

Crazy Crane User's Manual

1. Introduction

Crazy Crane is one of the best profitable crane machine in the world. Besides its elegant looking, also base on a special control theory and quality manufacturing. It is proud of fantastic income and wonderful feeling of play.

It is the key to make better profit that we must convince the player to spend more money on this machine. So, we must create the feeling that the player wins almost every play, although the toy just fall down remissly.

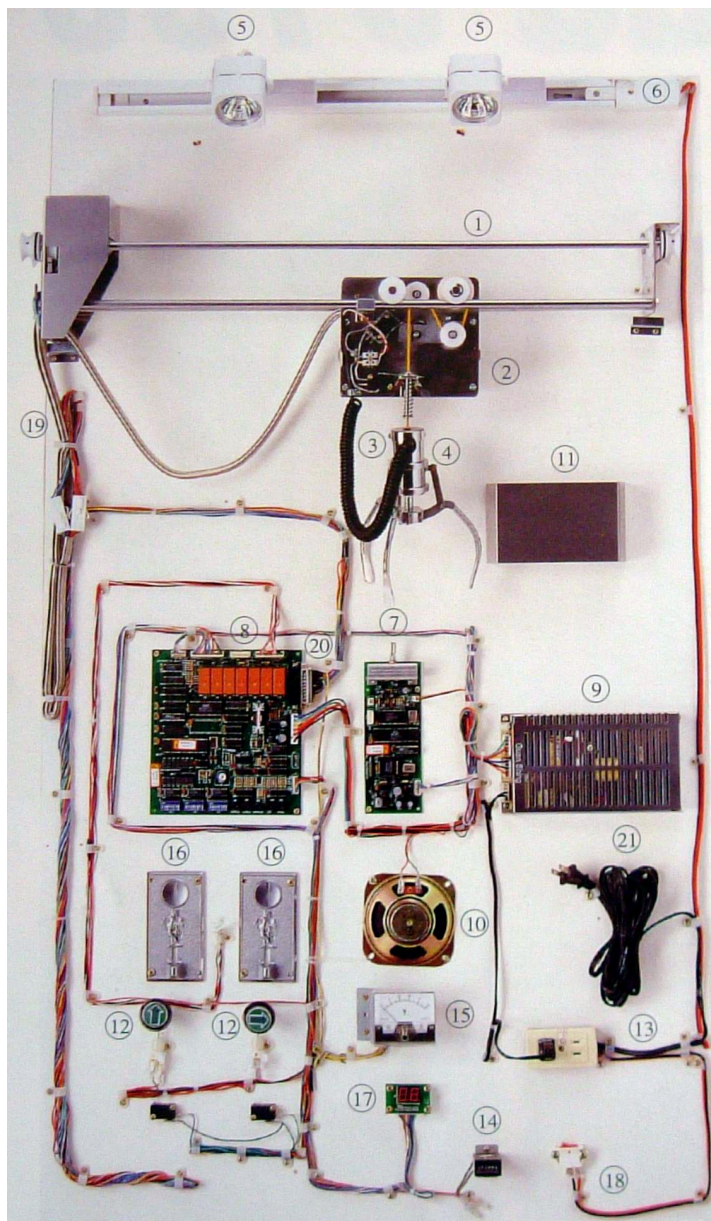
Crazy Crane also with following advantages:

1. Attractive and elegant art design with anti UV printing. Color will be lasting for many years.
2. Aluminum alloy frame with stainless surface powder coating. Cabinet is DIY oriented designed that can be assembled by one man with simple tools.
3. Heavy-duty crane rails are made by high precision machining carbonized steel. Smooth action of crane traveler is guaranteed.
4. Heavy-duty DC motor with adjustable speed control.
5. Reliable main control board with qualified components.
6. Cabinet and crane mechanism can be shipped by SKD form.



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2. System configuration



1	天 車	GANTRY
2	馬 達	MOTOR
3	取 物 夾	CLAW
4	線 圈	COIL
5	鹵 素 燈 座	HALOGEN BULB PLUG
6	電 軌 道	POWER TRACK
7	音 樂 卡	MUSIC CARD
8	主 機 板	MAIN BOARD
9	電 源 供 應 器	POWER SUPPLY
10	喇 叭	SPEAKER
11	馬 達 座 前 蓋	COVER FOR MOTOR FRAME
12	指 標 按 鈕	DIRECTION PUSH BUTTON SWITCH
13	A C 插 座	AC SOCKET
14	計 數 器	COUNTER
15	強 弱 度 錶	STRENGTH METER
16	投 幣 道	COIN SELECTOR
17	顯 示 卡	DISPLAY CARD
18	A C 開 關	AC SWITCH
19	天 車 連 接 線	CRANE CONNECT WIRE
20	D 型 連 接 線	D-TYPE CONNECT WIRE
21	A C 線	AC-WIRE



Notes:
Different model may have different parts
and/or different configuration.

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J2: JST-V6 (DC Power)

Outlet sensor board sensitivity setting:

1. (YL) +12V
2. (GN) +48V
3. (YL) GND(+48V)
4. (OR) +24V
5. (RD) +5V
6. (BK) GND(+5V, +12V, +24V)

J3: Reserved

J4: JST-VH (Sound card)

1. (PK) +12V
2. (WH) Music select
3. (GY) GND
4. (PL) +5V
5. (BL) Sound effect
6. (GN) Sound effect

J5: JST-VH (Coins and Meters)

1. (BK) GND
2. (BK) GND
3. (BK) GND
4. (WH) Coin 1 signal
5. (WH) Coin 2 signal
6. (OR) Prize out meter
7. N/C
8. (RD) +12V for coin and meter
9. (RD) +12V for coin and meter
10. (GY) Coin meter
11. (RD) +12V
12. (BR) Take button (Claw close)

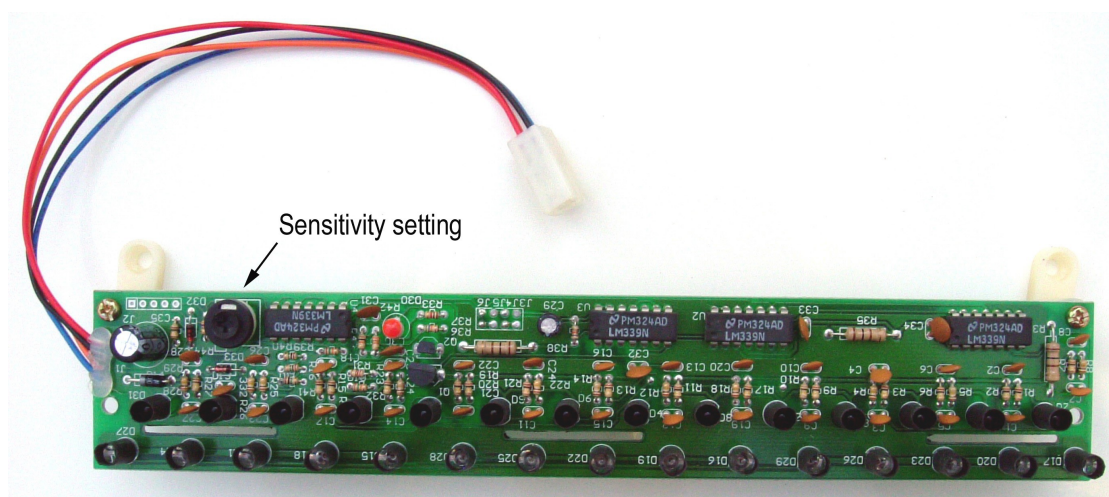
J6: JST-VH (Joystick)

1. (BL) Outlet sensor
2. (GN) Down
3. (YL) Left
4. (OR) Right
5. (RD) Backward
6. (BR) Forward
7. (BK) GND

J7: JST-VH (Display)

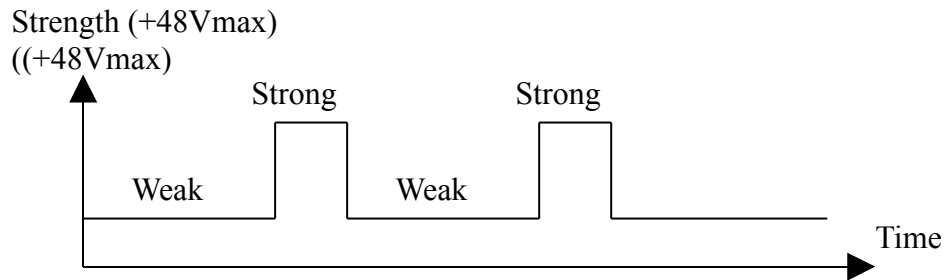
1. (OR) Outlet sensor enable
2. (BK) Claw down lamp
3. N/C
4. (YL) DSP-d.p.
5. (RD) +12V
6. (GN) DSP-g
7. (BL) DSP-f
8. (PL) DSP-e
9. (GY) DSP-d
10. (WH) DSP-c
11. (PK) DSP-b
12. (OR/BK) DSP-a
13. (BL/BK) DSP-com-01
14. (PL/BK) DSP-com-10

JM: Reserved



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4. Grabber (Claw) control theory



1. This system embeds a free-run timer to determine claw strength at each time point.
2. The claw will initialize as Strong stage when a game was start.
3. The claw will stay Strong until 1.5 second after the claw was closed.
4. Then the system will check the free-run timer to determine strength until claw back home position. If the player is lucky, he will win the prize with longer period of Strong claw. If not, the prize will fall down once the Strong period was expired.
5. The claw strength is controlled by PWM (Pulse width modulation) technology that will keep the claw close tightly during the Weak stage.
6. Therefore, the prize payout rate can be determined by the duty of Strong/Weak setting.

5. Program setting

SW1: Weak duty 1 ~ 255 second

SW1-1 ~ SW1-8 all off = 1 second

SW1-1 = 1 second

SW1-2 = 2 second

SW1-3 = 4 second

SW1-4 = 8 second

SW1-5 = 16 second

SW1-6 = 32 second

SW1-7 = 64 second

SW1-8 = 128 second

Example:

Set 100 second by turn ON SW1-7, SW1-6, SW1-2, SW1-1

(64+32+2+1+1 = 100)

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SW2-1 ~ SW2-4:

		SW2-1	SW2-2	SW2-3	SW2-4
Coin/Play	1 coin 1 play	off	off		
	1 coin 2 play	off	on		
	2 coin 1 play	on	off		
	5 coin 6 play	on	off		
Claw down Time	3 second			off	off
	4 second			off	on
	5 second			on	off
	6 second			on	off
		The playing time of one game is 10 second maximum.			

SW2-5 ~ SW2-8: Strong duty 1 ~ 16 second

SW2-5 ~ SW2-8 all off = 1 second

SW2-5 = 1 second

SW2-6 = 2 second

SW2-7 = 4 second

SW2-8 = 8 second

Example:

Set 5 second by turn ON SW2-7 (4+1 = 5)

SW3: Operating mode (* mark is default setting)

SW3-1: ON=Twin claws mode, *OFF=Single claw mode or left side of Twin claws mode.

SW3-2: *ON=Joystick mode, OFF=Button mode.

SW3-3: *ON=Outlet on Home position, OFF=Outlet on backside.

SW3-4: ON=claw force (strong/weak voltage) adjusting, *OFF=Normal operating.

SW3-5: *ON (reserved)

SW3-6,7: *ON, ON=Outlet sensor used (prize out meter enable)

ON, OFF=No outlet sensor, prize out meter disable.

SW3-8: Prize value concerned. (Always give prize within a set value of SW4)

SW4: Prize value setting

SW4-1 ~ SW4-8 all OFF = \$10

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SW4-1 = \$10

SW4-2 = \$20

SW4-3 = \$40

SW4-4 = \$80

SW4-5 = \$160

SW4-6 = \$320

SW4-7 = \$640

SW4-8 = \$1280

Example: Set prize value as \$200

Turn ON SW4-5, SW4-2, SW4-1 ($160+20+10+10 = 200$)

NOTE: All Setting switches are read at power-on moment only.

6. Claw strength and Motor speed adjustment

Claw strength adjusting:

1. Turn off the machine and set SW3-4 to ON position.
2. Turn on the machine, the machine will enter Claw strength adjustment mode.
3. Move Forward or Backward of joystick to adjust STRONG voltage. Voltage can be monitored by voltage meter.

KEY POINT: Set STRONG voltage to the value that makes claw just can pick up the prize.

4. Move Left or Right of joystick to adjust WEAK voltage. Voltage can be monitored by voltage meter.

KEY POINT: Set WEAK voltage to a value that makes claw release prize always, but claw should keep on close position all the time.

5. When the setting was finished, press Drop button to exit adjustment mode.
6. Turn off the machine and set SW3-4 to OFF position, then turn on the machine for normal operation.

Motor speed adjusting:

VR1: Forward/Backward speed.

VR2: Up/Down speed.

VR3: Left/Right speed.

*Default setting is on the maximum speed (Turn to right end)

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7. Trouble shooting

A. Error code = "11" blinking: Crane traveler did not back home position.

1. One of three motors was out of order.
2. +48V fuse burned out. (locate on power supply unit.

Check point:

1. Turn off power and move crane traveler to the center of cabinet.
2. Push the UP L.S. (make it as ON), then turn the power.
3. If crane traveler move to home position automatically. Then we know the Up/Down motor is out of order.
4. If crane traveler did not move on one direction, then we know the motor for that direction is out of order.
5. If the fuse burns out too frequently, please change the fuse with a bigger one. (maximum 8A)

B. Error code = "44" blinking: Outlet sensor failure.

1. Toy stuck on the outlet.
2. Sensor board failure.
3. Sensor enable signal (main board J7-1) short. The signal must in tri-state when it is enabled.

Check/Test method:

1. Set SW3-7 and SW3-8 at ON position, then restart the machine.
2. The LED on sensor board must lit.
3. Test the sensor board by a toy. The LED comes off when a toy pass through.

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8. Packing information

Machine dimension: 81cm(Width) x 72cm(Depth) x 193cm(Height)

Net Weight: 106kg, Gross Weight: 115kg (Carton pack)

40 feet container = 42pcs of complete machines.

9. Claw size option

