

Holland Computers, Inc.

Crane Kit Manual
Part Number RA-CRANE-KIT

SECTION 1 - Introduction

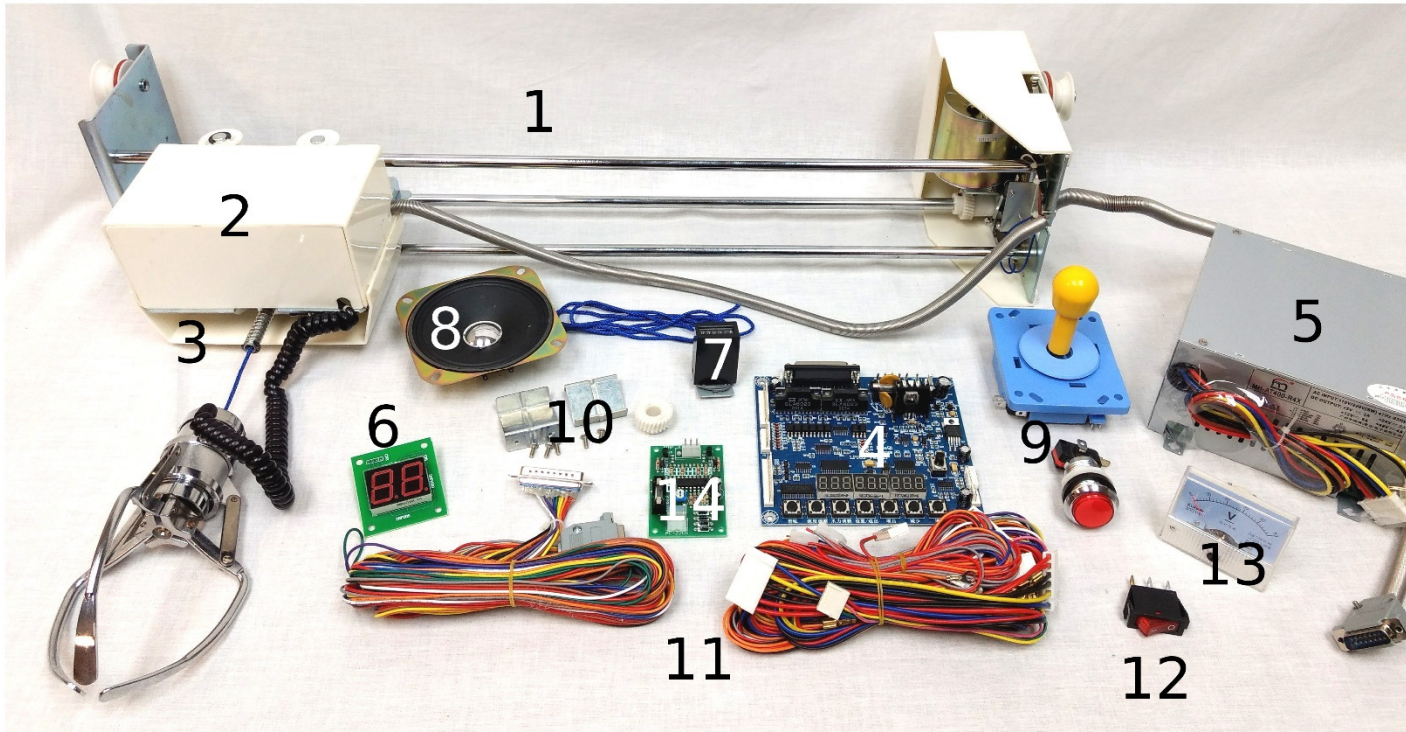
Description

This kit has been manufactured as a replacement gantry and electronics for existing machines using a 28" wide gantry or for new installations in your own cabinet.

Warnings and disclaimers

- This kit is designed for professional installation only.
- EXPOSED HIGH VOLTAGE EQUIPMENT – USE EXTREME CARE – NEVER TOUCH ANY COMPONENT WITHOUT UNPLUGGING THE POWER CORD. FAILURE TO FOLLOW THIS WARNING MAY RESULT IN INJURY OR DEATH.
- Due to varied manufacturing methods and multiple suppliers, some parts may not look as pictured in this manual. Wiring colors on diagrams are not provided because each manufacturer may use different colors. Please refer to the pin out section to trace connections.

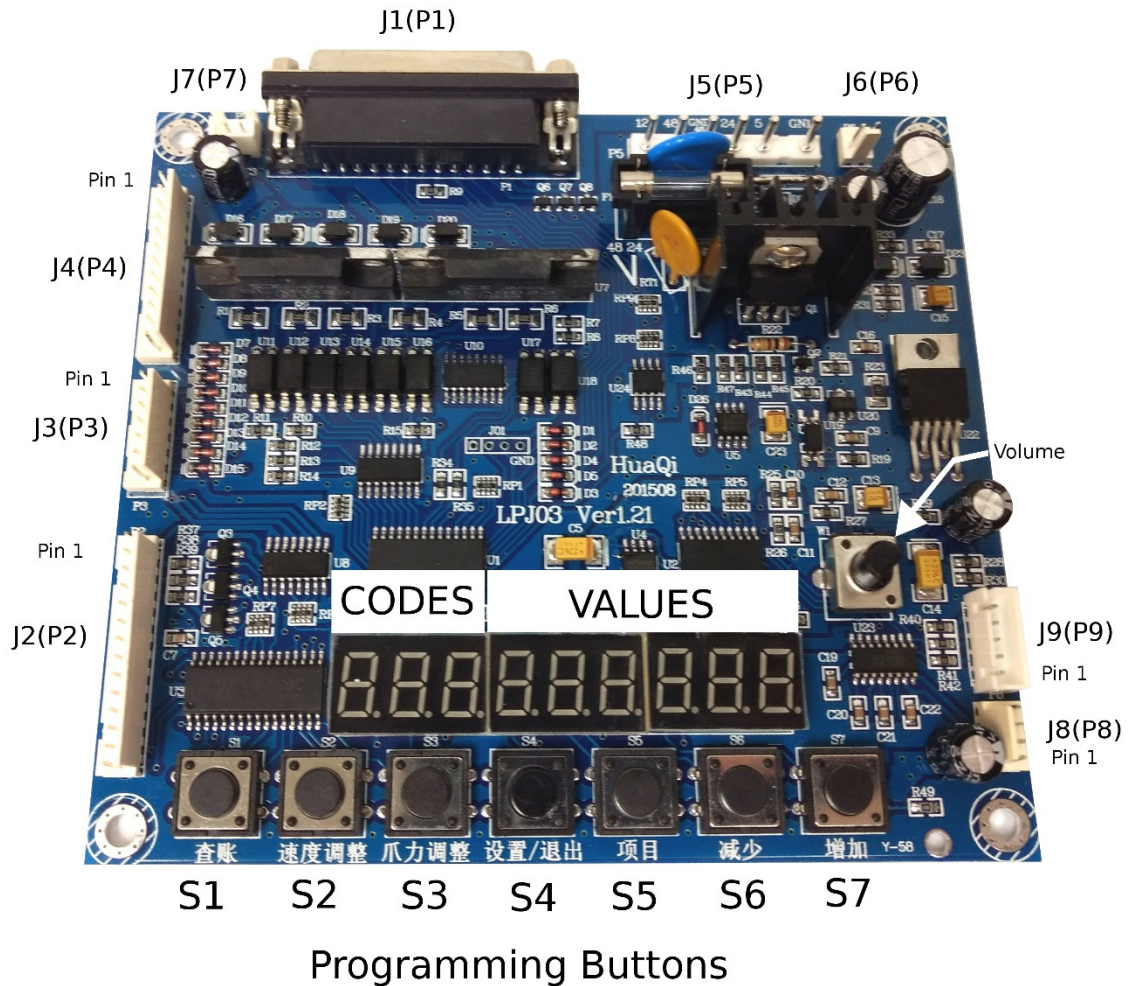
Kit Contents



- 1) Gantry assembly
- 2) Gantry crane lower cover
- 3) Gantry crane front cover
- 4) Main board
- 5) Power supply
- 6) Led display
- 7) Coin counter (Optional use)
- 8) Speaker
- 9) Button and switch assembly Joystick
- 10) Hardware kit with spare gear, screws and brackets
- 11) Wiring harnesses
- 12) Power switch (Optional use)
- 13) Volt meter (Optional use)
- 14) EF - LED light controller (Optional Use) (LED light strips sold separately)

SECTION 2 – Main Board

Image



Main Board Buttons

S1 – Accounting (Audit) Menu

S2 - Speed Adjustment Menu

S3 - Claw Force Adjustment Menu

S4 - Menu Advance Button (Set/Exit)

- Press once to go to menu
- Each press will change to next menu item (See Section II for Menu Items and Settings)
- Press for 2 seconds to save and exit menu system

S5 - Menu Back Button (Project)

- Each press will go back on menu item
- Press for 2 seconds to reset default settings

S6 - Menu item value decrease -

S7 - Menu item value increase +

Menu items and settings

• Introduction to the Menu System

- Fault Codes are indicated by flashing the code on first 2 digits of the programming display.
- Menu Items and Sub Menu items are referred to by a code number. The code number is indicated by the first 2 digits of the programming display.
- Values are displayed on the last 6 digits of the programming display.
- It is highly recommended to have a speaker connected during any programming as instructions and prompts are all given by voice.

• S1 – Accounting Menu (Each press will cycle the codes)

- Press Button S1 to enter the accounting menu, this will display Code 61. Subsequent presses of S1 will cycle through the following codes.
 - Code 61 value = Number of coins deposited
 - Code 62 value = Number of prizes won
- Values cannot be changed, only reset. The following is the reset procedure.
 - Power off
 - Press and hold S1 and S5 While Powering On
 - Press S4 to confirm

• S2 - Speed Control Menu (Each press will cycle the codes)

- 41 – Forward/Aft motor speed
- 42 – Left/Right Motor Speed
- 43 – Up/Down Motor Speed

• S3 – Claw Force Menu (Each press will cycle the codes)

- 51 – Weak Grip wattage (Default = 40)
- 52 – Strong Grip wattage (Default = 80)

• S4 - Basic Settings (Each press will cycle the codes)

- Simply navigate using the S4 button to cycle through the Menu Items (Codes) **IMPORTANT** – You must Press and hold S4 for 3 seconds to save your settings
- Codes – Press S4 to enter hold S4 to Save and Exit
 - Code 1 value = 1 coin equal x credits – Default x=1
 - Code 2 value = x credits = 1 play – Default x=1
 - Code 3 value = crane activation countdown timer – Default = 15 seconds
 - Code 4 value = Demonstration Mode timer – Default = 10
 - Values 0 to 30 Minutes
 - This is the amount of time before unit goes into demo mode. 0 Turns Demo Mode off.
 - Code 5 value = Game Sound Settings
 - 0 = Turn off all sound
 - 1 = Turn off only demo sound
 - 2 = Turn off game background sound
 - 3 = All sound on
 - Code 6 value = Control Mode (See **Controlling Win Rate** on the next page for detailed instructions)
 - 0 = Strong Grip with Random Control

- 1 = Weak Grip Control
- 2 = Strong Grip Control
- 3 = Always Win (Requires Optional Prize Sensor)
- Code 7 value = Control Number Base (5-125, Default = 5) (See “**Controlling Win Rate**” below for detailed instructions)
- Code 8 value = Control Times (1-15 Default = 1) (See “**Controlling Win Rate**” below for detailed instructions)
- Code 9 value = Random order in control mode (0-100, Default = 50) (See “**Controlling Win Rate**” below for detailed instructions)
- Code 10 value = Grip Control Mode
 - 0 = Control after overhead crane is back to top
 - 1 = Control after grip delay
- Delay time of Grip Control Mode 1
- Position of Prize door
 - 0 = Front left corner
 - 1 = Front right corner
 - 2 = Rear left corner
 - 3 = Rear right corner
- Crane Parking Location
 - 0 = Front left corner
 - 1 = Front right corner
 - 2 = Rear left corner
 - 3 = Rear right corner

- **Controlling Win Rate**

- In Control Mode 0 (Code 6) the Win Rate is Random
- In Control Mode 1 (Code 6) the following formula applies

	Controlled Times (Code8)		Number of Weak Grip Control
Win Rate =	----- -----	=	----- -----
	Control Base (Code7)		Number of Games

Example: If Code 8 = 1 and Code 7 = 5, then 1 in 5 games will have weak grip and 4 of 5 games will have strong grip.

- In Control Mode 2 (Code 6) the following formula applies

	Controlled Times (Code8)		Number of Strong Grip Control
Win Rate =	----- -----	=	----- -----
	Control Base (Code7)		Number of Games

Example: If Code 8 = 1 and Code 7 = 5, then 1 in 5 games will have strong grip and 4 of 5 games will have weak grip.

- In Control Mode 3 (Code 6) the following formula applies

	Controlled Times (Code8)		Number of Wins
Win Rate =	----- ----	=	-----
	Control Base (Code7)		Number of Games

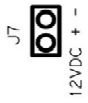
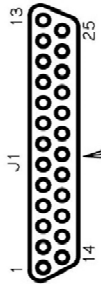
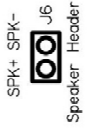
Example: If Code 8 = 1 and Code 7 = 5, then 1 in 5 games will win. Win counter is reset when a prize is won. This mode requires a prize sensor to detect a win, otherwise all plays win.

- **S5 – Coin Device Parameters – Hold while powering on to enter this mode**
 - The first number of the display will flash a 1 or 2 indicating which coin box is being programmed. Switch by pressing S5.
 - The system will automatically detect the coin box parameters.
 - Hold S5 for 3 seconds to reset to factory settings
 - Hold S4 to Save and exit

Section 3 - Troubleshooting

Error Code	Description	Solution
10	System failure	Replace Board
11	Sensor polarity error	Check sensor wiring
12	Coin 1 polarity error	Change coin 1 switch to "NC"
13	Coin 2 polarity error	Change coin 2 switch to "NC"
14	Basic parameters are set wrong	Check basic settings (S4)
15	Crane speed parameters are set wrong	Check speed settings (S2)
16	Grip Parameter is wrong	Check basic settings (S4) Code 6
17	Account parameters are wrong	Check Accounting (S1)
18	Coin Device Parameters are wrong	Check Coin Device Parameters (S5)
19	Control Function Node error	Replace Board
20	System Failure – unknown	Press S4 to continue. Replace board if error continues
21	Limit switch failure	Check all limit switches and wiring
22	Up/Down failure	<ul style="list-style-type: none"> • Check Up/Down limit switches. • Check wiring. • Verify that limit switches are not reversed. • Check if motor has reached lower limit without slack (without slack is normal) on the claw pull line.
23	Left /Right failure	<ul style="list-style-type: none"> • Check Left/Right limit switches. • Check wiring. • Verify that limit switches are not reversed.
24	Left/Right failure	<ul style="list-style-type: none"> • Check Left/Right limit switches. • Verify that limit switches are set to normally open.
25	Forward /Aft failure	<ul style="list-style-type: none"> • Check Fore/Aft limit switches • Verify that limit switches are set to normally open.
26	Forward /Aft failure	<ul style="list-style-type: none"> • Check Fore/Aft limit switches. • Check wiring. • Verify that limit switches are set to normally open.
27	Kernel Error	Replace Board
28	Overload	<ul style="list-style-type: none"> • Check motors and claw coil for short circuit. • Check Grounds
29	Claw failure	Check Claw mechanical and electrical
31	Prize door blocked	<ul style="list-style-type: none"> • Check Prize Door for obstruction • Check Prize sensor
32	Coin 1 fault	<ul style="list-style-type: none"> • Check Coin 1
33	Coin 2 fault	<ul style="list-style-type: none"> • Check Coin 2
34	Tilt Alarm	<ul style="list-style-type: none"> • Check Tilt switch • Level machine
35	Coin fault	<ul style="list-style-type: none"> • Check for tampering of coin devices
51-69	System Failure	Replace Board

Section 4 Connectors and Wiring

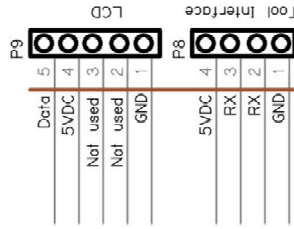
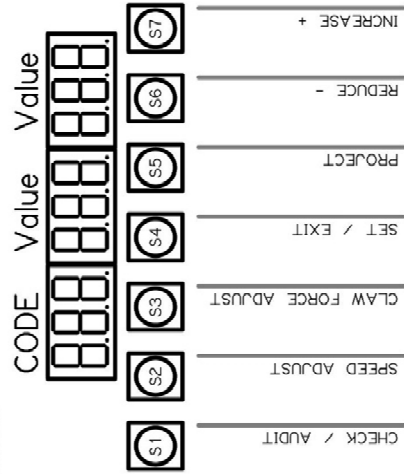


P4	1	GND
	2	GND
	3	Coin - (GND)
	4	Coin Device 1 Input
	5	Coin Device 2 Input
	6	Giff Code Table
	7	Not used
	8	12VDC
	9	12VDC
	10	Coin Code Table
	11	12VDC
	12	Shake Switch
	1	Extract- Prize Out Sensor
	2	Activate Claw
	3	Left
	4	Right
	5	Back (Aft)
	6	Forward
	7	GND

J1 PINS

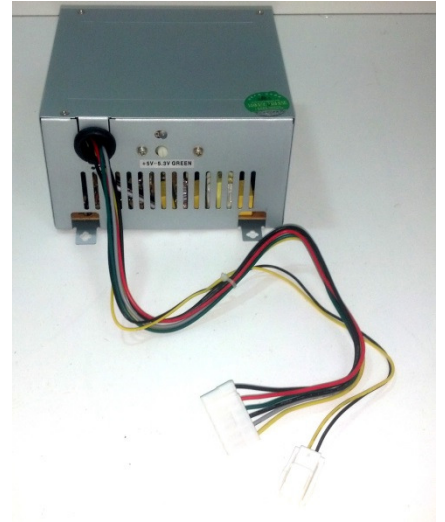
	1	Fore/Aft Motor -
	2	Left/Right Motor -
	3	Up/Down Motor -
	4	Claw +
	5	Aft Stop Switch
	6	Fore Stop Switch
	7	Right Stop Switch
	8	Left Stop Switch
	9	Up Stop Switch
	10	Down Stop Switch
	11	Crane Blue Light (Not used in standard harness)
	12	Crane Green Light (Not used in standard harness)
	13	Crane Red Light (Not used in standard harness)
	14	Fore/Aft Motor +
	15	Left/Right Motor +
	16	Up/Down Motor +
	17	Claw -
	18	GND
	19	GND
	20	GND
	21	GND
	22	GND
	23	Not used
	24	Not used
	25	Not used

P2	1	Button Light (Not used in standard harness)
	2	Red Light (Not used in standard harness)
	3	Green Light (Not used in standard harness)
	4	Blue Light (Not used in standard harness)
	5	12VDC
	6	LED Segment G
	7	LED Segment F
	8	LED Segment E
	9	LED Segment D
	10	LED Segment C
	11	LED Segment B
	12	LED Segment A
	13	LED Digit 2
	14	LED Digit 1



Section 5 - Power Supply

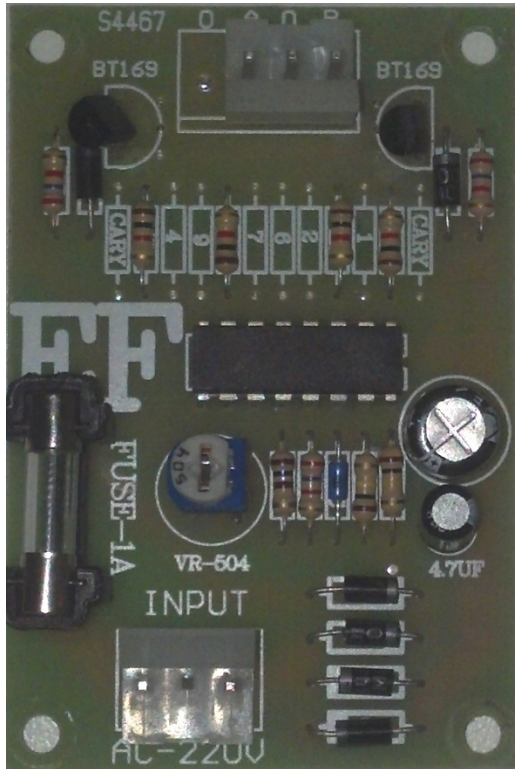
- The 5 wire pigtail plugs into J5 of the Main board
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Section 6 – Included Optional equipment

EF Light Control Board

- Image



- Input AC 110v or 220v
 - Output DC 12V
 - **THIS UNIT DOES NOT CONNECT TO THE MAIN BOARD. ANY ATTEMPT TO DO SO WILL VOID ANY AND ALL WARRANTIES FOR THIS KIT.**
 - LED Light strips not included
- **Volt Meter** is used to check output voltage to assist in setting proper claw strength. Can be permanently mounted or simply used during setup then removed.
 - **Coin Counter** is provided to offer a way to keep a running total of coins. Onboard counter can be reset, losing this data. Exclusion of this unit will not affect operation.
 - **Power Switch – UNPLUG FROM AC POWER SUPPLY BEFORE INSTALLING THE POWER SWITCH.**
This switch is place between AC power and the Power supply and should only be installed by a professional electrician

Section 7 – Optional Equipment – Purchase Separately - Please visit our website or call to order.

RA-CRANE-PRIZE-SENSOR



Crane Machine Prize Sensor for RA-CRANE-KIT

Specifications:

Length: 9.625 inches

Height: 1.125 inches

Width: 1.75 inches

RA-COIN-METER-2



KESSLER ELLIS 6-DIGIT METER/COUNTER

This electric, non-resettable counter has 6 digits and counts to 999,999 then repeats. It can count up to 600 per minute. It comes with a mounting bracket clip and 10" wire leads.

Voltage: 12V DC

Max Speed: 18 coins per second.

UPC: 738435731793

Distributed By:

Holland Computers, Inc.

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Elyria, Ohio 44035

440-365-9906

www.hollandcomputers.com

Support:

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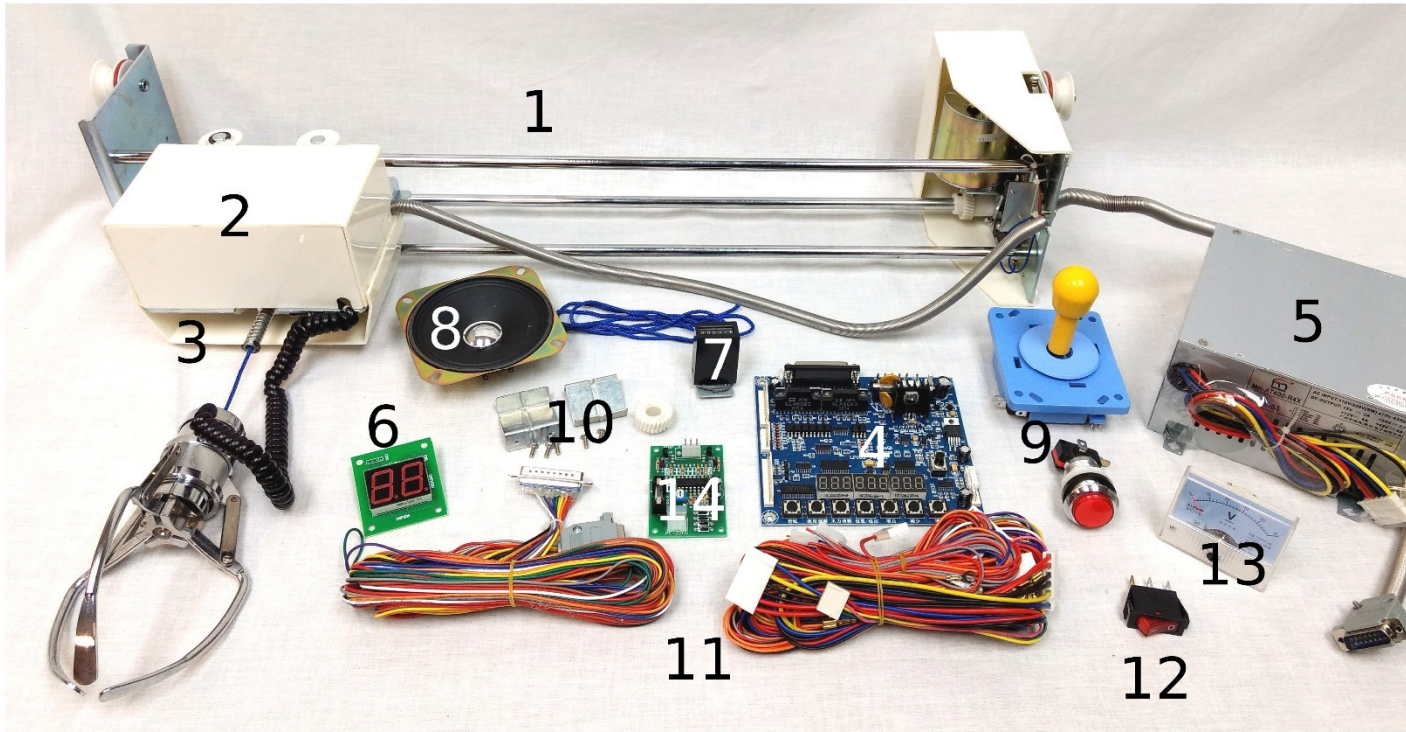
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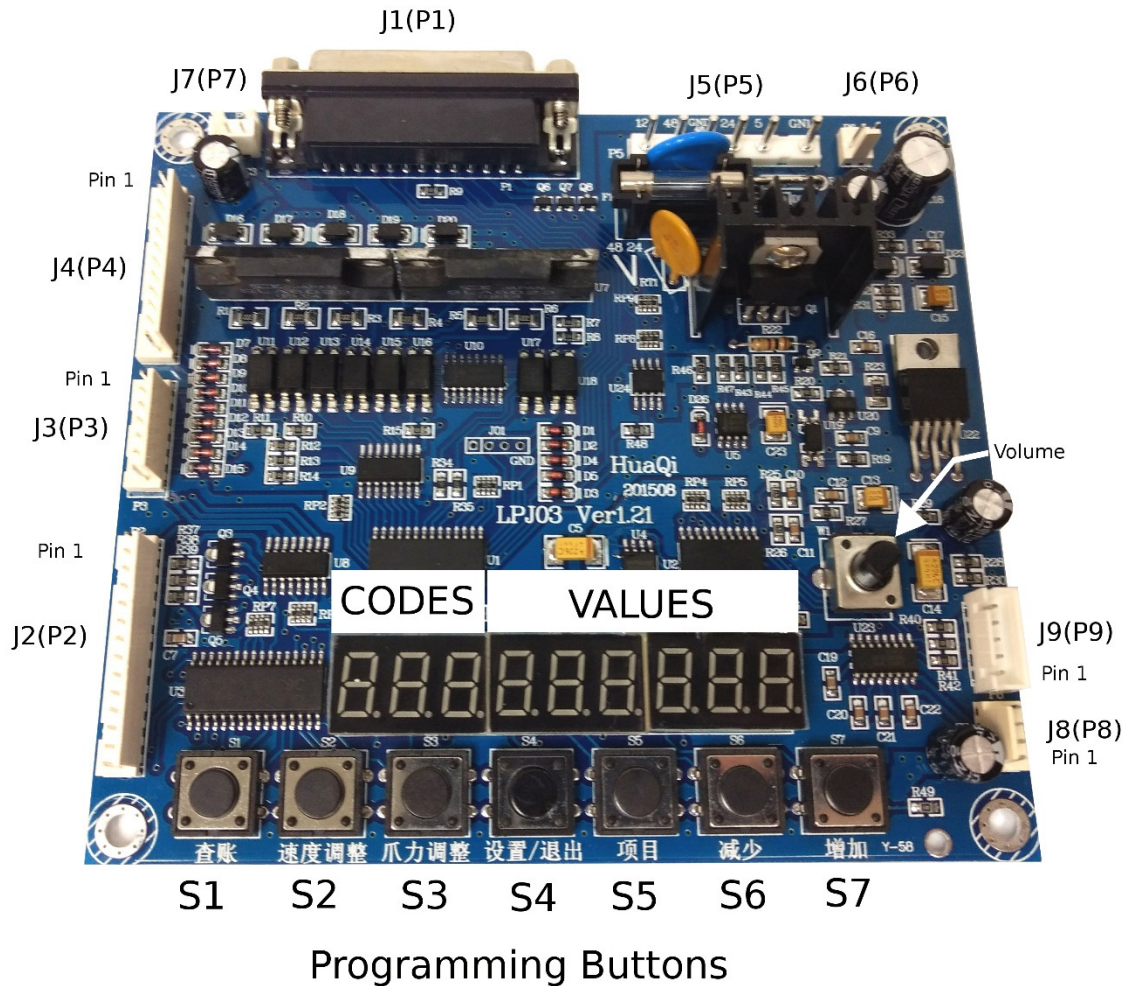
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 - Power off
 - Press and hold S1 and S5 While Powering On
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- 41 – Forward/Aft motor speed
- 42 – Left/Right Motor Speed
- 43 – Up/Down Motor Speed

- **S3 – Claw Force Menu (Each press will cycle the codes)**

- 51 – Weak Grip wattage (Default = 40)
- 52 – Strong Grip wattage (Default = 80)

- **S4 - Basic Settings (Each press will cycle the codes)**

- Simply navigate using the S4 button to cycle through the Menu Items (Codes) **IMPORTANT** – **You must Press and hold S4 for 3 seconds to save your settings**
- **Codes – Press S4 to enter hold S4 to Save and Exit**
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 - 0 = Control after overhead crane is back to top
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- Crane Parking Location
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- **Controlling Win Rate**

- In Control Mode 0 (Code 6) the Win Rate is Random
- In Control Mode 1 (Code 6) the following formula applies

	Controlled Times (Code8)		Number of Weak Grip Control
Win Rate =	----- -----	=	----- -----
	Control Base (Code7)		Number of Games

Example: If Code 8 = 1 and Code 7 = 5, then 1 in 5 games will have weak grip and 4 of 5 games will have strong grip.

- In Control Mode 2 (Code 6) the following formula applies

	Controlled Times (Code8)		Number of Strong Grip Control
Win Rate =	----- -----	=	----- -----
	Control Base (Code7)		Number of Games

Example: If Code 8 = 1 and Code 7 = 5, then 1 in 5 games will have strong grip and 4 of 5 games will have weak grip.

- In Control Mode 3 (Code 6) the following formula applies

	Controlled Times (Code8)		Number of Wins
Win Rate =	----- ----	=	-----
	Control Base (Code7)		Number of Games

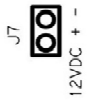
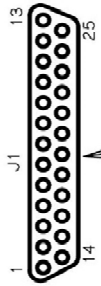
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- **S5 – Coin Device Parameters – Hold while powering on to enter this mode**
 - The first number of the display will flash a 1 or 2 indicating which coin box is being programmed. Switch by pressing S5.
 - The system will automatically detect the coin box parameters.
 - Hold S5 for 3 seconds to reset to factory settings
 - Hold S4 to Save and exit

Section 3 - Troubleshooting

Error Code	Description	Solution
10	System failure	Replace Board
11	Sensor polarity error	Check sensor wiring
12	Coin 1 polarity error	Change coin 1 switch to "NC"
13	Coin 2 polarity error	Change coin 2 switch to "NC"
14	Basic parameters are set wrong	Check basic settings (S4)
15	Crane speed parameters are set wrong	Check speed settings (S2)
16	Grip Parameter is wrong	Check basic settings (S4) Code 6
17	Account parameters are wrong	Check Accounting (S1)
18	Coin Device Parameters are wrong	Check Coin Device Parameters (S5)
19	Control Function Node error	Replace Board
20	System Failure – unknown	Press S4 to continue. Replace board if error continues
21	Limit switch failure	Check all limit switches and wiring
22	Up/Down failure	<ul style="list-style-type: none"> • Check Up/Down limit switches. • Check wiring. • Verify that limit switches are not reversed. • Check if motor has reached lower limit without slack (without slack is normal) on the claw pull line.
23	Left /Right failure	<ul style="list-style-type: none"> • Check Left/Right limit switches. • Check wiring. • Verify that limit switches are not reversed.
24	Left/Right failure	<ul style="list-style-type: none"> • Check Left/Right limit switches. • Verify that limit switches are set to normally open.
25	Forward /Aft failure	<ul style="list-style-type: none"> • Check Fore/Aft limit switches • Verify that limit switches are set to normally open.
26	Forward /Aft failure	<ul style="list-style-type: none"> • Check Fore/Aft limit switches. • Check wiring. • Verify that limit switches are set to normally open.
27	Kernel Error	Replace Board
28	Overload	<ul style="list-style-type: none"> • Check motors and claw coil for short circuit. • Check Grounds
29	Claw failure	Check Claw mechanical and electrical
31	Prize door blocked	<ul style="list-style-type: none"> • Check Prize Door for obstruction • Check Prize sensor
32	Coin 1 fault	<ul style="list-style-type: none"> • Check Coin 1
33	Coin 2 fault	<ul style="list-style-type: none"> • Check Coin 2
34	Tilt Alarm	<ul style="list-style-type: none"> • Check Tilt switch • Level machine
35	Coin fault	<ul style="list-style-type: none"> • Check for tampering of coin devices
51-69	System Failure	Replace Board

Section 4 Connectors and Wiring

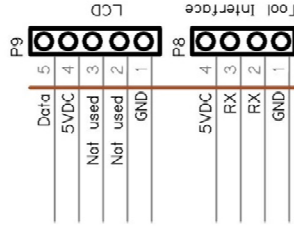
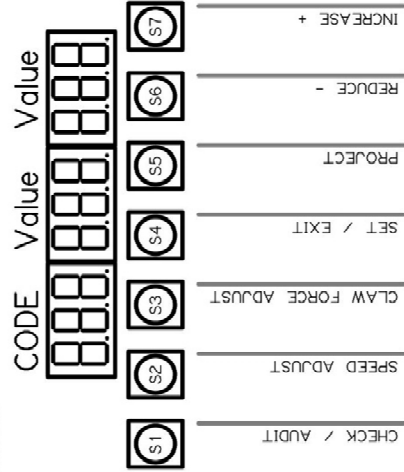


P4	1	GND
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	3	Coin - (GND)
	4	Coin Device 1 Input
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	6	Giff Code Table
	7	Not used
	8	12VDC
	9	12VDC
	10	Coin Code Table
	11	12VDC
	12	Shake Switch
	1	Extract- Prize Out Sensor
	2	Activate Claw
	3	Left
	4	Right
	5	Back (Aft)
	6	Forward
	7	GND

J1 PINS

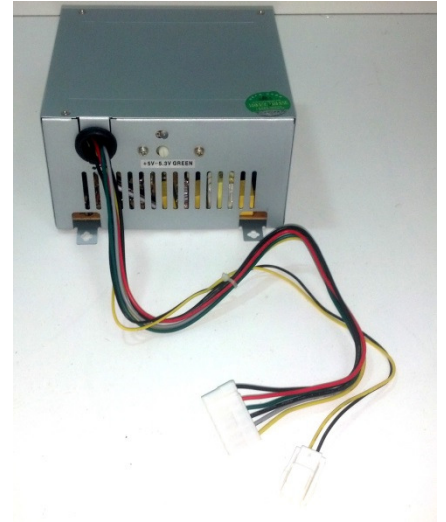
1	Fore/Aft Motor -
2	Left/Right Motor -
3	Up/Down Motor -
4	Claw +
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6	Fore Stop Switch
7	Right Stop Switch
8	Left Stop Switch
9	Up Stop Switch
10	Down Stop Switch
11	Crane Blue Light (Not used in standard harness)
12	Crane Green Light (Not used in standard harness)
13	Crane Red Light (Not used in standard harness)
14	Fore/Aft Motor +
15	Left/Right Motor +
16	Up/Down Motor +
17	Claw -
18	GND
19	GND
20	GND
21	GND
22	GND
23	Not used
24	Not used
25	Not used

P2	1	Button Light (Not used in standard harness)
	2	Red Light (Not used in standard harness)
	3	Green Light (Not used in standard harness)
	4	Blue Light (Not used in standard harness)
	5	12VDC
	6	LED Segment G
	7	LED Segment F
	8	LED Segment E
	9	LED Segment D
	10	LED Segment C
	11	LED Segment B
	12	LED Segment A
	13	LED Digit 2
	14	LED Digit 1



Section 5 - Power Supply

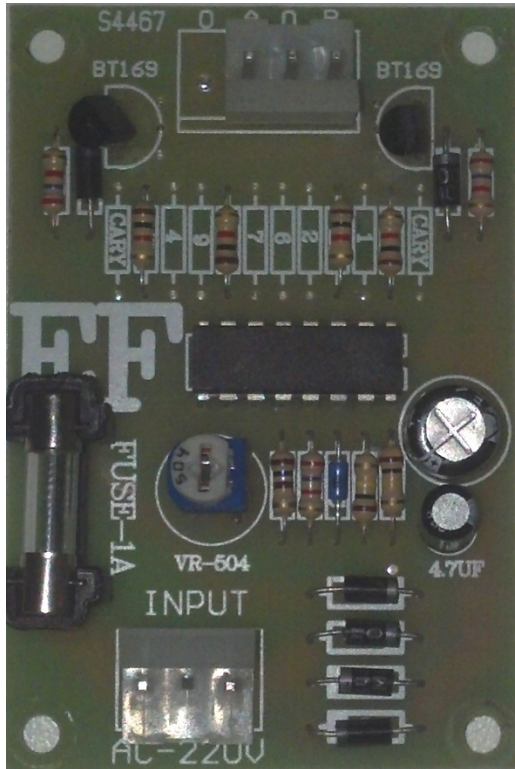
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Section 6 – Included Optional equipment

EF Light Control Board

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 - Output DC 12V
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This switch is place between AC power and the Power supply and should only be installed by a professional electrician

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RA-CRANE-PRIZE-SENSOR



Crane Machine Prize Sensor for RA-CRANE-KIT

Specifications:

Length: 9.625 inches

Height: 1.125 inches

Width: 1.75 inches

RA-COIN-METER-2



KESSLER ELLIS 6-DIGIT METER/COUNTER

This electric, non-resettable counter has 6 digits and counts to 999,999 then repeats. It can count up to 600 per minute. It comes with a mounting bracket clip and 10" wire leads.

Voltage: 12V DC

Max Speed: 18 coins per second.

UPC: 738435731793

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