

Pachislo Repair Guide.

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A Special thanks goes to Chris, and the people at Pachislo Data Base.com for their input and pictures used in this guide.

This is a guide for repairing and maintaining Pachislo machines.

Some steps outlined in this guide may be out of your capability and so you should consult someone with more experience on a certain subject for your own safety. For the most part these machines run on a very low voltage, however the cord that plugs into the wall and that goes into your machine is 120 Volts AC. Extreme caution should be used if you are not familiar with connections and handling the high voltage that is present when the cord is plugged into the wall outlet. An electrical shock from this voltage can be fatal! So please use precautions such as removing the plug from the wall when trying to repair the power aspect of your game, such as changing fuses, or checking a loose wire.

There are several sections in this guide designed to give you ideas on what to check to affect a repair on problems that might arise while owning your Pachislo machine. It would be nearly impossible to outline every part in every machine in use. There are so many makes and models, and each with its own differences. This guide is designed to guide you in the right direction, even though something pictured in this guide may not be exactly like the part in your game. At the end of this guide you will have an understanding about your game as well as many others out there. Because even though each game is different, essentially it's the same as another. Parts are different, but at the same time they do the same thing as ones that may be pictured in this guide.

One thing I learned a long time ago, is before you start playing your game, check it inside and out for dust, loose wires, loose connections etc. Clean your machine, before you start playing, you will enjoy it much more because it will be cleaned, and you won't have to look through dirty reel windows, at those dusty reels as they turn.

A vacuum is good for some areas, and it's better to use a bag-less with a clean dirt cup. If you suck up something valuable you can find it a lot easier than with a bag vacuum, you can also use 'canned air' or an air compressor with the air pressure turned down to about 50 psi; for getting into small areas.

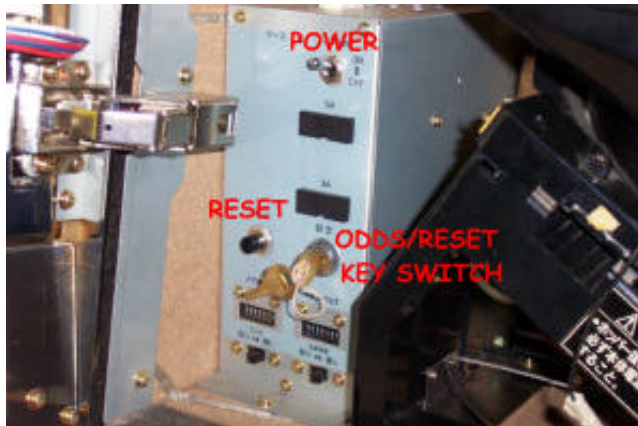
Okay, now that you have cleaned & checked that all the connections and wires are in good condition, plug in your machine and turn on the power, if an error is displayed and sound should start, it is entirely possible this is normal. Most newer games will *not* maintain a memory if it has been turned off for a long period of time. In fact some games only have to be powered off for a couple weeks, and when it is turned on it may show and sound an error has occurred, and need to have a Hard Reset done. To reset the game for play.

You will need to select a number from 1~6, with one being the hardest to achieve a bonus game, and 6 being the easiest to achieve a bonus game. Refer to page 23 of this guide for doing a full reset, and changing the odds on your game.

It's important to know,

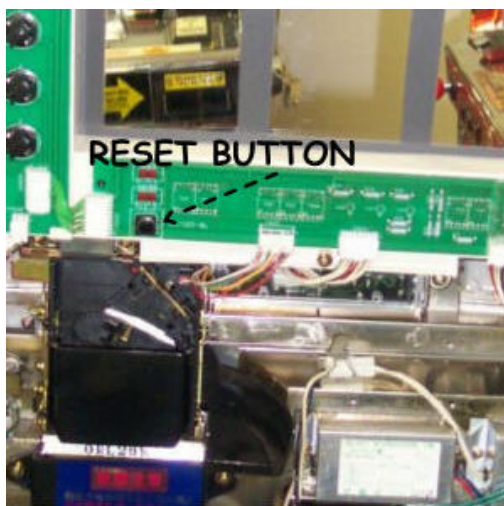
Some games have a split door. The bottom half opens up then on the inside right is a red handle, pull this down, and then pull the top door towards you. Now you have full access to your game.

MACHINE SPECIFIC INFORMATION FOR ARUZE, UNIVERSAL, MACY, ELECO, ELECTROCOIN BRAND MACHINES: POWER SUPPLY DETAIL AND LOCATIONS OF RESET BUTTONS:



Or on newer machines such as TACO SLOT and BABEL, the reset key switch is to the right of the reels as pictured above right.

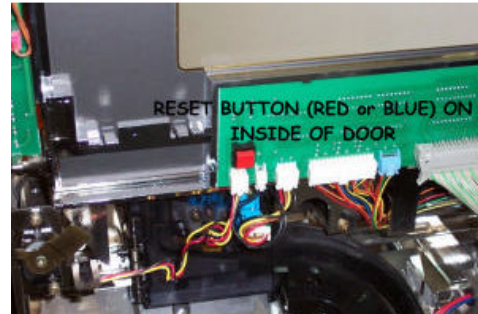
And the reset button is on the inside of the door, Pictured below.



On machines such as AZTECA LEGEND, REAL VOLTAGE, OUTLAW, and some OYAKATA machines the reset is pictured above right.

FOR OLYMPIA/HEIWA BRAND MACHINES

LAS VEGAS, TOMCAT, EXHAUST, BEAT THE DRAGON, ICE STORY, I'M ANGEL, TRICK MONSTER, TAKARABUNE, SAKURA FUBUKI, GOLGO 13, POWER SUPPLY DETAIL, RESET SWITCH, IS SHOWN LOWER LEFT: OR SOME OTHERS ARE LOCATED HERE:



SAMMY / ARISTOCRAT / RODEO BRAND MACHINES: BELOW:



TAGASAKO BRAND MACHINES BELOW:



YAMASA RESET BUTTONS: LEFT.

These images should give you a good idea what to look for when locating the reset and odds changing buttons.

Power supply switches:

Some games have a switch on the power unit, or on the hopper that allows the hopper to be “dumped”. If you have only a few tokens left in the hopper, and you want them all out, you can use this switch to have the hopper do the work. Leave this switch off when your not clearing the hopper.

Or another thing the switch is good for, is getting yourself another round of tokens without having to dig into the hopper for them. Have a small tray or other such container ready, holding it near the opening where the tokens exit the hopper, then turn of the switch. *Be ready*, They come out fast!

Power units also have the Main Power Switch, as well as Reset Buttons, then some have a hopper reverse button. Not all Power units have these buttons. Yamasa games have a reverse button to help clear token jams, this simply backs up the hopper when it is pressed. Just don't hold it long, or it can cause things to get jammed up. Some games have reset buttons on the power unit, or located on the door, usually under the reel window on the left side, some have it under the reels.

See pages 2 thru 5 for areas to find reset buttons or switches.

Some power units have One fuse, where others have several fuses.

A power unit that has a lot of fuses, protects all power outputs from the power supply.

So if one thing doesn't work in your game, and others do, check the power supply's fuse(s)

Other switches found on the power unit are: Bonus reset game over switch's, pictured below.



What these switch's do:

After a bonus game they will; in the “Off “ position you will keep the credits earned, and you can keep playing on.

In the “On” position, you will be paid in tokens any credits earned, and the game will end, “Game Over” will display and alarm will sound. And the door key turned to the left will reset the alarm, and turn off the Game over light.

Error codes:

Error Code Meaning, And Solution

E-0/ (CE/CJ) A token slot is jammed. Push the button at the token slot.

E-1/ (HE/ HJ) A hopper is jammed. Turn off your machine, remove the hopper and take out all the tokens.

E-2/ (HE/ HJ) Hopper dysfunction. Check the hopper.

E-3/ (HE/ HJ) A hopper is empty. Refill the hopper.

E-4/ (RR) RAM error. Push the reset button.

E-5 Reel error. Restart the machine and push the reset button.

E-6/ (CO) Prize error. Push the reset button.

E-7 Hopper Overload. Check the hopper.

E-8 Hopper disconnected. Check the cable.

CE/ CJ/ C2 A token slot is jammed. Need to be cleared and clean with alcohol. Then, press the reset button.

Keep in mind that some newer games that have been turned off for long periods of time may require a full reset before you can play.

To perform a Full Reset, or to Change the Odds, follow these instructions.

With the door open, locate the reset switch, usually located on the power unit, it may be a key switch or it may have been changed to a toggle switch.

If the **power** is **on**, turn it **off**.

Turn the reset key switch (or toggle) to ON, now turn the **power** back ON. A number should be displayed either on the door in the Win or Credit display. Now locate the reset button, most of these are located on the power unit, try pressing A button if your not sure what is the correct one. Did the number in the display change? If it did, you pressed the right button, now pull on the spin knob to lock the setting in, and turn off the reset switch.

Unfortunately, some makers don't put these buttons in the same place as others. If your having trouble finding the button, or getting the machine to reset.

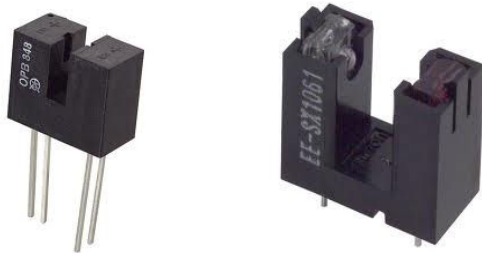
What's the best way to turn on or off my game?:

Since some machines have a power transformer that may still be on even though you turned 'off' the switch in the game. It's a good idea to invest in a surge protector strip. You can turn on or off your games using the switch provided on the power strip as well as protecting them from a power surge.

Sensors and what they look like, and cleaning:

Games that have been sitting around in a dusty environment can sometimes create problems. Sometimes this dust can obstruct the “opto” sensors that most games have. The opto sensors look for interruption in the beam of light that is made by an LED on one side of the sensor, and read by a photo transistor on the other side.

A typical sensor looks like this:



The sensor on the right shows the LED on the left side, and on the right side is the Photo Transistor.

These sensors can be found all over the game, in the coin or Token readers as well as the spin knob, stop buttons, and the hopper, and reels are common areas to find these.

The best way to clear dust from these sensors is compressed air. But If you don't have an air compressor, you can buy Canned Air at electronics or computer stores. This is a small can of compressed air used to blow dust from areas not easily accessed by a brush or other means.

Never use something such as WD40 on opto sensors! This could actually ruin the sensor and make it in operable. **Cleaning opto sensors:**

Using a Q tip or an old tooth brush, with something such as window cleaner is a good start. Just don't use too much. You don't need to over wet the sensor, because that will only create more issues. For areas not easily accessed try canned air, if your using a compressor with an air gun. Turn the pressure down to about 50 psi. You don't want to use too high a pressure.

Finding out if you have a bad or dirty sensor, for example if your stop buttons are not working open the door of your game, looking at the Mother Board (MB) there are several LED's lighted as well as not lit. Each LED is operated by a sensor in the game.

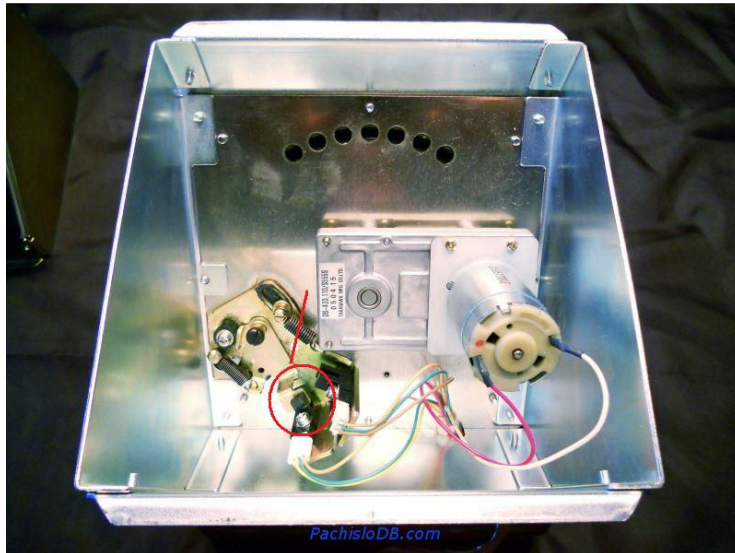
Familiarize your self with these LED's and what each one does, it will turn **on** or **off** by actions such as the spin knob, stop button etc. When you push the spin knob, look for the LED that either goes on or off when you press the knob. Make notes as to which LED corresponds to what button, and if it turns on or off. In the future this will be a big help to find a problem quickly if it relates to a bad sensor or a dirty sensor, or even a bad wire.

Reels have Opto sensors too, to find the corresponding LED's on the MB turn each reel one at a time, slowly. When the reel get's to a starting point an LED will light. It can happen quick so keep an eye out for an LED that flashes or just goes on or off. Again make note's as to which LED corresponds to what reel or button. Some makers built the sensor into the motor, so if you try looking for an external sensor it won't be there. Go through each function such as the spin knob, stop buttons, bet buttons etc. To locate the sensor LED for the hopper, you can do this a couple ways. One is to try turning the hopper by hand counter clock wise so it forces a token out. NOTE this will trigger an error alarm, but keep an eye on the MB to locate the LED for the hopper opto sensors. The other way is to take the hopper out, empty of tokens, locate the swing arm, under the hopper and operate it by hand. Again it will trigger an error alarm, to reset these alarms turn the door key to the left, that should reset the error condition.

Hopper Sensors:

If your getting errors like a hopper problem it could be a sensor causing the error.

On the hopper where the tokens are ejected there is a small arm that moves back and forth as the tokens are ejected out. When the token is just about ready to exit the hopper, as the arm swings out, it interrupts the opto sensor located on the underside of the hopper. This is used to count the tokens being ejected from the hopper. See photo below for the detail of the opto (**circled**) and swing arm (**line**).



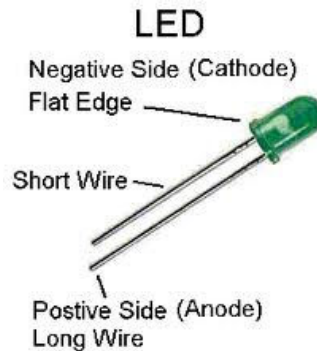
This hopper has two sensors, the arm is shown at rest in one set and just to the right is the second set.

Look at the arm as mentioned above, apply a couple drops of light oil to the pivot point to ensure it doesn't stick after it moves. The rest of the hopper should not need any type of oil, as this would get onto tokens and cause them to jam the coin mech. This is a good time to examine the hopper to make sure it is not really dusty or dirty. If it is dirty, remove it from the game and using cleaner and paper towel, or a rag wipe the inside clean as best that you can.

You may also be able to remove the token wheel, remove the screw in the center of the reel, and pull upward on the wheel. This will allow you to clean better under the wheel.

Use the area below for making notes on what LED on the MB corresponds to what button/ area.

LED's (Light emitting Diodes) and what they look like.



LED's come in many colors, The picture on the far right is a three color LED, this is a common type used on newer games. Depending on where you buy a replacement LED, depends on how much you spend on one.

They average from 50 cents for a single color, to about Six dollars for a three color.

Below is a picture of a replacement LED lamp that will fit a wedge base.



The Square TRI colored LED pictured above is a common type used in Pachislo games. As mentioned before the computer uses each lead to produce many colors at any one time. When replacing LED's it's important to keep the polarity correct, or they will not work at all.

Removing reels for service or replacing LED's or Lamps, or just cleaning the reels to remove dust or dirt.

***It is very important to mark each reel as to it's position in the reel cage! ***

If you mix them up, later, when the reels stop they won't make any sense, and at times it could be hard to find the right order, to reset the reels to the correct order. So a small piece of tape with a number as to where the reel goes is simple to mark the reel with.

Reels usually have to come out as a unit, called a cage. Once this is removed, each reel can be removed from the assembly, take your time, make sure the cables that connect the cage to the rest of the game are disconnected, usually a ribbon cable is all there is.

The pictures below are more for showing you what to expect and what to look for as far as removing the reels from both the cage and the motor.



Note the circled area, in this case this is a screw that has to be removed for the reel cage to be removed from the reel shelf. **Above right;** This picture is showing you several connectors that need to be removed before you can remove the individual reel. **NOTE** Your game may not have all these connectors, also some connectors may lock into the mating socket. If the connector does not come out easy, look for a small lock type finger on the side of the connectors. Most often it just needs to be squeezed a little while you pull up on the connector. Also *do not cut any wire retainers* or wire wraps, these will hold the position of the harness for when you need to reconnect them.

Now there may be a few screws to be removed in order to remove each reel from the cage assembly;

Check on top of the assembly, as well as the back. Note the circles marking locations of screws on the top of the reel cage.



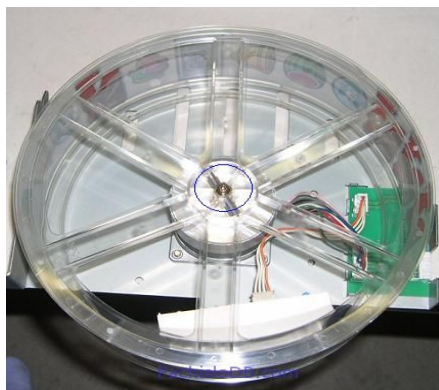
Now that the screws are removed, and the connectors are pulled from the sockets, grasp the reel assembly and pull forward. It should come right out. If something is getting hung up look for a screw or connector got missed.

As you can see the motor and lamp assembly, the lamp assembly in the picture is an LED unit. A lamp unit would be a little different, it would either have lamp and leads soldered to the board, or sockets would be visible in this picture. Some lamps may be red and also have white on the same board. Such as an Arraking game. So if you have played your game before, make note on the color of the lamps or LED's.

LED's come in a TRI colored packaged unit. Meaning three different colors are present on the same LED unit. These are a little more expensive, about \$6.00 each compared to just a white LED unit for about \$3.00. The computer uses a combination to illuminate the colors the game is supposed to use while the game is being played. Or while in the Attract mode, in other words while the game is idle, and not being played.

See section marked LEDs in this guide for what types your game may use.

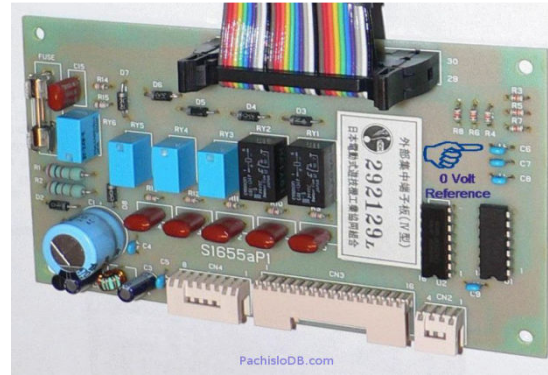
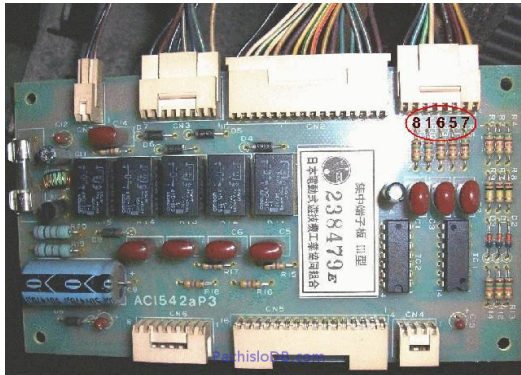
To remove the reel from the motor lay the reel on it's side as shown below, remove the screw on the hub. Some reels may have set screws on the shaft that need to be loosened in order to remove the reel from the motor



This is also a good time to clean the reels, using mild soap and water, other cleaners may harm the graphics.

Stop boards are usually found next to the reels, on the right side of the game.

These control the reels, both starting and stopping.



The one pictured above is an OLDER style found in early games. The one on the right is a newer type of the one pictured left. Note the FUSE located on the left side of the circuit board, this is a Type GMA 1AMP.

The best way to check the fuse to see if it is good, is to use a continuity tester, just looking at it is not a good way to see if it's good or not. The small wire element can be broken at the end and you may not see it.

Pay no attention to the numbers on the left picture, these are for another application, discussed later in this manual.



The board's pictured above are a newer type, the one on the left is from a Heiwa/ Olympia game, the one pictured on the right is from a NET machine. The newest boards do not have fuses on them.

The older type stop boards can sometimes go bad, and cause reels to not start, or at times not stop.

The reels don't start! If you have inserted the correct amount of tokens, and the start light is on or flashing, you can locate a possible cause by looking at the stop board fuse.

Step One:

Turn off the game's power, remove the fuse or if you can't get a good access to the stop board, remove the connectors, then the stop board.

Check the fuse, with a continuity tester, to check the fuse. Using your eye, may not tell you if the fuse is actually "open".

If the fuse is testing good, check for loose cables or wires on the reel cage or around the rest of the game. Also check the spin knob by pulling it down and letting go back to center "rest".

Actually at this point it's a good idea to make sure the spin knob is working correctly, like returning to it's resting place, center.

Also check to make sure the connection to the back side of the spin knob has not come loose from the knob assembly. Look at the spin LED on the MB for the spin knob and see if it lights, or goes out as it should when you move the knob up or down and let it come to rest.

Step Two:

Press one stop button at a time, again looking at the LEDs on the MB, making sure they all work as they should. If they all light as the button's are pressed they should be fine.

If the LEDs don't operate for one or more buttons, check to see if a button is stuck in the pressed position, or look for a loose connection on the door circuit board or on the buttons them self's.

This will keep the reels from starting.

Step Three:

Insert tokens, (if needed) does the start light comes on, press the spin knob. Hopefully the reels start.

As mentioned earlier, games are not all the same. Some may light the LED and others make it turn off on the MB. Make sure all connections are made to the corresponding connectors. Also check the door cable, this is usually a large cable with a large connector that goes between the door and the cabinet to the MB or an interface of some sort.

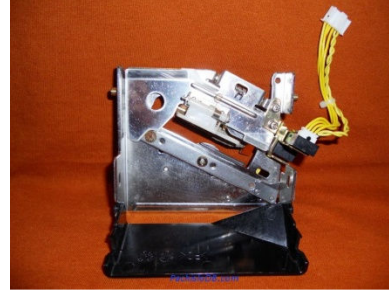
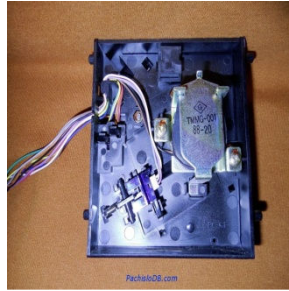
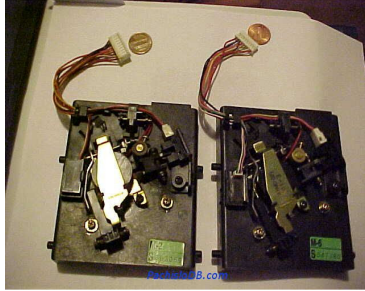
Sometimes as these cables age, and the door is opened and closed, a wire may get pinched, or a conductor on the cable may break causing other areas not to work properly.

With the power off to the game, remove the cable in question from either end of where it connects.

Using your continuity tester, check the pins on each end of the cable, one at a time, to locate any possible problems with a wire, or connection.

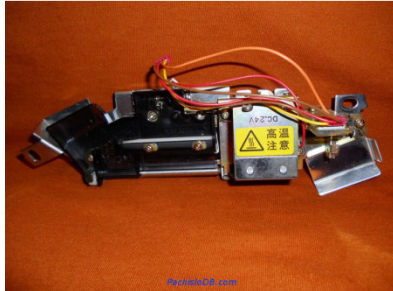
Coin or Token unit's also referred to as Coin Mech's or mechanisms.

Here are some examples of what your's may look like:



The unit's pictured just above are able to be removed easily from the door, you simply need to find the clip usually on the Left side, pull the clip away and pull out the mech, it should come right out.

Remember to remove the plug from the connector when removing the coin mech.



The mech pictured above, you should see the bottom of the track with out even removing the mech from the door. Others may have screws that need to be removed before you can remove them from the door.

Like the one pictured above. Make note of how the angle of yours looks before you do these types, so you can re-install them properly.

Coin mechanisms and token slots can become dirty and slow or jam a token as it is inserted.

To clean the insert slot, use a Q tip with Rubbing alcohol. Simply wetting the tip will be enough. You may have to repeat this a couple times to get everything cleaned. You can use the same technique for cleaning the coin mech it's self, You will need to open the coin mech, the type found at the top of this page has a small door that swings away, some may have a cover to be removed then pull open the door on the coin mech. Find access to the coin track and using a wetted Q tip, wipe the bottom surface where the coin travels to clean the surface. Re-install into the door and try some tokens, you should see a big difference how it works now. DO this periodically, to keep tokens flowing freely.

Keep your tokens clean, by placing them into a container such as a large coffee can or rubber maid type container with a mild cleaner and let them soak for a few days, rinse and dry them well before using.

Do this about once a year, or if you play the machines a lot, move it up to twice a year.

Replacing light bulb's

Most older machines have light bulbs and sockets that plug into the circuit board on the door. The lamp “plugs” into Some sockets, but some lamps are “wired” into the sockets, such as some older games, where most newer games have LED's to light the areas on the door.

The lower area of the door with the name of the games is called the **Belly**, and the light that goes in there is a Fluorescent. The most standard size for the belly is a T8 size. It a bulb that is about 1” diameter, and 13” long. Other size is a T5, that is ½ inch diameter, and the length can vary by game.

Numbers will be printed on most lamps, but if you have any question, take it with you to a local hardware store and they should be able to match it up for you. Or you can do a search on the internet and find better prices. Other games use a T4, very hard to find, and the leads are wired onto the ends of the lamp.

Light bulb types:



BULB NO. : T-10

SOCKET : V-2 Long Socket

SPECIFICATIONS: 28V/3W or 24V/3W

MACHINE TYPE: BELLCO, DAIDO, KITAC



BULB NO. : T-A

SOCKET : V-2S Long Socket

SPECIFICATIONS: 24V/3W

MACHINE TYPE: KITAC (Reel Back Light Only)



BULB NO. : T-5

SOCKET : V-2S Long Socket

SPECIFICATIONS: 24V

MACHINE TYPE: TAKASAGO



BULB NO. : T-10 (This is a standard. Most machines are using this Bulbs.)

SOCKET : V-2 Standard

SPECIFICATIONS: 28V/3W or 24V/3W

MACHINE TYPE:

ARUZE(ELECO,MIZUHO,MACY)=24V, BALTEC=28,
BELLCO=28V, DAITO-GIKEN=24V, EIPEX=28V,
IGT=24V, KITAC=24V, LUSTER(TECHNO-
KOSHIN)=28V, NACOL=28V, NET=28V,
OKAZAKI=28V, OLYMPIA=28V, PIONEER=28V,
SAMMY(ARISUTOCRAT,RODEO)=28V, TAIYO=28V,
YAMASA=28V



BULB NO. : T-A

SOCKET : Bulb with Socket Type

SPECIFICATIONS: 18V

MACHINE TYPE: ELECO(word of Lights etc.)



BULB NO. : T-5

SOCKET : V-2S Standard

SPECIFICATIONS: 24V

MACHINE TYPE: TAKASAGO, DAITO-GIKEN,
BELLCO, PIONEER, OH-IZUMI



BULB NO. : T-5

SOCKET : Bulb with Socket Type

SPECIFICATIONS: 12V

MACHINE TYPE: SAMMY(Reel Back Light Only)



BULB NO. : T-A

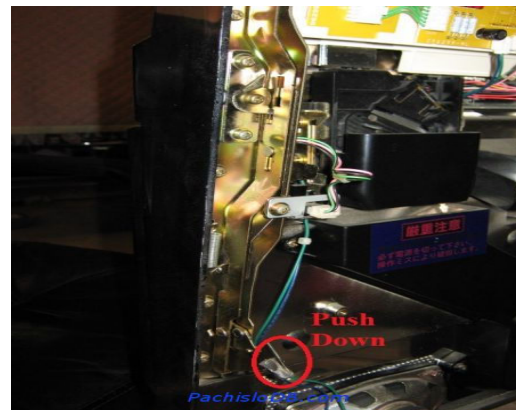
SOCKET : Bulb with Socket Type

SPECIFICATIONS: 24V

MACHINE TYPE: TAIYO(Hello Santa body etc.),
ELECO(Hanabi-Hyakukei body etc.)

Oh no! I locked my keys in the machine!

The best way to gain access to your game is through the bottom. With your game on the table, slide it so the right side is over the side of the table about 5" or so. On the underside of the machine should be an opening, some have the "Plug" still in place, (if this is the case keep reading.) Turn off the power by removing the plug from the wall outlet, using your hand find the opening as in the picture below. Note the plug is shown still in place in the picture. To remove this using a hammer, come in from the side of your game about 3", back from the door about 2". Not too much force, but take a whack at the bottom and the piece will break away. Using your fingers pull more out till the opening is large enough for your hand to fit inside. Once you have the door open, you can clean up the rough edges where the plug was. If you have an over flow bin, inside the game, you may need to push this up and towards the hopper to get it out of the way for your hand and fingers to find the latch (pictured right).



It will feel pointed, so using your fingers pull down on this point, and the door will open. If this is not working for you, you can lay the machine on it's left side, and do the same procedure.

The only problem is all those tokens go everywhere when you tilt the game like that. You can also try gaining access from the back of the game, it's a longer reach, and only if the hole "plug" has been removed.

I'm missing my Reset or Door Key! What can I do?

Ok, if your missing a reset key for the switch, the best way to get around this is to remove the power unit.

Start by unplugging the game from the wall, now remove the connectors from the power unit. Most connectors have some sort of lock to hold the connector in, it will look like a finger on one side of the connector. Using a small bladed screwdriver, press in on this finger to release the lock, and gently pull up on the connector. If it does not want to come out, look closer at the locking finger, and try again. **DO NOT FORCE** the connector, or you could break something!

Once all the connectors are out, *(and they will go back in only one way, so don't worry)* Remove the at least one screw that holds the power unit into the game, try looking around the top of the power unit. Now you can remove the power unit. Some may have an open back, where others may be all enclosed. Look around the edges of the power unit, locate the screws that may keep the cover on the unit. **DON'T** just remove all the screws! Or you may have your hands full when it comes time to put it all back together again.

Once you have the power unit open, locate the key switch, cut the wires off of the switch, and remove it.

Now with the toggle you bought at Radio Shack, or at a hardware store, fit the toggle into the hole where the key switch was, **with the notch down**(the off position) And connect the wires to the switch. It doesn't matter what wire goes to what terminal, because it's only a switch. You may need to use a soldering iron, or use small crimp connections for the switch. Replace the screws you removed to open the power unit, put the unit back into the game, and secure it with the screw(s) and plug in all the connectors till they "click". Plug in the power cord, turn on the game, and turn on the switch. You should see your setting in the Win display or Credit display. Now you can reset the game if you want, or just turn the switch off. And resume playing your game.

If your missing the keys, refer to the section "OH NO, I locked my keys in the game!"

This will tell you how to open the game with out a key. Once the door is opened, locate the door lock and remove the screws holding it in the door.

Now take and measure the length of the lock, and then take some pictures of the mounting end, and the length of the lock, and try locating another lock. You can go to "Pachislo Data Base" sign up and make a post, put up the pictures and you might get lucky and find a lock with a key to fit your game. Or another thing to try is looking under "Vendors" on the Data Base, and call or e mail some one to see if you can buy a lock and key for your game.



The lock pictured above is showing how to measure the entire length of the lock.

Or you can “dummy” the lock, by opening the lock up and de pinning it and use either a screwdriver or a blank key to open the door. On the out side it still looks like a lock, and it is, you simply need something to open the door.



Step one: You will need to drill out the pins that hold the cylinder in the lock assembly. You may want to start with a very small drill to put a small divot in the pin's center to have a good starting point for the larger drill bit, or you can use a nail or very small center punch with a point.

This will help keep the drill in the center of the pin, so the drill won't wander off to the side when drilling. A 1-1/6 " bit should be a good size to drill out the pins, **But don't drill too deep** 2-1/6" should be fine.



Once the pin's have been drilled out, the cylinder will come out of the lock assembly as pictured Left.

Next you will need to push out the center of the lock cylinder, you may need a small punch or screwdriver to do this.

Once this is done, the pins and spring will fall out of the cylinder as pictured Right.

The type pictured above is a Round "Ace" or "Bell" key type lock cylinder now any key that type will turn the lock in the door, making it possible to open the door.

Note the shaft in the cylinder and the end shaft of the lock supported by the key in the Right picture.

These must mate back together when re assembling the cylinder and lock after being de-pinned.

Cylinders that use a flat key will have brass slide plates that you will see after the cylinder is removed from the rest of the lock. Simply slide these down using a small flat blade screwdriver, the springs will jump out, and tap the cylinder on the table and the tumblers will come out as well



The picture above shows the re- assembled lock and cylinder Epoxy was used to fill the holes to keep the cylinder and the lock together. What ever you use to keep these parts together, it can't protrude past the edges of the lock or it will not fit into the door for mounting.

You can also use an ink pen cartridge to put in place of the pins that had to be drilled out, securing them with some super glue. Just make sure that the fit is a bit tight to start with, if it's loose, it may not stay and the lock may come apart later on.

Some locks have been “crimped” and not pinned as shown in the previous pictures. In this case you can try to drill out the crimp divot, just deep enough to release the cylinder.



If you try to hammer the end of the shaft, Opposite the end shown, be very care full doing this, you could render your lock totally useless! If there was a screw in the end of the shaft, put it back before you try to tap the end out, or you will damage the hole and not be able to get the screw back into the hole after hitting it with a hammer.

Volume Controls and where to find them:

Unfortunately manufacturers of pachislo machines hardly ever follow basic places to keep the volume controls for any given game.

Some have them to the Left of the reels, Like Bellco Super Bingo, Automatic etc, made in the mid to late 80's.

Others may be found on the door, under the reel window, on the left, or even the right. While others may have them over the reel window. Some older Yamasa's have them on the bottom left of the game next to the hopper. Some have a slide control, some have a rotary dial type.

Here are some pictures to help you locate some;



The one above is a Yamasa, the next one is Heiwa AquaVenus, the next is Bellco Super Bingo. This is found above the reel window. This is found to the left of the reels, as is the Bellco.

What it all boils down to is, in most cases of older games especially, the volume controls don't really amount to much actual volume control in game play. So many Pachislo owners have sought an alternative volume control, like ones pictured below. 50 ohm works, some prefer 50,000 to 500K 'K' being 1000, ohms. linear taper is better than audio taper. You get a better range of adjustment out of them.



These are installed in the game, by cutting one side of the speaker wire, and using the center and the right side taps on the "POT" or Potentiometer. The type pictured center and to the right, above need to have the leads soldered to them. Whereas the type pictured on the left have leads already to connect using small "Butt" connectors that are crimped on to bare ended wires of the speakers.

These work pretty well in most cases to obtain a suitable volume even when playing bonus rounds, where the sound tends to greatly increase in game play.

In most cases people use hot glue or simply use wire ties to hold these out of the way after being installed in the game.

No sound in my game.

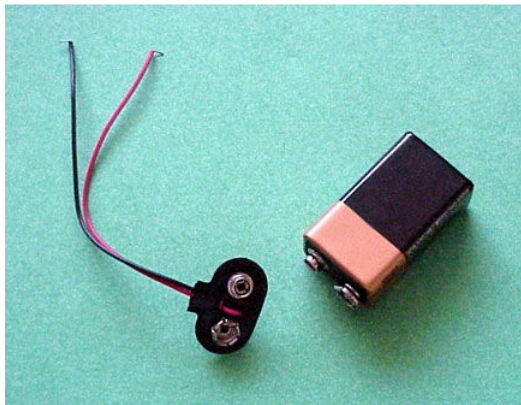
The first thing to look at is, are the speakers connected. If they are connected to the speakers, look for the wires that come from them, trace them back to the connector. Is the connector plugged into the proper area.

If not, the mating connector should be near by, locate it and re connect the connector. If the connectors are all plugged in, look at the board they are connected to, are any connectors pulled out? Keep trying to trace back verifying all the connectors/ wires are connected. All it takes is a cut wire, chewed wire, something like that to shut the sound off.

One thing you can try at this point, *but you need to pull the connectors* either from the speakers, or from the sound board. Using a battery, a nine volt with a couple leads coming off of it, connect ONE side to the speaker, next with the other lead, quickly touch the other speaker terminal. Did you hear a “POP”, if you did the speaker is good, remove the battery connections, move on to the next speaker. Don’t think because you checked that one speaker they are all good. Another way to check them is to do the same as mentioned above, but use the connector from the sound board. This way you can check all the speakers all at once.

Remember to use a quick connection from the battery, too long and you could damage the speakers.

ALSO remember to disconnect the connector from where it goes before you try the battery part. Or you could damage other parts of the game!



Other areas to look, try to locate the volume control, they could be just about anywhere, most often they are on the sound board, where the speakers connect to. Or there may be after market volume controls, some require a small screwdriver, to adjust. Using what ever needs to be used, work the volume controls. Sometimes they get ‘dirty’ and the sound can stop working. Most often the volume is increased by turning the control clockwise. But if it’s some where in the middle that should be fine as well

If everything looks fine, check all the connectors leading into the board. If they are clean and not green colored, then move onto the next areas of connection. The Main Board (MB) for one, lets hope the sound chip is not fried.

Over flow sensors:



Some games still have the probes installed, if these become shorted, they can cause an OF error to be displayed and an alarm to sound when playing the game. To keep this from happening anymore, turn off the game, locate the probe's and wires on the bottom right of the game, to the right of the hopper.

Most often these wires go to the power unit, you can just cut these wires off at the source, being careful to cut only these overflow leads. Then remove the probes mounted on the back with a Phillips screwdriver inside of the game.

Leave the ground strap as seen in the above picture. It's the braided wire that is stapled to the cabinet.

It's better to just leave this alone, do not try to connect any other wires to it.

Now turn the game back on, if the game is still showing an error, try using the door key and turn it to the Left.

This should reset the error, if it does not, perform a full reset as indicated on the next page.