

GAME NO. 866
FEBRUARY, 1980

MIDWAY'S

Galaxia

PARTS AND OPERATING MANUAL



MIDWAY MFG. CO.

A BALLY COMPANY

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WARNING

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

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GENERAL INSTRUCTIONS FOR "GALAXIAN"

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

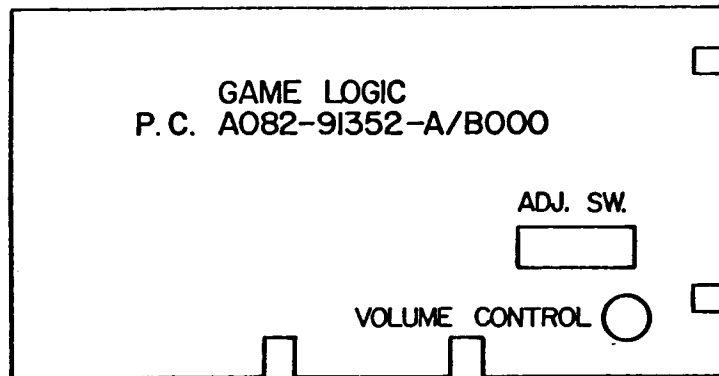
A line voltage safety switch has been provided for your protection. It is located on the right rear side of the cabinet in the back door area. When the back door is removed, it opens the circuit to the line voltage. To restore power (when servicing), pull switch fully out.

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 MONITOR 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.

TEST SLIDE SWITCH

Located in cash box area and is readily accessible by opening coin door. When placed in "on" position this switch initiates test mode.

GAME BOARD TEST

If game board is good, the following information will be displayed on the screen:

OK
Coin Adjustment Setting
Bonus Adjustment Setting
No. of Galaxip Per Game Setting

RAM/ROM TEST

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

"Bad Ram 1" – indicates bad Ram at location 7N or 7P.
"Bad Ram 2" – indicates bad Ram at location 3F or 3H.
"Bad Ram 3" – indicates bad Ram at location 4FH or 5FH.
"Bad Ram" – indicates bad Rom on memory board.

***NOTE:** Early models were not equipped with memory boards. In these models, "Bad Rom" indicates bad Rom at location 7F or 7H.

CONTROL PANEL AND COIN SWITCH TEST

To verify operation of any switch, close switch in question. If the 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.

M051-00866-A012

MONITOR ADJUSTMENTS

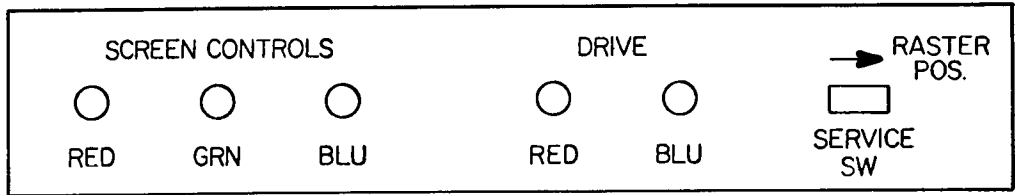
Degaussing:

All monitors are equipped with an automatic degaussing circuit which effectively demagnetizes the picture tube each time the monitor is turned on. The degaussing circuit will operate automatically each time the game is turned on after having been off for at least five (5) minutes. The degaussing is confined to the picture tube since the coils are mounted on the ferrous tube shield. Should any part of the chassis of 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 parts to be demagnetized, then slowly withdraw the degaussing coil for a distance of six (6) feet before disconnecting the coil from the A.C. power supply.

Purity Adjustments:

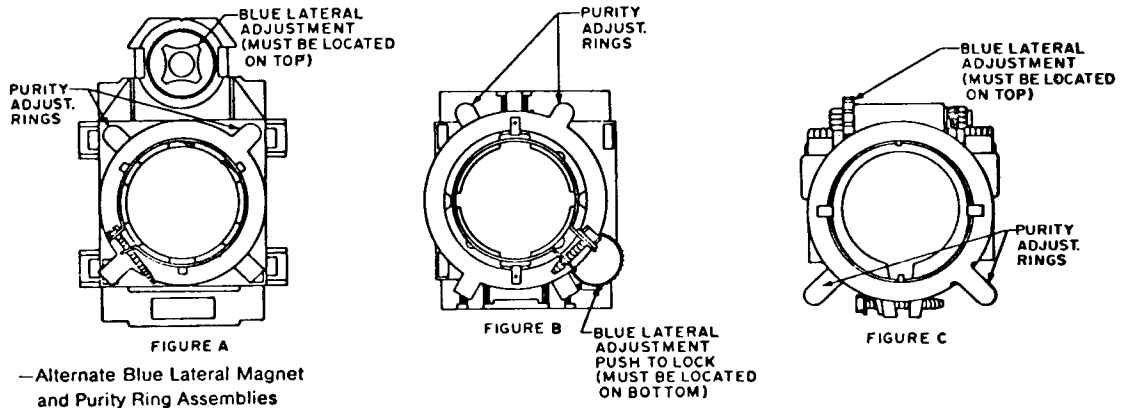
If degaussing fails to improve bad color, check for purity as follows. Position monitor to be facing

either north or south. Purity adjustments are most accurate while observing RED FIELD ONLY. Remove the interface printed circuit connector at the monitor. Turn BLUE and GREEN screen controls (shown below) fully counterclockwise.



To obtain RED field, place service switch in RASTER position. Next, adjust the RED screen control to sufficient brightness to observe purity.

Loosen the yoke and slide the yoke back against the convergence coils assembly. Adjust for a uniform RED area in the center of the screen by spreading or rotating the purity magnet assembly located on the BLUE lateral magnet housing assembly.



Spreading the tube increases the magnet strength and moves beams in a radial direction. Rotating the purity magnets moves beams in a circular path.

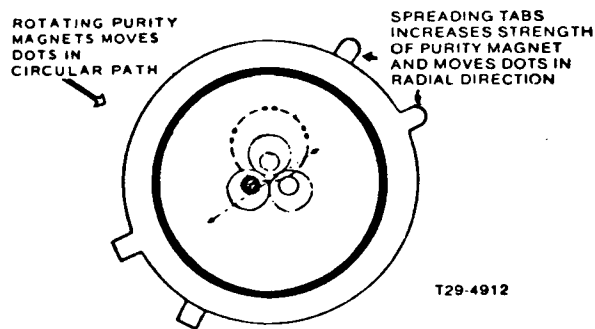


Figure 4.—Center Landing Adjustments

After purity has been attained, slide yoke toward the picture tube bell while observing entire screen. Position yoke for the best overall RED screen and tighten yoke. Preactivate BLUE and GREEN guns and observe all three beams. If the screen is not a uniform white, repeat purity adjustments. Place service switch in NORMAL position and reconnect interface connector at monitor.

CONVERGENCE ADJUSTMENTS:

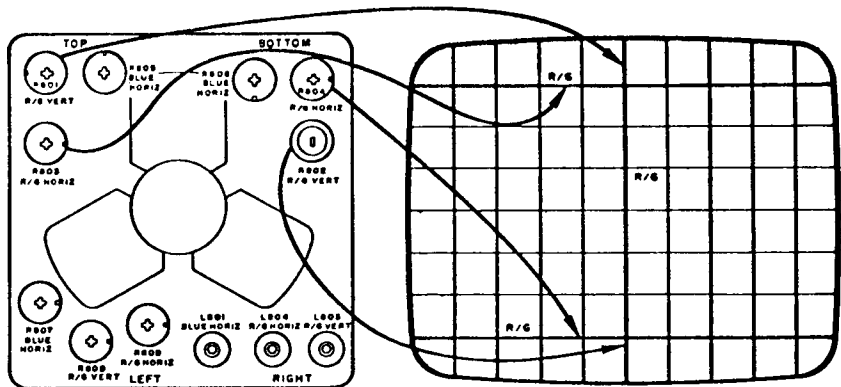
Before performing convergence adjustments, the monitor must be preheated for at least five (5) minutes. The convergence service switch is located to the right of the cash box and is accessed by opening coin door. Turn this switch momentarily "ON" then "OFF". When the crosshatch pattern appears on the screen, turn the service switch back to the "ON" position. The crosshatch pattern will now remain on the screen.

Converge the monitor as follows:

CONVERGENCE

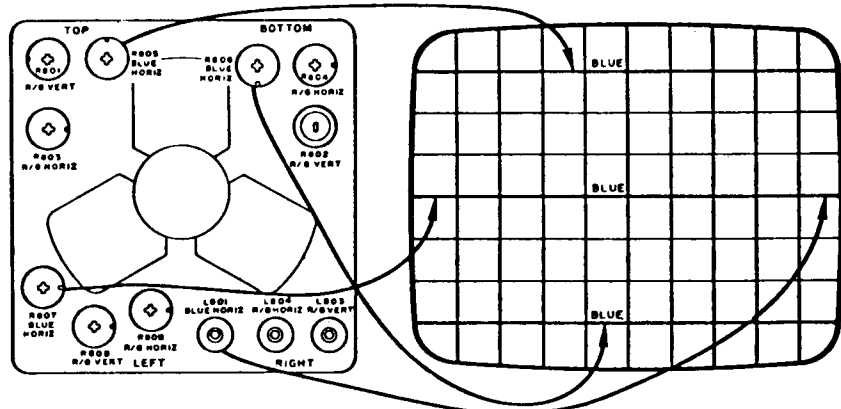
1. Use either crosshatch or dot pattern for center convergence.
2. Converge center of screen with red, green and blue magnet and the blue lateral magnet.
3. Adjust R801 and R802 for convergence (parallelism) of R/G vertical center line.
4. Readjust center convergence if necessary.
5. Adjust R804 to converge bottom R/G horizontal lines and R803 to converge top R/G horizontal lines at center line of screen.
6. Adjust R807 and L801 for straight horizontal blue center line.
7. Adjust R806 and R805 for uniform displacement of blue horizontal lines along center vertical lines.
8. Converge blue horizontal lines with R/G horizontal lines by adjusting the blue convergence magnet. Adjust red and green magnets if necessary.
9. Repeat steps 6 through 8 if necessary.
10. Adjust alternately L803 and R809 for right and left side convergence of R/G vertical lines.
11. Adjust alternately L804 and R808 for convergence of R/G horizontal center line.
12. Converge center of screen and repeat steps 10 and 11 if necessary.
13. Minor touch-up adjustments may be made using the appropriate controls.

SERVICE ADJUSTMENTS



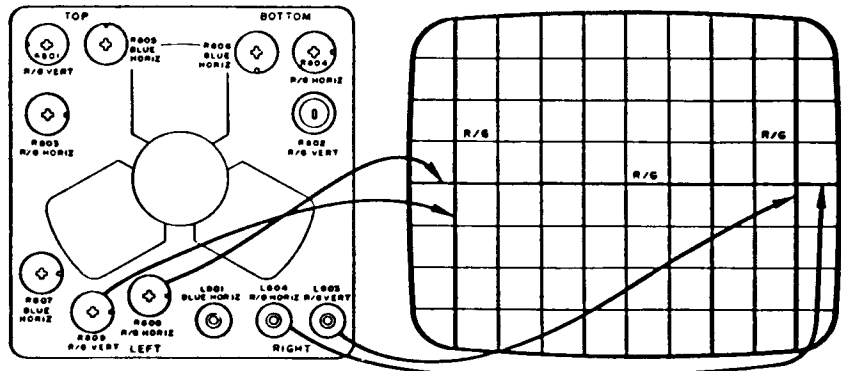
STEPS 3 AND 5 ADJUSTMENTS

Figure 8.—Effect of R801, R804, R803 and R802 Adjustment



STEPS 6 AND 7 ADJUSTMENTS

Figure 9.—Effect of R807, L801, R806 and R805 Adjustment



STEPS 10 AND 11 ADJUSTMENTS

Figure 10.—Effect of L803, R809, L804 and R808 Adjustment

When monitor is satisfactorily converged, return service switch to "OFF" position, (game mode).

SWITCH ADJUSTMENTS

PROGRAM NO. 1

| METHOD OF PLAY | | |
|-----------------------|--------------|--------------|
| | SW. 1 | SW. 2 |
| 1 COIN = 1 PLAY | OFF | OFF |
| 2 COINS = 1 PLAY | ON | OFF |
| 1 COIN = 2 PLAYS | OFF | ON |
| FREE PLAY | ON | ON |

| BONUS GALAXIP | | |
|----------------------------|--------------|--------------|
| | SW. 3 | SW. 4 |
| NO BONUS GALAXIP | OFF | OFF |
| BONUS GALAXIP AT 4000 PTS. | ON | OFF |
| BONUS GALAXIP AT 5000 PTS. | OFF | ON |
| BONUS GALAXIP AT 7000 PTS. | ON | ON |

| NUMBER OF GALAXIP PER GAME | | |
|-----------------------------------|--|--------------|
| | | SW. 5 |
| 3 GALAXIP PER GAME | | OFF |
| 5 GALAXIP PER GAME | | ON |

M051-00866-A006

PROGRAM NO. 2

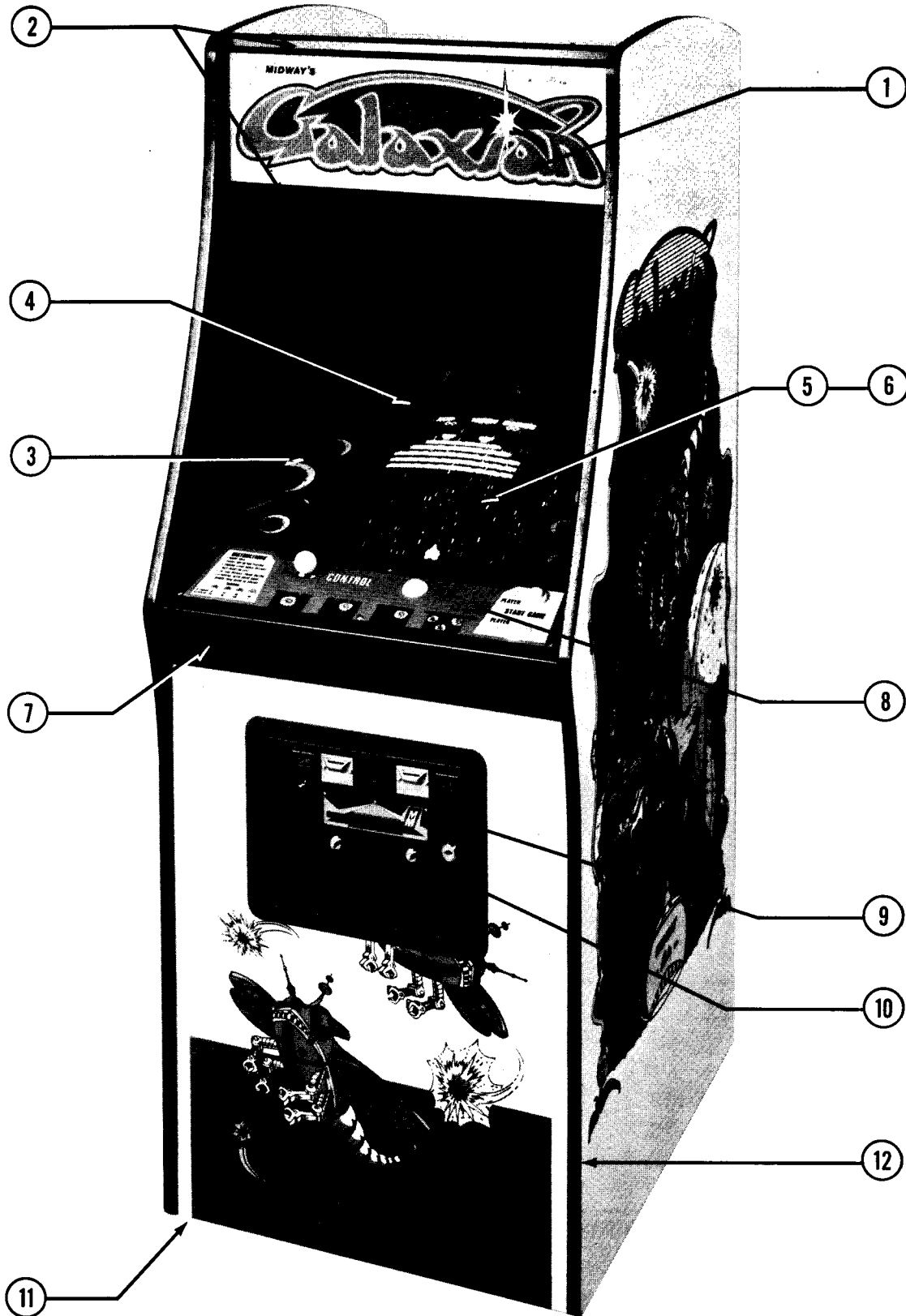
| METHOD OF PLAY | | |
|-----------------------|--------------|--------------|
| | SW. 1 | SW. 2 |
| 1 COIN = 1 PLAY | OFF | OFF |
| 2 COINS = 1 PLAY | ON | OFF |
| 1 COIN = 2 PLAYS | OFF | ON |
| FREE PLAY | ON | ON |

| BONUS GALAXIP | | |
|----------------------------|--------------|--------------|
| | SW. 3 | SW. 4 |
| NO BONUS GALAXIP | OFF | OFF |
| BONUS GALAXIP AT 3000 PTS. | ON | OFF |
| BONUS GALAXIP AT 4000 PTS. | OFF | ON |
| BONUS GALAXIP AT 5000 PTS. | ON | ON |

| NUMBER OF GALAXIP PER GAME | | |
|-----------------------------------|--|--------------|
| | | SW. 5 |
| 2 GALAXIP PER GAME | | OFF |
| 3 GALAXIP PER GAME | | ON |

M051-00866-A005

NO. 866 – GALAXIAN – FRONT PICTURE

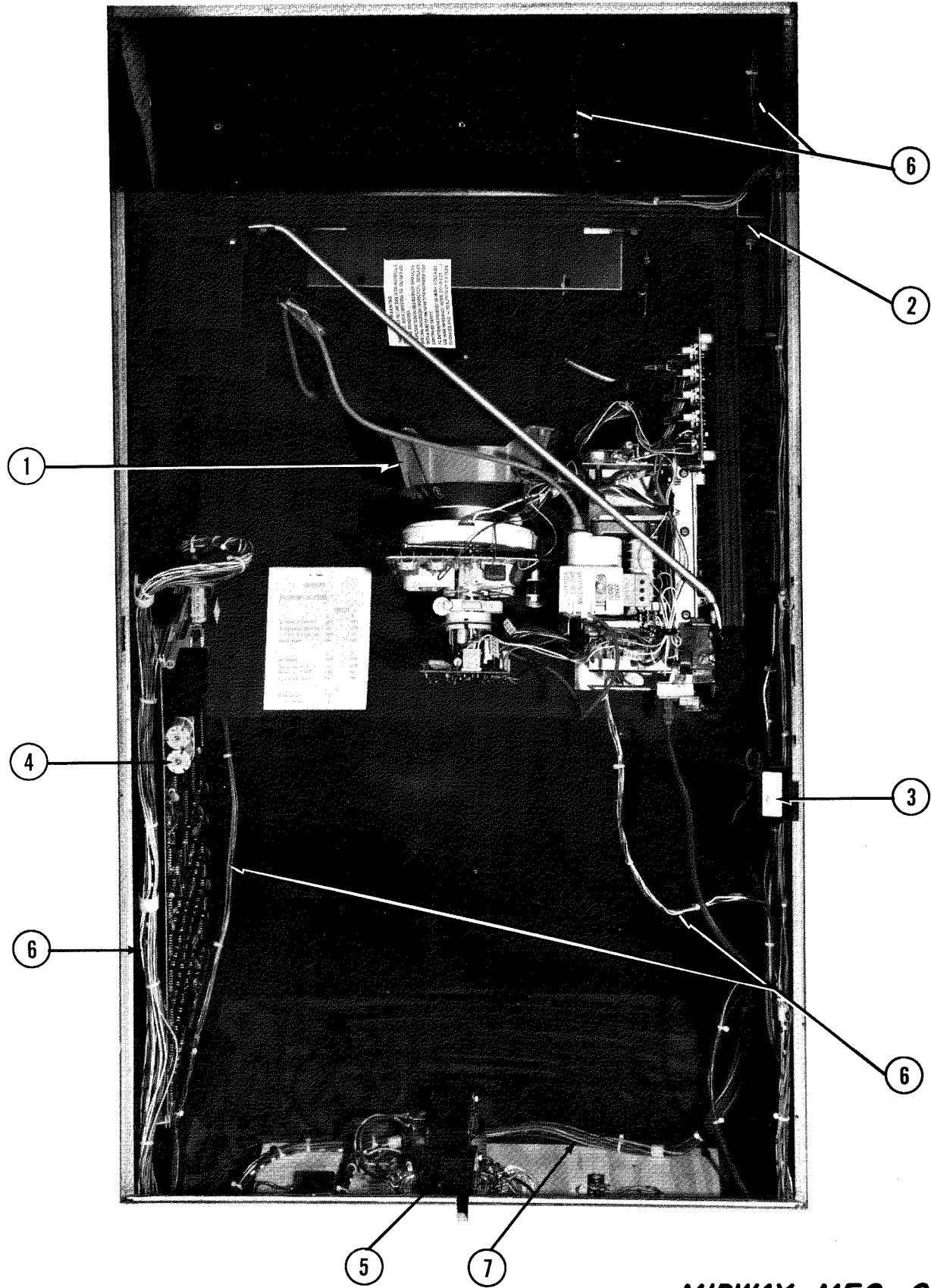


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ORDER BY PART NUMBER ONLY

| ITEM | PART NO | DESCRIPTION |
|------|-----------------|---|
| 1 | 0866-00901-0000 | UPPER DISPLAY PLEXI - 23" x 9" x 3/16" |
| 2 | 0866-00103-00XF | PLEXI RETAINING BRKT. (2 REQ'D.) |
| 3 | 0866-00900-0000 | MAIN DISPLAY PLEXI - 2-1/8" x 23" x 3/16" |
| | M052-00050-0005 | SPONGE RUBBER TAPE - 1/4 x 29" LG. |
| 4 | 0866-00904-0000 | T.V. BEZEL |
| 5 | 0851-00904-0000 | DISPLAY PLEXI (SMOKED) - 17-3/8" x 14" |
| | M052-00090-0001 | DOUBLE COATED TAPE - 1/2 x 17" LG. |
| 6 | 0017-00003-0294 | 19" COLOR MONITOR - COMPLETE |
| 7 | 0866-00902-00XF | CONTROL SHELF OVERLAY |
| | 0017-00101-0639 | #8 - 32 x 1-1/4 CARRIAGE BOLTS (6 REQ'D.) |
| | 0017-00104-0022 | #8 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. SCREW (2 REQ'D.) |
| 8 | 0866-00903-0000 | DECORATIVE CONTROL PANEL |
| 9 | A090-00020-2001 | DOUBLE ENTRY COIN DOOR ASSY. |
| | A090-00057-0000 | COIN DOOR COUNTER METER ASSY. |
| 10 | 0090-00002-02GR | COIN DOOR FRAME |
| | 0017-00101-0555 | #6 - 32 x 5/16 HEX HD. S.M.S. (3 REQ'D.) (MOUNTS COIN DOOR TO FRAME) |
| 11 | 0017-00102-0048 | LEG LEVELERS (4 REQ'D.) |
| | 0017-00103-0026 | LEG LEVELER NUTS (4 REQ'D.) |
| 12 | 0098-00900-0200 | T-MOLDING - GREEN |
| | | <u>NOT SHOWN LIST</u> |
| | 0017-00003-0187 | 6" x 9" SPEAKER - 80HM, 9W. |
| | 0017-00009-0393 | BLACK SPEAKER GRILL W/4, 1-1/2" SCREWS |
| | 0017-00009-0033 | LATCH CLAMP (2 REQ'D.) |
| | 0603-00131-0000 | STRIKE (2 REQ'D.) |
| | 0586-00036-0000 | ON-OFF SWITCH |
| | 0567-00106-0100 | SWITCH MTG. PLATE |
| | 0017-00101-0025 | #8 x 1/2 SLOT. HEX HD. WD. SCR. (4 REQ'D.) |
| | A866-00036-0000 | TEST SWITCH & BKT. ASSY. |

NO. 866 – GALAXIAN – OPENED BACK PICTURE

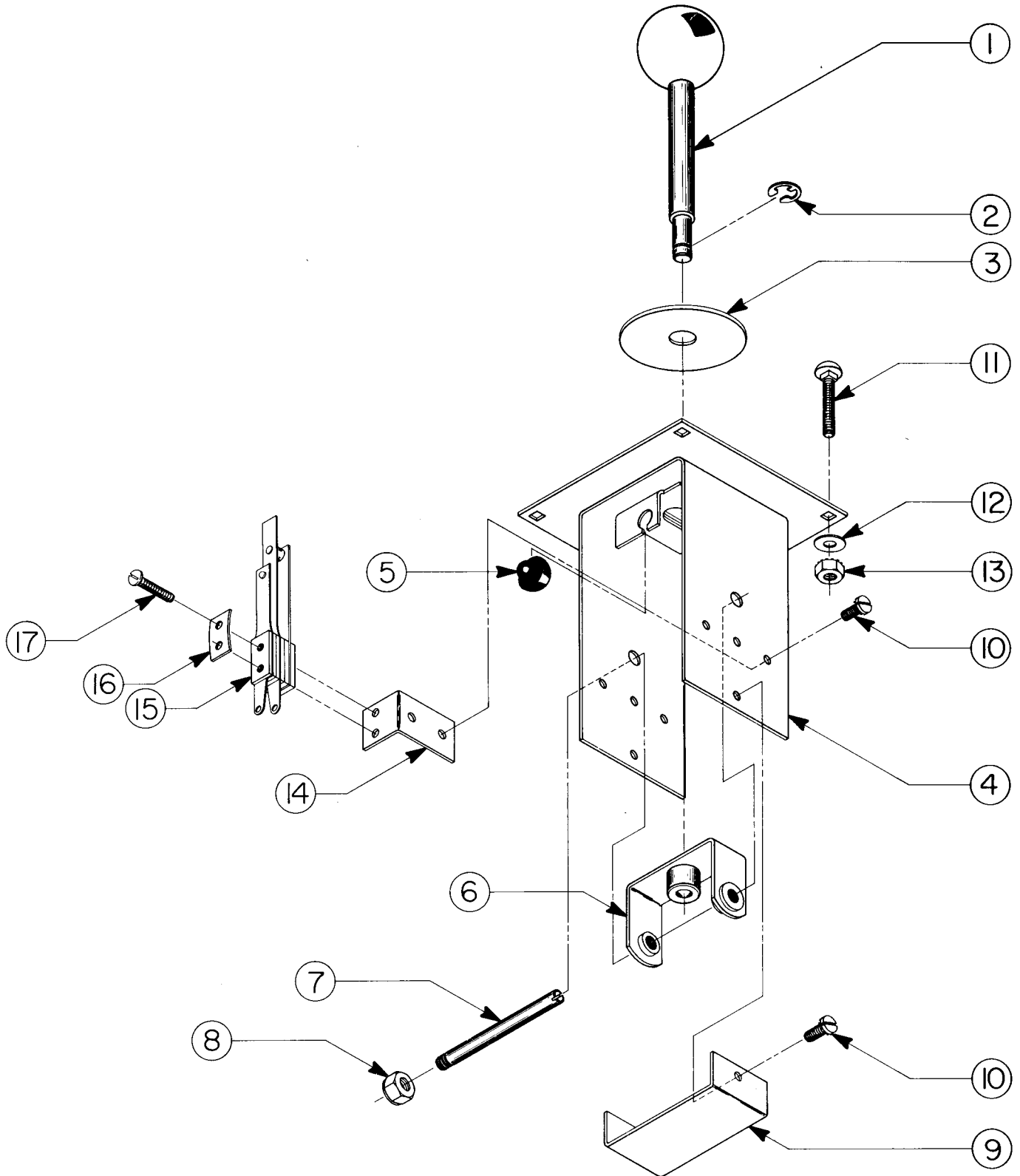


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NO. 866 - GALAXIAN - OPENED BACK PICTURE
ORDER BY PART NUMBER ONLY

| ITEM | PART NO | DESCRIPTION |
|------|-----------------|---|
| 1 | 0017-00003-0294 | 19" COLOR MONITOR & CHASSIS - COMPLETE |
| 2 | 0866-00109-0000 | MONITOR MTG. BRKT. |
| | 0017-00101-0115 | #8 - 32 x 2" HEX MACH. SCREW (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 | A082-91352-A866 | GAME LOGIC BOARD ASSY. |
| | 0624-00902-0600 | P.C. SUPPORT BRKT. - 17" (2 REQ'D.) |
| | 0624-00902-0300 | P.C. SUPPORT BRKT. - 2-1/2" (2 REQ'D.) |
| 5 | A866-00048-0000 | TRANSFORMER BOARD ASSY. |
| 6 | A866-00054-0000 | LOW VOLTAGE CABLE ASSY. |
| 7 | A866-00051-0000 | POWER CABLE ASSY. - HIGH VOLTAGE |
| | A866-00053-0000 | COIN DOOR CABLE ASSY. - NOT SHOWN |
| | A866-00052-0000 | CONTROL PANEL CABLE ASSY. - NOT SHOWN |
| | | <u>ADDITIONAL PARTS LIST</u> |
| | A084-91353-A866 | MEMORY BOARD ASSEMBLY |
| | A097-00001-0000 | LOCK ASSY. - BACK DOOR |
| | 0618-00117-0000 | VENT SCREEN (2 REQ'D.) |
| | A623-00110-0000 | COIN BOX ASSY. |
| | A623-00013-0000 | COIN BOX COVER ASSY. |
| | A624-00001-0000 | COIN BOX GUIDE BRKT. ASSY. |
| | 0624-00101-0000 | COIN BOX GUIDE BRKT. |
| | 0017-00101-0628 | #8 - 32 x 3/4 CARRIAGE BOLT (4 REQ'D.) |
| | 0017-00104-0022 | #8 STL. WASHER (4 REQ'D.) |
| | 0017-00103-0061 | #8 - 32 LOCK NUT SEMS. (4 REQ'D.) |
| | 0866-00905-0000 | FISHPAPER SHIELD 4 IN. SQ. |
| | 0017-00009-0419 | PIN EXTRACTOR TOOL (PIN POPPER) |

NO. 866 – GALAXIAN – CONTROL ASSEMBLY

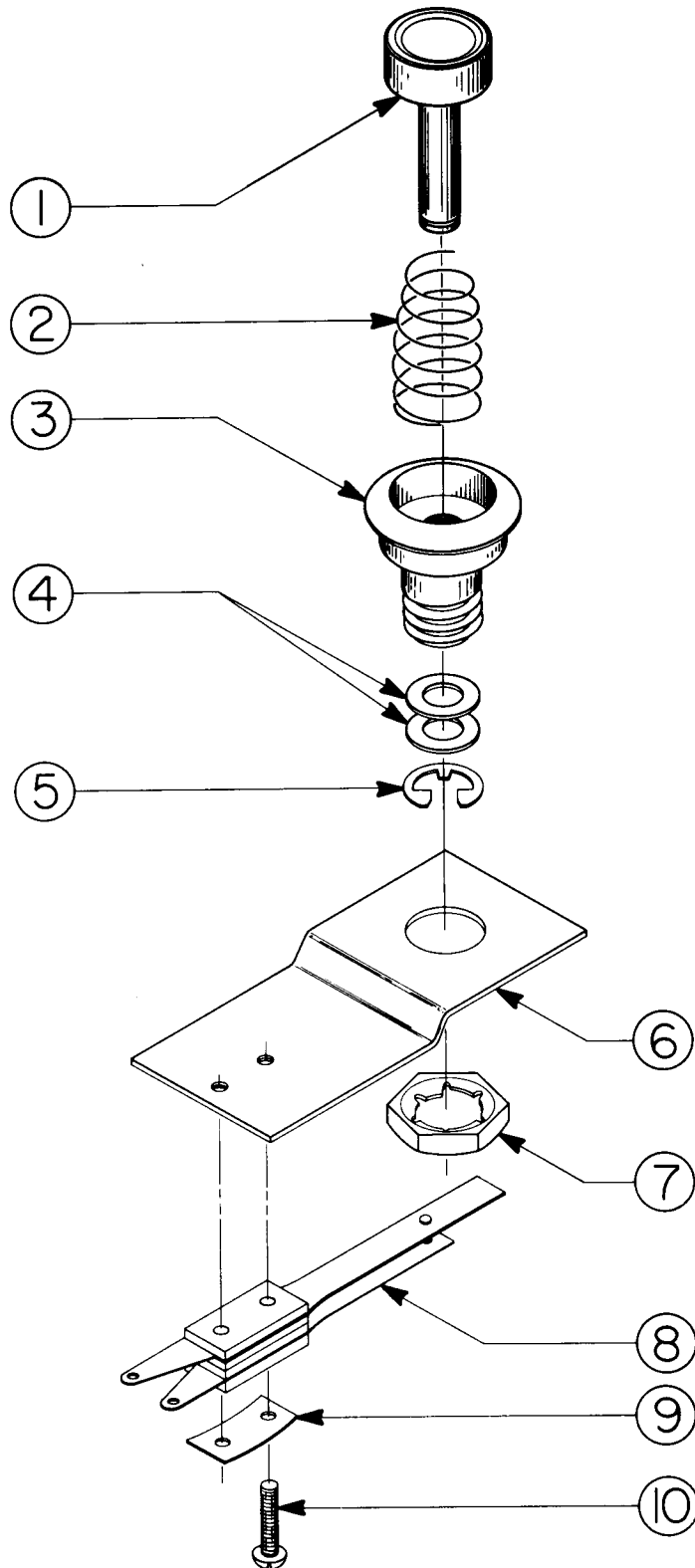


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NO. 866 – GALAXIAN – CONTROL ASSEMBLY
ORDER BY PART NUMBER ONLY

| ITEM | PART N ^o | DESCRIPTION |
|------|---------------------|--|
| 1 | A866-00028-0000 | HANDLE ASSEMBLY |
| 2 | 0017-00100-0025 | "E"-RING |
| 3 | 0852-00106-0000 | PLATE - FOLLOWER |
| 4 | A852-00014-00XF | CONTROL SW. BRKT. & TOP PLATE ASSY. |
| 5 | 0017-00041-0616 | RUBBER BUMPER (2 REQ'D.) |
| 6 | A866-00027-0000 | PIVOT BRKT. HUB & BEARING ASSY. |
| 7 | 0852-00701-00XF | PIVOT ROD |
| 8 | 0017-00103-0011 | #10 - 32 LOCK NUT |
| 9 | 0852-00101-00XF | BRACE MAIN BRKT. |
| 10 | 0017-00101-0553 | #6 - 32 x 1/4 SLT. PAN HD. M.S. (6 REQ'D.) |
| 11 | 0017-00101-0637 | #8 - 32 x 1" CARRIAGE BOLTS (4 REQ'D.) |
| 12 | 0017-00104-0022 | #8 STL. WASHER (4 REQ'D.) |
| 13 | 0017-00103-0061 | #8 - 32 HEX LOCKNUT SEMS. (4 REQ'D.) |
| 14 | 0852-00103-00XF | SWITCH BRACKET (2 REQ'D.) |
| 15 | A852-00016-0000 | SWITCH ASSY. (2 REQ'D.) |
| 16 | 0020-00202-0000 | SWITCH PLATE (2 REQ'D.) |
| 17 | 0017-00101-0737 | #5 - 40 x 5/8 PAN HD. M.S. (4 REQ'D.) |

NO. 866 – GALAXIAN – PUSH BUTTON ASSY.

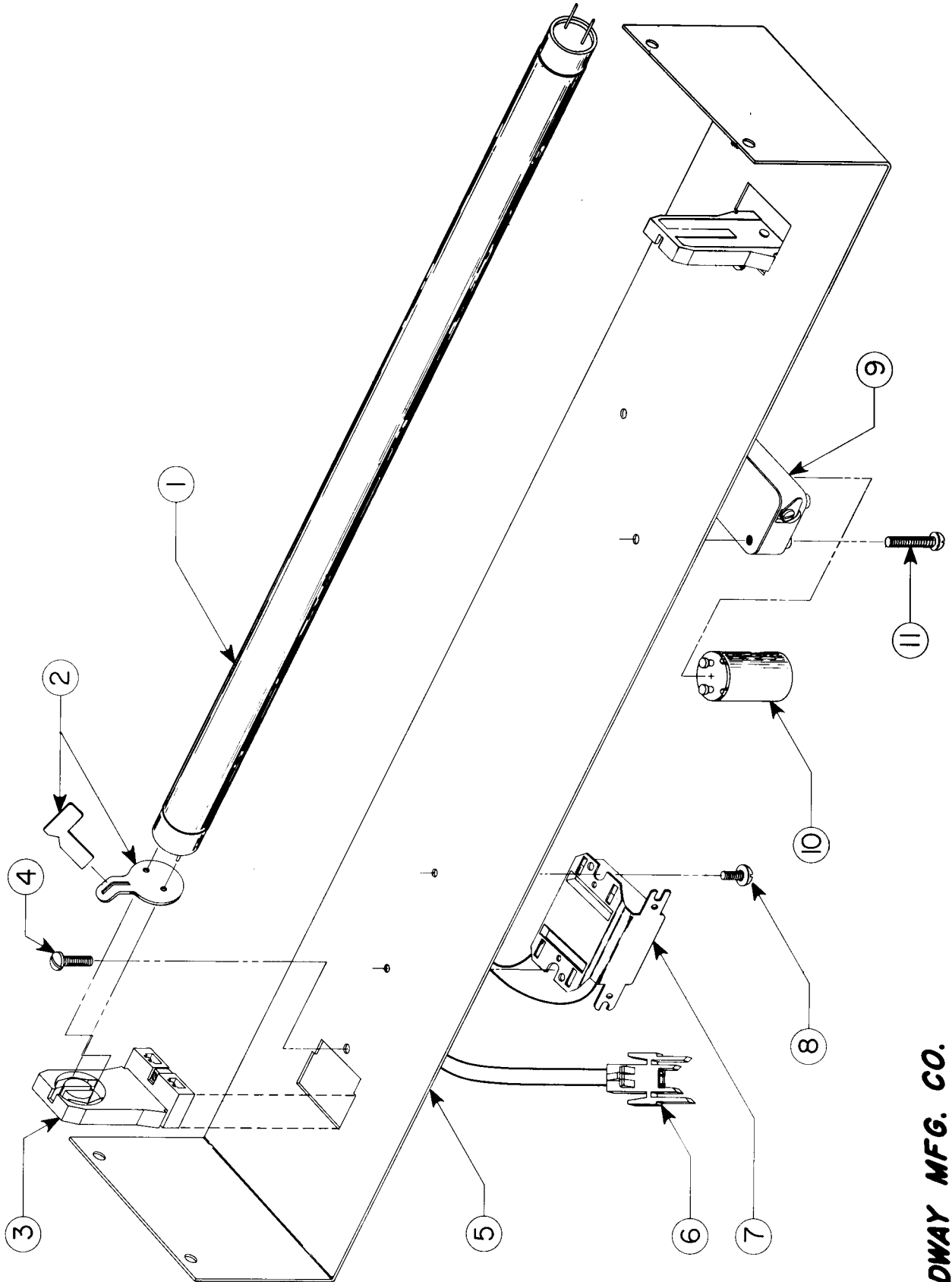


NO. 866 - GALAXIAN - PUSH BUTTON ASSY.

ORDER BY PART NUMBER ONLY

| ITEM | PART NO | DESCRIPTION |
|------|-----------------|--|
| 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 |
| | 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. 866 -- GALAXIAN -- FLUORESCENT FIXTURE ASSEMBLY OR
INCANDESCENT LIGHT ASSEMBLY**



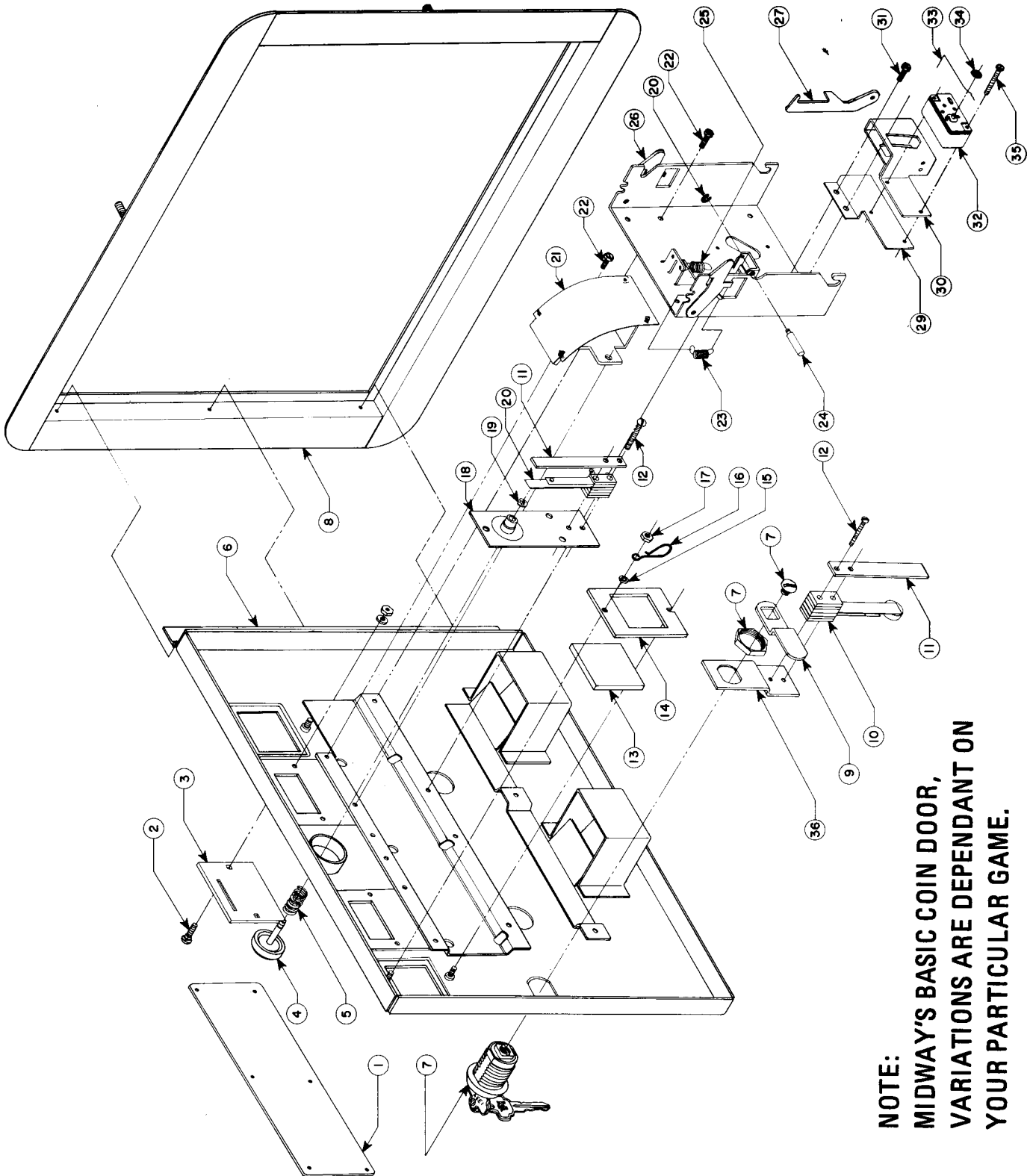
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**NO. 866 – GALAXIAN – FLUORESCENT FIXTURE ASSEMBLY OR
INCANDESCENT LIGHT ASSEMBLY**

ORDER BY PART NUMBER ONLY

| ITEM | PART N ^o | DESCRIPTION |
|------|---------------------|---|
| 1 | 0017-00003-0043 | 18 IN. FLUORESCENT LAMP - COOL WHITE |
| 2 | 0017-00021-0005 | FLUORESCENT LOCKS (2 REQ'D.) |
| 3 | 0017-00031-0036 | FLUORESCENT SOCKET (2 REQ'D.) |
| 4 | 0017-00101-0573 | #6 - 32 x 1/2 SLT. RND. HD. M.S. (2 REQ'D.) |
| 5 | 0866-00108-0000 | FLUORESCENT BRKT. ASSY. |
| 6 | 0017-00021-0096 | 2 PIN SOCKET CONNECTOR |
| 7 | 0017-00003-0026 | BALLAST |
| 8 | 0017-00101-0593 | #8 - 32 x 1/4 SLT. PAN HD. M.S. (2 REQ'D.) |
| 9 | 0017-00021-0079 | STARTER HOLDER |
| 10 | 0017-00003-0019 | STARTER |
| 11 | 0017-00101-0528 | #5 - 40 x 3/4 R.H.M.S. (2 REQ'D.) |
| | A866-00039-0000 | FLUORESCENT CABLE ASSY. - NOT SHOWN |
| | | <u>INCANDESCENT LIGHT ASSEMBLY</u> |
| | | USED AFTER GAME NO. 3,000 |
| | 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.) |

NO. 866 – GALAXIAN – FRONT DOOR ASSY.



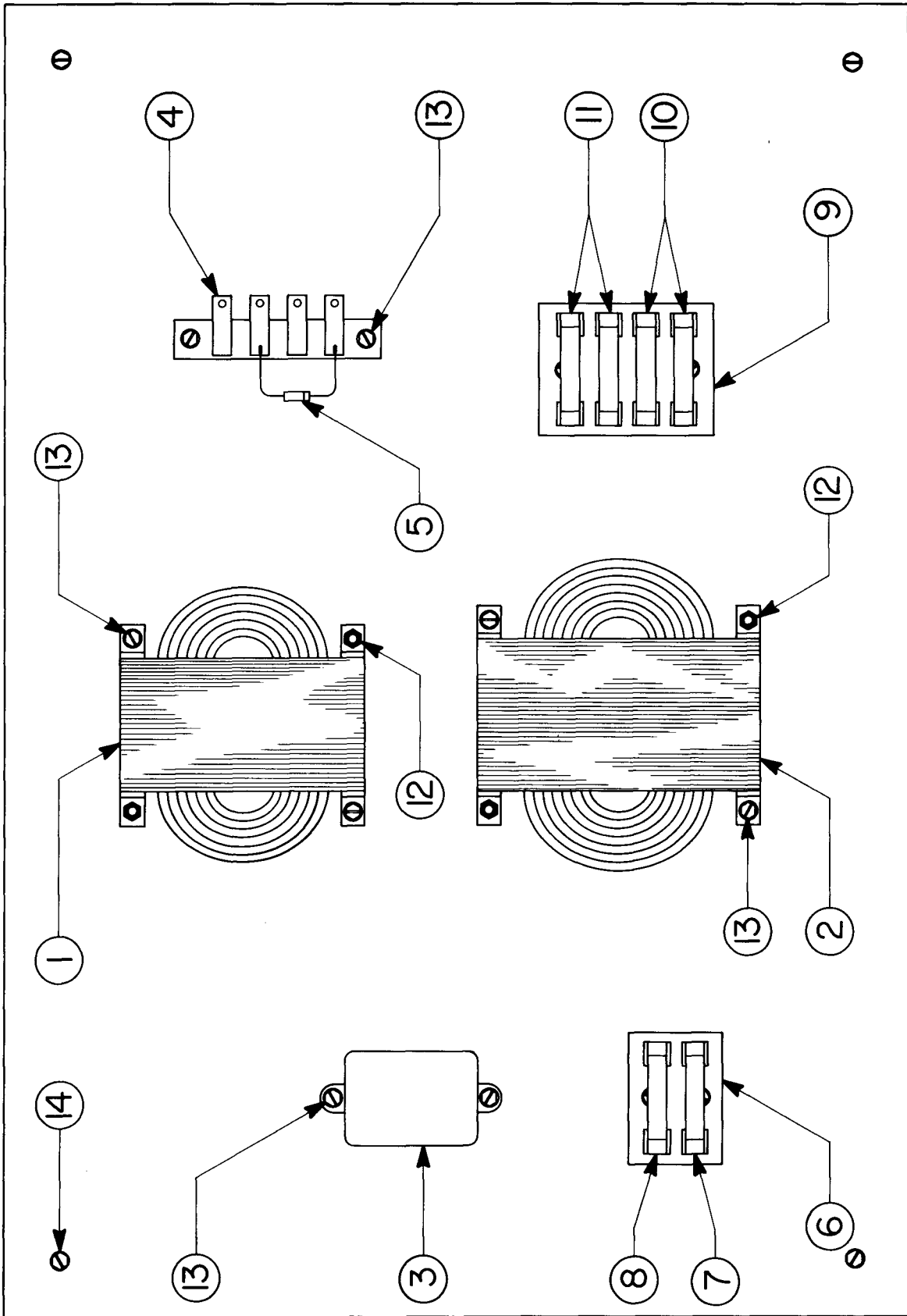
**NOTE:
MIDWAY'S BASIC COIN DOOR,
VARIATIONS ARE DEPENDANT ON
YOUR PARTICULAR GAME.**

NO. 866 - GALAXIAN - FRONT DOOR ASSY.

ORDER BY PART NUMBER ONLY

| ITEM | PART NO | DESCRIPTION |
|------|------------------------------------|--|
| 1 | 0090-00902-0000 0090-00902-0100 | DRESS PLATE DRESS PLATE (W/O PRESS 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 | 0090-00013-0200 | DOOR ASSY. DOUBLE ENTRY |
| 7 | 0017-00005-0050 | DOOR LOCK & KEY WITH SCREW & NUT |
| 8 | 0090-00002-02BR | DOUBLE DOOR FRAME |
| 9 | 0017-00005-0041 | 421 N.S. CAM |
| 10 | 0090-00901-0000 | DOOR SWITCH |
| 11 | 0090-00126-01XF | SWITCH BACKUP PLATE |
| 12 | 0017-00101-0528 | #5 - 40 x 3/4" LNG. M.S. |
| 13 | 0090-00903-0040 | 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 CHUT W/BRKT. ASSY. |
| 22 | 0017-00101-0598 | #8 - 32 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 | 0093-00151-00XF | COIN GUIDE MTG. BRACKET |
| 30 | 0090-00005-0000 | COIN GUIDE ASSY. |
| 31 | 0017-00101-0555 | #6 - 32 x 5/16 SCREW |
| 32 | 0017-00005-0039 | COIN SWITCH |
| 33 | 0010-00557-2500 | TRIP WIRE |
| 34 | 0017-00007-0132 | PUSH-ON RING (BIK) |
| 35 | 0017-00101-0507 | #4 - 36 x 3/4 SCREW |
| 36 | 0090-00128-00XF | SWITCH BRKT. - DOOR TILT |
| | A090-00061-0000 | ANTI-STRING DEVICE ASSY. - OPTIONAL (REPLACES ITEM 30) |
| | A090-00064-0000 | ANTI-PENNY DEVICE ASSY. - OPTIONAL |

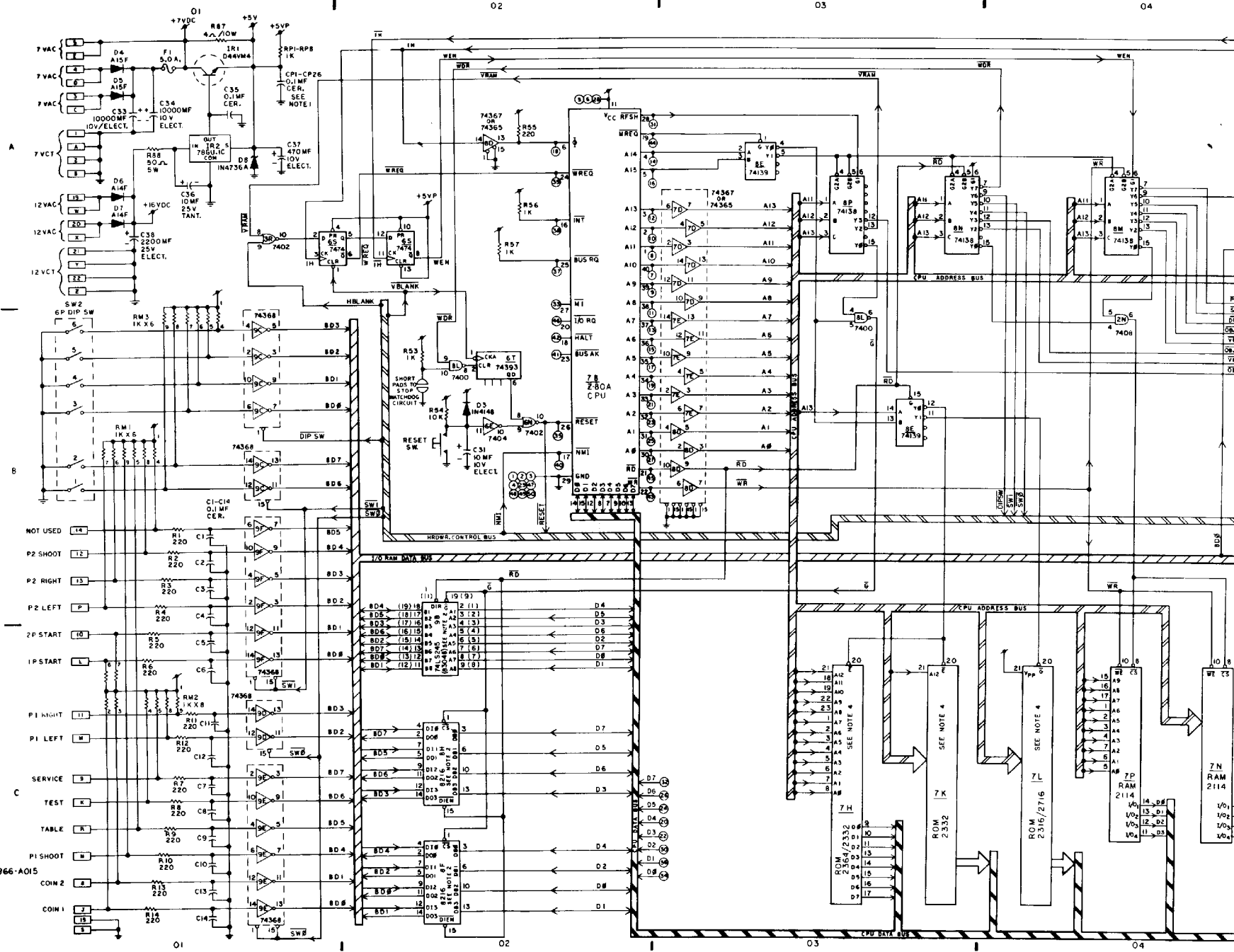
NO. 866 -- GALAXIAN -- TRANSFORMER BOARD ASSEMBLY



NO. 866 - GALAXIAN - TRANSFORMER BOARD ASSEMBLY

ORDER BY PART NUMBER ONLY

| ITEM | PART NO | DESCRIPTION |
|------|-----------------|--|
| 1 | MT00-00082-0000 | TRANSFORMER - 115 VOLT |
| 2 | MT00-00081-0000 | TRANSFORMER - 240 VOLT |
| 3 | 0017-00003-0114 | NOISE FILTER |
| 4 | A031-00002-0000 | TERMINAL STRIP ASSY. |
| 5 | 0064-030XX-XXPX | IN4004 400 V. DIODE |
| 6 | 0720-00001-0200 | 2 POSITION FUSE CLIP |
| 7 | 0017-00003-0103 | FUSE 1A. 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 |



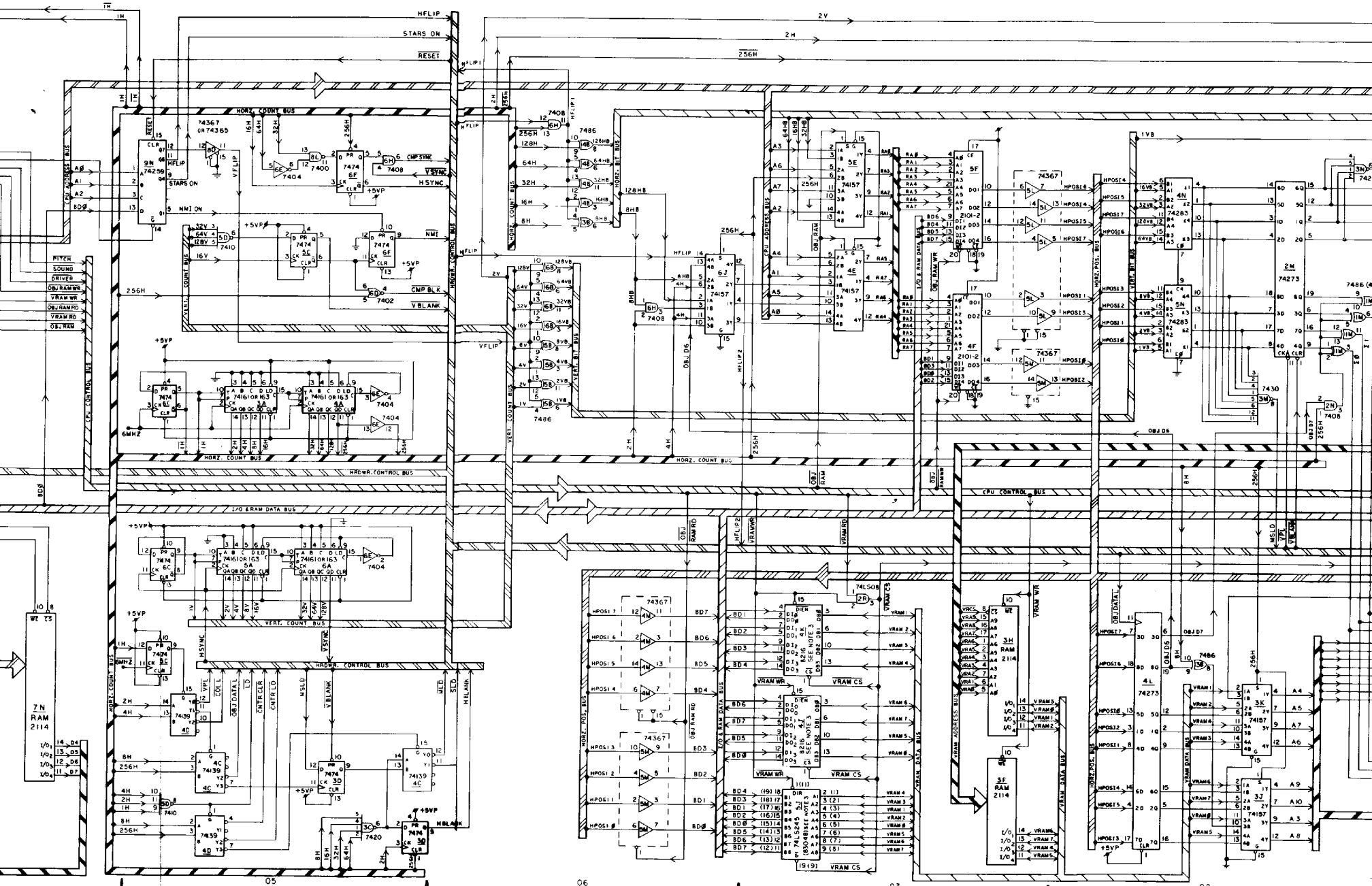
NOTES:

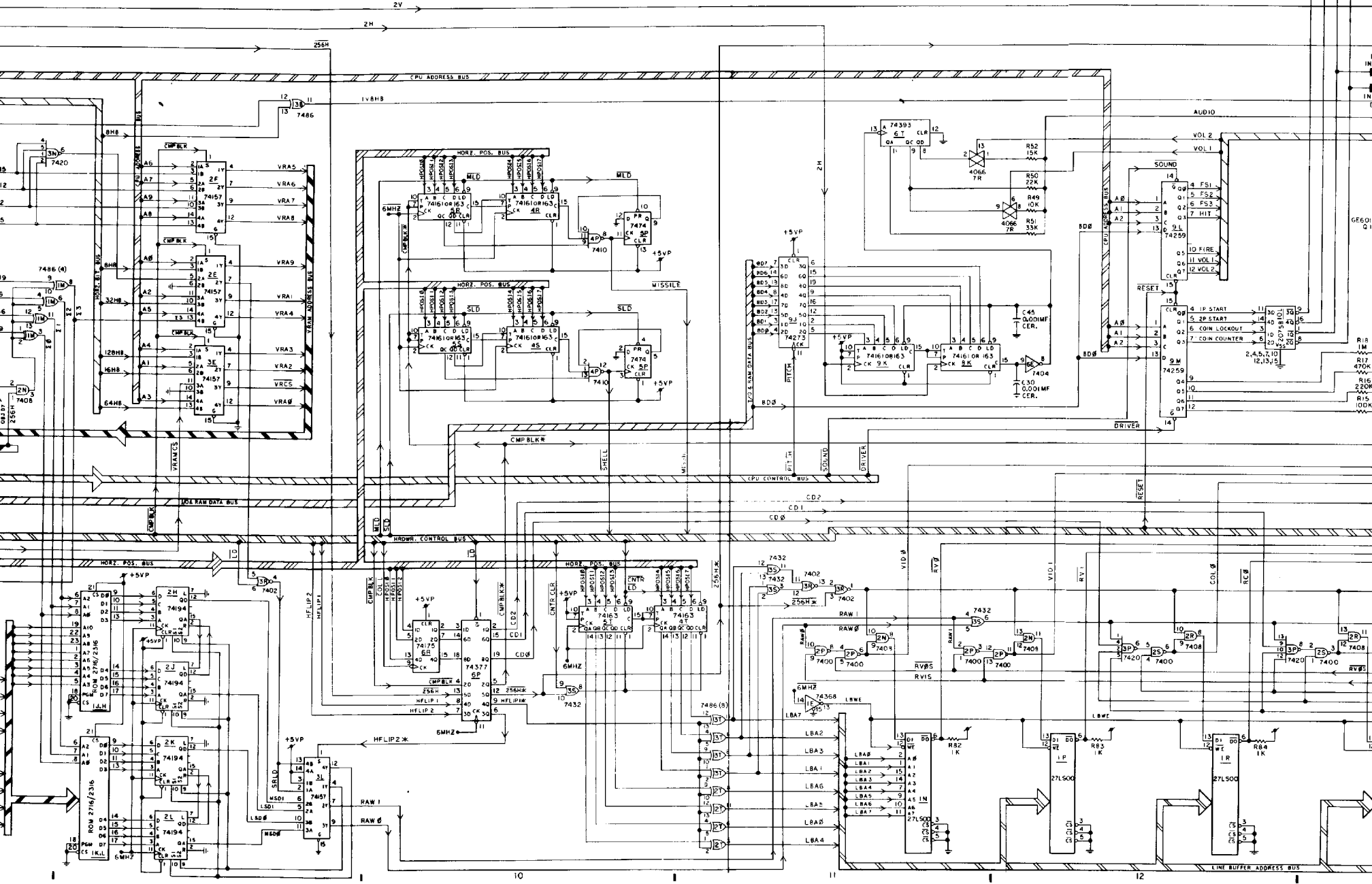
1. 8 PULL-UP RESISTORS AND 28 DECOUPLING CAPACITORS ARE DISTRIBUTED OVER THE P.C. BOARD ASSY.
2. ONLY 1 PC 74LS245, OR 1 PC 83048, OR 2 PC 82W ARE USED (AND STUFFED) FOR BI-DIRECTIONAL DRIVERS (1 BYTE OF DATA).
3. SAME AS NOTE 2.
4. SUBSTITUTION FOR THESE ROM'S IS MEMORY BRD. ASSY A084-91353-A866

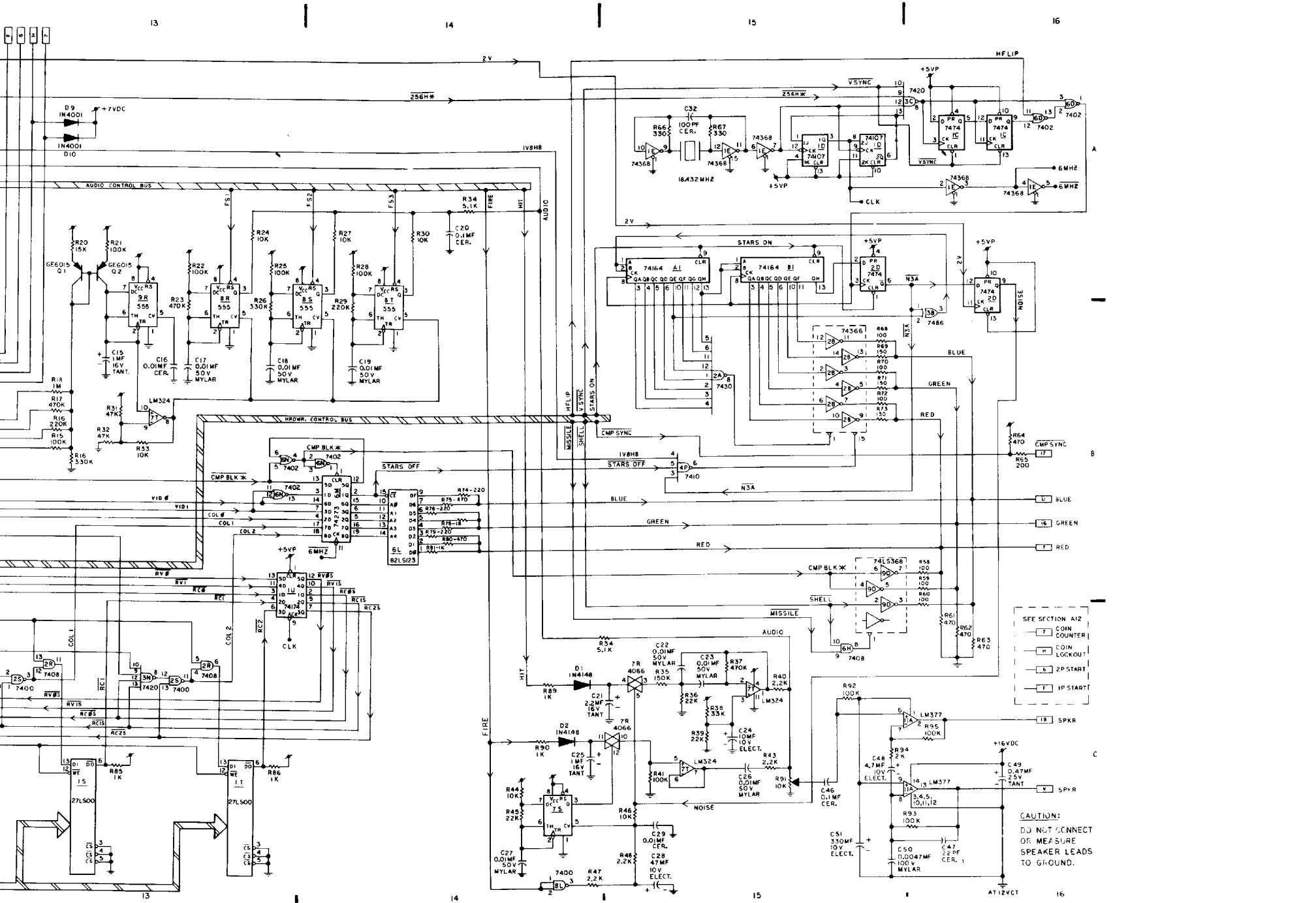
↑ INDICATES +5V

| | | |
|--|------------|------|
| B ALL OJMF CER. CAR. & R. LEAD 10000 | | |
| REV. | DESC. | DATE |
| MIDWAY MFG. CO. FRANKLIN PARK, ILL. | | |
| DR. G/ RIZZO | CHK. | |
| DATE: JAN, 1980 | NO. REV. 1 | |
| USED ON GALAXIAN | | |
| LOGIC BOARD CIRCUITRY | | |
| PART NO. A082-91352-A/0000 | | |

LOGIC SCHEMATIC PART NO. M051-00866-A015





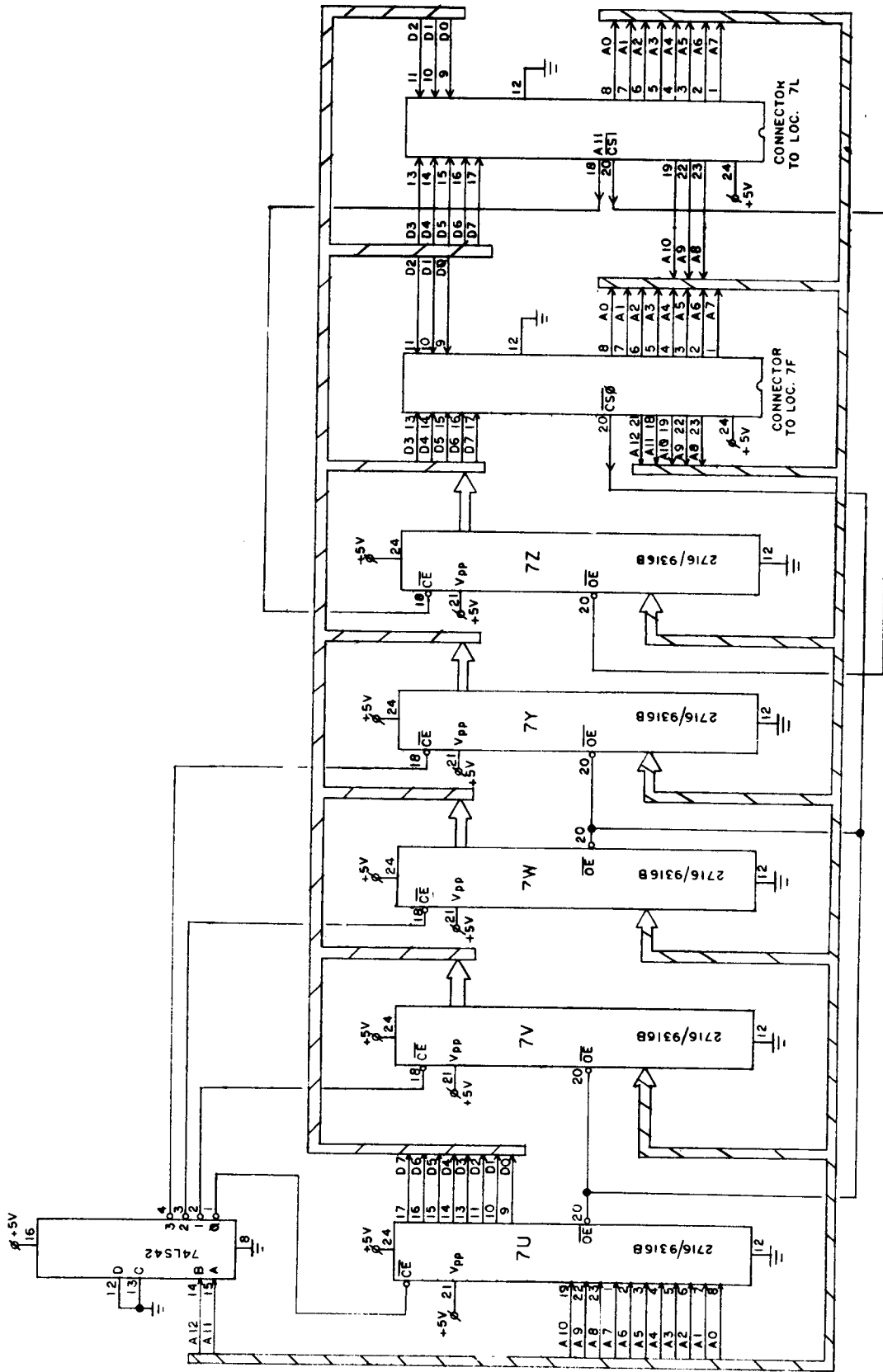


GALAXIAN LOGIC BOARD

| CHIP NUMBER | FUNCTION |
|--------------------|-------------------------------|
| 74LS00 | Quad Two Input Nand |
| 74LS02 | Quad Two Input Nor |
| 7404 | Hex Inverter |
| 74LS08 | Quad Two Input And |
| 74LS10 | Triple Three Input Nand |
| 74LS20 | Dual Four Input Nand |
| 74LS30 | Eight Input Nand |
| 74LS32 | Quad Two Input Or |
| 74LS74 | Dual "D" Flip – Flop |
| 74LS86 | Quad Two Input Exclusive Or |
| 74LS107 | Dual "JK" Flip – Flop |
| 74LS138 | Three to Eight Line Decoder |
| 74LS139 | Dual Two to Four Line Decoder |
| 74LS157 | Quad Two Input Multiplexer |
| 74LS161 | Four Bit Counter |
| 74LS163 | Four Bit Counter |
| 74LS164 | Eight Bit Shift Register |
| 74LS174 | Hex "D" Flip – Flop |
| 74LS175 | Quad "D" Flip – Flop |
| 74LS194 | Eight Bit Shift Register |
| 74LS259 | Eight Big Addressable Latch |
| 74LS273 | Octal "D" Flip – Flop |
| 74LS823 | Four Bit Binary Adder |
| 74LS245 | Octal Bus Transceiver |
| 74LS366 | Hex Bus Driver – Inverting |
| 74LS367 | Hex Bus Driver |
| 74LS368 | Hex Bus Driver – Inverting |
| 74LS377 | Octal "D" Flip – Flop |

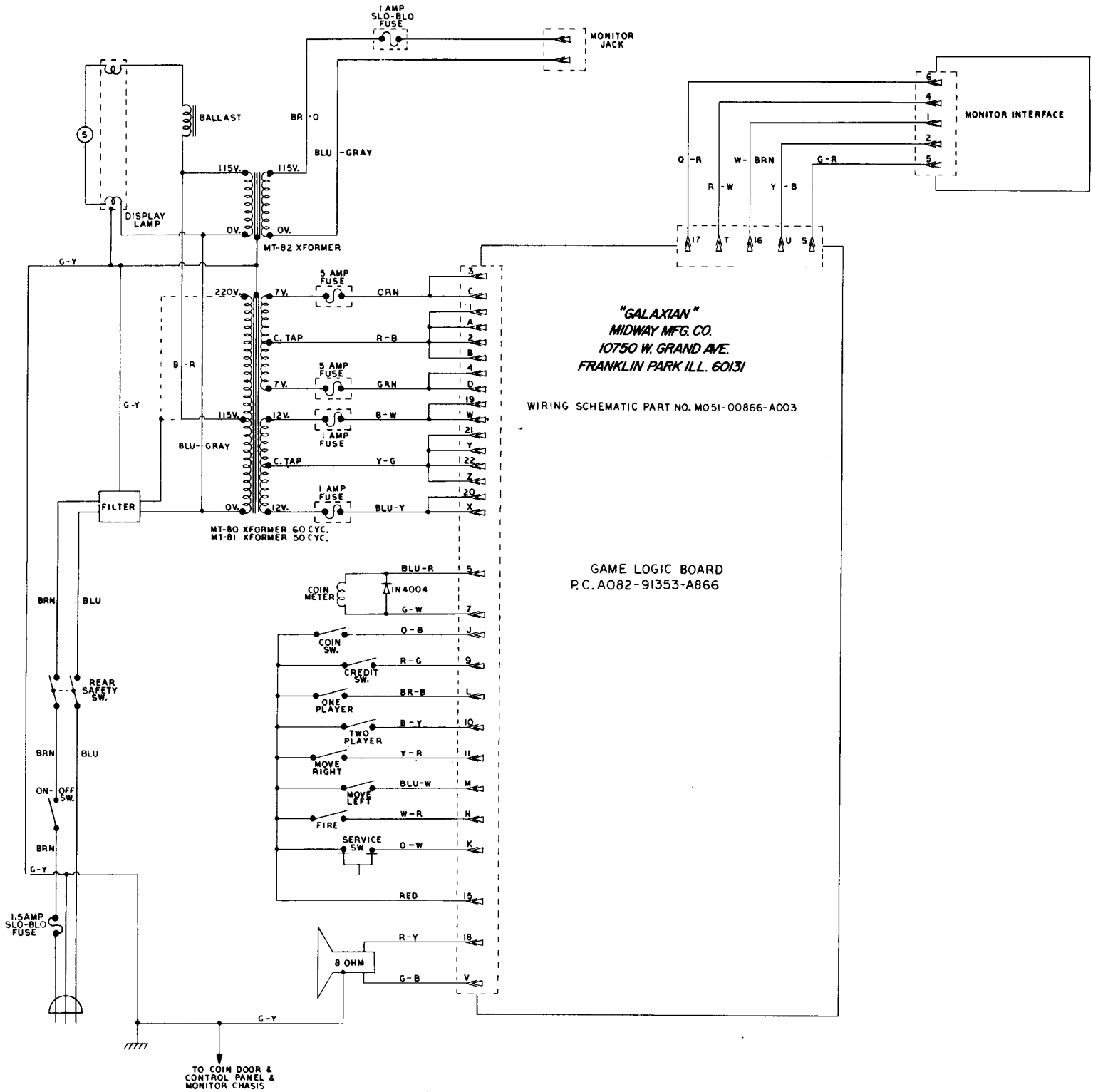
GALAXIAN LOGIC BOARD

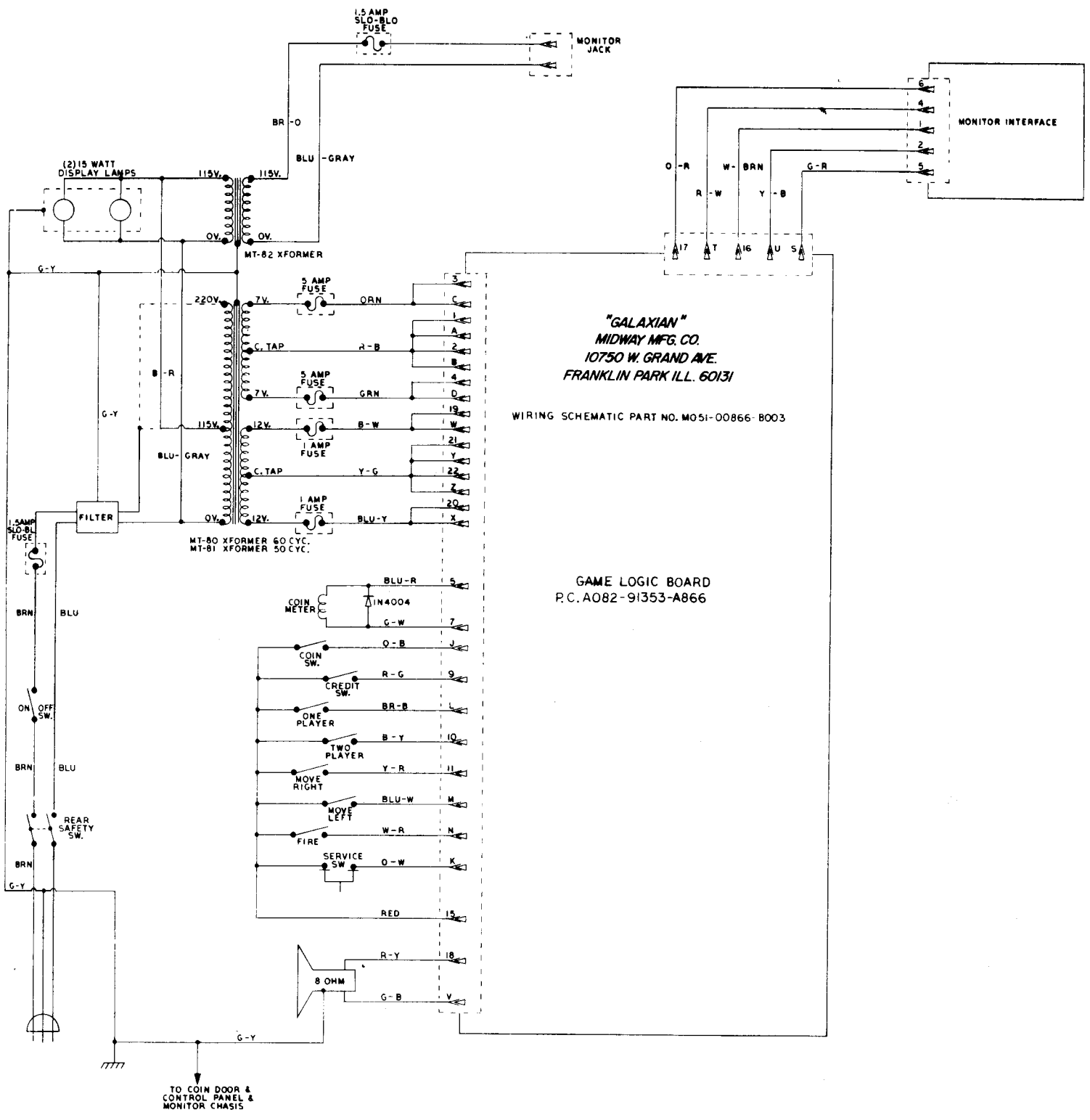
| CHIP NUMBER | FUNCTION |
|--------------------|------------------------------|
| 74LS393 | Dual Four Bit Binary Counter |
| 27LS00 | Ram |
| 2114 | Ram |
| TMS4045 | Ram |
| AM9124 | Ram |
| 2102-2 | Ram |
| AM9101 | Ram |
| 8304 | Bus Driver – Bidirectional |
| 8216 | Bus Driver – Bidirectional |
| LM324 | Quad Operational Amp |
| 555 | Timer |
| LM377 | Audio Amp |
| Z80 | CPU |
| 2716 | Prom – 16K |
| 1M5610 | Prom |
| 78GUIC | Voltage Regulator |
| ULN2075 | Quad Buffer |
| 18.432 | X-TAL |
| CD4066 | Quad Electronic Switch |
| D44VM4 | Transistor |
| GE6015 | Transistor |
| MC14066 | Quad Electronic Switch |
| GEA15F | Diode – Rectifier |
| A14F | Diode – Rectifier |
| IN4148 | Diode – Rectifier |
| IN4736A | Diode – Zener |
| D2316EC | 16K Rom |
| D2364C | 64K Rom |

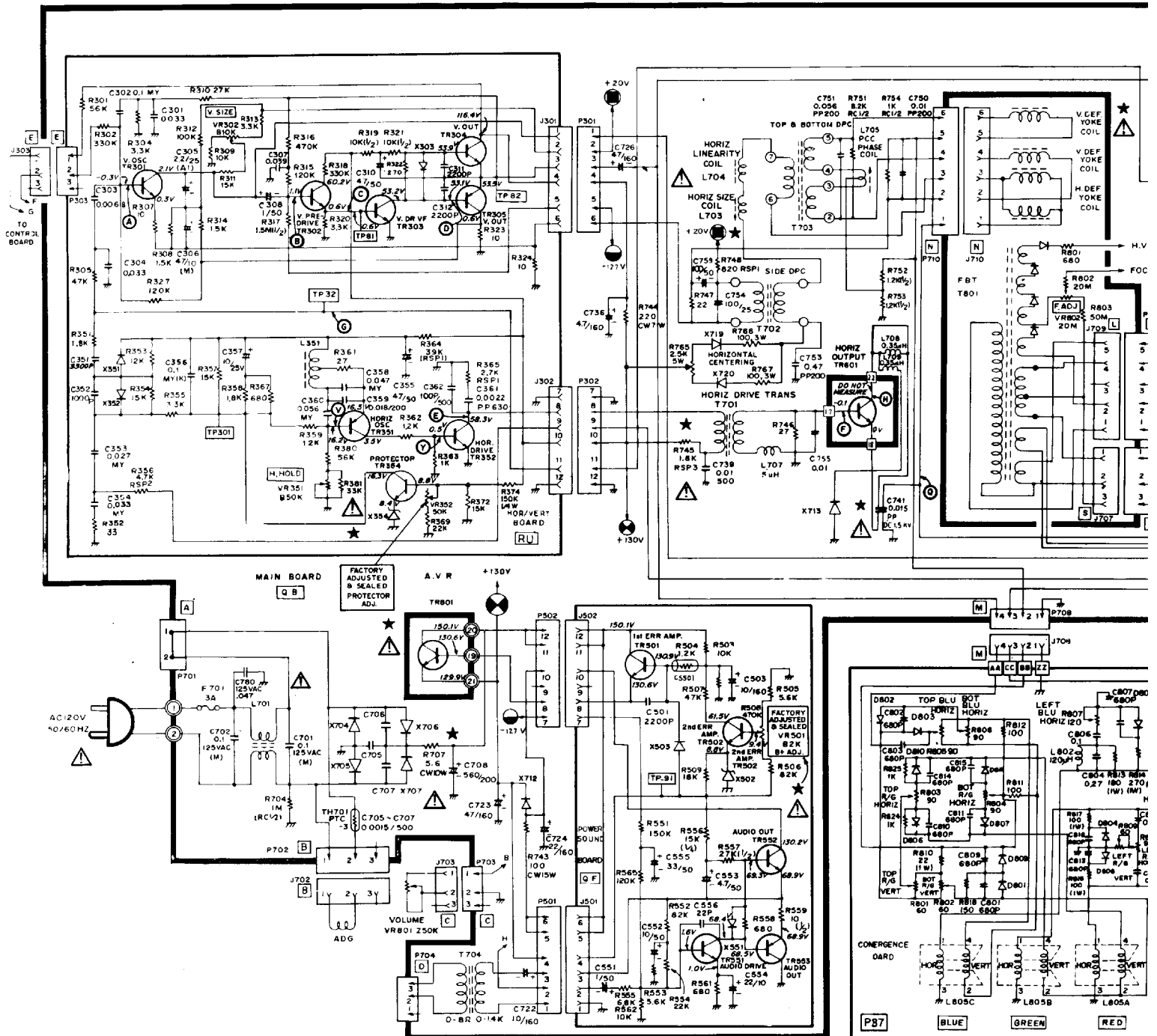


MEMORY LOGIC SCHEMATIC
PART NO. MOS1-00866-A004

| | | | | | | | | | | | |
|-------------------|--|----------------------------------|--|------------------------------------|--|--------------|--|---------|--|-------------------|--|
| REVISIONS | | USED ON GALAXIAN | | NO. REQ'D | | SCALE | | DATE | | PRINTED | |
| MIDWAY MFG. CO. | | FRANKLIN PK. ILL. | | 1 | | MEMORY BOARD | | CIRCUIT | | A108219 353-A8166 | |
| DO NOT SCALE DWG. | | DIM. TOLERANCES UNLESS SPECIFIED | | CONDUCTIVITY V.I.R. AND MECHANICAL | | MATERIAL | | DATE | | 285.12.78 | |







WELLS-GARDNER MONITOR SCHEMATIC
 MONITOR SCHEMATIC PART NO. 1051-00087-A00

