Comet!

COMET 31" SKILL CRANE
SERVICE & OPERATION MANUAL

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Version: 1.01   Date: 2013-1-30

SAFETY INSTRUCTIONS

* WARNING! *
BEFORE SETTING UP THE GAME, PLEASE READ THE FOLLOWING INSTRUCTIONS.

* WARNING! *
FAILURE TO FOLLOW THESE DIRECTIONS COULD CAUSE DAMAGE TO THE GAME.

NOTICE FOR INSTALLATION

- **This machine is for indoor use only and is not suitable for outdoor use.**

- **After the machine is completely installed, please make sure that the machine is securely and safely leveled on the floor.**

- **Do not assemble or disassemble the game. or move the game without careful instructions.**

- **Switch off the power and pull out the plug before moving the machine or repairing.**

- **Place the game on flat floor. Do not install in unsteady or damp locations.**

- **Do not place the game near equipment or areas that are humid, inflammable or of high temperature.**

- **Do not place any heavy equipment on the top of the machine, or on top of the power cord.**

- **Do not expose the circuit part in the machine to the air for a long time.**

NOTICE FOR OPERATION

- **Before plugging in or turning on the machine, please check if the power plug and power cord are in good conditions, and check if the voltage is set to the proper voltage that is suitable for your country.**

- **Turn off the power before you check or inspect the machine.**

- **Only qualified technicians are allowed to perform repair or maintenance of the game.**

- **Suitable accessories and technical parts should be used for parts replacement**

- **Hold the plug (not the wire) to remove the power cord from the wall outlet.**

- **Do not plug or unplug the game with wet hand.**

- **Do not pull or twist the power wire and fuses.**

INTRODUCTION

Your 31.5″″COMET" Crane Game is a new version of an indoor prize machine typical of most crane style merchandising games. This machine is simple to play, with attractive lighting and cabinet design built of high quality materials. "COMET" Crane is a game that can easily be installed and operated in any location type.

PACKAGING

During delivery, the machine should be handled with care. Use of appropriate moving and carrying devices such as a fork lift or hand truck or wheeled dolly to deliver the packaged machine is recommended. Be careful not to improperly load or collide the machine with heavy equipment. This may cause damage to the machine.

ACCESSORIES

Your "COMET" Crane machine is packed with the following Accessories:

Accessories	Quantity	Remarks
Operation Manual	1	
Keys	4	4*1888
Power Cord	1	110V/AC
String for the Claw Carriage	2*1.1m	

TECHNICAL PARAMETERS

- Model: LP.LLXDZ05
- Dimension: 77.5" H x 30.5" W x 34.5" D ~ 1970 H x 766 W x 875 D (mm)
- with optional Topper + 22"
- Weight: 286 Lbs. ~ 130KG
- DBV Option 110V/AC
- Power: 110VAC/60Hz   6 Amps

LOCATION REQUIREMENTS

- Indoor temperature: between from 5℃ and 40℃.
- Indoor humidity: low
- U.V. radiation: Very low
- Vibrations level: low

PLAYING INSTRUCTIONS

1. **Insert Coin**. After the proper number of credits is achieved, the game will enter into play mode (eg. Default setting is 1 coin/token for every game. So, if 1 coin/token is inserted, then the game will start automatically. If the setting is 2 coins/tokens for each game, then the player needs to insert 2 coins / tokens to start the game.) . The LCD on the console will show the credits and the playtime.

2. **Normal Mode**: Within the play time limit, move the joystick to control the position of the claw. Move the claw to your target. Press the "DROP" button to catch the desired prize. If the claw catches the prize and releases the prize into the prize chute, the prize will come out through the prize door. Game will be over when the crane returns the original position.

3. **Vending Mode** ***: [Skill Only version] within the play time limit, move the joystick to control the position of the claw. Move the claw to your target. Press the "DROP" button to catch the desired prize. Game will continue to allow play until the player wins a toy/prize successfully.

*Note: The setting of payout ratio of the game does not work in Vending Mode***. And the voltage of claw will always be at the full power state so that the player can finally win a prize in vending mode***, so please pay attention to the claw and prize sensor.*

METERS

COIN METER

The total shown on the Coin Meter will increase by one for every coin inserted in this electronic coin mechanism.

PRIZE METER

The total shown on the Prize Meter will increase by one when a prize is given out.

OPERATION

This game has two adjustable play modes.

Free Play Mode used for burn in and testing of the machine, and the other one is coin play mode. When the machine is in free play mode, after pressing the reset button, no coin is required to start the game. The machine will be in play mode continuously and allow the technician or operator to play game after game which is useful during periods of installation and setting game play functions.

Coin Play Mode. When the machine is in Coin Play Mode, it can be in one of the following

six modes: 1) Attract Mode, 2) Test Mode, 3) Claw Carriage Test Mode, 4) Game Play Mode, 5) Error state, 6) Prize-Out Mode. Please refer to the Flow Chart below for details:
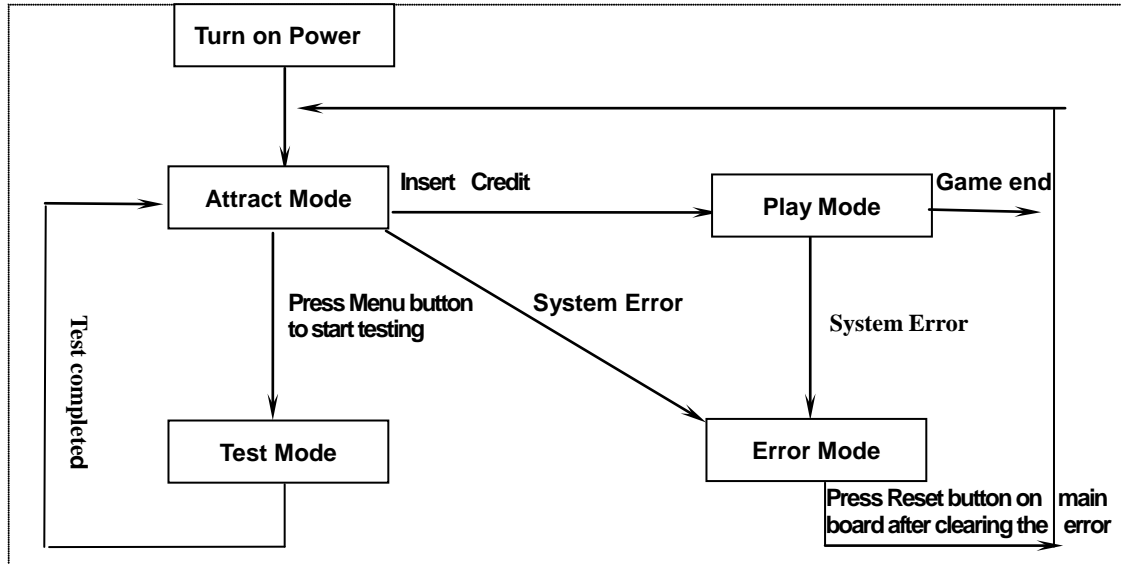
TURN ON THE POWER

Before turning on the power, please check the plug and cord, and make sure that the game is set to the proper voltage.

GAME PLAY MODE

When the Game is started, the LCD on the console will display the time and credit the player has left at the beginning of the game. There is also audio to signal the game is functioning normally.

TEST MODE

Test whether the lights, claw carriage and music are normal. When machine is in ATTRACT MODE, press the "MENU" button, music will stop and the game will enter into "TEST MODE".

ERROR MODE

During the game play, whenever there is an ERROR, the system will enter into ERROR MODE and display the Error Code on the control panel LCD screen. Refer to the Manual for ERROR Codes and solutions to correct them.

PRIZE OUT MODE

If a prize is given out, a win audio "PRIZE-OUT" will be activated. The total Prize OUT displayed on the Prize meter will also increase by one.

CPU Wiring Pin Out

Plug NO	Pin NO	Wire color	Function	I/O CODE	Function of I/O
J1 (Output)	PIN 1	0.3－Brown	Speaker +;	-----	
	PIN 2	0.3－White	Speaker -;	-----	
	PIN 3	0.3－Blue	Speaker_PWR;	-----	+8—+18V
	PIN 4	0.3－Blue	Speaker_PWR;	-----	+8—+18V
	PIN 5	0.3－Yellow	+12V Input;	-----	
	PIN 6	0.3－Yellow	+12V Output;	-----	
	PIN 7				
	PIN 8	0.3－Yellow	+12V Output;	-----	
	PIN 9				
	PIN 10	0.3－Yellow	+12V Output;	-----	
	PIN 11	0.3－Red	Output #1	-----	LED strip(Red)
	PIN 12	0.3－Yellow	+12V Output;	-----	
	PIN 13	0.3－Green	Output #2	-----	LED strip(Green)
	PIN 14	0.3－Yellow	+12V Output;	-----	
	PIN 15	0.3－Blue	Output #3	-----	LED strip(Blue)
	PIN 16	0.3－Yellow	+12V Output;	-----	
	PIN 17	0.3－Pink	Output #4	-----	Speaker Led(Red)
	PIN 18	0.3－Yellow	+12V Output;	-----	
	PIN 19	0.3－Green	Output #5	-----	Speaker Led(Green)
	PIN 20	0.3－Yellow	+12V Output;	-----	
	PIN 21	0.3－Blue	Output #6	-----	Speaker Led(Blue)
	PIN 22				
	PIN 23	0.3 - Black	GND;	-----	
	PIN 24	0.3 - Black	GND;	-----	
	PIN 25	0.3 - Black	GND;	-----	
	PIN 26	0.3 - Black	GND;	-----	
	PIN 27	0.3－Brown	Output	OUT0	Coin meter
	PIN 28	0.3－Pink	Output	OUT1	Prize meter
	PIN 29	0.3－Orange	Output	OUT2	Coin Indicator
	PIN 30	0.3－SkyBlue	Output	OUT3	Catch Button Indicator
	PIN 31	0.3－Green	Output	OUT4	JobStick Indicator
	PIN 32	0.3－Blue	Output	OUT5	Prize Outlet Indicator
	PIN 33	0.3－Purple	Output	OUT6	
	PIN 34	0.3－Gray	Output	OUT7	

	PIN 35	0.3－Brown	Output	-----	Motor #1 (Forward or Backward) Output+
	PIN 36	0.3－Pink	Output	-----	Motor #1 Output-
	PIN 37	0.3－Orange	Output	-----	Motor #2 (Leftward or Rightward) Output+
	PIN 38	0.3－Sky-blue	Output	-----	Motor #2 Output+ol
	PIN 39	0.3－Green	Output	-----	Motor #3 (Upward or Downward) Output+
	PIN 40	0.3－Blue	Output	-----	Motor #3 Output+
	PIN 41				
	PIN 42				
	PIN 43	0.3－Blue	Output	-----	Claw Output+
	PIN 44	0.3－Pink	Output	-----	Claw Output-
	PIN 45				
	PIN 46				
	PIN 47	0.3－Blue	+48V Input	-----	Claw Power
	PIN 48	0.3－Blue	+48V Input	-----	
	PIN 49				
	PIN 50				
J2	PIN 1	0.3－Brown	TTL output (0---+5V)	-----	Keypad CLOCK
	PIN 2	0.3－Pink	TTL output (0---+5V)	-----	LCD RS
	PIN 3	0.3－Orange	TTL output (0---+5V)	-----	LCD CS
	PIN 4	0.3－Sky-blue	TTL output (0---+5V)	-----	LCD RST
	PIN 5	0.3－Purple	TTL input (0---+5V)	-----	Keypad SI
	PIN 6	0.3－Brown	TTL output (0---+5V)	-----	Keypad CS
	PIN 7	0.3－White	TTL output (0---+5V)	-----	LCD SO
	PIN 8	0.3－Green	TTL output (0---+5V)	-----	LCD CLOCK
	PIN 9				
	PIN 10	0.3 - Green	TXD (0---+5V)	-----	
	PIN 11				
	PIN 12	0.3－Blue	RXD (0---+5V)	-----	
	PIN 13	0.3-Brown/white	Input	IN0	Coin In Sensor
	PIN 14	0.3-Red/white	Input	IN1	Prize Out Sensor
	PIN 15	0.3-Orange/white	Input	IN2	
	PIN 16	0.3-Yellow/white	Input	IN3	
	PIN 17	0.3-Green/white	Input	IN4	
	PIN 18	0.3-Blue/white	Input	IN5	
	PIN 19	0.3-Purple/white	Input	IN6	

	PIN 20	0.3-Gray/white	Input	IN7	
	PIN 21	0.3-Brown/white	Input	IN8	Joystick forward
	PIN 22	0.3-Red/white	Input	IN9	Joystick backward
	PIN 23	0.3-Orange/white	Input	IN10	Joystick leftward
	PIN 24	0.3-Yellow/white	Input	IN11	Joystick rightward
	PIN 25	0.3-Green/white	Input	IN12	front limit switch
	PIN 26	0.3-Blue/white	Input	IN13	back limit switch
	PIN 27	0.3-Purple/white	Input	IN14	Left limit switch
	PIN 28	0.3-Gray/white	Input	IN15	Catch Button Input
	PIN 29	0.3-Brown/white	Input	IN6	Top limit switch
	PIN 30	0.3-Red/white	Input	IN7	Bottom limit switch
	PIN 31				
	PIN 32				
	PIN 33				
	PIN 34				
	PIN 35				
	PIN 36				
	PIN 37				
	PIN 38				
	PIN 39				
	PIN 40				
	PIN 41				
	PIN 42				
	PIN 43				
	PIN 44				
	PIN 45	0.3-White	+3.3V Output	-----	
	PIN 46	0.3-Black	GND	-----	
	PIN 47	0.3-Red	+5V Output	-----	
	PIN 48	0.3-Black	GND	-----	
	PIN 49	0.3-Red	+5V Output	-----	
	PIN 50	0.3-Black	GND	-----	
	PIN 1	0.3-White	+3.3V Output	-----	
J3	PIN 2	0.5－Green	RST/C2CK	-----	
	PIN 3	0.5－Blue	C2D	-----	
	PIN 4	0.3-Black	GND	-----	

Game Settings, Adjustment and Testing:

You can enter the Test and Set Up adjustment menus by pressing ENTER on the keypad <u>only</u> during Attract Mode periods of non-game play.

<u>Clearing Bookkeeping totals</u> [software meters]:

Using the Keypad, Pressing "CLEAR" will clear all bookkeeping software meters. Pressing "CLEAR" Only clears the "Coin QTY", and "Prize Out QTY". The Game Settings will not change.

<u>Attract Mode Adjustment</u>:

Press "MODE" to enter Test and Adjustment Mode and then scroll up or down to access the Attract Mode settings. Press MODE again to return to attract mode and game play;

In Test and Adjustment Mode, press "ENTER" to access each consecutive menu state. Press EXIT to return to a previous menu.

When choosing the Menu desired, press DOWN to choose next menu or press UP to choose the previous menu. During the parameter setting, press DOWN to decrease the item value, pressing UP will increase the item value
.
<u>Volume Adjustment:</u>

In Attract Mode, press VOL+ to increase Volume and press VOL- to decrease Volume.

<u>LCD Display Brightness Contrast:</u>

In Attract Mode，press UP to increase LCD Contrast and press DOWN decrease LCD Contrast.

LCD Screen Menu Display

(1)、System information, cannot be changed
    1、Machine Serial Number
    2、Software Version
    3、Date of MFG
    4、Game Audits
            A、Credits
            B、Prize Out
(2) Parameter settings

AutoMode™   Prize Management software

"AutoMode"™ is a system designed to allow Operators to predetermine fill kit set up in advance by determining the various game settings usually done on site and location which can often take long periods of time and test. Prefilled game fill kits can be calculated for cost of goods, desired throw, price per play options, and overall claw strength [high and low power] through the AutoMode™ table. By marking fill kits in advance with the relative AutoMode™ prize code settings, an Operator can very quickly replenish stock on location and, by entering a predetermined 4 digit code, be completely set up for operation.

In "AutoMode"™, the control panel LCD Display appears as follows:

```
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       Code:   X-X-X-X
```

"AutoMode"™ Prize Code Table explained;

"Code:XXXX" displays the current "AutoMode"™ table set for operation by the Operator. To accessing the four codes to set, press; UP or DOWN to select the code's position, press VOL+ or VOL- to select the character. Press ENTER to Input。 The code designations are as follows;

#1 "X" = Coins Per Credit   These are coin pulses for coin sw. or DBV
#2 "X" = Avg. Win Ratio   The desired approx. payout frequency
#3 "X" = High Power Set   Based on a power range of *PWM of 1-26 [26 is strongest]
#4 "X" = Low Power Set   Based on a power range of *PWM of 1-26 [26 is strongest]

Prize Code for "COMET" Crane:

X   X   X   X

Code	Coins Per Credit	Avg. Win Ratio	Claw High Power	Claw Low Power
A	1	1 in 1	1 [weakest]	1[weakest]
B	2	1 in 2	2	2
C	3	1 in 3	3	3
D	4	1 in 4	4	4
E	5	1 in 5	5	5
F	6	1 in 6	6	6
G	7	1 in 7	7	7
H	8	1 in 8	8	8
I	9	1 in 9	9	9
J	10	1 in 10	10	10
K	11	1 in 11	11	11
L	12	1 in 12	12	12
M	13	1 in 13	13	13
N	14	1 in 14	14	14
O	15	1 in 15	15	15
P	16	1 in 16	16	16
Q	17	1 in 17	17	17
R	18	1 in 18	18	18
S	19	1 in 19	19	19
T	20	1 in 20	20	20
U	21	1 in 21	21	21
V	22	1 in 22	22	22
W	23	1 in 23	23	23
X	24	1 in 24	24	24
Y	25	1 in 25	25	25
Z	26	1 in 26	26 [strongest]	26[strongest]

PRESS; "VOL+" TO STORE THE ADJUSTMENTS AND THEN POWER THE GAME OFF AND ON AFTER ANY MENU ADJUSTMENTS TO SAVE THEM!

Here is a prize setting _example_ in "AutoMode"™ when an Operator chooses the following examples based on the "Prize Code" table;

Example:

Coins [pulse] required per Credit: 4
Average Win ratio desired: 1 in 12
High Power setting: PWM level 18
Low Power setting: PWM level 6

The above "AutoMode"™ Screen example would be set using the keypad like this;

D L R F

By entering this Prize Code in "AutoMode" the game would set the four principal adjustments automatically by software. Be sure to press; "VOL +" to save your change! There is a small audio tone to confirm.

(3)、I/O Test
    1、Test All Inputs (showing all input terminal, black means valid, blank invalid)
    2、Test All Outputs (showing all output terminal, black means valid, blank invalid press S2 to change the current terminal ,press S4or S8 to change the terminal No.)
    3、Test Audio

(4)、Crane Gantry Testing

(5)、Burn In Testing

(6)、Restore Factory Settings (select ENABLE and press VOL+ to confirm, An audio switch effect will sound once).

**The "COMET"™ Crane Game and "AutoMode"™
is the exclusive Intellectual Property of Sting International**