IGT SLOT MACHINES

The

Complete

Service

Manual

For The

S SLOT SERIES ™ and the S-PLUS ™

IGT® SLOT MACHINES

The Service Manual for the S-SLOT and S-PLUS

Table of Contents

IGT S-Slot Basic Dimensions

WIDE

21¼"

24½"

40"

9 INCH AWARD GLASS

16"

20¾"

INTERMEDIATE

18¼"

21½"

WIDE

21¼"

24½"

46¼"
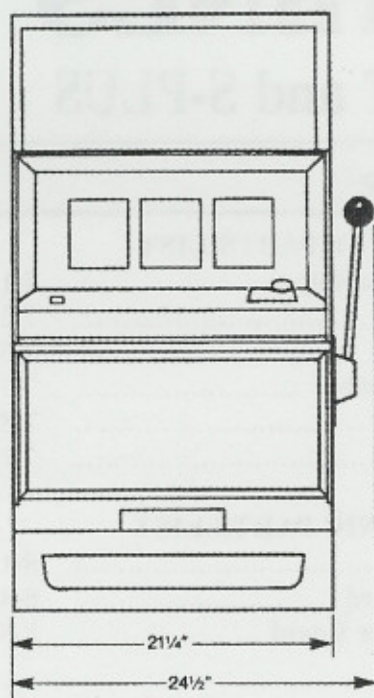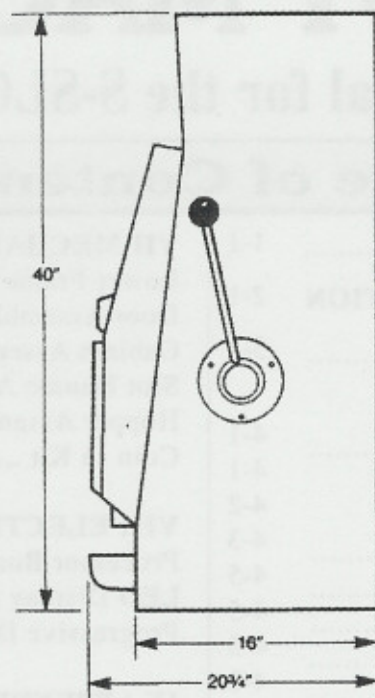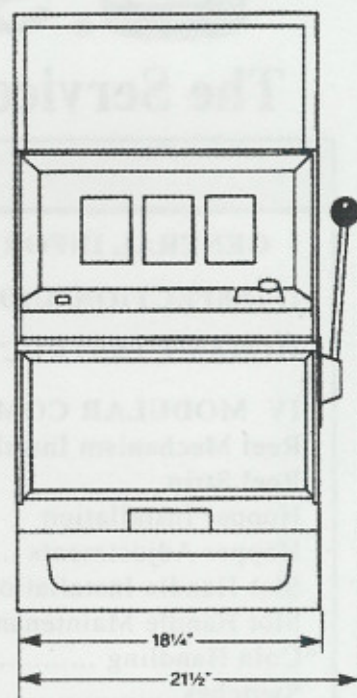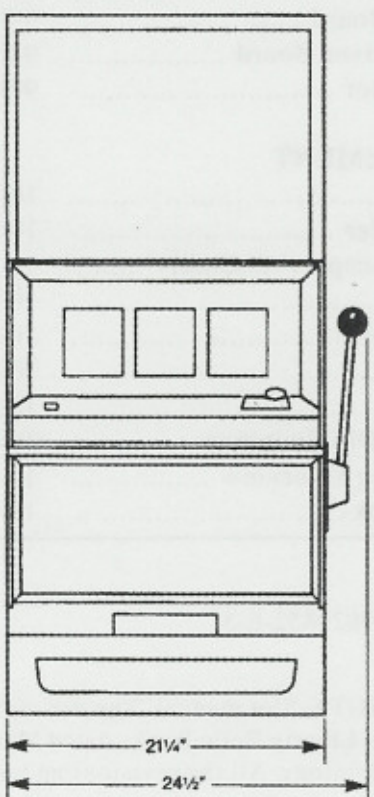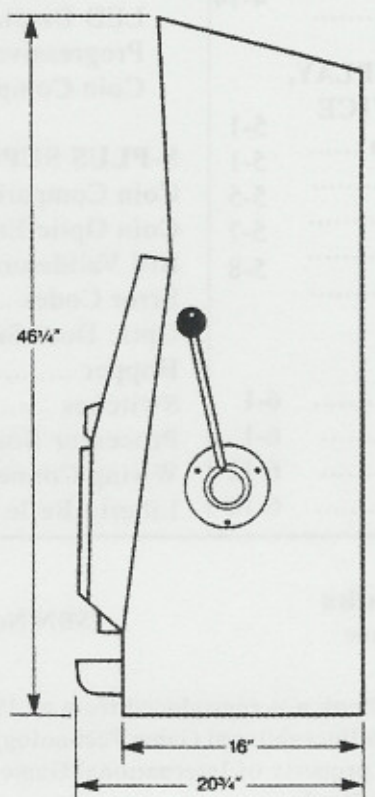
16 INCH AWARD GLASS

16"

20¾"

INTERMEDIATE

18¼"

21½"
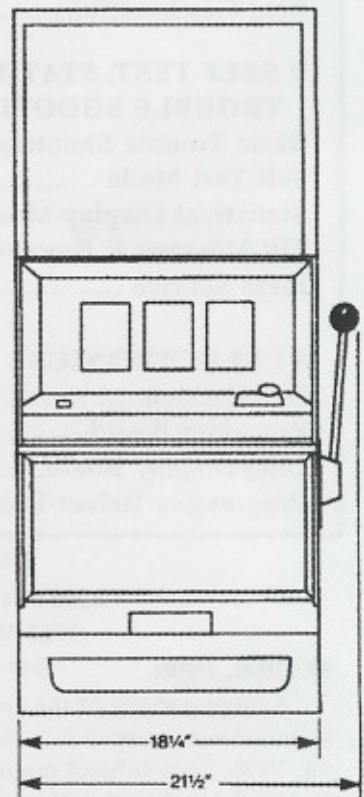
A limited number of S-Slots was were manufactured in the 17 inch wide Standard Cabinet. Produced with flat tops, they have the same depth and height as the intermediate and wide cabinets.

Section I
General Information

Introduction

The IGT S-Slot machine has been professionally engineered to provide a new level of machine flexibility, economy of installation and simplified maintenance.

Special Features

The S-Slot machine uses the IGT circuit board system. This system provides the following unique features:

- Microprocessor control of the game.

- Modular component design.

- Numerous advanced security features.

- Backup battery for memory circuit.

- Low voltage sensing circuit.

- Error detection circuitry.

- Sound generation.

- Self Test and Statistical Display modes.

Options.

The following options are available for the S-Slot:

- A large selection of program percentages are available, as well as credit play features and progressive features.

- Denomination can be quickly changed to any U.S. coin or gaming token.

- Machines are available with handle and/or "SPIN REELS" button.

- Speed of play choices.

- Various maximum hopper pay levels.

- Coins are dropped into either a tray or a loud bowl stand.

- Upper glass lighting is available in standard back lighting or in two, three, four, five and six coin stepper boxes, in either standard or expanded top.

- A large selection of candle colors are available.

- Power supplies and line cords are available for both U.S. and foreign configurations.

Specifications

Table 1-1 lists the electrical, physical and environmental specifications for the S-Slot.

Power Requirements

The S-Slot machine operates from 99-128VAC at 50/60 Hz and at 198-244VAC at 50/60 Hz for foreign games. A transformer is used to provide power to all components requiring isolated voltages.

Table 1-2 lists the transformer output AC voltages and the transformer tap selections. A schematic diagram for the transformer is provided in Section VII Appendix.

FCC Data

This equipment generates and uses radio frequencies in the radio band-width. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Part 15 of FCC rules, which are designed to provide reasonable protection against radio and television interference in an industrial installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, the user is encouraged to try to correct the interference.

Table 1-1
General Specifications

ELECTRICAL

Line Voltage:	99 to 128 V rms Single Phase
	198 to 244 V rms Single Phase
Line Frequency:	47 to 63 Hz

Power Consumption:

Average - Idle	180 Watts - 115VAC @ 60 Hz 1.5 AMPS
Average - Idle	200 Watts - 220VAC @ 50 Hz .9 AMPS
Worst Case - Hopper On	450 Watts - 115VAC @ 60 Hz 3.7 AMPS
Worst Case - Hopper On	500 Watts - 220VAC @ 50 Hz 2.3 AMPS

Current Protection:	3 Fuses
Power Cord Receptacle:	EIA Specified

Power Supply:

Secondary	24VAC @ 6A max
	8VAC @ 2A max
	7VAC @ 6A max
	115VAC @ Isolated 1A max
Primary	115VAC Input (2)
	22OVAC Input (3)

PHYSICAL DIMENSIONS

Height w/o candle:	9 in:	40.00 in.
		101.60 cm.
	15 in:	46.25 in.
		117.48 cm.
Width with handle:	Wide Body:	24.50 in.
		62.23 cm.
	Intermediate:	21.50 in.
		54.61 cm.
Depth:	Base Depth:	20.75 in.
		52.71 cm.
Weight (app.):	Wide Body:	175 lbs.
		80 kgs.
	Intermediate:	170 lbs.
		78 kgs.

ENVIRONMENTAL

Temperature:	Operating:	32°F - 95°F AMB
		0°C - 35°C
	Storage:	32°F - 150°F AMB
		0°C - 65°C
Humidity (Relative):	Operating:	10% - 90%
Non-Condensing	Storage:	0% - 95%

TRANSFORMER OUTPUT VOLTAGE	TRANSFORMER TAP
110-120VAC COM	1
110VAC HOT	2
7-8VAC COM	3
7VAC	4
8VAC RETURN	5
24VAC HOT	6
24VAC CT	7
24VAC RETURN	8

Section II

Inspection & Installation

Introduction

This section provides general inspection procedures and installation procedures for the S-Slot machine.

Inspection

Check the exterior of the machine to verify that the machine is free from scratches, chips, blemishes and any mechanical damage.

Check the interior of the machine, making sure none of the components are disconnected or loose.

The main cabinet door and processor tray for the printed circuit board are not provided with locks. Install separate secure locks to maintain proper security control. See Table 2-1 for each door lock requirement.

MAIN DOOR LOCK
- 3/4" DIA. "DOUBLE-D" MOUNTING HOLE
- BARREL LENGTH - 5/8" TO 1 1/8"
- 90° OR 180° RIGHT OR LEFT HAND
- STRAIGHT CAM
- ₵ OF LOCK TO END OF CAM - 1"
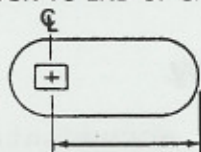
PROCESSOR TRAY LOCK
- 3/4" DIA. "DOUBLE-D" MOUNTING HOLES
- BARREL LENGTH - 7/8"
- 90° RIGHT HAND
- STRAIGHT CAM
- ₵ OF LOCK TO END OF CAM - 1"

Table 2-1
Security Locks

Remove the processor tray and make sure that the circuit board is securely connected. Check that the wire harnesses are properly routed and secured away from all moving parts or removable assemblies.

Make sure that all electrical connections are tight and that proper antichafe protection has been used.

Installation

To mount the machine on the stand, proceed as follows: (See Figure 2-1)

1) Set the machine on the center of the stand and align the mounting holes on the bottom of the cabinet with those on the top of the stand. If there are no holes in the stand, use IGT Template #781 039 00 or 781 040 00 and align on the stand. Drill mounting holes using a 3/8" drill.
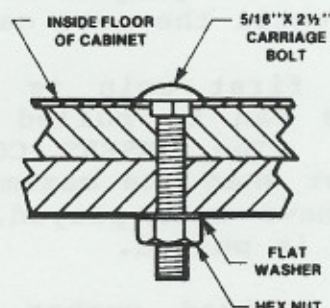
Figure 2-1
Stand Mounting

2) Insert a 5/16" X 2-1/2" carriage bolt in each hole from the inside of the machine, down into the stand. Secure the bolts with flat washers and hex nuts.

Returning for Damage Adjustment

As per the "General Terms and Conditions of Sales", no merchandise may be returned for adjustment without prior written approval of IGT. No credit or replacement will be effected until alleged defects are established to IGT's satisfaction by tests and inspections to be performed by IGT at any reasonable time and place it designates.

Electrical Connection

Refer to Section I, General Information, for electrical requirements.

Section III
Game Instructions

Introduction

This section provides the game instructions for the S-Slot machine.

Game Instructions — Regular Slot

One to six coins can be played to start the game. After the first coin is accepted, the COIN ACCEPTED light will turn on. The COINS PLAYED LED display shows the number of coins accepted and increments as successive coins are accepted. The number of coins played will remain displayed until the next game.

After the first coin is accepted, the handle can be pulled to start the game. The INSERT COIN light will go out when the maximum number of coins have been played, or when the handle is pulled.

When the desired number of coins have been accepted and the handle has been pulled, the reels will start to spin. The reels then stop one at a time from left to right.

Win Condition — Hopper Pay

A win condition is any one of the winning combination of symbols shown on the paytable. When a win occurs, the amount paid out will increment on the LED display as the hopper pays out each coin. The number of coins paid-out will remain displayed until the next game.

Win Condition — Hand Pay

A hand pay condition occurs when the amount won is in excess of the maximum hopper pay out. When a large jackpot is hit, the jackpot light will turn on, the machine will lockout until the jackpot is paid and the game is reset by authorized personnel.

The game is reset by turning the Jackpot Reset Key Switch clockwise. Refer to Section IV, for switch

information. When the machine has been reset, and jackpot light will turn off and the game will return to the Idle mode.

Lose Condition

If no win occurs, the INSERT COIN light will come on and the game will return to the Idle mode.

Game Instructions — Play Credit Slot

Same as Regular Slot, with the following exceptions:

PLAYER SWITCHES: BET ONE CREDIT, PLAY (X) CREDITS, COLLECT WINNINGS, SPIN REELS. Each switch will illuminate whenever that function can be used.

BET ONE CREDIT: Push to bet one credit; hold down to increment credits one at a time.

PLAY (X) CREDITS: Push to automatically bet the maximum coins allowed per game, and automatically initiate the game without pulling handle.

SPIN REELS: Push to spin reels instead of pulling handle.

COLLECT WINNINGS: Push to cash out accumulated credits in coin from the hopper.

Credits Display

As credits accumulate, the LED display continually shows the number of credits. Credits will not accumulate over the set maximum hopper pay. Example: If the hopper maximum pay is 400 coins and a player has accumulated 375 credits, a win of 50 coins means the machine will pay all 50 coins and the 375 credits will be maintained.

Win Condition

Amount won will appear as credits. COLLECT WINNINGS switch must be pushed to collect winnings.

Section IV
Modular Components

Introduction

The following text provides basic descriptions, functions, removal and installation instructions, adjustments and functional checkout information for the major components of the S-Slot.

For more detailed information on the circuit boards and electronics, refer to Section VI or the S-Slot Tester Manual, or contact IGT Customer Service.

Reel Mechanism

REEL MECHANISM DESCRIPTION AND FUNCTION

The reel mechanism provides the reel spin for the S-Slot and is a self-contained, modular assembly, controlled by the Processor Board.

The reel spin cycle begins when a start signal is generated by the Master Board and starts each stepper motor spinning the reels.

An optic sensor continually monitors the reel position and speed, and provides input to the Master Board. This input provides for the stop signal, stopping the reel and completing the reel spin cycle.

REEL MECHANISM REMOVAL AND INSTALLATION

To remove the reel mechanism from the cabinet, proceed as follows:

1) Open the door and turn the main power switch to the machine OFF.

2) Unplug the wire harness from the reel mechanism, located under the shelf.

3) Pull outward and lift the reel mechanism clear of the shelf.

To install the reel mechanism into the machine, proceed as follows:

1) Align the reel mechanism into the guides on the shelf and slide the assembly into the cabinet.

2) Plug the harness into the reel mechanism below the shelf.

REEL MECHANISM MAINTENANCE

The Reel Mechanism is virtually maintenance free. Periodically remove each reel mechanism and wipe the optics clean. Refer to Section V for interval.

REEL STRIP REMOVAL AND INSTALLATION

To remove the reel strip, locate the seam and gently peel apart. Make
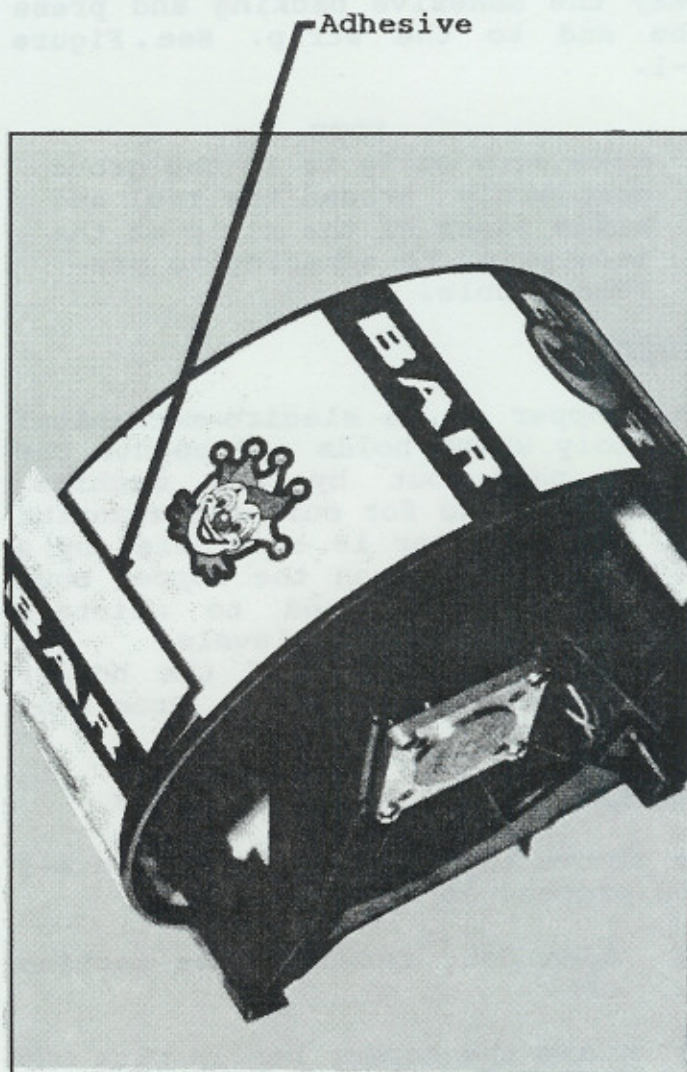
**Figure 4-1
Reel Strip Installation**   4-1

sure that the adhesive tape remains on the underside of the upper surface (inside) of the strip to prevent damage to the artwork. See Figure 4-1.

Note
Damage to the artwork will result if the adhesive tears or attempts to remain on the upper surface of the bottom half.

To install the reel strip, locate the index pins on the reel by feeling the molded index bumps on the outside of the reel. The index pins for the reel strips are located inside from the mold bumps. Align the notches on the reel strip with the index pins and the grooves on the reel. Continue around the reel until the end of the strip. Peel away the adhesive backing and press the end to the strip. See. Figure 4-1.

NOTE
Make sure strip is in the grove completely around the reel and align edges of the strip at the seam prior to adhering to prevent wobble.

Hopper

The hopper is an electro-mechanical assembly which holds and counts the coins paid out by the machine. Optics provide for coin-out counting and the diverter is controlled by a coin level probe on the hopper bowl and can be adjusted to maintain different coin levels. The mechanical operation of the hopper is controlled by the Processor Board.

HOPPER REMOVAL AND INSTALLATION

To remove the hopper, see Figure 4-2 and proceed as follows:

1) Open door and turn the machine OFF.

2) Grasp the hopper handle with one hand and pull the hopper straight out, supporting the hopper bowl with the other hand.

4-2
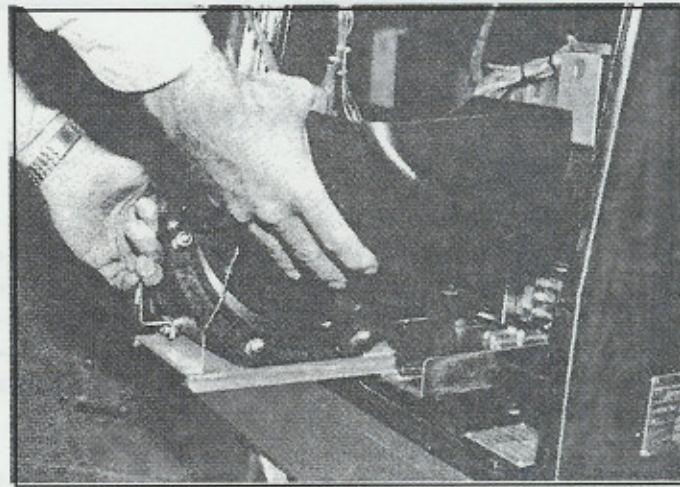
Figure 4-2
Hopper Installation

To install the hopper, proceed as follows:

1) Align the hopper base with the metal guides and slide the hopper back into the cabinet.

NOTE
Make sure that the hopper is firmly plugged into the receptacle.

2) Turn the main power ON, and close and lock the door.

HOPPER DISASSEMBLY AND ASSEMBLY INSTRUCTIONS

This section describes the procedure for disassembly and assembly of the hopper for motor replacement. Refer to Section VII—Mechanical Parts List.

To disassemble the hopper, proceed as follows:

1) Remove the four Phillips head screws that secure the hopper bowl in place and remove the bowl.

2) Desolder the AC leads on the motor.

3) Remove the four Phillips screws holding the motor to the housing and remove motor. Refer to Section VII.

To assemble the hopper with a new motor, proceed as follows:

1) Insert the four Phillips head screws that hold the motor to the housing.

2) Solder the AC leads on the terminals of the motor.

NOTE

Be sure that the new motor has the drive-pin in the shaft and that the pin is centered in the shaft.

3) Replace bowl.

HOPPER PLUG

If it becomes necessary to replace the hopper plug, make sure that it is correctly oriented to align with the receptacle in the cabinet.

HOPPER ADJUSTMENTS

The following adjustment procedures provide instructions to make all necessary adjustments to the hopper.

KNIFE ADJUSTMENT

1) Loosen knife retaining screws.

2) Hold knife blade assembly to the top of the shelf wheel lightly. See Figure 4-3.
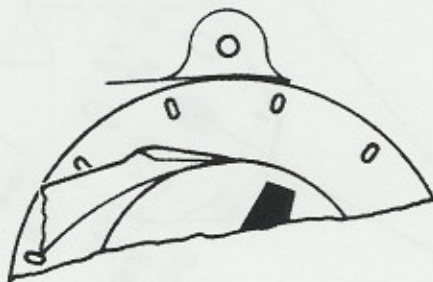
Figure 4-3
Knife Adjustment

3) Tighten knife retaining screws. Depress motor brake and rotate the pinwheel to check for smooth operation.

COIN WIPER

1) Loosen the coin wiper retaining screws. See Figure 4-4.

2) Place a coin on the shelf wheel under the tip of the coin wiper.

3) Use a flat blade screwdriver in the slot of the coin wiper and housing. Twist screwdriver until the tip of the coin wiper just touches the edge of the coin sitting on the shelf wheel.

4) Tighten retaining screws, using care not to change the position of the coin wiper.
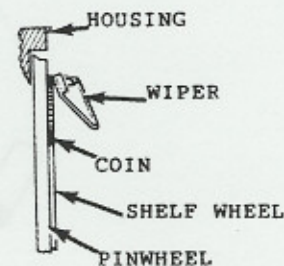
Figure 4-4
Wiper Adjustment

Slot Handle Mechanism

SLOT HANDLE MECHANISM DESCRIPTION AND FUNCTION

The slot handle mechanism is located on the right hand wall of the cabinet and is a mechanical ratchet assembly that simulates the start of the reel spin.

The handle mechanism has an electrical switch which indicates that the handle has been fully extended, which then activates the reel spin.

The lockout solenoid on the handle mechanism energizes when coins are accepted, allowing the handle to be pulled. The handle mechanism has bumpers to absorb the shock of hard
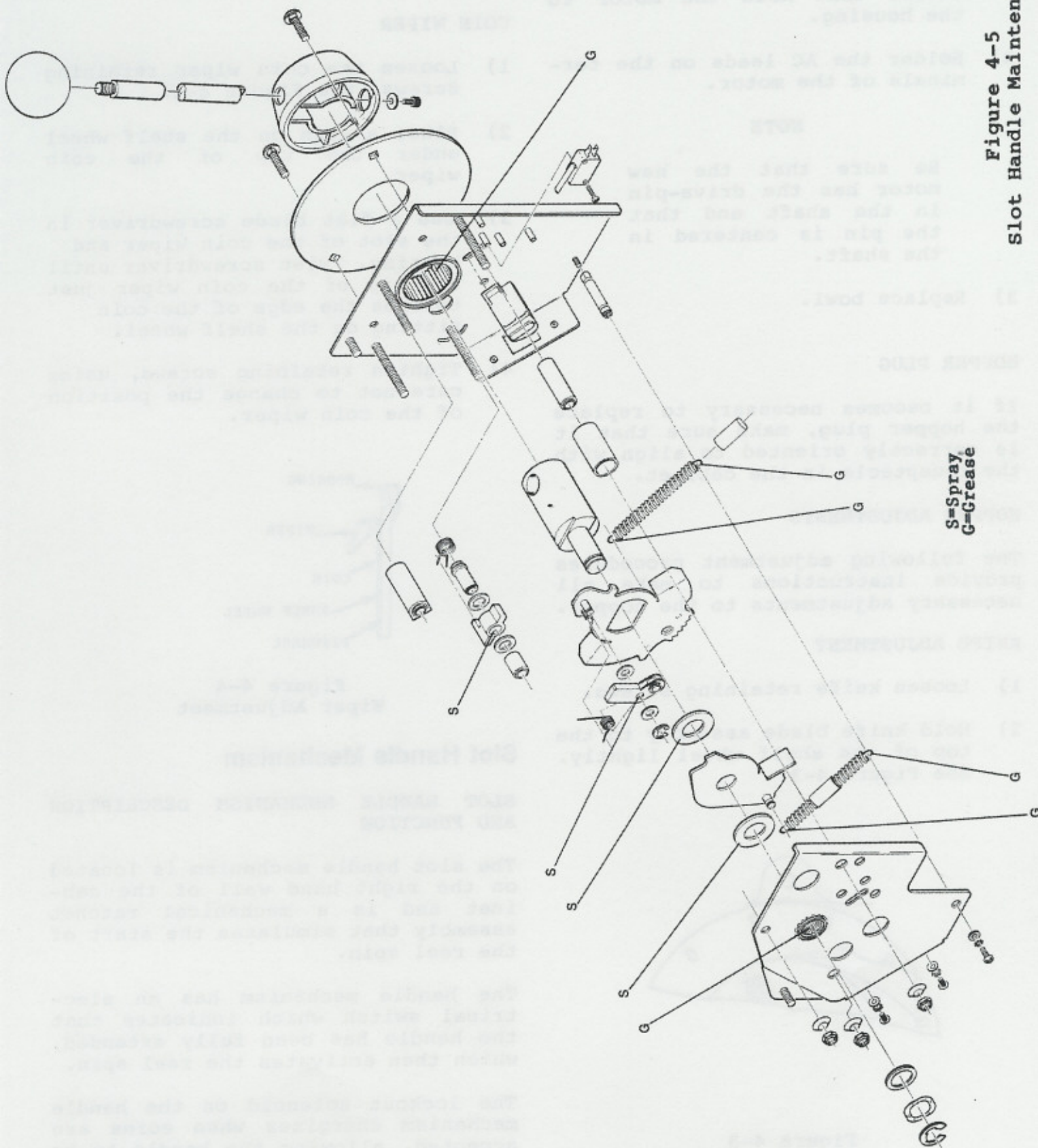
Figure 4-5
Slot Handle Maintenance

handle pulls or returns.

SLOT HANDLE MECHANISM REMOVAL AND INSTALLATION

To remove the slot handle mechanism, see Figure 4-5 and proceed as follows:

1) Turn the main power to the machine OFF.

2) Place a shop rag into the coin overflow bin to prevent parts from falling into the slot stand.

3) Unplug the wire harness from the switch mounted on the base plate.

4) Remove the 1/4-20 socket head screw from the handle hub remove handle and outer cover.

5) Remove the three 1/4-20 nuts that mount the handle module to the cabinet.

6) Remove the three carriage bolts and the ring plate.

7) Remove the handle module from the cabinet.

To install the slot handle mechanism, follow the removal steps in reverse order.

SLOT HANDLE MECHANISM MAINTENANCE

This section provides information for proper maintenance and operation checks for the slot handle mechanism.

1) To adjust the upper microswitch, pull the handle to the "bottom out" position and hold. Bend the microswitch lever until the switch contacts close. Lock the adjustment in place with the switch adjustment screw and release the handle.

2) Check the switch wiring with the machine wiring diagram. Refer to Section IX - Appendix for wiring diagram.

3) Lubricate all moving parts with a high film strength spray lubricant and extreme pressure grease. Refer to Section V for interval. See Figure 4-5 for application points.

Coin Handling Assembly

COIN HANDLING ASSEMBLY DESCRIPTION AND FUNCTION

The coin handling mechanism, with the exception of the drop chute for the cash box, is fully contained in the door of the S-Slot machine. It is designed to electronically or mechanically accept coins of the proper denomination and return undesired or invalid coins.

Another feature of the coin handling is the ability to change denomination with minimal effort. The coin handling has been designed to provide for various coin acceptors.
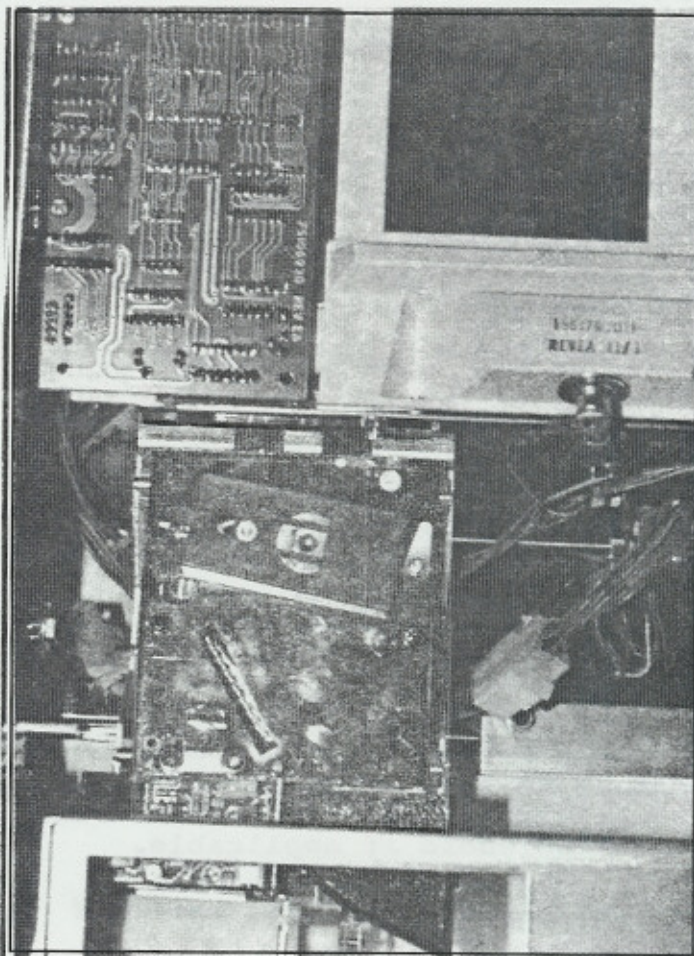
Figure 4-6
Coin Acceptor and LED Display Board

ATTACHING POINT - 50¢ ONLY
ATTACHING POINT- ALL DENOMINATIONS EXCEPT 50¢

LOCKOUT POSITIONING
SMALL COINS and 50¢
WITH SPACER

LOCKOUT POSITIONING
LARGE COINS and 45MM
(NO SPACER)

ENCODER POSITION
A = Large Coins
B = Small Coins, 50¢ and 45MM
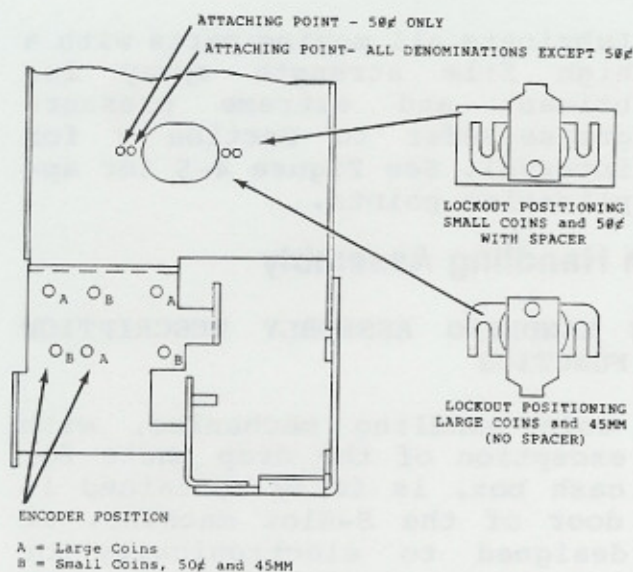
Figure 4-7
Lockout and Encoder Position

Contact IGT Casino Service for denomination changes. Refer to Section IX-Appendix for coin acceptor adjustments.

COIN HANDLING ASSEMBLY REMOVAL AND INSTALLATION

This section describes removal and installation of major components of the coin handling mechanism. Refer to Section VI-Mechanical Parts List.

COIN ACCEPTOR

To remove the coin acceptor, grasp the sides of the acceptor and pull away from the chassis until the clips release. If the acceptor is electronic, unplug the harness from the acceptor. See Figure 4-6.

CHASSIS ASSEMBLY

To remove the chassis assembly, remove the coin acceptor, then remove the three 6-32 screws from the back of the chassis. Disconnect the harness for the encoder or coin-in switch, diverter solenoid and lockout solenoid if applicable.

MOUNTING PLATE/COIN ENTRY ASSEMBLY

To remove the mounting plate, remove the coin acceptor and the chassis assembly, then remove the two 6-32 screws attaching the mounting plate to the entry assembly through the door.

COIN HEAD

To remove the coin head, remove the entry assembly then remove the two 3-48 cap screws.

To install the coin assembly components, follow the above steps in reverse order.

CHASSIS ASSEMBLY COMPONENT DISASSEMBLY AND ASSEMBLY

This section provides instructions for the removal of the major components of the chassis assembly.

LOCKOUT SOLENOID

Machines equipped with a mechanical coin acceptor require a lockout solenoid which is located on the acceptor chassis behind the coin acceptor. To remove the lockout solenoid, remove the acceptor then remove the two 4-40 screws attaching the solenoid to the chassis. A spacer is placed under the solenoid for small denomination coin acceptors. See Figure 4-7 for positioning of the lockout solenoid for the different denominations.

ENCODER INSERT (MACHINES WITH COIN-IN OPTICS)

To remove the encoder insert, remove the two 4-40 screws holding the top encoder board to the encoder assembly and move the board to access the insert. A unique insert is used for each denomination of coin. Each encoder insert is identified with the correct denomination or coin size.

ACCEPTOR CLIPS

To remove the coin acceptor clips, remove the coin acceptor then remove the clips by turning them 1/4 turn. See Figure 4-8 for positioning of the clips for various denominations.
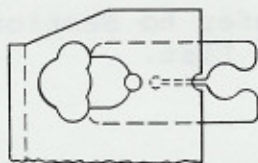
LARGE COIN POSITION
(INCLUDING $5 TOKEN)
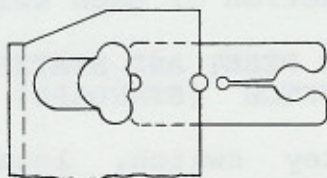
SMALL COIN POSITION
(INCLUDING 50¢)

Figure 4-8
Acceptor Clip Position

NOTE

Only three clips are used for the $5 token coin acceptor. Use of the fourth clip prevents coin reject.

REJECT CHUTE

To remove the reject chute, remove the two 6-32 screws attaching the chute to the chassis assembly.

DIVERTER SPRING

To remove the diverter spring, remove the 4-40 screw attaching the spring to the cam pivot and release the spring from the cam.

DIVERTER

To remove the diverter, position the cam half way through its travel and place a small screwdriver between the diverter and chassis on the side opposite the cam. Twist the screwdriver until the pivot pin clears the hole.

NOTE

The following components require removal of the chassis assembly from the door. Refer above to Chassis Assembly Removal.

ENCODER ASSEMBLY (MACHINES WITH COIN-IN OPTICS)

To remove the encoder assembly remove the chassis assembly from the door and remove the three 4-40 cap screws from the back side of the chassis assembly attaching the encoder assembly to the chassis. See Figure 4-7 for the correct position and hole pattern for different denominations.

SWITCH HOUSING AND COIN SWITCH (MACHINES WITH COIN-IN SWITCH)

To remove the switch housing, remove the chassis assembly from the door and remove the 4-40 screw and #4 nut attaching the switch housing to the chassis. The coin switch can then be separated from the switch housing by removing the two 4-40 screws and #4 nuts.

DIVERTER SOLENOID

To remove the diverter solenoid, remove the chassis assembly, encoder or coin-in switch assembly, and the diverter spring. Remove the three 6-32 cap screws attaching the solenoid to the chassis and slide the solenoid off the drive pin. This removal provides access to the diverter cam and the shim.

To install the components of the chassis assembly, follow the removal instructions in reverse order. Make sure the spring is not pinched between the solenoid and the mounting bracket. Check the cam movement to make sure it does not rub the harness or the coin reject chute.

COIN HANDLING ASSEMBLY ADJUSTMENTS, LUBRICATION AND MAINTENANCE

The coin handling kit in the IGT S-Slot is designed so that no adjustment or lubrication is required.

To assure proper continuous operation, visually inspect all coin handling components for loose or broken parts and excess wear every three months. Inspect, clean off excessive coin deposits and check

for proper diverter operation every three months. Refer to Section V Self Test to check diverter operation. Inspect and clean encoder optics every three months.

NOTE

If the diverter solenoid is very audible with the door closed, the adjustment screw on top of the solenoid may be turned 1/16 turn at a time until the buzz is minimized.

DENOMINATION CHANGE

To make a denomination change, see Table 4-1 for a definition of components and alignments affected. Refer to Coin Handling Assembly Removal and Installation for procedures to change the affected components. Refer to Section VI-Mechanical Parts List.

Switches

This section lists all possible switches, both standard and optional, and provides a description of the function of each switch.

JACKPOT RESET AND STATISTICAL DISPLAY SWITCH (STANDARD)

This key switch, located on the lower right hand side of the machine, is a multi-functional switch used for the following functions:

1) To reset the machine when a hand pay jackpot has occurred. Refer to Section III- Game Instructions.

2) To enter the Statistical Display mode. Refer to Section V-Self

FROM / TO — COMPONENT	100 SERIES COIN MECH (MECHANICAL)														COIN COMPARATOR				3RD WAVE			
	$5			LG. COIN				SM. COIN				50¢			LG. COIN		SM. COIN		LG. COIN		SM. COIN	
	LG. COIN	SM. COIN	50¢	$5	LG. COIN	SM. COIN	50¢	$5	LG. COIN	SM. COIN	50¢	$5	LG. COIN	SM. COIN	LG. COIN	SM. COIN	LG. COIN	SM. COIN	LG. COIN	SM. COIN	LG. COIN	SM. COIN
LOCKOUT SOLENOID	—	C	C	—	—	C	C	C	C	—	M	C	C	M	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LOCKOUT SPACER	N/A	A	A	N/A	N/A	A	A	R	R	—	—	R	R	—	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENCODER INSERT¹	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
ENCODER HOUSING¹	M	—	—	M	—	M	M	—	M	—	—	—	M	—	—	M	M	—	—	M	M	—
COIN-IN SWITCH²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	C	C	N/A	N/A	C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SWITCH HOUSING²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	—	C	N/A	N/A	C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ACCEPTOR CLIPS	—	M	M	—	—	M	M	M	M	—	M	M	—	—	M	M	—	—	M	M	—	—
COIN HEAD	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
COIN BASE	—	C	C	—	—	C	C	C	C	—	—	C	C	—	—	C	C	—	—	C	C	—
ACCEPTOR HARNESS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	C	C	—
ACCEPTOR	C	C	C	C	C	C	C	C	C	C	C	C	C	C	—	C	C	—	C	C	C	C

R—REPLACE   M—MOVE   C—CHANGE   A—ADD   N/A—NOT APPLICABLE   DASH (—)—NO CHANGE

¹ FOR MACHINES WITH COIN-IN OPTICS
² FOR MACHINES WITH COIN-IN SWITCH

Table 4-1
Denomination Change

Test and Statistical Display
Mode.

HANDLE SPIN SWITCH (STANDARD)

This microswitch is mounted on the
handle mechanism and provides input
to the CPU for reel spin actuation.

POWER ON SWITCH (STANDARD)

This toggle switch is mounted inside
the cabinet on the service panel and
turns the main power to the machine
on or off.

CHANGE LIGHT SWITCH (STANDARD)

This pushbutton switch is mounted on
the door and turns on the candle
light on top of the machine.

SELF TEST SWITCH (STANDARD)

This pushbutton switch is located
inside the cabinet on the test
switch panel. It is used to enter
and exit the Self Test Mode as well
as to advance the groups within the
Self Test Mode.

DOOR SWITCH (STANDARD)

This pushbutton switch is located
inside the cabinet and turns on the
door open light, deactivates the
meters, blanks the LED displays,
zeroes the coins played display, and
deactivates the progressive amount
from incrementing when the door is
opened. It also allows for game play
while the door is open but any
credits accumulated are lost upon
door closure.

BET ONE CREDIT (OPTIONAL)

This player actuated pushbutton
switch is located on the front of
the door when the machine is equip-
ped with credit play feature and
serves the same purpose as a single
coin being played.

PLAY [X] CREDITS (OPTIONAL)

This player actuated pushbutton
switch is located on the front of
the door when the machine is equip-
ped with the credit play feature. It

allows players to wager the maximum
number of coins per game and auto-
matically starts the game once the
wager is recorded.

CASH OUT (OPTIONAL)

This player actuated pushbutton
switch is located on the front of
the door when the machine is equip-
ped with the credit play feature and
allows the player to collect
accumulated credits.

SPIN REELS (OPTIONAL)

This player actuated pushbutton
switch is located on the front door
when the machine is equipped with
the spin feature and allows the
player to spin the reels with the
switch rather than the handle.

Lighting

This section describes both the
standard and optional lighting as-
semblies for the S-Slot machine and
lamp replacement.

REEL LIGHT ASSEMBLY (STANDARD)

The reel light assembly is located
above the reel mechanism. The light
assembly is a fluorescent light.

To replace reel light bulb, proceed
as follows:

1) Open the door and turn the power
    OFF.

2) Turn the fluorescent bulb 1/4 turn
    to remove from the sockets.

To install replacement bulb follow
the above steps in reverse order.

REEL GLASS LIGHTS (STANDARD)

The reel glass lights are located on
the door in plastic light barriers.
Depending on the type of machine,
various #47 incandescent bulbs are
arranged about the reel glass.

To replace bulbs, proceed as
follows:

1) Open the door and turn the main

power OFF.

2) Unplug the light socket from the barrier.

3) Turn the bulb 1/8 turn counterclockwise and gently pull the bulb straight out from the socket

To install the replacement bulb, proceed as follows:

1) Insert the bulb straight into the socket and twist it 1/8 turn clockwise.

2) Insert the socket into the barrier until it snaps in place.

3) Turn the power ON, close and lock the door.

BELLY LIGHT ASSEMBLY (STANDARD)

The belly light is a fluorescent light assembly located inside the lower portion of the door, below the coin acceptor mechanism.

To replace the bulbs in the lower light panel, proceed as follows:

1) Open the door and turn the power OFF.

2) Gently twist the fluorescent bulb from the sockets.

To install the bulbs, follow the above steps in reverse order.

SERVICE LIGHT ASSEMBLY

The service light assembly is located inside the cabinet under the fuse panel.

To replace the service light bulb proceed as follows:

1) Open door and turn main power OFF.

2) Unscrew bulb from socket and remove.

To replace bulb follow the above steps in reverse order.

AWARD GLASS LIGHT ASSEMBLY (OPTIONAL)

To replace the lamps in the Top Box, proceed as follows:

1) Open the machine door and turn the power OFF.

2) Remove glass by pushing up and pivoting the lower end outward.

3) Twist the incandescent bulb 1/8 turn counterclockwise to remove it from the socket in plastic barrier. Gently twist the fluorescent bulb from its sockets. See Figure 4-9.

To install replacement bulbs, follow the above steps in reverse order.
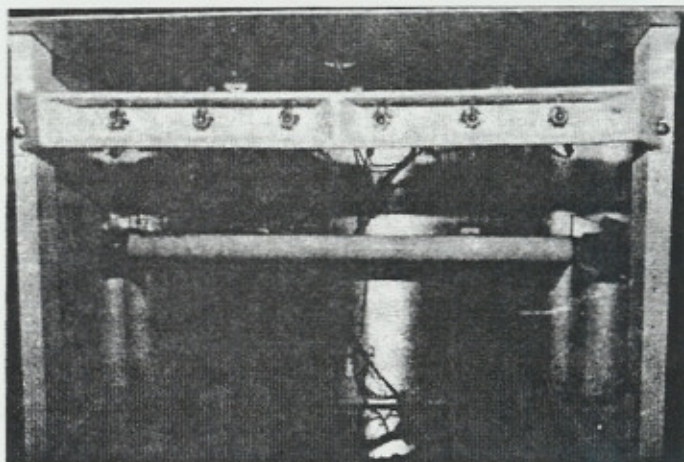
**Figure 4-9
Typical Award Glass Lighting**

LIGHT EMITTING DIODE (LED) DISPLAY ASSEMBLY (STANDARD)

Refer to Section VI-Electronics.

PLAYER ACTUATED PUSHBUTTON LIGHTS

The player actuated pushbuttons are equipped with incandescent lights that turn on when appropriate. See -Switches for information on each individual switch.

To replace the bulb proceed as follows:

1) Open the door.

2) Turn the machine power OFF.

3) Turn the bayonet type socket from the switch base to remove.

4) Gently pull the bulb straight out from the socket.

To install the replacement bulb proceed as follows:

1) Insert the bulb straight into the socket, and turn and engage the socket bayonets.

2) Turn the machine ON.

3) Close and lock the door.

Fuses

The three fuses in the IGT S-Slot are located on the service panel below the reel mechanism shelf to the left cf the hopper. Refer to Section IX-Appendix for Wiring Schematic.

To inspect and/or replace any fuse turn the cap 1/4 turn, in the direction of the arrow, and pull the fuse out. If the fuse is blown, pull the fuse out of the cap and replace it with one with the same amperage rating. Insert the fuse into the socket and turn the cap 1/4 turn clockwise.

Printed Circuit Boards

This section describes the printed circuit boards and their removal and installation in the IGT S-Slot machine. This section also describes the DIP switch option selection. There are two standard printed circuit boards in the IGT S-Slot machine, the Processor Board and the LED Display Board.

PROCESSOR BOARD

The Processor Board is located in the lower portion of the cabinet against the back wall. This board contains the game processor chip which is the central element in the system. The Processor Board also contains a DIP switch for option selection. For more information on the circuit boards refer to Section VI Electronics.

DIP SWITCH OPTIONS

A DIP switch is located on the Processor Board. It provides for maximum hopper pay, spin sound, game cycle and progressive option selection. See Table 4-2 for the switch positions.

To make DIP switch option selections, turn the power OFF and remove the Processor board. See Board removal.

FUNCTION	OPTION	SWITCH							
		1	2	3	4	5	6	7	8
MAXIMUM HOPPER PAY	300 COINS	OFF	OFF						
	400 COINS	ON	OFF						
	600 COINS	OFF	ON						
	PROGRAMMABLE	ON	ON						
SPIN SOUND				ON					
GAME CYCLE	NORMAL				OFF				
	FAST				ON				
PROGRESSIVE						ON			
	HI—LO					ON	ON	ON	
	DOUBLE					ON		ON	
	LINK					ON			ON

Table 4-2
DIP Switch Options

LED DISPLAY BOARD

The Display Board is located inside the door adjacent to the reel windows. This board displays COINS PLAYED, WINNER PAID, and CREDITS (optional). The Display Board is also used to display Self Test and Statistical Data. Refer to Section V Self Test and Statistical Display Mode and Section VI Electronics.

PROGRESSIVE DRIVER BOARD (OPTIONAL)

The Progressive Driver Board is located behind the progressive display in the machine top box. This board interfaces between the Processor board and any of a variety of progressive LED display boards. Refer to Section VI Electronics.

PROCESSOR BOARD REMOVAL AND INSTALLATION

CAUTION

> Handle all circuit boards with care to avoid possible damage to the components, the boards, and the edge connectors.

To remove the processor board, proceed as follows:

1) Turn the main power to the machine OFF. Unlock the tray and pivot outward.

2) Disconnect the wire harness and remove the assembly from the cabinet. See Figure 4-10.

To install the processor board assembly, proceed as follows:

1) Connect the wire harness to the board

2) Determine the location of the circuit board and align the tray with the guides on bottom of the cabinet.

3) Close and lock the tray.
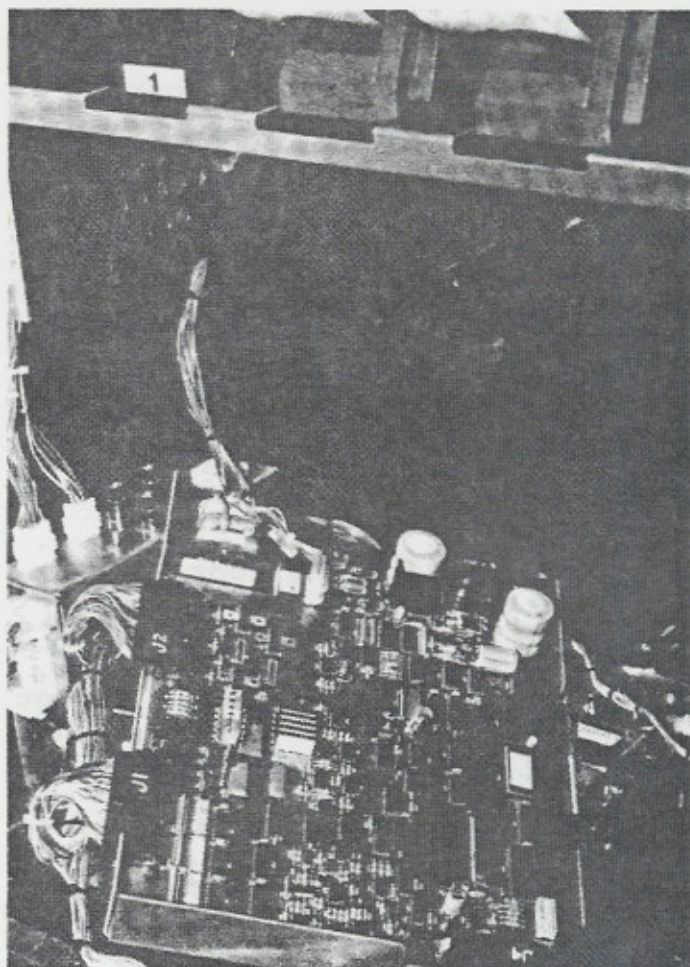
Figure 4-10
Processor Board Installation

LED DISPLAY BOARD ASSEMBLY REMOVAL AND INSTALLATION

To remove the LED Display Board, proceed as follows:

1) Open the door and turn the main power OFF.

2) Unscrew the two Phillips screws and remove the board from the door. See Figure 4-6.

3) Unplug the wire harness from the board.

Follow the reverse procedure to install the LED Display Board.

CAUTION
Make sure the O-rings are in place on the screws.

PROGRESSIVE DRIVER BOARD REMOVAL AND INSTALLATION

To remove the Progressive Driver Board proceed as follows:

1) Open the door and turn the power OFF.

2) Remove the award glass.

3) Disconnect the harnesses from the board.

4) Remove the four screws and remove the board from the bracket.

Follow the reverse procedure to install the Progressive Driver Board. See Figure 4-11.
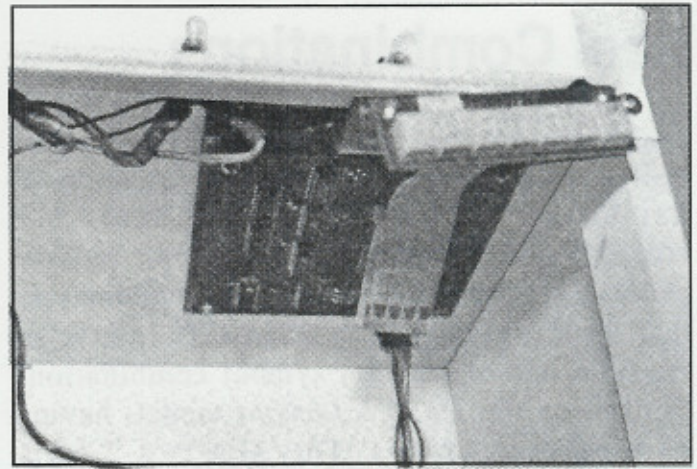
Figure 4-11
Typical Progressive
Driver Board Installation

3 REEL
3 LINE

R/S 987

R/S 986

R/S 984

Reel Combinations

Using stepper-motor driven reels with 11 symbols and 11 blanks, *S-Slots* are capable of having up to 256 symbols per reel. The stopping positions are determined by a random generator that selects from the reel combinations that are programed into a chip. Below is an example one of the reel symbol combinations utilized on the *Double Jackpot* model, having 64 positions per reel. This slot is a 2-coin, 3-reel machine with a total of 262,144 total combinations.

Symbol	1st	2nd	3rd
Blank	32	37	43
Cherry	2	2	2
1 Bar	22	18	11
5 Bar	6	5	6
Dble JP	2	2	2
Total	64	64	64

Reel Combinations
used on model #36
DOUBLE JACKPOT

Coin No.	Percent Pay Back	Hit Freq.	Total Hits	Total Pays
1	92.026%	14.521%	38066	241240
2	92.026%	14.521%	38066	482480

Program for Reel Combinations

Line	1st	2nd	3rd	Line	1st	2nd	3rd
1	~~	~~	~~	33	CH	1B	~~
2	1B	~~	~~	34	CH	1B	CH
3	1B	~~	~~	35	~~	~~	CH
4	1B	5B	~~	36	~~	~~	~~
5	1B	~~	5B	37	1B	CH	~~
6	~~	~~	~~	38	1B	CH	~~
7	~~	~~	~~	39	1B	~~	~~
8	~~	1B	~~	40	1B	~~	5B
9	~~	1B	~~	41	~~	~~	~~
10	DJ	~~	1B	42	~~	~~	~~
11	~~	~~	1B	43	~~	5B	~~
12	~~	~~	1B	44	~~	5B	~~
13	~~	5B	1B	45	DJ	~~	1B
14	~~	5B	~~	46	~~	~~	~~
15	1B	~~	~~	47	~~	~~	~~
16	1B	~~	~~	48	~~	1B	~~
17	1B	~~	~~	49	~~	1B	~~
18	1B	1B	DJ	50	1B	1B	5B
19	~~	1B	~~	51	1B	1B	5B
20	~~	1B	~~	52	1B	~~	~~
21	~~	1B	~~	53	1B	~~	~~
22	5B	~~	~~	54	~~	~~	~~
23	5B	~~	5B	55	~~	~~	~~
24	5B	~~	5B	56	~~	DJ	DJ
25	~~	~~	~~	57	5B	~~	~~
26	~~	DJ	~~	58	5B	~~	~~
27	~~	~~	~~	59	5B	~~	~~
28	1B	~~	~~	60	~~	~~	~~
29	1B	~~	1B	61	~~	1B	1B
30	1B	~~	1B	62	1B	1B	1B
31	~~	1B	~~	63	1B	1B	1B
32	~~	1B	~~	64	1B	1B	1B

1ST COIN WINNERS

JACKPOT	JACKPOT	JACKPOT	800
5	5	5	50
(bell)	(bell)	(bell)	20
BAR	BAR	BAR	10
ANY BAR	ANY BAR	ANY BAR	5
Any Two	(bell)		5
Any One	(bell)		2

2ND COIN WINNERS

JACKPOT	JACKPOT	JACKPOT	1600
5	5	5	100
(bell)	(bell)	(bell)	40
BAR	BAR	BAR	20
ANY BAR	ANY BAR	ANY BAR	10
Any Two	(bell)		10
Any One	(bell)		4

JACKPOT DOUBLES WINNING COMBINATION

2 JACKPOT's PAYS 4X WINNING COMBINATION EXCEPT WHEN 3 JACKPOT's ARE SHOWING

When one Double Jackpot symbol appears on the payline the award is doubled. When two of these symbols line up on the payline the win is multiplied four times.

Section V
Self Test, Statistical Display, Troubleshooting & Field Service

Basic Troubleshooting Information

The following procedures are used to isolate a faulty circuit board from other devices in the machine:

1) Check the condition of all harnessing and securing of all wires, as well as the individual contacts of the mating connectors to the circuit board;

2) Substitute a like unit known to be in good working order;

3) Check all switches for proper operation with the Self Test Mode;

4) Check the supply voltage to make sure it is within specified limits.

If a circuit board proves to be inoperative, replace it and return the faulty board to IGT Customer Service.

Recommended Test Equipment

It is recommended that the IGT S-Slot Tester be used to troubleshoot the circuit boards and the electronic system of the S-Slot machine.

Self Test Mode

The Self Test Mode is entered by opening the door and pressing the Self Test Switch, located on the switch panel. The Self Test Mode can only be entered when the machine is in the Idle Mode or in a Tilt Condition.

Some of the option selections are only available if the DIP switch positions correspond. Refer to Section IV - DIP Switch Selections. Each group and test within a group

will be displayed on the LED Display on the front door.

> **Note**
> The options may not be changed when the machine is in a Tilt Condition.

To advance to the selected group, continue pressing the Self Test Switch until the desired test group is found. To advance within each test group, turn the Jackpot Reset Switch clockwise. See Figure 5-1.

To exit the Self Test Mode, advance one step past the Option Selection Group and wait. After a short delay, the display will return to the game status and the Idle Mode. To proceed back to Self Test Group 1, press the Self Test Switch. The Self Test Mode can also be exited by closing the door in any group but the Input Test group.

There are eight test groups in the Self Test Mode.

GROUP	DESCRIPTION	DISPLAY
1	Input Test	1
2	Output Test	2
3	Sound Test	50
4	Display Test #1	-
5	Display Test #2	-
6	Hopper Test	3
7	Paytable/Reel Strip	4,5
8	Option Selections	6,7,8 & 9

The following information and figures provide a complete breakdown for all of the possible tests and displays within each of the eight groups.

GROUP 1 - INPUT TEST

In the Input Test, a 1 will be shown on the **Coins Played** display and

NUMBER	DESCRIPTION
10	Coin in A optical input or mechanical coin input
11	Coin in B optical input or door open coin switch
12	Coin in C optical input
13	Door open switch
14	Hopper coin out
15	Hopper weight switch
16	Handle switch and/or spin switch
17	Jackpot reset/Statistical display switch
20	Play one credit switch*
21	Play max credits switch*
22	Cashout credits switch*
23	Change light switch
24	Reel mechanism in place input
25	Self test switch
26	Spare
27	Spare
30	Nudge reel #1 switch*
31	Nudge reel #2 switch*
32	Nudge reel #3 switch*
33	Nudge reel #4 switch*
34	Nudge reel #5 switch*
35	Nudge direction up switch*
36	Nudge direction down switch*
37	Spare
40	Reel #1 optic
41	Reel #2 optic
42	Reel #3 optic
43	Reel #4 optic*
44	Reel #5 optic*

* - Optional

Table 5-1
Input Tests

NUMBER	DESCRIPTION
10	Coin drop meter
11	Coin out meter
12	Coin in meter
13	B switch output for SDS
14	Hopper drive signal #1
15	Stepper motor direction
16	Not used
17	Not used
20	3 lamp coin stepper*
21	4 lamp coin stepper*
22	5 lamp coin stepper*
23	6 lamp coin stepper*
24	Nudge switch lamps*
25	Spare
27	Jackpot meter
31	Change lamp
33	Diverter
34	Coin lockout
35	Hopper drive signal #2
36	1 lamp coin stepper*
37	2 lamp coin stepper*
40	Stepper motor power supply level
41	Insert coin lamp
42	Coin accepted lamp
43	Up/Down lamp*
44	Bet max credits switch lamp*
45	Bet one credit switch lamp*
46	Cashout switch lamp*
47	Spin reels switch lamp*

* - Optional

Table 5-2
Output Tests
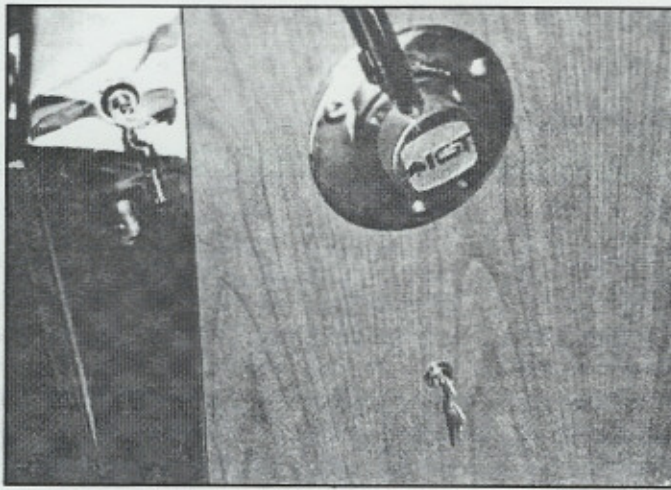
Figure 5-1
Jackpot Reset Keyswitch

three of four digits will be shown
on the **Winner Paid** display. The
first digit represents the input
byte selected, the second digit
represents the input bit position
selected and the third digit
represents the state of the input.
See Figure 5-2. See Table 5-1.

To test the input, locate the
appropriate byte and bit from the
table. Activate the Jackpot Reset
Switch until the lefthand digits
correspond. Activate the input and
observe the logic level change from
0 to 1 or vice versa. A "1"
indicates that the input is active.

GROUP 2 - OUTPUT TEST

In the output test, a 2 will be
shown on the **Coins Played** display
and two of four digits will be shown
on the **Winner Paid** display. The
first digit represents the byte
selected and the second digit
represents the bit selected. See
Table 5-2.

To test an output, locate the proper
byte and bit from the table.
Activate the Jackpot Reset Switch
until the digits on the display
correspond. Activate the handle/spin
switch and observe that output.
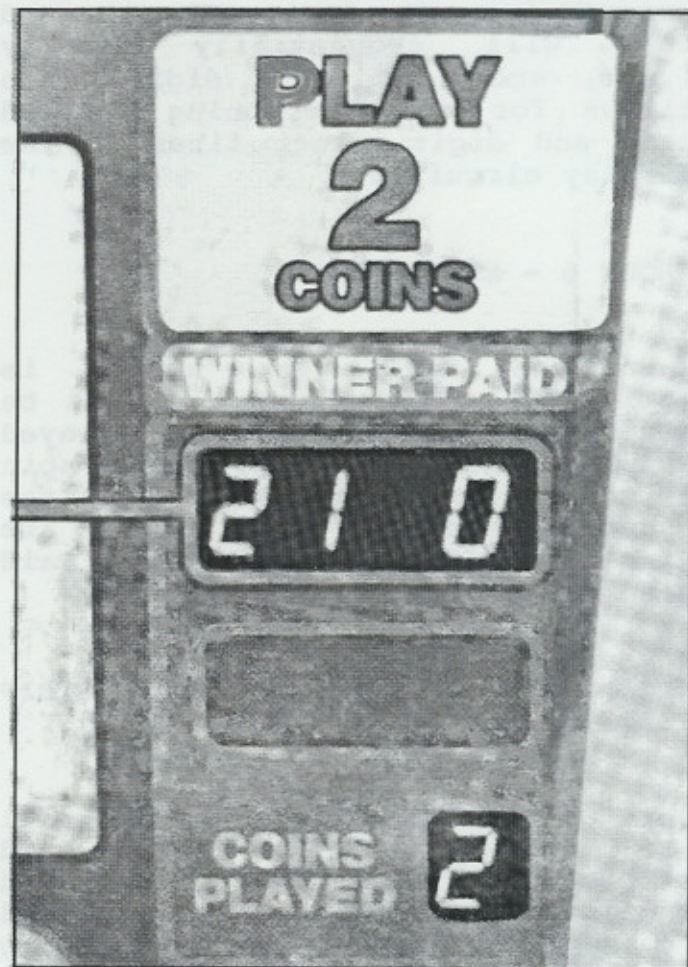
Figure 5-2
Input Test Display

Note
The Handle Spin switch and
the "Spin Reels" switches
are wired in parallel. Ei-
ther pull the handle or push
the "Spin Reels" switch.

GROUP 3 - SOUND TEST

The **Winner Paid** display will read
50. Each sound available is selected
by activating the Jackpot Reset
switch. The sound is played by
activating the handle/spin switch.

GROUPS 4 & 5 - DISPLAY TESTS

The next two pushes of the Self Test
switch will perform a two part test
of the machine displays. The first
test will display 8's in each digit
of all displays including the

5-3

progressive displays. The second test will sequentially display 1,2,4, and 8 in each digit. This allows for troubleshooting shorted data and digit-select lines in the display circuitry.

GROUP 6 - HOPPER TEST

When the Self Test switch is activated to this test a 3 will be displayed in the **Coins Played** display. Activate the handle/spin switch to pay 10 coins from the hopper. The number of coins paid are displayed on the **Winner Paid** display.

GROUP 7 - PAYTABLE AND REEL STRIP TEST

This test first displays the reel strip number on the **Winner Paid** Display and a 4 on the **Coins Played** display. The paytable is displayed by spinning the reels to winning combinations. The first coin win is displayed on the **Winner Paid** display and the maximum coin-in win on the **Credits** display. If the machine is set for progressive, then the maximum coin amount will flash on and off. Each pay is displayed by activating the handle/spin switch.

After the paytable has been displayed the reel mechanism will spin to position #1 on all of the reels and a 5 will be shown on the Coins Played display. As the handle/spin switch is activated all of the reels will move one stop at a time in descending order (32, 31, 30,...). The position of the reels is displayed on the **Winner Paid** display. The first position number displayed is the total number of stops.

NOTE
The Reel Strip Test can also be entered by pushing the Self Test Switch until the 5 appears in the **Coins Played** display.

GROUP 8 - OPTION SELECTIONS

Denomination

The **Coins Played** display will read 6 and the **Winner Paid** display will show the current denomination. Activating the handle/spin switch will step through the available denominations including several "no denomination" states. If the machine is used as a progressive jackpot machine, then the denomination setting is used to determine the coin equivalent of the progressive dollar amount. This value is then used to increment jackpot meters for accounting purposes. The value of denomination also is used to calculate the progression rate.

Maximum Hopper Pay

The **Coins Paid** display will read 7 and the **Winner Paid** display will show the current value of the maximum amount of coins to be paid from the hopper if DIP switch numbers 1 and 2 are on. If n maximum hopper value is desired then this value is set at 9999. If 9999 is selected, all wins, including progressive wins, will be attempted from the hopper, even if greater than 9999 coins.

Note
This feature should be used with care since it may result in excessive hopper fills on progressive machines.

The digit to be changed is selected by activating the Jackpot Reset Switch. The selected digit will flash on and off. The value of the digit is incremented by activating the handle/spin switch. When all digits have been selected, activate the Self Test Switch to save the new value and proceed to the next test.

Partial Pay

The **Coins Played** display will read 8 and the **Winner Paid** display will

show the current value of the amount of coins to be paid from the hopper when a jackpot occurs. If no partial pay is desired, then this value is set to 0000. The digit to be changed is selected by activating the Jackpot Reset Switch. The selected digit will flash on and off. The value of the digit is incremented by activating the handle/spin switch. When all the digits have been selected, activate the Self Test switch to save the new value and proceed to the next test.

Progressive #1

The **Coins Played** display will show **9** when the DIP switch #5 on the processor board is set to ON for progressive and DIP switch #8 is OFF for stand alone.

Note
If the DIP switch has just been changed the display may not appear until the door has been closed and the test started again because the DIP switch settings are only read upon door closing, power up and end of games.

There are four states within this section which will be indicated on the **Winner Paid** display. The states refer to the setting of the progressive reset value, the maximum progressive amount, the progressive percentage and the current amount of the jackpot. Each of these values will be displayed on the local progressive display and may be changed by activating the Jackpot Reset switch to select the digit and activating the handle/spin switch to change the digit as was performed to change the partial pay amount. The Self Test switch is used to step to the next test.

STATE - DESCRIPTION

1 - Reset Value
2 - Maximum Value
3 - Progressive Percent
4 - Current Amount

Progressive #2

This selection will only be displayed if the DIP switch #7 is ON. The **Coins Played** display will read **9** and the values to be set will be displayed on the local progressive display as above and is a continuation of Progressive #1 . There are four states numbered 5 through 8. These set the second progressive display.

STATE - DESCRIPTION

5 - Reset Value
6 - Maximum Value
7 - Progressive Percent
8 - Current Amount

Statistical Display Mode

STATISTICAL DISPLAY MODE DESCRIPTION

The statistical Display Mode allows for the examination of the status of CMOS and tilt conditions. Information appears on the LED display on the front of the door. This mode also allows for examination of the previous game played.

There are three groups in the Statistical Display Mode:

1) **Statistical Data**

2) **Last Game Data**

3) **Game State Audit Trail**

Note
The Statistical Display Mode can only be entered when the machine is in the Idle Mode or when a Tilt Condition exists.

To enter the Statistical Display Mode, turn the Jackpot Reset key switch clockwise once and release. This updates the CMOS and enters the first group. To advance within a group, activate the handle/spin switch. To advance to subsequent groups, turn the Jackpot Reset switch.

The Handle spin switch
and the "Spin Reels" switch
are wired in parallel. Eith-
er pull the handle or push
the "Spin Reels" switch.

To exit the Statistical Display
Mode, Turn the Jackpot Reset Switch
clockwise to the last group. Then
turn the reset switch once and the
machine will return to the Idle mode
and normal game play.

STATISTICAL DATA

The first turn of the Jackpot Reset
key switch enters the Statistical
Data group. The **Coins Played** display
will show **01** flashing first 0 then 1
then blank for coin in cumulative
total. Activating the handle/spin
switch will advance through the
data. See table 5-3.

LAST GAME DATA

The second turn of the Jackpot Reset
key switch enters the Last Game Data
group. The position of reel #1 will
be displayed in the **Winner Paid**
display. See Figure 5-3. With each
subsequent activation of the
handle/spin switch the other reel
positions are displayed in numerical
order. After the last reel position
has been displayed, the next
activation of the handle/spin switch
will display last coins in, coins
paid and credits in their normal
locations.

GAME STATE AUDIT TRAIL

The third statistical display mode
provides an audit trail of sixteen
digits that show the last sixteen
states that the machine entered.
Activate the handle/spin switch and
the digits will scroll across the
Winner Paid display.

COINS PLAYED DISPLAY	DESCRIPTION
01	Coin in cumulative total
02	Coin out cumulative total
03	Coin drop cumulative total
04	Collect credit total
05	Games played total
06	Jackpot pays cumulative total
07	Door opens cumulative total
08	Wins cumulative total
09	Losses cumulative total
10	Coin in tilts cumulative total
11	Coin out tilts cumulative total
12	Resets cumulative total
13	Hopper empty tilts cumulative total
14	Not used
15	Not used
16	Number of games played since last door closed
17	Number of games since last power up
18	Number of 1 coin games
19	Number of 2 coin games*
20	Number of 3 coin games*
21	Number of 4 coin games*
22	Number of 5 coin games*
23	Number of 6 coin games*
24	Number of 7 coin games*
25	Number of 8 coin games*
26	Number of 9 coin games*

* - Optional

Table 5-3
Statistical Data Displays

Figure 5-3
Last Game Data Display

Tilt Messages & Processing

When a tilt condition exists, one of the numbers in Table 5-4 will appear in the **Winner Paid** display and the following occurs:

a. The change lamp (candle) will flash.

b. All game play will stop until the tilt is reset by the attendant.

c. The hopper is stopped and the coin acceptor lockout coil is deactivated.

d. Reel tilts will halt the game without finishing the spin.

With the exception of numbers 12, 61, and 62, the tilt conditions are cleared by opening and closing the door.

NUMBER	DESCRIPTION
12	Low battery voltage
21	Coin in tilt
31	Extra coin paid out
32	Coin jam
33	Empty hopper
41	Reel # tilt
42	Reel #2 tilt
43	Reel #3 tilt
44	Reel #4 tilt
45	Reel #5 tilt
49	Reel mechanism disconnected
61	Bad CMOS RAM
62	Bad EPROM

Table 5-4
Tilt Condition Codes

The following describes each of the thirteen tilt conditions and method of clearing:

12) LOW BATTERY VOLTAGE - The voltage of the battery that preserves the CMOS memory is below 2.9VDC. To clear tilt, replace the battery on the processor board.

> **Note**
> Check casino and state
> security procedures.

21) COIN IN TILT - Coin in jam caused by stringer, coin in jam or some problem with the detectors (LED's), may also indicate a valid coin in sequence continued with the door open. To clear, open then close the door. If the tilt code still exists, proceed with the following steps:

   a) Check for and clear jammed coins in the coin handling in the door.

   b) Make sure the LED's in the optic encoder are not obstructed.

   c) Check the wire harness connections on the coin handling.

31) EXTRA COIN PAID OUT - Extra coin paid out by the hopper. To clear, open and close the door. Check for proper operation of the hopper brake.

5-7

32) COIN JAM - Coins jammed in the hopper. To clear, open and close the door. Check for and clear jammed coins in the hopper. Check the harness to the hopper and the hopper harness.

33) EMPTY HOPPER - The hopper is empty. To clear, open and close the door. Check for empty hopper and refill. Check the harness to the hopper and the hopper harness.

41, - 45) REEL TILT - One of the reel mechanisms has tilted. To clear, open and close the door. If the tilt condition still exists, isolate the problem then proceed with the following steps:

Note
To isolate the problem, turn the power OFF and swap the connector to the indicated reel with one from another reel mechanism. Then open and close the door the reels will attempt to reset. If the same tilt code appears then the problem is in the harness or on the processor board. If the other reel tilt code is displayed then the problem is in the reel mechanism.

a) If the problem is isolated to the reel mechanism, check that the optics are not obstructed or loose. If the optics are not the problem, then replace the reel mechanism.

CAUTION
Do not disconnect the reel mechanism while the power is ON, damage to the processor board will result.

b) If the problem is isolated to the harness or the processor board, check the wire harness connections at the plug to the reel mechanism and to the processor board. If the wire harness checks repair or replace the processor board.

49) REEL MECHANISM DISCONNECTED -One of the reel mechanisms is not receiving signals from the processor board. To clear, open and close the door. If the tilt condition still exists, then check the wire harness. If the harness checks then the problem is in the processor board. Repair or replace the processor board.

CAUTION
Do not disconnect the reel mechanism while the power is ON, damage to the processor board will result.

61) BAD CMOS RAM - There is a problem in the CMOS circuitry. To clear, press and hold the Self Test switch for 2 seconds.

Note
Check casino and state security procedures.

62) BAD EPROM - The EPROM circuitry is faulty. To clear, replace the EPROM.

Note
Check casino and state security procedures.

Field Services

The following information defines regular preventive maintenance and cleaning schedules. These are recommended to help assure longevity and reliability. If the IGT S-Slot is installed near the outer limits of the environmental specifications, more frequent intervals may be required. Refer to Section I, Environmental Specifications, Table 1-1.

Every 90 days vacuum the inside the cabinet and clean dust and dirt from the coin chutes. Wipe clean the optics on each reel mechanism, the coin encoder, the coin out sensor on the hopper and on the electronic coin acceptor. Lubricate the handle mechanism. Refer to Section VI-Modular Components.

Section VI
Electronics

Introduction

This section provides basic information for the printed circuit boards for the IGT S-Slot machine. Full schematics for each board are provided in Section IX Appendix. The IGT S-Slot Tester is recommended for testing the circuit boards. For more information, contact IGT Customer Services.

Processor Board

POWER SUPPLIES

Three separate power supplies are used on the processor board, 5VDC regulated, V_B and V_S. See Figure 6-1 and Table 6-1.

5VDC REGULATED - supplies power to the 8031 CPU and associated digital logic. The isolation transformer steps down the 24VAC from J4 to 16VAC with a center tap. The 16VAC is full wave rectified by CR4 and CR5 to form V_{UN} (1). V_{UN} is used to drive the reel optic LED's as well as the digital side of all optical isolators. U46 provides a regulated 5.6V (2). This voltage, through the blocking diode CR11 (3), supplies power to the CMOS memory and associated circuitry. The 5VDC is produced from the 5.6V through CR6 (4). The 5V grounds are completely isolated from chassis ground and all other power supplies.

V_B - is an unregulated voltage that provides power to all I/O circuitry. Board ground is common with chassis ground and the return side of the 7VAC line that powers all the incandescent lights. The 8VAC hot is used to form V_B through CR12 (5). 8VAC through CR3 also provides the low level stepper motor power supply used in the Idle Mode (6).

V_S - The stepper motor high level power is provided by full wave rectifying the 24VAC with CR13 and CR14 (7). The level is switched by

Q23 and Q24 by an output bit in the serial I/O train.

	99VAC	115VAC	128VAC
1	9.4	10.6	12.9
2	5.6	5.6	5.6
3	5.0	5.0	5.0
4	5.0	5.0	5.0
5	8.0	9.1	10.2
6	8.0	9.1	10.2
7	17.2	18.0	18.8

Table 6-1
Power Supplies

POWER UP/DOWN RESET

The 8031 reset signal (A) is held high, on power up, for about 100ms by R72 and C36. This insures that all power supplies have stabilized before the CPU starts accessing program memory. Glitches or power down resets are detected by either V_{UN} dropping below 9.1V (U33, pin 11) or by the regulated 5VDC dropping below 4.8V (U33, pin 9). The CPU is given advance notice of an imminent power down on INT0 line (B). The watchdog timer, U27 B, must be triggered continuously by the CPU (C). (Once every 500ms minimum.). If this oneshot times out (D), all outputs are disabled. See Figures 6-2 and 6-3.

CPU AND MEMORY

The 8031 CPU uses a 10MHz crystal (U48, pin 18). U57 latches the low order 8 bit address for program and RAM memory access (U58 and U59). U53 and U55 are write and read address decoders. See Table 6-2.

SERIAL I/O

All inputs and outputs are handled by serial I/O control section and the isolated trains of shift

REEL MECH

REEL OPTICS	STEPPER MOTORS

LAMPS, HOPPER, DIVERTER

STEP DOWN XFRMS

POWER SUPPLIES 5VDC REGULATED 10VDC ISOLATED I/O 16VDC STEPPER MTRS	BUFFER	STEPPER MOTOR CONTROLLER	OUTPUT DRIVERS

WINNER PAID   14

CREDITS   25

COINS IN   2

DISPLAY SHIFT REGISTER	8031 CPU	SERIAL I/O CONTROLLER	OUTPUT SHIFT REGISTER

SOUND	CMOS MEMORY WITH BATTERY 2K BYTES	PROGRAM MEMORY 128K EPROM	INPUT SHIFT REGISTER

S-SLOT CONTROL BOARD

FRONT PANEL, SWITCHES, COIN IN, COIN OUT, DOOR OPEN

S-SLOT BLOCK DIAGRAM

Figure 6-1
Schematic - Power Supply

ADDRESS		FUNCTION
0XXX	RD	Read serial byte (Start serial output)
	WR	Write next serial output byte
1XXX	RD	Read from CMOS RAM
	WR	Write to CMOS RAM
2XXX	RD	Trigger watchdog
	WR	Write byte to serial latch for display
4XXX	RD	Read port on sound IC
	WR	Write to sound IC
5XXX	RD	Read reel optics byte
6XXX	WR	Send load pulse to serial I/O

Table 6-2
CPU and Memory

registers that simultaneously shift one byte out and one byte in.

The CPU first writes a byte of output information to address 0XXX. It then reads from address 0XXX the last byte of input data shifted in. This read then initiates a hardware controlled train of 8 pulses that act as a clock for both trains of shift registers.

The three signals, LOAD, ENA, and SCLK are optically isolated and fed to the shift registers as shown in Figure 6-3. Wave forms for SCLK (F) and LOAD (G) are shown in Figure 6-4.

STEPPER MOTOR CONTROLS

U5, U7, U9, U14, and U16 are the stepper motor controller IC's. Each IC has a clock input (pin 7) and a direction signal (pin 10). The five clock pulses are driven directly from port #1 on the CPU. P1.0 (U48 pin 1) is the clock for Reel #1 stepper motor. P1.1 (U48 pin 2) is the clock for Reel #2 etc. The direction bit is common to all motors and is set as a bit in the serial I/O. Pin 8 on each IC is set either HI or LO by jumper E5 - E6. E5 sets the bit HI and causes the controller IC's to operate in the half stop mode. Likewise, E6 sets the bit LO and provides the full stop mode of operation. See Figure 6-5.
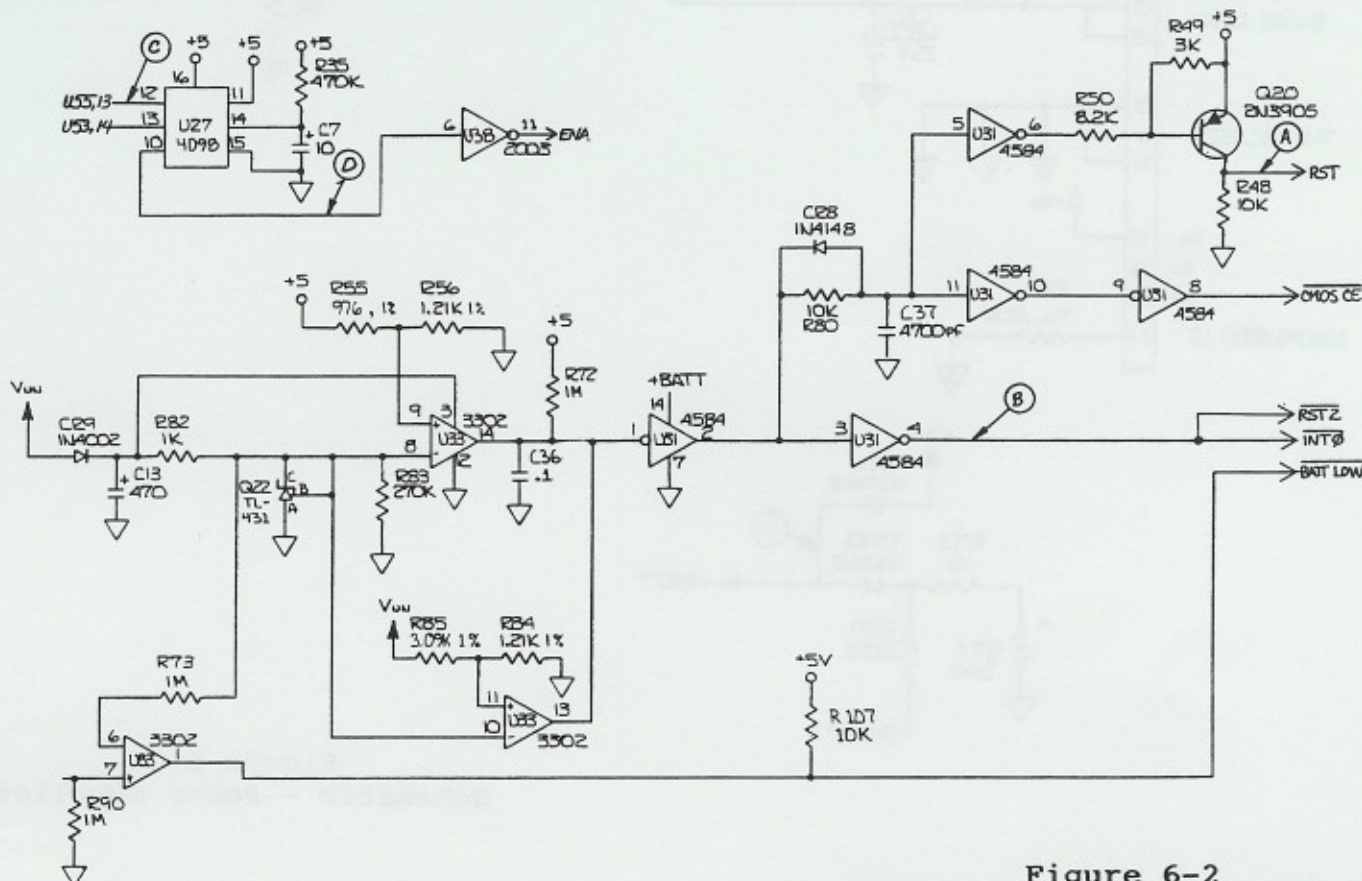
Figure 6-2
Schematic - Power Up/Down Reset
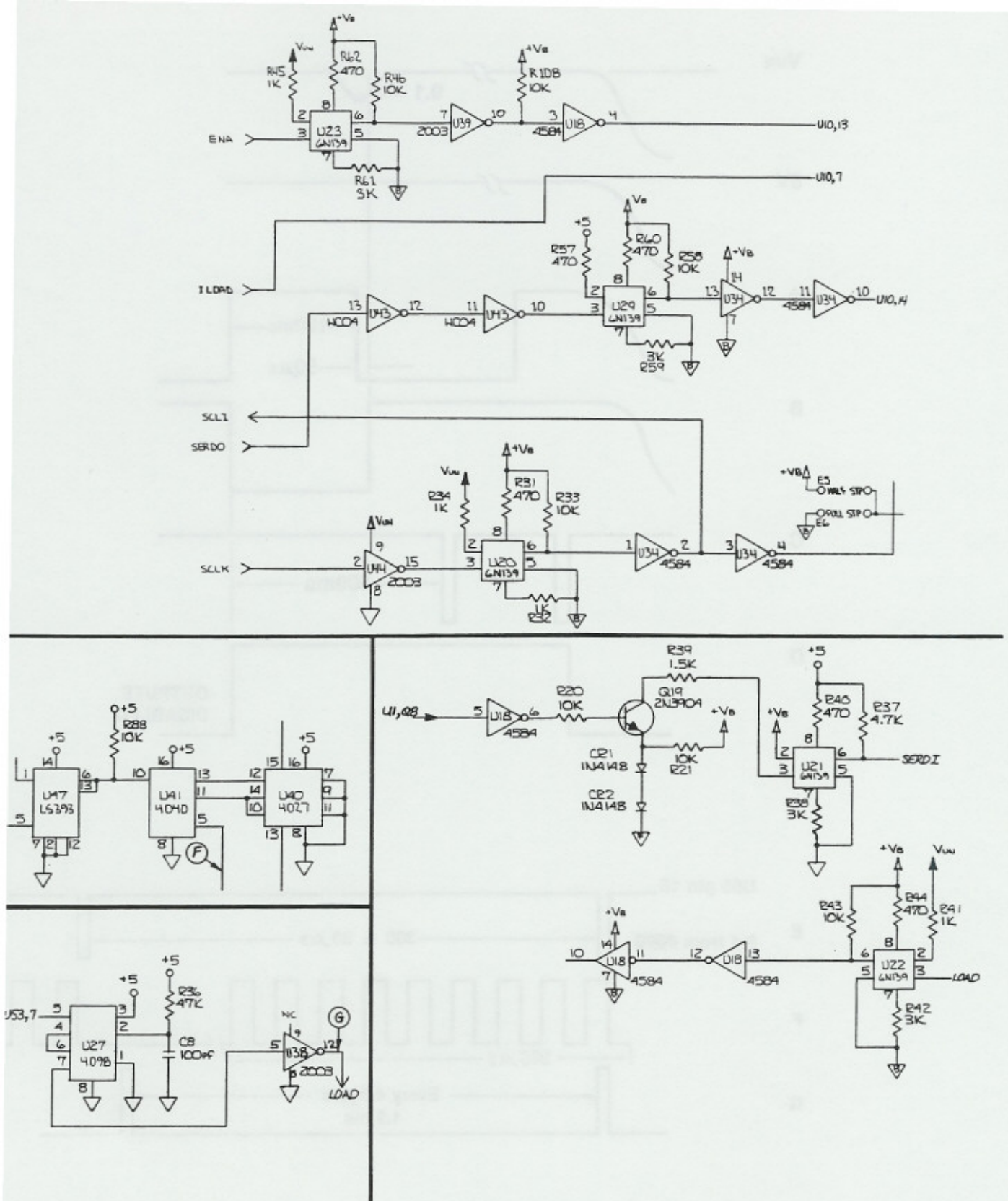
Figure 6-3
Schematic - Serial I/O
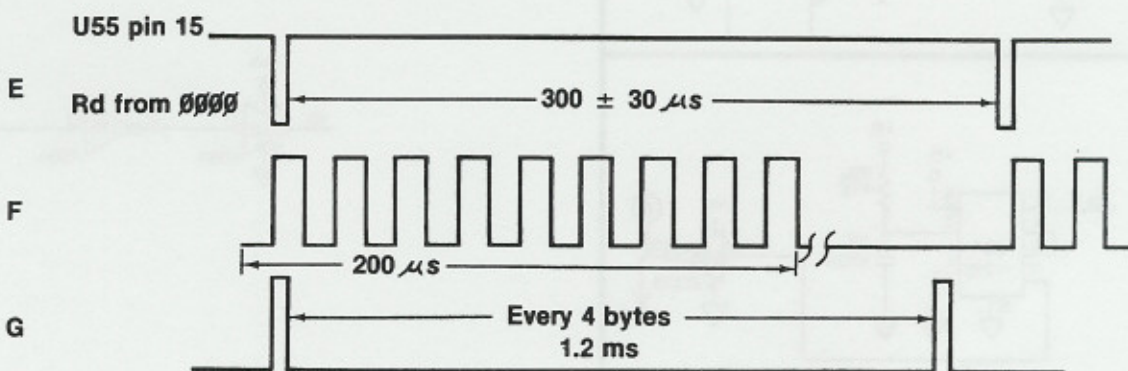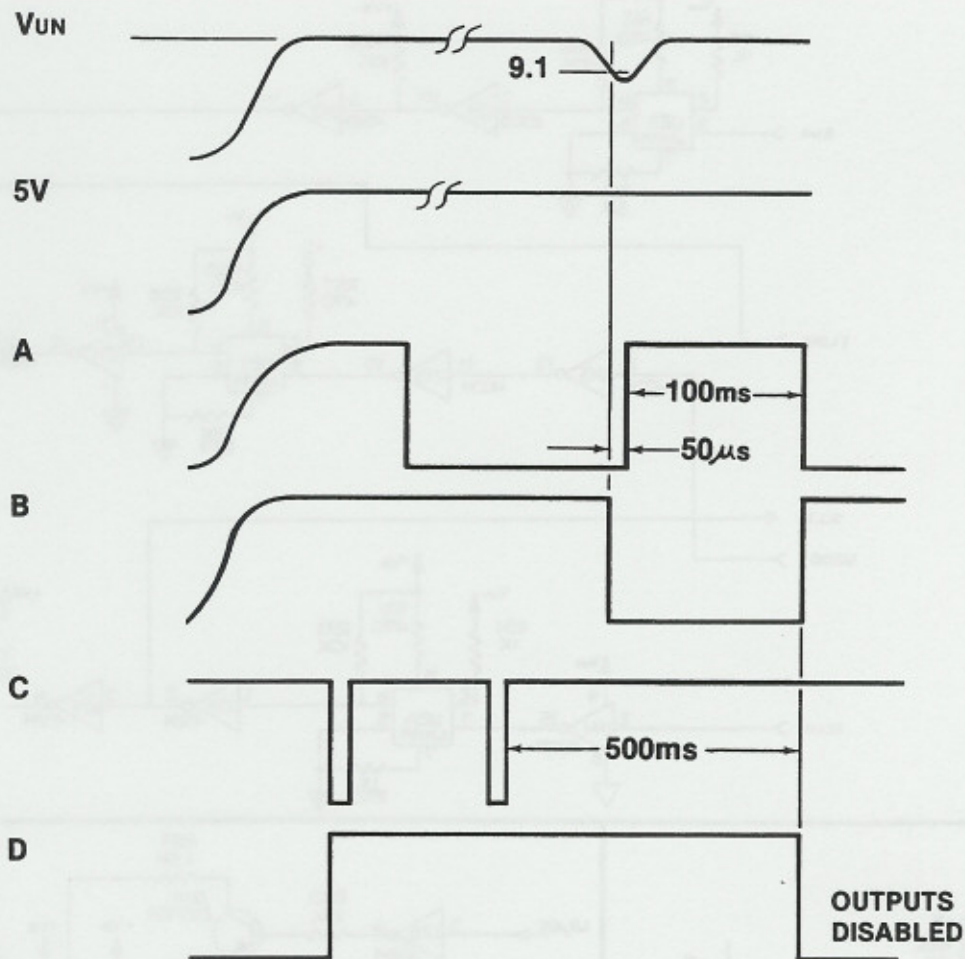
Figure 6-4
Waveforms
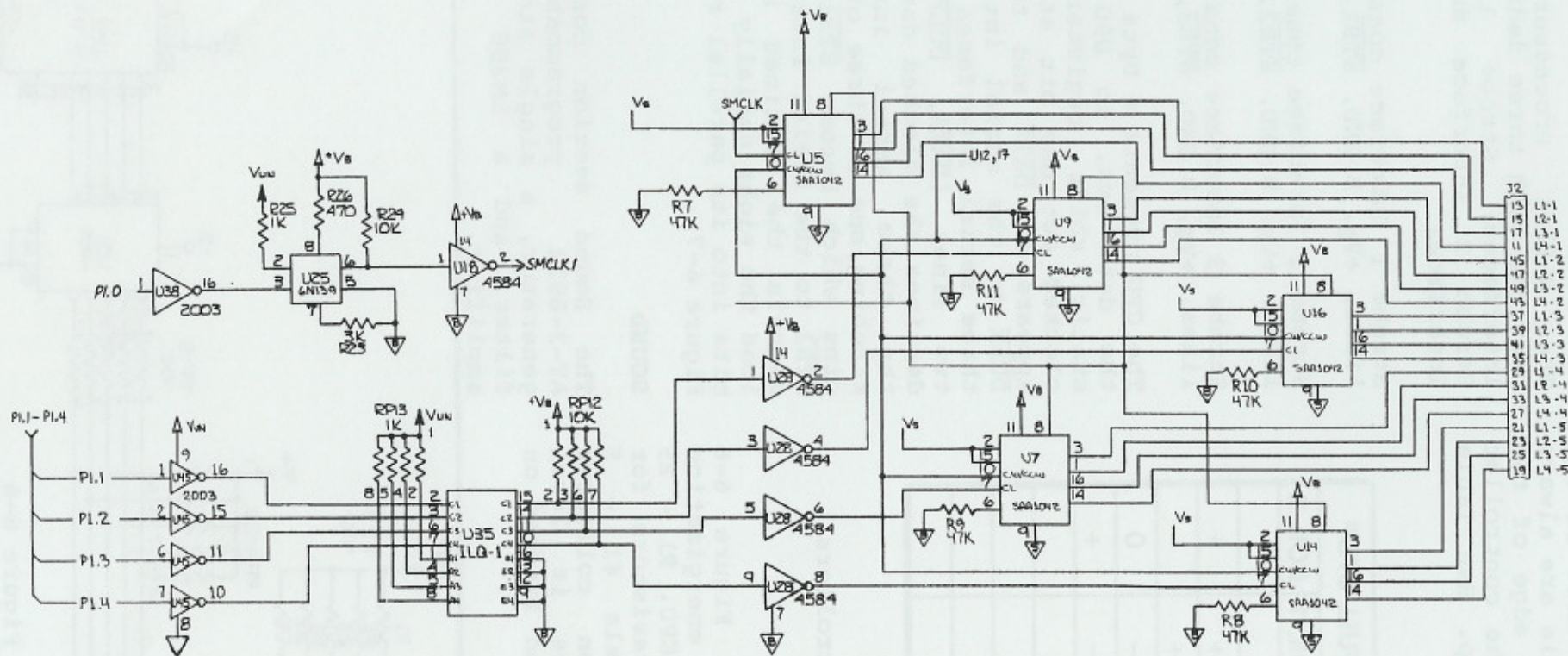
Figure 6-5
Schematic - Stepper Motor Controllers

In the half stop mode, one coil is turned OFF 50% of the time. In the full stop mode, the coils are always energized. Each rising edge of the clock pin will cause the controller IC to advance one step. See Table 6-3.

	HALF STOP		FULL STOP	
STOP	COIL 1	COIL 2	COIL 1	COIL 2
1	+	−	+	+
2	+	O	+	−
3	+	−	−	O
4	O	−	−	+
5	−	−		
6	−	O		
7	−	+		
8	O	+		

Table 6-3
Stepper Motor Controllers

REEL OPTICS

The circuit shown in Figure 6-6 shows the reel optic energization and monitoring by the CPU. R1 - R5 are current limiting resistors for the LED's in the Reels #1 - 5 respectively. The open collector photo detector voltage is level shifted to 5V by U51 and latched on the bus by U52.

TRI-SERIAL INTERFACE

The S-Slot Processor Board is provided with three dedicated serial interfaces; Strobe 1 Interface, Strobe 2 Interface and Strobe 3 Interface.

Strobe 1 Interface consists of five lines, $+V_B$, B GND, $\overline{STB1}$, $\overline{DATA}$, $\overline{DCLK}$.

Strobe 2 Interface consists of five lines, $+V_B$, B GND, $\overline{STB2}$, $\overline{DATA}$, $\overline{DCLK}$.

Strobe 3 Interface consists of five lines, $+V_B$, B GND, $\overline{STB3}$, $\overline{DATA}$, $\overline{DCLK}$.

The CPU presents a byte of data from the data bus, to U60 an 8-stage static shift register. Data is clocked out one bit at a time and appears as $\overline{DATA}$ and the clock as $\overline{DCLK}$ to the serial interfaces. All three serial interfaces share these two lines ($\overline{DATA}$, $\overline{DCLK}$). The CPU destines the clocked data to one of the three serial interfaces by strobing one of three of its port 1 pins which become $\overline{STB1}$, $\overline{STB2}$, and $\overline{STB3}$ to the serial interfaces. This signals the destined interface to load the eight serially shifted data bits into its parallel register. See Figure 6-7.

SOUND

The Sound section consists of a AY-3-8912 programmable sound generator, a single stage low pass filter, and a LM388 audio power amplifier.
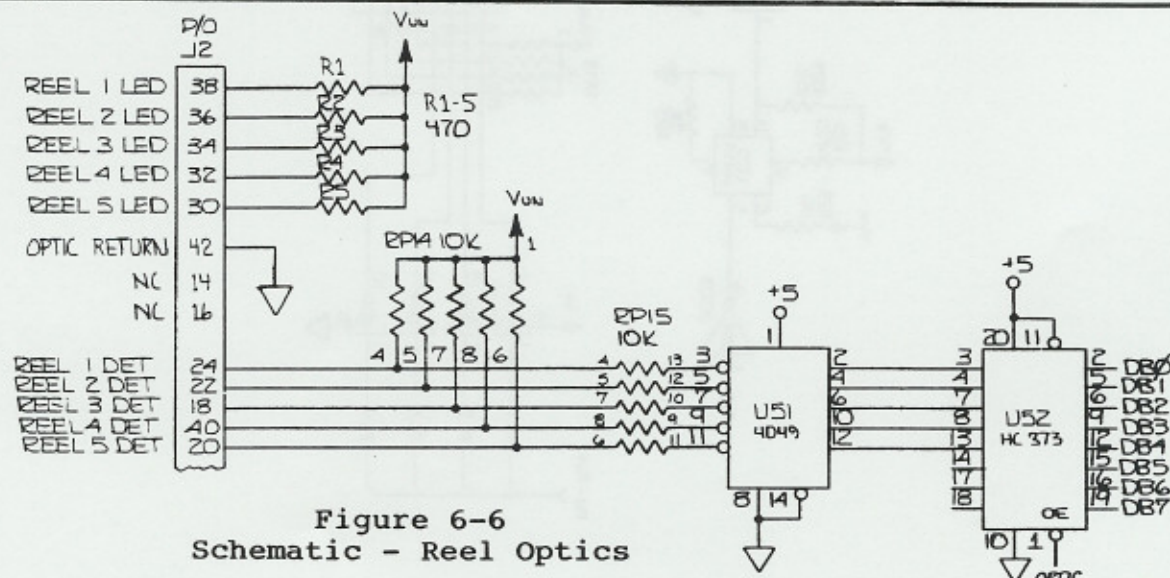
Figure 6-6
Schematic - Reel Optics
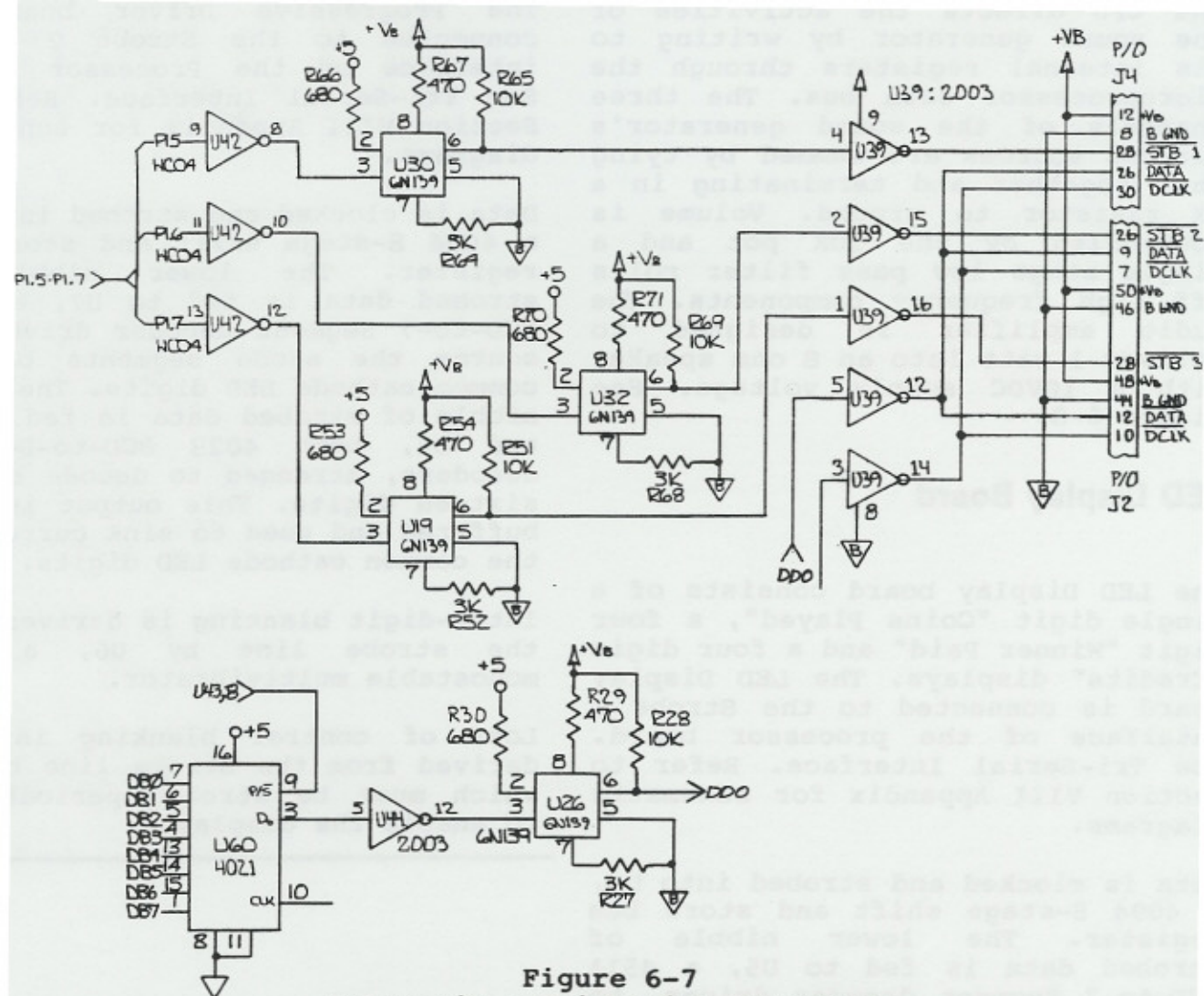
Figure 6-7
Schematic – Tri-serial Interface
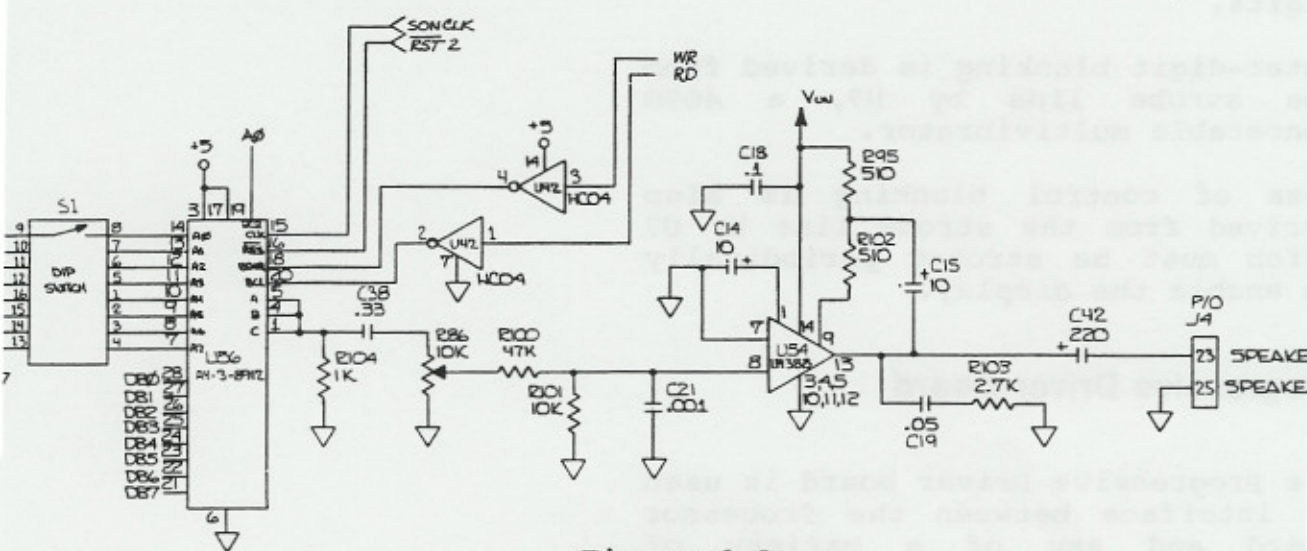
Figure 6-8
Schematic – Sound

The CPU directs the activities of the sound generator by writing to its internal registers through the microprocessor data bus. The three channels of the sound generator's current sources are summed by tying them together and terminating in a 1K resistor to ground. Volume is controlled by the 10K pot and a single stage low pass filter rolls off high frequency components. The audio amplifier is designed to deliver 1 watt into an 8 ohm speaker with a 10VDC supply voltage. See Figure 6-8.

LED Display Board

The LED Display board consists of a single digit "Coins Played", a four digit "Winner Paid" and a four digit "Credits" displays. The LED Display board is connected to the Strobe 1 interface of the processor board. See Tri-Serial Interface. Refer to Section VIII Appendix for schematic diagrams.

Data is clocked and strobed into U4, a 4094 8-stage shift and store bus register. The lower nibble of strobed data is fed to U5, a 4511 BCD-to-7 Segment decoder driver, to source the anode segments of the common cathode LED digits. The upper nibble of strobed data is fed to U3, a 4028 BCD-to-Decimal decoder, which is then buffered and used to sink current of the common cathode LED digits.

Inter-digit blanking is derived from the strobe line by U7, a 4098 monostable multivibrator.

Loss of control blanking is also derived from the strobe line by U7 which must be strobed periodically to enable the display.

Progressive Driver Board

The Progressive Driver board is used to interface between the Processor board and any of a variety of progressive LED display boards.

The Progressive Driver board is connected to the Strobe 2 serial interface on the Processor board. See Tri-Serial Interface. Refer to Section VIII Appendix for schematic diagrams.

Data is clocked and strobed into U8, a 4094 8-stage shift and store bus register. The lower nibble of strobed data is fed to U7, a 4511 BCD-to-7 Segment decoder driver, to source the anode segments of the common cathode LED digits. The upper nibble of strobed data is fed to U2 and U4, both 4028 BCD-to-Decimal decoders, arranged to decode one of sixteen digits. This output is then buffered and used to sink current of the common cathode LED digits.

Inter-digit blanking is derived from the strobe line by U6, a 4098 monostable multivibrator.

Loss of control blanking is also derived from the strobe line by U6, which must be strobed periodically to enable the display.

Section VII   Mechanical Parts Lists

TOP
FRONT VIEW
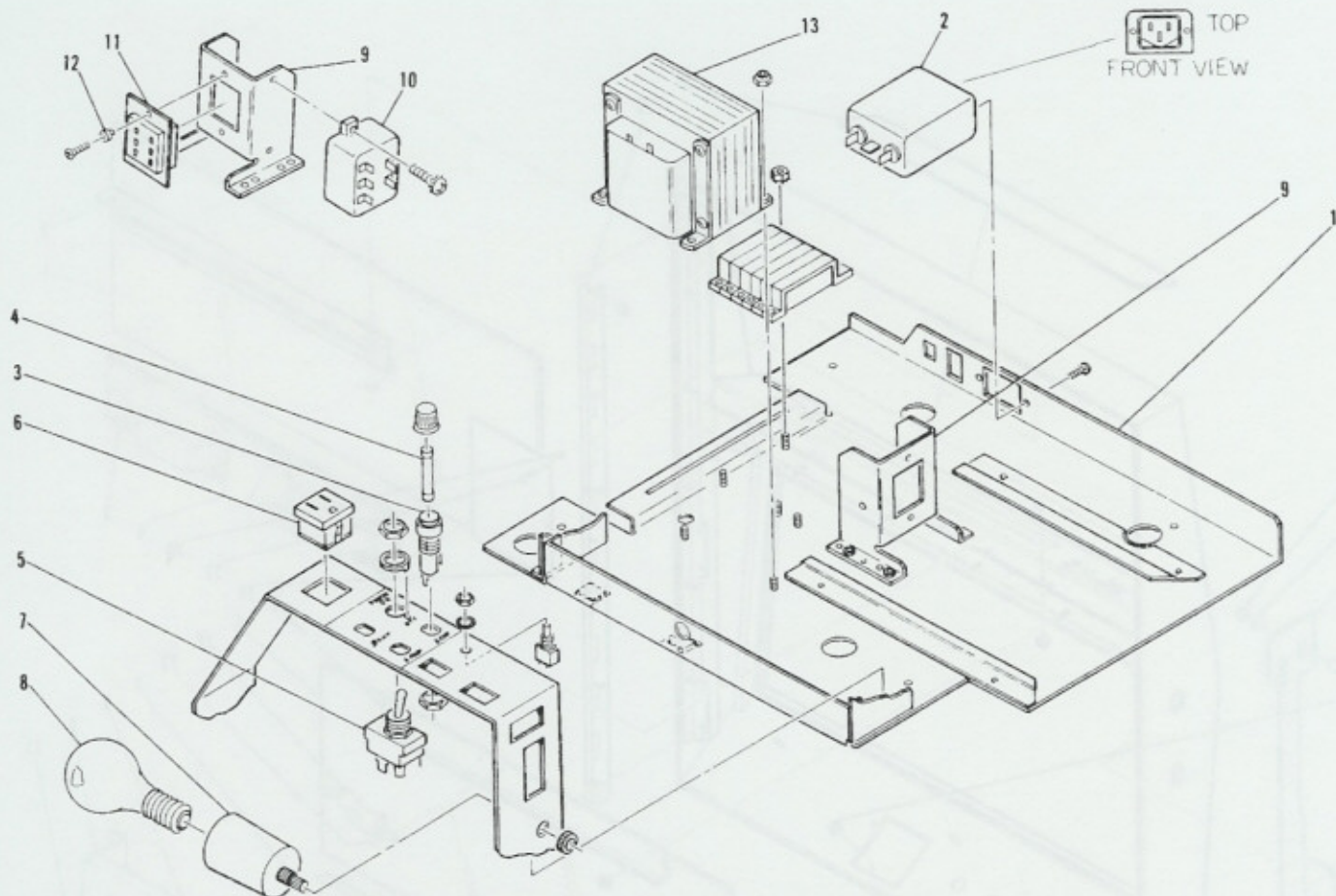
LOWER MODULE ASSEMBLY

IGT S-SLOT MACHINE REPLACEABLE PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY	UM
–	647 050 00	FRAME ASSY-LOWER MOD. NON SDS	1.000	EA
–	647 050 01	FRAME ASSY-LOWER MOD. SDS	1.000	EA
1	647 051 00	FRAME-LWR MODULE	1.000	EA
–	850 126 01	LABEL-SWITCH PANEL, S-SLOT	1.000	EA
2	272 006 00	FILTER, ASSY, LINE, 5 AMP	1.000	EA
3	213 011 90	HOLDER, FUSE	3.000	EA
4	524 013 90	FUSE, F.B., 6 AMP	2.000	EA
–	524 015 90	FUSE, F.B., 8 AMP	1.000	EA
5	511 018 90	SWITCH, TOGGLE DPST .250 FASTO	1.000	EA
6	125 010 90	OUTLET, 125VAC .250 Q-DISC GND	1.000	EA
7	120 020 90	SOCKET, LAMP, MED. BASE, W/SW.	1.000	EA
8	190 022 90	LAMP, SCREW, 120VAC 15W	1.000	EA
9	636 644 00	BRACKET-HOPPER	1.000	EA
10	454 030 90	RELAY, OPTO, ASSY	1.000	EA
11	129 031 90	SOCKET, 7 PIN, W/MTG BKT, PREGND	1.000	EA
12	638 049 00	BUSHING, HOPPER PLUG	2.000	EA
13	560 021 90	TFMR-24VCT/GA, 8V/2A, 7V/6A, 115V	1.000	EA

All parts and part numbers are subject to change. Contact
IGT Customer Service for updated information when ordering.

S-SLOT LOWER MODULE ASSEMBLY
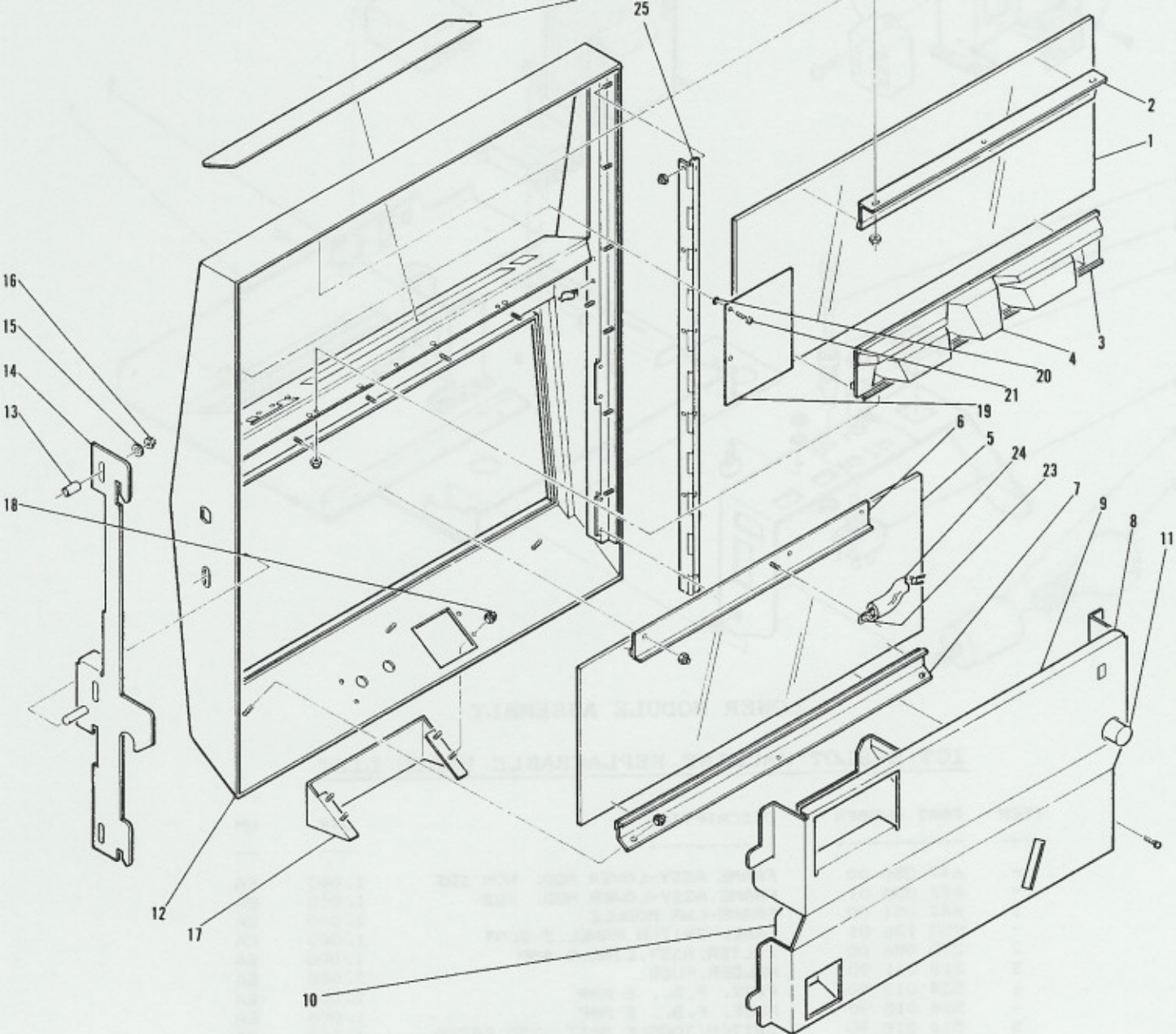
S-SLOT DOOR ASSEMBLY

DOOR ASSEMBLY

IGT S-SLOT MACHINE REPLACEABLE PARTS LIST

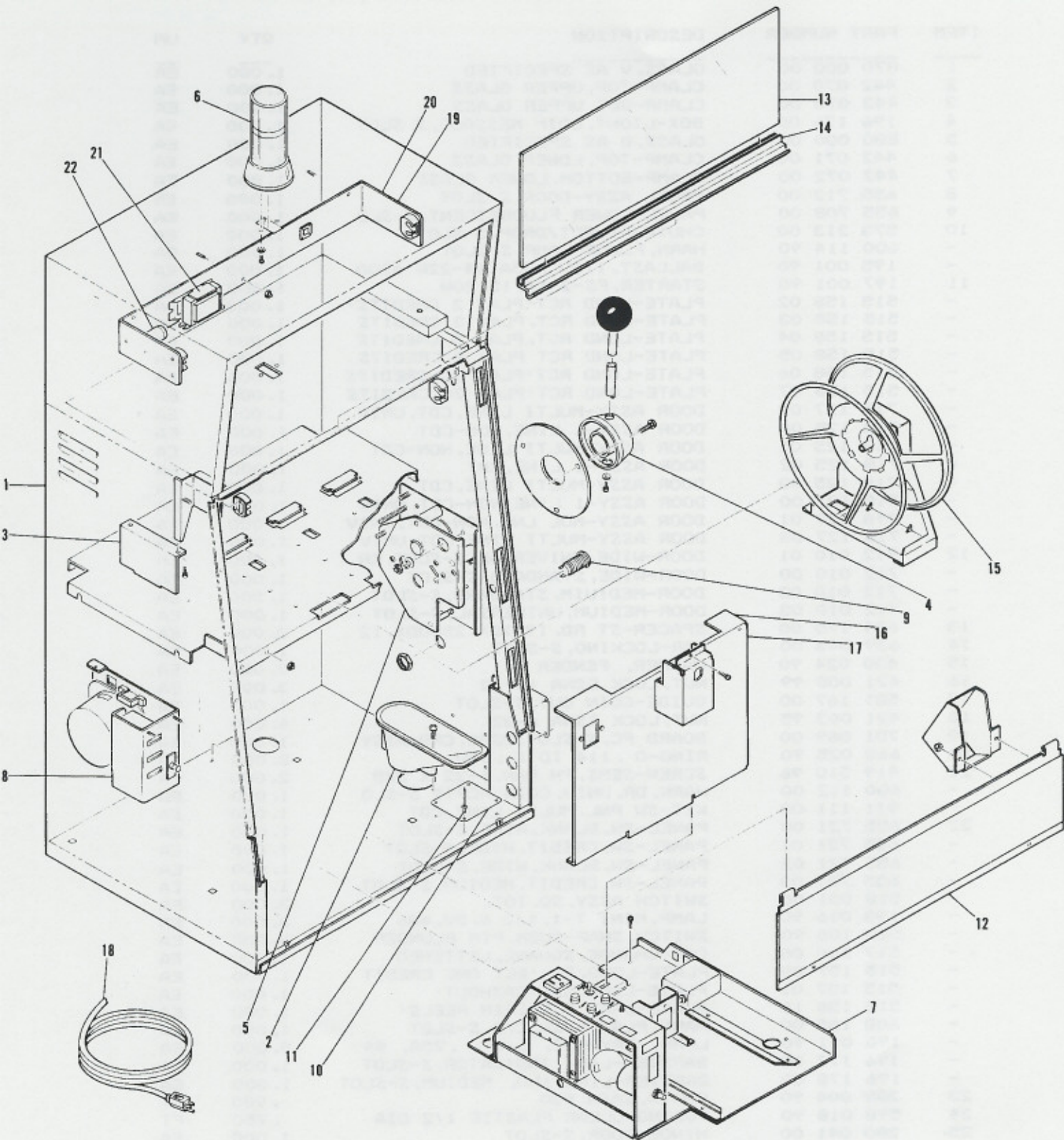| ITEM	PART NUMBER	DESCRIPTION	QTY	UM
1	870 000 00	GLASS, V AS SPECIFIED	1.000	EA
2	442 070 00	CLAMP-TOP, UPPER GLASS	1.000	EA
3	442 073 00	CLAMP-BOT, UPPER GLASS	1.000	EA
4	196 176 00	BOX-LIGHT, COIN MESSAGE, S SLOT	1.000	EA
5	880 000 00	GLASS, B AS SPECIFIED	1.000	EA
6	442 071 00	CLAMP-TOP, LOWER GLASS	1.000	EA
7	442 072 00	CLAMP-BOTTOM, LOWER GLASS	1.000	EA
8	655 712 00	PANEL ASSY-DOOR, S SLOT	1.000	EA
9	655 708 00	PANEL-LOWER FLUORESCENT, S-SLO	1.000	EA
10	573 213 00	CHUTE-REJECT/DROP, S-SLOT	1.000	EA
–	600 114 90	HARN, FLUOR-LAMP, S SLOT	1.000	EA
–	195 001 90	BALLAST, 118V .35A 14-22W #200	1.000	EA
11	197 001 90	STARTER, FS-2 14, 15, 20W	1.000	EA
–	515 158 02	PLATE-LGND RCT 'PLAY 2 CREDITS'	1.000	EA
–	515 158 03	PLATE-LGND RCT. PLAY 3 CREDITS	1.000	EA
–	515 158 04	PLATE-LGND RCT. PLAY 5 CREDITS	1.000	EA
–	515 158 05	PLATE-LGND RCT. PLAY 8 CREDITS	1.000	EA
–	515 158 06	PLATE-LGND RCT 'PLAY 10 CREDITS	1.000	EA
–	515 158 07	PLATE-LGND RCT 'PLAY 20 CREDITS	1.000	EA
–	718 127 03	DOOR ASSY-MULTI LINE, CDT, UNIV	1.000	EA
–	718 125 00	DOOR ASSY-1 LINE, NON-CDT	1.000	EA
–	718 125 01	DOOR ASSY-MULTI LINE, NON-CDT	1.000	EA
–	718 125 02	DOOR ASSY-1 LINE, CDT	1.000	EA
–	718 125 03	DOOR ASSY-MULTI LINE, CDT	1.000	EA
–	718 127 00	DOOR ASSY-1 LINE, NON-CDT, UNIV	1.000	EA
–	718 127 01	DOOR ASSY-MUL LNE, NON-CDT, UNIV	1.000	EA
–	718 127 03	DOOR ASSY-MULTI LINE, CDT, UNIV	1.000	EA
12	712 010 01	DOOR-WIDE, UNIVERSAL, S-SLOT, CR	1.000	EA
–	712 010 00	DOOR-WIDE, STANDARD, S-SLOT	1.000	EA
–	712 010 02	DOOR-MEDIUIM, STANDARD, S-SLOT	1.000	EA
–	712 010 03	DOOR-MEDIUM, UNIVERSAL, S-SLOT	1.000	EA
13	674 175 00	SPACER-ST RD. 190IDX. 250ODX. 12	3.000	EA
14	639 043 00	BAR-LOCKING, S-SLOT	1.000	EA
15	430 024 90	WASHER, FENDER	3.000	EA
16	421 008 99	NUT, LOCK ESNA 10-32	3.000	EA
17	581 167 00	GUIDE-COIN OUT, S-SLOT	1.000	EA
18	421 003 95	NUT, LOCK ESNA 6-32	4.000	EA
19	751 069 00	BOARD PC, S-SLOT, DSPL, CRD, ASSY	1.000	EA
20	663 025 90	RING-O .114 ID X .070	2.000	EA
21	419 510 96	SCREW-SEMS, PH PAN, 6-32 X 3/8	2.000	EA
–	600 112 00	HARN, DR. UNIV. COIN ACPTR S-SLO	1.000	EA
–	911 111 00	KIT-SW PNL, MULTI LINE, CDT	1.000	EA
22	655 721 00	PANEL-SW, BLANK, WIDE, S-SLOT	1.000	EA
–	655 721 01	PANEL-SW, CREDIT, WIDE, S-SLOT	1.000	EA
–	655 721 02	PANEL-SW, BLANK, WIDE, S-SLOT	1.000	EA
–	655 721 03	PANEL-SW, CREDIT, MEDIUM, S-SLOT	1.000	EA
–	518 031 00	SWITCH ASSY, SQ. IGT.	3.000	EA
–	193 016 90	LAMP, MINI T-1, 1/2 6.3V, #86	3.000	EA
–	510 108 90	SWITCH, SNAP-SUBM, PIN PLUNGER	3.000	EA
–	517 160 00	CAP-CHANGE, SQUARE, LETTERED	1.000	EA
–	515 157 00	PLATE-LGND, SQ 'BET ONE CREDIT	1.000	EA
–	515 157 01	PLATE-LGND, SQ. 'CASHOUT'	1.000	EA
–	515 158 16	PLATE-LGND RCT 'SPIN REELS'	1.000	EA
–	608 155 00	HARN, PLAYER SW. C/P S-SLOT	1.000	EA
–	190 011 90	LAMP, BAYONET, 6.3V, .25A, #4	5.000	EA
–	196 177 00	BARRIER-LINE INDICATOR, S-SLOT	1.000	EA
–	196 178 00	BARRIER-LINE IND, MEDIUM, S-SLOT	1.000	EA
23	289 004 90	CHAIN, SASH #30	.900	FT
24	598 018 90	TUBING, CLEAR PLASTIC 1/2 DIA	.750	FT
25	280 041 00	HINGE-DOOR, S-SLOT	1.000	EA

All parts and part numbers are subject to change. Contact
IGT Customer Service for updated informtion when ordering.

S-SLOT CABINET ASSEMBLY

IGT S-SLOT MACHINE REPLACEABLE PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY	UM
1	142 101 00	CAB/TOP BOX ASSY-9.75IN, 2 CM	1.000	EA
-	142 101 01	CAB/TOP BOX ASSY-9.75IN, 3CM	1.000	EA
-	142 101 02	CAB/TOP BOX ASSY-9.75IN, 5CM	1.000	EA
-	142 101 03	CAB/TOP BOX ASSY-9.75IN, 6CM	1.000	EA
-	142 101 04	CAB/TOP BOX ASSY-9.75IN, 3C B/P	1.000	EA
-	142 101 05	CAB/TOP BOX ASSY-9.75IN, 4C B/P	1.000	EA
-	142 101 06	CAB/TOP BOX ASSY-9.75IN, 3 LINE	1.000	EA
-	142 101 07	CAB/TOP BOX ASSY-9.75IN, 5 LINE	1.000	EA
-	142 102 00	CAB/TOP BOX ASSY-16IN, 2 CM	1.000	EA
-	142 102 01	CAB/TOP BOX ASSY-16IN, 3 CM	1.000	EA
-	142 102 02	CAB/TOP BOX ASSY-16IN, 5 CM	1.000	EA
-	142 102 03	CAB/TOP BOX ASSY-16IN, 6 CM	1.000	EA
-	142 102 04	CAB/TOP BOX ASSY-16IN, 3 C B/P	1.000	EA
-	142 102 05	CAB/TOP BOX ASSY-16IN, 4 C B/P	1.000	EA
-	142 102 06	CAB/TOP BOX ASSY-16IN 3 LINE	1.000	EA
-	142 102 07	CAB/TOP BOX ASSY-16IN 5 LINE	1.000	EA
-	633 052 00	BASE-WOOD, STEPPER SLOT	1.000	EA
2	573 209 00	CHUTE-DROP	1.000	EA
-	600 114 90	HARN, FLUOR-LAMP, S SLOT	1.000	EA
3	636 641 00	BRACKET-STARTER BALLAST ASSY	1.000	EA
-	195 001 90	BALLAST, 118V .35A 14-22W #200H	1.000	EA
4	388 023 00	HANDLE ASSY-1 SW W/LO CHROME	1.000	EA
5	388 016 00	HANDLE ASSY. MODULE	1.000	EA
-	911 106 00	KIT-HANDLE MODULE, CHROME	1.000	EA
6	191 064 00	CANDLE KIT-RED/YEL CNDL (NV)	1.000	EA
-	191 063 00	CANDLE KIT-YELLOW CNDL (NV)	1.000	EA
-	191 065 00	CANDLE KIT-RED/WHT CNDL (NJ 5C)	1.000	EA
-	191 066 00	CANDLE KIT-GRN/WHT CNDL (NJ10C)	1.000	EA
-	191 067 00	CANDLE KIT-YEL/WHT CNDL (NJ25C)	1.000	EA
-	191 068 00	CANDLE KIT-ORG/WHT CNDL (NJ50C)	1.000	EA
-	191 069 00	CANDLE KIT-BLU/WHT CNDL (NJ 1$)	1.000	EA
7	911 103 00	KIT-S SLOT, LOWER MOD. NEV.	1.000	EA
-	911 103 01	KIT-S SLOT, LOWER MOD. NEV/SDS	1.000	EA
-	911 103 02	KIT-S SLOT, LOWER MOD. NJ.	1.000	EA
-	911 103 03	KIT-S SLOT, LOWER MOD. NJ/SDS	1.000	EA
-	601 061 00	HARN, MAIN STD. S-SLOT	1.000	EA
-	560 021 90	TRMR-24VCT/GA, 8V/2A, 7V/6A, 115V	1.000	EA
8	636 649 00	BRKT ASSY-SPEAKER/METER, S SLOT	1.000	EA
-	636 642 00	BRACKET-3 METER, SPEAKER ASSY	1.000	EA
-	130 001 90	SPEAKER, 8 OHM 2W 4INCH	1.000	EA
-	292 034 90	COUNTER, 24VAC 6DIGIT TOTAL	3.000	EA
9	510 097 90	SWITCH, KEY N/O MOM KEYED ALIK	1.000	EA
10	853 065 00	PLAQUE, SERIAL NO	2.000	EA
11	282 008 90	RIVEY, AL .125DIA X .125LG	8.000	EA
12	911 104 00	KIT-LOUD BOWL, S SLOT	1.000	EA
-	911 105 00	KIT-TRAY, S SLOT	1.000	EA
13	860 000 00	GLASS, AS SPECIFIED	1.000	EA
14	442 074 00	CLAMP-TOP BOX	1.000	EA
15	660 017 00	REEL MECH ASSY, 3 REEL S SLOT	3.000	EA
16	597 099 00	TRAY ASSY-PROC. BOARD	1.000	EA
17	597 097 00	TRAY-PROC. BOARD MOUNTING	1.000	EA
-	755 052 00	BOARD PC S-SLOT PROCESSOR ASS	1.000	EA
-	404 011 90	BATTERY, LITHIUM, 3.4V, 600MA	1.000	EA
18	618 004 90	CORD, POWER, STD. 7.5FT	1.000	EA
19	199 137 00	LIGHT ASSY-UPPER FLUOR S SLOT	1.000	EA
20	636 643 00	BRACKET-LIGHT ASSY, 18IN	1.000	EA
-	600 114 90	HARN, FLUOR-LAMP, S SLOT	1.000	EA
21	195 001 90	BALLAST, 118V .35A 14-22W #200	1.000	EA
22	197 001 90	STARTER, FS-2 14, 15, 20W	1.000	EA
-	194 004 90	LAMP, 18 IN FLO, 15W F15T8/CW	1.000	EA

All parts and part numbers are subject to change. Contact
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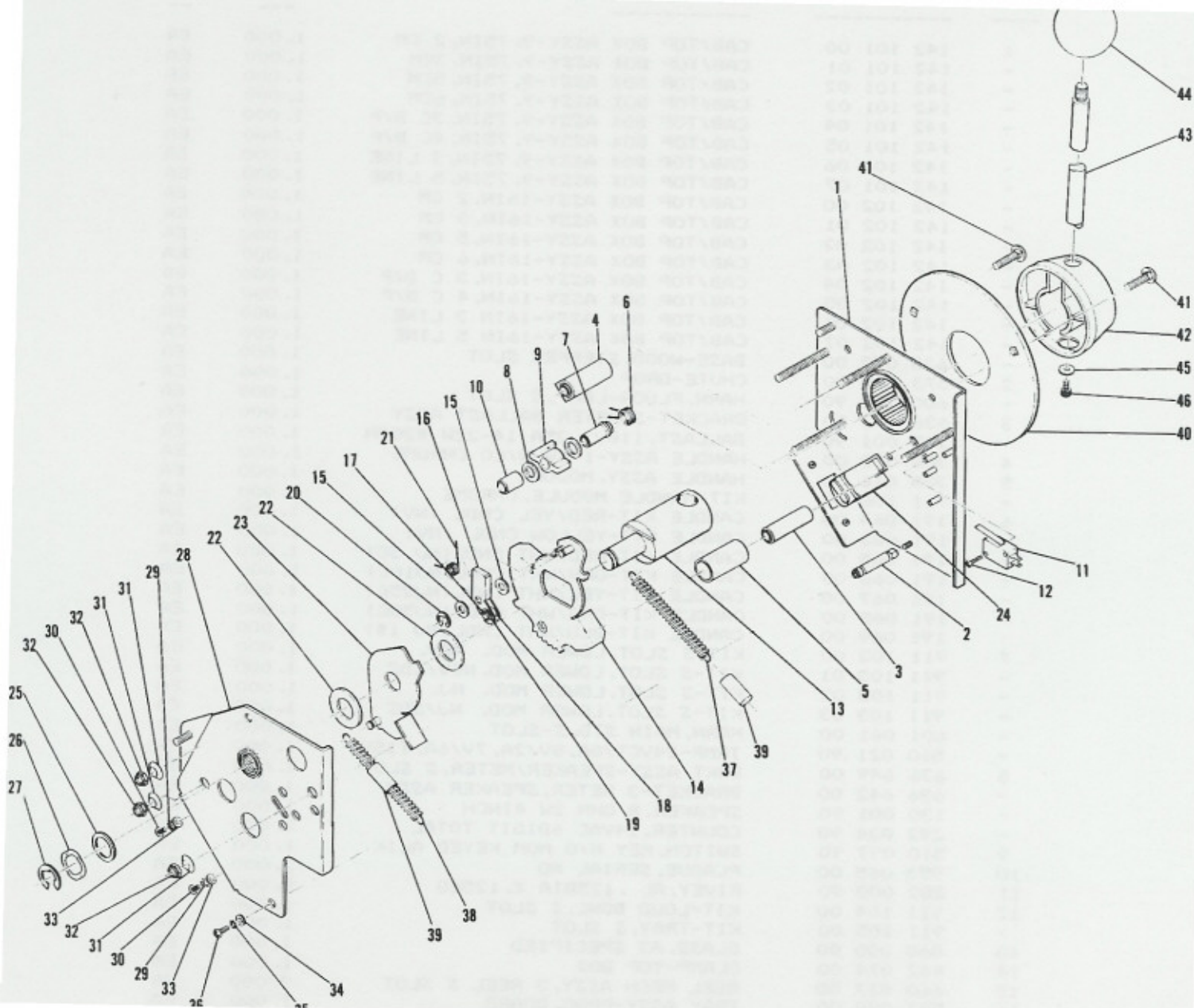
HANDLE MECHANISM

IGT S-SLOT MACHINE REPLACEABLE PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY	UM
1	589 326 00	PLATE, BOTTOM, HANDLE MODULE	1.000	EA
2	674 171 00	SPACER, ST RD .312 OD X1.56 L	1.000	EA
3	674 170 00	SPACER, ST RD.265IDX.500DX1.56	1.000	EA
4	637 021 00	BUMPER-RUBBER, 1.56 L	1.000	EA
5	665 022 00	ROLLER, .6Z ID X.75 OD X 1.45	1.000	EA
6	332 025 00	SPRING-.442IDX1.12L X.038 W	1.000	EA
7	674 167 00	SPACER, ST RD.265IDX.500DX1.04	1.000	EA
8	439 045 90	WASHER, BRZ, .38IDX.630DX.062TH	2.000	EA
9	656 017 00	PAWL, HANDLE RATCHET	1.000	EA
10	674 169 00	SPACER-ST RD.265 IDX.500X.603	1.000	EA
11	510 030 90	SWITCH, SNAP-MINI LEVER	1.000	EA
12	411 002 92	SCREW, MACH PH PAN 4-40 X 3/4	2.000	EA
–	164 001 90	ADHESIVE, LOCTITE #242	.006	OZ
13	667 038 00	SHAFT, HANDLE MODULE 3.648 L	1.000	EA
14	589 327 00	PLATE, RATCHET, HANDLE MODULE	1.000	EA
15	439 040 90	WASHER, BRZ, .25IDX.50 ODX.031T	2.000	EA
16	599 135 00	CAM, SLOT HANDLE RELEASE	1.000	EA
17	440 009 00	PIN, CAM	1.000	EA
18	665 006 00	ROLLER, CAM	1.000	EA
19	447 002 90	RING, E, 133-.180 SHAFT	1.000	EA
20	447 040 90	RING, E, 133-.250 SHAFT	1.000	EA
21	332 008 00	SPRING, TORSION, CAM	1.000	EA
22	439 046 90	WASHER, BRS, .628X1.250DX.12TH	2.000	EA
23	589 328 00	PLATE, HAMMER, HANDLE MODULE	1.000	EA
24	637 020 00	BUMPER-HANDLE STOP	1.000	EA
25	439 044 90	WASHER, BRZ, .63IDX1-000DX.062T	1.000	EA
26	436 005 90	WASHER, WAVE. 64ID X.8750DX.125	1.000	EA
27	447 037 90	RING, E, 133-.620 SHAFT	1.000	EA
28	589 325 00	PLATE, TOP, HANDLE MODULE	1.000	EA
29	431 003 95	WASHER, LOCK INT STEEL #6	2.000	EA
30	411 003 99	SCREW, MACH, PH PAN 6-32 X 3/	2.000	EA
31	434 007 90	WASHER, SPRING, .256IDX.694OD	3.000	EA
32	421 011 91	NUT, LOCK ESNA THIN 1/4-20	3.000	EA
33	430 003 95	WASHER, FLAT, STEEL #6	2.000	EA
34	430 006 98	WASHER, FLAT, STEEL #8	1.000	EA
35	431 006 98	WASHER, LOCK INT STEEL #8	1.000	EA
36	411 007 90	SCREW, MACH. PH PAN 8-32X1/4	1.000	EA
37	330 086 00	SPRING, EXT. 440 ODX3.59LX.057W	1.000	EA
38	330 089 00	SPRING-EXT .47 ODX3.60LX.059W	2.000	EA
39	311 006 90	SLEEVE, SHRINK 1 IN BLACK	.166	FT
–	162 006 90	LUBE, GREASE, LUBRIPLATE 184	.012	OZ
40	661 081 00	RETAINER-RING, SLOT HANDLE, CRM	1.000	EA
41	412 903 90	BOLT, CARRIAGE, 1/4-20X5/8 NI PL	3.000	EA
42	582 023 00	HUB, SHAFT COVER	1.000	EA
43	631 081 00	ARM, AHNDLE, HANDLE MODULE	1.000	EA
–	164 009 90	ADHESIVE, LOCTITE RC/601 OMNFT	.009	OZ
44	383 005 90	KNOB, SLOT HANDLE, 1 7/8IN DIA	1.000	EA
45	430 017 90	WASHER, ST, .281IDX.6250DX.062	1.000	EA
46	414 611 95	SCREW, CAP, HEX SOC 1/4-20X5/8	1.000	EA
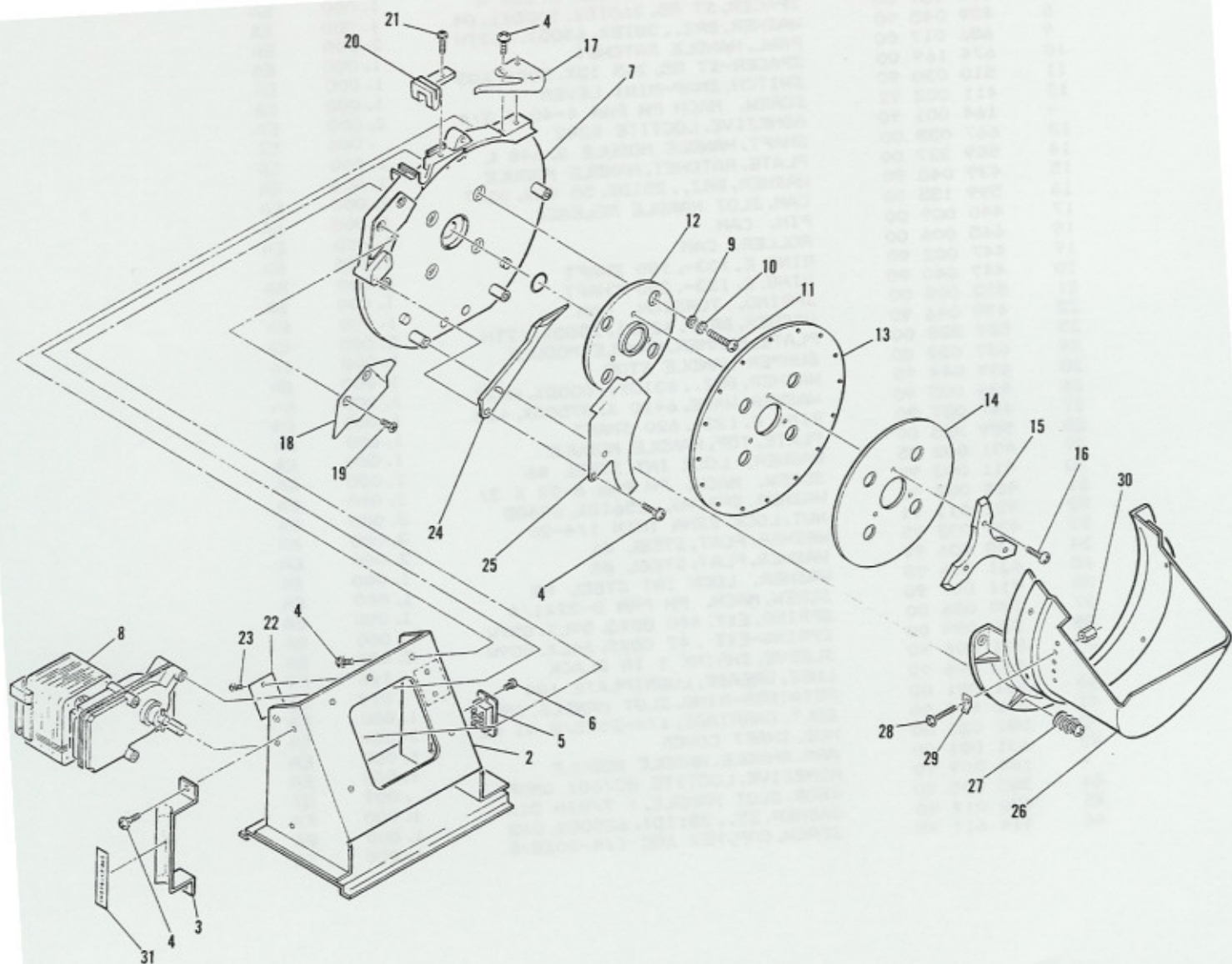
S-SLOT HOPPER

HOPPER

IGT S-SLOT MACHINE REPLACEABLE PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY	UM
1	797 001 00	HOPPER-7 PIN, STD. BOWL, 1CT	1.000	EA
-	797 002 00	HOPPER-7 PIN, STD. BOWL, 5CT	1.000	EA
-	797 003 00	HOPPER-7 PIN, SIDE BOWL, 5CT	1.000	EA
-	797 004 00	HOPPER-7 PIN, EXT. BOWL, 5CT	1.000	EA
-	797 005 00	HOPPER-7 PIN, STD. BOWL, 10CT	1.000	EA
-	797 006 00	HOPPER-7 PIN, SIDE BOWL, 10CT	1.000	EA
-	797 007 00	HOPPER-7 PIN, EXT. BOWL, 10CT	1.000	EA
-	797 008 00	HOPPER-7 PIN, STD. BOWL, 25CT	1.000	EA
-	797 009 00	HOPPER-7 PIN, SIDE BOWL, 25CT	1.000	EA
-	797 010 00	HOPPER-7 PIN, EXT. BOWL, 25CT	1.000	EA
-	797 011 00	HOPPER-7 PIN, SIDE BOWL, 50CT	1.000	EA
-	797 012 00	HOPPER-7 PIN, EXT. BOWL, 50CT	1.000	EA
-	797 013 00	HOPPER-7 PIN, STD. BOWL, SBA	1.000	EA
-	797 014 00	HOPPER-7 PIN, SIDE BOWL, SBA	1.000	EA
-	797 015 00	HOPPER-7 PIN, EXT. BOWL, SBA	1.000	EA
-	797 016 00	HOPPER-7 PIN, SIDE BOWL, DOLLAR	1.000	EA
-	797 017 00	HOPPER-7 PIN, EXT. BOWL, DOLLAR	1.000	EA
-	797 018 00	HOPPER-7 PIN, SIDE BOWL, 40MM	1.000	EA
-	797 019 00	HOPPER-7 PIN, EXT. BOWL, 40MM	1.000	EA
-	797 020 00	HOPPER-7 PIN, SIDE BOWL, $5	1.000	EA
-	797 021 00	HOPPER-7 PIN, EXT. BOWL, $5	1.000	EA
-	797 022 00	HOPPER-7 PIN, STD. BOWL, $100	1.000	EA
2	647 042 00	FRAME ASSY-HOPPER, 7 PIN PLUG	1.000	EA
3	380 011 00	HANDLE, HOPPER	1.000	EA
4	419 530 90	SCREW-SEMS, PH PAN, 10-32 X 3/8	10.000	EA
-	605 049 00	HARN, HOPPER 7P/ C.O. OPTICS	1.000	EA
5	217 064 90	PLUG, 7PIN, W/MTG BKT, PREGND	1.000	EA
6	413 809 94	SCREW, MACH. SOC. BUT 10-32X1/4	2.000	EA
7	649 047 00	HOUSING, HOPPER, SIDE EJECT	1.000	EA
8	358 010 90	MOTOR HOPPER, 25 RPM LD	1.000	EA
-	358 009 90	MOTOR HOPPER, 35 RPM, HD	1.000	EA
9	430 008 99	WASHER, FLAT STEEL #10	4.000	EA
10	431 008 99	WASHER, LOCK INT STEEL #10	5.000	EA
11	411 010 94	SCREW, MACH, PH P 10-32X1 1/2	4.000	EA
-	411 010 90	SCREW, MACH. PH PAN 10-32 X 1	1.000	EA
12	582 022 00	HUB-PINWHEEL	1.000	EA
-	284 016 00	SHIM, PINWHEEL, .010 THICK	1.500	EA
13	588 034 00	PINWHEEL, HOPPER, 16 PIN	1.000	EA
-	588 033 00	PINWHEEL, HOPPER, 11 PIN	1.000	EA
14	575 045 00	DISC, COIN, 1CT	1.000	EA
-	575 045 01	DISC, COIN, 5CT	1.000	EA
-	575 045 02	DISC, COIN, 10CT	1.000	EA
-	575 045 03	DISC, COIN, 25CT	1.000	EA
-	575 045 04	DISC, COIN, SBA	1.000	EA
-	575 045 05	DISC, COIN, 50CT	1.000	EA
-	575 045 06	DISC, COIN, DOLLAR	1.000	EA
-	575 045 07	DISC, COIN, 40MM	1.000	EA
-	575 045 08	DISC, COIN, $5 TOKEN	1.000	EA
-	575 045 09	DISC, COIN, $100 TOKEN	1.000	EA
15	572 007 00	AGITATOR-HOPPER	1.000	EA
16	419 909 90	SCREW, PH T HD 10-32X5/8	3.000	EA
17	681 019 00	WIPER, COIN, HOPPER	1.000	EA
18	574 036 00	DEFLECTOR-COIN, HOPPER	1.000	EA
19	411 107 91	SCREW, MACH. PH. F. 8-32X3/8	2.000	EA
20	379 011 00	OPTICAL ASSY-HOPPER	1.000	EA
21	419 520 91	SCREW-SEMS, PH PAN, 8-32 X 3/8	1.000	EA
22	753 046 00	BOARD, PC, HOPPER C/O OPTIC	1.000	EA
23	419 510 90	SCREW-SEMS, PH PAN, 4-40 X 1/4	2.000	EA
24	585 027 00	KNIFE-HOPPER, PLASTIC	1.000	EA
25	688 010 00	COVER, COIN OUTLET, 1CT-SBA	1.000	EA
-	688 077 00	COVER, COIN OUTLET, 50CT-40MM	1.000	EA
26	620 033 00	BOWL, HOPPER, STANDARD	1.000	EA
-	620 034 00	BOWL, HOPPER, EXTENDED	1.000	EA
-	620 035 00	BOWL, HOPPER, SIDE	1.000	EA
27	331 045 00	SPRING-COMP, HOPPER BOWL	4.000	EA
28	411 911 90	SCREW, MACH, RD, BRS, 10-32X1 1/4	1.000	EA
29	216 095 90	TERM, .250 TAB, 45 DEG, SGL. MAL	1.000	EA
30	312 036 90	STANDOFF-10-32 HX .50L NYLON	1.000	EA
31	850 101 00	LABEL, HOPPER ADJUSTMENT INSTR	1.000	EA

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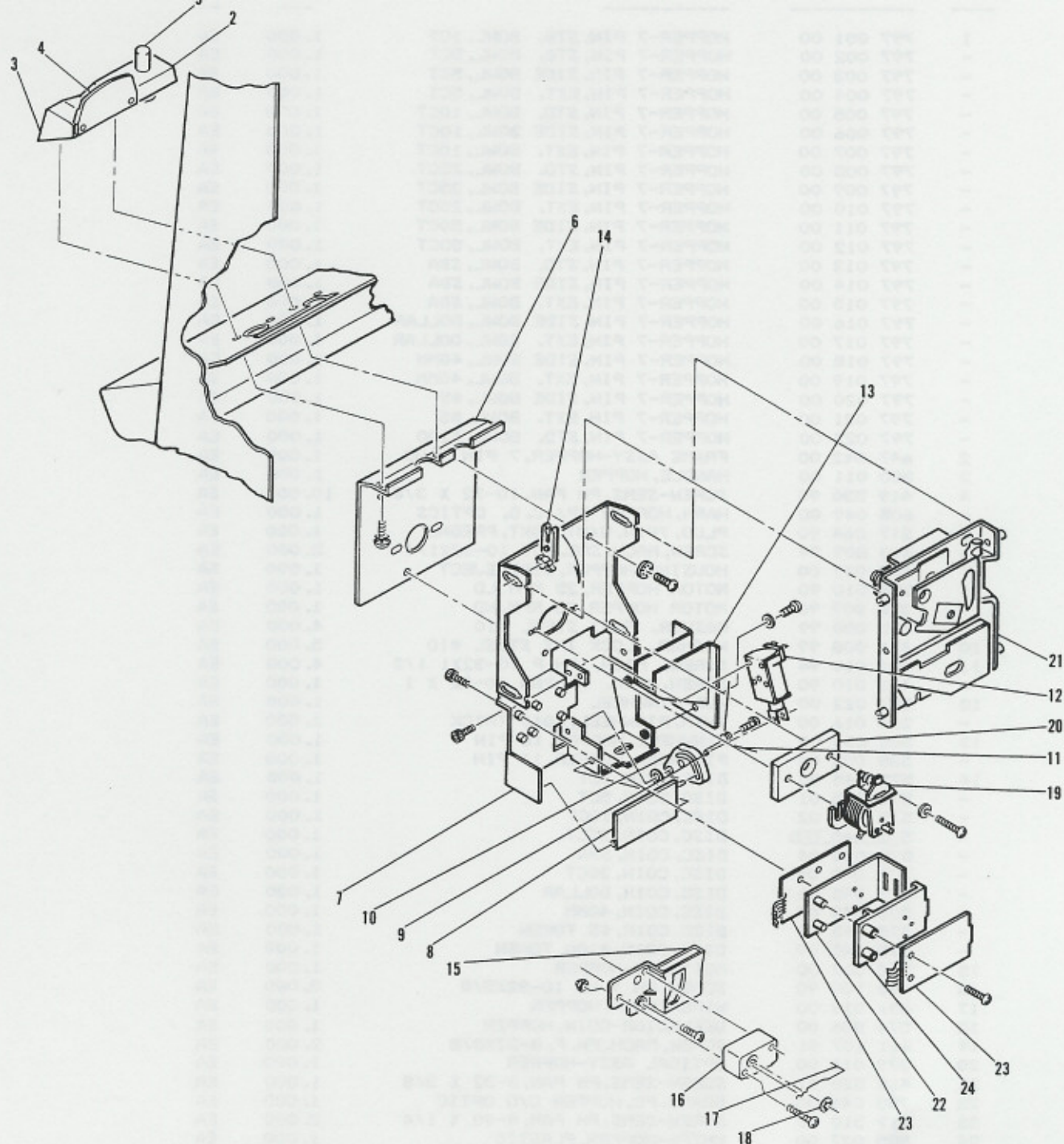IGT Customer Service for updated information when ordering

S-SLOT COIN-IN KIT

COIN-IN KIT

IGT S-SLOT MACHINE REPLACEABLE PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY	UM
1	599 200 03	COIN IN KIT-SM,MECH SW,25CT	1.000	EA
-	599 200 01	COIN IN KIT-SM,MECH SW,5CT	1.000	EA
-	599 200 02	COIN IN KIT-SM,MECH SW,10CT	1.000	EA
-	599 200 04	COIN IN KIT-SM,MECH SW,50CT	1.000	EA
-	599 198 01	COIN IN KIT-SM,E/CM,5CT	1.000	EA
-	599 198 02	COIN IN KIT-SM,E/CM,10CT	1.000	EA
-	599 198 03	COIN IN KIT-SM,E/CM,25CT	1.000	EA
-	599 198 04	COIN IN KIT-SM,E/CM,50CT	1.000	EA
-	599 198 05	COIN IN KIT-SM,E/CM,SBA	1.000	EA
-	599 202 00	COIN IN KIT-LG,E/CM,IKE	1.000	EA
-	599 202 01	COIN IN KIT-LG,E/CM,40MM	1.000	EA
-	599 197 01	COIN IN KIT-SM,3RD WAVE,5CT	1.000	EA
-	599 197 02	COIN IN KIT-SM,3RD WAVE,10CT	1.000	EA
-	599 197 03	COIN IN KIT-SM,3RD WAVE,25CT	1.000	EA
-	599 197 04	COIN IN KIT-SM,3RD WAVE,50CT	1.000	EA
-	599 197 05	COIN IN KIT-SM,3RD WAVE,SBA	1.000	EA
-	599 203 00	COIN IN KIT-LG,3RD WAVE,IKE	1.000	EA
2	578 131 03 ~~6403~~	ENTRY ASSY-SM,W/REJECT,25CT	1.000	EA
-	578 131 00	ENTRY ASSY-SM,W/REJECT,1CT	1.000	EA
-	578 131 01 ~~6401~~	ENTRY ASSY-SM,W/REJECT,5CT	1.000	EA
-	578 131 02	ENTRY ASSY-SM,W/REJECT,10CT	1.000	EA
-	578 131 04	ENTRY ASSY-SM,W/REJECT,50CT	1.000	EA
-	578 132 00	ENTRY ASSY-SM,W/O REJECT,1CT	1.000	EA
-	578 132 01	ENTRY ASSY-SM,W/O REJECT,5CT	1.000	EA
-	578 132 02	ENTRY ASSY-SM,W/O REJECT,10CT	1.000	EA
-	578 132 03	ENTRY ASSY-SM,W/O REJECT,25CT	1.000	EA
-	578 132 04	ENTRY ASSY-SM,W/O REJECT,50CT	1.000	EA
-	578 132 05	ENTRY ASSY-SM,W/O REJECT,SBA	1.000	EA
-	578 133 00	ENTRY ASSY-LG,W/REJECT,IKE	1.000	EA
-	578 133 01	ENTRY ASSY-LG,W/REJECT,40MM	1.000	EA
-	578 133 02	ENTRY ASSY-LG,W/REJECT,45MM	1.000	EA
-	578 134 00	ENTRY ASSY-LG,W/O REJECT,IKE	1.000	EA
-	578 134 01	ENTRY ASSY-LG,W/O REJECT,40MM	1.000	EA
-	578 134 02	ENTRY ASSY-LG,W/O REJECT,45MM	1.000	EA
3	633 049 00	BASE-ENTRY,SMALL,W/REJECT	1.000	EA
-	633 049 01	BASE-ENTRY,SMALL,W/O REJECT	1.000	EA
-	633 048 00	BASE-ENTRY,LARGE,W/REJECT	1.000	EA
-	633 048 01	BASE-ENTRY,LARGE,W/O REJECT	1.000	EA
4	599 196 03	COIN HEAD-SMALL,25CT	1.000	EA
-	599 196 00	COIN HEAD-SMALL,1CT	1.000	EA
-	599 196 01	COIN HEAD-SMALL,5CT	1.000	EA
-	599 196 02	COIN HEAD-SMALL,10CT	1.000	EA
-	599 196 04	COIN HEAD-SMALL,50CT	1.000	EA
-	599 196 05	COIN HEAD-SMALL,SBA	1.000	EA
-	599 195 00	COIN HEAD-LARGE,IKE	1.000	EA
-	599 195 01	COIN HEAD-LARGE,40MM	1.000	EA
-	599 195 02	COIN HEAD-LARGE,45MM	1.000	EA
5	658 037 00	PLUNGER-REJECT	1.000	EA
-	331 044 90	SPRING-COMP,.30 ODX.75LX.022W	1.000	EA
-	447 002 90	RING,E,133-.18 SHAFT	1.000	EA
6	653 163 00	MOUNT-CHASSIS	1.000	EA

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S-SLOT COIN-IN KIT
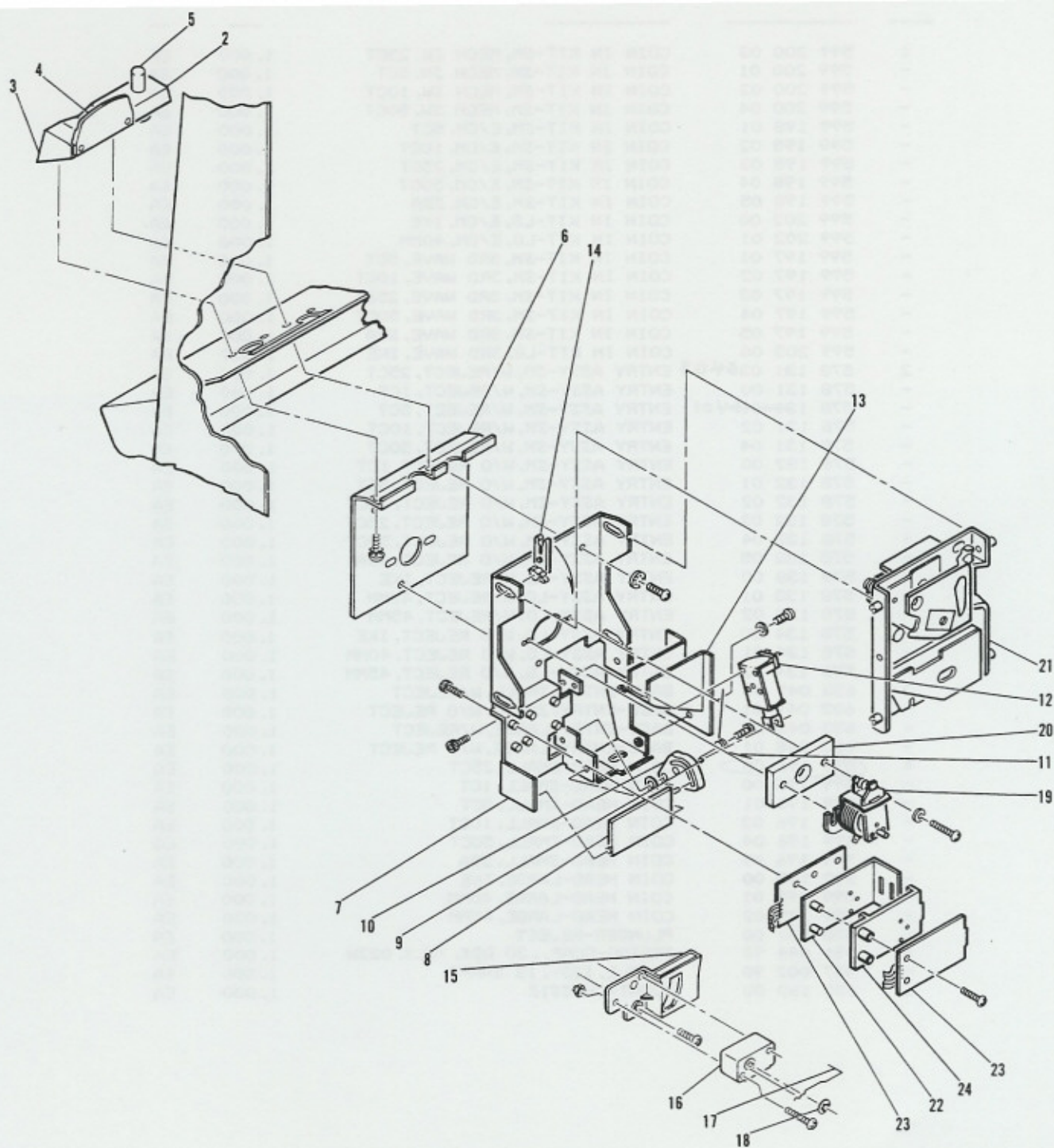
IGT S-SLOT MACHINE REPLACEABLE PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY	UM
–	573 208 00	CHUTE-COIN IN	1.000	EA
–	143 040 00	CHASSIS ASSY, UNIV COIN HNDLE	1.000	EA
7	143 039 00	CHASSIS, UNIV COIN SYSTEM	1.000	EA
8	576 034 00	DIVERTER, UNIV COIN SYSTEM	1.000	EA
9	659 088 00	CAM, DIVERTER, UNIV COIN SYSTEM	1.000	EA
10	444 001 90	PIN, DOWEL .094DIA X .50LB	1.000	EA
11	339 036 00	SPRING, TORS/COMP, UNIV COIN SY	1.000	EA
12	450 031 90	SOLENOID, 24VAC CONT, C-6 .106	1.000	EA
–	609 414 00	HARN, SOLENOID, UNIV. COIN SYSTE	1.000	EA
13	573 185 00	CHUTE, REJECT, UNIV COIN SYSTEM	1.000	EA
14	446 032 00	CLIP-ACCEPTOR, UNIV COIN SYSTE	4.000	EA
15	649 053 00	HOUSING-SWITCH, COIN-IN	1.000	EA
16	510 124 90	SWITCH-SNAPACTION, 5A, 125/250V	1.000	EA
17	571 032 90	ACTUATOR-SWITCH, COIN-IN, 25CT	1.000	EA
18	447 065 90	RING, PUSHON 105-.12 SHAFT	1.000	EA
19	459 014 90	SOLENOID, CREM, 24VAC W/.281 PI	1.000	EA
20	674 156 00	SPACER, LOCKOUT, UNIV COIN SYS.	1.000	EA
21	570 013 90	ACCEPTOR MECHANISM, COIN, 25CT	1.000	EA
–	570 009 90	ACCEPTOR MECHANISM, COIN, 1CT	1.000	EA
–	570 011 90	ACCEPTOR MECHANISM, COIN, 5CT	1.000	EA
–	570 012 90	ACCEPTOR MECHANISM, COIN, 10CT	1.000	EA
–	570 014 90	ACCEPTOR MECNANISM, COIN, 50CT	1.000	EA
–	570 015 90	ACCEPTOR MECHANISM, COIN, SBA	1.000	EA
–	570 080 90	ACCEPTOR MECHANISM, COIN, DOLLAR	1.000	EA
–	570 042 90	ACCEPTOR MECHANISM, COIN 40MM	1.000	EA
–	570 067 90	ACCEPTOR MECHANISM, ASSY-5$ TOK	1.000	EA
–	570 085 90	ACCEPTOR, 3RD WAVE, 5CT	1.000	EA
–	570 036 90	ACCEPTOR, 3RD WAVE, 10CT	1.000	EA
–	570 087 90	ACCEPTOR, 3RD WAVE, 25CT	1.000	EA
–	570 088 90	ACCEPTOR, 3RD WAVE, 50CT	1.000	EA
–	570 089 90	ACCEPTOR, 3RD WAVE, $	1.000	EA
–	570 074 90	ACCEPTOR, EL/CM UP TO 50¢	1.000	EA
–	570 101 90	ACCEPTOR, EL/CM $	1.000	EA
–	600 098 00	HARN, DOOR COIN MECH. NON $ F-3	1.000	EA
–	600 099 00	HARN, DOOR UNIV. COIN ACPTR. F-3	1.000	EA
–	600 100 00	HARN, COIN HDLG. 3RD WAVE $ F-3	1.000	EA
–	600 101 00	HARN, COIN HDLG 3RD WAVE N-$ F3	1.000	EA
–	600 102 00	HARN, COIN HDLG. COIN COMP. F-3	1.000	EA
22	649 042 00	HOUSING, ENCODER, UNIV COIN SYS	1.000	EA
23	753 040 00	BOARD ASSY, 3 OPTIC ENCR/DECR	1.000	EA
–	753 045 00	BOARD ASSY, 3 OPTIC ECDR/DCDR-2	1.000	EA
24	584 043 03	INSERT, 25CT, UNIV COIN SYSTEM	1.000	EA
–	584 043 00	INSERT, 1CT, UNIV COIN SYSTEM	1.000	EA
–	584 043 01	INSERT, 5CT, UNIV COIN SYSTEM	1.000	EA
–	584 043 02	INSERT, 10CT, UNIV COIN SYSTEM	1.000	EA
–	584 043 04	INSERT, 50CT, UNIV COIN SYSTEM	1.000	EA
–	584 043 05	INSERT, SBA, UNIV COIN SYSTEM	1.000	EA
–	584 043 06	INSERT, IKE, UNIV COIN SYSTEM	1.000	EA
–	584 043 07	INSERT, 40MM, UNIV COIN SYSTEM	1.000	EA
–	584 043 08	INSERT, 45MM, UNIV COIN SYSTEM	1.000	EA

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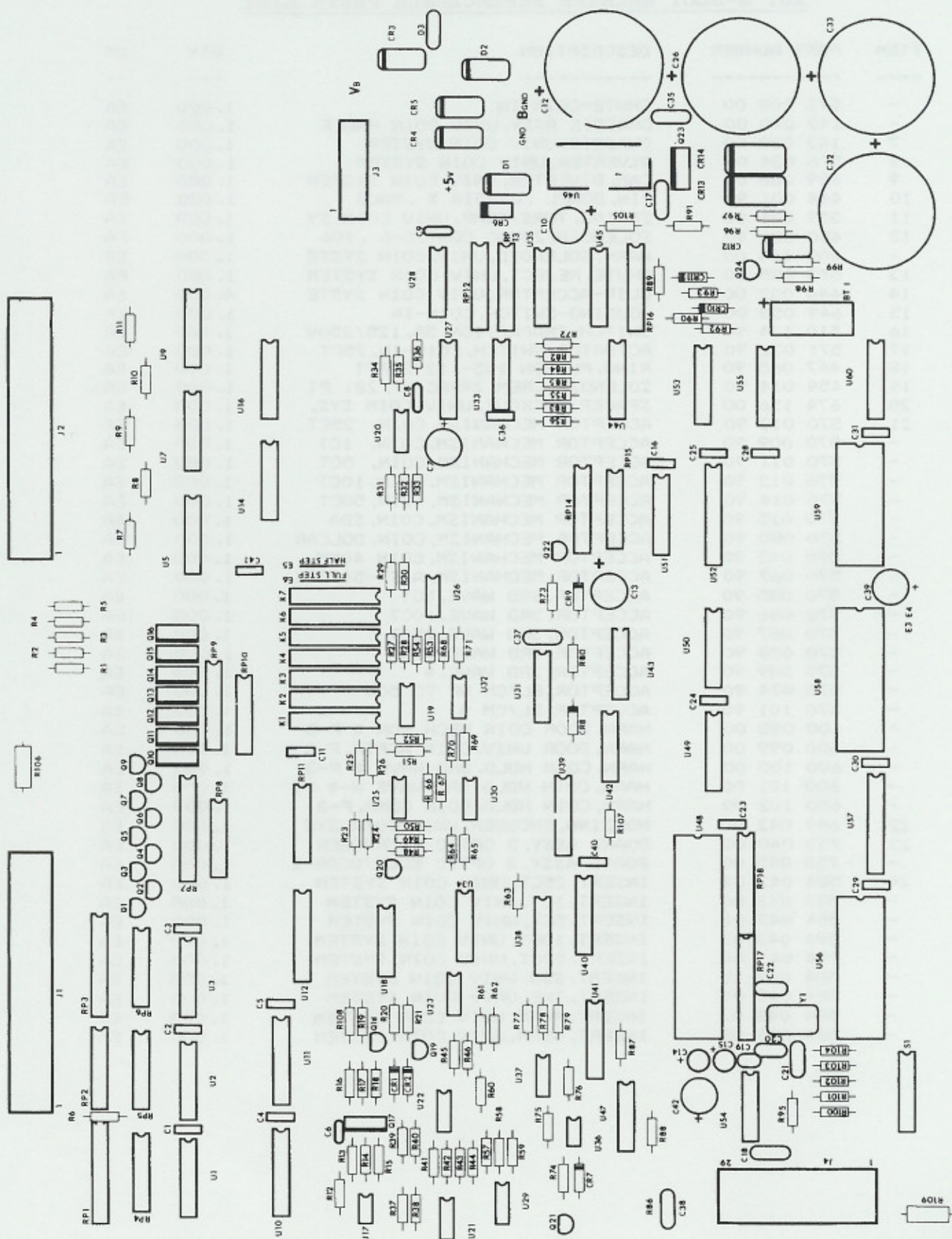
Assembly List – S-Slot Processor Board

Reference Number	Description	Part Number
	BOARD, PC, S-SLOT PROCESSOR RAW	75505230
U52, 57	IC, LATCH, OCTAL, HS 74HC373	32023490
U53, 55	IC, DCDR, 3 TO 8 LINE 74HC138	32027490
U47	IC DUAL 4BIT BIN CNTR 74LS393	32025290
U42, 43	IC, INVERTER, HEX 74HC04	32027290
U41	IC, CNTR, 12 STAGE, BIN 4040	32010590
U40	IC, F/F, DUAL, J-K 4027	32020190
U51	IC, HEX INV BUFFER, 4049	32029590
U49	IC, REGR, SHF/STR 4094	32010890
U27	IC, MULTVBR, DUAL MONO 4098	32014090
U1, 2, 3, 50, 60	IC, S/REGR, 8 STAGE 4021	32010390
U18, 28, 31, 34	IC, INVR, HEX, SCHMIDT 4584	32003890
U33	IC, CMPR, VOLT, QUAD LM3302	32013090
U38, 39, 44, 45	IC, DRVR, DARL, 7-OUT ULN2003	32013290
U56	IC, SOUND GEN, GAMES, AY38912	32008990
U10, 11, 12	IC, 10-BIT, SER DRV W/LATCH	32026490
U54	IC, AUDIO, POWER, 1.5W LM388	32400490
U36	OPTO, COUPLER TRANS H11A1	37000390
U19, 20, 21, 22, 23, 25, 26, 29, 30, 32	OPTO, COUPLER, DARL, 6N139	37000790
U35	OPTO, COUPLER, QUAD-TRANS ILQ-74	37001390
U17	OPTO, COUPLR, TRIAC MOC3030	37000890
U5, 9, 16	IC, STEPPER MOTOR DRV, SAA 1042	32100490
REF. U58	SOCKET, I.C. DIP, 28 PIN	12701190
REF. U59	SOCKET, I.C. DIP, 24 PIN	12700990
REF. U48	SOCKET, I.C. DIP, 40 PIN	12701090
CR1, 2, 7, 8, 11	DIODE, COMPTR, 100V, 100MA, IN4148	48003390
CR10	DIODE, SCHOTTKY, 60V, 400MW	48005890
CR13, 14	DIODE, POWER 60505	48003490
CR3, 4, 5, 12	RECT, SIL, 3A, 100V, 1N5401	48403890
Q22	DIODE, REF, 2.5V	48006390
D1	SUPR, VOLTAGE, 5V, 5W	48301090
D2	SUPR, VOLTAGE, 12V, 5W	48301190
CR6, 9	RECT, SIL, 100V, 1.0A IN4002	48402290
RP2, 13	RESISTOR, NET, 1K-7, 8 PIN, SIP	47801490
RP17, 18	RESISTOR, NET, 22K-9, 10 PIN, SIP	47802090
RP12, 14	RESISTOR, NET, 10K-7, 8 PIN, SIP	47801690
RP1, 3	RESISTOR, NET, 1K-9, 10 PIN, SIP	47803290
RP9	RESISTOR, NET, 750-7, 8 SIP	47807190
RP7	RESISTOR, NET, 750-9, 10 SIP	47807090
RP16	RESISTOR, NET, 22K-7, 8 SIP	47806990
RP8, 10, 11	RESISTOR, NET, 390-8, 16 DIP	47806890
RP15	RESISTOR, NET, 10K-8, 16 PIN, DIP	47800790
RP4, 5, 6	RESISTOR, NET, 100K-8, 16 DIP	47806690
R109	RESISTOR, COMP, 3.9 OHM, 1/2W	47117890
R106	RESISTOR COMP 180 OHM 1/2W	47117290
R93	RESISTOR, CFILM, 10 OHM 1/4W	47404890
R14	RESISTOR, CFILM, 47 OHM 1/4W	47400990
R15	RESISTOR, CFILM, 100 OHM 1/4W 5%	47400290
R97	RESISTOR, CFILM, 220 OHM 1/4W	47401890
R12, 75	RESISTOR, CFILM, 330 OHM 1/4W	47405490
R1, 2, 3, 4, 5, 18, 26, 29, 31, 40, 44,	RESISTOR, CFILM, 470 OHM 1/4W	47402090
R95, 102	RESISTOR, CFILM, 510 OHM 1/4W	47402190
R30, 53, 66, 70	RESISTOR, CFILM, 680 OHM 1/4W	47405790
R6, 16, 96	RESISTOR, CFILM, 750 OHM 14 W	47400890
R13, 25, 32, 34, 41, 45, 82, 92, 104	RESISTOR, CFILM, 1K OHM 1/4W	47402390
R39, 76	RESISTOR, CFILM, 1.5K OHM 1/4W	47400190
R37	RESISTOR, CFILM, 4.7K OHM 1/4W	47402590
R50, 98	RESISTOR, CFILM, 8.2K OHM 1/4W	47403990
R23, 27, 38, 42, 49, 52, 59, 61, 64,	RESISTOR, CFILM, 3K OHM 1/4W	47400590
R103	RESISTOR, CFILM, 2.7K OHM 1/4W	47403190
R17, 19, 20, 21, 24, 28, 33, 43, 46,	RESISTOR, CFILM, 10K OHM 1/4W	47402690
R63	RESISTOR, CFILM, 22K OHM 1/4W	47402890
R7, 8, 9, 10, 11, 36, 100	RESISTOR, CFILM, 47K OHM 1/4W	47402990
R89	RESISTOR, CFILM, 180K OHM 1/4W	47401190
R83	RESISTOR, CFILM, 270K OHM, 1/4W	47403590
R35	RESISTOR, CFILM, 470K OHM 1/4W	47401290
R72, 73, 90	RESISTOR, CFILM, 1MEG OHM 1/4W	47401390
R105	RESISTOR, MFILM, 243 OHM, 1/4W, 1%	47601690
R91	RESISTOR, MFILM, 845 OHM, 1/4W 1%	47601590
R55	RESISTOR, MFILM, 976 OHM, 1%	47600990
R85	RESISTOR, MFILM, 3.09KOHM, 1/4W1%	47601790
R56, 84	RESISTOR, MFILM, 1.21K, 1%	47601090
D3	VARISTOR, 47V	48300990
C21	CAPR, CERAMIC 100PF, 200V	15200390
C6	CAP, DISC CERAMIC .01MF 100V	15205790
C19	CAPR, DISC CERAMIC, .05MF, 25V	15204990
C1-5, 9, 11, 16, 18, 23, 24, 25, 28,	CAPR, CER, BYPASS, .1UF, 50V	15207190
C17, 35	CAPR, CERAMIC, 100000PF, 50V	15200690
C38	CAPR, CER, BYPASS, .33UF, 50V	15207390
C37	CAPR, CERAMIC, 4700PF, 200V	15206890
C8	CAPR, CERAMIC 100PF, 200V	15200390

Assembly List – S-Slot Processor Board
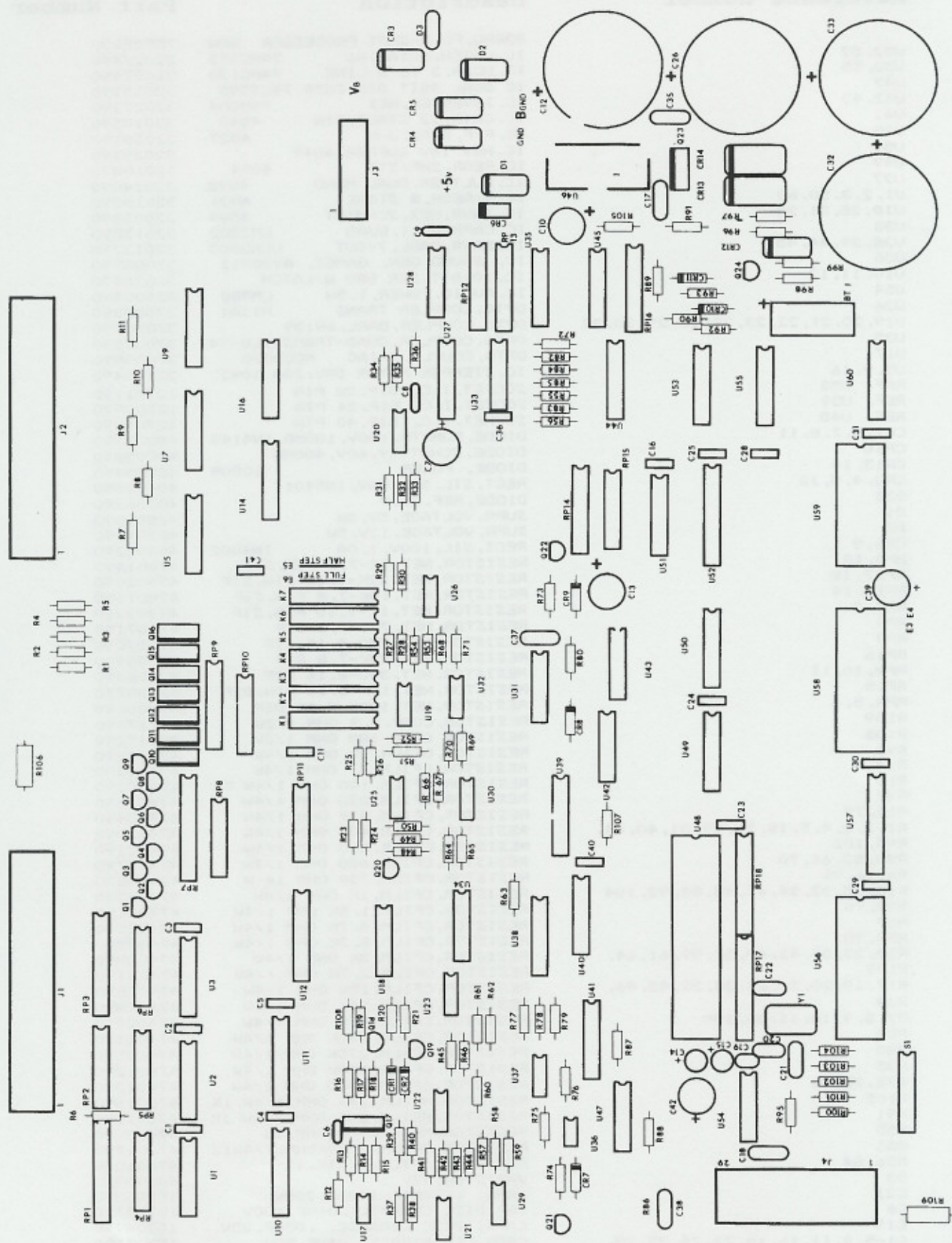
| Reference Number	Description	Part Number
C20, 22	CAPR, DIP MICA, 20PF, 500V	15300590
C10, 39	CAPR, DIPTANT, 10MF-35	15401090
C7, 14, 15	CAPR, ELECTRO, RAD, 10MF, 16V	15601690
C13	CAPR, ELECTRO, 470MF, 25V	15602890
C42	CAPR, ELECTRO RAD, 220MF, 16V	15602190
C26, 33	CAPR, ELECTRO, RAD, 6800MF, 16V	15605190
C12, 32	CAPR, ELECTRO, RAD, 6800MF, 25V	15604590
Y1	CRYSTAL 10.0 MHZ HC-18/U	23012190
R86	POT, LINEAR, 10K, HORIZ	46003490
Q18, 19, 21, 24	TRANS, NPN, GEN PURP AMP, 2N3904	48101790
Q20	TRANS, PNP, GEN PURP AMP, 2N3905	48101890
Q23	TRANS, PNP, DARLINGTON, 8A, TIP125	48103490
Q17	TRIAC, 8A, 250V MAC3030-8	48201590
Q1-9	TRIAC, 400V, .8A	48201290
Q10-16	TRIAC, 1.6AMPS, 200V, L2001L3	48201690
U46	REGR, POS, ADJ, 1.5A, LM317T	48802590
K1-5	RELAY, SSR, 120VAC 1A, SIP	45403890
REF. J1, 2	CONN, HDR, 50 PIN, RTA SHROUD	21102390
REF. J4	CONN, HDR, 30 PIN, RTA SHROUD SL	21102690
REF. J3	WAFER, 6 PIN, MOLEX	21902390
U48	MICROPRCSOR, 8-BIT, 12 MHZ, 8031	32700490
U58	EPROM 128K, 250NS 27128	70801290
REF. U59	RAM, CMOS, 2KX8, 150NS, 6116	70601990
REF. U46	HEATSINK, 18C/W, TO-220	26702290
REF. U46	COMPOUND, HEAT SINK	16100190
REF. B71	BATTERY, LITHIUM, 3.4V, 600MA	40401190
REF. S1	SWITCH, DIP, 8POS, 16PIN	51010590
RAW BD	BOARD PC, 3 OPTIC DCDR-2 RAW	75304430
U1	OPTO, COUPLER, AC/DC HCPL-3700	37001090
U2	IC, TIMER, NE555	32011790
CR1	DIODE, COMPTR, 100V, 100MA, IN4148	48003390
R2	RESISTOR, CFILM, 33 OHM 1/4W	47405190
R1	RESISTOR, CFILM, 3.9K OHM 1/4W	47403290
R3	RESISTOR, CFILM, 10K OHM 1/4W	47402690
R4	RESISTOR, CFILM, 47K OHM 1/4W	47402990
C1	CAPR, ELECTRO, RAD, 10MF, 35V	15601790
C2	CAPR, CER, BYPASS, .01UF, 50V	15207290
Q4	TRANS, PNP, GEN PURP AMP, 2N3906	48101990
Q1-3	PHOTOTRANS, 250MW, 40V MRD360	37300490
J50	WAFER, RT ANG, .1, 10 PIN	21928390
REF Q1-3	SPACER, INSULATING,	67400390
S1	SWITCH, SPDT, MOM, PCB, RT. ANG	51010990
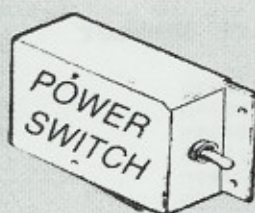
ALWAYS turn off the main Power Switch and unplug the line cord before removing or installing any assembly, connector or component. Before handling Integrated Circuits be sure to dissipate any static charges which may have built up in the body. Some of the Integrated Circuits may be damaged by direct contact with static electricity.

For location of power switch refer to page 7-1, item number 5

CAUTION! Do not use cleaning solvents containing ammonia on exterior surfaces of the cabinet. Permanent damage to the finish well result.
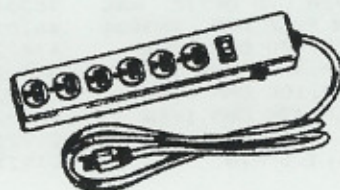
As with all electronic devices, it is a very good idea to use a Surge Protector to prevent the sensitive electronic components against house current surges.

Assembly Drawing
S-Slot Display Board
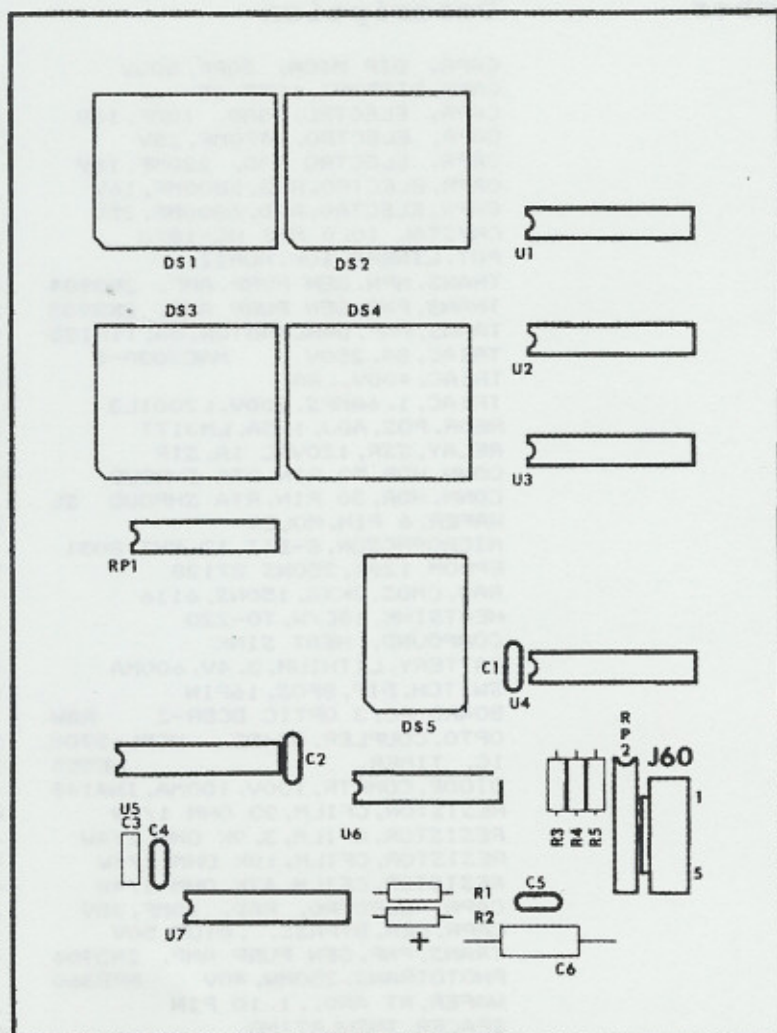
Assembly List - S-Slot Display Board

| Reference Number	Description	Part Number
	BOARD PC, S-SLOT, DISPLAY, RAW	75106930
U4	IC, REGR, SHF/STR 4094	32010890
U3	IC, BCD/DEC, DECODER 4028B	32000390
U1, 2	IC, DRVR, DARL, 7-OUT ULN2003	32013290
U6	IC, INVR, HEX, SCHMIDT 4584	32003890
U5	IC, DRVE/DECR, BCD-7SEG, CD4511BE	32010990
U7	IC, MULTVBR, DUAL MONO 4098	32014090
RP2	RESISTOR, NET 1K-5, 6PIN SIP	47806490
RP1	RESISTOR, NET, 270-7, 14 PIN, DIP	47802890
R2, 3, 4, 5	RESISTOR, CFILM, 100K OHM 1/4W	47401090
R1	RESISTOR, CFILM, 1MEG OHM 1/4W	47401390
C3	CAPR, CERAMIC 100PF, 200V	15200390
C1, 2, 4, 5	CAPR, CER, BYPASS, .01UF, 50V	15207290
C6	CAPR, ELECTRO, AX, 15MF, 25V	15700790
J60	CONN, 5PIN, STR, SHROUD	21102590
DS1, 2, 3, 4	LED, RED, 7SEG, .56, 2-DGT, CCATH	25401090
DS5	LED, RED, 7SEG, .56, 1-DGT, CCATH	25401190
RAW BD	BOARD, PC, HOPPER C/O OPTIC RAW	75304630
Q1	TRANS, NPN, GEN PURP AMP, 2N3904	48101790
R3	RESISTOR, CFILM, 470 OHM 1/4W	47402090
R1	RESISTOR, CFILM, 4.7K OHM 1/4W	47402590
R4	RESISTOR, CFILM, 10K OHM 1/4W	47402690
R2	RESISTOR, CFILM, 47K OHM 1/4W	47402990
J1	WAFER, SQ PIN, .1, 4 PIN	21921090
J2	WAFER, SQ PIN, .1, 5 PIN	21921190

Assembly Drawing
S-Slot Progressive Driver Board
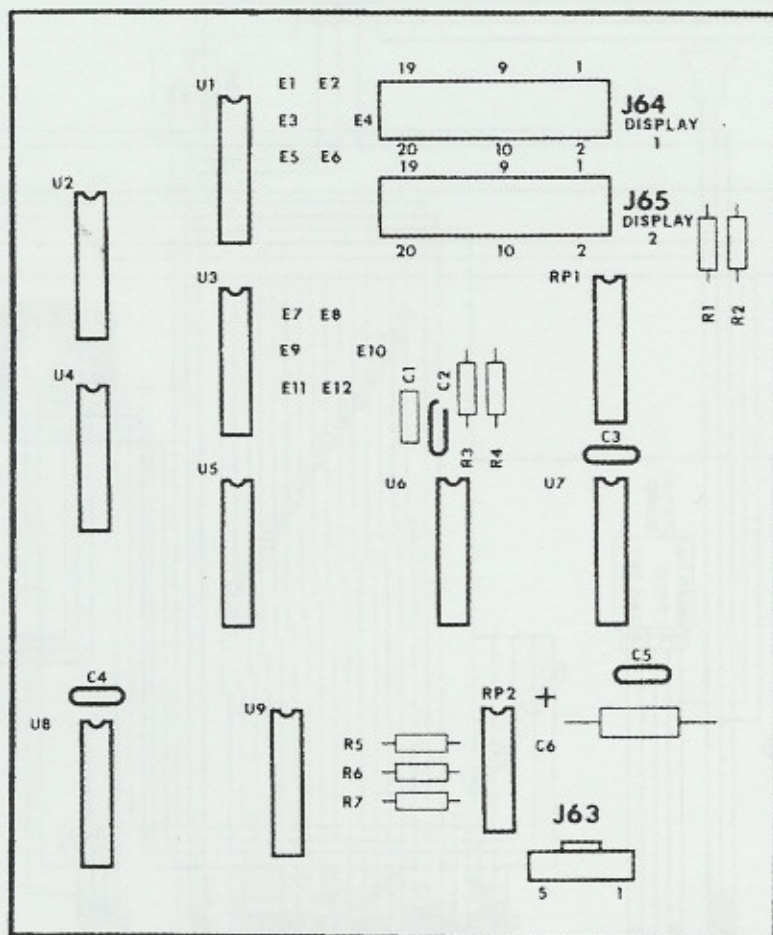
Assembly List - S-Slot Progressive Driver Board

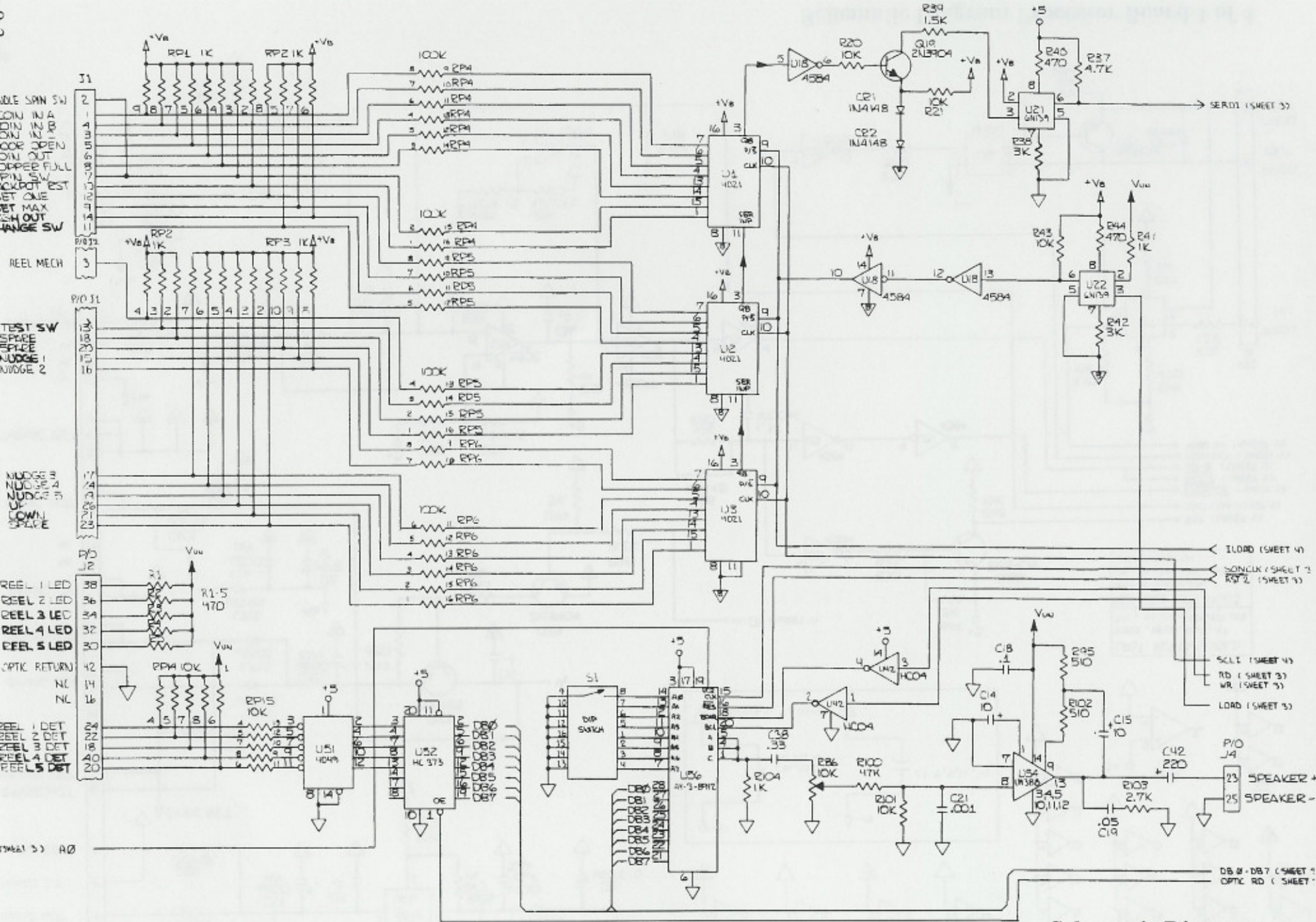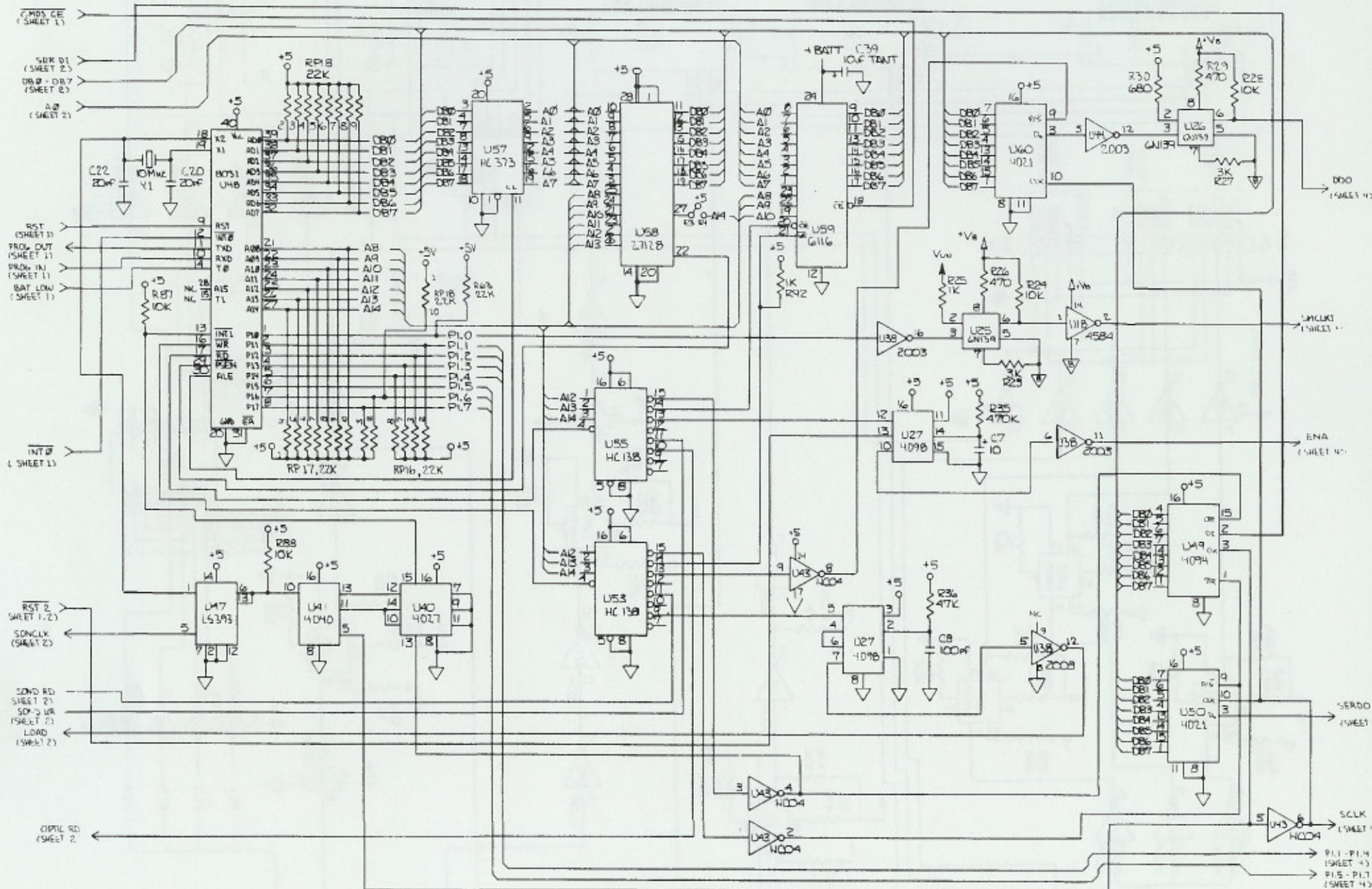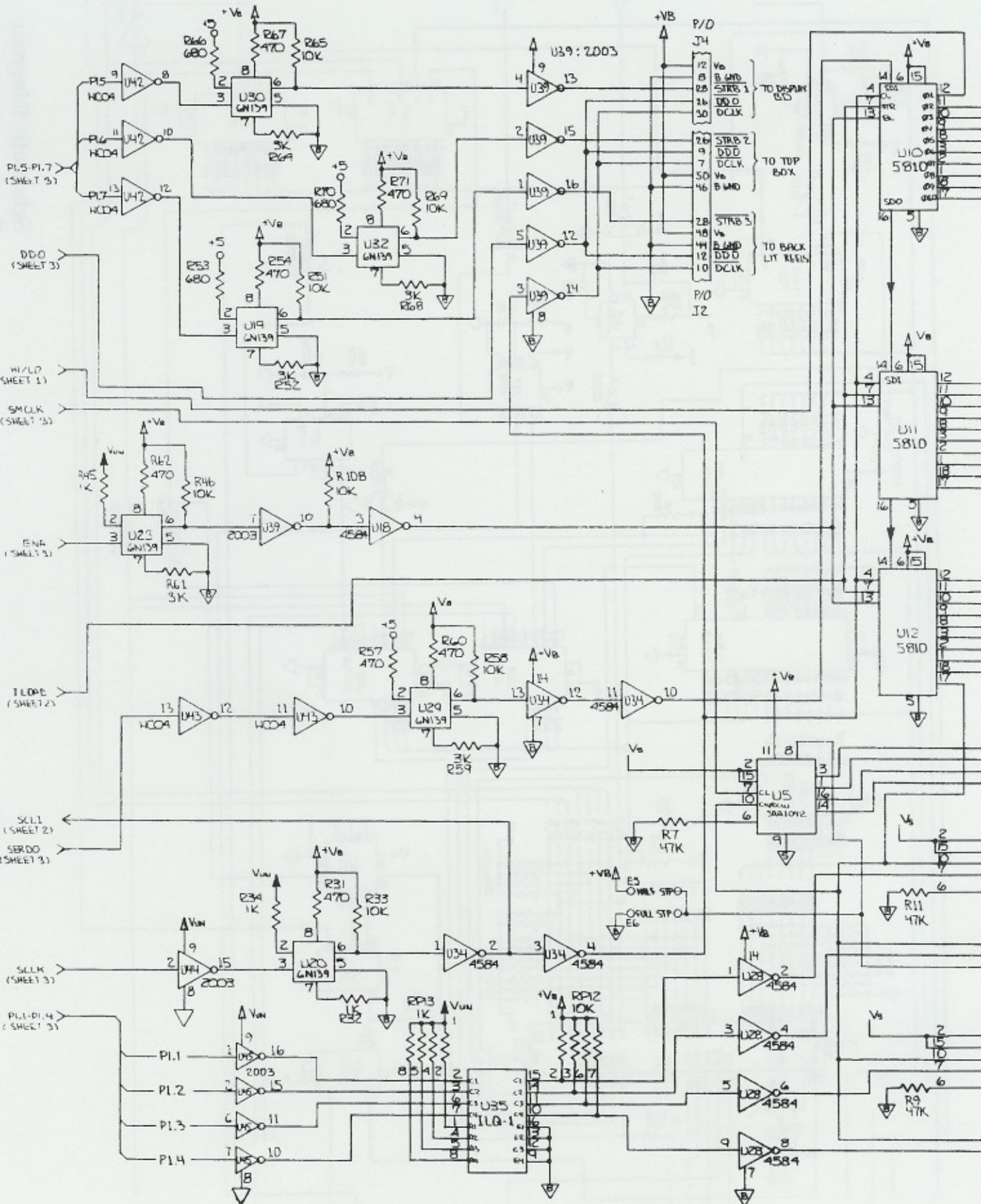| Reference Number	Description		Part Number
	BOARD PC SSLT PROG DRVR RAW		75107130
U9	IC, INVR, HEX, SCHMIDT	4584	32003890
U8	IC, REGR, SHF/STR	4094	32010890
U6	IC, MULTVBR, DUAL MONO	4098	32014090
U7	IC, DRVE/DECR, BCD-7SEG, CD4511BE		32010990
U2, 4	IC, BCD/DEC, DECODER 4028B		32000390
U1, 3, 5	IC, DRVR, DARL, 7-OUT	ULN2003	32013290
RP1	RESISTOR, NET, 270-7, 14 PIN, DIP		47802890
RP2	RESISTOR, NET 1K-5, 6PIN SIP		47806490
R1, 2	RESISTOR, CFILM, 270 OHM 1/4W		47400490
R4-7	RESISTOR, CFILM, 100K OHM 1/4W		47401090
R3	RESISTOR, CFILM, 1MEG OHM 1/4W		47401390
C1	CAPR, CERAMIC 100PF, 200V		15200390
C2-5	CAPR, CER, BYPASS, .01UF, 50V		15207290
C6	CAPR, ELECTRO, AX, 15MF, 25V		15700790
J64, 65	CONN, HDR, 20P, SHROUD, NO EJECTOR		21101790
J63	CONN, 5PIN, STR, SHROUD		21102590

Wiring Schematic
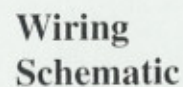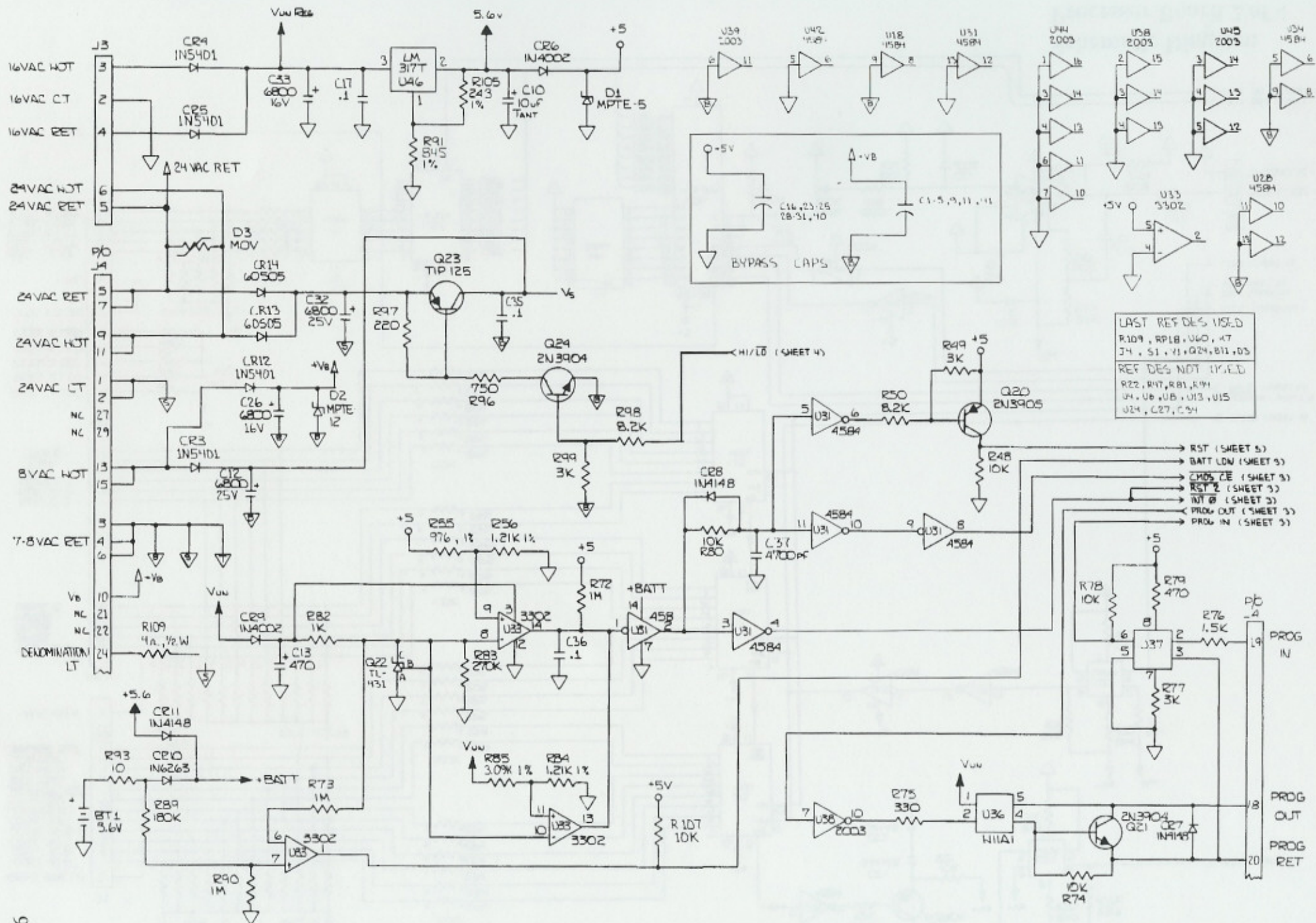
Schematic Diagram Processor Board 1 of 4
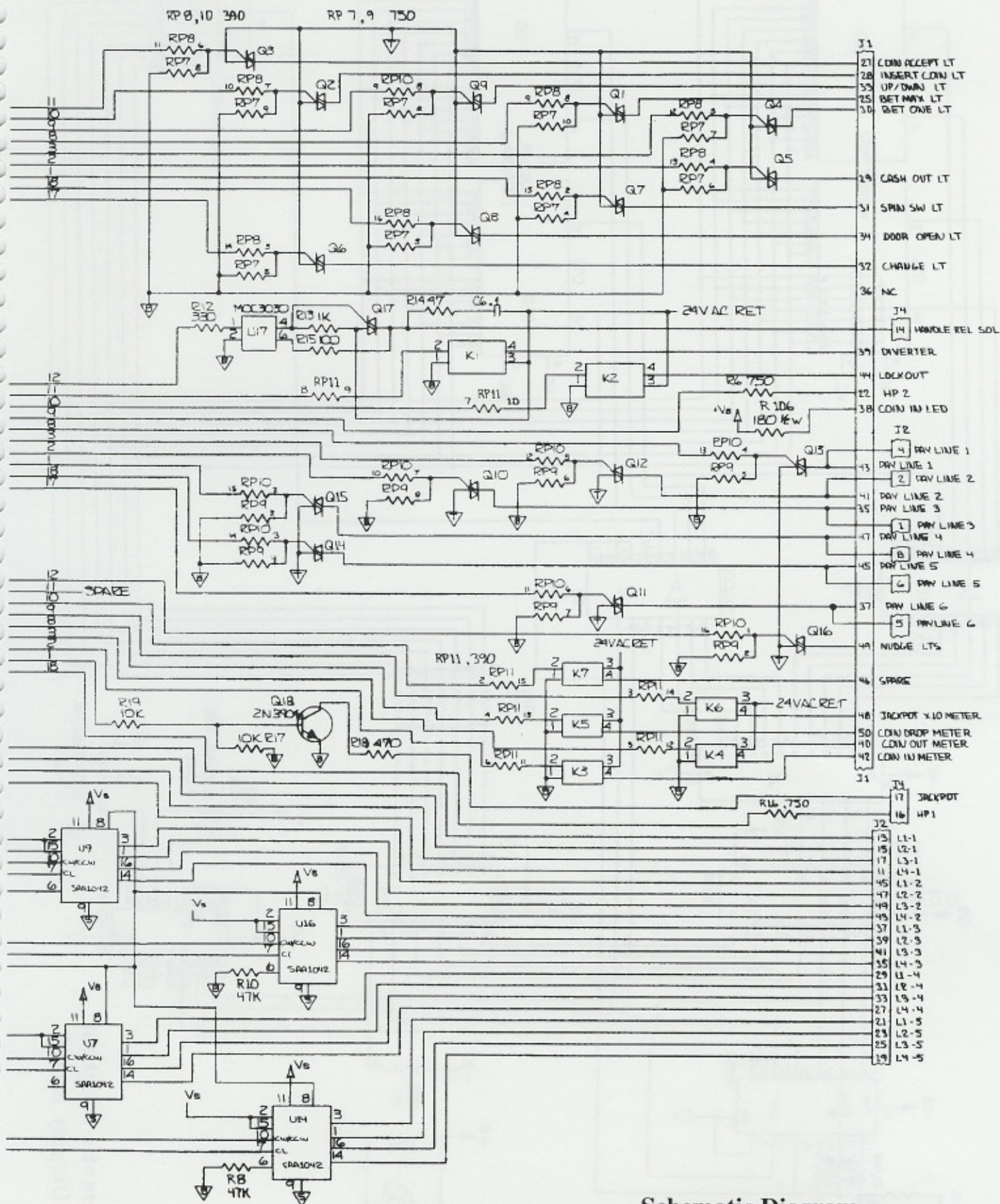
Schematic Diagram
Processor Board 2 of 4

Schematic Diagram
Processor Board 3 of 4

RP 8,10 390   RP 7,9 750
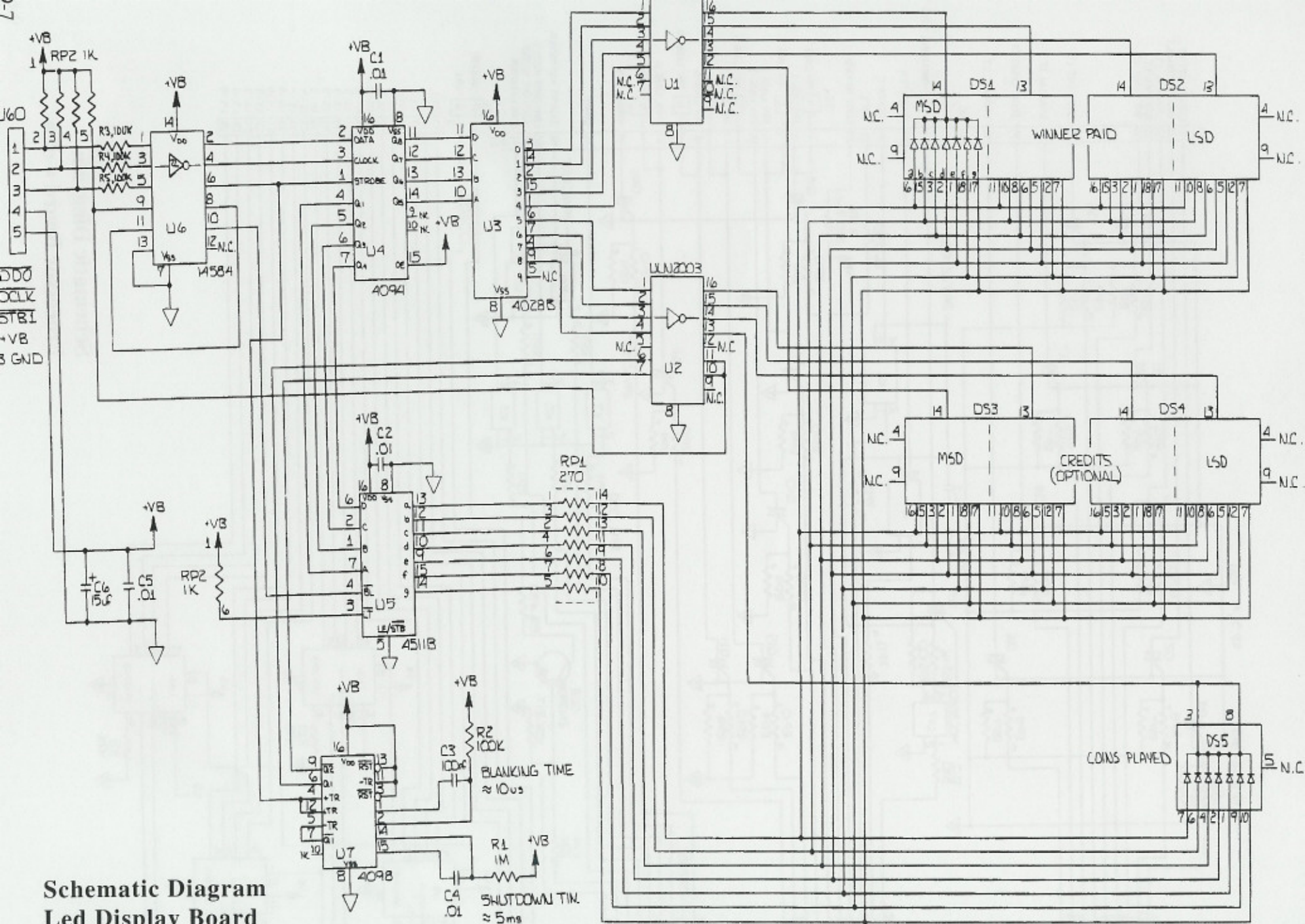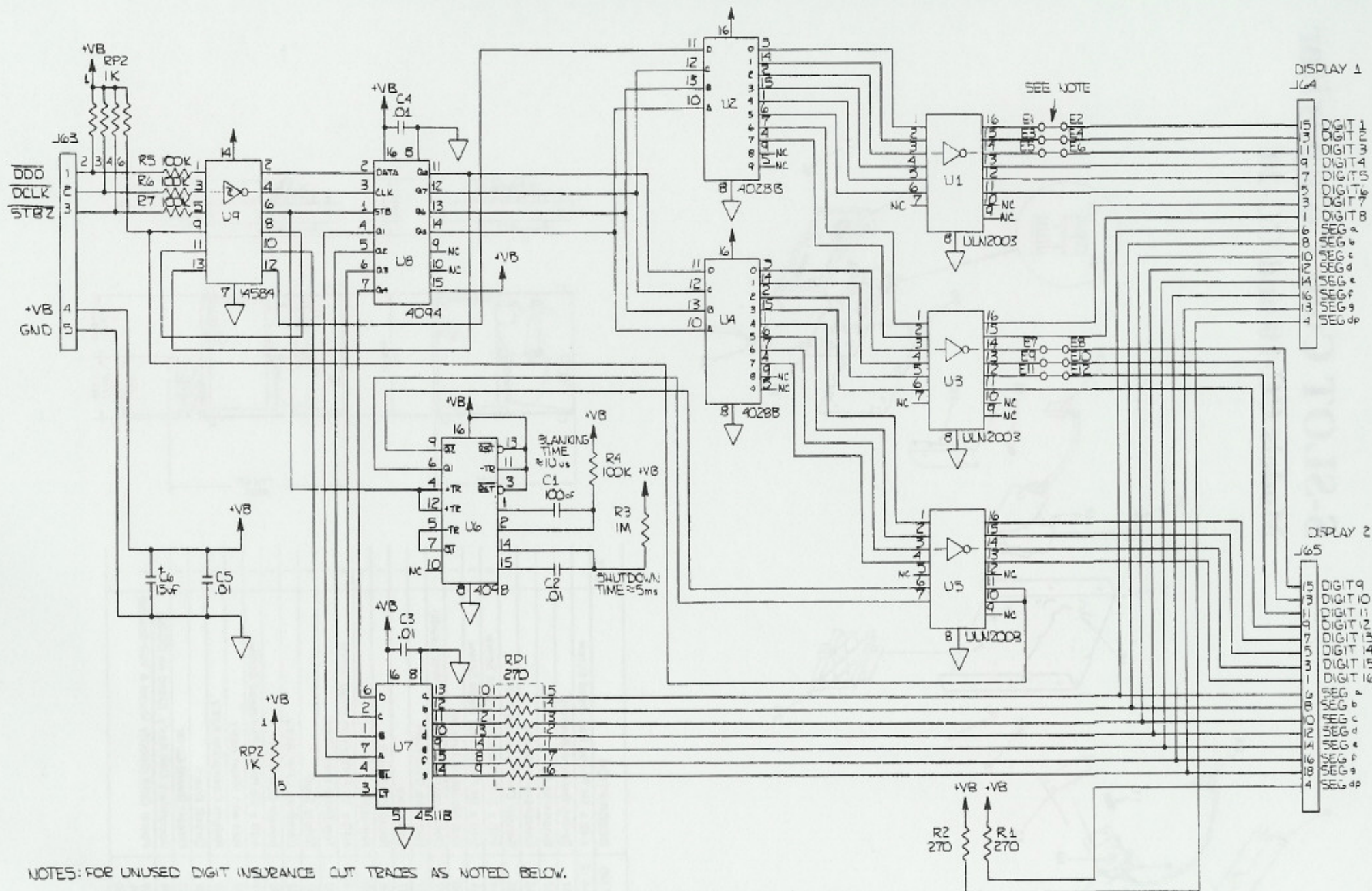
RP8
RP7   Q3
RP8   Q2
RP7
RP10   Q9
RP7
RP8   Q1
RP7
RP8   Q4
RP7
RP8   Q5
RP7
RP8   Q7
RP7
RP8   Q8
RP7
RP8   Q6
RP7

J1
27 COIN ACCEPT LT
28 INSERT COIN LT
33 UP/DOWN LT
25 BET MAX LT
30 BET ONE LT
29 CASH OUT LT
31 SPIN SW LT
34 DOOR OPEN LT
32 CHANGE LT
36 NC

R12 330   MOC3030 U17   R13 1K   Q17   R14 47   C6 .1   24VAC RET
R15 100
K1
RP11   RP11 1D
K2
R6 750
+V8   R106 180 KEW

J4
14 HANDLE REL SOL
39 DIVERTER
44 LOCKOUT
12 HP 2
38 COIN IN LED

J2
RP10   Q13   4 PAY LINE 1
RP9   43 PAY LINE 1
RP10   Q10   RP9   Q12   RP9   2 PAY LINE 2
RP9   41 PAY LINE 2
RP10   Q15   35 PAY LINE 3
RP9   1 PAY LINE 3
RP10   Q14   47 PAY LINE 4
RP9   8 PAY LINE 4
45 PAY LINE 5
SPARE   6 PAY LINE 5
RP10   Q11   37 PAY LINE 6
RP9   5 PAY LINE 6
RP10   Q16   49 NUDGE LTS
RP9
24VAC RET
46 SPARE
RP11 390   RP11
K7   RP11
R19 10K   Q18 2N3904   K5   RP11   K6   24VAC RET   48 JACKPOT X10 METER
10K R17   R18 47O   K3   K4   50 COIN DROP METER
40 COIN OUT METER
42 COIN IN METER

J1
R11 750   J4
17 JACKPOT
16 HP 1

J2
13 L1-1
15 L2-1
17 L3-1
11 L4-1
45 L1-2
47 L2-2
49 L3-2
43 L4-2
37 L1-3
39 L2-3
41 L3-3
35 L4-3
29 L1-4
31 L2-4
33 L3-4
27 L4-4
21 L1-5
23 L2-5
25 L3-5
19 L4-5

+V8
U9 SAA1042   CK/CCW   CL
+V8   U16 SAA1042   CK/CCW   CL   R10 47K
+V8   U7 SAA1042   CK/CCW   CL
V8
V8   U14 SAA1042   CK/CCW   CL   R8 47K

Schematic Diagram
Processor Board 4 of 4

**Schematic Diagram
Led Display Board**

NOTES: FOR UNUSED DIGIT INSURANCE CUT TRACES AS NOTED BELOW.

FOR 8 DIGIT SINGLE AND DOUBLE BOARD DISPLAYS NO CUTS ARE REQUIRED BETWEEN E1/E2 THRU E11/E12. POSITIONS.
FOR 7 DIGIT SINGLE AND DOUBLE BOARD DISPLAYS CUT TRACES BETWEEN E1/E2 AND E7/E8.
FOR 6 DIGIT SINGLE AND DOUBLE BOARD DISPLAYS CUT TRACES BETWEEN E1/E2, E3/E4, E7/E8, E9/E10.
FOR 5 DIGIT SINGLE AND DOUBLE BOARD DISPLAYS CUT TRACES BETWEEN E1/E2, E3/E4, E5/E6, E7/E8, E9/E10, E11/E12.
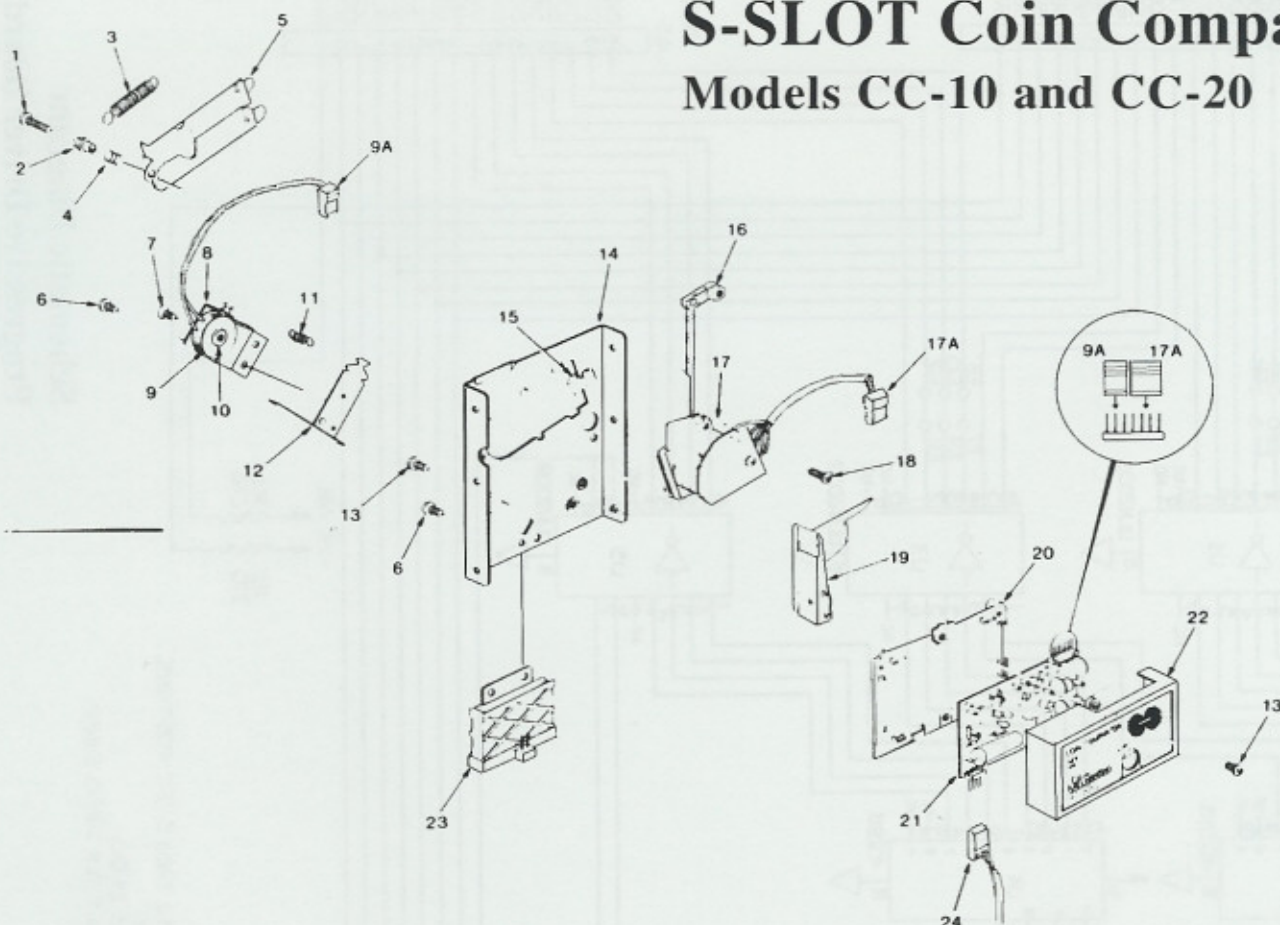
Schematic Diagram
Progressive Driver Board

S-SLOT Coin Comparitor
Models CC-10 and CC-20

DRAWING NO.	PART NO.	DESCRIPTION	QTY.
1	P-104-4-12	4-40 x 3/4 Phillip Pan Head Screw	1
2	CC-151	Spring Retainer Bushing	1
3	CC-152	Extension Spring	1
4	CC-153	Compression Spring	1
5	CC-154	Sensor Coil Retaining Shield	1
6	P-104-4-3	4-40 x 3/16 Phillip Pan Head Screw	5
7	102-5-4	5-40 x 1/4 Phillip Flat Head Screw	1
8	CC-156	Coil Mounting Bracket	1
9	CC-147	Coil (Specify Black or Red Wire Leads)	1
9A	CC-122	Red Wire Connector	1
10	CC-157	Core Pins	1
11	CC-158	Restoring Spring	1
12	CC-159	Armature	1
13	P-104-4-4	4-40 x 1/4 Phillip Pan Head Screw	4
14	CC-160	Top Entry Main Plate	1
15	CC-161	Safety Stop	1
16	CC-162	Dampner Lever Ass'y.	1
17	CC-165	Sensor Coil Ass'y.	1
18	P-104-4-6	4-40 x 3/8 Phillip Pan Head Screw	1
19	CC-176	Rail and Insert Ass'y.	1
20	CC-180	Return Coverplate Ass'y.	1
21	CC-182	Circuit Board	1
22	CC-183	Circuit Board Cover	1
23	CC-184	Secondary Coil Ass'y. (Used on CC-20)	1
24	CC-149 OR CC-150	Power Cord (Specify Model & Volt Source)	1
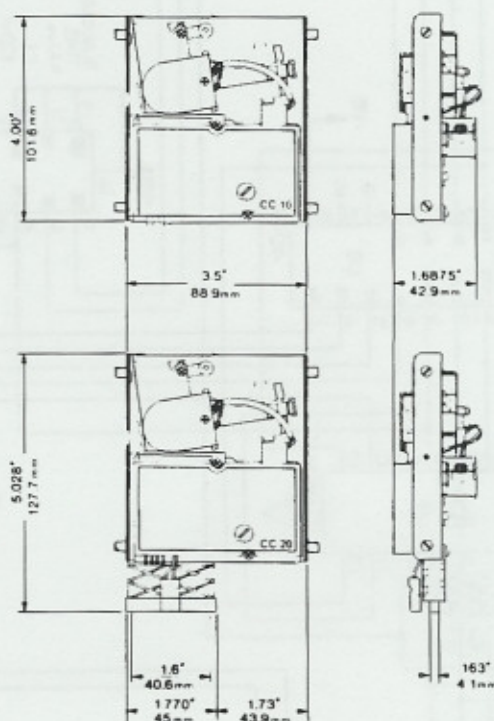
Coin Size Specification

Coin Diameter Range: .748 thru 1.575″ (19mm thru 40mm)
Nort: For dia. of 1.205 thru 1.575 (22.61m thru 40mm) A plug spacer is recommended.

Recommended Maximum thickness of coin: .100″ (2.45mm)

Coin slot control is necessary for oversize protection beyond .050″ (1.27mm) of coin in sample holder.

Voltage

Operation range determined by power cords:

	Model CC-10 Power Cords	Model CC-20 Power Cords
15 thru 20 VDC * or 12 thru 20 VAC	CC-149-12-20	CC-150-12-20
20 thru 32 VDC * or 20 thru 32 VAC	CC-149-20-32	CC-150-20-32
50 VAC/DC (Optional)	CC-149-50	CC-150-50

*DC Voltage can be regulated or unregulated.
Optional 12 VDC Comparitor available on special order (Only operates from regulated 12 VDC source).

CURRENT DEMAND: IDLE 10-25 m Amps
PEAK 110-125 m Amps

Potentiometer Adjustment

Each Comparitor leaving the factory is adjusted to give excellent discrimination against slugs. However, some high quality slugs may need a finer adjustment:

1) Adj. pot CCW until high quality slug is rejected.
2) Insert proper coin and make sure of accurate acceptance.
3) Repeat steps 1 and 2, if necessary.

COIN ACCEPTABILITY: 120 to 150 mSec

OUTPUT PULSE TIME: 80 to 120 mSec

Installation Instructions

The voltage source must first be determined. If your equipment uses a blockout coil, it may be an ideal source, however you MUST stay within operating range of the power cord (refer to voltage specification). If a D.C. source is used, determine the polarity of the wires and mark accordingly.

TURN POWER OFF

INSTALLING SAMPLE COIN:
Looking at the front of the Comparitor, slide (without lifting) sensor coil assembly to the right and replace sample coin blank with desired coin, then carefully release. In most cases, the coin will automatically seat itself. When properly seated, the coin will rest firmly between sensor coil assembly and between ribs on rail insert.

WHEN REPLACING EXISTING ACCEPTOR:
1) Remove acceptor.
2) Disconnect coin return linkage.
3) Remove blockout coil, if used.
4) In some cases the Comparitor mounting studs may need to be relocated to meet mfg. mounting specifications.
5) If model CC-20 is being installed, turn power on and determine the polarity of the (DC logic) coin switch wires, and mark accordingly. **Turn power off.** If a capacitor is connected across the coin switch, remove it. The coin switch can now be disassembled and removed completely.
6) Mount Comparitor into equipment.

Wiring Instructions

MODEL CC-10

CONNECTING TO AC VOLTAGE SOURCE:
Connect the black power cord wire to either side of the source, then the yellow wire to the other side.

CONNECTING TO DC VOLTAGE SOURCE:
Connect the black power cord wire to the negative (−) side of the source, then the yellow wire to the positive (+) side.

MODEL CC-20

VOLTAGE SOURCE CONNECTIONS ARE THE SAME AS CC-10.

CONNECTING TO DC LOGIC SWITCH WIRES:
Connect the red power cord wire to the negative (−) side of the coin switch wires, then the blue wire to the positive (+) side.

Checklist

BEFORE TURNING POWER ON:

1) Make sure all connections are properly insulated.
2) Tuck wire to prevent interference with coin travel or coil Armature movement.
3) Power cord should be firmly connected to PC Board with the wires from the connector facing away from the comparitor.
4) Make sure the Comparitor is mounted securely in the equipment.
5) Check entry chute alignment by inserting proper coin, the coin should fall freely through the Comparitor, without stopping, and reject out of the equipment.

TURN POWER ON:

1) Insert proper coin. It should be recognized by the Comparitor and accepted.
   A) If using model CC-10, the proper coin should trip the coin switch when accepted.
   B) If using model CC-20, the proper coin should fall to the cash box and credit the machine.
2) Repeat step 1 five times to make certain the Comparitor is functioning properly.

THE COMPARITOR SHOULD NOW BE READY FOR OPERATION.
If a problem exists, review all instructions. If not satisfied, call our service department for assistance.
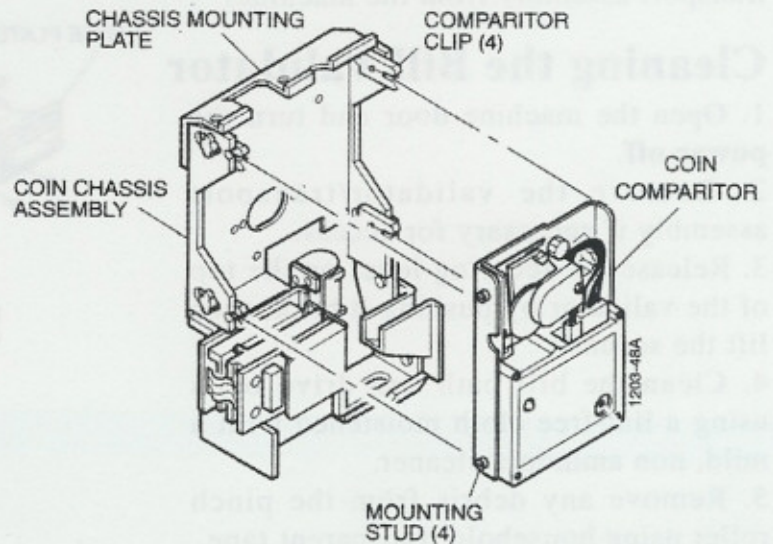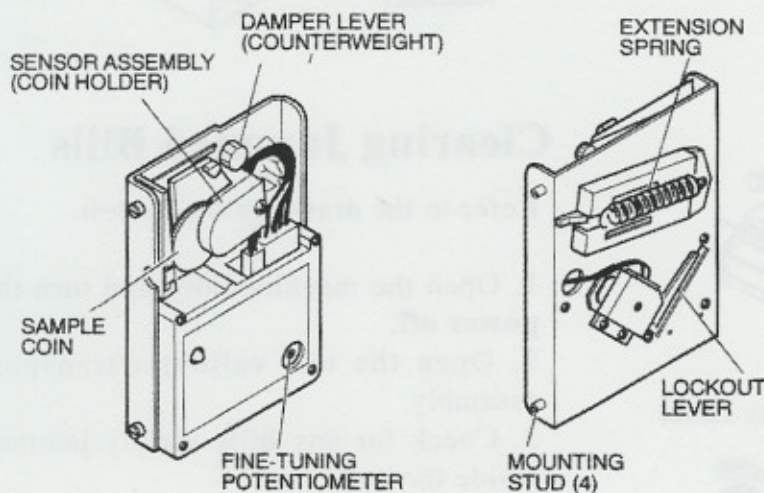
S-PLUS SUPPLEMENT

Coin Comparitor

The Coin Comparator is an electronic coin tester that analyzes the material content of an incoming coin by comparing it to a sample coin and either accepts or rejects the coin. The coin comparator uses a sample coin, placed within a magnetic field on the acceptor, to create a specific signal characteristic for comparison. The signal generated from the sample coin is important in distinguishing coins of similar material.

If two signals are alike, an internal lock-out solenoid energizes and allows the coin to pass through the accept channel. If the two signals are different, the lockout solenoid remains active and diverts the coin to the reject channel.

CHASSIS MOUNTING PLATE
COMPARITOR CLIP (4)
COIN CHASSIS ASSEMBLY
COIN COMPARITOR
MOUNTING STUD (4)
1200-48A

SENSOR ASSEMBLY (COIN HOLDER)
DAMPER LEVER (COUNTERWEIGHT)
SAMPLE COIN
FINE-TUNING POTENTIOMETER
EXTENSION SPRING
LOCKOUT LEVER
MOUNTING STUD (4)

Checking the Comparitor

1. Remove Comparator and inspect the coin channel for foreign deposits, film or dust.
2. Check the lockout lever on the back of the coin comparator for smooth operation. The lever is located just above the anti-stringing device.
3. Check the damper lever (counter weight) for free movement. If the lever sticks, the machine will not accept coins.
4. Check the sliding sensor coil and extension spring for unobstructed action.

Optic Coin Encoder

The Electronic Encoder is located directly below the coin comparator and has three sets of optics that read the coin passing through.

Cleaning the Electronic Encoder

1. Clean the surface of the optics on both encoder boards, the encoder housing and the denomination insert., using a soft cloth or a Q-Tip and isopropyl alcohol.
2. Clean the optic windows of the encoder housing and denomination insert, using a pipe cleaner or a stiff short-haired brush.

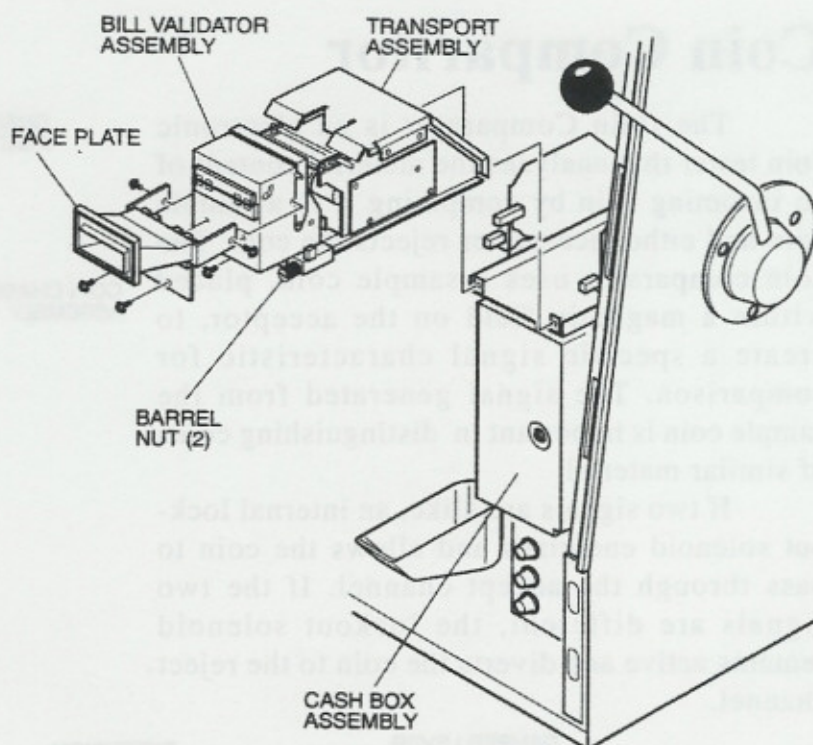COIN CHASSIS ASSEMBLY
ELECTRONIC ENCODER

10-1
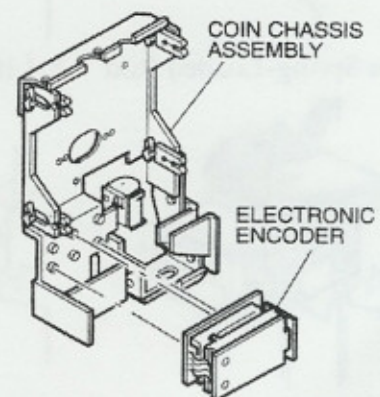
Bill Validator/Transport Assembly

It order to remove jammed bills or preform other routine maintenance, it is often necessary to remove the validator/ transport assembly from the machine.
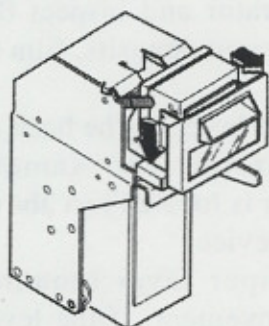
Cleaning the Bill Validator

1. Open the machine door and turn the **power off**.
2. Remove the validator/transport assembly if necessary for access.
3. Release the securing lever on the top of the validator by pushing it back, then lift the scanner.
4. Clean the bill path and drive belts using a lint-free cloth moistened with a mild, non ammonia cleaner.
5. Remove any debris from the pinch roller using household transparent tape.
6. Clean all optics with a cotton swab soaked in mild, isopropyl alcohol, (not to exceed 50 percent in concentration.

BILL VALIDATOR ASSEMBLY

TRANSPORT ASSEMBLY

FACE PLATE

BARREL NUT (2)

CASH BOX ASSEMBLY

1. Remove the Bill Validator   4. Release Security Lever

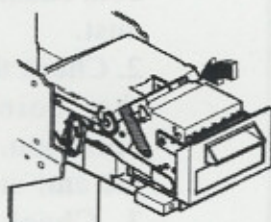2. Release Spring-Loaded Rod   5. Lift the Scanner Unit

Clearing Jammed Bills
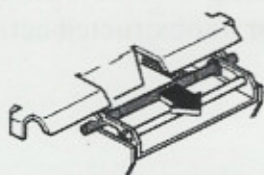
Refer to the drawings on the left.

1. Open the machine door and turn the **power off**.
2. Open the bill validator/transport assembly.
3. Check for any bills visibly jammed inside the unit.
4. Pull forward on the spring-loaded rod located at the top of the transport assembly and open the cover of the transport assembly.
5. Release the securing lever on the top of the validator by pushing it back, then lift the scanner.
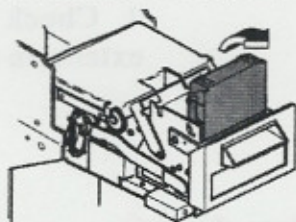6. Remove the jammed bill.

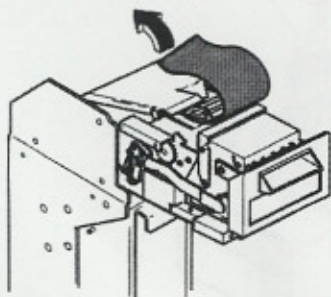3. Remove Vills in Transport 6. Removing Bills Beneath Scanner

S-PLUS Error Codes

Tilt Messages & Processing

When a tilt condition exists, one of the numbers in the tables at the right will appear in the Winner Paid display. The change lamp will flash, the hopper is stopped and all game play will stop until the game is reset or the malfunction is repaired

Candle Codes

Lamp: Top	Lamp: Bottom	Machine Status
Off	Off	Idle or Operation Normal – Machine Door Closed
Off	Medium Flash	Idle – Machine Door Open
Off	Fast Flash	Idle – Drop Door Open
On	Off	Change – Machine Door Closed
On	On	Game Disabled
On	Medium Flash	Change or Game Disabled – Machine Door Open
On	Fast Flash	Change or Game Disabled – Drop Door Open
Slow Flash	Off	Tilt – Machine Door Closed
Slow Flash	Slow Flash	Hand Pay or Tilt – Hand Pay Lockup
Slow Flash	Medium Flash	Hand Pay or Tilt – Machine Door Open
Slow Flash	Fast Flash	Hand Pay or Tilt – Drop Door Open

Optic Door Sensor

LOCKING BAR   OPTIC SENSOR MOUNT   ENCLOSURE MOUNTING FLANGE

EMITTER   RECEIVER
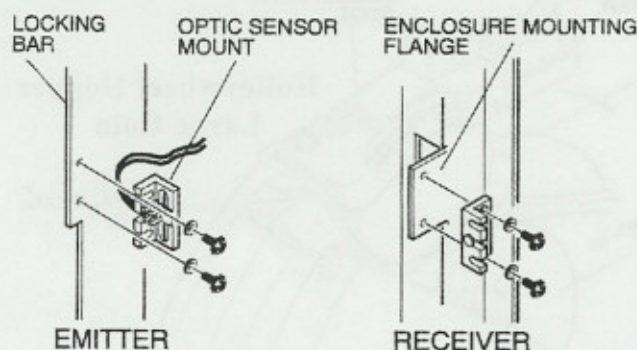
1. Confirm that all wire connections are secure and that both optics are clean and free from chips or cracks. Clean the optics (located on the optic sensor mounts) with denatured alcohol or mild glass cleaner.

Machine Codes

Code	Meaning	Action
12	Low Battery	Power down/up; Open/close door to clear; Change battery
21	Coin-In Tilt	Open/close door; Check coin-in optics
3100	Extra Coin Out	Open/close door; Check hopper
3200	Coin-Out Tilt	Open/close door; Check hopper
3300	Hopper Empty	Open/close door; Check hopper
41-45	Reel Tilt 1-5	Open/close door; Check reels
49	Reel Mech Disc	Open/close door; Check reel plug
61	Bad CMOS RAM	Open door; press self test switch for 3 seconds
61-1	Game Date Reset	Open/close door; Turn reset key switch
61-2	Recoverable CMOS error	Open door; press self test switch for 3 seconds
62-0	Bad Game EPROM	Verify insertion; Replace EPROM
62-1	Bad Data EPROM	Verify insertion; Replace EPROM
63	Processor Tray Open	Check processor tray lock optics/switch
64	Link Down	Check link; Check communicator
65-0	Bad EEPROM Device	Press self test switch for 1 second, if won't clear, replace EEPROM
65-1	Bad EEPROM Data	Press self test switch for 1 second, 65-1 clears
65-2	Game Type Mismatch	Press self test switch for 1 second, 65-2 clears
66	Game EPROM Change	Power down/up
67	Data EPROM Change	Power down/up
68	Not Compatible Data EPROM	Change to compatible data EPROM

Validator Codes

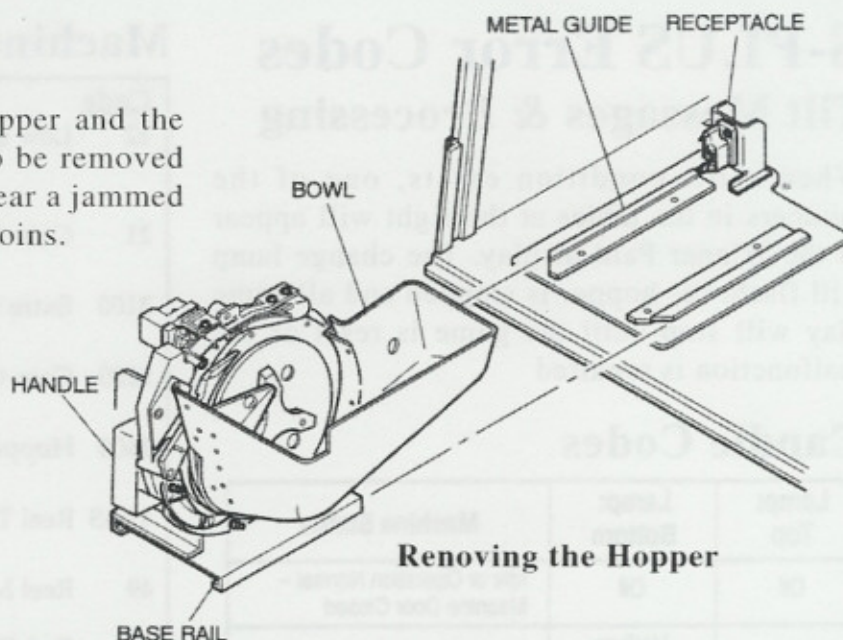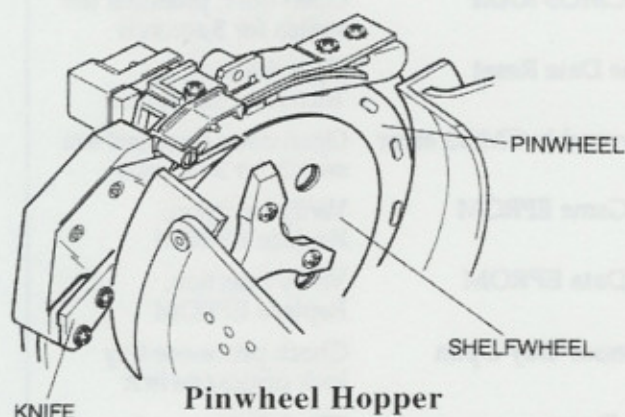| Tilt Code	Malfunction
99–1	Bill validator stacker jam
99–2	Bill validator cash box removed
99–4	Bill validator cash box full
99–5	Bill validator hardware error
99–6	Bill validator reverse bill detected

S-PLUS Hopper

S-PLUS slots use both the Pinwheel Hopper and the Holeywheel Hopper. The hopper needs to be removed from the machine for inspection and to clear a jammed coin. Remove the hopper and empty the coins.
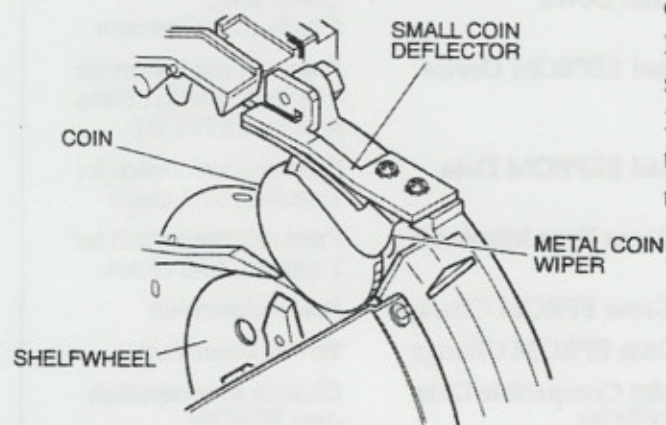
Removing the Hopper

1. Open the machine door and turn the power off.
2. Firmly grip the hopper handle with one hand and support the hopper bowl with the other hand.
3. Pull the hopper straight out from the machine enclosure taking care not to spill any of the coins.

Renoving the Hopper

Pinwheel Hopper

Cleaning the Pinwheel Hopper

1. Turn the power off before starting any cleaning procedure.
2. Clean the inner surface of the optic sensor using a cotton swab soaked in isopropyl alcohol.
3. Wipe the sensor dry with a lint cloth.
4. Clean the coin level probe (brass screw) using a stiff short-haired brush and isopropyl alcohol.

Pinwheel Hopper Knife Adjustment

1. Slightly loosen the screws that secure the small coin deflector and metal coin wiper.
2. Place a coin of the correct denomination on the edge of the shelfwheel under the tip of the metal coin wiper.
3. Lightly hold the coin wiper in place and tighten the screws that secure the small coin deflector and metal coin wiper until the wiper is not quite touching the coin.
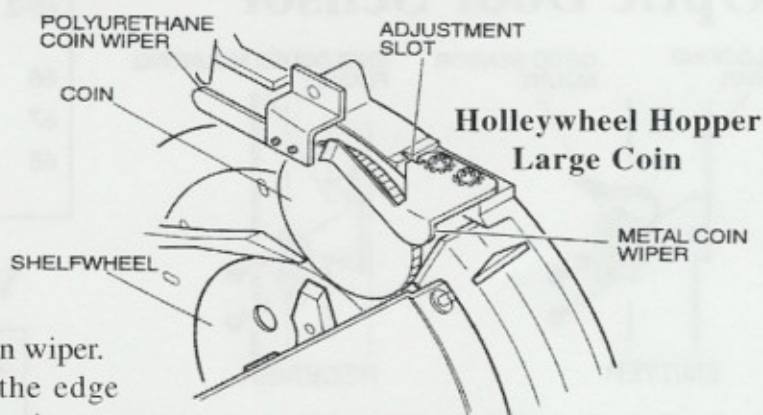
Holeywheel Hopper Large Coin

Holeywheel Hopper Small Coin

Holeywheel Knife Adjustment

1. Slightly loosen the screws that secure the metal coin wiper.
2. Place a coin of the correct denomonation on the edge of the shelfwheel under the tip of the metal coin wiper.
3. Insert a small flat-blade screwdriver into the tip of the metal coin wiper and housing
4. Twist the screw driver until the tip of the metal coin wiper almost touches the edge/surface of the coin. Leave a very small gap between the wiper and the coin to accommodate coins of that may be slightly thicker.
5. Lightly hold the coin wiper in place and tighten the screws top secure the coin wiper.

Hopper Maintenance

Hopper Inspection

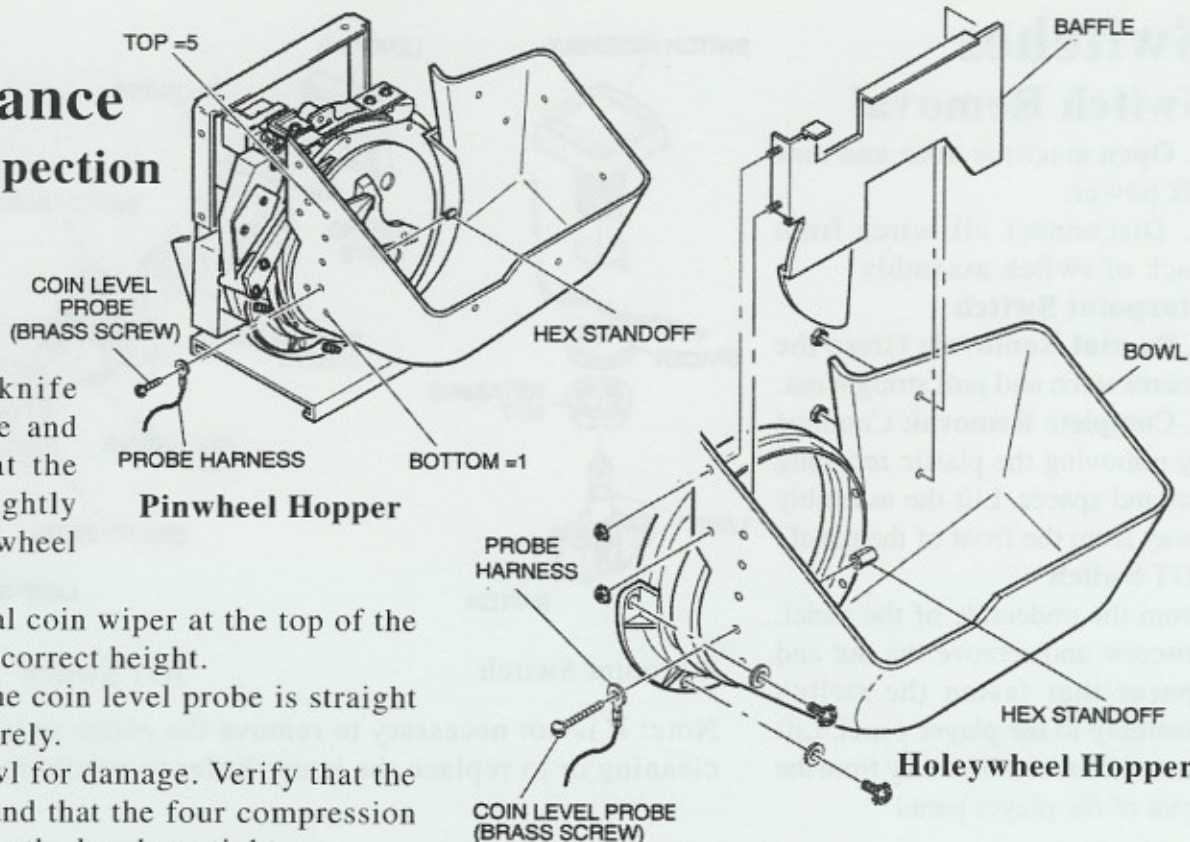1. Inspect the optic sensor for dirty services and any damage.

2. Inspect the knife blade for damage and check to see that the knife tip rests lightly against the shelfwheel and the pinwheel.

3. Check the metal coin wiper at the top of the main housing for correct height.

4. Confirm that the coin level probe is straight and fastened securely.

5. Inspect the bowl for damage. Verify that the baffles are tight and that the four compression springs that secure the bowl are tight.

TOP = 5
COIN LEVEL PROBE (BRASS SCREW)
HEX STANDOFF
PROBE HARNESS
BOTTOM = 1
Pinwheel Hopper

BAFFLE
BOWL
PROBE HARNESS
HEX STANDOFF
Holeywheel Hopper
COIN LEVEL PROBE (BRASS SCREW)

Pinwheel Hopper Preventive Maintenance			
Maintenance Item	Service Interval (Months)*		
	1	3	6
Bowl			C
Metal Coin Wiper H			A
Polyurethane Coin Wiper H	C		A
Motor Brake			C
Optic Sensor	C		
Coin Level Probe			C
Knife H	C & A		C

* C = Clean & Inspect   A = Adjust   H = Not used on Holeywheel

Preventative Hopper Maintenance Chart

The Metal coin Wiper, the Knife Blade and the Polyurethane Coin Wiper not apply to the Holeywheel Hopper.

1. The optic sensors should be checked for dirty surfaces and cleaned with isopropyl alcohol and wiped dry with a lint-free cloth.

2. Clean the coin level probe (brass screw) using a stiff short-haired brush and isopropyl alcohol.

Setting the Hopper Level

For home use it is not always desirable to fill the hopper with the maximum coins. The desired number of coins can be set by moving the Coin Level Probe (brass screw) to a new hole. The lower hole has the least capacity and the top hole the largest capacity.

Typical Superbowl Hopper Probe Levels						
Denomination		Probe Hole Number*				
		1	2	3	4	5
Max. Coins	Nickel	760	1090	1500	2400	3200
	Dime	1520	2300	3300	5100	6900
	Quarter	650	1100	1450	2180	3050
	Fifty	500	750	1000	1200	1450
	Dollar	220	320	420	600	820

* 1=Bottom Hole   5=Top Hole

Switches

Switch Removal

1. Open machine door and turn off power.
2. Disconnect all wires from back of switch assembly

Starpoint Switch

a. **Partial Removal:** Grasp the microswitch and pull straight out.
b. **Complete Removal:** Continue by removing the plastic retaining nut and spacer. Lift the assembly away from the front of the panel.

IGT Switch

From the underside of the panel, unscrew and remove the nut and spacer that fasten the switch assembly to the player panel. Lift the switch assembly away from the front of the player panel
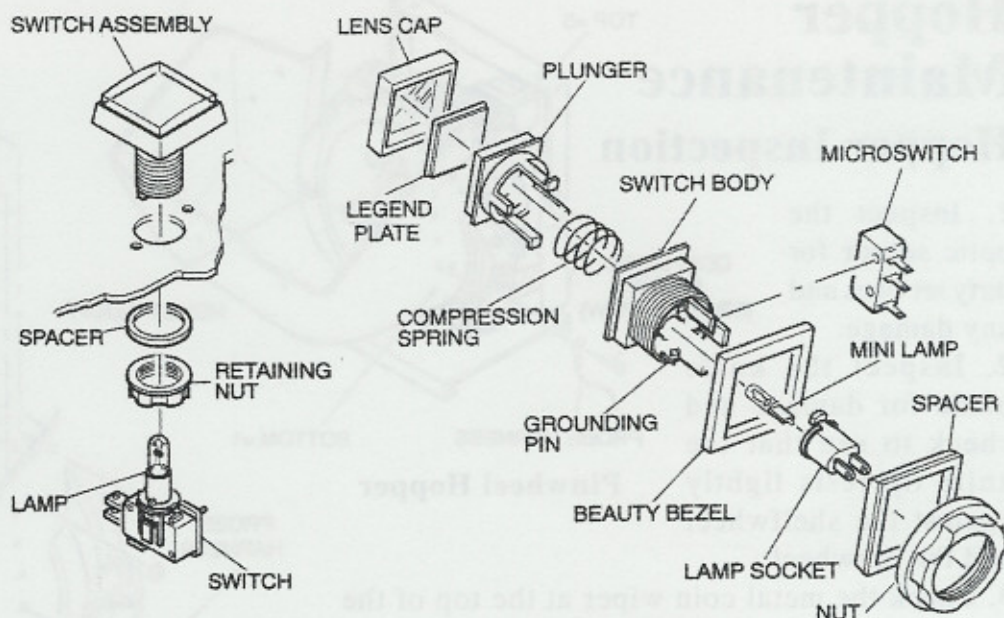
Starpoint Switch

IGT Switch

Note: It is not necessary to remove the entire switch for minor cleaning or to replace the lamp. Refer to partial removal procedure.

Processor Board DIP Switch Settings

Processor Board DIP Switch Settings						
1	Max Hopper Pay	OFF	ON	OFF	ON	# – ON/ON enables programmable hopper size in the self test mode; must be reset in the event of a CMOS RAM error (when value defaults to 1000 coin hopper pay)
2		OFF	OFF	ON	ON	
		300	400	600	#	
3	Sound Generator	ON	Sound generator produces reel spin sounds and reel stop sounds during game play			
		OFF	Sound generator produces reel stop sound only			
4	Game Speed	ON	Fast machine cycles			
		OFF	Normal machine cycles			
5*	Progressives	ON	Allows progressive game play			
		OFF	Non progressive setting			
6	High/Low Progressives	ON	Allows high/low progressives			
		OFF	Allows single level alternating progressives			
7	Double Progressives	ON	Allows double progressives			
		OFF	Allows single progressives			
8	Link Progressives	ON	Allows link progressives			
		OFF	Allows standalone progressives			

* Switch 5 must be ON for features in 6, 7 and 8 to be enabled. Switches 5 through 8 will have no effect if the machine is a Wide Area Progressive game.

S-Plus Wiring
Connector Overview

TO J/P140 SERVICE LIGHT (CANDLE)
TO DOOR
J/P200A PANEL SWITCHES/LAMPS
J/P200B PANEL SWITCHES/PAYLINE LAMPS
J/P101,103 FLUORESCENTS
J/P102 UNSWITCHED AC
J/P104 POWER TO BILL ACCEPTOR
J/P111 POWER ON/OFF SWITCH
J/P106,107,108 UNSWITCHED AC
J/P203 COIN IN/LAMPS/ PANEL SWITCHES
J/P201 SERVICE LAMP/ PAYLINE DISPLAY
J140 SERVICE LIGHT (CANDLE)
J/P305 AC BALLAST
J/P400 PAYLINE DISPLAY
J/P211 FLUORESCENT
J180A REEL 1
J/P60A PAYLINE LAMPS
J/P69 DENOMINATION, INSERT, COIN LAMP
J/P80 IR KEY INTERFACE
J/P60 DIGITAL DISPLAY (7 SEGMENT)
J/P50 3 OPTIC ENCODER
J/P170 DOOR OPTIC EMITTER
J/P300 FLUORESCENT
J/P301 COIN HANDLING
TO SPEAKER
J/P171 DOOR OPTIC RECEIVER
J180B REEL2
J180C REEL 3
J180D REEL 4
J180E REEL 5
J135 BELL
J/P150 HANDLE LOCKOUT
J/P195 BILL ACCEPTOR
I/P212 HOPPER
J/P110 LOW VOLTAGE POWER (LAMPS, METER, SOLENOID, HANDLE)
J19
J/P109 HOPPER
120402-2A
120402-1A

Wiring Identification Chart

PURCHASED PART
STRIPE
(BODY)COLOR
WIRE FAMILY
WIRE GAUGE

611 XXX 90

WIRE GAUGE
0-22,UL1061
1-22
2-18
3-16
4-14
5-18,UL1015
6-26
7-18,UL1061
8-24
9-24,UL1061

COLOR CODE
● 0-Black
○ 1-Brown
○ 2-Red
○ 3-Orange
○ 4-Yellow
○ 5-Green
○ 6-Blue
○ 7-Violet
◉ 8-Grey
○ 9-White

S-PLUS YM

Component Identification

SERVICE LIGHT
(CANDLE)

TOP BOX
(OPTIONAL)

STEPPER
REELS

MACHINE
DOOR

DIGITAL
DISPLAY

RESET KEY
SWITCH

COIN-IN
ASSEMBLY

PLAYER
PANEL

HANDLE

BELLY
DOOR

BELLY
PANEL

PROCESSOR
TRAY

HOPPER

BILL
ACCEPTOR

COIN
TRAY

POWER
SUPPLY

DROP
DOOR

DROP DOOR
LOCK

STAND

COIN DROP
CONTAINER

DROP DOOR SENSOR
SWITCH