# OWNERS AND SERVICE MANUAL

Cromptons Leisure International Limited
All Rights Reserved
Cromptons Leisure International Limited
4 Wilton Road, Haine Industrial Estate, Ramsgate, Kent CT12 5HG. UK
tel: +44 1843 593335 fax: +44 1843 588043
website: www.cromptons.com
e-mail: info@cromptons.com (For Sales)
service@cromptons.com (For all service enquiries)
spares@cromptons.com ( For spares enquiries)

# TABLE OF CONTENTS

5-27-03

# INTRODUCTION

## OVERVIEW

Thank you for your purchase of the new X-FACTOR™ crane from Cromptons. You will be very satisfied with your new crane because of all the great features we have packed into it.

We have spent a great deal of time designing new features into the unit that not only increase revenues but make servicing far easier than on previous cranes.

## GREAT FEATURES

REVOLUTIONARY CLAW DESIGN - We have designed the claw assembly for incredibly linear operation. The grab strength at full claw tip extension is very similar to that when fully retracted. We use a triple solenoid system with great reliability and durability. This system will also allow the claw to function in the unlikely event that one of the solenoids were to fail. This is possible because all 3 solenoids are connected together rather than working independently. This method also allows the claw to work much more consistently. The solenoids also have a unique design that improves linear functionality. The built in heat sinks keep the temperature of the solenoids more consistent which in turn also results in a more consistent grab. The claws are ideally shaped for the best balance of grab and slip. The shape has been fine tuned for auto-percentaging of the machine & requires no adjustment.

DOOR DESIGN - The front door of the game opens easily and simply by turning the lock handle just 90 degrees. The control panels are mounted to the door via "intelligent" wiring, keeping them out of the way during service. The door is counterbalanced by nitrogen shock absorbers to raise the door fully out of the way. This works much better that doors that open outward in locations where space is an issue. Further we lift the door rather than use sliding doors because an unimpeded view of the playfield is much more desirable, and sliding doors offer much less security than the lift up design incorporated.

ELECTRONICS HOUSING - The unique housing for the main electronics makes it extremely fast to change the Main P.C. Board. Just pull on the spring loaded retaining pin and pull the Electronics housing from the game. To put new electronics in the game, just push the housing in until you rear the retaining pin snap into place. Removal or installation takes just seconds!

INSTANT REPLAY AND FREE GAME FEATURES - These unique features add to the play value of the machine. The instant replay will allow the player to re-deploy the claw in the exact same position as the last drop provided there is a credit available in the machine. A great feature for the "just missed it" attempt. The "Free Game" option adds a random opportunity for the player affording additional excitement.

CABINET CONSTRUCTION - The materials and construction methods used in the manufacture of this cabinet make it the strongest and most durable in the industry. Thick powder coated steel outer cabinet construction and internal bracing make the cabinet extremely stiff and able to withstand repeated moves from location to location.

DISPLAY CABINET - the unique display cabinet allows for additional product display without encroaching into the play area. This design also allows us to keep the cabinet width narrower. This is advantageous since the display cabinet can be slid into the main cabinet if necessary to go through narrow doorways - something the competition does not offer. The shelving units are fully adjustable and there are attractive stainless steel retaining rods to hold the prizes in place. The display cabinet is fully mirrored rear and sides to add a touch of class.

GRAPHICS PACKAGE - The cabinet colors and graphics have been carefully chosen to create an eye catching, yet classy expensive looking design.

# INTRODUCTION

REMOTE PROGRAMMING UNIT - This crane uses a remote programming unit that enables the customer to comfortably program the unit without having to bend into awkward positions or read cryptic displays. The small hand-held unit uses a remote connecting cable and utilizes plain text graphics that are easy and straight forward to read and understand. Navigating through the menus is simple and quick. All of the programming options are updated in real time so you can test your changes as you play the machine. There is no need to go in and out of programming mode to see if your changes worked correctly. This is a great time saving feature that makes it easy for the machine servicer to do a better and more accurate set up job.

EASY SET-UP - When programming, the game has been designed to work as efficiently and as broadly as possible to minimize adjustments in the field. In fact, under most circumstances the game will dispense small and large prizes with equal accuracy using the same settings at the same time.  For the first time you can confidently load anything you want mixed together at the same time onto the playfield.

NOTE: We strongly recommend using the auto-percentaging feature whenever possible. This will yield the most accurate payout percentages and the most consistent payouts which will keep your customers happy and generate additional repeat play. (It is not advisable to mix different sized prizes together when operating in manual mode).

LIGHTING - The playfield and top sign lighting is achieved through the use of high output, long life florescent lamps. The lamps used have very long life (Typical in excess of 20,000 hours) and are very reliable, quick and easy to replace.

INDEPENDENT DOOR ACCESS - The crane allows the Front playfield door, the electronics access / storage door, and the coin doors to all be accessed separately. This means you can have different people service different areas of the game without having access to any other area prohibited.

FULLY INDEPENDENT OPERATION - The crane has been designed so that both sides operate totally independently. All electronics, power supplies and mechanicals are separated into 2 distinct sides. This means one side of the crane could fail, yet the other side will continue to operate.

# INSTALLATION

## SAFETY PRECAUTIONS

IMPORTANT: FAILURE TO FOLLOW THESE DI-RECTIONS CLOSELY COULD CAUSE SERIOUS DAMAGE TO YOUR CRANE.

WARNING: WHEN INSTALLING THIS CRANE, A 13 AMP GROUNDED SOCKET MUST BE USED. FAILURE TO DO SO COULD RESULT IN SERI-OUS INJURY TO YOURSELF OR OTHERS. FAIL-URE TO USE A GROUNDED SOCKET COULD ALSO CAUSE IMPROPER CRANE OPERATION, OR DAMAGE TO THE ELECTRONICS.

USING AN IMPROPERLY GROUNDED GAME COULD VOID YOUR WARRANTY.

## CRANE SET-UP

BEFORE PLUGGING THE GAME IN, OR TURNING IT ON, BE SURE THE GAME HAS BEEN SET TO THE PROPER VOLTAGE. YOUR CRANE SHOULD COME PRE-SET FROM THE FACTORY AT THE CORRECT VOLTAGE, HOWEVER IT IS A GOOD IDEA TO CHECK THE A.C. SUPPLY VOLT-AGE BEFORE PLUGGING THE GAME IN.

## ASSEMBLY INSTRUCTIONS

1. Carefully remove the crane from its packaging.

2. Using the supplied keys, unlock the front door of the cabinet.

3. Cut all tie wraps holding the wagon assembly and crane in place.

4. Unwrap the glass shelving for the display unit.

5. Install the shelving by removing the (2) plastic mirror strips on either side of display unit. The mirror strips are held in place with Velcro.

6. Insert the shelves into the desired slots in the sides of the display unit.

7. Reinstall the mirror strips onto the machine.

8. Install the stainless steel prize retention rods above the shelving. NOTE: The rods should be installed 2 holes up from the shelf itself.

9. Plug the game in.

   The machine is now ready for start up

## START UP

Turn the power on to the machine and note the operation.

When powered up, the claws should drop into the prize chute and retract.

You should notice the claws snapping shut during the initial power up.

You should be able to hear game sounds at this time.

## PROGRAMMING

Please see the following section of the manual for detailed instructions on how to program your crane.

# TESTING / MAINTENANCE

## TESTING

After the initial setup, it is time to test your game for proper operation.

1. Locate the game in its permanent location.
2. Be sure the game has been properly plugged in.
3. Verify that the game is set up for the proper voltage, and turn the power to the game on.
4. The game will run through a test mode at every startup.  See test mode explanation in the programming section for details.
5. Insert coins into the machine at least ten times into the coin mech to assure proper operation.
6. Check the credit and prize counters for proper operation.
7. Check game volume during busy time at location to set it at the proper level.

## CLEANING

Regular cleaning of this game will keep it looking new, and greatly enhance its appeal.

Clean the windows of your X-FACTOR™ with a standard window cleaner.

Clean the cabinet sides with a good cleaner and a soft rag.  A mild soapy solution can be used. You may use a furniture polish when finished to protect the game and make it look more attractive,

NOTE:  DO NOT USE ALCOHOL, THINNERS OF ANY KIND, OR PINBALL PLAY FIELD CLEANERS ON ANY OF THE CABINET SURFACES ESPECIALLY THE DECALS.

# PROGRAMMING

## THE MULTI-PROGRAMMER HAS THE FOLLOWING PUSHBUTTONS:
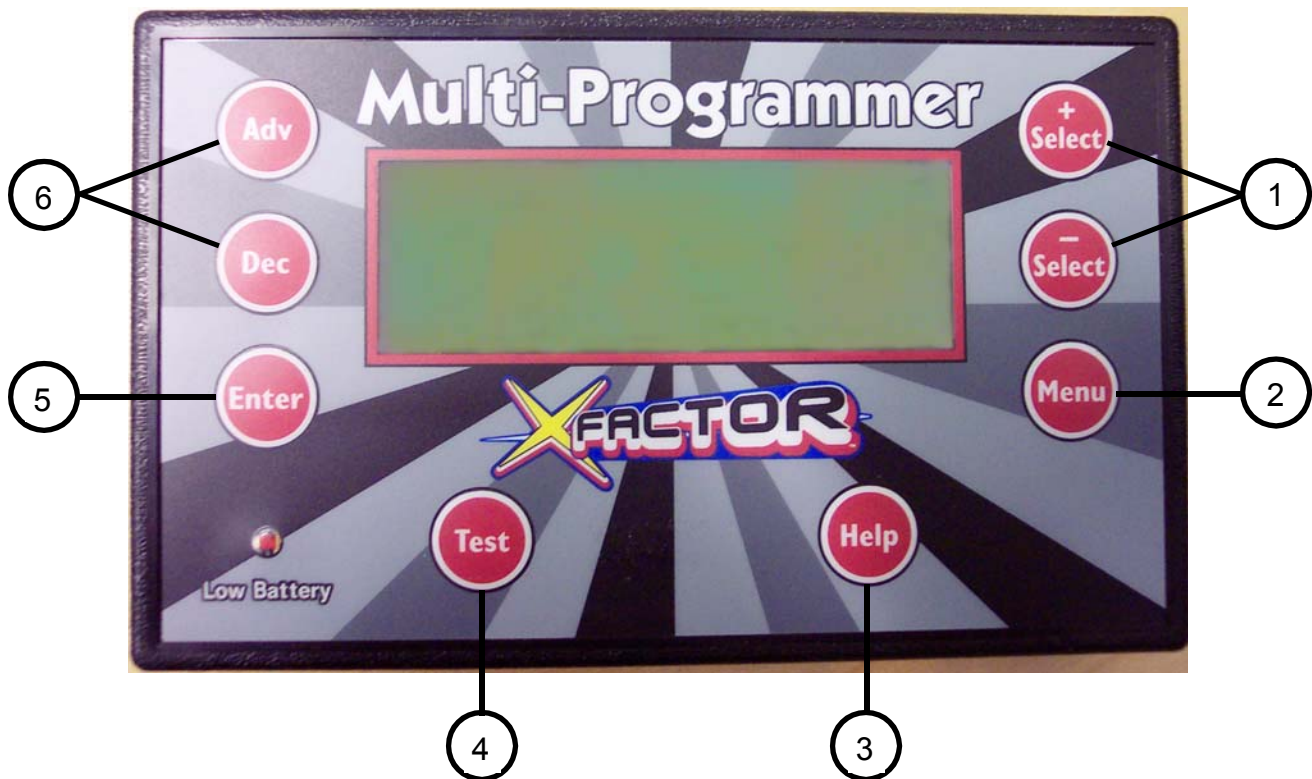


1. Select upward and downward arrow. They are used to move up and down through the various menus and settings.

2. Pushbutton is used to close a menu, or to perform certain actions, e.g. setting meters to zero.

3. With this pushbutton, you can obtain more information about each setting.

4. In some menus, it is possible to directly test the various set values by pressing this button, e.g. we select pick up power; press test and the grabber closes using the power that you have set.

5. Pushbutton is used to open a menu.

6. With these buttons you can change the settings.

# PROGRAMMING

## PROGRAMMING THE GAME

Turn on the power to the game.

Open the front door and locate the main board housings in the center of the game. Insert one end of the cable provided in the jack on the main board housing and the other to the hand held "Multi-Programmer".

The display on the "Multi-Programmer" should appear as shown in the photo below. Note that the lower case "c" is displayed. This indicates that the "Multi-Programmer" is connected & functioning normally.



## MAIN MENU

**Backlight** - Turn on or off

**Version Info** - To Version Info menu

**Status Snapshot** - To Status Snapshot menu

**Accounting** - To Accounting menu

**Setup** - To Setup menu

**Test Play** - To Test Play menu

**Diagnostics** - To Diagnostics menu

**Data Transfers** - To Data Transfers menu

**Reset MP Device** - COMMAND to Reset the programmer

## VERSION INFO MENU

**Machine Type** - "X-Factor"
**Machine SW Revision** - XX.XX (major/minor version codes)
**Machine SW Date** - In YYYY-MM-DD format
**Multi-Programmer Version** - XX.XX
**Multi-Programmer SW Date** - In YYYY-MM-DD format

## STATUS SNAPSHOT MENU

**Regulator target payout %** - Target payout %
**Cash box payout %** - Current % of money out per money in
**Total payout %** - Total % of money out per money in
**Grab power now** - Live data

## ACCOUNTING MENU

**Daily meters** - To Daily Meters menu
**Total meters** - To Total Meters menu

## DAILY METERS MENU

**Number of plays** - The current count of games played
**Prizes won count (wins)** - The current count of the prizes won
**Prizes won value** - The current value of the prizes won
**Cash box money value in** - The current value of the money in the cash box
**Current payout %** - 100 * (current prizes won value) / (current money in value)
**Clear daily meters** COMMAND to reset these soft counters, when emptying cashbox

## TOTAL METERS

**Number of plays** - The total count
**Prizes won count (wins)** - The total count
**Prizes won value** - The total value
**Total money value in** - The total value
**Total payout %** - The total payout
**Clear total meters** - COMMAND to reset these soft counters, after major setup

# PROGRAMMING

## SETUP MENU

**Attract Settings** - To Attract Settings menu
**Credit Settings** - To Credit Settings menu
**Payout Settings** - To Payout Settings menu
**Game Settings** - To Game Settings menu
**Motor Settings** - To Motor Settings menu
**Grab Settings** - To Grab Settings menu
**Reload Factory Defaults** - COMMAND to reset all Settings values to their defaults

## ATTRACT SETTINGS MENU

### ATTRACT TIMER

This setting determines the duration of time between attract modes in minutes. The range for this option is 1 - 45. The default setting is 3.

### ATTRACT SOUND VOLUME

This setting determines the sound volume of the game. Setting a "0" turns the sound to minimum. Setting a "1" turns the sound to maximum. The default setting is 1.

### ATTRACT TYPE

This setting determines what type of attract mode (if any) is used. Setting a "0" turns the attract mode off. Setting a "1" makes sound only. Setting a "2" allows movement only. Setting a "3" allows both sound & movement. The default setting is 3.

## CREDIT SETTINGS MENU

### COST PER GAME (CREDIT)

This setting is used to determine the value of 1 credit. (Coin)

### BASE COIN VALUE

This setting determines the amount by which other money settings are incremented. The range for this option is 1 - 20. The default setting is "1".

## CHANGE BASE COIN
TO BASE COIN VALUE MENU

### VALUE OF CHANNEL 1 COIN PULSE

This setting determines the money value per channel. (per coin) The range for this option is 1 - 60. The default setting is "2".

### VALUE OF CHANNEL 2 COIN PULSE

This setting determines the money value per channel. (per coin) The range for this option is 0 - 60. The default setting is "0".

### VALUE OF CHANNEL 3 COIN PULSE

This setting determines the money value per channel. (per coin) The range for this option is 0 - 60. The default setting is "0".

### VALUE OF CHANNEL 4 COIN PULSE

This setting determines the money value per channel. (per coin) The range for this option is 0 - 60. The default setting is "0".

### VALUE OF CHANNEL 5 COIN PULSE

This setting determines the money value per channel. (per coin) The range for this option is 0 - 60. The default setting is "0".

### VALUE OF CHANNEL 6 COIN PULSE

This setting determines the money value per channel. (per coin) The range for this option is 0 - 60. The default setting is "0".

### LAST MONEY PUT IN
DIAGNOSTIC

### CREDITS LIMIT

This setting determines the number of credits allowed. The range for this option is 0 - 99. The de-

# PROGRAMMING

fault setting is "0". When the limit has been set, no more coins will be accepted for credit.

## FREE GAME 1-in-X

This setting determines the amount of time, in seconds, at which a free game may be won. The range for this setting is 1 - 20. The default setting is "4".

# BASE COIN VALUE MENU

## BASE COIN

This setting is used to set the amount by which other money settings are incremented. The range for this setting is 1 - 20. The default setting is "1".

# PAYOUT SETTINGS MENU (Regulator)

## MONEY VALUE OF EACH PRIZE

This setting is used to set the value of each prize determined by the value of the BASE COIN VALUE. The range for this setting is 1 - 200. The default setting is "20".

## REGULATOR TARGET PAYOUT

This setting determines the value set by the operator for payout percentage. The range for this setting is 20 - 50%. The default setting is 33%.

## TOTAL PAYOUT PERCENTAGE
(INFORMATION)

## DAILY PAYOUT PERCENTAGE
(INFORMATION)

## FAIL LIMIT PERCENTAGE

This setting is used to set the limit for out of range payouts. If the payout percentage is over the set limit, the game will no longer accept coins. The range for this setting is 0 - 50%. The default setting is 0%.

## RESTART REGULATOR

This **COMMAND** is used to restart the payout regulator. This is designed for a new prize or in the event of large fluctuations in the vending price or purchase price. Always restart the game after adjusting the machine.

# GAME SETTINGS MENU

## GAME TIMER

This setting is used to set the duration of the game in seconds. The range for this setting is 15 - 60. The default setting is "20".

# MOTOR SETTINGS MENU

## FORWARD / BACK MOTOR SPEED

This setting allows for the adjustment of the forward / backward speed of the crane. The range for this setting is 10 - 20 with 10 being slow and 20 being fast. The default setting is "20".

## SIDEWARD MOTOR SPEED

This setting allows for the adjustment of the left / right speed of the wagon. The range for this setting is 10 - 20 with 10 being slow and 20 being fast. The default setting is "20".

## DOWN MOTOR SPEED

This setting allows for the adjustment of the down speed of the claw. The range for this setting is 10 - 20 with 10 being slow and 20 being fast. The default setting is "20".

## UP MOTOR SPEED

This setting allows for the adjustment of the up speed of the claw. The range for this setting is 10 - 20 with 10 being slow and 20 being fast. The default setting is "20".

# PROGRAMMING

## GRAB SETTINGS MENU (Claw)

### INDICATE POWER

This display shows the real time "Grab" power when the game is being played or not.

### PICKUP POWER

This setting determines the initial pickup strength of the claw. The range for this setting is 45 - 99. The default setting is "70".

### RETAIN POWER

This setting determines the pickup power to go to, after the pickup timer has elapsed. The range for this setting is 20 - 99. The default setting is "50".

### DIG TIME

This setting determines the amount of time for the claw to dig in when down. The range for this setting is 0 - 24 seconds in 1/8 second increments. The default setting is "4".

### PICKUP TIME

This setting is used to determine the amount of time the claw will be at pickup power after dig. The range for this setting is 0 - 24 seconds in 1/8 second increments. The default setting is "8".

### HOLD AT TOP TIME

This setting is used to determine the amount of time the claw will be held at the top. The range for this setting is 0 - 80 seconds in 1/8 seconds increments. The default setting is "0".

### PICKUP RETAIN TIME

This setting is used to determine the step length of smooth transition from Pickup to Retain power. The range for this setting is 1 - 99 seconds in increments of .005 seconds. The default setting is 2.

### RANDOM BOOST TIME

This setting determines the time for a random pickup boost. A setting of "0" will disable this feature while a setting of "1" will enable it. The default setting is "1".

### STOP AND DROP

This setting is used for allowing the claw to descend to a predetermined distance before releasing a prize. This setting is extremely useful for fragile prizes. Settings for this feature are: "0" = No and a "1" = Yes. The default setting is "0"

### TEST GRAB SEQUENCE

Use this COMMAND to test the entire grab / drop / lift cycle using the game's current settings.

## TEST PLAY MENU

### TEST FREE GAME

COMMAND - one free game with no meters.

### BONUS UNTIL WIN

COMMAND - no free game to be played, but will allow for full grab power until next win.

### FREE PLAY MODE

COMMAND - play free games with no meters.

### NORMAL PLAY MODE

COMMAND - no free games, restore game to normal play.

## DIAGNOSTICS MENU

### TESTS
TO TESTS MENU

### ERRORS
TO ERRORS MENU

# PROGRAMMING

## TESTS MENU

### LAST MONEY PUT IN

Allows monitoring of the last money put in and test the coin in lines.

### TEST VERTICAL GRAB MOTOR

### MOTOR SENSORS

This test will indicate which stop sensors are on.

### TEST FORWARD MOTOR

### TEST SIDEWARD MOTOR

### OTHER SENSORS

Shows a field of letters corresponding to active sensors.        **- NOT IMPLEMENTED -**

### TEST GRABBER

### TEST LAMPS

## ERRORS MENU

### NUMBER OF METER ERRORS

### NUMBER OF MOTION ERRORS

### NUMBER OF GRABBER ERRORS

### CLEAR ERROR COUNTS

COMMAND - Clears the diagnostic error counts.

## DATA TRANSFERS MENU

### GET GAME DATA

Loads the crane's current settings AND account info into the programmer. Once this is done, the programmer's current settings are in sync with the crane until manually changed.

### GET DEFAULT SETTINGS

Resets the programmer's current settings to default values, even if it is not connected to the crane. When connected to the crane, it also sends a "restore defaults" command to the crane and then queries its resulting settings, and uses those as its current settings. This means that if the crane uses different defaults than the programmer, the crane's values "win".

### CLEAR DAILY METERS

Zeroes the displayed daily meters on the programmer. When connected to the crane it also sends it a zero command for these account values.

### CLEAR TOTAL METERS

Zeroes the displayed total meters on the programmer. When connected to the crane it also sends it a zero command for these account values.

### PUT GAME SETTINGS

When connected to the crane, this command takes the programmer's current settings (but not account info) and puts them into the crane. It then reads back the same values from the crane, and if the crane replies with any different values, those values become part of the programmer's current settings.

### SELECT SETTINGS BANK

The programmer has 4 banks where it can save copies of setting information. This lets you select which is the active setting save bank.

### SAVE SETTINGS TO SETTINGS BANK

Takes the programmer's current settings and saves it into the active setting save bank. This overwrites any previous save data in that bank.

### LOAD SETTINGS FROM SETTINGS BANK

Takes the settings from the active settings save

bank and copies it into the programmer's current settings. If a bank has never been saved to, it holds the default values. The new current values are not sent to the crane, however; you must do this explicitly as a separate step via the "Put game settings" command.

## SELECT METERS BANK

The programmer has 8 banks where it can save copies of account information. They are totally separate from the settings save banks. This lets you select which is the active account save bank.

## SAVE METERS TO METERS BANK

Takes the programmer's current accounts and saves it into the active account save bank. This overwrites any previous save data in that bank. You would do this after loading the crane's account data via the "Get game data" command.

## LOAD METERS FROM METERS BANK

Takes the accounts from the active account save bank and copies it into the programmer's current settings. If a bank has never been saved to, it holds zeroes. If connected to a crane, the crane's account data may overwrite the programmer's current account info at a later time. This command exists to help you record account data from multiple cranes and then review it later, away from the cranes. What you should do is this (1) connect to a crane; (2) get its game data; (3) save its accounts to a bank; (4) repeat steps 1-3 for other cranes, using other save banks; (5) away from the cranes, load the meters on at a time to current to review and write down.

# QUICK TROUBLESHOOTING

| PROBLEM | PROBABLE CAUSE | SOLUTION |
|---|---|---|
| NO GAME POWER | ON-OFF SWITCH ON THE GAME IS TURNED OFF<br>BLOWN A.C. POWER FUSE<br>GAME NOT PLUGGED OR CORD DAMAGED<br>BAD TRANSFORMER<br>TRANSFORMER HARNESS NOT CONNECTED<br>BAD POWER MODULE | TURN POWER ON<br>REPLACE WITH PROPER FUSE<br>CHECK POWER CORD<br>CHECK FOR PROPER VOLTAGES<br>CHECK HARNESS<br>REPLACE POWER MODULE |
| GAME WILL NOT TAKE MONEY OR GIVE CREDITS CORRECTLY | BAD COIN SWITCH<br>COIN DISCOUNTING SET WRONG<br>COINS PER CREDIT SETTING INCORRECT<br>BAD COIN MECHANISM<br>LOOSE OR DAMAGED HARNESSING<br>BAD MAIN P.C. BOARD | CHECK W/METER AND REPLACE<br>CHECK PROGRAMMABLE SETTING<br>CHECK PROGRAMMABLE SETTING<br>ADJUST OR REPLACE<br>CHECK W/METER—REPAIR<br>REPAIR OR REPLACE MAIN BOARD |
| DISPLAYS DO NOT WORK | BLOWN FUSE<br>BAD DISPLAY P.C. BOARD<br>BAD MAIN P.C. BOARD<br>LOOSE OR DAMAGED DISPLAY HARNESSING | REPLACE WITH PROPER FUSE<br>REPAIR OR REPLACE P.C. BOARD<br>REPAIR OR REPLACE P.C. BOARD<br>CHECK W / METER AND REPAIR |
| CRANE OR WAGON DOES NOT MOVE | BAD MOTOR<br>LOOSE OR DAMAGED HARNESSING<br>BAD SWITCH ON BUTTON OR JOYSTICK<br>BAD HARNESSING TO BUTTONS OR JOYSTICK<br>BLOWN FUSE TO MOTORS ON MAIN P.C.B. | REPLACE MOTOR<br>CHECK W / METER—REPAIR<br>REPLACE SWITCH<br>CHECK W / METER—REPAIR<br>REPLACE WITH PROPER FUSE |
| CRANE KEEPS TRYING TO MOVE IN TO THE HOME POSITION | BAD LIMIT SWITCH (S)<br>LIMIT SWITCH NOT ALIGNED WITH ACTUATOR | REPLACE SWITCH (S)<br>ALIGN SWITCH AND ACTUATOR |
| CLAW WILL NOT CLOSE | BLOWN FUSE TO CLAW ON MAIN P.C. BOARD<br>BAD COIL<br>LOOSE OR DAMAGED HARNESSING<br>CLAW HAS MECHANICALLY JAMMED | REPLACE WITH PROPER FUSE<br>REPLACE COIL<br>CHECK W / METER AND REPAIR<br>FIND JAM AND REPAIR |
| CLAW STAYS CLOSED | BAD DRIVE TRANSISTOR ON MAIN P.C.B.<br>CLAW HAS MECHANICALLY LOCKED | REPLACE TRANSISTOR<br>FIND JAM AND REPAIR |
| SKILL LEVELING IS NOT FUNCTIONING | PROGRAMMING IS NOT CORRECTLY SET<br>BAD PRIZE SENSOR<br>LOOSE OR DAMAGED SENSOR HARNESS | SET OPTIONS "9", "16" AND "17"<br>REPLACE PRIZE SENSOR<br>CHECK W / METER AND REPAIR |
| CLAW GOES DOWN AND THEN UP BUT DOES NOT CLOSE | DOWN SWITCH BAD<br>LOOSE OR DAMAGED HARNESS TO DOWN SWITCH | REPLACE DOWN SWITCH<br>CHECK W / METER AND REPLACE |
| CLAW COMES UP AND ABOUT 10 SEC. PASSES BEFORE CRANE MOVES TO THE HOME POSITION | UP SWITCH BAD<br>LOOSE OR DAMAGED HARNESS TO UP SWITCH<br>BROKEN "UP" SPRINGS | REPLACE UP SWITCH<br>CHECK  W / METER AND REPLACE<br>REPLACE SPRINGS |
| CRANE OR WAGON WHEELS SLIP | MISSING OR DAMAGED O-RING DRIVE BELTS<br>LOOSE SET SCREWS IN WHEELS<br>LOOSE SET SCREWS IN DRIVE COUPLER<br>RAILS NEED TO BE SCUFFED | REPLACE O-RING BELTS<br>TIGHTEN SET SCREWS<br>TIGHTEN SET SCREWS<br>SCUFF TOP OF RAILS WITH SANDPAPER |
|  |  |  |

# QUICK TROUBLESHOOTING

- NOTE: <u>If the Wagon does not move smoothly through a full travel from left to right</u>, check to see that the wheel spacing is correct. If the spacing is correct, then check the 2 cabinet rails for burrs that may cause the wheels to bind.

- NOTE: <u>If the Crane does not move smoothly through a full travel from front to back</u>, check to see that the wheel spacing is correct. If the spacing is correct, then check the 2 separator rails for burrs that may cause the wheels to bind.

- NOTE: <u>If the Micro track for the left / right movement is binding during its travel</u>, check to see if the top mirror bracket's edge, also the shelf the micro track rides on, has been de-burred.

- NOTE: <u>If the front door is having trouble closing fully</u>, check to see that all harnessing is out of the way for the door to close. Next, check to see that the door is aligned properly.

- NOTE: <u>If the door will not lock properly or locks with difficulty</u>, check to see that the lock rotates smoothly. Next, check that the lock rods are not binding on the lock cam or the lock rod guides. Next, check that all friction points have been lubricated with molly grease. Finally, if need be, adjust the lock rod guides such that the door closes and locks smoothly.

- NOTE: <u>If at the beginning of the self test mode, the claw does not drop</u>, one or more of the following may apply. The prize sensor is not working or is blocked. The string or string lever is mechanically binding. The up or down switch is sticking or misaligned from its actuator.

- NOTE: <u>If claw stays closed</u>, it is likely that the diode has blown and the transistor controlling the claw has also blown. Shut off the game immediately and have a qualified technician install a new coil assembly and transistor on main board.

- NOTE: <u>If claw is jerky while being lowered</u>, it is likely that the up spring is missing or has not been slightly elongated properly. Another possibility is that the string has mechanically bound on the spool. To fix the string binding, you will need to use the "Multi-Programmer". Plug the programmer into the game Enter the Main Menu, Diagnostics Menu & then the Tests Menu. Using the Tests Menu, lower the claw all the way until it starts to wind up backwards. Reverse the motor direction to raise the claw mechanism and properly rewind the string on the spool. Exit the programming mode and the string should be free of mechanical binding.

- NOTE: <u>If the claw stays open</u>, first check for bad fuses on the main board. Next check that there are no wires dislodged from the connectors in the harness between the wagon and crane, the harness between the wagon and the main board, the crane assembly and the wagon assembly. If the problem still exists, and no fuses are blown or wires dislodged, it is likely that the transistor controlling voltage to the claw has blown on the main board. Have the coil assembly and transistor on the main board replaced by a qualified technician.

- NOTE: <u>If the crane / wagon, in the home position, tries to move left or back</u>, check to see that the actuators are both present. Next, check to see that the sensors are present. Next, check to see that the sensors and actuators are aligned. Then check to see that the sensor wires are not dislodged from the connectors. Finally, replace the sensor, it is likely to be bad.

# PARTS LISTINGS

## MECHANICAL PARTS

| | |
|---|---|
| 5011 | SPRING |
| BC1013 | LOCK CAM |
| BC3028 | SIDE GLASS |
| CG1054 | WAGON ROLLER SHAFT |
| CG1055 | WAGON MOTOR END PLATE |
| CG1055X | WAGON ASSEMBLY |
| CG1056 | WAGON END PLATE |
| CG1057 | WAGON SEPARATOR RAIL |
| CG1058 | WAGON DRIVESHAFT |
| CG1059 | WAGON DRIVESHAFT COUPLER |
| CG1060 | TRACK GUIDE MOUNT |
| CG1061 | CRANE MOTOR HOUSING |
| CG1061X | CRANE ASSEMBLY |
| CG1062 | CRANE MOTOR HOUSING CAP |
| CG1063 | CRANE STRING LEVER |
| CG1064 | COIL STOP BLOCK COVER |
| CG1066 | CRANE UP SPRING |
| CG1068 | BUSHING |
| CG1069 | TRACK MOUNT RAIL |
| CG1069X | TRACK MOUNT RAIL ASSEMBLY |
| CG1071 | BRACKET |
| CG1077 | STRING ROLLER |
| CG1078J | CLAW (SILVER PAINT) |
| CG1078JX | CLAW ASSEMBLY |
| CG2012 | SENSOR (FWD) |
| CG2013 | SENSOR (L & R) |
| CG3008A | MICRO TRACK 62 LINK |
| CG3008B | MICROTRACK END LINK SET |
| CG3019 | CAGE RETAINER CAP |
| CG3019X | THUMB SCREW ASSEMBLY |
| CG3030 | WHEEL (LARGE) |
| CG3032 | STRING SPOOL SIDE |
| CG3034 | COIL STOP BLOCK |
| CG3035 | COIL CAP |
| CG4003 | O RING |
| CG4004 | STRING |
| CG5014 | LOCK - T-HANDLE |
| CG5015 | LOCK - BARREL |
| CX1051 | SHOCK (HYDRAULIC) |
| CX1052 | CASTER (SWIVEL) |
| CX1053 | CASTER (SWIVEL - LOCKING) |
| CX1072-P100 | SOLENOID MOUNTING PLATE |
| CX1073-P100 | PLATE BOX BOTTOM |
| CX1075 | CRANE CONNECTING PIN |
| CX1076-P800 | HEAT SINK PLATE |
| CX3026 | MIRROR (REAR WALL) |
| CX3027 | GLASS (FRONT) |
| CX3036 | FINGER PIN |
| CX3037 | CLAW SPIDER |

## GRAPHICS & DECALS

| | |
|---|---|
| BC7017 | DECAL (CHROME MYLAR STRIP) |
| CX7005 | DECAL (BUTTON INSTANT REPLAY) |
| CX7006 | DECAL (BUTTON ARROW) |
| CX7008 | DECAL (SIDE "X") |
| CX7012 | DECAL (CONTROL PANEL OVERLAY) |
| CX7026 | DECAL (LEFT MARQUEE X FACTOR) |
| CX7027A | DECAL (REAR MARQUEE X FACTOR) |
| CX7028 | DECAL (RIGHT MARQUEE X FACTOR) |
| CX7029A | DECAL (FRONT MARQUEE X FACTOR) |
| CX7052 | DECAL (MIRROR GRID X FACTOR) |
| CX7056 | DECAL (PRIZE DOOR X FACTOR) |
| CX7057 | DECAL (CROMPTONS LOGO) |
| CX7061 | DECAL (CLAW CROMPTONS LOGO) |
| CX9001 | SERVICE MANUAL |

## ELECTRICAL / ELECTRONIC PARTS

| | |
|---|---|
| 2133CW | ROPE LIGHT |
| 8284 | BALLAST WH6-120L |
| 8312 | BULB PL-L 40W |
| 8395 | BULB #192 WEDGE |
| CG2002CEX | TRANSFORMER |
| CG2008 | MOTOR |
| CX2009 | SOLENOID |
| FP2007 | SPEAKER (4" ROUND) |
| HD20224 | COUNTER 5V |
| HD2364 | FAN 120V |
| SM2008 | TRANSFORMER |

## RECOMMENDED SPARES

| | |
|---|---|
| CG4003 | O RING |
| CG4004 | STRING |
| 8312 | BULB PL-L 40W |
| 8395 | BULB #192 WEDGE |
| CG2008 | MOTOR |
| CX2009 | SOLENOID |

# WIRING DIAGRAM