

PAINT N PUZZLE

SERVICE MANUAL

CENTURY
VENDING AND DISTRIBUTING

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Phone (310)532-2351
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GAME CONTROLS

COLOR BUTTONS

Located on the player control panel are ten 2 inch push buttons. These buttons control the paint colors while playing the paint game, they have no effect on the puzzle game.

TOUCH SCREEN

This game uses a micro touch screen that has been bonded to the monitor picture tube. Touching the surface of the screen allows coloring of items in the color game, movement of pieces in the puzzle game, or alteration of game setup while in game setup mode.

COIN ACCEPTOR

This game uses a standard over/under coin door. Coins inserted in the game are mechanically verified before they trip a switch crediting the game and then fall into the coin box.

VOLUME CONTROL

Located on the game circuit board and requires a small flat blade screwdriver to adjust. The volume level of all game sounds are controlled by this device.

TEST BUTTON

Located inside the coin door, mounted on top of the cash box vault. Pressing this button allows you to get coin and ticket meter readings, calibrate the touch screen and adjust the game option settings.

POWER SWITCH

Located next to the test button inside the coin door. This switch turns off all power to the game. As an added precaution unplug the game before opening the back door for service.

GAME PLAY INSTRUCTIONS

- Insert coin
- Touch screen
- Only one player can play at a time.
- Choose your game, Puzzle or Paint

PUZZLE

- Choose difficulty level from one of four puzzles.
- Touch Puzzle piece to be moved (piece must be next to and open square).
- Solve the puzzle to win tickets
- Watch the timer at the top of your screen, you can buy-in to the game as needed.

PAINT

- Choose picture to Paint from one of three.
- Use buttons to select colors.
- Touch screen to color in objects.
- Repaint picture exactly like original to win extra tickets.
- Watch the timer at the top of your screen, you can buy-in to the game as needed.

CALIBRATION

This game has a two step calibration. The first calibrates the screen processor and the second calibrates the game processor. You should calibrate your game when you first receive it, and after that any time the accuracy seems to change. Your first step should be to clean the screen (this may cure the inaccuracy) then follow these steps.

TOUCH SCREEN CALIBRATION

First turn the game off, wait a few seconds and turn the game back on and hold down the red color button. The screen will be a solid green color, in what seems like an eternity you will see the screen in figure 1. Follow the instructions on the screen and touch the top left corner as close as you can to the inside the plastic bezel. Lift your finger, the screen will change to one like figure 2, touch the lower right corner as close as you can to the inside of the plastic bezel. Lift your finger, the screen will then tell you that calibration was successful and the game will go into attract mode.

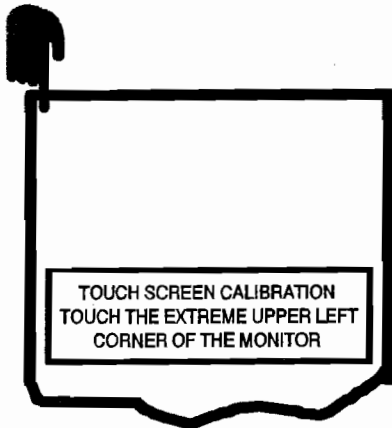


FIG 1

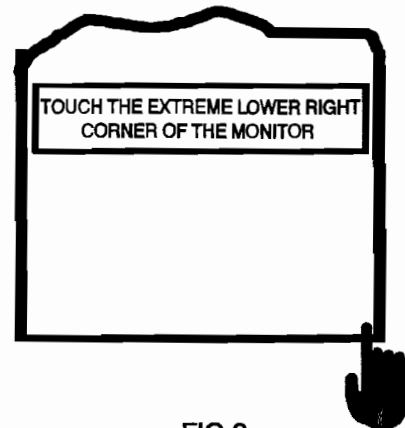


FIG 2

GAME CALIBRATION

Turn on the game and wait until it enters attract mode. Press the test button located inside the coin door, the screen will change to one like shown in figure 3. Touch the "TOUCH FOR CALIBRATION" box the screen will change to figure 4, carefully touch the small square in the upper corner. Lift your finger and the screen will then change to figure 5. Carefully touch the small square now in the lower corner. Lift your finger and the screen will change to figure 6. Draw your finger around the screen and a black line will follow your finger. Touch "QUIT" to exit back to figure 3, if you were not happy with the calibration touch "TOUCH FOR CALIBRATION" again and repeat the process. If you miss a square turn the machine off and start over.

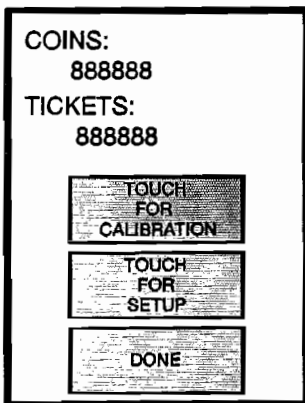


FIG 3

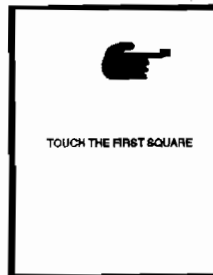


FIG 4

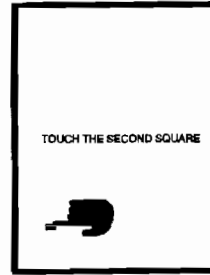


FIG 5

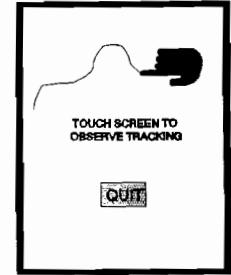


FIG 6

GAME SETUP

The game play time and the number of tickets awarded are adjustable, the coins per play is factory set at one per play and cannot be changed. To change the settings press the test button as instructed in the calibration section on the preceding page. You will see a screen like figure 3 (see calibration p 3). Touch the "TOUCH FOR SETUP" box, the screen will change to figure 7. Touch the up arrow to increase the numbers, or touch the down arrow to decrease the number. Touch the "RESTORE DEFAULTS" box to change settings to factory. After making choices touch the "SAVE SETTINGS" box to save your settings and exit to the previous screen, or touch the "QUIT WITHOUT SAVING" box to exit and leave the settings as they previously were.

MINIMUM TICKETS

This is the default number of tickets dispensed if the game player does not win. This number is overridden by any win setting. (If you set a win to 0 and minimum to 5 and the player wins, he will receive 0 tickets.)

WIN PAINT TICKETS

This is the number of tickets dispensed when a paint picture is restored to the original colors.

WIN PUZZLE TICKETS

For each difficulty of puzzle, you can choose the number of tickets awarded when the pieces are restored to their original positions.

PLAY TIME

The amount of play time for each coin/credit can be set to 30, 45 or 60 seconds. The continue at the end of the game adds this amount of time and deducts one credit.

NO TICKET OPERATION

If you set all the ticket payout options above to zero (0) all references to ticket payout will be removed from the play and attract mode screens.

CARD DISPENSER OPERATION

If your game is equipped with a card dispenser instead of a ticket dispenser, set all the ticket payouts to either one (1) or zero (0). If they are set higher the game will pause for a long time after dispensing the card. The card dispenser will dispense a maximum of one card per play.

METER READINGS

Press the test button (see calibration p 3), you will see the screen shown in figure 3. Touch the "DONE" box to return to attract/play mode.

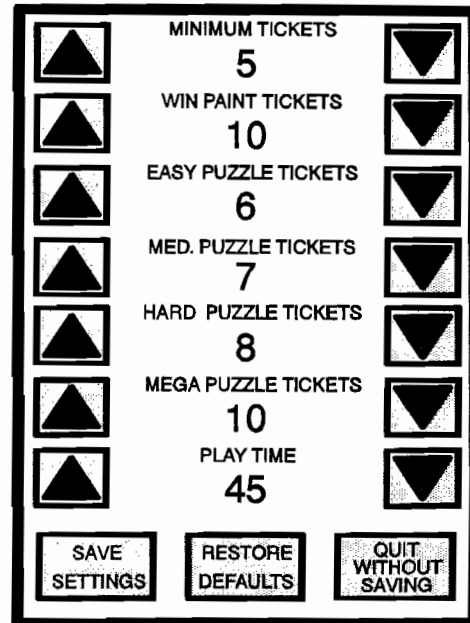


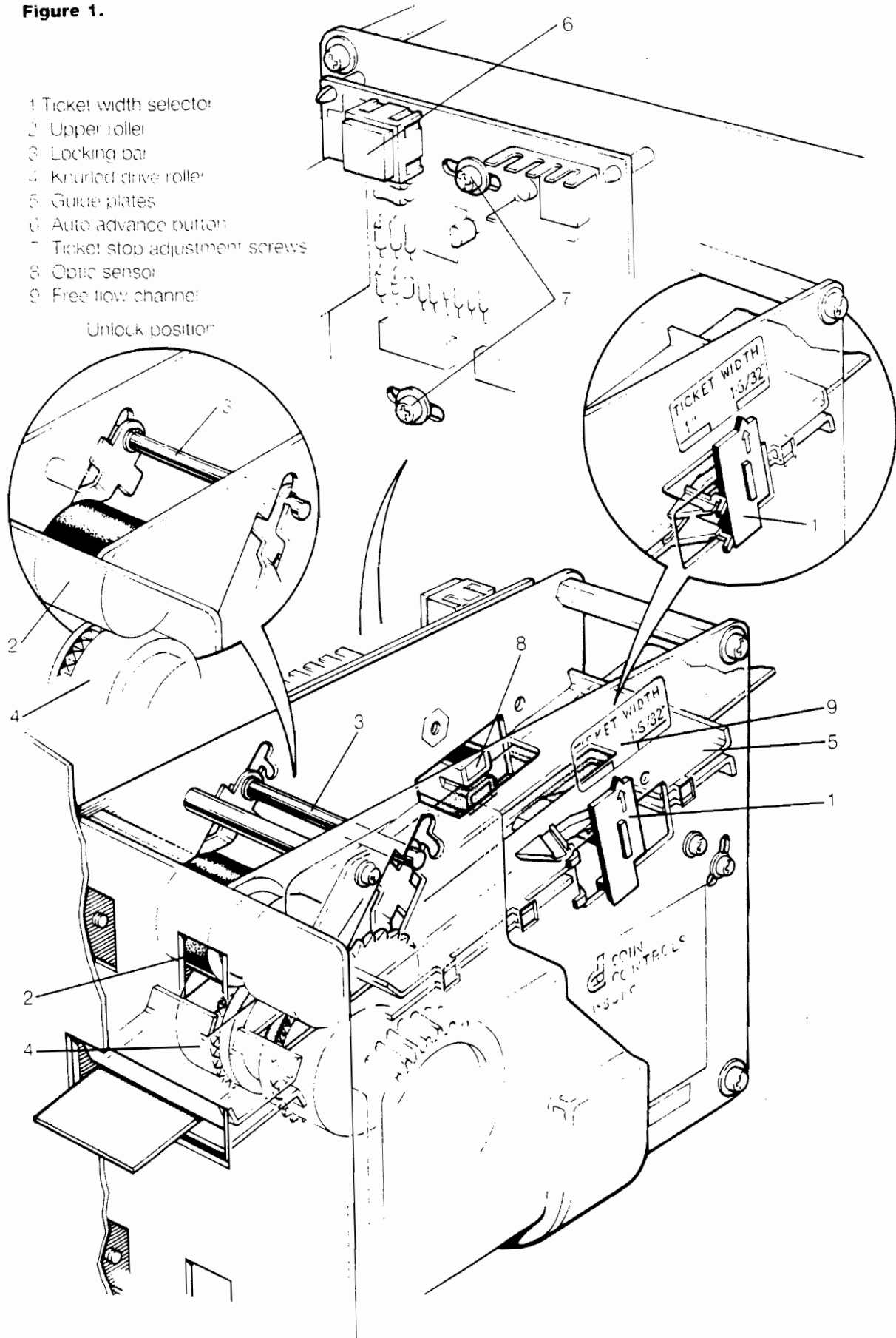
FIG 7

**DESCRIPTION
OF
OPERATIONS
1.0
See Figure 1.**

- 1.1 **Loading Tickets**
- a) Select the ticket width by positioning the arrow on the tab (1) to either the 1" or 1⁵/₃₂" as indicated.
 - b) Lift the upper rollers (2) by pulling up the locking bar (3) until it falls into the unlock position. The upper rollers are now disengaged from the knurled drive rollers (4).
 - c) Slide the tickets between the guide plates (5) until the tickets are located between the upper and knurled drive rollers.
 - d) Release the locking bar (3) to allow the upper rollers (2) to re-engage with the knurled drive rollers (4). The tickets should now be locked so that it is not possible to pull them through the unit.
 - e) Depress the auto advance button (6) momentarily to advance the tickets.
- 1.2 **Ticket Stop Adjustment**
- a) To adjust the length of ticket protruding from the front plate, turn the two Phillips pan head screws (7) on the circuit board one quarter of a turn counter clockwise.
 - b) Move the board forward or backward to the appropriate position.
 - c) Re-tighten the screws.
- 1.3 **Mode Selection**
- Refer to Jumpers Function Table (section 2.2)
- a) Mode 1
In mode 1, one ticket is paid out per pulse. To select mode 1, connect pins 2 and 3 on Jumper 1. Then, using Jumper 2, connect pins 1 and 2 for a negative voltage input, and pins 2 and 3 for a positive input.
 - b) Mode 2 (Industry Standard Setting)
In mode 2, the tickets pay out continuously until shut off by the host machine. To select mode 2, connect pins 1 and 2 on Jumper 1. This can only be used with a positive input, so connect pins 2 and 3 on Jumper 2.
- 1.4 **Ticket Meter**
- With pins 1 and 2 connected on Jumper 3, the CTD10 is set to drive a 12 volt ticket meter. If another meter voltage is required, then change the jumper to positions 2 and 3. Pin 8 on the 8 pin connector can now accept a voltage of between 5 and 30 volts DC.
- 1.5 **Out of Ticket Indicator**
- With pins 2 and 3 connected on Jumper 4, the CTD10 is set to drive an LED. If a 12 volt lamp is desired, Jumper 4 must be used to connect pins 1 and 2.
- 1.6 **Clearing Jams**
- a) Lift the upper rollers (2) by pulling the locking bar (3) until it drops into the unlock position.
 - b) Push the tickets away from the black slide-selector switch (1) towards the optic sensor (8).
 - c) Gently pull the tickets towards the rear of the unit. If necessary apply pressure to the tickets in the free flow channel (9) with a small screw driver. (or narrow bladed implement).
 - d) Tear off the damaged tickets and slide the remaining tickets between the guide plates (5) until the tickets are located between the upper rollers (2) and the knurled drive rollers (4).
 - e) Release the locking bar (3) to re-engage the upper rollers.
 - f) Depress the auto advance button (6) to advance the tickets.

1.0 DESCRIPTION OF OPERATIONS

Figure 1.



TECHNICAL SPECIFICATIONS 2.0

2.1

8 Pin Connector

Summary of connections

- 1 Ticket notch output (open collector transistor)
- 2 Ground (0 volts)
- 3 Motor enable pulse or continuous positive trigger
- 4 +12 VDC
- 5 +ve for ticket meter (set to 12 VDC by OEM)
- 6 -ve ticket meter return
- 7 Motor enable continuous (positive or negative)
- 8 External ticket meter supply voltage
(Caution: disconnect Jumper3 if connecting voltage to this pin)

2.2

2 Pin Connector

- 1 + "out of ticket" LED or 12 VDC lamp
- 2 - LED or lamp return

2.3

Jumpers Function Table

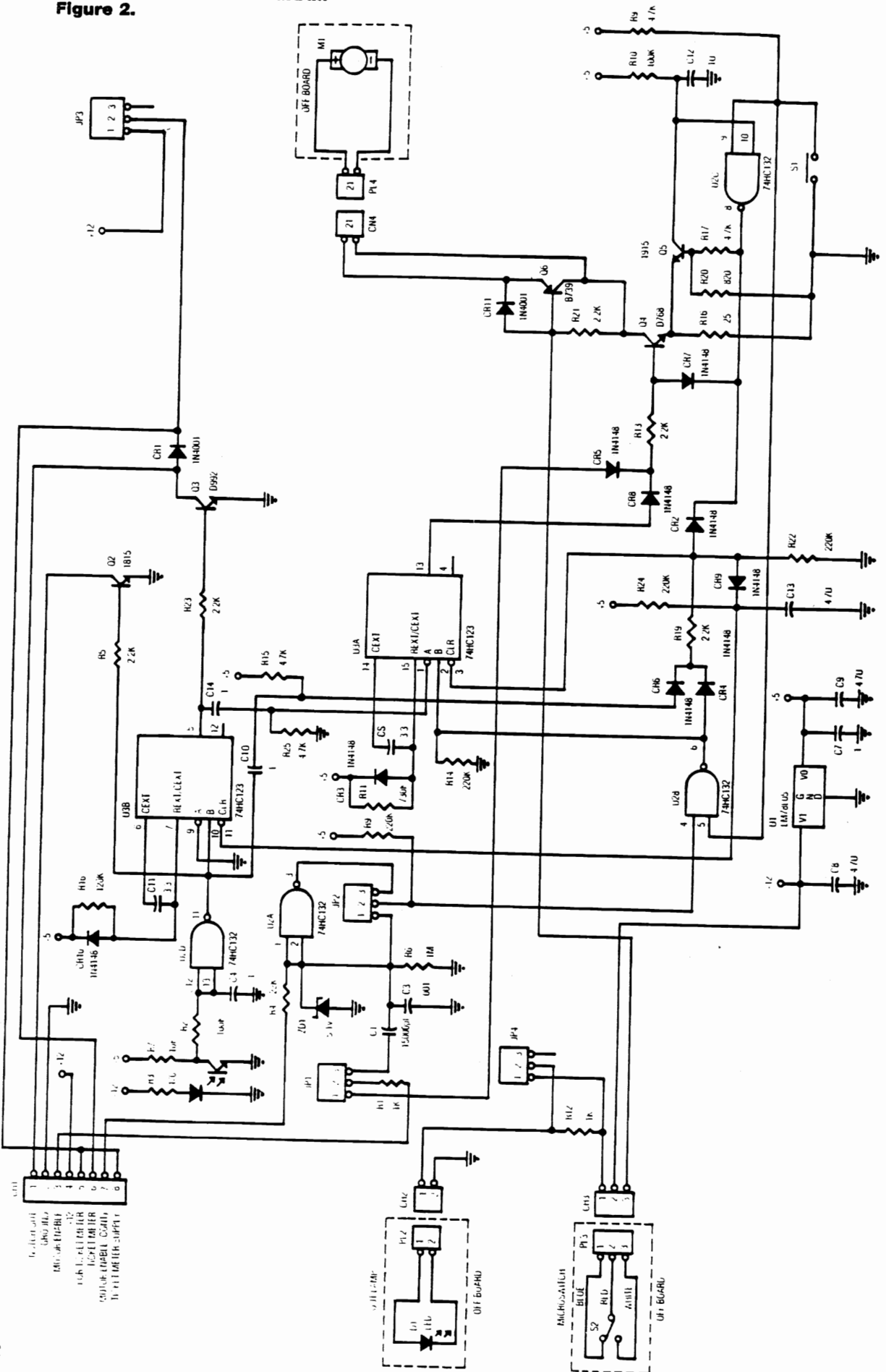
	1	2	3	DESCRIPTION
J1				LEVEL INPUT POSITIVE ONLY (PIN 3 OR 8 PIN HEADER)
				PULSE INPUT POSITIVE OR NEGATIVE (PIN 3 OF 8 PIN HEADER)
J2				NEGATIVE INPUT (LEVEL OR PULSE)
				POSITIVE INPUT (LEVEL OR PULSE)
J3				V+ FOR TICKET METER (+12V)
				TICKET METER SUPPLY VOLTAGE FOR METERS OTHER THAN 12V
J4				OUT OF TICKET INDICATOR FOR 12V LAMP
				OUT OF TICKET INDICATOR FOR LED

2.4

Operating Conditions

PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNITS
VCC		10.8	12.0	13.2	V
Operating Temperature		0	-	65.0	°C
Standby Current		-	25.0	40.0	mA
Start Current		-	2.44	3.2	A
Run Current		-	0.65	0.9	A
Stall Current		-	2.16	2.9	A
Dispensing Speed		-	2	-	Ticket/Sec
Stall Condition Cut Off Time		-	100	300	ms
Vin (H)	Pin 7 (Mode 1&2)	4.5	-	13	V
	Pin 3 (Mode 1)	4.5	-	13	V
	Pin 3 (Mode 2)	4	-	13	V
Vin (L)	Pin 7 (Mode 1&2)	-	-	0.7	V
	Pin 3 (Mode 1&2)	-	-	0.7	V
Iin (H)	Pin 7 (Mode 1&2)	200	-	-	µA
	Pin 3 (Mode 1)	200	-	-	µA
	Pin 3 (Mode 2)	0.8	-	-	mA
Iin (L)	Pin 7 (Mode 1&2)	-	-	-200	µA
	Pin 3 (Mode 1&2)	-	-	-200	µA
TW Pulse Width	Pin 7 (Mode 1)	1	-	300	ms
	Pin 3 (Mode 1)	1	-	-	ms

3.0 CTD10 SCHEMATIC DIAGRAM Figure 2.



WELLS-GARDNER ELECTRONICS CORPORATION

19 Inch Video Display

Model K7000B

COLOR SPECIFICATIONS

CRT

- 19" diagonal measure
- P22 phosphor
- Polished faceplate standard
- Stripe trio spacings: .75mm

INPUT SIGNALS

- **Video:** RGB analog, 1v to 5v peak-to-peak (adjustable with contrast control), 4.7k ohm input impedance, 40 usec to 50 usec active video.
- **Optional inputs available:**
- Negative video
- RGB analog 0-0.75v, 75 ohm input impedance
- **Sync:** TTL positive or negative going, separate or composite. Input impedance: 20K ohms for positive going sync; 12K ohms for negative going sync.

HORIZONTAL SCAN

- **Width:** Adjustable with just one coil to accommodate active video from 40 usec to 50 usec.
- **Frequency:** 15.1 kHz to 16.8 kHz standard; higher scan frequencies available.
- **Linearity:** $\pm 5\%$

PICTURE SIZE REGULATION

- 2%

VERTICAL SCAN

- **Frequency:** 47 Hz to 63 Hz
- **Linearity:** $\pm 5\%$

GEOMETRIC DISTORTION

- $\pm 2\%$ (max).

VIDEO CHARACTERISTICS

- **Bandwidth (-3 db):** 12 MHz typical
- **Rise Time:** Less than 50 nanoseconds
- **Overshoot (max):** 5%

MECHANICAL

- The 19" monitor is in a universal mount bracket. The monitor can be mounted in the user's cabinet horizontally or vertically.

USER ADJUSTABLE CONTROLS AND ADJUSTMENTS

- Brightness, Contrast, Horizontal Hold, Horizontal Size, Horizontal Raster Position, Horizontal Video Position, Vertical Hold, Vertical Size, Vertical Raster Position, Focus. Up front control printed circuit board is standard.

POWER INPUT

- 120 VAC +10% -15%, 50-60 Hz, 85W (max). Isolation transformer required.

WARNINGS

1. Power Up Warning—

An isolation transformer must be used between the AC supply and the AC plug of the monitor before servicing testing, or operating the monitor since the chassis and the heat sink are directly connected to one side of the AC line which could present a shock hazard.

Before servicing is performed, read all the precautions labelled on the CRT and chassis.

2. **X-RAY RADIATION WARNING NOTICE**

WARNING: PARTS WHICH INFLUENCE X-RAY RADIATION IN HORIZONTAL DEFLECTION, HIGH VOLTAGE CIRCUITS AND PICTURE TUBE ETC. ARE INDICATED BY (★) IN THE PARTS LIST FOR REPLACEMENT PURPOSES. USE ONLY THE TYPE SHOWN IN THE PARTS LIST.

3. High Voltage—

This monitor contains HIGH VOLTAGES derived from power supplies capable of delivering LETHAL quantities of energy. Do not attempt to service until all precautions necessary for working on HIGH VOLTAGE equipment have been observed.

4. CRT Handling—

Care must be taken not to bump or scratch the picture tube as this may cause the picture tube to implode resulting in personal injury. Shatter proof goggles must be worn when handling the CRT. High voltage must be completely discharged before handling. Do not handle the CRT by the neck.

5. **PRODUCT SAFETY NOTICE**

WARNING: FOR CONTINUED SAFETY REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER RECOMMENDED PARTS. THESE PARTS ARE IDENTIFIED BY SHADING AND BY (△) ON THE SCHEMATIC DIAGRAM.

For replacement purposes, use the same type or specified type of wire and cable, assuring that the positioning of the replacement wire follow the same path as the original wire or cable.(especially for H.V. and power supply circuits). Use of alternative wiring or positioning could result in damage to the damage or in a shock or fire hazard.



WELLS-GARDNER ELECTRONICS CORPORATION

2701 N. KILDARE AVENUE • CHICAGO, ILLINOIS 60639 • (312) 252-8220 • FAX (312) 252-8072

PART NO. 69X2387-100

SOLDER SIDE

GROUND (1)
 GROUND (1)
 +5 V DC (2)
 +5 V DC (2)
 -5 V DC (9)
 +12 V DC (4)
 KEY

 SPEAKER (9)
 TICKET NOTCH (69)

 COIN (3)

 RED BUTTON (95)
 BLUE BUTTON (96)
 GREEN BUTTON (97)
 YELLOW BUTTON (98)
 WHITE BUTTON (7)
 GROUND (09)

A 1
 B 2
 C 3
 D 4
 E 5
 F 6
 H 7
 L 8
 K 9
 L 10
 M 11
 N 12
 P 13
 R 14
 S 15
 T 16
 U 17
 V 18
 W 19
 X 20
 Y 21
 Z 22
 a 23
 b 24
 c 25
 d 26
 e 27
 f 28

PARTS SIDE

GROUND (1)
 GROUND (1)
 +5 V DC (2)
 +5 V DC (2)
 -5 V DC (9)
 +12 V DC (4)
 KEY

 SPEAKER (3)
 TICKET MOTOR (79)

 TEST (9)
 COIN (4)

 TAN BUTTON (45)
 BROWN BUTTON (46)
 L. GREEN BUTTON (48)
 L. BLUE BUTTON (47)
 PINK BUTTON (89)
 GROUND (09)

PAINT N PUZZLE

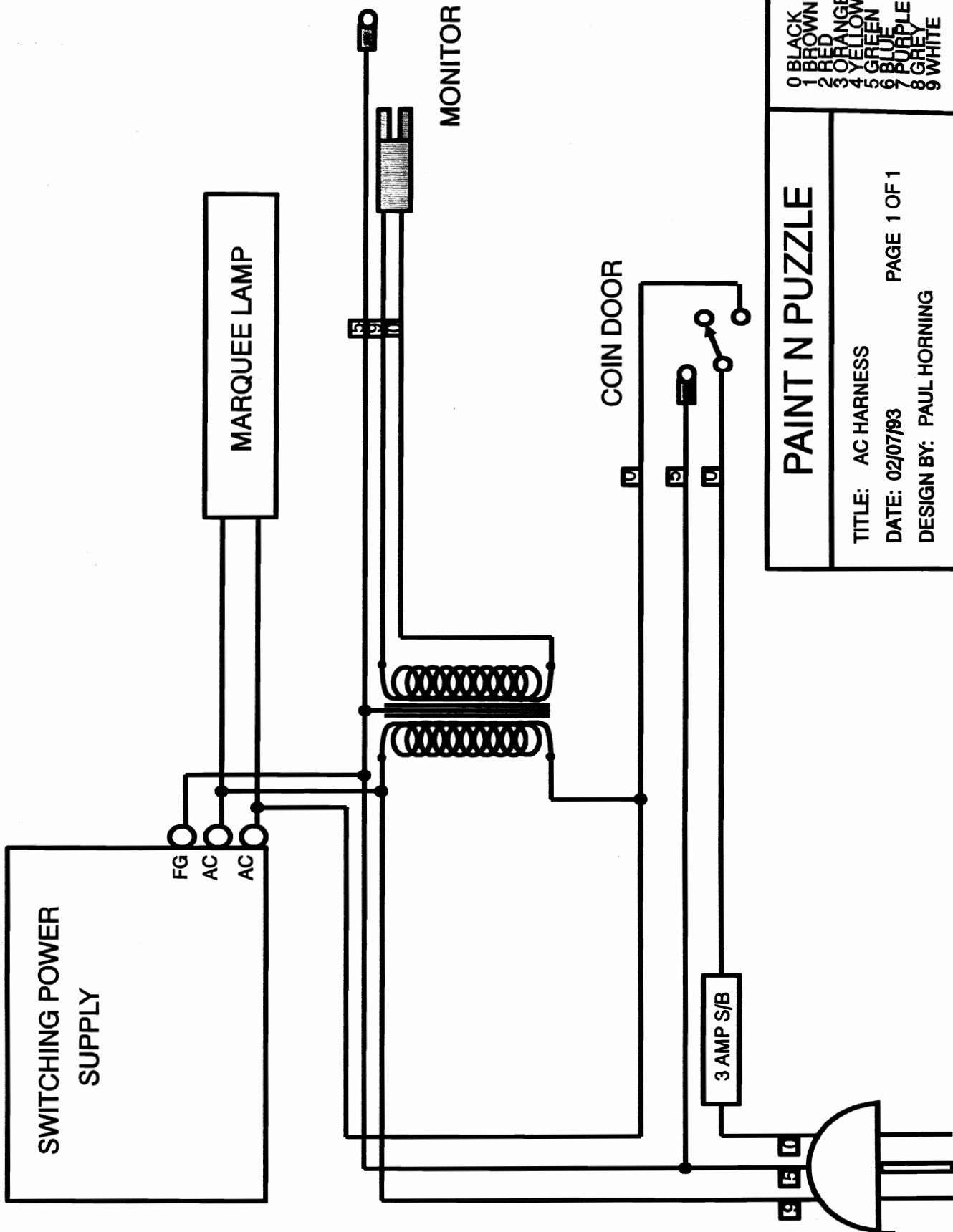
TITLE: JAMMA PIN OUT

DATE: 02/08/93

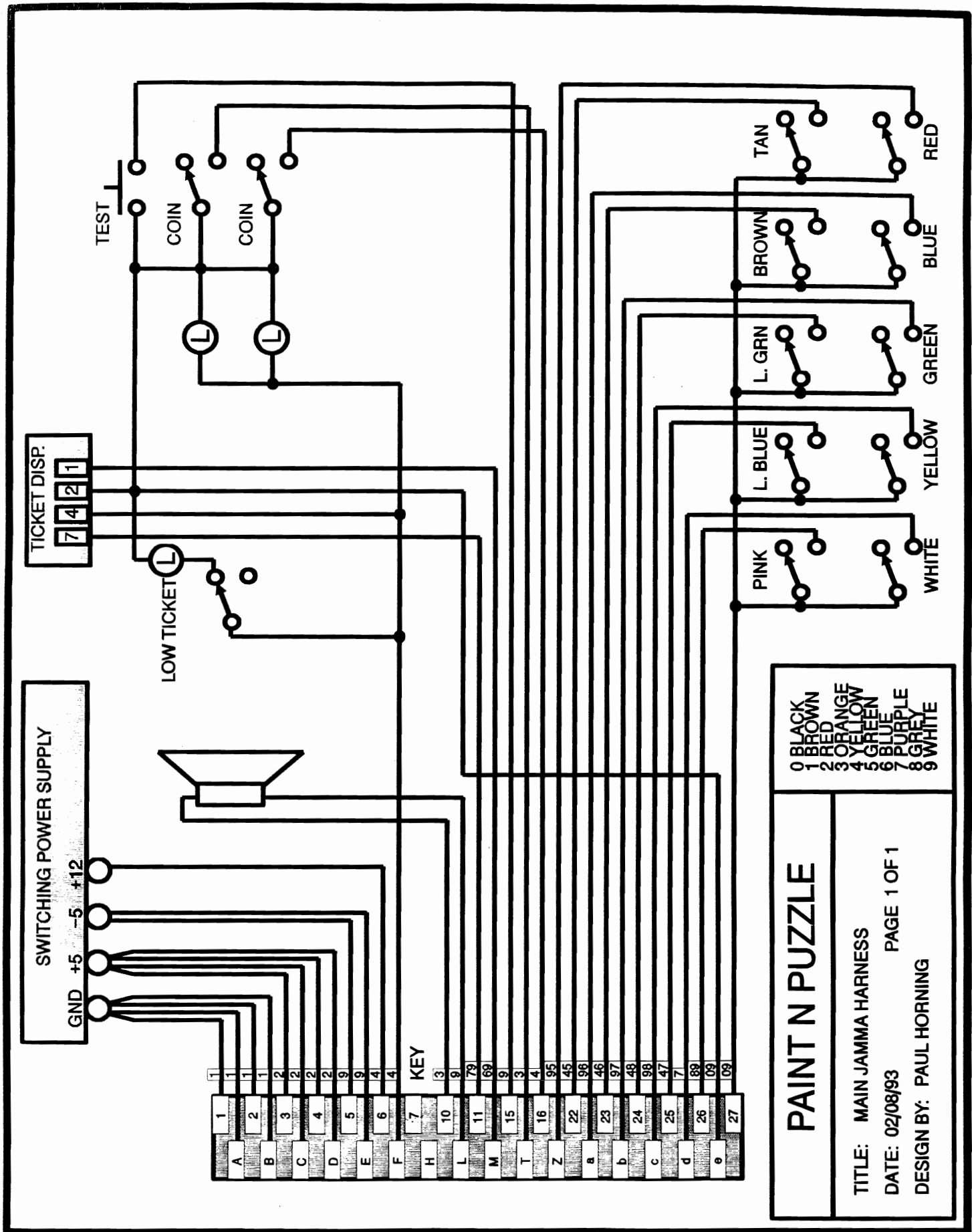
PAGE 1 OF 1

DESIGN BY: PAUL HORNING

0 BLACK
 1 BROWN
 2 RED
 3 ORANGE
 4 YELLOW
 5 GREEN
 6 BLUE
 7 PURPLE
 8 GREY
 9 WHITE



PAINT N PUZZLE TITLE: AC HARNES DATE: 02/07/93 DESIGN BY: PAUL HORNING	0 BLACK 1 BROWN 2 RED 3 ORANGE 4 YELLOW 5 GREEN 6 BLUE 7 PURPLE 8 GREY 9 WHITE
	PAGE 1 OF 1



PAINT N PUZZLE

TITLE: MAIN JAMMA HARNESS
 DATE: 02/08/93
 DESIGN BY: PAUL HORNING

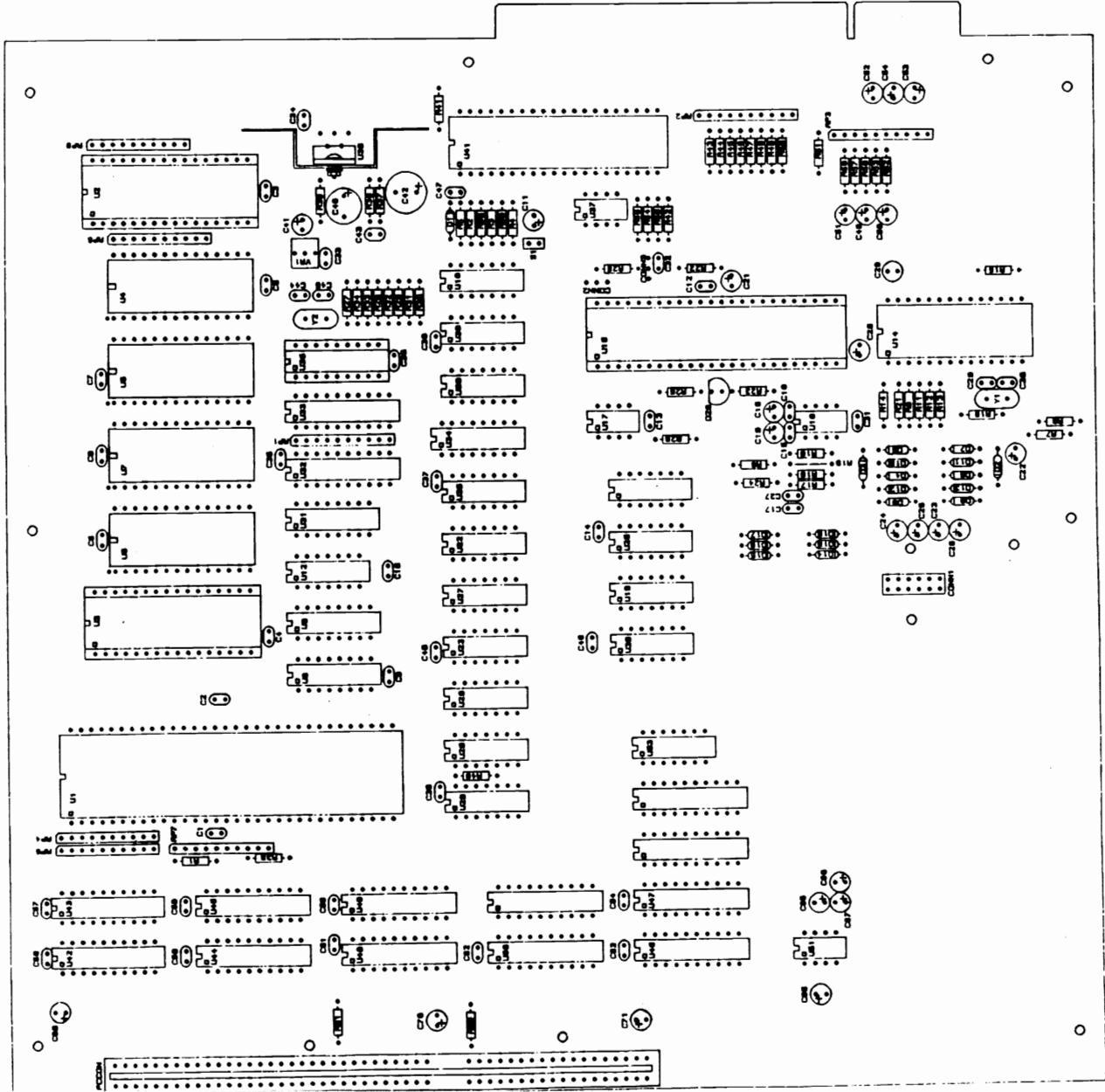
PAGE 1 OF 1

0 BLACK
 1 BROWN
 2 RED
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 4 YELLOW
 5 GREEN
 6 BLUE
 7 PURPLE
 8 GREY
 9 WHITE

PAIN T AND PUZZLE ASSEMBLY REV B

NOTES:

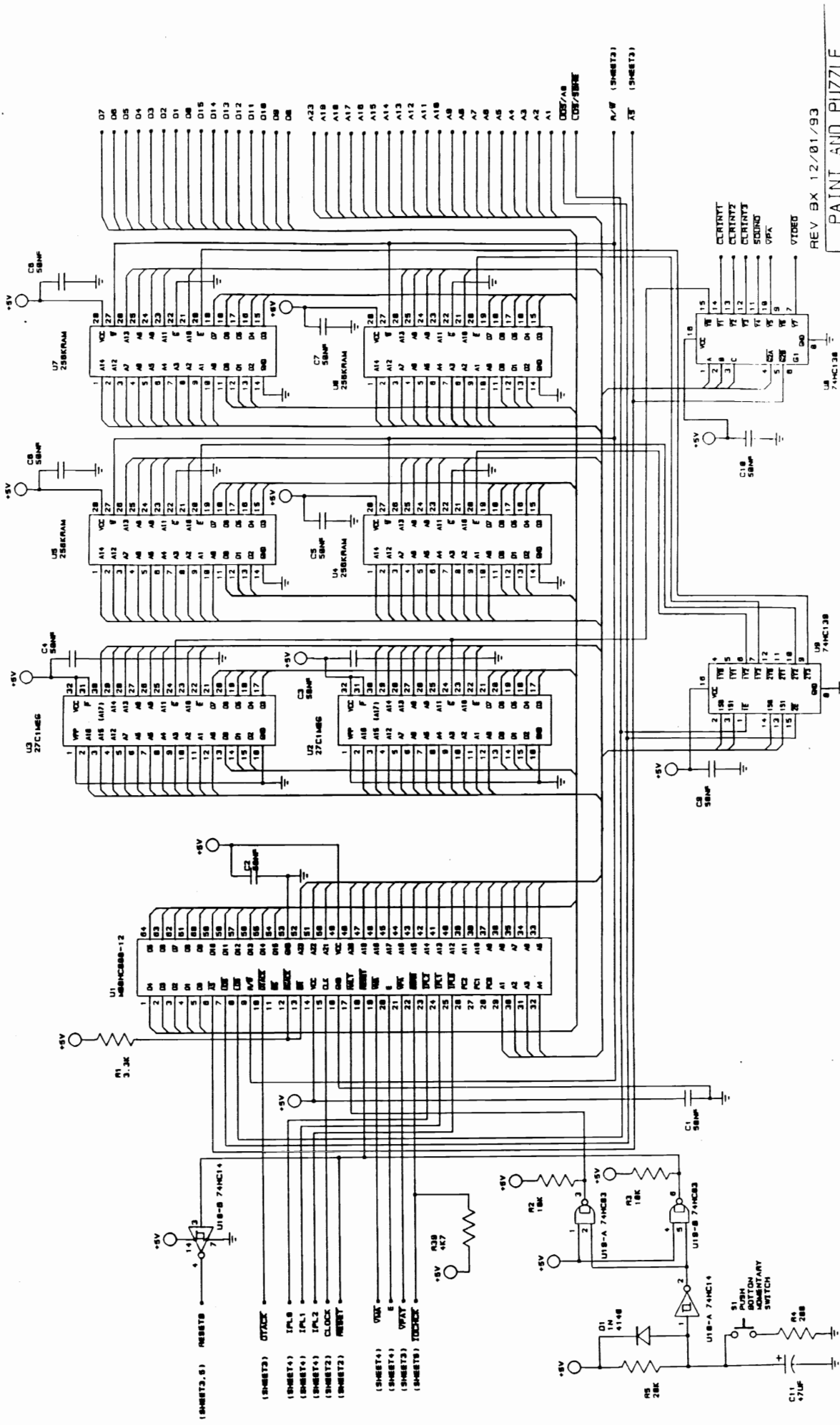
1. OBSERVE POLARITY OF ALL MARKED CAPACITORS.
2. OBSERVE ORIENTATION OF ALL I.C.S.
3. U36 REQUIRES HEATSINK, THERMAL COMPOUND, NUT, WASHER, AND BOLT.
4. OBSERVE ORIENTATION OF ALL SIPS WITH PIN 1 MARKED.
5. REWORK (CUTS AND JUMPERS) PER SEPERATE INSTRUCTIONS.
6. DO NOT INSTALL C28 OR R18.
7. R19 IS REPLACED BY A TINNED WIRE JUMPER.



4

3

2



NOTE: 5 3.3K RESISTOR PACKS (RP4 THRU RP8) PULL UP ALL 68000 OUTPUT CONTROL, ADDRESS, AND DATA LINES. THESE ARE NOT SHOWN.

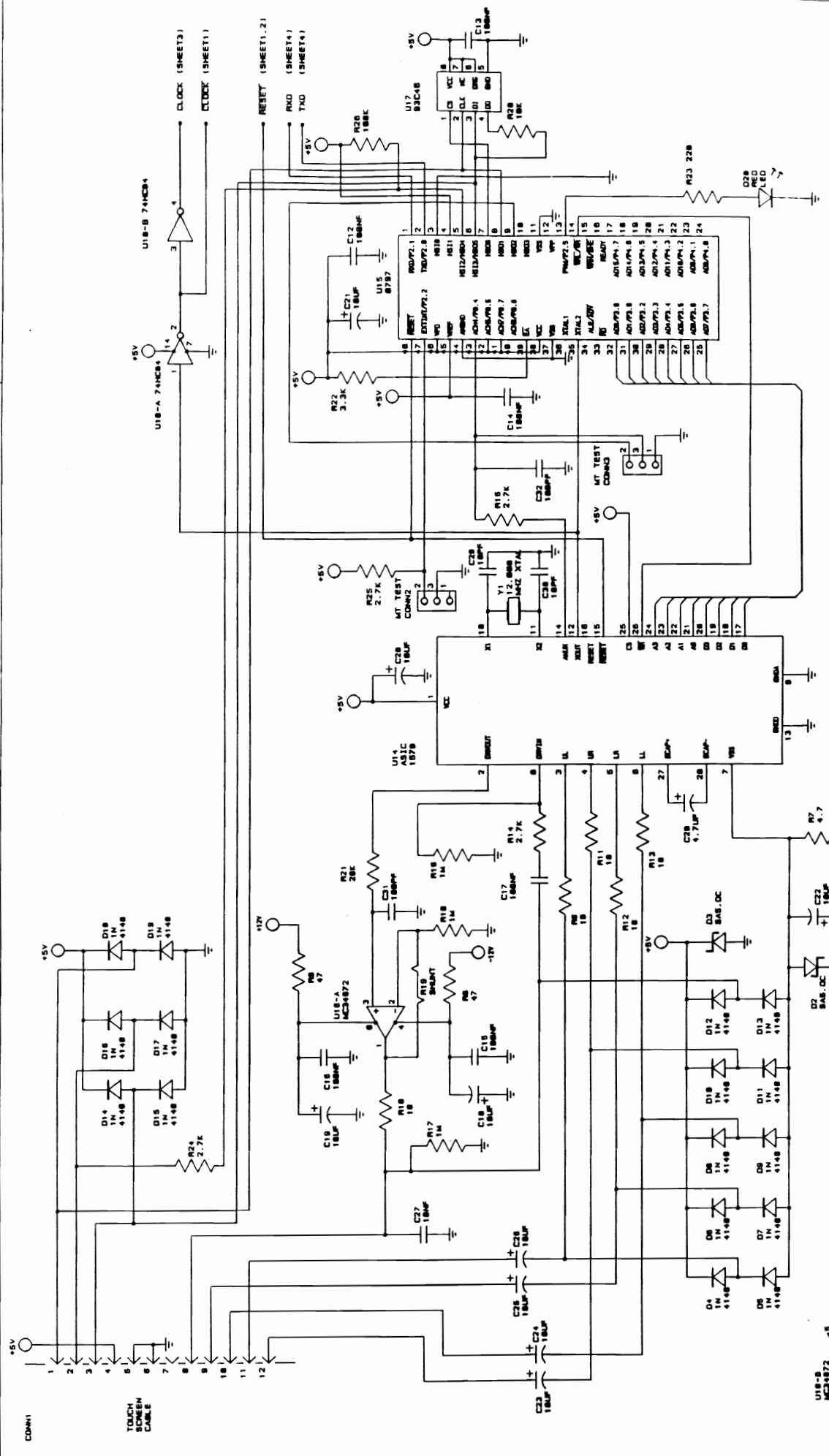
REV BX 12/01/93

PAIN AND PUZZLE

DATE	8/19/93	SIZE	B
DESIGNER	SCALE	DATE	1/08/94
DRWING	SCALE	DATE	1/08/94

SHEET 1 OF 1

1
2
3
4

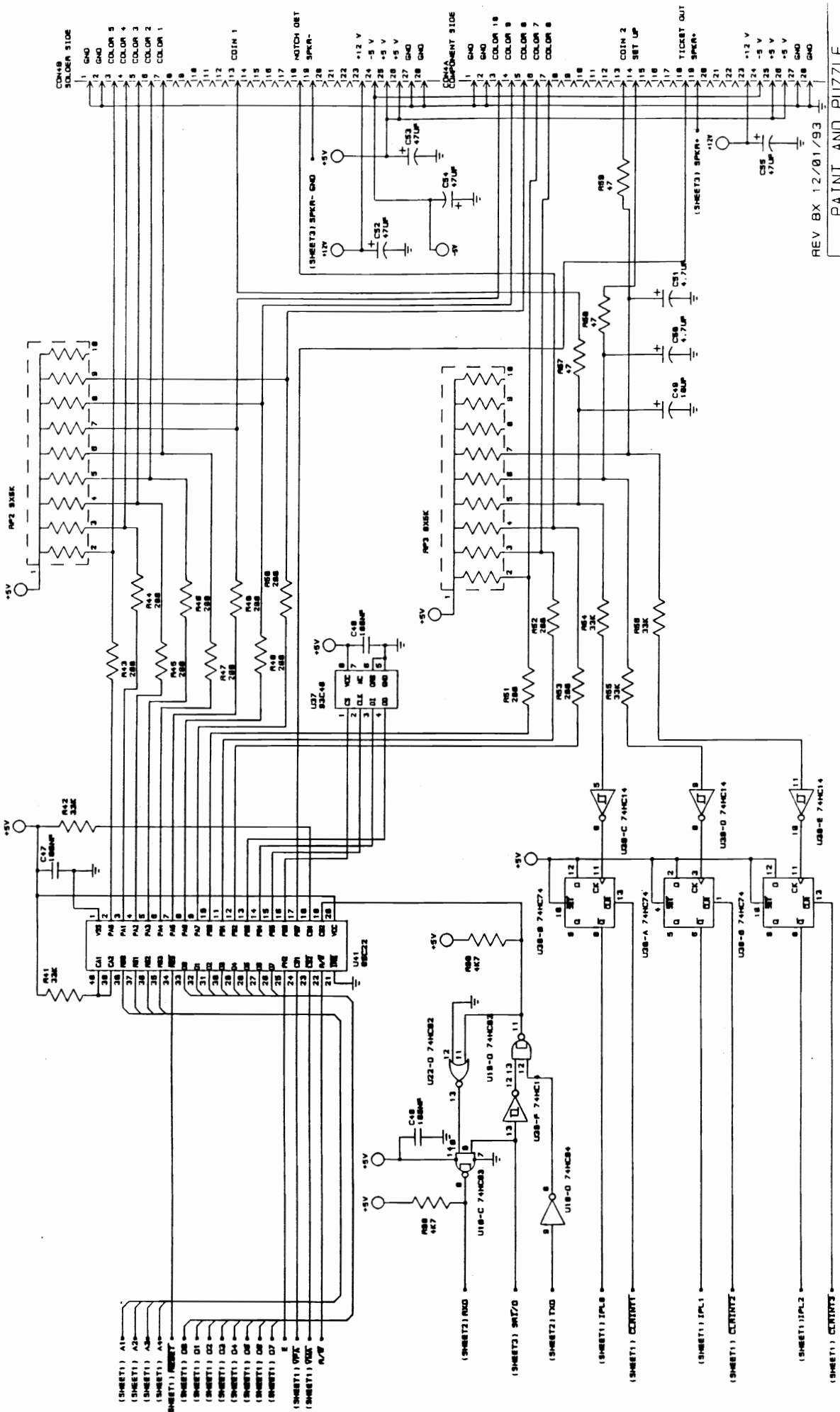


REV BX 12/01/93

PAINT AND PUZZLE

DRAWN 8/19/93
SCALE
SHEET 2 OF 5

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2
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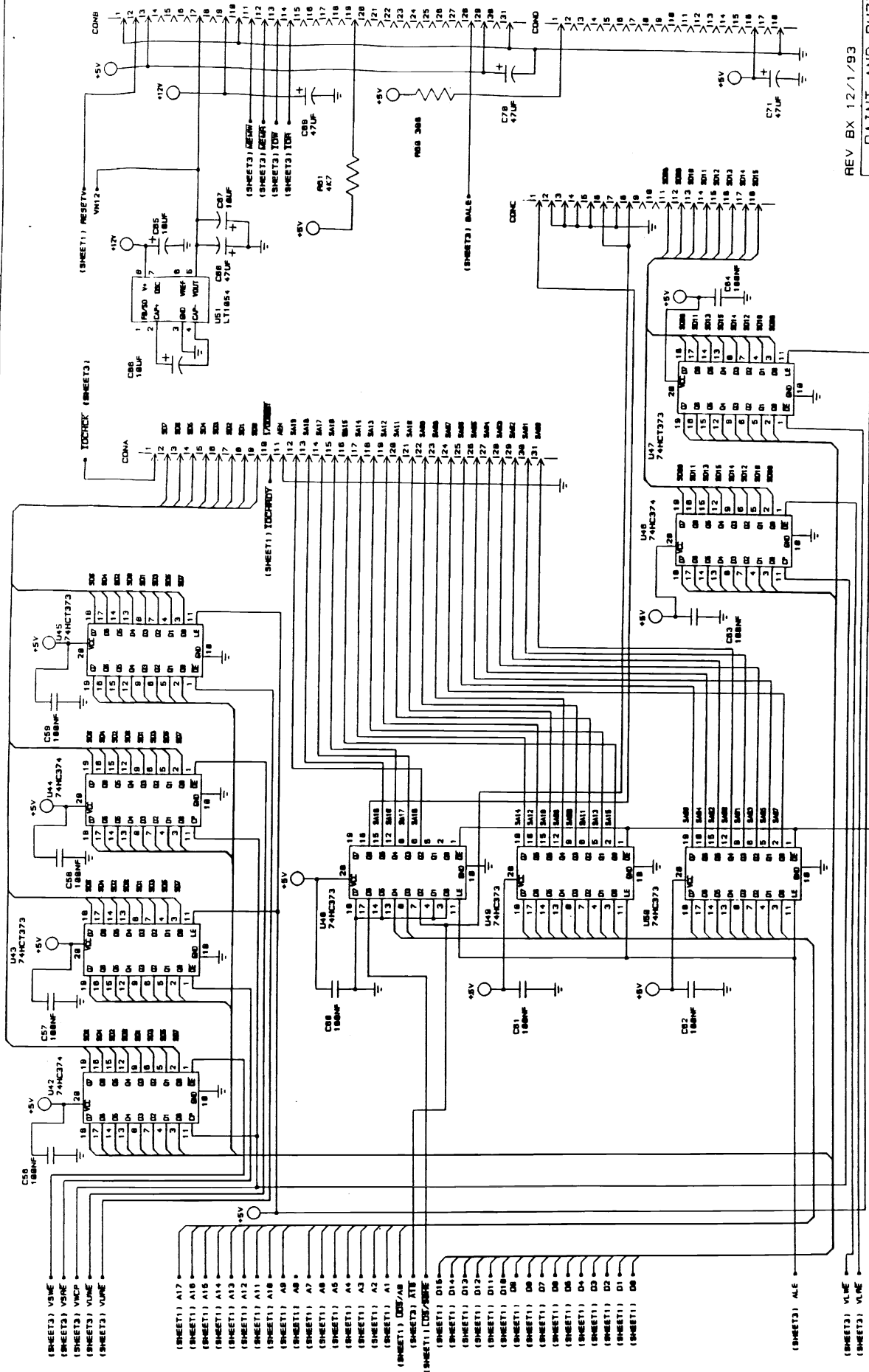


REV BX 12/01/93

DATE	8/19/93	SIZE	SCALE	SHEET NO	ONE OF	REV
DESIGNER						
				SHEET 4 OF 5		

PAINT AND PUZZLE

1
2
3
4



REV BX 12/1/93
DRAWN 8/19/93
ISSUED 8/19/93
PAGE 5 OF 5

WARNING

THIS GAME MUST BE GROUNDED, FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS. Please read the following safety information carefully. All warnings apply to anyone who services this game. Failure to follow proper servicing procedures may lead to injury to service personnel and damage to the electronic components of the game. This game must be grounded.

- This game must be properly grounded when in operation. Failure to properly ground this game may result in injury to players and service personnel and damage to electronic components. A 3 prong grounded plug must be used. Plug game into a 3 wire grounded outlet only.
- When replacing fuses, unplug the game, use only those fuses called for in this manual. The replacement fuse(s) must be of the exact type and electrical rating called for by the manufacturer and specified in this manual. Failure to use the proper fuses may cause electrical shock or damage to this game.
- All service work should be done with the game unplugged. Failure to do so may cause shock or injury to service personnel.
- Use only century parts when repairing this game.
- Handle the monitor with EXTREME CARE. Avoid electrical shock while repairing the monitor, do not touch any internal parts of the monitor with hands or tools - high voltage still exists in the CRT even after it has been disconnected from power. Always discharge the monitor prior to removing from the game or repairing.
- Always insure that the AC line voltage from the power receptacle is compatible with the "Paint n Puzzle" game and its power supply. The electrical requirements of the game are as follows:

LINE VOLTAGE	110-130 VAC
LINE FREQUENCY	60 HZ
CURRENT	1.5 AMPS

WARRANTY

The manufacturer, Century Vending and Distributing Inc., warrants the game logic circuit boards to be free from defects for a period of ninety (90) days from the date of shipment from our factory. Century warrants the video display and touch screen to be free from defects in materials and workmanship for a period of thirty (30) days from date of shipment from our factory. No other parts are warranted.

If this product fails to perform satisfactorily the manufacturers sole liability will be, at its option, to replace, repair, or credit the buyers account for items returned during the warrantee period, provided:

- a) The manufacturer is notified that the product is defective.
- b) The defective parts are returned to the Manufacturers plant freight pre-paid.
- c) The manufacturer determines upon inspection that the failure was not accident, misuse, abuse, alteration, improper repair, installation, or improper testing. In no event will the manufacturer be liable for loss of profits, loss of use, incidental or consequential damages.

NOTE: The use of non-Century parts may void your warranty. The use of non-Century parts may also adversely affect the safety of your game and cause injury to you and others. Century distributors are independent, being privately owned and operated. In their judgement they may sell parts or accessories other than Century parts or accessories. Century cannot be responsible for the quality, suitability or safety of any non Century part or any modification including labor which is performed by such distributor.

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