AKV2100PC

The Tripp Enterprises Auto Keno System

USER MANUAL AND SERVICE GUIDE

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The Tripp Enterprises AKV2100PC Auto Keno System

User Manual and Service Guide

Document Revision A

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Introduction

The AKV2100PC represents an exciting new level of security and ease of use for the Keno industry. With the addition of special upgrades to the keno and player tracking system in the casino, the AKV2100PC can be installed to provide automated ball draws with unparalleled speed and accuracy.

Operation Cycle

 The keno operator informs the Keno System to begin a new game by pressing the appropriate key on the console.

 The AKV2100PC wheel rotates, dumping all balls from the previous game back into the bowl.

 The blower turns on high speed for a short time to lift and mix the balls.

 After the short delay, the blower slows down to normal running speed and the wheel moves into the first position.

 When a ball is captured in the pocket, the reading system processes the ball's image so its identification can be made. When the ball's identity is confirmed, the number is sent automatically to the Keno System just as if the operator had pressed that number's key.

 After all 20 balls are drawn and identified, the blower will turn off and the AKV2100PC will be ready for the next game.

Tripp Enterprises is continuing to upgrade and improve its product line and as a result, this manual may not reflect the most recent change to the AKV2100PC. Any required upgrades to this manual will be provided as needed.

System Components & Assembly

Drawings have been included in this manual to assist the user in locating and identifying the various components used in the AKV2100PC (see Drawings in the Table of Contents).

The AKV2100PC System consists of 4 standard components:

1. The Wood Base and Glass Bowl assembly
2. The AKV2100PC Controller
3. The Blower Motor Assembly
4. The Auto Keno Upper Assembly

The glass bowl is very fragile and must be handled with care to prevent breakage.

Unpack all boxes and become familiarized with all of the parts by referring to Dwg **150-10634-01**. The assembly of these parts will now be discussed.

1. If holes have not yet been cut into the counter top to accept the Wood Base, they must be cut before continuing. A cutting template drawing is available for this purpose.

2. If the Wood Base is already attached to the Glass Bowl, skip to step 8.

4. Place the Glass Bowl onto the Wood Base so that it is on top of the Venturi Dish (Dwg. 100-10253-01 PN 340-10007).

5. Attach the Electrical Conduit Assembly, 150-12040 to the Glass Bowl mounting flange using two 8-32 flat head screws (Dwg. 100-10253-01 PN 351-06206). By doing this, the Glass Bowl will be oriented properly on the Wood Base before attaching the Bowl Collars.

6. Place the 2 Bowl Collars (Dwg. 100-10253-01 PN 300-10010-01) around the bottom flange of the Glass Bowl where it meets the Wood Base. Be sure they are arranged as shown in Dwg. 100-10253-01 and ensure the two foam cushions are placed between the wood and the glass. Tighten them down to the Wood Base using eight 8-32 machine screws (Dwg. 100-10253-01 PN 351-08236). This will secure the Glass Bowl to the Wood Base.

7. Place a Collar (Dwg. 100-10253-01 PN 297-11283) around the Conduit Tube (Dwg. 100-10253-01 PN 150-12040) and secure it while holding it tightly against the Wood Base. Repeat this procedure with another Collar on the opposite side of the Wood Base. These two collars will prevent the Conduit Tube from moving up or down through the Wood Base.

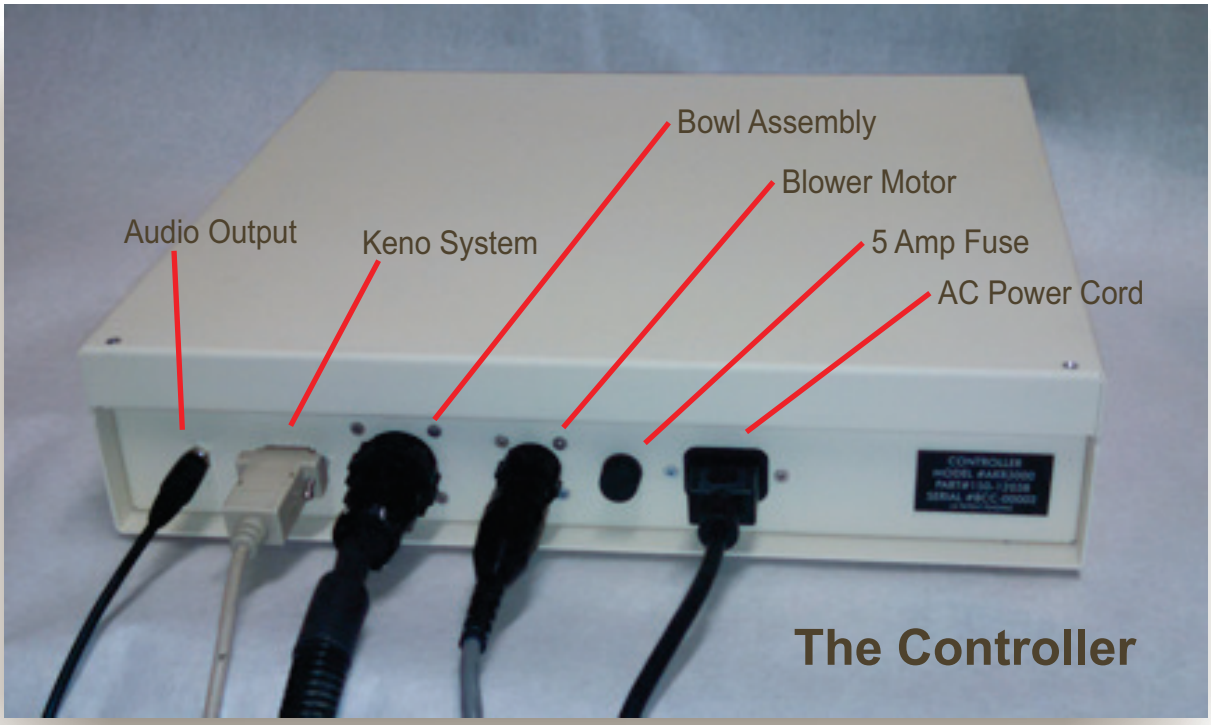
8. Place the Wood Base and Glass Bowl Assembly onto the counter top, being careful to route the electrical cable through the hole first. Gently guide the cable through the hole so it does not become trapped underneath the Wood Base as it is put into place.

9. Put the Blower Motor Assembly (Dwg. 150-10634-01 PN 150-11028) in place and cut the hose (Dwg. 150-10634-01 PN 701-11500) to length.

10. Put the two Hose Clamps (Dwg. 150-10634-01 PN 400-10014) on the hose, then attach the hose between the Blower Motor Assembly and the Venturi (Dwg. 100-10253-01 PN 328-16644).

11. Tighten the two Hose Clamps around each end of the hose where it meets the Venturi and the Blower Motor Assembly.

12. Place the AKV2100PC Controller (Dwg. 150-10634-01 PN 150-10597-01) under the counter below the Wood Base/Glass Bowl Assembly. The AKV2100PC Controller may be positioned either upright or on its side. Locate the unit with its front panel easily accessible from the operator's position. The four black feet can be unscrewed from the bottom and moved to the side when installing in an upright position.



13. Place the UPS back-up power supply near the AKV2100PC Controller.

14. Connect the Blower Motor Assembly cable to the back of the AKV2100PC Controller.

15. Connect the cable coming from the Glass Bowl Assembly to the back of the AKV2100PC Controller.

16. Connect the AC power cord to the socket on the back of the AKV2100PC Controller.

17. Connect the AC power cord for the AKV2100PC Controller to the UPS

18. Check the fuse holder contains a 5A fuse.

19. Connect the Keno System to the Keno System connector on the back of the AKV2100PC Controller.

20. If your AKV2100PC was supplied with the VOICE option, connect your PA/System to the RCA audio jack on the rear of the AKV2100PC Controller.

21. Place the keno balls into the Glass Bowl.

22. Place the Auto Keno Upper Assembly onto the Glass Bowl being careful to mate the connectors properly. Use straight up and down movements when installing or removing the Upper Assembly.

Ball Cleaning and Waxing

Upon initial installation, the keno balls need to be waxed with the supplied Buckskin™ product. The only other product we recommend for this is Tuff-Cote™. Apply the wax liberally to each ball. After it dries, buff each ball with a soft cloth.

The keno balls must be cleaned on a regular basis. The cleaning interval varies with the site location but will generally be needed once per week. Be sure to refer to the cleaning and waxing instructions enclosed with your new set of balls. If the Windjammer blower is located near a restaurant, some greases and oils will be drawn into the system that may greatly increase the number of times the balls need to be cleaned. Clean the balls by putting them in a solution of water and detergent such as Tide™. Clean all the balls to remove any build up of wax and dirt. Rinse and dry the balls, then wax them with the supplied Buckskin™ product. The only other product we recommend for this is Tuff-Cote™. Apply the wax liberally to each ball. After it dries, buff each ball with a soft cloth.

System Startup

1. Turn the system on by pushing the Power Switch.

2. During Power up, the front panel LED's will light up in a distinctive pattern. At this time the ACTIVE LED will begin to flash. This flashing will continue until the AKV2100PC has communicated with all the system components including your Keno System Console. When the process is complete the ACTIVE LED will stop flashing and the SYSTEM READY LED will light up. If the SYSTEM READY LED does not turn on after the ACTIVE LED stops flashing, check the cable connection to the Keno System.

3. When the SYSTEM READY LED is on steady (not blinking), the AKV2100PC is ready to begin game play.

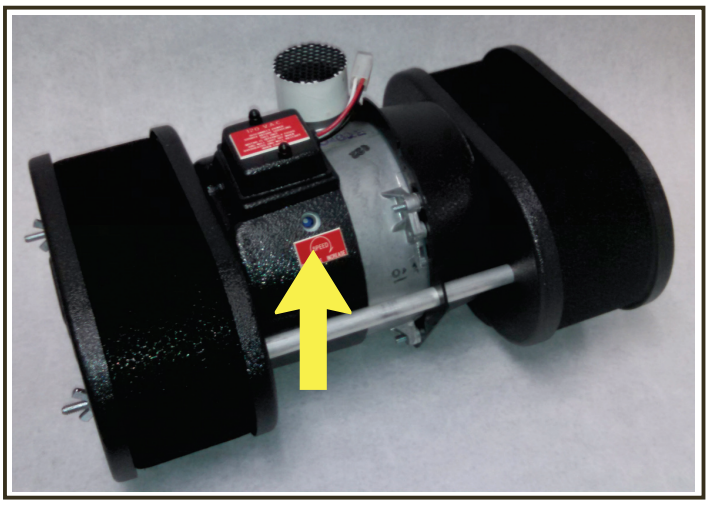
Blower Speed Adjustment

The "Blower Speed" control is used to adjust the airspeed flowing through the balls. Adjust the speed of the blower while a game is in progress. After the game is started, the ACTIVE light will be on during the high speed blower premix. Wait for this light to go off and the blower motor to slow down before adjusting the air speed. This occurs when the wheel moves to the first pocket position. The setting of the air speed is a compromise between game length and ball life. Faster air flow will provide faster games with shorter ball life. Slower air flow will slow down the game but will increase ball life. Choose the appropriate setting using the Blower Speed knob. Typically, the games should always be finished in under one minute and 15 seconds. Measure this time from

the moment the wheel begins to move into position 1 until the last ball is identified and the wheel moves to the home position.

The "Air Always On" switch will allow the blower motor to run even if the Air Speed control becomes faulty. In its NORMAL, or off position, blower speed is adjusted using the Air Speed control knob. If the Air Speed control should become inoperative, place the Air Always On switch in the ON position to run the game. This will cause the air speed to always be on full power. The AKV2100PC Controller should be repaired as soon as possible if the speed control fails.

Depending on the altitude where this equipment is installed, it may be necessary to adjust the blower speed setting on the blower motor. During the high speed blower premix, the blower on full speed. If the keno balls are breaking too often, the high speed can be adjusted by turning the speed control with a small screwdriver. The arrow at right shows the location of the speed control. The best way to adjust this speed control is by first placing the AIR ALWAYS ON switch in the on position. Then, adjust this speed control for the desired top speed of the blower.



Note: if this control is adjusted, overall blower speed will be affected and this may require readjustment of the Air Speed knob while a game is in progress.

Front Panel Indicator Lamps

There are three indicator lights that provide the following information:

SYSTEM READY - This light indicates the unit has connected to the Keno System.
ACTIVE - This light indicates the unit is currently busy.
FAULT DETECTED - This light will illuminate if some part of the system is not functioning properly.

System Shutdown Procedure

When it becomes necessary to turn off the AKV2100PC system, such as when removing the wheel assembly from the top of the bowl, press the Power Switch button in and promptly release it.

The AKV2100PC controller must always be turned off prior to removing the wheel or placing the wheel on the glass bowl. The voice output of the AKV2100PC controller can become garbled if the wheel assembly is removed without first turning off the controller.

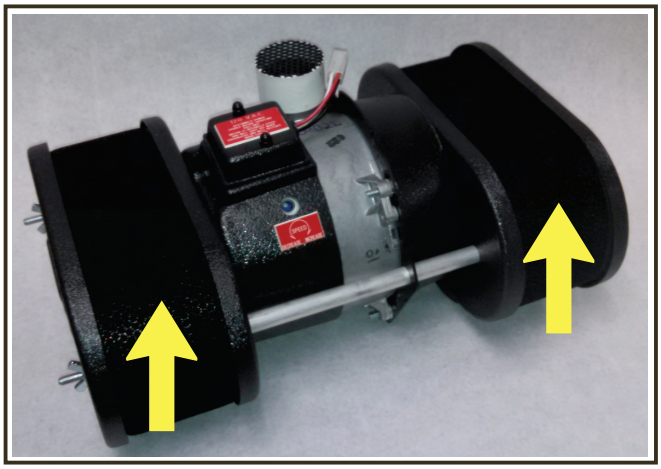
Periodic Maintenance

The AKV2100PC system requires some maintenance to be performed on a regular basis in order to provide trouble free service. The schedule of your maintenance will depend upon your location. This will have to be determined by careful observation after the system is in place.

As a starting point, we recommend these minimum service intervals.

Blower Unit

Because of the Blower Unit constantly blowing air through the system, some dirt is going to be collected inside the glass bowl and upper assembly. The amount of this dirt will depend upon how clean the environment is around the system. For the first several weeks, inspect the filters on the Blower Motor weekly and clean them when dirt is observed on the outside surfaces of the filters. Note this time period and clean the filters on a regular basis thereafter. These filters are identified by the yellow arrows in this picture.



Controller

The AKV2100PC CONTROLLER has no external fan to draw air into the system so it should remain relatively clean inside. We recommend lifting its top cover and blowing it out with compressed air to remove any dust buildup on an annual basis.

To open the cover, first turn the power off and then remove the two small screws as indicated by the two yellow arrows in this picture.

The top cover can then be opened from the front as it rotates on the hinge in the back.

The power supply, indicated by the red arrow, has a fan that will draw air into it. Use compressed air to clean out the inside of the power supply.

The outside case of the controller can be cleaned with a mild soap and water mixture on a clean cloth.

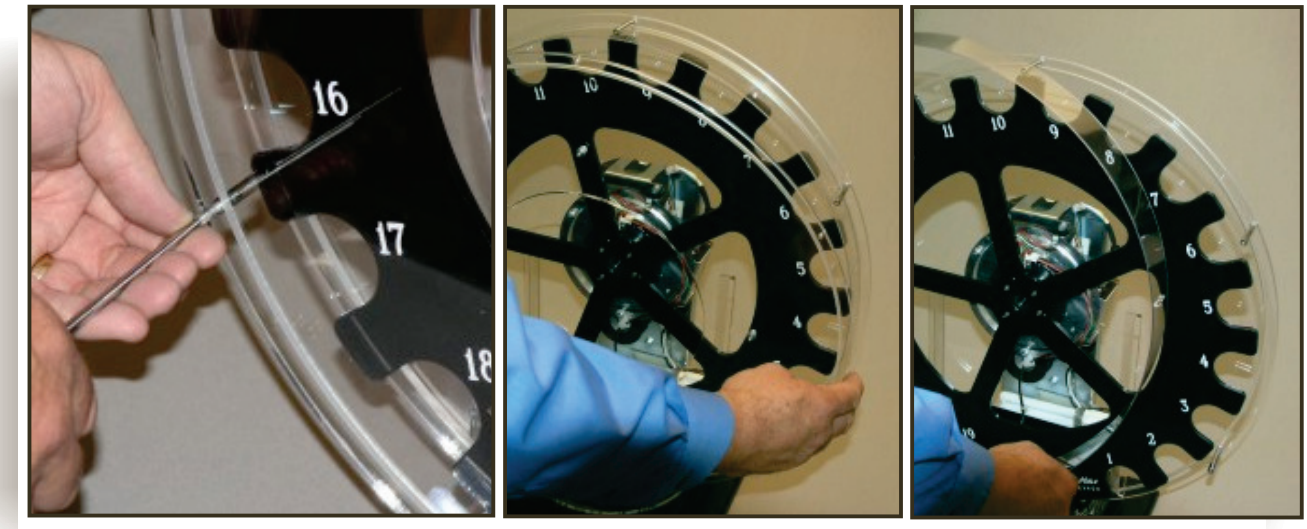
Upper Assembly (Wheel)

The AKV2100PC UPPER ASSEMBLY needs to be cleaned inside periodically by removing its front cover and blowing it out with compressed air to remove any dust buildup. Cleaning the inside of the upper assembly will be necessary when dirt accumulation is noticed inside the unit that cannot be removed with compressed air.

Disassembly

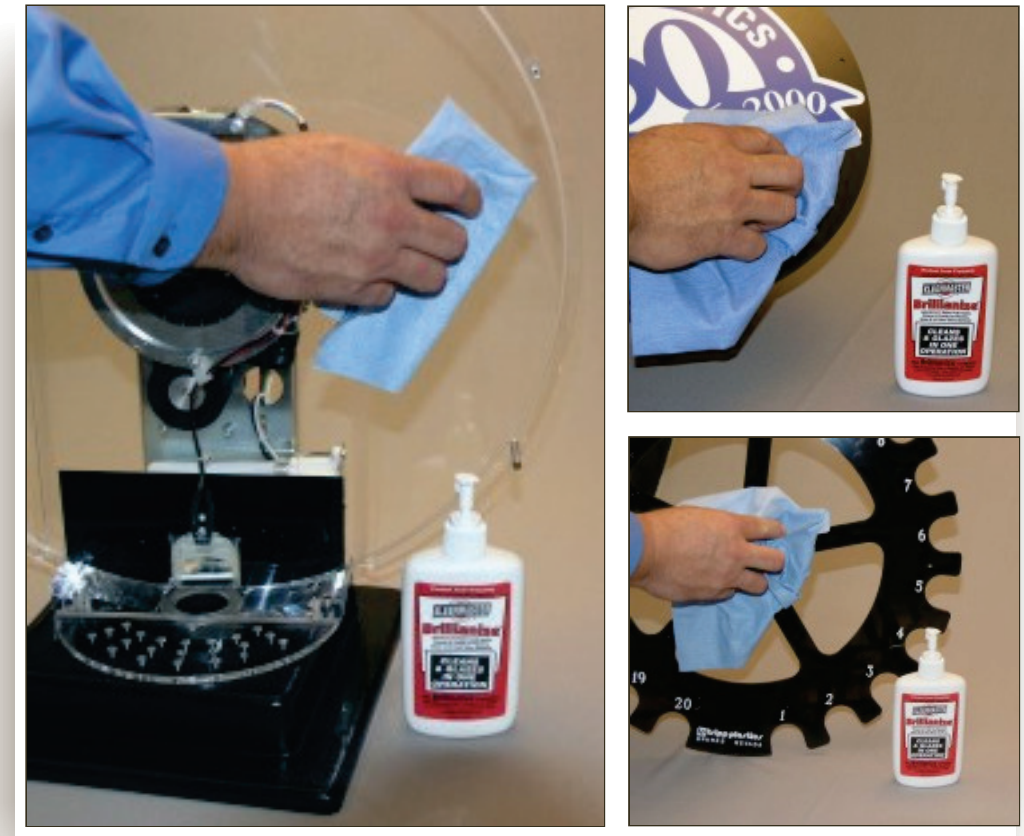
1. Remove the Motor Cover (Dwg. 150-10478-01 PN 340-13313).
2. Unscrew the three thumb screws holding the Upper Assembly to the Glass Bowl.
3. Remove the Upper Assembly from the Glass Bowl by lifting straight up until the harness connector is disconnected.
4. Place the Upper Assembly onto the Service Stand. Remove the four acorn nuts and lift the Front Cover off of the unit as shown below.

5. Remove the 7 screws securing the Front Panel. Remove the Front Panel and the Wheel Strip as shown below.

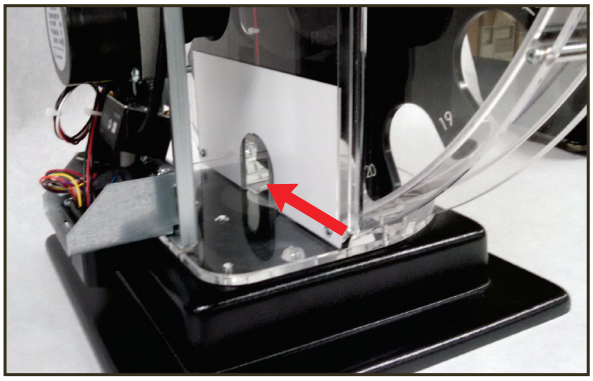


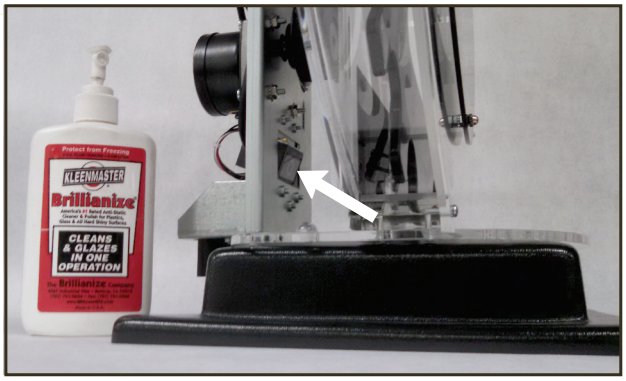
6. Remove the 4 screws securing the Wheel and remove it by lifting it off of the 3 locating pins protruding from the Wheel Spacer as shown below. NEVER remove or loosen the screw indicated by the yellow arrow.

7. CAUTION: Use a very soft, lint free cloth for cleaning the plastic parts or scratching may occur. Clean all of the items removed using mild soap and water or "Brillianize" cleaner. Be sure to dry all parts completely before assembly using a soft cloth.



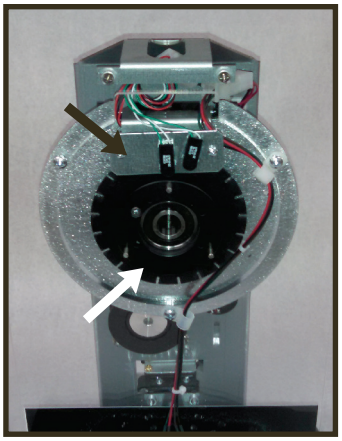
8. Clean the Reader Lens (white arrow below) using Brillianize on a soft cloth. Wrap the cloth around your index finger, then spray some Brillianize on the cloth. Gently clean the Reader lens with the moist part of the cloth, then dry it with a dry section of cloth.
9. Clean both sides of the glass window (red arrow below) with the same cloth using Brillianize.

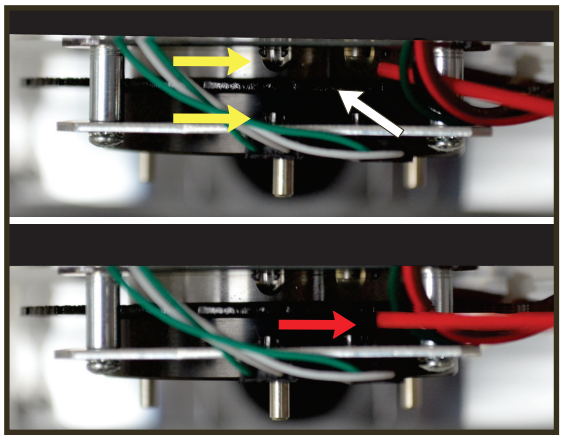




10. Clean the lens on the Ball Optic using Brillianize on a rag wrapped around your fingertip.

11. Using compressed air, blow off the surfaces of the optic detectors (yellow arrows below) on the Optic Assembly (black arrow below). Be sure to blow air on both the front and back of the timing wheel (white arrows below) as shown by the red arrow below.





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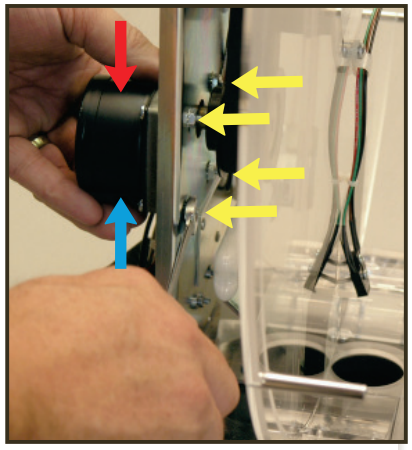
12. Reverse the disassembly order to put the unit back together. Special care must be taken while tightening the screws during assembly. Do not over tighten these screws or there will be risk of cracking the plastic. A snug fit is all that is required when tightening

Bowl Assembly

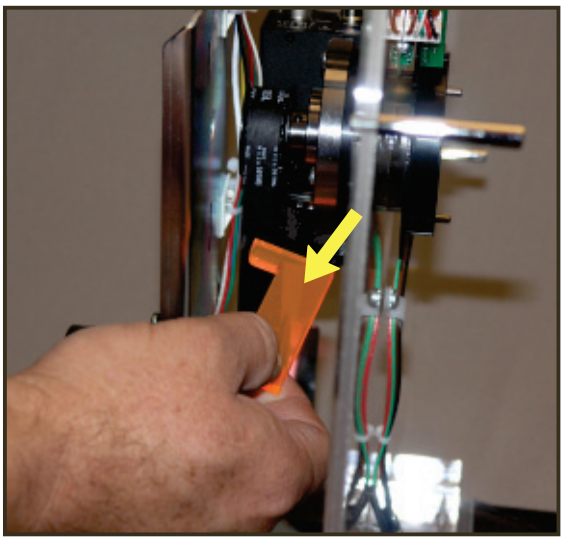
The Bowl Assembly should be cleaned periodically.
1. Remove the Upper Assembly.
2. Remove the balls from the Glass Bowl. Clean the inside of the bowl using a soft cloth and regular glass cleaner or Brillianize. Be sure the inside of the bowl is dry before replacing the balls.

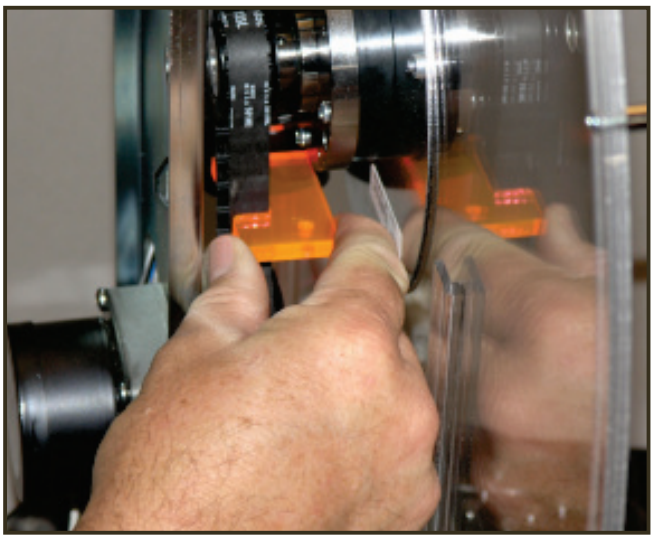
Wheel Motor Drive Assembly

The Wheel Motor Drive Assembly does not require maintenance. The information provided here will assist you if the drive belt requires replacement or adjustment. To replace or tension the belt, loosen all four nuts holding the motor in place until the motor is able to be moved up and down (blue and red arrows) in its mounting holes. Do not remove the nuts from the threaded posts (yellow arrows) . Your tool kit includes a wrench for this purpose.

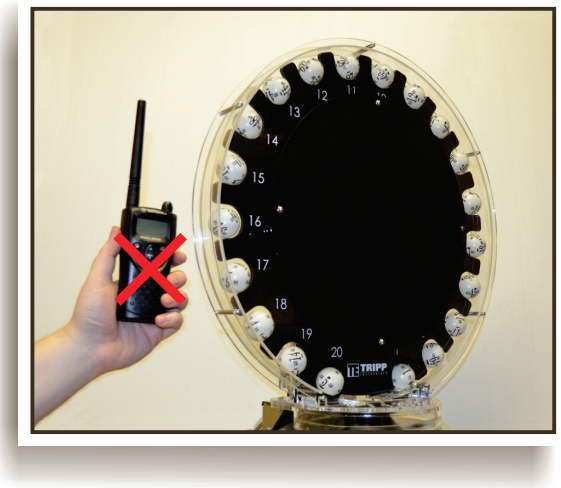


To obtain proper belt tension, use the belt tension gauge (yellow arrow below). Place the belt tension gauge onto the drive belt as shown below. This will pre-tension the drive belt. After the gauge is in place, hold downward force on the motor (red arrow) and tighten the four motor mount nuts. Remove the belt tension gauge and put it back into your toolkit.





Radio Interference



As with any electronic device, radio interference above a given amount can cause system instability. Our equipment filters out radio interference from the environment when kept at a standard level. If, however, the signal gets too strong, the wheel may skip pockets and you will have an invalid ball draw. The use of personal communication devices such as cell phones and walkie-talkies must be kept at least three feet away from all Auto Keno equipment.

Training Classes

Tripp Enterprises provides free training at our Sparks, Nevada facility by appointment. All aspects of operation and maintenance of your AKV2100PC system are covered in this class. We utilize a hands on approach to help new and existing customers with all these topics. Please contact our Auto Keno sales team for more information.

Troubleshooting

The Operator may occasionally experience problems with the AKV2100PC and/or the keno system to which it is attached that will interrupt normal game play. This can be caused by random power problems or static discharges and are usually recoverable. Please refer to the instructions supplied with the keno system to recover a game that may be in progress. If it is found the keno system is working properly, the AKV2100PC controller may need to be turned off, then back on again using the power button on the front panel.

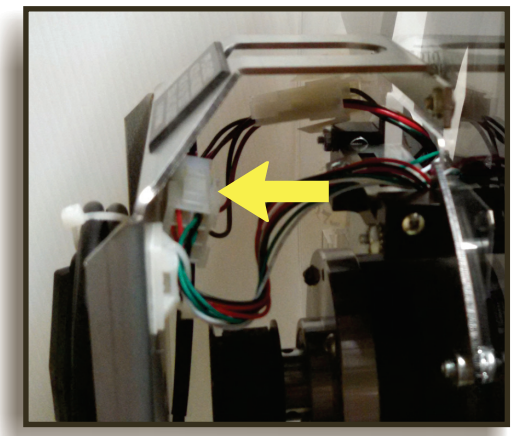
If there are balls captured in the wheel that must be included in the recovered game, place the Air Always On switch into the On position before the next game is started on the keno system. This will prevent the balls from the current game from falling back into the bowl before the game can be recovered.

Wheel problems

Symptom: The wheel does not turn.
Solution(s):
1. Check the fuse located on the back panel of the AKV2100PC System Controller. Replace with a 5 amp rated fuse.
2. Make sure the wheel motor connector is fully seated.
3. Tighten the pulley setscrews. There are two pulleys with a belt around them.
4. Make sure the belt tension is properly set (see Wheel Motor Drive Assembly).

If you cannot resolve this problem, replace the Upper Assembly (wheel) with your spare and send the faulty one to our Repair Facility (see Table of Contents).

Symptom: The wheel turns but does not stop at a pocket or home.
Solution(s):
1. Clean the wheel position optic assembly (see Periodic Maintenance).
2. Make sure the optic connector is plugged in properly (yellow arrow at right).
3. Turn the controller off, then back on again.

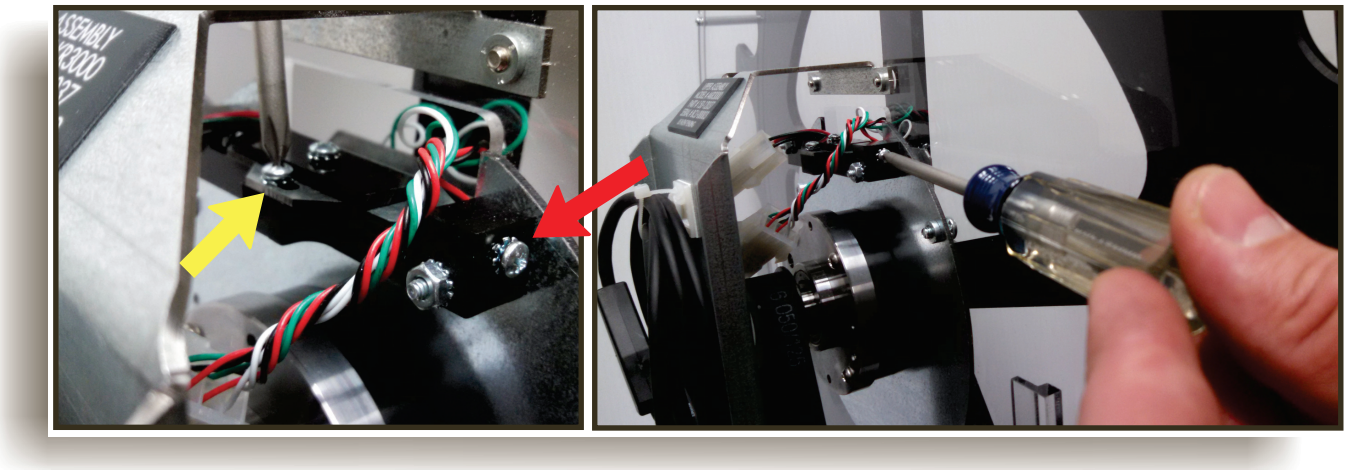


If you cannot resolve this problem, replace the Upper Assembly (wheel) with your spare and send the faulty one to our Repair Facility (see Table of Contents).

Symptom: The wheel turns slowly or erratically.
Solution(s):
1. Tighten the pulley setscrews. There are two pulleys with a belt around them.
2. Make sure the belt tension is properly set (see Periodic Maintenance).

If you cannot resolve this problem, replace the Upper Assembly (wheel) with your spare and send the faulty one to our Repair Facility (see Table of Contents).

Symptom: The wheel turns and stops at the pockets but the pockets are not lined up with the hole where the balls pass through.
Solution: Loosen the Wheel Optic Lock Screw (yellow arrow below). Turn the Wheel Optic Adjustment Screw (red arrow below) clockwise to make the wheel turn more clockwise before stopping or turn it counter-clockwise for the opposite effect. Tighten the Lock Screw when finished.



Symptom: The rubber
strip fell off or is coming off the bottom of the wheel, under our logo.
Solution: Remove any loose particles where the rubber strip fell off and glue with a small amount of perma-bond or super glue.

Ball problems

Symptom: Balls break.
Solution: Your keno balls will eventually break under normal conditions. However, if you feel the balls are breaking too often, slow down the airspeed during game play (see Blower Speed Adjustment on page 6 and the picture on page 7). Make sure the inside of the wheel and both sides of the glass window are clean.

Symptom: Balls broken - jamming wheel.
Solution: Remove the broken pieces by first removing the front panel (see Upper Assembly (Wheel)).

Symptom: Balls don't rise high enough to get into pocket.
Solution(s):
1. The graphics panel stand-offs are missing, allowing the graphics panel to touch the front panel. Replace stand-off nuts to ensure there is a gap behind the graphics panel.
2. Replace or clean the air filters on the blower motor (see Blower Unit).

Symptom: The balls don't rise at all.
Solution(s):
1. The blower hose may have fallen off. Make sure it is securely attached at both ends.
2. The blower motor cable has become disconnected from the controller or has become faulty.
3. The blower motor may have failed. Replace it with your spare blower unit.

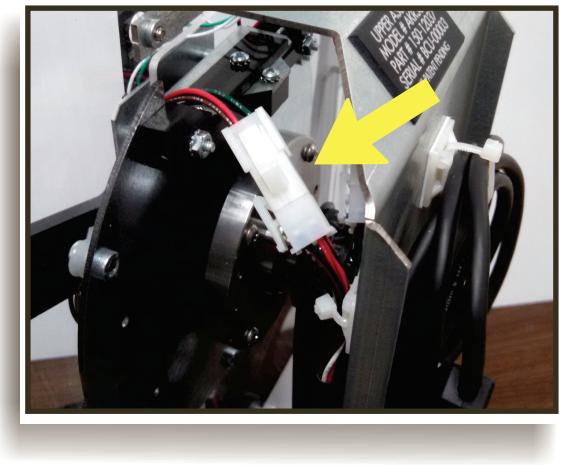
Reading problems

Symptom: The game time is too long (always over 1 minute, 30 seconds).
Solution(s):
1. Make sure the graphic panel is not mounted so it is touching the front panel. This will make it very difficult for a ball to come into the pocket.
2. Replace old, worn out balls with new ones.
3. Clean the Upper Assembly (wheel).
4. Clean the glass window.
5. Clean the balls.
6. Replace the glass window if it is scratched or has a flaw on it.

Symptom: There are occasional long read times for a ball.
Solution: It is normal to have occasional long read times for a ball. If this happens more than once every game, see “The game time is too long”, above.

Symptom: A ball number is being read more than once.
Solution(s):
1. The wheel is not turning properly. See Wheel Problems under Troubleshooting.
2. Make sure there are not two or more identical balls in the bowl.

Symptom: A ball goes into the wheel pocket but is not read. The Keno Console may time out.
Solution(s):
1. Check the ball detect optic. Make sure it is clean and the connector is plugged in properly (see yellow arrow at right).
2. See “The game time is too long”, above.
3. If the Keno System displays a no read or similar error, manually enter the ball number by following the instructions provided by your keno system supplier.



Game problems

Symptom: “Duplicate Spot Error” or similar message displayed on Keno Console.
Solution(s):
1. Determine why the wheel is not turning properly.
2. Make sure there are not two or more identical balls in the bowl.

Symptom: The system stops working during a game.
Solution(s):
1. If the wheel position is incorrectly detected, this could cause the system to think a ball has not been captured. This happens when the wheel position is off so far that the next ball does not get captured. The wheel stops moving before the next ball can get captured. Determine why the wheel is not moving properly.
2. Replace the cable between the AKV2100PC controller and the Keno System.
3. Replace the fuse on the rear panel of the AKV2100PC controller.
4. Turn the AKV2100PC controller off, then back on. Be sure to put the Air Always On switch in the ON position before restarting the controller. Also, turn the controller on right away to prevent a ball from falling back into the bowl.

Symptom: The wheel does not always stop to pick up a ball. It is skipping pockets.
Solution(s):
1. Do not use cell phones or walkie talkies too close to the game. RF interference will cause a pocket to be skipped.
2. Clean the wheel detect optic assembly (see Upper Assembly (wheel)).
3. Make sure both optic connectors are plugged in properly.

Symptom: When the AKV2100PC controller is turned on, the Active lamp flashes indefinitely and will not stay off.
Solution(s):
1. Set the Upper Assembly Wheel onto the top of the glass bowl assembly.
2. Make sure the connector from the Base/Bowl assembly is plugged into the back of the AKV2100PC Controller. See page 5.

If this problem persists, contact our Repair Facility. (See Table of Contents).

Symptom: When the AKV2100PC controller is turned on, the Ready lamp flashes indefinitely and never stays on steady, without blinking.
Solution(s):
1. Turn the AKV2100PC Controller off, then back on again.
2. Make sure the Keno System is connected as shown on page 5.

If this problem persists, contact our Repair Facility. (See Table of Contents).

Symptom: When a game is started, air comes on full speed and the wheel does not turn to position 1.
Solution: The belt tension is too tight. Make sure the belt tension is properly set (see Wheel Motor Drive Assembly). If this problem persists, the wheel will have to be sent to our Repair Facility (See Table of Contents).

Blower problems

Symptom: The blower unit does not turn on.
Solution(s):
1. Replace the blower unit cable.
2. Replace the fuse on the rear panel of the AKV2100PC controller.
3. Replace the blower unit with your spare.

Symptom: The air flow is erratic.
Solution: Replace the blower unit.

Symptom: The high speed air flow is not turning on.
Solution(s):
1. Clean or replace clogged air filters on the blower unit.
2. The air speed is set so high that high speed has no effect.

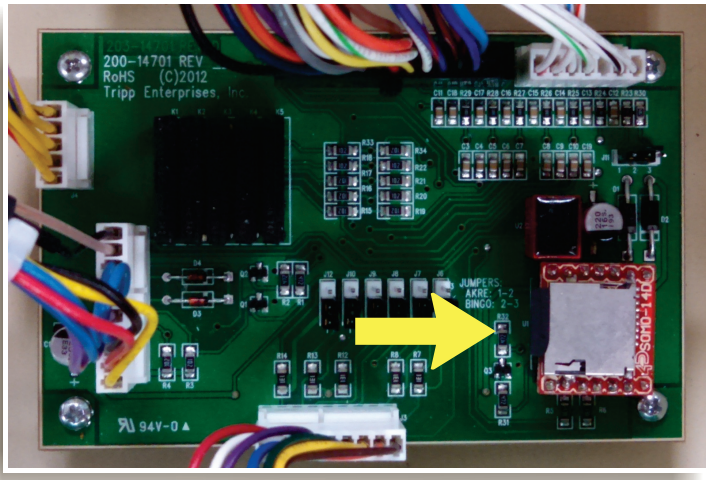
Symptom: The Air Speed knob is not changing air flow speed.
Solution(s):
1. Replace the blower unit with your spare.
2. Call our service number for assistance as a wire may have become disconnected.

Symptom: The air hose keeps becoming disconnected from the blower or bowl assembly.
Solution: Make sure the hose clamps are being used on each end of the blower hose and ensure they are tight.

Symptom: The blower is noisy or vibrates.
Solution: Replace the blower unit with your spare.

Symptom: The Air Always On switch is not responding or does not change air speed.
Solution(s):
1. The air speed may be set so high that switching to high speed has no effect.
2. Call our service number as a wire may have become disconnected.

Voice Game Announcement Problems



Symptom: There is no voice output.
Solution(s):
1. Adjust the volume on your PA system.
2. Repair or replace the cable between our AKV2100PC Controller and your PA system.
3. Make sure the voice MicroSD card is installed correctly (yellow arrow at right).

Symptom: The voice speed is too fast or high pitched.
Solution: This always happens as a result of removing the Upper Assembly (wheel) without first turning off the controller. Turn off the controller, replace the wheel and turn the controller on again.

Symptom: There is static or distorted audio.
Solution: Turn the power off to the AKV2100PC controller and then back on again.

Repair Facility

The address of our repair facility is: Tripp Enterprises
250 Greg Street
Sparks, NV 89431
Attn: Auto Keno Department

Please make sure you fully insure the product for loss. Call us at 775-355-7552 to obtain a current value of the product. Ask for Auto Keno Sales.

Make sure the product is properly packaged and protected. Refer to the second pages of drawings 150-10478 and 100-10253 for detailed packing information. Call us with any packaging questions.

Our Auto Keno Service Department is available for assistance by calling **775-843-4931** 24 hrs, 7 days a week. By calling this phone number you can receive operating and troubleshooting assistance. Please note: If you are having problems with your Keno System, please call the manufacturer of the equipment. In most cases, we cannot help you with problems concerning your Keno System.

Please direct any product purchasing or shipping questions to 775-355-7552 8am to 5pm, Monday through Friday, PST.

DRAWINGS

This section contains drawings for various components of the AKV2100PC product.

The following drawings are included in this section:

100-10253-01 Base / Bowl Assembly
150-10478-01 Upper Assembly (wheel)
150-10634-01 AKV2100PC System
150-11028 Blower Motor

NOTES