

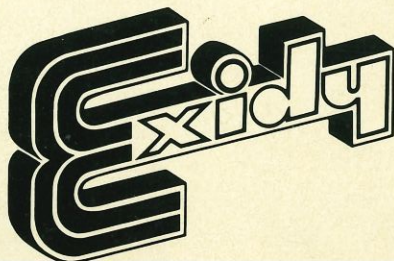
TIDAL WAVE



**WHIRLY BUCKET™**

**OPERATION & SERVICE**  
**manual**

**SECOND EDITION**



WHIRLY BUCKET™

Operation and Service Manual  
2nd Edition

© 1982 Exidy, Inc.  
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#### **WARNING**

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

#### **TRADEMARKS**

WHIRLY BUCKET<sup>TM</sup> is a trademark of Exidy, Inc.

#### **QUESTIONS**

Exidy encourages technicians to use the toll-free customer service hotline for any questions they may have regarding WHIRLY BUCKET<sup>TM</sup>. That number is (800) 538-8402.

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## I. PRELIMINARY PROCEDURES

The following sections describe the proper procedure for game inspection, installation, test and option switch locations, and checkout.

### A. GAME INSPECTION

All Exidy equipment is carefully packaged in well-padded cardboard containers to prevent damage during shipment. Before signing the delivery receipt, you should read unpacking instructions and then follow this procedure:

- a. Check for obvious damage and make certain that the physical piece count of the shipment matches the piece count on the bill of lading. These two procedures should always be done **before** signing the delivery receipt.
- b. Shortages and/or obvious damage to the packaging on any given shipment should be noted **in writing** on the delivery receipt **before** signing for the delivery.
- c. If concealed damage is suspected on any shipment, those packages believed to contain the damaged goods **should be opened in the presence of the delivery driver**. If the goods have sustained concealed damage, a description of said damage should be noted **in writing** on the delivery receipt **before** signing for the delivery.
- d. **Never** apply power to any game with noticeable damage.

### 1. Filing a Claim

To file a claim, follow this procedure:

- a. Any and all damaged freight, including packaging, **should be retained by the consignee** until a physical inspection of said freight can be made by a representative of the carrier involved.
- b. The Claims Manager for the carrier involved should be notified as soon as possible, after the damaged goods are received. Preferably, the carrier's Claims Manager should be notified within forty-eight (48) hours of receipt of the goods by the consignee.
- c. If warranted, a written claim should be filed with the carrier involved. A detailed description of the damage(s) should be provided and copies of all supporting documents, **including bill of lading and/or delivery receipt, inspection report, and invoice**, should be attached.
- d. The sooner a claim is filed, the better for all parties concerned. The carrier against which a claim is filed is required, by law, to respond to (acknowledge) that claim within 30 days of receiving same and must make a final determination of the matter within 120 days.

### 2. Visual Check

If no immediate cabinet damage is evident, perform the following visual inspection:

- a. Find the plastic envelope in the coin pedestal, containing two sets of keys. One key opens up the coinbox door only. The other opens all other doors: the back door, the electronic module door, the target mech door, the ticket mech door, and the ball feed door.
- b. Examine each major and electrical component thoroughly for scrapes, dents, broken or missing parts and loose or missing screws.
- c. Check for loose cable connectors. (Some cables are shipped unconnected, and instruction for connection is in the section "Assembling the Game".)
- d. Visually verify that all the integrated circuit devices (IC's) plugged into sockets are properly seated and that no IC pins are bent or misaligned.

If you find any damage during this inspection, file a claim with the carrier. Send a complete report of the damage to Exidy.

#### B. UNPACKING THE GAME

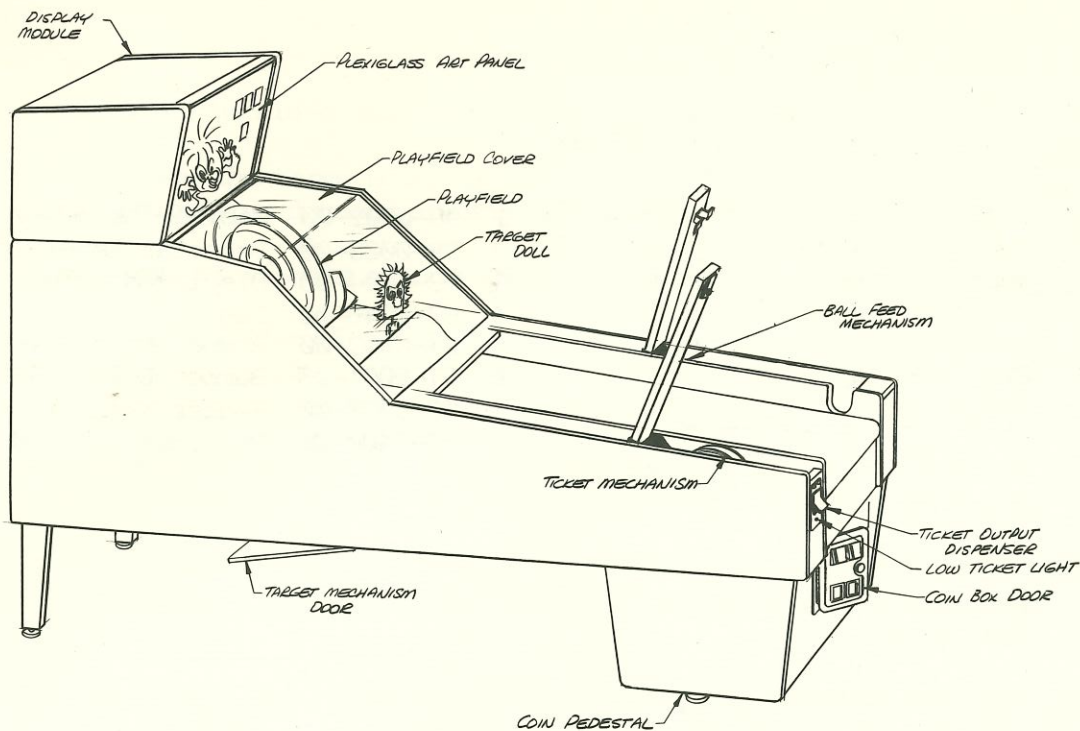
WHIRLY BUCKET™ is shipped standing on its end, with two units banded to it.

1. Remove carton sleeve by lifting it over the game.
2. Carefully bring the game to rest on its horizontal, playing position.
3. Remove the bands binding two units, the coin pedestal and display module, and the rear legs to the main cabinet.
4. Remove and save the bolts attaching the display module to the game (they will be needed to mount the module later).
5. Remove shipping material from coin pedestal, including balls, manual, keys, mounting hardware, etc.
6. You are now ready to assemble the game.

#### C. INSTALLATION SPECIFICATIONS

We recommend assembling WHIRLY BUCKET™ in the location it will be played, to avoid strenuous moving. Planning the location of the game involves both physical and electrical considerations. The physical clearances are as follows:

	inches	cm.
Height	47.50	1206,00
Width	25.25	641,00
Depth	84.00	2134,00
Weight	300 lbs.	136.0 kg.



**Figure 1: Identification of Parts**

An indoor, relatively dust-free environment is necessary, with proper conditions required of any electrical device. Electrical considerations include availability of an AC outlet with the correct voltage and frequency, as marked on the silver label on the back of the game. The cabinet must be within seven feet of an AC outlet.

**CAUTION:**

DO NOT remove the AC ground prong from the plug. Doing so voids your warranty!

The game should be level, with allowances of a 1 degree grade, to operate properly. After it is assembled, place a carpenter's level on the display module, and adjust the four leveler feet. The game must be level for it to function properly, especially from side to side.

**D. ASSEMBLING THE GAME**

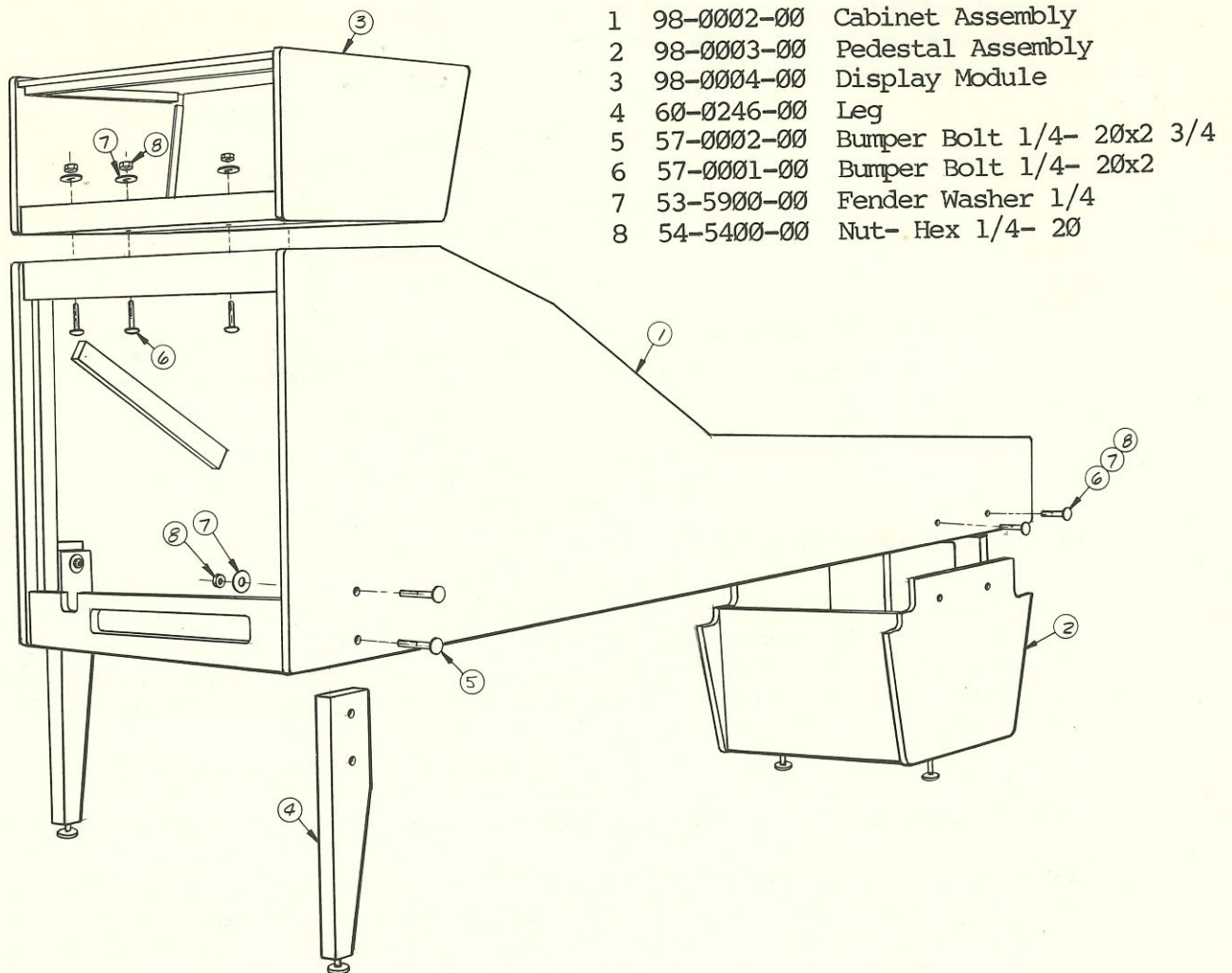
After determining the game's proper play location, you are ready to assemble it. Assembling the game may require a second person.

**1. Attaching the Coin Pedestal**

- a. Make sure all necessary materials are out of the coin pedestal, except the coinbox and appropriate harness.
- b. Place the coin pedestal in front of the foot of the game, with coin door facing forward.
- c. Lift up the main unit and slide in the coin pedestal until it fits.
- d. Four bolts fit through predrilled cabinet holes and then through the coin pedestal. Open the coin door and place a washer on the bolt and tighten the nut.



e. Connect the six pin molex P7 to J7.



**Figure 2: Attaching the Coin Pedestal to the Main Unit**

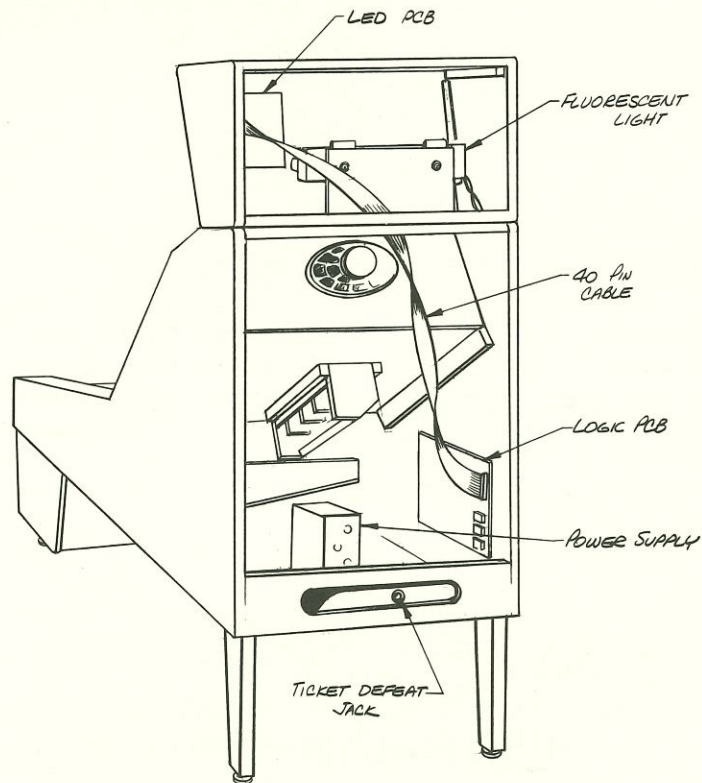
## 2. Attaching the Legs

- Open the back door with the key.
- Find the two black legs originally banded to the display module.
- A second person may be required to hold up the back of the game while sliding in legs and bolting them to game.
- Place bolt through cabinet and then through legs. Fasten washer with nut on the inside of the game, through the back door.

## 3. Mounting Electronics Module

- Put the display module on the top of the game with the art panel facing forward.

- b. Line the sides and back of the module with the sides and back of the game.
- c. Place the three bolts (previously used to fasten module to unit during shipping) through predrilled holes in the back of the module.
- d. Connect the three pin molex J21 to P21.
- e. Connect the 40 pin ribbon cable to the logic PCB at P5.



**Figure 3: Back view of game**

#### 4. Installing the Balls

- a. Open the right hand ball feed access door and place all balls behind the ball feed mechanism.
- b. The game is factory set for 9 balls. The extra balls included with the game may be placed in the game (with a maximum capacity for 15 balls) because an electronic counter counts the number of balls played. If balls are lost, a minimum of 5 are needed to recycle balls efficiently.

#### 5. Loading the Ticket Dispenser

- a. The WHIRLY BUCKET™ ticket dispenser accepts either ticket rolls or stacks. Only 1 1/8" to 1 3/16" X 2" tickets with a 1/8" radius notch on all four corners may be used as shown here:

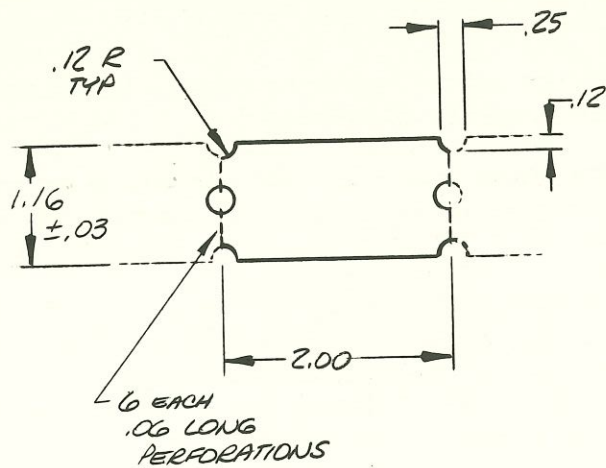


Figure 4: Proper ticket type for dispenser

The tickets included with the game are from Globe Ticket Company. A list of sales offices is included later in the manual. Should you use Globe Ticket Company, ask for stock number 1206 (Stack) and specify notched corners at the perforation.

- b. Find the door key and open the ticket mechanism door on the left arm.
- c. Take out the ticket hub and place it inside the roll of tickets.

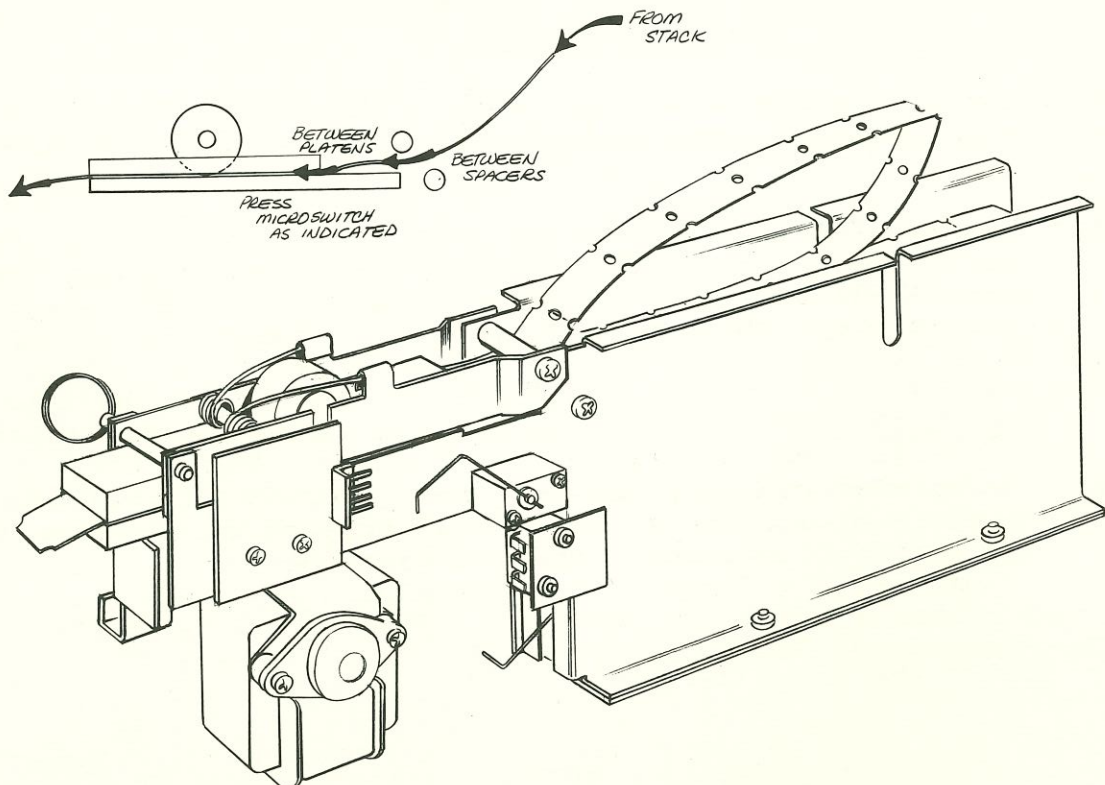


Figure 5: Installing tickets

- d. Drop in with the packaging string binding it. Cut the string off once the tickets are properly placed.
- e. Thread the tickets over the first pin and under the second one, then push them into the flat metal ticket guides until they stop, as shown in Figure 5.
- f. Press the wire actuator lever on the right side of the mechanism to feed the tickets through the output dispenser. Release when the tickets have started to come out the front. The unit will automatically stop when the tickets are correctly located (do not be concerned if it shoots out an extra ticket after you've released the button).
- g. Tear off any extra tickets, close and lock door, and game is ready to play.
- h. For information on the Low Ticket Warning Light, see that section under Adjustments and Tests.

#### **E. CHECKOUT PROCEDURE**

After properly inspecting and installing WHIRLY BUCKET™, follow this procedure to check its operation:

1. Plug the game into an AC outlet.
2. Make sure all doors are closed. Game should appear to be "on", with digital displays lit, and Display Plex back lit.
3. Insert the appropriate coin or token into the coin slot. A ball should be released, a sound effect should be heard, and the moving target should start up.
4. Continue game play. Anytime the target is hit with the ball, the point value of the hole it drops into is doubled. When the ball in play drops into a hole in the game field or gutter the next ball is released. Game play ends when the preset amount of balls have been rolled.
5. The number of balls (factory set for 9) and number of points per ticket may be adjusted to your needs. See the following section for more information.
6. At the end of game play, the score board alternately flashes the highest score and the last game played. Also the number of balls per game (factory set for 9) and the number 0 flash alternately.

If assistance or repairs are necessary, contact the Exidy Customer Service Department, (800) 538-8402.

## II. OPERATOR SWITCHES AND ADJUSTMENTS

### A. OPERATOR OPTIONS

WHIRLY BUCKET™ options are set for optimum earning potential, as established by Exidy's own field testing. However, should you require changing any of the options, you may do so by adjusting the hardware DIP switch on the Printed Circuit (PC) board (see Figure 6). This board is accessible through the back door and is on the lower right side of the game.

You may need a flash light to see the numbers printed on the DIP switch. Switches 1 and 2 are not used for operator options. The following is a list of adjustments that may be made:

OPTION DESIRED	DIP SWITCH SETTING	
<b>1. Number of Balls per Game</b>	7	8
9	ON	ON
8	ON	OFF
7	OFF	ON
6	OFF	OFF
<b>2. First Ticket Point Threshold</b> (the score at which the first ticket is given)	5	6
100 POINTS	ON	ON
200 POINTS	ON	OFF
300 POINTS	OFF	ON
400 POINTS	OFF	OFF
<b>3. Subsequent Ticket Interval</b>	3	4
20 points	ON	ON
40 points	ON	OFF
60 points	OFF	ON
80 points	OFF	OFF

POINTS	TICKETS
100	1
180	2
260	3
340	4
420	5

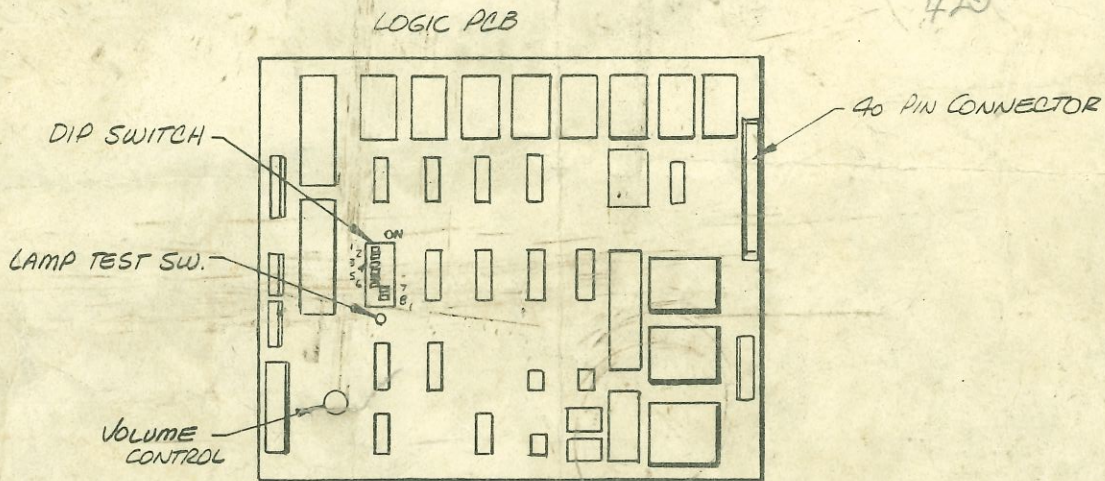


Figure 6: Switch Locations on Printed Circuit Board

## B. VOLUME CONTROL

The volume may be controlled by finding the volume control marked in Figure 6, and turning clockwise to increase sound, and counter-clockwise to decrease the sound.

## C. LAMP TEST SWITCH

When the Lamp Test DIP Switch No 1 on the PC Board is activated, all segments of the "Score" and "Ball" LED's should light up. If any segment is not lit, there is either a failure in the circuitry, or the LED is burned out and must be replaced. Be sure to turn OFF the Test Switch before starting game.

## D. LOW TICKET WARNING LIGHT INDICATOR

When the red light on the ticket output plate comes on, tickets are getting low. When the game is completely out of tickets, it "locks up". That is, after a game is finished, it shows a score of UUU and will not give out tickets. New tickets must be installed.

To do so, open up the ticket mech door on the left arm of the game. Install tickets and when the force feed switch is used, a ball rolls out of the game. When this ball is rolled into the game, the appropriate amount of tickets is dispensed for the previous game played.

For information on how to correct a ticket jam, see the Service section.

## E. TICKET DEFEAT JACK

If you do not wish to have any tickets dispensed from WHIRLY BUCKET™, short the 1/4" ticket defeat jack by inserting a shorted phone plug into it. A phone plug with a remote switch may be installed for remote switching.

## III. TECHNICAL INFORMATION

### A. SERVICE

WHIRLY BUCKET™ is virtually maintenance-free. It is not necessary to lubricate any parts. Occasional cleaning of the clear plexiglass playfield cover, art panel, and playfield may be needed. To do so, use a clean, soft cloth and window cleaner.

One key opens all doors except the coinbox door. To service the ticket and ball Mechanisms, use respective access doors. Access to the power supply, the P.C. Board, and the switches that count the balls is through the back door. The door to the target is underneath the game.

#### 1. Ticket Jams

A ticket jam will not be acknowledged until the end of a game, when tickets are dispensed. At that time, the game will lock up, and the score will show a code of UUU. To correct:

- a. Open up the ticket mech door on the left arm.
- b. Unscrew the lower screw at the ticket output plate.
- c. Assure the shipping screw is off at the back of the ticket mech.
- d. Lift the ticket mech out of the game.
- e. Pull latching pin by ring.
- f. Lift up pinch roller assembly and pull out jammed ticket.
- g. Put latch pin in place and reinstall the ticket mech with the front mounting screw (the rear screw only needs to be re-installed if the game is to be shipped). Install tickets as previously described.
- h. Activate the force feed switch to move the tickets through and tear off any extra tickets that have come out of the front plate.
- i. A ball should roll out of the game. Close the door and roll the ball back into the game. The proper number of tickets for the previous game score will be dispensed.

## 2. Power Supply Information

All DC Power required to operate WHIRLY BUCKET™ is supplied by the Exidy Power Supply Module.

### CAUTION:

Only certified technicians should make adjustments on any components of WHIRLY BUCKET™. Only the +5v DC is adjustable. This must be adjusted to:

+5.00v DC +/- .25v

as measured on the Logic PCB near the microprocessor.

If you need to change the AC Input voltage of your game, contact Exidy Customer Service for the appropriate procedure.

**SALES OFFICES FOR GLOBE TICKET COMPANY**

**Corporate Office:** 680 Blair Mill Rd., P.O. Box 365, Horsham, PA 19044 (215) 657-4230

3435 Empire Blvd S.W., P.O. Box 82759, Hapeville Branch, Atlanta, GA 30354 (404) 766-0286

5600 Executive Center Drive, Suite 110, Charlotte, N.C. 28212 (704) 536-4432

1935 Atlantic Blvd. Neptune Beach, Jacksonville FL 32233 (904) 279-5271

Sixth Street, P.O. Box 2178, Woburn, MA 01888 (617) 935-7150

300 Constance Drive, P.O. Box C 5026, Warminster, PA 18974 (215) 443-9414

1457 Broadway, Room 909, New York, N.Y. 10036 (212) 944-6315

800 Airport Freeway Suite 525, Box 6069, Irving TX 75062 (214) 438-2616

5670 Haynes Blvd., Suite C, New Orleans, LA 70126 (504) 241-7843

3871 Harlem Road, Buffalo N.Y. 14215 (716) 835-5202

602 Main St., Room 803 Gwynne Bldg. Cincinnati, Ohio 45202 (512) 621-3339

24481 Detroit Road Suite 401, Westlake, Ohio 44145 (216) 871-5516

9675 Bryden Street, Detroit, Michigan 48204 (313) 931-6720

2105 Wyandotte Circle, P.O. Box 864, Olathe, Kansas 66061 (816) 921-0707

Suite 600, 1000 RIDC Plaza, Pittsburgh, PA 15238 (412) 828-9030

6785 E. 50th Ave., #204, Commerce City, CO 80022 (303) 288-2607

2787 E. Del Amo Blvd., Compton, Ca 90656, Los Angeles, CA 90009 (213) 774-4210

3118 W. Thomas, Suite 705, Phoenix, AZ 85017 (602) 278-3550

5850 Shellmound Street, Emeryville, CA 94608 (415) 761-2110

6002 McKinley Ave., P.O. Box 11067, Tacoma, WA 98411 (206) 474-0721

8825 Cranbrook Drive, P.O. Box 4485, Boise, Idaho 83704 (208) 377-1276

40 S. Redwood Road, Suite 101, P.O. Box 179, Salt Lake City, Utah 84054

E. 220 Wellesley, Suite 104, P.O. Box 18865, Spokane, WA 99208 (509) 489-6601

1105 Broadway, P.O. Box 1752, Vancouver, WA 98668 (206) 285-0391



**99-0002-00****FINAL ASSEMBLY SHIPPING**

75-0009-00 Rubber ball, 2.0  
 00-0002-01 Operation & Service Manual  
 80-0026-00 Ticket stack (2000)  
 95-0016-00 Coin box  
 60-0246-00 Leg

**98-0002-00****CABINET FINAL ASSEMBLY**

60-0241-00 Right Arm Door  
 70-0236-00 Left Arm Door  
 65-0044-00 Hinge  
 61-0017-00 Rear Door Assembly  
 61-0016-00 Lower Door Assembly  
 95-0012-00 Lock Assembly for doors  
 90-0064-00 Drain Field Assembly  
 80-0020-00 Cover plex  
 65-0052-00 Plex retaining bracket  
 80-0023-15 Ramp overlay  
 80-0021-00 Light shield plex  
 65-0064-00 Shield plex bracket  
 48-4000-00 Ball switch  
 75-0008-00 Spiral playfield  
 80-0024-00 Hole value sticker set  
 95-0017-00 Speaker 6 x 9 oval 10W  
 65-0066-00 Speaker grill  
 48-5000-00 Gutter switch  
 65-0050-00 Switch bracket  
 45-5001-00 Interlock switch "cherry" E69  
 65-0065-00 Interlock switch bracket  
 49-0014-05 AC line cord assembly  
 77-0012-05 PCB, logic assembly  
 90-0070-00 Power supply  
 17-0001-04 Terminal strip assembly  
 35-0002-00 Fuse 3 AMP 3 AG  
 Cover, terminal block  
 49-0009-05 Playfield harness assembly  
 49-0018-05 Main Harness Assembly

**90-0067-00****TICKET MECH ASSEMBLY**

66-0001-00 Ticket Front Plate Assembly  
 71-0001-00 Ticket hub assembly  
 78-5014-00 Switch cherry E51-00T  
 16-0001-00 Motor molon HGM-4050-20  
 59-0046-00 Torsion Spring  
 59-0032-00 Quick Release "McMaster pin

**77-0014-05****TICKET PRINTED CIRCUIT BOARD**

77-0014-04 PCB, Optical Sensor  
 48-5015-00 Optical Switch, Slotted  
 02-1032-00 Resistor 4.7K 1/4W  
 02-1222-00 Resistor 1.2K 1/4W

02-1812-00	Resistor 180 ohm 1/4 W
21-0010-00	Transistor 2N2222
40-0046-00	Connector 4 Pin "Molex"
90-0068-00	BALL FEED ASSEMBLY
59-0025-00	Solenoid
59-0024-00	Spring
90-0066-00	TARGET MECH ASSEMBLY
65-0045-00	Wire form target
59-0027-00	Cotter pin .093 x 2.00
48-4001-00	Switch Leaf
59-0030-00	Spring Torsion LEE LTL-020-D4
16-0002-00	Motor Molon #HGM4019-13
49-0010-05	Target harness assembly
90-0072-04	Target Doll Assembly
98-0003-00	PEDESTAL FINAL ASSEMBLY
95-0014-00	Coin Door Assembly
49-0008-05	Coin door harness
90-0065-00	Coin counter assembly
98-0004-00	DISPLAY MODULE FINAL ASSEMBLY
80-0019-15	Display Plex
80-0022-00	LED ambient plex
65-0053-00	Upper plex bracket
65-0054-00	Lower plex bracket
50-3306-26	Screw, button hd. 10-24 x 3/4
77-0013-05	LED PCB Assembly
65-0063-00	LED PCB bracket
57-0006-00	PCB support x 1/2 Fastex 215-510 912-03
90-0071-00	Florescent lamp assembly
49-0016-00	Florescent lamp harness
95-0019-00	Bulb, Fluorescent 15w
59-0039-00	Retainer clip
49-0015-05	LED ribbon cable assembly

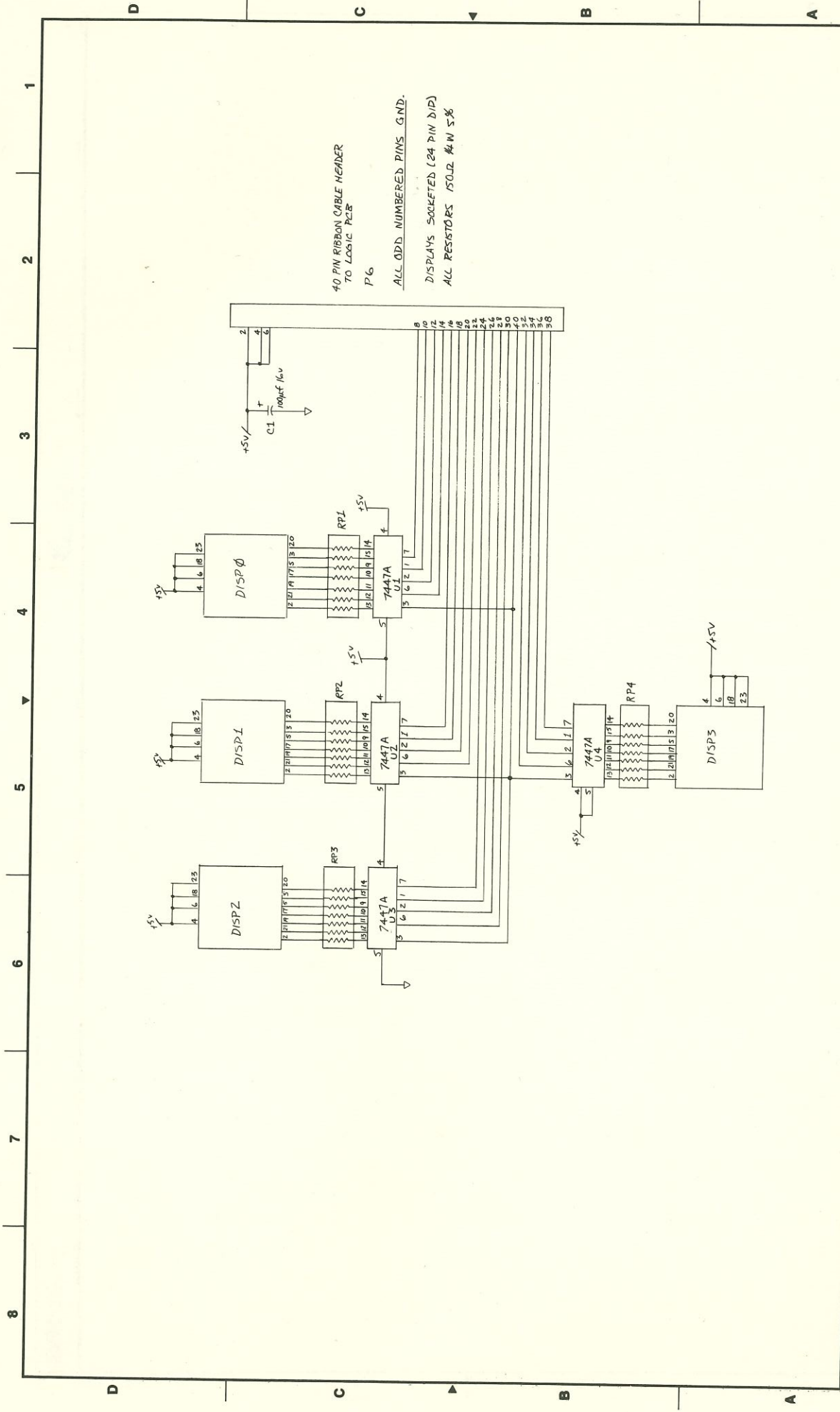
#### PRINTED CIRCUIT BOARDS PARTS LIST

Part Number	Description	Location
77-0012-01	PRINTED CIRCUIT BOARD	
44-4001-00	SOCKET I.C. 40 PIN DIP	1C, 1A, 7D, 10A
44-2401-00	SOCKET I.C. 24 PIN DIP	
44-1601-00	SOCKET I.C. 16 PIN DIP	2E
40-0021-02	CONNECTOR, 2 PIN MOLEX	P6
	IN LINE WAFER .100 CENTER	
	WITH LOCKING RAMP	
40-0005-06	CONNECTOR, 6 PIN MOLEX	P4
	IN LINE WAFER .156 CENTER	
	WITH LOCKING RAMP	
40-0005-10	CONNECTOR, 6 PIN MOLEX	P3
	IN LINE WAFER .156 CENTER	
	WITH LOCKING RAMP	
40-0021-10	CONNECTOR 10 PIN MOLEX	P1
	IN LINE WAFER .100 CENTER	
	WITH LOCKING RAMP	

Part Number	Description	Location
40-0021-12	CONNECTOR, 12 PIN MOLEX IN LINE WAFER .100 CENTER WITH LOCKING RAMP	P2
41-0005-00	CONNECTOR 40 CKT RIBBON CABLE HEADER	P5
25-0004-00	I.C. 6502 CPU	7D
25-0005-00	I.C. Z80A CPU	1A
26-0003-00	I.C. PIA 6520 OR 6821	1C
25-0002-00	I.C. PIA 6532	10A
22-0022-02	I.C. 74LS154	7E
22-0021-02	I.C. 74LS374	2B, 8B
22-0038-02	I.C. 74LS367	3B
22-0039-02	I.C. 74LS42	5B
22-0023-00	I.C. 4069	3D
27-0004-00	I.C. MC3417	2E
21-0011-00	I.C. TL084	4E
22-0036-00	I.C. LM741	5E
27-0003-00	I.C. NE555	5D, 6D
22-0011-02	I.C. 74LS74	3C, 4C
22-0001-02	I.C. 74LS00	2D, 5C
22-0010-02	I.C. 74LS32	6C, 4B
22-0016-02	I.C. 74LS161	6B
21-0001-00	TRANSISTOR TIP 120	Q3
21-0002-00	TRANSISTOR TIP 125	Q2
33-0002-00	SOLID STATE RELAY 2.5A	SSR1, 2, 3
20-0002-00	DIODE, IN 4001	CR2
20-0008-00	DIODE, IN9A4	CR3
20-0011-00	DIODE, LED	LD1, 2
29-0002-00	CRYSTAL 3.579545 MHZ	Y1
49-5002-00	8 POS DIP SWITCH	OPTION SW
48-3061-00	PC MOM., N.O. SWITCH	SW2, 3
09-0007-00	RESISTOR PAK, SIP	RP1
	10 PIN, 1 COMMON 220 ohm	
09-0004-00	RESISTOR PAK, SIP 10 PIN, 1 COMMON 2.2K ohm	RP2
02-3012-01	1/4 WATT 5% RESISTOR 300 ohm	R31
02-3312-01	1/4 WATT 5% RESISTOR 330 ohm	R35, R36
02-4712-01	1/4 WATT 5% RESISTOR 470 ohm	R32
02-1022-01	1/4 WATT 5% RESISTOR 1K ohm	R2, 4, 37, 34
02-1322-01	1/4 WATT 5% RESISTOR 1.3K ohm	R10
02-3322-01	1/4 WATT 5% RESISTOR 3.3K ohm	R28, 33, 11
02-3922-01	1/4 WATT 5% RESISTOR 3.9K ohm	R18, 21
02-4722-01	1/4 WATT 5% RESISTOR 4.7K ohm	R29, R22
02-1032-01	1/4 WATT 5% RESISTOR 10K ohm	
02-1832-01	1/4 WATT 5% RESISTOR 18K ohm	R12, 17, 20
02-2032-01	1/4 WATT 5% RESISTOR 20K ohm	R9
02-2422-01	1/4 WATT 5% RESISTOR 2.4K ohm	R8
02-3332-01	1/4 WATT 5% RESISTOR 33K ohm	R40
02-7532-01	1/4 WATT 5% RESISTOR 75K ohm	R23
02-2452-01	1/4 WATT 5% RESISTOR 2.4 meg	R13
02-1052-01	1/4 WATT 5% RESISTOR 1.0 meg	R27
02-1062-01	1/4 WATT 5% RESISTOR 10 meg	R30
02-2232-01	1/4 WATT 5% RESISTOR 22K ohm	R25
07-0004-00	POTENTIOMETER 10K	VOLUME R38

Part Number	Description	Location
10-1024-1	CAPACITOR CERAMIC DISC .001 uf 25v min.	C21
10-5024-01	CAPACITOR CERAMIC DISC .005 uf 16v min.	C20
10-2204-1	CAPACITOR CERAMIC 22pf 16v 22 pf 16v	C16
10-1034-1	CAPACITOR CERAMIC .01 uf 16v	C11
10-2034-01	CAPACITOR CERAMIC .02 uf 16v	C5, C7
14-2224-1	CAPACITOR MYLAR .0022 uf 16v	C17, C6, C8
10-1044-1	CAPACITOR CERAMIC .1uf 16v	A/R
13-3355-01	CAPACITOR ELECTROLYTIC .33 uf 16v RADIAL	C1
13-1055-00	CAPACITOR ELECTROLYTIC 1.0 uf 16v AXIAL/RAD	C4, 9, 19
13-1062-00	CAPACITOR ELECTROLYTIC 10uf RADIAL 16v	C12
13-3365-1	CAPACITOR ELECTROLYTIC 33 uf 25v AXIAL	C22,23,13,14
13-1075-00	CAPACITOR, ELECTROLYTIC 100 uf 16v AXIAL	C15
40-0015-00	40 PIN RIBBON CABLE ASSY	
23-0069-01	EPROM 2732 WBA1	2A
23-0070-01	EPROM 2732 WBA1	3A
23-0071-01	EPROM 2732 WBA1	4A
23-0072-01	EPROM 2732 WBA1	5A
23-0073-01	EPROM 2732 WBA1	6A
23-0074-01	EPROM 2732 WBA1	7A
23-0075-01	EPROM 2732 WBL3	7B
77-0013-05	LED DISPLAY PCB ASSEMBLY	
77-0013-04	Printed Circuit Board	
22-0059-00	I.C. 7447	U1,U2,U3,U4
22-0060-00	Digital Display	DISP 1-4
44-2401-00	24 Pin Socket	DISP 1-4
41-0005-00	40 Pin Connector	P6
13-1075-00	100 UF Capacitor	C1
10-1044-01	.1 UF Capacitor	A/R
02-1512-00	Resistor 150 ohm 1/4w	RP 1-4





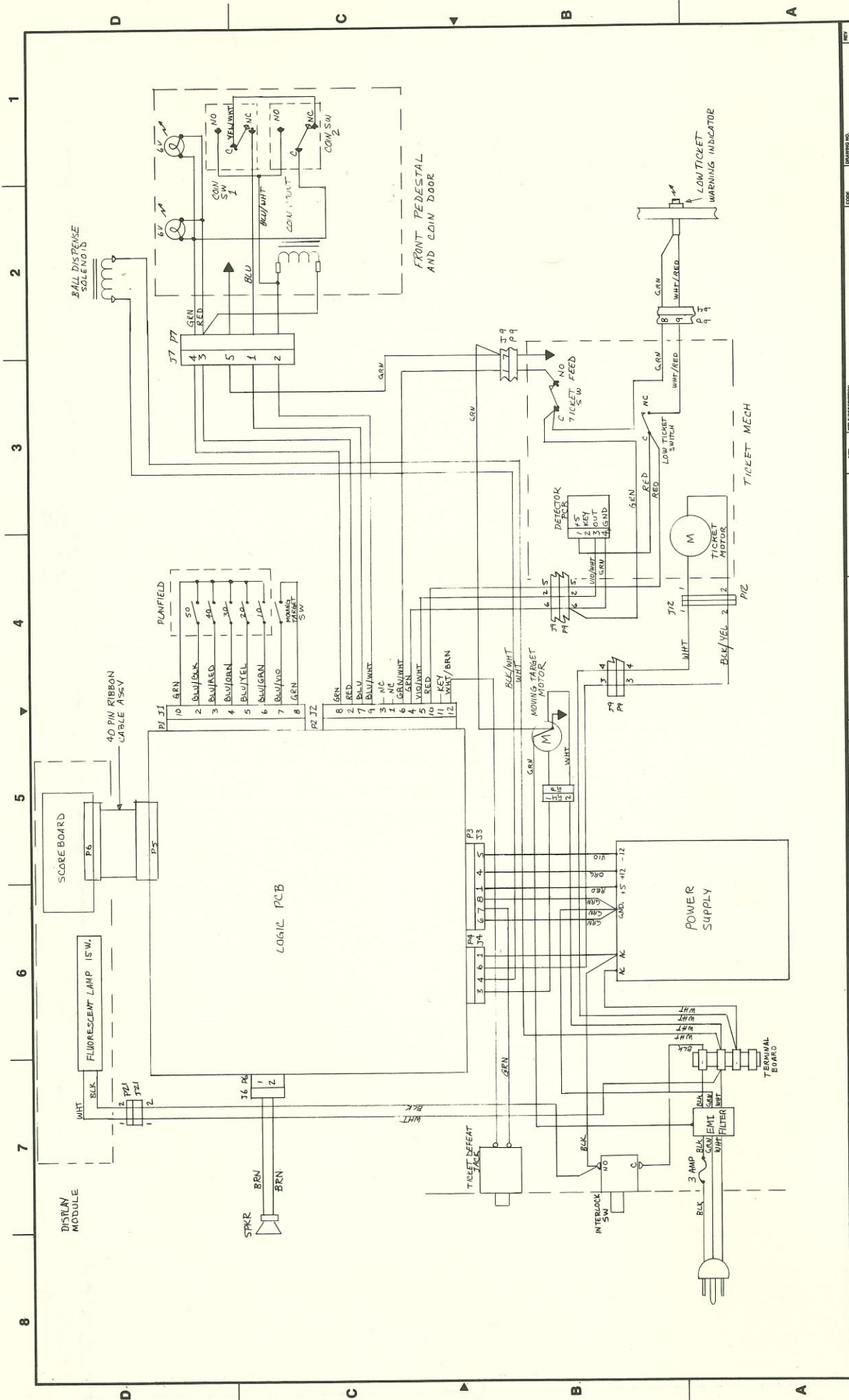
40 PIN RIBBON CABLE HEADER  
TO LOGIC PC28  
P6  
ALL ODD NUMBERED PINS GND.  
DISPLAYS SOCKETED (24 PIN DIP)  
ALL RESISTORS 150Ω 1/4W 5%

PROPRIETARY	DATE	DESIGNED BY	DATE	ASSEMBLY	USED ON	DESCRIPTION	SIZE	DATE	REV
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300 JAWA DR  
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	DATE 10-11-82 DATE 10-11-82	SHEET 6 OF 6
DATE 10-11-82 DATE 10-11-82	DRAWN BY MARK VON STRIEBER	CHECKED BY MARK VON STRIEBER
DATE 10-11-82 DATE 10-11-82	DESIGNED BY MARK VON STRIEBER	CHECKED BY MARK VON STRIEBER
DATE 10-11-82 DATE 10-11-82	MANUFACTURED BY MARK VON STRIEBER	CHECKED BY MARK VON STRIEBER
DATE 10-11-82 DATE 10-11-82	ASSEMBLED BY MARK VON STRIEBER	CHECKED BY MARK VON STRIEBER
DATE 10-11-82 DATE 10-11-82	TESTED BY MARK VON STRIEBER	CHECKED BY MARK VON STRIEBER
DATE 10-11-82 DATE 10-11-82	INSPECTED BY MARK VON STRIEBER	CHECKED BY MARK VON STRIEBER
DATE 10-11-82 DATE 10-11-82	APPROVED BY MARK VON STRIEBER	CHECKED BY MARK VON STRIEBER
DATE 10-11-82 DATE 10-11-82	RELEASED BY MARK VON STRIEBER	CHECKED BY MARK VON STRIEBER
DATE 10-11-82 DATE 10-11-82	TITLE WIRING DIAGRAM	PART NO.
DATE 10-11-82 DATE 10-11-82	PART NO.	REV

