NBA®
HANGTIME™

C€

Operations Manual Includes
- Operations & Adjustments
- Testing & Problem Diagnosis
- Parts Information
- Wiring

DECLARATION OF CONFORMITY

MIDWAY MANUFACTURING CO., INC.

3401 N. CALIFORNIA AVE.
CHICAGO, IL 60618
U.S.A.

WE, HEREBY DECLARE UNDER SOLE RESPONSIBILITY THAT

THE MODEL: *"NBA HANGTIME" 40259, 40459, 41059, 41459, 42059 (VIDEO)*

TO WHICH THIS DECLARATION RELATES IS IN CONFORMITY WITH THE FOLLOWING EUROPEAN PRODUCT SAFETY DIRECTIVES:

ELECTROMAGNETIC COMPATABILITY DIRECTIVE
(89/336/EEC AND AMENDMENTS 91/C162/08, 92/31/EEC,93/68/EEC

AS IS VERIFIED BY COMPLIANCE WITH THE FOLLOWING STANDARDS:

EN5014: 1993	EN61000-4-2: 1995
IEC 801-3: 1984 (EN61000-4-3)	EN61000-4-4: 1995
EN61000-4-5: 1995	

Date issued: MARCH 15, 1996

MANUFACTURE'S SIGNATURE

DON HASSLER

V.P. MANUFACTURING

NBA®
HANGTIME™

Information current at time of release.

Fill out and mail in game registration card. Be sure to include the game serial number. For your records, white the game serial number in the manual.

PIC Number_____   Serial Number_____

Midway Manufacturing Company reserves the rights to make modifications and improvements to its products.

The specifications and parts identified in this manual are subject to change without notice.

TABLE OF CONTENTS

NBA® HANGTIME™

Operation

Safety Notices

The following safety instructions apply to all game operators and service personnel. Specific warnings and cautions will be found throughout this manual where they apply. We recommend that you read this page before preparing your game for play.

⚠ CAUTION

ISOLATION TRANSFORMER. This video game system does not utilize an isolation transformer. No isolation exists between the cabinet AC system and the external AC line.

AC POWER CONNECTION. Verify the slide switch on the power supply is set for 110VAC or 220VAC according to local line voltage. Verify that the fluorescent lamp assembly is correct for local line voltage.

PROPERLY GROUND THE GAME. To avoid electrical shocks, do not plug in the game until it has been inspected and properly grounded. This game should only be plugged into a grounded 3-wire outlet. Shocks may also result, if the control panel is not properly grounded! After servicing any parts on the panel, be sure that the ground wires are secure. Only then should you lock up the game.

DISCONNECT POWER DURING REPAIRS. To avoid electrical shock, disconnect the game from the AC power source before removing or repairing any part of the game.

USE THE PROPER FUSE. To avoid electrical shock, use the replacement fuse which is specified in the parts list for this game. The replacement fuse must match the original fuse in fuse type, voltage rating, and current rating.

HANDLE FLUORESCENT TUBE AND CRT WITH CARE. If you drop a fluorescent tube or CRT and it breaks, it will implode! Shattered glass can fly eight feet or more from the implosion.

ATTENTION!

PROPERLY ATTACH ALL CONNECTORS. Make sure that the connectors on each printed circuit board (PCB) are properly connected. If the connectors do not slip on easily, do not force them. A reversed connector may damage your game and void the warranty. All connectors are keyed to fit specific pins on each board.

EPILEPSY WARNING

A very small portion of the population has a condition which may cause them to experience epileptic seizures or have momentary loss of consciousness when viewing certain kinds of flashing lights or patterns that are commonly present in our daily environment. These persons may experience seizures while watching some kinds of television pictures or playing certain video games. People who have not had any previous seizures may nonetheless have an undetected epileptic condition.

If you or anyone in your family has experienced symptoms linked to an epileptic condition (e.g. seizure or loss of awareness), immediately consult your physician before using any video games.

We recommend that parents observe their children while they play video games. If you or your child experience any of the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation, or convolutions, DISCONTINUE USE IMMEDIATELY and consult your physician.

Setup Procedure
Game Location Requirements

Power:

Domestic	120V @ 60 Hz, 3 Amps
Foreign	230V @ 50 Hz, 2 Amps
Japan	100V @ 50 Hz, 3 Amps

Dimensions: **_(Crated)_**

Width:	29"
Depth:	43"
Height:	75"

Dimensions: **_(Assembled)_**

Width:	37"
Depth:	42"
Height:	73"

Temp.: 32° F to 100° F
(0° C to 38° C)

Weight: Approx. 400 Lbs. **_(Crated)_**
Approx. 370 Lbs. **_(Assembled)_**

Humidity: Not to exceed 95% relative.

Installation And Inspection

1. Remove all items from shipping container and set them aside. Inspect the exterior of the cabinet for any signs of damage.

2. Remove keys from the hook attached to the left inside cabinet. Unlock and open the coin and cash box doors. (Leg levelers and spare parts are stored in the cash box).

3. Tilt or lay the cabinet down. Locate the four threaded holes on the bottom of the cabinet (one in each corner) and install one leg leveler (with its hex nut) in each hole.

4. Stand the cabinet upright and make certain that it is in a stable position. Level the cabinet.

5. Remove the rear door of the cabinet. Inspect the interior for any signs of damage. Check all major assemblies to assure that they are mounted securely.

6. Refer to the games Cabinet Wiring Diagram (section 3), to assure that all cable connectors are correctly secured. DO NOT FORCE CONNECTIONS. Watch for damaged connectors and avoid making reversed connections.

7. To secure the rear door with a padlock. remove the two nuts from inside the cabinet, above the rear door opening. The hasp is located in the spare parts bag. Slide the hasp on the bolts so that it protrudes from the hole in back of the cabinet. Replace the nuts.

    Remove the two nuts and bolts from the back of the rear door, holding the lock plate in place. Turn the lock plate around so that the slot in the lock plate is above the door. Reinstall the two bolts and nuts.

LOCK PLATE

HASP
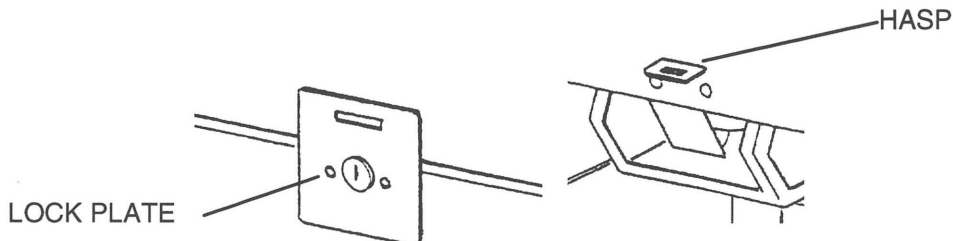
8. Install the control panel assembly:

    Be sure the game is unplugged and the coin door is open.

    Remove all packaging from the control panel assembly.

    Open the control panel by unhooking the two latches inside the housing. Pivot the control panel up onto its hinges.

    Place the control panel assembly on the cabinet so the bolt holes in the cabinet line up the bolt holes in the assembly. Secure the assembly to the cabinet with four ¼-20 X 2" bolts and four large flat washers (located in the spare parts bag).

    Plug the control panel cable connectors into the appropriate cabinet cable connectors. Be sure to match up the wire colors when you plug the connectors into each other. (See the Cabinet Wiring Diagram in Section 3 of the game manual.) DO NOT FORCE THE CABLE CONNECTORS.

    Attach the ground strap from the cabinet under wing nut.

    Lower the control panel and reach through the coin door to close the latches on the left and right sides of the assembly.

9. Install the line cord.

    Remove rear door and line cord cover plate.

    Route line cord through hole in cabinet.

    Insert line cord I.E.C. connector into mating receptacle on Power Chassis.

    Mount line cord cover, taking care to align line cord with opening in cover.
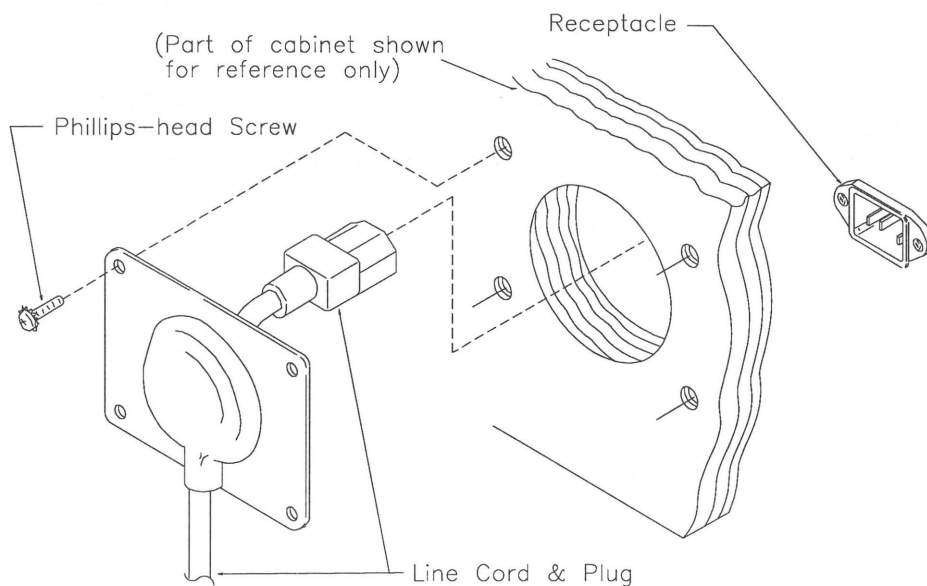
10. Connect the line cord to a grounded (3-terminal) AC wall outlet.

11. Switch ON the game using the ON/OFF switch located on the upper left rear of the cabinet.

12. Once your game is operational, open the coin door and press the Test Switch. Perform the Switch test (see Menu System Operation in Section 1 of the game manual) to be sure all buttons and joysticks are working properly. If they don't, a cable might be connected wrong.

13. To check the cables, turn Off and unplug the game. Reach through the coin door, undo the latches and tilt the control panel forward until it rests on its support brackets. Recheck the cable connections.

14. Once you are sure the connections are correct, close and latch the control panel. Close and lock the coin door. Plug the game in and turn it On. All buttons and joysticks should function normally.

NOTICE: Velcro is provided on the side of the cabinet, as well as on control panel housing to allow the operator to relocate the Remote Control Board from the cabinet to control panel housing, if so desired. This makes monitor adjustments easier.

Cabinet Assembly (Front)

Fluorescent Lamp Assembly

Screened Marque

Speaker Assembly

25" Monitor

Bezel

Instruction Card

Joysticks

Buttons

Control Panel
Assembly

Coin Door

Blank

Cabinet Assembly (Rear)

On/Off Switch

Vent Cover

CPU Board

Rear Door Assembly

Line Cord

Switching
Power Supply
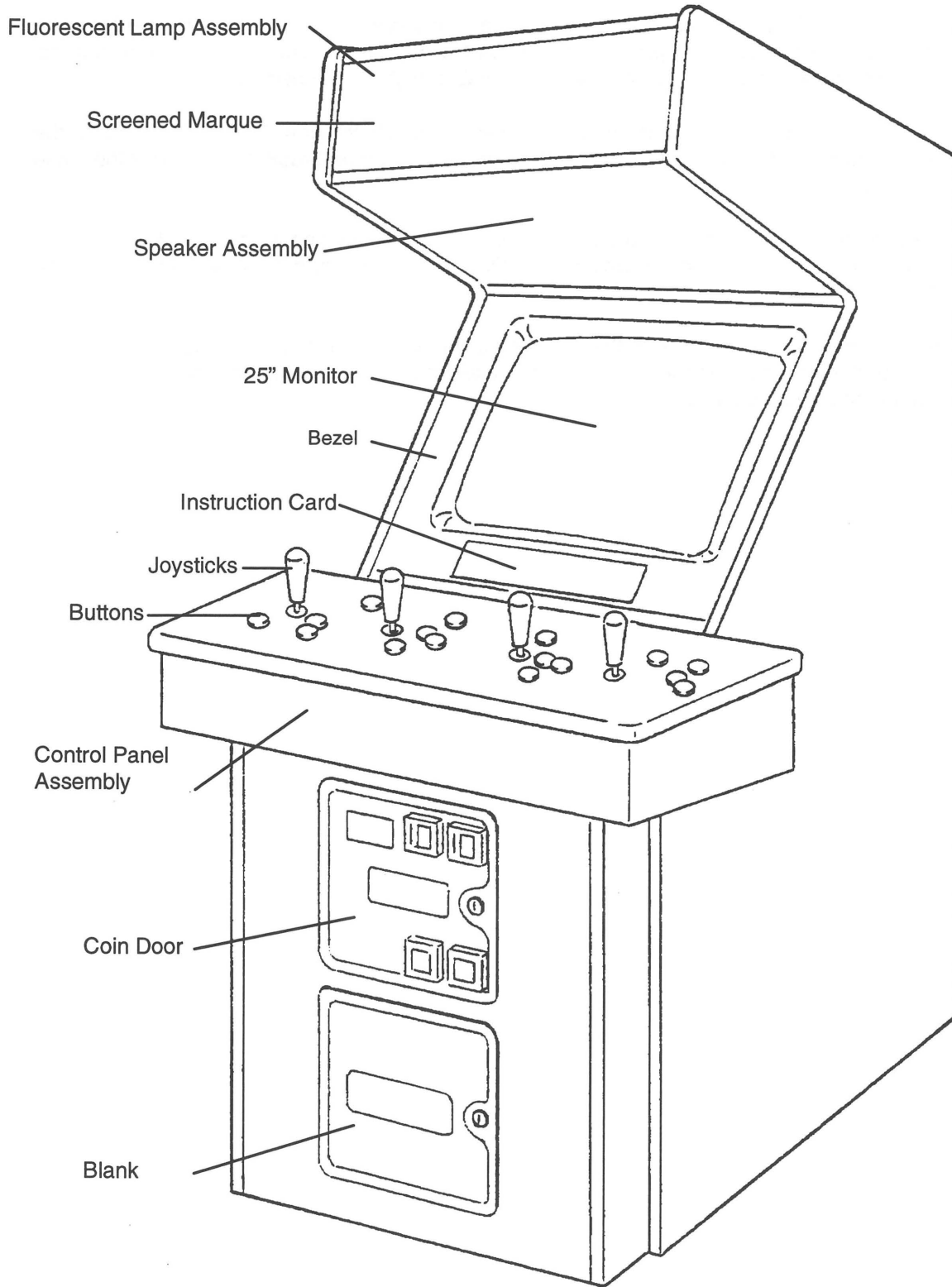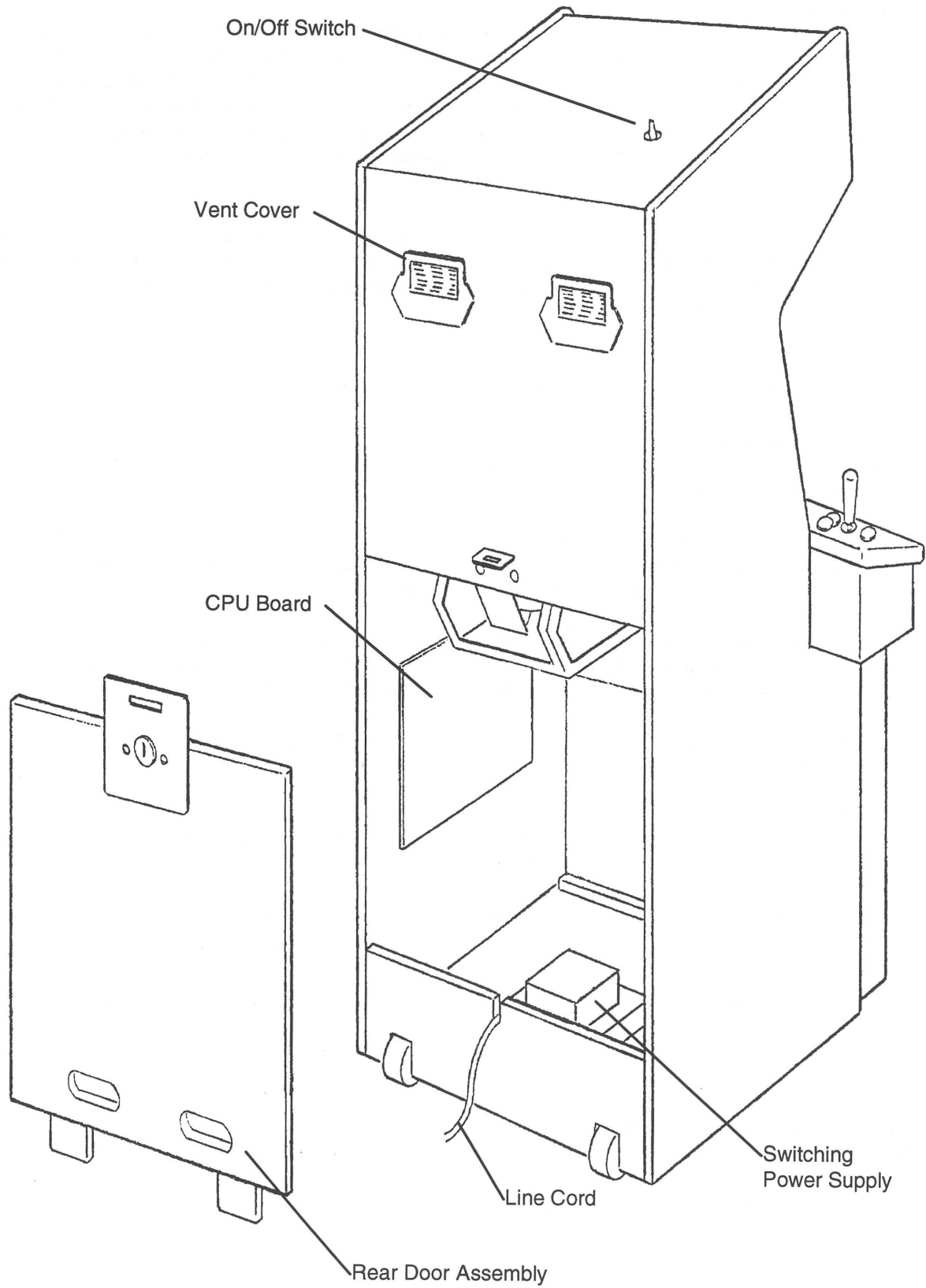
Servicing

- **Control Panel**
  The control panel is held in place by two latches (located inside the cabinet, on the left and right sides of the control panel) which provide constant pressure on the strikes. The latches can be reached through the coin door opening. To release the latches, lift the latch handle and unhook the wire fasteners. Using the side edges, carefully lift the control panel and tilt it forward until it rests on its support hinges. To reinstall the control panel, check for proper cable connections, including the ground strap. Lower it into position, avoiding pinched wires. Re-clamp the latches.

- **Remove Viewing Glass**
  Open the control panel. Loosen the three Phillips head screws that secure the back glass retaining bracket, located at the bottom of the viewing glass. Lift the glass retaining bracket straight up, away from the cabinet. Carefully lift the viewing glass up and over the wooden lip, then slide the glass down and out of the cabinet.

- **Remove Monitor Bezel**
  Remove the viewing glass. Remove the bezel from its grooved edge.

- **Monitor Replacement**
  Midway® recommends that you read the SAFETY NOTICES section (page 1-2) thoroughly before beginning this procedure.

  Switch OFF power to the game. Remove the viewing glass and the monitor bezel. Completely disconnect the monitor from all of its cabling. Remove the four flange nuts securing the monitors mounting flanges to its mounting panel. Pull the monitor carefully from the cabinet front.

  > ⚠️**CAUTION** *The monitor DOES NOT require isolation from A.C. line.. However when servicing the monitor on the test bench, it is a good practice to use an isolation transformer. Replace the monitor with a Midway® authorized monitor.*
  >
  > *The monitor is heavy. Be sure it is firmly supported if it must be removed from the cabinet.*

- **Remove Marquee Glass**
  Remove the screws in the back plastic strip on top of the cabinet. Remove the strip and carefully lift the glass. Store the glass carefully to prevent damage.

  Remove the fluorescent lamp retainer brackets. Grasp the tube, give it a quarter turn and remove it from its socket. Carefully place a new tube into the socket and turn to reinstall.

WARNING
If a fluorescent tube drops and it breaks, it will implode!
Use care in handling.

- **Remove Fluorescent Light Assembly**
  Switch OFF power to the game. Remove the marquee glass (above). Disconnect the fluorescent light assembly from its power cable. Remove the screws fastening the assembly to the cabinet and lift out the assembly.

- **Remove Speakers**
  Switch OFF power to the game. Remove marquee glass. Remove the keps nuts which are accessible through the marquee opening.

- **Diagnostics Switches**
  The Diagnostics Switches are located on a small bracket on the coin door. The Begin Test Switch, on the right, activates the game's menu system. The Service Credit Switch, on the left allows credits to be allotted for service testing without affecting the game's bookkeeping total.
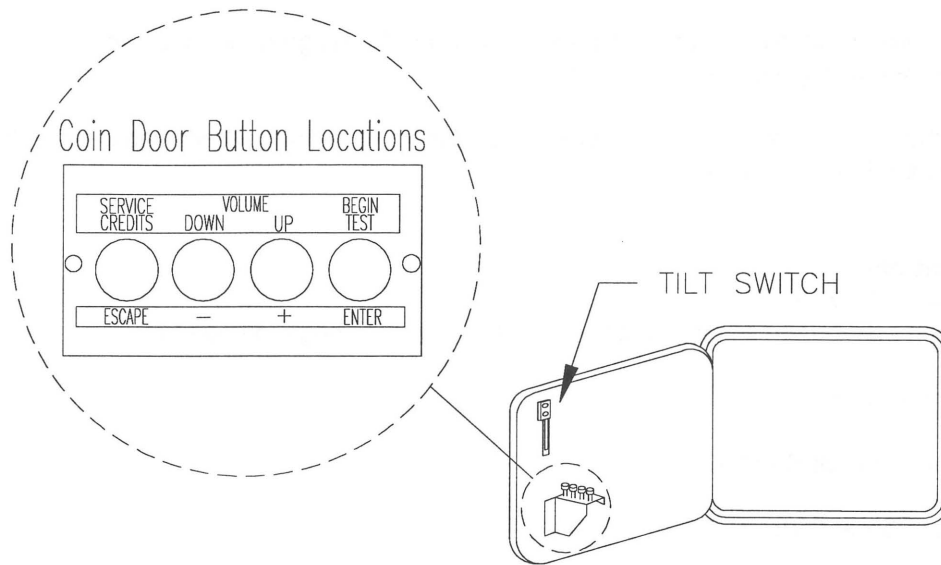
Game Features

NBA® HANGTIME™ is a one to four player game.

Starting Up

Switch ON power to the game. A "rug" pattern appears on the CRT screen. When the "rug" pattern ends, the screen shows a CPU board map. Bad chips are indicated in red, good chips are in green. The software revision level is shown at the top of the screen.

NOTE: When an error is detected during Start-up Tests, game start-up does not progress, and an error message appears on the screen.

Insert the desired amount of coins or tokens. Select which player receives the credit by pressing the appropriate Player Start Button.

Player Controls

- **Player Start Button**
  Each start button allows the corresponding player to begin game play.

- **Turbo Button**

- **Shoot/Block Button**

- **Pass/Steal Button**

- **Joystick**
  Each players Joystick controls the movement of their on screen player.
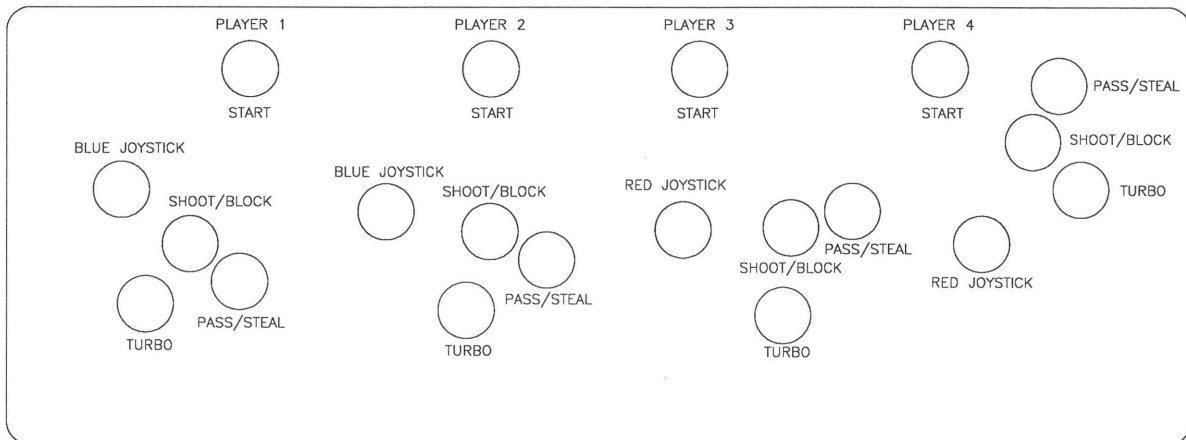
Button Colors:

Player Start Button	Orange
Shoot/Block Button	Red
Pass/Steal Button	Blue
Turbo Button	White

Game Operation

The Control Switches are located inside the coin door. These switches allow the operator to customize some features of the game.

CABINET SWITCHES

- The **SLAM TILT SWITCH** detects any forceful vibrations against the Coin Door. This eliminates pounding for free games. It is located on the inside of the coin door.

- The **ON/OFF SWITCH** is located on the top left side of the cabinet.

CONTROL SWITCHES

- The **TEST MODE SWITCH** activates the games Menu System. Press the Test Mode Switch to access the Main Menu. To exit the menu system, use the Volume Down Switch and select EXIT TO GAME OVER from the Main Menu, then press the Test Mode Switch or use the Service Credit Switch.

- The **VOLUME UP SWITCH** moves up through the menu selections or adjustment choices, and raises the sound level of the game when in game play.

- The **VOLUME DOWN SWITCH** moves down through the menu selections or adjustment choices, and lowers the sound level of the game when in game play.

- The **SERVICE CREDIT SWITCH** is a special feature switch that allots credit without affecting the game's bookkeeping total and is used to get out of a menu selection or return to the main menu.

These buttons can be used instead of the control panel buttons when operating the Menu System. The Up and Down buttons move the cursor; the Enter and Excape buttons open and close the menus.
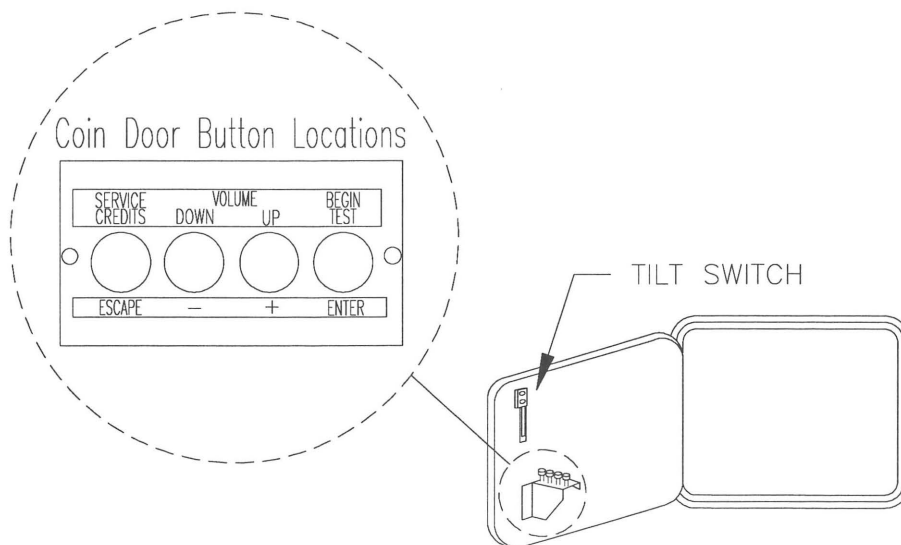
Menu System Operation

OPERATION

All Game Audits, Adjustments, and Diagnostics are options of the Main Menu. Each option, in turn, has its own menu, listing several choices that you may act upon as desired.

Press the Test Mode Switch to activate the Main Menu (shown below). Game adjustments, bookkeeping, and diagnostics are all accessible from this menu.

Use any joystick to select desired menu option; press any control panel button to activate it. Notice that the options are highlighted in sequence.

Note: Only highlighted options can be activated.

```
SELECT WITH ANY STICK

ACTIVATE WITH ANY BUTTON


DIAGNOSTIC TESTS

COIN BOOKKEEPING

GAME AUDITS

GAME ADJUSTMENTS

UTILITIES

HARDWARE INFO

GAME VOLUME ADJUST

A-MODE VOLUME ADJUST

EXIT TO GAME OVER
```
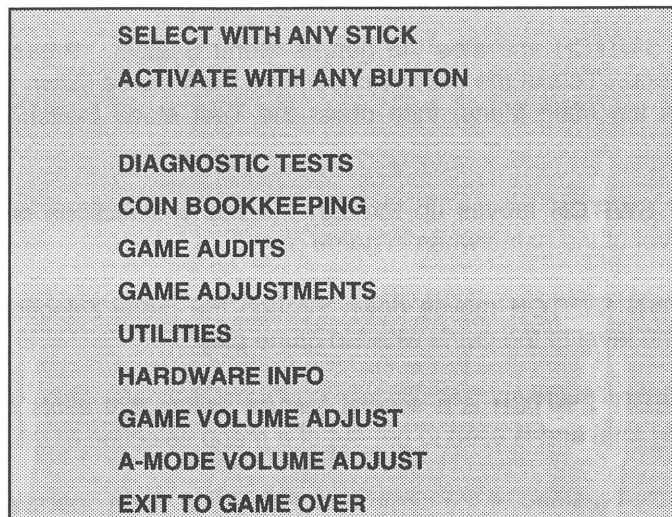
Main Test Menu

DIAGNOSTIC TESTS

To enter the Diagnostic Tests from the Main Menu, move any joystick to select (option, and press any control panel button to activate.

```
┌─────────────────────────────────────────────┐
│         SELECT WITH ANY STICK                │
│         ACTIVATE WITH ANY BUTTON             │
│                                              │
│         SWITCH TEST                          │
│                                              │
│         DIP SWITCH TEST                      │
│                                              │
│         CPU BOARD TEST                       │
│                                              │
│         SOUND BOARD TEST                     │
│                                              │
│         MONITOR PATTERNS                     │
│                                              │
│         RUN BURN-IN TEST                     │
│                                              │
│         RETURN TO MAIN MENU                  │
└─────────────────────────────────────────────┘
```
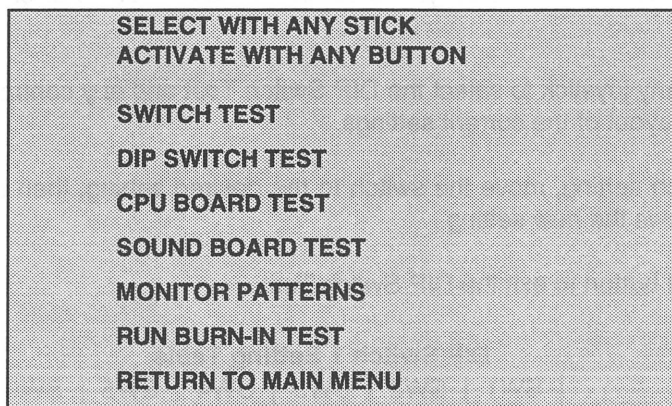
Diagnostic Test Menu

Switch Test
The Switch Test allows the operator to test the switches on the control panel and the coin door.

Select the Switch Test by using any joystick to highlight the option, then press any control panel button to activate. Pressing a switch on the control panel or coin door causes the corresponding switch location the screen to light. Release the switch and the screen returns to normal.

Press the Player 1 & 2 Start Buttons together to return to the Diagnostic Menu.

DIP SWITCH TEST

The DIP Switch Test allows the operator to check the position of the two 8-position DIP switches on the CPU Board. The operator can also change the setting of each position of each DIP Switch during this mode.

To enter the test, use any joystick to select the DIP Switch Test and any control panel button to activate. The screen displays a layout of the current settings.

To change a DIP Switch setting, move the switch to the desired setting, then check the screen to verify that the switch now shows the new setting.

Press any control panel button to exit the DIP Switch Test.

DIP Switch 1 Setting Table

	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
Test Switch	Off* On							
Powerup Test		Off* On						
Not Used			Off* On	Off* On	Off* On	Off* On		
No Dollar Bill Validator							Off*	
Dollar Bill Validator Installed							On	
4 Player Kit								Off*
2 Player Kit								On

DIP Switch 2 Setting Table

	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
One Coin Counter, 1Count/Coin	Off*	Off*						
One Coin Counter, Totalizing	On	Off						
Two Coin Counters, 1Count/Coin	Off	On						
One Coin Counter, 1Count/Coin	On	On						
Country								
USA			Off*	Off*				
French			On	Off				
German			Off	On				
Unused			On	On				
Coinage								
USA1 Ger1 Fr1					Off*	Off*	Off*	
USA2 Ger2 Fr2					Off	Off	On	
USA3 Ger3 Fr3					Off	On	Off	
USA4 Ger4 Fr4					Off	On	On	
USAECA GerECA FrECA					On	Off	Off	
N/U N/U N/U					On	Off	On	
N/U N/U N/U					On	On	Off	
Free Play Free Play Free Play					On	On	On	
DIP Switch Coinage								Off*
CMOS Coinage								On

Video Section Testing

The CPU Board Test (much like the Start-up Test) allows the operator to check the RAMs and ROMs.

Highlight the CPU Board Test by using any joystick to select the option; then press any control panel button to activate. When this test is activated, a "rug" pattern appears on the screen. The screen then changes to show the layout of the RAMs and ROMs on the CPU. Any chip that is shown as gray with a white outline and should turn green during the CPU Test. During the test, chips are good if they turn green; they are faulty if they turn red.

Press and hold start button to exit the CPU Board Test.

Sound Section Testing

The Sound Test allows listening to some of the sounds that the game is capable of producing.

To enter the test, use any joystick to select the option; then press any control panel button to activate.

SELECT WITH ANY STICK
ACTIVATE WITH ANY BUTTON
GENERAL TEST
PLAY SOUNDS
BACK TO DIAGNOSTIC MENU
RETURN TO MAIN MENU

Sound Section Testing Menu

Monitor Patterns

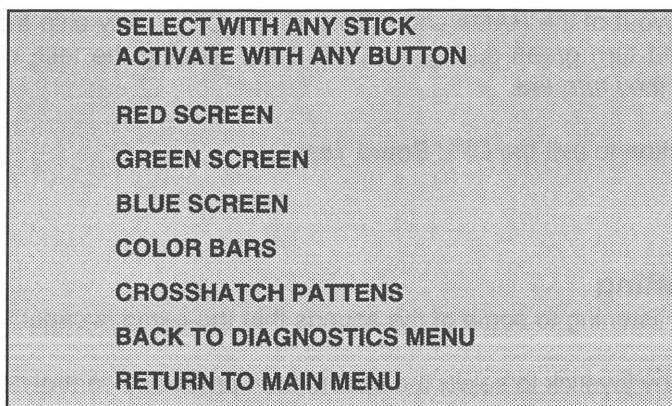The Monitor Patterns Test provides a menu for testing the monitor. Highlight the test by using any joystick to select the option; then press any control panel button to activate.

```
SELECT WITH ANY STICK
ACTIVATE WITH ANY BUTTON

RED SCREEN

GREEN SCREEN

BLUE SCREEN

COLOR BARS

CROSSHATCH PATTENS

BACK TO DIAGNOSTICS MENU

RETURN TO MAIN MENU
```

Monitor Pattern Menu

The **RED, GREEN,** and **BLUE SCREEN** tests fill the screen with either red, green or blue.

The **COLOR BARS** test fills the screen with several gradated colors to help with red, green and blue level adjustments. Each color should appear sharp and clear. A total of 15 color bars should be displayed.

The **CROSSHATCH PATTERNS** test fills the screen with a grid and should be clear.

Use the Monitor Remote Control Board to adjust monitor size and picture. The board provides adjustments for horizontal size/centering, vertical size/centering, horizontal/vertical hold, contrast, and brightness.

Run Burn-in Test

The Burn-in Test continually repeats the CPU Board Test. Use any joystick to select the option; then press any control panel button to activate. When the Burn-in Test detects an error, the test stops and displays an error message on the screen. Use this test to find intermittent CPU problems.

```
RUN BURN-IN TEST
ARE YOU SURE?

YES
NO
```
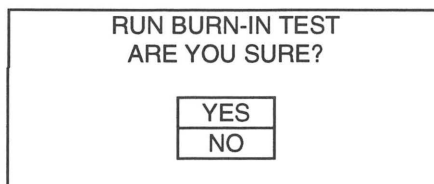
To exit this test, switch the game OFF then ON again.

COIN BOOKKEEPING

The Coin Bookkeeping Table records the coin box totals and game play counters. The left side of the table names the bookkeeping item; the right side shows the number of coins, credits or plays for each item.

Highlight Coin Bookkeeping by using any joystick to select the option; then press any control panel button to activate.

LEFT SLOT COINS	0
RIGHT SLOT COINS	0
CENTER SLOT (3) COINS	0
EXTRA SLOT (4) COINS	0
BILL VALIDATOR	0
ATTRACT MODE STARTS	0
PAID CREDITS	0
MID GAME STARTS	0
TOTAL COLLECTION	$0.00
SERVICE CREDITS	0
TOTAL PLAYS	0
NEXT AUDIT PAGE	
RETURN TO MAIN MENU	

Coin Bookkeeping Table

GAME AUDITS

The Game Audits Table records the game play statistics. The left side of the table names the Audit item; the right side shows the amount of play.

TOTAL GAME UPTIME (Hrs:Mins)	00:00
TOTAL GAME PLAY TIME (Hrs:Mins)	00:00
GAMES STARTED	0
INDIVIDUAL PLAYER STARTS	0
INITIALS ENTERED	0
FULL GAMES PURCHASED	0
1 PLAYER PLAY	0
2 PLAYER PLAY	0
3 PLAYER PLAY	0
4 PLAYER PLAY	0
FINISHED 1ST QUARTER	0
FINISHED 2ND QUARTER	0
FINISHED 3RD QUARTER	0
FINISHED 4TH QUARTER	0
GONE TO OVERTIME	0
CREATED A PLAYER	0
NEXT AUDIT PAGE	
RETURN TO MAIN MENU	

Page 1 of Audit Table

GAME AUDITS Continued

SND ERR (DAV & READ BACK)	0
DOGS	0
PROCESS KO	0
AVERAGE SCORE	0
AVERAGE HUMAN SCORE	0
AVERAGE CPU SCORE	0
AVERAGE WINNING SCORE	0
AVERAGE LOSING SCORE	0
CPU VICTORIES	0
GREATES CPU VICTORY MARGIN	0
GREATEST CPU LOSS MARGIN	0
SCORE DIFFERENTIAL AT DROPOUT	0
HUMAN VS. HUMAN-GAMES PLAYED	0
LSW	0
TOTAL HOT STREAKS STARTED	0
AVERAGE PTS SCORED ON HOT STREAKS	0
NEXT AUDIT PAGE	
PREVIOUS AUDIT PAGE	

Page 2 of Audit Table

ATLANTA	0	MINNESOTA	0
BOSTON	0	JEW JERSEY	0
CHARLOTTE	0	NEW YORK	0
CHICAGO	0	ORLANDO	0
CLEVELAND	0	PHILADELPHIA	0
DALLAS	0	PHOENIX	0
DENVER	0	PORTLAND	0
DETROIT	0	SACRAMENTO	0
GOLDEN STATE	0	SAN ANTONIO	0
HOUSTON	0	SEATTLE	0
INDIANA	0	TORONTO	0
L.A. CLIPPERS	0	UTAH	0
L.A. LAKERS	0	VANCOUVER	0
MIAMI	0	WASHINGTON	0
MILWAUKEE	0		
RETURN TO MAIN MENU			
PREVIOUS AUDIT PAGE			

Page 3 of Audit Table

GAME ADJUSTMENTS

The Game Adjustment menu option allows the owner/operator to change the Game Pricing and Game Difficulty. The activated item provides a setting choice. Highlight setting choice with any joystick, then press any button to lock setting.

```
SELECT WITH ANY STICK
ACTIVATE WITH ANY BUTTON

RETURN TO MAIN MENU
STANDARD PRICING
CUSTOM MULTIPLIERS
CUSTOM PRICING
FREE PLAY
PLAYER HEAD SIZE
DRONE DIFFICULTY
GAME TIMER SPEED
CREDITS FOR FULL GAME
GAME WIN BONUS
COMPUTER ASSISTANCE
TOURNAMENT MODE
ATTRACT MODE SOUND
TRIVIA CONTEST
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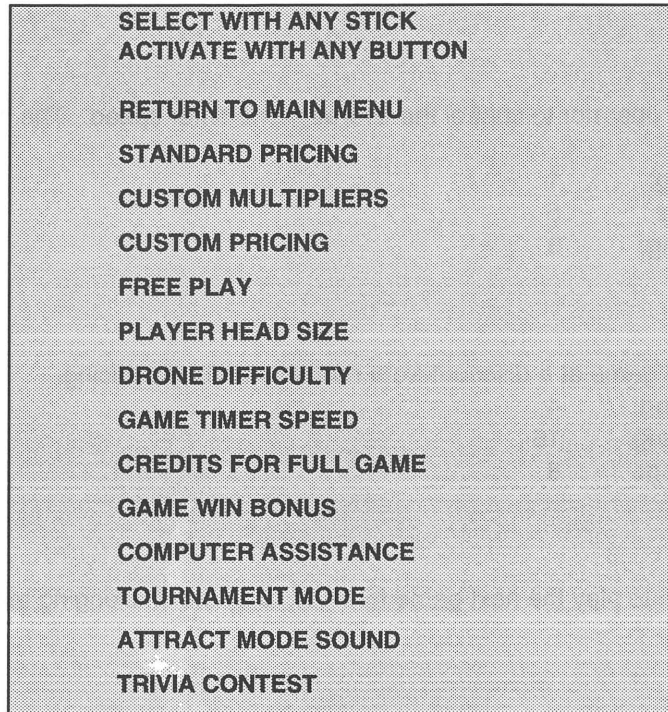
Game Adjustment Menu

Standard Pricing
Standard Pricing allows the operator to choose any of the "Standard" selections for the Standard Pricing Table.

Custom Multipliers
Customize the internal coin chute multipliers for each chute.

Custom Pricing
Custom Pricing allows the operator to install pricing other than that of the Standard Pricing Table. Custom Pricing also allows the operator to select the amount of credits required to start a game and the amount of credits required to continue a game. This option is enabled via the Dip Switch Settings (set Dip Switch 2, SW8 to ON). The game must be set for CMOS Coinages for this feature to work.

Free Play
This option selects free play. The setting choices for this adjustment are:
> -No (factory)
> -Yes

Player Head Size
This controls the head size for players in the game.
> -Normal Size: 1 (factory)
> -Large Size: 2

Drone Difficulty
This controls the skill level of the computer controlled players.

      -Easiest Setting: 1
      -Hardest Setting: 5
      -Factory Setting: 3

Game Timer Speed
Game Timer allows the operator to control the overall game timer speed. The settings for the adjustment are:

      -Slowest Setting: 1
      -Fastest Setting: 5
      -Factory Setting: 3

Credits for Full Game
Allows purchasing a full game at a discount from normal start/buyin pricing.

      -Minimum Setting: 4
      -Maximum Setting: 16
      -Factory Setting: 8

Game Win Bonus
Allows the winning team to play the next game for free. Only the challenging team pays.

      -On (factory)
      -Off

Computer Assistance
When enabled, computer keeps game scoring close.

      Factory Setting: Enabled

Tournament Mode
When in Tournament Mode, CPU assistance is turned off and no power-ups or special guests are allowed! No Cheating!

      Factory Setting: Disabled

Attract-Mode Sounds
Determines whether the game will make sounds in the attract mode. The settings for the adjustment are:
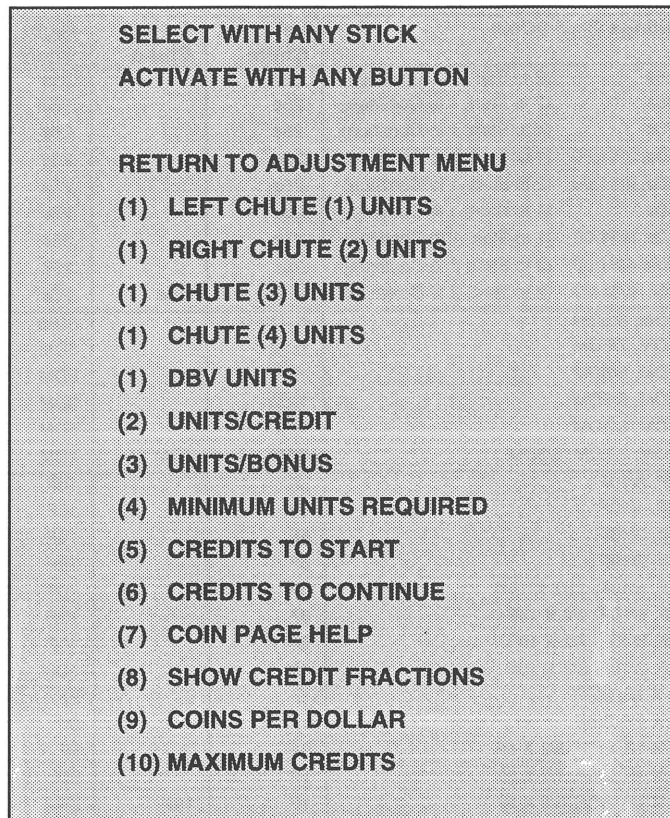
      -On
      -Off (factory)

Trivia Contest
Determines whether the game will allow the Trivia Contest at Game Over.

      -On factory)
      -Off

Standard Pricing Table

NAME	Settings Credit/Coin		Left Chute	Center Chute	Right Chute	Fourth Chute	Bill
USA1	1/25¢	(2 to Start; 2 to Continue)	.25¢		.25¢		$1.00
USA2	1/25¢	(2 to Start; 1 to Continue)	.25¢		.25¢		$1.00
USA3	1/25¢	(1 to Start; 1 to Continue)	.25¢		.25¢		$1.00
USA4	1/50¢, 3/$1.00	(1 to Start; 1 to Continue)	.25¢		.25¢		$1.00
USA5	1/50¢, 4/$1.00	(2 to Start; 1 to Continue)	.25¢		.25¢		$1.00
USA6	1/50¢	(1 to Start; 1 to Continue)	.25¢		.25¢		$1.00
USA7	1/50¢, 3/$1.00	(1 to Start; 1 to Continue)	.25¢		.25¢		$1.00
USA8	1/50¢, 4/$1.00	(2 to Start; 2 to Continue)	.25¢		.25¢		$1.00
USA ECA	1/25¢, 4/$1.00	(2 to Start; 2 to Continue)	$1.00	.10¢	.25¢	.05¢	$1.00
GERMAN1	1/1DM, 6/5DM		1DM		5DM		
GERMAN2	1/1DM, 7/5DM		1DM		5DM		
GERMAN3	1/1DM, 8/5DM		1DM		5DM		
GERMAN4	1/1DM, 5/5DM		1DM		5DM		
GERMAN5	1/1DM, 6/5DM		1DM		5DM		
GERMAN ECA	1/1DM, 2/2DM, 6/5DM		5DM	1DM	2DM		
FRANCE1	2/5F, 5/10F		5F		10F		
FRANCE2	2/5F, 4/10F		5F		10F		
FRANCE3	1/5F, 3/10F		5F		10F		
FRANCE4	1/5F, 2/10F		5F		10F		
FRANCE5	2/5F, 5/10F, 11/2 X 10F		5F		10F		
FRANCE6	2/5F, 4/10F, 9/2 X 10F		5F		10F		
FRANCE7	1/5F, 3/10F, 7/2 X 10F		5F		10F		
FRANCE8	1/5F, 2/10F, 5/2 X 10F		5F		10F		
FRANCE9	1/3 X 1F, 2/5F		1F		5F		
FRANCE10	1/2 X 1F, 3/5F		1F		5F		
FRANCE11	1/3 X 1F, 2/5F, 5/2 X 5F		1F		5F		
FRANCE12	1/2 X 1F, 3/5F, 7/2 X 5F		1F		5F		
FRANCE ECA	1/3 X 1F, 2/5F, 5/2 X 5F		1F	10F	5F		
CANADA	1/2X25¢, 3/$1.00		.25¢		$1.00		$1.00
SWISS1	1/1F, 6/5F		1F		5F		
SWISS2	1/1F, 7/5F		1F		5F		
SWISS3	1/1F, 8/5F		1F		5F		
ITALY	1/500LIRE		500 LIRE		500 LIRE		
UK1	1/20P, 3/50P		20P		50P		
UK2	2/20P, 5/50P		20P		50P		
UK ECA	1/20P, 3/50P, 7/£1.00		£1.00	20P	50P	10P	10P
UK ELEC W/CCU	1/30P, 2/50P, 4/£1.00		£1.00		CCU		
SPAIN1	1/100PESETA, 6/500PESETA		100PESETA		500PESETA		
SPAIN2	1/100PESETA, 5/500PESETA		100PESETA		500PESETA		
AUSTRALIA1	1/3X20¢, 2/$1.00		.20¢		$1.00		
AUSTRALIA2	1/5X20¢, 1/$1.00		.20¢		$1.00		
JAPAN1	1/100YEN		100 YEN		100 YEN		
JAPAN2	2/100YEN		100 YEN		100 YEN		
AUSTRIA1	1/5SCHIL, 2/10SCHIL		5 schilling		10		
AUSTRIA2	1/2X5SCHIL, 3/2X10SCHIL		5 schilling		10		
BELGIUM1	1/20F		20F		20F		
BELGIUM2	3/20F		20F		20F		
BELGIUM3	2/20F		20F		20F		
BELGIUM ECA	1/20F		50F	5F	20F		
SWEDEN	1/3X1KRONA, 2/5KRONA		1 KRONA		5 KRONA		
NEW ZEALAND1	1/3X20¢		20¢		20¢		
NEW ZEALAND2	1/2X20¢		20¢		20¢		
NETHERLANDS	1/1HFI, 3/2.5HFI		1HFI		2.5HFI		
FINLAND	1/1MARKKA		1MARKK		1MARKK		
NORWAY	1/2X1KRONE, 3/5X1KRONE		1KRONE		1KRONE		
DENMARK	1/2X1KRONE, 3/5KRONE, 7/2X5KRONE		1 KRONE		5 KRONE		
ANTILLIES	1/25¢, 4/1GUILDER		.25¢		1GUILDE		
HUNGARY	1/2X10FORINT, 3/2X20FORINT		10FORIN		20FORIN		

Custom Pricing

```
SELECT WITH ANY STICK
ACTIVATE WITH ANY BUTTON


RETURN TO ADJUSTMENT MENU
(1)  LEFT CHUTE (1) UNITS
(1)  RIGHT CHUTE (2) UNITS
(1)  CHUTE (3) UNITS
(1)  CHUTE (4) UNITS
(1)  DBV UNITS
(2)  UNITS/CREDIT
(3)  UNITS/BONUS
(4)  MINIMUM UNITS REQUIRED
(5)  CREDITS TO START
(6)  CREDITS TO CONTINUE
(7)  COIN PAGE HELP
(8)  SHOW CREDIT FRACTIONS
(9)  COINS PER DOLLAR
(10) MAXIMUM CREDITS
```

(1) Coins inserted accumulate units. This adjustment specifies the number of units given for each coin in the fourth chute (see "units/credit")
(2) This is the number of coin units required to buy one credit.
(3) One bonus credit is awarded after this many coin units have accumulated.
(4) No credits will be awarded until this many coin units have accumulated.
(5) Each player needs this many credits to begin a game.
(6) Each player needs this many credits to continue a game.
(7) Whenever standard pricing is used, a corresponding message is displayed on the credits screen. Setting this to no disables the message.
(8) When set to yes, fractional credits will be seen on the credits screen.
(9) The detailed bookkeeping screen shows total collections based on this many coins per dollar. (Set to zero to disable the display of money totals.)
(10) This is the limit for the credits counter. Additional coins inserted will be lost. Factory setting is 30.

UTILITIES

The Utilities Menu allows the owner/operator to clear the games bookkeeping memory and to install a custom message. Highlight selection with any joystick, then press any button to lock setting.

```
SELECT WITH ANY STICK

ACTIVATE WITH ANY BUTTON


CLEAR CREDITS

CLEAR COIN COUNTERS

CLEAR GAME AUDITS

RESET HIGH SCORES

CLEAR PLAYER STATISTICS

DEFAULT ADJUSTMENTS

FULL FACTORY RESTORE

OPERATOR MESSAGE

RETURN TO MAIN MENU
```

Utilities Menu

After an item has been activated, you are given the option of resetting that item or not. For example:

```
CLEAR CREDITS?
ARE YOU SURE?

YES
NO
```

Highlight setting choice with any joystick, then press any button to lock setting and return to the Utilities Menu.

## HARDWARE INFO

Displays the name of the game, the serial number and manufacture date.

```
NBA® HANGTIME™

SERIAL NUMBER:            XXXXXX

DATE OF MANUFACTURE:    MONTH, DAY, YEAR
```

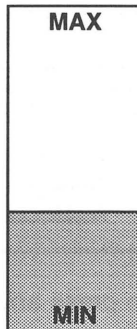Press any control panel button to exit to the main menu.

ADJUST VOLUME

Move any joystick up to increase, or down to decrease the sound level of the game. Press any control panel button to lock the volume level and return to the Main Menu.

```
┌──────────┐
│   MAX    │
│          │
│          │
│          │
├──────────┤
│░░░░░░░░░░│
│░░░░░░░░░░│
│░░░MIN░░░░│
└──────────┘
```
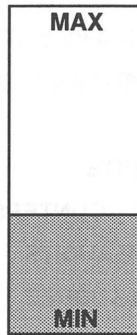
Press any control panel button to exit to the main menu.

ATTRACT MODE VOLUME ADJUST

Move any joystick up to increase, or down to decrease the sound level in the Attract Mode. Press any control panel button to lock the volume level and return to the Main Menu.

```
┌──────────┐
│   MAX    │
│          │
│          │
│          │
├──────────┤
│░░░░░░░░░░│
│░░░░░░░░░░│
│░░░MIN░░░░│
└──────────┘
```

Press any control panel button to exit to the main menu.

Troubleshooting

| PROBLEM	POSSIBLE SOLUTION
NO PICTURE OR DISTORTED PICTURE	Check for faulty video board or monitor. Check for disconnected video signal cable.
TURN GAME ON & NOTHING HAPPENS.	Check line fuse. Check for +5VDC at pins C, D, 3, and 4 of the JAMMA Connector. Check to see that the proper AC line voltage is selected for Switching Power Supply operation.
NO SOUND.	Check the speaker and speaker connection to pins L and 10 on the JAMMA Connector. Check volume control setting. Check for +12VDC at pins F and 6 on the JAMMA connector, also -5VDC at pin 5. Check inter-board wiring on CPU Board.
NO GENERAL ILLUMINATION.	Check -5V at pins E and 5 on JAMMA cable. Use pin "e" as ground reference.
PRESS START BUTTON AND NOTHING HAPPENS.	Check for open wires between the button and CPU Board. Check for contamination on CPU Board pins or the button switch blade contacts. Check for proper ground.
NO CREDIT GIVEN WHEN COINS ARE INSERTED.	Check for contamination on coin switch contacts. Check for an open wire between Coin Switch 1 and pin 16 on the JAMMA Connector or Coin Switch 2 and pin T of the JAMMA Connector.
TOO MANY CREDITS FOR NUMBER OF COINS INSERTED.	Check Game Pricing setting. Check for a Short between pins T & 16 on the JAMMA Connector.
GAME STAYS IN THE TEST MODE.	Check that the Test Switch in the coin door and the Test Switch (Position 1) on DIP Switch 2 are set to Off.
GAME OPERATES INTERMITTENTLY OR INCORRECTLY.	Check for proper Power Supply voltages: $+5 \pm 0.25V$ $+12 \pm 1.2V$ $-5 \pm 0.25V$

Notes...
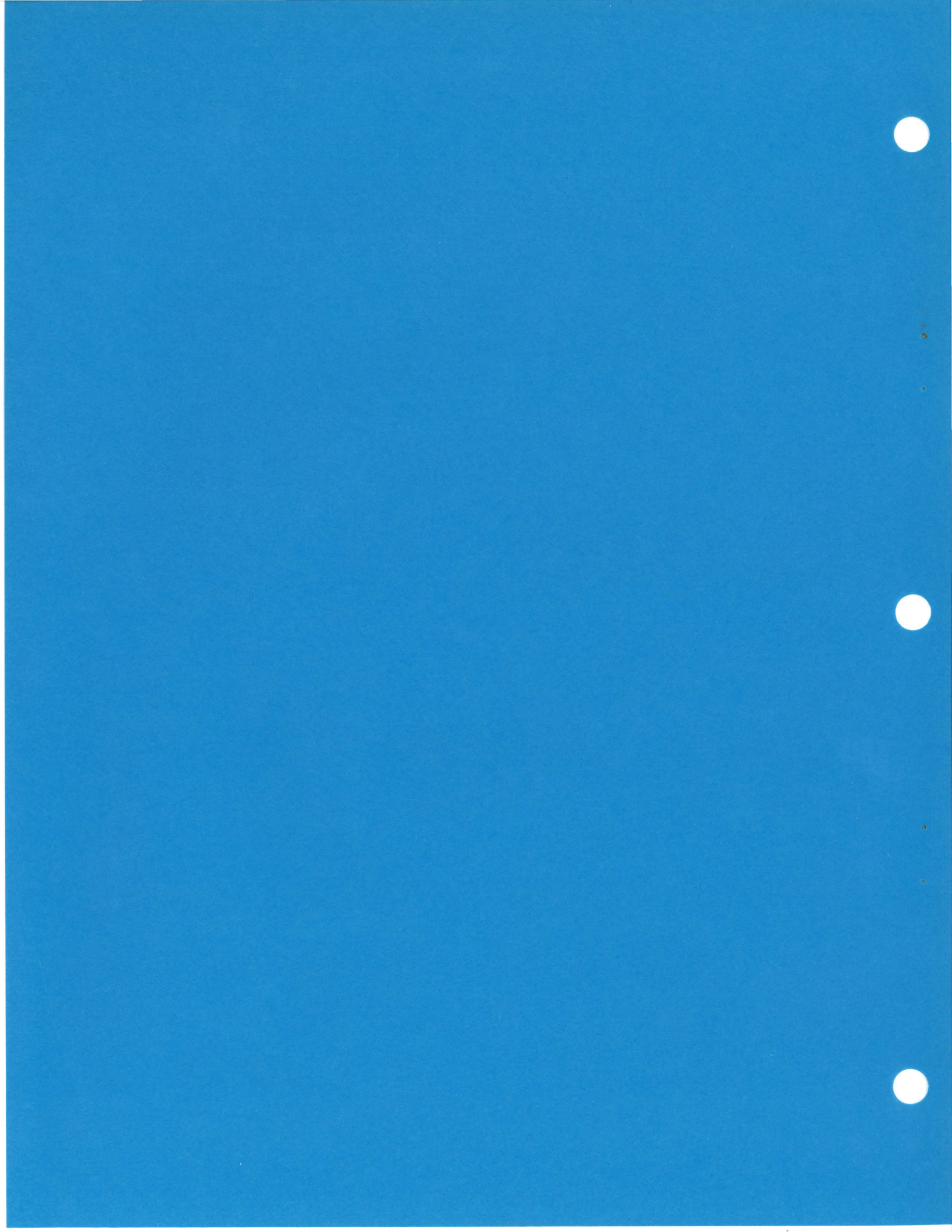
NBA® HANGTIME™

Parts Information

Cabinet Assembly	04-10158	
Coin Vault Wood	04-10150	
Vent, Handle Pull	03-8326	(Qty. 2)
Leg Leveler Plate	01-9155	(Qty. 4)
Leg Leveler, 3.0"	08-7377	(Qty. 4)
Coin Door Associated Parts		
Coin Door Interlock Cable	H-18610	
Dollar Bill Chute Mounting Bracket	01-11334	
Dollar Bill Chute	01-11379	
Mars Pin Jumper Plug	5797-13606-00	
AC Distribution Assembly	A-20278	
Switching Power Supply	20-10167	
Glass Retainer Bracket	01-13943	
Glass Retainer Bracket Screws	4008-01105-32	(Qty. 3)
Line Cord Cover	01-10714	
Cover Plate-Bill Chute Opening	01-11275	
Coin Meter Plate - One Slot	01-11298-1	
Coin Chute Assembly	01-12324	
Marquee Retainer	03-8252-2	
Glass Edge Channel 25"	03-9373-1	(Qty. 2)
Cash Box Tub (Video)	03-8863	(Qty. 2)
Marquee Glass, Blank	08-7456-4	
CRT Glass	08-7456-10	
Coin Door Blank w/lock	09-41000	
Key Hook Wire	12-7039	
Screened Marquee	31-2393	
Interlock Switch	5643-09268-00	
Long Arm Key T-20	20-9620	
#555 Bulb, 6.3V	24-8768	
Bezel, 25" CRT	03-8497	
Instruction Card	31-2394	
Coin Meter w/Diode	5580-13476-00	

PC Boards

CPU Final Assembly	A-20362

Control Panel & Housing Assembly	A-20360	
Control Panel Assembly	A-20359	
Control Plate Assembly	A-16850.1	
T-Molding, Black	RM-41-02	
Control Panel Wood	04-10106	
Control Panel Housing Wood	04-10159	
Overlay, Clear	03-9372.1	
Overlay, Screened	31-2392	
Red 8-way Joystick, Red	20-9978-1	
Blue 8-way Joystick, Blue	20-9978-3	
Control Panel "Z" Bracket	01-11996	
Security Latch Bracket	01-11955	

Red Push Button	20-10209-1
White Push Button	20-10209-2
Blue Push Button	20-10209-3
Orange Push Button	20-10209-7
15 Link Safety Chain	20-9275-2
Control Panel Hinge	20-9841.1
Toggle Latch	20-9347

Fluorescent Lamp Assembly

Fluorescent Lamp Assembly 15W, 60Hz, 120VAC	A-20277
Fluorescent Lamp Assembly 15W, 50Hz, 220VAC	A-20277-1
18" Fluorescent Bulb, 15W	24-8809

Speakers

Speaker Grill	01-11262
Full Range Speaker-8 Ohm	5555-13961-00 (Qty. 2)

Fuses

Fuse, SB, 3A, 250V	5731-10356-00 (Domestic)
Fuse, SB, 2A, 250V	5731-08665-00 (Foreign)

Cables

IDC AC Cable	H-20353
Coin Door Interlock Cable	H-18610
Control Panel Cable	H-20358
Main Harness Cable	H-20282
Cabinet Speaker Cable	H-19599
Line Voltage Cable Assembly	A-20331
Dixie/Mars Interconnect Cable	H-17019
USA D.B.V Adapter Cable	H-18136-1
AC Y-Cable	H-19297

Monitor

Monitor Mounting Bracket	01-10819
25" Monitor	5675-14660-02

Manuals

|	
Instruction Manual	16-40059-101
DBV Installation Instructions	16-9637

Line Cord Application Chart

Country	5850-13271-00	5850-13272-00	5850-13273-00	5850-13275-00	5850-13276-00	5850-13277-00	5850-13278-00
USA	√						
England			√				
Italy				√			
Japan							√
New Zealand						√	
Germany		√					
Spain		√					
Switzerland					√		
Hungary		√					
Canada	√						
Austria		√					
France		√					
Australia						√	
Belgium		√					

Coin Door Chart
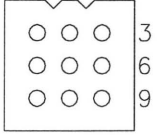
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USA												√		
England													√	
Italy					√									
Japan						√								
New Zealand							√							
Germany	√										√			
Spain								√						
Switzerland									√					
Hungary										√				
Canada												√		
Austria		√												
France														√
Australia			√											
Belgium				√										

Rear Door Assembly
A-20281
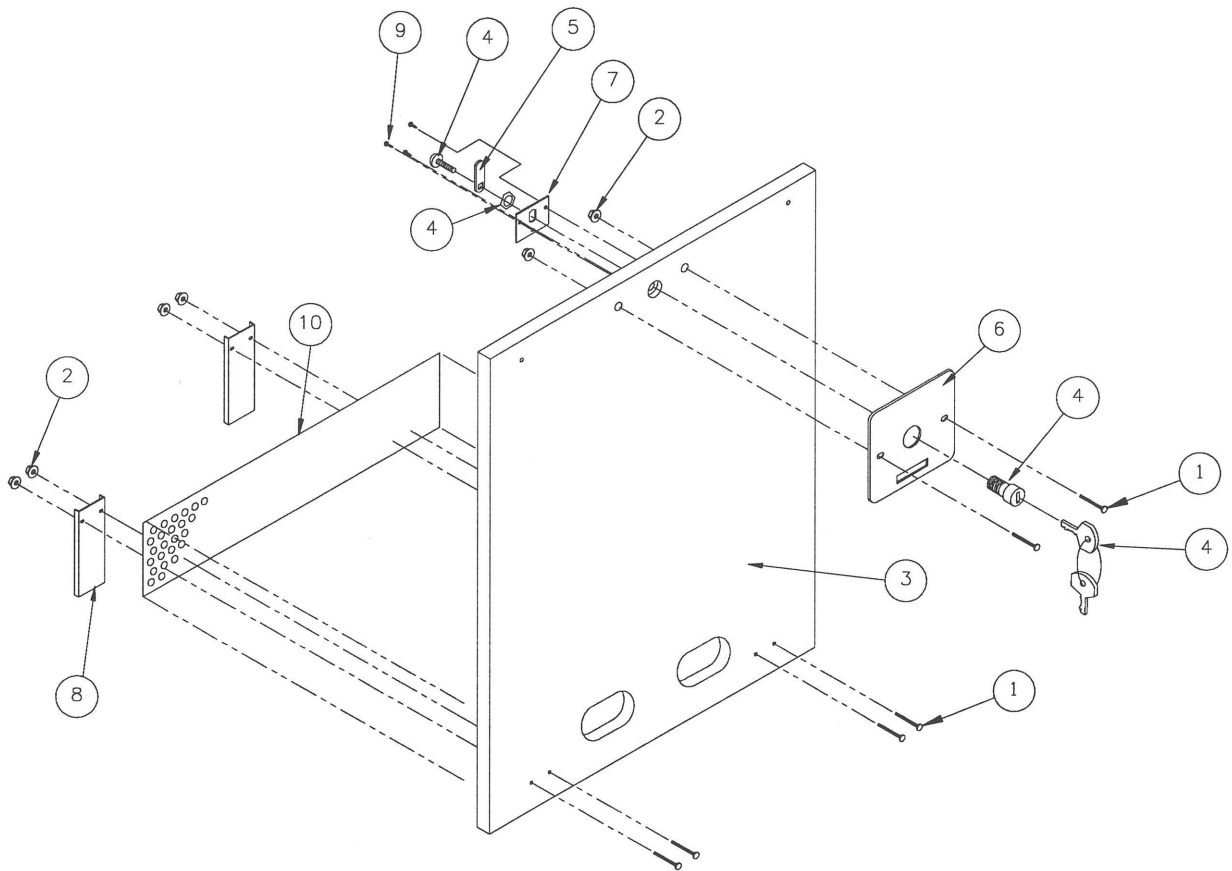
ITEM	PART NUMBER	DESCRIPTION
1	4320-01123-20B	Bolt, 1/4 x 1 1/4 CB
2	4420-01141-00	Nut, 1/4-20 Flangegrip
3	04-10149.1	Wood, Rear Door
4	20-10187	Cam Lock
5	01-8989	Cam
6	01-11285	Lock Plate
7	01-7264	Plate, Lock Retainer
8	01-11291	Door Bracket
9	4608-01081-11	H-F #8-32 x 11/16 PL-HWH
10	03-7620	Cover, Venthole 20"

Switching Power Supply
20-10167

PIN		WIRE COLOR	
, 2, 3	+5 VDC	RED	
⊦, 5, 6	GND	BLACK	
7	−5V	YELLOW (TYP)	
8	+12V	ORANGE (TYP)	
9	−12V	BLUE (TYP)	

A-20362
NBA HANGTIME CPU Assembly

U45

U47

U63

U54

U64

B1

U35

U57

U130 U126 U122 U118 U114 U110 U106 U102

U131 U127 U123 U119 U115 U111 U107 U103

U132 U128 U124 U120 U116 U112 U108 U104

U2 U3 U4 U5

U133 U129 U125 U121 U117 U113 U109 U105

U6 U7 U8 U9

P3

P9

P8

P8A

P10

P11

P12
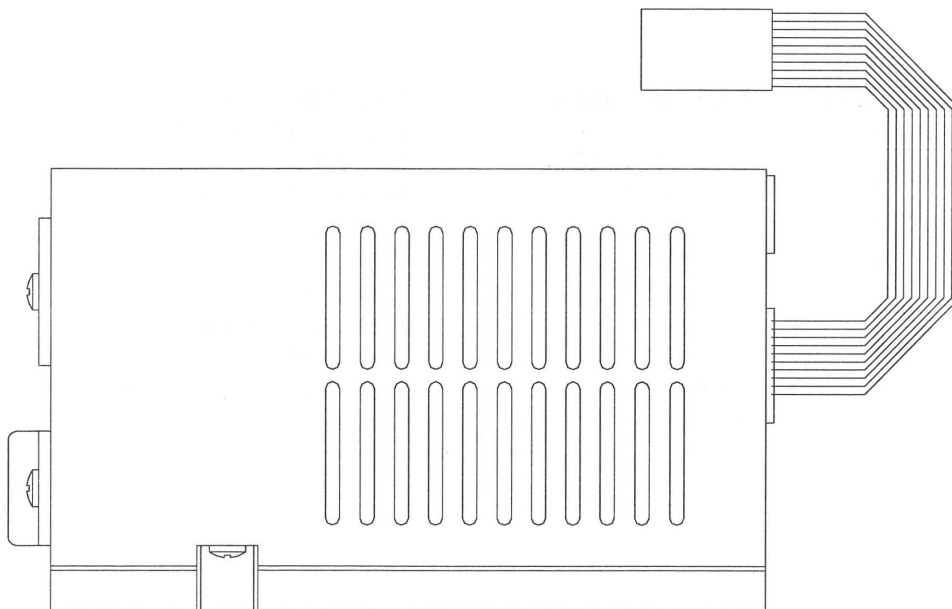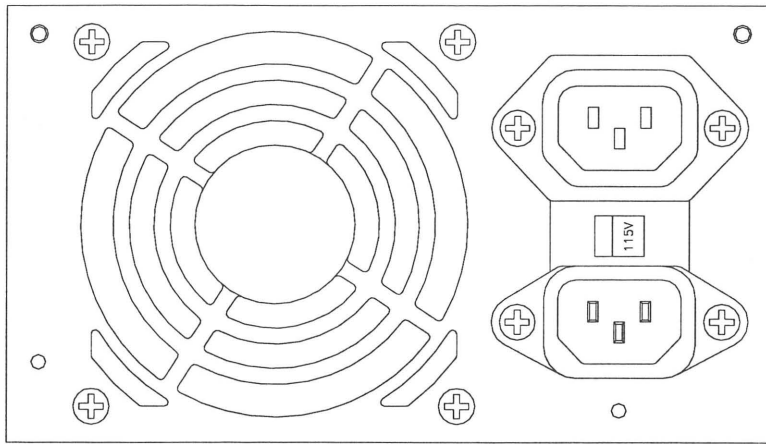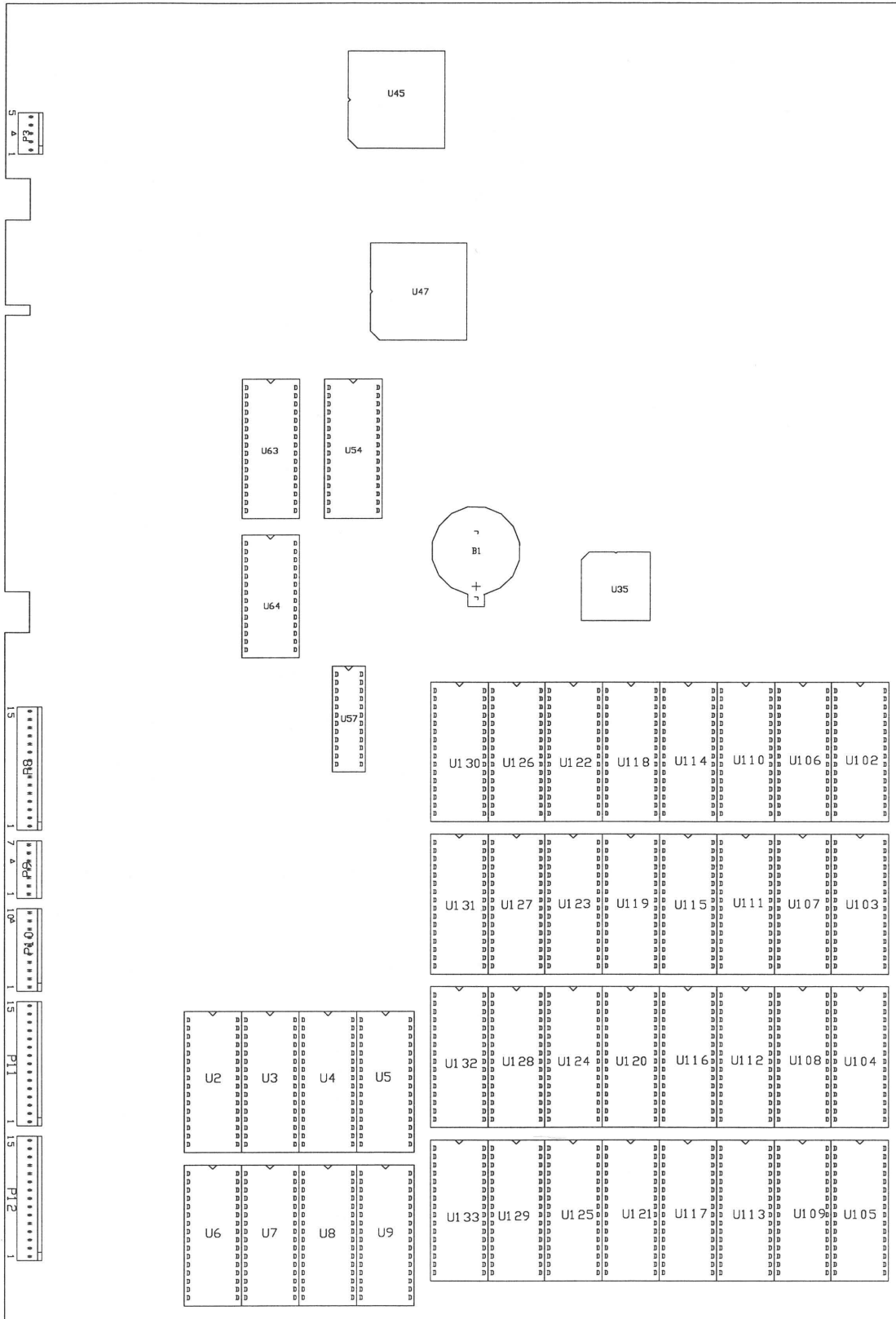
A-20362
NBA HANGTIME CPU Assembly

| PART NUMBER	DESCRIPTION	LOC	QTY
5880-11056-00	BATTERY 3V LITHIUM	B1	1
A-20255	SOUND PLD ASSY NHL	U57	1
A-20257	ASSY PLD 7032 44PJCC 15nS	U35	1
A-20258	ASSY PLD 7064 64PJCC 15nS	U45	1
A-20259	ASSY PLD 7064 64PJCC 15nS	U47	1
A-5343-40059-2	ASSY EPROM NBA MUSIC/SPCH	U2	1
A-5343-40059-3	ASSY EPROM NBA MUSIC/SPCH	U3	1
A-5343-40059-4	ASSY EPROM NBA MUSIC/SPCH	U4	1
A-5343-40059-5	ASSY EPROM NBA MUSIC/SPCH	U5	1
A-5343-40059-10	ASSY EPROM NBA GAME IMAGE	U122	1
A-5343-40059-11	ASSY EPROM NBA GAME IMAGE	U123	1
A-5343-40059-12	ASSY EPROM NBA GAME IMAGE	U124	1
A-5343-40059-13	ASSY EPROM NBA GAME IMAGE	U125	1
A-5343-40059-14	ASSY EPROM NBA GAME IMAGE	U126	1
A-5343-40059-15	ASSY EPROM NBA GAME IMAGE	U127	1
A-5343-40059-16	ASSY EPROM NBA GAME IMAGE	U128	1
A-5343-40059-17	ASSY EPROM NBA GAME IMAGE	U129	1
A-5343-40059-18	ASSY EPROM NBA GAME IMAGE	U130	1
A-5343-40059-19	ASSY EPROM NBA GAME IMAGE	U131	1
A-5343-40059-20	ASSY EPROM NBA GAME IMAGE	U132	1
A-5343-40059-21	ASSY EPROM NBA GAME IMAGE	U133	1
A-5343-40059-28	ASSY EPROM NBA GAME IMAGE	U121	1
A-5343-40059-29	ASSY EPROM NBA GAME IMAGE	U120	1
A-5343-40059-30	ASSY EPROM NBA GAME IMAGE	U119	1
A-5343-40059-31	ASSY EPROM NBA GAME IMAGE	U118	1
A-5343-40059-24	ASSY EPROM NBA GAME IMAGE	U113	1
A-5343-40059-25	ASSY EPROM NBA GAME IMAGE	U112	1
A-5343-40059-26	ASSY EPROM NBA GAME IMAGE	U111	1
A-5343-40059-27	ASSY EPROM NBA GAME IMAGE	U110	1
A-5343-40059-22	ASSY EPROM NBA PROGRAM	U54	1
A-5343-40059-23	ASSY EPROM NBA PROGRAM	U63	1
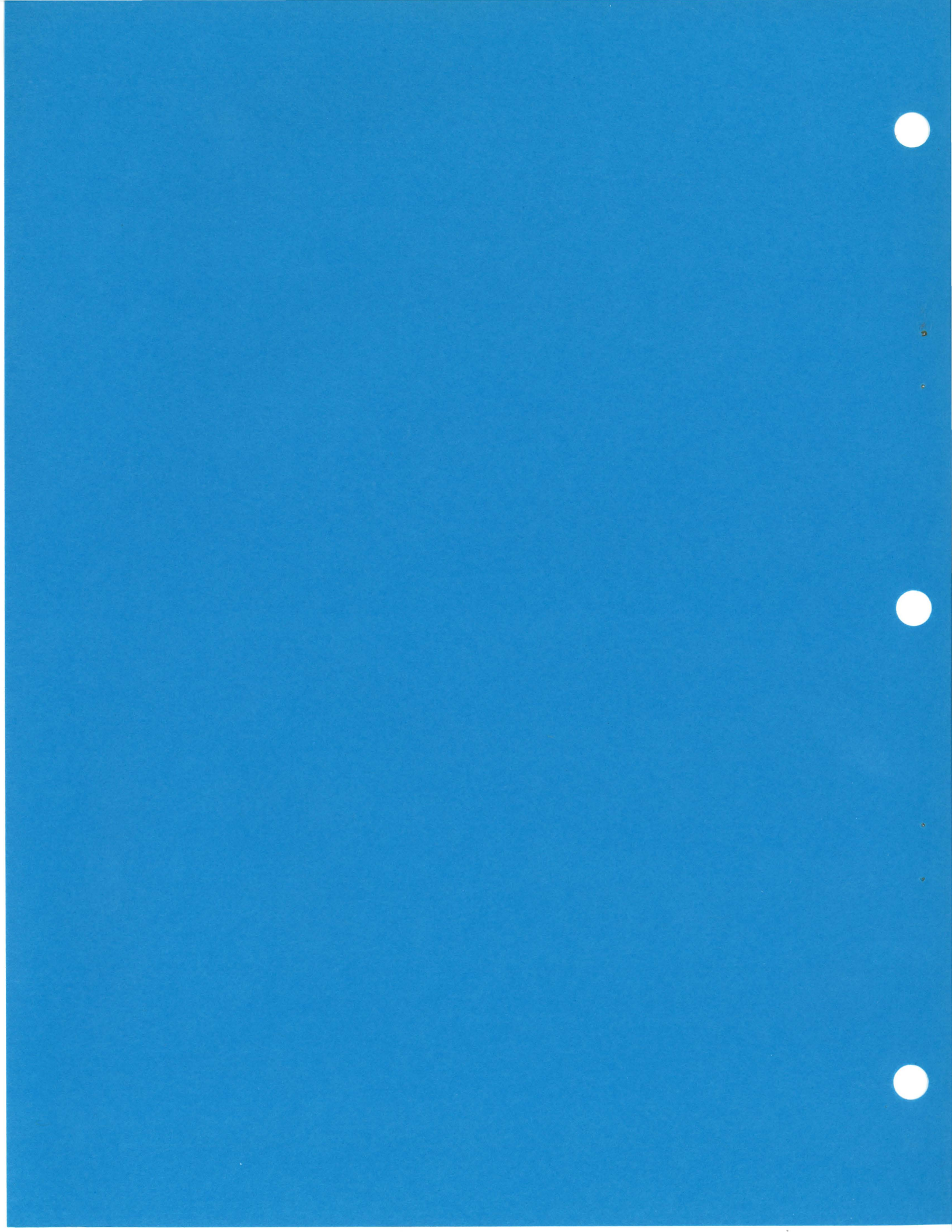
NBA®
HANGTIME™

Cabinet Wiring

PRINTED CIRCUIT BOARD ASSEMBLY SCHEMATICS ARE NO LONGER AVAILABLE.

JAMMA CHART

Function	Wire Color	Pin	Pin	Wire Color	Function
Ground	Black	1	A	Black	Ground
Ground	Black	2	B	Black	Ground
+5 Volts DC	Red	3	C	Red	+5 Volts DC
+5 Volts DC	Red	4	D	Red	+5 Volts DC
-5 Volts DC	Yellow	5	E	Yellow	-5 Volts DC
+12 Volts DC	Orange	6	F	Orange	+12 Volts DC
	Key	7	H	Key	
Counter 1	Brown	8	J	Brown-Red	Counter 2
	NC	9	K	NC	
Speaker (+)	Red-Gray	10	L	Brown-Gray	Speaker (-)
	NC	11	M	NC	
Video Red	Yellow/Red	12	N	Yellow/Green	Video Green
Video Blue	Yellow/Blue	13	P	Yellow/White	Video Sync
Video Ground	Yellow/Black	14	R	White-Gray	Service Credit
Test	Black-Blue	15	S	Black-Green	Slam Tilt
1 Coin	Black-Brown	16	T	Black-Red	2 Coin
1 Start	White	17	U	Violet-White	2 Start
1 Up	White-Black	18	V	Violet-Black	2 Up
1 Down	White-Brown	19	W	Violet-Brown	2 Down
1 Left	White-Red	20	X	Violet-Red	2 Left
1 Right	White-Orange	21	Y	Violet-Orange	2 Right
1 Shoot/Block	White-Yellow	22	Z	Violet-Yellow	2 Shoot/Block
1 Pass/Steal	White-Green	23	a	Violet-Green	2 Pass/Steal
1 Turbo	White-Blue	24	b	Violet-Blue	2 Turbo
Not Used	White-Violet	25	c	Violet	Not Used
	NC	26	d	NC	
	NC	27	e	Yellow/Brown	Coin Door Lamp Ground
Ground	Black	28	f	Black	Ground

POWER WIRING DIAGRAM

NOTE: FOR 220V OPERATION CHECK FUSE VALUE, AND 120/220 SWITCH ON SWITCHING POWER SUPPLY. ALSO VERIFY THE CORRECT FLUORESCENT LAMP (120V 60HZ OR 220V 50HZ).

MAIN WIRING DIAGRAM
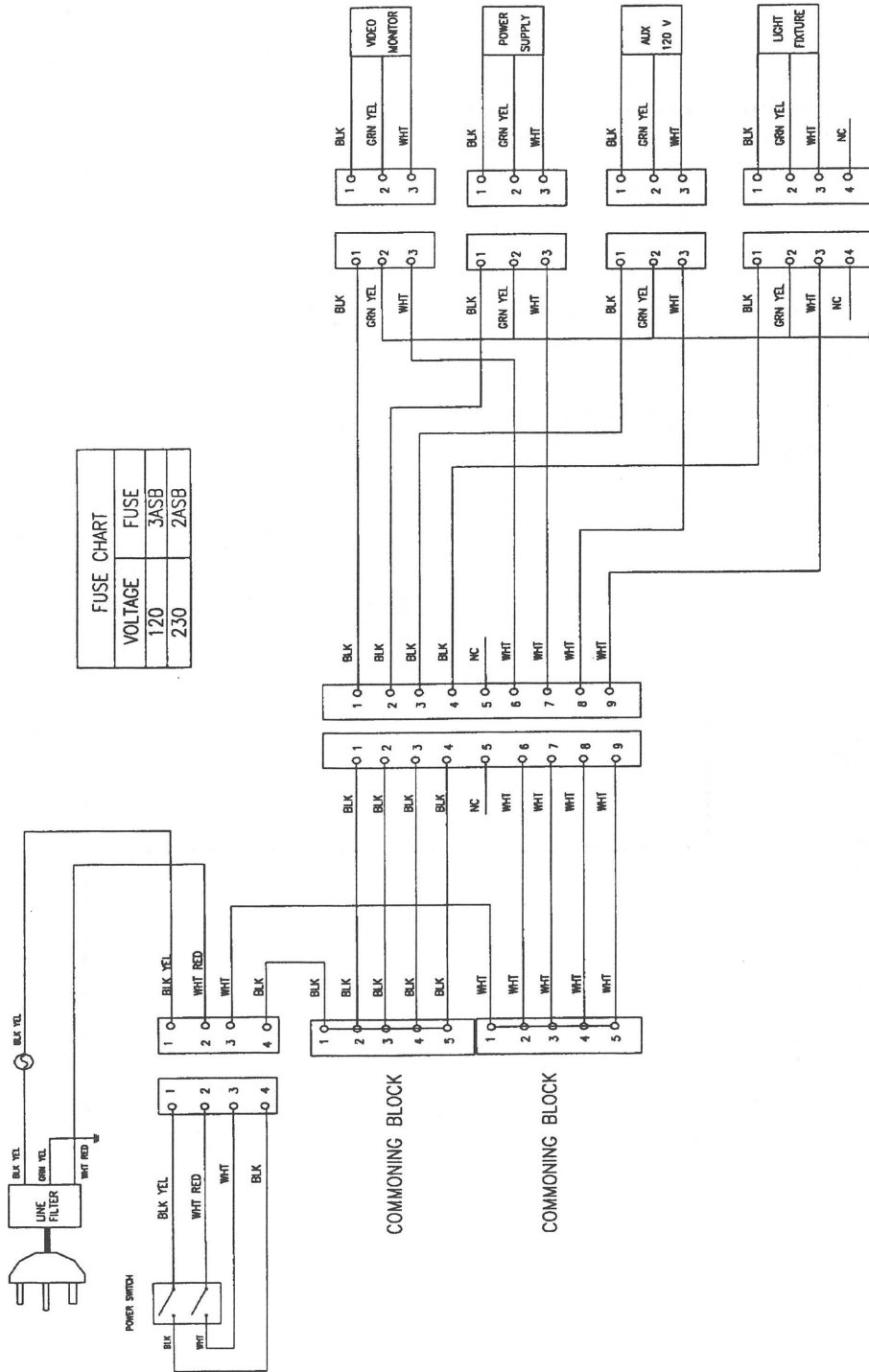
NBA HANGTIME
40059
WIRING DIAGRAM
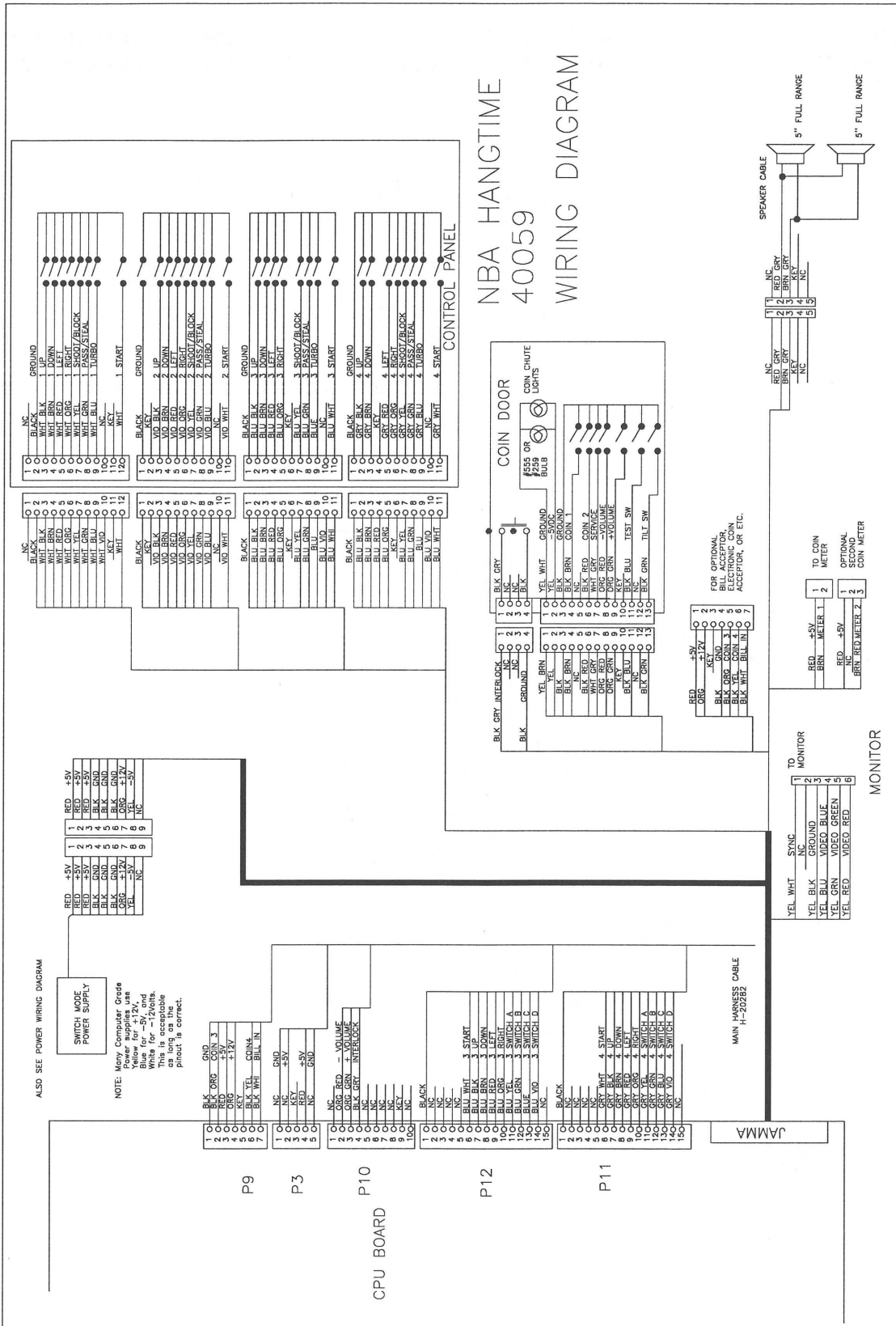
WARNINGS & NOTICES

Warning

USE OF NON-MIDWAY® PARTS OR CIRCUIT MODIFICATIONS MAY CAUSE SERIOUS INJURY OR EQUIPMENT DAMAGE! USE ONLY MIDWAY® AUTHORIZED PARTS.

* For safety and reliability, substitute parts and modifications are not recommended.

* Substitute parts or modifications may void FCC type acceptance.

* This game is protected by Federal Copyright, trademark and patent laws. Unauthorized modifications may be illegal under Federal law. This also applies to MIDWAY® logos, designs, publications and assemblies. Moreover, facsimiles of MIDWAY® equipment (or any feature thereof) may be illegal under federal law, regardless of whether or not such facsimiles are manufactured with MIDWAY® components.

Warning

This equipment generates, uses and can emit radio frequency energy and, if not installed properly and used according to the directions in this manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of part 15 of FCC rules which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference to radio communications, in which the user, at his or her own expense, will be required to take whatever measures may be needed to correct the interference.

Warning

Prevent shock hazard and assure proper game operation. Only plug this game into a properly grounded outlet. Do not use a cheater plug to defeat the power cord's grounding pin. Do not cut off the ground pin.

Notice

When MIDWAY® ships a game, it is in compliance with FCC regulations. Your sticker is proof. If the sticker is missing or damaged, legal repercussions to the owner or distributor of the game may result. If your game does not contain an FCC sticker, call MIDWAY® immediately.

Notice

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