TEN PIN DELUXE PRELIMINARY OWNER/OPERATOR INSTRUCTIONS

10 PIN DELUXE SET-UP INSTRUCTIONS

1. Remove all packing from game parts.
2. Remove wooden shipping rails from T.V. Cabinet and Coin Cabinet.
3. Install 4 leg Levelors on bottom of T.V. Cabinet and 2 Leg Levelors on bottom of Coin Cabinet.
4. Slide Playfield into T.V. Cabinet.
5. Slide Coin Cabinet under front of Playfield.
6. Align holes on Playfield bottom panel with holes on T.V. Cabinet interior panel.
7. Place Flat Washers on 4 Hex Bolts and join T.V. Cabinet to Playfield.
8. Align holes on Playfield bottom with holes on Coin Cabinet roof.
9. Place Flat Washers on 4 Hex Bolts and join Coin Cabinet to Playfield.
10. Remove Screws that hold Bowling Pin Panel in shipping position.
11. Move Bowling Pin Panel UP and Hook into Playing Position.
12. Reattach Bowling Pin Panel using same screws.
13. Move/Slide game into play position.
14. Place carpenter's level on Playfield. Adjust Leg Levelors so that game is level front to back and side to side.
15. Install Nuts on top of each Leg Levelor. (Inside of Cabinets).
16. Connect all necessary cables to corresponding plugs. (Front and Rear Cabinets).
17. Set Masonite Black Out Panel/Shield inside T.V. Cabinet (on Lower Lip of Bowling Pin Panel and on top of Wood Block).
18. Install Front and Rear Wood Doors on T.V. Cabinet.
19. Have Fun!

IMPORTANT NOTE: All Cables should be Disconnected and Cabinets Unbolted and Separated before game is Transported to Next Location.

INTRODUCTION

10-PIN DELUXE is a revolutionary video/machanical bowling game. It's streamlined cabinet design features no moving parts to wear or switches to adjust. The magnetic puck actuates hermetically-sealed reed switches and the bowling pins are fluorescent lamps.

10-PIN DELUXE is designed for 1 to 6 players and contains four different bowling games: REGULATION, STRIKE-90, FLASH, and SUPER-FLASH.

In REGULATION, scoring is identical to offical bowling.

In STRIKE-90 the player scores 90 points for a strike, 60 points for a spare and the normal score value for an open frame. The player continues to shoot on strikes.

In FLASH the strike score is indicated by the moving yellow score value on the screen, the spare score by the moving red score value on the screen and normal score value for an open. A row of sequential flashing lights is seen on the alley and the scores are the highest when the lit lights are in the middle of the alley. The flashing stops when the pins are hit on the first shot.

In SUPER-FLASH scoring is identical to flash but the same player continues to shoot on a strike.

SPECIAL OPERATOR FEATURES

PORTABILITY - This game breaks down into three pieces
SIZE - smaller and lighter than conventional shuffle alleys
ALL ELECTRONIC - No moving parts
FULL DIAGNOSTIC TEST PACKAGE
SOFTWARE PROGRAMMABLE DIFFICULTY SETTING
SELECTABLE BEER FRAME CARTOONS
OPTIONAL BILL ACCEPTOR for $1 and/or $5 bills
OPTIONAL TICKET DISPENSER - software adjustable score levels for tickets
ESTABLISHMENT NAME - can be displayed during attract mode
FREE GAME - can be awarded at operated set score level

OPERATION

TO PLAY A GAME: INSERT COIN

The game will change from its ATTRACT mode to its SELECT GAME mode. The number of credits is displayed on the lower right of the screen. The maximum number of credits allowed are nine unless the $1/$5 bill acceptor is installed in which case the maximum number of credits will be twenty-nine.

SELECT NUMBER OF PLAYERS

The number of players is displayed at the top of the screen. Depressing the NUMBER OF PLAY-
ERS Button will increase the number of players as it decreases the number of credits.
Should the player depress the button too many times he may continue to actuate the button as
the number of players will roll-over backto 1 and increase again. One credit is required
for each player.

SELECT A GAME

The names of the four games are displayed on the screen. One of the names is in yellow let-
tering and the others are in blue lettering. Each depression of the SELECT GAME Button
changes which name is in yellow and therefore which game is selected to be played. Simply
depress the button until the name of the desired game is selected. Here again successive
depressions of the button will roll-over the selection to the beginning of the list.

START GAME

To start a game after the number of players and game have been selected, depress the START
GAME Button. After the START GAME Button has been actuated no players may be added nor may
the selected game be changed.

DURING GAME PLAY

During the play of the game, the puck should be thrown only when the bowling pins are dis-
played.

The current scores can be displayed at the beginning of each frame as desired by depressing
any button (START GAME, SELECT NUMBER OF PLAYERS, or SELECT GAME). The scores will be dis-
played as long as the button is depressed.

SELF-TEST MODE

The Self-Test mode is a special mode for checking the game switches circuitry functions, and
setting operator options. It is the easiest and best way to check for proper operation of
the entire game. When in the Self-Test mode you will see a cursor (arrow pointing to the
right) along the left edge of the monitor screen. To position the cursor use the NUMBER OF
PLAYERS Button to move the cursor up the screen; use the SELECT GAME Button to move the cur-
sor down the screen; and use the START GAME Button to select/exit the function indicated by
the cursor.

The Self-Test mode is fairly self-explanatory. You may enter the Self-Test mode by placing
the TEST SWITCH located inside the coin door to the ON position. If there are no credits in
the machine the game will go immediately to the Self-Test mode. If there are credits in the
game you must actuate the DOOR SLAM switch to enter the Self-Test mode. Any credits will
not be erased.

Displays of test results will generally take one of two forms: a display of colored rectan-
gles or the words GOOD, BAD, or OK. For displays of colored rectangles GREEN usually means
good or actuated and RED means bad or not-actuated. Failures of any of the CIRCUITRY TESTS
will require PC board swapping in the field as these problems usually require extensive cir-
cuit troubleshooting reserved for bench repair.

To exit the Self-Test mode turn the TEST SWITCH to OFF, position the cursor to any of the
following words: REPEAT, RETURN, or EXIT, and then press the START GAME Button. The exact
wording will depend on the test level that you are in.

SELF-TEST MODE FUNCTIONS OUTLINE:

I.   CIRCUITRY TESTS
     A.   16-COLOR BOARD TESTS
          1.   WRITE MODES
          2.   INTERCEPT
     B.   RAM TESTS
          1.   SCREEN RAM
          2.   SCRATCH PAD
          3.   WRITE PROTECT
     C.   ROM TEST
     D.   CONTINUOUS TEST
          1.   START NEW TEST
          2.   CONTINUE PREVIOUS TEST
II. VIDEO TEST/ADJUST
     A.   CROSS-HATCH
     B.   COLOR BARS
     C.   GREY LEVELS
     D.   PURITY
     E.   CARTOONS
          1.   CARTOON 1
          2.   CARTOON 2
          3.   CARTOON 3
          4.   CARTOON 4
          5.   CARTOON 5
          6.   CARTOON 6
          7.   CARTOON 7
          8.   CARTOON 8
III. AUDIO/MECHANICAL
     A.   SOUNDS
     B.   SWITCHES
     C.   DEVICES
          1.   FLUORESCENTS
               a.   LAMP 1
               b.   LAMP 2
               c.   LAMP 3
               d.   LAMP 4
               e.   LAMP 5
               f.   LAMP 6
               g.   LAMP 7
               h.   LAMP 8
               i.   LAMP 9
               j.   LAMP 10
               k.   ALL
          2.   COINCTRS
               a.   COINCTR 1
               b.   COINCTR 2
               c.   TICKET DISP

3.   FLASH LIGHTS
             a.   LIGHT 1
             b.   LIGHT 2
             c.   LIGHT 3
             d.   LIGHT 4
             e.   LIGHT 5
             f.   LIGHT 6
             g.   LIGHT 7
             h.   LIGHT 8
             i.   LIGHT 9
             j.   SEQUENCE ALL
        D.   PLAYFIELD
IV. STATISTICS
        A.   GAME PLAY STATS
        B.   CLEAR STATS
V.   GAME SETTINGS
        A.   DISPLAY NAME
        B.   --ENTER NAME
        C.   BEER FRAME
        D.   FREE PLAY
        E.   DOOR 1 CO/CR
        F.   DOOR 2 CO/CR
        G.   DIFF GAME, STRIKE
        H.   FREE GAME
        I.   --AT SCORE
        J.   TICKET AT, EV, MAX
        K.   *SET DEFAULTS*

There is a special indication which is not normally seen. When the game is powered up in
the Self-Test mode, the program does a quick ROM check of the portion with the test code, a
RAM test of the portion required to run the test and a portion of the battery backed-up RAM
test. If these tests fail, the Self-Test will not function. Assuming the game was once op-
erational, you can locate the defective part by observing the following indications. These
parts are all located on the SUPER GAME MEMORY board. Diagonal RED stripes indicate a bad
EPROM at position X1; diagonal BLUE stripes indicate a bad RAM at position X20; and diagonal
GREEN stripes indicate a bad RAM at position X21.

Following is an outline of all the Self-Test mode functions.

EXPLANATION OF SELF-TEST FUNCTIONS

The 16 COLOR BOARD TESTS check the majority of the circuitry on the screen RAM and CPU boards.

The RAM TESTS check the dynamic RAMs on the SCREEN RAM BOARD and the static RAMs on the SUPER GAME MEMORY BOARD.

The ROM TEST checks the 2764 EPROMS on the SUPER GAME MEMORY BOARD. In this test empty sockets X16 and X17 (displayed as R and S in the test) may be displayed as EMPTY or BAD. Either indication is OK as there are no EPROMs in these positions.

The CONTINUOUS TEST is generally used to test a game over night for intermittent or heat-related problems. Two options are available. START NEW TEST resets the pass counter, error counter and reset counter. CONTINUE PREVIOUS TEST causes the previous test to continue without resetting the above mentioned counters. After each complete cycle of the CONTINUOUS TEST the results are displayed. Each cycle takes several minutes so to get a fairly instant test result display hold down the START GAME Button and wait for the results to appear. The individual test that is running must complete itself. Releasing the button causes the CONTINUOUS TEST to continue.

The VIDEO TEST/ADJUST functions are for adjusting the monitor. Use the CROSS HATCH function to adjust horizontal and vertical linearity, horizontal and vertical size, and convergence. Use the COLOR BARS function to verify that all the color guns are functioning. Use the GREY LEVELS function to adjust overall brightness. Block 0 should be Black and block 15 should be white. Each block from 0 to 15 should be progressively brighter. Use the PURITY function to see if the monitor needs degaussing.

The CARTOON tests are to verify that all the cartoons are functioning.

The SOUND tests are to verify functionality of the sound generator package. This package uses a separate microprocessor and receives commands form the video processor via an 8-bit bus. This test sends the various commands to the sound processor. Some commands are processor commands such as reset and sounds ON or OFF. These commands themselves should not generate any sounds. Lettering on the screen during this test dicates whether an 8-bit value is a command or a sound under the heading CATEGORY. The actual 8-bit value sent is displayed next to the wording # TO SEND TO SG. Only 8-bit values actually used are displayed in hexadecimal. As the value is actually sent the word SENT is displayed in the lower left-hand corner of the screen. Also displayed is the function of the particular 8-bit value next to the word MEANING. To increase the hex value depress the NUMBER OF PLAYERS Button; to decrease the value depress the SELECT GAME Button. To send the 8-bitvalue depress the START GAME Button. Each time the START GAME Button is depressed the value is sent. If the button is held down, the commands are continually sent approximately every one-half secondat first and then every one-sixth of a second.

Depending on the priority of the command being sent, some sounds will interrupt sounds being generated while others will stack up and complete the sound before a new one is begun. To exit this test depress the NUMBER OF PLAYERS and SELECT GAME Buttons at the same time.

Use the SWITCH test to verify proper operation of all switches in the game. The display is a 5 by 8 grid of rectangles. Along the left side of the display are the hexadecimal compu-

ter port numbers associated with the eight rectangles displayed to the right of the number. Above each rectangle is a two-letter abbreviation of the switch function. The abbreviations are explained as follows:

C1   Coin Switch #1 - the left coin slot
C2   Coin Switch #2 - the right coin slot   ⌐─ coin door open,
                      (the bill acceptor   viewed from back side.
                      input when included)

TS   Test Switch   - located inside coin door
SL   Slam Switch   - on coin door
SG   Select Game   - Player control panel
PL   Number of Plyr - Player control panel
ST   Start Game   - Player control panel
USED   - Used internally by electronics

CT   Cocktail   - DIPswitch pos 1
LK   Lockup   - DIPswitch pos 2
RS   Reset   - DIPswitch pos 3
BP   Beep   - DIPswitch pos 4
RO   Regulation   - DIPswitch pos 5
TD   Ticket Disp   - DIPswitch pos 6
$A   Bill Acceptor - DIPswitch pos 7
USED   - Used internally by electronics

F1 thru F0   - See Diagram
P1 thru P0   - See Diagram

Under the DEVICES test, the first option is the fluorescent lamps tests. The simulated bowling pins each contain a fluorescent tube which is lit under software control. They are numbered according to the bowling pin number that they represent. The test flashes each lamp simultaneous flashing of all ten lamps.

The COINCTRS tests are for the coin counters and the optionally installed ticket dispenser. The circuitry for coin counter 2 is used for the ticket dispenser when the dispenser is installed. Either coin counter test pulses the associated counter at a 1 hertz rate when the test is selected. The test for the ticket dispenser is a momentary test in that it is designed to issue one ticket with each depression of the START GAME Button.

The FLASH LIGHTS tests are for the ten incandescent lamps mounted in the playfield which are used in the FLASH games. There are nine lamp circuits and ten lamps. The center two are connected together and are called LAMP 5 in the FLASH LIGHTS test. Because of circuit design it is impossible to turn all lamps on at the same time or to have more than one lamp on at a time (except for the center two red ones). This test will flash the selected lamp at about a 1 hertz rate. SEQUENCE ALL - goes through all lamps one-at-a-time.

The PLAYFIELD test is designed to show a simulation of the playfield sensor layout and illustrate what switches were activated when the puck was thrown. Non-activated switches

are green. When the test is entered the switches that were activated form the previous game may be shown. The intent is for the operator to shoot the puck and verify that the proper switches were in fact activated for the given shot. There are two horizontal lines; one at the top of the screen and one at the bottom of the screen. These represent signals generated by the electoronics corresponding to the puck traversing the front line of the sensor area and the back line of the sensor area.

An example of the operator moving the puck along the left rail from front to back should produce the following results in the following sequence if everything is functioning properly.

1) The front line changes from green to red.
2) As the puck reaches the back line, the back line changes from red to green and back to red as puck returns while the fron t line changes from red to green.
3) The display is updated to show that the sensors in the upper left (P7) and lower left (F1) have been activated.
4) As the puck returns across the front line, the front line changes form green to red.

PLAYFIELD SENSOR DIAGRAM

P7   P8   P9   P0

    P4   P5   P6

        P2   P3

            P1

F1 F2 F3 F4 F5 F6 F7 F8 F9 F0
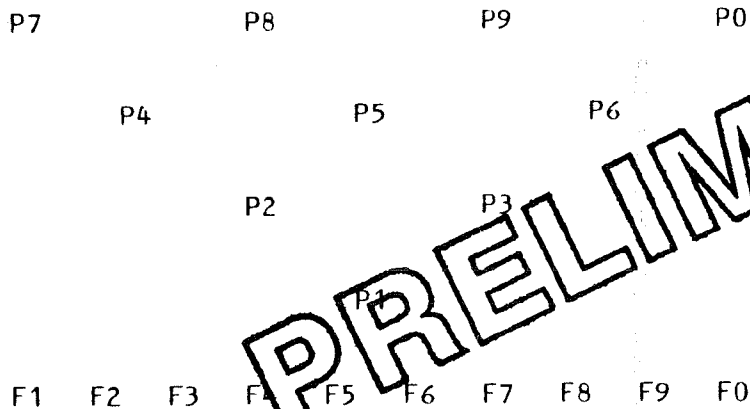
The STATISTICS allows the operator to see which of the four games is being played the most, what the total number of games played is since the last full reset, and provides a way for the operator to clear the values. Note that DIP switch position 3 on the Game I/O Board

should be in the OFF position.   Otherwise, these values are cleared on each powerup of the game.

GAME SETTINGS - allows the operator to tailor certain functions of the game to his location.

Selecting the functions of DISPLAY NAME, BEER FRAME, FREE PLAY, and FREE GAME is done by turning the particular function you are interested in ON or OFF. For the four above functions, select the function using the START GAME Button, turn the function ON with the NUMBER OF PLAYERS Button and turn it OFF with the SELECT GAME Button.

During the game's ATTRACT MODE, it will display the name of the establishment if the DISPLAY NAME function is ON and the name of the establishment was previously entered in the game.

To enter the name of the establishment, go into the ENTER NAME mode. You will then see a display looking like this:

                              OPERATOR

                    YOUR NAME CAN BE 25 CHARACTERS

   A   B   C   D   E   F   G   H   I   J   K   L   M

   N   O   P   Q   R   S   T   U   V   W   X   Y   Z

   0   1   2   3   4   5   6   7   8   9   -   ,   .

   SELECT GAME = RIGHT   NO. OF PLAYERS = LEFT

            START GAME = PICK A LETTER

BEER FRAME function: ON or OFF   During the play of REGULATION bowling, for two or more players, a cartoon is shown at the start of the fifth frame if this function is ON. There are no cartoons shown if this function is OFF, or during a single player game.

The FREE PLAY mode can be used in the distributors showroom or for tournament play. The game will cycle through its attract mode. Then you will be able to select the number of players and choose game.

DOOR1 CO/CR and DOOR2 CO/CR are set in the same manner. DOOR1 refers to the left coin slot and DOOR2 is the right coin slot (when facing the back side of an open coin door).

When this function is chosen, the SELECT GAME Button switches between the CO (coins) function and the CR (credits) function.

The NUMBER OF PLAYERS Button increases the number in the chosen function to a maximum of nine and rolls over to one.

This allows the operator to set the number of coins required for a given number of credits. It is totally adjustable for any combination from 1 coin for 9 credits to 9 coins for 1 credit and anywhere in between. The game can be set up to require as many as 9 coins to give 1 credit or 2 credits, etc. Any combination of numbers is possible. Note that 3/3 and 7/7 etc. is the same as 1/1. If the game were set for 2/3, one credit will be issued for the first coin and 2 credits will be issued for the second coin. However, if a game was played and completed between when the first and second coins were inserted, the second coin will only give one credit and a third coin would be required to get the next two additional credits. The game keeps track of fractions of a coin but clears the fraction at the end of the game.

It should be noted that when the BILL ACCEPTOR is installed, the BILL ACCEPTOR actuates the switch circuitry four times for each dollar accepted and twenty times for each five dollar bill accepted unless set otherwise.

DIFFICULTY - can be set to level 1, 2 or 3 of which 1 is for easiest and 3 is the hardest. In level 3 difficult splits appear more often effectively lowering the players score because getting a spare with a difficult split is not too easy to accomplish.

FREE GAME - is a function that may be turned ON or OFF. If turned ON a credit is issued only during the play of REGULATION bowling when the player has achieved the score value as set below.

The FREE GAME score value is set when the AT SCORE function is selected. The range of possible values is every ten points between 200 and 300 points.

When DIP switch position 6 is turned to ON to indicate the presence of a TICKET DISPENSER,

the operator may set certain parameters for dispensing tickets by selecting the TICKET AT, EV, MAX function. If the DIP switch is OFF, the function will display N/A for NOT APPLICABLE. When the function is selected, the program will jump to the next screen to allow operator entry.

The first setting will be FIRST TICKET AT. Entering a score here will determine at what score the first ticket will be issued. Possible values are between 100 and 300. Depressing the NUMBER OF PLAYERS Button will increase the score by ten points and the SELECT GAME Button will decrease the score by ten points.

The second setting will be TICKET EVERY. Possible values here range from 10 to 100 with the NUMBER OF PLAYERS and SELECT GAME Buttons operating in the same manner but increasing/decreasing the value by five points at a time.

The third setting MAX TICKETS/GAME determines the maximum tickets issued per player per game. The range of values here is from 1 to 9.

Also shown on this screen, under the heading of SCORES SELECTED, are the scores at which tickets will be issued as calculated per the parameters set sbove.

It should be noted that the TICKET DISPENSER issues tickets AT THE END OF each players game and **ONLY** when playing REGULATION.

The last programmable setting option available to the operator is to automatically set all values to the factory recommended settings (or DEFAULT values). These are as follows:

DISPLAY NAME	ON
BEER FRAME	ON
FREE PLAY	OFF
DOOR1 CO/CR	1/1
DOOR2 CO/CR	1/1
DIFF GAME,STRIKE	2
FREE GAME	OFF
DIFFICULTY	1
FREE GAME	ON
--AT SCORE	250
TICKET AT,EV,MAX	100,50,5

O P T I O N   S W I T C H   S E T T I N G S

DIPswitch 1   OFF = upright game
                        ON = cocktail
                                (has no effect on this game)

DIPswitch 2   OFF = does not halt on error during CONTINUOUS TEST
                        ON = halts on error during CONTINUOUS TEST

DIPswitch 3   OFF = does not reset data whenever game is powered off and on
                        ON = RESETS data when game is powered off and on factory recommended
                                default values are used

DIPswitch 4   OFF = No audio response to test results
                        ON = Audio response to test results. A high-pitched beep means GOOD or
                                OK and a low-pitched beep means BAD or ERROR. Useful to monitor
                                test results during continuous test without having to keep an eye
                                on the game

DIPswitch 5   OFF = 4 different bowling games can be played
                        ON = only REGULATION may be played

DIPswitch 6   OFF = No ticket dispenser is installed
                        ON = ticket dispenser is installed; tickets will be issued according to
                                game setting option

DIPswitch 7   OFF = no bill acceptor is installed
                        ON = bill acceptor is installed. Will accept both $1 and $5 bills;
                                maximum credits is 29; the second coin counter counts NUMBER of
                                DOLLARS

DIPswitch 8   OFF = don't care; not used in this game
                        ON = don't care; not used in this game

D O   N O T   USE SHUFFLE ALLEY POWDERED WAX ON THIS SURFACE! ! !

U S E   O N L Y

"WILDCAT # 200" WAX & CLEANER OR EQUAL.

///

P L A Y F I E L D   G L A S S   H E I G H T   A D J U S T M E N T

BEFORE MAKING THIS ADJUSTMENT,

TURN THE POWER TO THE GAME OFF AND UNPLUG IT FROM IT'S OUTLET.

UNLOCK AND REMOVE THE FRONT WOOD DOOR ASSEMBLY (UNDER THE ALLEY).

LOOKING UP, YOU WILL SEE FOUR NYLON SCREWS WITH LOCK NUTS IN A METAL PLATE.

LOOSEN THE LOCK NUTS SLIGHTLY AND ADJUST THE NYLON SCREWS UP OR DOWN TO GET THE DESIRED RESULT (THE TOP SURFACE OF THE PLAYFIELD GLASS **MUST** BE FLUSH WITH THE TOP SURFACE OF THE SHUFFLE ALLEY).

TIGHTEN THE LOCK NUTS DOWN CAREFULLY SO AS NOT TO CHANGE THE ADJUSTMENT ON THE NYLON SCREWS.

REINSTALL AND LOCK THE FRONT WOOD DOOR ASSEMBLY.

RECONNECT YOUR GAMES POWER AND TURN IT ON.

M051-00A28-B020

10 PIN DELUXE SET-UP INSTRUCTIONS

COIN CABINET

T.V. CABINET

PLAYFIELD