



MODULE 2

MK2-V7MOD-0005

SETUP AND OPERATIONS

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Module 2

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Module 2 Setup and Operation

This module describes specifications, installation, configuration and operation of Game Maker® and Game Maker-7200™ machines.

Specifications

Electrical Specifications

Line Voltage	100/240 VAC 50/60 Hz			
Power Supply Output	+5, +12, -12, 115VAC Isolation Transformer			
Machine State	Idle	Play	Payout	Maximum Theoretical Draw
Current @ 110VAC	1.1 Amp	1.2 Amp	1.7 Amp	2.35 Amp
Current @ 220VAC	.55 Amp	.6 Amp	.85 Amp	1.18 Amp
Power	121W	132W	187W	259W

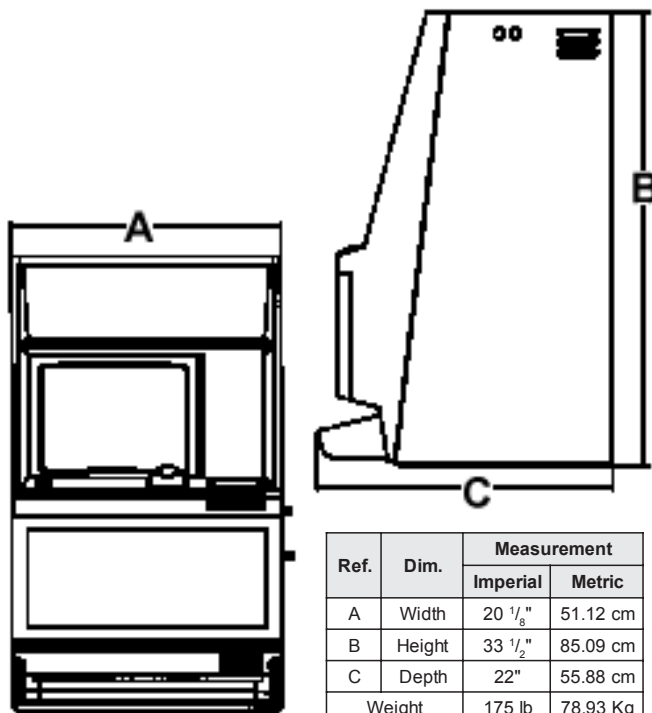
Environmental Specifications

Ambient Temperature:

Max: 100° F (38° C) Min: 40° F (4° C)

Maximum Relative Humidity: 90%

Average Heat From Machine: 600 BTU/Hr.

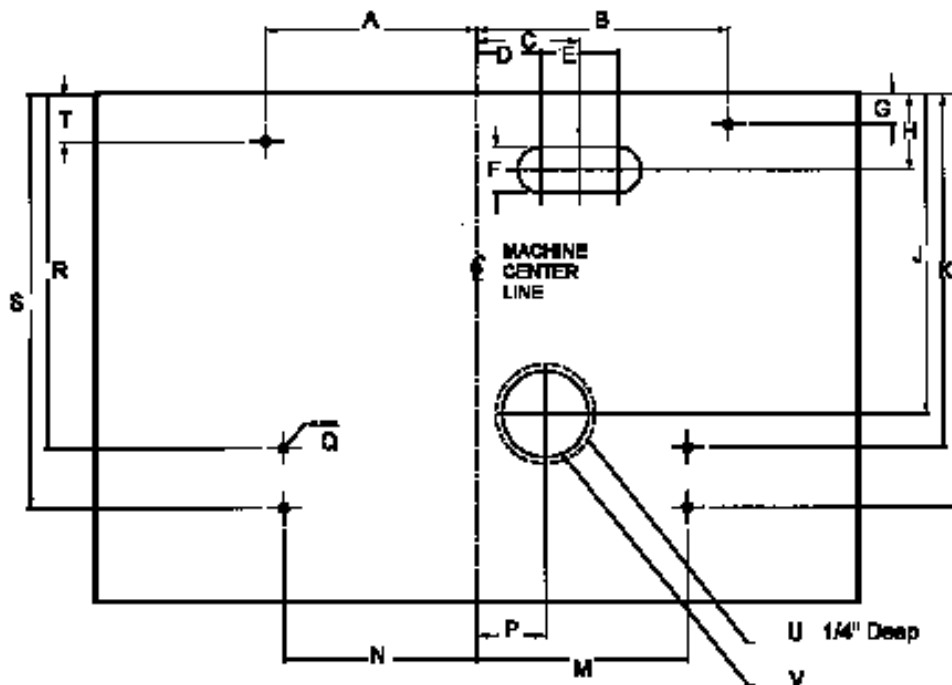


Ref.	Dim.	Measurement	
		Imperial	Metric
A	Width	20 1/8"	51.12 cm
B	Height	33 1/2"	85.09 cm
C	Depth	22"	55.88 cm
	Weight	175 lb	78.93 Kg

Physical Specifications

Game Maker 7214™

Ref.	Imperial	Metric
A	7 15/32"	18.95 cm
B	8 15/16"	22.68 cm
C	3 21/32"	9.30 cm
D	2 9/32"	5.79 cm
E	2 3/4"	6.99 cm
F	1 5/8"	4.14 cm
G	1 1/16"	2.70 cm
H	2 11/16"	6.83 cm
J	11 5/16"	28.73 cm
K	12 1/2"	31.75 cm
L	14 5/8"	37.15 cm
M	7 7/16"	18.89 cm
N	6 27/32"	17.40 cm
P	2 7/16"	6.17 cm
Q	5/16"	.79 cm
R	12 1/2"	31.75 cm
S	14 5/8"	37.15 cm
T	1 21/32"	4.21 cm
U	3 17/32"	8.97 cm
V	3 1/16"	2.70 cm



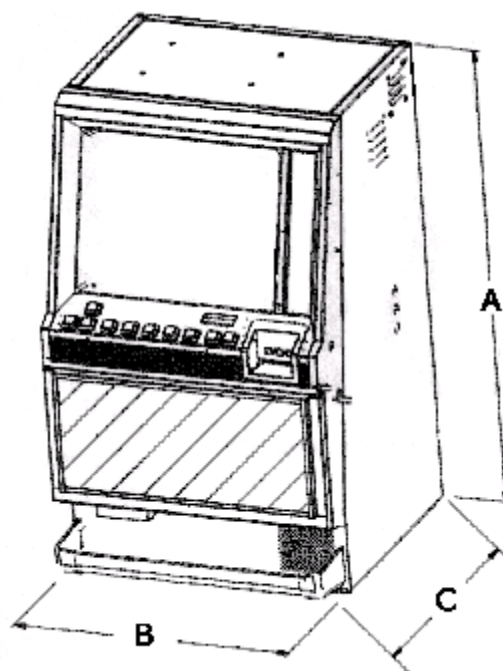
Mounting Detail - Game Maker-7214™

Specifications (cont.)

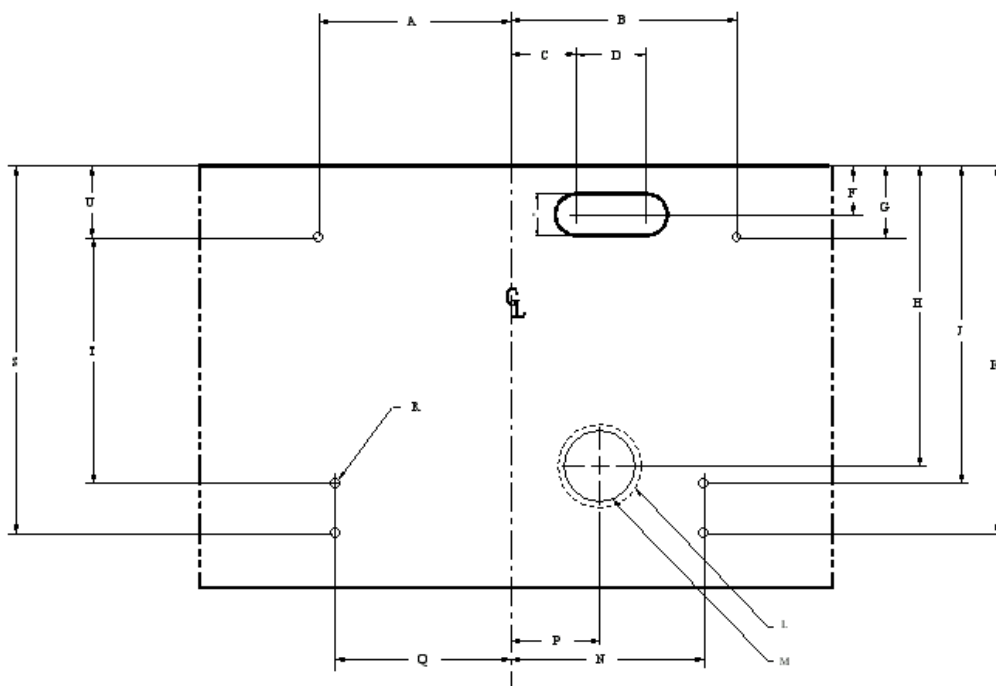
Physical Specifications (cont.)

Game Maker 7217™

Ref.	Dim.	Measurement	
		Imperial	Metric
A	Height	35 ³⁷ / ₆₄ "	90.37 cm
B	Width	21 ³ / ₈ "	54.31 cm
C	Depth	22 1/2"	57.15 cm
Weight		268 lb	121.56 Kg



Ref.	Imperial	Metric
A	8 ³ / ₁₆ "	20.80 cm
B	9 ¹⁵ / ₆₄ "	24.41 cm
C	2 ³ / ₄ "	7.01 cm
D	3"	7.62 cm
E	1 ³ / ₄ "	4.47 cm
F	2 ¹ / ₁₆ "	5.26 cm
G	3 ¹ / ₁₆ "	7.80 cm
H	12 ⁴⁹ / ₆₄ "	32.44 cm
J	13 1/2"	34.32 cm
K	15 ⁵ / ₈ "	39.70 cm
L	3 ¹⁷ / ₃₂ "	8.97 cm
M	77 ¹ / ₁₆ "	7.77 cm
N	8 ⁷ / ₃₂ "	20.85 cm
P	3 ³ / ₄ "	9.55 cm
Q	7 1/2"	19.02 cm
R	∅ 7 ¹ / ₁₆ "	∅ 1.12 cm
S	15 ⁵ / ₈ "	39.70 cm
T	10 ⁷ / ₁₆ "	26.52 cm
U	3 ¹ / ₁₆ "	7.77 cm



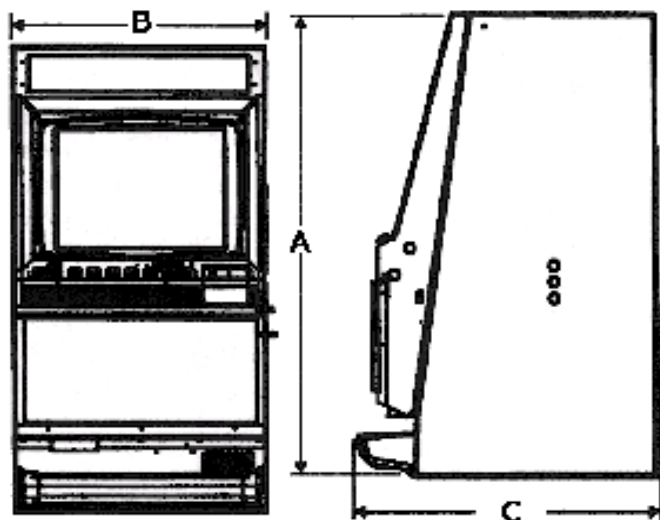
Mounting Detail - Game Maker-7217™

Specifications (cont.)

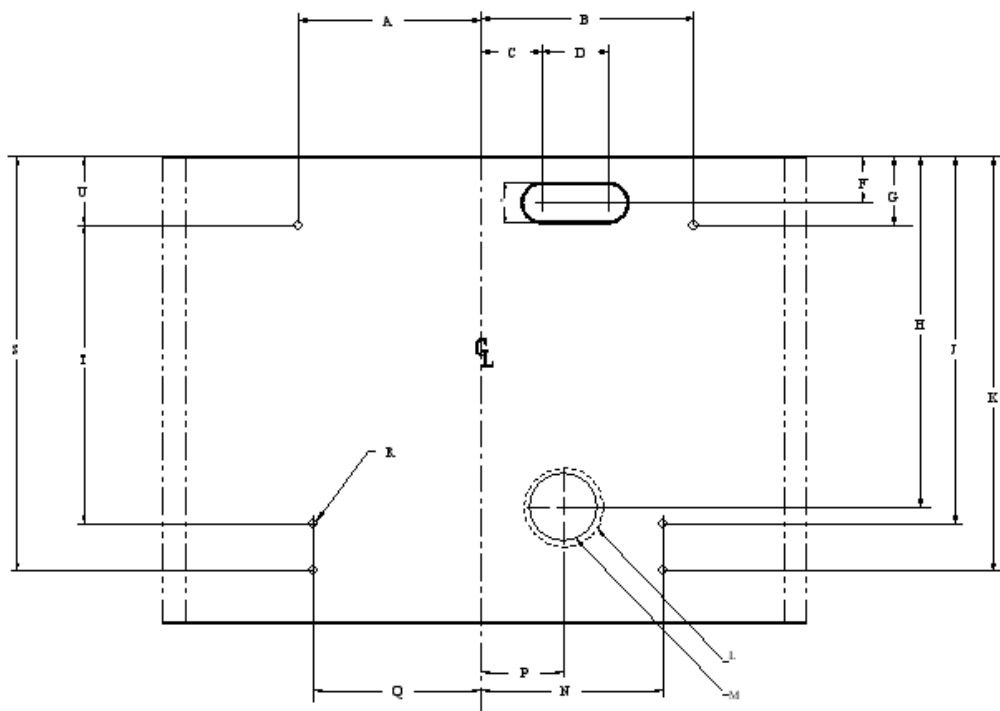
Physical Specifications (cont.)

Game Maker-7219™

Ref.	Dim.	Measurement	
		Imperial	Metric
A	Height	34 ¹¹ / ₁₆ "	88.09 cm
B	Width	21 ¹ / ₂ "	54.64 cm
C	Depth	25 ²⁹ / ₆₄ "	64.64 cm
Weight		276 lb	125.19 Kg



Ref.	Imperial	Metric
A	8 ³ / ₁₆ "	20.80 cm
B	9 ¹⁵ / ₆₄ "	24.41 cm
C	2 ³ / ₄ "	7.01 cm
D	3"	7.62 cm
E	1 ³ / ₄ "	4.47 cm
F	2 ¹ / ₁₆ "	5.26 cm
G	3 ¹ / ₁₆ "	7.80 cm
H	15 ⁴⁹ / ₆₄ "	40.06 cm
J	16 ¹ / ₂ "	41.94 cm
K	18 ⁵ / ₈ "	47.32 cm
L	3 ¹⁷ / ₃₂ "	8.97 cm
M	3 ¹ / ₁₆ "	7.77 cm
N	8 ⁷ / ₃₂ "	20.85 cm
P	3 ³ / ₄ "	9.55 cm
Q	7 ¹ / ₂ "	19.02 cm
R	∅ ⁷ / ₁₆ "	∅ 1.12 cm
S	18 ⁵ / ₈ "	47.32 cm
T	13 ⁷ / ₁₆ "	34.14 cm
U	3 ¹ / ₁₆ "	7.77 cm



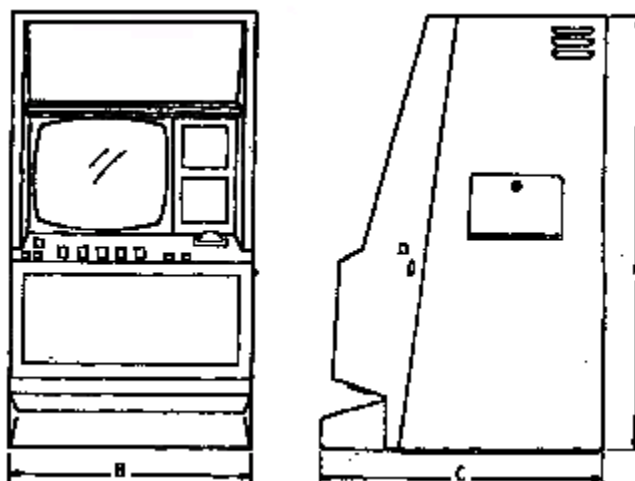
Mounting Detail—Game Maker-7219™

Specifications (cont.)

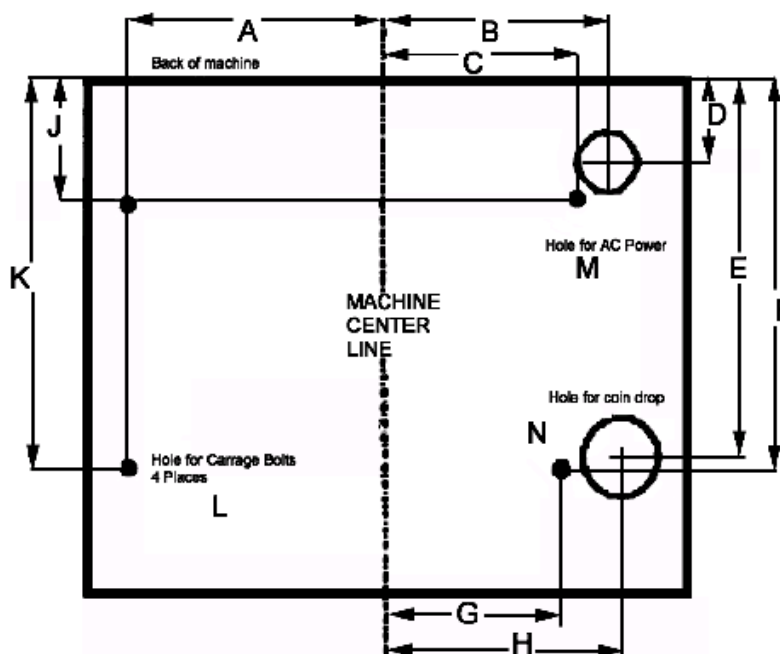
Physical Specifications (cont.)

Game Maker® V7000 Upright Cabinet with 14-inch Monitor

Ref.	Dim.	Measurement	
		Imperial	Metric
A	Height	33 1/2"	85.09 cm
B	Width	18 7/8"	47.94 cm
C	Depth	21 1/4"	53.97 cm
Min. Spacing		6 1/2"	16.51 cm
Weight		175 lb	79.37 Kg



Ref.	Imperial	Metric
A	8"	20.32 cm
B	6 7/8"	17.46 cm
C	5 7/8"	14.92 cm
D	2 9/16"	6.51 cm
E	11 3/8"	28.89 cm
F	11 11/16"	29.67 cm
G	5 3/8"	13.65 cm
H	7 1/4"	18.42 cm
J	3 3/4"	9.53 cm
K	12 3/16"	30.96 cm
L	3/8"	.95 cm
M	1 1/4"	4.45 cm
N	2 3/8"	6.03 cm



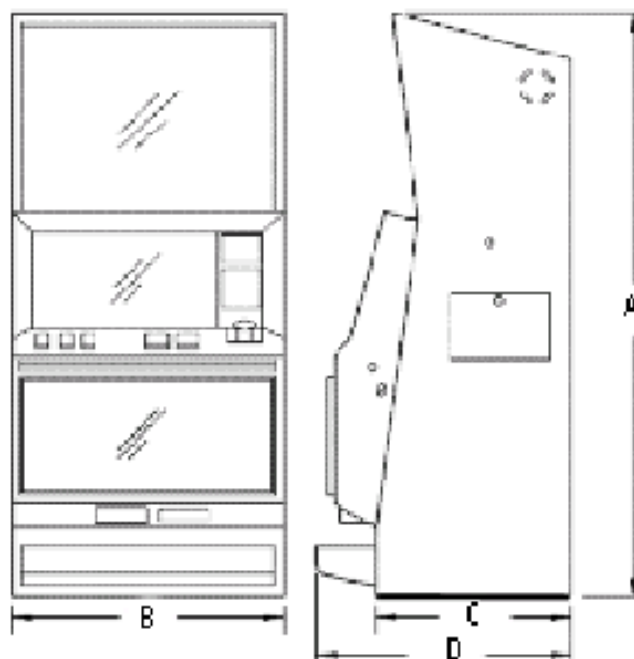
Mounting Detail - V7000 Upright Cabinet with 14-inch Monitor

Specifications (cont.)

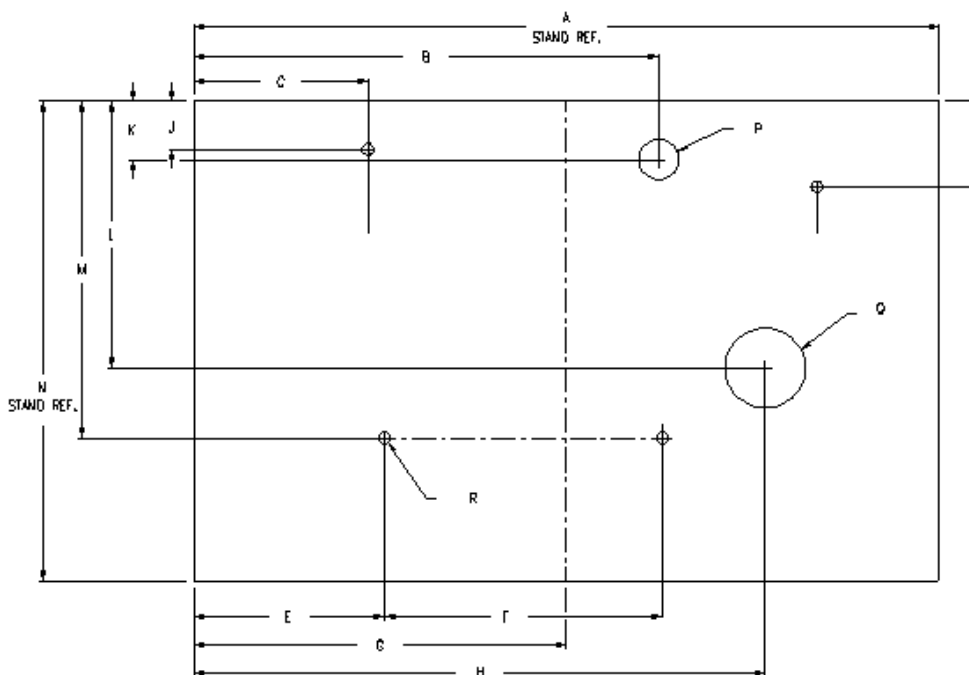
Physical Specifications (cont.)

Game Maker® V7000 Casino

Ref.	Dim.	Measurement	
		Imperial	Metric
A	Height	46"	116.84 cm
B	Width	21 1/4"	53.97 cm
C	Depth	15"	38.10 cm
D	Depth (Overall)	19 5/8"	49.83 cm
Min. Spacing		6 1/2"	16.51 cm
Weight		235 lb	106.59 Kg



Ref.	Imperial	Metric
A	28"	71.12 cm
B	17 15/32"	44.37 cm
C	6 17/32"	14.92 cm
D	3 7/32"	8.15 cm
E	7 1/2"	19.05 cm
F	11 1/16"	28.09 cm
G	14"	35.56 cm
H	21 15/32"	54.53 cm
J	1 13/16"	4.60 cm
K	2 13/64"	5.59 cm
L	10"	25.40 cm
M	12 5/8"	32.11 cm
N	18"	45.72 cm
P	1 1/2"	3.81 cm
Q	3"	7.62 cm
R	7/16"	1.12 cm



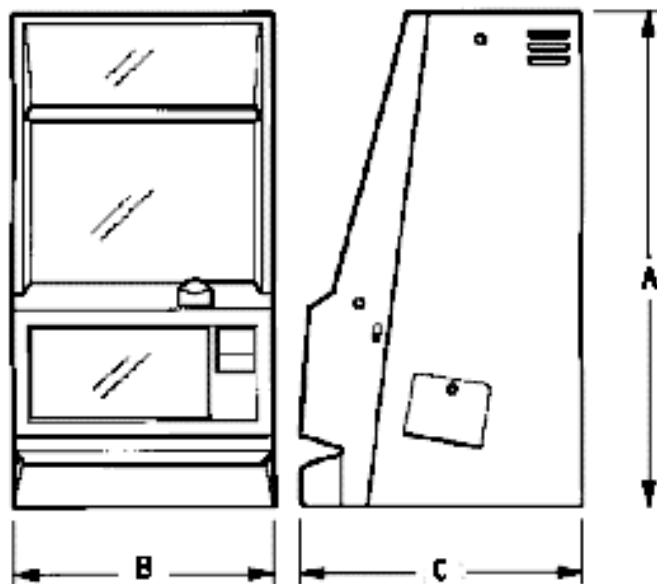
Mounting Detail - V7000 Casino

Specifications (cont.)

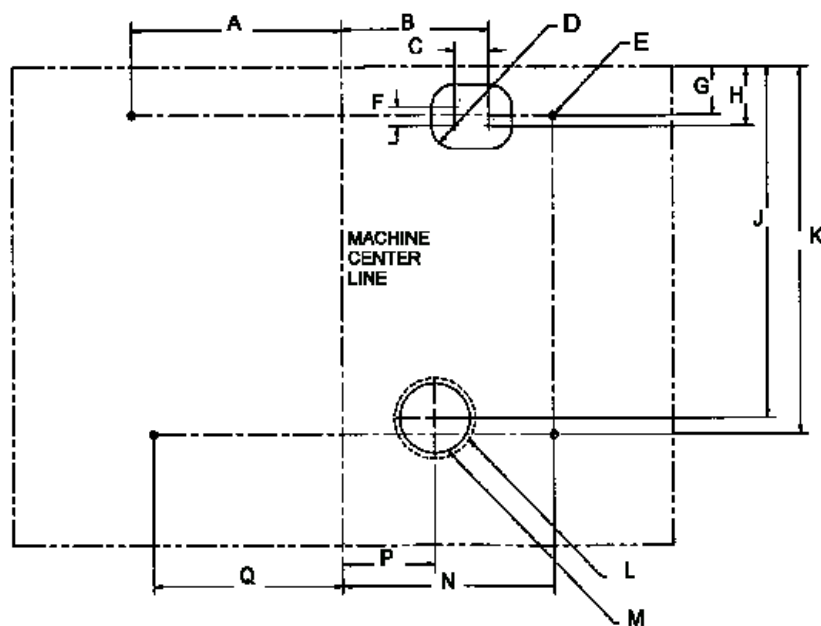
Physical Specifications (cont.)

Game Maker® V7000 with 20-inch Monitor

Ref.	Dim.	Measurement	
		Imperial	Metric
A	Height	38"	96.34 cm
B	Width	21 1/4"	53.98 cm
C	Depth	25 1/4"	64.10 cm
Minimum Spacing		6 1/2"	16.51 cm
Weight		230 lb	106.33 Kg



Ref.	Imperial	Metric
A	9 1/4"	23.49 cm
B	6 15/32"	16.43 cm
C	1 1/2"	3.81 cm
D	R1 X 4"	2.54 X 4 cm
E	15/16" X 4"	.79 X 4 cm
F	13/16"	2.06 cm
G	2 1/8"	5.40 cm
H	2 5/8"	6.67 cm
J	15 7/16"	39.21 cm
K	16 1/4"	41.28 cm
L	3 17/32"	8.97 cm
M	3 1/16"	7.78 cm
N	9 1/4"	71.95 cm
P	4 1/16"	10.32 cm
Q	8 11/32"	21.19 cm



Mounting Detail - V7000 Upright Cabinet with 20-inch Monitor

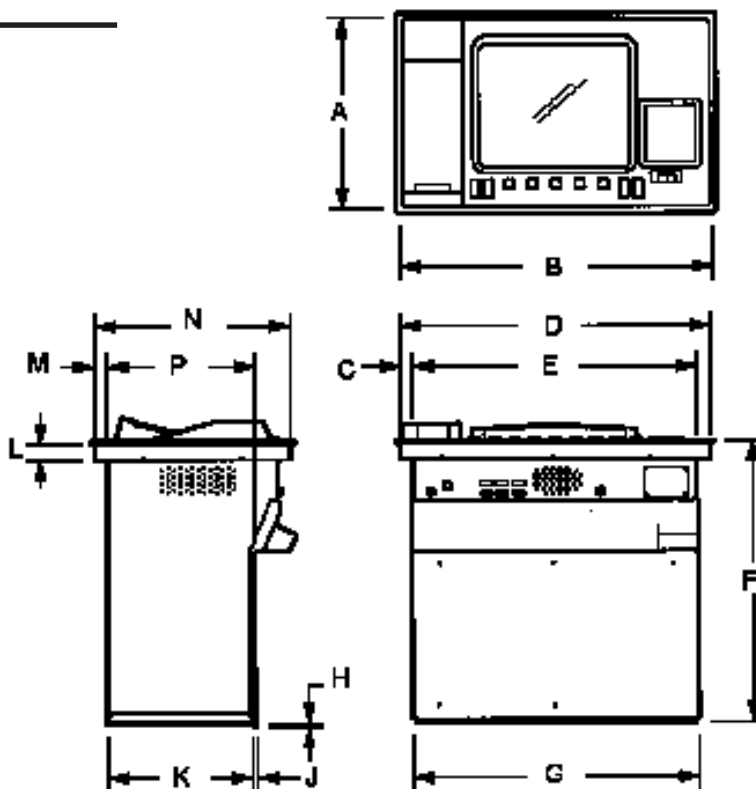
Specifications (cont.)

Physical Specifications (cont.)

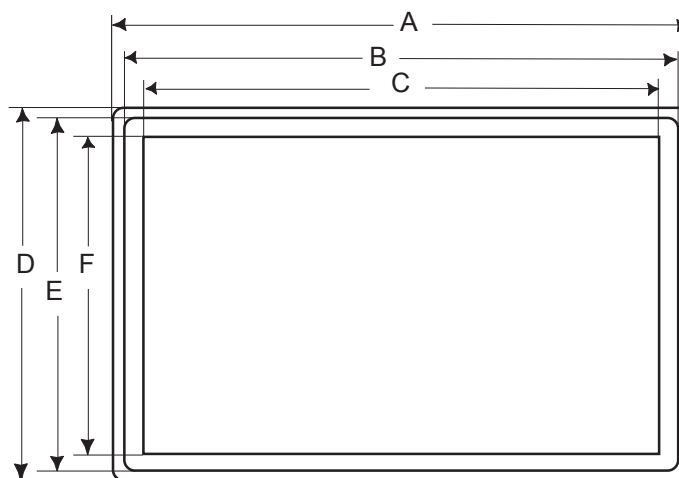
Game Maker® Bartop

Weight: 159 lb (72.12 Kg)

Ref.	Imperial	Metric
A	16 ³ / ₄ "	42.55 cm
B	27"	68.58 cm
C	1"	2.54 cm
D	26 ¹ / ₈ "	66.34 cm
E	24 ¹ / ₈ "	61.26 cm
F	23 ¹ / ₂ "	59.69 cm
G	24 ¹¹ / ₃₂ "	61.82 cm
H	¹ / ₄ "	.64 cm
J	¹⁵ / ₁₆ "	.79 cm
K	12 ¹ / ₃₂ "	30.56 cm
L	1 ³ / ₈ "	3.48 cm
M	1 ¹ / ₁₆ "	2.69 cm
N	16"	40.64 cm
P	12 ⁹ / ₃₂ "	31.19 cm



Ref.	Imperial	Metric
A	27 ¹ / ₁₆ "	68.73 cm
B	26 ¹ / ₄ "	66.68 cm
C	24"	62.38 cm
D	16 ⁹ / ₁₆ "	42.70 cm
E	16 ¹ / ₈ "	40.97 cm
F	14 ⁵ / ₁₆ "	36.35 cm
G	R ¹ / ₄ "	R 6.4 cm



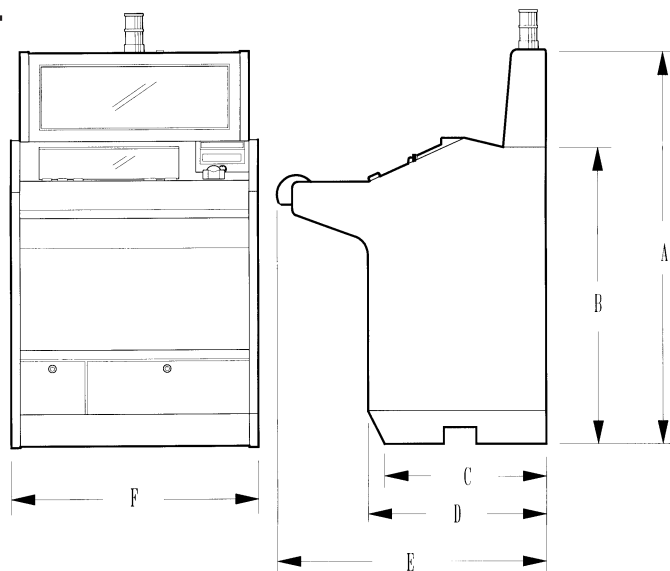
Bartop Cutout

Specifications (cont.)

Physical Specifications (cont.)

Slant Top

Ref.	"S" Style		"S Extended" Style	
	Inches	Centimeters	Inches	Centimeters
A	50 ⁷ / ₈ "	129.24 cm	53 ³ / ₈ "	135.57 cm
B	39 ¹ / ₄ "	99.70 cm	39 ¹ / ₄ "	99.70 cm
C	20 ⁵ / ₈ "	52.39 cm	20 ⁵ / ₈ "	52.39 cm
D	22 ¹ / ₈ "	56.20 cm	22 ¹ / ₈ "	56.20 cm
E	31 ³ / ₈ "	64.10 cm	31 ³ / ₈ "	64.10 cm
F	28 ¹ / ₁₆ "	75.57 cm	28 ¹ / ₁₆ "	75.57 cm
Weight	345 lbs	156.49 kg	348 lbs	157.85 kg



Installing the machine

Installation Check List

- ☐ Review environmental and power requirements
- ☐ Unpack and inspect machine
- ☐ Secure the machine to the stand or bar counter
- ☐ Install locks
- ☐ Setup
- ☐ SafeRAM™ Clear
- ☐ Set EEPROM options
- ☐ Set game options

Review Power and Environmental Requirements

Line power must provide an earth ground for safe operation. Do not overload the circuit. Consider no more than six machines at 110VAC for each 20 Amp circuit.

The Game Maker® radiates radio frequency energy. Although it complies with Subpart J and Part 15 of FCC regulations, use of the machine may interfere with radio communication.

Ensure ventilation is adequate for the number of

machines in an area.

Unpack and Inspect Machine

Unpack and inspect the machine. If the machine is damaged, contact your Bally Gaming and Systems Distributor or Customer Service Representative for Return Merchandise Authorization (RMA) information.

Carefully unpack and remove all loose parts. Verify the power cord is properly routed out of the cabinet. Remove all packing materials and parts from the hopper. Locate the included cloth bag of lock cams and mounting hardware.

Verify Specific Model Information (SMI) documentation before continuing installation.

Secure the Machine to the Stand or Bar Counter

Upright and Casino

Remove the hopper. Mark the center of the stand. Drill the required mounting, drop chute, and power cord holes.

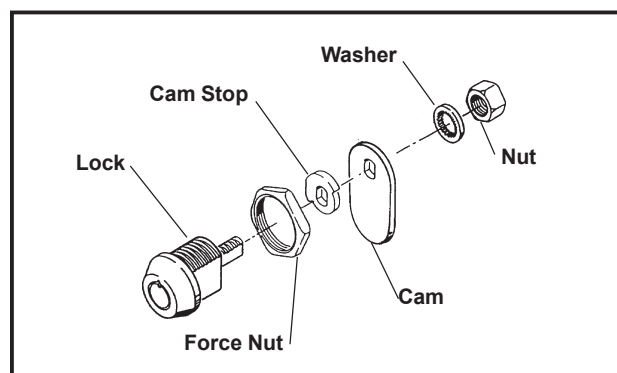
Use a lifting device to place the machine on the stand. Route the power cord where it will not be pinched,

Installing the machine (cont.)

abraded, or otherwise damaged. Bolt the machine to the stand using all four provided mounting bolts. Inspect for loose connectors and verify all circuit boards are firmly seated.

BARTOP

Ensure the cutouts conform to the recommended dimensions. Secure the bezel into the cutout. Using a lifting device, place the machine into the opening. Fasten the machine to the bezel, and route the power cord to the power source. Inspect for loose connectors and verify all printed circuit boards are firmly seated.



Lock and Cam Assembly

Install Locks

Door, stand, and other high-security locks should be ordered by the Operator from a reliable lock supplier. See Module 3 Assemblies, Parts and Hardware for lock specifications.

Remove the large and small nuts from the keyed lock and insert the lock into the cabinet door opening. The notch on the lock face points upward. Secure the lock



WARNING: Features, operation, and presented accounting information depend upon Main EPROM version, Jurisdiction setting, and additional installed peripherals.

with the large nut. Place the cam stop on the lock cylinder. Attach the included lock cam to the back of the lock and verify it moves in the correct direction. Secure the lock cam with the washer and nut.

Setup

Plug the line cord into a grounded power source, but do not turn the machine on.

Battery Enable Procedure

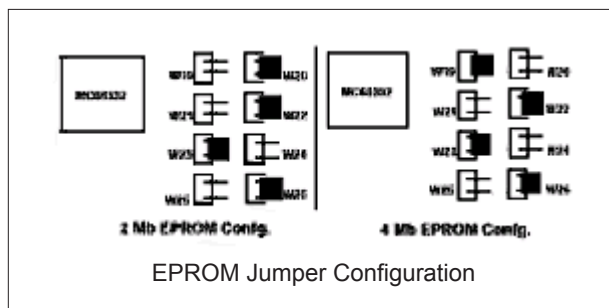
The Lithium battery may be disabled for shipping or storage by having a nearby three-pin header labeled W17 in the OFF position. It must be enabled by moving the two-pin Burg jumper to ON before the machine will operate.



WARNING: Attempting to recharge Lithium batteries can cause them to explode. Replace failed batteries with Bally Gaming part E-00628-0023 or its equivalent.

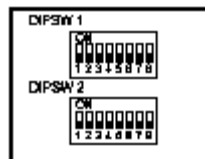
EPROM Size Jumper Settings

The Game Maker® MPU board can accommodate EPROM sizes from 1M to 4M. Main versions prior to "Version 12" use 2M EPROMs. Main versions later than "Version 12" use 4M EPROMs. The illustration below shows jumper settings according to memory size.



Dip Switch Operation

Dual In-line Package (DIP) switches DIPSW1 and DIPSW2 operate according to the following table:



Some of the selections require specialized firmware installed in EPROM socket P10.

DIPSW1			DIPSW2		
Switch	Level	Description	Level	Description	Description
1	ON	Autoplay	N/A	Reserved	
2	ON	Ignore Checksum	ON	Deluxe Sound	
3	ON	Show State Status	N/A	Reserved	
4	ON	Host Override	ON	Enable 12 Button Deck	
5	ON	Printer/Hopper Override	ON	Bill to Tray Option	
6	ON	Watchdog Override	ON	Touchscreen Not Installed	
7	ON	EEPROM Clear	ON	Enable Progressive Change	
8	ON	SafeRAM™ Clear	ON	Show Error Log	

Setup (Cont.)

SafeRAM™ Clear

SafeRAM™ Clear refers to erasing information stored within battery-backed random access memory (RAM). A SafeRAM™ Clear is essential before the first use, when Main program EPROMs are replaced, or if game memory becomes corrupted.

For a SafeRAM™ Clear, locate DIPSW1 along the battery side edge of the MPU board assembly and set DIPSW1-8 to ON. Some versions of Main programs require a EPROM labeled “V7S1000CLEAR-02” in socket P10. Upon ensuring the MPU assembly is firmly seated into the backplane board, turn the machine power ON. The message “SAFERAM CLEAR ENABLED” appears. Actuate the audit key switch.

Follow the displayed instructions by turning power OFF, setting DIPSW1-8 OFF, removing the CLEAR-02 EPROM from P10 if installed, and turning power ON. The screen then displays the settings for CURRENT JURISDICTION, PRIMARY HOST, SECONDARY HOST, SAS® VERSION, CHASSIS TYPE, COIN ACCEPTOR, BILL ACCEPTOR, HOPPER TYPE, DOUBLE DOWN, TOURNAMENT, SECONDARY DEVICE and RESIDUAL CREDIT MODE.

If the information is correct, the machine can be restarted by cycling power or pressing the RESET button located on the MPU assembly.

Set EEPROM Options

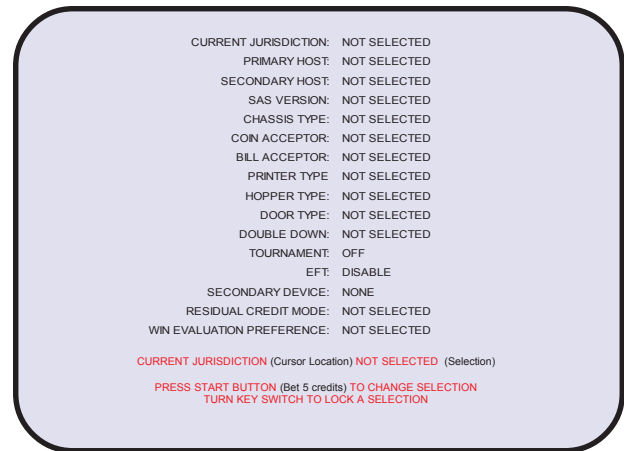
If the settings require change, actuate the audit key switch. Scroll through the available choices with DEAL/DRAW/START. Confirm each choice with the key switch.

Current Jurisdiction

CURRENT JURISDICTION, or Market Code, designates specific operation according to the requirements of a gaming control agency. Some jurisdictions are preset at the factory. The following table lists current Market Codes and Jurisdictions.

Jurisdiction Setting	Market	Jurisdiction Setting	Market
Locked	VLC	8	Puerto Rico
1	International 60 Hz	9	Delaware
2 (Locked)	New Jersey	10	New Mexico
3 (Locked)	GLI	11	OLGC
4	International 50 Hz	12	Swiss B No Bet Limit
5	Default	13	Swiss A Bet Limit
6	Uruguay	14	USAF 2000 Win Limit
7	South Africa	15	USAF No Win Limit

EEPROM Jurisdiction Selections



EE PROM Selection

Primary Host / Secondary Host

A Primary Host and Secondary Host cannot both use the same protocol. A dual Host system must use a combination of SAS® (2.xx - 5.xx) and SDS®. PRIMARY HOST must be set prior to setting SECONDARY Host.

SAS® Version

SAS® VERSION refers to the communication protocol that is compatible with the version of Slot Accounting System Host computer. The choices for SAS® VERSION are 2.83, 2.84, 3.11, 3.13, 4.00, 4.02 and 5.01.

Chassis Type

The choices for CHASSIS TYPE are UPRIGHT, BARTOP, or SLANT. The selection determines the graphical display of status information when the door is open.

Coin Acceptor

The choices for COIN ACCEPTOR are COIN ACCEPTOR ONLY, COIN ACCEPTOR AND COD BOARD, or NRI. COIN ACCEPTOR ONLY and COIN ACCEPTOR AND COD BOARD refer to the presence or absence of a coin optic decoder (COD) board (Bally part # AS-03356-0303). Some versions of Main programs offer choices for Coin Mechanisms, Inc., CC-62 or CC-16 coin acceptors. The CC-62 does not require a COD board. The CC-16 does.

NRI refers to the National Rejectors, Inc., brand of programmable coin acceptors and the processing of coin information for this acceptor.

Other brands of coin acceptors may be compatible if they conform to the size and electrical operation of these acceptors.

Setup (cont.)

Set EEPROM Options (cont.)

Bill Acceptor

The choices for BILL ACCEPTOR are NO BILL ACCEPTOR, JCM WBA, JCM DBV, GPT, ARDAC, AND MARS 1100 SERIES.

JCM WBA refers to Japan Cash Machine's World Bill Acceptor.

JCM DBV selects a communication protocol compatible with Japan Cash Machine models DBV145, DBV146, CBA135, SRA135, or IBA135.

GPT selects a protocol for models developed by Global Payment Technologies.

ARDAC refers to the bill acceptor manufactured by ARDAC, Inc.

MARS 1100 SERIES refers to the model manufactured by Mars Electronics International. It is also the correct setting for the Cashflow™ SC6600.

Printer Type

The Game Maker® will support thermal printers manufactured by Seiko Instruments, Inc., and Transact Technologies, Inc. The choices are SEIKO PRINTER, ITHAKA 800 PRINTER, OR NONE. Select one choice to match the hardware installed in the machine.

Hopper Type

The choices for HOPPER TYPE are COIN, OR NONE. Select COIN if the machine has a coin-dispensing hopper.

Door Type

The choices for DOOR TYPE are MECHANICAL OR PULSED OPTIC. The selections refer to the sensing device used to detect the opening of the main door.

Double Down

DOUBLE DOWN is ON or OFF. If ON, the opportunity to enable and configure this feature will be available under CONFIGURATION.

Tournament

TOURNAMENT is ON or OFF. If ON, the opportunity to enable and configure this feature will be available under CONFIGURATION.

EFT (Electronic Funds Transfer)

The choices for EFT are ENABLE OR DISABLE. If enabled, credits can be added to the machine from a remote location by the accounting system Host computer.

Secondary Device

The choices for SECONDARY DEVICE are Bally or Anchor. The choices refer to the manufacturers of the peripheral device.

Residual Credit Mode

If a machine is configured so that one coin registers multiple credits (tokenization), it is possible to have credits remaining after a cashout. The selections for RESIDUAL CREDIT MODE refer to the disposition of the extra credits. The choices are NO GAMBLE AND NO ATTEN. PAY, ATTEN. PAY ONLY, GAMBLE ONLY, and GAMBLE OR ATTEN. PAY.

■ The NO GAMBLE AND NO ATTENDANT PAY setting forces a Player to continue playing until either the remaining credits equal zero; or they equal the exact value of a coin from the hopper.

■ ATTENDANT PAY ONLY requires an Attendant to remove the remaining credits from the machine by turning the Audit key switch and paying the Player.

■ GAMBLE ONLY enables a post game where all residual credits are wagered on a win-lose outcome. A win results in a coin from the hopper. A loss zeros the remaining credits. A Player's chance of winning a coin is proportional to the residual credits wagered:

If a credit is 1/10th of a hopper coin, gambling one credit offers a Player a one-in-ten or 10% chance of receiving a coin.

However, if nine residual credits are left, the Player has a 90% chance of receiving a coin for the residual credits.

■ GAMBLE OR ATTENDANT PAY provides the Player with all options for resolving residual credits.

Setup (cont.)

Set EEPROM Options (cont.)

Win Evaluation Preference

The choices for WIN EVALUATION PREFERENCE are OHWP/PLS or LEGACY. If multiple progressive jackpots are available for the Player, the machine can be configured to award the largest of multiple eligible amounts. For example, a straight flush progressive win will be awarded for a royal flush if the straight flush progressive amount is larger than the progressive amount for the royal flush.

To enable the feature, set EVALUATION PREFERENCE to OHWP/PLS. To establish progressive levels that remain fixed at the associated win level, set the feature to LEGACY.

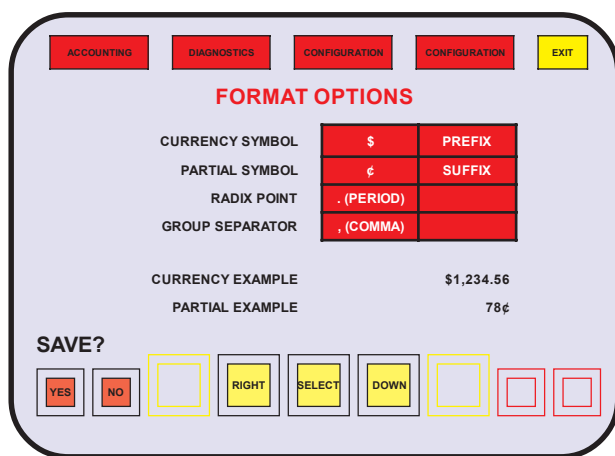
One-time configuration after a SafeRAM™ Clear

Following a SafeRAM™ Clear, on-screen instruction state that the DIP switches must be reset and special EPROMs, if installed, removed.

Touch Screen Calibration After SafeRAM™ Clear

After a successful SafeRAM™ Clear, the Game Maker® program automatically enters the CAL TOUCH SCREEN sub menu of the DIAGNOSTICS menu. Follow the on-screen instructions for hardware and software calibration.

Currency Format Selection



Currency Format Selection

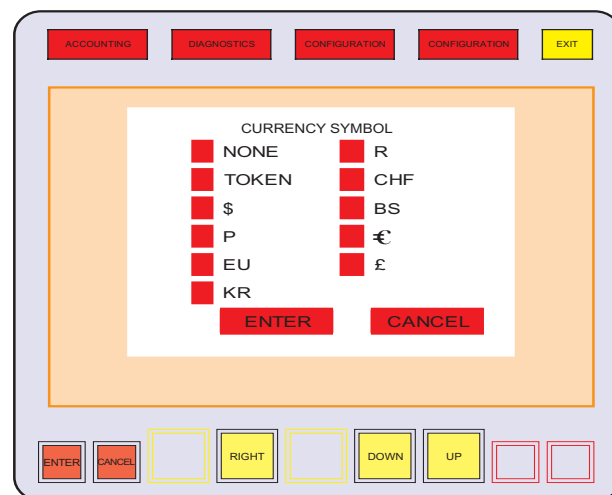
Following the calibration of the touch screen, the Game Maker® initialization process requires a setting for how the bookkeeping records show monetary information.

The items can be selected only once. A SafeRAM™ Clear Procedure is required to change the selection once it is set and saved.

Selecting TOKEN or NONE will have bookkeeping records reflect credits (integers) instead of monetary (decimal) values. For example, **.25 NONE** selection will show “4” in a bookkeeping meter to reflect \$1 worth of credits. **.25** and \$ will show “1.00” for the same value.

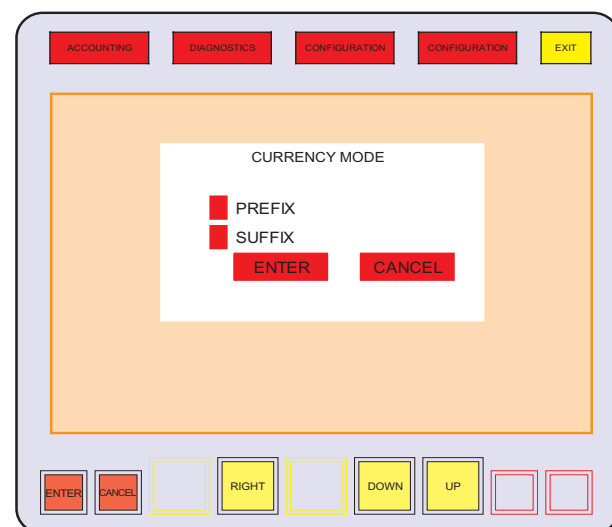
Touch the currency symbol icon in the menu to display the available symbols.

Currency Symbol



Currency Symbol

Select the currency symbol by touching the icon beside it. Then press enter to return to the format options menu.



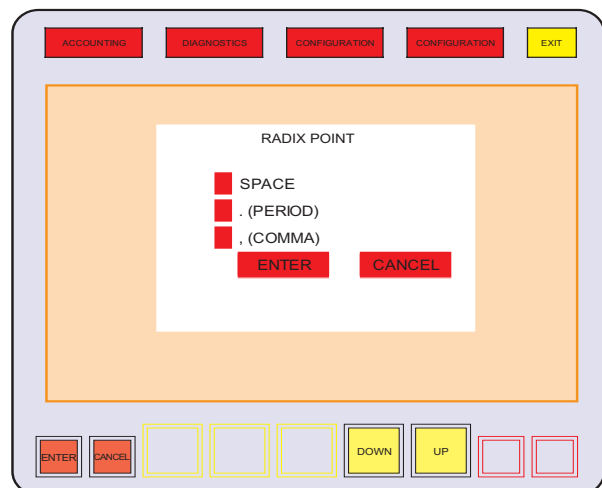
Currency Mode (Suffix/Prefix Selection)

Setup (cont.)

One-time configuration after a SafeRAM™ Clear (cont.)

The selected symbol can appear as a prefix or suffix. Touch the suffix text icon to enter the currency mode menu. Touch the suffix or prefix icon, then touch ENTER to return to the format options menu.

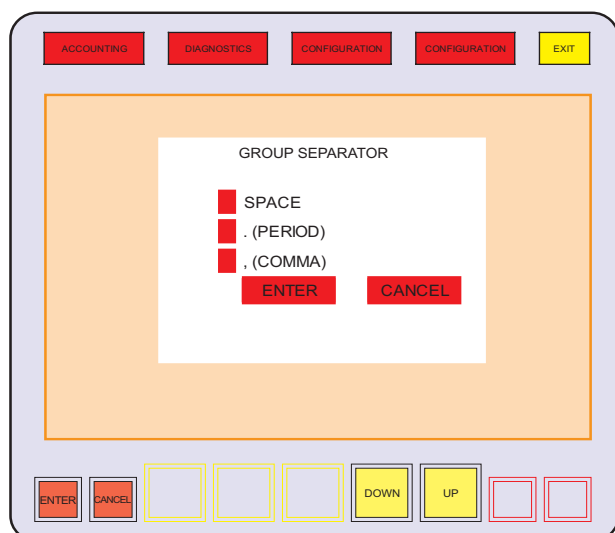
Radix Point



Radix Point

The radix point for values can be configured. Touch the radix point icon to enter the radix point selection menu. Touch the icon beside the text, then touch ENTER to return to the format options menu.

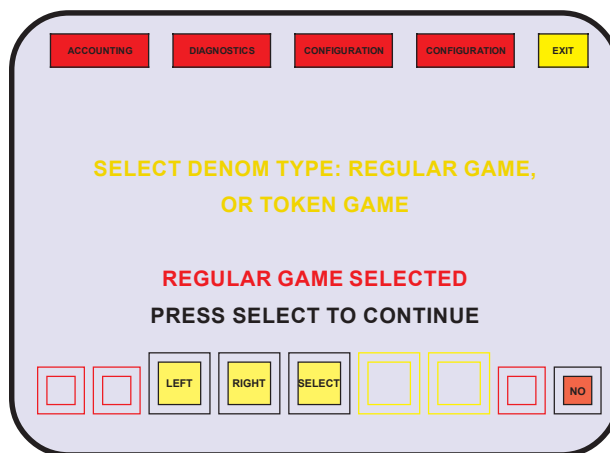
Group Separator



Group Separator

The punctuation separating groups of digits can be configured. Touch the group separator icon showing the current selection to enter the group separator selection menu. Touch the icon beside the text of the separator, then touch ENTER to return to the format options menu.

Denom Type (Credits per Coin Setup)

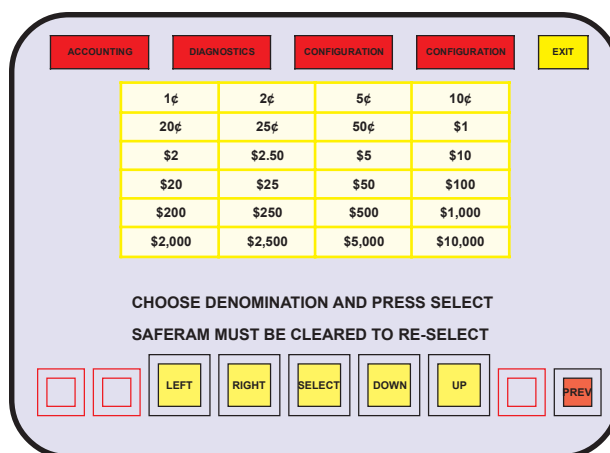


Regular Game or Token Game

The machine can be configured to apply multiple credits for each coin in through the coin acceptor and out through the coin hopper. REGULAR GAME associates one credit per coin. TOKEN GAME allows one coin to equal multiple credits for accepted coins through the coin acceptor and dispensed coins by the hopper. Touch LEFT or RIGHT to toggle choice, then touch SELECT. Touch YES to confirm and save selection.

Denomination

The selection for Coin Denomination is the value of a coin accepted by the coin acceptor and dispensed by the hopper. Touch the value of the coin where it appears in the menu, then touch SELECT. Confirm by touching YES when asked to save changes.



Coin Acceptor Coin Denomination

Setup (cont.)

One-time configuration after a SafeRAM™ Clear (cont.)

Multiple Credit Configuration

Token Credit Setup

If TOKEN GAME was selected to accumulate multiple credits for each coin through the coin acceptor, an opportunity is presented to select the value of each credit.

Touch the value of a credit where it is presented in the menu, then touch SAVE.

Multiple Denomination Setup

0.01	0.02	0.05	0.10
0.20	0.25	0.50	1.00
2.00	2.50	5.00	10.00
20.00	25.00	50.00	100.00

Multiple Denomination Setup

The Game Maker® Main program provides an opportunity to set a value for each unit of wager that may be different from the denomination of the coin acceptor. Up to five different values can be selected for all games.

DENOM	PCT 1
0.01	00.00
0.02	00.00
0.05	00.00
0.10	00.00
0.20	00.00

Multiple Denomination Game Setup

Each installed Personality will be presented for one-time configuration. Changes require a SafeRAM™ Clear.

CHANNEL	Amount
CHANNEL 1	\$1
CHANNEL 2	NONE
CHANNEL 3	\$5
CHANNEL 4	\$10
CHANNEL 5	\$20
CHANNEL 6	\$50
CHANNEL 7	\$100
CHANNEL 8	NONE
CHANNEL 9	NONE

Bill Acceptor Country

Bill Acceptor Configuration

Bill denominations accepted must match assignments established in the machine's bill acceptor. There is only one correct setting. Individual bill acceptance or rejection can be selected by switches in the bill acceptor.

Touch the text icon of a table to view a list of bill denominations and channels.

Touch SELECT. Confirm the selection by touching yes to save. Advance to the next menu by touching PREV.

The following table lists the available channel assignments:

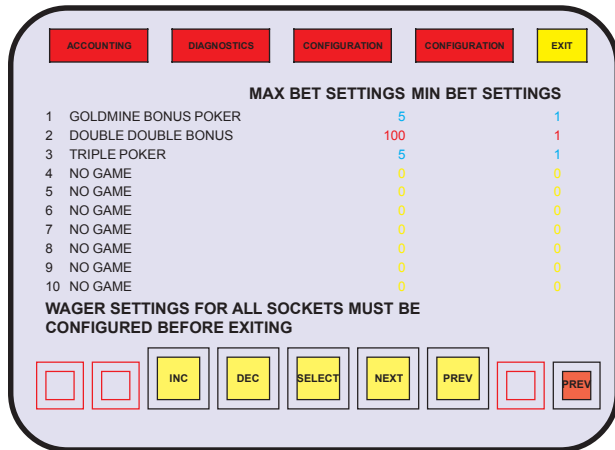
Bill Acceptor Channel Assignments Table									
Group	Channel								
	1	2	3	4	5	6	7	8	9
Universal 1	1	2	5	10	20	50	100	200	500
Universal 2		100							
Universal 3	100	200	500	1000	2000	5000	10000	20000	
Universal 4	10	20	50	100	200	500	1000	5000	100000
Universal 5	1000	2000	5000	10000	20000	50000	100000		
Universal 6	1	5	10	20					
Universal 7	10	25	50	100	250	500	1000	2000	

Enabled ☐
Disabled ☐

Setup (cont.)

One-time configuration after a SafeRAM™ Clear (cont.)

Adjustable Maximum and Minimum Bet

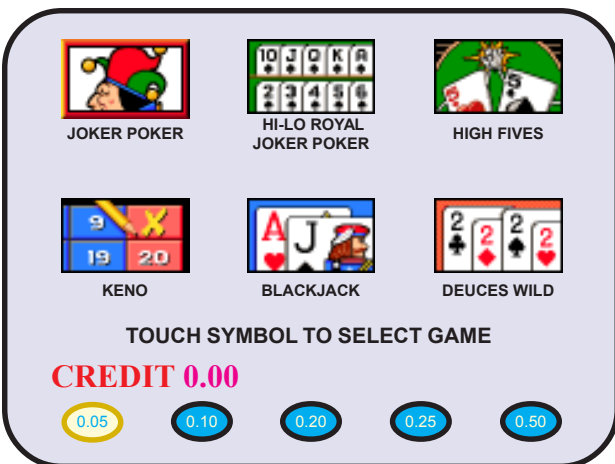


Adjustable Wager Setup

Some games include the ability to adjust wager settings. Changeable settings appear in red in the menu. SELECT enters the value. The selection must be confirmed with by touching SAVE.

Upon exiting, the machine will present the Audit Key administration menu.

Machine Operation



Game Menu

Selecting a Game to Play

The Game Maker® allows the Player to choose from a selection of games. The selection is determined by the Personality EPROMs installed in MPU board

sockets P1 through P10. If multiple denominations are enabled, the current denomination is highlighted. The Player can choose a different denomination. Selecting the game's icon presents the play screen for the game.

HELP (instruction) screens and pay tables are available for some games. EXIT will leave HELP or PAY TABLE and return to the game. Selecting MENU returns to the game menu.

Playing a Game

The Player must wager at least one credit to play a game. Credits are awarded from wins, or purchased by the Player. Credits or their value display next to the text CREDIT.

Credits are wagered by selecting BET ONE or BET MAX. Wagers may be adjusted by selecting the arrows on either side of BET, located in the upper right of the screen.

MAX BET will wager all available credits or the maximum wager for the game, whichever requires fewer credits.

Once credits are wagered, the game begins by selecting DEAL/DRAW/START. Upon completion of the game, winning combinations increment CREDITS and WIN according to the game's pay table.

Once the game is over and any winnings are accounted for, the Player may play the same game again, select a different game, or collect all remaining credits. If a different game is selected, credits are carried over to the new game.

To collect, or "cash-out," the Player selects the COLLECT icon. Depending upon machine configuration, coins are paid from the hopper; a credit voucher is created and dispensed; or the value of the credits are transferred to the Player's account.

Releasing a Jackpot Lockup

When a win exceeds a configured value, the machine indicates a jackpot lockup condition by illuminating a tower light, playing a jackpot melody, displaying a message across the screen, and suspending further play. The jackpot condition must be released by an Attendant or by a system Host.

Audit Key Menu

The audit key menu displays all electronic accounting, diagnostic, and game configuration selections. It consists of three sub menus; ACCOUNTING, DIAGNOSTICS, and CONFIGURATION.

Only ACCOUNTING is accessible with the main door closed. To view the complete audit key menu, open the main door or deck, and actuate the audit key switch.

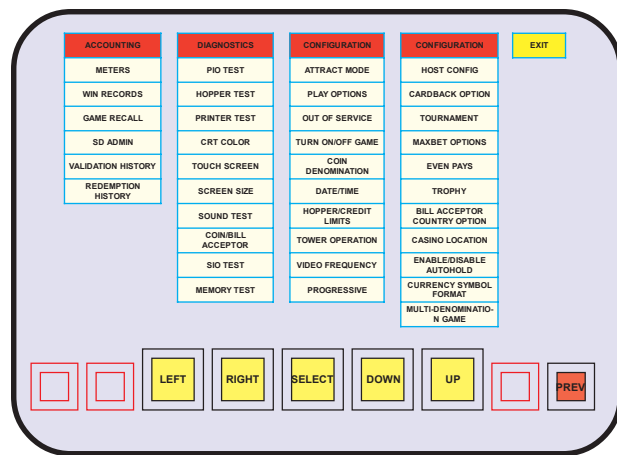
The Game Maker® responds to selections by touching the icon or menu representing the selection. The choice activates when the finger lifts from the touch screen.

Another way to select is to use the icons at the bottom of the screen. Activating these icons directs a highlighted box cursor to a location or activates the choice.

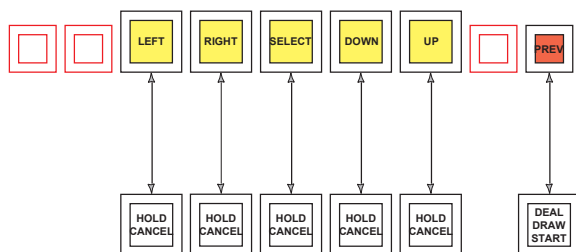
The icons are:

- LEFT moves highlight one column left.
- RIGHT moves highlight one column right.
- SELECT activates the selection at the cursor.
- DOWN moves highlight down within column.
- UP moves highlight up within column.

A third way to select is to use the deck buttons. For each icon there is an associated illuminated deck button.



Audit Key Menu



Deck Buttons and Icons

Accounting

The Game Maker® records and stores accounting information in electromechanical counters (hard meters) and electronic counters (soft meters).

Electromechanical Meters

Electromechanical meters are located inside the machine's cabinet. The meters are numbered one through five. The information recorded is determined by jurisdiction.

The labels for the meters vary, but are usually TOTAL IN, TOTAL OUT, and DROP. Other information may be ATTENDANT PAID, and BILL CREDITS. Additional information that may be recorded with electromechanical meters may be SUPER (highest award) JACKPOTS, number of times the main door has been opened, and the number of games.

The following tables list three meter group assignments (A, B, and C) according to the EEPROM setting for JURISDICTION.

Table of Meter Groups A, B, and C

Electromechanical Meters			Meter Group		
Meter #	Label	Description	A	B	C
1	Total In	Counts each credit wagered.	X	X	X
2	Total Out	Counts each credit won without a win lockup.	X	X	X
3	Drop	Counts each coin sent to the drop bucket.	X		X
		Counts each coin sent to the drop bucket and each credit from the bill acceptor.		X	
4	Attendant Paid	Counts credits paid to a Player by an attendant upon a win (jackpot) lockup.	X	X	X
5	Bill Credits	Counts credits for bill transactions.	X		
	Games Played	Increments once for each game completion.		X	
	Jackpots	Increments once each time the top award has been won.			X

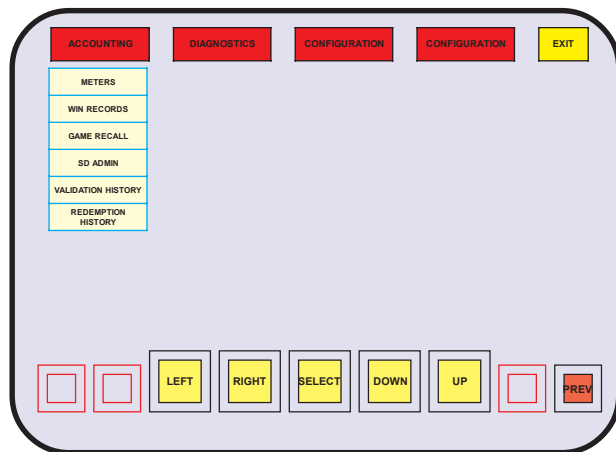
Table of Meter Groups by Jurisdiction Setting

Meter Group Assignments by Market					
Jurisdiction Setting	Market	Meter Group	Jurisdiction Setting	Market	Meter Group
Locked	VLC	None	8	Puerto Rico	C
1	International 60 Hz	B	9	Delaware	A
2	New Jersey	None	10	New Mexico	B
3	GLI	A	11	OLGC	B
4	International 50 Hz	A	12	Switzerland B w/out Bet Limit	B
5	Default	B	13	Switzerland A w/Bet Limit	A
6	Uruguay	A	14	USAF w/2000 Win Limit	B
7	South Africa	A	15	USAF w/out Win Limit	B

Accounting (cont.)

ACCOUNTING

Accounting Sub Menu



Accounting Sub Menu

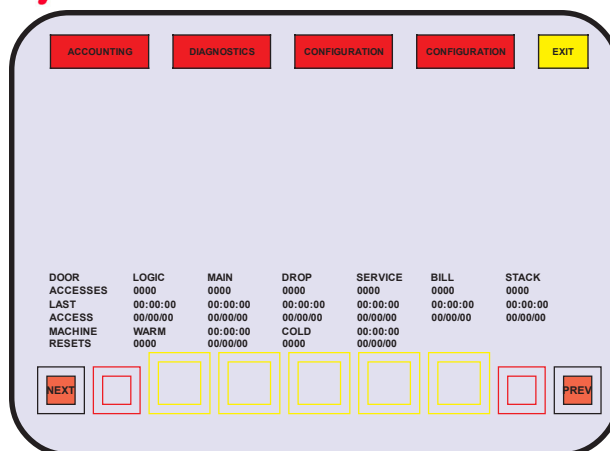
The ACCOUNTING sub menu provides access to METERS, WIN RECORDS, GAME RECALL, SD ADMIN, VALIDATION HISTORY and REDEMPTION HISTORY.

METERS

METERS

Meters	
Bookkeeping and Event Counters	
Bill Acceptor Transactins	
Voucher and Coupon Accounting	
Game Activity	
Double or Nothing Activity	
Host Bonus Meters	
Win Lockup Summary	
Total Weighted Theoretical Percentage	
Internal Progressive Controller Records	
	Controllers 1-13
	Controllers 14-25
External Progressive Controller Records	
	Controllers 1-5
	Controllers 6-10
Slot Accounting System Summary	
	AFT Non Cashable Credit Transactions
	AFT Cashable Credit Transactions
	AFT Promotional Credit Transactions
	AFT System Collect Transactions
	AFT Hopper Collect Transactions

There are multiple screens of bookkeeping information available under the METERS sub menu. The information presented depends upon the Main program version and configuration settings.



Bookkeeping and Event Counters

Select METERS under the accounting sub menu to display the first (master meter) screen. NEXT and LAST icons navigate through the screens of information. Select PREV to return to the audit key menu, or EXIT to return to the game menu.

METER	DESCRIPTION
CURRENT CREDITS	Value of credits available to the Player when the machine returns to normal operation.
ACCOUNTING DENOMINATION	Value of each credit
GAMES PLAYED SINCE RESET	Total of games completed since the last System Reset.
GAMES PLAYED SINCE DOOR CLOSED	Total of games completed since the closing of the Main Door.
TOTAL IN	Amount wagered on all games in machine.
TOTAL OUT	Amount of winnings paid by machine.
TOTAL DROP	Combined COIN TO DROP and BILL DROP.
TOTAL BILL ACC. IN	Amount of currency accepted.
ATTEN. PAID	Amount of credits paid by an attendant.
NET ATTEN. PAID	Amount of ATTEN. PAID for credits won by the Player.
PROG. JACKPOT	Quantity of jackpots hit for games configured for a progressive jackpot or merchandise award.
GAMBLE PLAYED	Residual credits wagered.
GAMBLE WON	Gambled credits won.
JACKPOT/HANDPAY	Portion of ATTEN. PAID resulting from a Win Lockup.
COIN ACCEPTOR	Amount accepted by coin acceptor.
HOPPER OUT	Amount dispensed by the hopper.
HOPPER OVERPAY	Amount of extra coins dispensed by the hopper.
BILL DROP	Amount of currency accepted.
COIN TO DROP	COIN ACCEPTOR that occurs while the hopper is full
SOFT COLLECT	Coins paid from the hopper from purchased credits.
SOFT ATTEN. PAID	Purchased credits paid by an Attendant. Purchased credits are from a bill transaction.
OTHER CREDIT	Electronic Transfers (EFT or ECT).
CANCEL CREDITS	Credits not from winning wagers paid by an attendant.
HOST BONUSES	Number of bonuses from SAS® host communications.
BONUSES PAID	An accumulated value of bonuses from SAS® host communications.
SD WINS	Amount won from secondary device.
DOOR ACCESS LOGIC, MAIN, DROP, SERVICE, BILL, STACK	Number of times each door has been opened.
LAST ACCESS LOGIC, MAIN, DROP, SERVICE, BILL, STACK	Time and date stamp for the most recent access for each door.
MACHINE RESETS: WARM	Number of System Resets from causes other than power OFF.
MACHINE RESETS: COLD	Number of System Resets from Power OFF.

Accounting (cont.)

ACCOUNTING

METERS (cont.)

METERS

Bill Acceptor Transactions

ACCOUNTING	DIAGNOSTICS	CONFIGURATION	CONFIGURATION	EXIT
LAST 10 BILLS IN STACKER				
0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00
0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00
0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00
0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00	0.00 - 00:00:00 00/00/00
BILLS/VOUCHERS/COUPONS IN STACKER				
1.00 - 0000000000	1.00 - 0000000000	1.00 - 0000000000	1.00 - 0000000000	1.00 - 0000000000
2.00 - 0000000000	2.00 - 0000000000	2.00 - 0000000000	2.00 - 0000000000	2.00 - 0000000000
5.00 - 0000000000	5.00 - 0000000000	5.00 - 0000000000	5.00 - 0000000000	5.00 - 0000000000
10.00 - 0000000000	10.00 - 0000000000	10.00 - 0000000000	10.00 - 0000000000	10.00 - 0000000000
20.00 - 0000000000	20.00 - 0000000000	20.00 - 0000000000	20.00 - 0000000000	20.00 - 0000000000
50.00 - 0000000000	50.00 - 0000000000	50.00 - 0000000000	50.00 - 0000000000	50.00 - 0000000000
100.00 - 0000000000	100.00 - 0000000000	100.00 - 0000000000	100.00 - 0000000000	100.00 - 0000000000
200.00 - 0000000000	200.00 - 0000000000	200.00 - 0000000000	200.00 - 0000000000	200.00 - 0000000000
500.00 - 0000000000	500.00 - 0000000000	500.00 - 0000000000	500.00 - 0000000000	500.00 - 0000000000
VOUCHER/COUPON COUNT				
0000000000	0000000000	0000000000	0000000000	0000000000
TOTAL 0000000000				
NEXT	LAST			PREV

Bill Acceptor Transactions

The bill acceptor transaction screen displays three groups of bill acceptor records: Last 10 Bills/Vouchers/Coupons, Bills/Vouchers/Coupons in Stacker, and Total Bills/Vouchers/Coupons.

The last 10 bill acceptor transactions by denomination, time and date are available for review. The current contents of the stacker sorted by denomination, is available; as well as a total item count—TOTAL IN. These records are zeroed when the stacker is removed.

A life-to-date record of all bill acceptor activity is available. These records will roll over, but cannot be altered. A SafeRAM™ Clear sets these values to zero.

Voucher and Coupon Transactions

ACCOUNTING	DIAGNOSTICS	CONFIGURATION	CONFIGURATION	EXIT
VOUCHER/COUPON ACCOUNTING				
	VALUE IN STACKER	COUNT IN STACKER	TOTAL VALUE	TOTAL COUNT
IN	0.00	0000	0.00	0000
COUPON PROMOTION	0.00	0000	0.00	0000
COUPON CASHABLE	0.00	0000	0.00	0000
VOUCHER PROMOTION	0.00	0000	0.00	0000
VOUCHER CASHABLE	0.00	0000	0.00	0000
TOTAL	0.00	0000	0.00	0000
OUT	0.00	0000	0.00	0000
VOUCHER PROMOTION	0.00	0000	0.00	0000
VOUCHER CASHABLE	0.00	0000	0.00	0000
VOUCHER RECEIPT	0.00	0000	0.00	0000
TOTAL	0.00	0000	0.00	0000
NEXT	LAST			PREV

Voucher Accounting

The totals for all vouchers and coupons are presented for review. The totals for items in the bill acceptor's stacker are zeroed when the stacker is removed.

Game Activity

ACCOUNTING	DIAGNOSTICS	CONFIGURATION	CONFIGURATION	EXIT
	GAMES PLAYED	GAMES WON	MONEY PLAYED	MONEY WON
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
NO GAME	00000000	00000000	000,000,000,000	000,000,000,000
OTHER GAMES	00000000	00000000	000,000,000,000	000,000,000,000
TOTAL	00000000	00000000	000,000,000,000	000,000,000,000
NEXT	LAST			PREV

Game Activity

A review of all money wagered for a game and the number of times the game has been played is available for all installed games. Games removed from a multi-game machine will automatically transfer the information to OTHER GAMES.

Double or Nothing Activity

ACCOUNTING	DIAGNOSTICS	CONFIGURATION	CONFIGURATION	EXIT
	DOUBLES PLAYED	DOUBLES WON	DOUBLES LOST	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
NO GAME	00000000	00000000	00000000	
OTHER GAMES	00000000	00000000	00000000	
TOTAL	00000000	00000000	00000000	
NEXT	LAST			PREV

Double or Nothing Activity

The number of times Players have accepted the Double or Nothing feature and the outcomes are available for review. Also available is the amount of money wagered and won by the feature.

Accounting (cont.)

ACCOUNTING

Meters (cont.)

METERS

Host Bonus Meters

ACCOUNTING	DIAGNOSTICS	CONFIGURATION	CONFIGURATION	EXIT
NO GAME	DEDUCTABLE	NON DEDUCTABLE	WAGER MATCH	
NO GAME	00000000.00	00000000.00	00000000.00	
NO GAME	00000000.00	00000000.00	00000000.00	
NO GAME	00000000.00	00000000.00	00000000.00	
NO GAME	00000000.00	00000000.00	00000000.00	
NO GAME	00000000.00	00000000.00	00000000.00	
NO GAME	00000000.00	00000000.00	00000000.00	
NO GAME	00000000.00	00000000.00	00000000.00	
NO GAME	00000000.00	00000000.00	00000000.00	
POPEYE	00000000.00	00000000.00	00000000.00	
NO GAME	00000000.00	00000000.00	00000000.00	
NO GAME	00000000.00	00000000.00	00000000.00	
OTHER GAMES	00000000.00	00000000.00	00000000.00	
TOTAL	00000000.00	00000000.00	00000000.00	

Host Bonus Meters

Bonus awards controlled by the Host are available for review. The awards are categorized as DEDUCTIBLE (wins), NON DEDUCTIBLE (promotional) and WAGER MATCH according to the capabilities of the Host.

Total Weighted Theoretical Percentage

ACCOUNTING		DIAGNOSTICS		CONFIGURATION		CONFIGURATION		EXIT	
SMI NUMBER	OTHER INFO.	GAME DESCRIPTION	GAME PCT.		MONEY PLAYED		WTD. PCT.		
Y-4522		NO GAME	0.00		0,000,000,000,000.00		0.00		
		NO GAME	0.00		0,000,000,000,000.00		0.00		
		NO GAME	0.00		0,000,000,000,000.00		0.00		
		NO GAME	0.00		0,000,000,000,000.00		0.00		
		NO GAME	0.00		0,000,000,000,000.00		0.00		
		NO GAME	0.00		0,000,000,000,000.00		0.00		
		NO GAME	0.00		0,000,000,000,000.00		0.00		
		POPEYE	88.18		0,000,000,000,000.00		0.00		
		NO GAME	0.00		0,000,000,000,000.00		0.00		
		NO GAME	0.00		0,000,000,000,000.00		0.00		
TOTAL WEIGHTED THEORETICAL PERCENTAGE					0,000,000,000,000.00		0.00		

NEXT

LAST

PREV

Total Weighted Theoretical Percentage

Each of the games installed in a machine usually have different hold percentages. Also, some games may have more appeal in certain locations. The Total Weighted Theoretical Percentage accounts for these differences and calculates a payback percentage for all of the games according to the combined play. The following table describes the information included:

Win Lockup Summary

ACCOUNTING	DIAGNOSTICS	CONFIGURATION	CONFIGURATION	EXIT
NO GAME	HAND PAID	PROGSV WINS	SAS PRG WINS	
NO GAME	0000000000	0000000000	0000000000	
NO GAME	0000000000	0000000000	0000000000	
NO GAME	0000000000	0000000000	0000000000	
NO GAME	0000000000	0000000000	0000000000	
NO GAME	0000000000	0000000000	0000000000	
NO GAME	0000000000	0000000000	0000000000	
NO GAME	0000000000	0000000000	0000000000	
NO GAME	0000000000	0000000000	0000000000	
POPEYE	0000000000	0000000000	0000000000	
NO GAME	0000000000	0000000000	0000000000	
NO GAME	0000000000	0000000000	0000000000	
OTHER GAMES	0000000000	0000000000	0000000000	
TOTAL	0000000000	0000000000	0000000000	

Win Lockup Summary

A record of the amount of win lockups is kept for each game installed in the machine. If the win level is associated with a progressive jackpot, the amount is recorded separately. Host controlled progressive wins are also recorded separately.

Table of Weighted Theoretical Percentage Information

Total Weighted Theoretical Percentage	
Heading	Description
SMI NUMBER	Specific Model Information (SMI) Number identifies the game for reference in the Product Reference Guide and other references. This number should match SMI documentation included with the machine.
OTHER INFO.	Information text labels stored in the EPROM about the game. For example, "T" for a tournament game.
GAME PCT.	Nominal and Basic percentage information is stored in the Personality EPROM. Which of the two percentages displayed depends upon Market Code. Nominal percentage includes bonuses for maximum-wager top awards. Basic percentage is the percentage of a single credit wager.
MONEY PLAYED	Value of wagers for the game.
WTD. PCT	The game's contribution to the total percentage for the machine. It is calculated by GAME PCT. times MONEY PLAYED.
TOTAL WEIGHTED THEORETICAL PERCENTAGE	The sum of WTD. PCT.

Accounting (cont.)

ACCOUNTING

Meters (cont.)

METER:

Internal Progressive Controller Records

ACCOUNTING	DIAGNOSTICS	CONFIGURATION	CONFIGURATION	EXIT
-------------------	--------------------	----------------------	----------------------	-------------

INTERNAL PROGRESSIVE METERS 14..25

	TOTAL IN	TOTAL OUT	DISPLAY MODE	JACKPOT
14	000,000,000,000,000	000,000,000,000,000		000
15	000,000,000,000,000	000,000,000,000,000		000
16	000,000,000,000,000	000,000,000,000,000		000
17	000,000,000,000,000	000,000,000,000,000		000
18	000,000,000,000,000	000,000,000,000,000		000
19	000,000,000,000,000	000,000,000,000,000		000
20	000,000,000,000,000	000,000,000,000,000		000
21	000,000,000,000,000	000,000,000,000,000		000
22	000,000,000,000,000	000,000,000,000,000		000
23	000,000,000,000,000	000,000,000,000,000		000
24	000,000,000,000,000	000,000,000,000,000		000
25	000,000,000,000,000	000,000,000,000,000		000
TOTAL	000,000,000,000,000	000,000,000,000,000		000

NEXT	LAST							PREV
------	------	--	--	--	--	--	--	------

Internal Progressive Controllers - Second Screen

If any of the 25 internal jackpot controllers are active, the transactions recorded are TOTAL IN, TOTAL OUT, and JACKPOT. The award is noted as DISPLAY MODE.

TOTAL IN and TOTAL OUT record the value of wagers and wins with each controller. DISPLAY MODE indicates an award that is a progressing monetary value, or a merchandise award. See Module 7, Progressives for more information. JACKPOT records each occurrence of a jackpot on each controller. A summation of the controllers is recorded in TOTAL.

External Progressive Controller Records

ACCOUNTING

DIAGNOSTICS

CONFIGURATION

CONFIGURATION

EXIT

EXTERNAL PROGRESSIVE JACKPOT METERS, 6.10

WIN LEVEL	CTLR 6	CTLR 7	CTLR 8	CTLR 9	CTLR 10
0	0000000	0000000	0000000	0000000	0000000
1	0000000	0000000	0000000	0000000	0000000
2	0000000	0000000	0000000	0000000	0000000
3	0000000	0000000	0000000	0000000	0000000
4	0000000	0000000	0000000	0000000	0000000
5	0000000	0000000	0000000	0000000	0000000
6	0000000	0000000	0000000	0000000	0000000
7	0000000	0000000	0000000	0000000	0000000

TOTAL EXT. PROG. JACKPOT COUNT
0000000

LEFT

RIGHT

SELECT

DOWN

UP

PREV

External Progressive Controllers - Second Screen

If any of the ten external controller interfaces are active, the number of occurrences are recorded for each win. See Module 7, Progressives for more information.

Slot Accounting System Information

ACCOUNTING

DIAGNOSTICS

CONFIGURATION

CONFIGURATION

EXIT

SLOT ACCOUNTING SYSTEM INFORMATION

SLAVE ADDRESS 0

SLAVE STATUS OFFLINE

00,00,00,00,00,00,00,00

00,00,00,00,00,00,00,00

00,00,00,00,00,00,00,00

00,00,00,00,00,00,00,00

00,00,00,00,00,00,00,00

00,00,00,00,00,00,00,00

CASHABLE IN 00000000

NON CASHABLE IN 00000000

PROMOTIONAL IN 00000000

CASHABLE OUT 00000000

NON-CASHABLE OUT 00000000

PROMOTIONAL OUT 00000000

LAST

PREV

Slot Accounting System Information

Slot Accounting System Information consists of a summary of Advance Fund Transfers (AFT). Also shown is the most recent transmission from the Host in hexadecimal notation, the Slave Address, and status.

Additional AFT Transaction Screens

ACCOUNTING	DIAGNOSTICS	CONFIGURATION	CONFIGURATION	EXIT
-------------------	--------------------	----------------------	----------------------	-------------

SLOT ACCOUNTING SYSTEM INFORMATION
EFT NON-CASHABLE CREDIT HISTORY

00,00,00,00,00,00,00,00
00,00,00,00,00,00,00,00
00,00,00,00,00,00,00,00
00,00,00,00,00,00,00,00
00,00,00,00,00,00,00,00
00,00,00,00,00,00,00,00

	LAST							PREV
--	------	--	--	--	--	--	--	------

AFT Non-Cashable Credit History

Host AFT records include separate screens that show the last five transactions and the transmission from the Host in hexadecimal notation for the following five categories: (1)Non-Cashable and (2)Cashable Credit Transactions, (3)Promotional Credit Transactions, (4) System Collect Transactions, and (5)Hopper Collect Transactions.

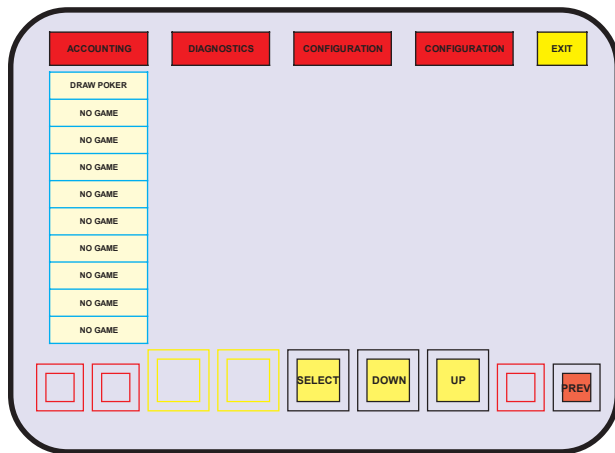
Each of the five screens are similar to the example shown for AFT Non-Cashable Credit History

Accounting (cont.)

ACCOUNTING

WIN RECORDS

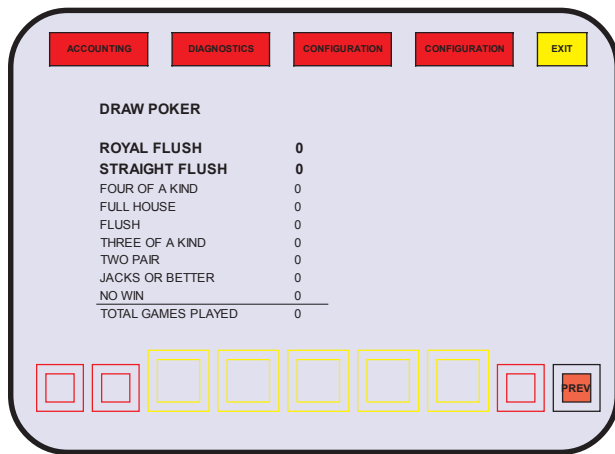
WIN RECORDS



WIN RECORDS Sub Menu

Selecting WIN RECORDS presents a sub menu listing of the installed games.

Draw Poker (example) Win Records

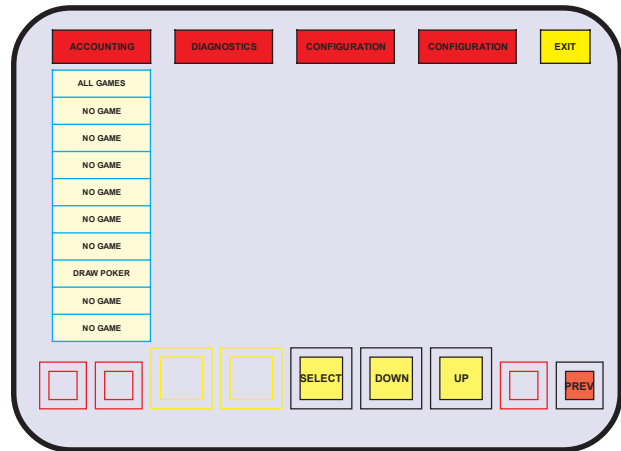


Win Records sub menu for DRAW POKER

When a game's text is selected, a listing of possible results, along with the number of occurrences, is presented.

GAME RECALL

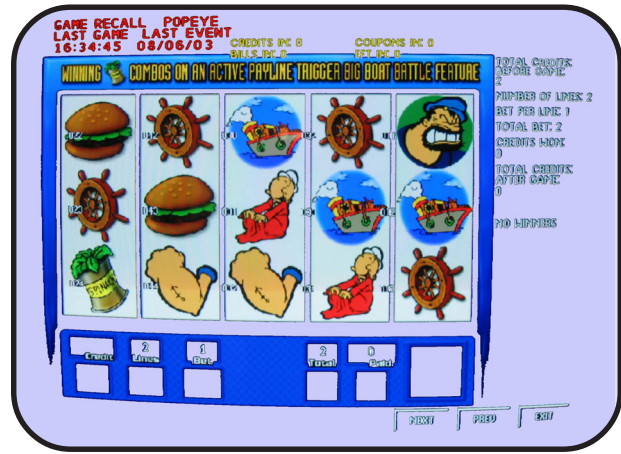
GAME RECALL



Game Recall Sub Menu

Selecting GAME RECALL presents a sub menu headed by the category ALL GAMES, and a listing of the games.

All Games



Game Recall (Popeye example)

Fifty events in occurrence order are available for review. The display includes the date and time the event occurred. An "event" is a completed game, or COLLECT. NEXT and PREV scroll through the 50 events.

Individual Game

Selecting an individual game from the multi-game menu will display the previous two completed games for the selected Personality.

Secondary Device Admin.

SD ADMIN

Selecting `SD ADMIN` presents a listing of possible results, along with the number of occurrences relating to the secondary device installed on the machine.

Validation History

VALIDATION HISTORY

PRINTED TICKET HISTORY provides a list of the last 35 voucher pays if the machine hopper is configured for SEIKO PRINTER or COIN AND SEIKO PRINTER. NEXT and PREV scroll through the 35 occurrences.

Redemption History

REDEMPTION
HISTORY

ACCOUNTING		DIAGNOSTICS		CONFIGURATION		CONFIGURATION		EXIT	
REDEMPTION HISTORY									
TIME	DATE	TYPE	VALIDATION NUMBER			AMOUNT		NUMBER	
CP - COUPON PROMOTIONAL CC - COUPON CASHABLE VP - VOUCHER PROMOTIONAL VC - VOUCHER CASHABLE									
☐	☐	☐	☐	☐	☐	☐	☐	☐	☒

Redemption History

REDEEM TICKET HISTORY provides a list of the last 35 voucher redemptions if the machine hopper is configured for SEIKO PRINTER or COIN AND SEIKO PRINTER. NEXT and PREV scroll through the 35 occurrences.

Diagnostics

DIAGNOSTICS

The Game Maker® provides user-controlled diagnostic functions for calibration and troubleshooting.

Diagnostics Sub Menu

The **DIAGNOSTICS** sub menu provides access to **PIO TEST**, **HOPPER TEST**, **PRINTER TEST**, **CRT COLOR**, **TOUCH SCREEN**, **SCREEN SIZE**, **SOUND TEST**, **SIO TEST**, **COIN/BILL ACCEPTOR** and **MEMORY TEST**.

The diagram shows a control panel with a central vertical column of buttons and a top row of four buttons. Below the central column is a row of six buttons, and at the bottom are two more buttons. The buttons are labeled as follows:

- Top row (left to right): ACCOUNTING, DIAGNOSTICS, CONFIGURATION, CONFIGURATION, EXIT.
- Central column (top to bottom): PIO TEST, HOPPER TEST, PRINTER TEST, CRT COLOR, TOUCH SCREEN, SCREEN SIZE, SOUND TEST, COMIBILL ACCEPTOR, SIO TEST, MEMORY TEST.
- Bottom row (left to right): LEFT, RIGHT, SELECT, DOWN, UP, and a button with a red border and no text.
- Bottom-most row (left to right): a button with a red border and no text, and a button with a red border and the text PREV.

Audit Key Menu

PIO Test

PIQ TEST

The control panel is organized into the following sections:

- Accounting:** A red button labeled "ACCOUNTING".
- Diagnostics:** A red button labeled "DIAGNOSTICS".
- Configuration:** Two red buttons labeled "CONFIGURATION".
- EXIT:** A yellow button labeled "EXIT".
- INPUTS:** A 4x2 grid of buttons:

DEAL	BET MAX
BET ONE	BATTERY LOW
COLLECT	2ND CHANCE
KEYSWITCH	CHANGE SVC
SPARE	SPARE
DROP DOOR	BILL DOOR
SERVICE DOOR	MAIN DOOR
LOGIC DOOR	SPARE
HOLD 1	HOLD 2
HOLD 3	HOLD 4
HOLD 5	PSEUDO CON
SPARE	SPARE
- OUTPUTS:** A 4x4 grid of buttons:

SPARE	SPARE	SPARE	DOOR OPTIC
SPARE	CON DEF1TR	SYS RESET 1	SYS RESET 2
HARD METER 1	HARD METER 2	HARD METER 3	HARD METER 4
HARD METER 5	CON 1 LOCK	CON 2 LOCK	SPARE
DOOR OPEN	LINK CON 1	KEY SOL	JACKPOT 2
JACKPOT 3	JACKPOT 1	END OF GAME	LINK CON 2
HOLD 1	HOLD 2	HOLD 3	HOLD 4
HOLD 5	FEATURE 1	GRN BILL LAMP	RED BILL LAMP
BOTTOM TOWER	MIDDLE TOWER	TOP TOWER	BET MAX
BET ONE	COLLECT	DEAL	JACKPOT BELL
- LOCK METERS:** A label above a row of four indicator lights.
- ON/OFF Switches:** Two toggle switches labeled "ON" and "OFF".
- LOCKED:** A label above a row of four indicator lights.
- AUTO-CYCLE OUTPUTS:** A row of six buttons: "ON", "OFF", "LEFT", "RIGHT", "SELECT", "DOWN", "UP", "LOCK", "PREV".

PIO Test (DIP SW2 - 4 = OFF)

Activating **PIO TEST** presents a listing of parallel inputs and outputs. Pressing any switch, **HOLD 1** for example, highlights the text in the listing to indicate proper function.

Touching the text in the `OUTPUTS` portion of the table will operate the listed output. Activating `DEAL` in the listing, for example, will light the `DEAL/DRAW/START` button lamp.

Diagnostics

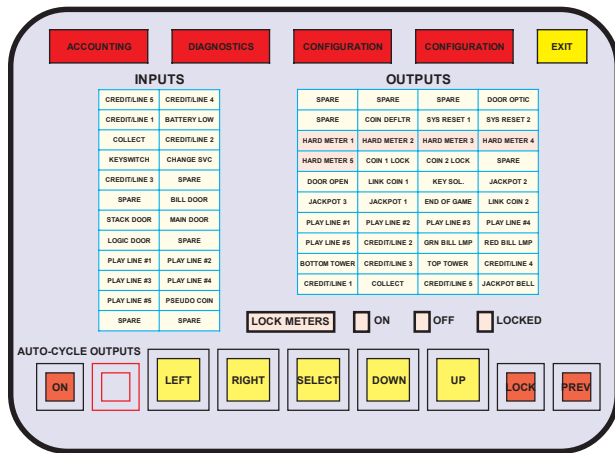
DIAGNOSTICS

PIO Test (cont.)

PIO TEST

All outputs can be momentarily activated by selecting AUTO-CYCLE OUTPUTS.

Electromechanical meters one through five are LOCKED to preserve accounting information, as indicated by red highlighting. Selecting OFF in the LOCK METERS area of the display allows testing of the electromechanical counters.



PIO Test (DIP SW2 - 4 = ON)

If DIPSW2—4 is set to ON, the INPUTS and OUTPUTS labels differ accordingly.

Hopper Test

HOPPER TEST

HOPPER TEST confirms proper function of the hopper drive circuitry and the coin level probe. Upon selection of HOPPER TEST, the status of the coin level is stated as "HOPPER BOWL SWITCH SHOWS: (status: full or not full)."

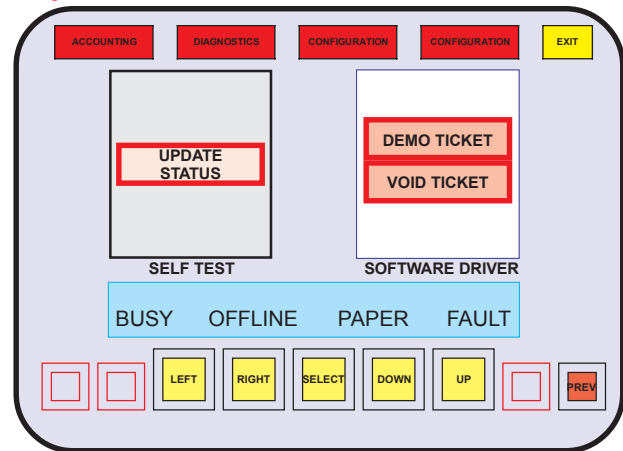
When the START icon is activated, the hopper attempts to dispense 10 coins. Each coin is counted by an on-screen counter as it passes through the coin switch. A status message appears upon completion as "HOPPER TEST COMPLETED SUCCESSFULLY" or "HOPPER FAILED". The test can be repeated by activating START.

Printer Test

PRINTER TEST

The printer test provides printer control line status and the ability to print test tickets. A functioning printer displays status text NORMAL CONDITION, and each control line indicator displays green.

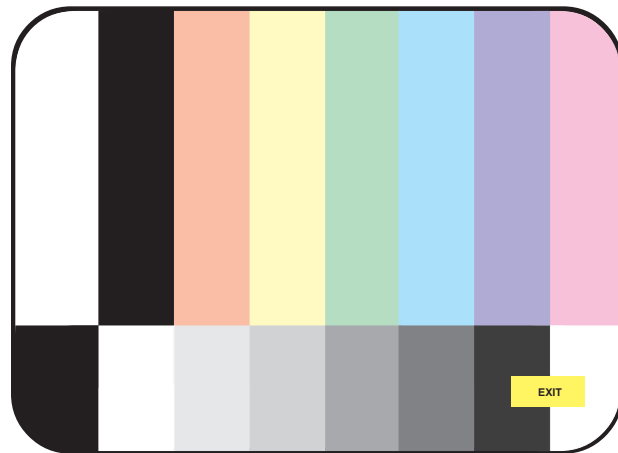
The SELF TEST icon activates the printer's self-test routine. The PRINT TICKET icon sends a test ticket through the printer.



Printer Test Sub Menu

CRT Color

CRT COLOR



CRT COLOR Sub Menu

Activating CRT color presents a color test pattern where monitor contrast, brightness, and color adjustments can be verified.

Touch Screen

TOUCH SCREEN

There are two sub menu selections under TOUCH SCREEN: CAL TOUCH SCREEN and TEST TOUCH SCREEN.

Cal Touch Screen

CAL TOUCH SCREEN

The touch screen senses capacitive changes when an area contacts human skin. It reports the X, Y coordinates serially to the MPU. CAL TOUCH SCREEN assures accurate positioning in relation to the icons presented on the screen. This procedure is forced after a SafeRAM™ Clear.

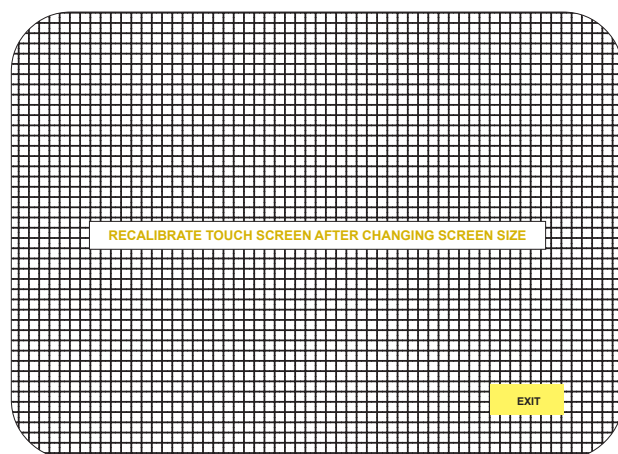
Test Touch Screen

TEST TOUCH SCREEN

Calibration of the touch screen can be verified by activating TEST TOUCH SCREEN. Once the test is activated, the machine will echo contact with the touch screen with an orange cross.

Diagnostics (cont.)

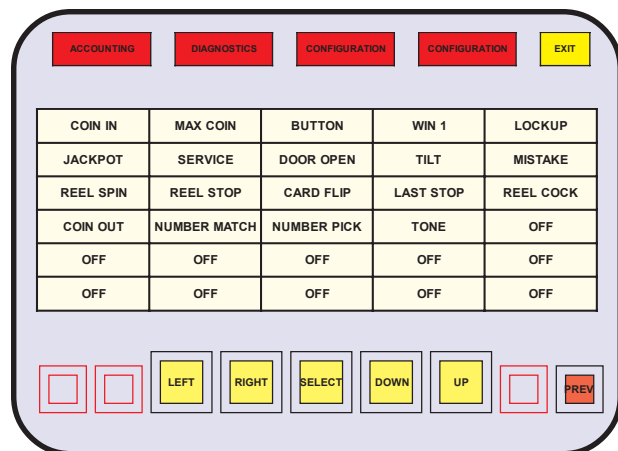
SCREEN SIZE



Screen Size

Activating **SCREEN SIZE** presents a crosshatch test pattern where monitor size, position, and pin cushion control adjustments can be verified. The touch screen must be calibrated if any monitor position adjustments have been made.

SOUND TEST

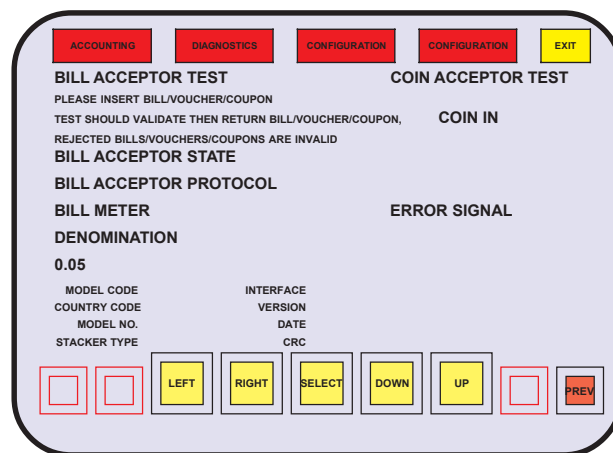


Sound Test

Upon selection of **SOUND TEST**, a matrix of events is presented. Select the event from the menu to hear the associated sound.

COIN/BILL ACCEPTOR

The **COIN/BILL ACCEPTOR** sub menu enables the coin acceptor and bill acceptor for diagnostics. When a bill is presented to the bill acceptor, the value of the bill is reported and the credits that would be posted is



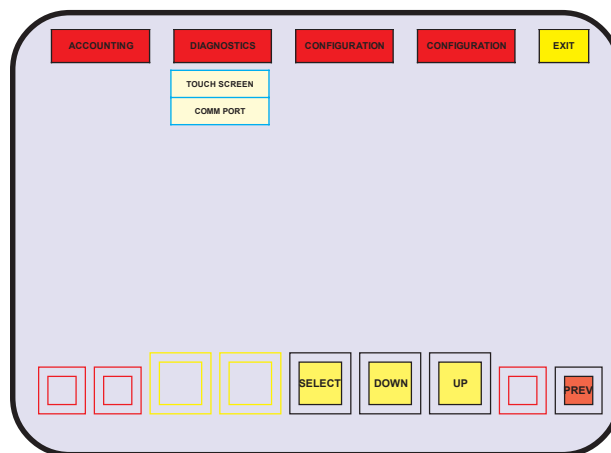
Coin Acceptor and Bill Acceptor Test

shown; or the bill is rejected. The bill is returned. The progress is displayed during the process.

Some models of bill acceptors are capable of communicating internal identification and settings. If it is available, the information is shown during diagnostics.

When a coin is inserted through the coin acceptor, the state of each signal of the coin acceptor is displayed. As a coin passes through the acceptor, the status of the signals are reported. The quantity of credited coins is displayed.

SIO TEST



Audit Key Menu

The **SIO TEST** checks the serial ports. Upon activation, a sub menu of the available serial ports is presented. For each serial port, three tests are available: INTERNAL LOOPBACK, EXTERNAL LOOPBACK, ECHO REMOTE DATA.

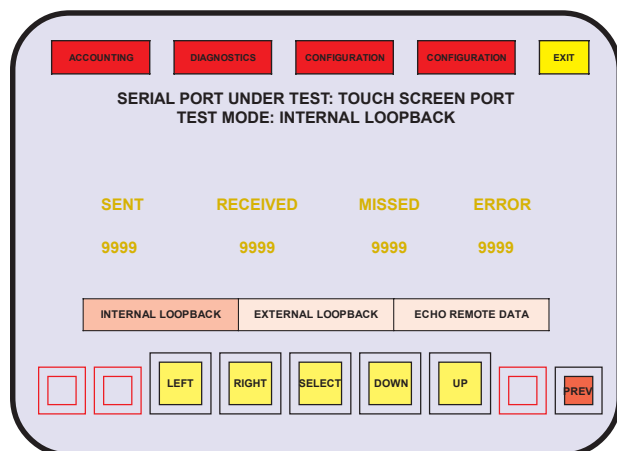
Diagnostics (cont.)

DIAGNOSTICS

SIO Test (Cont.)

Internal Loopback

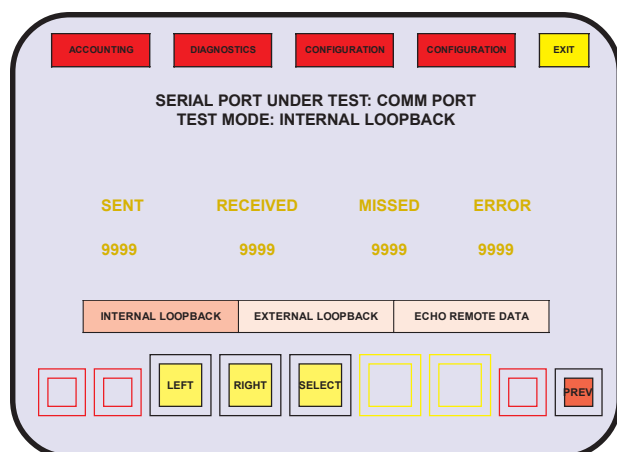
SIO TEST



SIO Test - Touch Screen Port

Not all UARTs support local loopback. UARTs not supporting this feature fail even though they work perfectly in actual use.

The port sends a data string to itself and verifies that it received it correctly. Counters record the number of bytes sent, the bytes received, bytes not received, and bytes received that did not match the byte sent.



SIO Test - Comm Port

External Loopback

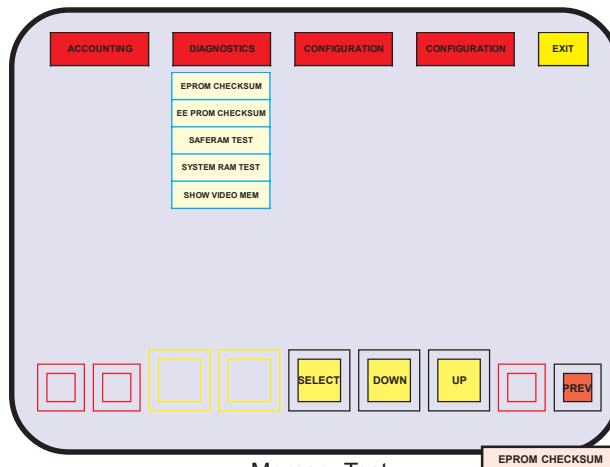
This test requires hardware modifications to connect the transmission wire to the receive wire of the port. See Module 9, Overall Wiring Diagrams for signal locations. The counters record the same information as in INTERNAL LOOPBACK.

Echo Remote Data

Counters are replaced with actual data. The data display is in HEX and ASCII.

Memory Test

MEMORY TEST

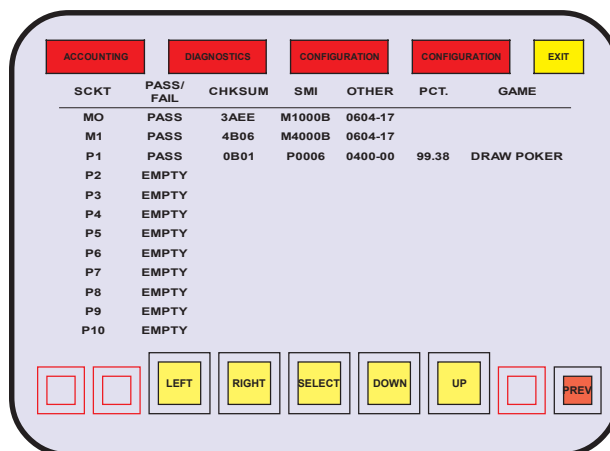


Memory Test

MEMORY TEST examines EPROM, EEPROM, and RAM. It also displays information about the contents of EPROMs and the EEPROM. The status of the EPROMs and EEPROM is evaluated by calculating a checksum and comparing it with a stored value.

RAM and SafeRAM™ are evaluated by write-read tests. SafeRAM™ is also checked by comparing a calculated checksum with the known value.

EPROM Checksum



SCKT	PASS/FAIL	CHKSUM	SMI	OTHER	PCT.	GAME
M0	PASS	3AEE	M1000B	0604-17		
M1	PASS	4B06	M4000B	0604-17		
P1	PASS	0B01	P0006	0400-00	99.38	DRAW POKER
P2	EMPTY					
P3	EMPTY					
P4	EMPTY					
P5	EMPTY					
P6	EMPTY					
P7	EMPTY					
P8	EMPTY					
P9	EMPTY					
P10	EMPTY					

EPROM Checksum

The EPROM CHECKSUM will display a listing of Main EPROMs in sockets M0 and M1, and all Personalities installed in sockets P1 through P10. The information includes socket number, pass or fail status, checksum, creation date, SMI, other labels, percentage, and the name of the game.

Diagnostics (cont.)

DIAGNOSTICS

Memory Test (Cont.)

MEMORY TEST

SCKT

The socket locations on the MPU board where EPROMs are installed are labeled as described in the following table:

MPU Board AS-03356-0246					
Label	Socket	EPROM	Label	Socket	EPROM
M0	U51	Main	P5	U52	Personality
M1	U58	Main	P6	U59	Personality
P1	U78	Personality	P7	U67	Personality
P2	U79	Personality	P8	U73	Personality
P3	U86	Personality	P9	U80	Personality
P4	U46	Personality	P10	U87	Personality

Pass/Fail

The checksum of the EPROM is calculated and compared to a know value stored in memory. Successful completion is noted in PASS/FAIL.

TYPE

The EPROM memory capacity is listed as TYPE.

CHECKSUM

The checksum of the EPROM is displayed.

DATE

The creation date of the program stored in the EPROM is displayed.

SMI

SMI is the Specific Model Information number for the game. Bally Gaming and Systems Model Development refers to SMI numbers for game reference purposes.

Other

The numbers listed under OTHER are revision levels of the development. For example, Main EPROM at M0 may have EPROM label V7M1000C2104-24. Numbers that would be included under OTHER are 2104-24.

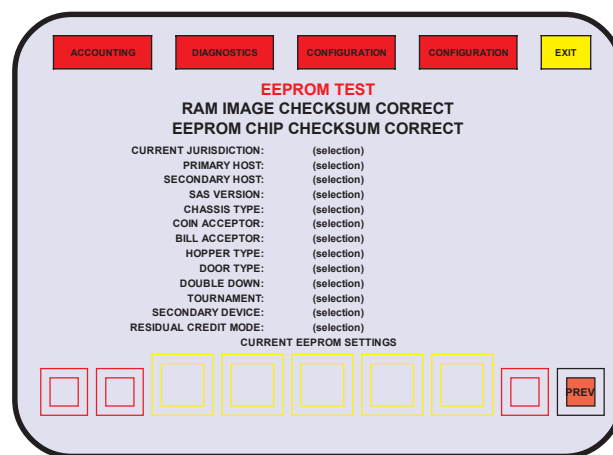
Pct.

The documented payback percentage of the game is listed under PCT. Refer to the SMI Documentation Package included with the machine for more information.

Game

A listing for the game as it appears in the Product Reference Guide and in the SMI Documentation Package appears under GAME. The Main EPROMs at M0 and M1 are not named, and show as blank.

EEPROM Checksum



EE PROM Checksum

Selecting EEPROM CHECKSUM initiates a self-test and displays the results. It also shows the configuration information currently stored.

RAM IMAGE refers to the contents of the EEPROM as it was copied to SafeRAM™, where a checksum was calculated and compared the stored value.

SafeRAM Test

Selecting SAFERAM TEST begins, then displays the results of a self-test of memory where critical machine information is stored in triplicate.

The battery status is also displayed.

System RAM Test

Selecting SYSTEM RAM TEST displays the result of a self-test of “scratchpad” memory.

Show Video Mem

SHOW VIDEO MEM displays the video image contents of Graphic EPROMs G1 and G2. Use LEFT, RIGHT, UP and DOWN icons to scroll the display.

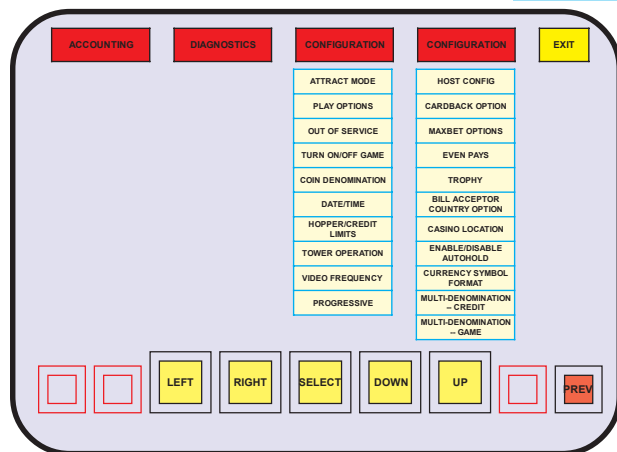
Configuration

CONFIGURATION

The configuration sub menu provides access to ATTRACT MODE, PLAY OPTIONS, OUT OF SERVICE, TURN ON/OFF GAME, COIN DENOMINATION, DATE/TIME, HOPPER/CREDIT LIMITS, TOWER OPERATION, VIDEO FREQUENCY, PROGRESSIVE, HOST CONFIG, CARDBACK OPTION, MAXBET OPTIONS, EVEN PAYS, TROPHY, CASINO LOCATION, ENABLE/DISABLE AUTOHOLD, CURRENCY SYMBOL FORMAT, MULTI-DENOMINATION--CREDIT and MULTI-DENOMINATION--GAME.

ATTRACT MODE

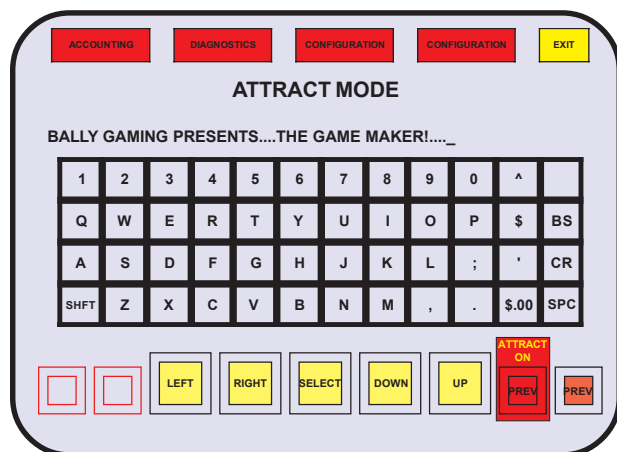
ATTRACT MODE



Audit Key Menu

The attract feature can be turned ON or OFF. If the feature is ON, the Game Maker® displays an attract feature after two minutes of inactivity with no credits.

A message scrolls across the screen. The default attract message is "BALLY GAMING PRESENTS. . . THE GAME MAKER! . . ." After 15 seconds the game menu appears. Ten seconds later, each individual game screen displays for five seconds. After the last game screen displays, the sequence repeats.



ATTRACT MODE Text Entry Keyboard

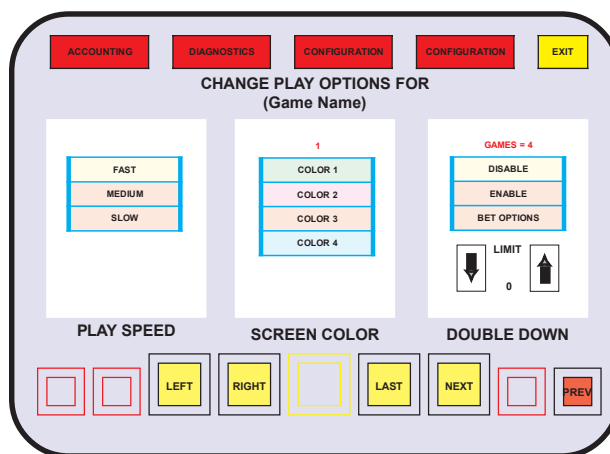
The message may contain up to 1,000 characters. To change the message, select CLEAR to erase the current text. Enter the new message by selecting the appropriate letters on the touch screen keyboard. Use the SPC key to add spaces between words. Extra spaces after the end of the message improves readability.

Select BS (backspace) to erase the last letter entered. SHFT (shift) adds more characters to the keyboard. When finished entering letters, select SAVE to keep the new message.

If the attract feature is OFF, the screen reverts to the game installed in Personality socket P1.

PLAY OPTIONS

PLAY OPTIONS



Play Options

(SPEED, SCREEN COLOR and DOUBLE DOWN)

The game speed, color scheme, and double-down are configured for each game in the play options sub menu. Selecting LAST and NEXT scrolls the installed Personalities for configuration.

Play Speed

PLAY SPEED refers to how fast cards are dealt, numbers are chosen, or how long the reels spin. Select the FAST, MEDIUM OR SLOW icon to set the play speed for the selected game.

Screen Color

Four color schemes are available for each game. The number representing the current setting is shown above the selections. Select one of the COLOR icons to choose a color scheme.

Configuration (cont.)

CONFIGURATION

PLAY OPTIONS (cont.)

PLAY OPTIONS

Double Down

The **DOUBLE DOWN** feature allows the Player the opportunity to increase the total win of a game by playing a double down game after the original game has completed. Double down is enabled during EEPROM optioning. Not all Personalities support the double down feature. If the double down feature is not available, it displays as a shaded icon on the play options screen.

LIMIT is the maximum double down win. The **UP** and **DOWN** arrow icons adjust **LIMIT**. If a double down win exceeds **LIMIT**, double down is not offered to the Player. The selection for **LIMIT** is for all Personalities, not just the game under configuration.

Select **ENABLE** to offer double down to a Player for the game under configuration. To configure the double down options, select **BET OPTIONS**. The double down box displays three new icons: **TOTAL WIN**, **HALF WIN**, and **PLAYER ADJ.**

For **TOTAL WIN**, the Player wagers the entire win on the double down hand. A double down win doubles the original win and may offer an opportunity to double down again. Another win increases the win to four times the original win. A double down loss leaves the Player with no win and ends the double down session.

For example, a win of five is wagered on a double down game and won. The opportunity to wager the total win of 10 will be offered. A win increases the total win to 20 (four times the original win of five). A loss leaves the Player with no win and ends the double down session.

For **HALF WIN**, the Player wagers half of the win on the double down hand. A double down win increases the win by half and offers the opportunity to wager half of the total win. A double down loss leaves the Player half of his original win and ends the double down session.



NOTE: A newly-installed Personality will be **OFF**. It must be turned **ON** in the **CONFIGURATION** sub menu before it will be available to a Player.

For example, a win of 10 is wagered on a double down game and won. The total win becomes 15, and the opportunity to play another double down game is offered. If the offer is accepted, seven credits are wagered. A double down win increases the total win to 22. A double down loss leaves the total win at eight, and the double down session is over.

For **PLAYER ADJ.**, the Player controls wager for the double down hand. The wager is changed by the **UP** and **DOWN** arrow icons.

Any combination of the three choices can be selected for each game.

OUT OF SERVICE

OUT OF SERVICE

A machine can be removed from service without switching power **OFF**. When removed from service, the machine displays "GAME DISABLED—OUT OF SERVICE" until it is placed back into service.

TURN ON/OFF GAME

TURN ON/OFF GAME

A game can be removed from operation without affecting bookkeeping records or the other installed games. Select the desired game's icon. The icon becomes shaded, indicating the game is disabled and removed from the game menu. Select the icon again to enable the game.

COIN DENOMINATION

COIN DENOMINATION

Coin Denomination (Information Only)

Machine denomination is set once after a SafeRAM™ Clear. The current selection can be viewed by selecting **COIN DENOMINATION**.

Configuration (cont.)

CONFIGURATION

DATE/TIME

DATE/TIME

Date and Time

Game recall and other records include a time and date stamp. The correct settings ensure accurate reconciliation when reviewing the records.

Enter the time in 24-hour format (HH:MM:SS). Enter the date as month, day, and last two digits of the year (MM:DD:YY). Example: January 31, 1999 at 4 P.M. is 16:00:00 01/31/99. After entering the time and date, use the **SELECT** icon to save the settings.

- **WIN LOCKUP LIMIT**—number of credits of a single winning combination, when exceeded, to cause a win (jackpot) lockup.
- **COIN HOPPER LOCKUP LIMIT**—number of credits, if exceeded, upon cashout that will cause a collect lockup.
- **COLLECT DROP AMOUNT**—the number of credits as coins from a coin hopper (if installed) upon a collect lockup.
- **WIN LOCKUP DROP AMOUNT**—The number of credits as coins from a coin hopper (if installed) upon a win lockup.
- **CREDIT METER HIGH LIMIT**—the maximum number of credits that will accumulate for a Player.
- **JP RESET TO CREDIT METER LIMIT**—the maximum number of credits that can be transferred to available credits by an Attendant or system Host upon a win lockup.
- **PRINTER MAX CREDITS**—the maximum credits that can be recorded upon a redeemable voucher.
- **PRINTER MIN CREDITS**—the minimum credits that can be recorded upon a redeemable voucher.

HOPPER/CREDIT LIMITS

HOPPER/CREDIT LIMITS

HOPPER/CREDIT LIMITS		
WIN LOCKUP LIMIT	ENABLED	800
COIN HOPPER LOCKUP LIMIT	ENABLED	800
COLLECT DROP AMOUNT	DISABLED	0
WIN LOCKUP DROP AMOUNT	DISABLED	0
CREDIT METER HIGH LIMIT	ENABLED	800
JP RESET TO CREDIT METER LIMIT	DISABLED	0
PRINTER MAX CREDITS	ENABLED	800
PRINTER MIN CREDITS	ENABLED	0

Hopper Payout and Credit Meter Limits

The **HOPPER/CREDIT LIMITS** sub menu allows configuration of the automated payout operation of the machine. Values can be entered for the partial payment of win lockup, the win amount that causes a lockup, the value of the credit meter that will cause a lockup upon a cashout, and the highest number of credits the machine will register.

Configuration (cont.)

CONFIGURATION

TOWER OPERATIONS

TOWER OPERATIONS

Tower Light Configuration

The Game Maker® can supports two-, three-, and four-tier towers. Use the numbered icons to display the available tower light operation. Use SELECT to choose the operation. “SAVE?” appears at the lower left of the screen. Touch YES to save the selected tower configuration.

Tower Lights	Setting	Function	Tower Display
2-Light	0	Door(s) Tilt Jackpot Service Hopper Pay Host Disabled Printer Jam or Empty Paper Low	Bottom Steady Bottom Flashing Top Steady Top Flashing Not Applicable Not Applicable Top Flashing Top Slow Flash
*3-Light	1	Door(s) Tilt Jackpot Service Hopper Pay Host Disabled Printer Jam or Empty Paper Low	Bottom / Middle Flashing (Top flash if Drop) Bottom Flashing Top Flashing Middle Flashing Not Applicable Not Applicable Middle Flashing Middle Slow Flash
4-Light	2	Door(s) Tilt Jackpot Service Hopper Pay Host Disabled Printer Jam or Empty Paper Low	Bottom Steady Top Flashing 4 th Light Steady (Light above top light) Middle Flashing Not Applicable Not Applicable Middle Flashing Middle Slow Flash
2-Light	3	Door(s) Tilt Jackpot Service Hopper Pay Host Disabled Printer Jam or Empty Paper Low	Bottom Steady Bottom Flashing Top Steady Top Flashing Top Steady Not Applicable Top Flashing Top Slow Flash
*3-Light	4	Door(s) Tilt Jackpot Service Hopper Pay Host Disabled Printer Jam or Empty Paper Low	Bottom Steady Middle Flashing Top Flashing Bottom Flashing Not Applicable Not Applicable Bottom Flashing Bottom Slow Flash
*3-Light	5	Door(s) Tilt Jackpot Service Hopper Pay Host Disabled Printer Jam or Empty Paper Low	Middle Flashing Middle Steady Top Flashing Bottom Flashing Not Applicable Not Applicable Bottom Flashing Bottom Slow Flash
2-Light	6	Door(s) Tilt Jackpot Service Hopper Pay Host Disabled Printer Jam or Empty Paper Low	Bottom Flashing or Fast Flash if Drop* Top Flashing Top Flashing Top Steady Not Applicable Top / Bottom Steady Top Flashing Bottom Slow Flash
2-Light	7	Door(s) Tilt Jackpot Service Hopper Pay Host Disabled Printer Jam or Empty Paper Low Administration	Bottom Flash or Fast Flash if Drop Top Slow Flash Top / Bottom Slow Flash Top Steady Not Applicable Top / Bottom Steady Not Applicable Not Applicable Top Fast Flash

*Compatible only with a 10-button player panel.

*Light remains illuminated until the start of the next game.

Configuration (cont.)

CONFIGURATION

Video Frequency

VIDEO FREQUENCY

The Game Maker® provides selection of 50 or 60 Hertz video timing to match the frequency of the power source.

Video Frequency

PROGRESSIVE

PROGRESSIVE

The Game Maker® can support up to four separate external progressive controllers. It is capable of bidirectional operation with one controller. Expanded progressive operation is available that supports up to 10 separate controllers with bidirectional communication.

The Game Maker has 25 independent internal single-level controllers that can be distributed among the games. Each controller can be independently configured for a progressive jackpot or merchandise award; with standard or "Mystery" operation. For more information about progressive operation, see Module, 7 Progressive Operation.

Host Configuration

Host Configuration

Some versions of Main programs support SAS® protocol. The terminal information must be configured before communications begin. Until the terminal is configured, the machine remains in "Demo Mode." VGD ADDRESS accepts any number from 1 to 127. Consult SAS® documentation for the appropriate setting. Some systems require the address to be 1. CR (carriage return) enters the selection and advances to the next item.

The SERIAL NUMBER can be any six digit number. It can be used to identify SAS® terminals.

Upon entering VGD ADDRESS and SERIAL NUMBER, a CR (carriage return) will enter the selection and automatically advance to the HOST OPTIONS sub menu.

SAS® Host Options

SAS HOST OPTIONS	
HOST OPTION	
1 HOST TYPE	STANDARD
2 HOST BONUSES	DISABLE
3 PROGRESSIVE	DISABLE
4 VALIDATION TYPE	NONE
5 REMOTE HANDPAY RESET	DISABLE
6 PRINT HANDPAY RECEIPT	DISABLE
7 HANDPAY EXCEPTION	UNSECURE
8 COMM LOSS TILT	DISABLE
9 JRCM CONTROL	SAS

SAS® Host Options

Upon entering VGD ADDRESS and SERIAL NUMBER, an opportunity to configure protocol features is presented. Touch the text of the Host option or the status to enter a configuration sub menu for the item.

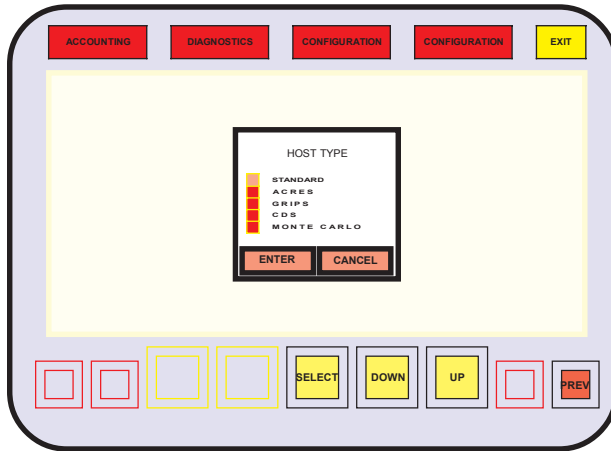
Configuration (cont.)

CONFIGURATION

Host Configuration (cont)

HOST CONFIG

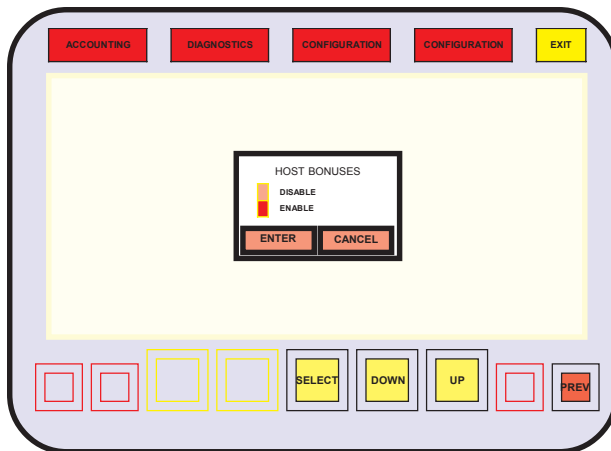
Host Type



Host Type

Hosts from some gaming equipment manufacturers vary the implementation of the SAS® protocol. The Host Type sub menu allows the selection of the operation by touching the icon beside the manufacturer of the Host.

Host Bonuses and Progressive

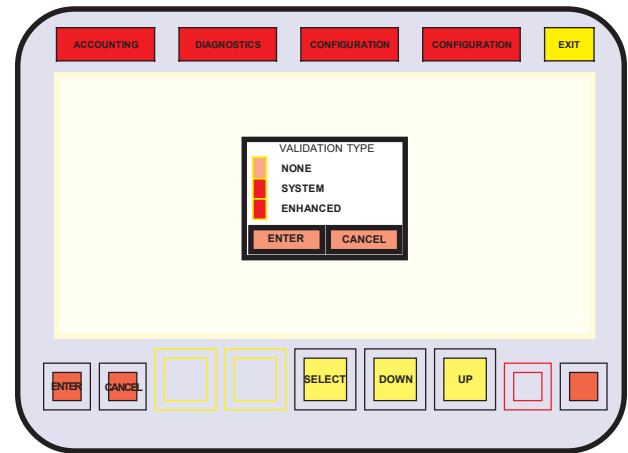


Enable/Disable

The SAS® protocol provides the capability for a Host to control award functions that usually require additional external bonus controllers or progressive jackpot controllers.

If the features are enabled in the Host and the machine, the Host can award additional credits to a Player, independent of the machine's pay table. Also, the Host can maintain a progressive jackpot, and award the jackpot to a winning Player's machine. Touching the text of the status of the feature activates a sub menu to change the enable or disable state.

Validation Type



Validation Type

The SAS® protocol provides a method to verify vouchers and coupons presented by a Player for wager or payment; and Host validation of payments made by an Attendant.

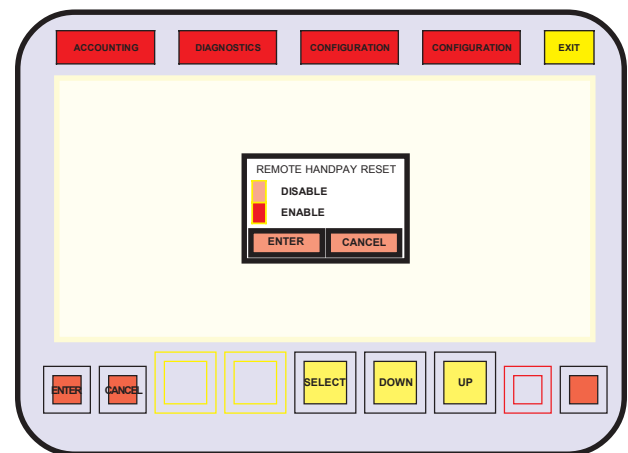
SYSTEM

System validation allows the host to provide a 16-digit validation number, a system ID and sequence number.

ENHANCED

The machine generates a 16-digit validation number. The machine will disable until an ID and starting sequence number has been configured by the Host. Enhanced validation also allows the machine to validate Attendant payments where no receipt is printed.

Remote Handpay Reset



Remote Handpay Reset

If provided by the Host, a machine can be configured to allow a win lockup or credit collect lockup to be released automatically by the Host rather than by an Attendant turning a key switch.

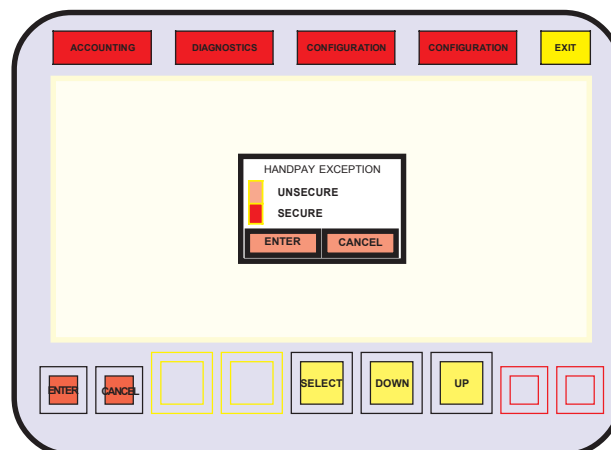
Configuration (cont.)

Host Configuration (cont.)

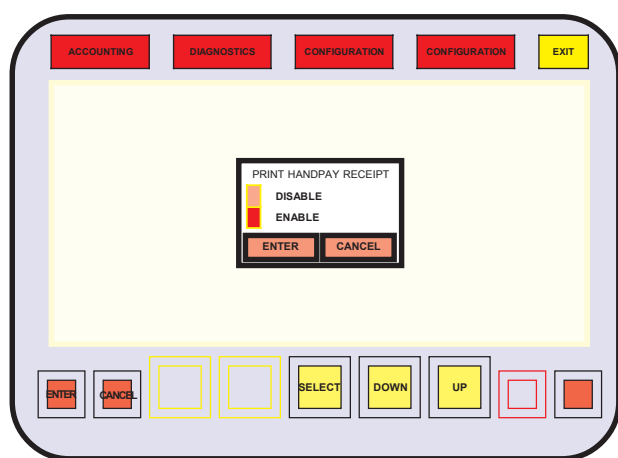
CONFIGURATION

HOST CONFIG

Handpay Exception



Handpay Exception



Print Handpay Receipt

The machine can be configured to be compatible with SAS® protocol requirements for a win or credit collect lockup. Upon a lockup, the Host is signaled. It is signaled again when an Attendant releases the lockup.

If the option is set to UNSECURE, the information about the lockup is removed from the buffer after the actuation of the key switch. If there is communication failure between the machine and the Host, the information could be lost by the Host.

With the option set to SECURE, the machine will store up to five lockup events and continue to signal the Host and respond with information until the queue is empty.

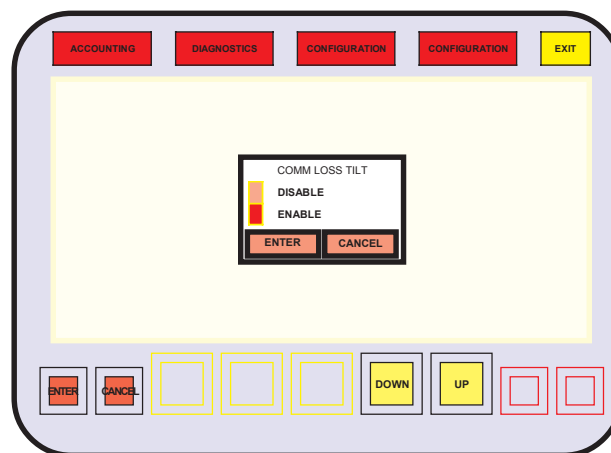
Print Handpay Receipt

If the machine has a printer, it can be configured to print a record of each payment to a Player by an Attendant



WARNING: An SDS® Host will not support the win lockup release feature. If an SDS Host is the primary or secondary Host, the feature will not be available.

Communication Loss Tilt



Communication Loss

The machine can be configured to disable itself if communication is lost between the machine and the Host.

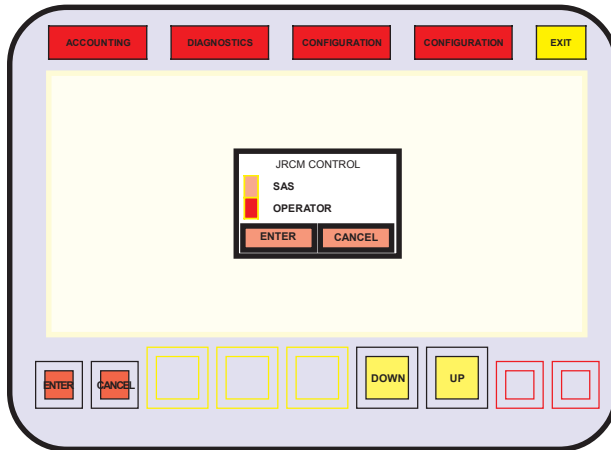
Configuration (cont.)

CONFIGURATION

Host Configuration (cont)

HOST CONFIG

JRCM Control



JRCM Control

The machine can be configured to release win lockups and accumulate the credits in the credit display rather than have the credits cancelled and paid by an Attendant.

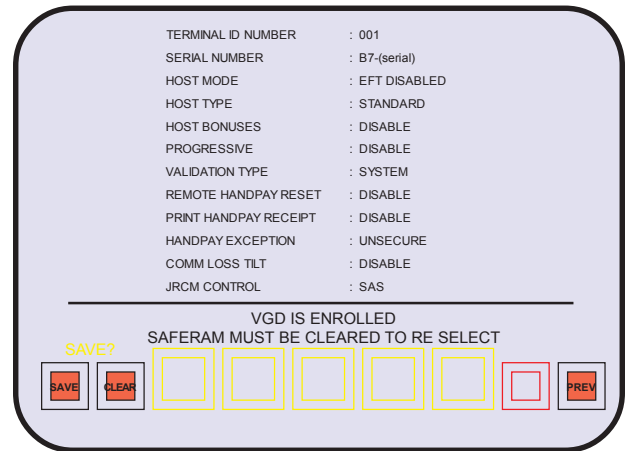
SAS

A win lockup that falls within parameters set in the HOPPER/CREDIT LIMITS sub menu, will accumulate as credits upon actuation of a second key switch by an Attendant. The Audit key switch will be disabled and not allow the credits to be cancelled and paid by the Attendant.

OPERATOR

A win lockup that falls within parameters set in the HOPPER/CREDIT LIMITS sub menu can either be cancelled and paid by an Attendant by actuating the Audit key switch; or released to accumulate as current credits when the Attendant actuates a second key switch.

Machine Enrollment



VGD Enrolled

Upon exiting the Host Configuration sub menu, a summary of settings is presented. The settings must be confirmed by touching the SAVE icon. Touching CANCEL will discard all Host Configuration settings and the machine will remain in Demo Mode.

Table of Host Configuration Selections

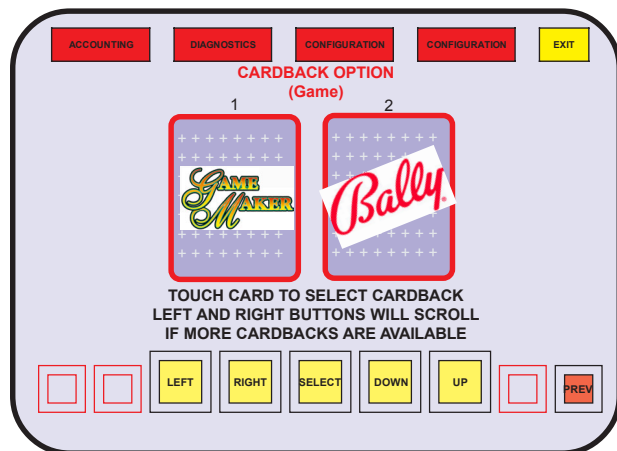
HOST CONFIGURATION		
TITLE	SELECTION	DEFINITION
HOST TYPE	STANDARD	Implementation of SAS® protocol for most manufacturers of Host systems.
	ACRES	Interpretations of SAS® protocol unique to Hosts manufactured by Acres Gaming, Inc.
	GRIPS	Interpretations of SAS® protocol unique to Hosts manufactured by GRIPS Electronic GmbH
	CDS	Interpretations of SAS® protocol unique to Hosts manufactured by Aristocrat Technologies, Inc.
	MONTE CARLO	Another variation of SAS® protocol.
HOST BONUSES	ENABLE or DISABLE	If enabled, the Host can award additional credits to a Player, independent of the payable of a game.
PROGRESSIVE	ENABLE or DISABLE	If enabled, a progressive Jackpot can be controlled by the Host rather than from an additional progressive controller.
VALIDATION TYPE	NONE	There are no restrictions upon a redeemable ticket (Not recommended).
	SYSTEM	The System provides a 16-digit validation number at the time of a cashout that the machine adds to a redeemable ticket. The numbers must verify before the ticket will be paid.
	ENHANCED	The machine provides a 16-digit validation number to a redeemable ticket using a Host-provided seed received by the machine at configuration.
REMOTE HANDPAY RESET	ENABLE or DISABLE	If enabled, a Jackpot Lockup may be released by the Host rather than by an Attendant
PRINT HANDPAY RECEIPT	ENABLE or DISABLE	If enabled, the machine can dispense informational receipts as well as redeemable vouchers.
HANDPAY/ EXCEPTION	UNSECURE	A lockup condition is processed by the machine, and communicated normally to the Host.
	SECURE	A minimum of five lockup events are buffered by the machine if the Host experiences communication faults.
COMM LOSS TILT	DISABLE	If enabled, a loss of communication with the Host causes a fatal exception at the machine.
JRCM CONTROL	SAS	The Host has the ability to enable and disable the Audit key and the Second key switches.
	OPERATOR	A jackpot lockup can be released by an Attendant by one of two ways if the win falls within parameters set in the HOPPER/CREDIT LIMITS submenu. See the CONFIGURATION submenu earlier in this chapter.

Configuration (cont.)

CONFIGURATION

Cardback Option

CARDBACK OPTION



Cardback Option

Some versions of graphic EPROMs installed in MPU location G1 and G2 have a variety of cardbacks to select from. If double down is enabled and configured, any game can use an available cardback design. Otherwise, the cardbacks are used for card games. Use the DOWN and UP icons to scroll to the desired game, which displays at the top of the screen. Use the LEFT and RIGHT icons to scroll through available cardback designs. Use SELECT to associate the cardback with that game.

Maxbet Options

MAXBET OPTIONS

Current settings for the maximum credits that can be wagered for individual games can be verified from this sub menu. Not all games have a selectable MAXBET OPTION. The configuration menu only appears after a SafeRAM™ Clear.

EVEN PAYS

EVEN PAYS

When enabled, EVEN PAYS allows a partial payment of a win lockup as coins or a voucher so that the remaining amount an Attendant must pay is an even amount.

For example, depending upon the setting of EVEN HANDPAY, a collect lockup of 1,111 credits will cause the machine's hopper to dispense coins in one of the following ways:

Even Pays for 1,111 Credits	
Setting	Result
Off	No coins from the hopper and lockup for an Attendant to pay 1,111 credits.
10	One coin from the hopper and lockup for an Attendant to pay 1,110 credits.
100	11 coins from the hopper and lockup for an Attendant to pay 1,100 credits.
1000	111 coins from the hopper and lockup for an Attendant to pay 1,000 credits.

TROPHY

TROPHY

Some game Personalities offer additional awards for cumulative wins. If a malfunction changes the quantity, the TROPHY options allows a technician to enter the correct value once after a SafeRAM™ Clear.

Bill Acceptor Country Option

BILL ACCEPTOR COUNTRY OPTION

The Game Maker® is compatible with a variety of bill acceptors. The operation is selected when the machine is placed into operation (see page 12). BILL ACCEPTOR COUNTRY OPTION allows the Operator to view the current setting.

CASINO LOCATION

CASINO LOCATION

A property may have a designation within a Host system. Machines must be configured to operate with the Host, however the setting for the option may be overwritten by the Host once communication is established.

Enable/Disable Autohold

ENABLE/DISABLE AUTOHOLD

If the Main program version offers the feature where the cards of Players best poker hand is automatically held, ENABLE/DISABLE AUTOHOLD allows the feature to be turned OFF.

Currency Symbol Format

CURRENCY SYMBOL FORMAT

Denomination mode is selected when the machine is placed into operation (see page 12). CURRENCY SYMBOL FORMAT allows the Operator to view the current setting.

Multi-Denomination—Game

MULTI-DENOMINATION--GAME

he configuration settings for wager units for each game is available for review.



NOTE: Some versions of Game Maker® Mains may not include every feature described in this manual.



Glass and Decals

MODULE 3A

MK3A-V7MOD-0001

GLASS AND DECALS

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Module 3A

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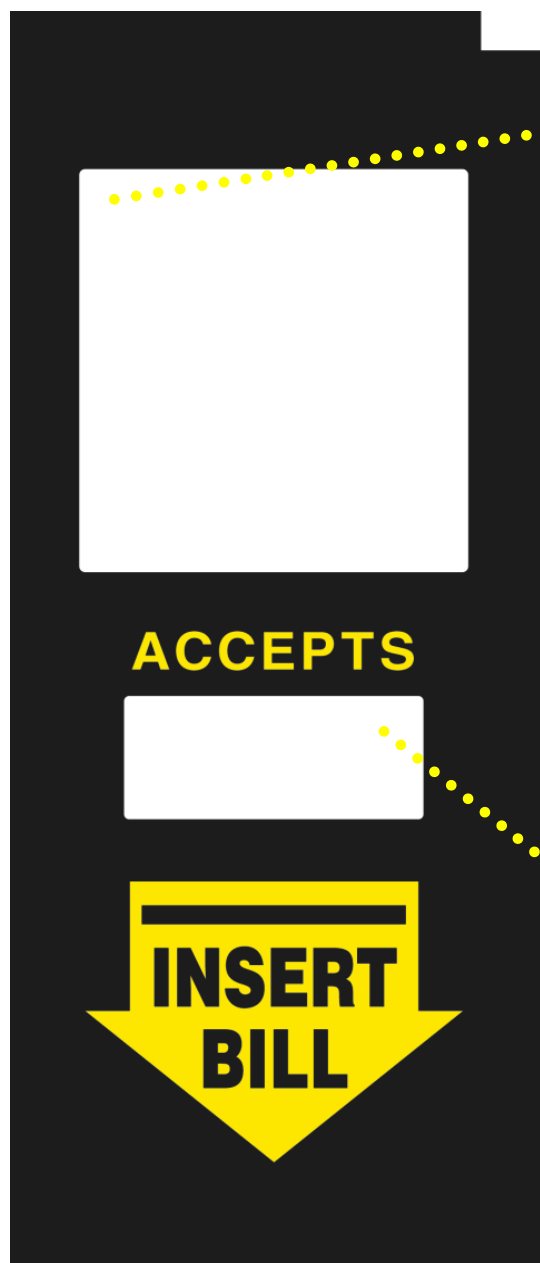


Game Maker® V7214



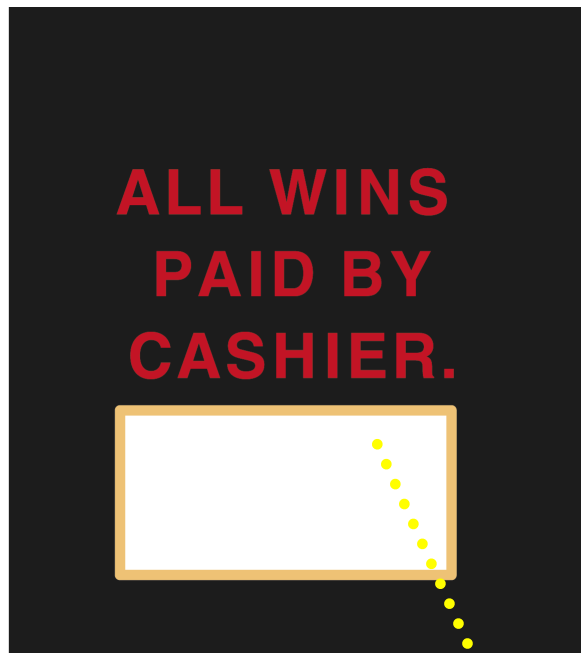
Game Maker® V7214 (cont.)

Decal Examples

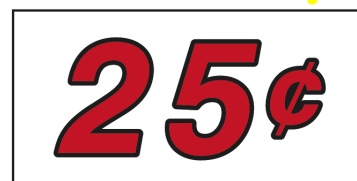


D161-00001-ENG+
Door Panel With Bill Acceptor, English

Decal Part #	Description
D161-00001-ENG+	Door Panel With Acceptor, English
D161-00001-GERM	Door Panel With Acceptor, German
D161-00001-SP++	Door Panel With Acceptor, Spanish
D161-00002-BLNK	Door Panel, No Acceptor (No D156... Required)
D161-00006-USSR	Door Panel With Acceptor, Russian



D170-0063-++++
Lockup Decal
Page 3A-7



D100-25C++-BERM
Denomination
Page 3A-11



D156-00003-US\$ BILL
RANGE
Page 3A-9

Game Maker® V7214 (cont.)

Lockup Decals D170...

Decal Part #	Description
D170-00001-++++	UP TO 100 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT.
D170-00001-CMOD	UP TO 100 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00002-++++	UP TO 200 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT.
D170-00002-CMOD	UP TO 200 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00003-++++	UP TO 300 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT
D170-00003-CMOD	UP TO 300 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00004-++++	UP TO 400 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT.
D170-00004-CMOD	UP TO 400 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00004-NJ++	400 COINS OR MORE PAID BY ATTENDANT
D170-00005-++++	UP TO 500 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT.
D170-00005-CMOD	UP TO 500 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00005-FC++	500 COINS PAID BY MACHINE BALANCE PAID BY ATTENDANT. French Canadian and English text.
D170-00005-FCMC	JACKPOTS OF 500 COINS OR MORE PAID BY ATTENDANT. + CREDIT MODE. French Canadian and English text.
D170-00005-NJ++	500 COINS OR MORE PAID BY ATTENDANT.
D170-00006-++++	UP TO 600 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT.
D170-00006-CMOD	UP TO 600 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00007-++++	UP TO 1000 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT.
D170-00007-CMOD	UP TO 1000 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00007-NJ++	1000 COINS OR MORE PAID ATTENDANT
D170-00008-++++	UP TO 1200 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT.
D170-00008-CMOD	UP TO 1200 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00009-++++	PLAY 1 TO 5 COINS. 5TH COIN ROYAL FLUSH PAID BY ATTENDANT.
D170-00009-CMOD	PLAY 1 TO 5 COINS. 5TH COIN ROYAL FLUSH PAID BY ATTENDANT. + CREDIT MODE
D170-00010-++++	ALL PAYS IN CREDITS plus 18 year-old disclaimer. Denomination Opening.
D170-00011-++++	ALL PAYS IN CREDITS plus 21 year-old disclaimer. Denomination Opening.
D170-00011-COLO	ALL PAYS IN CREDITS plus 21 year-old disclaimer. ONLY HIGHEST WINNER PAID. Denomination Opening.
D170-00012-++++	PLAY 1-10 COINS. + PLAYER SELECT. (Blackjack)
D170-00013-++++	PLAY 1-10 COINS. (Blackjack)
D170-00014-FC++	PLAY 1-5 COINS. 500 COINS PAID MACHINE, BALANCE PAID BY ATTENDANT. + CREDIT MODE. French Canadian text.
D170-00015-FC21	PLAY 1-10 COINS. 500 COINS PAID BY MACHINE, BALANCE PAID BY ATTENDANT. + CREDIT MODE. French Canadian Text (Blackjack)
D170-00016-++++	PLAY 1-20 COINS. (Blackjack)
D170-00017-++++	PLAY 1-5 COINS. (Blackjack)
D170-00018-++++	PLAY 1-10 COINS. UP TO 1000 COINS PAID MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00019-++++	PLAY 1-10 COINS. UP TO 400 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT. + CREDIT MODE
D170-00020-++++	PLAY 1-20 COINS. + CREDIT MODE (Blackjack)
D170-00021-++++	PLAY 1-5 COINS. + CREDIT MODE (Blackjack)
D170-00022-++++	PLAY 1-20 COINS. (Blackjack)
D170-00023-++++	PLAY 1-5 COINS. UP TO 1000 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT.
D170-00024-++++	UP TO 239 COINS PAID MACHINE. ALL OTHER WINS PAID BY ATTENDANT.



Game Maker® V7214 (cont.)

Lockup Decals D170... (cont.)

Decal Part #	Description
D170-00025-NORW	GEVINSTER UTBETALES I GAVEKORT KAN KUN BENYTTES PA STEDET INNKAŠT Kr. 1.-/5.-/10.- (Norway) ALL PAYS IN CREDITS, INSERT KRONER 1/5/10)
D170-00026-++++	ALL PAYS IN CREDITS, V7000 MONTE CARLO MARKET
D170-00027-++++	WINS OF \$100.00 OR MORE REQUIRE ATTENDANT
D170-00028-++++	JACKPOTS OF \$1200.00 OR MORE PAID BY ATTENDANT.
D170-00029-++++	ALL WINS PAID BY MACHINE.
D170-00030-++++	JACKPOTS OF 1600 COINS OR MORE PAID BY ATTENDANT.
D170-00031-++++	PLAY 1-20 COINS. 200 COINS PAID BY MACHINE, ALL OTHER WINS PAID BY ATTENDANT
D170-00032-FR++	TOP JACKPOT PAID BY ATTENDANT + FRENCH MALFUNCTION DISCLAIMER. French text.
D170-00033-++++	TOP JACKPOT PAID BY ATTENDANT.
D170-00034-++++	JACKPOTS OF 800 COINS OR MORE PAID BY ATTENDANT
D170-00035-++++	UP TO 2000 COINS PAID BY MACHINE. BALANCE PAID BY ATTENDANT.
D170-00036-ARMY	ALL WINS PAID BY MACHINE. 3000 COIN MAXIMUM WIN PER GAME.
D170-00037-++++	JACKPOTS OF \$1000.00 OR MORE PAID BY ATTENDANT.
D170-00038-++++	JACKPOTS OR CREDITS OF 1000 OR MORE PAID BY ATTENDANT.
D170-00039-++++	JACKPOTS OR CREDITS OF 1000 OR MORE PAID BY ATTENDANT. + CREDIT MODE
D170-00040-++++	JACKPOTS OR CREDITS OF 400 OR MORE PAID BY ATTENDANT. + CREDIT MODE
D170-00041-SP++	PROIBIDO O JOGO PARA MENORES DE 18 ANOS. Spanish age disclaimer
D170-00042-++++	JACKPOTS OR CREDITS OF 400 OR MORE PAID BY ATTENDANT
D170-00043-BALL	BALLY GAMING LOGO DECAL W/D100 DENOMINATION OPENING. AUSTRALIA
D170-00044-PORT	Portuguese text, UP TO 400 COINS PAID MACHINE. ALL OTHER WINS PAID BY ATTENDANT. "A máquina paga directamente até fichas. Prémios superiores são pagos pelos empregados."
D170-00045-FC++	MACHINE PAYS UP TO 1000 COINS. LARGER AMOUNTS PAID BY ATTENDANT. French Canadian and English text
D170-00046-++++	JACKPOTS OVER 4000 COINS PAID BY ATTENDANT.
D170-00047-++++	JACKPOTS OVER 1000 COINS PAID BY ATTENDANT.
D170-00048-++++	JACKPOTS OF \$800 OR MORE PAID BY ATTENDANT.
D170-00049-SP++	JACKPOTS OF 1000 COINS OR MORE PAID BY ATTENDANT. Spanish text (PREMIOS DE 1000 MONEDAS O MAS PAGOS POR EL DEPENDIENTE)
D170-00050-SP++	JACKPOTS OF 400 COINS OR MORE PAID BY ATTENDANT. Spanish text (PREMIOS DE 400 MONEDAS O MAS PAGOS POR EL DEPENDIENTE)
D170-00051-PLA5	PLAY 5 COINS
D170-00053-FC++	MACHINE PAYS UP TO 200 COINS. LARGER AMOUNTS PAID BY ATTENDANT. French Canadian and English text
D170-00054-FC++	MACHINE PAYS UP TO 500 COINS. LARGER AMOUNTS PAID BY ATTENDANT. French Canadian and English text
D170-00055-++++	THIS MACHINE CONTAINS ADDITIONAL FEATURE GAMES
D170-00056-SP++	JACKPOTS OF 400 COINS OR MORE PAID BY ATTENDANT. Special Spanish text for some South America markets. PREMIOS DE 400 MONEDAS O MAS PAGOS POR EL ASISENTE
D170-00057-++++	NO ONE UNDER 18 YEARS OF AGE MAY PLAY
D170-00058-++++	NO ONE UNDER THE AGE OF 21 ALLOWED TO PLAY OR OPERATE. White text on black background
D170-00060-\$25+	JACKPOTS OF \$1195 OR MORE PAID BY ATTENDANT
D170-00061-USSR	400 COINS PAID BY MACHINE, BALANCE PAID BY ATTENDANT. Russian text.
D170-00062-TOKN	INSERT \$1 = 5 CREDITS X 20C
D170-00063-PARS	JACKPOTS OF 1000 COINS OR MORE PAID BY ATTENDANT. Custom lockup for Paris Casino, white background with blue copy and red Eiffel Tower
D170-00063-++++	ALL WINS PAID BY CASHIER
D170-00064-PARS	JACKPOTS OF 400 COINS OR MORE PAID BY ATTENDANT. Custom lockup for Paris Casino, white background with blue copy and red Eiffel Tower

Game Maker® V7214 (cont.)

Bills Accepted Decals D156...

Decal Part #	Description
D156-00001-RAND	RANDS R10,R20 / R10,R20,R50 / R10,R20,R50,R100 / R10,R20,R50,R100,R200
D156-00002-DM++	DEUTSCHE MARKS 10DM,20DM / 10DM,20DM,50DM / 10DM,20DM,50DM,100DM / 100DM
D156-00003-US\$A	U.S. DOLLARS \$1 / \$1,\$5 / \$1,\$5,\$10,\$20 / \$1,\$5,\$10,\$20,\$50,\$100
D156-00003-US\$B	U.S. DOLLARS \$10 / \$20 / \$50 / \$100 / \$10,\$20 / \$5,\$20 / \$5,\$10,\$20,\$50,\$100
D156-00003-US\$C	U.S. DOLLARS \$10 / \$20 / \$50 / \$100 / \$10,\$20 / \$20,\$100 / \$50,\$100 / \$10,\$20,\$50,\$100 / \$20,\$50,\$100/\$10,\$20,\$50
D156-00003-US\$D	U.S. DOLLARS \$1,\$5,\$10,\$20,\$50,\$100
D156-00004-LIRA	ITALIAN LIRA LIT 5K,10K,50K,100K / 10K / 50K / 100K
D156-00005-FCAN	French Canadian With Canadian Bill Orientation. ACCEPTS 5\$,10\$,20\$ / 10\$ & 20\$ / 10\$,20\$,50\$ / 5\$,10\$
D156-00006-RM++	MALAYSIAN RINGETT RM10,RM50,RM100
D156-00007-FIM+	FINLAND FIM 50 & FIM 100
D156-00008-ÖS++	AUSTRIAN SCHILLINGS 20 ÖS,50 ÖS,100 ÖS,500 ÖS & 1000 ÖS
D156-00009-USSR	RUSSIA RUBELS R5.000,R10.000,R50.000,R100.000 / R10.000,R50.000,R100.000
D156-00010-HGRY	HUNGARY F1.000,F2.000,F5.000,F10.000
D156-00011-BELF	BELGIAN FRANCS BF 1.000 & BF 2.000
D156-00012-KRON	ESTONIAN KRONA 25,50,100,500
D156-00013-ESC+	FOR 25 ESC, 1.000 ESC & 2.000 ESC / REV ADD 1000,2000,5.000 & 10.000
D156-00014-EEK	50 EEK,500 EEK / REV 2/23/00, 10,25,50,100,500
D156-00015-ATS+	AUSTRIAN SCHILLINGS ATS 50,100,500,1000
D156-00016-FCAN	FRENCH CANADIAN MARKET, WITH CANADIAN BILL ORIENTATION. ACCEPTS 5\$, 10\$, 20\$/10\$ & 20\$/10\$, 20\$, 50\$/5\$
D156-00017-SP++	FOR ARGENTINA AND OTHER S.A. JURISDICTIONS. "\$2,\$5,\$10,\$20,\$100"
D156-00018-DR++	FOR GREECE. DR 1.000, DR 10.000
D156-00019-WON+	KOREAN CURRENCY. "1,000 WON, 5,000 WON, 10,000 WON"
D156-00020-USSR	RUSSIAN CURRENCY AND TEXT. "10 PY6, 50 PY6, 100 PY6, 500 PY6"/REVISED 10 PY6, 50 & 100 PY6
D156-00021-BS++	BOLIARES. "BS. 5.000, BS. 2.000, BS. 1.000", REVISED 100,500,1000, & 5000
D156-00022-MALT	MALTA CURRENCY "2L,5L,10L,20L"
D156-00023-GUIL	NETHERLANDS GUILDERS 10,50,100
D156-00024-BS++	BS.500, BS.1000, BS.5000
D156-00025-SIT+	SIT 500, 1,000, 5,000
D156-00026-PARS	Custom Paris, White background with blue copy. 10-100 / 50-100 / 100
D156-00027-URUG	URUGRAY \$20, \$50, \$100, \$200, \$500, \$1000
D156-00028-FIN	FIN 50, 100, 500
D156-00029-LATS	LATS 5, 10, 20, 50, 100
D156-00030-CHLI	CHILE CURRENCY \$500, \$1,000, \$2,000,\$5,000, \$10,000
D156-00031-ARGE	ACCEPTA \$2, \$5, \$10, \$20, \$50, \$100
D156-00032-CHIL	ACCEPTA \$1,000/ \$2,000/ \$5,000/ \$10,000

Game Maker® V7214 (cont.)

Bills Acceptor Bezel D150...



Part #	Description
D150-00108-\$A++	\$1—\$100
D150-00108-\$B++	\$5—\$100
D150-00108-\$C++	\$25—\$100
D150-00126-\$+++	ALL
D150-00184-URUG	Uruguay
D150-00216-PERU	5,10,20,50,100 (US\$) Peru



D201-00009-KENO Package Game Decal

D201... Package Game Decals

Decal	Description
D201-00001-COIN	GANG ART, COIN AMOUNT DECALS, 3, 4, 5, 8, 9, 10, 15, 16, 18, 20, 25, 27, 45, 50, 90, 100, & 180
D201-00002-BELY	GANG ART, HOTDOG DECALS FOR DISPLAY GLASSES, "HI COIN SERIES", "TOUCH SCREEN", "MULTI-GAME", "PROGRESSIVE"
D201-00002-BELYS	GANG ART, HOTDOG DECALS FOR DISPLAY GLASSES, "HI COIN SERIES", "TOUCH SCREEN", "MULTI-GAME", "PROGRESSIVE" SPANISH TEXT
D201-00003-GEMS	REEL GEMS LOGO FOR PACKAGE FEATURE GLASS
D201-00004-JUMP	JUMPIN JOKER LOGO FOR PACKAGE FEATURE GLASS
D201-00005-3XPK	TRIPLE POKER LOGO FOR PACKAGE FEATURE GLASS
D201-00006-GMSL	GOLD MINE SLOT LOGO FOR PACKAGE FEATURE GLASS
D201-00007-2DBL	DOUBLE DOUBLE BONUS POKER LOGO FOR PACKAGE FEATURE GLASS
D201-00008-BHPK	BIG HOUSE POKER LOGO FOR PACKAGE FEATURE GLASS
D201-00009-KENO	TRIPLE TROUBLE KENO LOGO FOR PACKAGE FEATURE GLASS
D201-00010-SLOT	TRIPLE TROUBLE SLOTS LOGO FOR PACKAGE FEATURE GLASS
D201-00011-POKR	TRIPLE TROUBLE BONUS POKER LOGO FOR PACKAGE FEATURE GLASS
D201-00012-PRNC	PRINCE OF PERSIA LOGO FOR PACKAGE FEATURE GLASS
D201-00013-GMPK	GOLD MINE POKER LOGO FOR PACKAGE FEATURE GLASS
D201-00014-GMBP	GOLD MINE BONUS POKER LOGO FOR PACKAGE FEATURE GLASS
D201-00015-RYL7	ROYAL 7'S LOGO FOR PACKAGE FEATURE GLASS
D201-00035-BNGO	BINGO
D201-00036-FBEE	FREE BEE
D201-00037-15WY	15 WAY KENO
D201-00038-ABC+	ALPHABET KENO
D201-00039-GMKO	GOLDMINE KENO
D201-00041-PATN	PATTERN KENO



D201-00001-COIN

MULTI-GAME

D201-00002-BELY

Game Maker® V7214 (cont.)

Denomination D100...

Denomination Decal	Text	Denomination Decal	Text
D100-.05+-BERM	.05	D100-5CTKN-BERM	5¢ TOKEN
D100-0.10+-BERM	0.10	D100-TOK5c-BERM	TOKEN 5¢
D100-.10+-BERM	.10	D100-TK10c-BERM	TOKEN 10¢
D100-.20+-BERM	.20	D100-25CTK-BERM	25¢ TOKEN
D100-.25+-BERM	.25	D100-TK25C-BERM	TOKEN 25¢
D100-.50+-BERM	.50	D100-50TOK-BERM	50¢ TOKEN
D100-1++++-BERM	1	D100-\$1TKN-BERM	\$1 TOKEN
D100-1.00+-BERM	1.00	D100-US\$1T-BERM	US \$1 TOKEN
D100-5.00+-BERM	5	D100-\$2TKN-BERM	\$2 TOKEN
D100-20+++--BERM	20	D100-TOKN2-BERM	TOKEN 2
D100-50+++--BERM	50	D100-\$4TKN-BERM	\$4 TOKEN
D100-66+++--BERM	66	D100-\$5TKN-BERM	\$5 TOKEN
D100-100+++--BERM	100	D100-\$10TK-BERM	\$10 TOKEN
D100-1000+-BERM	1000	D100-\$20TK-BERM	\$20 TOKEN
D100-1CENT-BERM	1¢	D100-\$25TK-BERM	\$25 TOKEN
D100-5C+++--BERM	5¢	D100-\$1CTK-BERM	\$100 TOKEN
D100-10C+++--BERM	10¢	D100-TOK2C-BERM	TOKEN 200
D100-20C+++--BERM	20¢	D100-\$5CTK-BERM	\$500 TOKEN
D100-20CEN-BERM	20 CENT	D100-TOK5C-BERM	TOKEN 500
D100-25C+++--BERM	25¢		
D100-50C+++--BERM	50¢	D100-.25\$+-BERM	.25\$
D100-50CCC-BERM	50c	D100-25/\$1-BERM	.25/\$1
D100-75¢+++--BERM	75¢	D100-.50\$+-BERM	.50\$
D100-\$1++++-BERM	\$1	D100-1.00\$-BERM	1.00\$
D100-US\$1+-BERM	US\$1	D100-2.00\$-BERM	2.00\$
D100-\$2++++-BERM	\$2	D100-5\$+-BERM	5\$
D100-\$3++++-BERM	\$3	D100-5.00\$-BERM	5.00\$
D100-\$5++++-BERM	\$5	D100-25.\$+-BERM	25.00\$
D100-\$10+++--BERM	\$10	D100-1C\$+-BERM	100.00\$
D100-\$20+++--BERM	\$20		
D100-\$25+++--BERM	\$25	D100-FPLAY-BERM	FREE PLAY
D100-\$50+++--BERM	\$50	D100-BALLY-BERM	BALLY
D100-\$1C+++--BERM	\$100	D100-BGTKN-BERM	BIG TOKEN
D100-\$100+++--BERM	\$100.00		
D100-\$200+++--BERM	\$200	D100-1FF+++--BERM	1 FF
D100-\$500+++--BERM	\$500.00	D100-2FF+++--BERM	2 FF
D100-\$1K+++--BERM	\$1,000.00	D100-2FFTK-BERM	2 FF TOKEN
		D100-5FF+++--BERM	5 FF
D100-1DM+++--BERM	1 DM	D100-10FF+-BERM	10 FF
D100-2DM+++--BERM	2 DM	D100-10FFT-BERM	10 FF TOKEN
D100-5DM+++--BERM	5 DM	D100-20FF+-BERM	20 FF
		D100-25FF+-BERM	25 FF
D100-2PESO-BERM	2 PESO	D100-50FF+-BERM	50 FF
D100-50PES-BERM	50 PESOS	D100-50FFT-BERM	50 FF TOKEN
D100-1CPES-BERM	100 PESOS	D100-100FF-BERM	100 FF
D100-50S+++--BERM	5 OS	D100-100WN-BERM	100 WON
D100-100S+-BERM	10 OS	D100-500WN-BERM	500 WON
D100-200S+-BERM	20 OS		
		D100-DR50+-BERM	DR 50
D100-A++++--BERM	A	D100-DR100-BERM	DR 100
D100-B++++--BERM	B	D100-DR200-BERM	DR 200
D100-C++++--BERM	C	D100-DR250-BERM	DR 250
		D100-DR500-BERM	DR 500
D100-BF20+-BERM	BF20		
D100-BF50+-BERM	BF50	D100-10LAT-BERM	.10 LATS
		D100-20LAT-BERM	.20 LATS
		D100-50LAT-BERM	.50 LATS

Game Maker® V7214 (cont.)

Denomination D100... (cont.)



D100-25C++-BERM Denomination Decal

Denomination Decal	Text	Denomination Decal	Text
D100-1/2SL-BERM	1/2 SOLE	D100-2P+++--BERM	2P
D100-1SOL++-BERM	1 SOL	D100-20P++-BERM	20P
		D100-10P++-BERM	10P
D100-DKR1+-BERM	DKR 1		
D100-DKR10-BERM	DKR 10	D100-F1+++--BERM	F1
		D100-F2+++--BERM	F2
D100-25COP-BERM	25 COPECK	D100-F5+++--BERM	F5
D100-50COP-BERM	50 COPECK	D100-F10++-BERM	F10
		D100-F50++-BERM	F50
D100-ESC25-BERM	ESC 25		
D100-ESC50-BERM	ESC 50	D100-FL+++--BERM	FL
D100-ESC1C-BERM	ESC 100	D100-FL1++-BERM	FL1
D100-ESC2C-BERM	ESC 200		
		D100-FIM1+-BERM	FIM1
D100-10CFI-BERM	10¢ FICHA	D100-FIM5+-BERM	FIM5
D100-25CFI-BERM	25¢ FICHA	D100-FIM10-BERM	FIM 10
D100-50CFI-BERM	50¢ FICHA		
D100-1FICH-BERM	1 FICHAS	D100-LIT5C-BERM	LIT 500
D100-FICHA-BERM	FICHA	D100-LIT1K-BERM	LIT 1000
D100-FICHS-BERM	FICHAS	D100-LIT2K-BERM	LIT 2000
		D100-LIT5K-BERM	LIT 5000
D100-1/4DN+-BERM	1/4 DINAR		
D100-1/2DN+-BERM	1/2 DINAR	D100-SEK1+-BERM	SEK1
D100-1DINA-BERM	1 DINAR	D100-SEK5+-BERM	SEK5
D100-R0.20-BERM	R0.20	D100-1KR++-BERM	1 KR
D100-R0.50-BERM	R0.50	D100-10KR+-BERM	10 KR
D100-R1+++--BERM	R1		
D100-1RTKN-BERM	1R TOKEN	D100-L2+++--BERM	L2
D100-R1.00-BERM	R1.00	D100-L500+-BERM	L500
D100-R2+++--BERM	R2	D100-L1000-BERM	L1000
D100-R2.00-BERM	R2.00	D100-L5000-BERM	L5000
D100-R5+++--BERM	R5		
D100-R10++-BERM	R10	D100-LM.10-BERM	LM0.10
D100-R25++-BERM	R25	D100-LM.25-BERM	LM0.25
D100-R500+-BERM	R500	D100-LM.50-BERM	LM0.50

Game Maker® V7214 (cont.)

Feature Glass

eat re lass	Description	
G701-00001-GMAK	Green Game maker	
G701-00001-SP++	Green Game Maker, Spanish	J0019
G701-00002-BLUE	Blue Game Maker	
G701-00002-SPBL	Blue Game Maker, Spanish	Z2734
G701-00003-25C+	Blue, 25¢	Package 1
G701-00003-PK1+	Blue, 5¢	Package 1
G701-00004-PK2+	Magenta, 5¢	Package 2
G701-00005-PK3+	Royals Plus	Package 3
G701-00005-SPK3	Royals Plus in Spanish	Package 3
G701-00006-PK4+	Triple Trouble Package	Package 4
G701-00006-SPK4	Triple Trouble Package in Spanish	Package 4
G701-00007-PK5+	Gold and Cream	Package 5
G701-00009-BHPK	Big House Bonus Poker	P0582
G701-00010-TRB+	Triple Trouble Slot	Z2406
G701-00011-FBEE	Free Bee Plus With Pay Table	Z3183
G701-00012-DDBP	Double Double Bonus Poker Paytable	P0540
G701-00013-KEN+	Purple Keno Plus	K0029
G701-00013-SP++	Purple Keno Plus, Spanish	K0063
G701-00014-JW++	Joker Wild	P0014, P0015, P0350, P0647
G701-00014-PTJW	Joker Wild	P0014
G701-00015-JACK	Jacks or Better	P382A
G701-00016-HILO	Hi Low Royal, Purple	P0272
G701-00018-++++	Draw Poker, Red	P0007, P0012, P0048, P0349, P0392, P0620
G701-00019-WAVE	Poker Wave Theme	P0442
G701-00020-GMIN	Gold Mine Bonus Poker or Slot	P0544, Z3075, Z3079
G701-00021-POKR	Red Poker	P0008
G701-00021-SP++	Red Poker, Spanish	P0544
G701-00022-HIFI	Hi Fives	P0490
G701-00024-WAKE	Wake the Genie	Z2733
G701-00025-TRPK	Triple Bonus Poker Pays on Glass, Red	P0447
G701-00026-SP++	Spanish Game Maker	
G701-00027-++++	\$100 Custom Draw Poker	P0638
G701-00028-++++	\$100 Custom Double Bonus Poker	P0639
G701-00029-++++	Triple Trouble Poker	P0551
G701-00032-RED+	Red Game Maker	Any
G701-00033-PRNC	Prince Of Persia	Z9904
G701-00033-PURP	Purple Game Maker	Any
G701-00034-FRBE	Free Bee Theme	Z3183
G701-00034-GMBL	Gambler's Choice	None
G701-00035-PLUS	Gambler's Choice	None
G701-00036-ISLD	Island Wins	Y3511
G701-00037-SAYR	Soothsayer	Y3322
G701-00038-MOO\$	Moo Money, USA	Y3508
G701-00039-TRPK	Triple Bonus Poker	P0524
G701-00040-JOKR	Jumpin Joker	Z9900
G701-00041-R5W+	Rapid Five Way	P0181
G701-00042-GEMS	Reel Gems	Z9902
G701-00043-BLZ7	Blazing 7s Theme Poker	P0442
G701-00044-SAME	Same 4 Wins More	P0353
G701-00045-SP++	Triple Trouble Bonus, Spanish	P557
G701-00049-KENO	V72 Ultimate Keno Package	K0042
G701-00050-CAKN	V72 California Keno	K0042
G701-00051-++++	Pickem Poker Coin Pays	X0078
G701-00052-PICK	Pickem Poker Theme	X0078
G701-00054-WELL	Wishing Well	Y3306
G701-00055-FRJW	Joker Wild, French	P0017
G701-00056-FRDP	French Draw Poker	P0005



Game Maker® V7214 (cont.)

Display Glass

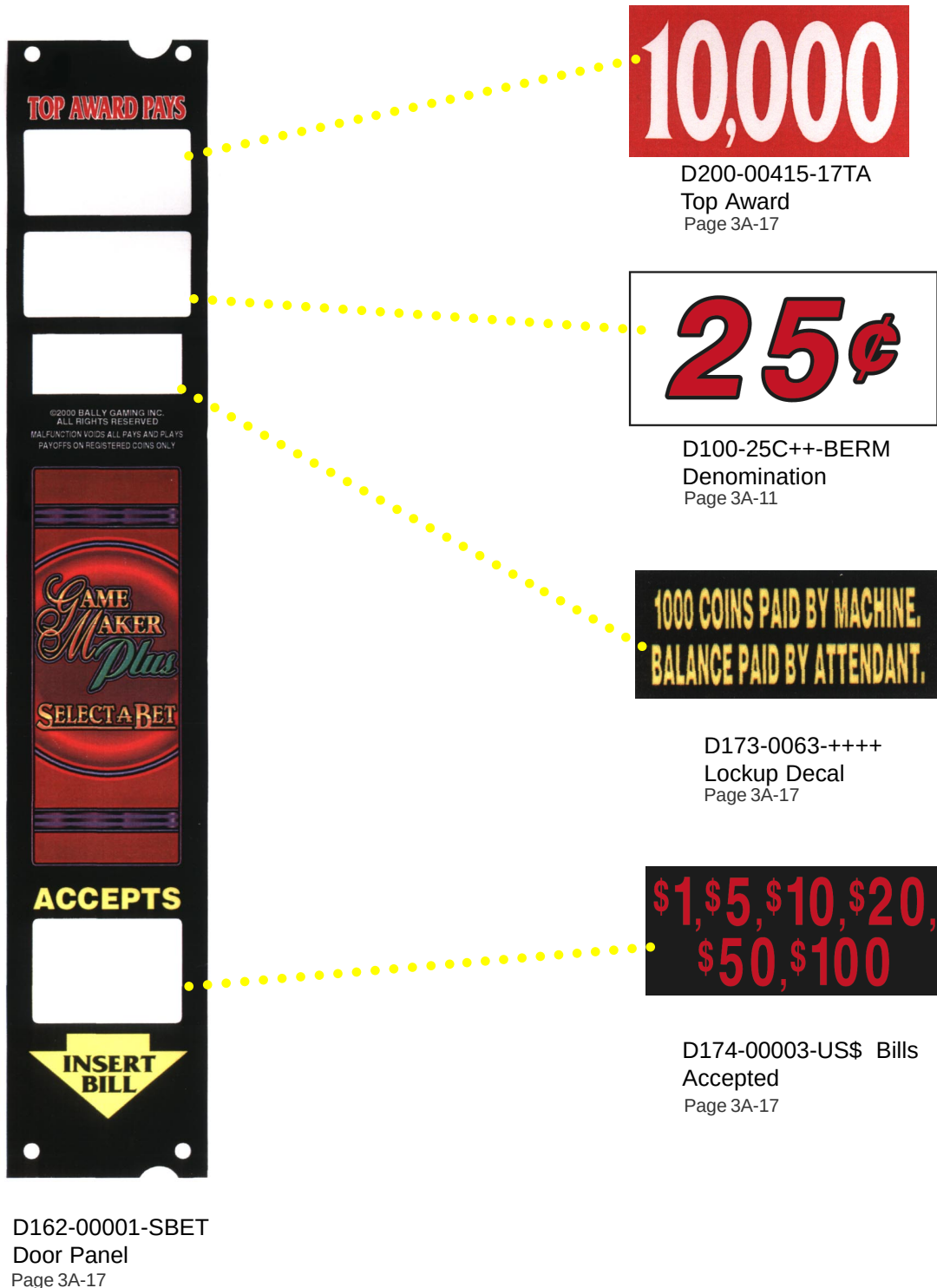
Display #	Description	
G702-00001-++++	Green Game Maker	
G702-00001-PRNT	Green Game Maker with Printer	
G702-00001-SP++	Green Game Maker, Spanish	J0019
G702-00002-BLUE	Blue Game Maker	
G702-00002-SPBL	Blue Game Maker, Spanish	
G702-00003-25C+	Package 1, Blue, 25¢	
G702-00003-PK1+	Package 1, Blue, 5¢	
G702-00004-PK2+	Package 2, Magenta, 5¢	
G702-00005-PK3+	Package 3, Royals Plus	
G702-00006-PK4+	Triple Trouble Package	
G702-00007-PK5+	Wr. Package #5, Cream & Gold	
G702-00008-AA++	All American	P0270
G702-00009-BHPK	Big House Bonus Poker	P0582
G702-00010-TRB+	Triple Trouble Poker	P0551, P0557, Z2406
G702-00011-FBEE	Free Bee Plus With Pay Table	Z3183
G702-00012-DDBP	Double Double Bonus Poker Paytable	P0540/P0620
G702-00013-KEN+	Purple Keno Plus	K0029
G702-00013-SP++	Purple Keno Plus, Spanish	K0063
G702-00014-JW++	Joker Wild	P0014, P0015, P0017, P350, P0647
G702-00015-JACK	Jacks or Better	P382A
G702-00016-HILO	Hi Low Royal, Purple	P0272
G702-00017-DW++	Deuces Wild	P0048
G702-00018-BODP	Bonus Draw Poker	P0349
G702-00019-WAVE	Poker Wave Theme	P0442
G702-00020-GMIN	Gold Mine Bonus Poker or Slot	P0544, Z3075, Z3079
G702-00020-PRNC	Prince Of Persia	Z9904
G702-00021-POKR	Red Poker	P0008, P0012
G702-00021-SP++	Red Poker, Spanish	P0544
G702-00022-HIFI	High Fives	P0490
G702-00023-DBPK	Double Bonus Theme, Red	P0392
G702-00025-WAKE	Wake the Genie	Z2733
G702-00026-TRPK	Triple Bonus Poker Pays on Glass, Red	P0447, P0524
G702-00027-DPOK	Draw Poker	P0007
G702-00028-\$1C+	\$100 Custom Draw Poker	P0638
G702-00028-+1C+	\$100 Custom Double Bonus Poker	P0639
G702-00029-BALY	Draw Poker "BALLY"	P0012, P0048
G702-00030-RED+	Red Game Maker	
G702-00031-PURP	Purple Game Maker	
G702-00032-GMBL	Gamber's Bonus Select-A-Bet	
G702-00035-ISLD	Island Wins	Y3511
G702-00036-SAYR	Soothsayer	Y3322
G702-00037-MOO\$	Moo Money 1¢	Y3508
G702-00038-JOKR	Jumpin Joker	Z9900
G702-00039-R5W+	Rapid Five Way	P0181
G702-00040-GEMS	Reel Gems	Z9902
G702-00041-SP++	Game Maker Slot, Spanish	
G702-00042-BLZ7	Blazing 7s Theme Poker	P0442
G702-00043-SAME	Same 4 Wins More	P0353
G702-00044-BNGO	Bingo	
G702-00046-KENO	Ultimate Keno Package	K0042
G702-00047-CAKN	California Keno	K0042
G702-00048-PICK	Pickem Poker Theme	X0078
G702-00049-SBET	Select-A-Bet	
G702-00050-WELL	Wishing Well	Y3306

Game Maker® V7217



Game Maker® V7217 (cont.)

Decal Examples



Game Maker® V7217 (cont.)

Top Award D200...

Decal #	Description
D200-00415-17TA	Top Award
D200-00420-MAXC	DECAL,TA,W/MAX CN.PLAYED
D200-00424-17TA	DECAL,TA,12,500,DIGITAL

Lockup C173...

Decal #	Description
C173-SP+11-BERM	400 Coin, Spanish Text. PREMIOS DE 400 O MAS MONEDAS PAGOS POR EL ASISTENTE
C173-SP+12-BERM	1000 Coin, Spanish Text
C173-00001-BERM	400 Coin Lockup
C173-00002-BERM	1000 Coin Lockup
C173-00003-BERM	Top Jackpot Paid By Machine
C173-00004-BERM	Machine Pays up to \$1000, Larger Amounts Paid by Attendant
C173-00005-BERM	Machine Pays up to \$500, Larger Amounts Paid by Attendant
C173-00006-BERM	2000 Coins or More Paid by Attendant
C173-00007-BERM	All Wins Paid by Cashier
C173-00008-BERM	Jackpots of 500 or More Paid by Attendant
C173-00009-BERM	Machine Pays up to 800 Coins, Larger Amounts Paid by Attendant
C173-00010-BERM	Machine Pays up to 500 Coins, Larger Amounts Paid by Attendant

Bills Accepted C174...

Decal #	Description
C174-00001-BERM	DECAL,CLEAR
C174-00003-CAND	DECAL,BILL ACCEPTOR (CA)
C174-00004-EEK+	V7217 BA,50EEK/100EEK/500EEK
C174-00006-BERM	DECAL,BA,\$1,\$5,\$10,\$20
C174-00007-BERM	DECAL,B/A,\$5,\$10,\$20
C174-00008-BERM	DECAL,BA,\$5,10,20,50,100
C174-00009-BERM	DECAL,B/A,\$10,20,50,100

Door Panel C162...

Decal #	SMI	Description
C162-00009-BEER	M0046	DECAL, 99 Bottles of Beer
C162-00010-BLUE	P0541	Blue Game Maker Door Panel
C162-00017-PK5+	P0558	Decal, PKG.#5 THEME Door panel
C162-00032-PKG4	P0558	Decal, Package 4 Theme Door Panel
C162-00029-2XPK	P0619	Decal, Double Double Bonus Poker
C162-00014-PICK	Y0078	DECAL, Pickem Poker Door Panel
C162-00005-COW+	Y3040	DECAL, Cash Encounters Door Panel
C162-00011-BCAR	Y3210	Decal, Box Car Bonus Door Panel
C162-00024-SAYR	Y3322	Decal, SOOTHSAYER Door Panel
C162-00017-MOO\$	Y3508	Decal, MOO MONEY Door Panel
C162-00023-BLZ7	Y3517	Decal, Blazing 7'S THEME Door Panel
C162-00022-POOL	Y3531	Decal, RUN THE TABLE Door Panel
C162-00002-HOT+	Y3924	DECAL, Hot Hot Hot Door Panel
C162-00012-POPR	Y4067	DECAL, Money Poppers Door Panel
C162-00033-MKT+	Y4087	Decal, Play The Market Door Panel
C162-00016-POPI	Y4172	Decal, POPEYE THEME Door Panel
C162-00019-LIVE	Y4180	Decal, PAYS OF OUR LIVES Door Panel
C162-00025-++++	Y4202	Decal, Blondie Double Feature Door Panel
D162-00001-7200		DECAL, Door Panel
D162-00005-COW+		DECAL, Door Panel
C162-00003-PLAT		DECAL, Platypus Door Panel
C162-00004-MPLA		DECAL, Multi-Play Door Panel
C162-00008-TRIF		DECAL, Trifecta Door Panel
C162-00010-GMAK		Green Game Maker Door Panel
C162-00010-RED+		Red Game Maker Door Panel
C162-00013-POKR		DECAL, Red Poker Game Maker
C162-00015-KENO		ULTIMATE KENO THEME Door PANEL
C162-00020-TRIF		Decal, NEW TRIFECTA THEME, Door Panel
C162-00026-MLTI		Decal, Multi-Denom Red Game Maker Plus
C162-00027-MLTI		Decal, Generic Door Panel



Game Maker® V7217 (cont.)

Display Glass G595...

Display Glass #	Description	SMI
G595-00530-MRLN(C)	MAGIC MERLIN THEME, DIGITAL	E0042
G595-00491-GMIN	GOLDMINE BONUS THEME	P0543
G595-00485-SUPR	SUPER BONUS POKER	P0663
G595-00531-MDRW(C)	MAGIC DRAW THEME, DIGITAL	P0701
G595-00549-PICK(C)	PICKEM POKER THEME, DIGITAL	Y0078
G595-00511-BCAR(C)	BOXCAR BONUS, DIGITAL	Y3210
G595-00536-SAYR(C)	SOOTH SAYS THEME, DIGITAL	Y3323
G595-00540-ISLD(C)	ISLAND WIRES , DIGITAL	Y3512
G595-00537-ISLD(C)	ISLAND WIRES THEME, DIGITAL	Y3512
G595-00517-++++	99 BOTTLES OF BEER, MARO VISION PAY	Y3982
G595-00535-MKT+(C)	LMAD TOP BOX, PLAY THE MARKET THEME, DIGITAL	Y3993
G595-00527-LATN(C)	LATIN PASSION THEME, DIGITAL	Y4077
G595-00528-GOAL(C)	GOAL THEME, DIGITAL	Y4080
G595-00529-TRIF(C)	TRIFECTA THEME, DIGITAL	Y9940
G595-00539-GMIN(C)	GOLDMINE BONUS, DIGITAL	Z3330
G595-00490-JP21	JACKPOT 21 THEME	Z8843
G595-00538-PRNC(C)	PRINCE OF PERCEA, DIGITAL	Z9904
G595-00437-BLCK	98% BLACK BKGD	
G595-00437-BLUE	98% BLUE BKGD	
G595-00437-RED+	98% RED BKGD	
G595-00474-BEER	99 BOTLES OF BEER THEME	
G595-00510-BAUY	BALLY DISPLAY	
G595-00493-LMAD	BLUE LMA THEME, BENNY SUM ARRT	
G595-00513-COW+(C)	CASH ENCOUNTERS THEME, DIGITAL	
G595-00418-DART	DARTS GAMEMAGIC	
G595-00546-DBPK(C)	DBL BONUS DRAW POKER, DIGITAL	
G595-00547-2XPK(C)	DBL DBL BONUS POKER, DIGITAL	
G595-00545-DPOK(C)	DRAW POKER THEME, DIGITAL	
G595-00548-2WLD(C)	DUECES WILD THEME, DIGITAL	

Game Maker® V7217 (cont.)**Display Glass G595... (cont.)**

Display Glass #	Description	SMI
G595-00260-FBEE	FREE BEE THEME	
G595-00212-GMAK	GAMEMAKER	
G595-00338-GM21	GAMEMAKER 21	
G595-00348-GMBZ	GAMEMAKER BLAZING 7	
G595-00151-RED	GAMEMAKER DISPLAY	
G595-00151-BLUE	GAMEMAKER DISPLAY, BLUE GAMEMAKER	
G595-00151-SP++	GAMEMAKER DISPLAY, SPANISH TEXT	
G595-00212-FCGM	GAMEMAKER FRENCH CANADIAN TEXT	
G595-00506-HOT+	HOT HOT HOT THEME	
G595-00506-SP(C)	HOT HOT HOT THEME, SPANISH TEXT, DIGITAL	
G595-00256-KEN+	KENO PLUS THEME	
G595-00404-DEAL	LET'S MAKE A DEAL THEME	
G595-00522-POPR	MONEY PAPPERS THEME	
G595-00526-MPLA(C)	MULTI PLAY THEME, DIGITAL	
G595-00370-5CBL	PKG #1 5C BLUE MULTI GAME	
G595-00371-5CMG	PKG #2 5C MAGENTA MULTI GAME	
G595-00372-++++	PKG #3 MULTI GAME	
G595-00373-++++	PKG #4 MULTI GAME	
G595-00374-++++	PKG #5 MULTI GAME	
G595-00525-PLAT(C)	PLATYPUS GAME THEME, DIGITAL	
G595-00475-RATS	RAT RACE THEME	
G595-00443-DEAL	RED LET'S MAKE A DEAL	
G595-00281-POKR	RED POKER PLUS ROUND TOP CASINO STYLE	
G595-00360-ROUL	ROULETTE	
G595-00417-++++	ROULETTE & 21 GAMEMAGIC	
G595-00439-++++	ROULETTE & DARTS	
G595-00416-ROUL	ROULETTE GAMEMAGIC	
G595-00524-SBET(C)	SELECT A BET RED THEME, DIGITAL	
G595-00282-SLOTS	SLOTS PLUS ROUND TOP, CASINO SYTLE	
G595-00509-SUP2	SUPER BONUS POKER II	
G595-00258-TRB+	TRIPLE TROUBLE PLUS (PLUS)	
G595-00512-KENO	ULTIMATE KENO	
G595-00272-WIZD	WIZARD OF ODDS THEME	



Game Maker® V7219



Game Maker® V7219 (cont.)

Decal Examples



D158-0002-8000
Lockup

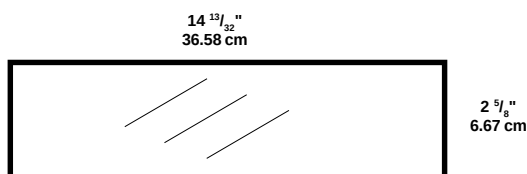


D100-25C++-BERM
Denomination
Page 3A-11

Decal #	Description
D158-00001-8000	UP TO 600 COINS PAID BY MACHINE. ALL OTHER WINS PAID BY ATTENDANT.
D158-00002-8000	UP TO 1000 COINS PAID BY MACHINE. ALL OTHER WINS PAID BY ATTENDANT
D158-FR+3-8000	TOP JACKPOT PAID BY ATTENDANT. FRENCH TEXT
D158-00003-8000	TOP JACKPOT PAID BY ATTENDANT.
D158-00004-8000	500 COINS PAID BY MACHINE. BALANCE PAID BY ATTENDANT.
D158-00005-8000	400 COINS PAID BY MACHINE. BALANCE PAID BY ATTENDANT.
D158-SP++5-8000	400 COINS PAID BY MACHINE. BALANCE PAID BY ATTENDANT. SPANISH TEXT
D158-00006-8000	ALL JACKPOTS PAID BY MACHINE.
D158-00007-8000	UP TO 2000 COINS PAID BY MACHINE. BALANCE PAID BY ATTENDANT.
D158-00008-PARS	1000 COINS PAID BY MACHINE. BALANCE PAID BY ATTENDANT. CUSTOM PARIS COLORS
D158-00009-PARS	400 COINS PAID BY MACHINE. BALANCE PAID BY ATTENDANT. CUSTOM PARIS COLORS
D158-00010-PARS	200 COINS PAID BY MACHINE. BALANCE PAID BY ATTENDANT. CUSTOM PARIS COLORS
D158-00011-PARS	100 COINS PAID BY MACHINE. BALANCE PAID BY ATTENDANT. CUSTOM PARIS COLORS
D158-00012-PARS	REF #19 TEXT. CUSTOM PARIS JP \$1200 OR MORE PBA
D158-00013-++++	JP OF 500 OR MORE PBA
D158-00014-AFOR	JACKPOTS PAID BY ATTENDANT AIR FORCE
D158-00015-BLCK	NO TEXT, JUST BLANK /BLACK D100 OPENING
D158-00016-PRNT	ALL WINS PAID BY PRINTER
D158-00017-SP++	DECAL, LOCK-UP, SPANISH

Game Maker® V7219 (cont.)

C723... Mid Panel Feature Glass



G-R0723 Mid Panel Feature Glass

Mid Panel Feature #	SMI	Description
C723-00001-BALY		BALLY THEME FEATURE
C723-00027-++++		PLAY THE MARKET MID-PANEL
C723-00024-PT	E0042	PT MID-PANEL MAGIC MELU
C723-00025-PT	P0701	MID-PANEL MAGIC DRAW,PT
C723-00010-COW+	Y3040	CASH EN COW TERS, MID-PANEL
C723-00010-SP++	Y3040	CASH EN COW TERS, MID-PANEL,SPANISH TEXT
C723-00004-BCAR	Y3210	BOX CAR BONUS THEME
C723-00014-SP++	Y3323	SOOTHSAYER MID-PANEL, SPANISH TEXT
C723-00026-FR	Y3411	MID-PANEL FR TEXT, BOX CAR BONUS
C723-00015-SP++	Y3512	ISLAND WINS MID-PANEL, SPANISH TEXT
C723-00006-BLZ7	Y3517	BLAZING 7'S THEME
C723-00017-SP++	Y3518	BLAZING 7'S MID-PANEL, SPANISH TEXT
C723-00054-POOL	Y3531	RUN THE TABLE
C723-00055-POOL	Y3531	RUN THE TABLE
C723-00046-BEER	Y3749	REEL,Y3749,99 BOTTLES OF BEER
C723-00005-Y2K+	Y3824	Y2K THEME
C723-00016-SP++	Y3825	Y2K MID-PANEL, SPANISH TEXT
C723-00002-HOT+	Y3942	HOT! HOT! HOT! THEME FEATURE
C723-00009-HOT+	Y3942	HOT! HOT! HOT! MID-PANEL
C723-00011-SP++	Y4067	SP MONEY POPPERS MID-PANEL GAME FEATURE
C723-00021-SP++	Y4077	SP MID LATIN PASSION
C723-00022-SP++	Y4080	MID-PANEL GOAL, SPANISH
C723-00047-GOAL	Y4081	FEAT.Y4081,GOAL,ENG.DIGITAL
C723-00045-POPI	Y4172	RT,Y4172,MID.PNL.POPEYE THEME
C723-00048-LIVE	Y4180	PAYS OF OUR LIVES
C723-00049-LIVE	Y4180	PAYS OF OUR LIVES
C723-00056-++++	Y4202	W/LMAD TP.BOX
C723-00057-++++	Y4202	WO/TOP BOX
C723-00023-++++	Y9929	TRIFECTA MID-PANEL
C723-00013-GMIN	Z3330	GOLDMINE MID-PANEL, SPANISH TEXT,ENG
C723-00013-SP++	Z3330	GOLDMINE MID-PANEL, SPANISH TEXT
C723-00012-++++	Z9904	PRINCE OF PERSIA MID-PANEL, SPANISH TEXT, ENG
C723-00012-SP++	Z9904	PRINCE OF PERSIA MID-PANEL, SPANISH TEXT
C723-00018-KEN+		PURPLE KENO PLUS



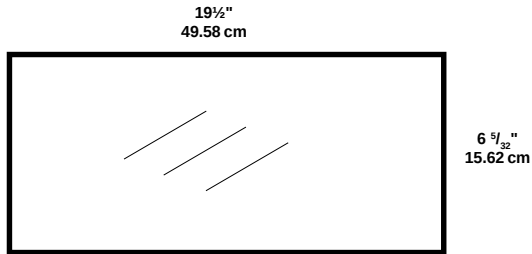
Game Maker® V7219 (cont.)

C723... Mid Panel Feature Glass (cont.)

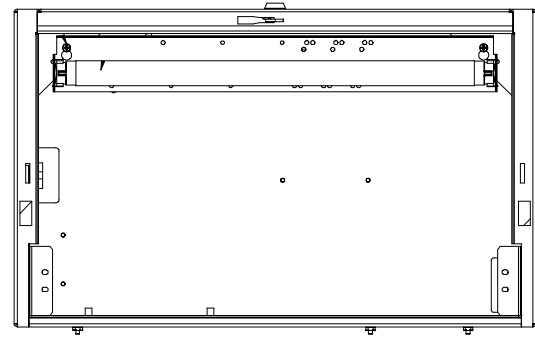
Mid Panel Feature #	SMI	Description
C723-00019-PLAT		FEATURE PLATYPUS GAME
C723-00003-COW+		REV. TO C723-00035-COW+
C723-00008-BLUE		GAMEMAKER MID-PANEL, MAY BE USED FOR V72 19" FEATURE ALSO, BLUE
C723-00008-GMKR		GAMEMAKER MID-PANEL, MAY BE USED FOR V7219 FEATURE ALSO
C723-00008-RED		GAMEMAKER MID-PANEL, MAY BE USED FOR V7219 FEATURE ALSO, RED
C723-00011-POPR		MONEY POPPERS MID-PANEL
C723-00011-SP++		MONEY POPPERS MID-PANEL, SPANISH TEXT
C723-00022-++++		MID-PANEL GOAL, ENGLISH
C723-00028-KENO		ULTIMATE KENO THEME, NO DECALS
C723-00029-PK3+		PKG 3 ROYALS & NO WINDOWS
C723-00030-PK4+		PKG 4 TRIPLE TROUBLE, NO WINDOWS
C723-00031-PK1+		PKG 1 5¢ BLUE
C723-00032-PK2+		PKG #2 5¢ MAGERETA
C723-00033-PK5+		PKG #5 CREAM & GOLD
C723-00034-COW+		MID-PANEL CASH ENCOUNTERS
C723-00034-SP++		SPANISH MID-PANEL
C723-00035-COW		FEATURE CASH ENCOUNTERS
C723-00035-COW+		CASH EN COW TERS, THEME
C723-00035-SP		FEATURE CASH ENCOUNTERS, SPANISH
C723-00036-BEER		99 BOTTLES OF BEER, FEATURE PANEL
C723-00037-PLAT		MID-PANEL PLATYPUS
C723-00038-MKT+		PLAY THE MARKET FEATURE
C723-00039-++++		MID-PANEL GEN COLORS
C723-00040-POPR		MONEY POPPERS THEME FEATURE
C723-00042-SBET		SELECT A BET
G723-00043-++++		GENERIC MULTI MID-PANEL / NO TOP AWD
G723-00044-++++		GENERIC / STD
C723-00052-TRIF		GLASS,RL.NEW TRIFECTA,MID-PNL
C723-00053-TRIF		GLASS,FEAT.NEW TRIFECTA THEME
C723-00058-MLTI		GLASS,FEAT.0000,GM+ THEME,NEW

Game Maker® V7219 (cont.)

Top Box Feature Glass, Extended Top

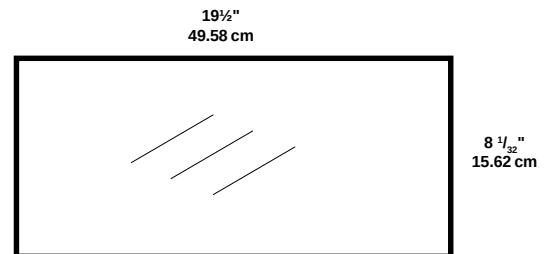


G-R0735 Top Box Glass for System and Vivo™ printer



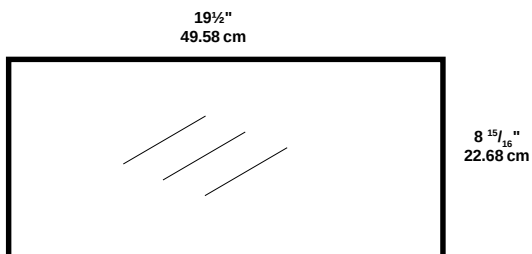
Extended Top

Feature Glass #	SMI	Description
C735-00008-2XPK	P0544	GLASS,FEAT.P0544,DBL.DBL.BNS.
C735-00009-SBET	P0619	GLASS,FEAT.P0619,SELECT-A-BET
C735-00007-BCAR	Y3411	GLASS,FEAT.Y3411,BOX CAR BNS.
C735-00010-POPR	Y4067	GLASS,Y4067,C/T,W/SYS.& PTR.
C735-00001-COW+		CASH ENCOUNTERS
C735-00002-HOT		HOT HOT HOT
C735-00003-MKT		PLAY THE MARKET
C735-00004-KENO		ULTIMATE KENO, D201 DEC
C735-00005-PKG5		PKG #5, D201 DEC
C735-00006-GMAK		GLASS,FEAT.RND.W/SYS.& PTR.

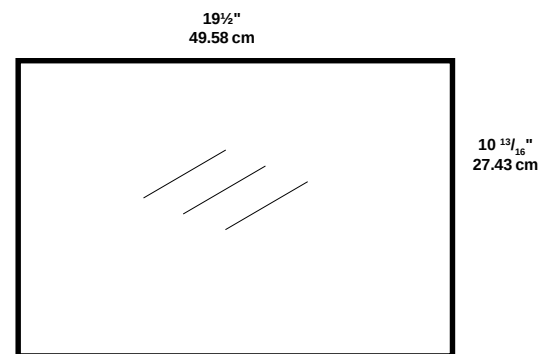


G-R0737 Top Box Glass for System

Feature Glass #	SMI	Description
C737-00003-BCAR	Y3211	CT,Y3211,SYS.OONLY,BOXCAR BONUS
C737-00004-HOT+	Y3940	GLASS,FEAT.Y3940,HOT,HOT,HOT
C737-00001-COW+		GLASS,CUSTOM,TB W/SYSTEM ONLY
C737-00002-GMAK		CT,W/SYSTEM ONLY,GRN.GAMEMAKER



G-R0736 Top Box Glass for Vivo™ printer



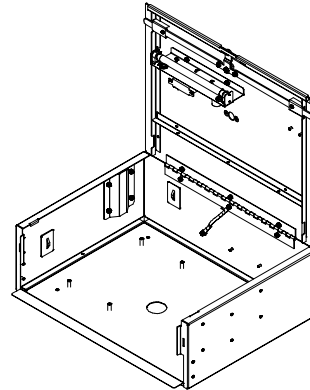
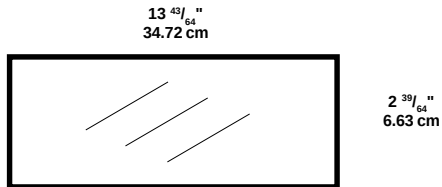
G-R0738 Top Box Glass

Feature Glass #	SMI	Description
C736-00001-COW+		GLASS, CASH ENCOUNTERS
C736-00002-POOL	Y3531	GLASS,FEAT.Y3531,RUN THE TABLE

Feature Glass #	SMI	Description
C738-00001-COW+	Y403	Cash Encounters

Game Maker® V7219 (cont.)

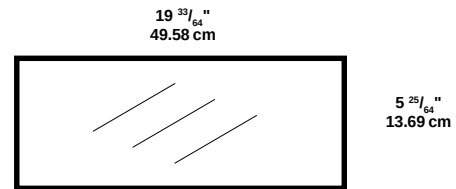
Top Box Feature Glass, Short Top



Short Top

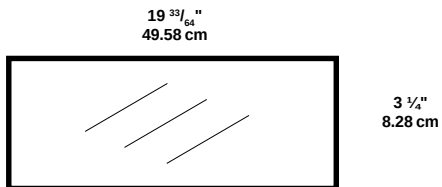
G-R0741 Top Box Glass for System and Vivo™ printer

Feature Glass #	SMI	Description
C741-00007-MLT1	P0555	GLASS,FEAT.P0555,GM PLUS,THEME
C741-00008-PK4+	P0555	GLASS,FEAT.P0555,PKG.#4,S/T,
C741-00001-MKT+		GLASS,FEAT.CUSTOM,CLEAR
C741-00002-BCAR		GLASS,FEAT.CUSTOM,CLEAR
C741-00003-HOT+		GLASS,FEAT.CUSTOM,CLEAR
C741-00004-COW+		GLASS,FEAT.CUSTOM,CLEAR
C741-00005-SBET		GLASS,FEAT.S/T W/SYS.& PTR.
C741-00006-PLAT		GLASS,FEAT.NEW,PLATYPUS GAME,
C741-00009-KENO		GLASS,FEAT.ULTIMATE KENO THEME



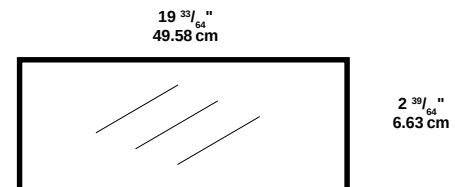
G-R0744 Top Box Glass

Feature Glass #	SMI	Description
C744-00001-COW+	Y4032	Cash Encounters



G-R0742 Top Box Glass for Vivo™ printer

Feature Glass #	SMI	Description
C742-00001-BEER		99 Bottles of Beer

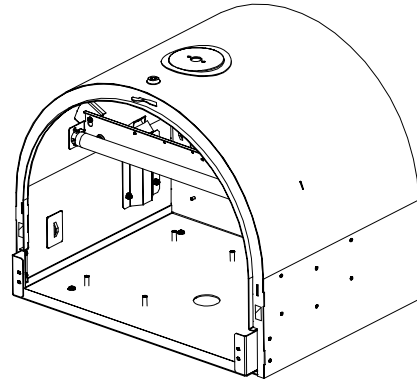


G-R0743 Top Box Glass for System

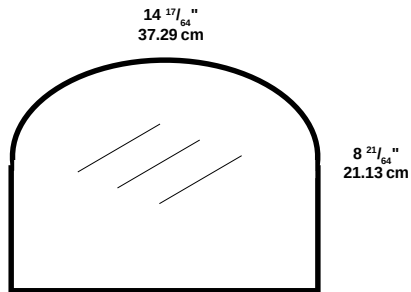
Feature Glass #	SMI	Description
C743-00009-KENO	K0003	K0003,ULTIMATE KENO,S/T,W/SYS
C743-00011-PK4+	P0558	GLASS,FEAT.P0558,TRIPLE TRBL.
C743-00006-POKR	Y0078	GAMEMAKER POKER
C743-00007-PICK	Y0078	PICKEM POKER THEME
C743-00002-BCAR	Y3210	BOX CAR BONUS THEME FEATURE
C743-00001-HOT+	Y3941	HOT HOT HOT THEME FEATURE
C743-00005-COW+	Y4031	CASH ENCOUNTERS THEME
C743-00004-POPR	Y4067	MONEY POPPERS THEME
C743-00003-MKT+	Y4086	PLAY THE MARKET THEME
C743-00008-GMAK		RT,SYS ONLY,GAMEMAKER,DIGITAL
C743-00008-RED+		GLASS,FEAT.V7217,S/T,SYS ONLY
C743-00013-BEER		GLASS,FEAT.99 BOTTLES OF BEER

Game Maker® V7219 (cont.)

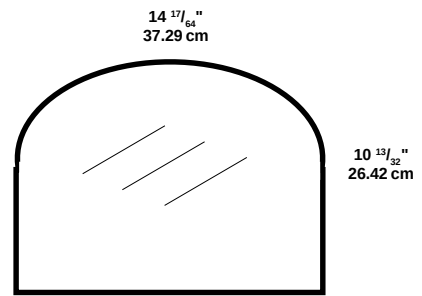
Top Box Feature Glass, Round Top



Round Top



G-R0724 Top Box Glass for System and Vivo™ printer



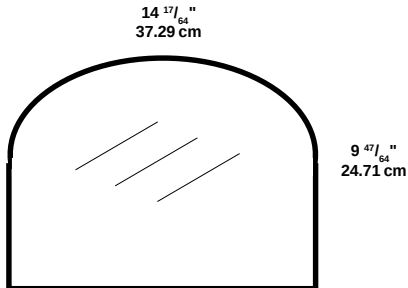
G-R0732 Top Box Glass for Vivo™ printer

Feature Glass #	SMI	Description
C724-00019-2XPK	P0622	DBL DBL BNS POKER,SYS.&
C724-00005-BCAR	Y3210	BOX CAR BONUS
C724-00026-POOL	Y3531	RUN THE TABLE
C724-00020-BEER	Y3749	99 BOTTLES OF BEER,
C724-00001-HOT+	Y3942	HOT HOT HOT THEME
C724-00009-MKT+	Y4086	PLAY THE MARKET
C724-00022-PROG	Y4172	GLASS,FEAT,V7219 RND.TOP
C724-00023-LIVE	Y4180	PAYS OF OUR LIVES
C724-00027-++++	Y4202	GLASS,FEAT., R/T W/SYS.&
C724-00002-COW+		CASH EN'COW'TERS THEME
C724-00003-POPR		MONEY POPPERS THEME
C724-00004-GMKR		GAMEMAKER THEME
C724-00004-RED		GAMEMAKER THEME, RED
C724-00004-BLUE		GAMEMAKER THEME, BLUE
C724-00006-PLAT		PLATYPUS
C724-00007-PK4		PKG #4 W/D201
C724-00008-KENO		ULTIMATE KENO D201
C724-00010-GMIN		GOLDMINE FEATURE
C724-00011-PK2		PKG #2 W/D201
C724-00012-PK5+		PKG #5 W/D201
C724-00013-DPOK		DRAW POKER THEME
C724-00014-DBPK		DBL BONUS D. POKER THEME
C724-00015-BLUE		BLUE GAMEMAKER
C724-00016-2XPK		DBL DBL BO POKER
C724-00017-2WLD		DEUCES WILD THEME
C724-00018-TRB+		TRIPLE TROUBLE PLUS THEME
C724-00021-POKR		FEAT,R/T W/SYS.& PTR,GAMEMAKER
C724-00025-TRIF		GLASS,FEAT.R/T W/SYS.& PTR.

Feature Glass #	SMI	Description
C732-00013-POOL	Y3531	GLASS,FEAT.Y3531,RUN THE TABLE
C732-00001-HOT+	Y3942	HOT HOT HOT THEME
C732-00005-MKT+	Y4081	PLAY THE MARKET
C732-00006-PLAT	Y4118	PLATYPUS WITH FEAT. V72 17"
C732-00009-PROG	Y4172	RT,Y4172,W/PTR.POPEYE,12CELL
C732-00010-LIVE	Y4180	GLASS,Y4180,PAYS OF OUR LIVES
C732-00014-++++	Y4202	GLASS,FEAT.Y4202,R/T W/PTR.
C732-00002-COW+		CASH ENCOUNTERS THEME
C732-00003-BCAR		BOX CAR BONUS
C732-00004-GMKR		GAMEMAKER
C732-00007-DVCN		PROMO WITH PAYS
C732-00008-DVCN		PROMO THEME
C732-00012-TRIF		GLASS,FEAT.R/T W/PTR.TRIFECTA

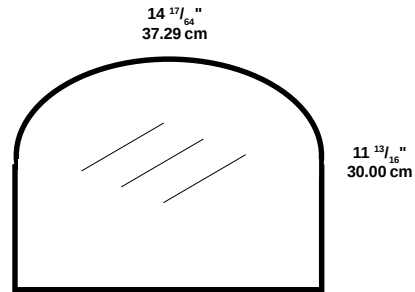
Game Maker® V7219 (cont.)

Top Box Feature Glass, Round Top (cont.)



G-R0733 Top Box Glass for System

PART #	SMI	DESCRIPTION
C733-00020-2XPK	P0622	GLASS,P0622,DBL.DBL.BNS.PKR.
C733-00004-BCAR	Y3211	BOX CAR BONUS
C733-00019-POOL	Y3531	GLASS,FEAT.Y3531,RUN THE TABLE
C733-00014-BEER	Y3749	FEAT.Y3749,RND.TOP,W/SYS.ONLY
C733-00001-HOT+	Y3942	HOT HOT HOT THEME
C733-00003-COW	Y4031	CASH ENCOUNTERS
C733-00005-MKT	Y4087	PLAY THE MARKET
C733-00013-PLAT	Y4118	PLATYPUS THEME
C733-00015-PROG	Y4172	GLASS,FEAT.Y4172,V7219 RND.TOP
C733-00016-LIVE	Y4180	GLASS,Y4180,PAYS OF OUR LIVES
C733-00021-++++	Y4202	GLASS,FEAT.Y4202,R/T W/SYS.
C733-00006-GMIN	Z3031	GOLDMINE BONUS
C733-00002-12MI	Z6893	BLZ 7,12 MI
C733-00007-BLUE		GAMEMAKER BLUE
C733-00008-PK2+		PKG 2, 5C MAGERILA,3 D201 DEC
C733-00009-PK5+		PKG 5 GOLD & CREAM, D201 DEC
C733-00010-KENO		ULTIMATE KENO, D201 DEC
C733-00011-POKR		GAMEMAKER RED POKER
C733-00012-KENO		PURPLE KENO
C733-00018-TRIF		GLASS,FEAT.R/T W/SYS.TRIFECTA



G-R0734 Top Box Glass

Feature Glass #	SMI	Description
C734-00002-GMIN	P0542	GOLD MINE BONUS
C734-00005-RED+	P0559	GLASS,FEAT.P0559,GAMEMAKER,RED
C734-00013-SAYR	Y3322	GLASS,FEAT.Y3322,R/T,WO/SYS.
C734-00012-POOL	Y3531	GLASS,FEAT.Y3531,RUN THE TABLE
C734-00015-BEER	Y3570	GLASS,FEAT.Y3570,99 BOTTLES OF
C734-00001-HOT+	Y3942	HOT HOT HOT THEME
C734-00003-COW+	Y4031	FEAT.Y4031,CASH ENCOUNTERS,R/T
C734-00008-MKT+	Y4086	GLASS,Y4086,PLAY THE MARKET,
C734-00007-PLAT	Y4118	GLASS,Y4118,PLATYPUS,WO/SYS.
C734-00004-PROG	Y4172	GLASS,FEAT.Y4172,V7219 RND.TOP
C734-00006-LIVE	Y4180	GLASS,Y4180,PAYS OF OUR LIVES
C734-00014-++++	Y4202	GLASS,FEAT.Y4202,R/T WO/SYS.&
C734-00009-GMAK	Z2885	GLASS,FEAT.Z2885,GRN.GM,R/T
C734-00011-TRIF		GLASS,FEAT.R/T,WO/SYS.& PTR.

Game Maker® Slant



Game Maker® Slant (cont.)

Decal Examples



D150-00070-B+++
Ready/Not Ready

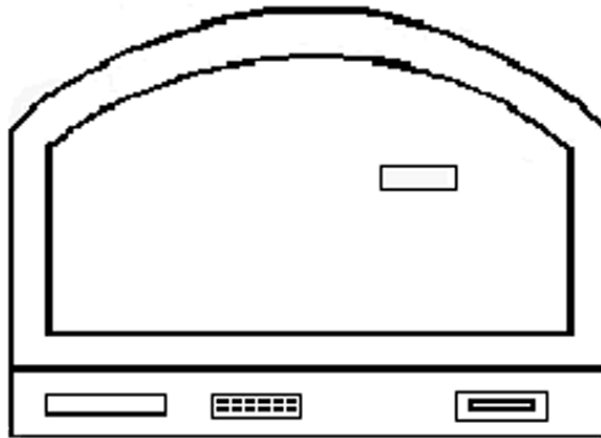
ACCEPTS
\$1, \$5, \$10, \$20

D150-00070-\$++++
Bill Acceptor Bezel

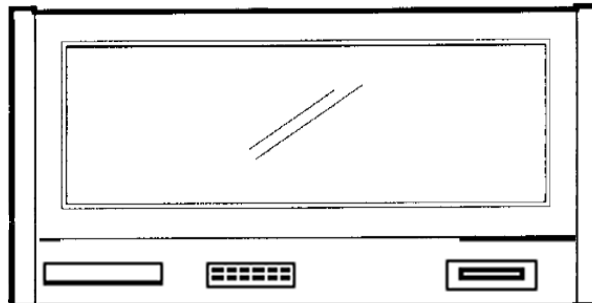
Decal #	Description
D150-00070-\$+++	Slant US\$ \$1,\$5,\$10,\$20,\$50,\$100 / \$5,\$10,\$20 / \$10,\$20,\$50,\$100 / \$20,\$50,\$100 / \$10,\$20 / \$20,\$100 / \$1,\$5 / \$5,\$10,\$20,\$50 / \$1,\$5,\$10 / \$10,\$20,\$50 / \$50,\$100 / \$100
D150-00070-B+++	Slant red and green Ready/Not Ready Symbols
D150-00075-DM++	Slant Deutsche Marks 10DM,20DM / 10DM,20DM,50DM / 10DM,20DM,50DM,100DM / 100DM
D150-00081-RAND	Slant Rand R10,R20 / R10,R20,R50 / R10,R20,R50,R100 / R10,R20,R50,R100,R200
D150-00084-FIM+	Slant Markka FIM 50, FIM 100
D150-00093-ESC+	Slant Escudo 1.000, 2.000 ESC / 1.000, 2.000, 5.000, 10.000 ESC
D150-00097-LIRA	Slant Lira LIT. 5K, 10K, 50K, 100K / 10K, 50K, 100K
D150-00110-RAND	Slant Rand (ARDAC Bill Acceptor) R10,R20 / R10,R20,R50 / R10,R20,R50,R100 / R10,R20,R50,R100
D150-00121-USSR	Slant Rubles R5.000,R10.000,R50.000,R100.000
D150-00124-FCAN	Slant French Canadian 5\$,10\$,20\$ / 10\$,20\$ / 10\$,20\$,50\$ / 5\$,10\$,20\$,50\$,100\$ / 10\$,20\$,50\$,100\$
D150-00141-DR++	Slant Drachmas DR 1.000, DR 10.000
D150-00144-ARGE	Slant Peso \$2,\$5,\$10,\$20,\$100
D150-00147-WON	Slant Won 1,000 WON / 5,000 WON / 10,000 WON
D150-00151-BS++	Slant Bolivar Bs. 5.000. Bs. 2.000, Bs. 1.000

Game Maker® Slant (cont.)

Feature Housings



Radial Feature Housing



Standard Feature Housing



Game Maker® Slant (cont.)

Feature Glass G605...

Feature Glass #	SMI	Description
G605-00507-SUIT	E0026	CAL 8 WAY THEME SUIT YOURSELF
G605-00447-GMBJ	J0026	BLACKJACK PLUS (21) GAMEMAKER
G605-00475-FKNO	K037	FRENCH TRIPLE TROUBLE KENO
G605-00043-SP++	P0005A	DRAW POKER WITH PAYS ON GLASS, SPANISH TEXT
G605-00439-FRDP	P0008	DRAW POKER THEME, FRENCH TEXT
G605-00491-FR++	P0331	HI FIVES THEME, FRENCH TEXT
G605-00438-FRJW	P0344	JOKER WILD POKER THEME, FRENCH TEXT
G605-00432-GMPG	P0349	GREEN GAMEMAKER, 12 CELL MINI
G605-00070-FRDW	P0458	DEUCES WILD THEME, FRENCH TEXT, COIN PAYS
G605-00490-FR++	P0482	DOUBLE BONUS POKER THEME, FRENCH TEXT
G605-00278-BALY	P048A	BALLY LV 2'S WILD, COIN PAYS
G605-00430-GMPK	P0542	GOLDMINE BONUS POKER
G605-00476-FR3X	P0557	FRENCH TRIPLE TROUBLE POKER THEME
G605-00394-TRBL	P0558	TRIPLE TROUBLE + THEME
G605-00477-FRBH	P0582	FRENCH BIGH HOUSE POKER THEME
G605-00478-FRGM	P0584	FRENCH GOLD MINE BONUS THEME
G605-00374-++++	P0590	DOUBLE BONUS DRAW POKER, PAYTABLE
G605-00276-BALY	P245A	BALLY LV BONUS POKER, COIN PAYS
G605-00007-SP++	P259A	DOUBLE PAYCARD POKER, PAYS ON GLASS, SPANISH TEXT, COIN PAYS
G605-00069-PORT	P268A	DRAW POKER THEME, PORTUGUESE TEXT, COIN PAYS
G605-00379-BALY	P269	BALLYS LAS VEGAS, PAYTABLE, COIN PAY
G605-00449-2JW+	P327	JOKER JOKER WILD, NEW D170 OPENING FOR TOUCH SCREEN
G605-00348-SPBL	P398A	BLAZING 7'S THEME, SPANISH TEXT, GAMEMAKER
G605-00429-BY3P	P448A	BALLY LAS VEGAS TRIPLE POKER
G605-00393-BY2C	P506	BALLY LV 2ND CHANCE CUSTOM, COIN PAY
G605-00406-BYLV	P519	BALLY LV DOUBLE BONUS POKER, DRAW TILL YOU WIN, COIN PAY
G605-00422-PK1+	PK1+	PACKAGE #1 - 5¢ BLUE
G605-00423-PK2+	PK2+	PACKAGE #2 - 5¢ MAGENTA
G605-00424-PK3+	PK3+	PACKAGE #3 - ROYAL PLUS
G605-00425-PK4+	PK4+	PACKAGE #4 - TRIPLE TROUBLE
G605-00425-SPK4	PK4+	PACKAGE #4, TRIPLE TROUBLE, SPANISH TEXT
G605-00426-PK5+	PK5+	PACKAGE #5 - CREAM & GOLD
G605-00426-SPK5	PK5+	PACKAGE #5, CREAM & GOLD, SPANISH TEXT
G605-00500-12MI	PO327	JOKER POKER THEME, WITH 12 MINI
G605-00391-BY3P	PO447	BALLY LV TRIPLE POKER, COIN PAY
G605-00513-2XPK	PO538	DBL DBL BONUS
G605-00524-++++	T0020	OASIS PRINCE OF PER.
G605-00521-++++	T0024	OASIS GOLDMINE
G605-00392-WROS	WRO	WILD ROSE THEME V7000
G605-00528-COW(C)	Y3040	CASH ENCOUNTERS, DIGITAL
G605-00493-SPSA	Y3322	SPANISH GOLDMINE BONUS THEME
G605-00445-SAYR	Y3324	SOOTHSAYER FEATURE FRENZY
G605-00471-BABY	Y3376	BABY BOOMER WITH PAYS

Game Maker® Slant (cont.)

Feature Glass G605... (cont.)

Feature Glass #	SMI	Description
G605-00470-BCAR	Y3411	BOX CAR BONUS WITH PAYS
G605-00451-MOO\$	Y3509	MOO\$ FEATURE FRENZY, COIN PAYS
G605-00444-ISLD	Y3513	ISLAND WINS FEATURE FRENZY
G605-00479-BLZ7	Y3519	BLAZING 7'S THEME (D170 DECAL)
G605-00446-JOKR	Y3575	JUMPIN JOKER FEATURE FRENZY
G605-00446-SJOK	Y3575	JUMPIN JOKER FEATURE ,FRENZY SPANISH VERSION
G605-00472-Y2K+	Y3826	Y2K WITH PAYS
G605-00502-HOT	Y3942	HOT HOT HOT THEME
G605-00530-PLAT(C)	Y4118	PLATYPUS, DIGITAL
G605-00473-WAKE	Z2733	WAKE THE GENIE THEME
G605-00492-SGMN	Z3085	SPANISH GOLDMINE BONUS THEME
G605-00459-PRNC	Z9904	PRINCE OF PERSIA THEME
G605-00313-BY21		BALLY'S LV "21"
G605-00233-GMAK		GREEN GAMEMAKER SLANT TOP
G605-00233-BLUE		BLUE GAMEMAKER
G605-00233-PURP		PURPLE GAMEMAKER
G605-00345-FRGM		FRENCH GAMEMAKER, DECAL OPEN, LO D200-261-FR
G605-00233-BALY		GAMEMAKER BALLY LAS VEGAS
G605-00234-SPEC		FAME & FORTUNE 2 TA, 1ST D200-257, 9 DIG MINI PHOTON, COIN PYS
G605-00362-POKR		SPACE QUEST POKER, GAMEMAKER
G605-00363-KENO		SPACE QUEST KENO, GAMEMAKER
G605-00364-21++		SPACE QUEST 21, GAMEMAKER
G605-00368-FBEE		FREE-BEE PLUS, GAMEMAKER
G605-00369-2XPK		DOUBLE DOUBLE BONUS POKER, GAMEMAKER
G605-00370-SP++		SAME 4 WINS MORE THEME, SPANISH TEXT, GAMEMAKER
G605-00395-RED+		GAMEMAKER RED
G605-00307-KEN+		NEW KENO+, PURPLE
G605-00409-PRNC		GAMEMAKER PRINCE OF PERSHA
G605-00419-BHPK		GAMEMAKER BIG HOUSE POKER THEME
G605-00353-GKNO		GREEN KENO PLUS, HAS A DIFFERENT FONT
G605-00233-RED+		RED GAMEMAKER
G605-00233-SP++		PURPLE GAMEMAKER, SPANISH TEXT
G605-00233-SPGR		GREEN GAMEMAKER, SPANISH TEXT
G605-00233-SPRD		RED GAMEMAKER,RED GAMEMAKER-SPANISH TEXT
G605-00271-BALY		GAMEMAKER, BALLY
G605-00271-KENO		GAMEMAKER, KENO
G605-00390-FBEE		GAMEMAKER FEATURING FREEBEE, (NO PAYS)
G605-00415-SLOT		GAMEMAKER BLUE SLOT
G605-00435-GSIT		GOLDMINE SLOT THEME FEATURE
G605-00435-GSIT		GOLDMINE SLOT THEME FEATURE
G605-00410-3IN1		GMKR 3 IN ONE, BIG HOUSE POKER, CATCH 22 KENO, GOLDMINE SLOT
G605-00503-ODDS		WIZARD OF ODDS, CAL 8 WAY THEME
G605-00504-BZ7+		BLZ 7'S, CAL 8 WAY THEME



Game Maker® Slant (cont.)

Feature Glass G605... (cont.)

Feature Glass #	SMI	Description
G605-00505-IN\$+		IN THE MONEY, CAL 8 WAY THEME
G605-00506-SAK7		CAL 8 WAY THEME SHAKA 7'S
G605-00508-SHRK		CAL 8 WAY THEME POOL SHARK
G605-00509-BEER		CAL 8 WAY THEME, 99 BOTTLES OF BEER
G605-00510-LUCK		CAL 8 WAY THEME, LUCKY GAME
G605-00333-POKR		RED POKER GAMEMAKER
G605-00480-++++		GAMBLERS CHOICE / PLAIN
G605-00480-GMBL		GAMBLERS CHOICE SELECT A BET VERSION
G605-00480-PLUS		GAMBLERS CHOICE SELECT A BET PLUS VERSION
G605-00495-WELL		WISHING WELL THEME
G605-00501-BNGO		BINGO THEME
G605-00511-CAKN		CALIF KENO THEME
G605-00512-KENO		ULTIMATE KENO THEME
G605-00523-DDPK		DBL DRAW THEME POKER
G605-00525-POPR		MONEY POPPERS
G605-00526-DDPK(C)		DBL DRAW POKER THEME, DIGITAL
G605-00527-MKT+(C)		PLAY THE MARKET, DIGITAL
G605-00530-PICK(C)		PICKEM POKER THEME, DIGITAL
G605-00531-2XPK(C)		BLUE DBL DBL BONUS POKER, ALBERTA, DIGITAL
G605-00532-PICK(C)		PICKEM POKER, DIGITAL

Game Maker® Slant (cont.)

Feature Glass G679...

Radial Feature Glass #	SMI	Description
G679-00053-21++	J0023	GENERIC BLACK JACK THEME
G679-00099-21++	J0028	PARIS "21" THEME
G679-00096-KENO	K0035	PARIS KENO PLUS
G679-00100-KENO	KENO	GMKR (NO PLUS) GENERIC KENO (PURPLE)
G679-00061-POKER	P0007	GAMEMAKER RED POKER
G679-00061-SP	P0007	GAMEMAKER RED POKER, SPANISH TEXT
G679-00062-POKR	P0007	GAMEMAKER BLUE POKER
G679-00063-POKR	P0007	GAMEMAKER GREEN POKER
G679-00064-POKR	P0007	GAMEMAKER PURPLE POKER
G679-00097-JWLD	P0014	PARIS JOKER WILD
G679-00092-DPOK	P007	PARIS DRAW POKER THEME
G679-00094-PARS	P007	PARIS GAMEMAKER
G679-00093-2WLD	P0239	PARIS DEUCES WILD THEME
G679-00089-BOPK	P0339	PARIS BONUS POKER THEME
G679-00028-\$25+	P0391	CUSTOM HILTON \$25 PAYTABLE 5M
G679-00090-2BOP	P0391	PARIS DBL BONUS POKER THEME
G679-00101-HART	P0428	PARIS-HEARTS
G679-00117-FLBO	P0428,429,430,431	CUSTOM PARIS, FLUSH BONUS THEME
G679-00102-DIAM	P0429	PARIS-DIAMONDS
G679-00103-CLUB	P0430	PARIS-CLUBS
G679-00104-SPAD	P0431	PARIS-SPADES
G679-00098-3XPK	P0447	PARIS TRIPLE BONUS POKER
G679-00088-2CH+	P0506	PARIS 2ND CHANCE POKER THEME
G679-00091-2XPK	P0621	PARIS DBL DBL BONUS POKER THEME
G679-00029-ROYL	P0635	CUSTOM HILTON PEDROT ROYAL
G679-00030-ROYL	P0636	CUSTOM HILTON PEDROT ROYALS
G679-00028-\$5++	PO391	CUSTOM HILTON \$5 PAYTABLE 5M
G679-00131-BCAR	Y3210	BOX CAR BONUS THEME
G679-00036-WELL	Y3305/06	WISHING WELL THEME
G679-00112-SAYR	Y3322	SOOTHSAYER THEME
G679-00035-BABY	Y3381	BABY BOOMER THEME
G679-00130-MOO\$	Y3508	MOO MONEY THEME
G679-00111-ISLD	Y3511	ISLAND WINS THEME
G679-00038-Y2K+	Y3826	Y2K THEME
G679-00147-HOT+	Y3942	HOT HOT HOT CEBA CHROME
G679-00148-MKT+	Y3993	PLAY THE MARKET
G679-00149-COW(C)	Y4031	CAH ENCOUNTERS, DIGITAL
G679-00108-GMIN	Z3085	GOLDMINE BONUS-THEME
G679-00109-FBEE	Z3184	FREEBEE THEME
G679-00127-JOKR	Z9900	JUMPER JOKER THEME
G679-00128-GEMS	Z9902	REEL GEMS THEME
G679-00129-PRNC	Z9904	PRINCE OF PERSIA THEME
G679-00136-SP++		2'S WILD COIN, SPANISH
G679-00134-SP		BALL OF FIRE COIN, SPANISH TEXT
G679-00135-SP++		WIN SPANISH COIN PAYS
G679-00095-PARS		PARIS GAMEMAKER
G679-00069-PK1+		PACKAGE #1
G679-00070-PK2+		PACKAGE #2
G679-00048-PK5+		PACKAGE #5 GAME
G679-00027-KEN+		PURPLE KENO GAMEMAKER ROUND SLANT TOP
G679-00024-BLUE		BLUE GAMEMAKER
G679-00024-GMKR		GREEN GAMEMAKER
G679-00024-PURP		PURPLE GAMEMAKER
G679-00024-SPRD		RED GAMEMAKER
G679-00024-RED+		RED GAMEMAKER
G679-00126-DDPK		DBL DRAW POKER THEME
G679-00146-PDPK		DBL DRAW POKER THEME



Game Maker® Bartop

Bill Acceptor
D300-...
Page 3A-38

Bill Acceptor
Bezel
D150...
Page 3A-38



Game Maker® Bartop (cont.)

Decals



D300-0006-21++
Bill Acceptor Decal

Decal #	Description
D300-00001-GMAK	GAMEMAKER W/BA
D300-00001-GMSP	GAMEMAKER, SPANISH TEXT
D300-00002-GMAK	GAMEMAKER W/O BA
D300-00003-GMAK	GAMEMAKER PROTO
D300-00004-POKR	GAMEMAKER POKER RED
D300-00005-GMAK	GAMEMAKER LIGHT/SOUND
D300-00006-21++	BLACKJACK 21, W/BV
D300-00007-3XPK	TRIPLE BONUS POKER
D300-00010-MPLA(C)	MULTI PLAY, DIGITAL
D300-00011-DDPK(C)	DBL DRAW POKER, DIGITAL
D300-00012-KENO(C)	ULTIMATE KENO, DIGITAL

ACCEPTS \$1, \$5, \$10, \$20

D150-0024-++++
Bill Acceptor Bezel

5\$, 10\$, 20\$ ACCEPTE\$

D150-0046-FCAN
Bill Acceptor Bezel

Decal #	Description
D150-00016-SLVS	Accepts \$1,\$5,\$10,\$20 / \$1,\$5 / \$5,\$10,\$20, / \$1,\$5,\$10/\$20,\$50,\$100
D150-00019-++++	Accepts \$1,\$5,\$10/\$20,\$50,\$100
D150-00024-++++	Accepts \$1,\$5,\$10,\$20,\$50 & \$100 / \$1,\$5,\$10 & \$20 / \$5,\$10 & \$20 / \$5,\$10/\$20,\$50 & \$100 / \$20, \$50 & \$100 / \$50 & \$100 / \$100.00
D150-00025-++++	Accepts \$5,\$10,\$20,\$50, \$100
D150-00034-\$25+	Accepts \$50 & \$100
D150-00044-RAND	Accepts R10 & R20 / R10,R20 & R50 / R10,R20,R50 & R100 / R10,R20,R50,R100 & R200
D150-00045-CAND	Accepts 5\$,10\$,20\$,50 / 10\$,20\$,50\$ & 100\$ / 50\$ & 100\$ / 5\$,10\$,50\$,100\$
D150-00046-FCAN	French Canadian/English Text Accepts 10\$ & 20\$ / 5\$, 10\$, 20\$, 50\$, 100\$ / 50\$ & 100\$ / 100\$ / 10\$, 20\$, 50\$, 100\$ / 10\$, 20\$ 50\$
D150-00049-++++	Accepts \$20 & \$100 / \$100
D150-00054-LIRA	Accepts LIT 100.00K (OLD & NEW) 50.00K (OLD & NEW) 10.00K & 5.00K / 10K, 50K,100K
D-150-00056-++++	Accepts \$1,\$5,\$10,\$20 & \$50 / \$5,\$10,\$20 & \$50
D-150-00060-++++	Accepts \$10,\$20 & \$50



Periodic Maintenance

MODULE 4

**MK4-SVMOD-0002
PERIODIC MAINTENANCE**

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Module 4

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Periodic Maintenance

Overview

This module describes periodic maintenance for all ProSlot®, GameMaker®, EVO® Video and EVO® Hybrid products

The following is the recommended Periodic Maintenance Schedule:

Periodic Maintenance Schedule				
Assembly	Maintenance Item	Service Interval (Days)		
		30	90	180
Cabinet	Door Switch Optic (detector)	X		
	Cabinet Interior		X	
	Lamps	X		
	Cabinet Exterior		X	
Machine Door	Player Panel Buttons	X		
	All Glass	X		
	Door Switch Optic (emitter)	X		
Coin Entry	COD Board Optics	X		
	Coin Diverter Inspection		X	
Coin Hopper	Coin Switch	X		
	Hopper Test		X	
Bill Acceptor	Bill Path	X		
	Timing Belts			X
	Sensors			X
Handle Mechanism	Release Solenoid and Ratchet		X	
Reel Drive	Reel Optics		X	
	Reel Strip	X		
Monitor	Viewable area	X		
	Position, Size, and Intensity		X	
	Touch Screen Calibration		X	
CD ROM Drive	Lens	X		
	CD ROM	X		
Printer	Ribbon (Impact)	X		
	Print Head	X		



Cabinet

Door Switch Optic (detector)	The ProSlot®, GameMaker®, EVO® Video and EVO® Hybrid use optical door switches. Maintain optimum performance by cleaning with a lint-free cloth.
Cabinet Interior	Vacuum the inside of the cabinet. Remove all dust and debris from the coin chutes. Remove loose coins to keep them from shorting electrical connections.
Lamps	Replace any burned out lamps. Flickering fluorescents may be caused by faulty starters. All fluorescents illuminate when machine power is switched ON. Locate burned out button and feature lamps by playing the machine or by activating the Output Test as described in Module 2, Setup and Operation.
Cabinet Exterior	The laminate or powder coat exterior of the cabinet requires little maintenance except for occasional dusting. Avoid abrasive cleansers.

Machine Door

Player Panel Buttons	Use a dry, lint-free cloth to clean the buttons. If a cleaning solution is necessary, use a mild glass cleaner. Avoid abrasive cleansers.
All Glass	Use a dry, lint-free cloth to remove the dust from the glass. Use a mild glass cleaner if necessary. Avoid abrasive cleansers or anything that will damage the protective laminate on the inside of the Display Glass and Feature Glass.
Door Switch Optic (emitter)	The ProSlot®, GameMaker®, EVO® Video and EVO® Hybrid use optical door switches. Maintain optimum performance by cleaning with a lint-free cloth.

Coin Entry

COD Board Optics	The Coin Optic Decoder Board uses an infrared emitter and detector to monitor coins. The emitter and detector are on the same side of the COD board. The emitter shines through the assembly and is reflected by a prism back to the detector. Use a lint-free cloth to clean the prism. Check the prism bracket to ensure that the prism is secure.
Coin Diverter Inspection	With power OFF the Coin Diverter Assembly should pivot freely. Activate the Output Test as described in Module 2, Setup and Operation, to verify operation.

Coin Hopper

Coin Switch	Upright and Bartop machines use optical switches to count coins from the hopper. Use a dry, lint-free cloth to clean the lenses. Check the adjustment of the micro switch on slant machines.
Hopper Test	Activate the Hopper Test as described in Module 2, Setup and Operation. The hopper will dispense 10 coins.

Bill Acceptor

Bill Path	Open the acceptor and transport components. Use a dry lint-free cloth to remove any debris.
Timing Belts	Frayed or worn belts should be replaced.

Periodic Maintenance

Bill Acceptor (cont.)

Dirty, clouded, or scratched lenses may degrade the performance of the acceptor and should be replaced. Clean the sensors with a dry lint-free cloth. If a solvent is needed, use a weak solution of water and mild dish detergent. Allow the lenses to dry completely before closing the acceptor and transport assembly.

Sensor

Activate the Bill Acceptor Test as described in Module 2, Setup and Operation, to verify operation.

Handle Mechanism

The handle mechanism consists of a ratchet assembly, an optic sensor, a release solenoid, and an arm assembly. The handle mechanism should be inspected for proper function and to ensure handle arm is secure.

Release Solenoid
and Ratchet

Press the PSEUDO COIN button to energize the handle release solenoid and allow the handle to move. Pull the handle and check for smooth ratchet operation. The reels should spin when the handle is in the full forward position. Release the handle and ensure it returns and locks into its original upright position.

Note: The handle mechanism is factory lubricated and does not require additional lubrication or adjustment.



Reel Drive

Optical sensors monitor the reel positions. Clean the reel optics with a dry lint-free cloth or swab. Dirty reel optics can cause 40 series and 70 series tilts. Refer to Troubleshooting in Module 2, Setup and Operation, for more information.

Reel Optics

Clean each Reel Strip with a soft cloth moistened with warm water.

Reel Strip

Monitor

A Micro Touch® touch screen is bonded to the CRT, which can be damaged with abrasive or ammonia-based cleaners. Clean the monitor with an antistatic nonabrasive cloth and a cleaner recommended for lap top computer screens.

Viewable Area

Allow at least 20 minutes with power ON for the monitor to stabilize. Check the picture for discoloration or fade-out. Degauss if necessary.

Position, Color and
Size

Check for correct horizontal and vertical alignment by ensuring that all text and images are within the borders of the monitor bezel. Use the CRT COLOR and SCREEN SIZE diagnostics as described in Module 2, Setup and Operation.

Settings for the touch screen will change over time, or if any adjustment has been made to the monitor. Calibrate the touch screen according to the directions described in Module 2, Setup and Operation.

Touch Screen
Calibration

CD ROM Drive

The CD ROM Drive reads data with a laser. Dust, smoke and airborne particles can cloud the lens that the laser is focused through, causing “freezing” and other machine malfunctions.

Lens



CD ROM Drive

Lens(cont.)	A commercial lens cleaner can help maintain optimum performance from the 5 ½" optical disc drive. The cleaner is a disc with a small lab-grade brush installed on the underside that gently cleans the delicate lens. This special brush is made with ultra-fine synthetic fibers that are infused with a microscopic strand of copper giving the cleaner antistatic properties.
CD ROM	Contamination on the CD ROM can cause read errors similar to those of a dirty drive. A slow flashing BUSY LED may indicate a dirty CD. Clean the CD ROM with a soft damp cloth. Avoid using a circular motion while cleaning. The disc should be wiped in a radial (inner side outward) direction.

Printer

Ribbon (Impact)	Frayed and worn ribbons can damage the print head by snagging and bending the pins. Replace worn ribbons according to procedure described in Module 8, Peripherals.
Print Head	Once the unit is opened, the ticket path is accessible for cleaning or clearing tickets. Use a soft brush to clean the paper dust from inside the printer and chassis area. The paper dust should also be removed from the sensor optics. If streaking on the printed ticket is evident, the thermal print head may need to be cleaned. Cleaning cards are available for thermal printers through TransAct or can also be purchased direct from Enefco International Ltd. at (888) 578-0141.



GLOSSARY

MODULE 5

MK5-SVMOD-0002

Glossary

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Acronyms and Abbreviations

ADJUST	SDS® Adjustments Report	A
APC	MAPS® Atomic Progressive Controller	
BADREV	SDS® Bad Revenue Report	B
BPC	MAPS® Boss Progressive Controller	
BSG	Bally Secondary Game	
CE	Council of the European Communities (Low Voltage Directive)	C
CIU	SDS® Communication Interface Unit	
CLR	SDS® Clear (CLR+ENT to move backwards in parameters)	
CMOS	Complementary Metal Oxide Semiconductor	
COD	Coin Optic Decoder	
COINRP	SDS® Coin Difference Report	
COMPRO	SDS® communications program	
CPC	MAPS® Central Progressive Controller	
CRC	Cyclical Redundancy Check	
CSA	Canadian Standards Association	
DAC	Digital to Analog Converter	D
DENOM	SDS® Machine Denomination	
DIP	Dual In-line Package	
DIU	SDS® Display Interface Unit	
DMK	SDS® Display with Magnetic card reader and Keypad	
DUART	Dual Universal Asynchronous Receiver Transmitter	
EEPROM	Electronically Erasable Programmable Read-Only Memory	E
EGD	Electronic Gaming Device	
EGM	Electronic Gaming Machine	
EIA	Electronics Industry Association (approved equipment)	
ENT	SDS® Enter: to move Forward in parameters	
EPI	SDS® Enhanced Player Interface	
EPROM	Erasable Programmable Read Only Memory	
GAT	Game Authentication Terminal	G
GMU	SDS® Game Monitoring Unit	
GSA	Gaming Standards Association (formerly GAMMA)	
GUI	Graphical User Interface	
HHU	Hand-Held Unit	H
LAN	Local Area Network	L
LED	Light Emitting Diode	
Mag Card	SDS® Magnetic Card	M
MAPS®	Multi Area Progressive System	
MC	SDS® Mastercom	
MISER	Micro Integrated Slot Event Recorder	
MPU	Microprocessing Unit	
NMOS	N-Channel Metal Oxide Semiconductor	N
NOCOMM	SDS® Slots Not Communicating Report	



Acronyms and Abbreviations (cont.)

O	OEM	Original Equipment Manufacturer
P	PAL	Programmable Array Logic
	PJP	SDS® Progressive Jackpot
	PRD	Peripheral Device
	PROM	Programmable Read Only Memory
	PTD	SDS® Period To Date
Q	QTD	SDS® Quarter To Date
R	RNG	Random Number Generator
	RTC	Real Time Clock
S	SAS®	Slot Accounting System (IGT)
	SCO	SDS® Software Change Order
	SDS®	Slot Data Systems
	SDT	SDS® Data Transport
	SED	Simple External Device
	SIU	SDS® System Interface Unit
	SMART™	Slot Marketing And Revenue Tracking System (IGT)
	SMI	Specific Model Information
	SMIB	Smart Interface Board
	SNA	Systems Network Architecture
T	TTL	Transistor-Transistor Logic
	TX/RX	Transmit/Receive
U	UART	Universal Asynchronous Receiver Transmitter
	UPS	Uninterruptable Power Supply
V	VGD	Video Gaming Device
	VGM	Video Gaming Machine
	VIP	SDS® Very Important Player or Video Interactive Play
	VLT	Video Lottery Terminal
	VRTX	Versatile Real-Time Execute
W	WAPS	Wide Area Progressive System
	WTD	SDS® Week To Date
X	XC	SDS® Exception Code
Y	YTD	SDS® Year To Date



Module 5

Glossary

Intro - Aw

This glossary includes terminology from Bally Gaming and Systems SDS® and MAPS®. These terms and definitions are included to assist the Operator's understanding of machine components and game operations.

Introduction

Abandoned Card: SDS® message generated when an Employee Card or Player Card is inserted into a card reader, but there is no activity registered to that machine.

A

Accounting Meters: See *Bookkeeping Meters*.

ADJUST: (Adjustments Report) SDS® listing of GMU meters outside preset parameters.

Administration Mode: The machine state invoked by the Audit Key where bookkeeping meters are displayed.

APC: (Atomic Progressive Controller) A MAPS® machine-to-LAN interface. It connects with a gaming machine through a three-wire RS-232C, and with the LAN through the slot line. It may also control a display that shows progressive jackpot amounts.

Appendage: A division of the SDS® Slot Line, connecting machines on the floor to the slot line patch panel. The slot line is divided as "A" side and "B" side, which is useful for troubleshooting and line balancing.

Art Form: A listing of symbols, their distribution on the reel tape, and the top awards for a slot. It is the information shown to a Player on the reels, feature glass and display glass.

Attendant: An employee whose responsibilities include verifying and paying jackpots.

Attendant Pay: See *Jackpot Lockup*.

Attract Message: A downloaded or Operator-entered message appearing on-screen, or in an SDS® EPI/DMK display to attract a potential Player.

Attract Mode: If active, following a specific period of inactivity the machine may display graphics, flash lamps, or play music to attract potential Players. It serves as a screen saver on video products.

Audit Key: (a.k.a. Reset Key) The key used to actuate the Audit Keyswitch.

Audit Key Menu: All electronic accounting information, diagnostic functions, and game configuration options are accessed from the Audit Key menu in video products.

Audit Keyswitch: When actuated with the Audit Key, it signals the game to respond according to the state of the machine. It may show Bookkeeping or Diagnostic Meters, the Audit Key menu, or release a jackpot lockup.

Autohold: An option selected during configuration that automatically holds suggested card combinations. A HELD message appears above those cards.

Awards Glass: See *Feature Glass*.

Awards Test: See *Payout Test*.



Ba - Bo

B

Backplane Board: (a.k.a. Motherboard) A printed circuit board that provides interconnections between the MPU board and cabling.

BADREV Report: (Bad Revenue Report) SDS® listing of machines that have performed with unusually high or unusually low receipts.

Banner: *See Attract Message.*

Bar Top: A machine manufactured to fit within a bar counter.

Base Amount: The starting amount of a progressive jackpot.

Basic Percentage: The payback percentage of a game, excluding the Bonus, for the maximum wager. *See also Nominal Percentage and Bonus.*

Beef: (a.k.a. Dispute) When coins are taken from a machine by an Employee and given to a Player (a coin jam, for example). An SDS® Beef Slip should be generated for this transaction.

Beef Slip: SDS® documentation from the change booth terminal to record the transfer of money taken from a machine or the change booth by an Employee and given to a Player.

Belly Glass: *See Display Glass.*

Bet Mode: A machine option that configures how the machine will accept wagers. The choices are Cash, Credit, Player Selectable, and Coin to Credit.

Bill Acceptor: An assembly that examines currency or coupons and communicates the value to the machine. Accepted items register as credits, rejected items are returned to the Player.

Bill Drop: (a.k.a. Soft Drop) Controlled process of removing bills from bill acceptors.

Bill Acceptor Records: A listing of bill transactions by denomination.

Bill Acceptor Transaction History: A record of credits incremented or coins dispensed for each of the last 10 bill transactions.

Bill Validator: *See Bill Acceptor.*

Bill Vended Meter: An SDS® meter that records the cumulative number of credits for accepted bills.

Blackout: An SDS® message generated when a machine with power OFF is turned ON.

Bleed: A process where coins are removed from a machine by an Employee and returned to the change booth. An SDS® Bleed Slip should be generated to document the transaction. For example, a Bleed would occur with the removal of all money from the hopper and the coin acceptor when a machine is removed from the floor.

Bleed Slip: SDS® documentation from the change booth terminal to record machine-specific Bleed transactions.

Bonus: A reward for playing the maximum wager. For example, on a three coin multiplier game, a particular combination may pay 100 with one wagered, 200 with two wagered, and 500 (instead of 300) with the maximum three wagered. The 500 pay includes a 200 coin bonus for wagering the maximum.

B

Bonusing: An automated payout system for rewarding Players even without playing the maximum wager or winning a jackpot. For example, "Savvy 7s" pays a random bonus between \$10 and \$1000 when a special symbol appears on the third reel; "Mystery Jackpots" pays a random award to the Player that reaches a level of play regardless of the game's outcome.

Bookkeeping Meters: An electronic and electromechanical means of storing and displaying statistical data within the machine. Typical information includes Total In, Total Out, Combined Drop, Attendant Paid, Bill Credits, etc.

BPC: (Boss Progressive Controller) Bally Gaming and Systems MAPS® LAN to WAN interface and the single site controller. If the WAN should fail, the BPC is capable of accumulating and displaying progressive information until communication through the WAN is restored.

BSG: (Bally Secondary Game) Communication protocol between processors controlling second-feature games, such as BellRinger®.

Buy-a-Pay: A style of game where the Player "buys" paying combinations by wagering more. For example, on a three-credit game, the first two coins may buy the wareds for all symbols except sevens on the payline. The third credit would buy the awards for the sevens.

Cabinet: The housing of the gaming machine.

Cancelled Credits: Soft credits paid by an Attendant.

Candle: *See Tower Light.*

Card: *See Player Card or Employee Card.*

Card Reader: Device for monitoring and tracking Player activity, machine maintenance, and Employee activity through insertions of magnetic stripe cards.

Cash: (Bet Mode) Machine option where coins inserted register in COIN IN or BET to the maximum allowed by the game. Bill acceptor transactions and wins are paid in coins from the hopper according to other machine option settings.

Cash Cage™: A bill hopper system within a machine that dispenses currency or coupons. It works in conjunction with a coin hopper to pay the Player upon a cashout.

Cashout: An activity by a Player to transfer credits to a Player's card, or convert machine credits to cash or payable vouchers by pressing the CASH/CREDIT button on the player panel, or the COLLECT screen icon.

Casino Cabinet: (a.k.a. W6 style) An upright cabinet style with a sloped top box that is several inches higher in the front than in the back.

Central Slip Printer: An SDS® printer dedicated to printing EPI/DMK Fill Slips.

Change Booth: SDS® facility for terminals that print jackpot and fill slips, activate Employee cards, and log drops.

Checksum: The result of an arithmetic operation on bits. Used to verify the integrity of data.

CIU: (Communication Interface Unit) SDS® hardware interface (commonly the red board) within the CIU/SIU rack.

C



Cl - Cr

- C**
- CIU/SIU: (Communication Interface Unit/System Interface Unit)** SDS® hardware that controls the on-line/off-line status. The CIU/SIU holds four types of boards: the slot line controller, the CIU "red board," TX/RX (transmit/receive) board, and the EIA board.
- Clear: SafeRAM™** See *SafeRAM™ Clear Procedure*.
- Clock:** A timing device that generates the base signal used to synchronize operations in a computer (*for time and date see RTC*).
- COD: (Coin Optic Decoder) Board** A printed circuit board containing micro-controller, optic sensors, and other components to detect a coin and determine it's direction of travel.
- Coin Diverter:** An assembly to guide coins to the hopper until it is full, then to a drop container.
- Coin Drop:** Action taken to empty the drop containers. See also *Hard Count* or *Hard Drop*.
- Coin Inhibit:** A control line from the MPU board to the coin acceptor or COD board to reject all coins.
- Coinless Transaction:** Where Players use vouchers or coupons, which are accepted by machines as credits, or where credits are transferred to the Player's card.
- Coin Out Switch:** A mechanical, optical, or proximity switch to count coins dispensed by the machine's hopper.
- Coin to Credit: (Bet Mode)** (a.k.a EuroCredit) All coins, currency, and wins are registered as credits up to the credit top limit.
- COINRP: (Coin Difference Report)** An SDS® report showing changes for coin in, coin out, drop, and games meters in the system while the main door was open.
- COMPRO:** An SDS® communication program interface between SDS software and the CIU.
- Concept3™:** A communication standard developed by Acres Gaming.
- Coupon:** A note with no cash value used in place of currency to establish credits on a machine.
- CPC: (Central Progressive Controller)** The central system for Bally MAPS®. It accumulates bet data from all LANs, computes the current and hidden jackpots for each link and transmits the amounts to the LANs.
- CPU: (Central Processing Unit)** The component of a computer system that has the circuitry to control the interpretation and execution of instructions.
- Crazy Reel Operation:** Random spin direction of each reel during a game.
- CRC: (Cyclical Redundancy Check)** Checksum technique to verify data. See also *Checksum*.
- Credit: (Bet Mode)** Machine option where inserted coins register in COIN IN or BET. Wins and bill acceptor transactions register as credits subject to other machine options. See *Bet Mode*.
- Credit Collect Lockup:** A jackpot lockup upon a collect, from a machine setting which, when equaled or exceeded by the available credits, requires an Attendant to pay the balance of credits remaining.
- Credit Meter:** A portion of the message center on a slot product and the area on a video screen where credits for play or collection are indicated to the Player.

CRT: (Cathode Ray Tube) A vacuum tube, such as a television picture tube, whose electron beam can be focused to show graphical data.

C

Current Credit Meter: Bookkeeping meter showing credits available to the Player when the machine returns to revenue operation.

Current Draw: The amount of current required to operate the machine. Usually measured in Amperes.

Cursor: The symbol on a display indicating where the next character will appear or where the next action will take place.

Cycle: The total number of symbol combinations on a gaming machine.

DAC: (Digital to Analog Converter) An IC that provides a voltage or current output from a digital input.

D

Daisy Chain: A group of devices where a second device is connected to the first, a third device is connected to the second, etc.

Data Vault™: A battery-backed redundant bookkeeping meter system that interfaces asynchronously with the machine's meters. The numbers are recorded at the same time, yet they are separate from the operations of the machine's meters, assuring accuracy even if something bad should happen to the machine's memory.

Deck: (a.k.a. Player Panel) Area of the machine's cabinet where the Player accessible buttons are located.

Degauss: The neutralizing of a magnetic field around a video monitor to correct faulty color.

Denomination: The value of each credit. For example, a machine configured for 25¢ registers one credit for each quarter through the coin acceptor and four credits for each dollar through the bill acceptor.

DIP Switch: (Dual In-line Package Switch) A set of switches with a footprint similar to an IC for mounting on circuit boards.

Display Glass: (a.k.a. Belly Glass) The lower glass insert of the door of an upright machine.

DIU: (Display Interface Unit) MAPS® system hardware that connects the LAN with external signs. Through this device, the CPC via the BPC sends character strings, display sequences, and jackpot amounts to the overhead signs.

Diverter: See *Coin Diverter*.

DMK: (Display with Magnetic card reader and Keypad) SDS® hardware interface between the GMU and the Operator or Player. External devices include a keypad, card reader and display.

DMK/EPI Fill Request: An SDS® fill request registered at the change booth when the employee enters the fill code at the keypad of a machine.

Double Down: 1) A secondary game where a Player may wager part or all of the winnings from the most recent game and possibly double the current winnings. 2) In Blackjack, doubling the initial wager when the value of the first two cards totals 10 or 11.

Double Up: See *Double Down, definition 1*.

Drop 1) Coins and bills collected from a machine or the process. 2) An SDS® indicator for the fiscal end and beginning of a gaming day for coin, bill, and/or slip data collection.



Dr - Ev

D

Drop Hold Percentage: The percentage of the total drop retained by the Operator. Calculated as (Combined Drop - [Fills + Attendant Paid]) / Combined Drop.

DUART: (Dual Universal Asynchronous Receiver Transmitter) A communication IC that can interface between a microprocessor and a serial channel. *See also UART.*

E

EEPROM: (Electrically Erasable Programmable Read-Only Memory) A memory IC where contents can be erased with electric signals.

EIA: (Electronics Industry Association [approved board]) An SDS® electronic circuit board in the CIU/SIU that interfaces the RS-232 signal lines with the SDS® computer. Each EIA board supports four terminals.

Electromechanical Meters: Lifetime counters within the machine that record accounting information. Commonly used meters are total in, total out, and combined drop. Usage varies with Market Code and configuration. The electromechanical meters are an independent record of the same information stored in bookkeeping meters.

Electronic Meters: *See Bookkeeping Meters.*

Electronic Signature: Individual identification, such as the magnetically encoded number on SDS® Player or Employee cards.

Employee Card: An SDS® magnetic stripe card encoded with the Employee's identification number, permission level, and expiration.

End of Game Signal: A serial or discrete output from the MPU indicating that a game has completed.

Environmental Requirements: Physical space, heat load, and power requirements of the machine.

EPI: (Enhanced Player Interface) An enhanced SDS® DMK with a flexible modular design. Enhancements include a card reader with a lighted bezel and a two-line vacuum fluorescent display. It has all the standard DMK functions plus hot key options accessed through the keypad.

EPI Fill Request: *See DMK/EPI Fill Request.*

EPROM: (Erasable Programmable Read-Only Memory) An electrically programmed memory IC erased by exposure to ultraviolet light. It provides a nonvolatile medium for program instructions. Game programs and video graphics are stored in EPROMs.

Error Messages: *See Exception Codes.*

Escalator: The part of the slant or bar hopper that carries coins up to the coin bucket assembly.

E² (E Squared) *See EEPROM.*

Even Handpay: Machine option, when enabled, allows a partial payment upon a jackpot lockup that is independent from the option coin hopper pay amount. The hopper pays enough additional coins so that the Attendant Pay amount is an "even" amount.

Event Log: Listing of SDS® metered events that have been recorded by the machine.



Exception Code: (a.k.a. XC, Tilt Code) A numeric message associated with operations of the machine, EPI/DMK, GMU, or SDS® computer. If a malfunction or inappropriate operation of any device occurs, the code is logged for tracking and reporting.

E

Exception Log: A SDS® record of all abnormal events.

Expanded Pay Table Glass: The display glass of an upright machine showing a continuation of the pay table from the feature glass.

Feature Glass: A silk-screened glass for the top box of an upright cabinet. It usually shows the pay table.

F

Fill: Coins that are added to an empty hopper or the process.

Fill Slip: SDS® documentation from the change booth terminal to record a fill and associate it with a specific machine.

Firmware: Software stored in an IC (EPROM, EEPROM, PROM or ROM).

Floor Activity Reports: Any of a group of SDS® reports generated to track casino floor activity. These include machine activity reports, coin in, coin out, drop, exception codes, handle pulls, fills, jackpots, etc.

Game: A program designed to operate a gaming machine offering a Player the opportunity to win money by wagering on the outcome of the game's activity. There can be several games on one machine.

G

Game Authentication Terminal: (GAT) Interface for verification of the contents of the machine's storage media.

GameKeeper®: A Bally Systems PC-based program family of products that includes GameTrack® and GameWatch®. These tools facilitate the collection and analysis of revenue.

Game Maker®: Bally Gaming's innovative multi-game product that is available in upright, bar top, slant, and casino cabinet styles.

Game Recall: Function that allows the Operator to review past games, including winning combination, amount collected, amount wagered, amount won, and the available credits.

GameTrak®: A Bally Systems PC-based program used to create alternative performance and analysis reports from data gathered from the SDS®.

GameWatch®: SDS® software that transforms data into graphical representations of the performance of the floor. Just by clicking icons, an Operator can isolate on a variety of parameters. There is even a CYCLE DISPLAY feature to automatically cycle the choices.

GMU: (Game Monitoring Unit) An SDS® circuit board within the machine that records machine operation and transfers the information to the CIU via the slot line.

Gross Handle: Sum of all wagers accepted

Handle: (Pulls) Games played.

Hard Count: The room, process, or the personnel counting coins from gaming operations.

Hard Credit: Any credit on a machine derived from a winning combination.

H



Ha - Ke

H

Hard Drop: The controlled process of removing coins from gaming machines.

Hard Meters: *See Electromechanical Meters.*

Hit Frequency: The winning combinations that will occur on the machine as a percentage of all combinations. It is calculated by dividing the number of individual winning games by the number of possible outcomes.

Hold Percentage: The percentage of wagers retained by the Operator. It is calculated by subtracting the payback percentage from 100.

Home Run: The cable lines from the Slot Patch Panel in the computer room to the casino floor.

Hopper Knife: The hopper component that moves coins from the pinwheel to the coin outlet.

Hopper Optic Switch: An opto-interrupter switch used on the hopper to determine coin direction and the number of coins paid from the hopper. *See also Coin-Out Switch.*

Hopper Probe: A sensor within the hopper bowl to detect a preset level of coins. When coins touch the probe, a signal is sent by the MPU to energize a coil that moves the coin diverter assembly to route coins to the drop container.

Host: A computer system operating where networked gaming machines are the target systems. The complexity of a Host can range from monitoring and compiling statistical information, to the electronic transfer of funds; and can include RNG and game outcome.

Hot: An SDS® layering system to monitor the activity on the floor and relate it to an individual Player's activity.

Hot Player: A casino specified rating for a Player with qualifying wagers within a time frame.

I

Insert: A piece of glass or film that contains information not included in the feature, display, or reel glass. It can be a payable or other important information. *See also Decal.*

J

Jackpot Keyswitch: *See Audit Keyswitch.*

Jackpot Lockup: A game state requiring intervention by an Attendant because the current win exceeds the setting at win lockup, or the current credits exceed the setting at credit collect lockup upon a cashout. The Attendant must pay the Player and release the jackpot lockup before the machine is available for play.

Jackpot Reset Switch: *See Audit Keyswitch.*

Jackpot Slip: SDS® documentation from the change booth to track Attendant pays for jackpot lockups.

Jumper: A removable connector (plug, wire, etc.) that electrically joins separate connections.

Jurisdiction: Area under the influence of a gaming control agency with the rights and power to interpret and apply the law as it applies to gaming.

K

Keypad: An input device with multiple buttons linked to an SDS® EPI or DMK to access the functions of the GMU.

Keyswitch: A switch actuated by inserting and turning a key.



Kn - Mo

Knockoff Credits: The credits registered on the machine when an Attendant activates the knockoff keyswitch.

LAN: (Local Area Network) A network of interconnected computers covering a relatively limited geographic area, such as one or more buildings at one location.

LED: (Light Emitting Diode) A semiconductor that glows when supplied with a current.

LED Message Center: An arrangement of seven-segment LED arrays used on slot products to show information to the Player and Operator.

Line Noise: Interference in a transmission line that may be caused by interference from a power source or poor connections within the line.

Link: MAPS® single set of progressive parameters, which include the progressive controllers, display interface units, and the gaming machines that participate in that set.

Linked Progressive: Several machines contributing to common jackpots.

Lockup: *See Jackpot Lockup.*

Logical Device Name: An SDS® name given to a terminal to describe its main function or menu access privileges.

Lottery: A gaming system where all machines are usually connected to an off-site central computer.

Lower Display Glass: (Door) *See Display Glass.*

Machine: A gaming device. This term is also synonymous with EGM (Electronic Gaming Machine), VGD (Video Gaming Device), VGM (Video Gaming Machine) and VLT (Video Lottery Terminal).

Machine Meter Groups: (MMG) Operator accessible groups of related electronic meters. Machine Meter Groups include Bookkeeping, Win Records, Game Recall, Games Summary, Bill Transactions, Bill History, Progressive Jackpot Meters, etc.

Machine Options: Operator-selectable configuration available from Diagnostic Function #11 in slot products and the Audit Key menu in video products.

Mag Card: (Magnetic Card) *See Employee Card or Player Card.*

Malfunction Codes: *See Exception Codes.*

MAPS®: (Multi Area Progressive System) A single progressive system for multiple properties.

Market Code: A numeric factory setting to cause the machine to operate in the manner prescribed by a jurisdiction.

Mastercom: *See GMU.*

Maxbet Options: Operator selectable maximum and minimum wager for some games.

Message Center: *See LED Message Center.*

Monitor CRT: (cathode ray tube), associated circuitry, and hardware for presenting game images and other information to the Player or Operator.

K
L

M



Mo - Pe

M

Monitor Video Frequency: *See Refresh Rate.*

MPU: (Microprocessing Unit) Circuitry that contains a microprocessor and memory, input/output interface, buffer, clock, and driver circuits. *See also CPU.*

MPU Board: The PCB assembly that contains the CPU, memory, and associated logic and driver circuits to control the machine. Connects to the backplane.

Multi-Area Feature: An SDS® software package that allows for the subdivision of a casino into manageable parts. With this system a message can be directed to a specific area, reports can be generated for that area, or for the whole system.

Multi-Line Game: A game function that presents the Player with the opportunity to buy multiple paylines by increasing the amount wagered.

Mystery Machine Pay: A system that awards Players for coins played rather than a winning combination. *See also Bonusing.*

N

Nominal Percentage: Payback percentage of a game including the bonus for the maximum wager. *See also Basic Percentage and Bonus.*

Nudge: Movement after a reel stop when a NUDGE symbol appears on the payline.

Operator: Any person, partnership, company, or corporation and/or their legal representatives who own, operate, service, maintain and derive profit from their association with gaming equipment.

O

Opto-Isolator: A solid state device used to isolate electrical connections by using light emission and reception.

P

PAL: (Programmable Array Logic) An IC which can be programmed to function as an array of logic gates.

Payback Percentage: The amount the Player is expected to win divided by the amount of money played expressed as a percentage. On games where there is a bonus for the maximum wager, the payback percentage will vary slightly according to how many credits per game are played.

Payline: Where symbols align for award combinations. The Payline is determined by the game program. It can be vertical, horizontal, diagonal, or a combination of the three.

Payout Test: Diagnostic Function #10 in slot products confirming that reel symbol combinations match the game's pay table as it appears on the feature glass.

Paytable: A chart of pay amounts for winning combinations.

PCB: (Printed Circuit Board) Fiberglass on which electrical connections are formed by a printing and etching process. Integrated circuits and other electronic components are added, forming a functional unit.

Peripheral: An intelligent device connected to the machine, such as a touch screen, hopper, printer, or bill acceptor.

Personality: Programmed EPROMs of game-specific information that includes symbol distribution and paytables.

Personality Socket: The location on the MPU board where the Personality EPROMs are installed.

P

Pinwheel: A rotating steel disc used in coin hoppers to dispense coins. Small metal pins or raised points along the outer circumference of the pinwheel provide individual pockets where coins can ride along as the pinwheel rotates. As the coins reach the exit point of the hopper they are stripped off the pinwheel by the hopper knife.

Player: Any person who deposits money into a machine for the purpose of playing the game.

Player Card: An SDS® magnetic stripe card encoded with privileges and benefits.

Player Tracking Connection: A connection that is transferred through SDS® to another Player Tracking System, usually an AS/400 system, for the compilation of player tracking information. This system is used primarily for Player bonuses and marketing purposes.

Player Tracking System: A computer, software and accessories connected to gaming devices that allow the Operator to identify a Player, accumulate data, and reward the Player accordingly.

Play Speed: A machine option controlling the rate at which game events occur, such as deal speed, duration of reel spin, etc.

Poll: 1) An electronic request for information, usually from a Host or other computer to peripheral devices. 2) The process of gathering meter information from each game and reporting it to the Host computer.

Port: The connection that allows communication between a digital system and an external device.

Probability: A number expressing the likelihood of the occurrence of a specific event. It is expressed as the ratio of the number of actual occurrences to the number of possible occurrences.

PRD: (Peripheral Device) Communication protocol between processors controlling second-feature games, such as Roll the Dice®.

Progressive: 1) A system of pooling a portion of each wager into a cumulative fund that is available for a win. 2) A game that increments the prize amount based on Player participation. *See also MAPS, Linked Progressive, Stand Alone Progressive, and WAPS.*

Progressive Controller: A system to track wagers, increment the jackpot accordingly, and reset it to the base amount when the jackpot is won.

Progressive Jackpot: The jackpot offered by a progressive system in lieu of a fixed Jackpot.

PROM: (Programmable Read Only Memory) An integrated memory circuit where data can be stored, and generally cannot be altered thereafter.

Protocol: The communication standard between two devices.

Pseudo Coin: A nonrevenue credit that allows the Operator to play the machine while the main door is open.

Qualifying Play Achieved: Message generated when Operator-set parameters are met thereby qualifying a Player for a specified reward.

RAM: (Random Access Memory) Volatile read/write memory.

Random Number Generator: (RNG) A routine designed to yield a random number.

Real Time Clock: (RTC) *See RTC.*

Q
R



Re - SD

R

Rebet: A function that allows a Player to duplicate the wager of the previous game by pressing REBET or the DEAL-SPIN-START button.

Red Board: An SDS® term for the CIU, which is usually red.

Reel Glass: The glass framing the reels.

Reel Map: A listing of the symbol distribution on each reel strip. It is shipped with the machine and with model conversion orders.

Reel Tape: Plastic imprinted with game-specific symbols that is wrapped onto a slot reel.

Refresh Rate: The number of times per second the screen is redrawn. This is equal to the vertical synchronization frequency in a CRT. Expressed in Hertz (Hz).

Reg. 14: A reference to Nevada Gaming Regulation #14, which specifies signals that must be included in a protocol for communicating with progressive systems.

Reserve Game: An SDS® DMK function that allows an Employee to reserve a game for a special Player.

Reset Keyswitch: See *Audit Keyswitch*.

Reset Switch: The reset button on the MPU board used for a System reset.

ROM: (Read-Only Memory) Semiconductor memory where data has been permanently stored.

RS-232: A serial communication standard that uses signals more negative than five volts for a high, and more positive than five volts for a low.

RS-485: A serial communication standard with balanced drivers and receivers, requiring two transmit and two receive lines, to sustain signals over long distances. Uses +5 volts (TTL).

RTC: (Real Time Clock) An IC for maintaining time and date information.

S

SafeRAM™: Battery-backed RAM with restricted write access that stores game information. This information can be erased only with a SafeRAM™ Clear Procedure.

SafeRAM™ Clear Procedure: The process of erasing and initializing game information stored in the SafeRAM™ storage area.

SafeRAM™ Clear Chip: Special EPROMs used for a SafeRAM™ Clear Procedure.

SAS®: (Slot Accounting System - IGT) A data collection and accounting package and the communication protocol used by this system.

Scale Package: An SDS® optional feature that facilitates the hard count drop and increases accuracy. The hard count scales automatically send the data to SDS®, eliminating any manual entry.

Schematics: A graphical representation of an electrical circuit or assembly.

Screen Banner: See *Attract Message*.

SDS®: (Slot Data System) A computerized accounting and machine monitoring system developed by Bally Gaming and Systems, and the communication protocol used.

Select-a-Bet™: A multi-denomination betting feature of the Gambler's Choice™ machine that allows the Player to choose the value of each credit within an Operator-selectable range.

Sensor: The component that converts an input signal to a quantity that is measured and changed to a readable signal for an information gathering system.

Service Time Report: An SDS® report of Employee activity including the time needed to return a malfunctioning machine to operation.

Seven-Segment Display: A display comprised of seven separate LED bars that display the digit "8" when all are active.

Shelf Wheel: A metal disc attached to the hopper pinwheel providing a shelf for coins. Changing denominations usually requires changing the shelf wheel and may require changing the pinwheel.

Slant: A machine cabinet with a slanted top designed for Player comfort, which incorporates the following features: standard height seating, a padded armrest, easy access to coin and bill entry, game action below eye level, and feature glass at eye level.

SLIP: An SDS® logical device name where EPI/DMK fill slips are printed. Casinos segmented into multi-areas can direct fill slips to other change booths.

Slip Drop: The collection of all of slips from the floor for balancing with the floor activity reports.

Slot Game: A game that utilizes spinning reels.

Slot Line: SDS® cabling.

Slot Patch Panel: An SDS® hardware component that interfaces the slot line and the CIU within the CIU/SIU.

Slot Product: Distinction made for machines using motor-driven reels for games as opposed to video machines which present games on a CRT.

SMART System: (Slot Marketing And Revenue Tracking System) An accounting system developed by IGT.

SMI: (Specific Model Information) The percentage, reel tape specifications, art form numbers, glass numbers, and EPROM identification that comprise a unique model.

SNA: (Systems Network Architecture) Another type of Player tracking connection used by SDS®. The architecture was created by IBM.

Soft Count: The counting of currency generated by gaming operations and the location where the activity takes place.

Soft Credit: A credit from any source other than a winning combination (hard credit). For example, credits from bills, coupons, coins, knockoff keyswitch, ECT, or EFT.

Soft Drop: The controlled process of removing bills from bill acceptors.

Soft Meter: Any of the machine meter groups stored in SafeRAM™.

Solenoid: An electromagnetic device that converts electrical energy into mechanical energy. The solenoid consists of a coil which, when energized, becomes a magnet. The magnet then causes a metal component to move in order to activate a mechanical device.



St - Up

S

Standalone Progressive: A progressive award that can only be won on one machine.

Stepper Motor: A motor used for precision motion control. Stepper motors rotate by applying a pulsating voltage to the windings. Each pulse causes the stepper motor shaft to rotate only a few degrees (1.6° per step on Bally slots).

Super Jackpot Meter: Number of times the machine has had a win that triggers JP0 while option 7, external jackpots, is greater than zero.

Synchronous: The ability to perform two or more processes at the same time controlled by a mutual timing signal or clock.

System Clock: A circuit on the MPU board that provides timing pulses for synchronization.

System Generated Code: Exception codes generated by SDS® in response to events recorded at change booths, at the RS-6000, or internally.

System Reset: Function used to return the program pointer to a known value. A system reset button is provided on the MPU board assembly for the Operator to restore a machine to operation after a malfunction.

System Test: The simulation of a running program to check for proper functioning of components and interconnections.

T

Terminal Patch Panel: An SDS® hardware component that interfaces the terminal lines and the EIA board within the CIU/SIU.

Terminal Server: OEM hardware for SDS® used to join several different terminal connections to the Network, then link to an SDS connection.

Test Box: An SDS® GMU attached to each slot patch panel to maintain the activity of the CIU to prevent its hibernation.

Top Box: An enclosed area at the top of the machine that typically contains a light assembly, feature glass, tower light, and optional assemblies.

Top Box Glass: *See Feature Glass.*

Tournament Operation: With additional hardware and enabled options, machines can operate in a nonrevenue state. Players compete with other Players to amass the most credits within a time period.

Tower Light: (a.k.a. Candle) The multi-lamp assembly mounted at the top of the machine. It displays machine states and game conditions using combinations of steady and flashing lamps.

Troubleshooting: (a.k.a. Fault Finding) The process of systematically locating and eliminating the source of a malfunction.

U

UART: (Universal Asynchronous Receiver Transmitter) Integrated circuit used in serial communication.

UNIX: The operating system used by Bally Systems for SDS®. Developed by AT&T Bell Laboratories in 1969.

Upright: Any machine model, except a slant or bar top. It is usually attached to a stand.



UP - XM

UPS: (Uninterruptable Power Source) A local backup power source for short term electrical power if the primary power fails.

Video Frequency: *See Refresh Rate.*

Video Products: Distinction made for machines using a CRT display to present games as opposed to slot products which use motor-driven reels for games.

Virtual Reel: An electronic slot machine with statistically calculated reel stops that are greater than the number of stops possible on a physical reel. This allows for higher awards, irrespective of the physical size of the machine's components. (Patent owned by IGT.)

VLT: (Video Lottery Terminal) A machine that communicates with a central computer system. Video lottery Players often receive payment in the form of printed tickets that are redeemable for cash.

Volatility: An index of the deviation from the expected hold of a game.

Voucher: A ticket from a video lottery terminal redeemable for cash.

WAPS: (Wide Area Progressive System) A progressive jackpot network linking several casinos. The games are played for a prize funded by the controlling agency. Examples include Thrillions®, Megabucks®, and Quartermania®. *See also MAPS.*

Weighted Mapping: The variable statistical weights assigned to reel positions. An alternative to virtual reel.

Wide Area Progressive System: *See WAPS, or see MAPS.*

Win Lockup: A jackpot lockup from a machine option setting, which was equaled or exceeded by a win.

XC: *See Exception Code.*

XMISER: An older SDS® GMU.

U

V

W

X





MODULE 7

MK7-V7MOD-0001
PROGRESSIVES

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Module 7

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Module 7

Progressive Operation

Overview

A progressive jackpot represents an amount of money held in reserve, which is paid out for a specific win. The jackpot begins at a selected minimum value, and increases by a percentage of money wagered on the games to which the progressive is connected.

Progressive Hardware Description

A progressive system requires a controller, which is a computer to track the progressive amounts. The controller receives wager information from the games, then increases the progressive by a percentage of the wager.

The jackpot information can be incorporated into the on-screen pay table of the game in socket P1, thereby eliminating the need for an external display to communicate the value of the progressive to the player. If more than one game has progressive jackpots, multiple controllers as well as additional displays may be required.

A Game Maker® will support one bidirectional (S/MPI) progressive and three unidirectional (MPI) progressives with the appropriate number of controllers. The Expanded Progressive Board Assembly (AS-04269-0005) will enable all ten games to support bidirectional progressive jackpots. S/MPI operation will allow each game to assimilate the progressive amount into each on-screen pay table and may, therefore, eliminate the need for additional signs.



Note: If Game Maker® Main program is "Version 14" or later, turn to page 7-8 for the most current information for progressive operation.

Progressive Configuration

Progressive operation can be configured only when DIPSW2-7 is ON. SafeRAM™ Clear is required to change the settings once they are configured. Some markets require an additional keyswitch (M-00281-0172) for progressive changes. A jumper must be installed on W4, located on the MPU board, to enable the RS-485 return serial communications channel.

Win Level Setup

The Win Level setup associates a winning combination with a progressive jackpot. Win levels must be configured before the game can be enabled for progressive operation. As many as eight progressives can be associated within each game.

The following illustration is an example of a poker SMI with four levels of winning combinations associated with progressive jackpots.

ACCOUNTING	DIAGNOSTICS	CONFIGURATION	CONFIGURATION	EXIT
GAME WIN LEVEL		PROGRESSIVE LEVEL		
ROYAL FLUSH		0		
STRAIGHT FLUSH		1		
FOUR OF A KIND		2		
FULL HOUSE		3		
FLUSH		NONE		
STRAIGHT		NONE		
THREE OF A KIND		NONE		
TWO PAIR		NONE		
JACKS OR BETTER		NONE		

Use the following procedure to configure win levels when using Game Maker® Main software development prior to "Version 14." For newer Mains, see procedures beginning on page 7-8.

Access the Audit Key Menu. Select PROGRESSIVE under the CONFIGURATION sub-menu. Select the WIN LEVEL SETUP icon. The first game in the listing is the SMI installed in the MPU board socket P1. The other installed games are listed according to their physical locations in the game sockets. NO PROGRESSIVE indicates that the game does not support progressive jackpots.

Select a game for progressive configuration. Use the LEFT and RIGHT icons to select win combinations (right=down, left=up). Use the DOWN and UP icons to change the progressive level number for each win combination. Use SELECT to save the win level priorities and return to the game selection list. Repeat for each progressive game.

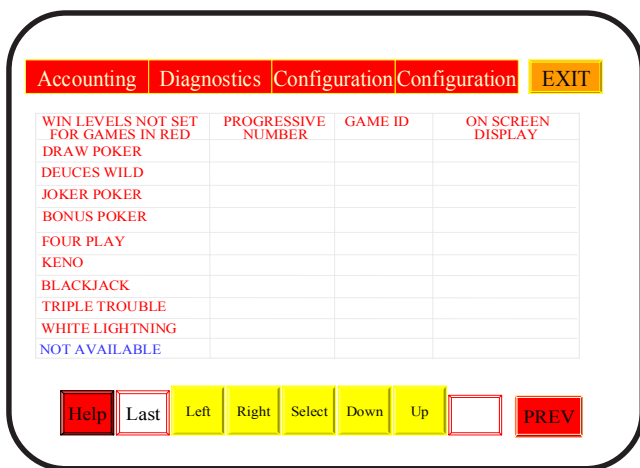
Progressive Configuration (cont.)

Assigning a Progressive to a Controller

Once the Win levels have been configured, each game can be assigned to a controller. PROGRESSIVE NUMBER assigns a particular game to a specific port and its associated controller.

GAME ID allows the game to identify jackpot information directed specifically to it from the controller. Game ID must correspond to the game's physical connection to the progressive link cable.

Selecting PROGRESSIVE SETUP displays the following:



Use the LEFT and RIGHT icons to step through PROGRESSIVE NUMBER, GAME ID, and ON SCREEN DISPLAY for each of the ten games.

Use SELECT to save the configuration and return to the PROGRESSIVE sub-menu.

When the configuration process is completed and the Main Door is closed, the GAME MENU icons display either "PROGRESSIVE," or the top progressive value.

The text "PROG. OFF" will be displayed where the progressive value is expected when the serial data has been interrupted for more than five seconds. Play on this game will be inhibited until communication is restored.

Where possible, the game paytables will also display the current progressive value. If a value is not available, the text "JACKPOT" or "JKPT" is displayed.



Tip: If the message "PLEASE CHECK PROGRESSIVE LEVEL SETUP" appears, go to WIN LEVEL SETUP and make the necessary changes.

Diagnostics and Troubleshooting

Diagnostic evaluation of each progressive is available from the COMMUNICATION TEST sub menu of PROGRESSIVE. Each of the eight jackpot levels of the ten controllers can be exercised and evaluated with the sub-menu. The operator may send coin pulses or jackpot messages by touching the appropriate icon in the table and activating the appropriate SEND command at the bottom of the screen. The table displays the current progressive value received from the controller. "NO DATA" is displayed if no controller information is received within five seconds.



Note: Without the Expanded Progressive Assembly, only progressives assigned to controller 1 will be capable of displaying the progressive value in this diagnostic menu.

Hardware Requirements

Progressive Types

Progressive systems can be stand-alone systems for one game or machine; or multiple games and machines linked. The Game Maker® can support most combinations of progressive systems.

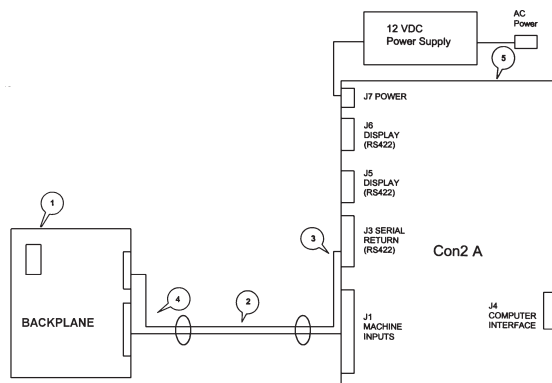
Mikohn Con2A Linked Progressive

For a Mikohn linked progressive system, the following parts are required:

PART #	QUANTITY	DESCRIPTION	DIAGRAM REF. #
CBL-20085-0001	1	Reg. 14 S/MPI Cable	4
E-00620-0662	1	4N35 Opto Isolator	1
CBL-20079-0001	1	Machine Link Cable Harness	2
CBL-30166-0001	1	Con2A Controller Cable	3
AS-02936-0016	1	Mikohn Con2A Controller	5

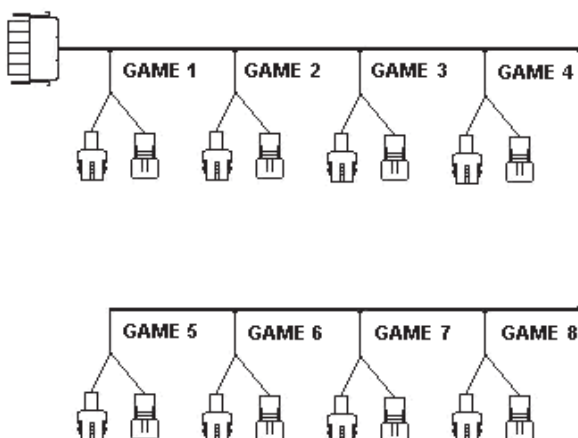
Hardware Requirements (cont.)

Installation of Linked Progressive Hardware

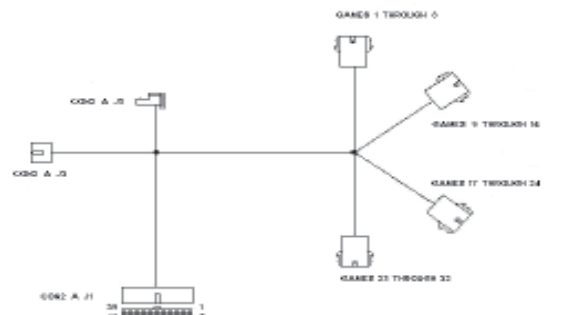


Install the 4N35 opto isolator into the U4 socket of the Game Maker® Backplane Board. The 8-circuit MTA-100 insulation displacement connector of CBL-20085-0001 connects at the backplane in JPROG1. The 4-circuit receptacle connects to the 8-Machine Link Cable CBL-30164-0001.

The Con2A Controller cable connects the controller with a maximum of four 8-Machine Link Cables. Each 15-circuit housing is numbered according to the machine identification locations at J1. Additional cables may be added if more machines are included on the progressive link. The Machine Link cables connect with the Con2A controller cable CBL-30166-0001.



8-Machine Link Cable CBL-30166-0001



Con2A Controller Cable CBL-30166-0001

Each pair of break-outs correspond with the machine identification connection at J1 of the Con2A. The physical connection of each machine must correspond with GAME ID configured in the Progressive Configuration sub-menu.

The Con2A must be programmed according to instructions in Mikohn P.S.P. Progressive System Software Configuration and User Manual #950-051-00.

Expanded Progressive Board Assembly

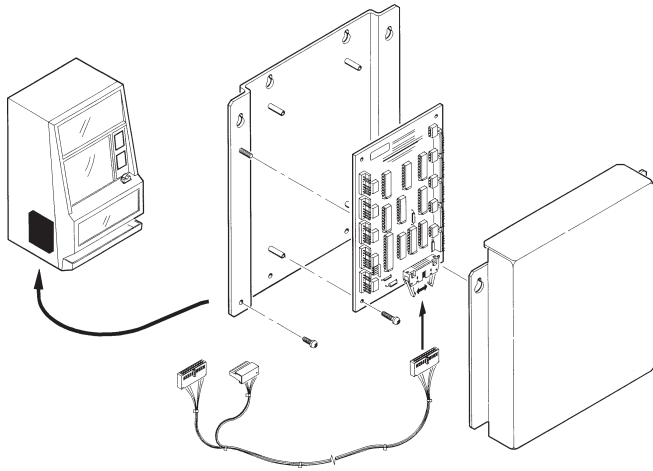
The Expanded Progressive Board Assembly enables all ten games in each Game Maker® to communicate bi-directional with each controller. The following parts are included in each assembly:

Install the Expanded Progressive by orienting the mounting holes to align with the tapped pem studs located on the lower left side of the cabinet. Secure the assembly with the four 3/8" phillips screws.

Part #	Quantity	Description
A-03207-0044	1	Expand. Prog. Bd. Cover
AS-03356-0357	1	Expand. Prog. Bd.
CBL-20177-0001	1	Expand. Prog. Bd. Cable
LBL-00243-0001	1	Cover I.D. Label
MSPP-00632-1108	2	6-32X1/2" Phillips Screw
MSPP-00832-1106	4	8-32X3/8" Phillips Screw
NLS-09339-0024	2	6-32 Keps Nut
P-09339-0024	1	Expand. Prog. Plate
SAPP-00800-1108	4	1/2" Sheet Metal Screw

CBL-20177-0001 connects at J1 of the Expanded Progressive Assembly and at two locations on the Game Maker® Backplane AS-03356-0247: JPROG1 and JPIO.

Expanded Progressive Board Assembly (cont.)



Expanded Progressive Assembly Installation

Mikohn ChamII+ Stand Alone Progressive

Diagram reference numbers refer to stand alone wiring diagram.

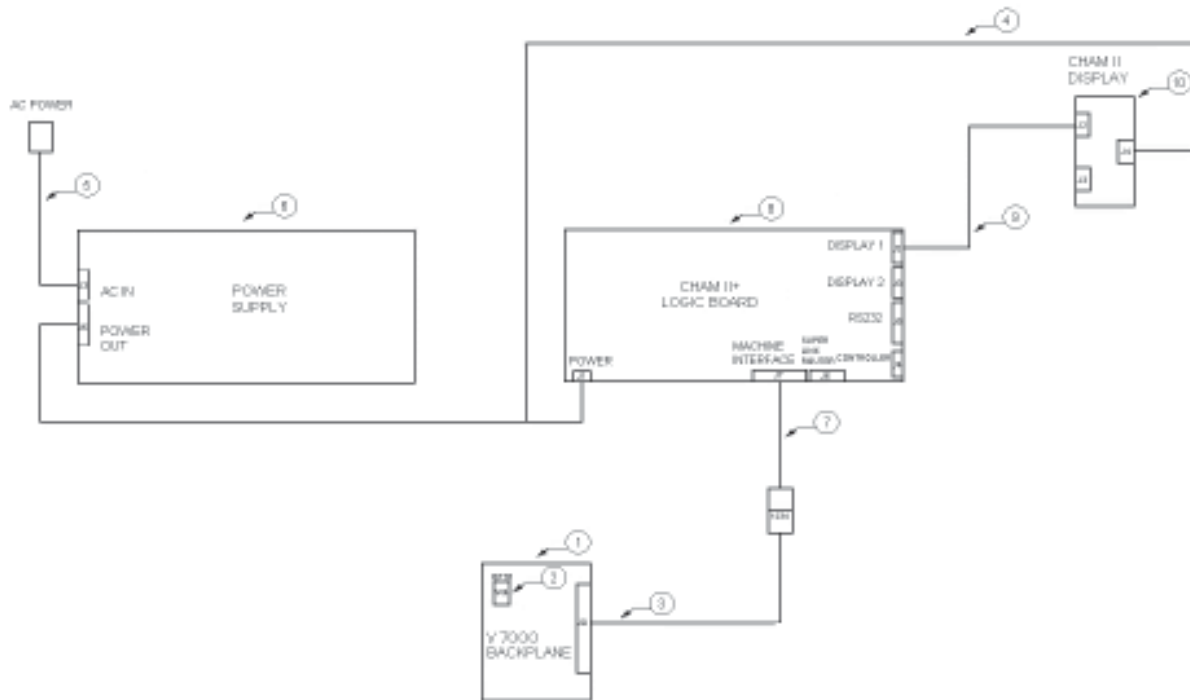
Part #	Quantity	Description	Diag. Ref. #
CBL-20085-0001	1	Reg 14 S/MPI Cable	3
E-00620-0662	1	4N35 Opto Isolator	2
AS-02988-0226	1	ChamII+ Ribbon Cable	9
AS-03110-0025	1	ChamII+ 12-Cell	10
CBL-30195-0001	1	ChamII+ Power Supply	6
E-01040-0022	1	ChamII+ Controller Logic Bd.	8
M-01760-0001	1	Wood Mount Super Mini	None
LSPP-00832-1110	4	Screw	None
TFPP-008832-1104	4	Screw	None

Internal Controller Operation

Game Maker® Main software development beginning with "Version 14" includes 25 independent internal single-level controllers that can be distributed among the games.

Each controller can be independently configured for a progressive jackpot or merchandise award; with standard or "Mystery" operation. HELP screens are available for configuration items.

The internal controllers may coexist with external controllers. Internal and external controllers may even be combined within a single game.



Stand Alone Wiring Diagram

Internal Controller Operation (cont.)

With additional hardware, internal controller operation includes communication support to configure the controllers with the aid of a personal computer (PC).

Internal Progressive Ceiling Amount

The Internal Progressive Ceiling Amount is the maximum value of any of the 25 controllers. It is set once after a SafeRAM™ Clear. If a progressive ceiling value has never been entered, the PROGRESSIVE sub-menu forces the operator to enter a value before any other configuration is allowed.

Selecting INT. PROG CEILING AMOUNT for the first time will present a numeric keypad with the default value:

INTERNAL PROGRESSIVE CEILING AMOUNT _____

SET THE CEILING AMOUNT FOR ALL INTERNAL PROGRESSIVE CONTROLLERS. THE CEILING AMOUNT IS THE MAXIMUM VALUE WHICH ANY INTERNAL PROGRESSIVE CAN ACHIEVE. THE INTERNAL PROGRESSIVE AMOUNTS WILL BE LIMITED TO THE CEILINGS REGARDLESS OF OTHER INTERNAL PROGRESSIVE SETUP, EFFECTIVELY OVERRIDING INC.2 WHERE APPLICABLE.

THE CEILING AMOUNT CAN BE SET ONE TIME ONLY. ONCE IT IS SET, AND THE OPTION SCREEN IS CLOSED, THEN IT CAN NOT BE CHANGED UNLESS SAFERAM IS CLEARED.

WHEN ASKED TO SAVE CHANGES, THE YES BUTTON STORES THE OPTION SETTINGS, THE NO BUTTON DISCARDS CHANGES AND RELOADS CURRENT SETTING

10,000. A value up to nearly 43 million (16⁸) can be entered by touching the appropriate areas of the keypad.

Internal Progressive Merchandise Text

Merchandise instead of a monetary value may be awarded for a winning combination or Mystery Pay. The Game Maker® can place a description of the merchandise within the pay table of any game enabled for the feature.

	DESCRIPTION		DESCRIPTION
0	PRG. AMOUNT	8	JACKPOT
1	JACKPOT	9	JACKPOT
2	HOUSE	10	JACKPOT
3	AUTOMOBILE	11	JACKPOT
4	BOAT	12	JACKPOT
5	MOTORCYCLE	13	JACKPOT
6	VACATION	14	JACKPOT
7	JACKPOT	15	JACKPOT

TO CHANGE THE TEXT, TOUCH THE GRID POSITION WHICH CONTAINS THAT TEXT.

THE TEXT AT INDEX 0 IS NOT A MERCHANDISE STRING. IT IS A PLACE HOLDER ONLY, AND CAN NOT BE EDITED.

WHEN ASKED TO SAVE CHANGES, THE YES BUTTON STORES THE OPTION SETTINGS, THE NO BUTTON DISCARDS CHANGES AND RELOADS THE CURRENT SETTING.

MAKE ADJUSTMENTS TO THE STRING LENGTHS IN ORDER FOR THEM TO PROPERLY APPEAR IN THE SELECTED GAME'S PAYTABLE.

Internal Controller Operation (cont.)

INTERNAL PROG. MERCHANDISE TEXT facilitates entering a description of a merchandise jackpot. Selecting the DESCRIPTION area of merchandise fields 1-15 will present a keyboard for entries. The field is ten characters. BS is a destructive backspace (It erases the character as it moves the cursor back one space). SPC enters a space. SHFT adds additional characters to the keyboard.

Internal Progressive Controller Setup

SETUP INT. PROGRESSIVE sub-menu displays a configuration table for all 25 controllers. PAGE DOWN and PAGE UP navigates through the controller listing as they appear ten at a time on the screen.

TYPE

TYPE is either STD (standard) or MYST (mystery). STD is awarded for a winning combination with maximum-credit wager.

Mystery Pay (MYST) is awarded when the credits played (TOTAL IN) equals a random preselected value between the LIMIT AMT. and the BASE AMOUNT. Please see Example 2—Mystery Pay on page 7-19.



Note: DIPSW2-7 must be ON to configure or change progressive operation



Formulae to find the *average* combined wagers to hit a Mystery Pay merchandise jackpot and the *average* value of a Mystery Pay if the jackpot is monetary:

AP=average Mystery Pay
AW=average (combined) wagers
B=BASE AMOUNT L=LIMIT AMOUNT
I=Inc.1

$$AP = (B + L) / 2$$

$$AW = (AP - B) / I$$

CONFIGURE INTERNAL PROGRESSIVE CONTROLLER BY CHOOSING THE FOLLOWING:

TYPE--SELECT THE PROG. MODE (NONE, STD, MYST.).
DISPLAY--SELECT HOW THE PROG. VALUE IS PRESENTED.
BASE AMT.--STARTING VALUE FOR PROG. AMOUNT.
INC.1--PERCENTAGE OF WAGER ADDED TO PROG. AMOUNT.
INC.2--PERCENTAGE OF WAGER ADDED TO PROG. AMOUNT AFTER LIMIT IS EXCEEDED. NOT USED IN MYST. TYPE.
HIDE INC.--PERCENTAGE OF WAGER ADDED TO HIDDEN AMOUNT. NOT USED FOR MYST. TYPE.
LIMIT AMT.--MAXIMUM VALUE OF HIDDEN AMOUNT AND SWITCH POINT TO STOP USING INC.1 AND START USING INC.2.

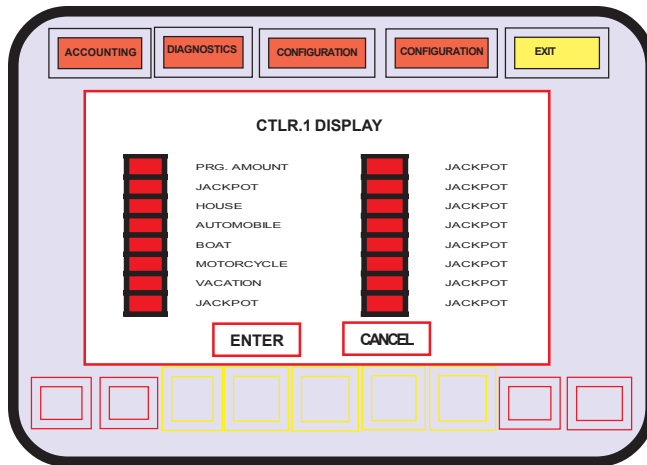
WHEN ASKED TO SAVE CHANGES, THE YES BUTTON STORES THE OPTION SETTINGS, THE NO BUTTON DISCARDS CHANGES AND RELOADS CURRENT SETTING

Internal Controller Operation (cont.)

DISPLAY

The setting for DISPLAY determines how the STD award appears in the game's paytable and in the game's icon as it appears in the Game Menu screen. For MYST, it determines the jackpot message when the award is won.

A "\$" in DISPLAY indicates that PROG. AMOUNT is the selection. The decimal monetary value will show as the award. It is the default when TYPE is something other than NONE. A choice of "JACKPOT" will display as text, as will any of the other text choices. Touching the DISPLAY area for any of the controllers presents a menu of the sixteen available choices.



LIMIT AMOUNT

For STD, the LIMIT AMT. is the value where a progressive amount increases by the rate of INC. 2. It is also the ceiling for a hidden progressive. For MYST, it is the upper boundary of a random value.

BASE AMOUNT

BASE AMOUNT is the starting value for a STD monetary progressive. It increments at the rate of INC 1 until it reaches LIMIT AMT, where it then increases at the rate of INC. 2 until it is either awarded or it reaches the INT. PROG. CEILING AMOUNT.

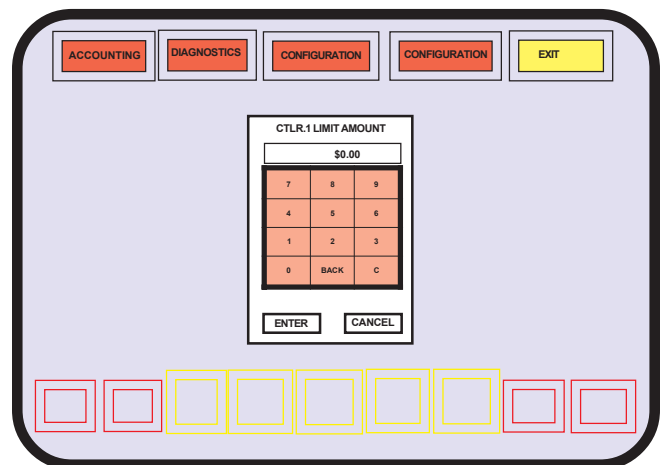
For MYST, it is the lower boundary of a random value and the beginning value of the unseen progressive value. The unseen value increases at the rate of INC. 1 until the progressive value matches the random value.

Inc. 1, Inc. 2, Hidden Inc.

The increment rates are expressed as decimal percentage of the credit value. For example, if the rate for a nickel machine is set at 20.00, a progressive would increase one penny for every credit played; or 20 cents for every dollar played. This increases the game percentage by 20%.

INC 1 is the rate STD and MYST increase. INC 2 is the rate STD increases after it reaches LIMIT AMT. It is not used for MYST.

HIDE. INC. is the rate of increase of a "hidden" jackpot. The hidden jackpot is the BASE AMOUNT of a STD jackpot increased at the rate of HIDE. INC. When the STD jackpot is awarded, the hidden jackpot amount becomes the current jackpot amount. The BASE AMOUNT becomes the new hidden jackpot.



Selecting any of the value areas presents a numeric keypad for entry.

Edit Internal Progressive

Within the INTERNAL PROGRESSIVE CONTROLLER EDIT sub-menu. CURRENT AMT and HIDE AMT. of STD awards can be changed by selecting the respective areas. A numeric keypad will appear where values can be entered. The opportunity to save or discard changes will be available upon leaving the sub-menu. MYST values do not display and can not be changed.

Internal Controller Operation (cont.)

HELP

INTERNAL PROGRESSIVE CONTROLLER EDIT _____

TO CHANGE A VALUE, TOUCH THE GRID POSITION WHICH CONTAINS THAT VALUE. THE CURRENT AND HIDDEN AMOUNTS ARE EDITABLE FOR STANDARD PROGRESSIVES ONLY.

CURRENT AMT.--CURRENT PAY VALUE FOR THE PROGRESSIVE. THIS VALUE INCREMENTS AT A RATE SPECIFIED BY INC.1 OR INC.2.

HIDDEN AMT.--VALUE TO LOAD INTO THE CURRENT AMT. FOLLOWING A WIN. THIS VALUE INCREMENTS AT A RATE SPECIFIED BY HIDE. INC. AND IS RESTRICTED BY LIMIT AMT..

WHEN ASKED TO SAVE CHANGES, THE YES BUTTON STORES THE OPTION SETTINGS, THE NO BUTTON DISCARDS CHANGES AND RELOADS CURRENT SETTING

External Progressive Setup

EXT. PROGRESSIVE SETUP sub-menu allows the set up of links to external controllers. Additional hardware is required for external progressive operation.

TYPE

There are two types of external controller operation: SERIAL RETURN and HANDPAY.

SERIAL RETURN enables the machine to receive jackpot information from the controller and display the information. The machine will process the jackpot credits according to the settings in HOPPER/CREDIT LIMITS configuration area. If the amount of the jackpot does not exceed the configuration limits, no intervention is neces-

HELP

EXTERNAL PROGRESSIVE CONTROLLER SETUP _____

CONFIGURE EACH EXTERNAL PROGRESSIVE CONTROLLER BY CHOOSING APPROPRIATE SETTINGS FOR THE FOLLOWING:

TYPE--SERIAL RETURN PROVIDES PROGRESSIVE WIN AMOUNT VIA SERIAL LINK, ALLOWING THE WIN AMOUNT TO BE PAID TO THE CREDIT METER. HANDPAY REQUIRES ATTENDANT TO MANUALLY PAY WINS.

MACH. ID--SPECIFIES THE PHYSICAL MACHINE ID TO THE EXTERNAL CONTROLLER. VALID MACHINE ID VALUES RANGE FROM 1 TO 32. THE MACHINE ID APPLIES ONLY TO EXTERNAL CONTROLLERS WHICH ARE OPTIONED FOR SERIAL RETURN.

WHEN ASKED TO SAVE CHANGES, THE YES BUTTON STORES THE OPTION SETTINGS, THE NO BUTTON DISCARDS CHANGES AND RELOADS CURRENT SETTING.

sary to pay the jackpot.

Handpay operation requires an attendant to pay and release the jackpot lockup condition.

Machine ID

MACH. ID associates the machine as one serviced by the controller. The ID must match the wiring for the external controller (consult the controller manufacturer's documentation).

Game Setup/Enable

GAME PROGRESSIVE SETUP/ENABLE allows the games to have win levels associated with internal and external controllers. Internal and external controllers may be selected for the same game. This allows a game to be connected to an external controller for linked jackpots, and to simultaneous stand alone controllers. Each win

Internal Controller Operation (cont.)

level, however, can be associated to only one controller.

If an external controller is associated with the game, selecting EXT. CTRL. offers a selection of the available external controllers. If the Expanded Progressive Assembly is not installed, the controllers are 1 through 4. Controller #1 is capable of SERIAL RETURN or HANDPAY. Controllers 2-4 are capable only of HANDPAY.

	GAME	PROG. ENABLE	EXT. CTRL.
1	DRAW POKER	DISABLED	NONE
2	(GAME NAME OF SOCKET P2)	DISABLED	NONE
3	(GAME NAME OF SOCKET P3)	DISABLED	NONE
4	(GAME NAME OF SOCKET P4)	DISABLED	NONE
5	(GAME NAME OF SOCKET P5)	DISABLED	NONE
6	NOT AVAILABLE		
7	NOT AVAILABLE		
8	NOT AVAILABLE		
9	NOT AVAILABLE		
10	NOT AVAILABLE		

To associate winning combinations, select the area under INT. PROG. CTRL or EXT. PROG. LEVEL.



Note: SERIAL RETURN is offered for controllers 2-4 even though they will not support the selection.

Controller #1 requires additional hardware for SERIAL RETURN. Please refer to the hardware listing on page 7-5.

GAME PROGRESSIVE SETUP/ENABLE

CONFIGURE GAME PROGRESSIVE SETUP BY CHOOSING THE FOLLOWING:

PROG. ENABLE--MASTER SWITCH TO ENABLE OR DISABLE PROGRESSIVE CAPABILITIES FOR THE ASSOCIATED GAME.

EXT. CTRL.--EXTERNAL CONTROLLER ASSOCIATED WITH GAME. THIS MUST BE CONFIGURED BEFORE EXTERNAL PROGRESSIVE LEVELS CAN BE USED IN THE EXTERNAL LINK CONFIGURATION FOR THE ASSOCIATED GAME.

WHEN ASKED TO SAVE CHANGES, THE YES BUTTON STORES THE OPTION SETTINGS, THE NO BUTTON DISCARDS CHANGES AND RELOADS CURRENT SETTING.

Internal Progressive Controller

When INT. PROG. CTRL next to the winning combination is selected, a listing of the available controllers is presented.

External Progressive Controller

When EXT. PROG LEVEL next to the winning combination is selected, the opportunity to associate the winning combination to a choice of levels 0-7 is presented. Most controllers are multilevel controllers with 0 usually the top award. Consult the controller manufacturer's documentation for more information.

Win Level Setup

WIN LEVEL SETUP allows the association of any winning combination of any game to any controller. Each game may associate up to 12 links.

When WIN LEVEL SETUP is selected, a listing of games is presented. Select the desired game and the winning combinations is presented in high-to-low order.

Internal Controller Operation (cont.)

	DRAW POKER, WIN LEVELS	INT. PROG. CTRLR	EXT. PROG. LEVEL
1	ROYAL FLUSH	NONE	NONE
2	STRAIGHT FLUSH	NONE	NONE
3	FOUR OF A KIND	NONE	NONE
4	FULL HOUSE	NONE	NONE
5	FLUSH	NONE	NONE
6	STRAIGHT	NONE	NONE
7	THREE OF A KIND	NONE	NONE
8	TWO PAIR	NONE	NONE
9	JACKS OR BETTER	NONE	NONE

HELP

PROGRESSIVE WIN LEVEL SETUP

CONFIGURE GAME WIN LEVEL LINKS TO PROGRESSIVE BY ASSIGNING A LINK BETWEEN THE GAME WIN LEVEL AND AN INTERNAL PROGRESSIVE CONTROLLER OR AN EXTERNAL PROGRESSIVE LEVEL, BUT NOT BOTH.

INT. PROG. CTRLR.—ESTABLISHES A LINK BETWEEN THE GAME WIN LEVEL AND THE INTERNAL PROGRESSIVE CONTROLLER. ONLY INT. PROG. CONTROLLERS OF TYPE STD ARE AVAILABLE.

EXT. CTRLR. LEVEL—ESTABLISHES A LINK BETWEEN THE GAME WIN LEVEL AND THE EXTERNAL PROGRESSIVE CONTROLLER LEVEL. EXT. PROG. LINKS ARE AVAILABLE ONLY IF AN EXT. PROG. CONTROLLER HAS BEEN ASSIGNED TO THIS GAME.

EACH GAME IS ALLOWED A MAXIMUM OF 12 WIN LEVEL LINKS. THESE WIN LEVEL LINKS ARE SHARED BY BOTH THE GAME WIN LEVEL CONFIGURATION AND THE MYSTERY WIN CONFIGURATION.

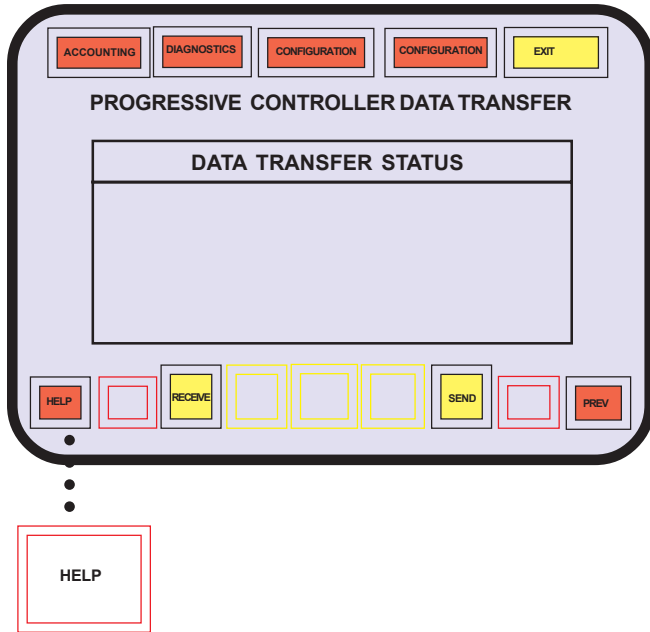
WHEN ASKED TO SAVE CHANGES, THE YES BUTTON STORES THE OPTION SETTINGS, THE NO BUTTON DISCARDS CHANGES AND RELOADS CURRENT SETTING.

Mystery Setup

The MYSTERY SETUP sub-menu allows enabling a game for Mystery jackpot operation. The controllers configured for MYST operation will be available to associate with each enabled game with a YES or NO.

When MYSTERY SETUP is selected, a listing of games is presented (identical to WIN SETUP LEVEL on page 7-12). Select the desired game and a listing of MYST controllers, DISPLAY, BASE AMT., and LIMIT AMT. is shown. The opportunity to enable each MYST controller is offered.

Progressive Controller Data Transfer and Progressive Game Data Transfer (cont.)



PROGRESSIVE CONTROLLER DATA TRANSFER _____

TRANSFER PROGRESSIVE CONTROLLER RELATED PROGRESSIVE DATA TO OR FROM EXTERNAL DEVICE.

THE SERIAL TRANSFER REQUIRES THE YMODEM PROTOCOL SET TO 9600 BAUD, 8 DATA BITS, NO PARITY, AND 1 STOP BIT. ALL DATA MUST BE IN TAB DELIMITED FORMAT.

THE RECEIVE BUTTON WILL ACCEPT A PROGRESSIVE CONTROLLER DATA FILE. THE DATA FILE IS VALIDATED FOR CONTENT BEFORE PROMPTING TO SAVE DATA. THE OPERATOR MUST THEN CHOOSE TO SAVE THE CHANGES OR ABANDON THEM. IF THE DATA FILE HAS ANY ERRORS IN IT, THE FILE WILL BE ABANDONED.

THE SEND BUTTON WILL TRANSMIT A PROGRESSIVE CONTROLLER DATA FILE

A TRANSFER MAY BE CANCELLED AT ANY TIME WITH THE CANCEL BUTTON.

Many commercial spreadsheet, word processing, or data base management programs support tab-delimited file formats.



Note: Neither line numbers nor headings are actually included in ctrl.dat. They are included here for clarity.

LINE #	DISPLAY #	TEXT FIELD
1	REM	Terminal ID: 0000, Serial No.: 14-0000 DATE 04:15:47 01/05/91
2	D0 1	JACKPOT
3	D0 2	HOUSE
4	D0 3	AUTOMOBILE
5	D0 4	BOAT
6	D0 5	MOTORCYCLE
7	D0 6	VACATION
8	D0 7	JACKPOT
9	D0 8	JACKPOT
10	D0 9	JACKPOT
11	D0 10	JACKPOT
12	D0 11	JACKPOT
13	D0 12	JACKPOT
14	D0 13	JACKPOT
15	D0 14	JACKPOT
16	D0 15	JACKPOT

The file transferred in PROGRESSIVE CONTROLLER DATA TRANSFER is "ctrl.dat."

The following is a file with default settings after a SafeRAM™ Clear.

CTRL.DAT

LINE #	#	TYPE	DISPLAY	BASE	LIMIT	INC1	INC2	HIDE INC.	CURRENT AMOUNT	HIDDEN AMOUNT
17	IO 1	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
18	IO 2	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
19	IO 3	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
20	IO 4	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
21	IO 5	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
22	IO 6	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
23	IO 7	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
24	IO 8	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
25	IO 9	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
26	IO 10	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
27	IO 11	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
28	IO 12	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
29	IO 13	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
30	IO 14	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
31	IO 15	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
32	IO 16	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
33	IO 17	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
34	IO 18	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
35	IO 19	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
36	IO 20	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
37	IO 21	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
38	IO 22	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
39	IO 23	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
40	IO 24	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00
41	IO 25	NONE	0	0.00	0.00	0.0000	0.0000	0.0000	0.00	0.00

Line one of ctrl.dat is a REMarks field. Changes here will have no effect on the controllers.

Lines 2-16 is information that can also be accessed through PROGRESSIVE MERCHANDISE TEXT EDIT.

Progressive Controller Data Transfer and Progressive Game Data Transfer (cont.)

LINE #	EXTERNAL #	TYPE	MACHINE ID
42	XO 1	SERIAL RETURN	1
43	XO 2	SERIAL RETURN	1
44	XO 3	SERIAL RETURN	1
45	XO 4	SERIAL RETURN	1
46	XO 5	SERIAL RETURN	1
47	XO 6	SERIAL RETURN	1
48	XO 7	SERIAL RETURN	1
49	XO 8	SERIAL RETURN	1
50	XO 9	SERIAL RETURN	1
51	XO 10	SERIAL RETURN	1

Lines 17-41 list information about the internal controllers that can also be accessed in INTERNAL PROGRESSIVE CONTROLLER SETUP and INTERNAL PROGRESSIVE CONTROLLER EDIT.

Lines 42-51 list information about the external controllers that can also be accessed in EXTERNAL PROGRESSIVE CONTROLLER SETUP.

LINE #	EPROM SOCKET P#	INTERNAL CONTROLLER	EXTERNAL CONTROLLER
1	REM ID	Terminal ID: 0000, Serial No.:14-000000 , DATE 04:16:25 01/05/91	
2	G0 1	DISABLED	NONE
3	G0 2	DISABLED	NONE
4	G0 3	DISABLED	NONE
5	G0 4	DISABLED	NONE
6	G0 5	DISABLED	NONE
7	G0 6	DISABLED	NONE
8	G0 7	DISABLED	NONE
9	G0 8	DISABLED	NONE
10	G0 9	DISABLED	NONE
11	G0 10	DISABLED	NONE

Progressive Game Data Transfer

The file transferred in PROGRESSIVE GAME DATA TRANSFER is "game.dat."

The following is a file with default settings after a SafeRAM™ Clear.

GAME.DAT

LINE #	EPROM SOCKET P#	LINK #	WIN LEVEL	INTERNAL PROGRESSIVE	EXTERNAL PROGRESSIVE
12	W0 1	1	0	NONE	NONE
13	W0 1	2	0	NONE	NONE
14	W0 1	3	0	NONE	NONE
15	W0 1	4	0	NONE	NONE
16	W0 1	5	0	NONE	NONE
17	W0 1	6	0	NONE	NONE
18	W0 1	7	0	NONE	NONE
19	W0 1	8	0	NONE	NONE
20	W0 1	9	0	NONE	NONE
21	W0 1	10	0	NONE	NONE
22	W0 1	11	0	NONE	NONE
23	W0 1	12	0	NONE	NONE

LINE #	EPROM SOCKET P#	LINK #	WIN LEVEL	INTERNAL CONTROLLER	EXTERNAL CONTROLLER
24	W0 2	1	0	NONE	NONE
..	W0 ..	..	..	..	..
36	W0 3	1	0	NONE	NONE
..	W0 ..	..	..	..	..
120	W0 10	1	0	NONE	NONE
..	W0 ..	..	..	..	..
131	W0 10	12	0	NONE	NONE

Line one of game.dat is a REMarks field. Changes here will have no effect on the games. The information listed in lines 2-11 can also be accessed in GAME SETUP/ENABLE.

Lines 12-23 list information about the game installed in Personality game socket P1. The information can also be accessed in WIN LEVEL SETUP.

The next 108 lines of game.dat list the information for EPROM sockets P2-P10.

ACCOUNTING

DIAGNOSTICS

CONFIGURATION

CONFIGURATION

EXIT

PROGRESSIVE LEVEL

1	NO DATA	COIN	MAX COIN	0	1	2	3	4	5	6	7
2	NO DATA	COIN	MAX COIN	0	1	2	3	4	5	6	7
3		COIN	MAX COIN	0	1	2	3	4	5	6	7
4		COIN	MAX COIN	0	1	2	3	4	5	6	7
5		COIN	MAX COIN	0	1	2	3	4	5	6	7
6		COIN	MAX COIN	0	1	2	3	4	5	6	7
7		COIN	MAX COIN	0	1	2	3	4	5	6	7
8		COIN	MAX COIN	0	1	2	3	4	5	6	7
9		COIN	MAX COIN	0	1	2	3	4	5	6	7
10		COIN	MAX COIN	0	1	2	3	4	5	6	7

SEND COIN

SEND JKPT

NEXT COIN

NEXT PROG

NEXT LEVEL

SEND COIN

SEND JKPT

PREV

Progressive Controller Data Transfer and Progressive Game Data Transfer (cont.)

Communication Test

COMMUNICATION TEST provides visual access to external progressive communication channels. A choice of the eight win levels can be selected for any of the external controllers.

COIN or MAX COIN, and a level can be selected for one of the ten controllers. SEND COIN will activate the choice. SEND JACKPOT will send a winning combination with the appropriate number of credits wagered to the external controller's level selected.

Jackpot information received from the external controller appears in column #2 beside the game socket number. NO DATA indicates no jackpot information is received from the external controller.

Examples

Example 1 --Two Standard Jackpots

In this example we will enable two jackpots for a \$0.05 Draw Poker game. One jackpot is a progressive jackpot for a royal flush that begins at \$200. The amount will not exceed \$10,000.00. The progression rate will be 1.5% until the amount reaches \$250.00. Thereafter, the rate will be .5%.

The second award on the same Draw Poker game is a silk jacket for any four of a kind.

Procedure:

DIPSW2-7 must be ON. Activate the Audit Key-

switch with the Main Door open to enter the Audit Key menu. Select PROGRESSIVE in the CONFIGURATION area of the menu.

Step 1. Select INT. PROG. CEILING AMOUNT. If the value has not been previously entered, a keypad will be presented. The default value of \$10,000.00 will be in the display, awaiting confirmation for entry. If the Ceiling has been previously entered, the current value will display. A SafeRAM™ Clear is required to change. None of the available 25 internal progressive jackpots will be able to exceed this value.

Step 2. Select INT. PROG. MERCHANDISE TEXT. Because one of the awards is a jacket rather than a progressive amount, a description of the item will be entered so that it will appear in the payable of the game.

A silk jacket is not one of the default items available, so it will have to be entered into one of the 15 avail-

	TYPE	DISPLAY	LIMIT AMT.	BASE AMT.	INC. 1	INC. 2	HIDE INC.
1	NONE						
2	STD	\$	\$250.00	\$200.00	1.50	.50	0.00
3	STD	SILKJACKET	\$0.00	\$0.00	0.00	0.00	0.00
4	NONE						
5	NONE						
6	NONE						
7	NONE						
8	NONE						
9	NONE						
10	NONE						

able areas that will accept text input. Any text field could be chosen; but we will select #9, which currently contains the default text "JACKPOT."

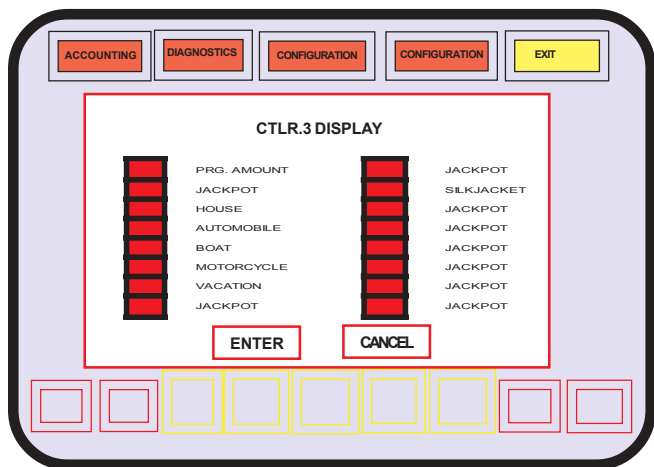
Once selected, a keyboard appears. BS will backspace and erase one character at a time. By creative

Examples (cont.)

abbreviation to fit into the ten available spaces, Silk Jacket will appear as "SILKJACKET".

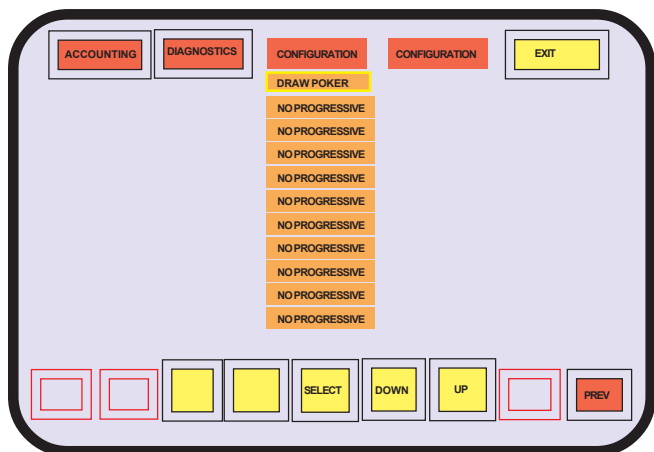
Select PREV. SAVE CHANGES? appears. Select YES, then PREV to return to the configuration sub-menu.

Step 3. Select SETUP INT. PROGRESSIVE to configure the behavior of the progressive (TYPE), format of the display (DISPLAY), the switch amount (LIMIT AMT.), BASE AMT, and the incrementation rates.



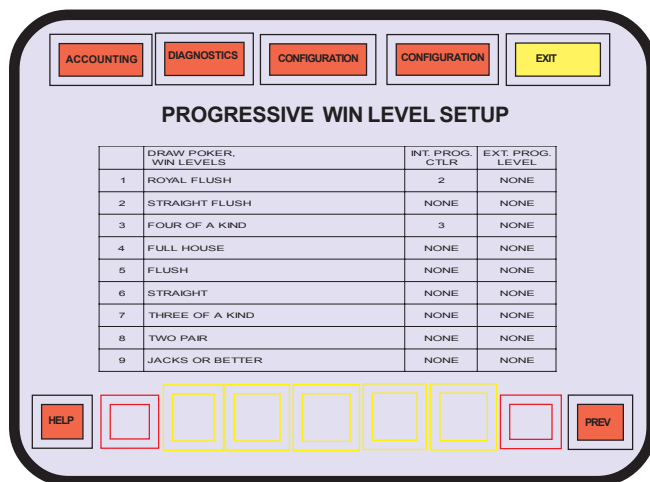
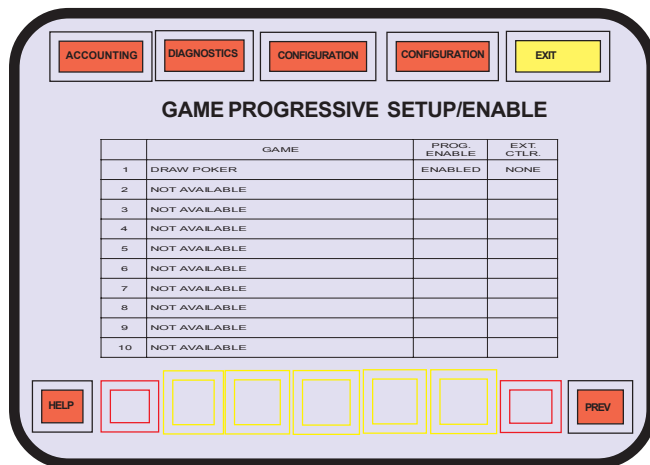
While in SETUP INT. PROGRESSIVE, we could assign any of the 25 available controllers, but for our example we will choose #2. The behavior (TYPE) of the progressive will be STD.

The format of the progressive DISPLAY will be "\$", the jackpot value in dollars and cents incorporated into the pay table of our poker game. The switch amount (LIMIT) is \$250.00. The BASE is \$200.00. INC. 1 is 1.50, which will increment the progressive amount three cents for every two dollars played until the progressive amount reaches \$250.00. INC. 2 is .50, which will increment the progressive one penny for every two dollars played after



the progressive amount reaches \$250.00. We will not use a hidden jackpot, so HIDE INC. will remain at 0.00.

The Silk Jacket can be associated with any of the remaining available controllers. We will assign it to con-



troller #3 in a manner similar to the preceding steps.

The TYPE will be STD. DISPLAY will be SILKJACKET (text item #9 set up in step 2.). LIMIT AMT., BASE AMT, and the INC values will not apply because the jackpot will be merchandise instead of a "progressed" monetary award.

Select PREV, then YES to save changes and return to configuration menu.

Step 4. Select GAME SETUP ENABLE. A listing of the installed games will appear. Choose PROG. ENABLE that corresponds with the Draw Poker to enable the game for internal controller operation.

Examples (cont.)

Step 5. Select WIN LEVEL SETUP and choose the Draw Poker game. The winning combinations are listed in order. Select INT. PRG CTLR. corresponding with the Royal Flush, and assign it to #2 (the controller set up in step 3.). Select the area that corresponds with the four of a kind, and assign it to #3 (also set up in step 3.).

Step 6. Power OFF. Turn DIPSW2-7 OFF, then power ON. Confirm the poker game has a progressive amount within the game icon, and the payable of the game displays SILKJACKET and the progressive amount when maximum credits are wagered.

	TYPE	DISPLAY	LIMIT AMT.	BASE AMT.	INC. 1	INC. 2	HIDE INC.
1	MYST	\$	\$100.00	\$0.00	.50	0.00	0.00
2	NONE						
3	NONE						
4	NONE						
5	NONE						
6	NONE						
7	NONE						
8	NONE						
9	NONE						
10	NONE						

	GAME	PROG. ENABLE	EXT. CTLR.
1	DRAW POKER	ENABLED	NONE
2	NOT AVAILABLE		
3	NOT AVAILABLE		
4	NOT AVAILABLE		
5	NOT AVAILABLE		
6	NOT AVAILABLE		
7	NOT AVAILABLE		
8	NOT AVAILABLE		
9	NOT AVAILABLE		
10	NOT AVAILABLE		

	DISPLAY	BASE AMT.	LIMIT AMT.	MYSTERY ENABLE
1	\$	\$100.00	\$0.00	YES

Example 2 - Mystery Pay

In this example we will enable a Mystery Pay for the same machine in example 1. The payment will show in WIN PAID of the Draw Poker game that has incremented a hidden value to the random Mystery Pay.

The payment will range between 0 and \$100, which means that the average award over time will be about \$50. The hidden value will increase at the rate of one penny for every two dollars wagered, which means that the average wagers before the Mystery Pay is \$10,000.

Procedure:

DIPSW2-7 must be ON. Activate the Audit Keyswitch with the Main Door open to enter the Audit Key menu. Select PROGRESSIVE in the CONFIGURATION area of the menu.

Step 1. Select SETUP INT. PROGRESSIVE to configure the TYPE, DISPLAY, LIMIT AMT., BASE AMT., and the rates. We will choose controller #1 to configure.

Type is MYST. DISPLAY is PROG. AMOUNT as indicated by "\$." This means that the player will be awarded a monetary value that will appear in WIN PAID when the jackpot is won.

LIMIT AMT. is \$100.00, which is the upper boundary for the random value of the Mystery jackpot.

BASE AMT. will be \$0.00, which is the lower boundary of the random value and the starting point of the progressing value.

INC.1 is .50, which is the rate of increase of the progressing value. INC.2 and HIDE INC. have no effect on the MYST operation.

Step 2. Select GAME SETUP ENABLE. A listing of the installed games will appear. Choose PROG. ENABLE that corresponds with the Draw Poker to enable the game for internal controller operation.

Step 3. Select MYSTERY WIN SETUP. The listing of installed games will appear again as in step 2. Choose Draw Poker from the list. A listing of the controllers configured for Mystery Operation appears (which will be only the one we configured in Step 1). A confirmation of YES will assign the controller to the Draw Poker game.

Step 4. Power OFF. Turn DIPSW2-7 OFF, then power ON. Confirm that the game icon shows the Mystery amount on the Game Menu screen.



PERIPHERALS

MODULE 8

MK8-SVMOD-0002
PERIPHERALS

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Module 8

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Coin Acceptors



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Glendale Heights, Illinois 60139-5128 • Toll
Free: (800) 323-6498 Phone: (630) 924-7070
Fax: (630) 924-7088 • www.coinmech.com

CC-16

Power Requirements:
fixed VDC models, 11.5
to 12.5 VDC

Feed Rate: 7 coins per
second (models CC-16,
CC-62, MC-16):

Designed for coin
diameters of .700"
(17.8mm) to 1.575 (40mm). Wide Body model
recommended for coin diameters up to 1.95"
(49.5mm).

Operating temperature recommended: 0° to 60°C.

Installing the Sample Coin (models CC-16, CC62, MC-16): Looking at the front of the comparator, slide (without lifting) the sensor coil assembly to the right. Replace the sample coin (or chip) with the desired coin (or chip) and then carefully release. In most cases, the coin (or chip) will automatically seat itself. When properly seated, the coin (or chip) will rest parallel between the sensor coil assembly and between the ribs on the rail insert.

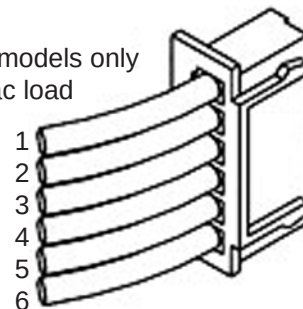
Replacing an Existing Mechanical Acceptor (models CC-16, CC-62, MC-16):

1. Remove the acceptor.
2. Disconnect the coin return linkage.
3. Remove the lockout coil (if used).
4. In some cases, the comparator mounting studs may need to be relocated to meet manufacturer's mounting specifications.
5. Mount comparator into equipment, ensuring that coin entry and coin exit are aligned.

Wiring Instructions: The CC-16 printed circuit board requires a 6-pin JST terminated interface. The connector diagram following denotes the typical voltage line pinouts to the printed circuit board:



1. Inhibit input - 12VDC models only
All other models - Triac load
2. Sense output
3. 48 Volt
4. 24 Volt
5. 12 Volt
6. Ground



Potentiometer Adjustment (models CC-16, CC-62):

Each comparator is adjusted to give excellent discrimination against slugs. However, some high quality slugs may need a finer adjustment.

1. Adjust potentiometer clockwise (CW) until high quality slug is rejected.
2. Drop good coins to ensure accurate acceptance.
3. Repeat steps 1 and 3 if necessary. For further potentiometer adjustment procedures, call or fax Coin Mechanism, Inc.'s service department and request document #09300072.

Before Turning Power On (models CC-16, CC-62, MC-16):

1. Make sure that all connections are properly insulated.
2. Tuck wire to prevent interference with coin travel or coil armature movement.
3. Check the power cord for firm connection to the PC board.
4. Make sure the comparator is mounted securely in the equipment.
5. Check the entry chute alignment by inserting the proper coin. The coin should fall freely, without stopping, through the comparator and reject out of the equipment.

After Turning Power On (models CC-16, CC-62, MC-16):

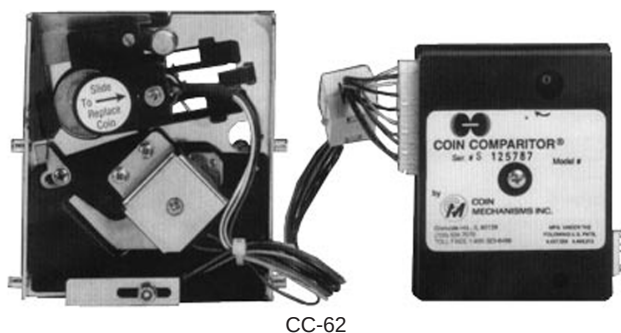
1. The LED will illuminate when voltage is applied.
2. Drop good coins. They should be recognized by the comparator and accepted.
3. Repeat step 2 several times to ensure the unit is functioning properly.

Coin Acceptors (cont.)

CC-62

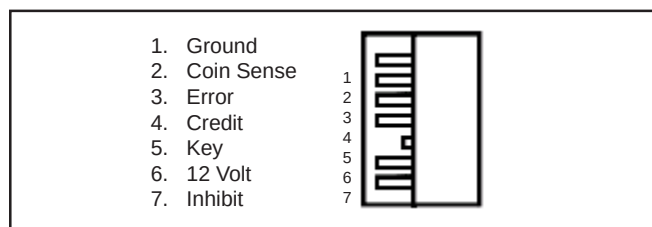
Power Requirements: Voltage Range, 11.5 to 12.5 VDC.

Designed for coin diameters of .700" (17.8mm) to 1.575 (40mm). Wide Body model recommended for coin diameters up to 1.95" (49.5mm).



CC-62

Wiring Instructions: The CC-62 printed circuit board requires a 7-pin AMP right angle locking connector interface.



Operating Voltage: The neutral or ground (GND) of the voltage source should be wired directly to pin #1 of the printed circuit board.

The hot or positive 12-Volt DC of the voltage source is wired directly to pin #6 of the printed circuit board. These connections now provide the operating voltage to the comparator.

Two Separate Outputs: When the sensing coils sense a good coin, a pulse is sent out to the host machine. Following this, the accept gate opens, and as the coin passes the LED optics a credit pulse is also sent out to the host machine. Together these two pulses provide optimum security against cheating. The host machine can be configured to recognize a valid coin only when both outputs have been detected.

The LED optics have been positioned such that coins falling edge-to-edge are guaranteed to be accepted without stealing.

Inhibit Feature: The CC-62 has an inhibit feature built-in to its electronics. The unique feature about the CC-62

inhibit is its ability to electronically inhibit the validator without removing power from it, thereby eliminating any power-up time delay. The inhibit condition is accomplished by disabling only the accept coil.

The inhibit line is wired to pin #7 of the printed circuit board.

Coin Sense Output Feature: The CC-62 sends a coin sense output pulse when the sensing coils detect a good coin. This pulse is sent on pin #2 of the printed circuit board.

LED Credit Output Feature: The CC-62 sends a credit pulse from the optics when a good coin has passed. This pulse is sent on pin #4 of the printed circuit board.

Tilt/Error Signal Feature: Another security feature of the CC-62 is its ability to protect against stringing. The optics are positioned in an A-Over-B pattern. This means that a coin must first block then uncover both the top and the bottom optic before a credit pulse is issued. If the bottom optic is blocked before the top, the CC-62 issues a tilt pulse on the tilt/error output line. The error signal, which is on the same output line, is used in the event of a failed or blocked optic. In the event an optic is blocked for a period of more than 1.5 seconds, the tilt/error output line goes low and will remain low for as long as the failed or blocked optic remains.

The built-in tilt/error detection line can be utilized by wiring to pin #3.

Denomination Adjustment: As with any comparator product it is essential that the proper dampener lever and weight assembly are used for the size coin being validated. For the CC-62 there is an additional adjustment step that is critical to proper operation. This adjustment is to the adjustable guide rail. The adjustable guide rail ensures that a good coin, once accepted, adequately passes the optics as it exits the validator body.

To perform this adjustment, loosen the rail screw on the adjustable guide fail, as well as the elastic nut on the rail support bracket. Position the bottom of rail so that you have the full diameter of the coin's width, plus $\frac{1}{32}$ " over. This guarantees proper optic blockage for the size coin being validated. After adjusting rail, make sure to fully tighten the rail screw to hold the adjustment made. Proceed by aligning the tip of the rail support bracket to the end of the rail, then tighten the elastic nut in place.



NOTE: An adjustment gage tool may be purchased from Coin Mechanisms directly by calling the Parts Sales department at (630) 924-7070 and requesting part number #06660003.

Coin Acceptors (cont.)

Micro Comparitor MC (Replacement for CC-16 and CC-62)

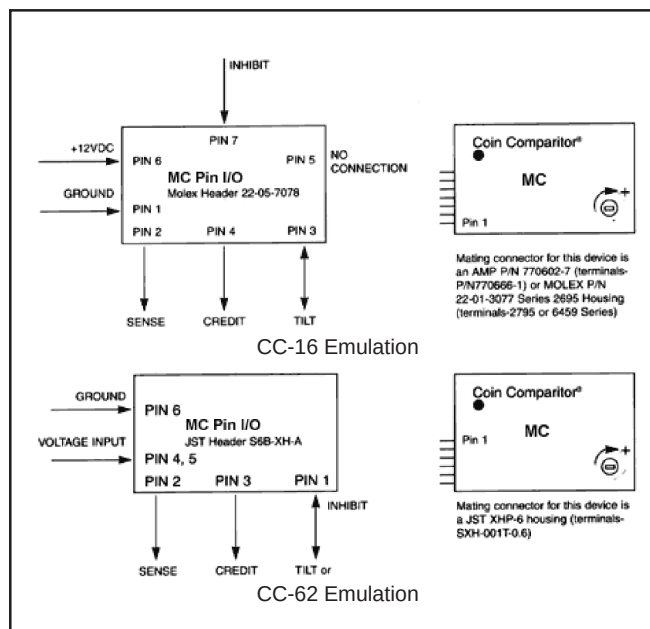
Designed for coin diameters of .700" (17.8mm) to 1.47" (37.34mm). Wide Body model recommended for coin diameters up to 1.950" (49.5mm).

Wiring Instructions: The printed circuit board is available with one of two possible connectors. A 7-pin Molex header is used when emulating a model CC-62; a 6-pin JST header is used to emulate both the CC-16 and CC-40.

Operating Voltage: There are two different models offered, a 12 Volt DC only model, and a multi-voltage model which allows for operations from 20 to 40 Volts DC, or 20 to 30 Volts AC.



MC-16



Inhibit Input Feature: The INHIBIT feature is an input which allows you to disable the device without removing power from it. The INHIBIT pin can be configured to accept either a LOW or HIGH level signal to inhibit the device.

Tilt Output: The TILT signal is an output which alerts the machine of a malfunction or tampering of the device. There are different conditions which will generate a TILT

signal, and the lengths of the pulses can be changed to accommodate different machine requirements. Additionally, a NULL signal is an internal signal generated when a valid coin passes the sensor coils. If this NULL signal is too long (> 250ms as sometimes occurs when stringing) the TILT line will output a signal. If any of the optics are blocked for 1.5 seconds or longer the TILT line will be active until the condition is corrected. If a coin is detected moving past the optics in a reverse direction (stringing) a TILT pulse occurs. If a coin passes the optics without a matching sense pulse a TILT occurs (note 1). The mechanism will not accept coins when the TILT line is active.

Credit Signal: The CREDIT signal is an output which occurs for every valid coin that is accepted properly through the mechanism. A CREDIT is generated by the internal microcontroller only when a valid sense pulse is matched with a corresponding optic pulse. This close control between the sense signal and the optic signal allows more accurate monitoring of coins through the mechanism. The CREDIT signals are buffered and therefore are fixed in length and duty cycle regardless of coin feed rate.

Sense Signal: The SENSE signal is an output which simply indicates that a valid coin has passed the sensor coils. It is available for those applications requiring a pre-count or verification that valid coins have entered the device.

Bi-Color Status Indicator: The MC-16/40/62 incorporates a bicolor (green / red) LED on its front cover to easily indicate the operating status of the mechanism visually. The LED will be green when power is applied to the device and it is enabled (INHIBIT not active) to accept coins. The LED will be red if the INHIBIT line is active (disable coin acceptance) or if there is no resident coin in place. The LED will also change to red when the TILT line is active (error condition). When the LED is red the device will not accept coins.

Coin Acceptors (cont.)

Money Controls  Money Controls • New Coin
Street, Royton Oldham OL2
6JZ United Kingdom • Phone:
+44 161-6780111 Fax: +44 161-6267674 •
www.moneycontrols.com

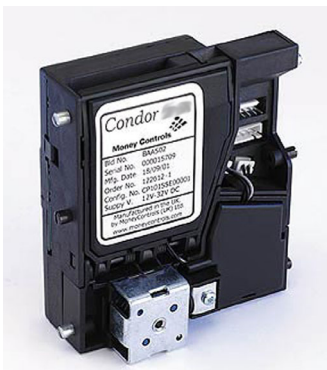
Condor CN103

Power Requirements: Volt-
age, 12 VDC to 32 VDC

Operating temperature: 0°
to 60° C.

Maintainable life of 20 mil-
lion coins.

Coinage: Accepts coins
within the diameter range
of .59-1.75" (15-44.5 mm)
and the thickness range of .059-.148" (1.5-3.75 mm).



CN103

Wiring Instructions:

- | | |
|-------------|---|
| Connector 1 | Pin 1 Inhibit all
Pin 2 VACS +6V
Pin 3 +12 to 32 VDC
Pin 4 +12 to 32 VDC
Pin 5 +12 to 32 VDC
Pin 6 +0V |
| Connector 2 | Pin 1 Accept (b) NPN generation
Pin 2 VACS NPN
Pin 3 Alarm
Pin 4 Error |
| Connector 3 | Serial Port |
| Connector 4 | LCD display |

Alarm: Open collector NPN is activated for 2 seconds
with inhibit all. This condition occurs when coins travel
in reverse, too slowly or block the opto beams. A con-
tinuous yellow LED will result for the duration of the alarm.
During this time a pulse will appear on the error pin.

Error: When a critical failure is detected at power up a
500ms pulse will be given on the error line and will re-
peat every 2 seconds. The LED will flash red and all
coins will be inhibited.

Teach and Run™ Programming: Follow these steps to
program:



Teach Coin
or Token

LED Status

- Select window 1 
- Press button 
- Start feeding coins/tokens until 
- Press button - normal operation 
- Select security (see 5.0)

Security: The acceptance window can be adjusted to
increase fraud rejection or increase coin acceptance.



- Clockwise (Increase fraud rejection)
- Anticlockwise (Increase true coin acceptance)
- 0 (Normal)

Coin Acceptors (cont.)



National Rejectors, Inc. GmbH • Postfach 1461 • Buxtehude 21604, Germany • Phone: +49 41 617 290 Fax: +49 41 617 29115 • www.nationalrejectors.com

G-13, 0000

Power Requirements: 12 VDC +3/-1 Volts tolerances

Operating temperature 0° to 55° C.

Acceptance: Up to six different coins.

Diameter: between .59" and 1.22" (15 and 31mm).

Thickness of coins: between .059" and .1" (1.5 and 2.6 mm)

Dimensions: Height 4" (102 mm) Width 3.5" (89 mm) Depth 2" (52 mm)

Temperature range: 0° C up to +55° C

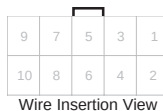
Coin inhibit: A common blocking line for all coins is available. Single coin inhibit may be achieved by DIP switches on the G-13.

Measuring principle: Three inductive sensors are arranged to detect material, thickness, diameter and embossing of coins as they pass. The passing coin activates the sensors, providing different voltage measuring values. These voltages are digitized and processed within the microprocessor.

Programming of acceptor: A standard computer (IBM PC or compatible) allows programming of the acceptor for any coin acceptance. Programming means just the insertion of a coin which should be accepted. Please refer to the document "Use of program PROEMP."

Wiring

1. Ground
2. +12 VDC
- 3, 4, 7, 8, 9, 10. Coin Signals*
5. N.C.
6. Coin Inhibit



*Coin Signals: <.07 volts active low / 150 mA Open collector NPN. I max = 150 mA, Umax = 35 volts. Time of pulses: 100 msec +/- 10%.



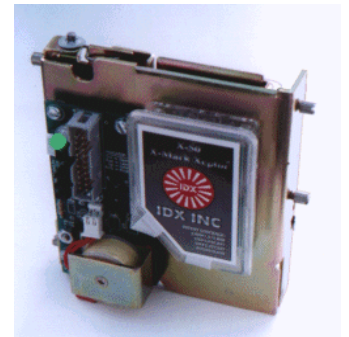
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X-10 and X-70 X-Mark Xeptors

The X-10 and X-70 X-Mark Xeptors are multi-coin acceptors which can be field programmed to distinguish and accept any of up to six coins or tokens. Multi-coin acceptance offers the possibilities of mixing promotional tokens with standard tokens, accepting older tokens with new tokens in the process of change-over, or replacing expensive (4x) hopper fill real currency with economical tokens. Precision diameter measurement totally eliminates shaved coin acceptance problems. Its built-in multi-color indicator LED provides operational status and field diagnostic information. Its novel Personality Plug modules ensure plug compatibility in field retrofit applications.



X-10 X-Mark Xeptor



X-70 X-Mark Xeptor

Features:

- Distinguishes and accepts any of up to six different coins or tokens.
- Reads multiple X-Mark codes and optionally detects the presence of SmartMark.
- Diameter ranges: X-10: 0.650" to 1.490" (16mm to 38mm), straight drop configuration, X-70: 1.330" to 1.950" (34mm to 49mm) reverse drop configuration
- Actually measures coin diameter to +/- .005" typ (X-10), +/- .007" typ X-70).
- Measures metal alloy 3 ways.
- Accepts up to 16 coins per second (X-10), 10 coins per second (X-70).
- Slide on access covers shed spilled liquids.
- Built-in coin release and opening coin chute.

Coin Acceptors (cont.)

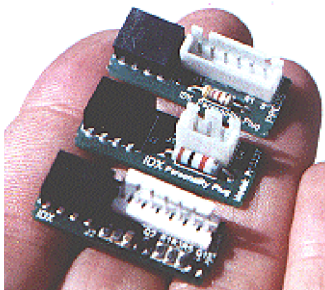
- New coin types can be field programmed without extra equipment.
- Multi-color indicator LED for operational status and field diagnostics.
- Universal electrical interface compatibility with existing legacy machines and new machines via Personality Plug modules.

LED Status Indicator

- No light indicates no power. Plug it in, check your wires, check your power supply. Verify your Personality Plug.
- Solid green means normal operation for either switch position 0 (Run) or switch positions 7 to F (Field Test).
- Green with short red flash means the unit is normally operating and is secured from coin programming without using the X-Key. This is available starting with V3.0r firmware.
- Solid red is normal in switch positions 1-6 for coin programming. A red flash during coin acceptance indicates credit has issued.
- Alternating red-green means that the unit has detected some sort of malfunction. See Field Test to diagnose.
- Blinking yellow means Inhibit. It is inhibited from acceptance in switch position 0 ,inhibited from coin programming in switch positions 1-6, and Credit Optics not available in switch position 8.

Personality Plugs

Personality plugs are small connector conversion modules about as big as the last segment of your little finger. They are used to convert the 8-pin header in the Xeptor to any of many available connector styles and pin assignments common in the industry. For example, there is one personality plug type for each of the older Coin Mechanisms CC-series acceptors and the NRI multi-wire output acceptors. Additionally, many have been designed to meet the needs of specific OEMs, including such things as simulation of OEM credit optics module signals. Other



special interface requirements are easily satisfied with new Personality Plugs designed specifically for the job. With the correct personality plug installed in an Xeptor, retrofit installation requires no machine connector rewiring. The tables below can help in deciding which personality plug to use. Refer to the Electrical Specifications table following for each pin definition.

Personality Plugs Table

Personality Plug Model	PP16	PP16IC	PPUNI	PPNRI-6	PPNRI-3
Compatibility Connector	CC-16 JST-6	CC-16 12V JST-6	Universal JST-6	NRI 10pin IDC	NRI 10pin IDC
Pin 1	1K to Gnd.	Inhibit	Inhibit	Ground	Ground
Pin 2	Sense	Sense	/Coin Optics	12VDC	12VDC
Pin 3	48 VDC/AC	----	----	/Output5	----
Pin 4	24 VDC/AC	24 VDC/AC	24 VDC/AC	/Output6	----
Pin 5	12 VDC	12 VDC	----	Coin Return	----
Pin 6	Ground	Ground	Ground	Inhibit	Inhibit
Pin 7				/Output1	/Output1
Pin 8				/Output2	/Output2
Pin 9				/Output3	/Output3
Pin 10				/Output4	----

Electrical Specifications

SIGNAL	ELECTRICAL CHARACTERISTICS (Note: Pulse widths programmable via "P" command on serial port)
INHIBIT	Inhibit = float or >3.5VDC, Enable = < 1.0VDC
SENSE	Active high 32ms pulse, PNP 12V pull-up 10mA max, 3.3K pull-down.
/SENSE	Active low 32ms pulse, NPN sinking 10mA max, 47K 5V pull-up.
/CREDIT	Active low 32ms pulse, NPN sinking 10mA max, 47K 5V pull-up.
/TILT	Active low >32ms pulse, NPN sinking 10mA max, 47K 5V pull-up.
/OUTPUT-n	Active low >32ms pulse, NPN sinking 10mA max, 47K 5V pull-up.
RELAY	Relay contact terminal. 40V 0.2A peak rating..
/Coin Optics	Wire-OR optics output enable, 100ms low pulse, 100K 12V pull-up.
48VDC/VAC	Power input 38 to 55VDC, 38 to 55VAC, 35mA max @idle.
24VDC/VAC	Power input 14 to 32VDC, 16 to 32VAC, 35mA max @idle.
12VDC	Power input 11.5 to 16VDC, 25mA max @idle, 240mA accept gate.
1K to Ground	1K 1W resistor to circuit ground. (for triac holding current)
Ground	Circuit common.

Field Tests and Diagnostics

The normal operation mode of the Xeptor is with the rotary switch position #0 where the LED is green. If the LED is flashing yellow, it means that the Xeptor is inhibited. This can be caused by an external control line such as from a door switch or otherwise as controlled by the machine that it connects to. It may also (although less likely) be caused by improper setting of the Inhibit bit in the SysConfig control byte. If the LED is alternating red-green, it indicates a malfunction has been detected. Some malfunctions can be corrected in the field.

Gate Relay Test (rotary switch #0): Press the test button to activate the gate relay. If it does not activate, it may be physically obstructed or its wire unplugged. This would be one cause for rejection of all coins.

Coin Acceptors (cont.)

Inductive Metal Sensor Tests (rotary switch #E, #F): Turn the rotary switch to positions #E and #F to test the inductive sensor. Normal LED color is green. A red color most often indicates either there is metal in front of the inductive sensors or that the flat cable going to the small sensor housing has been unplugged.

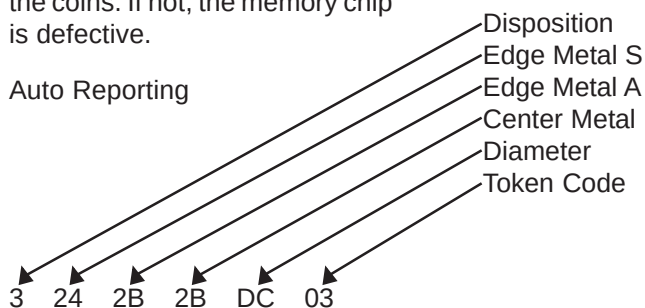
Diameter Optics Sensor Tests (rotary switch #B, #C, #D): Turn the rotary switch to positions #B, #C, and #D to test each of the three diameter through-beam optical sensors. Normal LED color is green. A red or orange color most likely indicated either there is an object or dirt blocking one of these three sensors and cleaning of the coin chute is required, or that the flat cable going to the small sensor housing has been unplugged.

X-Mark Code Optics Sensor Calibration (rotary switch #9, #A): Fold a piece of white paper twice (to 4 thicknesses) and insert it into the center of the coin chute. Turn the rotary switch to position #9 (rear side optics) and press the test button. The unit will use information gathered to calibrate the sensitivity of its reflective sensors for reading the X-Mark optical code on tokens. The LED should be an orange color after calibration. Repeat for switch position #A (front side optics). When you remove the paper, the LED should be green in both of the switch positions.

Credit Sensor Test (rotary switch #8): The credit optics (if installed) are located just above and below the gate relay rake. If they are not installed the LED will flash amber to indicate that the credit optics were not detected at power-up. If they are installed, the LED is normally green for proper function, and will become orange to red as they become blocked by dirt or other obstructions.

Memory Test (rotary switch #7): Turn the rotary switch to positions #7 to test the validity of memory. Normal LED color is green. A red color indicates that memory is corrupted. It may be possible to correct this by relearning the coins. If not, the memory chip is defective.

Auto Reporting



Auto report from a coin matching coin memory #3. The coin has the same edge and center metal, a diameter of 1.464" and an X-Mark code of 03.

The Xeptors will not "speak unless spoken to" except when a coin has been deposited. The Xeptor will automatically report the disposition and sensor readings taken from each coin when the analysis is complete and the SENSE pulse has been issued. If internal credit optics are installed, a subsequent report on slow or reverse coins may additionally occur. The auto report message consists of 6 data bytes in ASCII Hex format.

Report Command

The "R" REPORT command produces a list of all the critical operational parameters of the Xeptor (see example following). In the first line, the software version is identified and the ID# of the unit is reported. The next eight lines report the detail contents of each of the six coin memories. The bits of the options byte are defined in the following table:

Example Configuration Report and Coin Auto Report Messages.

```
Xeptor 30 (d) ID#: 1F5E -Firmware version and ID#
Coin Memory: 01 02 03 04 05 06
Coin Pulses: 0D 01 00 01 00 00
Token Code: 00 00 00 03 00 00
E-Metal S: 26 24 00 24 00 00
E-Metal A: 2E 2C 00 2C 00 00
C-Metal A: 2E 2C 00 2C 00 00
Diameter: D9 DA 00 DC 00 00
Options: 01 01 00 81 00 00
Thresholds: 05 07 03 06 03 05 08 00 00
Tank Calib: 47 Tank Now: 47 51
Sys Config: 08 Tilt Time 1/3 sec: 09
Credit ms: 20 Divert Dly/Pls ms: 10 50
2 23 2D 2C D9 00
2 25 2C 2C DC 00
2 24 2C 2D DA 00
4 24 2D 2D DB 03 - Distinguished by X-Mark from #2
D 35 3E 3E 1E 00 - Failed on diameter
2 23 2D 2C D9 00
2 25 2C 2C DC 00
M 2A 30 30 DA 00 - Failed on edge metal
4 25 2C 2C DC 03
4 24 2C 2D DA 03
4 24 2D 2D DB 03
U 26 2D 2E D6 00 - Unwanted close slug for #2
U 27 2E 2D DA 00 - Unwanted close slug for #2
I 00 00 00 00 00
I 00 00 00 00 00 - Xeptor inhibited
I 00 00 00 00 00
2 23 2D 2C D9 00
2 25 2C 2C DC 00
2 24 2C 2D DA 00
S 00 00 00 00 00 - Coin took too long in coin chute
R 00 00 00 00 00 - Wrong exit after credit issue.
4 24 2C 2D DA 03
4 24 2D 2D DB 03
2 23 2D 2C D9 00
2 25 2C 2C DC 00
2 24 2C 2D DA 00
4 24 2D 2D DB 03
```

Note: The internal sequence for parameter checking is 1.) diameter, 2.) code, 3.) edge metal-S, 4.) edge metal-A, 5.) center metal. Coin memory is checked in the order of 1-6 for a match.

Coin Acceptors (cont.)

The "Thresholds" line shows the sensitivity levels set for the 4 X-Mark optical sensors, the three diameter optical sensors, and the two credit optics sensors. These values will be between one and eight normally. The "Tank Calib" line shows the value of the inductive sensor reading when the last "learn" was performed, and what it is now in two different configurations. These should be in the 40s or higher. The "Sys Config" byte will normally be 00 for "inhibit low" and 80 for "inhibit high" on the Inhibit input line. The remaining timing values should be self explanatory.

View the Report Screen: Send the "R" command to see the coin data stored in memory and the operating parameters for various sensors and the timing of the credit pulse and other signals.

Change Inhibit Line Logic: Xeptors have a hardware inhibit line that is used to prevent acceptance of coins even when power is applied to the unit. When inhibited, the Xeptor LED will flash amber color to indicate the inhibit state. Send the "I" command to change to "inhibit high" or send the "i" command to change to "inhibit low". After doing so, you must send the "S" command to save the new configuration to nonvolatile memory.

Change Credit Pulse or Tilt Timing: The "Pccdddttt" command is used to change the output credit pulse width (cc), the diverter output option delay and pulse width (dddd) and the tilt time. Assuming you do not have a diverter option and you would like the credit pulse to be 34ms (22 hex) and the self inhibit after a tilt to last four seconds (12/3 sec P 0C hex) then you would enter the command "P2200000C", followed by the "S" command to save the new configuration to nonvolatile memory.

Increase X-Mark Code Reading Security: Use this command to cause the Xeptor to increase the X-Mark reading security (have higher standards for acceptance) to knock out tokens which may have minted text or graphics which may, at least in part, mimic X-Mark facet reflections (only V3.0p or after). Bits 4 and 5 in the SysConfig byte control the X-Mark reading security features. Assuming that the inhibit logic is set for inhibit high (stored in bit 3 of SysConfig) and you wanted to set both X-Mark reading security bits (which raise the signal threshold level and require the mark be seen on both the leading and trailing edge of the coin), you would send the command "s38" followed by the "S" command to save the new configuration to nonvolatile memory. If you additionally wanted tighter metal alloy tolerance, use "s78".

Thickness and Diameter Adjustment: The X-10 Xeptor significantly raises the ability to measure and discriminate between coins through precision optical diameter measurement sensors, edge and center of coin metal alloy measurement, and X-Mark optical sensors

to read minted-in codes on the surface of the coin. To benefit from these new measurement capabilities we must also do a little better in coin position control than formerly required when only metal alloy was being measured. One cannot expect imprecise coin position control to allow precise and repeatable measurement of the coin properties any more than one could expect an accurate measurement of the length of a fish if you won't put the ruler up against the fish.

Thickness Setup: Figure 1 of the X-10 Xeptor is a side view showing a series of eight holes and a sliding adjustment with a detent that centers itself over one of the selected holes. The dimensions referring to each of the eight holes is the chute thickness achieved at each position of the sliding adjustment. A good rule of thumb would be to set the adjustment for .010" to .020" more than the thickest coin in the intended coin set.

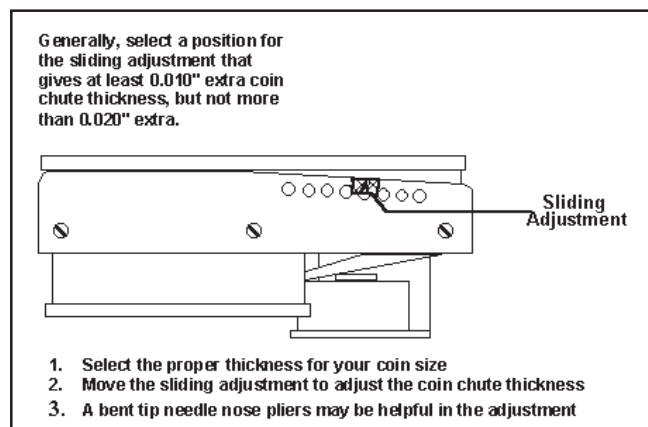


Figure 1

Diameter Setup: To control coin centering over the optical and inductive sensors, install the appropriate pair of clip-on coin chute edge guides as shown in Figure 2. The resultant coin chute width should be no more that about .060" wider than the coin if it has X-Mark codes. Without X-Mark codes, it may be as much as .23" wider. A single drop of silicone adhesive is recommended on each to ensure they are not accidentally knocked out.

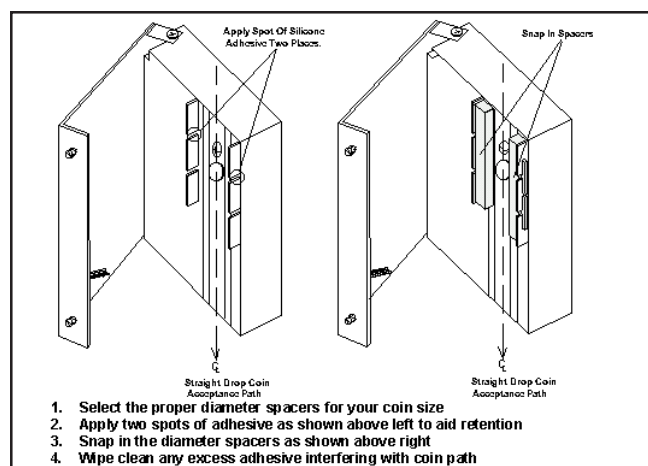


Figure 2

Bill Acceptors



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JCM® WBA-SS

Power Requirements: Voltage Range, 95 to 135 VAC with power supply 50 to 60 Hz, or 12 VDC max 20 VA.

Magazine capacity 600 notes.

Operating temperature recommended 0° to 45° C.

Adjustable Bill Slot: The WBA-SS has the ability to read a wide range of bill sizes. Four adjustment guides are available for bills that are 65 mm to 80 mm wide (Figure 1).



WBA-SS

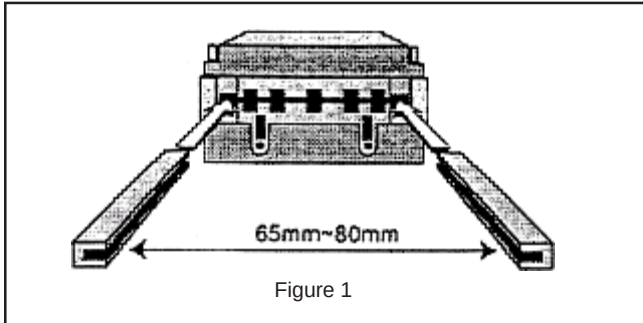


Figure 1

Collecting Bills: Collect bills by pressing the release lever and pulling the stacker box towards you (Figure 2).

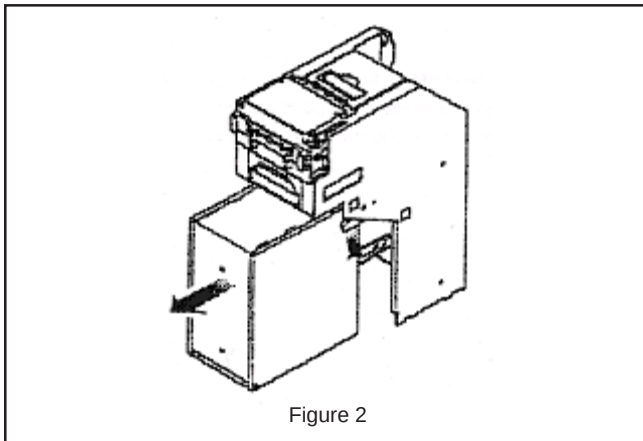


Figure 2

Open the stacker box cover and remove the bills inside (Figure 3).

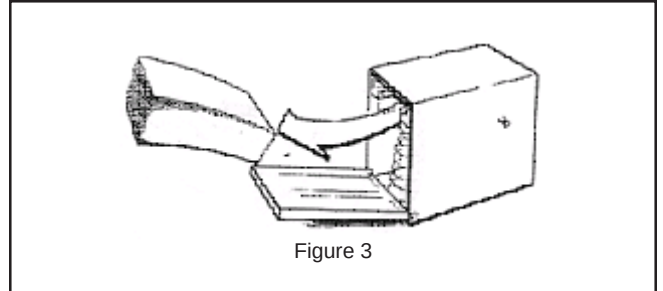


Figure 3

Bill Jams: Remove jammed bills from the bill head by moving the release catches on both sides of the head towards you. Open the acceptor head to access the jammed bill (Figure 4).

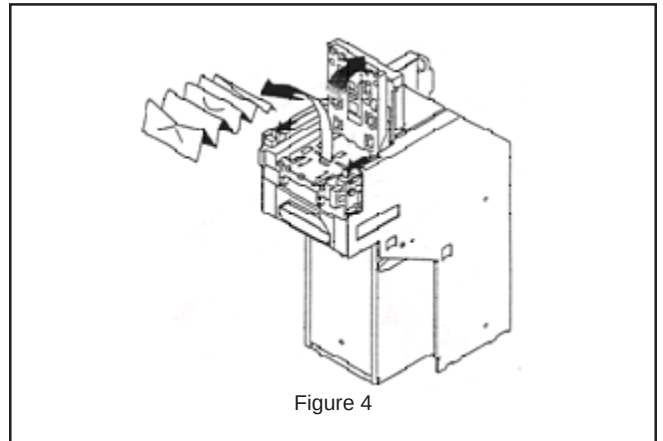


Figure 4

Remove jammed bills from the transfer area by pulling the access lever and opening the top cover (Figure 5).

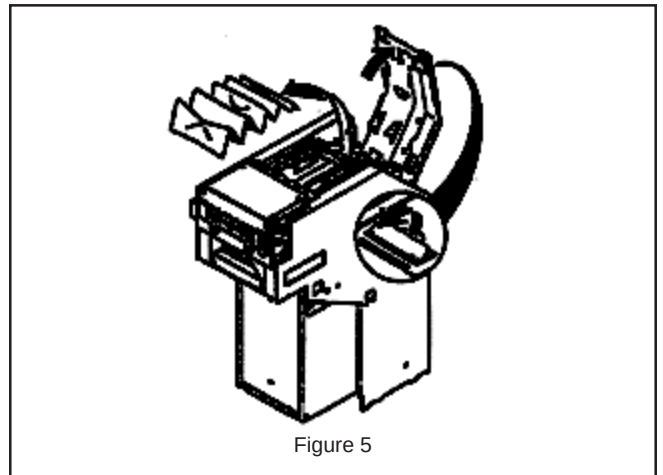


Figure 5

Occasionally, a bill jams near the inlet of the stacker box. Push the release lever of the stacker box and remove it to access the jammed bill (Figure 6).

Bill Acceptors

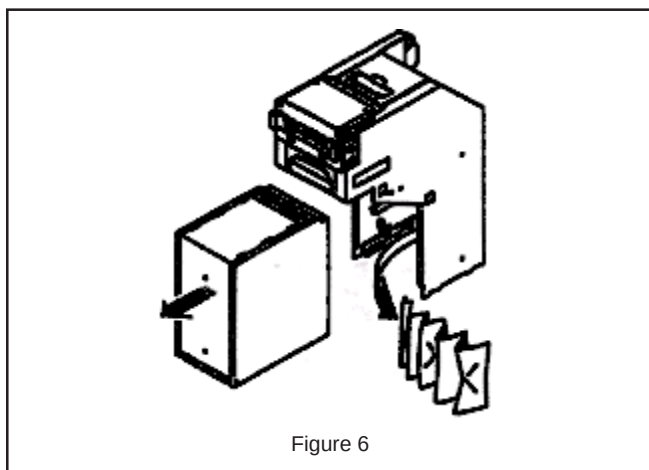


Figure 6

Interface: The WBA-SS uses an ID-003 interface. The ID-003 interface is a bidirectional serial interface. The machine is able to receive status reports from the WBA in response to appropriate commands (Figure 7).

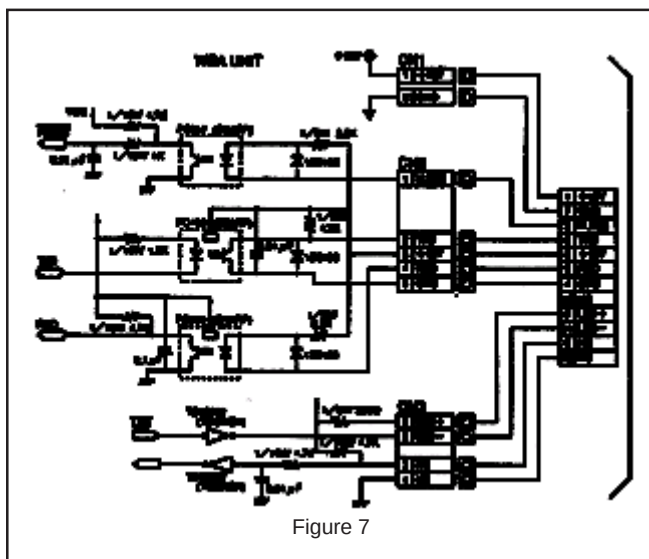
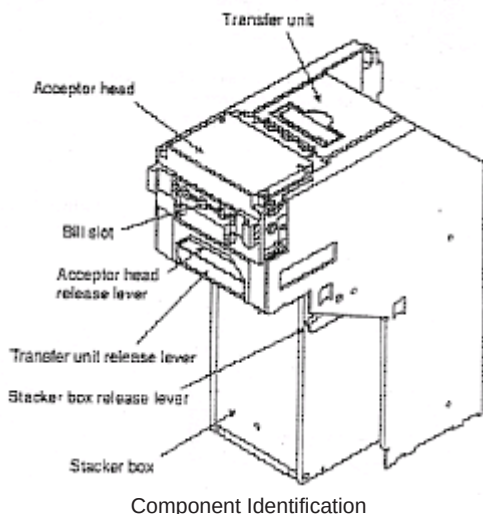
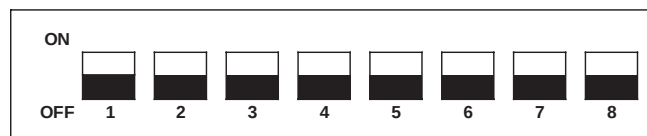


Figure 7



Component Identification

US dollar (\$) DIP Switch Settings



WBA-10/11/12/13 ID-003

SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-8
DIR	\$1	\$5	\$10	\$20	\$50	\$100	OFF

(DIR) "ON": 2-WAY ACCEPTANCE (IF WITHIN FIRMWARE)
"OFF": 4-WAY ACCEPTANCE (IF WITHIN FIRMWARE)

Troubleshooting

Description	Probable Cause	Possible Solution
Bill Rejection	DIP switches not set properly	Set DIP switches
	Roller and/or belts are excessively dirty	Clean head and rollers with mild soap and water solution
	Denomination disabled on game	Check game options
	Credit limit not set properly on game	Set credit limit for proper acceptance
	Cashbox is full, or not installed properly	Check and verify cashbox condition
	Sensors out of calibration, unit not calibrated after software upgrade	Calibrate unit using proper procedures
		Check for proper software/ID protocol
No Activity	No power to the unit/No LEDs visible	Check Power source, pins, wires and connector
	Will not start acceptance procedure/cycle	Check for proper software usage/ID protocol
	Cycles, but will not accept bills	Check for proper DIP switch and game settings
	Acceptor in an error status	Run standalone test to verify
	BAD CPU board, no lights on CPU board	Replace CPU board, or change out unit
	Unit out of calibration	Calibrate unit using proper procedures

Stand-alone Test Mode

Accomplish this function by applying power to the unit's transport and head only.



NOTE: Perform this test outside the game using an extension harness, or power supply hookup.

- Remove power.
- Prior to starting, set the DIP switches. Place DIP switches 1, 2, 3 and 8 in the ON position.
- Apply power.
- Turn DIP switch 8 OFF. The unit should cycle briefly.
- The unit is now ready for the test.

Bill Acceptors (cont.)

- Insert a known bill/note.
- The bill/note will either go completely through, or be rejected.
- If the bill/note rejects, check calibration. Recalibrate if necessary. If the unit still rejects, there is a possible sensor problem, or incorrect software version. See Bill Return Codes.



NOTE: Verification that the unit is function properly can be done while in test mode.

- If the acceptor does not take the bill/note, check for power.
- When the unit cycles on power ON, this indicates power and forward motor operation.
- When a plain piece of paper is inserted and rejected, this indicates reverse motor operation.
- When various denominations of bills are inserted and accepted, this indicates the bill was successfully matched against the characteristics of the software.

Bill Return Codes

# of Blinks	Description	Possible Cause
1	Crooked insertion	WBA-10, 11, 12, 13 sensor PT1 or PT2 not working WBA-20, 21, 22, 23 sensor PT3 or PT4 not working Bill inserted crooked
2	Magnetic pattern error	Dirty rollers/belts Bad mag sensor PCB
3	Entrance sensors bypassed	Sensor other than PT1 and PT2 or PT3 and PT4 detected the presence of the bill/note while in standby
4	Dark-light ratio is below the fixed value	Reflective sensors may not be working
5	Bill not detected	Bill/note not detected by a sensor within a specified period HPC, HPL, HPR or feed in sensor
7	Photo sensor error	Bill/note may have a pattern not programmed or recognized in memory
8	Photo level error	The bill note may be dirty Overlapping bill/note detected
9	Illegal bill/note	The bill/note does not fall into the range of acceptable bill/note in program
11	Stacker level problems	Solenoid not working Sensor may not know position of the stacker lever
12	Timing error	The timing is degraded between the sensors that track the bill/note movement
13	Bill/Note length error	Bill/note is torn Registration on bill/note is too short
14	Color pattern error	Color pattern on the bill/note is incorrect

Auto-Calibration - Sensors

Description: Calibration sets a starting reference point for all optical sensors within the unit. This can be done at the host unit, or at the work bench with just a power source.

When to Calibrate:

- After the acceptor's components have been disassembled for repair.
- After a sensor board has been replaced.
- Whenever bill/note acceptance is degraded.
- During scheduled preventative maintenance (see Module 4, Periodic Maintenance)
- When upgrading/downloading software.

Procedure:

1. Remove transport unit with head.
2. Set DIP switches 5, 6, 7, and 8 to the on position, all others to the off position.
3. Connect transport unit with head to a power source - either the host machine, or adaptive power supply.
4. Listen for activation of the transport motor - forward and reverse for up to two seconds, then stop - READY.
5. After inserting the calibration paper, black paper first, the unit will carry the paper forward/reverse several times. When the process is complete, the unit will return the paper.



NOTE: Calibration paper may be purchased from JCM American directly by calling the Parts Sales department at (702) 651-3445 and requesting part number #501-000032.

6. Wait a few moments to allow for complete transfer of calibration data to be stored in memory. This is indicated via the LED on the test harness, or the bezel light on some applications with fast blinks.
7. Unsuccessful calibrations: Check the lenses. Retry calibration. If necessary, refer to the Error Conditions table following. Additional testing/troubleshooting may be required.



NOTE: Recalibration is required after installation of a new CPU.

Bill Acceptors (cont.)

Auto-Calibration Error Conditions Table

Look at the indicator LED connected to the test harness, or the bezel light. If the LED blinks from one to 11 times at $\frac{1}{2}$ second intervals, an error exists.

Count the number of blinks and match the table following. If a count was missed, it will repeat after a one-second pause.

# of Blinks	Error Found During Calibration
1	Entrance Lever Error
2	Solenoid Error
3	Entrance Sensor Error
4	Transport Jam
5	Gain Error - White or Black Level
6	Digital/Analog Error
7	Bar Code Sensor Error
8	Acceptor Head Error
9	Magnetic Setting Error
10	Write-In Error
11	Black Level Error

JCM® SENTRY™ - Intelligent Bezel



SENTRY™ Intelligent Bezel

The SENTRY bezel attaches to the WBA bill acceptor to provide both the machine user and slot technicians improved information about the operation of the bill acceptor.

For the slot user, the SENTRY has an animated display of green arrows on the bezel platform going into the bill acceptor that shows the unit is ready to accept bills or barcode coupons. While it is validating a bill or coupon, the arrows move from side-to-side. It also displays the denominations currently acceptable by the bill acceptor on the platform. The last bill entered is identified by the appropriate denomination light changing to orange.

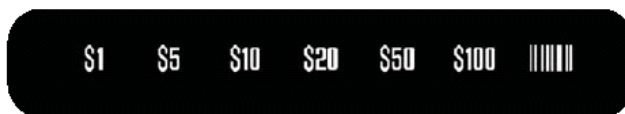
When there is a problem requiring immediate attention, a flashing blue icon of an ambulance blinks on the front of the bezel and the bill acceptor shuts down. If a red icon also lights up, this gives the slot technician more specific information about the problem. On the standard bezel, the icons are a key, a crossed circle, an eye, and a crossed hammer and wrench. There is also a large JCM logo, which indicates the cashbox is full when lit.

Dimensions: 55 mm x 114 mm x 30 mm.

Note Acceptance: Accepts notes from 67 mm to 81 mm.

Features:

- Clearly indicates acceptor status, using graphic icons.
- Shows currently enabled denominations and/or bar code.



- Displays denomination of last-inserted bill.
- Runway light pattern indicates "Ready" (front to back) or "Processing" (side to side).
- Brilliant blue trouble light is easily visible from a distance.

Bill Acceptors (cont.)

- Easily installed as a retrofit on most machines.
- Low-cost, low-maintenance design.
- Controlled directly by the bill acceptor - no changes to game software necessary.

Installation Instructions

1. Remove the transport from the frame.

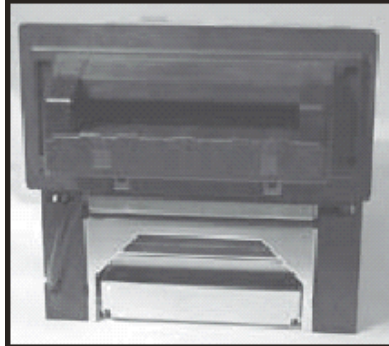


Figure 1

2. Remove the existing faceplate by opening the WBA transport and removing two screws. Disconnect the 4-wire harness from the transport (Figure 1).

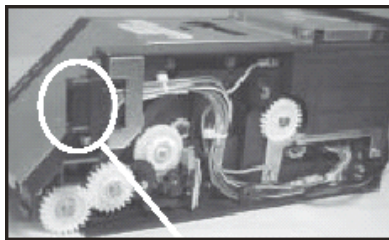
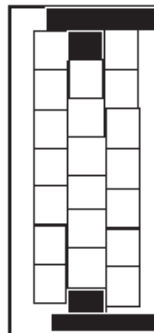


Figure 2

3. Disconnect the existing wire harness (Figure 2), then remove the two screws securing the connector on the rear of the transport.

4. Install the new wire harness, including the 3-wire connector going to the new faceplate. Secure the rest of the wires in the same manner as before.



5. Attach the 3-wire connector to the back of the circuit board (Figure 3).

6. Slide the circuit board into the SENTRY faceplate (Figure 4).

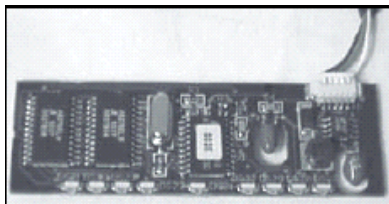


Figure 3

7. Push the faceplate down the front of the transport.

8. If desired, attach the SENTRY bezel to the WBA with the two supplies supplied in the kit.

9. Replace the transport in the frame (Figure 5).

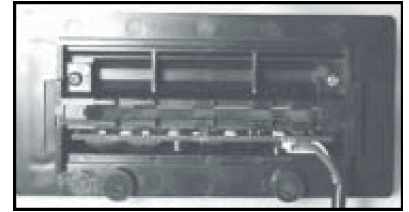


Figure 4

Troubleshooting

When there is a loss of communication between the bill acceptor and the machine, a flashing blue icon of an ambulance blinks on the front of the bezel and the bill acceptor shuts down. If one of the four red icons light up with the flashing ambulance, it indicates a specific problem and the bill acceptor will shut down.

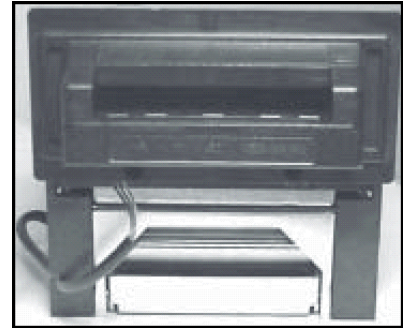


Figure 5

The following table details what the icons indicate when they light up along with the blue icon:

Icon	Message
Key	Problem with the cashbox. Someone with access to the cashbox must handle this problem.
Crossed Circle	ROM verification error, or a jammed motor. The bill acceptor will have to be returned to the manufacturer for repairs.
Eye	Possible cheat attempt. If the eye illuminates by itself, the WBA has rejected several bills in a short period of time. This will NOT disable the bill acceptor, but could mean calibration or cleaning is needed.
Crossed Hammer and Wrench	Minor error condition that can be repaired at the location.
JCM Logo	Cashbox is full.

Bill Acceptors (cont.)

JCM® DBV-200

Power Requirements: 12V DC.

Features:

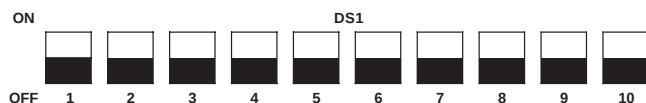
- 4-way or 2-way acceptance of old and new bank notes, by DIP switch selection.
- 4-megabit memory
- Automatic calibration



DBV-200

US dollar (\$) DIP Switch Settings

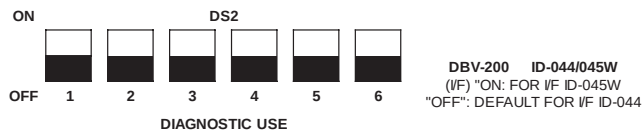
DBV-2000 Connection



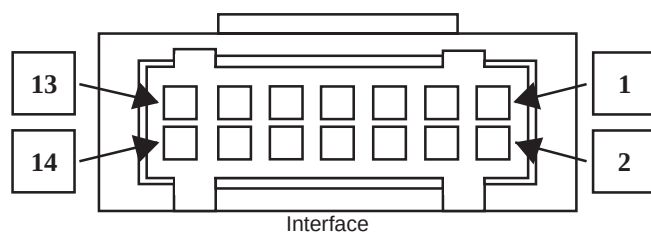
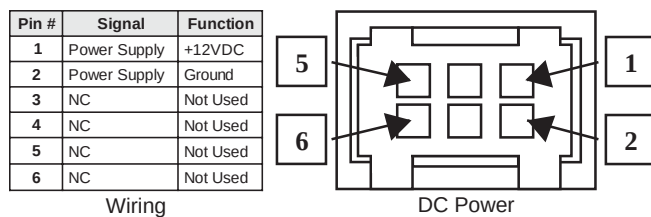
DENOMINATION / INTERFACE USE

WBA-10/11/12/13 ID-003							
SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-8
DIR	\$1	\$5	\$10	\$20	\$50	\$100	OFF

NOTE: WHEN DIP SWITCHES ARE IN THE "ON" POSITION, IT DISABLES THE ACCEPTANCE OF THAT BILL DENOMINATION.



Switch	ON	OFF
1	With Stacker	Without Stacker
2	Must be set to OFF	OFF
3	Must be set to OFF	OFF
4	Must be set to OFF	OFF
5	Must be set to OFF	OFF
6	Test Mode	Normal



Pin #	Signal	Function
1	NC	Not Used
2	NC	Not Used
3	Busy	Indicates that the validator is in operation
4	Soft Reset	Signal to clear ABN (abnormal) or STKF (stacker full) signal.
5	Data	Terminal to output communication message.
6	CTS	Signal allows to send any communication message.
7	Ground	Ground
8	LED Power	Power supply to drive LED
9	NC	Not Used
10	Disable/Enable	Validator can accept bill when Low, and can not accept when High
11	RTS	Confirms the start of communication message.
12	NC	Not Used
13	NC	Not Used
14	ABN	To be output when the validator is in trouble, or when the stacker is full.

Troubleshooting

Description	Probable Cause	Possible Solution
Bill Rejection	DIP switches not set properly	Set DIP switches
	Roller and/or belts are excessively dirty	Clean head and rollers with mild soap and water solution
	Credit limit not set properly on game	Set credit limit for proper acceptance
	Cashbox is full, or not installed properly	Check and verify cashbox condition
No Activity	Sensors out of calibration, unit not calibrated after software upgrade	-Calibrate unit using proper procedures -Check for proper software/ID protocol
	No power to the unit/No LEDs visible	Check Power source, pins, wires and connector
	Will not start acceptance procedure/cycle	Check for proper software usage/ID protocol
	Cycles, but will not accept bills	Check for proper DIP switch and game settings
	Acceptor in an error status	Run standalone test to verify
	BAD CPU board, no lights on CPU board	Replace CPU board, or change out unit
	Unit out of calibration	Calibrate unit using proper procedures

Stand-alone Test Mode

Set the DIP switches, then apply power to the unit to accomplish this function.



NOTE: Perform this test outside the game using the game power (6-pin) connector, or power supply hookup.

- Before applying power, turn DIP switch 6 to on.

Bill Acceptors (cont.)

- Apply power, then turn DIP switch 6 to OFF. The unit should cycle.
- The unit is ready for stand-alone testing.
- Insert a bill/note. The bill/note will either be accepted and go complete through the bill head, or be rejected.
- If the unit rejects the bill/note, refer to the Bill Return Codes table.
- If the unit will not take the bill/note, check the Abnormal Initialization Codes table.
- When the unit cycles on power ON, this indicates power and forward motor operation.
- When a plain piece of paper is inserted and rejected this indicates reverse motor operation.
- When various denominations of currency are inserted and accepted, this indicates the bill/note was accurately match against the characteristics of the software version.

Bill Return Codes

# of Blinks	Description	Possible Cause
1	Crooked insertion	Bill was inserted crooked Entrance sensor malfunction
2	Magnetic pattern error	Error detecting magnetic pattern on a bill/note
3	Acceptor detected a bill while in standby	Detected the presence of a bill/note while in standby
4	Dark-light ratio is below the fixed value	Reflective sensors may not be working properly
5	Transport feed error	Bill/note not detected by the transport feed sensor within a specified period
7	Photo pattern error	Bill/note may have a pattern not programmed or recognized in memory Sensor may not be working properly
8	Photo level error	Dirty belts and/or rollers Double/overlapping bill detected The bill/note may be dirty
9	Return by inhibit settings	Bill/note does not fall into range of acceptable bills/notes, or denomination direction
10	Returned by host	Game program/settings will not accepted inserted bill/note
12	Detected another bill while a bill was still in stack mode	Entrance sensor malfunction Object blocking entrance sensor
13	Bill length error	Length of bill/note not within programmed specification
14	Color pattern error	Irregular color/shade/markings
15	Returned by other reasons (Magnetic error)	A combination error with magnetic sensors

Abnormal Initialization Codes

# of Blinks	Description	Possible Cause
1	Cashbox Full	Cashbox may be FULL Motor not functioning Sensor not working Encoder gear cracked or split
2	Jam in Cashbox	Pusher mechanism may be jammed Stacker encoder sensor not functioning
3	Jam in Transport Unit	Cover open Stacker lever problem Bill remains in the carrying path
4	Jam in Acceptor Head	An object blocking sensors Sensor problem
5	Motor Speed Error	No signal from the acceptor's encoder sensor
6	Motor Stop Error	Motor not functioning Encoder gear cracked or split Encoder sensor not functioning
8	Solenoid Error	Solenoid not functioning Stacker lever not at home position
10	Cashbox Removed	No cashbox (SS units only) Cashbox not seated properly
12	Cheat Condition Detected	Sensors indicate possible sensor manipulation
15	D/A Adjustment Error	Possible calibration sensor error

Auto-Calibration

1. Power OFF
2. Set DIP switch DS2: 4, 5, and 6 to ON.

ON

DS1

OFF 1 2 3 4 5 6 7 8 9 10

DENOMINATION / INTERFACE USE

ON

DS2

OFF 1 2 3 4 5 6

DIAGNOSTIC USE
3. Power-on the unit plugging in the 6-pin connector.
4. Head motor will cycle and stop indicating it is ready to calibrate.
5. Insert the DBV-200 calibration paper, black side first.



NOTE: Calibration paper may be purchased from JCM American directly by calling the Parts Sales department at (702) 651-3445 and requesting part number #057619.

Bill Acceptors (cont.)

After inserting the calibration paper, the unit will carry the paper forward/reverse several times. When the process is complete, the unit will return the paper.

Look at the indicator for proper signals: 14-pin test LED, or the bezel light, if used. Fast blinks indicate acceptable calibration, and blinks from one to 11 intervals of $\frac{1}{2}$ second indicate an error as described in the table following:

# of Blinks	Error Found During Calibration	# of Blinks	Error Found During Calibration
1	Entrance Lever Error	7	Barcode Sensor Error
3	Entrance Sensor Error	9	Magnetic Setting Error
5	Gain Error - White or Black Level	10	Write-in Error
6	Digital/Analog Error White Level Adjustments	11	Black Level Error



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2694 • <http://www.meiglobal.com>

ZT Series 1000

Features

- **Exceptional Security:** Through the use of multiple wavelength optical sensing and sophisticated data processing, the ZT Series 1000 bill acceptor sets the standard for rejecting invalid bills. Optical cross-channel sensors examine the bill path for foreign objects such as clear tape or strings. The LRC triggers an automatic "lock out" when separated from the unit for added security.
- **High, four-way acceptance:** Satisfy customers by accepting bills of all conditions. Bills can be fed in any direction, face up or down.
- **Future flexibility in a flash:** All U.S. models accept \$1, \$2, \$5, \$10, \$20, \$50 and \$100 bills. The ZT Series 1000 bill acceptor can be easily updated electronically to handle new currency designs.
- **Reliable / low maintenance:** With the streamlined recognition system, sensors are embedded under the smooth plastic bill path, and the magnetic head and pinch roller have been eliminated to dramatically reduce jams, debris build up and the need for cleaning.
- **Bar code capability:** Reliably accepts industry standard bar code coupons face up in both directions.
- **Easy to use:** The Recognition and Transport Unit (RTU) and the Lockable Removable Cassette (LRC) can be removed from the front with one hand. The RTU fully opens for cleaning and electrically connects automatically when inserted. An easily accessible toggle switch enables the operational mode to be changed to "test" or "setup" mode.



ZT Series 1000

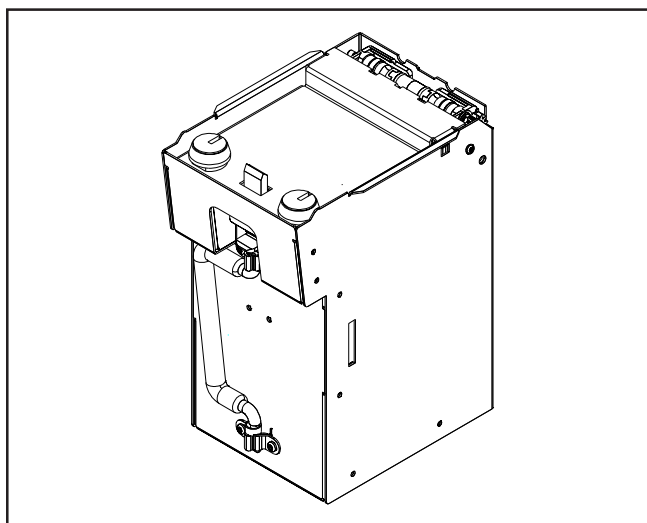
Specifications

- **Acceptance Rate:** 95% or greater for US \$1 through \$100 bills
- **Bill Insertion:** Bill/lengthwise, four way (face up/down, either direction)
- **Bar code Coupon:** face up, either direction

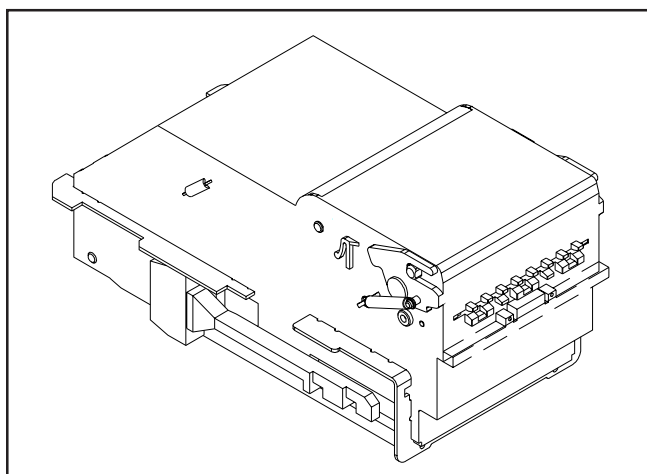
Bill Acceptors (cont.)

- Transaction Speed: Approximately three seconds (from bill insertion to completed bill-stacking)
- Interfaces: Pulse and multiple serial protocols
- Power Sources: 12 to 40 volts DC
- Power Consumption: Standby: 3.0 Watts, Acceptance: 30 Watts peak, Stacking: 50 Watts peak
- Escrow: One bill/one barcode coupon
- Environment: Operating temperature: 5° C to 50° C, storage temperature: -30° C to 70° C, humidity: 5% to 85% relative humidity (non-condensing)

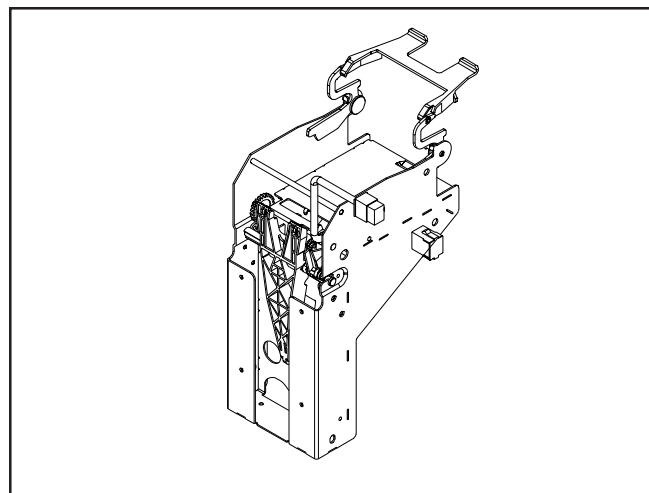
Bill acceptor components: The ZT1200 consists of three main components, the cashbox/LRC, the RTU and the chassis.



Cashbox/LRC

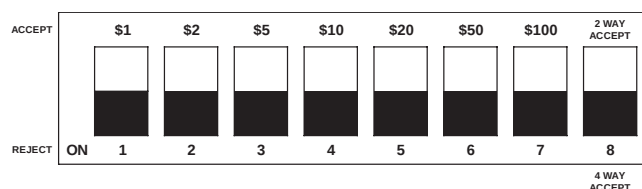


RTU



Chassis

US Dollar (\$) DIP Switch Settings



RTU Removal

1. Pull forward on the release lever on top of the RTU. At the same time, pull forward on the RTU to its first locked position, about halfway out.
2. Pull forward on the release lever again. Pull forward on the RTU to remove it from the chassis.

RTU Installation

1. Ensure that the bill path access areas are latched closed.
2. Slide the RTU into the chassis and push firmly to seat the unit.

Modes

Interface Mode (normal operation): This mode is selected by placing the mode switch to the down position. Interface mode is the normal operating mode of the ZT1200 Bill Acceptor. This allows the unit to communicate with the machine that it is installed in so that it may accept bills and give credits.

Calibration Mode: This mode is selected by placing the mode switch to the middle position and cycling power. After the calibration is successfully completed, the ZT1200 will automatically return to Interface mode.

Boot Mode: This mode is selected by holding the mode switch in the up position while cycling power to the

Bill Acceptors (cont.)

ZT1200. Boot mode is a special mode, which is reserved for factory use and field software upgrades. This unit will not accept bills or give credits when in this mode. To exit Boot mode, return the mode switch to the Interface mode position.

Test Mode: The test mode allows testing of the unit without credits being communicated to the host machine. This mode is very useful for troubleshooting and other stand-alone testing of the bill acceptor.

Entering the Test Mode:



NOTE: Bills will be accepted, but credits will not be given in test mode. Ensure that test mode is properly exited before placing the bill acceptor back in service.

1. Power up the ZT1200 in Interface mode.
2. After the unit performs a run-and-stack operation, wait at least an additional 10 seconds before performing the next step.
3. Hold the mode switch in test mode position.

The ZT1200 will now accept and stack bills, but no credits will be issued on the host machine.

To Exit the Test Mode:

1. Release the mode switch and return it to the Interface mode position.
2. Remove the RTU.
3. Replace the RTU (the unit will perform a run-and-stack).

The unit is now ready for use.



NOTE: The cashbox must be in place for bill acceptance.

Coupon Mode: This mode is selected by toggling the mode switch to the up position. This mode allows the default settings to be changed in the ZT1200 bill acceptor. These settings are used when switches 1-7 are in the OFF position on the bill option switch. The factory default coupon settings are \$1, \$2, \$5, \$10, \$20, \$50, and \$100s enabled with four-way acceptance. Coupon mode will only allow a onetime try for coupon configuration. After an attempt, the ZT1200 will automatically return to Interface mode.

1. Turn bill option switches 1-7 to the off position.
2. To enter the coupon mode, toggle the mode switch to the up position one time.
3. Install the RTU into the machine and close the door. The unit will run-and-stack and then pulse the motor in reverse indicating coupon configuration mode is enabled.

Coupon Configuration:

1. Make copies of a coupon with a standard, carbon-based, non-color copier. Copies of the coupon are usable if cut to match the size of the following coupon.
2. Fill out the coupon using a #2 pencil to complete the blocks for desired coupons. For correct operation, all eight lines must be completed. Fill in only one block per line. Do not mark the back of the coupon.
3. Complete lines one through seven to enable desired bill denominations. Complete one block for each denomination. High accept enables maximum bill acceptance. High security may be desired for locations where a higher level of discrimination is desired. Off will reject bills of the selected denomination.
4. Complete line eight to enable desired bill direction. Enable 1-or 2-way face up, or 4-way acceptance (which allows acceptance in all directions).
5. Insert coupon and verify settings were accepted.

ACCEPTED: Coupon will be held in escrow mode for approximately three seconds then returned.

REJECTED: Coupon will be immediately returned. Review instructions or try a new coupon.

Returning to Normal Operation:

1. Remove the RTU.
2. Change bill option switches.
3. Reinstall the RTU.

Calibration:



NOTE: A Mars ZT Calibration Kit is required to perform a calibration. Contact Mars at (800) 345-8215 and reference part number 251061008 for assistance.

Bill Acceptors (cont.)

A calibration of the ZT1200 bill acceptor may need to be performed after certain maintenance procedures. Those procedures that require it will explicitly state that a calibration must be performed. As a general guide, any disassembly must be followed up with a calibration.

1. Turn off the bill acceptor and move the mode switch to the calibration position.
2. Turn on the unit and insert a piece of MARS calibration paper into the bezel of the bill acceptor within four seconds. After a few seconds, the calibration paper will be rejected.



NOTE: The bill acceptor will exit Calibration mode and return to Interface mode automatically four seconds after turning the power on if no calibration paper is inserted into the unit.

3. Remove the calibration paper from the bezel. The RTU will perform a run-and-stack operation if the calibration was accepted. If the unit does not perform a run-and-stack, the calibration data was not accepted. In this case, the calibration paper must be re-fed.



NOTE: If, after several attempts, the unit does not perform a run-and-stack, the bill acceptor may require additional services.

4. Allow the ZT1200 to idle for at least 20 seconds following the run-and-stack operation. Ensure that all bills, calibration paper or other objects are removed from the bezel during this period.
5. Turn off the unit and place the mode switch to the Interface position.
6. Turn on the unit. A run-and-stack operation will be performed if ready for service.

Troubleshooting

Description	Probable Cause	Possible Solution
Unit will not draw in bills	Jammed bill in bill path	Check bill path for jammed bill
	Cassette not properly seated	Remove the cashbox and reinstall
	RTU not properly seated	Remove the RTU and reinstall
	Interface connector not installed or faulty connection	Check interface connector
	Power connector not installed or faulty connection	Check power connector
	Mode switch not in Interface mode position	Turn the unit off, place the mode switch to the Interface mode position, and turn the unit on
	Unit disabled by machine	Check machine for errors Check machine doors
Unit does not give credit	Mode switch not in Interface mode	Turn the unit off, place mode switch to the Interface mode position, and turn the unit on
	Bezel option switch in wrong position	Return bezel option switch #1 to OFF position and cycle power
	Cassette jammed	Remove RTU, verify home flag is in UP position. If not, cased may be jammed. Remove cassette and verify proper operation by pushing in on silver pusher at cassette rear.
	Communication error	Turn power off and on to clear error
Unit jams	Cassette not properly seated	Remove the cashbox and reinstall
	RTU not properly seated	Remove the RTU and reinstall
	Gear missing	Remove the RTU, check for two gears on the left-hand side, and replace gear if missing.
	Defective cashbox (LRC)	Remove the RTU. Roll the chassis idler gear (left-rear of chassis) and check for slipping. Remove and reinstall cashbox. Recheck for slipping. If slipping persists, replace cashbox.
Unit draws bills in, but will not accept bills	Option switches not set properly	Refer to Option Switch Settings section
	Interface errors	Check controller/machine enabling of bill acceptor
	Unit in Calibrate mode	Check mode switch position section
	Communication error	Turn power off and check connectors. Turn power on.
	Bills inserted upside down	Check switch for 4-way
	Worn or non-genuine bills	Use cash in better condition
Unit runs motor, stacks three times, then goes out of service	Cassette not properly installed	Remove and reinstall cashbox
	Home flag unclipped or broken	Remove RTU and verify proper home flag action. Re-clip or replace home flag.
	Cassette present cherry switch pushing on stacker arm	Some applications may have a cherry switch mounted behind the bill acceptor to verify cashbox removal. Remove cherry switch and wire to cassette present wires from chassis main harness.
RTU runs motor seven times and unit goes out of service	Dirt in bill path	Clean bill path and recalibrate

Bill Acceptors (cont.)

Money Controls  Money Controls • New Coin
Street, Royton Oldham OL2
6JZ United Kingdom • Phone:
+44 161-6780111 Fax: +44 161-6267674 •
www.moneycontrols.com

Ardac WACS

The **Ardac WACS (World Acceptor Cassette System)** is a world-proven, self-contained note acceptor and cassette stacking system that offers high performance, high security and fast, trouble-free note handling for a wide range of applications.



Ardac WACS

Based on world-proven **Ardac** technology, **WACS** is designed for acceptance of virtually all the world's note currencies and can handle multiple currencies of varying sizes at the same time. EPROM or Flash memory is used to program up to 260 individual note profiles that allow reliable discrimination of up to 65 banknotes in four directions.

Ardac WACS optically scans each note to determine authenticity and denomination, resulting in very high security, and also incorporates an internationally proven optical and mechanical anti-stringing design to protect against fraudulent activity. Individual notes may be inhibited from normal acceptance, giving operational flexibility and enhanced security when needed. Accepted notes are routed and stacked within the removable, and optionally lockable, cassette. This has a capacity to hold up to 550 street-grade notes, and, with no motor or electrical connectors, is ideal for use as an interchangeable unit.

The modular **Ardac WACS** comprises the acceptor and cassette mounted within a steel chassis that allows simple location of the unit within a host machine. The acceptor and cassette can be easily removed from the chassis and opened for periodic inspection or cleaning without the use of tools, simplifying general maintenance. Advanced maintenance and system monitoring is performed using the built-in diagnostics function in association with a PC and Ardac Host Simulator interface.

Features:

- High-speed, high-performance solution
- Truly global – accepts most of the world's note currencies

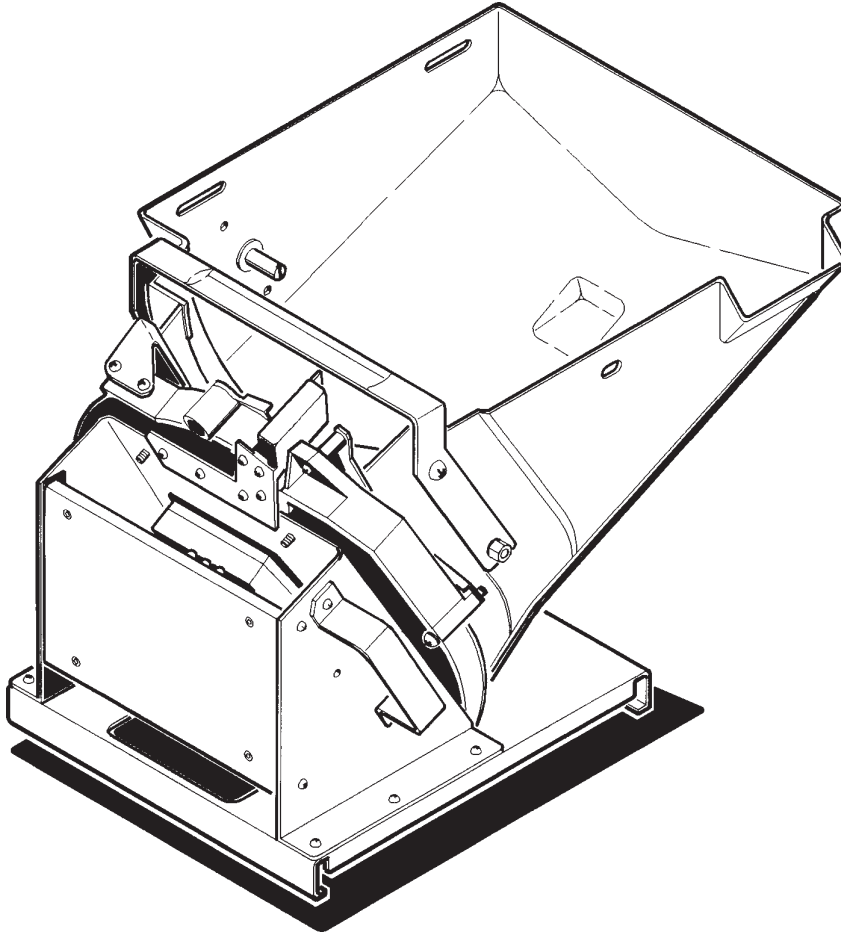
- Field update of note sets
- Handles multiple currencies at the same time
- Optimum in-service time
- Quick and easy to use by the end user.
- Very high first-time acceptance rate of street-grade banknotes
- Multiple, precision optical and magnetic sensors
- Automatic calibration of sensors for high performance
- Optical and mechanical anti-stringing design
- Alternative programming methods – EPROM replacement or download
- Compact, modular system, front or rear entry
- Built-in diagnostics
- Cassette holds up to 550 street-grade banknotes.

Specifications

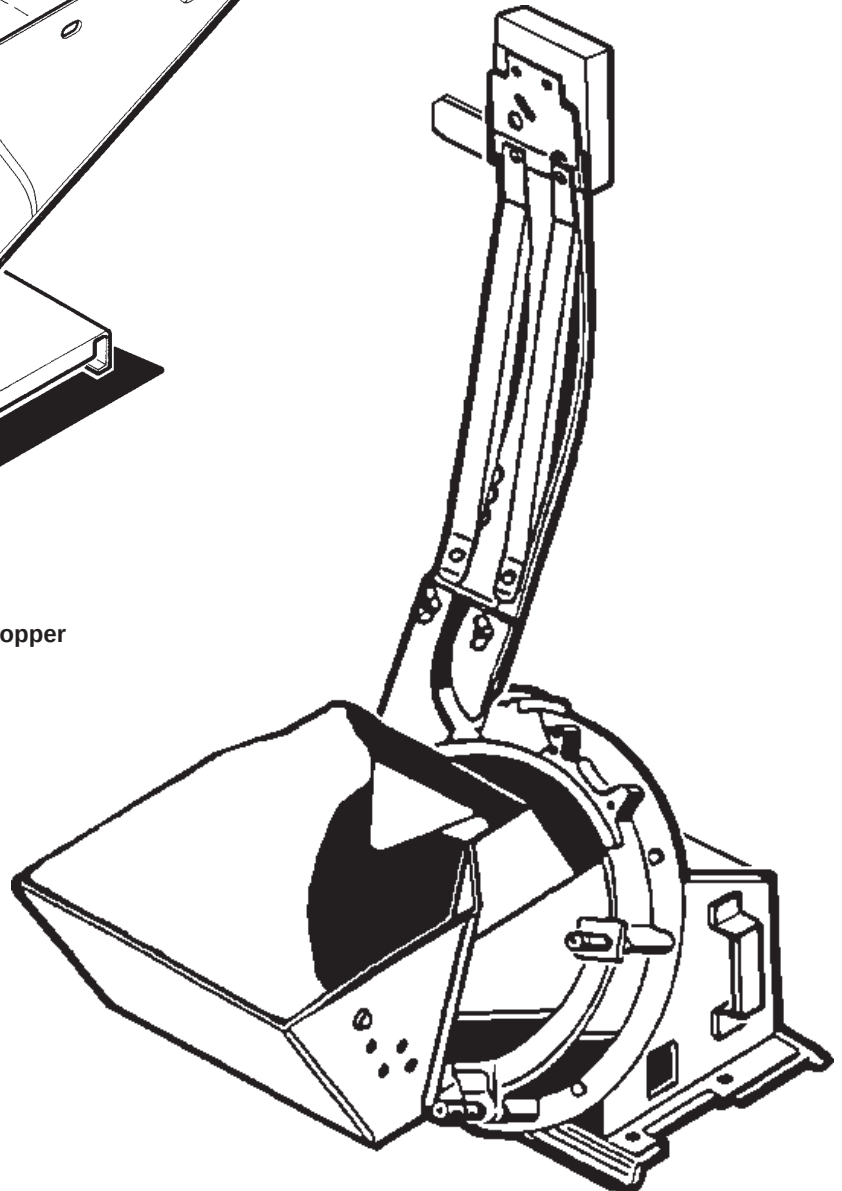
Dimensions	Acceptor	Cassette	Chassis
Height	90mm (3.520")	204mm (8.042")	316mm (12.442")
Width	107mm (4.210")	88mm (3.476")	116mm (4.588")
Depth	229mm (9.000")	202mm (7.940")	180mm (7.100")
Weight	2.2kg (4.75lb)	2.3kg (4.90lb)	1.6kg (3.50lb)
Note Size			
Minimum Width	62mm (2.443")		
Maximum Width	83mm (3.270") [85mm (3.350") option]		
Minimum Length	120mm (4.728")		
Maximum Length	172mm (6.777")		
Cassette Stacking Capacity			
Up to 550 street-grade notes			
Environmental			
Temperature Range: Operating	0°C to 60°C		
Storage	-30°C to 60°C		
Humidity Range	Up to 90% RH non-condensing		
Electrical Interface			
Voltage: Nominal	12 - 24Vdc range		
Current:	@ 12Vdc		@24Vdc
Typical (running)	2.0A		820mA
Minimum (idle)	400mA		270mA
Maximum	4.0A		1.6A
Operational Specification			
	65 notes x 4-ways, 260 profiles		
	Automatic calibration of sensors for high performance		
	Vend time less than 3.25 seconds		
	Individual bill/note inhibit using 8-position DIP switch		
	Easy access to not path for inspection and cleaning		
	Diagnostics via RS232 ASCII serial interface		
Communications Interface			
	Ardac-2 serial protocol (RS232)		
Security			
	Ardac WACS incorporates an optical and mechanical anti-stringing design to deter and protect against fraudulent activity, such as pullback manipulation, thus providing optimum security.		

Hoppers

Bally Gaming and Systems products may use the XS-1200 Standard hopper. It also may use hoppers manufactured by Asahi Seiko, Inc.



Bally XS-1200 Standard Hopper



Asahi Seiko Hopper

Hoppers (cont.)

Bally Gaming and Systems XS-1200 Hopper (AS-04787-SERIES)

The XS-1200 design combines operator enhancements with the most advanced technology. It uses a multipurpose processor to provide an extremely efficient operation in a compact and simple design.

The primary focus of the engineering staff was to design the most dependable increased capacity hopper for the market and have greatly reduced the damage to components if a malfunction occurs, by adding several protective circuits. This is further enhanced by the power supply being included on a single printed circuit board for quick and easy repair.

Features

- Increased capacity for all denominations of coins. The recommended running levels are 4,200 25¢, 1,000 \$1 (or tokens) and 500 \$5 tokens.
- Larger motor for increased power, speed and reliability.
- Convenient switches for manual operation and testing.
- Advanced technology for easy repair.
- Easily adapted to various machine models.

XS-1200 Controller Board

The XS-1200 controller board is an intelligent control circuit. It handles all functions of the XS-1200 including pin wheel rotation, mixer rotation and coin un-jamming routines.

Switch Descriptions and Options

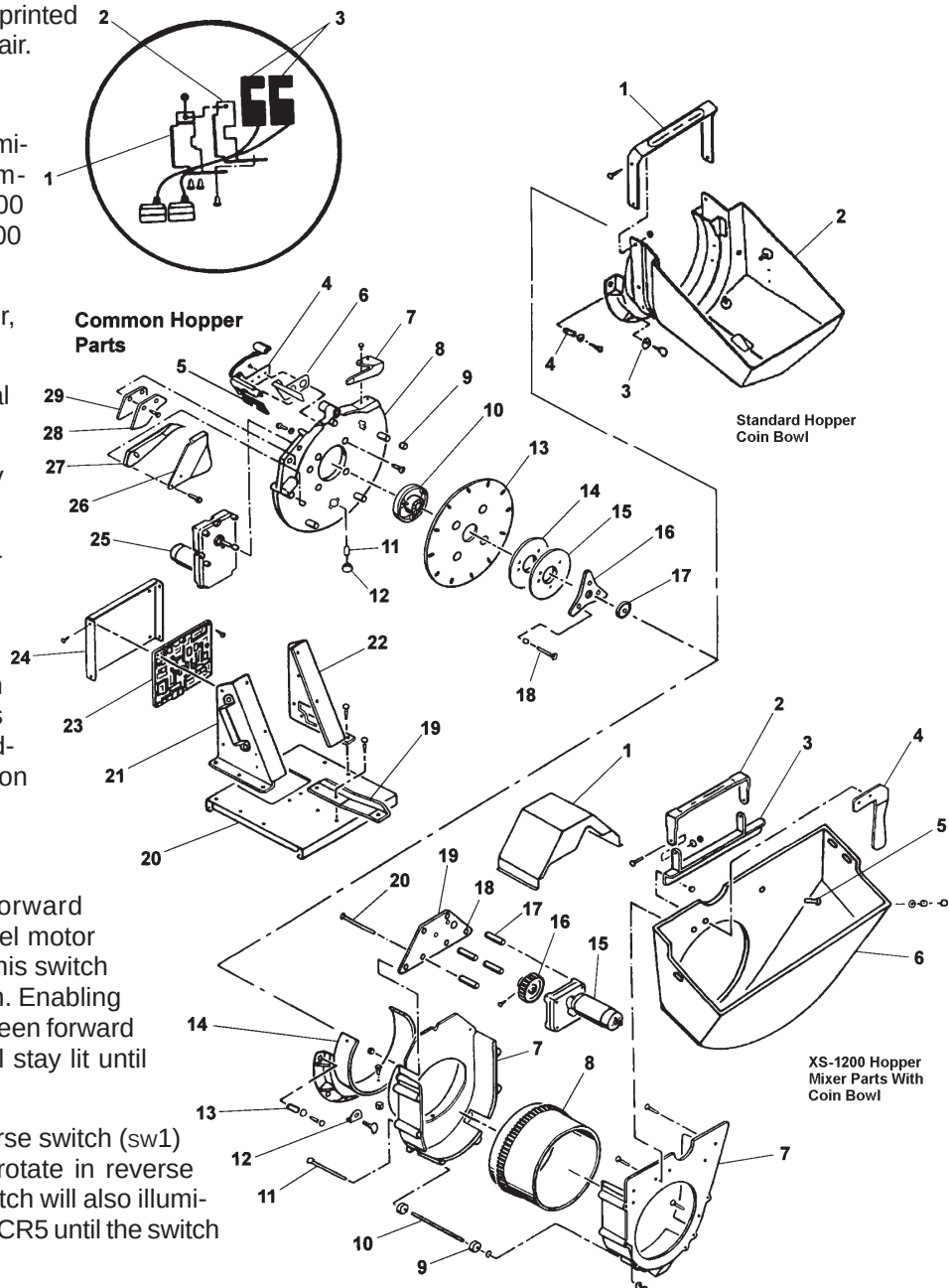
Forward Switch: Pressing the forward switch (sw2) will cause the pinwheel motor to rotate forward (payout mode). This switch will only function with the door open. Enabling this switch will also illuminate the green forward LED located at CR4. This LED will stay lit until the switch is released.

Reverse Switch: Pressing the reverse switch (sw1) will cause the pinwheel motor to rotate in reverse (clear jam mode). Enabling this switch will also illuminate the red reverse LED located at CR5 until the switch is released.



NOTE: The reverse spin on the pinwheel is slower than the forward spin, because the CPU on the control board sends a slower signal to prevent coins being forced underneath the hopper knife.

Forward / Reverse (Mixer/Motor Test): Pressing the forward switch (sw2) and the reverse switch (sw1) simultaneously will start the mixer motor, and illuminate the yellow mix LED located at CR3. The motor will remain on, and the LED will remain lit, until either switch is released.



Peripherals

Hoppers (cont.)

XS1200 HOPPER PARTS		
ITEM	PART #	DESCRIPTION
1	P-09319-0512	Bracket, Outer Mounting
2	P-09319-0511	Bracket, Inner Mounting
3	E-00733-0008	Optic Switch Assembly (2)
4	P-09319-0204	Bracket, Hopper Optic Guard, Outer
5	E-00733-0008	Optic Switch Assembly (Single)
	TFPP-00632-1114	Screw
6	P-09319-0203	Bracket, Hopper Optic Guard, Inner
7	P-00845	Wiper
8	M-03073-0002	Wheel Housing, Hopper
9	S-00231-0978	Spacer
10	M-03072-001B	Drive Coupling, Pinwheel, Hopper
11	S-02562-001A	Roller Shaft
12	M-03009-A001	Roller (3)
13	P-00842-011B	Pin Wheel, 12 Pin (1.00Token)
	P-00482-010B	Pin Wheel, 15 Pin (25¢)
	P-00482-009B	Pin Wheel, 16 Pin (5¢)
	A-04308-001A	Pin Wheel (5.00 Token)
14	P-00847-0024	Spacer, Shelf Wheel (5.00 Token)
15	P-00847	Shelf Wheel (25¢) .836" (21.23 mm) To .902" (22.91 mm) Diameter X .062" (1.58 mm) Width
16	R-00526-0003	Agitator, 5¢ to \$1
17	S-02569-0002	Cup, Washer, Pin Wheel Hold Down
18	S-00231-0825	Bushing, Agitator Mounting
19	P-09278-0004	Bracket, Counter Balance Adjustment, Super (mixer) Hopper
	P-09278-0005	Bracket, Counter Balance Adj. Adjustment, V72,
	P-09278-0008	Bracket, Counter Balance
	NLS-25020-1112	Nut
	MSOH-25020-1124	Screw
20	P-09277-001B	Platform Bracket, (mixer)
21	P-09263-0005	Bracket, Hopper Mounting, Left
	TFPP-00832-1106	Screw (6)
22	P-09263-0006	Bracket, Hopper Mounting, Right
	TFPP-01032-1106	Screw (6)
23	AS-03356-0363	Hopper Control Board
24	P-06629-523A	Bracket, PCB
	TFPP_00832-1104	Screw (4)
	LSPP-00632-1108	Screw (4)
25	E-00119-0532	Motor, Pinwheel, Hi-Torque, 24RPM
26	P-00838-0011	Outlet Cover
	P-00838-006B	Outlet Cover, 5¢ & 25¢
	P-00838-0009	Outlet Cover, 5¢-50¢
	P-00838-007A	Outlet Cover, 1.00 Token
	P-00838-005A	Outlet Cover, 5.00-100.00 Token
	P-00838-0008	Outlet Cover, 5.00-100.00 Token
	P-00838-0012	Outlet Cover, 5.00-100.00 Token
27	M-03068-0006	Knife, Coin, Up To 1.625" (41.28mm) Diameter
	M-03068-0007	Knife, Coin, Over 1.625" (41.28mm) Diameter
28	P-00839	Coin Deflector
	P-00839-0004	Coin Deflector, 1.00, 5.00, 25.00, 100.00 Token
	MSPF-0832-1106	Screw (2)
29	P-09291-001B	Spacer, Deflector Plate

XS1200 HOPPER WITH MIXER PARTS		
ITEM	PART #	DESCRIPTION
1	M-03082-001A	Cover, Mixer Drive
2	P-06264-0309	Handle
	TFPP-01032-1108	Screw
3	A-04349-0002	Bracket, Handle Mounting
	NLS-00832-1112	Nut (2)
	M-00319-0001	Stop Nut,Elastic (2)
4	P-09295-002D	Baffle
	NLS-00832-112	Nut (2)
5	S-00463-0053	Pin, Level Contact (Probe)
	P-00800-0006	Washer (2)
	NLS-00832-112	Nut (2)
6	M-03048-0013	Coin Bowl, V7K
	M-03048-0015	Coin Bowl, S6K
	A-04394-0001	Grounding Stud
7	AS-03368-0001	Assembly, Hopper Mixer Front/Back Bracket
8	M-03047-001A	Mix Cylinder
9	M-03066-001A	Roller (4)
	P-02891-0006	Retainer Ring
10	S-02558-001A	Shaft Roller (2)
11	TFPP-00832-1924	Screw (6)
12	M-01348-0043	Thumbscrew
13	SP-00200-0203	Spring (2)
	MSPT-01032-110B	Nut (2)
	PW-00010-0012	Washer (2)
	M-03074-001B	Adaptor
14	NLS-00832-0112	Nut (2)
	MSPT-01032-1108	Screw (3)
	NLS-01032-1112	Screw (3)
15	E-00119-0529	Mixer Cylinder Motor
16	M-03069-001B	Drive Gear Hopper
	CPAO-01032-1804	Set Screw
	S-00231-0979	Spacer (4)
17	S-00231-0978	Spacer (4)
	NLS-00832-1112	Nut (2)
18	R-00111-0029	Rubber Grommet For Elec.Wire
19	P-09276-0002	Bracket, Drive Motor
20	MSPF-00832-1132	Screw

STANDARD HOPPER COIN BOWL		
ITEM	PART #	DESCRIPTION
1	P-09334-002B	Handle
	M-03048-0015	Coin Bowl, S6K, V8K
	M-03048-0012	Coin Bowl, V7K
2	M-03048-0017	Coin Bowl, V7 Casino
	M-03048-0019	Coin bowl, V72
	S-00463-0053	Pin,Level Contact
3	P-09278-003A	Retaining Bracket
	M-01348-0043	Thumbscrew
4	SP-00200-203	Spring (2)

Hoppers (cont.)

Hopper Adjustments

Adjust Hopper Wiper: The wiper knocks off coins stuck together, which allows only one coin to pass. To adjust the wiper, follow these steps:

1. Turn the pin wheel to position a coin under the wiper.
2. Loosen both mounting screws and move the wiper edge up to the coin.
3. Tighten both screws just enough to allow the wiper to be moved in and out.
4. Slide a coin under the wiper edge and release it. The coin should fall down onto the shelf wheel. The wiper edge should be close to the coin, but not holding it.
5. Tighten the back screw, then the front screw, constantly checking the wiper position to the coin. Continue to tighten the back screw then the front until the wiper cannot be moved in or out. Do not overtighten the screws as the head of the screw will break off.

Adjust Hopper Knife Position: The forward edge of the hopper knife presses against the pin wheel and touches the edge of the shelf wheel. This allows no coin to wedge itself between the blade and the pin.

Removing the Mix Cylinder: The mix cylinder is used to agitate coins in the hopper to prevent coin jams. It can be removed for hopper maintenance or replacement if necessary.

1. Remove the gear cover.
2. There are three bolts used to secure the drive motor to the adaptor hopper. Remove the two bolts that are in the recessed openings, and pull the motor up and to the side.
3. Unscrew and remove the baffle.
4. Lift out the mix cylinder.

Hopper Probe Circuit: The hopper probe circuit consists of two hopper probes. The first probe is a stationary pin located at the bottom of the bowl. The stationary probe and the moveable probe are electrically connected when the coins in the bowl are touching both probes. When the coins in the hopper are grounding to the stationary probe, and are also touching the moveable probe, a signal is sent to the MPU board indicating the hopper is full. The signal triggers the diverter coil on the door so that coins will be diverted to the drop.

Setting the hopper probe circuit coin level

1. Fill the hopper with the desired number of coins. The coins should be either level with, or slightly above, one of the holes drilled into the side of the hopper coin bowl.
2. Activate the forward switch for approximately five seconds. This will agitate, and then settle, the coins in the bowl.
3. Insert the top probe into the hole that is level with (or just above) the amount of the coins in the bowl. This sets the coin level for the chosen probe location.

Hoppers (cont.)



6644 Paradise Road, Las Vegas,
Nevada • 89119-3719 • Telephone:
(702) 260-6666 • Fax: (702) 260-6493 •
Toll Free: 1(800) 859-5353 • <http://www.asusainc.com>

Asahi Seiko DH-750 Hopper, Model 53, Slant Top (AS- 03105-SERIES)

Features

- Customization: The DH-750/U1 allows customers the flexibility to design around their requirements. They can choose exit direction, voltage, coin capacity, counting method and coin level detection as standard options.



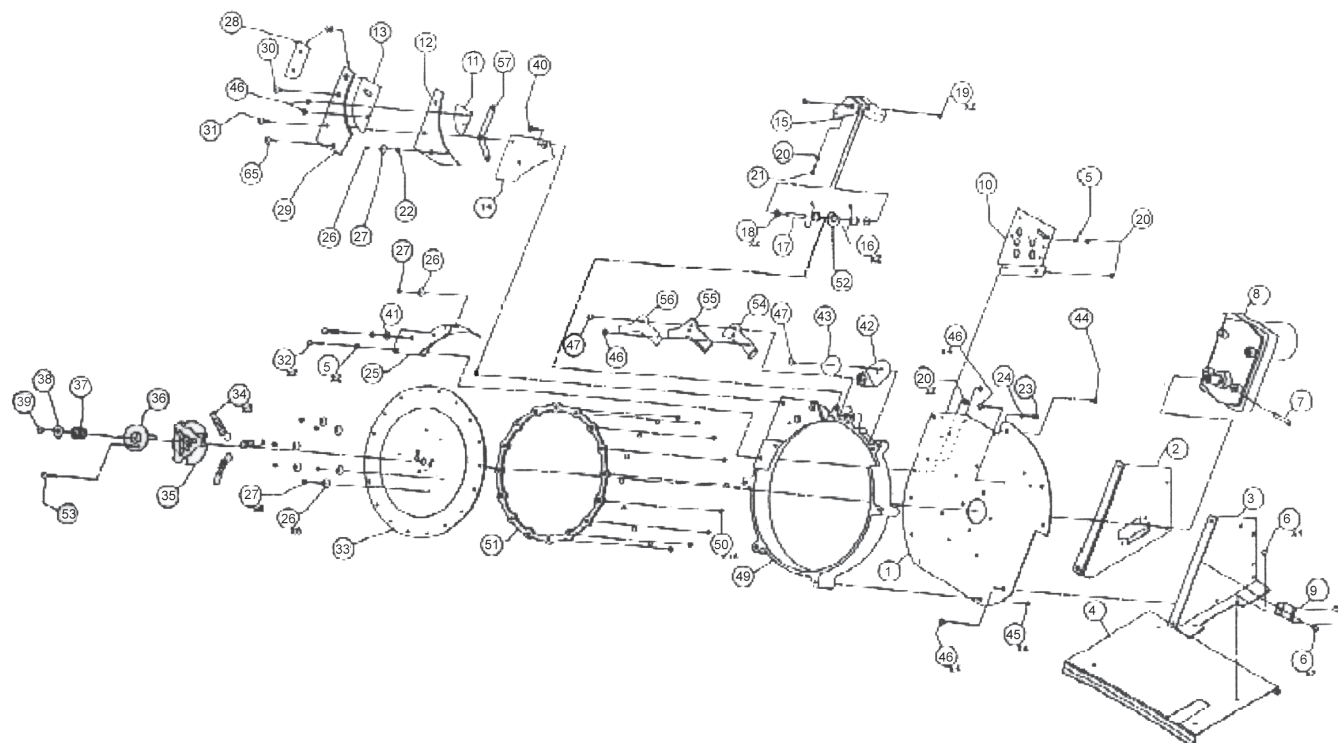
DH-750 Hopper

- Serviceability: The DH-750/U1 was designed with the field service industry in mind. In the event a coin jam occurs, service techs can simply loosen the screws to clear the jam without damaging any parts that would otherwise require replacement. The use of Asahi Seiko's patented "back flow" system prevents coins from flowing back down the escalator causing miscounts and frequent coin jams.

General Specifications

Applicable Coin Sizes:	Diameter: 21.0mm – 38.0mm
	Thickness: 1.5mm – 3.3mm
Coin Capacity:	US 5¢: 1,300
	US 25¢: 1,000
	\$1 Token: 300
Dispensing Speed:	US 5¢: 400 coins/minute
	US 25¢: 380 coins/minute
	US \$1: 200 coins/minute
Coin Counting Method:	Proximity Sensor or Microswitch
Motor Voltage:	115VAC, 220VAC, 24VDC (Thermal Protector and Instant Stop device included on AC motors only)
Motor Rating:	5 Minutes
Current Consumption:	3.0A @ 115V AC
Operation Temperature:	-10°C - +60°C
Weight:	14.69 pounds approx. (AC motor)

DH-750 Model 53 Hopper Assembly



Hoppers (cont.)

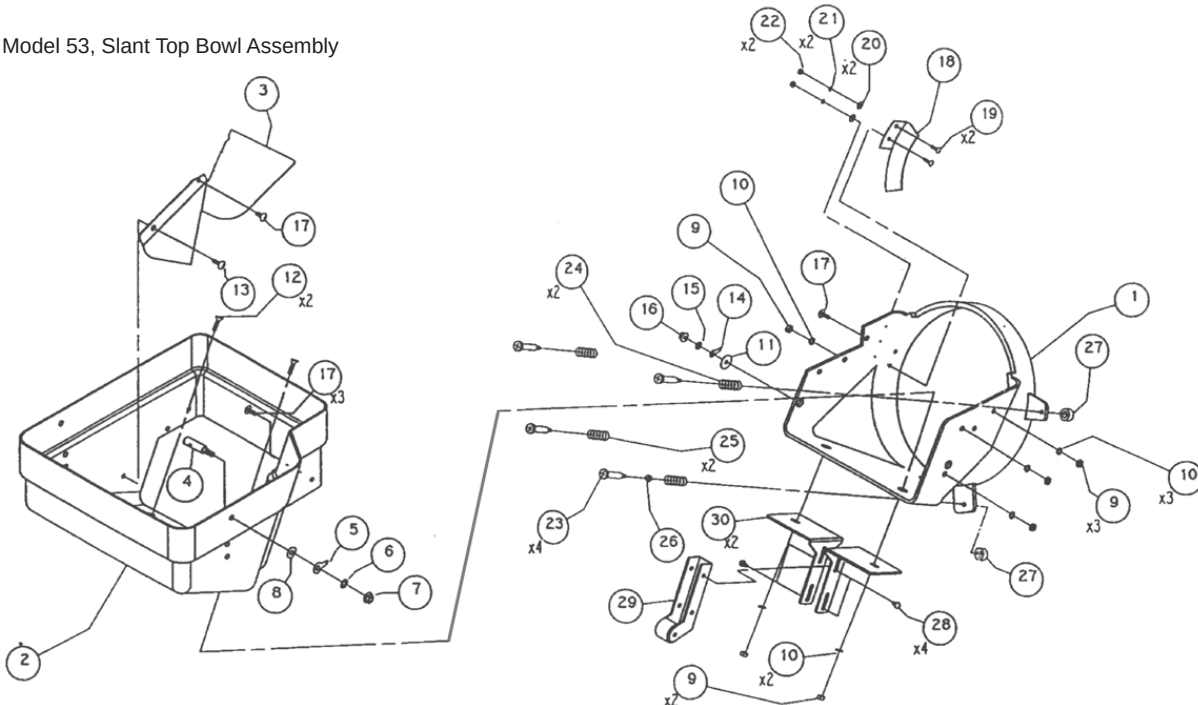


NOTE: Items without a Bally part number are not stocked by Bally.

DH-750 MODEL 53, SLANT TOP COIN HOPPER

Item#	Bally Part #	Asahi Seiko Part #	Description	Item#	Bally Part #	Asahi Seiko Part #	Description
1		DH7991M025001	PLATE, CHASSIS	32	ASH-05000-0001	B4025HXSS	BOLT, M4x25, SS
2		DH7534M025002	FRAME, SIDE (R)	33	ASH-05000-0003	DH7001M005033	DISC, US 5¢
3		DH7534M025003	FRAME, SIDE (L)		ASH-05000-0012	DH7001M025033	DISC, US 25¢
4		DH7534M025004	PLATE, BASE		ASH-05000-0035	DH7001M10T033	DISC, \$1 TOKEN
5		W4000SW99	WASHER, M4 SPLIT	34	ASH-05000-0013	DH7001M025034	SPRING, STIRRING
6		S4006RHSW	SCREW, M4x6 W/SW	35	ASH-05000-0014	DH7001M025035	COVER, SPRING
7	ASH-05000-0005	DH7001M025007	PIN, MOTOR DRIVE	36	ASH-05000-0015	DH7001M025036	HOLDER, SPRING
8	ASH-05000-0040	DH7004M025008	MOTOR, 24VDC (DME44S7C-272)	37	ASH-05000-0016	DH7001M025037	SPRING, DISC
9		DH7001M025055	HANDLE	38		W4015FW10	WASHER, 4x15x1.0 FLAT
10	ASH-05000-0097	DH7101M025536	BRACKET, ESCALATOR MOUNTING	39	ASH-05000-0170	S4008LHSS	SCREW, M4x8 TRUSS HEAD SS
11	ASH-05000-0168	DH7101M005530	GUIDE, TRANSITION (R), US 5¢	40	ASH-05000-0108	S4015CS99	SCREW, M4x15 COUNTERSUNK
	ASH-05000-0094	DH7101M025530	GUIDE, TRANSITION (R), US 25¢	41		W4010FW10	WASHER, 4x10x1.0 FLAT
	ASH-05000-0044	DH7101M10T530	GUIDE, TRANSITION (R), \$1 TOKEN	42	ASH-05000-0029	DH7001M025073	SEPARATOR, COIN
12	ASH-05000-0169	DH7101M005531	GUIDE, TRANSITION (L), US 5¢	43	ASH-05000-0030	DH7001M025074	RETAINER, SEPARATOR
	ASH-05000-0095	DH7101M025531	GUIDE, TRANSITION (L), US 25¢		ASH-05000-0037	DH7001M10T074	RETAINER, SEPARATOR, \$1 TOKEN
	ASH-05000-0045	DH7101M10T531	GUIDE, TRANSITION (L), \$1 TOKEN	44		S4010HXSS	SCREW, M4x10 UPSET SF SS
13	ASH-05000-0077	DH7534M025529	COVER, TRANSITION (R)	45		S4015HXSS	SCREW, M4x15 UPSET SF SS
14:	ASH-05000-0096	DH7101M025534	PLATE, COIN SLIDE	46		S3010HXSS	SCREW, M3x10 UPSET SF SS
15	ASH-05000-0043	DH7101M025015	ROLLER LEVER, ESCALATOR	47		S4012HXSS	SCREW, M4x12 UPSET SF SS
16	ASH-05000-0006	DH7001M025016	SPRING, ROLLER LEVER	48		S4008HXSW	SCREW, M4x8 UPSET SW SS
17	ASH-05000-0007	DH7001M025017	PIN, ROLLER LEVER	49	ASH-05000-0022	DH7001M025057	CAST FRAME
18	ASH-05000-0008	DH7001M025018	BEARING, ROLLER LEVER	50		DH7001M025058	06 BALL BEARING
19	ASH-05000-0112	W3000ER99	03 E-RING	51		DH7001M025059	RETAINER, BEARING
20		N4000HX99	NUT, M4	52		DH7001M025064	WASHER, ROLLER LEVER
21		B4012HX99	BOLT, M4x12	53		S4025LHSS	SCREW, M4x25 LARGE HEAD SS
22	ASH-05000-0113	W3008FW08	WASHER, 3x8x0.8 FLAT	54		DH7001M005070	PLATE, ADJUSTING, US 5¢
23	ASH-05000-0106	S3010RH99	SCREW, M3x10		ASH-05000-0026	DH7001M025070	PLATE, ADJUSTING, US 25¢
24	ASH-05000-0086	N3000HX99	NUT, M3			DH7001M10T070	PLATE, ADJUSTING, \$1 TOKEN
25	ASH-05000-0002	DH7001M005025	KNIFE, US 5¢	55		DH7001M005071	RUBBER, JUMP, US 5¢
	ASH-05000-0009	DH7001M025025	KNIFE, US 25¢		ASH-05000-0027	DH7001M025071	RUBBER, JUMP, US 25¢
	ASH-05000-0034	DH7001M10T025	KNIFE, \$1 TOKEN		ASH-05000-0036	DH7001M10T071	RUBBER, JUMP, \$1 TOKEN
26	ASH-05000-0010	DH7001M025026	BOSS, PLASTIC	56	ASH-05000-0004	DH7001M005072	COVER, JUMP, US 5¢
27	ASH-05000-0011	DH7001M025027	SCREW, BEVEL-HEADED		ASH-05000-0028	DH7001M025072	COVER, JUMP
28		DH7101M10T538	COVER, TRANSITION (L) \$1T	57		DH7514M025650	SHIM, TRANSITION (L) 0.3t
29	ASH-05000-0099	DH7101M025538	COVER, TRANSITION (L)			DH7514M10T650	SHIM, TRANSITION (L) 0.5t
30		S4012HXSS	SCREW, M4x12 UPSET SF SS	58		S4020HXSS	SCREW, M4x20 UPSET SF SS
31		S4025HXSS	SCREW, M4x25 UPSET SF SS				

DH-750 Model 53, Slant Top Bowl Assembly



Peripherals

Hoppers (cont.)

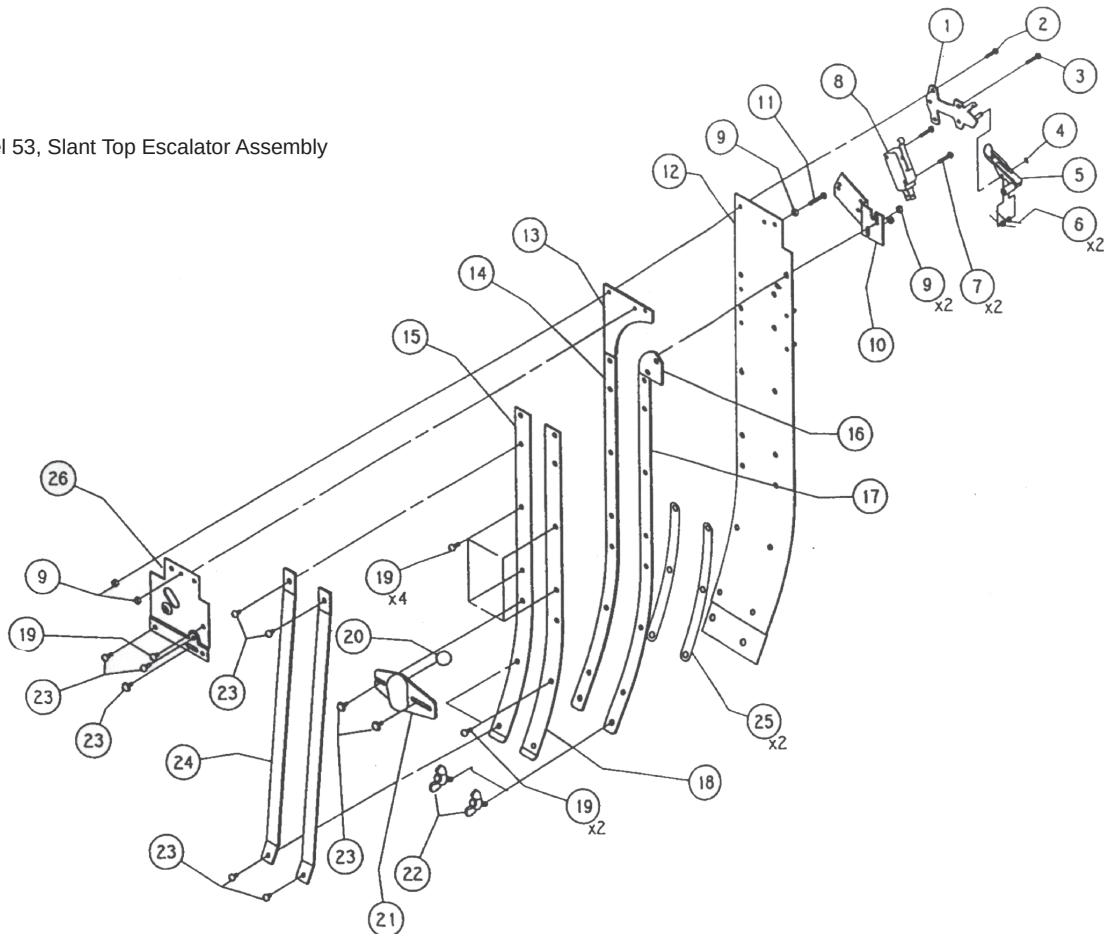


NOTE: Items without a Bally part number are not stocked by Bally.

DH-750 MODEL 53, SLANT TOP BOWL ASSEMBLY (PLASTIC)

Item#	Bally Part #	Asahi Seiko Part #	Description	Item#	Bally Part #	Asahi Seiko Part #	Description
1		DH7031M025322	SCOOP, ALUMINUM	16		N4000SN99	NUT, M4 SHOULDER
2		DH7534M025950	BOWL, HOPPER (PLASTIC)	17		S4012LH99	SCREW, M4x12 LARGE HEAD
3		DH7031M025046	PLATE, REGULATOR	18	ASH-05000-0021	DH7001M025052	INSULATOR
4		DH7011M025153	.PROBE PIN	19		S3010LH99	SCREW, M3x10 LARGE HEAD
5		DH7011M025093	05 WIRE TERMINAL	20	ASH-05000-0113	W3008FW05	WASHER, 3x8x0.5 FLAT
6		W5000SR99	WASHER, M5,STAR	21		W3000SW99	WASHER, M3 SPLIT
7		N5000SN99	NUT,M5 SHOULDER	22	ASH-05000-0086	N3000HX99	NUT, M3
8		W5012FVW08	WASHER, 5x12X0.8 FLAT	23	ASH-05000-0018	DH7001M025047	SCREW, BOWL MOUNTING
9		M4000HX99	NUT, M4	24	ASH-05000-0019	DH7001M025048	SPRING, BOWL MOUNTING, UPPER
10		W4000SW99	WASHER, M4 SPLIT	25	ASH-05000-0020	DH7001M025049	SPRING, BOWL MOUNTING, LOWER
11		W4015FW10	WASHER, 4x15x1.0 FLAT	26	ASH-05000-0104	N4006HX99	NUT, M4 SMALL
12	ASH-05000-0108	S4015CS99	SCREW, M4X15 COUNTERSUNK	27	ASH-05000-0038	DH7001M107081	COLLAR, SPACING (\$1 TOKEN ONLY)
13	ASH-05000-0109	S4015LHSS	SCREW, M4X15 LARGE HEAD SS	28		S4008RHSF	SCREW, M4x8 W/SW & FW
14		DH7011M025307	04 WIRE TERMINAL	29		DH7031M025324	ROLLER, SUPPORT
15		W4000SR99	WASHER, M4 STAR	30		DH7534M025325	BRACKET, SUPPORT

DH-750 Model 53, Slant Top Escalator Assembly



Hoppers (cont.)

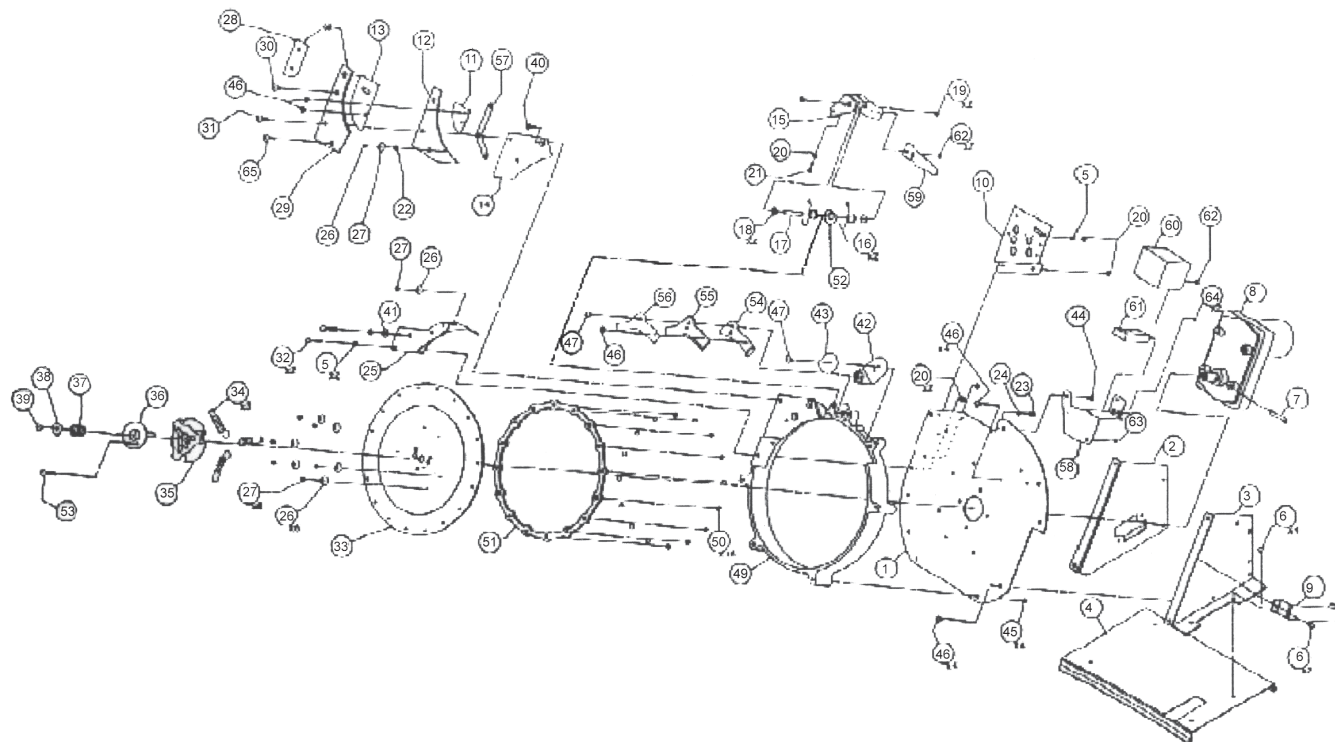


NOTE: Items without a Bally part number are not stocked by Bally.

DH-750 MODEL 53, SLANT TOP ESCALATOR ASSEMBLY

Item#	Bally Part #	Asahi Seiko Part #	Description	Item#	Bally Part #	Asahi Seiko Part #	Description
1	ASH-05000-0020	DH7101M025516	PLATE, ACTUATOR MOUNTING	14		DH7534M005604	RAIL, GUIDE (L) 2.5t
2		S3010HXSW	SCREW, M3x10 UPSET SW SS			DH7534M025604	RAIL, GUIDE (L) 2.0t
3		S3012HXSW	SCREW, M3x12 UPSET SW SS			DH7534M10T604	RAIL, GUIDE (L) 3.2t
4	ASH-05000-0111	W2000ER99	02 E-RING	15		DH7534M025606	COVER, GUIDE (L)
5	ASH-05000-0088	DH7101M025522	ACTUATOR, M/S INBOARD	16	ASH-05000-0160	DH7301M005560	GUIDE, TOP (R) US 5¢
6	ASH-05000-0089	DH7101M025523	SPRING, ACTUATOR		ASH-05000-0049	DH7301M025560	GUIDE, TOP (R) US 25¢
7		S3013RH99	SCREW, M3x13	17		DH7534M005605	RAIL, GUIDE (L) 2.5t
8	ASH-05000-0140	DH7534M025068	MICROSWITCH (D44L-R1LD)			DH7534M025605	RAIL, GUIDE (L) 2.0t
	ASH-05000-0039	DH7001P025013	PROXIMITY SENSOR			DH7534M025605	RAIL, GUIDE (L) 3.2t
9	ASH-05000-0086	N3000HX99	NUT, M3	18		DH7534M025607	COVER, GUIDE (R)
10		DH7301M025069	BRACKET, M/S MOUNTING (INBOARD)	19		S3010HXSS	SCREW, M3x10 UPSET SF SS
11		S3016RH99	SCREW, M3x16	20	ASH-05000-0091	DH7101M025525	011 BALL BEARING
12		DH7534M005601	PLATE, BACK US 5¢	21	ASH-05000-0090	DH7101M025524	RETAINER, CHECK BALL
		DH7534M025601	PLATE, BACK US 25¢	22	ASH-05000-0092	DH7101M025527	BOLT, M4x1.0WING
		DH7534M10T601	PLATE, BACK \$1T	23		S3012HXSS	SCREW, M3x12 UPSET SF SS
13		DH7301M005507	GUIDE, TOP (L) US 5¢	24	ASH-05000-0079	DH7534M025565	SUPPORT, ESCALATOR
	ASH-05000-0047	DH7301M025507	GUIDE, TOP (L) US 25¢	25		DH7534M025602	RAIL SPACER
	ASH-05000-0052	DH7301M10T507	GUIDE, TOP (L) \$1T	26	ASH-05000-0048	DH7301M025514	COVER, TOP

DH-750 Model 51 Hopper Assembly



Peripherals

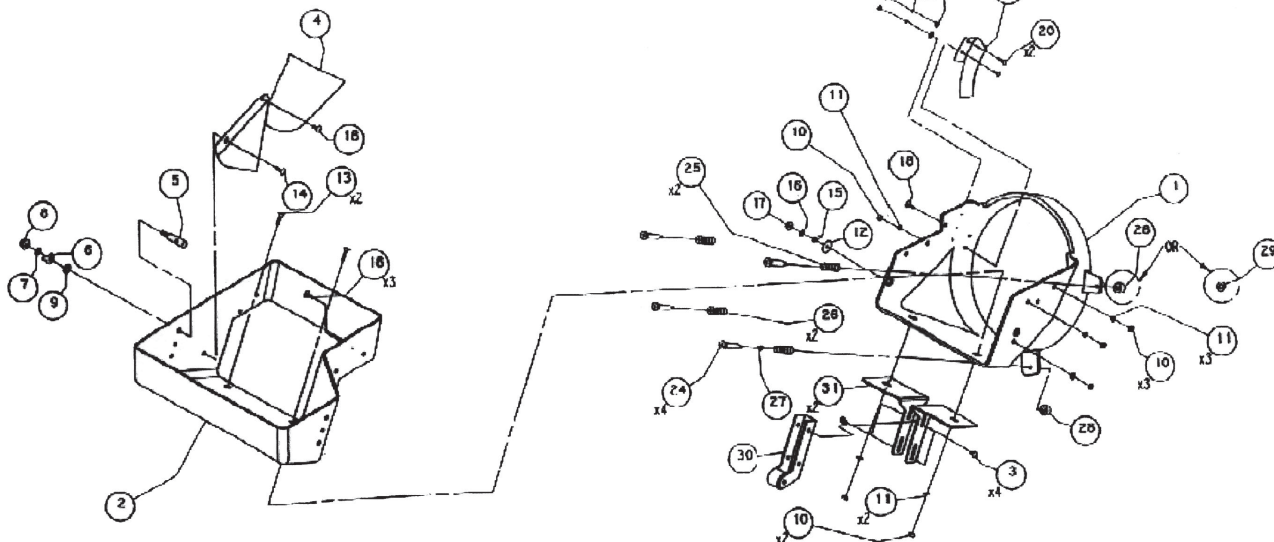
Hoppers (cont.)



NOTE: Items without a Bally part number are not stocked by Bally.

DH-750 MODEL 51, BARTOP (AS-03107-SERIES)							
Item#	Bally Part #	Asahi Seiko Part #	Description	Item#	Bally Part #	Asahi Seiko Part #	Description
1		DH7991M025001	PLATE, CHASSIS	34	ASH-05000-0013	DH7001M025034	SPRING, STIRRING
2		DH7534M025002	FRAME, SIDE (R)	35	ASH-05000-0014	DH7001M025035	COVER, SPRING
3		DH7514M025003	FRAME, SIDE (L)	36	ASH-05000-0015	DH7001M025036	HOLDER, SPRING
4		DH7534M025004	PLATE, BASE	37	ASH-05000-0016	DH7001M025037	SPRING, DISC
5		W4000SW99	WASHER, M4 SPLIT	38		W4015FW10	WASHER, 4x15x1.0 FLAT
6		S4006RHSW	SCREW, M4x6 W/SW	39	ASH-05000-0170	S4008LHSS	SCREW, M4x8 TRUSS HEAD SS
7	ASH-05000-0005	DH7001M025007	PIN, MOTOR DRIVE	40	ASH-05000-0108	S4015CS99	SCREW, M4x15 COUNTERSUNK
8	ASH-05000-0040	DH7004M025008	MOTOR, 24VDC (DME44S7C-272)	41		W4010FW10	WASHER, 4x10x1.0 FLAT (US 5¢ ONLY)
9		DH7001M025055	HANDLE	42	ASH-05000-0029	DH7001M025073	SEPARATOR, COIN
10	ASH-05000-0097	DH7101M025536	BRACKET, ESCALATOR MOUNTING	43	ASH-05000-0030	DH7001M025074	RETAINER, SEPARATOR
11	ASH-05000-0168	DH7101M005530	GUIDE, TRANSITION (R), US 5¢		ASH-05000-0037	DH7001M10T074	RETAINER, SEPARATOR. \$1 TOKEN
		DH7101M025530	GUIDE, TRANSITION (R), US 25¢	44		S4010HXSS	SCREW, M4x10 UPSET SF SS
	ASH-05000-0044	DH7101M10T530	GUIDE, TRANSITION (R), \$1 TOKEN	45		S4014HXSS	SCREW, M4x14 UPSET SF SS
12	ASH-05000-0169	DH7101M005531	GUIDE, TRANSITION (L), US 5¢	46		S3010HXSS	SCREW, M3x10 UPSET SF SS
		DH7101M025531	GUIDE, TRANSITION (L), US 25¢	47		S4012HXSS	SCREW, M4x12 UPSET SF SS
	ASH-05000-0045	DH7101M10T531	GUIDE, TRANSITION (L), \$1 TOKEN	48		S4008HXS	SCREW, M4x8 UPSET SW SS
13	ASH-05000-0077	DH7534M025529	COVER, TRANSITION (R)	49	ASH-05000-0022	DH7001M025057	CAST FRAME
14	ASH-05000-0096	DH7101M025534	PLATE, COIN SLIDE	50		DH7001M025058	06 BALL BEARING
15		DH7514M025918	LEVER, ROLLER	51		DH7001M025059	RETAINER, BEARING
16	ASH-05000-0006	DH7001M025016	SPRING, ROLLER LEVER	52		DH7001M025064	WASHER, ROLLER LEVER
17	ASH-05000-0007	DH7001M025017	PIN, ROLLER LEVER	53		S4025LHSS	SCREW, M4x25 LARGE HEAD. SS
18	ASH-05000-0008	DH7001M025018	BEARING, ROLLER LEVER	54		DH7001M005070	PLATE, ADJUSTING, US 5¢
19	ASH-05000-0112	W3000ER99	03 E-RING		ASH-05000-0026	DH7001M025070	PLATE, ADJUSTING, US 25¢
20		N4000HX99	NUT, M4			DH7001M10T070	PLATE, ADJUSTING, \$1 TOKEN
21		B4012HX99	BOLT, M4x12	55		DH7001M005071	RUBBER, JUMP, US 5¢
22	ASH-05000-0113	W3008FW08	WASHER, 3x8x0.8 FLAT		ASH-05000-0027	DH7001M025071	RUBBER, JUMP, US 25¢
23	ASH-05000-0106	S3010RH99	SCREW, M3x10		ASH-05000-0036	DH7001M10T071	RUBBER, JUMP, \$1 TOKEN
24	ASH-05000-0086	N3000HX99	NUT, M3	56	ASH-05000-0004	DH7001M005072	COVER, JUMP, US 5¢
25	ASH-05000-0002	DH7001M005025	KNIFE, US 5¢		ASH-05000-0028	DH7001M025072	COVER, JUMP
	ASH-05000-0009	DH7001M025025	KNIFE, US 25¢	57		DH7514M025650	SHIM, TRANSITION (L) 0.3t
	ASH-05000-0034	DH7001M10T025	KNIFE, \$1 TOKEN			DH7514M10T650	SHIM, TRANSITION (L) 0.5t
26	ASH-05000-0010	DH7001M025026	BOSS, PLASTIC	58		DH7514M025915	BRACKET, OPTIC MOUNTING
27	ASH-05000-0011	DH7001M025027	SCREW, BEVEL-HEADED	59		DH7514M025916	FLAG, OPTIC
28		DH7101M10T538	COVER, TRANSITION (L) \$1T	60		DH7514M025917	COVER, OPTIC
29	ASH-05000-0099	DH7101M025538	COVER, TRANSITION (L)	61		DH7514M025920	OPTIC
30		S4012HXSS	SCREW, M4x12 UPSET SF SS	62		N3000LN99	NUT, M3 NYLON LOCK
31		S4025HXSS	SCREW, M4x25 UPSET SF SS	63		S3005RHSF	SCREW, M3x5 W/SW & FW
32	ASH-05000-0001	B4025HXSS	BOLT, M4x25, SS	64		S3595TP99	SCREW, M3.5x9.5 TAPPING
33	ASH-05000-0003	DH7001M005033	DISC, US 5¢	65		S4020HXSS	SCREW, M4x20 UPSET SF SS
	ASH-05000-0012	DH7001M025033	DISC, US 25¢				
	ASH-05000-0035	DH7001M10T033	DISC, \$1 TOKEN				

DH-750 Model 51, Bartop Bowl Assembly



Hoppers (cont.)

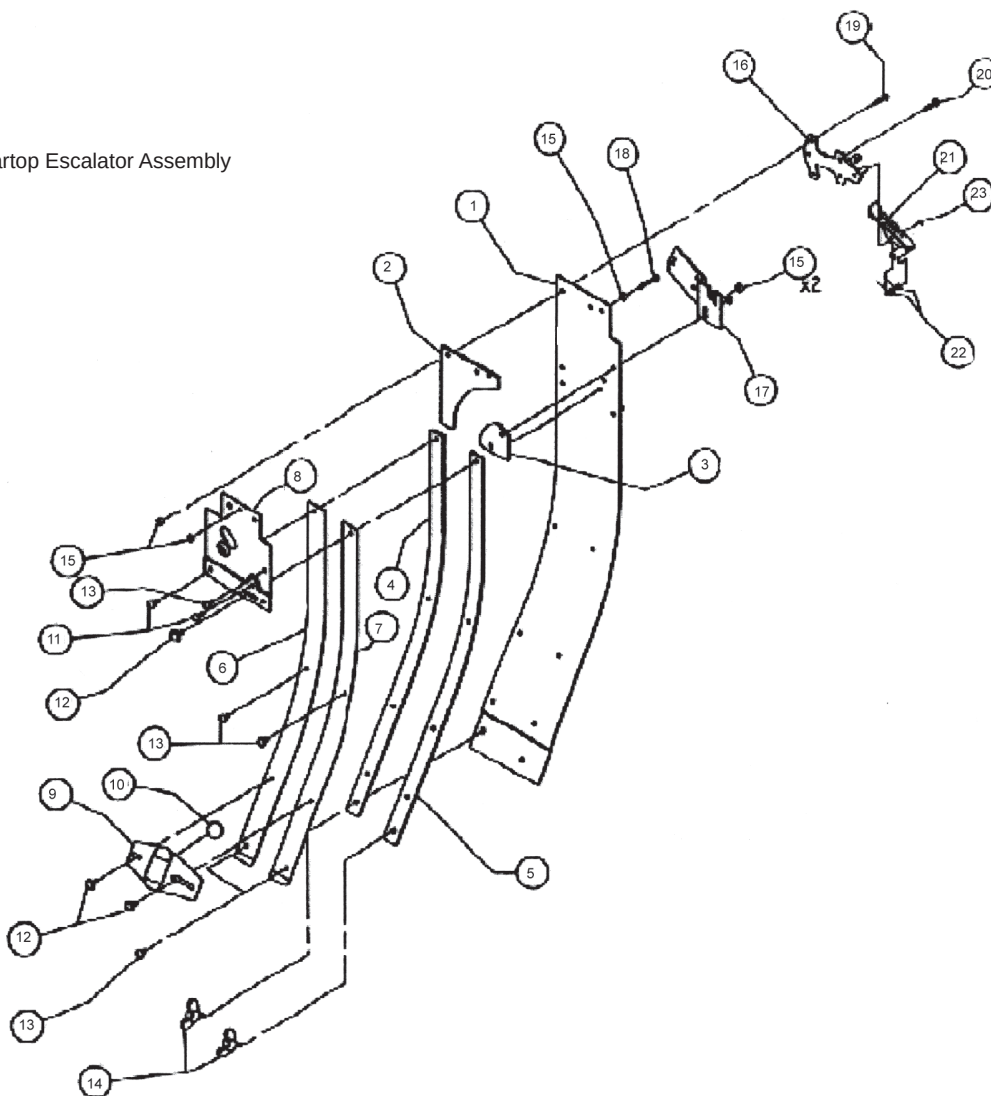


NOTE: Items without a Bally part number are not stocked by Bally.

DH-750 MODEL 51, BARTOP BOWL ASSEMBLY

Item#	Bally Part #	Asahi Seiko Part #	Description	Item#	Bally Part #	Asahi Seiko Part #	Description
1		DH7031M025322	SCOOP, ALUMINUM	17		N4000SN99	NUT, M4 SHOULDER
2		DH7514M025050	BOWL, HOPPER	18		S4010LH99	SCREW, M4x10 LARGE HEAD
3		S4008RHSF	SCREW, M4x8 W/SW & FW	19	ASH-05000-0021	DH7001M025052	INSULATOR
4		DH7031M025046	PLATE, REGULATOR	20		S3010LH99	SCREW, M3x10 LARGE HEAD
5		DH7011M025153	PROBE PIN	21	ASH-05000-0113	W3008FW05	WASHER, 3x8x0.5 FLAT
6		DH7011M025093	05 WIRE TERMINAL	22		W3000SW99	WASHER, M3 SPLIT
7		W5000SR99	WASHER, M5 STAR	23	ASH-05000-0086	N3000HX99	NUT, M3
8		N5000SN99	NUT, M5 SHOULDER	24	ASH-05000-0018	DH7001M025047	SCREW, BOWL MOUNTING
9		W5012PW08	WASHER, 5x12x0.8 FLAT	25	ASH-05000-0019	DH7001M025048	SPRING, BOWL MOUNTING, UPPER
10		N4000HX99	NUT, M4	26	ASH-05000-0020	DH7001M025049	SPRING, BOWL MOUNTING, LOWER
11		W4000SW99	WASHER, M4 SPLIT	27	ASH-05000-0104	N4006HX99	NUT, M4 SMALL
12		W4015FW10	WASHER, 4x15x1.0 FLAT	28	ASH-05000-0038	DH7001M10T081	COLLAR, SPACING (\$1 TOKEN ONLY)
13	ASH-05000-0108	S4015CS99	SCREW, M4x15 COUNTERSUNK	29		W4010FW16	WASHER, 4x10x1.6 FLAT (5° ONLY)
14	ASH-05000-0109	S4015LHSS	SCREW, M4x15 LARGE HEAD SS	30		DH7031M025324	ROLLER, SUPPORT
15		DH7011M025307	04 WIRE TERMINAL	31		DH7534M025325	BRACKET, BOWL SUPPORT
16		W4000SR99	WASHER, M4 STAR				

DH-750 Model 51, Bartop Escalator Assembly



Peripherals

Hoppers (cont.)



NOTE: Items without a Bally part number are not stocked by Bally.

DH-750 MODEL 51, BARTOP ESCALATOR ASSEMBLY

Item#	Bally Part #	Asahi Seiko Part #	Description	Item#	Bally Part #	Asahi Seiko Part #	Description
1		DH7514M005505	PLATE, BACK, US 5¢	8	ASH-05000-0048	DH7301M025514	COVER, TOP
		DH7514M025505	PLATE, BACK, US 25¢	9		DH7101M025524	BRACKET, BALL RETAINING
		DH7514M10T505	PLATE, BACK, \$1 TOKEN	10		DH7101M025525	011 BALL BEARING
2		DH7301M005507	GUIDE, 1 UP (L), US 5¢	11		S3012HXSS	SCREW, M3x12 UPSET SF SS
	ASH-05000-0047	DH7301M025507	GUIDE, TOP (L), US 25¢	12		S3012HXSS	SCREW, M3x12 UPSET SF SS
	ASH-05000-0052	DH7301M10T507	GUIDE, TOP (L), \$1 TOKEN	13		S3010HXSS	SCREW, M3x10 UPSET SF SS
3		DH7301M005560	GUIDE, TOP (R), US 5¢	14		DH7101M025527	BOLT, M4 WING
	ASH-05000-0049	DH7301M025560	GUIDE, TOP (R), US 25¢	15	ASH-05000-0086	N3000HX99	NUT, M3
4	ASH-05000-0146	DH7514M005506	RAIL, GUIDE (L), US 5¢	16		DH7101M025516	PLATE, ACTUATOR MOUNTING
	ASH-05000-0147	DH7514M025506	RAIL, GUIDE (L), US 25¢	17	ASH-05000-0025	DH7001M025069	PLATE, M/S MOUNTING, INBOARD
		DH7514M10T506	RAIL, GUIDE (L), \$1 TOKEN	18		S3016RH99	SCREW, M3x16
5	ASH-05000-0149	DH7514M005508	RAIL, GUIDE (R), US 5¢	19		S3010HXSW	SCREW, M3x10 UPSET SWSS
	ASH-05000-0150	DH7514M025508	RAIL, GUIDE (R), US 25¢	20		S3012HXSW	SCREW, M3x12 UPSET SW SS
	ASH-05000-0151	DH7514M10T508	RAIL, GUIDE (R), \$1 TOKEN	21		DH7301M025522	ACTUATOR, M/S, INBOARD
6	ASH-05000-0152	DH7514M025509	COVER, GUIDE (L)	22		DH7101M025523	SPRING, ACTUATOR
7	ASH-05000-0153	DH7514M025511	COVER, GUIDE (R)	23	ASH-05000-0111	W2000ER99	02 E-RING

HOPPER CAPACITIES					
PROBE AT LEVEL	STANDARD		SUPER		ASAHI-SEIKO
	VIDEO	SLOT	VIDEO	SLOT	
	5¢				
1	1100	700	2100	1200	
2	2100	1000	2900	2000	
3	3100	1700	3600	2500	
4		2200	4300	3400	
5		2800	5000	3800	5000
6		3400		4300	
PROBE AT LEVEL	STANDARD		SUPER		ASAHI-SEIKO
	VIDEO	SLOT	VIDEO	SLOT	
	25¢				
1	900	700	1600	1000	
2	1000	2200	1500		
3	1400	2800	2200		
4	1700	3400	3100		
5	2400	4000	3800	3500	
6	2900		4200		
PROBE AT LEVEL	STANDARD		SUPER		ASAHI-SEIKO
	VIDEO	SLOT	VIDEO	SLOT	
	\$1				
1	340	140	500	300	
2	560	280	640	460	
3	800	400	800	660	
4		560	900	800	
5		680	1100	1000	1200
6		820		1200	

Ticket Printers

ithaca

TransAct Technologies, Inc. •
20 Bomax Drive Ithaca, New
York 14850 USA • Phone:
Sales/Support 1-877-7ithaca

or (607)-257-8901 Fax: Sales (607) 257-3868 / Support
(607) 257-3911 • <http://www.ithper.com>

Ithaca Series 70 Impact Ticket Printer

The Series 70 takes the gamble out of consistent, quality impact printing for unattended printing applications. The Series 70 delivers receipts, tickets, and coupons at 4.9 lines per second with solid consistency. It features enhanced or emphasized font styles for greater legibility, and utilizes Oki® technology, known worldwide for quality, reliability, and snap-in/snap-out, user-friendly ribbon cassette. The Series 70 has a convenient "Paper Low" indicator to alert you before the paper roll runs out.



Series 70

Features

- All Printers are Mechanisms with Drive Electronics
- Print Speed: 4.9 lps.—On Standard Test Receipt
- One-Year Standard Warranty: Extended Maintenance Plan Available
- Data Buffer: 2K
- Auto-Cutter (Full Cut): 82.5 mm (3.25 in.)
- CPI: 5, 6, 8.5, 10, 12, 15, 17.1, 24
- Print Zone: 60 mm (2.34 in.)
- Self-Test: Test Ticket
- Low 37W Power
- Paper Low Indicator
- Character Sets: 2 ASCII (slashed ø and unslashed 0), IBM Character Sets I and II, French, French Canadian, Spanish, German
- Barcodes: Code 128, Interleaved 2 of 5, Interleaved 3 of 9

Power Requirements

- Standard (Internal Supply): 110/120 VAC, 60 Hz
- Optional (Internal Supply): 220/240 VAC, 50/60 Hz

Reliability

- Printer in full operation (using all available features)*
- MTBF: 25,000 Hours
- Printhead: 200,000,000 Characters
- Auto-Cutter: 1,000,000 Cuts

Reliability data is based on Ithaca standard test conditions.

Environmental Specifications

- Operating Temperature: 0 to +50 degrees C (32 to +122 degrees F)
- Operating Humidity: 10 to 90% RH non-condensing

Media

- Standard Paper Roll—M75 (one-ply):
Width: 82.5 mm (3.25 in.) Diameter: 89.0 mm (3.5 in.) or optional 152.0 mm (6 in.)
One-ply Maximum Thickness: .11 mm (.0045 in.)
Length Per Roll (3.5 in. dia.): 74.6 m (245 ft.)
Length Per Roll (6 in. dia.): 148.8 m (488 ft.)
- Standard Paper Roll—M76 (two-ply):
Width: 82.5 mm (3.25 in.) Diameter: 89.0 mm (3.5 in.) Maximum Thickness Per Ply: .09 mm (.0035 in.)
Length Per Roll: 38.1 m (125 ft.)
- Ribbons: 3-4.5 Million Character Life
Ithaca or Genuine Oki Snap-on Ribbon Cassette (Black or Purple)

Physical Characteristics

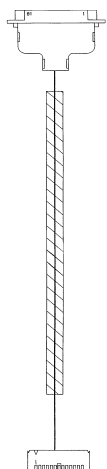
- Dimensions (without transport): 154 mm H x 274 mm L x 172 mm H (6.06 in. W x 10.75 in. L x 6.75 in. H)
- Weight: 3.86 kg (8.5 lbs.)

Ticket Printers (cont.)

Connection Printer (Centronics)

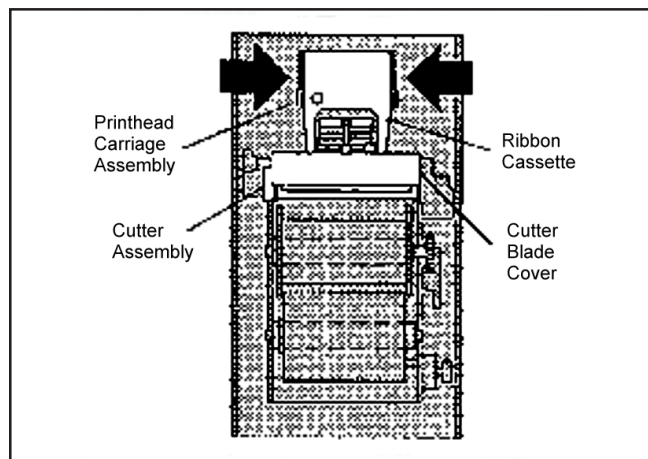
1	BK/RD	Strobe	19		
2	BR	Data 1	20		
3	WT	Data 2	21		
4	OR/BL	Data 3	22		
5	YE	Data 4	23		
6	OR	Data 5	24		
7	GY	Data 6	25		
8	BL	Data 7	26		
9	YE/WT	Data 8	27		
10			28		
11	WT/BL	Busy	29		
12	WT/BR	Paper End	30		
13	WT/OR	Select	31	BR/BK	Printer Reset
14			32	WT/BK	Printer Fault
15			33	BK	Ground
16	BK	Ground	34		
17			35		
18			36		

Backplane (Dual Row Header)

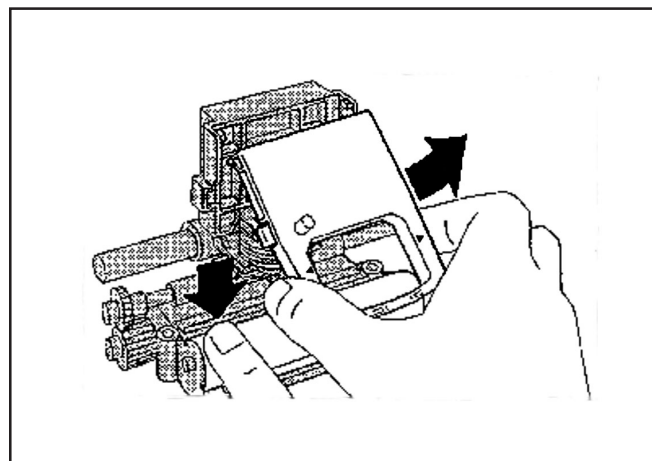


1	BR	Data 1	14		
2	WT/OR	Select	15	YE/WT	Data 8
3	WT	Data 2	16		
4	WT/BL	Busy	17	BK/RD	Strobe
5	OR/BL	Data 3	18		
6			19	BR/BK	Printer Reset
7	YE	Data 4	20		
8	BK-1	Ground	21	WT/BK	Printer Fault
9	OR	Data 5	22		
10	BK-2	Ground	23	WT/BR	Paper End
11	GY	Data 6	24		
12			25		
13	BL	Data 7	26		

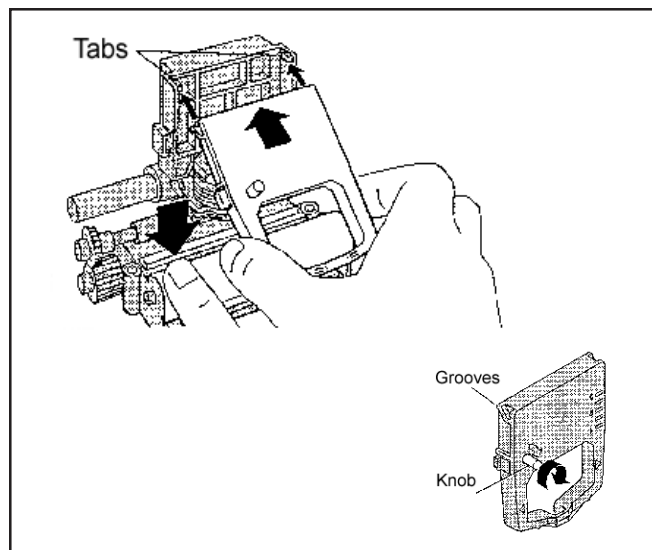
Changing the Ribbon Cassette: Change the cassette when the print becomes faded. Worn ribbons can damage the print head.



1. To remove the old cassette slide the Printhead Carriage Assembly to the middle.
2. Hold down the Cutter Blade Cover.
3. Grasp the bottom of the ribbon cassette and pull out.



4. To install the new cassette hold down the Cutter Blade Cover.
5. Align the grooves at the top of the cassette with the tabs on the Printhead Carriage Assembly.
6. Pivot the ribbon cassette into the Printhead Carriage Assembly until it snaps into place.
7. Tighten the ribbon by turning the knob on the cassette clockwise.



Ticket Printers (cont.)

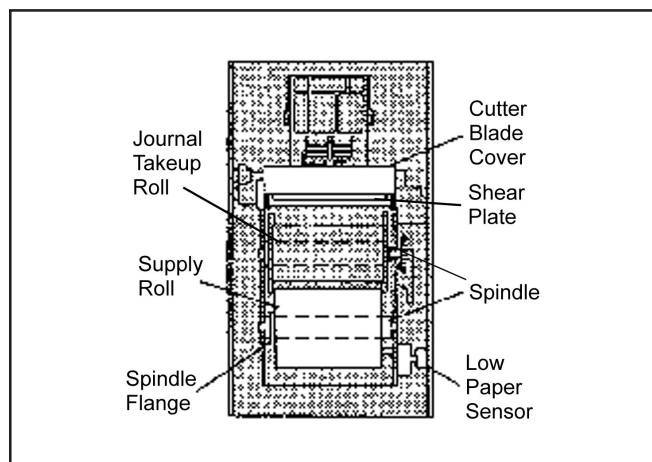
Ordering Supplies

The following parts are available through TransAct Technologies, Inc.:

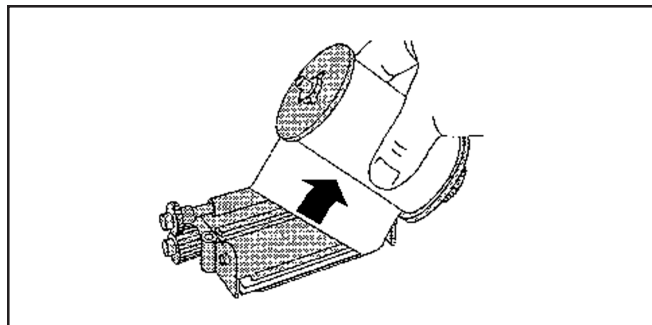
Description	Part #
Paper (two-ply)	98-0558
Ribbon Cassette (black or dark purple)	06-0560 (case of 12)
Supply Roll Spindle Large Diameter	09-1230
Supply Roll Spindle Small Diameter	09-1494
Take-up Spindle Take-up Core	06-0597
Take-up Flange	06-0599
Take-up Assembly (both core and flange)	06-0993
Power Cord	06-0561
Fuses 1.0 Amp, 125 Volt	150-9810010
1.5 Amp, 125 Volt	150-9810015
Printhead	06-0565
Printhead Clamp	06-0571

Changing Paper

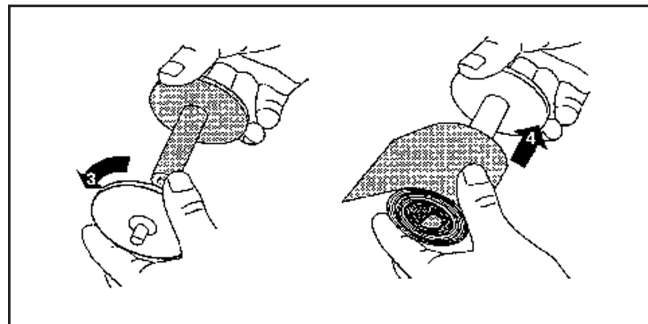
Change the Supply Roll paper when you see the pink stripe on the receipt paper or when the terminal indicates the paper is low. Although the pink stripe appears with eight to ten feet left on the roll, the printer will print only 21 inches after the Paper Low sensor activates.



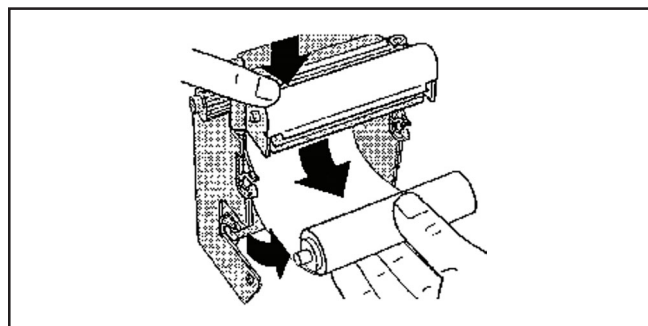
1. Unsnap the Journal Takeup Roll Spindle from the bracket. Tear off the yellow journal paper using the Shear Plate.



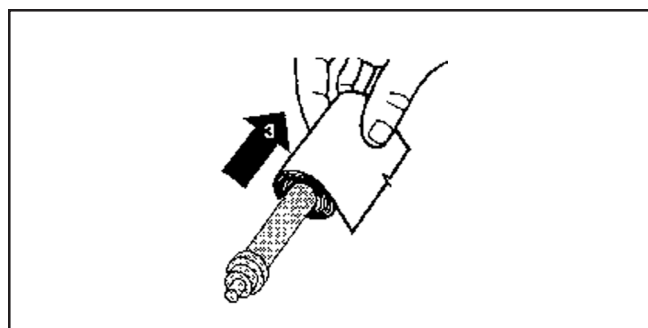
2. Remove the spindle from the journal by unscrewing the left flange in the direction of the OFF arrow. Secure and store the journal roll as required.



3. Unsnap the Supply Roll Spindle from the bracket. Hold down the Cutter Blade Cover and pull the remaining paper out of the printer.

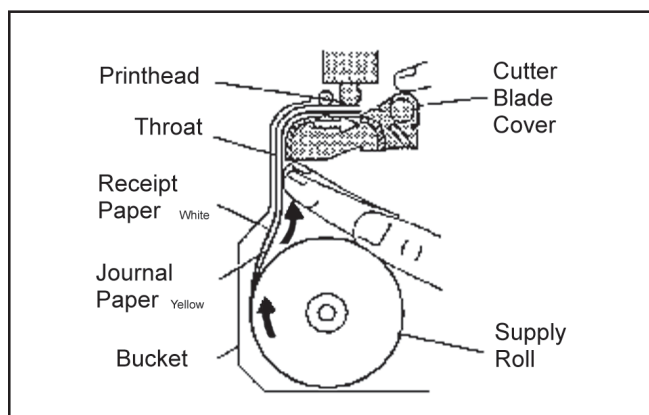


4. Remove the spindle from the used supply roll and set it aside. Don't throw it away.

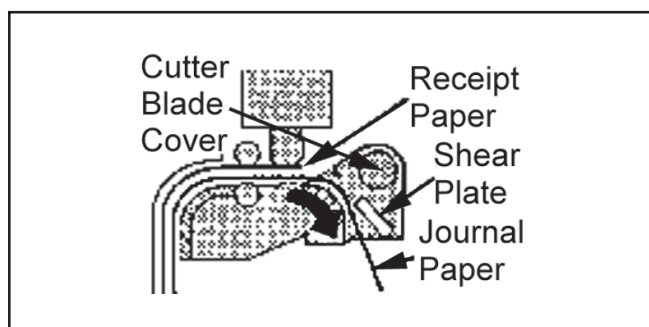


5. Trim enough of the new Supply Roll for a straight edge free from glue.
6. Put the spindle that was removed from the used supply roll into the new roll so that the white receipt paper is on the outside (See figure below). Snap the spindle into the lower set of snaps in the Bucket.
7. Hold down the Cutter Blade Cover and push the paper up through the throat in the back of the Bucket until the paper passes the printhead.

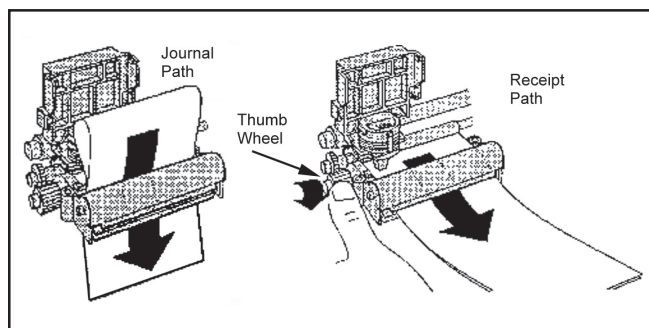
Ticket Printers (cont.)



8. The receipt and journal thread through different paths. Using the Thumb Wheel (Gear on the left side. See bottom figure) to advance the paper, guide the journal and receipt paper so that they are separated by the Shear Plate.

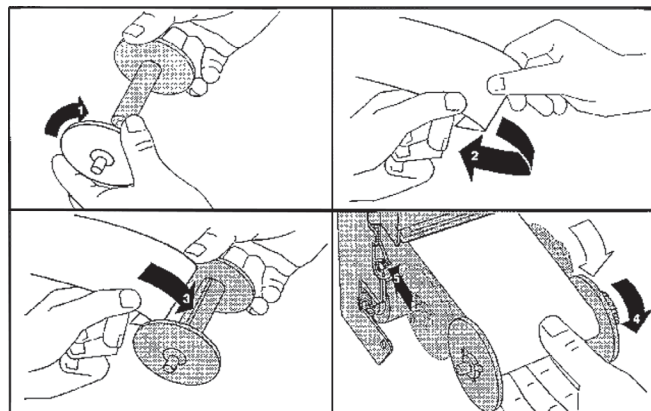


9. Advance about six inches of paper then tear off only the white receipt ply.



10. Reassemble the Journal Takeup Spindle by turning the flange in the direction of the ON arrow. Do not overtighten.
11. Fold about ½" of the journal paper and insert it into the groove of the Journal Takeup Spindle so that the gear is to the right.

12. Turn the Journal Takeup Spindle a few turns in the direction of the ON arrow to take up the excess journal paper.

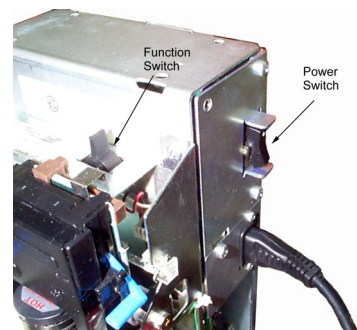


Function Switch

The Function Switch is a momentary two-position switch that provides the following functions:

With power ON:

Left: Incremental paper advance
Right: Auto paper advance and cut.



Position switch with power OFF, then power ON:

Left: Print Test
Right: Hex Data Dump

Replacing the Printhead

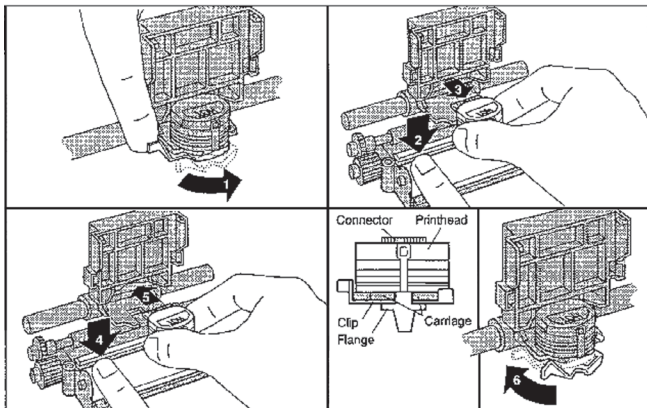


WARNING: The printhead may be hot.

1. Remove the ribbon cassette.
2. Release the printhead by unfastening the Printhead Clamp. Pull the tab on the left to swing it open.
3. Hold down the Cutter Blade Cover.
4. Pull the printhead free from the edge connector and carriage.
5. Using the guide on the printhead, slide the new printhead onto the carriage and into the edge connector.

Ticket Printers (cont.)

6. Secure the printhead with the Printhead Clamp.
7. Put the ribbon cassette back in.



8. Check the print quality. Use the blue lever on the side of the carriage for lighter or darker printing.

Ithaca Series 700 Thermal Ticket Printer



Series 700

Coin-free slot machines have never been so hassle-free. With the Series 700, the ticket will not stick out until it is completely printed. This prevents players from pulling it too soon—a major cause of printer problems. Another practical feature is a user-friendly, illuminated front bezel; a ticket supply box that holds 400 tickets; and a ball-bearing drawer chassis that slides out for easy ticket loading and maintenance.

Features

- Print Resolution: 8 dots per mm (203dpi) Horizontal and Vertical
- Easy Ticket Loading
- Print Zone Width: 56 mm (2.205 in.)
- Data Buffer: 4K
- Memory: 64K EPROM & 32K RAM
- Self Diagnostics
- Standard Warranty: 1 year
- Bar Code: Code 3 of 9, Interleaved 2 of 5, UPC-A & UPC-E, Codabar,
- EAN8 and EAN13, Code 128, and Postnet
- Ticket Low Sensor
- Top of Form/Ticket-Out Sensor
- High Quality Printing: Text, Barcodes, Graphics, Lines Bitmap Graphics, Portrait, and Landscape Printing
- Ticket is contained within the printer until printing is complete, preventing user interference.

Printing Characteristics

- Print Speed: 51 mm/sec (2 in. per second)
- Five Fonts: 7.5 cpi, 10 cpi, 12 cpi, 16.5 cpi, and 20 cpi
- Normal, Double-high, Double-wide, and Double-high/Double-wide print modes
- Prints on 62 mm x 120 mm, 65 mm x 120 mm, 65 mm x 156 mm (dollar-bill size) tickets

NOTE: 65 mm x 156 mm ticket requires no printing on last 1.4 inches of each ticket

Ticket Printers (cont.)

Physical Characteristics

- 750—139 mm W x 85 mm H x 159 mm D (5.46 in. W x 3.36 in. H x 6.27 in. D)
- Overall Size with All Options (with 120 mm length ticket supply box):
139 mm W x 85 mm H x 287 mm D (5.46 in. W x 3.36 in. H x 11.29 in. D)
Weight: 3.31 kg (7.30 lbs.)
- Overall Size with All Options (with 156 mm length ticket supply box):
139 mm W x 85 mm H x 325 mm D (5.46 in. W x 3.36 in. H x 12.8 in. D)
Weight: 3.41 kg (7.50 lbs.)

Media (Thermal Ticket, Fan Fold, Perforated)

- Type: Top coated, high sensitivity, direct thermal (Kanzaki TO-381N or approved equivalent)
- Thickness: 0.112 mm (0.0044 in.)
- Width x Length: 62 mm (2.44 in.) x 120 mm (4.73 in.); 65 mm (2.56 in.) x 120 mm (4.73 in.); 65 mm (2.56 in.) x 156 mm (6.14 in.) dollar-bill size
- Standard Store: 400 tickets per stack

Interface

- Bi-Directional RS232C
- CTS and/or XON/XOFF Handshake

Power Requirements

- 24VDC: 1.5A (supplied by system)
- Exit Lamp: 13VDC @ 150mA (supplied by system)

Reliability: Printhead Life: 25 km

Environmental Specs

- Operating Temperature: 0C to + 40C
- Storage Temperature: -20C to + 70C
- Operating Humidity: 5 to 95% RH Non-Condensing

Troubleshooting

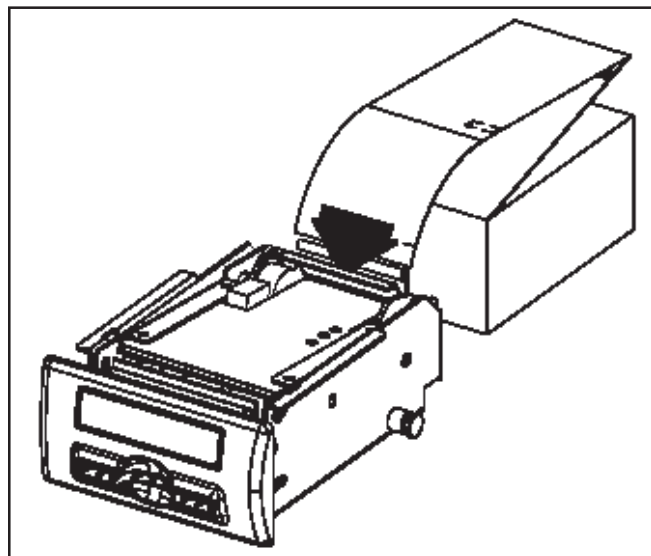
If the 700 Series printer is experiencing printing problems, check to see if the unit is receiving power. The

green test LED, located on the top of the “Core” printer, should be on when the printer is correctly receiving power. After confirming that the printer is receiving power, check to see that the ticket has been loaded correctly and is not jammed in the ticket path. Pressing the Ticket Feed switch-on the top of the “Core” printer-will advance a single ticket through the print mechanism, automatically positioning the tickets correctly. Check all connections to ensure a proper signal.

If the printer does not stop feeding when it automatically scrolls the ticket, check to see that the tickets are facing the right direction so the ticket present sensor detects the Black Dot/Top of Form indicator.

Loading Tickets into the Feeding Mechanism: The first ticket of the stack must be inserted into the printer by hand. With the Series 700 Printer Ticket Supply Box, there is a guide to direct the ticket into the printer mechanism. To load the printer, grasp the first ticket, and insert it into the guide until the ticket reaches the printer mechanism. Continue pushing gently until the printer mechanism detects the ticket and the motor pulls it through the printer. The printer will stop feeding automatically. Pressing the Ticket Feed button on the printer controller board will run the motor to present blank tickets or to aid in loading.

1. Insert the first ticket, blank side up, into the ticket feed guides as shown by the load ticket arrow on the instruction card.
2. The printer will automatically feed the ticket when the ticket is sensed by the printer.
3. If ticket does not feed automatically, press the Ticket Feed switch.
4. Remove the excess ticket from the front of the printer.

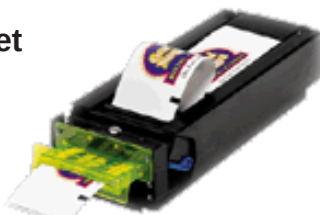


Ticket Printers (cont.)

SII • Seiko Instruments USA Inc. •
Micro Printer Division • 2990
West Lomita Blvd., Torrance, CA
90505 • Phone: (800) 553-6570
Fax: (310) 517-8154 • www.seikoprinters.com

PSA-66 Thermal Ticket Printer

Operator Interface: The printer has status indicators and two controls. The status indicators are part of the Keypad. They are LEDs labeled STATUS and ERROR. The Operator controls are the Keypad and the Platen Release Lever.



PSA-66-ST

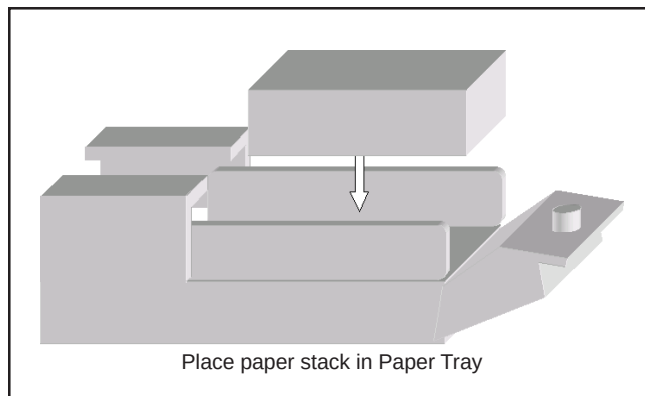
Loading Paper

To load paper, pull open the printer drawer until the paper tray is completely accessible. Place the paper stack in the printer as indicated by the band around the stack and the Paper Orientation Label in the paper tray. Present the paper to the Paperfeed slot.

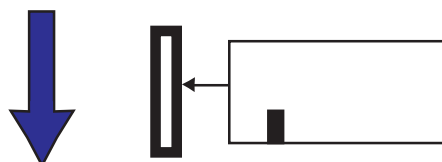
The automatic loading feature of this system will advance at least one ticket through the printer. The Platen Release Lever and the paper advance button are provided as support, but usually are not required to load paper.



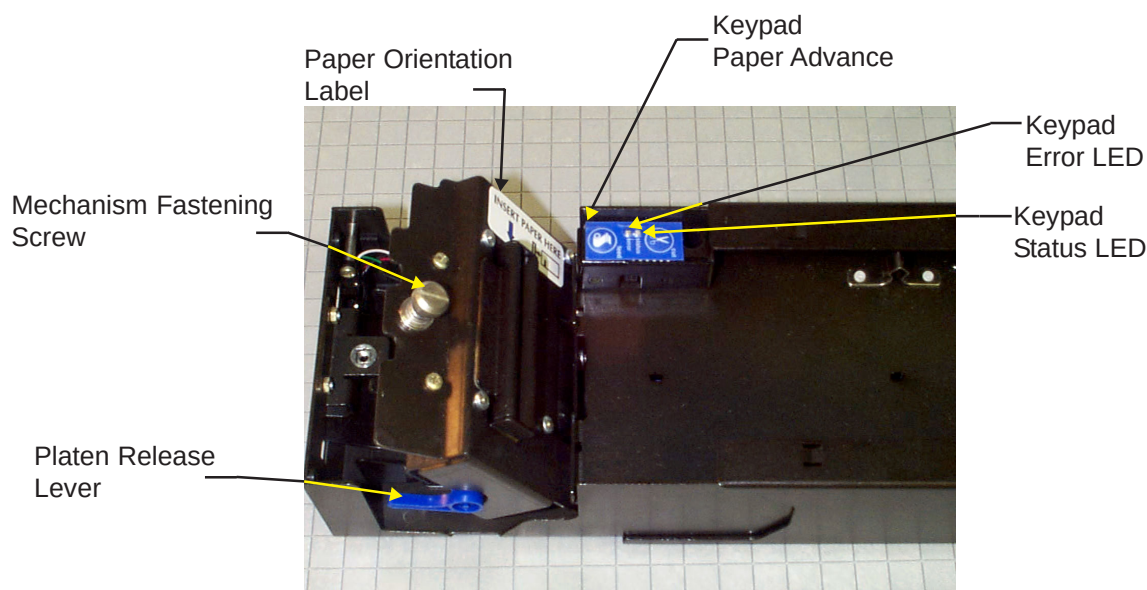
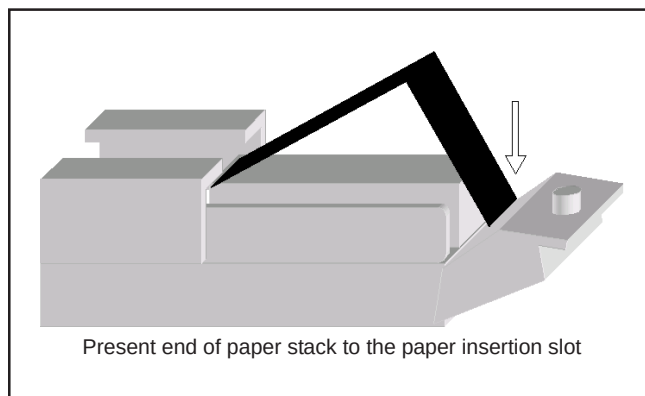
NOTE: The Keypad CUT function is inoperative.



INSERT PAPER HERE



Paper Orientation Label



Component Identification

Ticket Printers (cont.)

Keypad LED Operation

The following table lists the conditions reported by the keypad LEDs.

CONDITION	STATUS LED	EERR LED
Unit in Powered Off	OFF	OFF
Unit Ready	ON	OFF
Unit Flushed	ON	ON
Paper out	OFF	ON
Head Up	OFF	ON
Temperature Error	OFF	MED BLINK
Voltage Error	OFF	SLOW BLINK
Print Head Error	ON	FAST BLINK
Flash Memory Error	SLOW BLINK	MED BLINK
Buffer Overflow	OFF	FAST BLINK
Missing Black Index Mark	ON	FAST BLINK
Paper Jam	ON	FAST BLINK

Error Conditions

Paper Out: The printer detects that paper is not present. The printer scans for a paper-out condition at all times. Remedy by loading a new paper stack.

Head Up: This condition results from lowering the Platen Release Lever. To remedy, raise the blue lever on the side of the unit.

Temperature Error: The printer has overheated. If the printer is operating environment is at room-temperature, this error would most likely be the result of a hardware problem. The printer will automatically resume operation when the head temperature cools within operational limits.

Voltage Error: The printer detected a power supply voltage (+24VDC to +25VDC) outside of legal limits. The printer will automatically resume operation when the power supply is within range.

Print Head Error: The printer senses an interfacing problem with the thermal print head. The error state remains until the power is cycled or the unit is reset. If the problem persists, the printer will require service.

Flash Memory Error: The printer is unable to program the Flash memory on the board. The printer will remain in error state until the power is cycled or the unit is reset. If the problem persists, the printer will require service before font or graphic data can be downloaded.

Buffer Overflow: A buffer overflow typically results from a mismatch in handshaking. The printer will remain in error state until the power is cycled or the unit is reset.

Missing Index Mark: While feeding paper or while printing, a black mark has not been seen within approximately 10" of paper. Remedy by using the correct paper in the printer, or installing the paper in the correct orientation. The condition is removed by raising the Platen Release Lever (presumably to change the paper).

Paper Jam: The printer detected an obstruction in the paper path. Remedy by opening the printer head and inspecting for a jammed ticket.

Self Test: If the Keypad FEED is held during power on or reset, a self test will be triggered. Proper operation will result in the printing of a configuration ticket.

Model: PSA-66-ST
Firmware: 1.0.0.0.0

COMMUNICATION

Interface: serial
Baud Rate: 19200
Data Bits: 8
Parity: NONE
Handshaking: HARDWARE

PRINT CONTROL

Darkness Control: +00%
Black Bar Index: Disabled
Print On Demand: Disabled
Auto Sleep Timer: Off

SYSTEM RESOURCES

FLASH -Used: 000000
-Free: 024064

LIBRARY INVENTORY

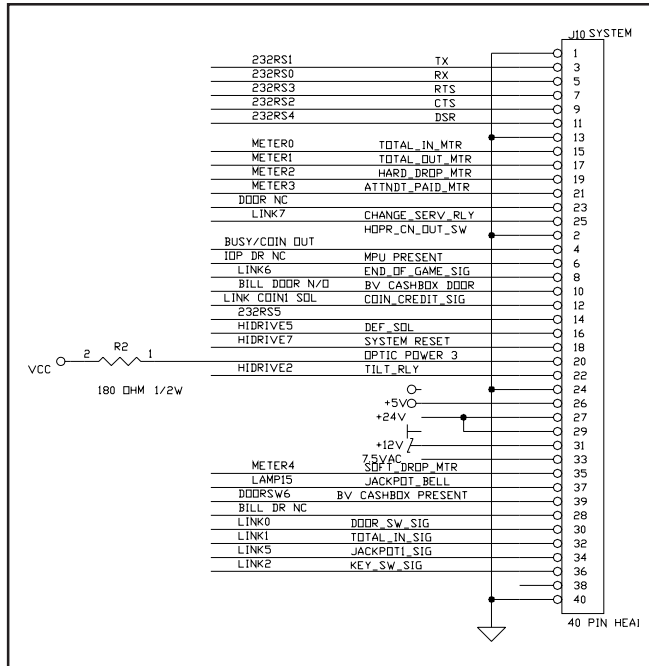
Templates:
Print Regions:
Graphics:
Fonts: 3(0), 7(0), 8(0), 5(0)

Sample Self-Test Ticket

Accounting System Interface

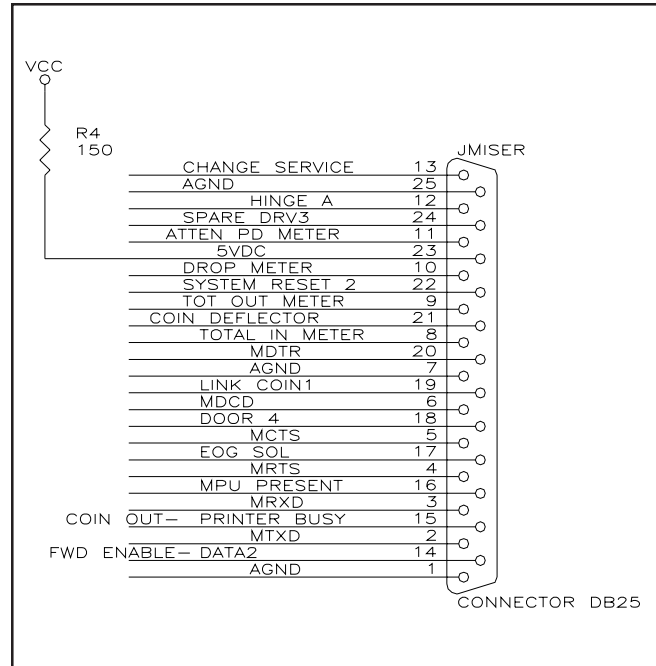
All Bally machines can interface accounting systems through a connection on the backplane board. Protocols supported are SDS® and SAS®.

EVO® V8700



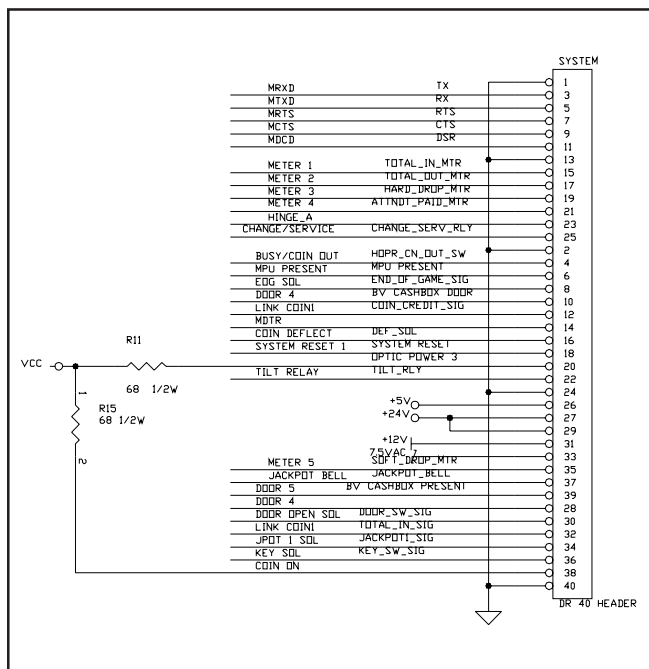
AS-03356-0501 Backplane Board

Game Maker® V7000



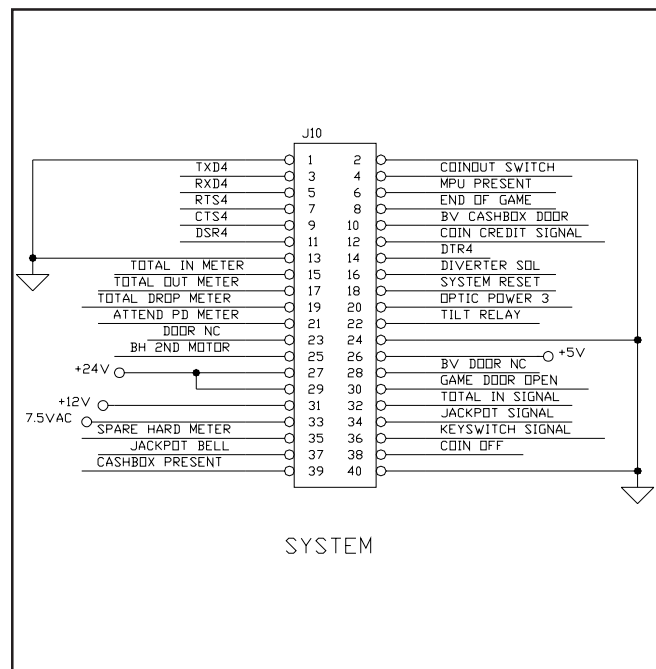
AS-03356-0247 Backplane Board

Game Maker® V7200



AS-03356-0432 Backplane Board

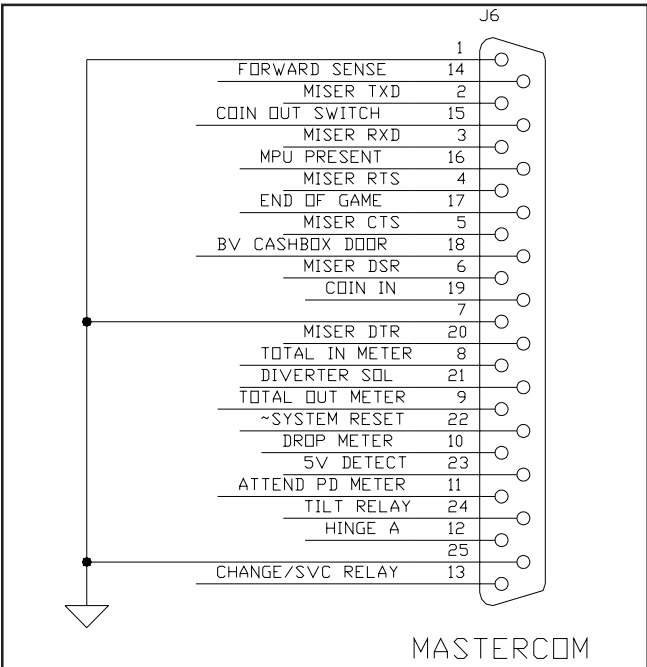
ProSlot® 6000



AS-03356-0445 Backplane Board

Accounting System Interface (cont.)

ProSlot® 5500

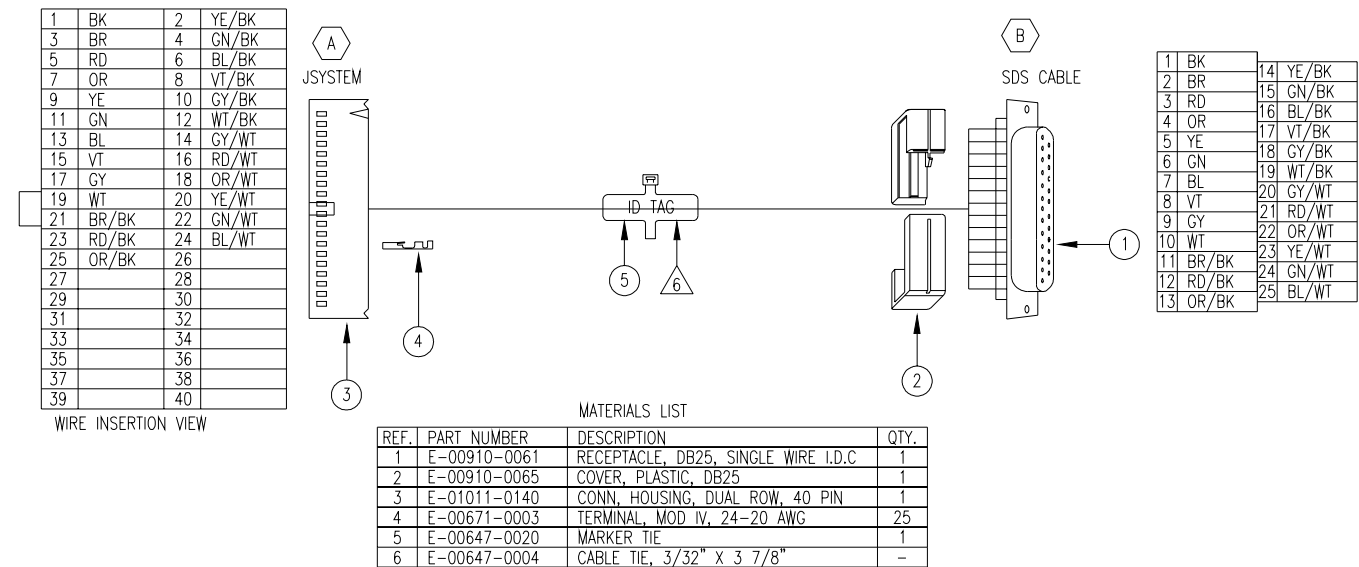


AS-03356-0207 Backplane board



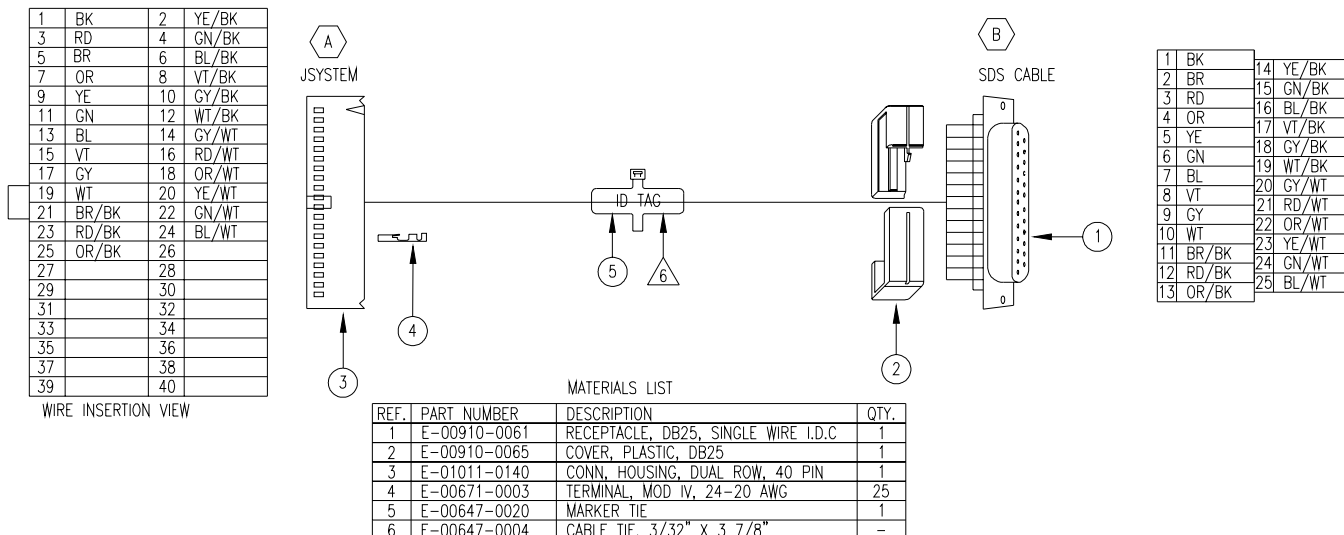
NOTE: See Module MK10-SVMOD-0005, SDS Parts Reference for hardware requirements.

CBL-20234-0001 System Interface Cable (ProSlot®)



Accounting System Interface (cont.)

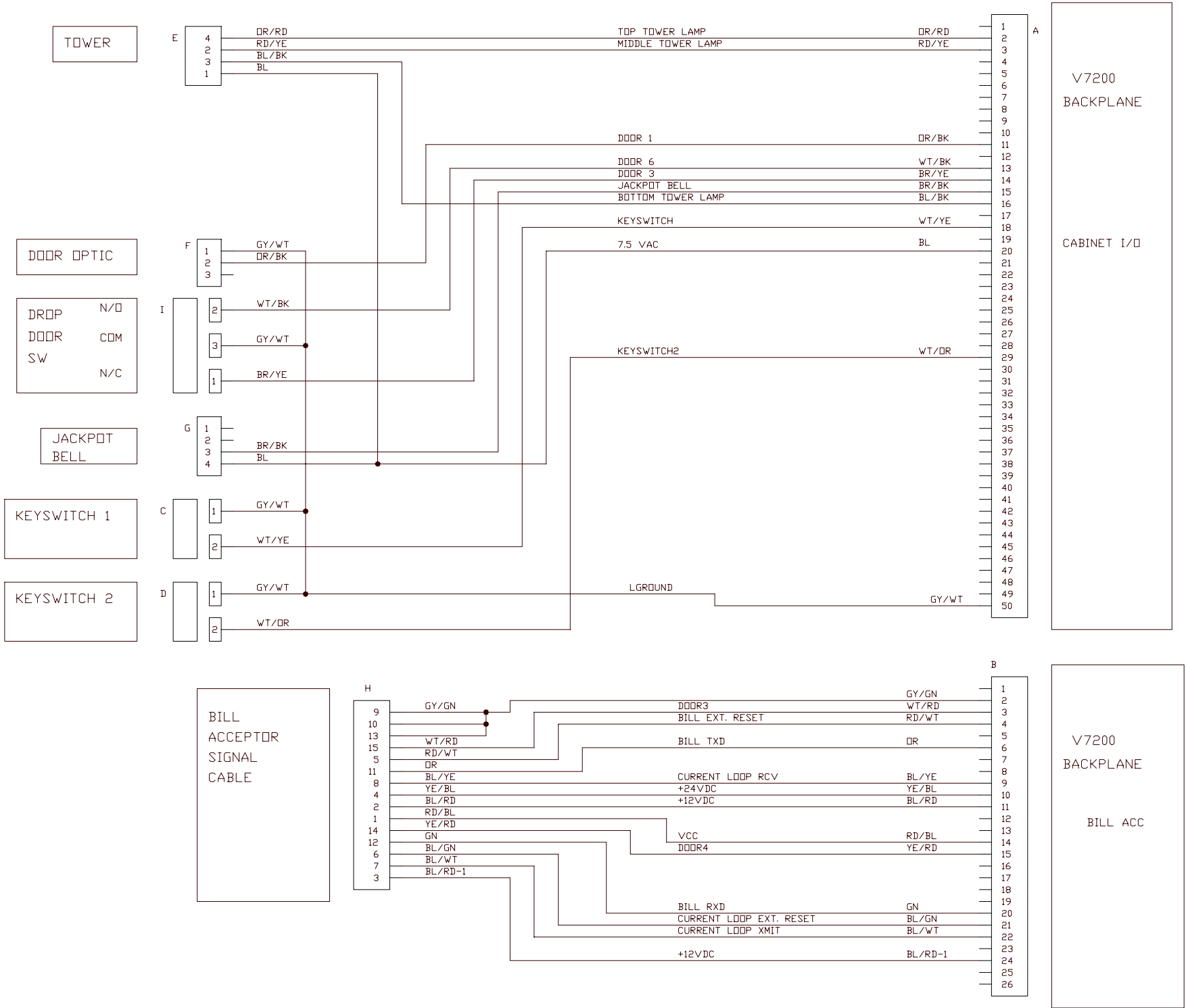
CBL-20238-0001 System Interface Cable (EVO®)

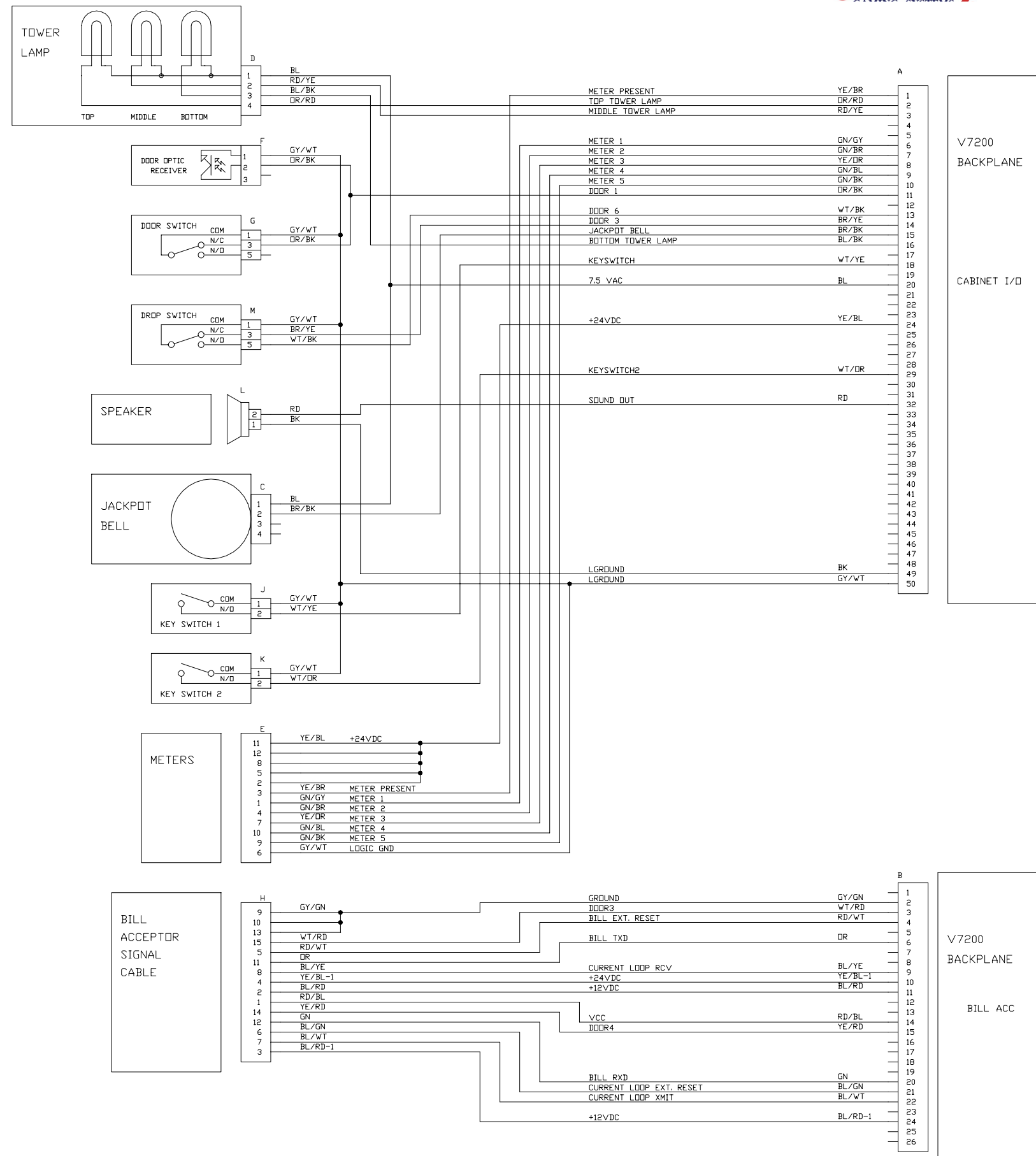


Accounting System Settings

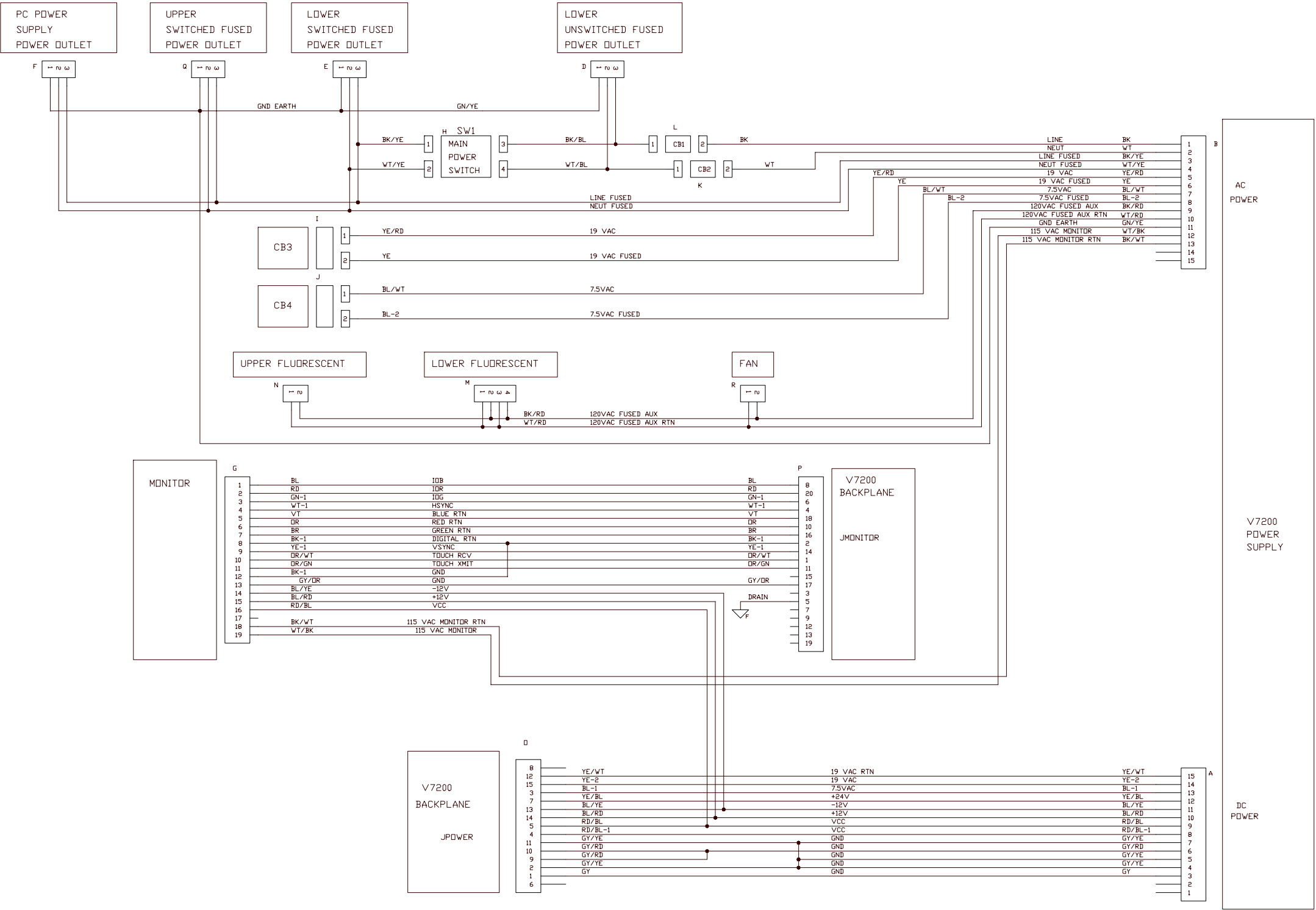
Manufacturer	System Type	System Version	Machine Setting(s)		System Protocol and Settings
			Video	Slot	
Acres Gaming	Acres SAS® 5.01	SAS® - 5 EFT Optional* Bonusing Optional*	Terminal ID: VGD > set to 1 Host Type > set to Acres (bonusing would be set in this mode if desired) Printer: Validation > set to Enhanced	Switch bank DS1 > #s 1 and 5 off for EFT Enable Switch bank DS1 > #s 1, 2, and 5 off for EFT Disable Switch bank DS1 > #3 off for Bonusing Option 78Ho set to 1 Printer: Option 73 set to 2	SAS® Protocol
Casino Data Systems	CDS SAS® 3.62 - 3.64	SAS® - 3 No EFT No Bonusing	May be set to Popeye 5.01 Terminal ID: VGD > set to 1 Host Type > set to Standard or CDS Printer Validation > set to Standard	Switch bank DS1 > #s 1 and 2 off for EFT Disable Option 78Ho set to 1 Printer: Option 73 set to 2	SAS® Protocol: set to IGT Winner (for SAS® 5 EVO®s, old Game Maker® cable [with single wire pigtail] must be used)
	CDS SAS® (Windows NT [Oasis])	SAS® - 4 / 5 No EFT No Bonusing	Terminal ID: VGD > set to 1 Host Type > set to Standard Printer Validation > set to Standard	Switch bank DS1 > #s 1, 2 and 5 off for EFT Disable Option 78Ho set to 1 Printer: Option 73 set to 1	SAS® Protocol: set to IGT Winner System cable #20115 for SAS® communication with printers
Gaming System International	GSI SAS® 5.01	SAS® - 5 No EFT No Bonusing	Terminal ID: VGD > set to 1 Host Type > set to Standard Printer Validation > set to Standard	Switch bank DS1 > #s 1, 2 and 5 off for EFT Disable Option 78Ho > set to 1 Printer: Option 73 set to 1	SAS® Protocol: BIN > #74 Flash > F9 System Driver > 4
Konami Gaming	Paradigm SAS® 5.01	SAS® - 5 No EFT No Bonusing	Terminal ID: VGD > set to 1 Host Type > set to Standard Printer Validation > set to Standard	Switch bank DS1 > #s 1, 2 and 5 off for EFT Disable Option 78Ho > set to 1 Printer: Option 73 set to 1	SAS® Protocol
Bally Systems	SDS®	Standard	Standard settings EVO® (i.e. Popeye) > set to SAS® 5.01	Switch bank DS1 > set all to ON Printer > Option 73 set to 3	SAS® Protocol Must have MC250 board with R-5 EPROM
ACSC Gaming Systems (Alliance Gaming Corporaton)	SAS® 5.01	SAS® - 5 EFT	Terminal ID: VGD > set to 1 Host Type > set to Standard Printer Validation > set to Standard	Switch bank DS1 > #s 1 and 5 off for EFT Enable Option 78Ho > set to 1 Printer: Option 73 set to 1	SAS® Protocol
IGT Gaming	EDT SAS® 2.4	SAS® - 1 No EFT	Use standard SDS settings	Switch bank DS1 > set all to ON Option 78Ho > set to 1	SAS® Protocol (EVO® and S6000 must use IGT cable #607-645-00 or to talk 5.01 SAS®)
	EDT SAS® 2.62 - 3.6	SAS® - 2 / 3 No EFT	Terminal ID: VGD > set to 1 Host Type > set to Standard	Switch bank DS1 > #1 to OFF Option 78Ho > set to 1 (try SAS® - 1 settings first)	SAS® Protocol (EVO® must use IGT cable #607-645-00)
	IGS SAS® 5.01	SAS - 5 No EFT	SAS® > set to 5.01 Terminal ID: VGD > set to 1 Host Type > set to Standard Printer Validation > set to Standard	Switch bank DS1 > #s 1, 2 and 5 off for EFT Disable Option 78Ho > set to 1 Printer: Option 73 set to 1	SAS® Protocol Flash: "G"
	SAS® 2.84 Easy Route	SAS® - 2 / 3 No EFT	SAS® > set to 2.84 Terminal ID: VGD > set to House Number Host Type > set to Standard Remote Reset > set to Enabled	Switch bank DS1 > #s 1 - 8 set to ON Option 78Ho > set to House Number Option 90 > set to 1 for Remote Reset	SAS® Protocol

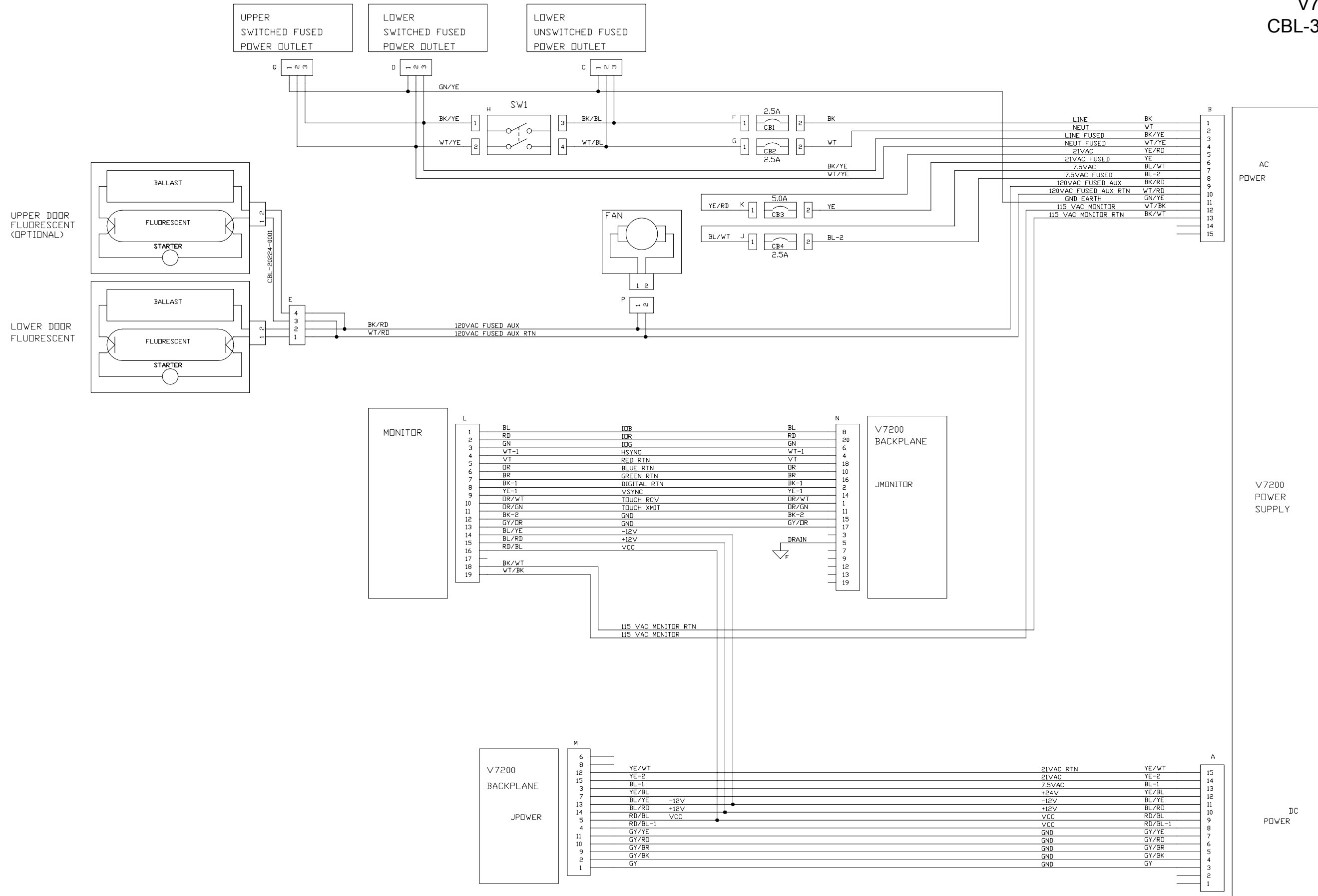




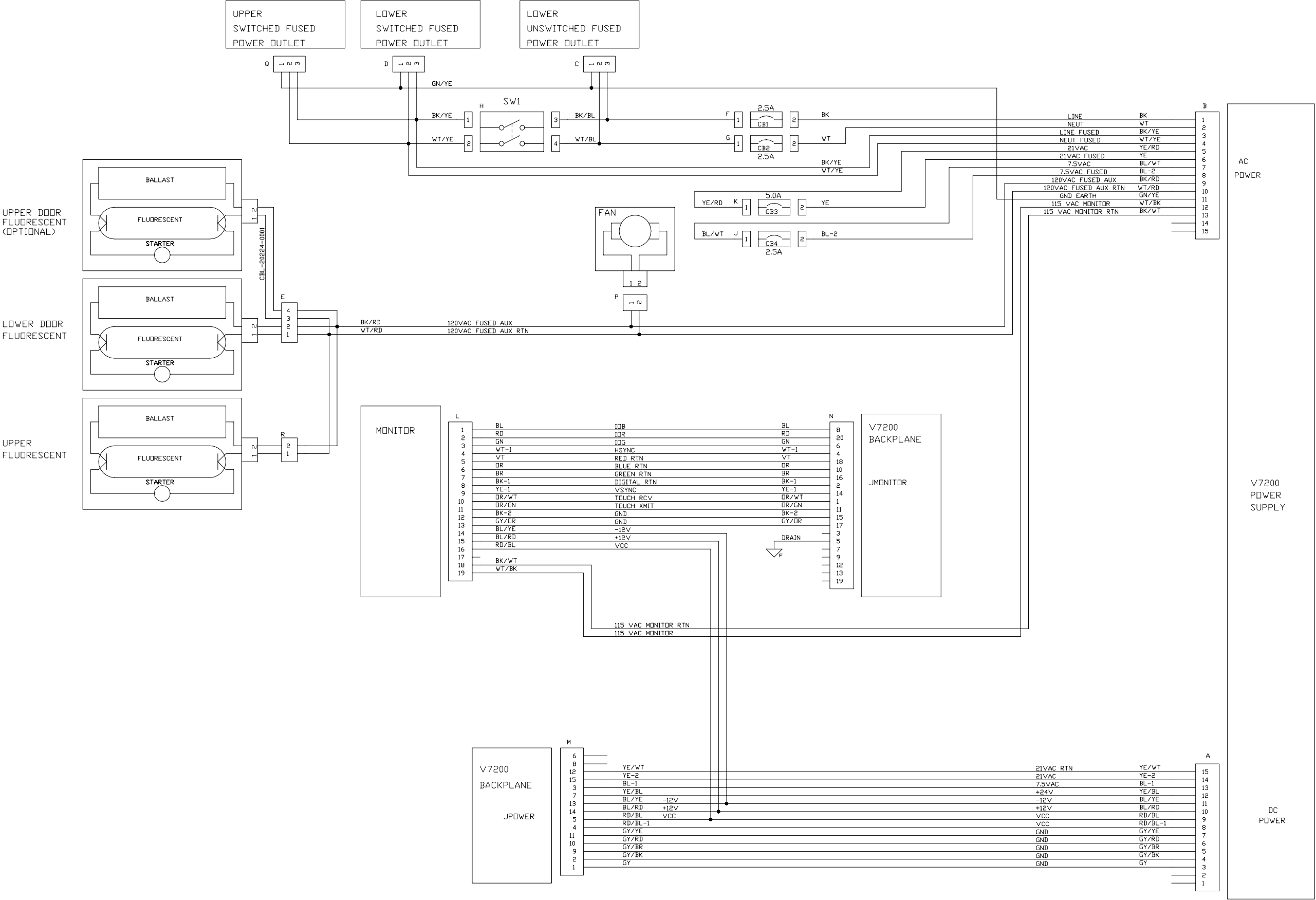


Game Maker-7200™ Upright
Cabinet Power
CBL-30257-0001

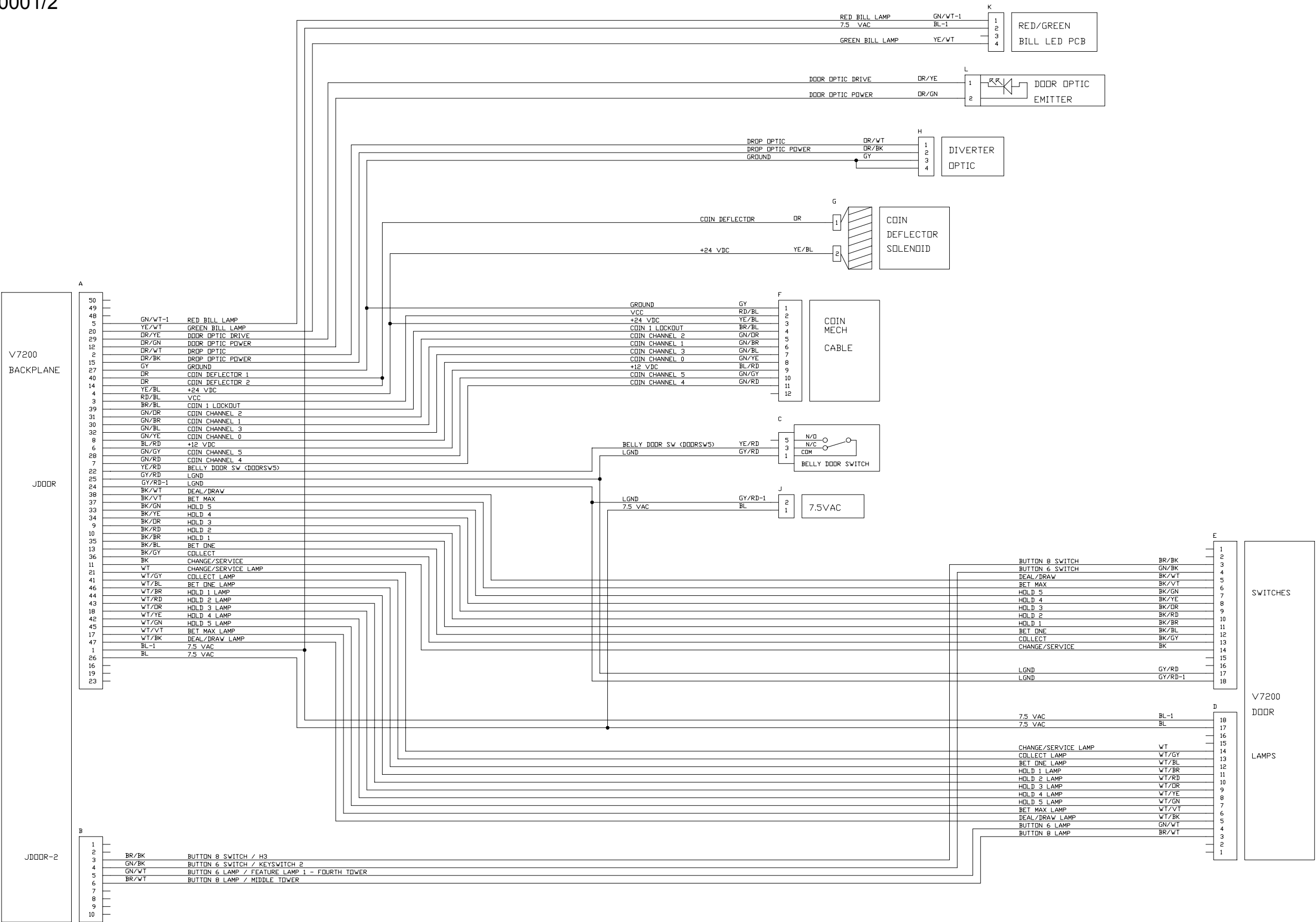


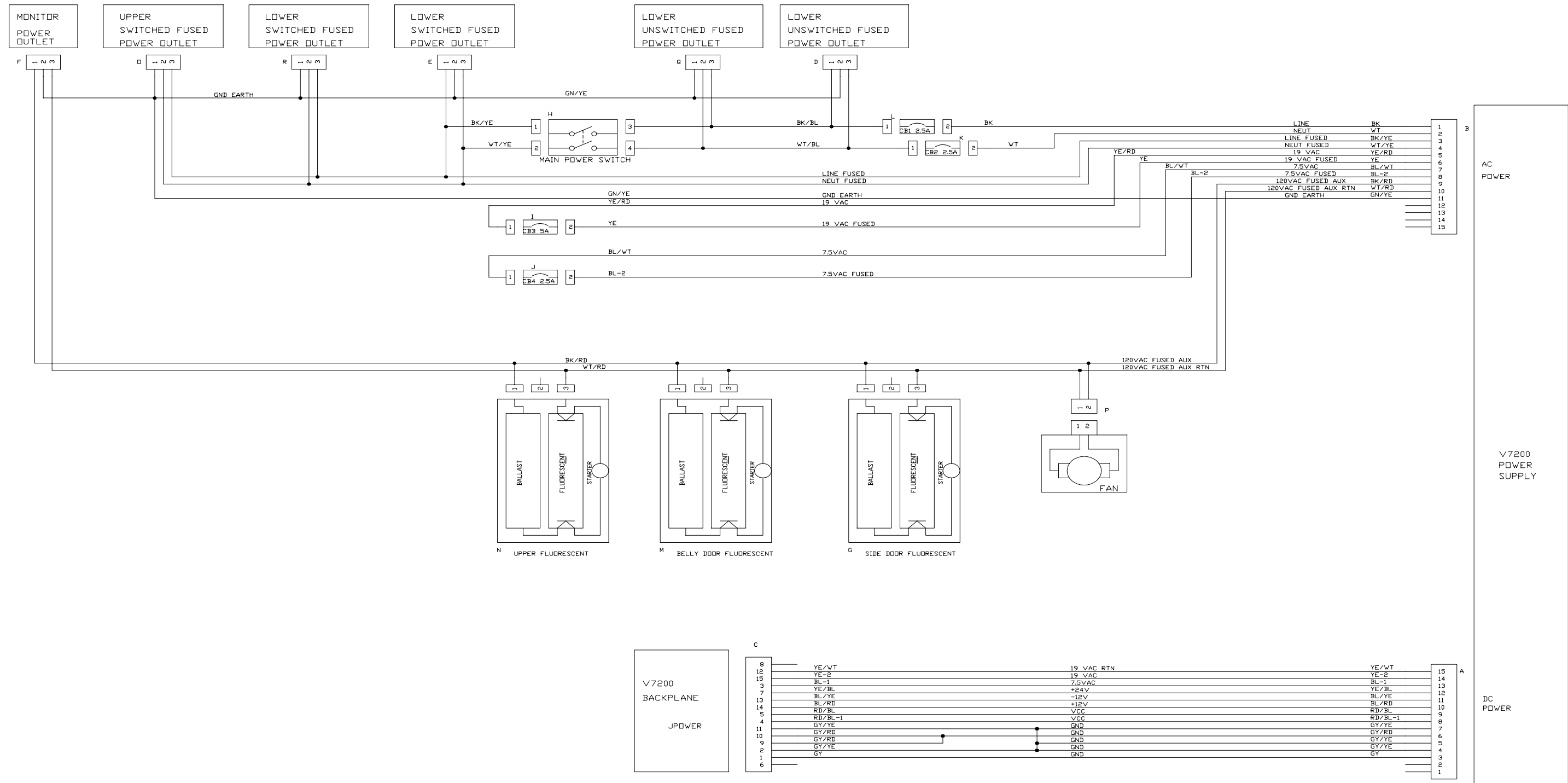


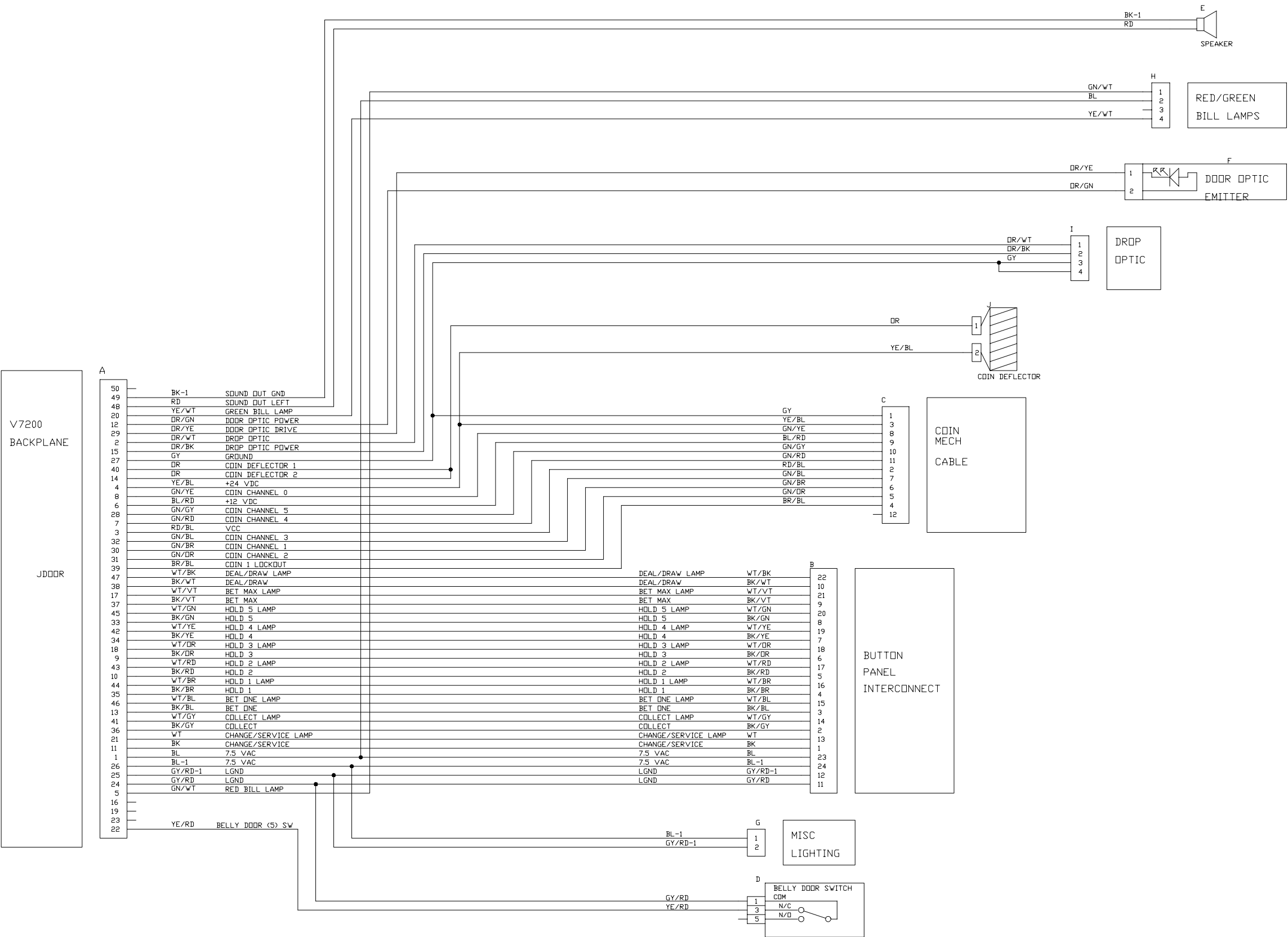
V7219Power
CBL-30479-0001

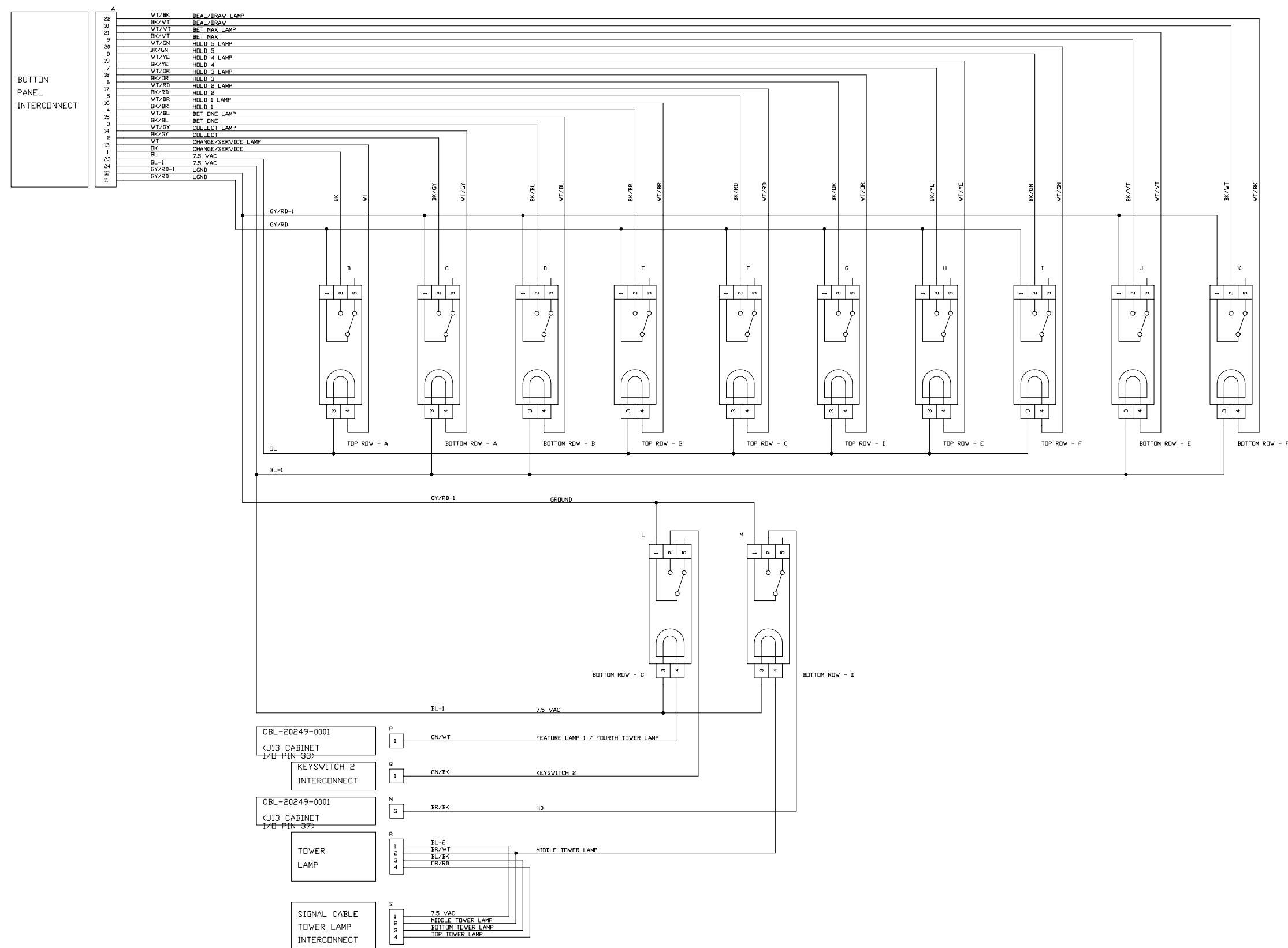


7217/19 Door
CBL-30481-0001/2









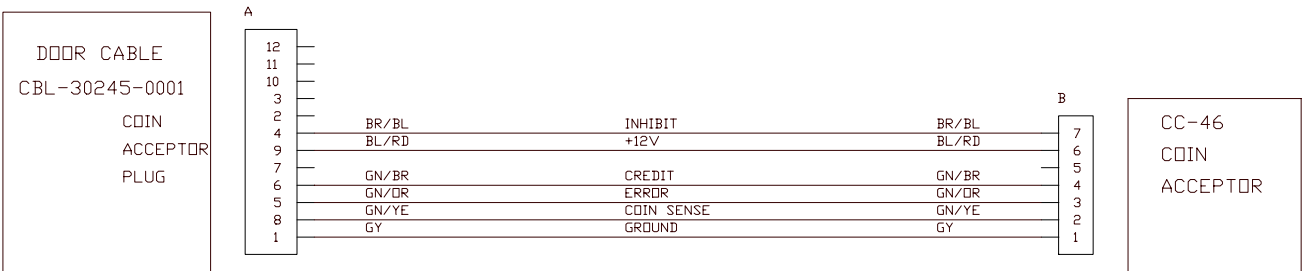
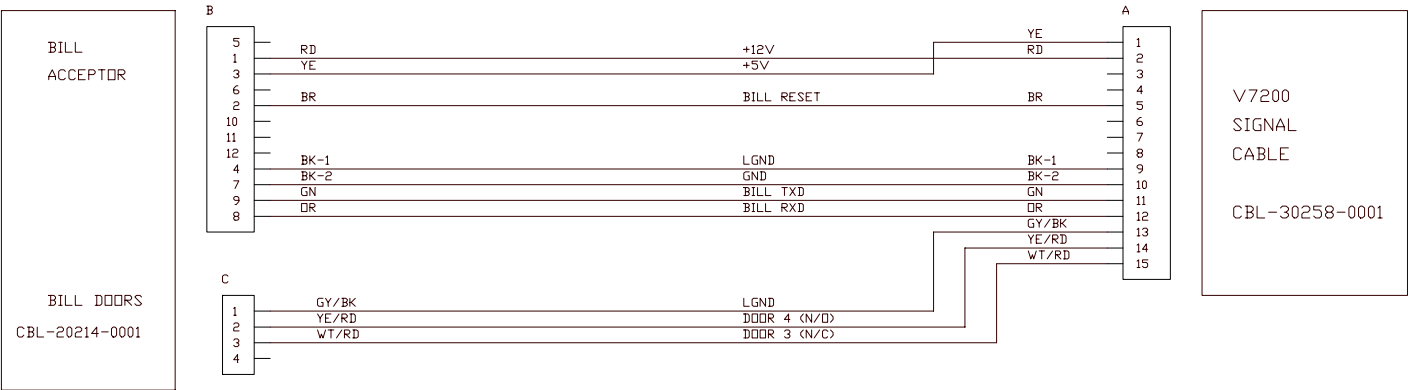
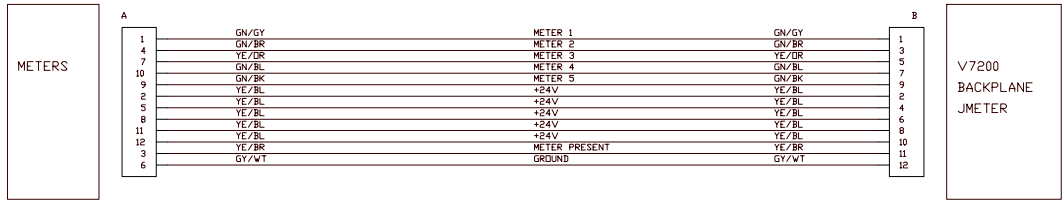


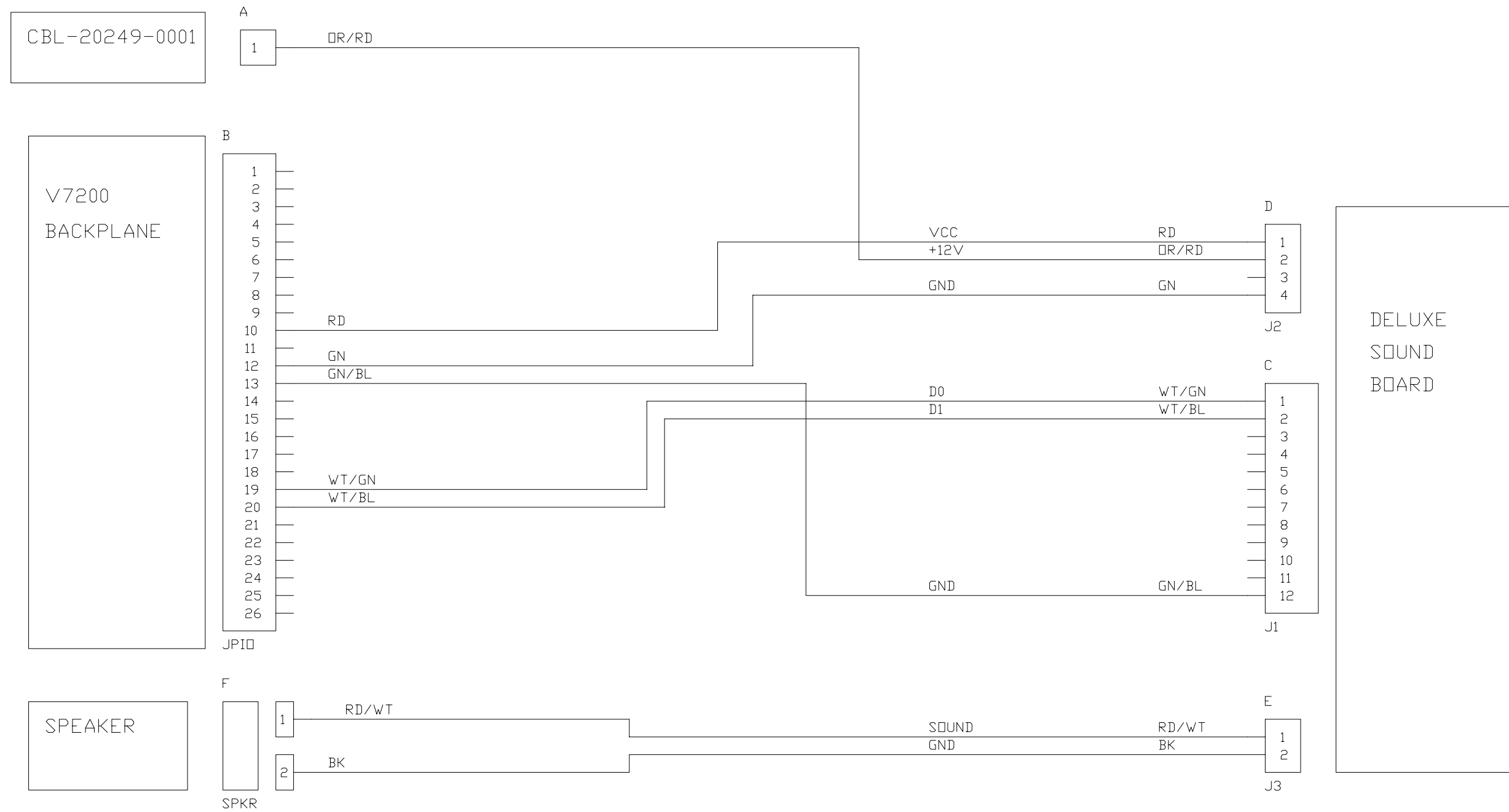
Game Maker-7200™ Upright, Game Maker Plus®

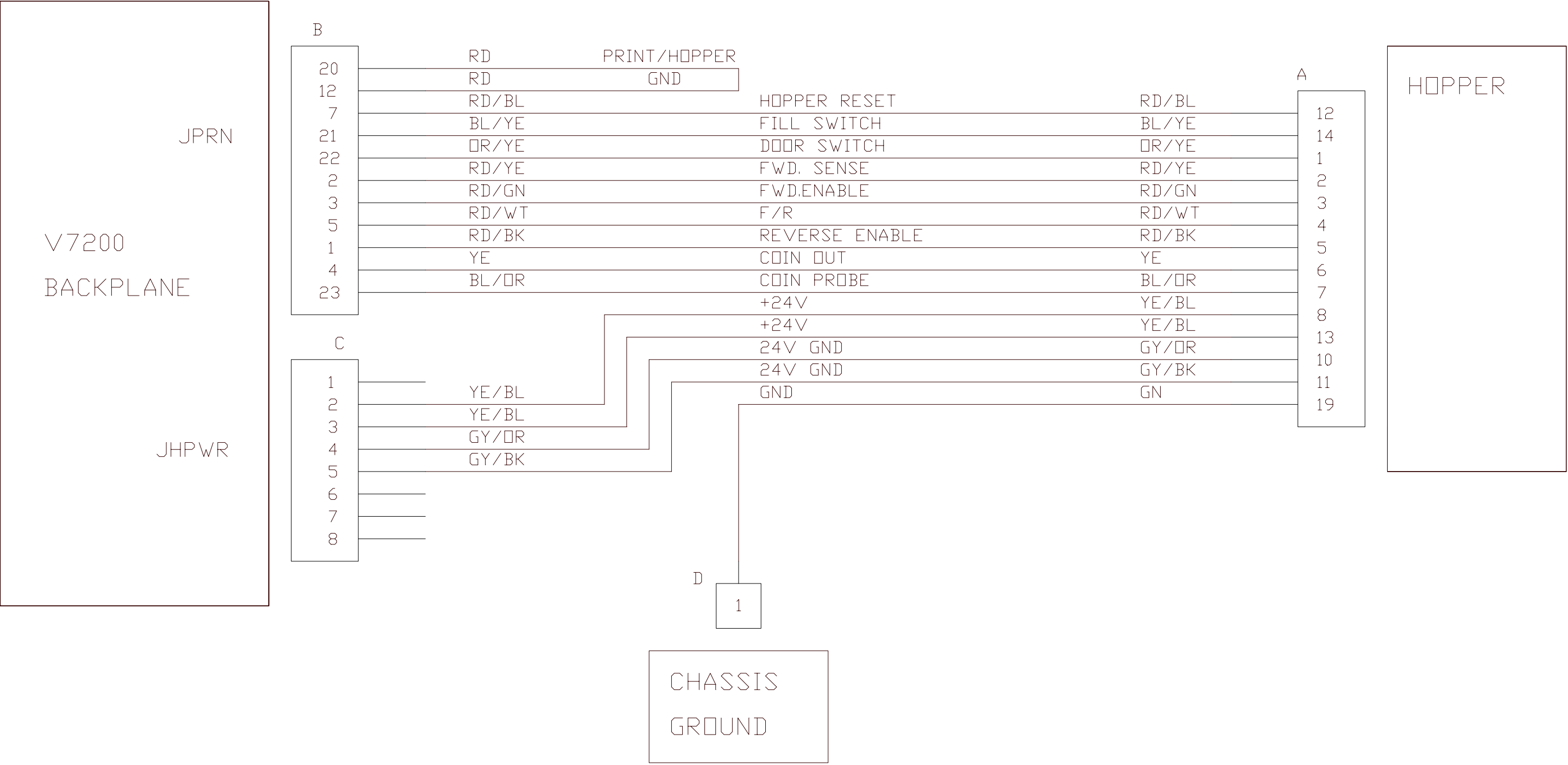
Electro-Mechanical Meters
CBL-20219-0001

Coin Acceptor, CC-46
CBL-20215-0001

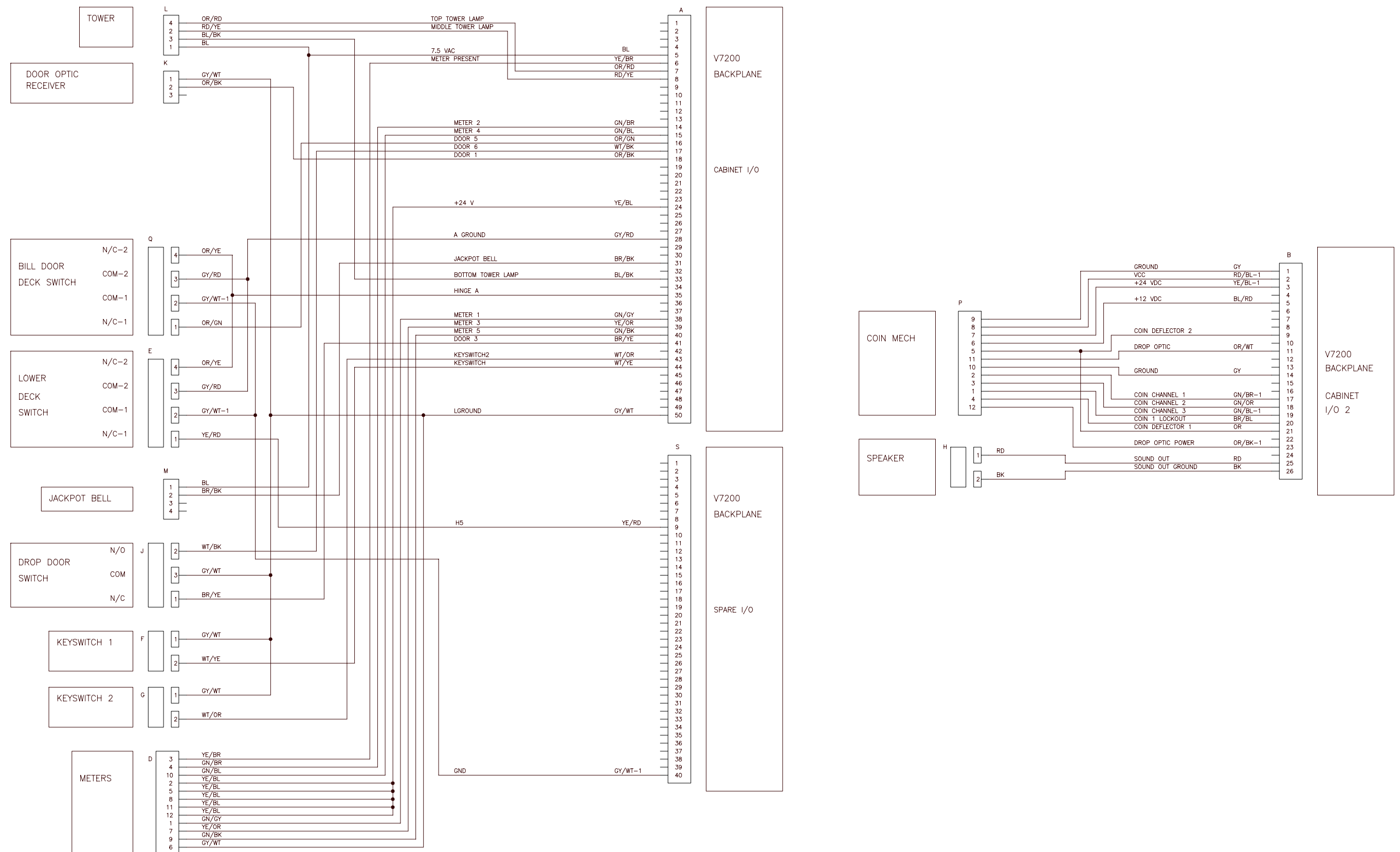
Bill Acceptor, WBA 10/20
CBL-20216-0001





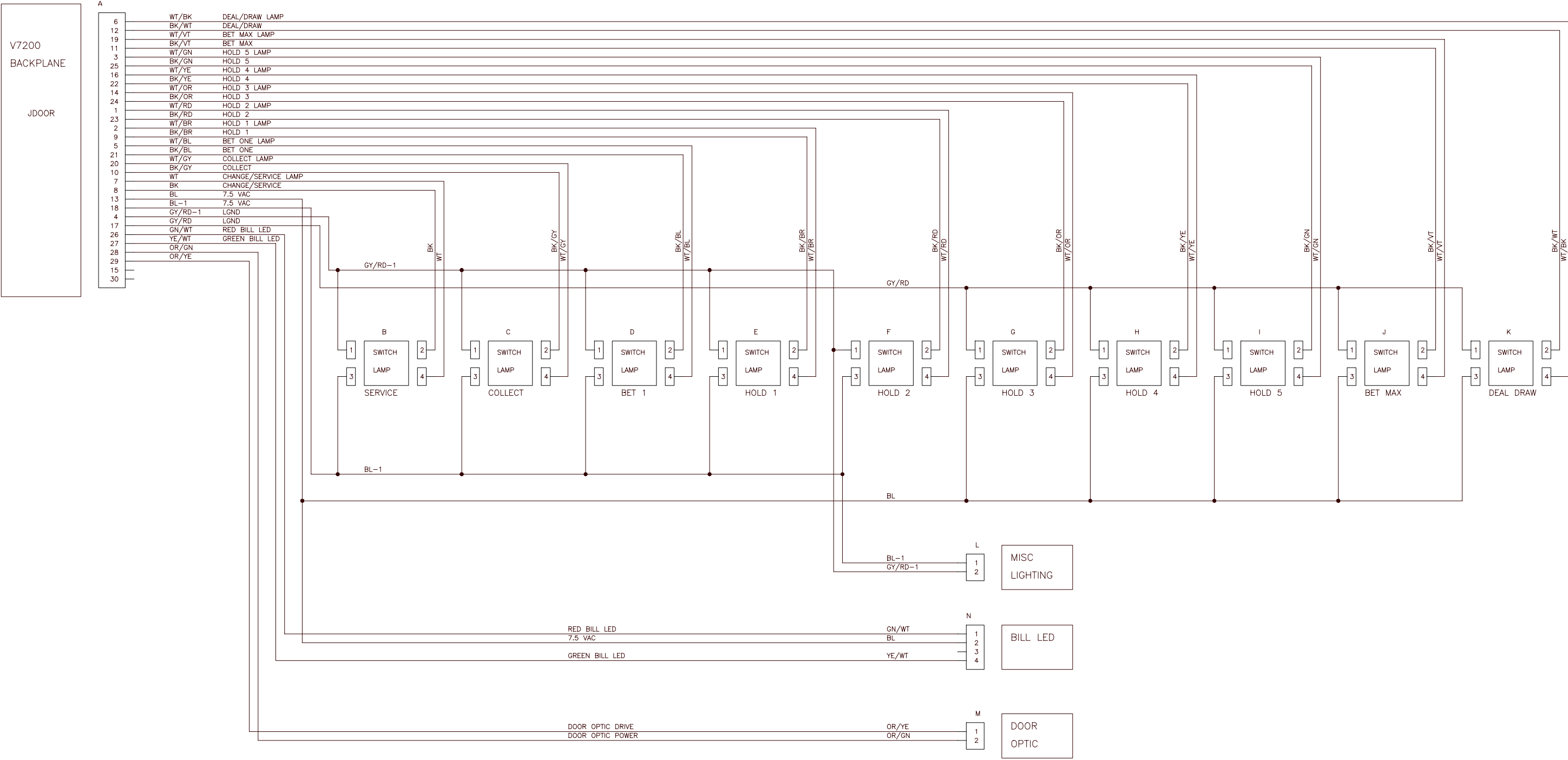


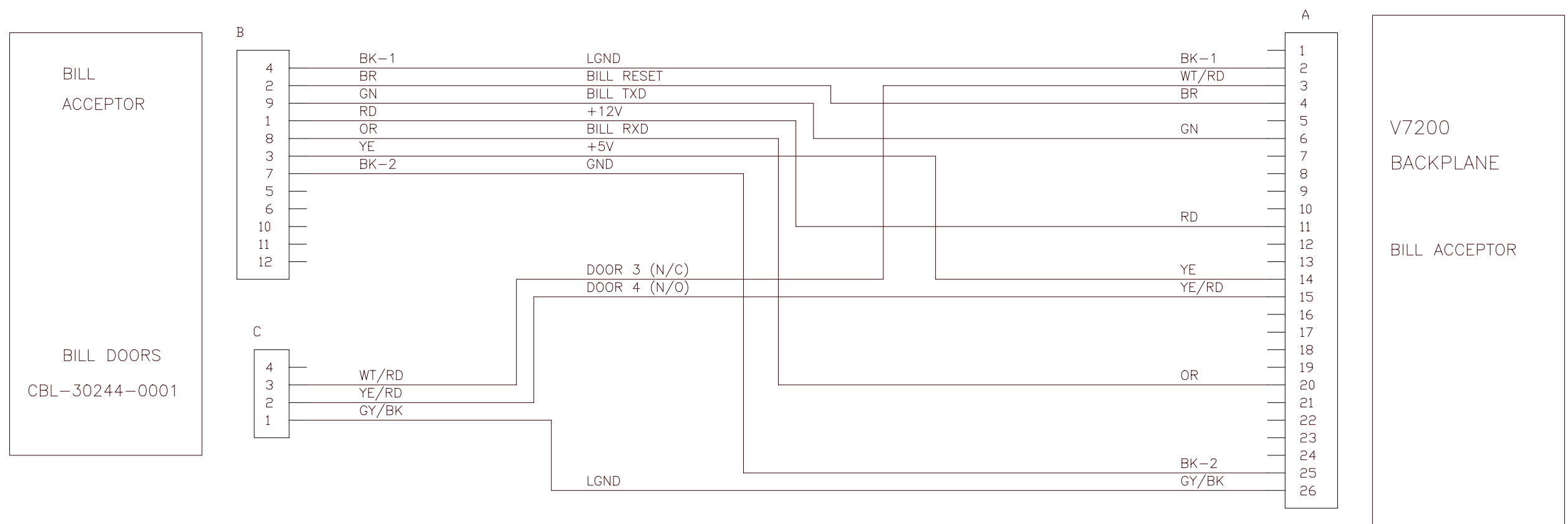
Game Maker-7200™ Slant Cabinet Signal



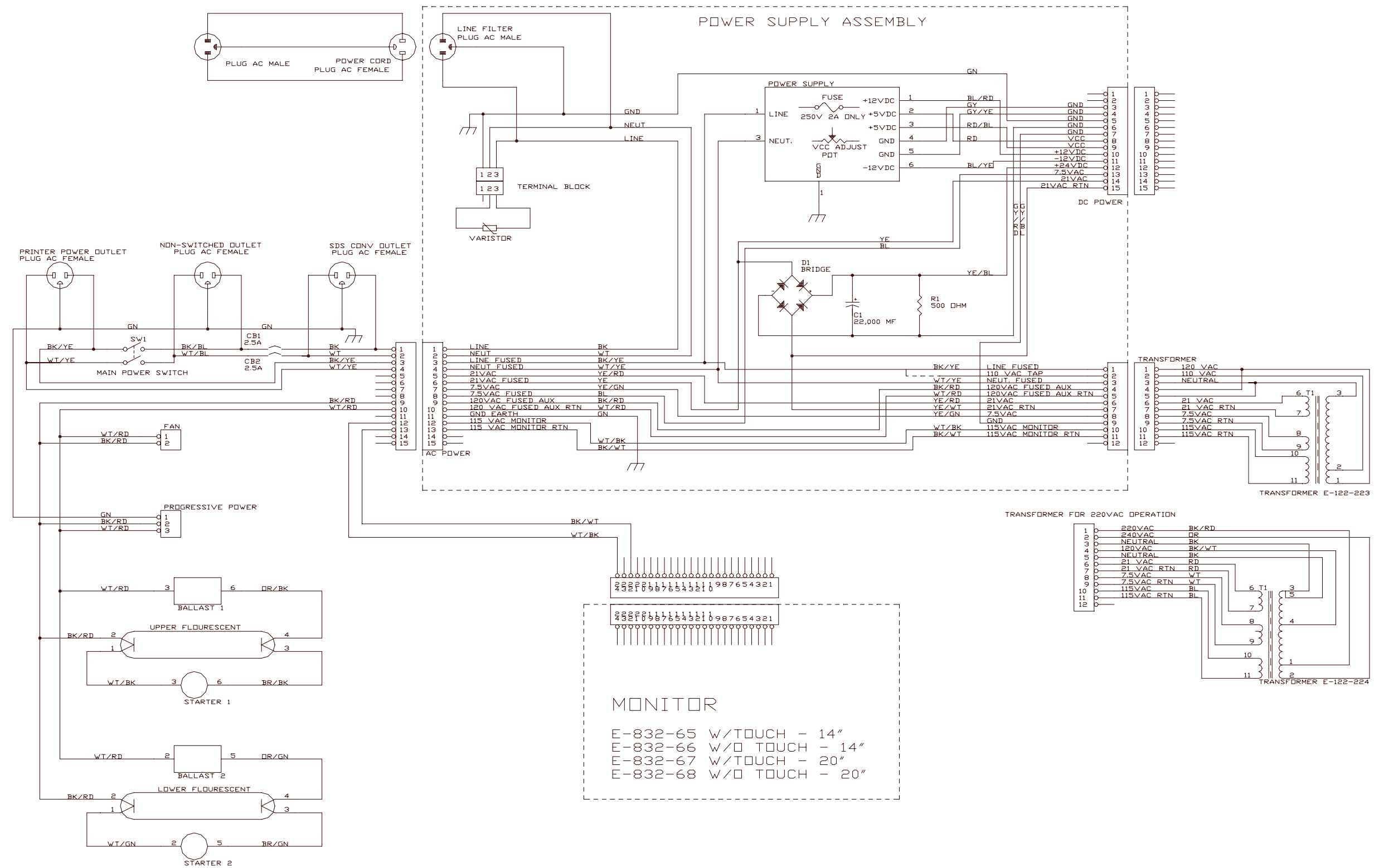


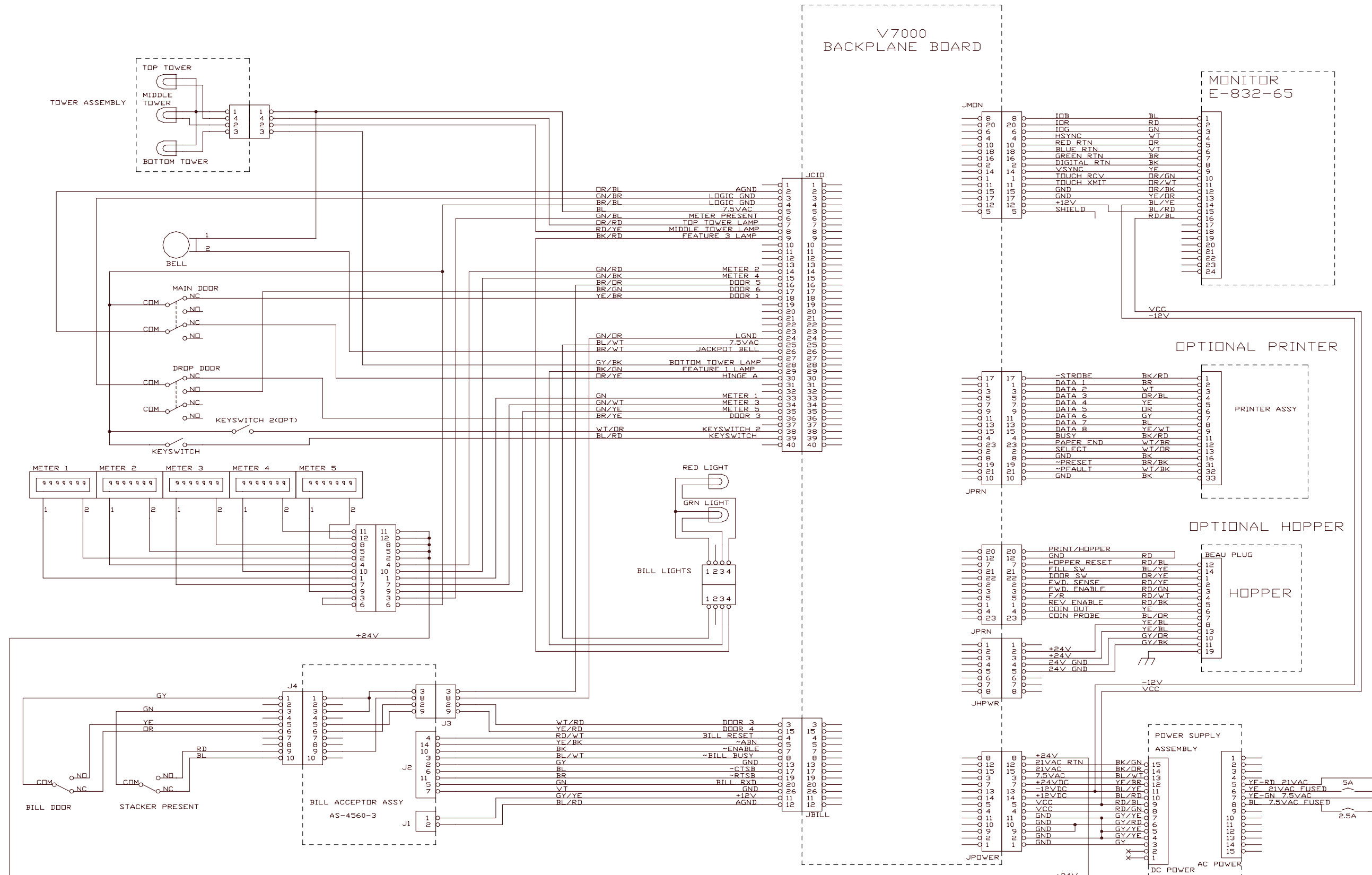
Game Maker-7200™ Slant
Deck
CBL-30246-0001

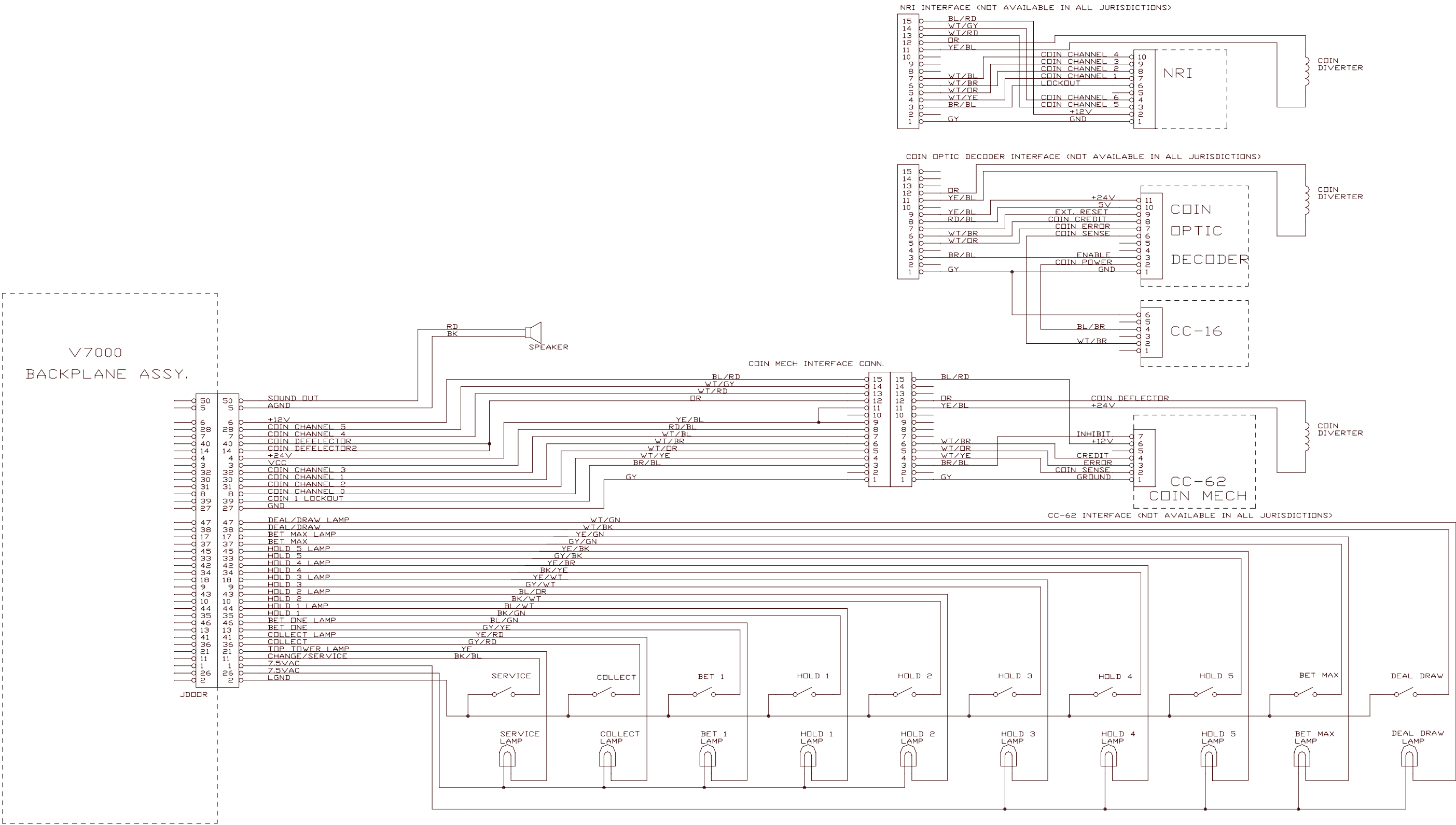


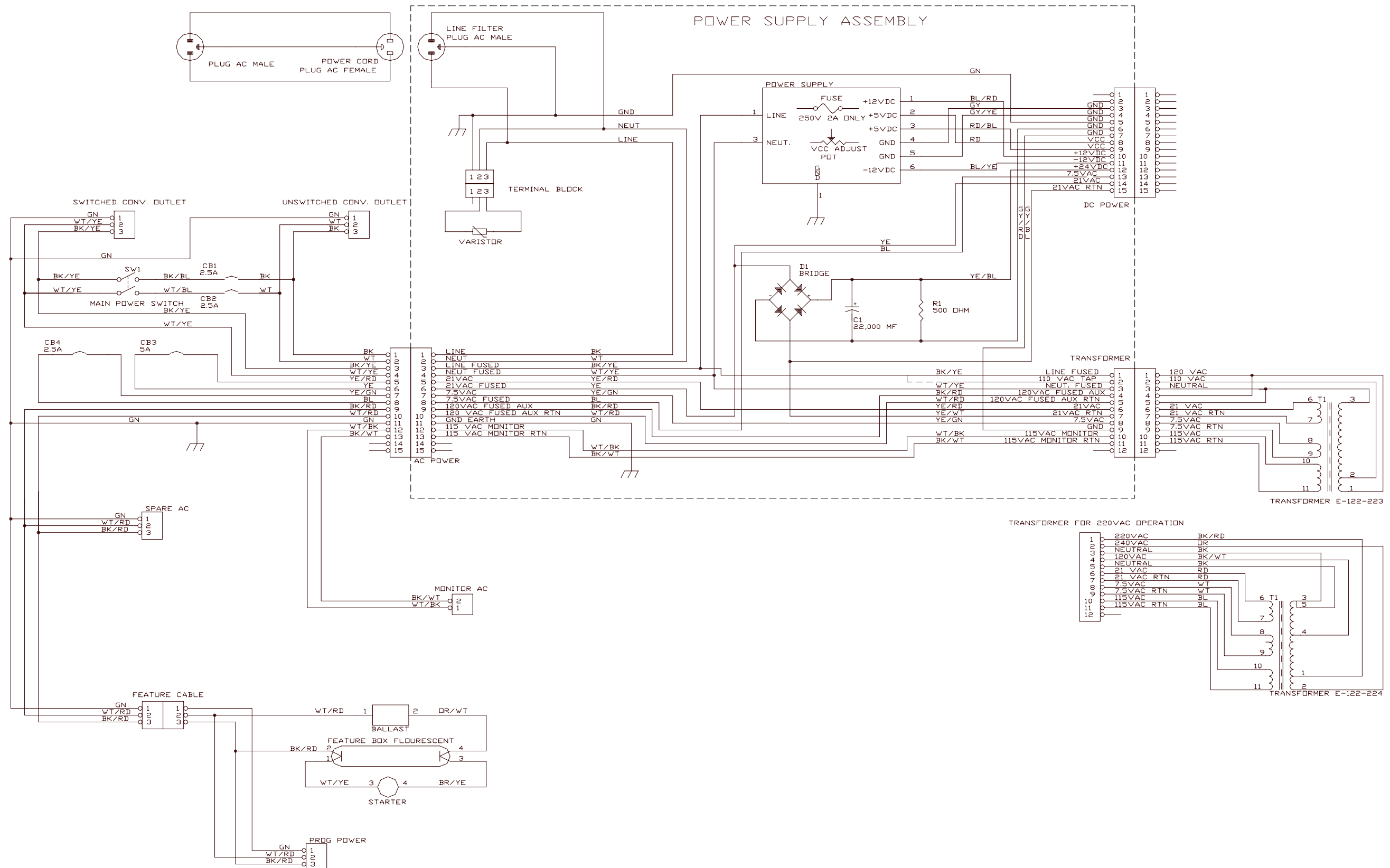


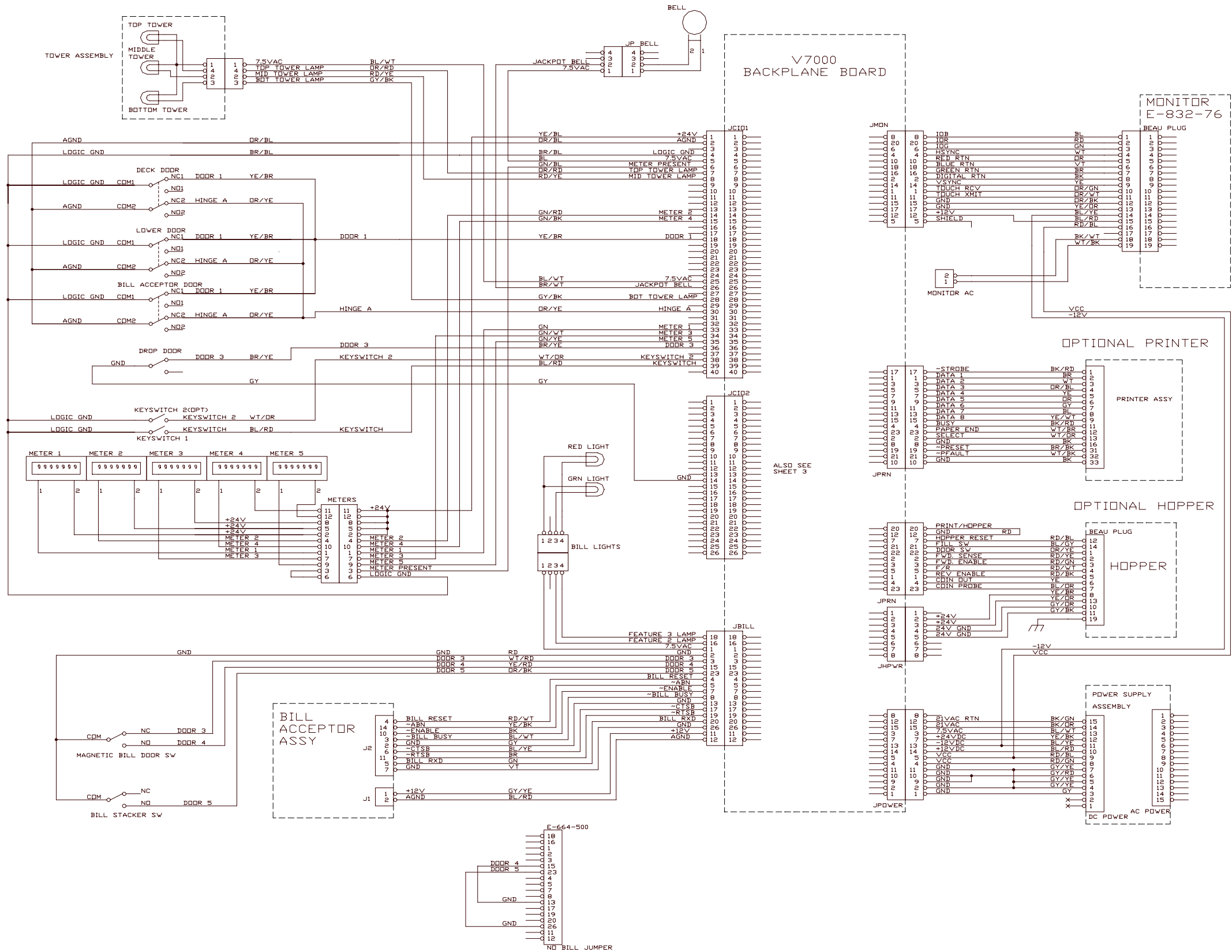
Game Maker® Upright Power

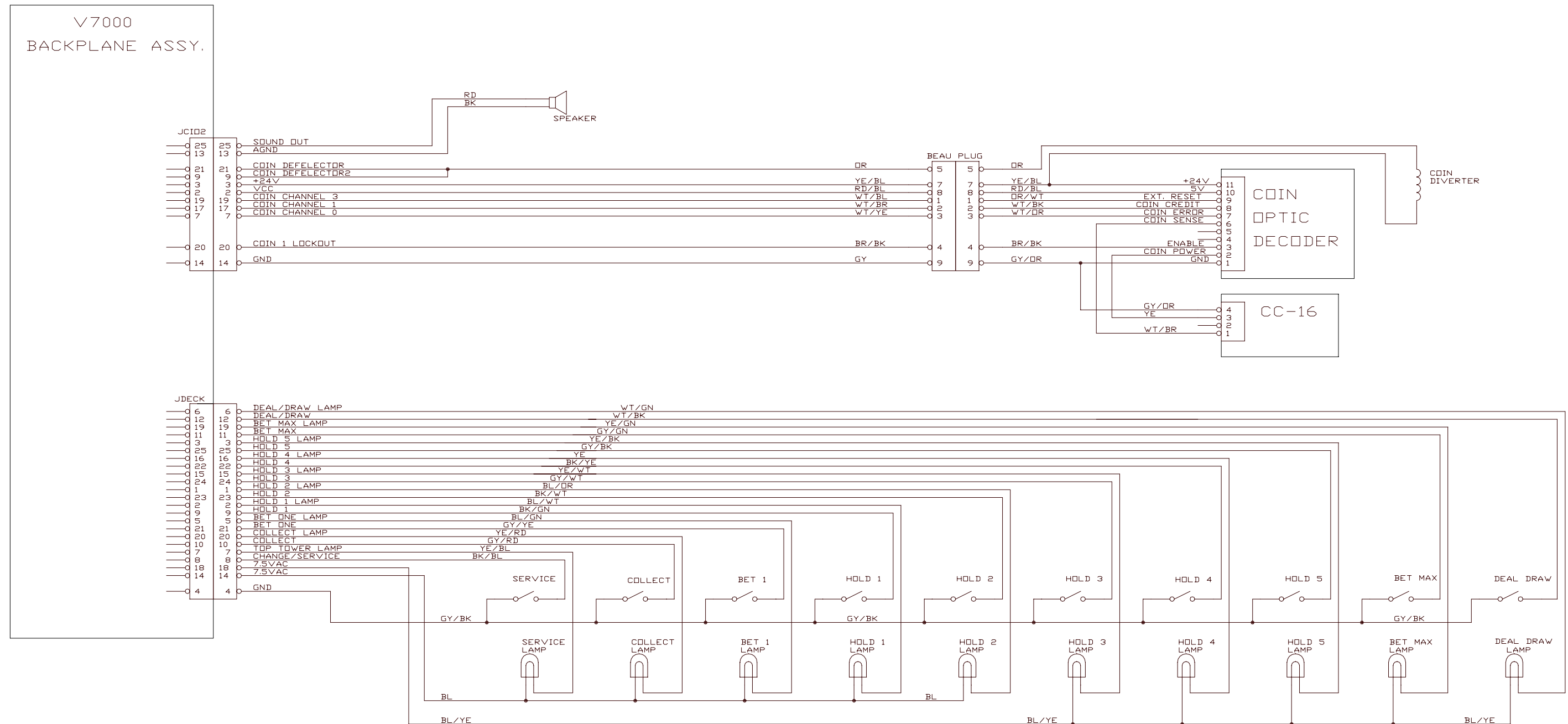


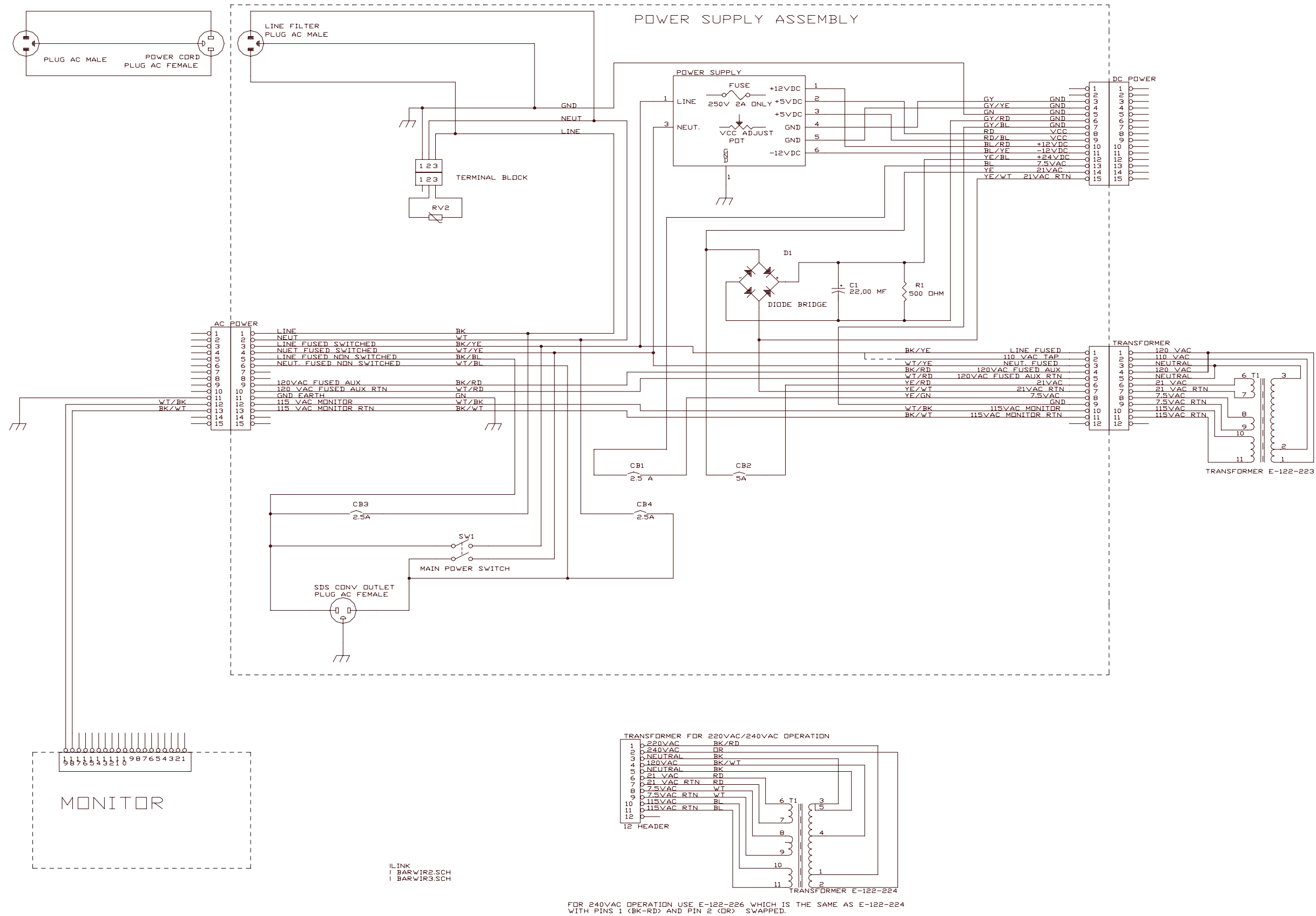


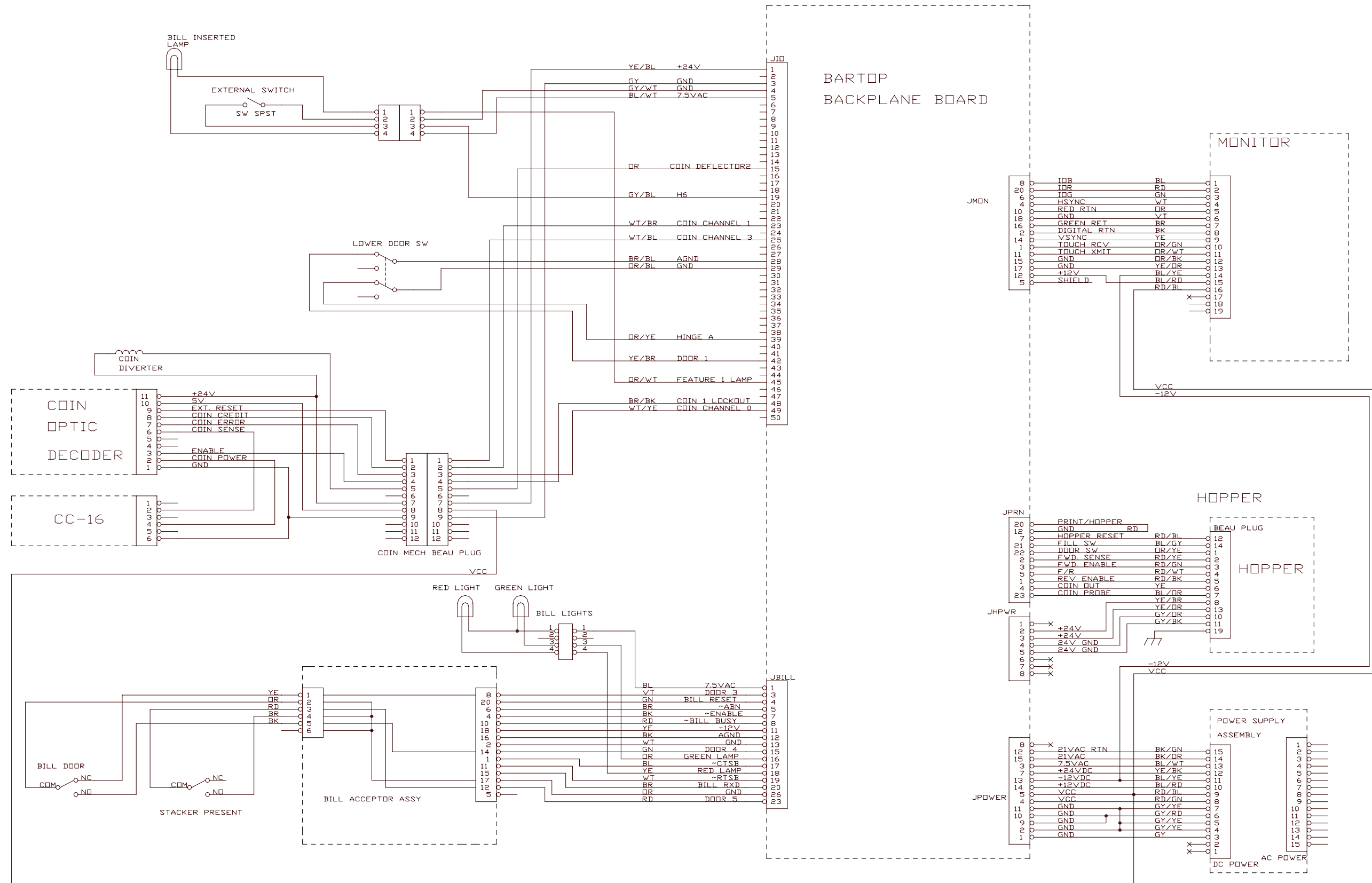


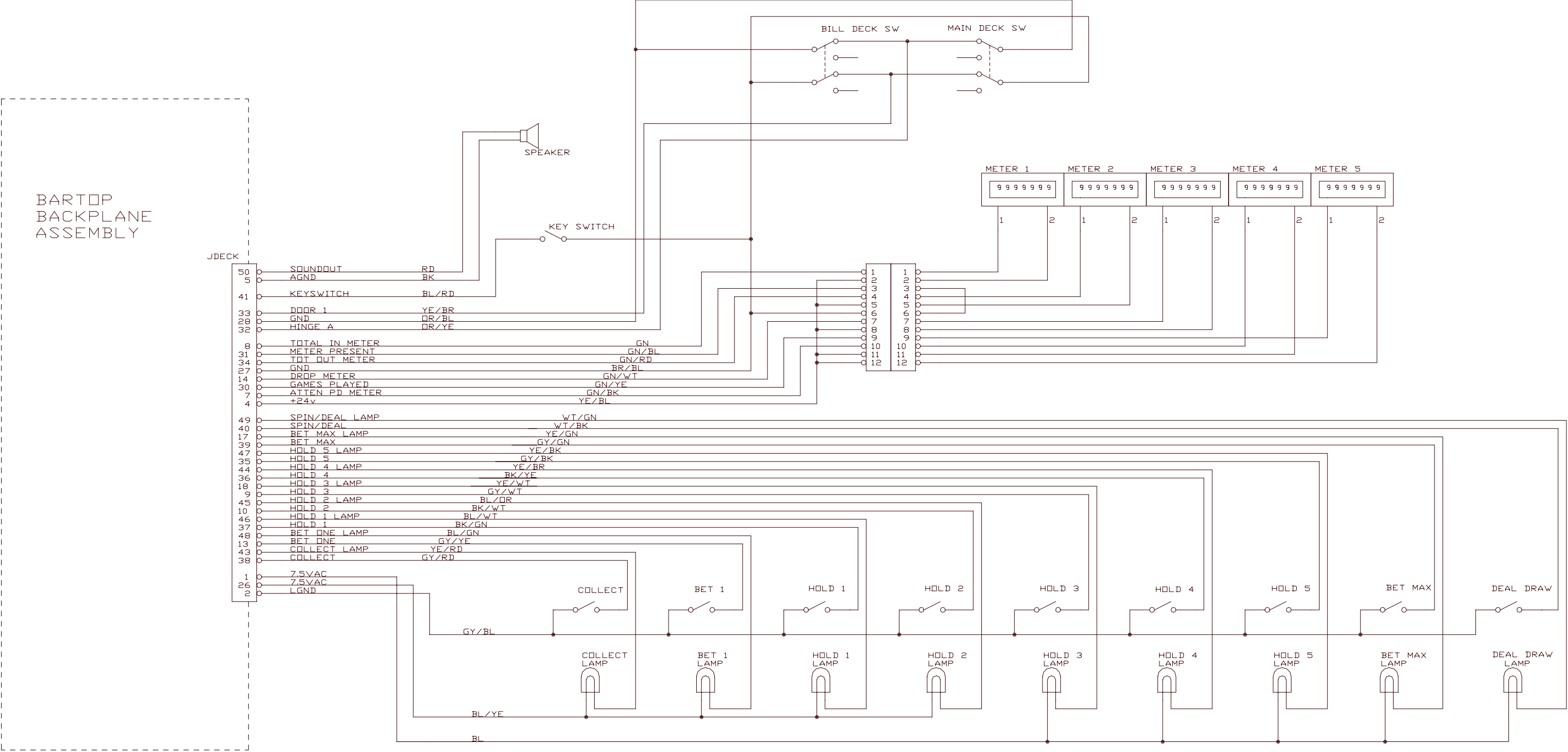




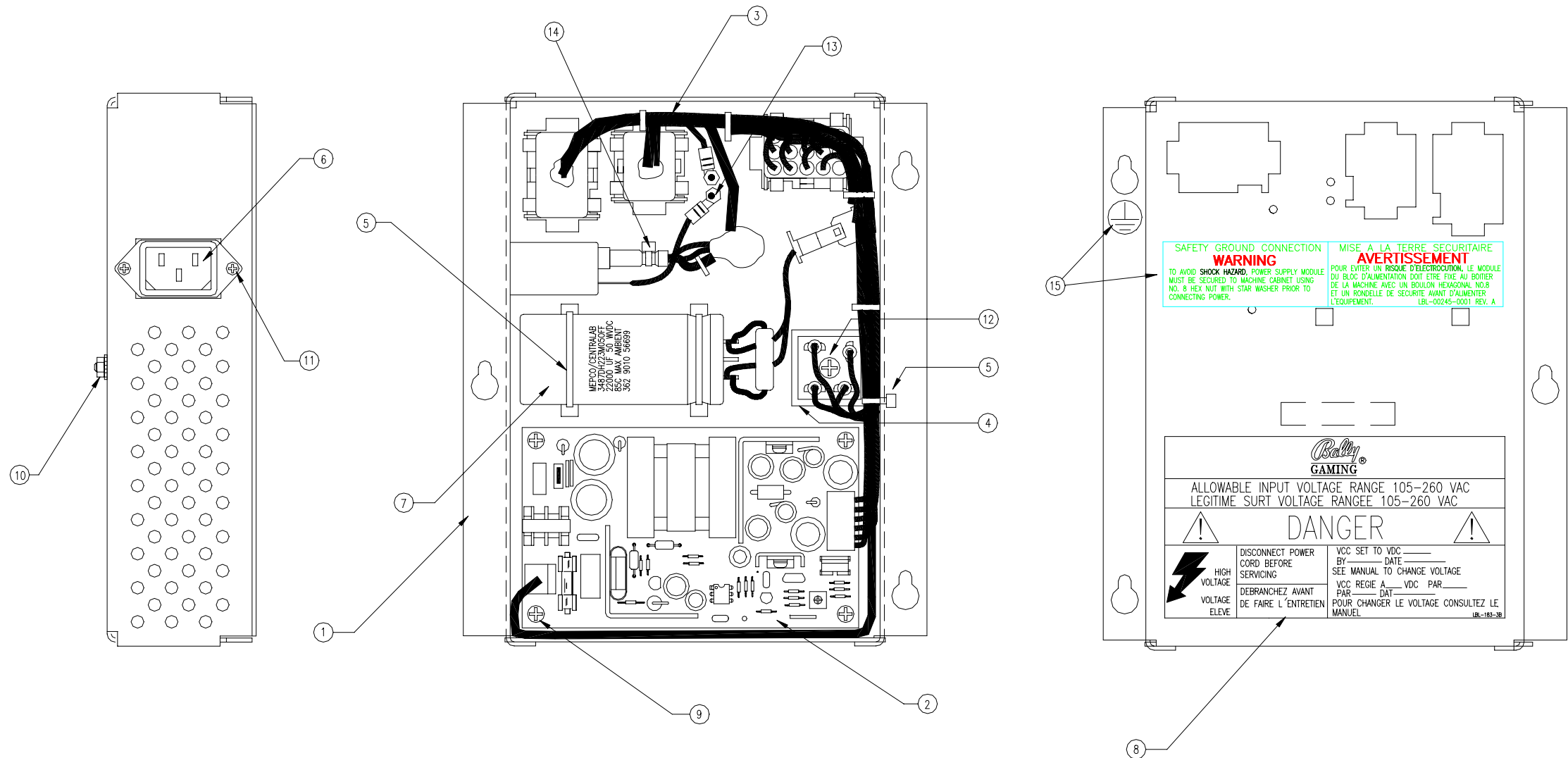




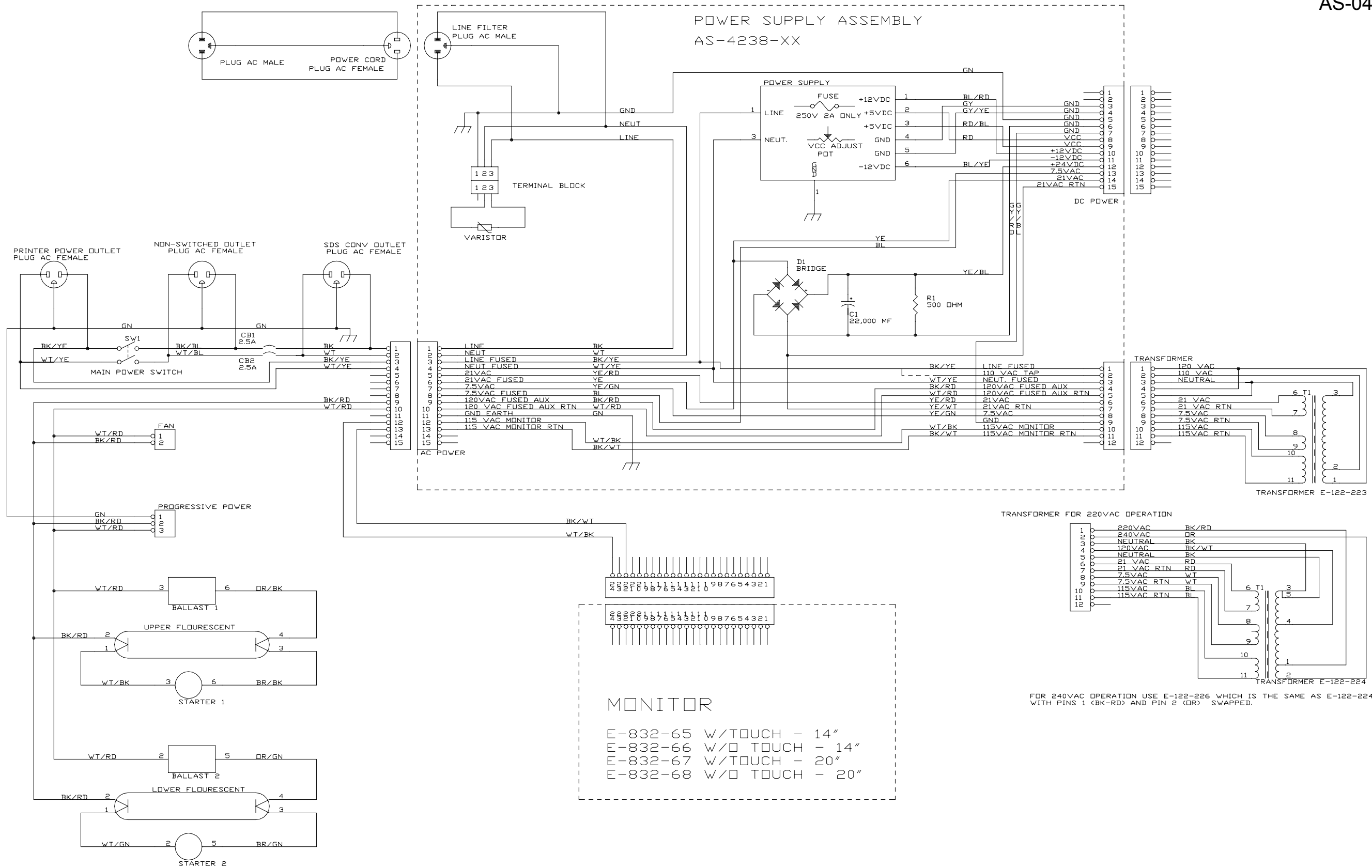


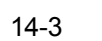
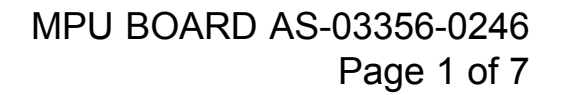


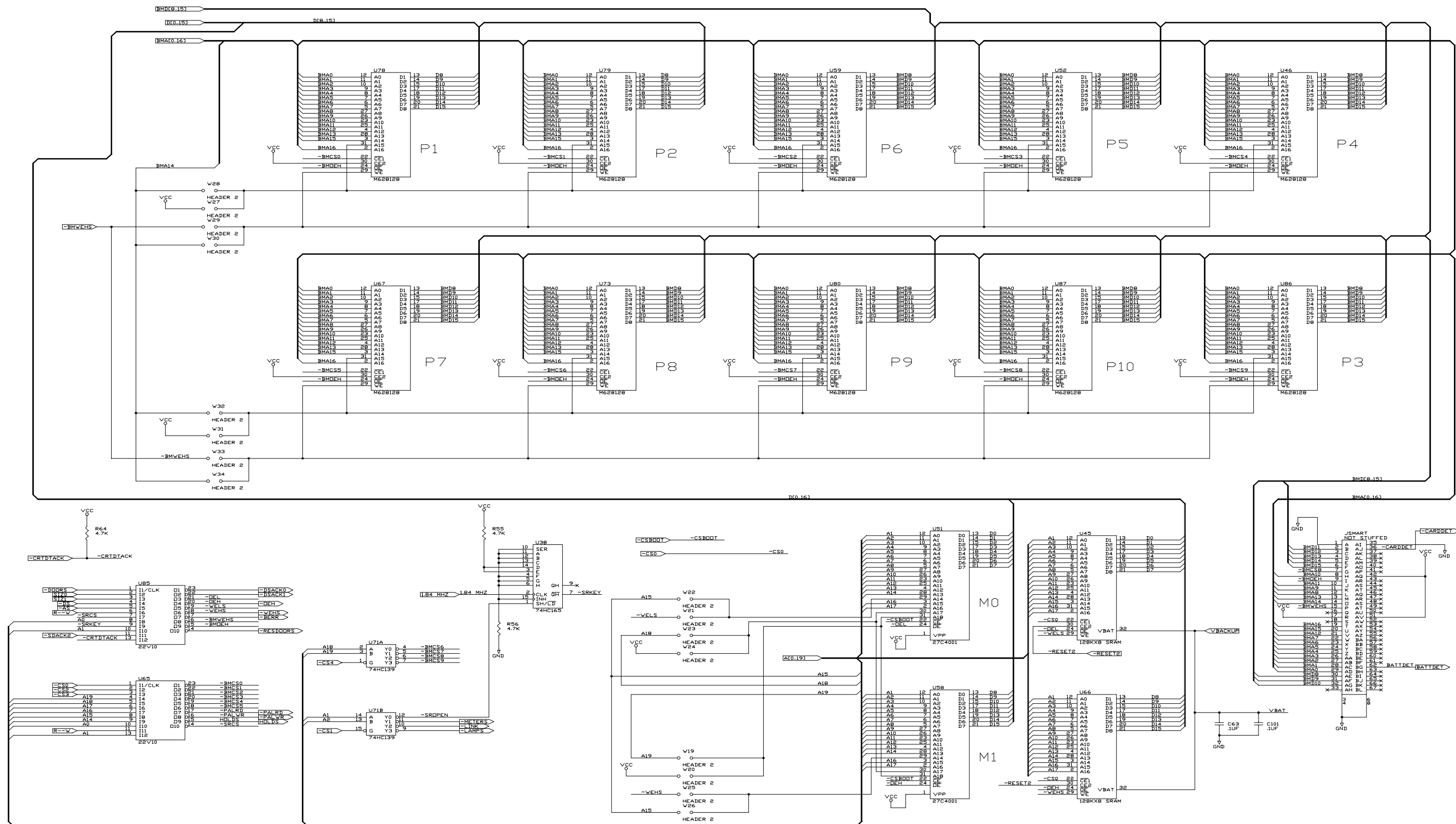


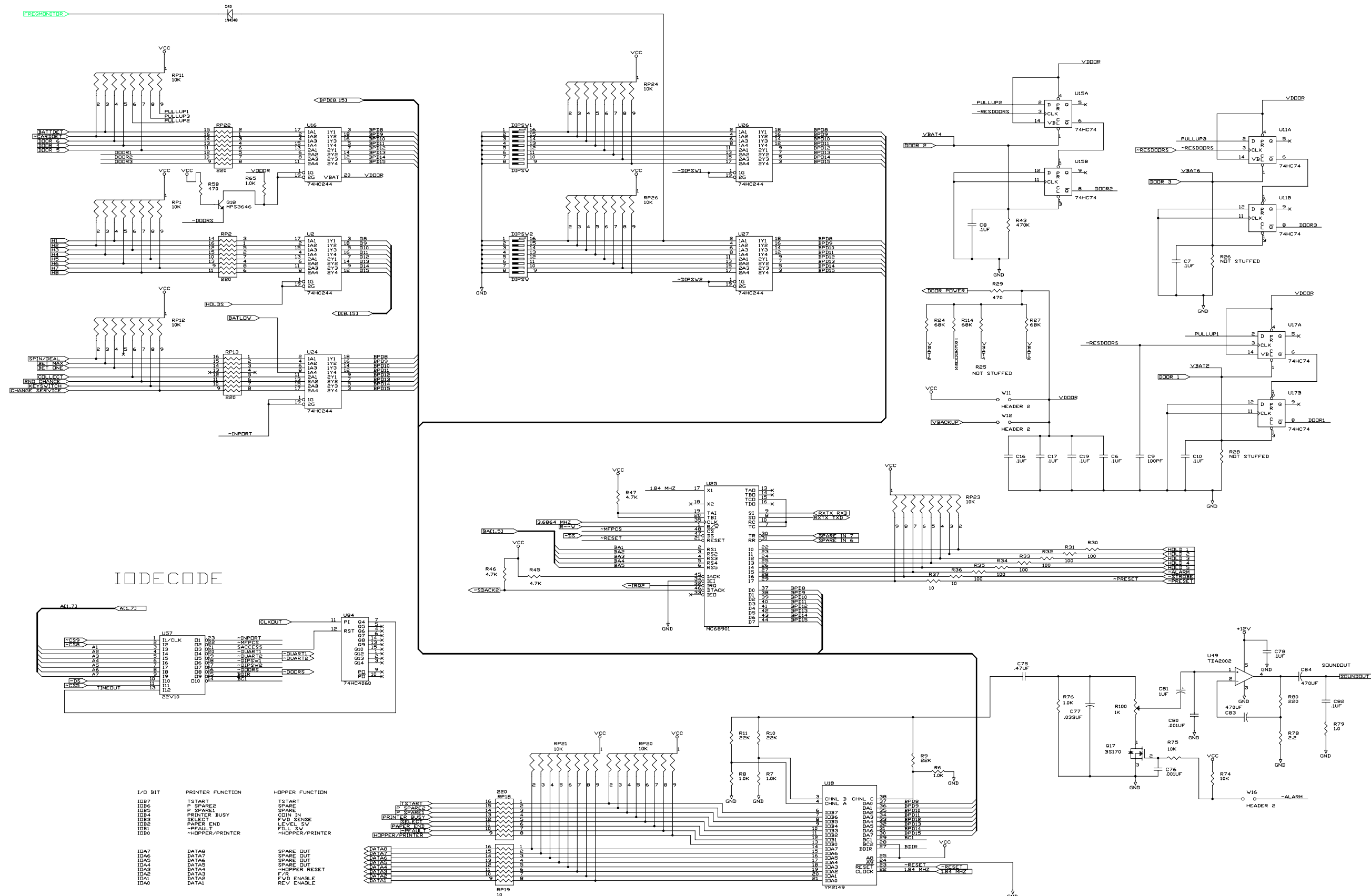


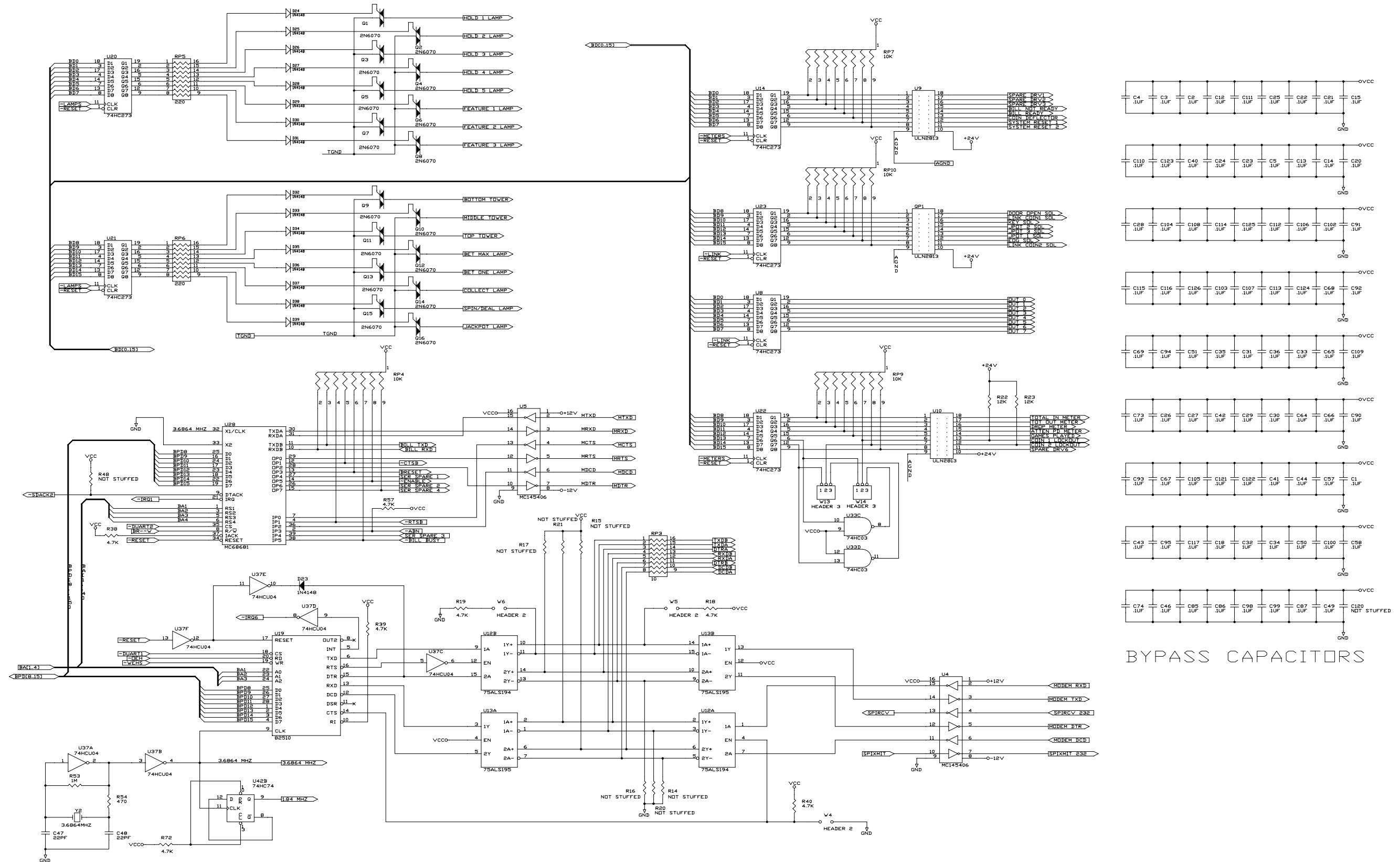
MATERIALS LIST			
REF.	PART NUMBER	DESCRIPTION	QTY.
1	A-04345-0003	ASSY, PWR. SUPL. CASE, V55+/CANADA	1
2	AS-02982-0030	ASSY, POWER SUPPLY BOARD	1
3	CBL-30180-0001	CABLE, PWR. SUPL, CE97	1
4	E-00602-0016	RECTIFIER, BRIDGE	1
5	E-00647-0005	CABLE TIE	3
6	E-00664-0594	ASSY, EMI LINE FILTER, STD / CSA	1
7	E-00664-0545	ASSY, CAPACITOR W/CONN, CE97	1
8	LBL-00183-0003	LABEL, PWR. SUPL, 105-260VAC	1
9	LSPP-00632-1104	SCREW	4
10	NLS-00832-1112	NUT	1
11	TFPP-00440-1106	SCREW	2
12	TFPP-00832-1112	SCREW	1
13	NLS-00832-2112	NUT	2
14	E-00647-0004	CABLE TIE	1
15	LBL-00245-0001	LABEL, GROUND SAFETY	1

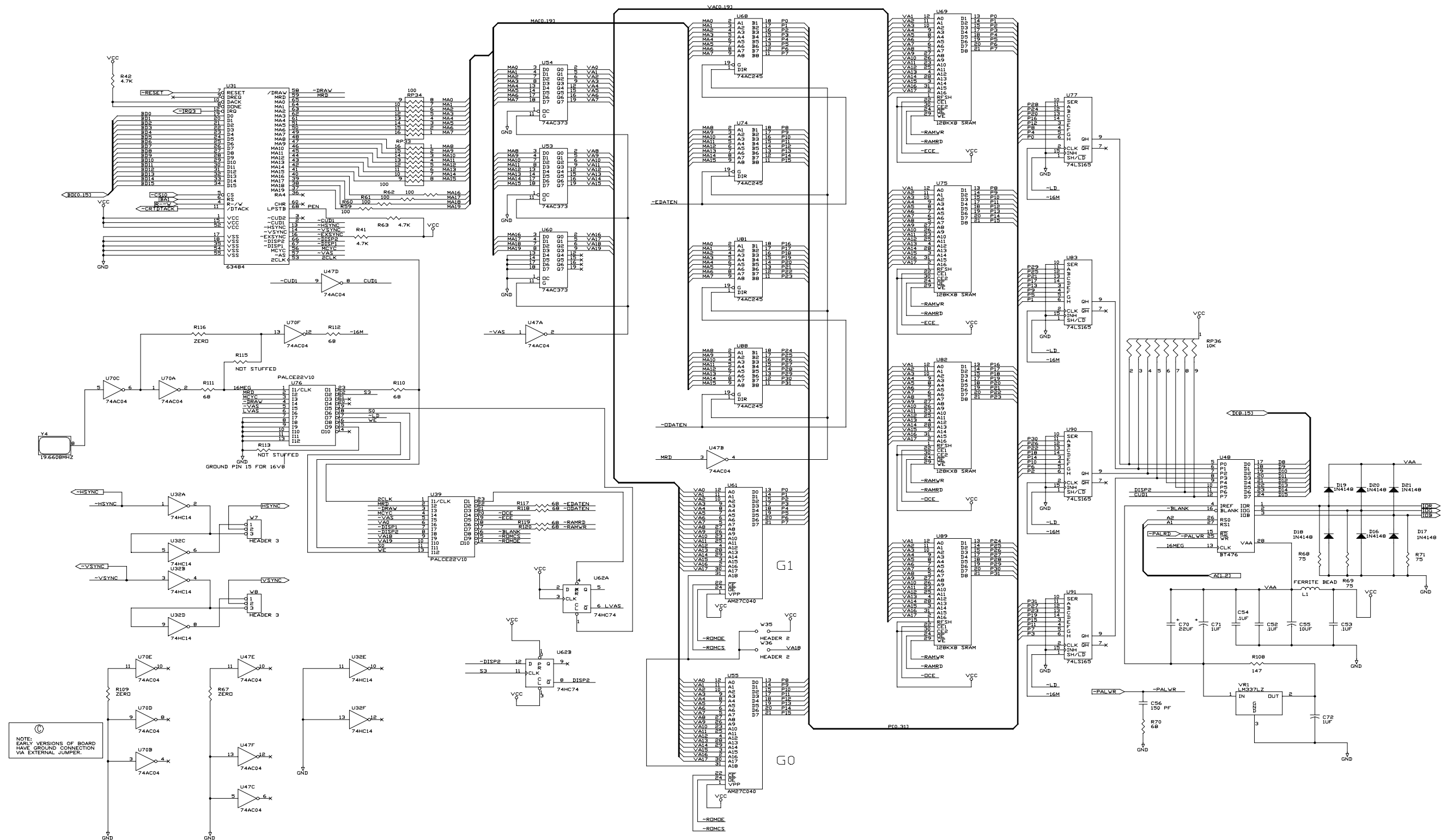




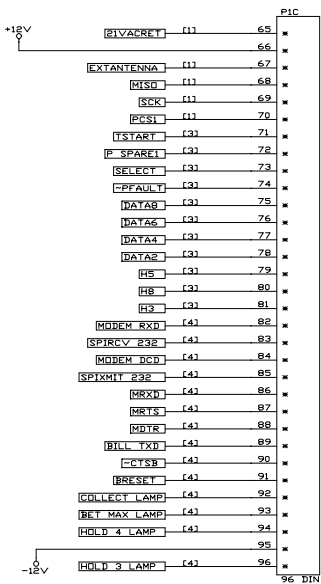
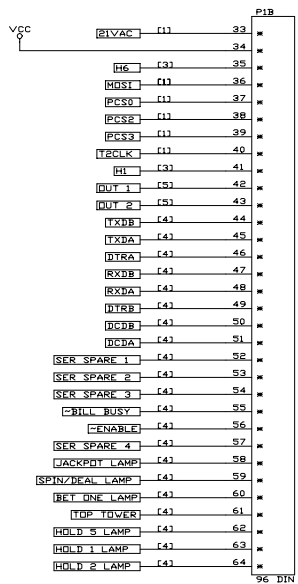
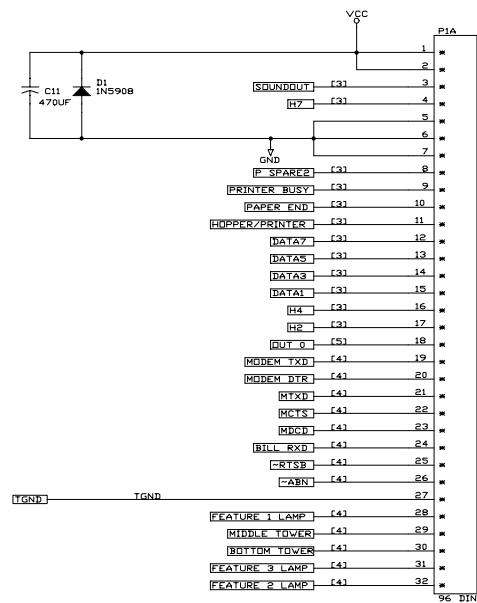




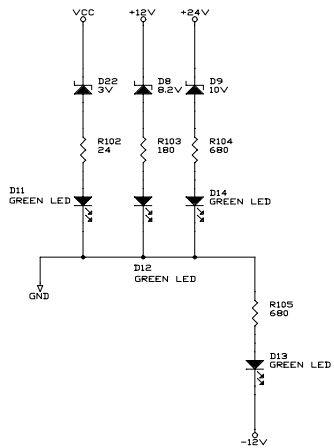
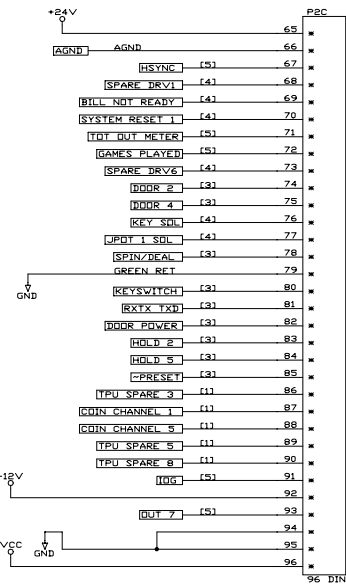
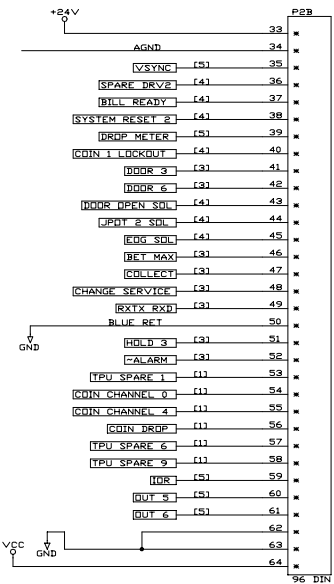
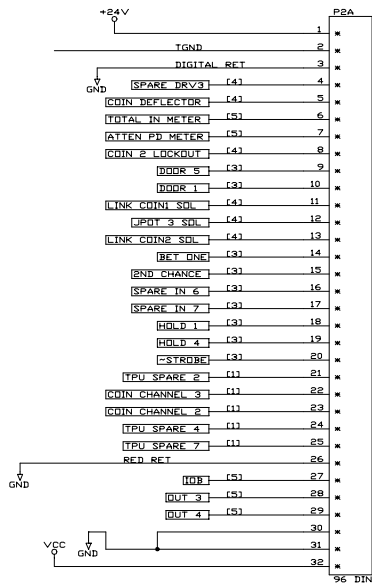




P1



P2

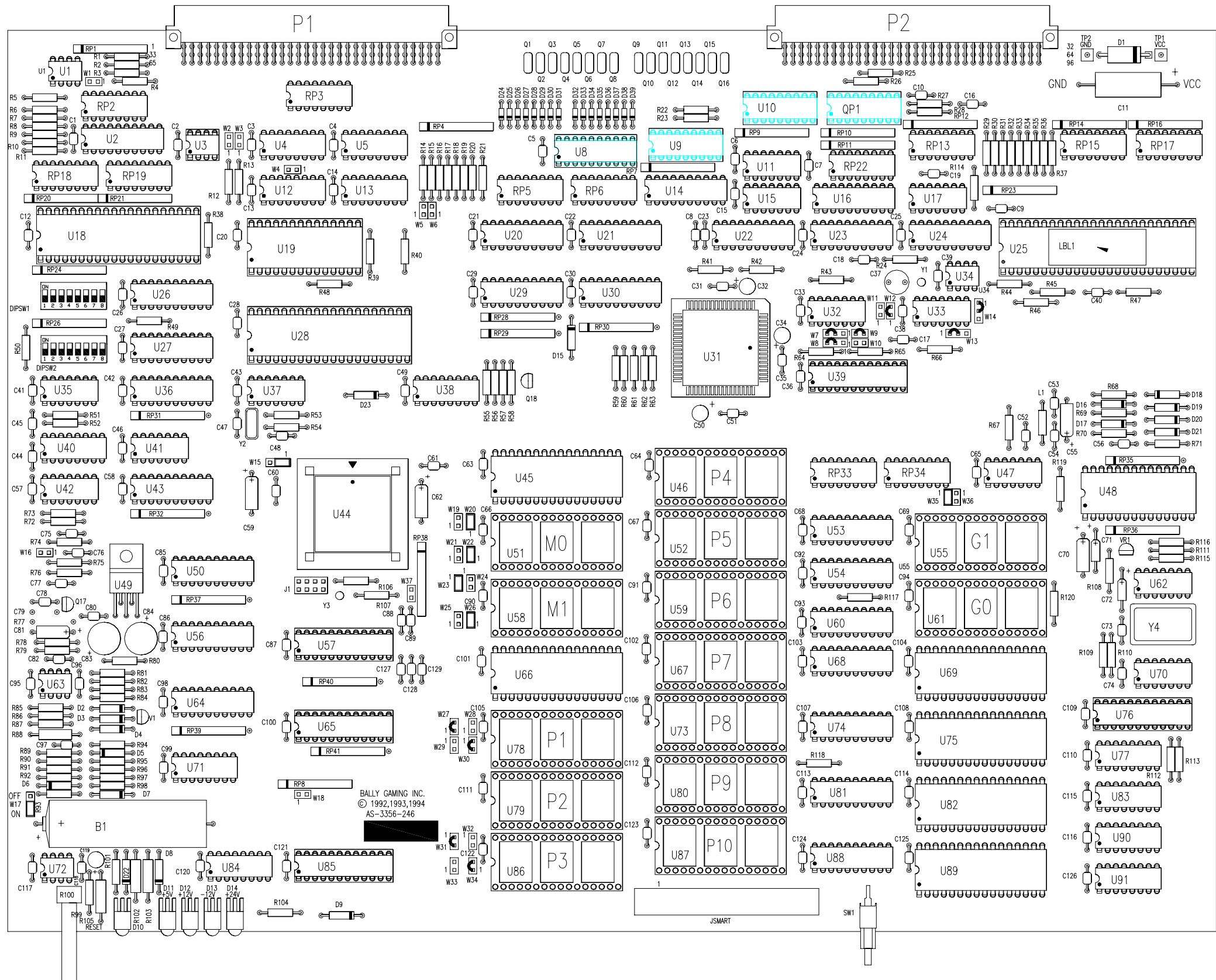




COMPONENT LOCATOR CHART

COMP.	ID	SHEET	GRID	X	Y
B1	BATTERY	1	B-7	4.6	15.2
C1	.1UF	4	J-5	29.7	108.1
C2	.1UF	4	I-1	26.1	1.9
C3	.1UF	4	H-1	25.5	1.9
C4	.1UF	4	I-1	29.9	7.9
C5	.1UF	4	I-2	27.9	3.3
C6	.1UF	3	H-4	25.1	9.7
C7	.1UF	3	I-3	26.7	5.4
C8	.1UF	3	G-2	22.2	4.6
C9	100PF	3	I-4	25.9	9.7
C10	.1UF	3	I-5	26.3	9.7
C11	470UF	6	A-2	2.1	4.3
C12	.1UF	4	I-1	26.7	1.9
C13	.1UF	4	I-2	28.5	3.3
C14	.1UF	4	J-2	29.1	3.3
C15	.1UF	4	J-1	29.7	1.9
C16	.1UF	3	H-4	23.0	9.7
C17	.1UF	3	H-4	23.7	9.7
C18	.1UF	4	I-5	26.1	12.3
C19	.1UF	3	H-4	24.4	9.7
C20	.1UF	4	J-2	29.7	3.3
C21	.1UF	4	J-1	29.1	1.9
C22	.1UF	4	I-1	28.5	1.9
C23	.1UF	4	H-2	25.5	3.3
C24	.1UF	4	I-1	24.9	3.3
C25	.1UF	4	I-1	27.9	1.9
C26	.1UF	4	H-4	25.5	9.3
C27	.1UF	4	I-4	26.1	9.3
C28	.1UF	4	I-2	24.9	4.8
C29	.1UF	4	I-4	27.3	9.3
C30	.1UF	4	I-4	27.3	9.3
C31	.1UF	4	I-4	27.3	7.8
C32	.1UF	4	I-5	27.3	12.3
C33	.1UF	4	I-4	25.5	7.8
C34	.1UF	4	I-5	27.9	12.3
C35	.1UF	4	I-4	26.7	7.8
C36	.1UF	4	I-4	27.3	7.8
C37	NOT STUFFED	1	D-6	11.4	13.9
C38	.1UF	1	A-6	1.9	14.2
C39	NOT STUFFED	1	D-6	12.3	14.0
C40	.1UF	4	H-2	24.3	13.3
C41	.1UF	4	I-5	27.9	10.8
C42	.1UF	4	I-4	26.7	13.3
C43	.1UF	4	H-5	24.3	12.3
C44	.1UF	4	I-5	28.5	10.8
C45	100PF	1	D-5	11.2	19.0
C46	.1UF	4	H-6	24.4	14.1
C47	22PF	4	A-8	11	18.1
C48	22PF	4	A-8	21	18.1
C49	.1UF	4	I-6	28.0	14.1
C50	.1UF	4	I-5	28.5	12.3
C51	.1UF	4	I-4	26.1	13.3
C52	.1UF	5	I-6	26.8	14.3
C53	.1UF	5	I-6	28.4	14.3
C54	.1UF	5	I-6	26.3	14.3
C55	10UF	5	I-6	27.5	14.3
C56	100 PF	5	H-7	24.3	16.0
C57	.1UF	4	J-5	29.1	10.9
C58	.1UF	4	J-5	29.7	12.3
C59	22UF	1	F-2	14.3	3.9
C60	.1UF	1	F-2	16.1	3.9
C61	.1UF	1	F-2	15.5	3.9
C62	22UF	2	F-2	14.9	3.9
C63	.1UF	2	F-2	15.6	16.3
C64	.1UF	4	I-4	28.5	9.3
C65	.1UF	4	J-4	29.1	7.8
C66	.1UF	4	J-4	29.1	9.3
C67	.1UF	4	H-5	24.3	10.8
C68	.1UF	4	H-5	29.1	6.3
C69	.1UF	4	H-4	24.9	7.8
C70	22UF	5	H-6	24.9	14.3
C71	.1UF	5	H-5	25.6	12.7
C72	.1UF	5	I-7	28.0	16.3
C73	.1UF	4	H-4	24.9	9.3
C74	.1UF	4	H-4	24.3	13.3
C75	.47UF	3	H-6	23.4	13.7
C76	.001UF	3	I-7	26.3	15.8
C77	.33UF	3	H-5	24.8	14.2
C78	.1UF	3	I-6	28.7	14.0
C80	.001UF	3	I-6	27.1	14.8
C81	.1UF	3	I-6	26.4	14.4
C82	.1UF	3	J-7	30.0	15.1
C83	.470UF	3	I-7	28.2	15.4
C84	.470UF	3	J-6	29.5	14.5
C85	.1UF	4	H-6	25.0	14.1
C86	.1UF	4	H-6	25.6	14.1
C87	.1UF	4	H-4	27.4	14.1
C88	22PF	1	B-5	6.1	10.1
C89	22PF	1	C-5	7.1	11.8
C90	.1UF	4	J-4	29.7	4.8
C91	.1UF	4	J-2	29.7	4.8
C92	.1UF	4	J-3	29.7	6.3
C93	.1UF	4	H-3	24.3	7.8
C94	.1UF	4	H-4	25.5	7.8
C95	.1UF	4	H-5	24.9	12.3
C96	68PF	1	F-8	16.4	17.9
C97	.1UF	1	G-8	20.9	18.4
C98	.1UF	4	I-6	26.6	14.1
C99	.1UF	4	I-6	26.9	14.1
C100	.1UF	4	J-5	29.1	12.3
C101	.1UF	2	I-7	26.4	16.7
C102	.1UF	4	I-6	29.1	4.8
C103	.1UF	4	I-3	26.7	6.3
C104	.1UF	4	H-2	25.5	4.8
C105	.1UF	4	H-2	24.9	10.8
C106	.1UF	4	I-2	28.5	4.8
C107	.1UF	4	I-7	27.3	6.3
C108	.1UF	4	I-2	26.1	4.8
C109	.1UF	4	J-4	29.7	7.8
C110	.1UF	4	H-3	24.3	6.3
C111	.1UF	4	I-1	27.3	1.9
C112	.1UF	4	I-2	27.9	4.8
C113	.1UF	4	I-3	27.9	6.3
C114	.1UF	4	I-2	26.7	4.8
C115	.1UF	4	H-3	24.9	6.3
C116	.1UF	4	H-3	25.5	6.3
C117	.1UF	4	H-5	25.5	12.3
C118	.1UF	1	H-8	22.5	18.4
C119	100UF	1	H-8	23.4	18.4
C120	NOT STUFFED	4	J-6	28.9	14.1
C121	.1UF	4	I-5	26.7	10.8
C122	.1UF	4	I-5	27.3	10.8
C123	.1UF	4	H-2	24.3	4.8
C124	.1UF	4	I-3	28.5	6.3
C125	.1UF	4	I-3	27.3	4.8
C126	.1UF	4	I-3	26.1	6.3
C127	.1UF	1	C-5	8.8	11.5
C128	.1UF	1	F-7	9.7	12.4
C129	.1UF	1	C-6	8.8	12.4
D1	IN5908	6	A-2	2.7	4.2
D2	IN6263	1	A-2	2.2	13.9
D3	IN6263	1	A-6	1.9	13.4
D4	IN6263	1	A-6	2.2	13.1
D5	IN4148	1	E-8	25.5	17.7
D6	IN4148	1	E-7	15.5	16.2
D7	IN4148	1	E-7	15.8	17.0
D8	82V	6	F-8	15.8	12.8
D9	10V	6	F-5	16.4	12.2
D10	RED LED	1	H-7	23.5	16.7
D11	GREEN LED	6	E-6	15.1	13.5

COMP.	ID	SHEET	GRID	X	Y
D12	GREEN LED	6	E-6	15.8	13.5
D13	GREEN LED	6	F-7	17.1	15.4
D14	GREEN LED	6	F-6	16.4	13.5
D15	IN4148	1	J-7	29.6	15.6
D16	IN4148	5	J-5	29.0	1.9
D17	IN4148	5	J-5	29.7	12.3
D18	IN4148	5	I-5	28.3	12.3
D19	330K	5	I-5	28.3	1.9
D20	IN4148	5	J-5	29.0	11.3
D21	IN4148	5	J-5	29.7	11.3
D22	5V	6	E-5	15.1	12.2
D23	IN4148	4	C-6	8.4	13.4
DPSV1	DIPSV	3	D-2	12.1	2.5
DPSV2	DIPSV	3	D-2	12.1	4.9
J1	HEADER 2X4	1	E-6	14.2	14.8
JSMART	NOT STUFFED	2	I-6	28.2	12.7
L1	FERRITE	5	I-6	27.8	13.5
PIA	BEAD	6	C-3	6.9	3.7
PIB	96 DIN	6	D-2	10.9	3.7
PIB	96 DIN	6	E-2	14.8	3.7
PIB	96 DIN	6	E-2	21.3	3.7
PIB	96 DIN	6	H-2	28.3	3.7
P2C	96 DIN	6	J-2	29.5	3.7
Q1	2N6070	4	C-1	8.5	1.8
Q2	2N6070	4	C-1	9.3	1.2
Q3	2N6070	4	C-1	8.5	1.6
Q4	2N6070	4	C-1	8.5	1.6
Q5	2N6070	4	C-1	8.5	5.4
Q6	2N6070	4	C-2	9.3	2.8
Q7	2N6070	4	C-2	9.3	2.8
Q8	2N6070	4	C-2	9.3	3.6
Q9	2N6070	4	C-2	8.5	4.8
Q10	2N6070	4	C-3	9.3	5.2
Q11	2N6070	4	C-3	8.5	5.6
Q12	2N6070	4	C-3	9.3	6.0
Q13	2N6070	4	C-3	8.5	6.0
Q14	2N6070	4	C-3	9.3	6.8
Q15	2N6070	4	C-3	8.5	7.2
Q16	2N6070	4	C-3	8.5	7.6
Q17	RS170	3	I-7	25.7	15.3
Q18	MPS3646	3	B-2	5.6	4.1
Q21	ULN2813	4	C-3	28.3	6.2
R1	22K	1	B-7	6.1	16.8
R2	20K	1	A-7	1.8	16.9
R3	20K	1	B-7	17.7	16.8
R4	1MEG	1	E-8	13.6	18.3
R5	NOT STUFFED	1	A-8	2.6	17.3
R6	10K	3	I-6	18.1	1.9
R7	10K	3	F-7	17.5	16.7
R8	10K	3	F-7	16.9	16.7
R9	10K	3	F-7	16.9	16.3
R10	22K	3	F-7	17.5	15.8
R11	22K	3	F-7	16.9	15.8
R12	4.7K	1	A-7	14.7	1.9
R13	4.7K	1	A-4	10	9.7
R14	NOT STUFFED	4	E-8	14.7	17.8
R15	NOT STUFFED	4	D-6	11.9	12.9
R16	NOT STUFFED	4	E-8	14.3	17.8
R17	NOT STUFFED	4	D-6	11.5	12.9
R18	NOT STUFFED	4	D-6	12.5	17.7
R19	4.7K	4	D-6	10.2	13.6
R20	NOT STUFFED	4	E-8	14.5	17.8
R21	NOT STUFFED	4	D-6	11.7	12.9
R22	12K	4	G-5	21.8	12.0
R23	12K	4	G-5	21.2	12.3
R24	12K	3	G-3	21.6	6.7
R25	NOT STUFFED	3	G-3	22.4	6.7
R26	NOT STUFFED	3	G-3	27.5	6.7
R27	68K	3	H-3	23.4	6.7
R28	NOT STUFFED	3	I-4	27.7	9.6
R29	470	3	H-5	23.7	6.0
R30	100	3	H-5	24.8	11.7
R31	100	3	H-5	24.3	11.8
R32	100	3	H-5	24.3	11.9
R33	100	3	H-5	23.3	12.0
R34	100	3	H-5	22.8	12.1
R35	100	3	G-5	22.2	12.2
R36	10	3	G-5	21.8	12.3
R37	10	3	G-5	21.3	12.4
R38	4.7K	4	A-5	12.3	14.4
R39	4.7K	4	C-6	8.2	14.3
R40	4.7K	4	F-8	17.6	17.7
R41	4.7K	5	C-7	17.4	5.9
R42	4.7K	5	A-2	2.1	2.5
R43	470K	3	H-2	23.0	4.5
R44	820	1	D-5	13.1	14.1
R45	4.7K	3	D-5	12.5	12.3
R46	4.7K	3	D-5	11.9	12.2
R47	4.7K	3	F-2	14.4	10.5
R48	NOT STUFFED	4	A-4	2.1	10.9
R49	2KRD	1	A-8	1.4	18.2
R50	2KRD	1	A-8	1.6	18.0
R51	62K	1	D-8	10.2	18.9
R52	27K	1	C-8	8.2	18.5
R53	1W	4	A-8	11.6	17.3
R54	470	4	A-8	2.4	17.7
R55	4.7K	2	D-6	10.6	12.4
R56	4.7K	2	D-6	10.9	14.3
R57	4.7K	4	C-5	8.6	11.7
R58	470	3	B-2	5.2	3.7
R59	100	5	C-3	8.4	5.1
R60	100	5	C-3	7.9	5.2
R61	100	5	C-3	8.4	5.1
R62	100	5	C-3	8.9	5.0
R63	4.7K	5	C-3	8.1	5.5</





MPU Board
AS-03356-0246

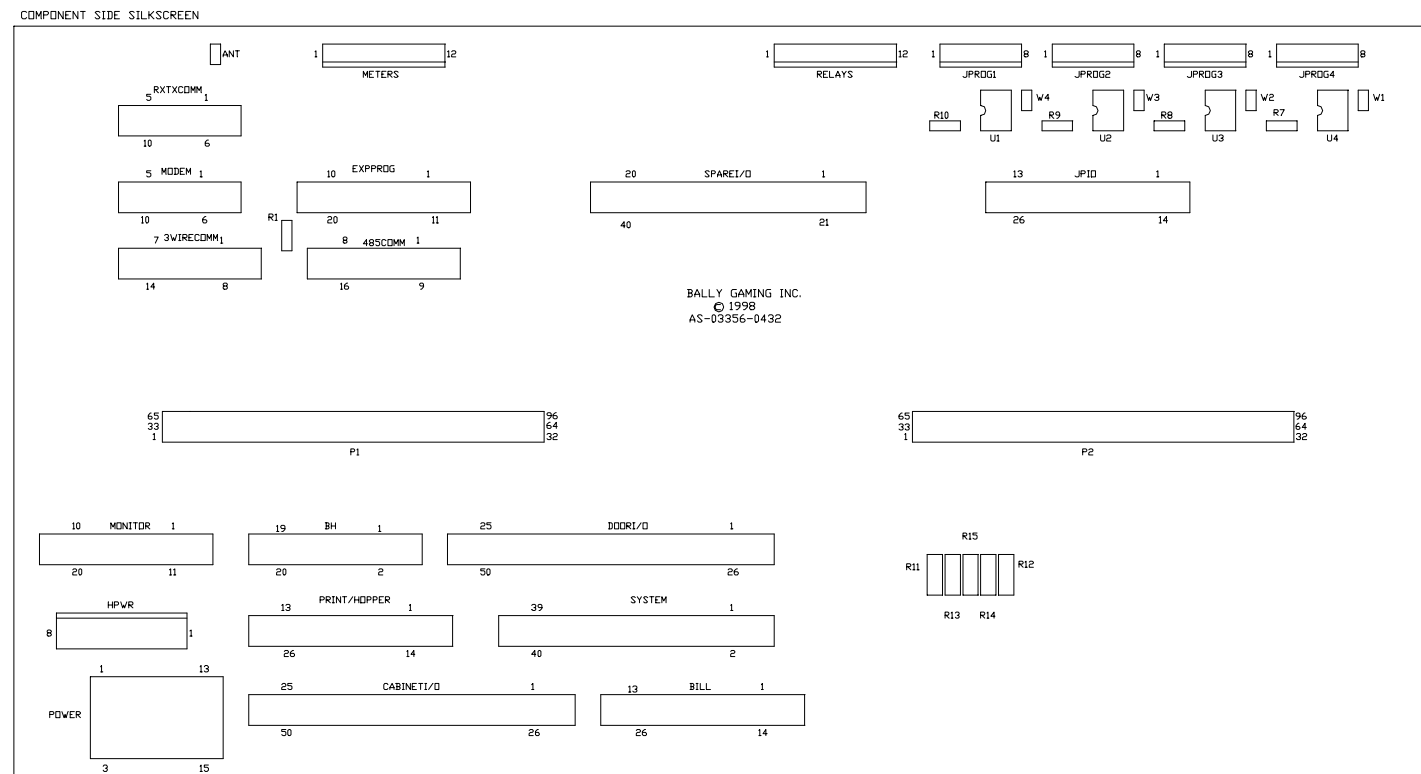
SOCKETS AND HARDWARE ITEMS				
Item	Quantity	Reference	BALLY Part No.	Description
1	3	QP1,U9,U10	E-01006-0018	SOCKET 18 PIN .3 IN.
2	1	R100	E-00599-0045	SOUND ADJUSTMENT STEM
3	1	U3	E-01006-0008	SOCKET 8 PIN .3"
4	1	U8	E-01006-0020	SOCKET 20 PIN .3"
5	2	U28,U18	E-01006-0040	SOCKET 40 PIN .6"
6	1	U19	E-01006-0028	SOCKET 28 PIN .6"
7	1	U25	E-01006-0048	SOCKET 48 PIN .6"
8	1	U31	E-01006-0068	SOCKET 68-PIN PLCC
9	5	U39,U57,U65,U76,U85	E-01006-0024	SOCKET 24 PIN .3"
10	1	U44	E-01006-0132	SOCKET 132-PIN
11	14	U46,U51,U52,U55,U58,U59, U61,U67,U73,U78,U79,U80, U86,U87	E-01006-0032	32 PIN SOCKET .6"
12	7	W12,W15,W20,W23,W35 W22,W26	E-00882	JUMPER BERG #65474-002 JUMPER PINS 1 & 2
13	1	W17	E-00882	JUMPER BERG #65474-002 JUMPER PINS 2 & 3
14	1	Y2	P-00150-0305	INSULATOR,CRYSTAL,HC-49U
COMPONENTS				
Item	Quantity	Reference	BALLY Part No.	Description
1	1	B1	E-00628-0023	BATTERY 3V @ 1800MAH SAFT LS6
2	99	C1,C2,C3,C4,C5,C6,C7,C8, C10,C12,C13,C14,C15,C16, C17,C18,C19,C20,C21,C22, C23,C24,C25,C26,C27,C28, C29,C30,C31,C33,C35,C36, C38,C40,C41,C42,C43,C44, C46,C49,C51,C52,C53,C54, C57,C58,C60,C61,C63,C64, C65,C66,C67,C68,C69,C73, C74,C78,C82,C85,C86,C87, C90,C91,C92,C93,C94,C95, C97,C98,C99,C100,C101, C102,C103,C104,C105,C106, C107,C108,C109,C110,C111, C112,C113,C114,C115,C116, C117,C118,C121,C122,C123, C124,C125,C126,C127,C128, C129	CCP-A3_50-0104	CER/CAP,AXIAL____,X7R____50V____0.1_MF
3	2	C45,C9	CCP-A1_50-0101	CER/CAP,AXIAL____,COG____50V____100_PF
4	1	C11	E-00586-0331	CAPACITOR 470UF 25V ELECTROLYTIC AXIAL
5	3	C32,C34,C50	E-00586-0281	CAPACITOR 1UF TANTALUM RDL
6	32	W1,J1,W2,W3,R5,W10,R14, R15,R16,R17,W18,R20,R21, R25,R26,W28,R28,W29,W32, W33,W37,C37,C39,R48,R87, R90,R95,R98,R113,R115, C120,SMART,R77,C79	NOT STUFFED	
7	4	C47,C48,C88,C89	CCP-A1_50-0220	CER/CAP,AXIAL____,COG____50V____22_PF
8	1	C55	E-00586-0363	CAPACITOR 10UF 10V TANTALUM AXIAL
9	1	C56	CCP-A1_50-0151	CER/CAP,AXIAL____,COG____50V____150_PF
10	3	C59,C62,C70	E-00586-0371	CAPACITOR 22UF 16V TANTALUM AXIAL
11	3	C71,C72,C81	E-00586-0309	CAPACITOR 1UF 20V TANTALUM AXIAL
12	1	C75	CCP-A3_50-0474	CER/CAP,AXIAL____,X7R____50V,0.47_MF
13	2	C76,C80	CCP-A3_50-0102	CER/CAP,AXIAL____,X7R____50V____.001_MF
14	1	C77	CCP-A3_50-0333	CER/CAP,AXIAL____,X7R____50V____.033_MF
15	2	C84,C83	E-00586-0355	CAPACITOR 470UF 16V ELECTROLYTIC RADIAL
16	1	C96	CCP-A1_50-0680	CER/CAP,AXIAL____,COG____50V____.68_PF
17	1	C119	E-00586-0373	CAP, 100UF 10V ELEC. RD
18	2	DIPSW1,DIPSW2	E-00677	DIP SWITCH 16 PIN
19	1	D1	E-00598-0049	TRANSIENT SUPPRESSOR (DIODE) 1N5908 6.0VBR 500MW
20	DELETED			
21	31	D2-7,D15-21,D23-40	E-00587-0014	DIODE 1N4148 100V 500MW
22	1	D8	E-00598-0054	ZENER 8.2V 1/2W 500MW 1N756A
23	1	D9	E-00598-0055	ZENER 10V 1/2W 500MW 1N758A
24	1	D10	E-00679-0028	HLMP-3001 OPT 010 RED
25	4	D11,D12,D13,D14	E-00679-0027	HLMP-3502 OPT 010 GREEN
26	1	D22	E-00598-0056	ZENER 3.0V 1/2W 500MW 1N4372A
27	1	L1	E-00904-0005	FERRITE BEAD FAIR-RITE 2743001111
28	2	P1,P2	E-00965	CONNECTOR 96 PIN DIN R/A MALE AMP 532505-1
29	3	QP1,U9,U10	E-00620-0133	TRANSISTOR ULN2813 DARLINTON 18 PIN DIP STD
30	16	Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8, Q9,Q10,Q11,Q12,Q13,Q14, Q15,Q16	E-00585-0099	TRIAC (XSTR) 2N6070A TO-126
31	1	Q17	E-00585-0124	BS170 NCHANNEL MOSFET TO-92
32	1	Q18	E-00585-0123	MPS3646 SWITCHING TRANSISTOR NPN TO-92
33	27	RP1,RP4,RP7,RP8,RP9,RP10, RP11,RP12,RP14,RP16,RP20, RP21,RP23,RP24,RP26,RP28, RP29,RP30,RP31,RP32,RP35, RP36,RP37,RP38,RP39,RP40, RP41	RPK-C09S5-103	R ARRAY,1COM,09PIN,SIP____.5%,10K OHM
34	8	RP2,RP5,RP6,RP13,RP15, RP17,RP18,RP22	RPK-I16D5-221	R ARRAY,ISOL,16PIN,DIP____.5%, 220 OHM
35	2	RP19,RP3	RPK-I16D5-100	R ARRAY,ISOL,16PIN,DIP____.5%, 10 OHM
36	2	RP33,RP34	RPK-I16D5-101	R ARRAY,ISOL,16PIN,DIP____.5%, 100 OHM
37	2	R1,R73	RES-0F0Q5-222	RES,CF,1/4W, 5%, 2.2K OHM
38	2	R3,R2	RES-0F0Q5-202	RES,CF,1/4W, 5%, 2.0K OHM
39	2	R4,R53	RES-0F0Q5-105	RES,CF,1/4W, 5%, 1.0M OHM
40	5	R6,R7,R8,R65,R76	RES-0F0Q5-102	RES,CF,1/4W, 5%, 1.0K OHM
41	3	R9,R10,R11	RES-0F0Q5-223	RES,CF,1/4W, 5%, 22K OHM

COMPONENTS Continued				
Item	Quantity	Reference	BALLY Part No.	Description
42	22	R12,R13,R18,R19,R38,R39, R40,R41,R42,R45,R46,R47, R55,R56,R57,R63,R64,R72, R81,R83,R92,R99	RES-0F0Q5-472	RES,CF,1/4W, 5%, 4.7K OHM
43	2	R23,R22	RES-0F0Q5-123	RES,CF,1/4W, 5%, 12K OHM
44	3	R24,R27,R114	RES-0F0Q5-683	RES,CF,1/4W, 5%, 68K OHM
45	3	R29,R54,R58	RES-0F0Q5-471	RES,CF,1/4W, 5%, 470 OHM
46	10	R30,R31,R32,R33,R34,R35, R59,R60,R61,R62	RES-0F0Q5-101	RES,CF,1/4W, 5%, 100 OHM
47	3	R36,R37,R94	RES-0F0Q0-100	RES,CF,1/4W, 10%, 10 OHM
48	3	R43,R82,R97	RES-0F0Q5-474	RES,CF,1/4W, 5%, 470K OHM
49	2	R44,R66	RES-0F0Q5-821	RES,CF,1/4W, 5%, 820 OHM
50	5	R49,R50,R67,R109,R116	M-01777-0240	JUMPER WIRE
51	1	R51	RES-0F0Q5-622	RES,CF,1/4W, 5%, 6.2K OHM
52	1	R52	RES-0F0Q5-273	RES,CF,1/4W, 5%, 27K OHM
53	3	R68,R69,R71	RES-0F0Q5-750	RES,CF,1/4W, 5%, 75 OHM
54	8	R70,R110,R111,R112,R117, R118,R119,R120	RES-0F0Q5-680	RES,CF,1/4W, 5%, 68 OHM
55	2	R74,R75	RES-0F0Q5-103	RES,CF,1/4W, 5%, 10K OHM
56	DELETED			
57	1	R78	RES-0F0Q5-2D2	RES,CF,1/4W, 5%, 2.2 OHM
58	1	R79	RES-0F0Q5-1D0	RES,CF,1/4W, 5%, 1.0 OHM
59	2	R84,R80	RES-0F0Q5-221	RES,CF,1/4W, 5%, 220 OHM
60	1	R85	RES-0F0Q5-561	RES,CF,1/4W, 5%, 560 OHM
61	2	R106,R86	RES-0F0Q5-334	RES,CF,1/4W, 5%, 330K OHM
62	1	R88	RES-0F0H5-101	RES,CF,1/2W, 5%, 100 OHM
63	1	R89	RES-0F0Q1-1181	RES,CF,1/4W, 1%, 1.18K OHM
64	1	R91	RES-0F0Q1-102	RES,CF,1/4W, 1%, 1.0K OHM
65	1	R93	RES-0F0Q5-684	RES,CF,1/4W, 5%, 680K OHM
66	1	R96	RES-0F0Q5-473	RES,CF,1/4W, 5%, 47K OHM
67	1	R100	E-00599-0044	POTENTIOMETER 1K OHM SINGLE TURN
68	1	R101	RES-0F0Q5-0331	RES,CF,1/4W,5%,330 OHM
69	1	R102	RES-0F0H5-240	RES,CF,1/2W, 5%, 24 OHM
70	1	R103	RES-0F0H5-0181	RES,CF,1/2W,5%,180 OHM
71	2	R105,R104	RES-0F0H5-0681	RES,CF,1/2W,5%,680 OHM
72	1	R107	RES-0F0Q5-206	RES,CF,1/4W, 5%, 20M OHM
73	1	R108	RES-0F0Q1-1470	RES,CF,1/4W, 1%, 147 OHM
74	1	SW1	E-00108-0299	SWITCH MICRO RESET
75	1	U1	E-00620-0610	IC HCPL3700 8-PIN DIP
76	8	U2,U16,U24,U26,U27,U50, U56,U64	E-00620-0305	IC 74HC244 OCTAL BUFFER/LINE DRV 3-STATE OUTPUTS 20-PIN DIP
77	1	U3	E-00620-0652	IC NMC93C56 E2 ROM
78	2	U5,U4	E-00620-0681	IC MAX1406
79	2	U6,U7	DELETED	
80	6	U8,U14,U20,U21,U22,U23	E-00620-0388	IC SN74HC273 OCTAL D-TYPE FLIP FLOP 20-PIN DIP
81	5	U11,U15,U17,U42,U62	E-00620-0329	IC SN74HC74 DUAL D-TYPE FLIP-FLOP POSITIVE-EDGE TRIG 14-PIN DIP
82	1	U12	E-00620-0470	IC SN75ALS194
83	1	U13	E-00620-0471	IC SN75ALS195
84	1	U18	E-00620-0657	IC YM2149 SOUND CHIP 40PIN
85	1	U19	E-00620-0631	IC 82510 SERIAL CONTROLLER
86	1	U25	E-00620-0651	IC MC68901 (MFP) MULTIFUNCTION PERIPHERAL 48-PIN DIP
87	1	U28	E-00620-0394	IC MC68681
88	4	U29,U30,U36,U43	E-00620-0291	IC 74HC245 OCTAL BUS TRANSCEIVER 3-STATE 20-PIN DIP
89	1	U31	E-00620-0639	IC PL63484 PLCC 9.8 MHZ ACRTC 68-PIN (HD63484CP98)
90	2	U35,U32	E-00620-0502	IC SN74HC14 HEX INVERTER SCHMITT TRIGGERED 14-PIN DIP
91	1	U33	E-00620-0661	IC SN74HC03
92	1	U34	E-00620-0638	DS1202, RTC
93	1	U37	E-00620-0665	IC SN74HCU04 HEX INV. 14-PIN DIP
94	1	U38	E-00620-0526	IC SN74HC165 8-BIT PARALLEL-IN SERIAL-OUT SHIFT REG 16-PIN DIP
95	1	U39	E-01055-0026	PROGRAMMED PAL PALCE22V10-10
96	2	U40,U84	E-00620-0650	IC 74HC4060
97	1	U41	E-00620-0340	IC 74HC11 3-INPUT NAND
98	1	U44	E-00620-0640	IC MC68332 MOTO PART MC68332-CFC16 132-PIN
99	6	U45,U66,U69,U75,U82,U89	E-00620-0641	IC 628128 128K X 8 RAM 120NS 32-PIN DIP
100	10	U46,U52,U59,U67,U73,U78, U79,U80,U86,U87	PERSONALITY EPROM	NOT STUFFED FOR THIS ASSEMBLY
101	2	U47,U70	E-00620-0645	IC SN74AC04 HEX INV. 14-PIN DIP
102	1	U48	E-00620-0646	IC BT476KP50 RAMDAC 50MHZ 28-PIN DIP
103	1	U49	E-00620-0307	IC TDA2002
104	2	U51,U58	MAIN PROGRAM EPROM	NOT STUFFED FOR THIS ASSEMBLY
105	3	U53,U54,U60	E-00620-0643	IC SN74AC373 OCTAL TRANSPARENT LATCH 3-STATE OUTPUT 20-PIN DIP
106	2	U61,U55	GRAPHICS EPROM	NOT STUFFED FOR THIS ASSEMBLY
107	1	U57	E-01055-0024	PROGRAMMED PAL AMPAL 22V10-10
108	1	U63	E-00620-0615	IC TLC372 8-PIN DIP
109	1	U65	E-01055-0023	PROGRAMMED PAL AMPAL 22V10-10
110	4	U68,U74,U81,U88	E-00620-0644	IC SN74AC245 OCTAL BIDIR. TRANSCEIVER 3-STATE I/O 20-PIN DIP

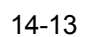
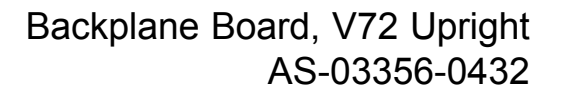
Item	Quantity	COMPONENTS Continued Reference	BALLY Part No.	Description
111	4	U69,U75,U82,U89		SEE ITEM 99
112	1	U71	E-00620-0389	IC SN74HC139 DUAL 1 OF 4 DECODER/DEMULTIPLEXER 16-PIN DIP
113	1	U72	E-00620-0614	IC TL7702A
114	1	U76	E-01055-0025	PROGRAMMED PAL PALCE22V10-10
115	4	U77,U83,U90,U91	E-00620-0082	IC SN74LS165 8-BIT PARALLEL-IN SERIAL-OUT SHIFT REG 16-PIN DIP
116	1	U85	E-01055-0022	PROGRAMMED PAL AMPAL 22V10-10
117	1	VR1	E-00585-0122	LM337LZ
118	1	V1	E-00587-0059	MOTOROLA LM385BZ-2.5 TO-92
119	16	W4,W5,W6,W11,W12,W16,W19, W20,W21,W22,W23,W24,W25, W26,W35,W36	E-00766-0002	KK-100 WAFER CONNECTOR 2 PIN
120	2	W7,W8	M-00177-0240	JUMPER WIRE PINS 2 & 3
121	7	W9,W13,W14,W27,W30,W31, W34	M-00177-0240	JUMPER WIRE PINS 1 & 2
122	2	W15,W17	E-00766-0003	3 PIN HEADER KK100-3
123	2	Y1,Y3	E-00744-0020	CRYSTAL 32.768KHZ
124	1	Y2	E-00744-0019	CRYSTAL 3.6864MHZ CRYSTAL (2-LEG)
125	1	Y4	E-00744-0038	OSC 19.6608MHZ
126	1	LBL1	LBL-00110-001A	LABEL, SILICON SOFTWARE RESTRICTED RIGHTS



Backplane Board, V72 Upright
AS-03356-0432

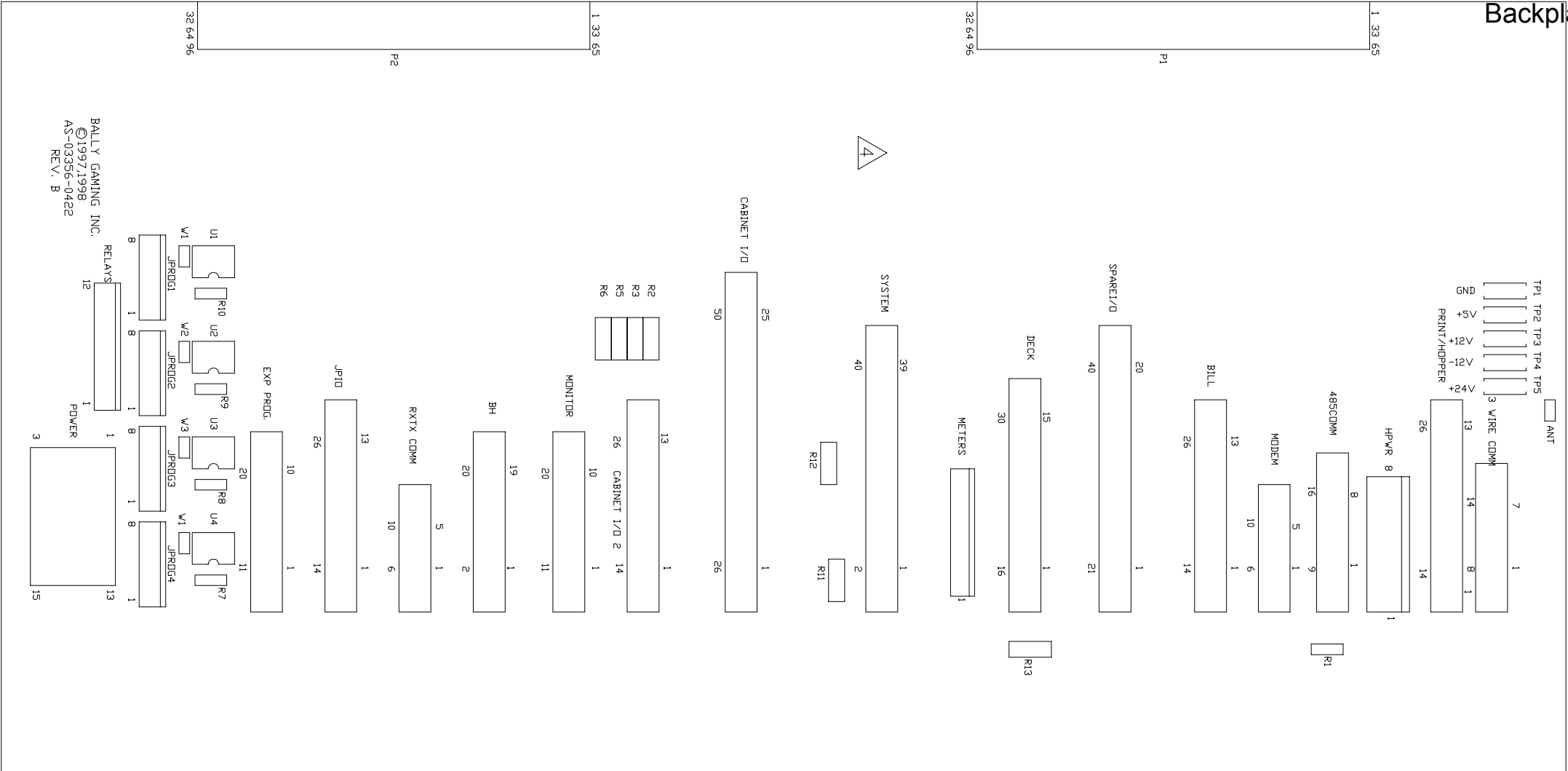


Item	Quantity	Reference	Part	Part Number
1	1	ANT	CONN. MTA-100, 2 PDS, KK-100	E-00989-0002
2	2	PRINT/HOPPER,BILL	HEADER, 26 PDS. W/LATCH	E-01076-0126
3	2	CABINET I/O,DOOR I/O	HEADER, 50 PDS. W/LATCH	E-01076-0150
4	3	MONITOR,EXP PROG,BH	HEADER, 20 PDS. W/LATCH	E-01076-0120
5	1	HPWR	CONN. MTA-156, 8 PDS	E-00978-0008
6	1	JPI0	HEADER, 26 PDS. W/LATCH	E-01076-0126
7	4	JPROG1,JPROG2,JPROG3, JPROG4	CONN. MTA-100, 8 PDS, KK-100	E-00989-0008
8	2	RELAYS,METERS	CONN. MTA-100, 12 PDS, KK-100	E-00989-0012
9	2	MODEM,RXTX COMM	HEADER, 10 PDS. W/LATCH	E-01076-0110
10	1	POWER	CONN. MAT'N/DC, AMP 350714-1	E-00998-0015
11	2	PI,P2	CONN. DIN, 96 PDS, RECEPTACLE	E-00964
12	1	R1	RES.CC,1/4W 5%, 270 OHM	RES-0C005-0271
13	4	R7,R8,R9,R10	RES.CC,1/4W 5%, 180 OHM	RES-0C005-0181
14	5	R11,R12,R13,R14,R15	RES.CC,1/2W 5%, 68 OHM	RES-0C0H5-0680
15	2	SYSTEM,SPARE I/O	HEADER, 40 PDS. W/LATCH	E-01076-0140
16	1	3 WIRE COMM	HEADER, 14 PDS. W/LATCH	E-01076-0114
17	4	U1,U2,U3,U4	SOCKET, IC, 6 PIN DIP	E-01006-006
18	4	W1,W2,W3,W4	NOT STUFFED	
19	1	485 CNM	HEADER, 16 PDS. W/LATCH	E-01076-0116

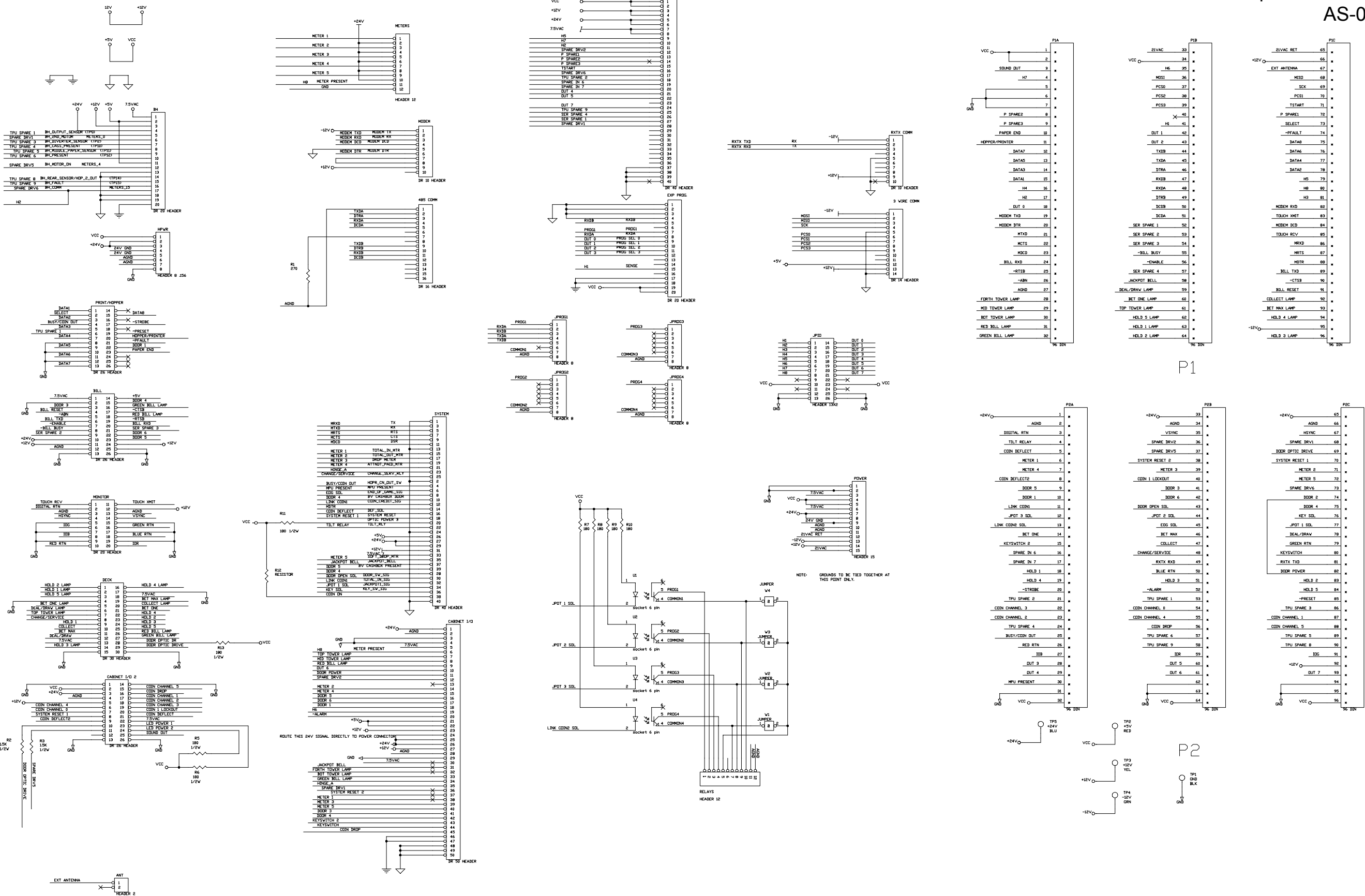


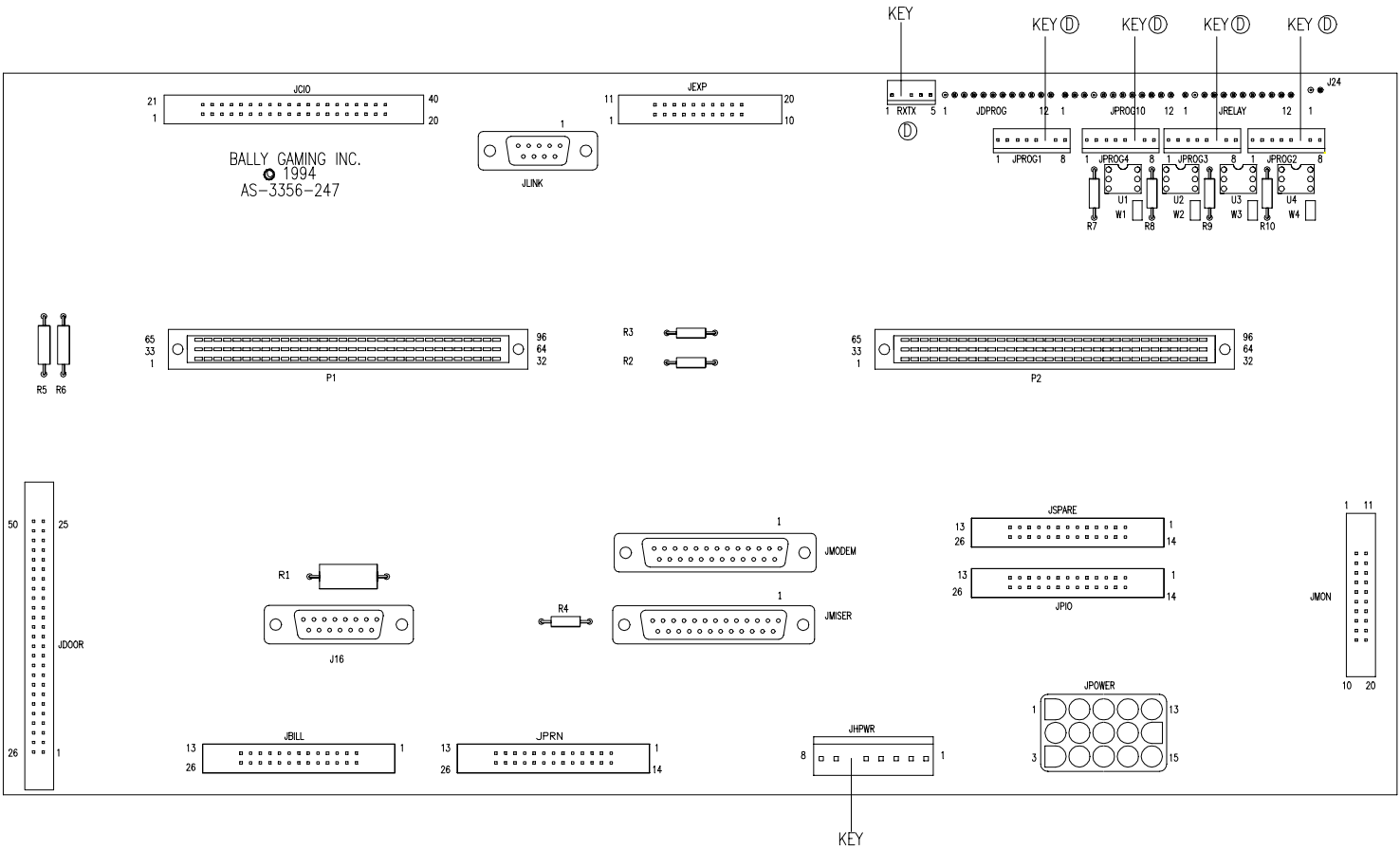
Backplane Board, V72 Slant
AS-03356-0422

COMPONENT SIDE SILKSCREEN AS-03356-0422 REV.B

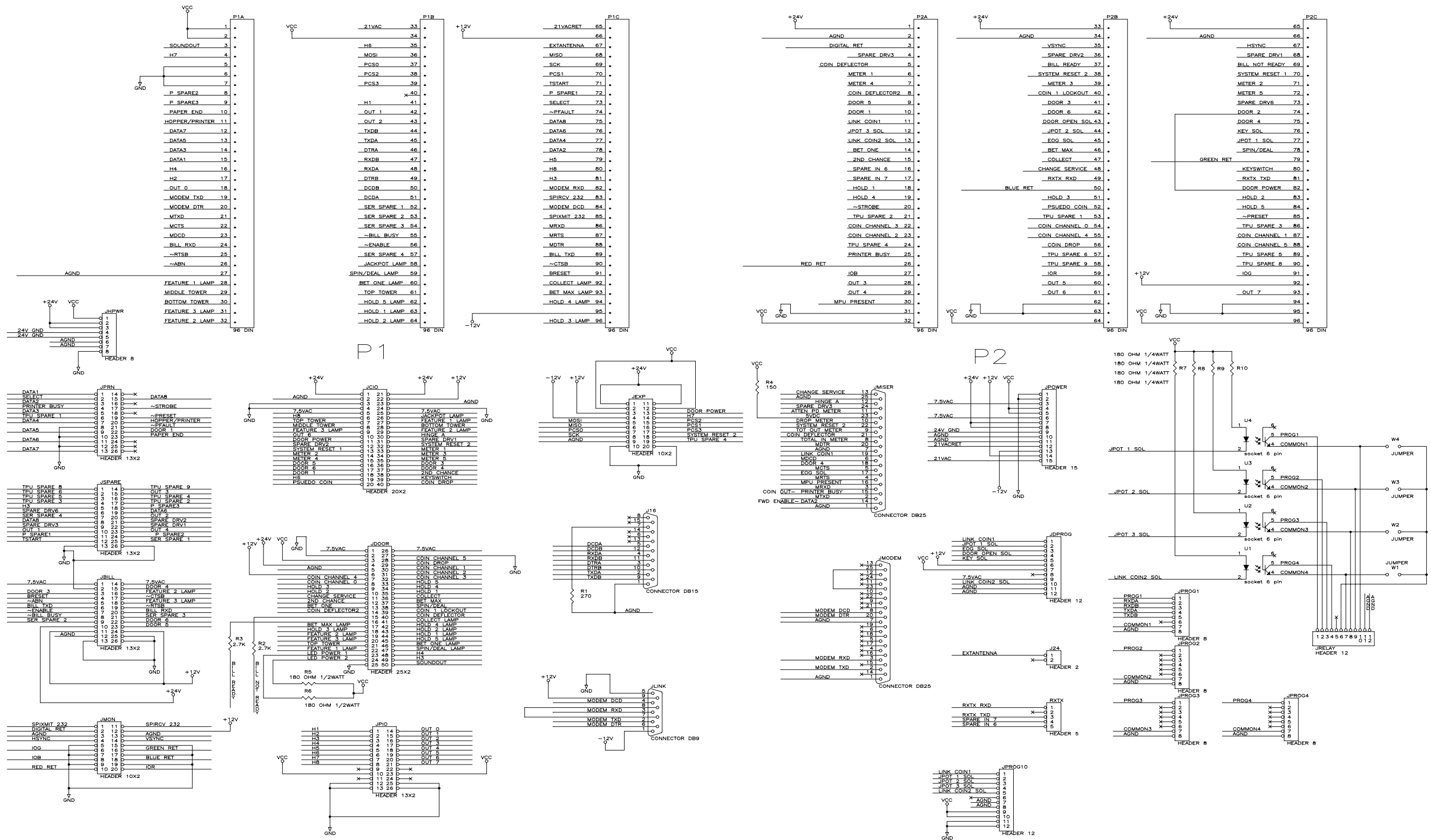


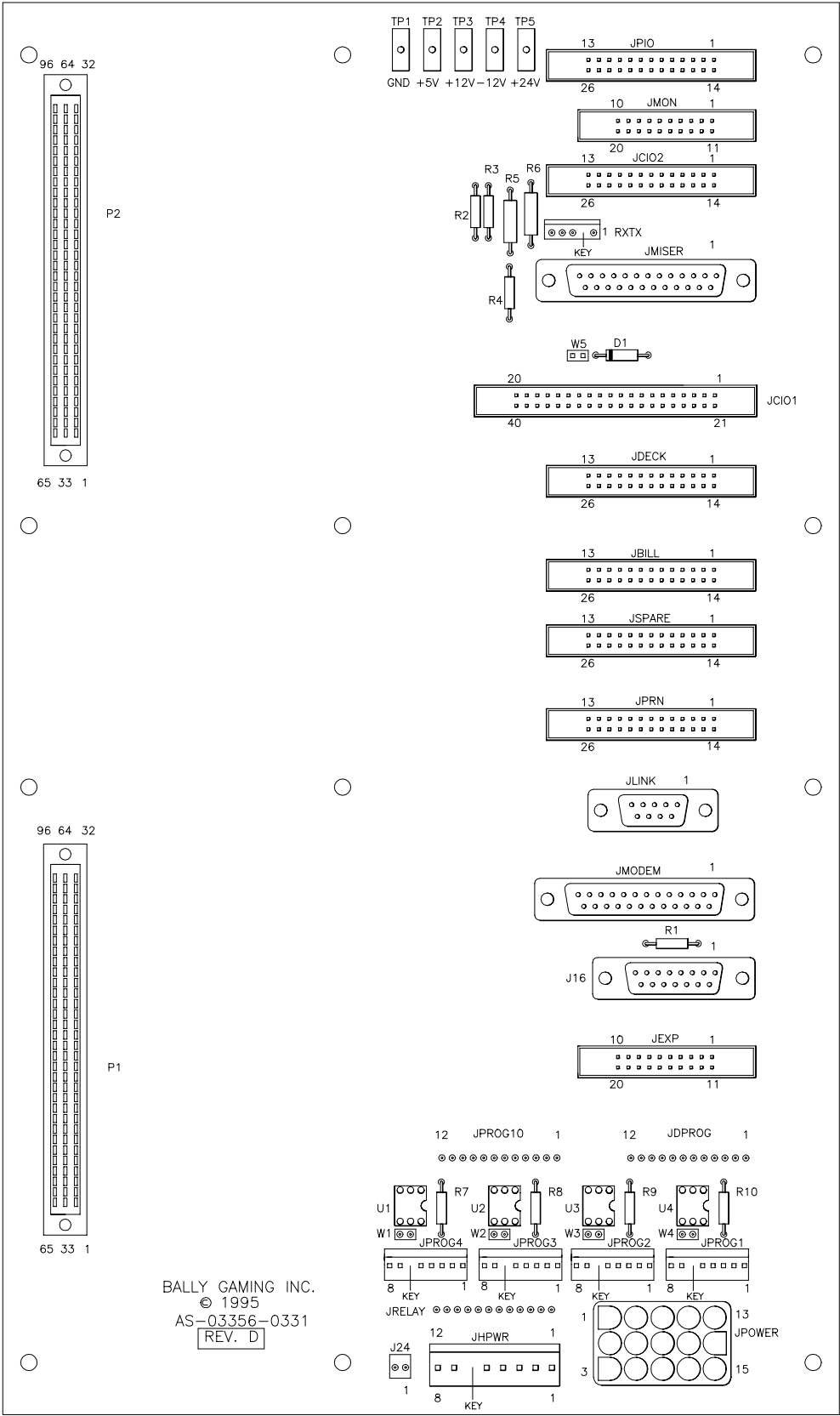
Item	Quantity	Reference	Part	Part Number
1	1	ANT	CONN, MTA-100, 2 PDS, KK-100	E-00989-0002
2	4	PRINT/HOPPER,BILL,CABINET I/O 2,JPID	HEADER, 26 PDS. W/LATCH	E-01076-0126
3	1	CABINET I/O	HEADER, 50 PDS. W/LATCH	E-01076-0150
4	3	MONITOR,EXP PROG,BH	HEADER, 20 PDS. W/LATCH	E-01076-0120
5	1	HPWR	CONN, MTA-156, 8 PDS	E-00978-0008
6	1	DECK	HEADER, 30 PDS. W/LATCH	E-01076-0130
7	4	JPRDG1,JPRDG2,JPRDG3,JPRDG4	CONN, MTA-100, 8 PDS, KK-100	E-00989-0008
8	2	RELAYS,METERS	CONN, MTA-100, 12 PDS, KK-100	E-00989-0012
9	2	MODEM,RXTX COMM	HEADER, 10 PDS. W/LATCH	E-01076-0110
10	1	POWER	CONN, MAT'N'LOC, AMP 350714-1	E-00998-0015
11	2	P1,P2	CONN, DIN, 96 PDS, RT ANGLE RECEPTACLE	E-00965-0001
12	1	R1	RES,CF,1/4W 5%, 270 OHM	RES-0F0Q5-0271
13	4	R7,R8,R9,R10	RES,CF,1/4W 5%, 180 OHM	RES-0F0Q5-0181
14	5	R5,R6,R11,R12,R13	RES,CF,1/2W 5%, 180 OHM	RES-0F0H5-0181
15	2	SYSTEM,SPARE I/O	HEADER, 40 PDS. W/LATCH	E-01076-0140
16	1	3 WIRE COMM	HEADER, 14 PDS. W/LATCH	E-01076-0114
17	4	U1,U2,U3,U4	SOCKET, IC, 6 PIN DIP	E-01006-006
18	4	W1,W2,W3,W4	NOT STUFFED	
19	1	485 COMM	HEADER, 16 PDS. W/LATCH	E-01076-0116
20	2	R2,R3	RES,CF,1/4W 5%, 1.5K	RES-0F0Q5-0152



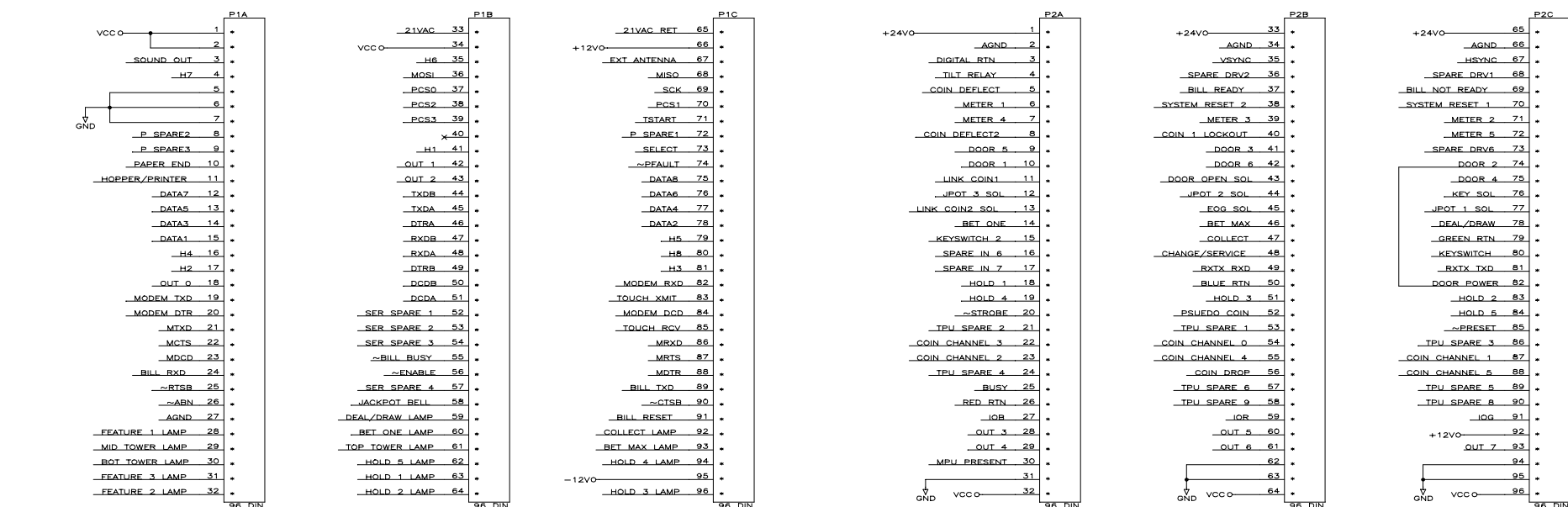


ITEM	QTY	REFERENCE	DESCRIPTION		
1	4	JSPARE,JPRN,JPIO,JBILL	HEADER 13X2	E-1076-126	26 POS STR HEADER W/LATCH AMP
2	1	JCIO	HEADER 20X2	E-1086-140	40 POS RA HEADER W/LATCH
3	1	JDOOR	HEADER 25X2	E-1076-150	50 POS STR HEADER W/LATCH
4	3	JPROG10,JRELAY,JDPORG	HEADER 12	NOT STUFFED	
5	1	JMON	HEADER 10X2	E-1076-120	20 POS STR HEADER W/LATCH
6	4	JPROG1,JPROG2,JPROG3,JPROG4	HEADER 8	E-975-8	8 POS STR MTA-100
7	1	JLINK	CONNECTOR DB9	E-910-53	DB9 FEMALE
8	2	JMODEM,JMISER	CONNECTOR DB25	E-910-52	DB25 FEMALE
9	1	JPOWER	HEADER 15	E-997-15	15 POS MATE AND LOCK BOARD MOUNT
10	1	J16	CONNECTOR DB15	E-910-51	DB15 FEMALE
11	0	J24	HEADER 2	NOT STUFFED	MTA 100 LOCKING 2 PIN
12	2	P1,P2	96 DIN	E-964	96 POS FEMALE DIN
13	1	RXTX	HEADER 5	E-975-5	5 POS STR MTA-100
14	1	R1	270	RES-0C015-0271	RES,CC, 1W, 5%, 270 OHM
15	2	R2,R3	1.5K	RES-0F0H5-0152	RES,CF,1/2W, 5%, 1.5K OHM
16	1	R4	150	RES-0F0Q5-0151	RES,CF,1/4W, 5%, 150 OHM
17	2	R5,R6	180 OHM 1/2WATT	RES-0F0H5-0181	RES,CF,1/2W, 5%, 180 OHM
18	4	R7,R8,R9,R10	180 OHM 1/4WATT	RES-0F0Q5-0181	RES,CF,1/4W, 5%, 180 OHM
19	4	U1,U2,U3,U4	SOCKET 6 PIN	E-1006-6	IC SOCKET 6 PIN DIP
20	4	W1,W2,W3,W4	JUMPER	NOT STUFFED	
21	1	JEXP	HEADER 10X2	E-1086-120	20 PIN RA HEADER W/LATCH
22	1	JHPWR	HEADER 8	E-978-8	8 POS STR MTA-156



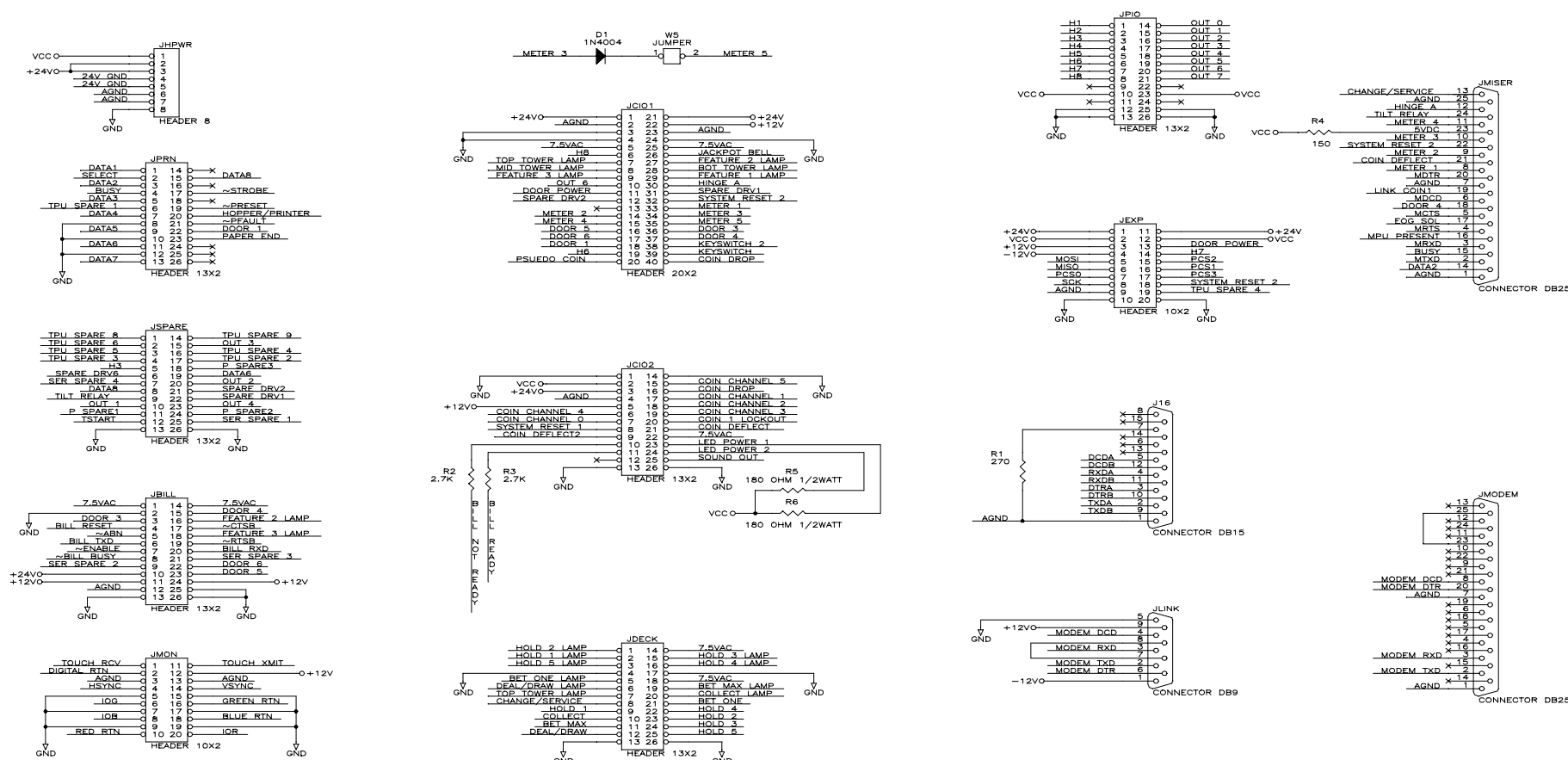


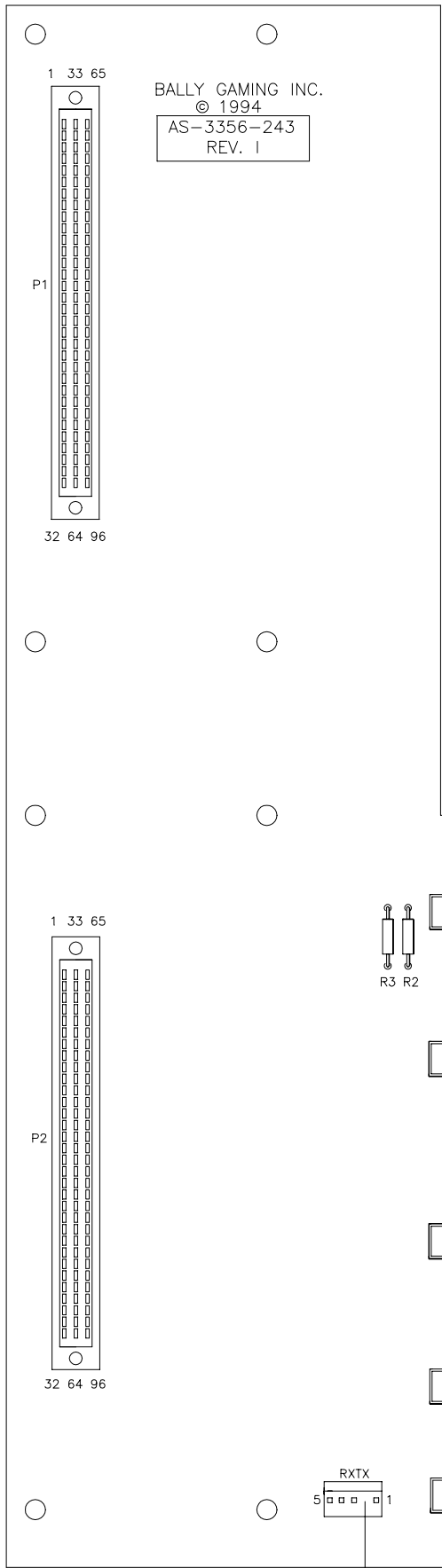
ITEM	LOCATION	PART NUMBER	DESCRIPTION	QTY.
1	JPRN,JPIO,JBILL,JCIO2,JDECK,JSPARE	E-01076-0126	HEADER, 26 POS. W/LATCH	6
2	JCIO1	E-01076-0140	HEADER, 40 POS. W/LATCH	1
3	JMON,JEXP	E-01076-0120	HEADER, 20 POS W/LATCH	2
4	JPROG1,JPROG2,JPROG3,JPROG4	E-00989-0008	CONN, MTA-100, 8 POS, KK-100	4
5	JLINK	E-00910-0053	CONN, DB9 RECEPTACLE	1
6	JMISER,JMODEM	E-00910-0052	CONN, DB25 RECEPTACLE	2
7	JPROG10,JDPORG,JRELAY	NOT STUFFED	CONN, MTA-100, 12 POS	0
8	JPOWER	E-00997-0015	HEADER, MATE N LOCK, BD MNT, 15 PIN	1
9	JHPWR	E-00978-0008	CONN, MTA-156, 8 POS	1
10	RXTX	E-00989-0005	CONN, MTA-100, 5 POS	1
11	J16	E-00910-0051	CONN, DB15 RECEPTACLE	1
12	J24	NOT STUFFED	CONN, MTA-100, 2 POS	0
13	P1,P2	E-00964	CONN, DIN, 96 POS, RECEPTACLE	2
14	D1	E-00587-0006	DIODE, 1N4004	1
15	R1	RES-0C0Q5-0271	RES,CC, 1/4W, 5%, 270 OHM	1
16	R2,R3	RES-0C0H5-0152	RES,CC,1/2W, 5%, 1.5K OHM	2
17	R4	RES-0C0Q5-0151	RES,CC,1/4W, 5%, 150 OHM	1
18	R5,R6	RES-0C0H5-0181	RES,CC,1/2W, 5%, 180 OHM	2
19	R7-R10	RES-0C0Q5-0181	RES,CC,1/4W, 5%, 180 OHM	4
20	U1-U4	E-01006-0006	SOCKET, IC, 6 PIN DIP	4
21	W1-W4	NOT STUFFED	JUMPER, 2 PIN, 0.1 SPACING	0
22	W5	E-00766-0002	JUMPER, 2 PIN, 0.1 SPACING	1
23	TP1	E-00627-0012	TEST JACK, BLACK, #39F1744	1
24	TP2	E-00627-0011	TEST JACK, RED, #39F1743	1
25	TP3	E-00627-0014	TEST JACK, YELLOW, #39F1747	1
26	TP4	E-00627-0013	TEST JACK, GREEN, #39F1745	1
27	TP5	E-00627-0015	TEST JACK, BLUE, #39F1749	1



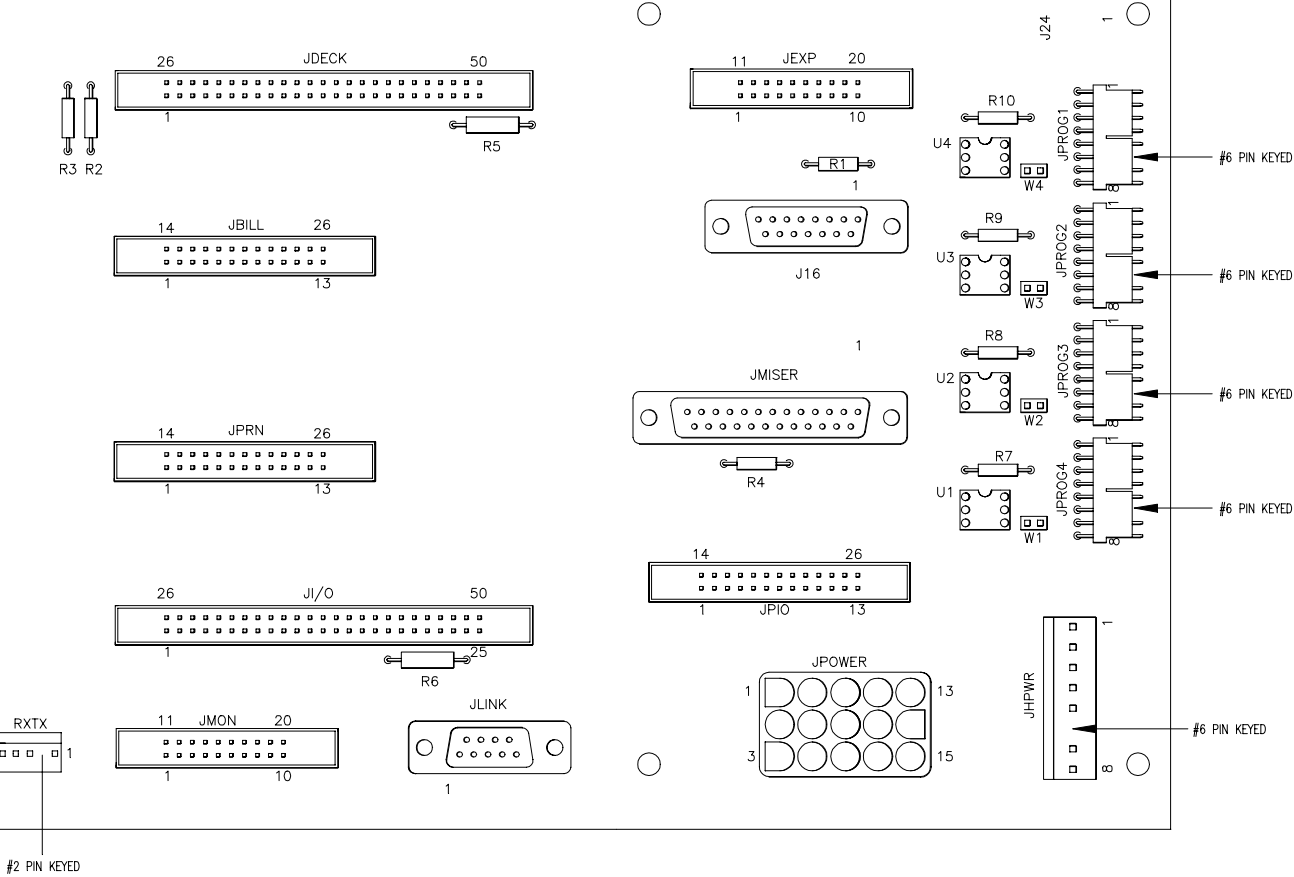
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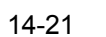
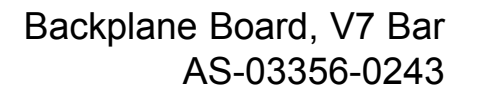
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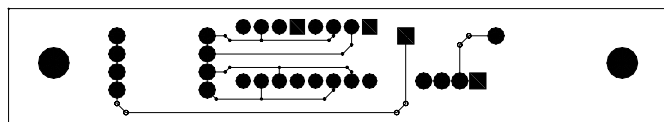


REFERENCE	BALLY P/N	DESCRIPTION	QTY
JPRN, JPIO, JBILL	E-1076-126	HEADER, 26 POS W/LATCH	3
JDECK, JIO	E-1076-150	HEADER, 50 POS W/LATCH	2
JMON, JEXP	E-1076-120	HEADER, 20 POS W/LATCH	2
JPROG1, JPROG2, JPROG3, JPROG4	E-975-8	CONN, MTA-100, 8 POS	4
JLINK	E-910-53	CONN, DB9 RECEPTACLE	1
JMISER	E-910-52	CONN, DB25 RECEPTACLE	1
JPOWER	E-997-15	HEADER, MATE AND LOCK BOARD MOUNT, 15 PIN	1
J16	E-910-51	CONN, DB15 RECEPTACLE	1
J24	NOT STUFFED	CONN, MTA-100, 2 POS	0
P1, P2	E-964	DIN, 96 POS, RECEPTACLE	2
RXTX	E-989-0005	CONN, MTA-100, 5 POS	1
R1	RES-0X015-0271	RES,MX,___1W,___5%,___270_OHM	1
R2, R3	RES-0F0H5-0152	RES,CF,1/2W,___5%,___1.5K_OHM	2
R4	RES-0C0Q5-0151	RES,CC,1/4W,___5%,___150_OHM	1
R5, R6	RES-0F0H5-0181	RES,CF,1/2W,___5%,___180_OHM	2
R7, R8, R9, R10	RES-0C0Q5-0181	RES,CC,1/4W,___5%,___180_OHM	4
U1, U2, U3, U4	E-1006-6	IC SOCKET, 6 PIN DIP	4
W1, W2, W3, W4	NOT STUFFED	JUMPER	0
JHPWR	E-978-8	CONN, MTA-156, 8 POS	1

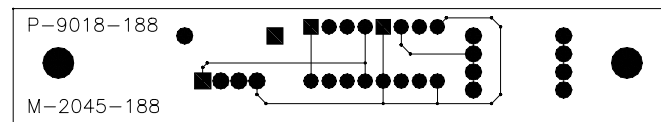




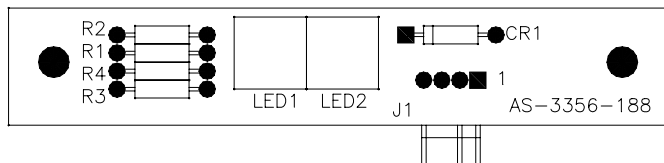
COMPONENT SIDE



SOLDER SIDE

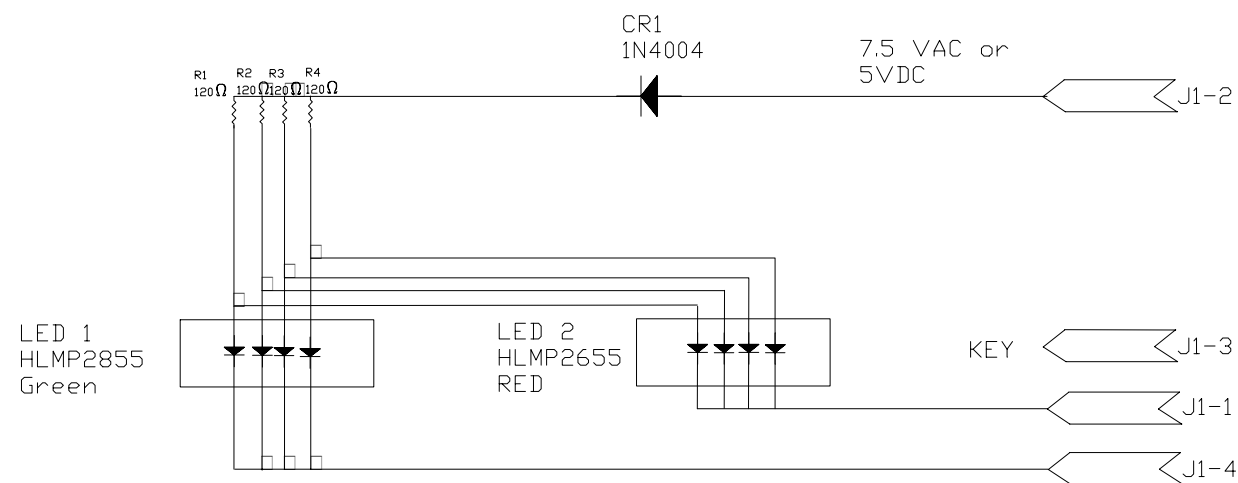


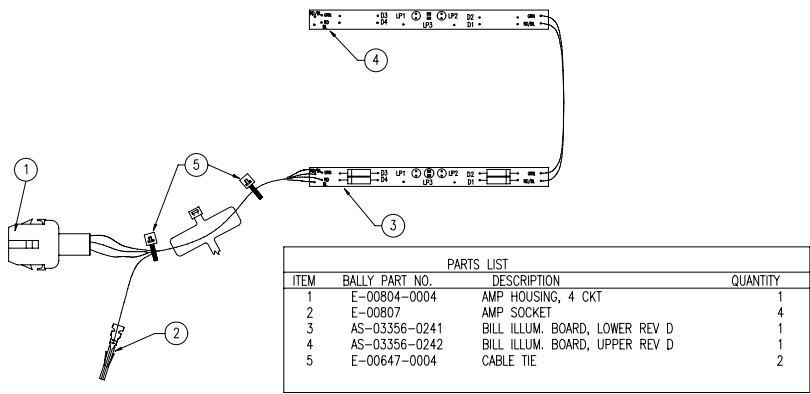
COMPONENT SIDE
SILKSCREEN



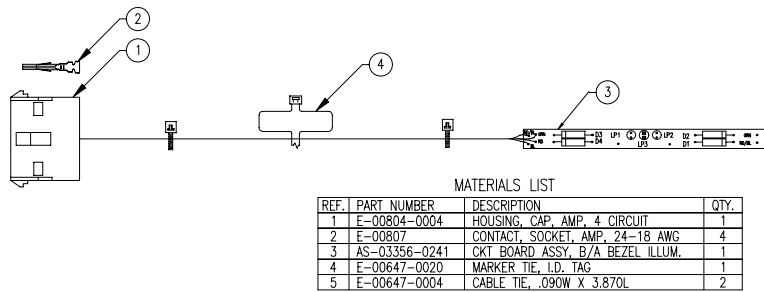
PARTS LIST

REFERENCE	PART NUMBER	DESCRIPTION	QTY
CR2	E-587-6	DIODE, 1N4004 400V 1A	1
J1	E-975-4	CONN, MTA-100 R/A 4 PIN	1
LED1	E-679-35	LED, GREEN, HLMP2855	1
LED2	E-679-34	LED, RED, HLMP2655	1
R1,R2,R3,R4	E-105-212	RES, 120 OHM, 5% .25W CF	4
	P-9018-188	PCB BARS BILL LAMPS BD.	1

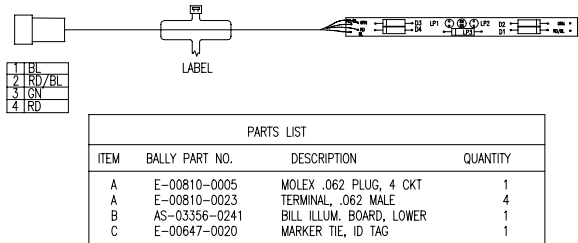




Bill Acceptor Light Board Assembly
E-00664-0496 V7 Upright



Bill Acceptor Light Board Assembly
E-00664-0497 V7 Slant

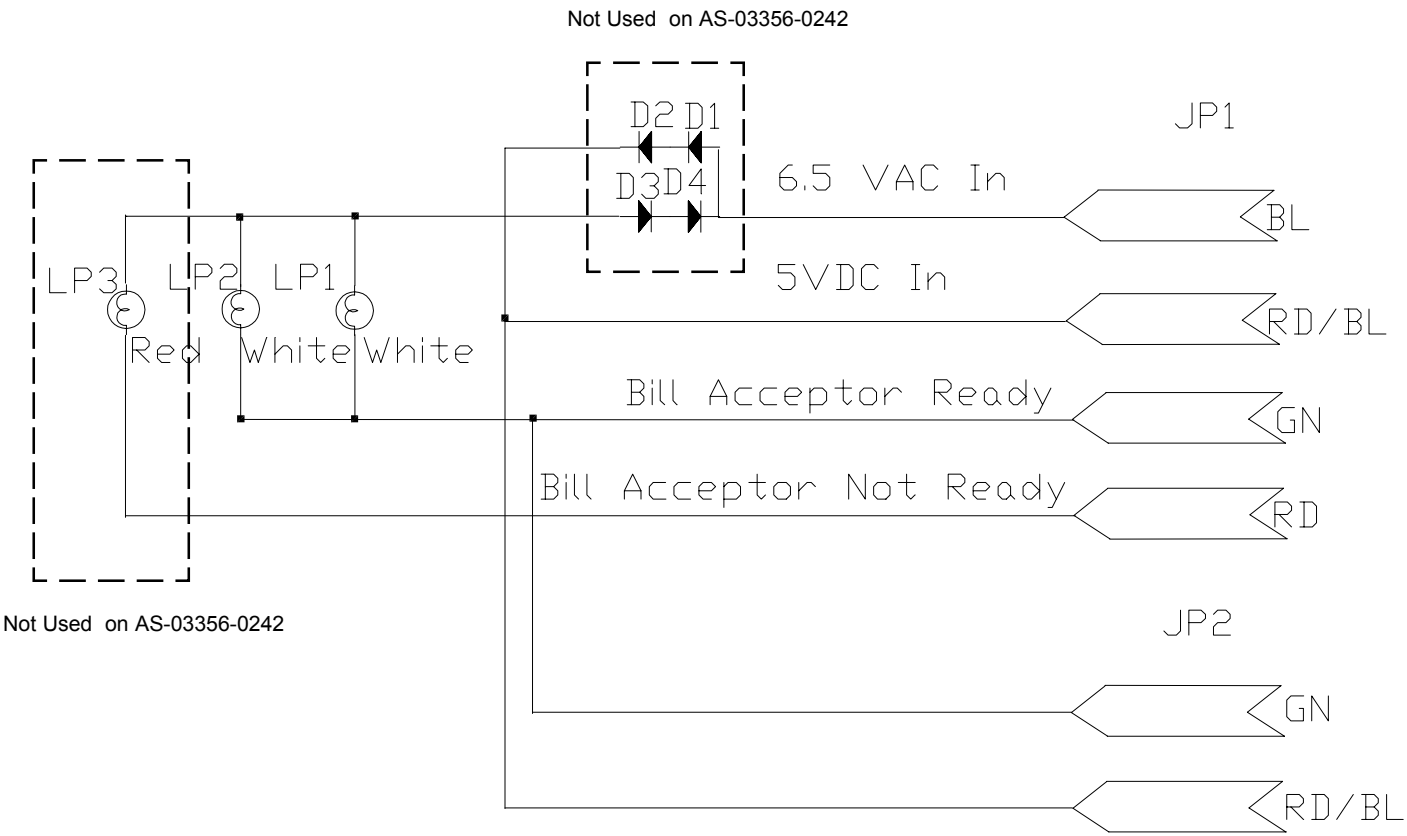


Bill Acceptor Light Board Assembly
E-00664-0527 Bar Top

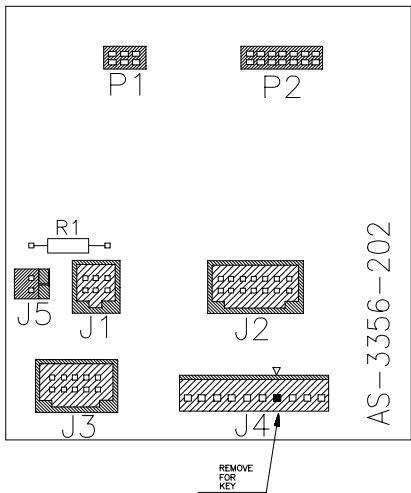
PARTS LIST				
ITEM	QTY	REFERENCE	PART NO.	DESCRIPTION
1	4	D1-D4	E-00587-0040	DIODE, 1N4001
2	2	LP1, LP2	E-00125-0101	LAMP, T-1, 5 VOLT, #7152
3	1	LP3	E-0125-0098	LAMP, RED, T-1, 5 VOLT
4	1	---	P-09018-0241	PCB, BILL BEZEL LAMP BOARD REV. B



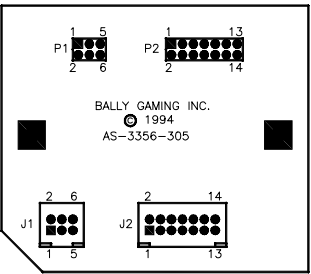
Bill Bezel Light Board Assembly AS-03356-0241 & 242



JCM Bill Acceptor Distribution Board



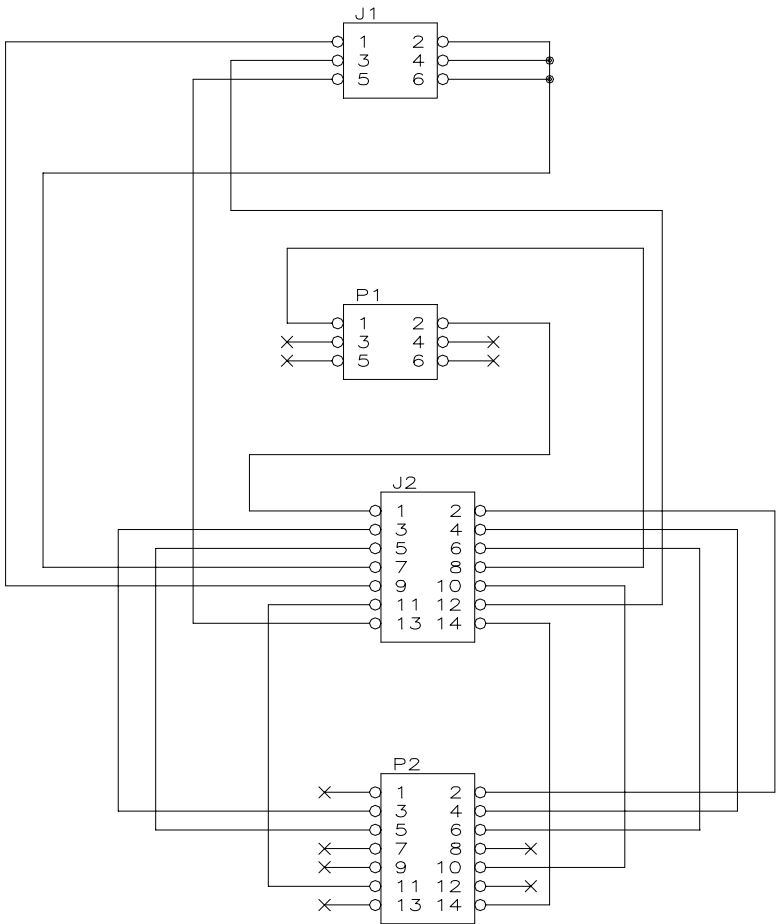
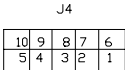
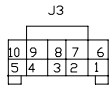
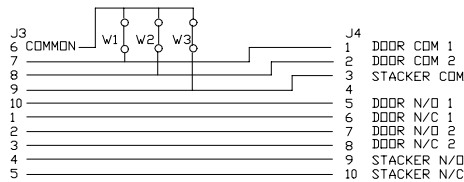
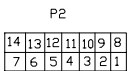
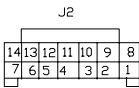
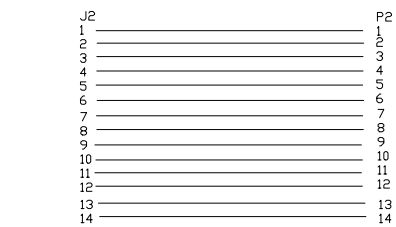
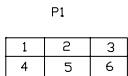
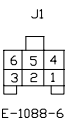
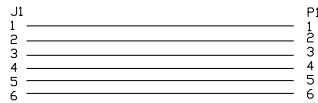
BILL OF MATERIAL			
SYMBOL	BALLY PART NUMBER	DESCRIPTION	QTY
P-1	E-1087-3	6 PIN CONNECTOR	1
P-2	E-1087-7	14 PIN CONNECTOR	1
J-1	E-1088-6	6 PIN CONNECTOR	1
J-2	E-1088-14	14 PIN CONNECTOR	1
J-3	E-1088-10	10 PIN CONNECTOR	1
J-4	E-989-10	10 PIN CONNECTOR	1
J-5	E-989-2	2 PIN CONNECTOR	1
R1	E-105-277	680 OHM .25 W	1



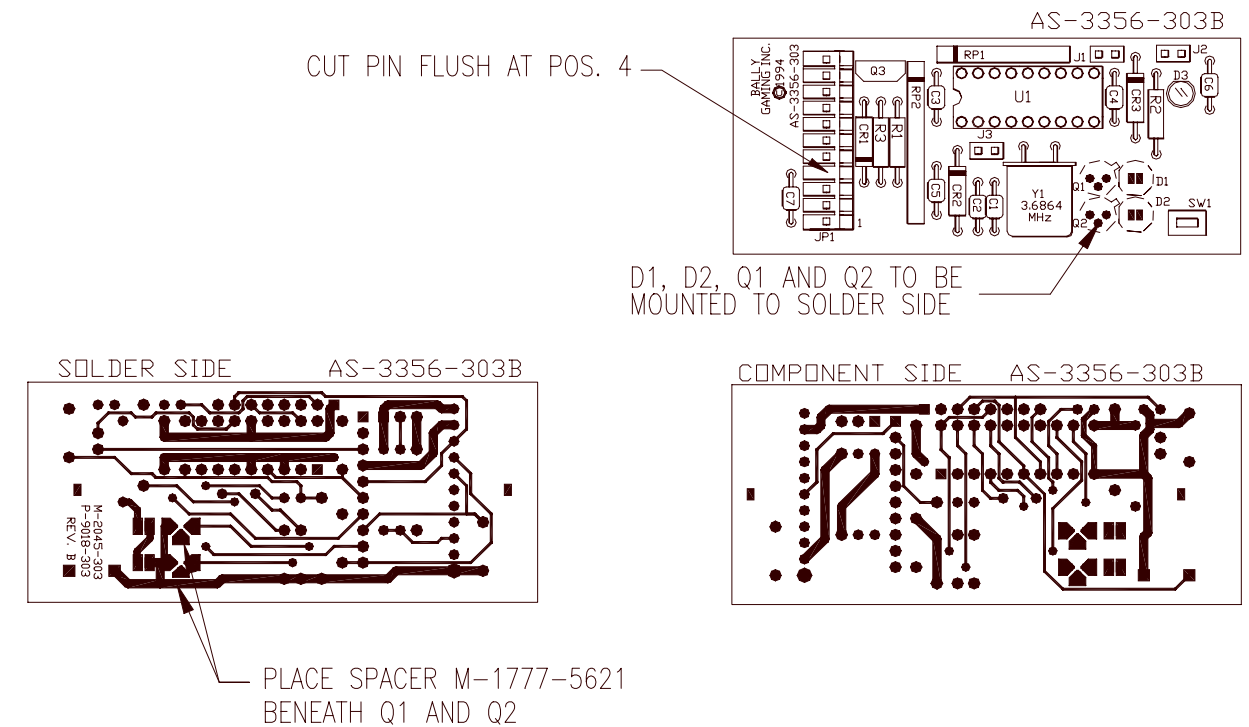
BILL OF MATERIAL			
SYMBOL	BALLY PART NUMBER	DESCRIPTION	QTY
P-1	E-1087-3	6 PIN CONNECTOR	1
P-2	E-1087-7	14 PIN CONNECTOR	1
J-1	E-1088-6	6 PIN CONNECTOR	1
J-2	E-1088-14	14 PIN CONNECTOR	1

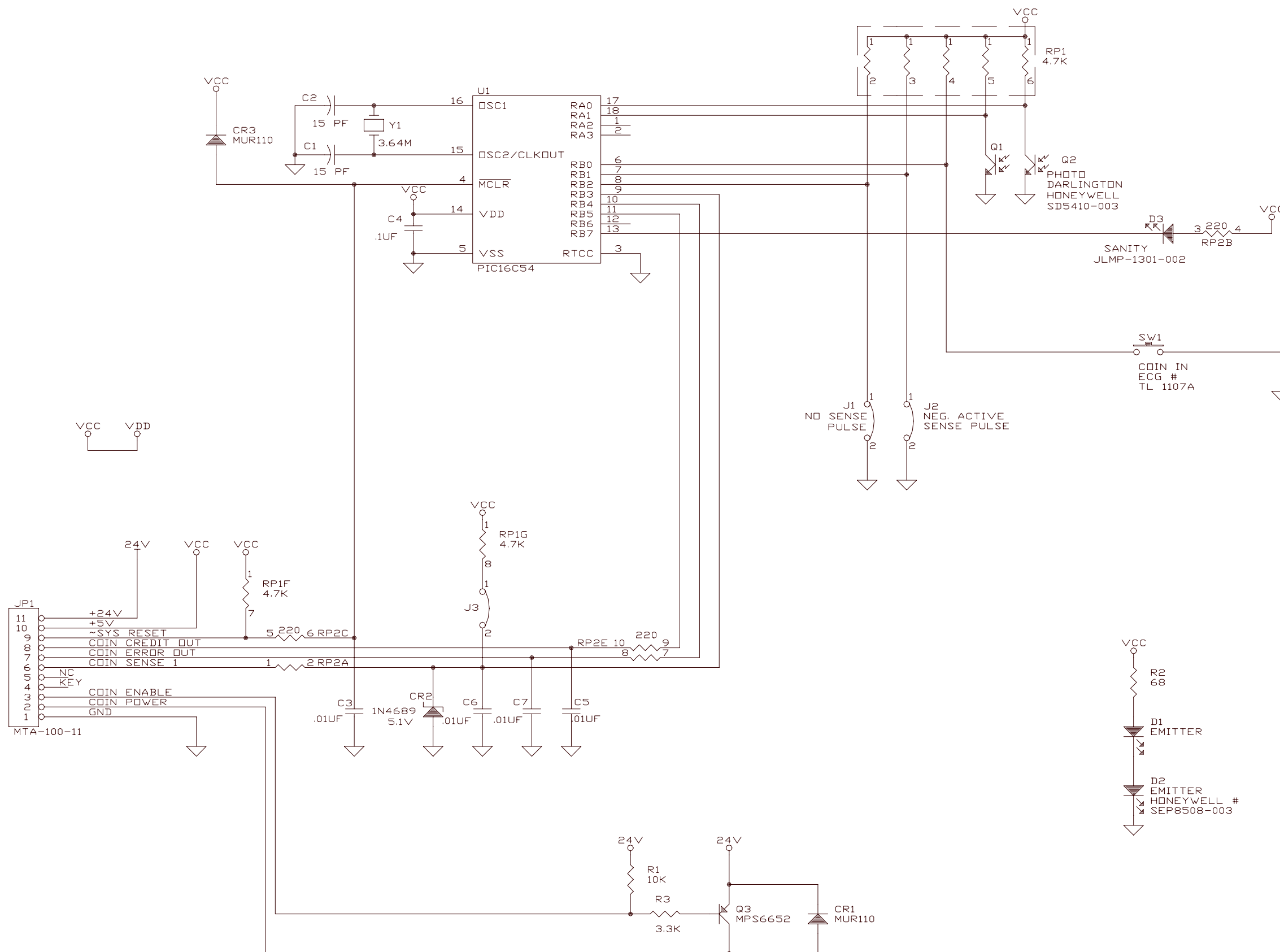
AS-03356-0202 V7 Upright

AS-03356-0305 Bar Top



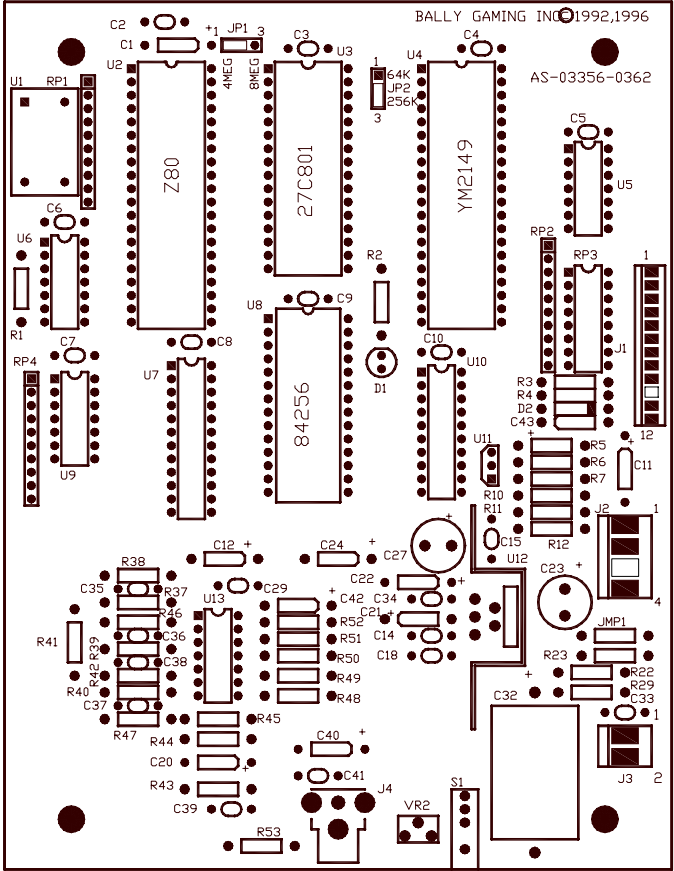
PARTS LIST				
ITEM	QUANTITY	REFERENCE	BALLY P/N	DESCRIPTION
1	2	NONE	M-01777-5621	T0-18 AND T-1 3/4 LED MOUNT
2	5	C3,C4,C5,C6,C7	CCP-A4+50-0103	CER/CAP,AXIAL,Z5U,50V,.01M
3	2	C1,C2	CCP-A4+50-0150	CER/CAP,AXIAL,Z5U,50V,15P
4	2	CR1,CR3	E-00587-0058	ULTRA FAST DIODE, 1A 200V 25ns
5	1	D3	E-00769-0004	LED, YELLOW T1-3/4 HP #HLMP-3400
6	2	D1,D2	E-00679-0033	IR EMITTER, HONEYWELL #SEP8705-003
7	1	JP1	E-00989-0011	11 PIN STR MTA-100 FRIC LOCK, KEY POS. 4
8	2	Q1,Q2	E-00585-0119	PHOTOTRANSISTOR, HONEYWELL SD5443-002
9	1	Q3	E-00585-0120	TRANSISTOR, PNP, 1 AMP, 1 WATT, MPS6727
10	1	CR2	E-00598-0057	ZENER DIODE, 4.7 VOLT 1 WATT 10% 1N4732
11	1	Y1	E-00744-0019	CRYSTAL, AT CUT, 3.6864 MHZ, HC49
12	1	R1	RES-0F0Q5-0103	RES,CF,1/4W, 5%, 10.K OHM
13	1	RP2	RPK-I10S5-0221	R ARRAY,ISOL,10PIN,SIP, 5%, 220.
14	1	RP1	RPK-C08S5-0472	R ARRAY,1COM,08PIN,SIP, 5%, 4.7K
15	1	R3	RES-0F0Q5-0332	RES,CF,1/4W, 5%, 3.3K OHM
16	1	R2	RES-0F0Q5-0680	RES,CF,1/4W, 5%, 68. OHM
17	1	U1	E-00712-0018	DIP SOCKET, 20 PIN .300"
18	3	J1,J2,J3	E-00766-0002	2 PIN STRAIGHT KK-100 HEADER
19	1	SW1	E-00108-368A	PUSH BUTTON SWITCH ECG #TL 1107A
20	1	NONE	P-09018-0303	PRINTED WIRING BOARD, COIN OPTIC DECODER

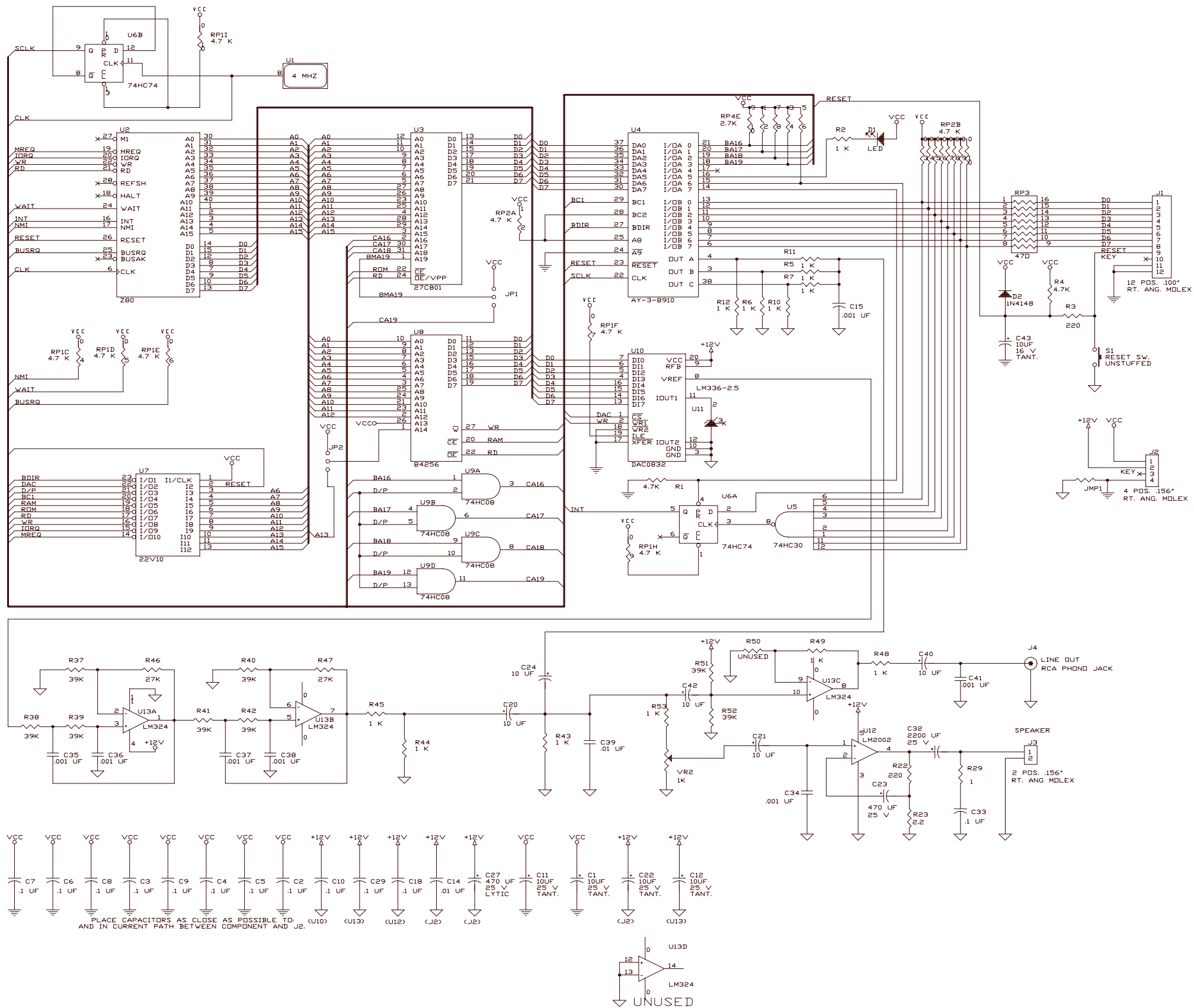




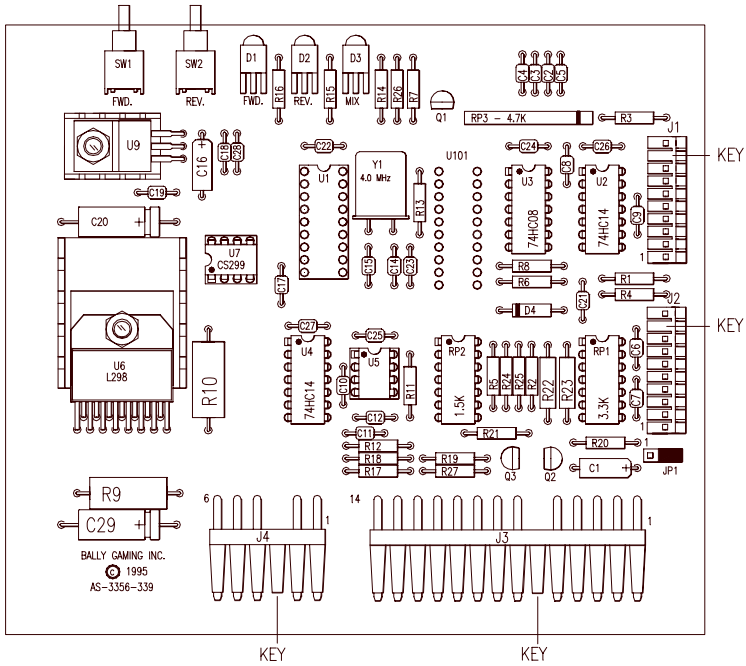
PARTS LIST

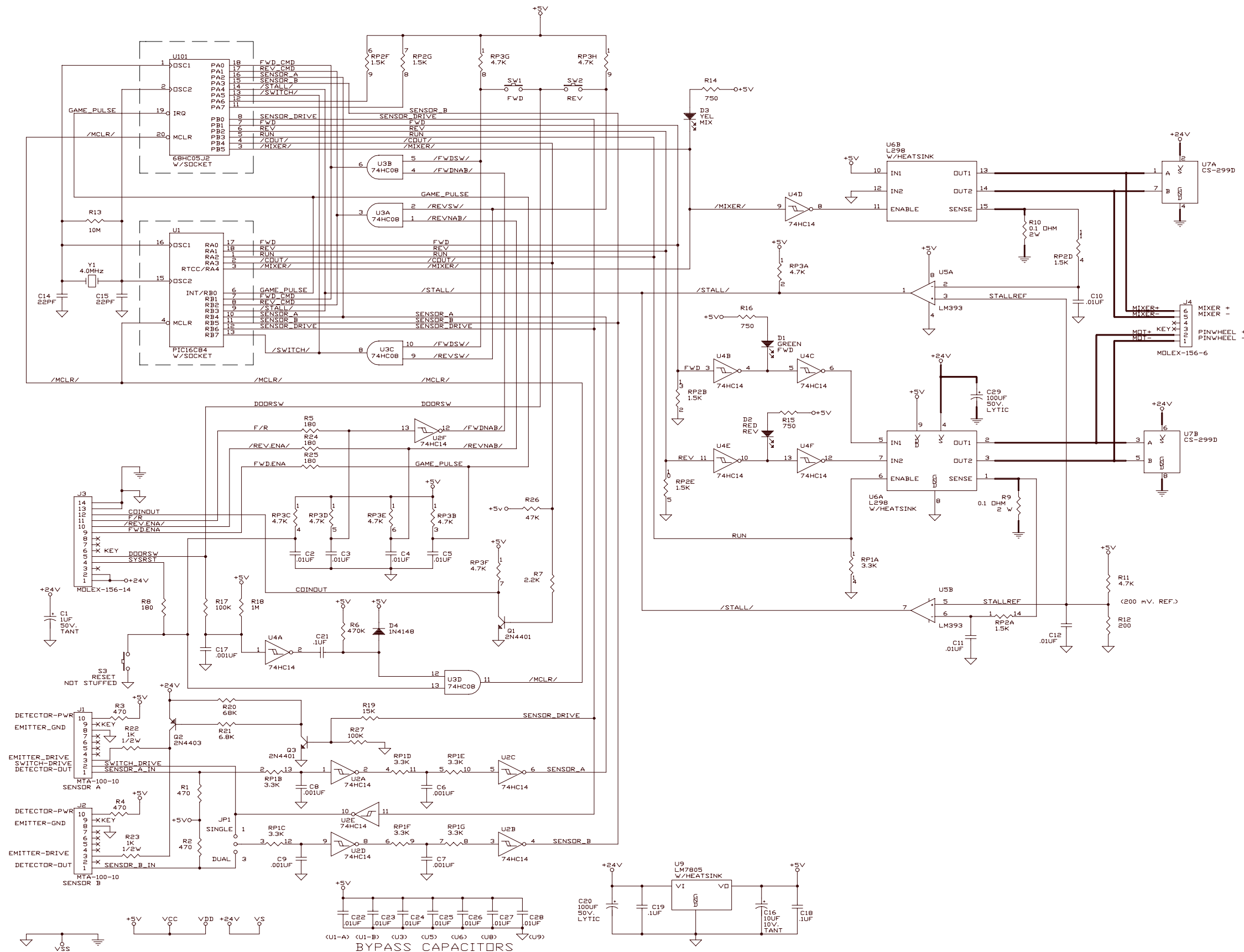
ITEM	QUANTITY	REFERENCE	BALLY PART NO.	DESCRIPTION
1	2	C23, C27	E-00586-0310	LYTIC/CAP, RADIAL, 20%, 25V, 470 UF
2	12	C2, C3, C4, C5, C6, C7, C8, C9, C10, C18, C29, C33	CCP-A3+50-0104	CER/CAP, AXIAL***, X7R, *50V, . 1 MF
3	2	C39, C14	CCP-A3+50-0103	CER/CAP, AXIAL***, X7R, *50V, . 01 MF
4	1	C32	E-00586-0336	LYTIC/CAP, RADIAL, 20%, 25V, 2200 UF
5	5	C20, C21, C24, C40, C42	E-00586-0047	LYTIC/CAP, AXIAL, 20%, 25V, 10 UF
6	5	C1, C11, C12, C22, C43	E-00586-0213	TANT/CAP, AXIAL, 20%, 25V, 10 UF
7	7	C15, C34, C35, C36, C37, C38, C41	CCP-A1+50-0102	CER/CAP, AXIAL***, C0G, *50V, . 001 MF
8	1	D1	E-00679-0001	LED T-1 3/4 RED
9	1	JMP1	M-01777-0126	JUMPER WIRE 1/2" 22 AWG SOLID
10	1	J3	E-00978-0002	HEADER, 2 POS., . 156", STRAIGHT
11	1	J1	E-00989-0012	HEADER, 12 POS., . 100", STRAIGHT
12	1	J2	E-00978-0004	HEADER, 4 POS., . 156", STRAIGHT
13	2	JP1, JP2	E-00766-0003	HEADER, WAFER, 3 POS., . 100", STRAIGHT
14	2	RP2, RP1	RPK-C10S2-0472	R ARRAY, 1COM, 10PIN, SIP, *2%, *4. 7K
15	1	RP4	RPK-C10S2-0272	R ARRAY, 1COM, 10PIN, SIP, *2%, *2. 7K
16	1	RP3	RPK-116D2-0471	R ARRAY, ISOL, 16PIN, DIP, *2%, **470
17	2	R22, R3	RES-0F0Q5-0221	RES, CF, 1/4W, *5%, **220*OHM
18	1	R29	RES-0F0Q5-0010	RES, CF, 1/4W, *5%, ***1*OHM
19	1	R23	RES-0F0Q5-02D2	RES, CF, 1/4W, *5%, *2. 2*OHM
20	8	R37, R38, R39, R40, R41, R42, R51, R52	RES-0F0Q5-0393	RES, CF, 1/4W, *5%, **39K*OHM
21	2	R46, R47	RES-0F0Q5-0273	RES, CF, 1/4W, *5%, **27K*OHM
22	13	R2, R5, R6, R7, R10, R11, R12, R43, R44, R45, R48, R49, R53	RES-0F0Q5-0102	RES, CF, 1/4W, *5%, ***1K*OHM
23	2	R1, R4	RES-0F0Q5-0472	RES, CF, 1/4W, *5%, *4. 7K*OHM
24	1	U2	E-00620-0552	IC, Z80B CMDS MICROPROCESSOR 40 PIN DIP
25	1	U3	E-01006-0032	SDCKET, IC, 32 PIN . 600
26	1	U7	E-01055-0040	PAL, PROGRAMMED, 22V10 24 PIN DIP
27	1	U4	E-00620-0124	IC, AY-3-8910 SOUND GENERATOR 40 PIN DIP
28	1	U6	E-00620-0329	IC, 74HC74 DUAL FLIP-FLOP 14 PIN DIP
29	1	U5	E-00620-0653	IC, 74HC30 8 INPUT NAND GATE 14 PIN DIP
30	1	U9	E-00620-0406	IC, 74HC08 QUAD AND GATE 14 PIN DIP
31	1	U10	E-00620-0654	IC, DAC0832 8 BIT DIGITAL TO ANALOG CONV.
32	1	U13	E-00620-0377	IC, LM324 QUAD OP AMP 14 PIN DIP
33	1	U11	E-00620-0655	IC, LM336-2.5 2.5 VOLT REFERENCE TO-92
34	1	U1	E-00744-0023	OSCILLATOR, 4 MHZ 14 PIN DIP
35	1	U12	E-00620-0307	IC, LM2002 5 PIN TO-220 AUDIO AMP
36	1	S1	NOT USED	
37	1	J4	E-01028-0003	JACK, RCA, RT. ANG. PCB MOUNT
38	1	U8	E-00620-0529	IC, 32K X 8 SRAM, 150ns, 28 PIN . 600
39	1	D2	E-00587-0014	DIODE, 1N4148
40	1	VR2	E-00599-0044	POTENTIOMETER, 1KOHM, PIHER PT10WH2. 51KA9
41	1	U2	E-01006-0040	SDCKET, IC, 40 PIN, MACHINED LEG, . 600
42	1	U7	E-01007-0024	SDCKET, IC, 24 PIN, MACHINED LEG, . 300
43	1	U12	E-00682-0010	HEAT SINK, THERMALLOY #6070B
44	1	PCB	P-09018-0362	PCB, BARE, DELUXE SOUND BOARD
45	2	JP1, JP2	E-00882	JUMPER PLUGS





53	U6,U9	NLS-00632-1118	NUT, 6-32 KEPS, BLACK OXIDE	2
52	U6,U9	MSSP-00632-1806	SCREW, 6-32x3/8 PAN HEAD, BLK. OXIDE	2
51	U9	E-00682-0034	HEATSINK, THERMALLOY 6079B	1
50	U6	E-00682-0037	HEATSINK, THERMALLOY 6106B-14	1
49	Y1	E-00744	CRYSTAL, 4.00 MHz	1
48	U9	E-00620-0622	IC, LM7805 VOLTAGE REGULATOR	1
47	U7	E-00620-0676	IC, CS-299D DUAL SCHOTTKY BRIDGE	1
46	U6	E-00620-0675	IC, CS-298, DUAL H-BRIDGE CONTROLLER	1
45	U5	E-00620-0282	IC, LM393 DUAL COMPARATOR	1
44	U3	E-00620-0406	IC, 74HC08 QUAD AND GATE	1
43	U2, U4	E-00620-0502	IC, 74HC14 HEX SCHMITT TRIGGER	2
42	U1	E-00712-0018	SOCKET, 1C, 18 PIN	1
41	SW3		NOT STUFFED	
40	SW1, SW2	E-00108-0366	SWITCH, SPST, SEALED, R/A MOUNT	2
39	R17,R27	RES-0F0Q5-0104	RES,CF,1/4W, 5%,100.K OHM	2
38	R26	RES-0F0Q5-0473	RES,CF,1/4W, 5%, 47.K OHM	1
37	R22,R23	RES-0F0H5-0102	RES,CF,1/2W, 5%, 1.0K OHM	2
36	R21	RES-0F0Q5-0682	RES,CF,1/4W, 5%, 6.8K OHM	1
35	R20	RES-0F0Q5-0683	RES,CF,1/4W, 5%, 68.K OHM	1
34	R19	RES-0F0Q5-0153	RES,CF,1/4W, 5%, 15.K OHM	1
33	R18	RES-0F0Q5-0105	RES,CF,1/4W, 5%, 1.0M OHM	1
32				
31	R14-16	RES-0F0Q5-0751	RES,CF,1/4W, 5%, 750. OHM	3
30	R13	RES-0F0Q5-0106	RES,CF,1/4W, 5%, 10.M OHM	1
29	R12	RES-0F0Q5-0201	RES,CF,1/4W, 5%, 200. OHM	1
28	R11	RES-0F0Q5-0472	RES,CF,1/4W, 5%, 4.7K OHM	1
27	R9,R10	RES-0X025-00D1	RES,MX, 2W, 5%, 0.1 OHM	2
26	R7	RES-0F0Q5-0222	RES,CF,1/4W, 5%, 2.2K OHM	1
25	R6	RES-0F0Q5-0474	RES,CF,1/4W, 5%,470.K OHM	1
24	R5,R8,R24,R25	RES-0F0Q5-0181	RES,CF,1/4W, 5%, 180. OHM	4
23	R1-4	RES-0F0Q5-0471	RES,CF,1/4W, 5%, 470. OHM	4
22	RP3	E-00835-0021	RES NETWORK, 4.7K OHM, 10P SIP, COMM.	1
21	RP2	E-00835-0077	RES NETWORK, 1.5K OHM, 14P DIP, ISOL.	1
20	RP1	E-00835-0078	RES NETWORK, 3.3K OHM, 14P DIP, ISOL.	1
19	Q2	E-00585-0023	TRANSISTOR, PNP, 2N4403	1
18	Q1,Q3	E-00585-0071	TRANSISTOR, NPN, 2N4401	2
17	J4	E-00976-0006	CONNECTOR, 6 POSITION, MTA-156	1
16	J3	E-00976-0014	CONNECTOR, 14 POSITION, MTA-156	1
15	J1, J2	E-00989-0010	HEADER, KK-100, 10 POSITIONS	2
14	JP1	E-00882	PROGRAMMING SHUNT	1
13	JP1	E-00777-0003	HEADER, 3 PIN 0.1" CENTERS	1
12	D4	E-00587-0014	DIODE, 1N4148, 75V., 200 mA	1
11	D3	E-00679-0026	LED, YELLOW, RIGHT ANGLE MOUNT	1
10	D2	E-00679-0028	LED, RED, RIGHT ANGLE MOUNT	1
9	D1	E-00679-0027	LED, GREEN, RIGHT ANGLE MOUNT	1
8	C20, C29	E-00586-0366	CAPACITOR, 100uF, 50V.,LYTIC AXIAL	2
7	C18,C19,C21	E-00586-0159	CAPACITOR, .1uF, 50V., CERAM AXIAL	3
6	C16	E-00586-0363	CAPACITOR, 10uF, 10V., TANT AXIAL	1
5	C14, C15	E-00586-0154	CAPACITOR, 22pF, 50V., CERAM AXIAL	2
4	C6-9,C17	E-00586-0332	CAPACITOR,.001uF, 50V., CERAM AXIAL	5
3	C2-5,C10-12,C22-28	E-00586-0085	CAPACITOR, .01uF, 50V., CERAM AXIAL	14
2	C1	E-00586-0364	CAPACITOR, 1uF, 50V., TANT AXIAL	1
1		P-09018-0339	PC BOARD, USING M-2045-339 REV. A	1
ITEM	LOCATION	PART NUMBER	DESCRIPTION	QTY







Hopper Control Board, FET
AS-03356-0368

58	U6,Q4-8	NLS-00632-1118	NUT, 6-32 KEPS, BLACK OXIDE	6
57	U6,Q4-8	MSSP-00632-1806	SCREW, 6-32x3/8 PAN HEAD, BLK. OXIDE	6
56	U6	E-00682-0034	HEATSINK, THERMALLOY 6079B	1
55	Y1	E-00744	CRYSTAL, 4.00 MHz	1
54	U12	E-00620-0689	IC, LTC1232,MICROPROCESSOR SUPERVISOR	1
53	U6	E-00620-0622	IC, LM7805 VOLTAGE REGULATOR	1
52	U5	E-00620-0282	IC, LM393 DUAL COMPARATOR	1
51	U4	E-00620-0245	IC, 7406,HEX INVERTER, OC	1
50	U3,U11	E-00620-0406	IC, 74HC08 QUAD AND GATE	2
49	U2	E-00620-0502	IC, 74HC14 HEX SCHMITT TRIGGER	1
48	U1	E-00712-0018	SOCKET, 1C, 18 PIN	1
47	TVS2-7	E-00713-0016	TRANSGUARD,5.6V,VA100005D150**	6
46	TVS1	E-00713-0017	TRANSGUARD,30V*,VA100030D650**	1
45	SW1, SW2	E-00108-0366	SWITCH, SPST, SEALED, R/A MOUNT	2
44	SW3		NOT STUFFED	
43	R26,R28,R29	RES-0F0Q5-0103	RES,CF,1/4W, 5%, 10.K OHM	3
42	R22, R23	RES-0F0H5-0102	RES,CF,1/2W, 5%, 1.0K OHM	2
41	R21	RES-0F0Q5-0682	RES,CF,1/4W, 5%, 6.8K OHM	1
40	R20	RES-0F0Q5-0683	RES,CF,1/4W, 5%, 68.K OHM	1
39	R19	RES-0F0Q5-0153	RES,CF,1/4W, 5%, 15.K OHM	1
38	R18	RES-0F0Q5-0105	RES,CF,1/4W, 5%, 1.0M OHM	1
37	R17, R27	RES-0F0Q5-0104	RES,CF,1/4W, 5%,100.K OHM	2
36	R14-16	RES-0F0Q5-0751	RES,CF,1/4W, 5%, 750. OHM	3
35	R13, R30	RES-0F0Q5-0152	RES,CF,1/4W, 5%, 1.5K OHM	2
34	R12	RES-0F0Q5-0201	RES,CF,1/4W, 5%, 200. OHM	1
33	R11, R31, R32	RES-0F0Q5-0472	RES,CF,1/4W, 5%, 4.7K OHM	3
32	R9,R10	RES-0X025-00D1	RES,MX, 2W, 5%, 0.1 OHM	2
31	R7	RES-0F0Q5-0222	RES,CF,1/4W, 5%, 2.2K OHM	1
30	R6	RES-0F0Q5-0474	RES,CF,1/4W, 5%,470.K OHM	1
29	R5,R8,R24,R25	RES-0F0Q5-0181	RES,CF,1/4W, 5%, 180. OHM	4
28	R3,R4	RES-0F0Q5-0471	RES,CF,1/4W, 5%, 470. OHM	2
27	R1, R2	RES-0F0Q5-0102	RES,CF,1/4W, 5%, 1.0K OHM	2
26	RP4	RPK-I16D2-0472	R ARRAY,ISOL,16PIN,DIP,*2%,*4.7K	1
25	RP3	RPK-C10S2-0472	R ARRAY,1COM,10PIN,SIP,*2%,*4.7K	1
24	RP1	RPK-I14D2-0332	R ARRAY,ISOL,14PIN,DIP,*2%,*3.3K	1
23	Q5,Q7,Q8	E-00585-0135	XSTR,IRF530N*,N-CH,15A,100V.**	3
22	Q4,Q6	E-00585-0136	XSTR,IRF9530*,P-CH,12A,100V.**	2
21	Q2	E-00585-0023	TRANSISTOR, PNP, 2N4403	1
20	Q1,Q3	E-00585-0071	TRANSISTOR, NPN, 2N4401	2
19	J4	E-00976-0006	CONNECTOR, 6 POSITION, MTA-156	1
18	J3	E-00976-0014	CONNECTOR, 14 POSITION, MTA-156	1
17	J1, J2	E-00989-0010	HEADER, KK-100, 10 POSITIONS	2
16	JP1	E-00882	PROGRAMMING SHUNT	1
15	JP1	E-00777-0003	HEADER, 3 PIN 0.1" CENTERS	1
14	D6-10	E-00598-0028	DIODE, ZENER,12.0V,****,10%	5
13	D4,D5	E-00587-0014	DIODE, 1N4148, 75V., 200 mA	2
12	D3	E-00679-0026	LED, YELLOW, RIGHT ANGLE MOUNT	1
11	D2	E-00679-0028	LED, RED, RIGHT ANGLE MOUNT	1
10	D1	E-00679-0027	LED, GREEN, RIGHT ANGLE MOUNT	1
9	C28	E-00586-0366	CAPACITOR, 100uF, 50V.,LYTIC AXIAL	1
8	C18,C21	CCP-A3+50-0104	CER/CAP,AXIAL**,X7R,+50.,100 MF	2
7	C17	CCP-A3+50-0102	CER/CAP,AXIAL**,X7R,+50.,001 MF	1
6	C16	E-00586-0363	CAPACITOR, 10uF, 10V., TANT AXIAL	1
5	C14, C15	CCP-A1+50-0220	CER/CAP,AXIAL**,COG,+50,*22. PF	2
4	C6, C7		NOT STUFFED	
3	C10-12,C20,C22-25	CCP-A3+50-0103	CER/CAP,AXIAL**,X7R,+50.,010 MF	8
2	C1	E-00586-0364	CAPACITOR, 1uF, 50V., TANT AXIAL	1
1		P-09018-0368	PC BOARD, USING M-02045-0368 REV. A	1
ITEM	LOCATION	PART NUMBER	DESCRIPTION	QTY

