

# ARCADE GAMES

# CAPSULE CRAZE

# Bubble Up

## OWNER'S MANUAL



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# IMPORTANT CAPSULE INFORMATION

## CAPSULE USAGE

Thank you for purchasing the **CAPSULE CRAZE™** Merchandizing game from **Bob's Space Racers**. To make your ownership experience as pleasant as possible, we have the following recommendations regarding capsules and the game.

1. Use only capsules that fully screw together whenever possible. The **Bob's Space Racers** brand screw together capsule is the best way to ensure the reliability of the game. The screw together capsule virtually eliminates any possibility of the capsules coming apart inside of the game. Also, the screw together capsule is made of a high quality plastic that resists cracking and breaking. The screw together capsule is available as fully stuffed pre-packs or empties directly from **Bob's Space Racers**.
  2. If you decide to use a snap together capsule, use only the best capsule available. Not all snap together capsules are created equally. Some have much better fit than others and some use a much higher quality plastic than others.
  3. Capsule preparation. It is important that all snap together style capsules are **FULLY** snapped together to eliminate chances of jamming up in the game. Because it is important that the fit between the capsule and game tubes are relatively tight for proper game operation, a partially open capsule can cause problems. Snap together capsules should be **FULLY TAPED** all the way around with a good quality 1/2" clear 3M brand cellophane tape or equivalent. If you purchase your pre-packed capsules from **Bob's Space Racers**, we will already have the capsules fully prepared for your use.
- ALWAYS CHECK THAT SNAP TOGETHER STYLE CAPSULES ARE PROPERLY SNAPPED SHUT AND FULLY TAPED WHEN INSTALLING THEM INTO THE GAME.**
4. Capsule stuffing. It is very important not to overstuff the capsules. An overstuffed capsule will have a tendency to try to open up inside of the game. Please be sure that the prizes fit properly inside of the capsules. . If you purchase your pre-packed capsules from **Bob's Space Racers**, we will already have the capsules properly prepared for your use.
  5. Capsule weight. It is possible to use any mixture of capsule weights from 1/2 to 8 ounces (15 to 230 grams). Do not exceed the maximum prize weight to avoid problems. **It is O.K. to mix different weight prize capsules together in the game since the game can automatically compensate for different prize capsule weights.** . If you purchase your pre-packed capsules from **Bob's Space Racers**, we will already have used the proper weight capsules for your game.

# IMPORTANT CAPSULE INFORMATION

## CLEARING CAPSULE JAMS

While we have engineered the CAPSULE CRAZE™ merchandiser to be as reliable as possible, there is always the chance that a Prize Capsule could become jammed somewhere in the game. To make it easy to clear broken or stuck capsules from the game, we have created these easy to follow directions.

**NOTE: IN ALL CASES, AFTER CLEARING A CAPSULE JAM, TURN THE GAME POWER ON AND OFF AT LEAST TWICE AND ALLOW THE GAME TO GO THROUGH THE POWER UP CYCLE. THIS WILL ALLOW THE GAME BLOWER TO CLEAR MULTIPLE CAPSULES WHICH COULD BE LOCATED IN THE GAME PLAY TUBE.**

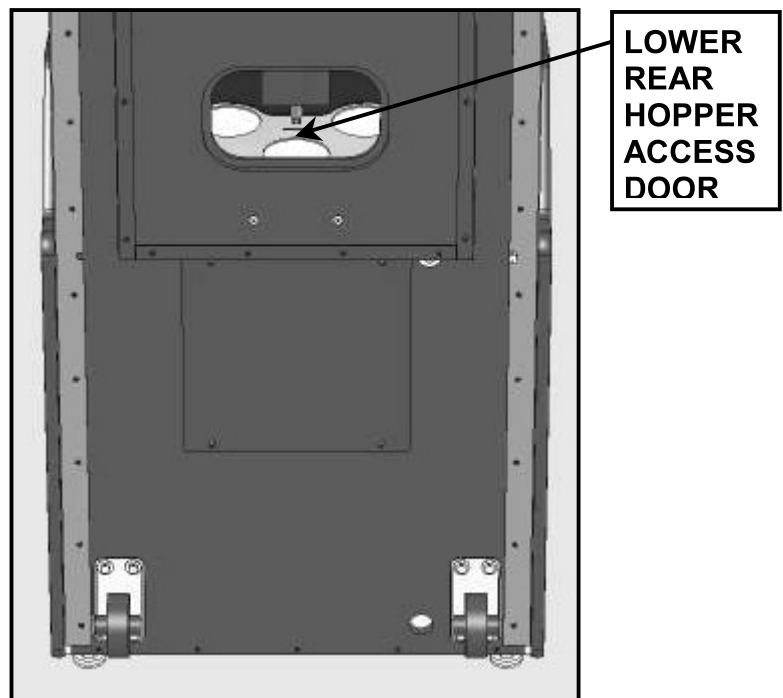
Areas where capsule jams might occur:

- A) HOPPER TURNTABLE OR FEED TUBE
- B) VIEW PORT AREA
- C) TOP DIVERTER AREA.

**HOPPER TURNTABLE OR FEED TUBE** - This is one of the most likely areas where jamming might occur, especially if a capsule has come apart in the hopper area.

If the capsule has come apart in the hopper turntable, it is possible that no capsules can be dispensed regardless of how many capsules are in the game. This is especially probable if you notice a small amount of wiggle back and forth from the turntable when it is time to dispense a capsule.

1. To remove this jam, turn power to the game OFF. Remove the **LOWER REAR HOPPER ACCESS DOOR** from the game. You should be able to see any pieces of capsule or prizes that might be stuck in the turntable. You might need to remove a few of the capsules to see better.

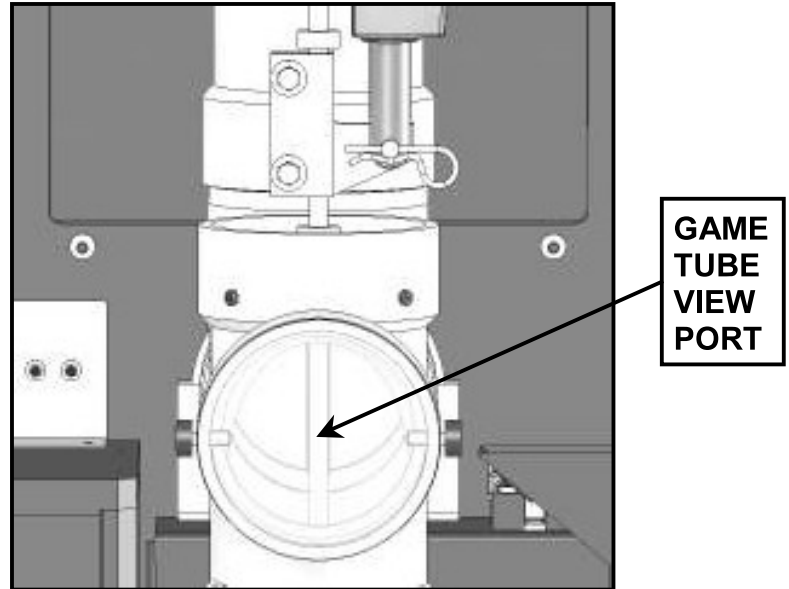


**REAR VIEW**

# IMPORTANT CAPSULE INFORMATION

2. After removing the capsule debris, look around the bottom of the hopper to see if there are any other pieces of the broken capsule. After removing the capsule debris, close up the game, play a couple of games to check for proper operation.

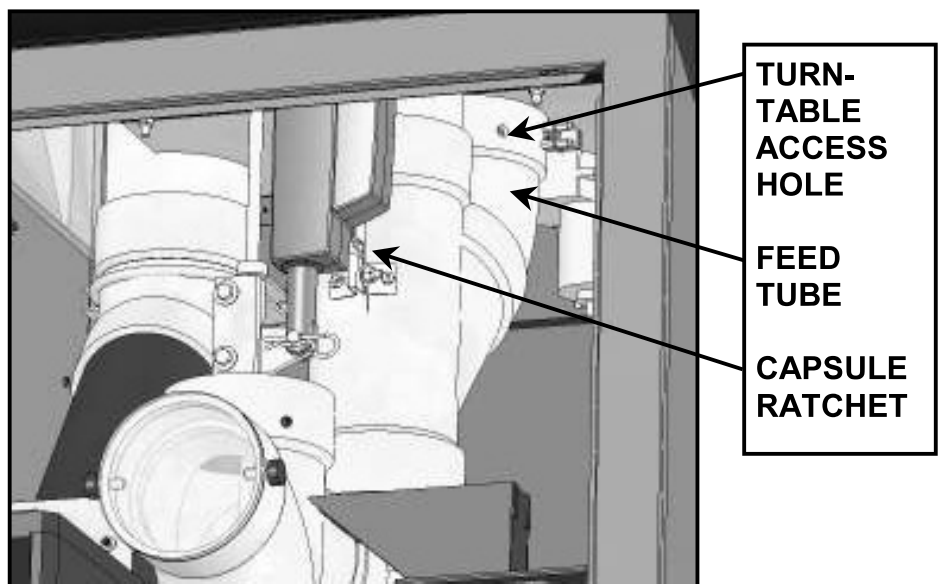
3. Check the **GAME TUBE VIEW PORT** to be sure there are no pieces of broken capsule in the play tube area. If there are any pieces of the capsule, remove them as per the instructions for "cleaning the game tube from debris".



FRONT VIEW

If a capsule partially opens, it might get stuck in the feed tube area just below the turntable. If this is the case it is very easy to clear the jam.

1. Insert a screwdriver or similar tool into the **TURN-TABLE ACCESS HOLE** just under the turntable. This can be accessed from inside the game. Move the screwdriver around to push the capsule down into the feed tube where it can be removed through the game tube view port. (Sometimes just playing another game will allow the capsule to then be ejected. Just remember to remove the capsule when it comes out at the top of the game. Don't allow it back into the hopper).



FRONT VIEW

# IMPORTANT CAPSULE INFORMATION

2. If the capsule is further down into the feed tube, insert the feed tube cleanout tool into the slot where the **CAPSULE RATCHET** is located and moving it up and down will bring the capsule down into the game tube view port area where it can be removed.

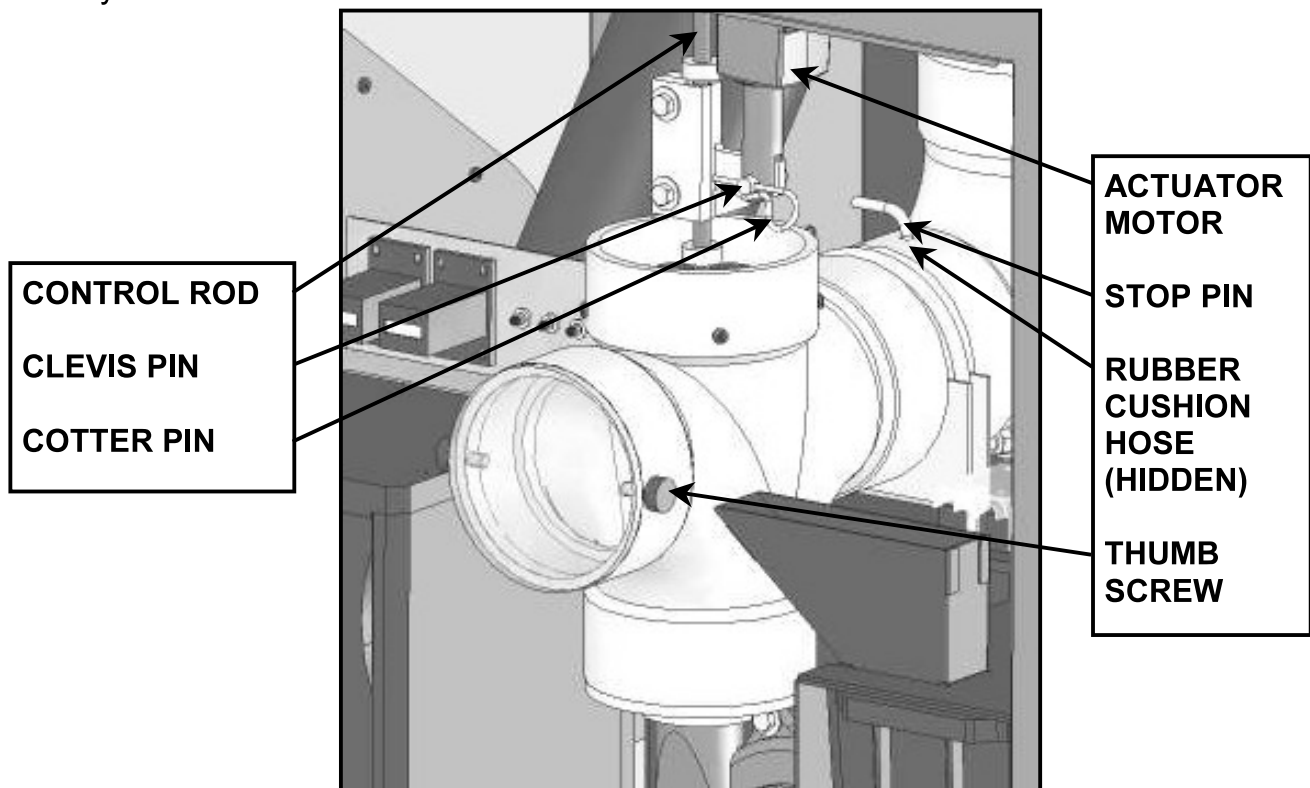
3. After removing the capsule debris, close up the game, play a couple of games to check for proper operation. **Check the game tube view port to be sure there are no pieces of broken capsule in the play tube area. If there are any pieces of the capsule, remove them as per the instructions for "cleaning the game tube from debris".**

**VIEW PORT** - This is a convenient way to see if there are any pieces of capsules, prizes, or any other debris in the game play tube. Simply open the front door of the game and look into the viewport and see if anything is visible. If there is anything to be removed, follow the directions below.

1. Loosen the 2 **THUMBSCREWS** and remove the view port window.

2. Remove the lower **COTTER PIN** and **CLEVIS PIN** and move the **ACTUATOR MOTOR** out of the way.

3. Remove the **STOP PIN** and **RUBBER CUSHION HOSE** from the bottom of the tube assembly.



FRONT VIEW

# IMPORTANT CAPSULE INFORMATION

4. Lift up on the **CONTROL ROD**, reach in with your hand and remove any pieces of debris from the bottom of the tube assembly.

5. Re-assemble in reverse order and play a game or two to be sure everything is working correctly.

**TOP DIVERTER AREA** - It is possible that if a capsule comes apart during game play, it can get stuck in the diverter area when the capsule tries to dispense at the end of the game. This can usually be seen just by looking up at the top of the tube. If the capsule is stuck in the diverter, remove the diverter and clear the jam as follows:

1. Shut off power to the game.

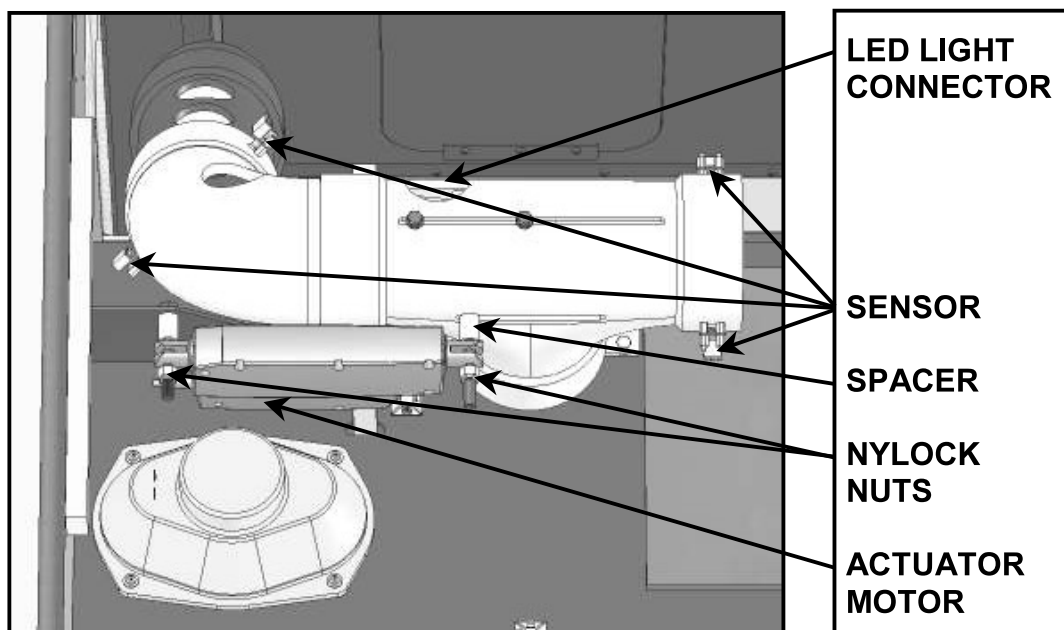
2. Using a ladder, open the marquee of the game and remove the top panel of the game.

3. Remove the **ACTUATOR MOTOR** by removing the **NYLOCK NUTS** and **SPACER**.

4. Remove all of the **SENSOR** and **LED LIGHT CONNECTORS** from the diverter assembly.

5. Lift off the diverter assembly from the game and remove the broken capsule.

6. Assemble in reverse order and play a couple of games to be sure everything is functioning properly.



TOP VIEW

IF YOU HAVE ANY QUESTIONS OR COMMENTS, PLEASE CONTACT OUR TECHNICAL SERVICE DEPARTMENT AT 1-386-677-0761

# GAME OVERVIEW AND TECHNICAL FEATURES

## OVERVIEW

CAPSULE CRAZE is a unique concept in coin operated Prize merchandisers. What makes CAPSULE CRAZE unique is that it actually uses the prize you might win as the actual "playing piece" for the game. This means that you could have a different playing piece for each game that is played. The prizes are enclosed in 3.9-inch (100 MM) clear plastic capsules.

BUBBLE UP has all of the same great features as Capsule Craze but uses a ball instead of prizes and dispenses tickets based on how long the ball is kept in the target area.

OBJECT OF THE GAME – The object of the game is to keep your prize inside of a moving target area for a pre-determined time (approx. 30 seconds). If you are successful, you win the prize or the big Ticket Bonus

## GAME PLAY / OPERATION

1. Game play begins when the player inserts enough money into the game to create 1 credit. (If the player inserts enough money for more than 1 game, the game will automatically start at the conclusion of the previous game.) If partial or multiple credits are inserted, this information will be flashed on the LED displays at this time, and until game start. The game will begin even if there are partial credits in the game. This will help to speed the game play process along. Any partial credits can be displayed at the conclusion of the game.
2. (Capsule Craze only) For the game to begin, the turntable will rotate to drop a capsule into the game tube. The turntable will continue to rotate for up to ten seconds or until a capsule is seen by the "LOAD SENSOR"
3. Once the capsule or Ball is seen by the sensor, the blower turns on at full voltage for 3 seconds to push the capsule or Ball up into the play tube. At the end of this 3 seconds, the blower speed will automatically lower to whatever setting was predetermined by the game computer.
4. At this point the game begins. A large GREEN TARGET AREA shows on the LED displays and is about 20 inches in length. It is surrounded top and bottom by RED zones At this time the GREEN TARGET ZONE is centered in the display vertically. The player is told by the game to "Stay in the GREEN ZONE to win, you lose if you enter the RED ZONE".

# GAME OVERVIEW AND TECHNICAL FEATURES

The player must keep the Capsule or Ball in the green zone for at least 3 seconds for the game to "officially" begin. This is the **Training** portion of the game. (If the player fails to stay in the green zone for 3 seconds the game will begin after 30 seconds anyways.)

As the official **game starts**, the target area slowly shrinks down to the game play size (about 10 inches) and YELLOW WARNING ZONES appear to either end of the GREEN ZONE. The GREEN TARGET ZONE then begins to move up and down along the length of the playfield.. As the game continues, the target area begins to move progressively faster. If the Capsule or Ball enters the YELLOW warning area, the game makes a distinctive sound and warns the player to "stay in the green".

5. As the game is being played, the game timer winds down. The time left is displayed in the target area.
6. If at any point the Capsule or Ball touches the RED ZONE the player loses and the game ends immediately. At this time, a sad player losing sound is played.
7. If the player keeps the Capsule or Ball in the GREEN TARGET ZONE until time runs out, they win the game. At this time, a congratulatory sound is played.
8. At this time whether the player wins or loses, the blower motor briefly (for around 1 second) shuts off.
9. (Capsule Craze only) Once the player wins or loses, the CAPSULE DIVERTER ACTUATOR MOTOR will direct the capsule in the appropriate direction. This is accomplished by the computer deciding where the capsule has to go. The motor will then begin to actuate, and the actuator piston will go either fully out (player wins) or fully in (player loses) depending on the outcome of the game.
10. (Capsule Craze only) Once the diverter motor is in position, the blower motor will come on at full voltage and blow the ball into the proper tube.
11. (Capsule Craze only) Once the game sees either of the DISPENSE SENSORS, it will know that the game has been successfully completed. If neither of the sensors see the capsule, the motor will shut off, and turn back on again at full power. The game will repeat this procedure up to 5 times, at which point it will assume that the game is out of order and display such on the LED displays.
12. ATTRACT MODE - A variable attract mode will be presented during idle time for the game.

# GAME OVERVIEW AND TECHNICAL FEATURES

## TECHNICAL FEATURES

**1. GAME PLAY TUBE** - The tube is a clear acrylic plastic tube that is 4 1/2" outside diameter and 4" inside diameter.. During the course of the game, the prize or ball being played moves up and down through this tube and is moved by pressurized air via the knob on the control panel.

**2. HIGH PRESSURE BYPASS VACUUM / BLOWER MOTOR** - This motor is very similar to a shop vacuum motor. This product is rated at 120 volt, 60hz, but is capable because of it's design capable of being operated at any voltages ranging from 20 - 130 volts AC, and at either 50 OR 60 HZ. This motor is capable of producing up to 93 inches of vacuum or pressure. Because of the actual size of the 4" capsule (3.9 inches), the fit between the tube and prize capsule is less than 1/8" overall. This allows us to lift a large amount of weight. The game can actually lift up to an 8 ounce prize. It is in fact double the amount of weight of the average prize.

**3. VARIABLE SPEED (Capsule Craze only)** - Because of this high amount of available air pressure, the way that the game plays, and the variable Prize Capsule weight, it is necessary to vary the blower speed to accommodate the different capsule weights, yet still have a consistent "feel" from game to game. This is accomplished through a proprietary method of determining the weight of the Prize Capsules. The game then automatically varies the low speed blower speed from game to game.

**4. AIR VALVE** - The air valve is a simple push rod arrangement. It is set up so that the air pressure from the blower motor blows the valve open and the push rod up. This in turn blows the capsule high into the tube. Pushing down on the valve closes off the airflow and the capsule drops. On the end of the push rod is a simple flat knob. Simple operation, up for up, and down for down. This provides the absolute best feedback, player feel and intuitiveness.

**5. PUSH ROD ACTUATOR (Capsule Craze only)** - Attached to the rod via a bracket and sliding slot attachment is a 12 volt DC reversible linear actuator motor. This motor is needed to assure that the air valve is in the open position at the end of the game so the prize can either be delivered to the customer or returned to the game as necessary. This attachment is designed so that the air valve is forced open at the end of the game. This is necessary since a player could hold the air valve shut and the game would never end. This assures that when full voltage is applied, the capsule will swiftly rise to the top of the game play tube. The bracket is also designed so that when the actuator motor retracts, the lever is NOT forced back into a closed position. This prevents any injuries

# GAME OVERVIEW AND TECHNICAL FEATURES

due to pinching. It is not important if the player holds the air valve open when the game is not in use because there is no capsule in the play tube area and the blower motor is shut off. Applying 12 volts to the motor terminals drives the linear actuator. The motor will stop automatically when it reaches the end of its travel. To reverse the motor, polarity of the voltage to the motor terminals is reversed.

**6. DISPENSING TURNTABLE (Capsule Craze only)** - There is a turntable dispensing system that is comprised of the capsule hopper, the turntable mechanism and the turntable motor. The turntable mechanism works in a similar fashion to a gumball dispenser. The turntable rotates and the capsules drop through an opening. Because of the application, the game delivers a high degree of torque from the motor yet limits the current of the motor to avoid damaging the capsules in the event of a jam up. Also, since jam-ups can occasionally occur, it is important that the motor does not destroy either itself or the capsule. It is also important that the mechanism tries to clear the jam automatically.

With these issues in mind, the turntable is designed with the following considerations. The game limits the current availability to the motor. The current limit value is set at the factory. The game electronics limit the current and will force the motor to stall earlier than it would without limitation, because the normal torque of the motor could cause damage to the turntable parts or actually break a capsule. It might be asked, why not just use a lower amperage or weaker motor. This is not possible since a high amount of starting torque is necessary due to the mechanical design of the turntable system. The reason the high amount of torque is needed is because the game needs to effectively seal as much air from back feeding through the turntable system as possible.

This requires an actual "rub" fit in certain locations, plus depending on capsule weight, there could be a significant amount of weight from the prizes themselves sitting on top of the turntable mechanism.

Also in the circuit design, the game has overcurrent - reversing technology added to the system. When an overcurrent condition is detected, the turntable motor reverses for a period of approximately 7-seconds then reverses back and forth again to the forward motion and tries again. The turntable motor should repeat this procedure for up to 10 times to try to clear a problem if a high current condition is detected. After 10 attempts, the turntable motor should shut down. The only way to re-set this condition is to turn game power off and back on. An overcurrent condition would be defined as one where the current draw on the motor increases by more than the pre-determined value.

**7. "LOAD" SENSOR (Capsule Craze only)** - Once the turntable begins to rotate, it will continue to rotate until the "load" sensor detects a prize or until 10 seconds have elapsed. The "load" sensor is a through beam optical pair that detects the passage of the prize capsule. This sensor is located immediately

# GAME OVERVIEW AND TECHNICAL FEATURES

below the turntable assembly so that the turntable can be shut off as quickly as possible once the capsule drop has been detected. If the capsule is not seen for 10 seconds or more, the turntable shuts down. The only way to re-start the turntable is to turn game power off and back on.

**8. TARGET PLAYFIELD LED's** - When the game begins the player must keep his or her prize capsule inside a designated "target area" This target area varies in size, position, movement and speed. Since the player needs to keep the capsule within the target area this needs to be easy at first so the player can learn how to accomplish this. When the game begins, the target area is large and stationary. As the game progresses, the target area begins to move faster in random up or down directions, and the target area itself starts to get smaller. There is also a "warning" zone to either end of the target area that when entered by the capsule, makes noise to let the player know they are in a danger zone. The target area is comprised of BI-COLORED LED's. The LED's are arranged on vertically mounted P.C. Boards on both sides of the play tube facing the game player. The full length on each side is around 40 inches X 2 1/2 inches. The BI-colored LED's are Red and Green. These LED's will also make a yellow color when both elements are lit simultaneously. The target area is lit in GREEN (good zone). The warning area is YELLOW(danger zone), and the loose zone is RED (too bad). This way, all of the LED's are always lit making the game more exciting looking. The LED's are mounted on pre-made matrix blocks. The LED's reside behind a protective Grey (neutral) tinted plastic panel.

**9. CAPSULE OR BALL POSITION SENSORS** - In the same enclosures that incorporate the Playfield LED's, the Capsule or Ball position Sensors reside. These sensors are used to determine where the capsule or ball is in relationship to the LED playfield. These sensors constantly scan the entire length of the playfield not only to detect the capsule or ball position but to check to be sure no one is trying to cheat the game. These sensors are optical through beam sensors that look through the clear plastic tube and through to the other side. The sensors use a proprietary scanning technology to increase their apparent resolution. The sensors also incorporate automatic gain technology to compensate for varying ambient lighting conditions as well as to adjust for normal wear and tear on the game tube itself. These sensors are extremely robust and can look through huge amounts of dirt on the tube yet will still be able to see virtually any capsule used.

**WARNING: DO NOT USE DIRECTLY FACING THE SUN AS THE SENSORS MAY BECOME INOPERATIVE. THE GAME MAY BE USED IN A SUNNY ENVIRONMENT AS LONG AS THE DIRECT SUNLIGHT IS KEPT FROM HITTING THE SENSORS THEMSELVES.**

# GAME OVERVIEW AND TECHNICAL FEATURES

**10. CAPSULE DIVERTER ACTUATOR MOTOR (Capsule Craze only)** - A linear actuator motor that is very similar to the push rod actuator motor is used to divert the capsule to the proper path at the game. This motor is used to determine one of 3 positions. **CLOSED** - In this position the motor will keep the prize capsule within the play tube. This is the normal position for the motor. In this position the motor plunger is extended half way out. **DISPENSE** - In this position, the actuator motor will fully extend the actuator plunger to divert the capsule into the dispense tube. **RETURN**- in this position the actuator plunger will fully retract to return the capsule to the machine for future use. This motor extends and retracts just as the push rod actuator motor does by applying 12 vdc to the motor terminals and reversing the polarity to reverse the motor.

**11. DISPENSE / RETURN SENSORS (Capsule Craze only)** - These sensors are through beam optical pairs that are used to determine if the prize has been dispensed to the proper location. There are 2 pairs of these sensors. One determines if the capsule has been dispensed to the customer, and the other determines if the capsule has been returned to the game.

**12. COIN MECHANISMS** - The standard game is shipped with 2 mechanical coin mechs that are operated by micro switches. The game electronics have the capability of properly debouncing and qualifying the signals received from the switches. Additionally, the electronics are capable of sensing a simple coin comparator mechanism or full electronic coin mech for use where better acceptance and coin compatibility are necessary.

**13. DOLLAR BILL VALIDATOR** - There should be an input provided to read a standard Dollar Bill Validator. There should also be provisions for the input power being either 12 vdc or 120 vac so we have a greater selection of available dispensers for customer selection.

**14. GAME SOUND** - The game electronics are capable of providing monaural sound on sound capability. This means that any sound chosen is able to be played on top of an already playing sound (such as a background theme song). This allows for more fluid sound and game play. A high quality audio amplifier completes the package.

**15. TICKET DISPENSER (Standard on Bubble Up, optional on Capsule Craze)** - The Ticket dispensing system is Deltronics 1275 compatible.

**16. LIGHTING** - Game marquee (and Background lighting on Bubble Up) lighting is accomplished using PLL40 fluorescent u-tubes and Workhorse 6 electronic ballasts. These ballasts are rated for 50/60 Hz. Operation.

# GAME OVERVIEW AND TECHNICAL FEATURES

**17. TIME LEFT DISPLAY** - The Time Left display is integrated into the green target zone area on the playfield. In this way the timer stays in front of the player at all times since it stays within the Green Target area as the target moves.

**18. OTHER VIDEO MESSAGE INFORMATION** - Other attract mode information as well as programming options are displayed in the LED playfield areas.

## **19. AUTO-DIFFICULTY -**

**CAPSULE CRAZE Version** - This option allows us to set the game to automatically adjust the difficulty level of game play to keep it fair for all age groups and keep the payout percentage within a targeted range. Example: If you want the game to pay out 30% and use a \$3.00 prize and charge \$1.00 to play, you would want to pay out 1 prize every 10 games. If you were to charge 50 cents to play, you would want to pay out 1 prize every 20 games. Since the target area is controlled by software, you can make the target area move quicker to make the game harder to win, or slower to be easier to win. Since the target area starts out large in the beginning of the game and also shrinks in size during the game, you can make it shrink faster or slower to make the game easier or harder to play based on the difficulty.

**BUBBLE UP Version** - The auto difficulty in Bubble Up works differently and is set up to try to allow the players to win every XX amount of games. This is to help keep the game exciting for young and old alike.

**NOTICE** - Since the target area IS noticeable to the player, the game is not doing anything that the customer is unaware of. There are no "hidden" adjustments in the game. Every change in the flow of the game is immediate and obvious to the game player.

**20. MANUAL DIFFICULTY** - In the event that you would rather set up the difficulty of the game manually, there are 5 different settings available. VERY EASY - EASY - MEDIUM - HARD - VERY HARD.

**21. TICKET PAYOUT ADJUSTABILITY** - Depending on which version of the game you have there are a full set of options for adjusting your ticket payouts.

**22. PRIZE AND COIN/CREDIT COUNTER** - There are coin / credit and Prize / Ticket counters to accurately track the accounting of the game.

# GAME SET-UP, OPERATION AND MAINTENANCE

## IMPORTANT SAFETY INFORMATION

**WARNING:** Unplug the game from the AC wall receptacle when servicing this product. Failure to do so could result in serious injury to yourself or others.

Use only a GROUNDED AC receptacle. Failure to do so could result in improper operation or damage to the game and could void your warranty. If you are unsure that your AC receptacle is properly grounded, have a qualified electrician perform this check for you.

Always be sure power to the game is turned off when doing even routine maintenance. Otherwise moving parts could activate unexpectedly causing injury.

This product is heavy necessitated by the design. When moving this game, be sure you have adequate help. Use a suitable dolly or hand truck where

## INSTALLATION

1. Clear an adequate area for your new game to be located. Please keep in mind the following:

This game is for indoor or sheltered use only.

Use only a heavy duty or appliance extension cord.

Use only a properly grounded AC outlet.

Do not install this game with the front of the game in direct sunlight.

On Capsule Craze games, try to keep access to the rear of the game available for servicing if needed.

2. Remove the game from the shipping container. Carefully look for any damage that might have occurred during shipping and report any damage to the proper personnel immediately. Be careful to locate the keys to the game before disposing of any packaging materials.

4. For Capsule Craze games, check to see that the Agitator Hose Assembly is still installed into the center of the Turntable.

**Read the IMPORTANT CAPSULE INFORMATION section of this manual at this time if you haven't already done so.**

5. For capsule Craze games, open the upper rear access door and loosely fill the game with prize capsules until you have at least one row of capsules sitting on the deflector shelf. Close the rear access door.

6. Move the game into its permanent location and plug into an AC receptacle.

7. Level the game by using the heavy duty adjuster feet on the bottom of the game if necessary. Adjust the feet to remove any rocking of the game if the floor is uneven.

**NOTE: REFER TO THE GAME PROGRAMMING SECTION OF THE MANUAL AT THIS TIME TO SET THE GAME UP BASED ON YOUR NEEDS.**

**OUR SALES OR SERVICE DEPARTMENT CAN ASSIST YOU IN PROGRAMMING YOUR GAME AND SUGGEST SETTINGS TO HELP YOU MAXIMIZE EARNINGS AT YOUR LOCATION.**

### FILLING THE GAME WITH CAPSULES

8. On CAPSULE CRAZE games, open the marquee at the top of the game by turning the lock located on the top of the marquee. You may need to use a suitable step stool to do this. Fill the game with prize capsules by throwing the capsules into the upper right hand side of the open marquee area.

**NOTE: DO NOT OVER FILL THE GAME WITH PRIZE CAPSULES. WE SUGGEST FILLING TO ABOUT 2/3RD'S UP AS SEEN IN THE DISPLAY WINDOW.**

9. On BUBBLE UP games, insert tickets into the ticket dispensing unit at this time.

10. Play a few games to make sure everything is functioning properly.

**IF YOU HAVE ANY QUESTIONS OR COMMENTS, PLEASE CALL OUR SERVICE DEPARTMENT AT:**

**1-386-677-0761**

ASK FOR CAPSULE CRAZE OR BUBBLE UP SERVICE

# GAME SET-UP, OPERATION AND MAINTENANCE

## MAINTENANCE

Due to the design of the machine, very little periodic maintenance is required.

1. EXTERIOR CLEANING - Clean the outer surfaces of the game with a commercial spray type cleaner. DO NOT however, use glass cleaner or commercial sprays on the acrylic play tube.

For cleaning the play tube we suggest using a commercial spray furniture polish such as Pledge or Endust. These products will lubricate and return the natural oils to the plastic and keep it clean and sparkling clear.

### 2. INTERIOR CLEANING (CAPSULE CRAZE ONLY)

Periodically vacuum out the inside of the turntable assembly.

Periodically vacuum out the bottom of the tube assembly through the inside view window by removing the 2 screws that secure the round plastic view window in place.

Vacuum the inside floor of the game.

3. Occasionally use a very thin coating of light weight lithium grease on the interior surface of the control rod. Use very sparingly.

# PROGRAMMING OPTIONS

## ENTERING PROGRAMMING MODE

The programming options are readable only by the game operator for the purpose of customizing the game to suit their location. The options below will be shown in 2 columns. These 2 columns will represent the left and right hand LED displays. These 2 displays will show the information at the same time.

The operator will press the "PROGRAMMING" button once to enter the programming mode.

The operator will press the "SELECT" button to scroll through the various options that are on the left-hand display.

The operator will press the "STEP" button to scroll through the various settings for each option that are shown on the right-hand display.

The operator will press the "PROGRAMMING" button once again to EXIT the programming mode and save all of the new values to the games memory.

Below is detailed information for the operation of each of the programming options.

## PROGRAMMING OPTIONS FOR CAPSULE CRAZE VERSION

**VOLUME** - The range for this option is **5-10**. The higher the number, the higher the game sound volume. The default value for this option is **8**.

**COINS PER CREDIT** - The range for this option is **0-10** coins per game. The default value for this option is **2**.

**GAMES PER CREDIT** - This option is used for rare instances where the value of the coin is so high that it makes it necessary to give out more than 1 game per coin. To use this option, the "COINS PER CREDIT" option must be set to **1**. The range for this option is **1-4**. The default value for this option is **1**.

# PROGRAMMING OPTIONS

**MONEY DISPLAY** - This option is used to make it easier for the customer to understand how much money to put into the machine to play. The actual coin number included in the message will be automatically changed by the game computer based on the coin setting option. The selections for this option are:

**COINS**  
**TOKENS**  
**\$XX AMOUNT**  
**SWIPE CARD**

The default value for this option is **COINS**

**ATTRACT MODE** - This option turns the attract mode **ON** or **OFF**. The default value for this option is **ON**.

**ATTRACT TIME** - This option determines how many minutes elapse between each playing of the attract mode. The range for this option is **1-30** (minutes). The default value for this option is **5**.

**PRIZE VALUE IN COINS** - This option is used in conjunction with the "AUTO DIFFICULTY" feature so the game can adjust difficulty to maintain a fair pay out to the customer. The settings are based on coins that would normally have a value of 25 cents (although any other base value coin could be used).

For example, to set this option up for a \$1.50 prize, (and assuming you use a quarter or equal value token) you would set the option at **6**. This would be the equivalent of 6 quarters or \$1.50

The range for this option is **1-40** (25 cents to \$10). The default value for this option is **6** (\$1.50 prize).

**PAYOUT PERCENTAGE** - This option is used to determine the pay out percentage for the game. In other words, if you would like to pay out \$3.00 in Prizes for every \$10.00 the game earns, you would select the "30%" setting. The game will automatically figure out how many games need to be played based on the price per game before a prize should be won.

# PROGRAMMING OPTIONS

NOTE: Setting a "100+%" will force the game to pay out a prize every time a game is played regardless if the game earned enough money to pay for the prize being paid out. **THIS IS THE WINNER EVERY TIME SETTING.** This setting will pay out a Prize even if the player has lost the game. The range for this option is **10% - 100%**. The default value for this option is **35%**.

**AUTO DIFFICULTY-** This option is used to assure that all customers are treated fairly in game payouts. This option is very handy for a couple of reasons. If an extremely talented player stays on the game, the game will increase the difficulty to prevent him or her from emptying out the game and making it unavailable for other players. Because of the built in lag time in the auto-difficulty calculations, the game will still allow a greater than normal amount of wins, so the extremely good player will still wind up with more prizes than a poor player.

On the other side of things, if a player is extremely poor, the game will attempt to make itself as easy to play as possible, so that the customer can win a fair amount of prizes.

SINCE THERE IS A HIGH DEGREE OF SKILL INVOLVED IN PLAYING THIS GAME, THE CUSTOMER HAS A VERY HIGH DEGREE OF CONTROL IN THE WINABILITY.

One very important difference between this game and games that use automatic percentaging is the fact that in this game, **ALL OF THE CHANGES IN THE FLOW OR SPEED OF THE GAME ARE FULLY VISIBLE TO THE GAME PLAYER.** There is nothing hidden that the customer is unaware of. The customer can easily see that the "trend" of the games being played is getting faster or slower.

For those that prefer not to use the AUTO - DIFFICULTY feature, the game difficulty settings that can be set up manually (BELOW) are handled by the game computer when this option is selected. The choices for this option are **ON** or **OFF**. The default value for this option is **"ON"**.

# PROGRAMMING OPTIONS

**MANUAL DIFFICULTY SETTINGS** - For those who would like to set the game difficulty up manually, you must first turn the AUTO - DIFFICULTY setting to **OFF**.

There are 5 manual difficulty settings:

**VERY EASY**  
**EASY**  
**MEDIUM**  
**HARD**  
**VERY HARD**

There is no default value for this option.

**TICKET PAYOUT** - (Capsule Craze only) If you need your game to pay out tickets in the event that the player does not win a prize, the game is set up to accept an optional external ticket dispensing unit. This unit will allow you to dispense tickets at certain time points of the game as follows:

TIME LEFT	TICKETS DISPENSED	DEFAULT VALUE
30 seconds left	<b>0-10</b>	<b>0</b>
25 seconds left	<b>0-10</b>	<b>0</b>
20 seconds left	<b>0-10</b>	<b>0</b>
15 seconds left	<b>0-10</b>	<b>0</b>
10 seconds left	<b>0-10</b>	<b>0</b>
5 seconds left	<b>0-10</b>	<b>0</b>

When the game timer reaches the seconds left as indicated above, the game will store the payout values set and pay out the tickets at the **END OF THE GAME** unless the player wins the Prize Capsule.

**RESET DEFAULTS** - This option is used to reset all of the programming values to their factory settings. Setting a **1** will reset the values. The range for this option is **0-1**. The default value for this option is **0**.

# PROGRAMMING OPTIONS

## PROGRAMMING OPTIONS FOR BUBBLE UP VERSION

**VOLUME** - The range for this option is **5-10**. The higher the number, the higher the game sound volume. The default value for this option is **8**.

**COINS PER CREDIT** - The range for this option is **0-10** coins per game. The default value for this option is **2**.

**GAMES PER CREDIT** - This option is used for rare instances where the value of the coin is so high that it makes it necessary to give out more than 1 game per coin. To use this option, the "COINS PER CREDIT" option must be set to **1**. The range for this option is **1-4**. The default value for this option is **1**.

**MONEY DISPLAY** - This option is used to make it easier for the customer to understand how much money to put into the machine to play. The actual coin number included in the message will be automatically changed by the game computer based on the coin setting option. The selections for this option are:

**COINS**  
**TOKENS**  
**\$XX AMOUNT**  
**SWIPE CARD**

The default value for this option is **COINS**

**ATTRACT MODE** - This option turns the attract mode **ON** or **OFF**. The default value for this option is **ON**.

**ATTRACT TIME** - This option determines how many minutes elapse between each playing of the attract mode. The range for this option is **1-30** (minutes). The default value for this option is **5**.

# PROGRAMMING OPTIONS

## TICKET PAYOUT - (Bubble Up only)

TIME LEFT	TICKETS DISPENSED	DEFAULT VALUE
30 seconds left	<b>0-10</b>	<b>0</b>
25 seconds left	<b>0-10</b>	<b>0</b>
20 seconds left	<b>0-10</b>	<b>0</b>
15 seconds left	<b>0-10</b>	<b>0</b>
10 seconds left	<b>0-10</b>	<b>0</b>
5 seconds left	<b>0-10</b>	<b>0</b>
<b>WIN</b>	<b>0-1000</b>	<b>50</b>

**NOTE: TICKETS ARE PAID OUT AT THE END OF THE GAME.**

**AUTO DIFFICULTY-** This option is used to assure that all customers are treated fairly in win payouts. This option is very handy for a couple of reasons. If an extremely talented player stays on the game, the game will increase the difficulty to prevent him or her from emptying out the game and making it unavailable for other players. Because of the built in lag time in the auto-difficulty calculations, the game will still allow a greater than normal amount of wins, so the extremely good player will still wind up with more prizes than a poor player.

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# PROGRAMMING OPTIONS

For those that prefer not to use the AUTO - DIFFICULTY feature, the game difficulty settings that can be set up manually (BELOW) are handled by the game computer when this option is selected. The choices for this option are **ON** or **OFF**. The default value for this option is "**ON**".

**MANUAL DIFFICULTY SETTINGS** - For those who would like to set the game difficulty up manually, you must first turn the AUTO - DIFFICULTY setting to **OFF**.

There are 5 manual difficulty settings:

**VERY EASY**  
**EASY**  
**MEDIUM**  
**HARD**  
**VERY HARD**

There is no default value for this option.

**AVERAGE GAMES TO WIN** - This option determines how many games will be played on average until a player wins a game. **THIS FUNCTION WILL ONLY WORK IF THE AUTO-DIFFICULTY SETTING IS TURNED ON**. The range for this option is **5-50** games. The default value for this option is **10**.

**RESET DEFAULTS** - This option is used to reset all of the programming values to their factory settings. Setting a **1** will reset the values. The range for this option is **0-1**. The default value for this option is **0**.

# ERROR MESSAGES

**ERROR MESSAGES** - These messages are intended to help the operator determine any problems that might occur with the game. If the game has a problem, the "CALL ATTENDANT" message will appear on the LED display on the front of the game.

To find out what's wrong, press the "PROGRAMMING" button inside of the cabinet. If there are errors, they will automatically show up first **INSTEAD** of the normal programming options. Pressing the "STEP" button will scroll through any and all problems the game computer has noted. Pressing the "SELECT" button will take the operator to the normal programming options.

Once a problem has been corrected, turn the game power OFF then back ON. When the game powers up it will do a self check / diagnostic test. If there are still problems, the "CALL ATTENDANT" message will appear again. Once the problems have been corrected, the game will function properly and all diagnostic messages will automatically clear.

**IF THE GAME TUBE TRANSMITTER OR RECEIVER P.C. BOARDS FAIL, THE GAME WILL NOT START AND A RED BAND WILL BE INDICATED ACROSS THE L.E.D. DISPLAYS IN THE AREA OF THE SENSOR FAILURE.**

BLOWER ERR = Could not load capsule or Could not return capsule or Could not give capsule

WIN SENSE = The capsule win optical sensor pair failed the power on test

LOSE SENSE = The capsule lose optical sensor pair failed the power on test

DISP SENSE = The capsule dispense optical sensor pair failed the power on test

There is also the out of prizes condition that alternates:

OUT OF PRIZES / CALL ATTENDANT (On Capsule Craze there is no out of ticket indicator).

In Bubble Up the only error message displayed is: OUT OF TIX = The game is out of tickets.

# QUICK TROUBLESHOOTING

This section covers both Capsule Craze and Bubble Up Quick troubleshooting procedures, so some information may not pertain to your game. Check to see if your problem is listed below.

If the game displays a "CALL ATTENDANT" message on the display, press the PROGRAMMING button to check for error messages. (See ERROR MESSAGES section in this manual for explanations).

For detailed servicing and repair information see the full the full repair section of this manual.

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Capsules jam up frequently	Oversized capsule Prizes too heavy Capsules not fully snapped shut Capsule not fully taped	Do not use capsule larger than 3.950" Limit prize weight to 8 oz. Maximum Use only properly assembled capsules Use only fully taped capsule, or <b>Use only Screw together capsule for best results</b>
Capsule or ball won't lower in game play tube	Control rod valve cracked or broken	Replace plastic control valve
No or low game sound	Check programming for volume level Bad speaker harnessing Bad speaker Main P.C. Board Bad	Adjust as necessary Check and repair harnessing Replace speaker Repair or replace Main P.C. Board
Game does not take or add money correctly	Coin switch out of adjustment Coin switch bad Coin Mech dirty or improperly adjusted Coin switch harness or connector bad Main P.C. Board Bad Improperly programmed Electronic mech Game improperly programmed	Re-bend coin switch wire Check or replace switch Clean and adjust mech as necessary Check and repair harnessing Repair or replace Main P.C. Board Reprogram or replace Electronic mech Check programming options and adjust
Game will not start	Game out of capsules Capsule stuck in feed tube Capsule stuck at dispense sensor Main fuse blown Game power off Sensor harnessing bad Dispense sensor pair bad or unplugged Lose sensor pair bad or unplugged Win sensor pair bad or unplugged Main P.C. Board Bad Tube sensor array bad or unplugged Turntable jammed Turntable motor fuse bad Turntable motor bad Bad blower motor Bad blower motor solid state relay Bad Capsule diverter motor	Check for capsules or turntable jams Check access hole and clear tube Clear capsule jam Check and replace fuse if necessary Check on/off switch and power cord Check and repair harnessing Repair or replace sensor pair Repair or replace sensor pair Repair or replace sensor pair Repair or replace Main P.C. Board Check and replace boards as necessary Clear jam and check for proper operation Check and replace fuse Replace turntable motor Replace blower motor Replace relay Replace motor
Capsules get stuck or can't get past Diverter at top of the game	Capsule broken open Diverter motor bad Diverter motor harness bad Diverter motor hardware loose Diverter pipe fitting not properly seated on tube	Remove capsule Replace motor Repair harnessing Properly tighten hardware Push Diverter down fully on tube

# QUICK TROUBLESHOOTING

Capsules bridge (tunnel) in hopper	Turntable agitator hose missing or broken Capsule hopper overfilled	Replace agitator hose assembly Do not fill past 2/3rds to top of window
Game play erratic & blower speed inconsistent	Control rod actuator motor bad Control rod actuator motor harnessing bad Control rod valve cracked or broken Capsule ratchet spring broken	Replace motor Repair harnessing Replace control valve Replace ratchet spring
Ticket dispenser not working properly	Ticket dispenser sensor blocked with debris Tickets jammed in dispenser Ticket dispenser bad Ticket dispenser harnessing bad Game improperly programmed	Clean off sensor Clear ticket jam Replace dispenser Check and repair harnessing Check ticket programming option
Players not winning game enough	In manual mode, game set too difficult	Re-program to easier setting Set game to auto-difficulty mode
Players winning game too much	In manual mode, game set too easy	Re-program to harder setting Set game to auto-difficulty mode

# DETAILED TROUBLESHOOTING AND REPAIR

## WHEN CALLING FOR SERVICE

1. When calling for service, please check the service manual first. Many times the answer to your problem has been addressed in this documentation.
2. Please make sure you have the serial number of the game ready when you call.
3. If this is a repeat call, please tell the service technician that you have made a previous call regarding this problem. This way we will be able to retrieve the history on your game allowing us to serve you better and save you time.
4. Please retain proof of purchase for your product. This might be requested for warranty repairs.
5. Please call from the game if possible since we might need you to check certain things on the game while we are on the telephone with you.

## IMPORTANT SAFETY INFORMATION

**WARNING:** Unplug the game from the AC wall receptacle when servicing this product. Failure to do so could result in serious injury to yourself or others.

Use only a GROUNDED AC receptacle. Failure to do so could result in improper operation or damage to the game and could void your warranty. If you are unsure that your AC receptacle is properly grounded, have a qualified electrician perform this check for you.

Always be sure power to the game is turned off when doing even routine maintenance. Otherwise moving parts could activate unexpectedly and cause injury.

This product is heavy as necessitated by the design. When moving this game, be sure you have adequate help. Use a suitable dolly or hand truck where practical. Use back support when needed.

## TROUBLESHOOTING PHILOSOPHY

When troubleshooting any product, certain general guidelines should be followed.

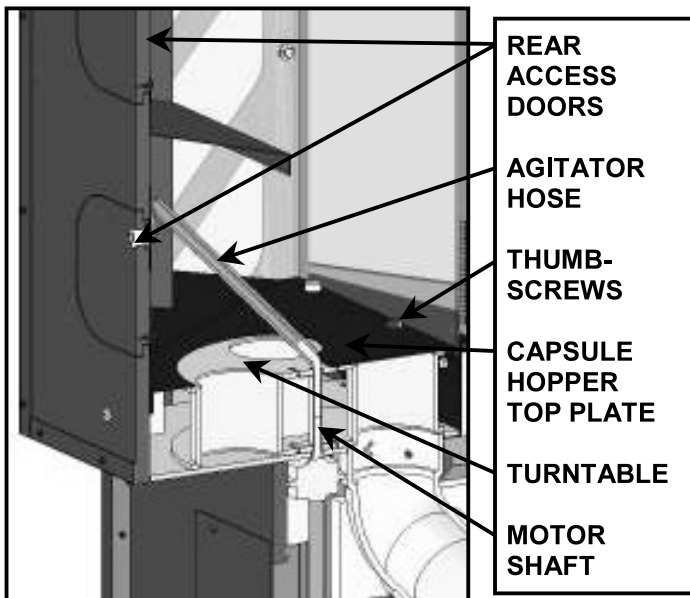
1. Always check to be sure that your game is turned on. Be sure that all of the fuses in the game are functional and check to see that the AC voltage is in the proper operating range for your game.
2. Check to be sure that all of the game harnessing is plugged in properly and that all of the pins are firmly seated in the connectors. It is always possible that a harness can be damaged by rough shipping or moving.
3. Check game harnessing to be sure that none of the wires are damaged. Using a handheld multimeter, check continuity of the wires to make sure they are not broken.
4. Check for obvious damage to any P.C. Boards or electrical components.
5. If you have multiple games or multiple parts on a game, change or exchange the parts and see if the problem goes away or moves to another location. This way you can quickly eliminate certain parts as being the problem with the game.
6. When changing electronic or electrical components, ALWAYS turn off and unplug the game.
7. Check to see that all power supplies are delivering the specified voltages to the P.C. Boards and components as shown in the manual.

# DETAILED TROUBLESHOOTING AND REPAIR

## MECHANICAL / MOTOR REPAIR

### TURNTABLE REMOVAL

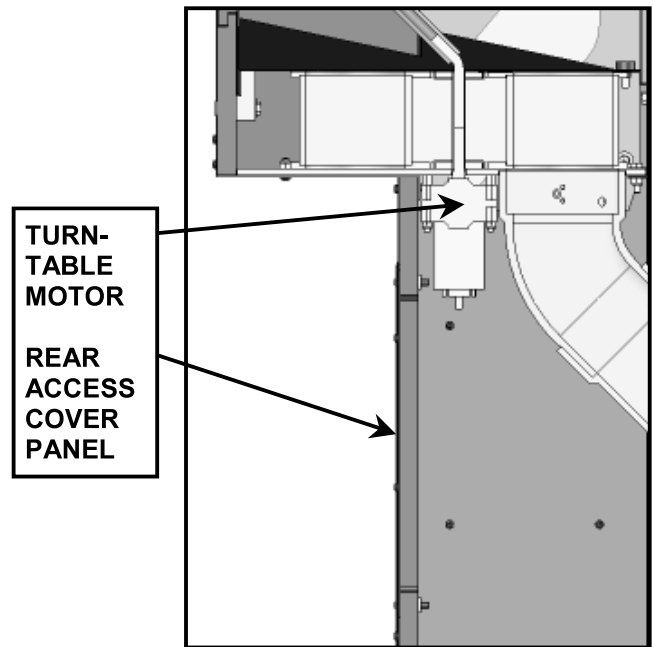
1. Turn off AC Power and unplug the game.
2. Move the game away from the wall, open the rear access doors and remove all of the capsules.
3. Remove the Agitator Hose assembly from the game.
4. Remove the (4) 1/4-20x3/4" Thumbscrews and lift up on the Capsule Hopper top plate.
5. Slide the turntable off the motor shaft and remove from the game.
6. Assemble in reverse order.



LEFT SIDE REAR VIEW (SECTION)

### TURNTABLE MOTOR REPLACEMENT

1. Remove the (4) 1/4-20x1 1/4 Allen head bolts that retain the rear access cover panel.
2. Remove the rear access cover panel.
3. Cut the tie wrap from around the turntable motor that acts as a strain relief for the turntable motor wiring.



LEFT SIDE VIEW (SECTION)

4. Remove the (2) fast on connectors from the motor terminals.

NOTE THE POLARITY OF THE WIRES AND BE SURE THEY ARE RE-CONNECTED THIS WAY.

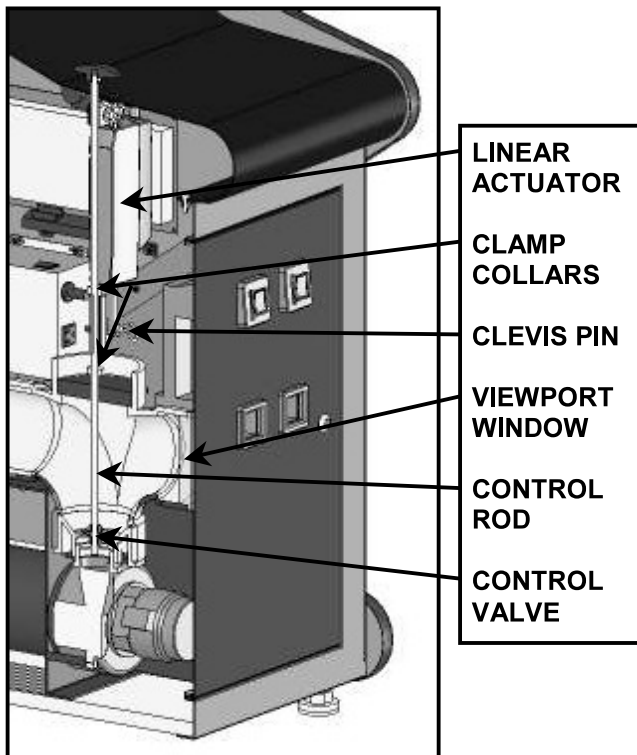
5. Remove the (4) nylon lock nuts that fasten the turntable motor to the game.
6. Slide the motor straight down off of the mounting bolts.
7. Slide the new turntable motor up onto the mounting bolts and align the motor shaft with the square opening in the center of the turntable.

# DETAILED TROUBLESHOOTING AND REPAIR

8. Re-install the (4) nylon lock nuts.
9. Re-install the fast-on connectors to the motor terminals. Please check that the polarity of the wires is correct.
10. Install a new tie wrap around the motor, capturing the motor wiring to act as a strain relief.
11. Plug the game in, turn the game on, start a game and check the turntable rotates correctly.
12. Re-install the rear access cover panel using the (4) 1/4-20x1 1/4 Allen head bolts.

## CONTROL VALVE REPLACEMENT

1. Turn off AC Power and unplug the game
2. Remove clear plastic viewport window by loosening the (2) 1/4-20x3/4" Thumbscrews.



LEFT SIDE FRONT VIEW (SECTION)

3. Loosen but do not remove the (2) clamp collars located on the control rod.
4. Remove the lower Linear actuator Clevis pin and clip to swing the actuator out of the way.
5. You can now lift up on the control rod far enough to gain access to the control valve.
6. Using 2 - 9/16" open end wrenches, loosen and remove the lower 3/8-16 nut to remove the washer and valve.
7. Install the new control valve and tighten securely.
8. Re-install linear actuator motor using the Clevis pin and clip.
9. Tighten the lower clamp collar so that it is 3/4" beneath the bottom of the actuator rod lift bracket (Make sure that the linear actuator is fully extended at this time. To be sure, turn game power off and back on).
10. Tighten the upper clamp collar so that it just sits on top of the actuator rod lift bracket. This takes stress off of the control valve in the event that someone pushes down on it with excessive force.

NOTE. BE SURE AFTER ADJUSTING THE LOWER CLAMP COLLAR THAT THE CONTROL VALVE CLOSES FULLY.

11. Re-install the clear plastic viewport window by tightening the (2) 1/4-20x3/4" Thumbscrews.

12. Play a couple of games to check for smooth operation.

NOTE: WHEN ADJUSTED PROPERLY, THE CONTROL ROD WILL AUTOMATICALLY LIFT AND THE BEGINNING AND END OF EACH GAME.

## CONTROL ROD REPLACEMENT

Follow the above procedure for control valve replacement except in step #6, remove both nuts on the control rod and extract the rod.

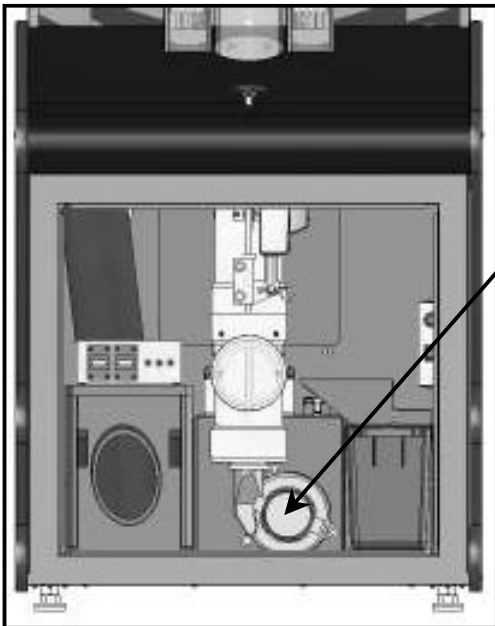
# DETAILED TROUBLESHOOTING AND REPAIR

## CONTROL ROD LINEAR ACTUATOR REPLACEMENT

1. Turn off AC Power and unplug the game
2. Remove the power connector from the linear actuator.
3. Remove the upper and lower clevis pins and clips.
4. Replace actuator and install in reverse order.

## BLOWER MOTOR REPLACEMENT

1. Turn off AC Power and unplug the game
2. Remove the (4) 1/4-20x3/4" bolts and flat washers that retain the blower motor.



**FRONT VIEW (DOOR REMOVED)**

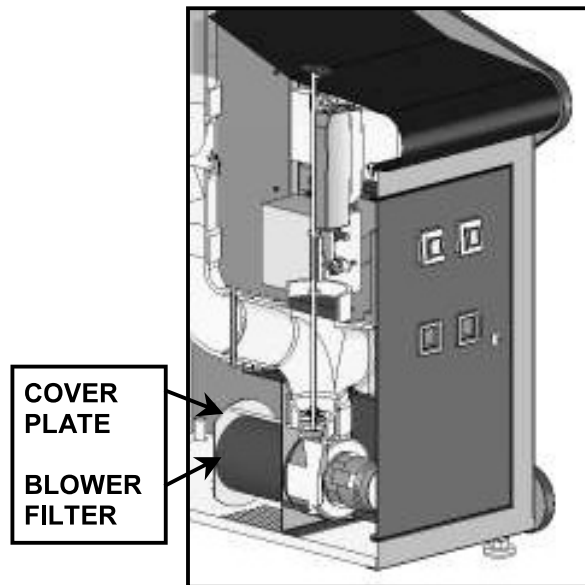
3. Rotate the motor slightly to remove.

NOTE: IT MIGHT BE NECESSARY TO LOOSEN THE PIPE RETAINING CLAMP SLIGHTLY TO REMOVE THE MOTOR.

4. Assemble in reverse order.

## BLOWER MOTOR FILTER REPLACEMENT

1. Turn off AC Power and unplug the game
2. Remove the (4) 1/4-20x7" bolts that retain the blower filter and cover plate.
3. Replace filter and assemble in reverse order.



**LEFT SIDE FRONT VIEW (SECTION)**

## DIVERTER LINEAR ACTUATOR REPLACEMENT

1. Turn off AC Power and unplug the game
2. Unplug the connector on the linear actuator motor.
3. Remove the (2) 3/8-16 Nylock nuts that retain the actuator motor.
4. Replace the motor and assemble in the reverse order.

# DETAILED TROUBLESHOOTING AND REPAIR

## ELECTRONIC / ELECTRICAL REPAIR

### MAIN P.C. BOARD REPLACEMENT

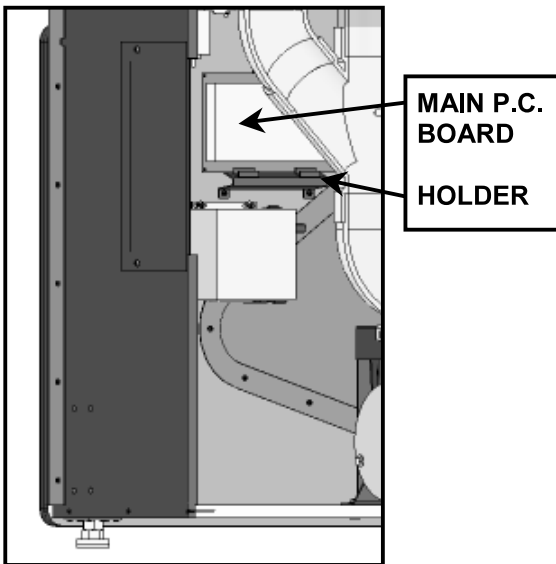
1. MAKE A NOTE OF ANY CUSTOM SETTINGS YOU MAY HAVE IN THE GAME PROGRAMMING.

2. Turn off AC Power and unplug the game

3. Carefully remove all of the connectors from the Main P.C. Board.

DO NOT ALLOW THE BOARD TO BEND WHEN REMOVING OR INSTALLING THE CONNECTORS.

4. Replace board by loosening retainer clamp and sliding board out of holder.



**LEFT SIDE REAR VIEW (SECTION)**

5. When replacing the board, be sure that the new board is properly installed into the board retaining slot at the bottom, and that the top clamp is firmly tightened.

BE SURE THAT THE TOP CLAMP IS NOT TOUCHING ANY ELECTRONIC COMPONENTS ON THE BOARD.

6. Turn the game on and re-program your new board to match the settings on your old board.

7. Play a few games to check for proper operation.

### DISPENSE SENSOR REPLACEMENT

1. Turn off AC Power and unplug the game

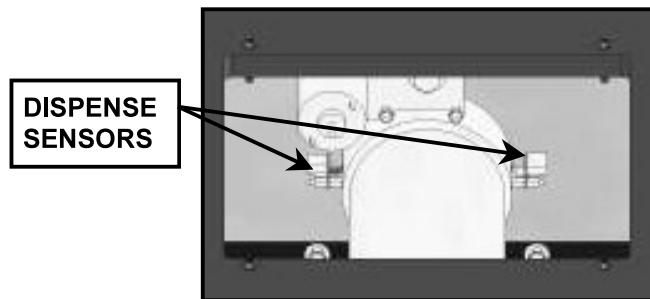
2. Remove the (4) 1/4-20x1 1/4 Allen head bolts that retain the rear access cover panel.

3. Remove the rear access cover panel.

4. Remove the connectors to the 2 sensors.

5. Remove the 2 sensors by removing the small plastic retaining spacer nuts.

6. Replace the sensors and re-assemble in reverse order.

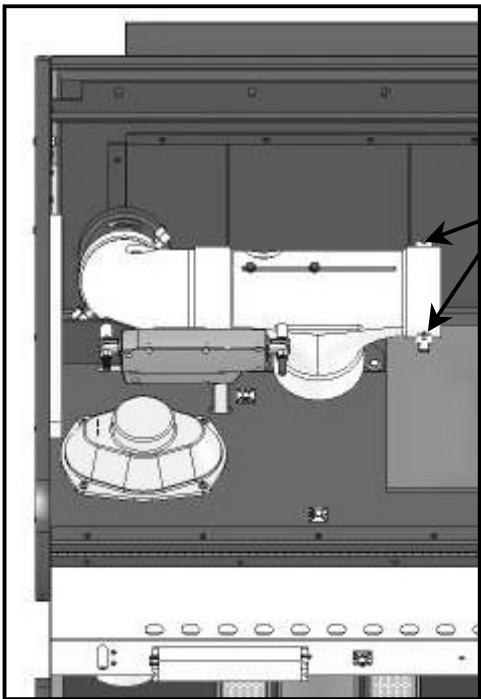


**REAR VIEW  
(REAR ACCESS COVER PANEL REMOVED)**

# DETAILED TROUBLESHOOTING AND REPAIR

## LOSE SENSOR REPLACEMENT

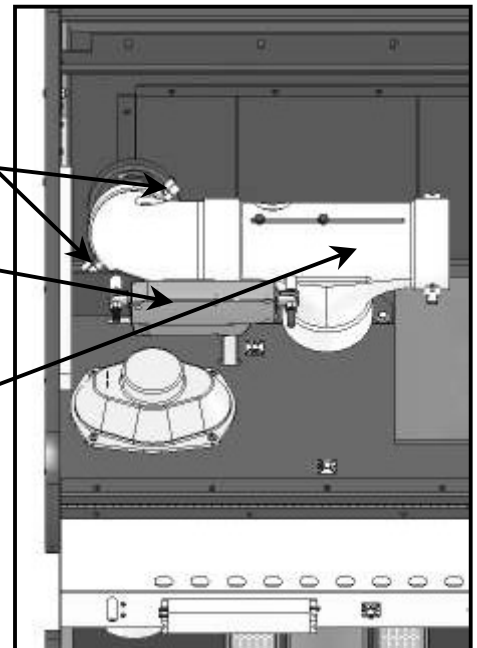
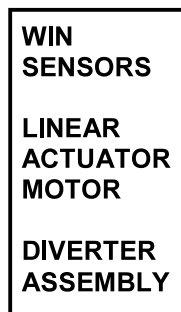
1. Turn off AC Power and unplug the game
2. Open the top game marquee by unlocking the top of the marquee.
3. Remove the top panel of the game by lifting up a few inches then pulling it out.
4. Remove the connectors to the 2 lose sensors.
5. Remove the 2 lose sensors by removing the small plastic retaining spacer nuts.
6. Replace the sensors and re-assemble in reverse order.



TOP VIEW  
(TOP PANEL REMOVED)

## WIN SENSOR REPLACEMENT

1. Turn off AC Power and unplug the game
  2. Open the top game marquee by unlocking the top of the marquee.
  3. Remove the top panel of the game by lifting up a few inches then pulling it out.
  4. Unplug the connector on the linear actuator motor.
  5. Remove the (2) 3/8-16 Nylock nuts that retain the actuator motor.
  6. Remove the Linear actuator motor and spacer from the diverter rod.
  7. Remove the connectors to the win sensors, lose sensors, and internal tube LED light.
  8. Lift the entire diverter assembly from the game.
- NOTE: YOU MIGHT NEED TO WIGGLE THE DIVERTER ASSEMBLY BACK AND FORTH TO WORK IT OFF OF THE 2 TUBES.
9. Remove the 2 win sensors by removing the small plastic retaining spacer nuts.
  10. Replace the sensors and re-assemble in reverse order.



TOP VIEW  
(TOP PANEL REMOVED)

# DETAILED TROUBLESHOOTING AND REPAIR

## GAME TUBE SENSOR AND L.E.D. REPLACEMENT

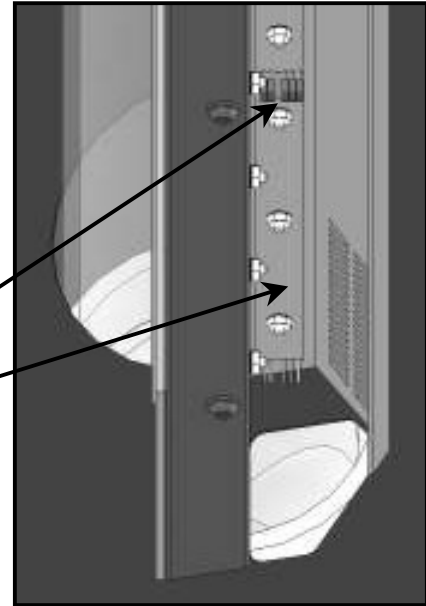
**NOTE: IF THE GAME WILL NOT START AND A RED COLORED BAND IS RUNNING ACROSS THE L.E.D. DISPLAYS, THAT WOULD INDICATE A FAILURE OF EITHER A TRANSMITTER OR RECEIVER TUBE SENSOR BOARD.**

**THE RED BAND WILL DISPLAY IN THE LOCATION OF THE FAILURE. THE PROBLEM COULD BE EITHER THE TRANSMITTER OR RECEIVER BOARD.**

There are 4 transmitter and 4 receiver sensor boards that run the length of the game tube. This is how the position of the prize capsule is sensed.

While the sensor failure could be either a transmitter OR receiver board, it is best to change the receiver board first since the receiver boards have more electronics on them and would be more likely to fail than the transmitter boards which are relatively simple by comparison.

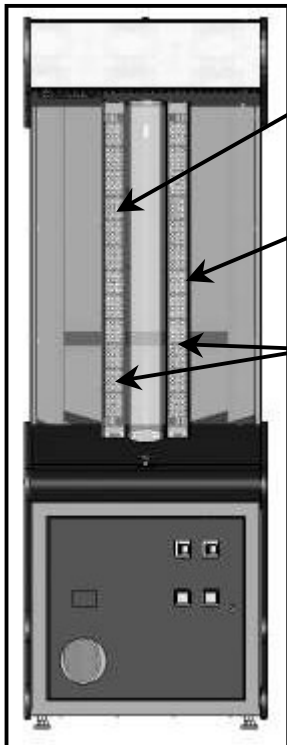
**BE VERY CAREFUL TO INSTALL THE JUMPER BLOCKS PROPERLY WHEN REPLACING THE P.C. BOARDS AS THE GAME WILL NOT FUNCTION PROPERLY IF ANY OF THE CONNECTIONS ARE MISSED.**



**JUMPER  
BLOCKS**

**RECEIVER  
BOARD**

**RIGHT SIDE VIEW  
(HOUSING COVER REMOVED)**



The transmitter boards are located in the LEFT hand display housing as viewed from the front of the game, and the receiver boards are

located in the RIGHT hand display housing as viewed from the front of the game.

The transmitter and receiver boards are independently mounted to the display housings and are connected together with small jumper blocks.

**LEFT-HAND  
DISPLAY  
HOUSING**

**RIGHT-HAND  
DISPLAY  
HOUSING**

**DISPLAY  
P.C. BOARDS**

**FRONT VIEW**

**WHEN REMOVING OR INSTALLING THE TRANSMITTER OR RECEIVER P.C. BOARDS, IT MAY BE NECESSARY TO REMOVE THE JUMPER HARNESSSES FROM THE L.E.D. DISPLAY BOARDS TO GAIN EASIER ACCESS TO THE SENSOR BOARDS AND THEIR JUMPER BLOCKS.**

The L.E.D. Display P.C. Boards are also mounted to the display housings.

All of the L.E.D. display boards are the same and are all fully interchangeable.

**WARNING: BE CAREFUL NOT TO MIS-PIN THE JUMPER HARNESSSES ON THE DISPLAY P.C. BOARDS WHEN SERVICING OR DAMAGE TO THE DISPLAY BOARDS MAY OCCUR.**

# DETAILED TROUBLESHOOTING AND REPAIR

1. Turn off AC Power and unplug the game
2. Remove the (4) 1/4-20x3/4" Allen head bolts and remove the display housing cover and tinted filter.
3. Change damaged sensor or Display P.C. Board and re-check for proper operation of the game.
4. Once proper game operation has been established, re-install the Display Housing cover.

## GAME TUBE HIGH POWER L.E.D.

The high power Game Tube L.E.D. is mounted on the capsule diverter inside the diverter assembly.

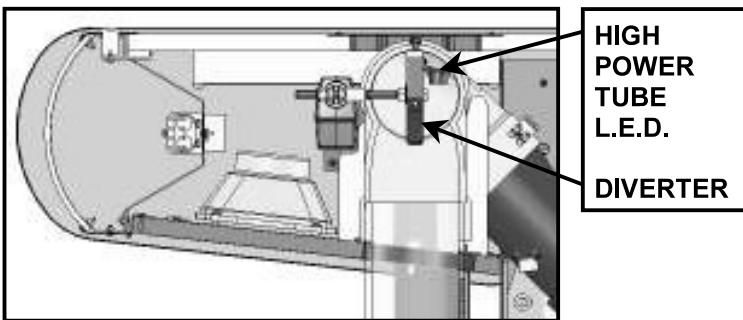
1. Turn off AC Power and unplug the game
2. Remove the diverter assembly as indicated in the "WIN SENSOR REPLACEMENT" section of the manual.
3. Once the diverter assembly has been removed from the game, remove the 3/8-16x6" stud from the capsule diverter itself using a pair of 9/16" open end wrenches.
4. Remove the (2) 1/4-20x2" Flange bolts that retain the diverter.
5. Remove the diverter from the diverter assembly and replace the defective L.E.D. assembly.
6. Assemble in reverse order.

**WARNING: MAKE SURE WHEN RE-INSTALLING THE 1/4-20X2" FLANGE BOLTS ON THE DIVERTER THAT THERE IS 1/32" TO 1/16" OF PLAY IN THE DIVERTER SO IT CAN SLIDE BACK AND FORTH EASILY IN THE DIVERTER ASSEMBLY.**

**IF YOU HAVE ANY QUESTIONS OR COMMENTS, PLEASE CALL OUR SERVICE DEPARTMENT AT**

**1-386-677-0761**

ASK FOR CAPSULE CRAZE / BUBBLE UP SERVICE



**RIGHT SIDE VIEW (SECTION)**

# PARTS LISTINGS

## MECHANICAL PARTS

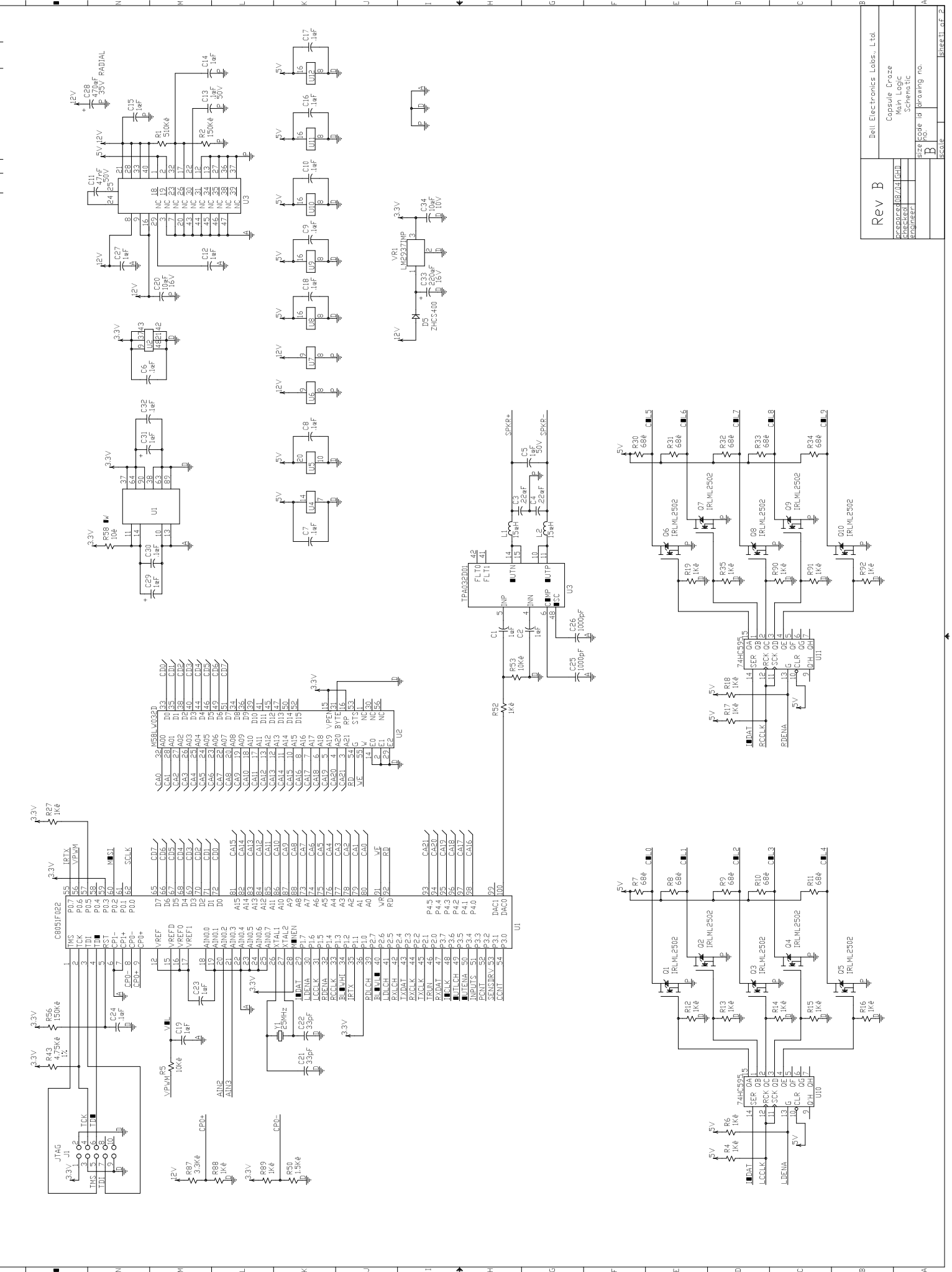
C0800040	Marquee Window
CX800041	Prize Door
CX800055	Blower view cover
CX800081	Window, side view
CX800085	Display Filter
E0800043	Bulb attachment clip
E0800044	Bulb retaining clip
EX800150	P.C. Board holder
H0001600	Fender Washer 3/8" x 1 1/2"
H0013310	1/4-20 x 3/4" Thumb Screw
H0017850	Stud, 3/8-16 x 6", 1.25 thread length
H0018620	Control rod clamp collar
M0005012	Clevis pin
M0800001	Rubber bumper (diverter)
M0800035	Cash Box
M0800072	Window retaining Bracket
M0009606	Lock, 103 key 1 1/4" thread
M0009607	Lock, 103 key 3/4" thread w/st cam
NX800022	Agitator tube (hose)
P0007412	4 1/2" Tube clamp
P0800058	Blower Filter
PX800101	Delivery Tube, Acrylic
PX800102	Game Tube, Acrylic
T0000400	Cotter Pin
W0800005	Marquee lock cam
W0800006	Cash Box lock hasp
W0800007	Lock cam
W0800014	Prize door hinge
W0800050	Ball stop sleeve
W0800051	Ball stop rod
W0800056	Capsule Ratchet
W0800057	Nylon screw insulator bushing
W0800058	Capsule ratchet mounting bracket
W0800059	Ratchet spring
W0800060	Control Rod
W0800061	Control Knob
W0800073	Rear access cover panel
W0800083	Marquee hinge
W0800084	Adjustable Foot
W0800105	Window, 1/4" Tempered Glass
W0800111	Game tube positioning bracket
Wx800062	Control Valve
WX800063	Control rod seal bearing
WX800111	Actuator rod lift bracket
WX8000112	Actuator rod lift bracket clamp
WX800113	Control rod bearing, long
WX800114	Control rod bearing, short

## GRAPHICS / DECALS

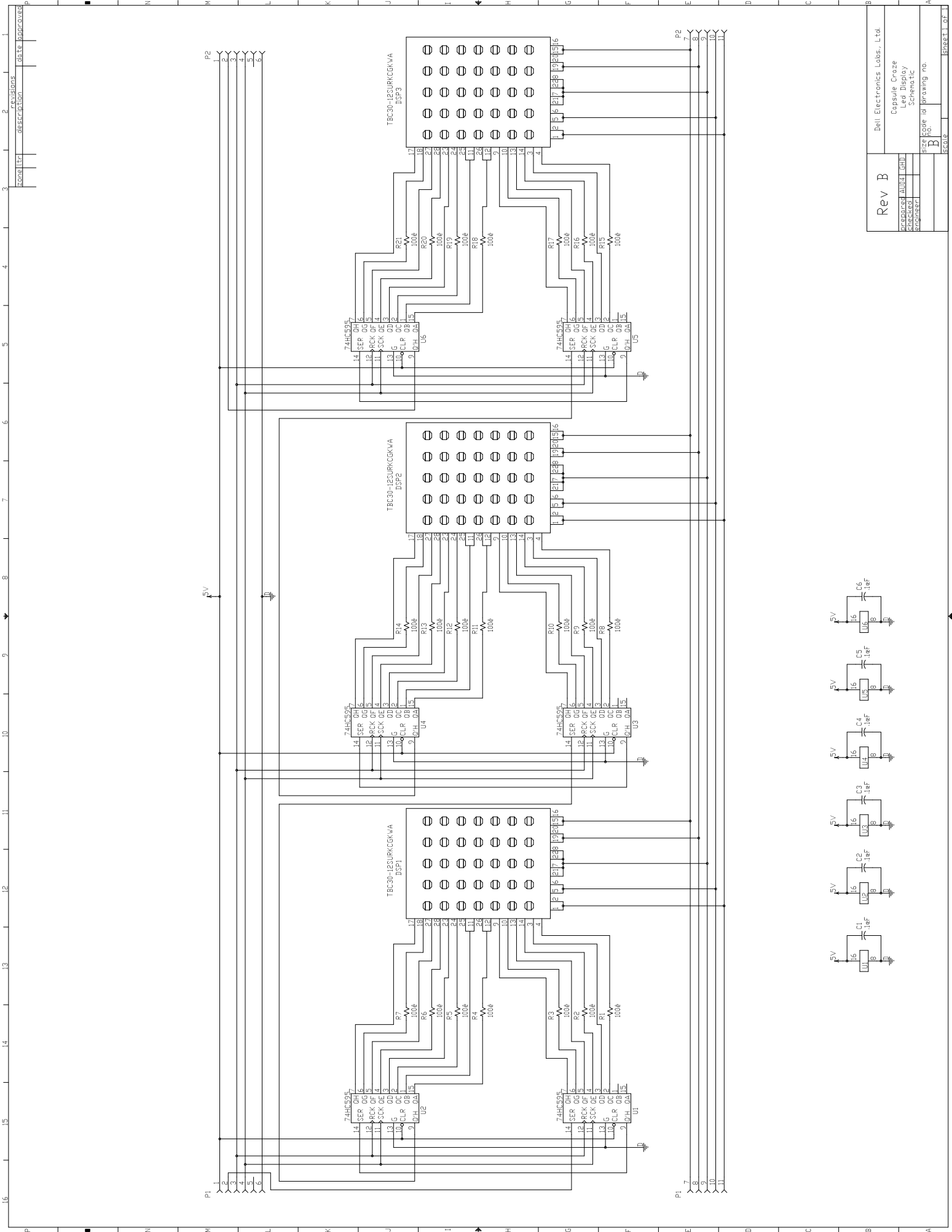
E0033066	Decal, AC power warning
M0800170	Control panel decal
M0800171	Door decal
M0800180	Marquee decal
M0813000	Service Manual
MX000150	Serial number decal

## ELECTRONIC / ELECTRICAL PARTS

E0025100	12 volt mechanical counter
E0004310	Relay Cover (for E0800310)
E0800015	Momentary contact push button
E0800021	Turntable Gearmotor
E0800031	40mm stroke linear actuator motor
E0800032	100mm stroke linear actuator motor
E0800040	Workhorse 6 Electronic Ballast
E0800041	PLL Compact Fluorescent Bulb
E0800042	Compact Fluorescent Bulb Socket
E0800070	6" x 9" Speaker
E0800151	Main P.C. Board
E0800152	Receiver sensor P.C. Board
E0800153	Transmitter sensor P.C. Board
E0800154	Sensor, tube receiver
E0800155	Sensor, tube transmitter
E0800157	Display P.C. Board
E0800201	Dual switching power supply
E0800224	Mini Shunt connector
E0800310	Solid State Relay
E0830213	High power LED
H0800027	3/8" aluminum standoff
H0800029	3/8" plastic standoff
W0800055	Blower Motor

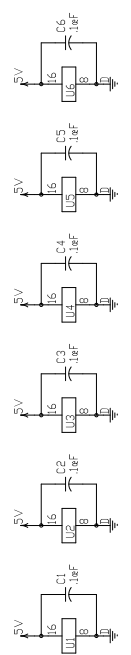


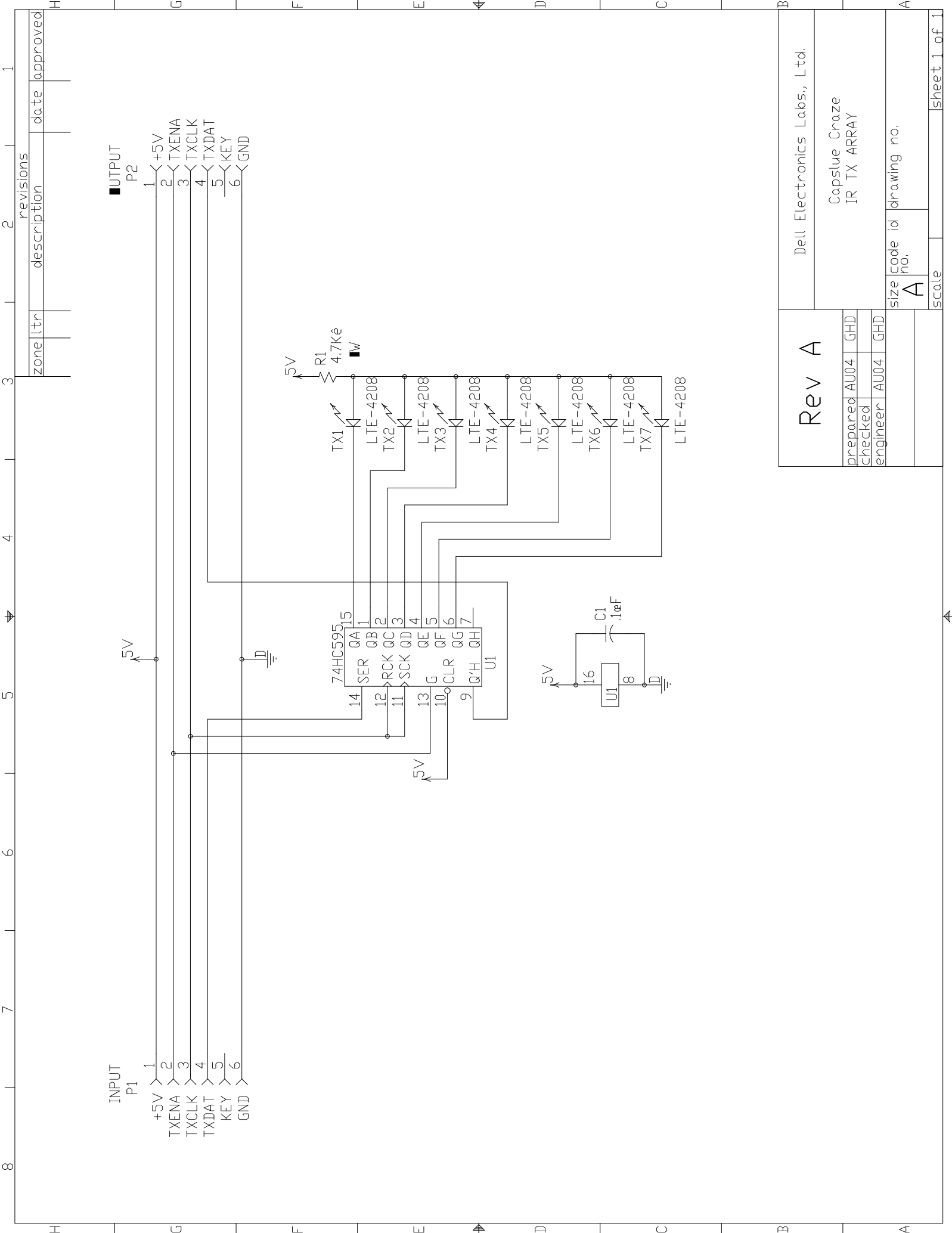




REV	DESCRIPTION	DATE	APPROVED
1			
2			

Rev B		Dell Electronics Labs, Ltd	
		Capsule Craze	
		Led Display	
		Schematic	
Prepared	AWB	Size	Scale
Checked		Id	
Engineer		Prwng no.	
	B		
			Sheet 1 of 1

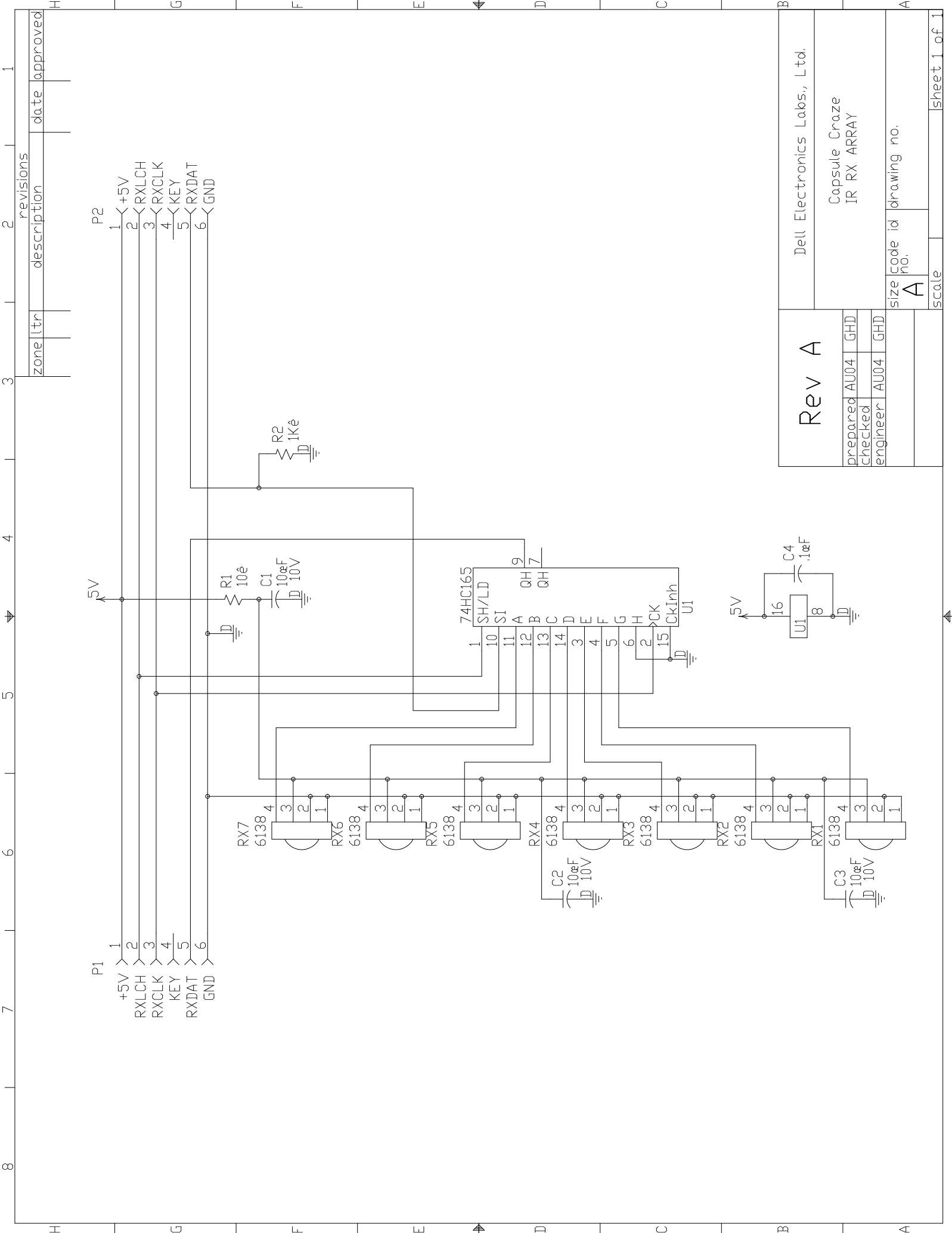




INPUT P1		OUTPUT P2	
1	+5V	1	TXENA
2	TXENA	2	TXCLK
3	TXCLK	3	TXDAT
4	TXDAT	4	KEY
5	KEY	5	GND
6	GND	6	

zone	ltr	description	revisions	date	approved

Rev A		Dell Electronics Labs., Ltd.	
prepared	AU04	GHD	Capslve Craze
checked			IR TX ARRAY
engineer	AU04	GHD	
size	A	code id	drawing no.
no.			
scale			sheet 1 of 1



zone	ltr	description	revisions	date	approved

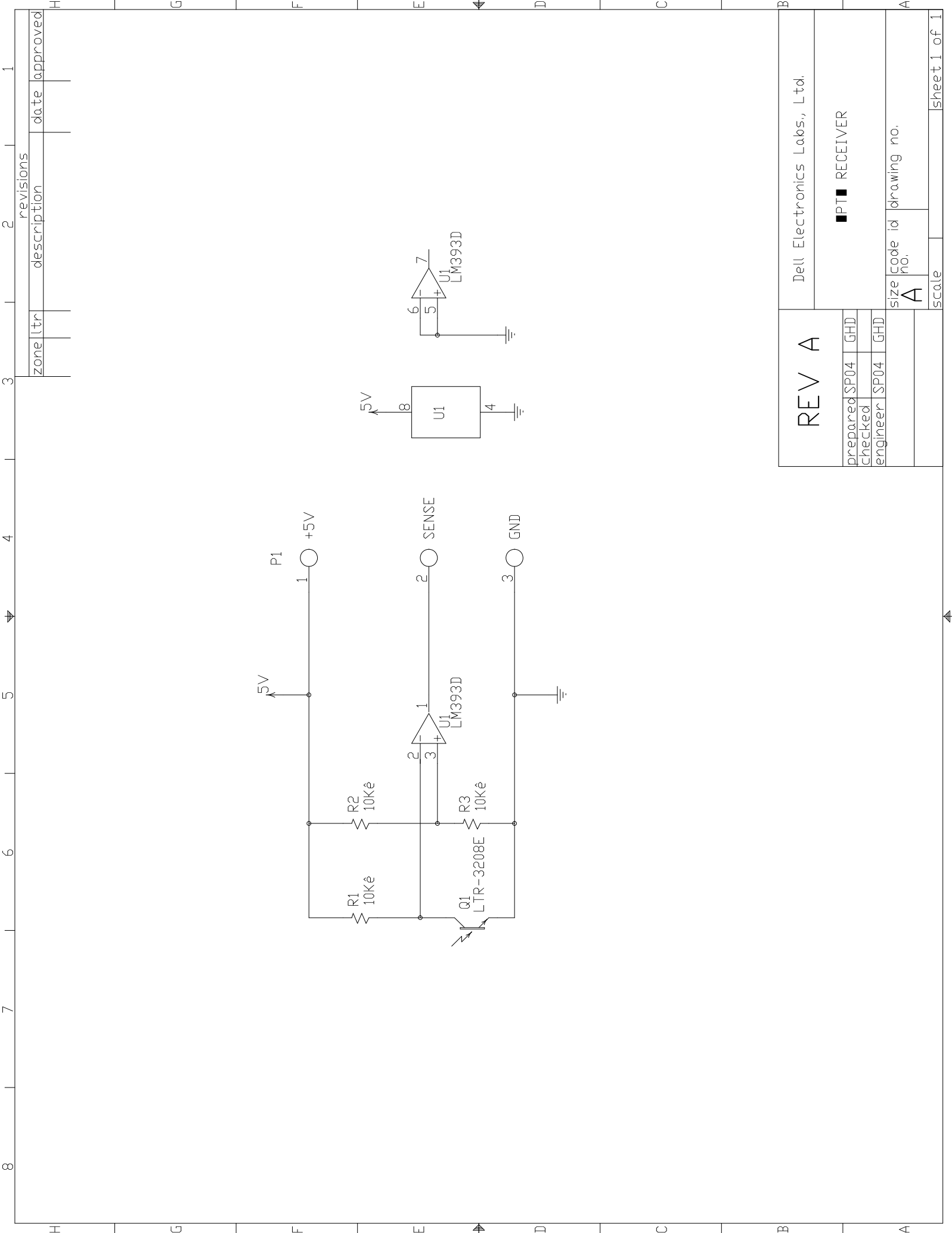
P1

1	>	+5V
2	>	RXLCH
3	>	RXCLK
4	>	KEY
5	>	RXDAT
6	>	GND

P2

1	<	+5V
2	<	RXLCH
3	<	RXCLK
4	<	KEY
5	<	RXDAT
6	<	GND

Rev A		Dell Electronics Labs., Ltd.	
prepared	AU04	GHD	Capsule Craze
checked			IR RX ARRAY
engineer	AU04	GHD	
size	A	code id	drawing no.
no.			
scale			sheet 1 of 1



zone	ltr	description	revisions	date	approved

REV A		Dell Electronics Labs., Ltd.	
prepared	SP04	GHD	■ IPT ■ RECEIVER
checked			
engineer	SP04	GHD	
size		code id	drawing no.
A			
scale		sheet 1 of 1	

# BOB'S SPACE RACERS INC.

## 90 DAY COIN-OPERATED GAME WARRANTY

1. INCLUDED IN THIS WARRANTY Bob's Space Racers, Inc. warrants to the original purchaser only that the equipment that is the subject of this sale conforms to its specifications, and is free from defects under normal service for a 90 day period from the original date of delivery. This warranty does not include any damages resulting from occurrences listed in Paragraph 2 below. This warranty is not transferable under any circumstance. Any claims under this warranty must be received in writing by Bob's Space Racers, Inc. within 120 days from date of delivery. Within a reasonable time of such written notification Bob's Space Racers, Inc. will replace or repair any defective component of the equipment or part thereof which fails for reasons other than normal service, use, or wear. Bob's Space Racers, Inc. reserves the right to request dated proof of purchase by the end user (original purchaser) at any time. Light bulbs are specifically excluded from this warranty and shall be the sole responsibility of the purchaser. Bob's Space Racers, Inc., within its sole discretion, makes the final determination as to whether to repair or replace any component and whether any such repair or replacement shall be performed where the equipment is located or at its home facility in Volusia County, Florida or another facility of its sole choice. Any and all freight charges for the purposes of repair or replacement shall be paid by the original purchaser. All defective parts shall be returned to Bob's Space Racers, Inc. if requested. Bob's Space Racers, Inc. does not warrant that the equipment will meet any original purchaser's specific requirements or that the operation of the equipment will be uninterrupted. These remedies are the original purchaser's exclusive remedies for breach of warranty.

2. EXCLUDED BY THIS WARRANTY. Bob's Space Racers Inc does not warrant (a) any product, components or parts not manufactured by Bob's Space Racers, Inc.; (b) damages caused by use of the equipment for purposes other than those for which it was designed; (c) defects caused by failure to provide a suitable installation environment for the equipment; (d) damage caused by unauthorized attachments, modification, or service; (e) damage caused by normal wear and tear or improper power supply; (f) damage caused by accident or disaster such as tires flood, lightning and wind; or (g) any other abuse or misuse of the equipment.

3. EXCLUSIVE WARRANTY. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OR REMEDIES, WHETHER WRITTEN, ORAL OR IMPLIED. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COURSE OF DEALING OR USAGE OF TRADE ARE HEREBY EXPRESSLY DISCLAIMED AND EXCLUDED.

4. REMEDIES LIMITED. UNDER NO CIRCUMSTANCES, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, SHALL BOB'S SPACE RACERS, INC. BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL ARISING OUT OF THE USE OR INABILITY TO USE THIS EQUIPMENT INCLUDING BUT NOT LIMITED TO ANY CLAIM FOR LOSS OF PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF USE OF THE EQUIPMENT, OR ANY ASSOCIATED EQUIPMENT, FACILITIES OR SERVICE, DOWNTIME, THE CLAIMS OR COSTS OF THIRD PARTIES INCLUDING CUSTOMERS AND INJURY TO PROPERTY.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

5. NO OTHER WARRANTIES. Unless modified in writing and signed by both parties, this agreement is understood to be the complete and exclusive agreement between the parties, superseding all prior agreements, oral or written, and all other communications between the parties relating to the subject matter of this agreement. No employee or representative of Bob's Space Racers, Inc. or any other party is authorized to make any other warranty or to assume any other liability in connection with the sale of its equipment.

6. TIME LIMIT FOR CLAIMS. Any claim for breach of warranty or claims under this warranty must be received in writing by Bob's Space Racers, Inc. within 120 days following delivery of the equipment.

7. FUTURE CHANGES. Bob's Space Racers, Inc. reserves the right to reserve, change or modify the construction and design of its equipment or any component part or parts thereof without incurring the obligations to make such changes or modifications in present equipment.

8. ALLOCATION OF RISKS. This agreement allocates the risks of equipment failure between Bob's Space Racers, Inc and the original purchaser. This allocation is recognized by both parties and is reflected in the price of the goods. THE PURCHASER ACKNOWLEDGES THAT IT HAS READ THIS AGREEMENT, UNDERSTANDS IT, AND IS BOUND BY ITS TERMS.

9. TO OBTAIN WARRANTY SERVICE. The original purchaser must, at his own expense, bring or ship the equipment to an authorized location for service. Additionally, the original purchaser must pay all freight, shipping or transportation charges for the return of the equipment from Bob's Space Racers, Inc. to the original purchaser. Telephone or write:

Bob's Space Racers, Inc.  
427 15th Street  
Daytona Beach, Florida 32117  
Telephone number 386/677-0761  
FAX 386/677-0794