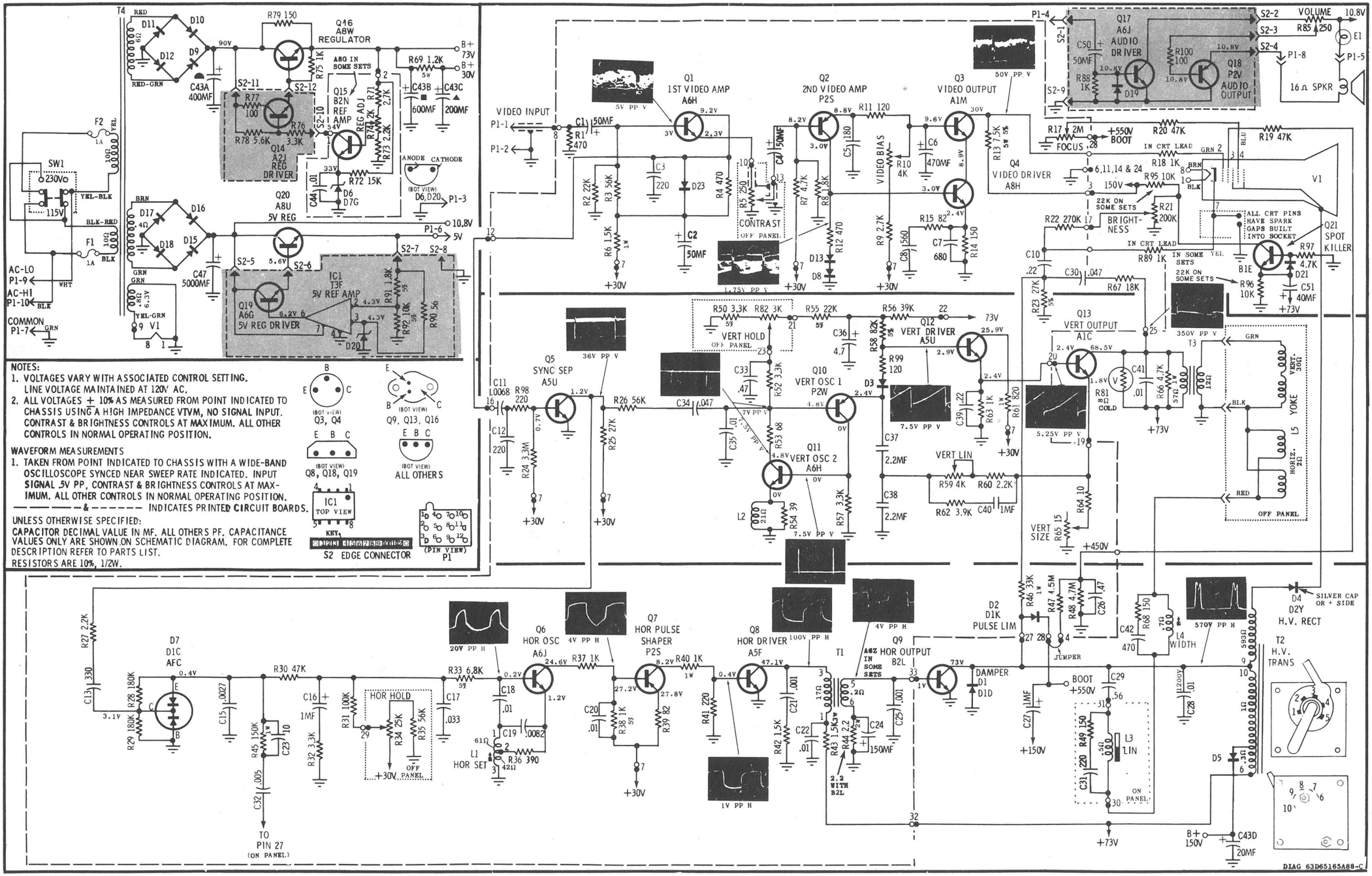


VIEW F
SCALE: 1/1

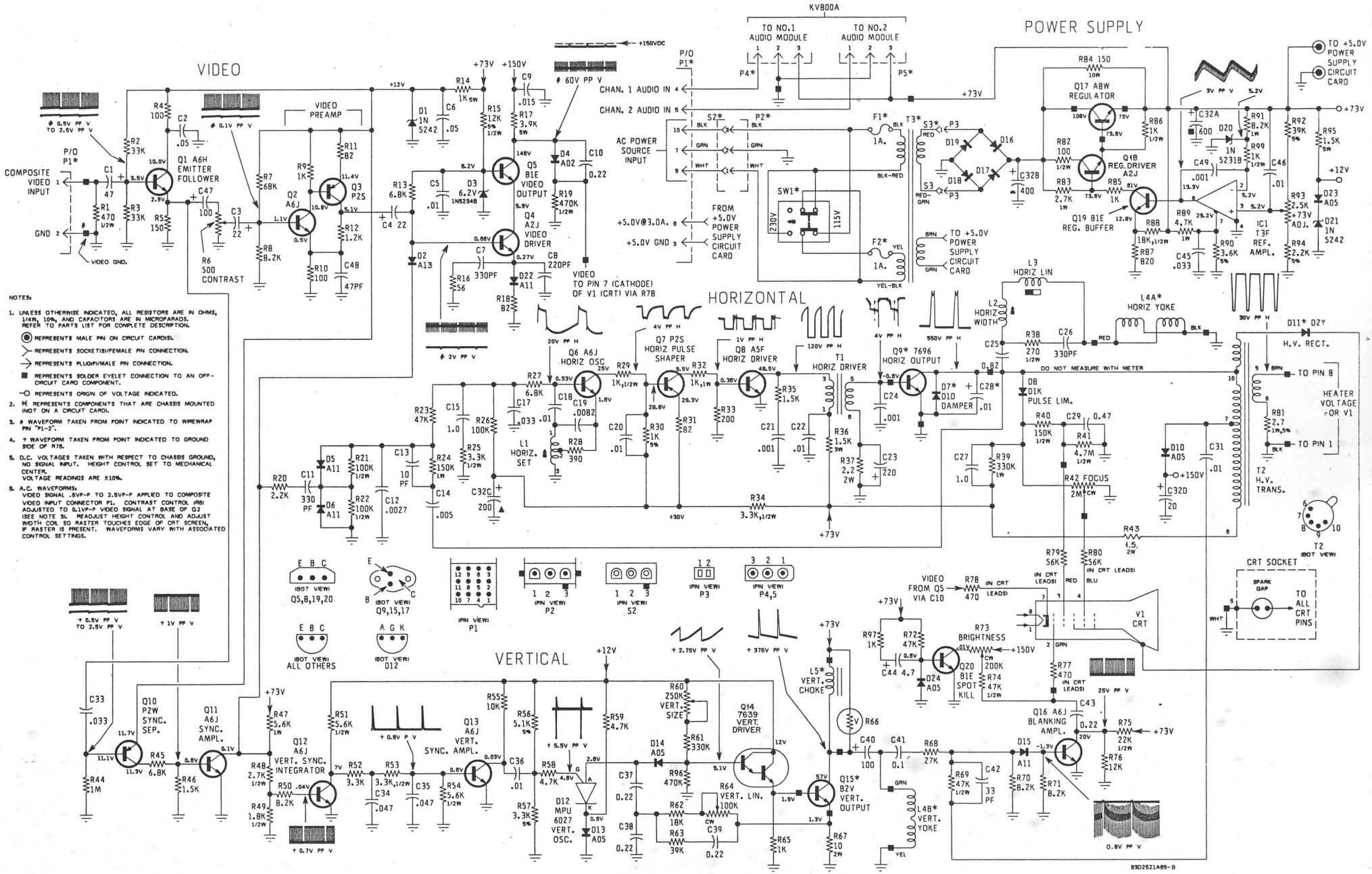
CABINET ASSY,
SLAM™

NUMBER	ISSUE
1011-4000	1
DATE 16 JUNE JLM	
REVISION	
RELEASED TO MFG 6/27/75 JLM	1

MIRCO GAMES, INC.
PHOENIX, ARIZONA
SHEET 2 OF 2



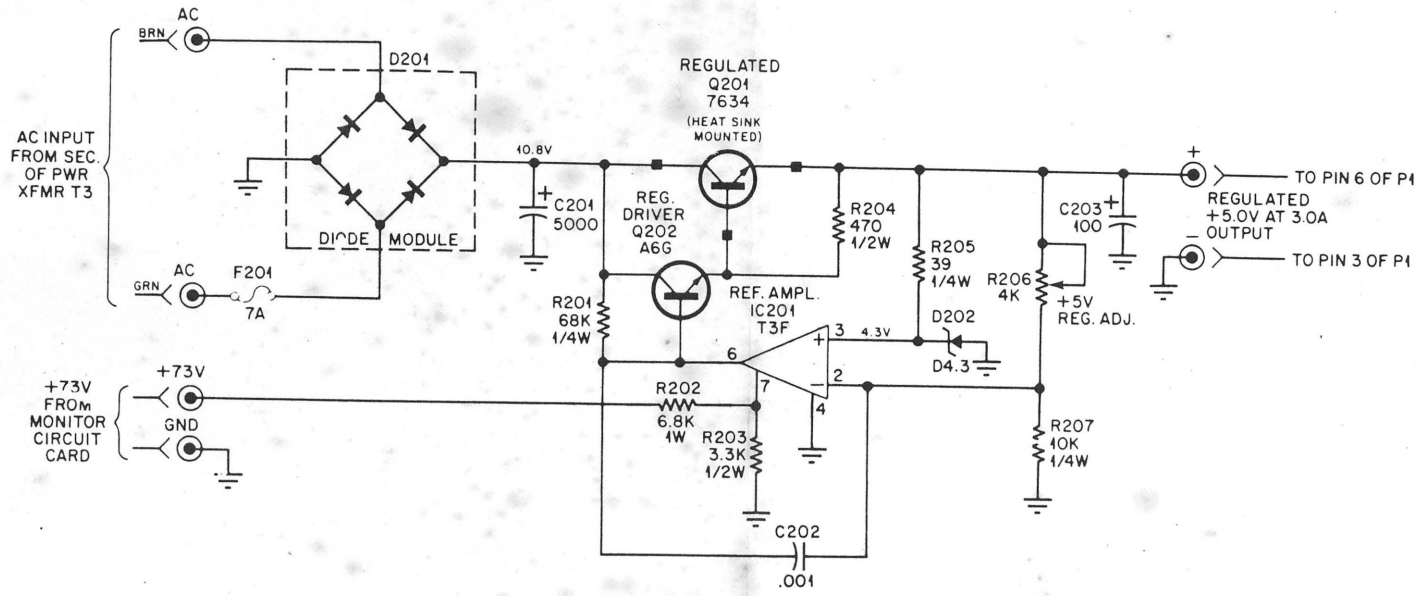
Schematic Diagram



NOTES:

1. UNLESS OTHERWISE INDICATED, ALL RESISTORS ARE IN OHMS, 1/4W, 10%, AND CAPACITORS ARE IN MICROFARADS. REFER TO PARTS LIST FOR COMPLETE DESCRIPTION.
   - ◉ REPRESENTS MALE PIN ON CIRCUIT CARD(S).
   - ⟩ REPRESENTS SOCKET(S)/FEMALE PIN CONNECTION.
   - → REPRESENTS PLUG(P)/MALE PIN CONNECTION.
   - ■ REPRESENTS SOLDER EYELET CONNECTION TO AN OFF-CIRCUIT CARD COMPONENT.
   - —○ REPRESENTS ORIGIN OF VOLTAGE INDICATED.
2. ✕ REPRESENTS COMPONENTS THAT ARE CHASSIS MOUNTED (NOT ON A CIRCUIT CARD).
3. ◊ WAVEFORM TAKEN FROM POINT INDICATED TO WIREWRAP PIN "P1-2".
4. † WAVEFORM TAKEN FROM POINT INDICATED TO GROUND SIDE OF R78.
5. D.C. VOLTAGES TAKEN WITH RESPECT TO CHASSIS GROUND, NO SIGNAL INPUT. HEIGHT CONTROL SET TO MECHANICAL CENTER. VOLTAGE READINGS ARE ±10%.
6. A.C. WAVEFORMS: VIDEO SIGNAL .5VP-P TO 2.5VP-P APPLIED TO COMPOSITE VIDEO INPUT CONNECTOR P1. CONTRAST CONTROL (R6) ADJUSTED TO 0.1VP-P VIDEO SIGNAL AT BASE OF Q2 (SEE NOTE 3). READJUST HEIGHT CONTROL AND ADJUST WIDTH COIL SO RASTER TOUCHES EDGE OF CRT SCREEN, IF RASTER IS PRESENT. WAVEFORMS VARY WITH ASSOCIATED CONTROL SETTINGS.

M5010–155, M7010–155 – Diagram Schematic



+5 Volt Supply — Diagram Schematic

PLACE
STAMP
HERE

MIRCO GAMES, INC.
1960 WEST NORTH LANE
PHOENIX, ARIZONA 85021

MIRCO GAMES, INC.

WARRANTY

MIRCO warrants the Goods to be free from defects in material and workmanship under normal use and service for a period of twelve (12) months from the date of delivery on all parts except potentiometers for which the warranty period is of ninety (90) days from the date of delivery. MIRCO MAKES NO REPRESENTATIONS OR WARRANTIES CONCERNING THE EQUIPMENT WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING THOSE OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE, OR WITH RESPECT TO PATENT INFRINGEMENT, EXCEPT AS MAY BE SPECIFICALLY MADE HEREIN. MIRCO's obligation under its warranty herein are limited to the repair or replacement of such parts which have been returned to MIRCO's plant at Purchaser's expense and which examination shall disclose to MIRCO's satisfaction to have been so defective and to the shipment of such repair or replacement parts to the Purchaser f.o.b. the shipping point. This Warranty does not apply to any of MIRCO's products which have been repaired or altered by unauthorized personnel or service facilities in any way or which have had the unit serial number altered or removed.

Upon acceptance of the Goods the Purchaser agrees to assume all liability for any damages, and bodily injury which may result from the use or the misuse of the equipment by the Purchaser, his employees or others, and to hold MIRCO GAMES, INC., harmless from liability and claims arising out of the use of the Goods by any person.

Parts returned for warranty service must be packaged to insure no damage is incurred during the shipment and shipped to 1960 West North Lane, Phoenix, Arizona 85021. The original shipping carton is recommended.

Effective 9/1/75

Nur auf Monitor und Board

PURCHASE DATE _____ GAME MODEL NO. _____

NAME _____ GAME SERIAL NO. _____

STREET ADDRESS _____ P.O. BOX _____

CITY & STATE _____ ZIP _____

WHERE WAS GAME PURCHASED? _____

NAME OF DISTRIBUTOR _____

WHERE WILL GAME BE USED? _____

WHO IS PROVIDING LOCAL SERVICE ON THIS GAME? _____

_____

For $75.00 your warranty will be increased to 2 years on main circuit board(s) and Monitor.
Please check below:

☐ Normal Warranty

☐ Extended Warranty (enclosed payment)

THIS CARD MUST BE RETURNED TO MIRCO GAMES, INC., WITHIN FIVE (5) DAYS OF PURCHASE TO MAKE WARRANTY EFFECTIVE.