

The Bear Notebook

ROWE STACKERS

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December 5, 2005

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Warning: The Rowe stackers use a geared motor and the pusher plate that moves in and out with a lot of force behind it. Serious damage to your finger can happen! Today I blew it. I was working on a dual bill box stacker and I forgot the basics. I got my fingers crushed by the pusher plate. I got a booboo! One nail is turning black as I write this. The first thing I did tonight was to add this paragraph at the top of the stacker article.

If you do not have time, or money to attend a Rowe bill changer school this is my attempt to give you a free school. The only expense will be for the paper and ink should you elect to print these pages.

In this article, I will pass along some of my FEK for some of the Rowe stackers. Before starting let me say because I mention a given problem please remember I may have only seen a given problem a few times. I write about them so you can save time, locate, and fix a given problem quickly.

The stacker basics are simple. Once a bill is accepted, the control computer sends a short start pulse to the stacker relay or driver board. A micro switch will run off the home position and the switch via the computer or relay control keeps the stacker motor running until it gets back to

the home position. Normally there is an adjustment for the positioning the micro switch. Some stackers have a 120 VAC relay. The single bill stacker has a 24vdc relay to control the 120 VAC motor voltage and supply the home position signal. There is a small driver card inside the single stacker. The dual stacker has a driver board on the right side of the stacker. Some jukebox and 4900 vending stacker have a 24 VDC motor and the micro switch signal is fed back to the control computer. There will always be a feedback signal to indicate the stacker is in the home position.

In many cases, if the changer is not operational [in a shut down error mode] because there is a non-stacker problem and the error problem shuts down the changer the stacker will be run off the home position and it will stop in the bill box. In this case seeing the stacker in the bill box does not indicate you have a stacker problem. These errors are where the 40 VDC LED is turned off and the changer Out of Service light is lit. Look at the error message and record what it says. If there is a real stacker problem then the error message will say CK STACKER on the BCxx00 bill changers and with the older bill changers, the code letter "D" will appear. In some cases there are status blinks pointing to a stacker problem. With the non-stacker problems look at the error code and fix the problem then the stacker will return to the normal home position. Trying to force open a stacker may cause damage to the stacker.

Some service people do not know you can get a bill changer back on line if you have a bill stacker problem by removing the

stacker and leaving it disconnected. The lower dual stacker assembly is attached to the acceptor frame by six screws that hold the stacker to the frame. You can remove the six screws and take the stacker section out of the changer and then you can put the acceptor frame and the acceptor back into the changer and it is back on line. The BC12R and BC1400 really needs the acceptor frame in the changer but it is a hard to get at the six screws with a normal 1/4" nut driver. You really could use one of those swivel joints or one of those springy extensions to take out or put back the six head screws. There is no need to sweat a stacker problem because you can take the stacker section out of the changer and leave the acceptor frame and acceptor in the changer. When working on a dual stacker without the frame you really cannot set/check upper/lower bill stop lever. I will tell you more about the bill stop later. When you have a single stacker, you can unplug it and remove the stacker and you are back on line. Once the stacker is removed, you may want to put in a box to catch the falling bills.

Before getting into other dual stacker problems let me start with one of the biggest problems with up/down stacking which is not a hardware problem but it is simply a setup programming error by the person setting [or not setting] the correct upper and lower box in the programming of BCx00 type changers. ALT or alternate is easy upper-lower- upper-lower and so on. In the older dual stacker, bill changers [BC12, 12R, BC35] there is a switch on the control board that set separate or alternate stacking. In the separate mode, \$1 bills went into the upper bill box and the \$5 went into the lower bill box. The

old bill changer formula was not used the new BCxx00 changers. The default is everything goes into the upper bill box so when someone goes to set the stacker programming to separate [SEP] and then just walks away and they may think it is set like the old changers but they are wrong. Everything defaults to upper bill box so you have to turn on SEP and then press value to set which bill box each type of bill will go into. You must select every type of bill set to be accepted \$1, \$5, \$10, and/or \$20 [press value to get to next bill type] and then use arrows to set the bill type to the upper or the lower bill box.

Stackers and control units all have connectors and related problems can and do exist. I presuppose you have read my article on connectors "[Connectors - Fixing and Testing](#)" already and you are now a professional connector expert.

Once a bill is accepted the control computer will send the signal for the stacker to start the push cycle but the push may not happen. You may find a bill or bills in the stacker chutes that did not get pushed into the bill boxes. This can happen because of a number of different problems including acceptor problems. Assume the bill never was accepted and the bill was never pushed back out of the acceptor.

One of the first tests that you should make is to prove the acceptor always returns a bill that was not accepted. Turn the bill around with the head facing the right and make sure it is rejected. I am not writing an acceptor article here but I will cover two eating the bill examples. BA3-35 acceptors may have a faulty anticheat

lever. The anticheat lever may have small sharp cuts on the bottom side and a bill can be caught on these grooves. The bill not pushed back out of the acceptor. When the forward motor run starts and if the bill is stuck at the back end of the acceptor the bill is pushed into the stacker chutes and it is never stacked. I should never say never. It may get stacked when another bill is accepted and both bills will be pushed into the bill box. A side note: This is one of the ways a bill gets into the wrong bill box.

Another case of no bill return [The bill was eaten and the customer got no change] is on a BA50 where there was no reverse mode because a wire short has occurred at the small acceptor connector at the BA50. The short occurs at Red/Black/ground motor wires. Even with the ground short on the – VDC motor lead the acceptor will run ok in the forward mode. However when the computer calls for a reverse motor run the + and – are reversed and the + motor voltage is grounded so there no voltage for the reverse motor run. The stopped bill just lays there instead of getting pushed back out of the acceptor. After a short pause the forward motor run pass starts and the bill moves forward again. At some point, the bill will be pushed forward into the stacker chutes and just lay there until you find it or another accepted bill comes along and both get pushed into a bill box. At this point, like with the BA3-35 acceptors, the changer does not know there was a problem so there is no error but a customer reports the changer eats their bill and they got no change. The bill is left in the stacker chutes and it will be pushed into the bill box on the next stacker cycle.

I will cover a few BA3-35 problems now

because they may show up as bill stacking related problems. BA3-35 bill acceptors have cut bills lengthwise. Normally this is seen where cold temperatures exist. Mostly bill cutting shows up in the wintertime in BC12Rs with BA35s. Generally, this occurs when the bottom rear rubber rollers a new, or fairly new, and the acceptor gets cold. The roller edges are sharp and when the bill is pressed between the cold rubber roller and the creasing rollers and the bill is cut. You may never find the problem when the acceptor is not cold. The fix the problem just remove [round off] the sharp edge of the rubber rollers.

With BA-3/35 acceptors the back lower rollers can break loose from the shaft so check them. If defective, replace the shaft assembly. The timing belt normally runs a little loose but they can be too loose. The old narrow shiny timing belts should always be replaced. BA3-35 acceptors have pulleys with roll pins. When driving out the roller pin put a metal block under the pulley. To put back the roll pin I start by pushing the pin in the hole and then I use a channel lock or vise grip pliers to squeeze the pin into place. You do have to be careful not to damage your fingers or hand. I prefer this method then hammering the pin into place. At one time, Early in the game Rowe did have a pulley problem but I assume you have already replaced any bad pulleys but if you have some strange belt problems look at the pulleys. Another problem could be a worn or miss-adjusted motor belt. A tight motor belt can cause the motor to slow down and a loose belt may jump.

Like hopper motors, one of the biggest

problems will be stacker motor brake problems. You may want to read my "[Rowe Bill Changer Hoppers](#)" information. Normally instead of dropping extra coin/s the stacker will motor will keep running past the home position. The computer will know the stacker is not in the home position so the system will shut down. Very old 120-volt AC stacker motors had a hole in the brake arm but it does not have a non-magnet rivet installed. A small non magnetic rivet installed in the hole and the rivet prevents residual magnetism of brake arm from sticking to the motor frame after the power has been removed. This magnetic holding of the brake arm can cause the motor to go by the correct home stop position. The rivet is a very small-headed non-magnetic rivet. You can order a new brake arm for the Molon motor which has the rivet installed (Part # 270299-02) or you can install a very small non-magnet rivet in the old brake arm. No, those big pop rivets will not work! You may elect to use something like a brass or stainless screw or rivet but be careful because items marked brass or stainless may not be pure but they are actually plated items. Always check such items with a magnet before using them. I remember one case where someone used a very small brass screw and nut but it was only brass plated so it did not work. A word to the wise!

In a few cases, I have seen the brake fail because the brake piece attached to the armature breaks free and the nylon brake cam does lock to the armature piece but the armature just keeps moving causing the motor to go beyond the home micro switch stop position.

The brake cam may not be able to lock down to the brake piece on the motor armature because the motor armature in and out slop is too great. The cam hits the round edge and cannot lock the motor armature.

Another failure can be the way the brake arm metal tab fits into the slot on the nylon brake cam. If it is miss-adjusted on release it can bind and the brake cam does not release to lock the motor. You can bend it one way or another until it freely releases when power is removed.

Another sticking brake cam problem is when the cam hits against the motor coil winding. The fix is to get new cam or grind down (at an angle) some of the nylon material so it does not hit the coil winding and stick there.

Sometime the stop cam on the motor armature may be worn and the stop cam bounces instead of locking the motor shaft. If you want to nickel and dime it, and if you are good, you might be able to resurface the worn out stop cam on the motor armature and get the brake to lock. In general, you will find many of motor parts are on its last legs and you may want to consider replacing the motor assembly.

You must always keep "stuff" or cables from the motor brake arm area. The arm must be able to move in and out without objects or cables interfering with its operation.

Do not be surprised when you find out a motor/gear box jam in a stacker is not a bad motor or gear box but a coin, screw, nut, or some other garbage got down into the

stacker assembly, motor, brake, or armature area and the motor is bound up tight. Sometimes you have to take the motor assembly out of stacker to find the debris.

Other braking problems can be caused by a missing, bad or miss-adjusted brake spring.

Other stacker motor coasting problems have to do with the dual stacker driver card on the side of the stacker. The single stacker has a small driver card inside. Some stackers have a relay card and arc suppression components. In worst cases, the arcs can cause the computer to crash and the computer may not give an error report and does not do an auto shutdown.

Like the BCx00 opto-triac leakage problem which chatters or turns on hopper motors the same problem can occur with the dual stacker driver board. You may hear the stacker motor chatter and/or the stacker motor turns enough to take it off the home position. I also change both the opto coupler and the triac pair. If you had a short and/or a shorted motor then chances are a hunk of copper will be missing and connector pins may be burnt or melted away along with a bad opto-triac combination. If a burnout occurred, the stacker may not run after you made the board repair.

The problems I just mentioned, burnt wires, hunks of missing copper in other places such as the power supply board, connector pin problems in other places. It may be a circuit breaker that may seem to reset. OK but it is actually bad or intermittent. Getting to the back of a BC12 or BC12R the interconnect board in the power supply can be a little troublesome. I pull out the

power supply enough to open it up. I pull out the power supply card and remove the power supply transformer screws. I move the transformer out of the way and this allows me to use a very long 1/4 inch nut driver to get at the interface card mounting screws. You may have to put two or more 1/4" extensions together to reach the screws. I repair the burnt copper and or solder bad connections and I put back the interface card on the back wall of the power supply.

On a BCxx00 power supply you may find some of the copper burned away.

The micro switch and the metal actuators can develop problems. These problems may cause the stacker motor to go by and/or not stop at the home position. The micro switch can be bad or intermittent and will have to be replaced. The actuator can be broken, deformed, or weakened. You may have to replace either or both of these items. You may also find the screws holding a micro switch have loosened and the switch has moved from the correct position. The micro switch adjustment procedures are listed in the manuals. When replacing a micro switch make a drawing first or use whatever system you use to make sure you replace the wires onto the correct poles on the micro switch. I have had to repair many stackers after someone has replaced the micro switch or removed the motor bracket in order to replace the motor or do some work and more often than not, the wires were not put back on the correct micro switch poles. I have to put the wires on the correct switch contacts.

On the dual stacker, the motor mounting plate bracket is also an adjustment of where the pusher plate rest when the stacker stops.

I put a screw on my workbench and hang the stacker on it. When the stacker stops at the home position I loosen the four bracket screws and move the bracket up and down making sure the plate is resting in the correct position. You want to make sure the dropping bill is not caught up on the wrong side of the pusher plate. Check the manual for the alignment procedure.

The dual stacker has a mounting plate setup on the bottom of the stacker and there are three different sets of adjustment screws. Check the manual but I would like to comment about the adjustment at the bottom of the stacker. First: These holes can be stripped so do not use a power tool and/or not too much force when tightening the screws. Second: Always use the short screws and washer. If the screws are too long the rollers will hit the screws. Third: You want to get the stacker assembly bottom up and away from the bottom of the changer. You want that pusher plate high so it will clear the bottom bill box. When adjusting the stacker at the bottom I like to put a screwdriver between the stacker and the bottom of the changer to raise the bottom of the stacker as high as it will go. I do not use too much force that could bend the stacker assembly. It is always a good idea to check the bottom of the bill box and make sure it is flat. You do not want that pusher plate jamming against a bent bill box or the bill box that is not pushed down as far as it can go. Damage can occur to the motor and/or gearbox if a jam happens.

Many people do not remove the mounting plate attached to the bottom of the dual stacker and it ends up bending the bottom of the stacker. The stacker assembly metal

may break if bent too often.

Another problem with the two screw holes at the bottom of the dual stacker. These holes can be stripped so do not use a power tool and/or not too much force when tightening the screws. The metal is not heavy gauge and it strips quite easily. OK so you got stripped hole/s but they can be fixed with the BEAR STRIPPED HOLE FIX: I take two 8/32 nuts and put them into a vise grip and bring them over to the grinder and carefully grind the nut down the length to about one half its original size. I take small screws and put the ground down nut on the backside of the stripped hole. From a car parts store I have some good two part metal gunk and I mix it up. I then place the gunk around the nut to hold it in place. I make sure not to build up a lot of gunk on the backside of the nut because the bottom rollers will come right up to the ground down nut. After it hardens, I remove the screws and the stripped holes are not a problem any more. In fact, now it may be better than the original holes. I'm sure you will find other places where this type of BEAR fix will solve some of your stripped hole problems.

You might want to look at The Startech message board sometime.

STAR TECH Journal Message Board:
Other: Rowe BC3500 changer tearing bills [All dual stackers] by Bruno Puglia (Brunop) on Friday, January 24, 2003 - 06:37 pm: Edit

I have edited it a little bit:

1. Check the bottom of the bill boxes. Is the end near pusher plate flat and even?
> Often the bottom of the bill box is bent.

The metal tab in the bottom center of the bill box gets bent up or down. Bend it back into the correct flat position. Also check the correct installation of the bill box pressure plate. I have seen the plate installed upside down and/or the L was not facing the back of the bill box. The |_ > faces the back of the bill box and not the opening.

2 Take out bottom bill box and check and/or set bill stop lever adjustment. See manual. While you are looking, check the bill stop shaft and make sure it is not bent or the screw holding the shaft is not loose. The adjustment is actually made by bending a piece of metal that you can hardly see up or down. > Rowe even put a hole in the stacker side to make it easier for you the bend the metal adjustment. You want the bill stop to lightly touch the bottom of the upper bill box.

3 Make sure stop lever is not hanging up. With no lower bill box in the changer, watch it flip back and forth. It should pull down and should come back to just the bottom of the upper bill box. See #2. Sometimes the plunger may have residual magnetism and/or the cap on the top of the solenoid assembly is worn and these items will cause the bill stop to hang in the down position. If the solenoid is hung in the down position check to make sure the solenoid pull voltage is not being applied.

4 Some BA50s have a metal bracket on the back end. The acceptor stop bracket on the stacker are different when used with this acceptor. The bracket shifts acceptor to stacker alignment. You may have to Dremel the holes in the stacker bracket so it aligns correctly.

Check the manual for correct stacker adjustment procedure. Take out the bill boxes and watch the bills fall down the chutes (rails). They should fall right down the chutes and do not get hung up.

> Any Rowe changer using a separate stacker will have a stacker alignment procedure and the manual should be looked at and the alignment done according to the manual instructions.

5 Take out both bill boxes and watch bills falling out of the bill acceptor. If they are hanging up (slow) a little bit coming out of the bill acceptor you have an acceptor problem, normally a rear end or maybe a belt problem

While we are talking about bill box problems, there is one that I have screwed around with. The upper bill box latch does not always fall down correctly to hold the bill box in place or it may move around enough and the bill box slips away from the guide chutes leaving a space between the bill box and the chutes. Besides adjusted the rod latch sometimes I mark the bill box where the latch should correctly fall. I bend/hammer the top front plate back a little bit so the sides of the bill box are exposed about 1/8 inches. I then round file, grind, or use a Dremel tool to cut a .rounded > notch on the bill box. Actually it is a like the bottom part of a U which match the shape of the hold down rod. The notches are just deep enough so the latch stays locked in the notch.

Some of the single stackers have a small flat bar and/or two bars which hit against the acceptor front trim plate and the bar/s supposedly will up the correct acceptor to

stacker alignment. In a few cases, I found the bills would fall to close to the front chutes edges close to the bill box. In fact the bills were hitting the chutes. A customer with a BC100 with a serial numbers just above 7000 complained the bills were not getting stacked correctly. The bills were hitting the front edge of the chutes. In order to get the bills to fall correctly into the chutes I had to grind off 1/4 inch of the two flat bars on the stacker. When acceptor to stacker alignment was done, the grinding moved the acceptor back 1/4 inch and the bills now fell 1/4 inch into the chute area. On this BC100 I also cut a > notch on the bill box so the latch would lock and hold the bill box in place. Sometimes the chutes are damaged and/or are deformed. In this case, the left chute had bent towards into the bill area about 1/16 inches that made the bill problem of hitting the chutes even worst. There is normally a V shaped wire mounted on the door and you can turn it around [maybe even bend it] and move it in a place where the wire spring now pushes against the bill box holding it in place.

To prevent dual stacker jams check the two small rollers and shaft on the bottom of the dual stacker. These parts do wear over time. The shaft may be bent, have slop, it may even break at some point in time and/or worn rollers may cause damage to the stacker motor and/or the gearbox. Many times I replace two rollers = 251796-01. and shaft = 251795-01. You can remove E clip at the motor crack arm pin then release the two flat bars. This will allow you to pull the pusher plate back out of the stacker and you can get at the shaft and rollers to replace them.

Sometime the motor run but the pusher plate does not move and/or move has it needs to. I have found the roll pin on the motor cranks sheared or sometimes even missing.

One has to be aware relays by their very nature are problem makers. They can have and create all kinds of problems. Besides burnt contact sticking problem there can be a residual magnetism problem too which will cause the relay not to release in a timely fashion. You may run across a relay with residual magnetism that causes the relay to stay or hang closed. This can cause the stacker to go past the home position and not stop in the correct position. Another thingy about relays is many designer put in arc suppression using caps and/or resistors. Sounds good but a failure in the suppression devices can cause extreme contact burning and maybe not so obvious noise spikes that can effect the main computers operation. A defective diode across the relay may also be defective. Where these things happen, the computer may crash and can cause serious cooking problems with the computer and other parts in the changer. Motors and bucket solenoids are at risk because a crashed computer will not have the protection software running and the system does not shut down. Crashes can also occur when motors quickly turn off and then back on again as in the case of a stacker going by the home position.

From my BC-1 notes: Also applies to 490-multi board vending machine stacker and 117 VAC jukebox stackers. Over the years, I have noted stacker problems and other bill changer problems that are due to a stacker relay with badly burned or pitted

contacts. The relay is mounted on a small board in the stacker. First check the connections going to the relay board are tightened by removing the pins, re-forming them and replacing them back into the connector. You can replace the entire relay board or replace the relay, .1 mfd @ 400 volts and the 100 ohm [use a carbon resistor]. Also check and/or re-solder every connection on the relay board. Remember these are problems that relates to crashed computers, burned solenoids, and flashing Fs.

CBA, UCBA [2 and 4] and RBA stackers will show up with a problem once in a while. The stacker assembly can be removed without too much trouble. Remove the screw and nut holding the front inlet. Remove the stacker cable from the control module and cut any tie wraps holding the stacker wires. Remove the two screws holding the stacker assembly in place. Push the assembly down and start to remove it by pulling out the bottom end first but stop when you have it out a little bit. Now look inside and notice the wires going to the magnetic head assembly. You want to push these wires down and away from the stacker pusher plate. You can now remove the stacker assembly. When you install the stacker assembly, you want to check the magnetic head wires are not caught up on the stacker pusher plate. You should always check the motor mounting screws to assure they are not missing or loose. You may find some stacker motors have a stickation problem. This is when the stacker motor has not been used for a while and when it cycles on power up or when is called to stack a bill it runs to slowly to complete the stacking cycle. Once the acceptor is reset, it may work

normally until the next period of rest. To spot the problem early always count the error status blinks before doing a reset or power off and on again because it make work correctly on the every cycle until the next period of rest {no use}. I like to wipe off some of the grease on the stacker slides and put a drop of oil on all parts of the slides. This seems to speed up the stacker cycle a little bit. In some cases, I take the motor apart, clean some of the heavy grease off the gears, and put a little oil on the gearbox parts. In worst case of stickation, you may have to replace the motor. Check the metal actuator arm on the micro switch and make sure it is not broken or bent. Sometimes you will find one or both micro switch screws are loose or if you replace the micro switch you will have to align the position by means of the two Philips screws. Other problems include bad connector pins or broken wires. Sometimes you may find the wires running along the side of the acceptor were damaged. They may even short to the metal frame of the acceptor. Where the stacker wires were extended because an old version acceptor was up dated to the new version Rowe used a small dual connector block to extend the cables. Then shrink tubing is put around the connector block. In shrinking the tubing down the sharp metal pins may punch through the tubing and one or more pins could possibly short to the metal frame of the acceptor. In a few cases, I have found the pin in the motor shaft missing and the drive cam does not track the shaft's rotation. Occasionally you may find the motor shaft is broken where the pin hole is located. In a few cases, I have found broken stacker drive cams. In a few cases, the nylon slides were defective and had to

be replaced.

With using Rowe link in jukeboxes, Rowe bill changers, and 4900 single board system remember the stack signal comes from the control computer. If you have a problem, it is a good idea to use a replacement acceptor to isolate if the problem is in the acceptor or elsewhere. Other problems could also occur if the acceptor does not see at least +12 VDC with less than .800 VAC under load conditions [motor running]. The Rowe transformer supplies are really a transformer with a bridge rectifier and a filter cap inside the case.

In all bill boxes make sure the pressure plate is inserted correctly. The bottom |_ goes to the back of the bill box. Sometimes you will find the foam in the bill box is squished out of shape and you should replace a deformed foam piece.

Lubrication of a stacker is something I do not see much when I get a stacker to repair. I admit the stacker has already been pulled out of the changer and given to me to repair so it is easy for me to lubricate the stackers when I work on them. These stackers need lubrication once in a while.

Take note of this Bear Sad story and what happened when a dual stacker named Miss Dual Stacker came into the shop. She was unconscious when she came into the Bear workshop. Her lower shaft was badly bent and her gearbox was destroyed. I operated on her and gave her a new motor assembly [besides being jammed the motor was worn], a new lower shaft, and two new rollers. While she was out of it, I also gave her real good lubrication job. When I

plugged her in she came to. She asked me what had happened. I told her it appears a bent shaft had destroyed her gearbox. She said she remembered passing out and nothing else after that. She said she felt OK now. I put in a bill into the acceptor and she stacked the bill just fine. She looked up at me and said, "Gee I feel great. I do not have to strain so much when I push the pusher plate." I told her "Besides the new parts you needed I gave you a lube job." She replied "I never got a lube job before. It feels great! Let me give you a big hug and a big kiss!" Well anyway, I got my hug and kiss too. That is how much she appreciated her first lube job! She was almost as good as new maybe even better than new and I tagged her with a charming little Bear label. You do lubricate your stackers and put nice tags on the equipment?

May Your Stacker Stack!



Some Dual and single stacker parts

Dual Stacker

210731-02 Micro Switch or 210732-01

Note: Put back wires back in same place.

251795-01 Lower roller shaft

251796-01 Lower rollers (2)

350728-01 Chute

350722-01 Motor and crank assembly

450346-03 Bill Box

Note: You cannot use 450346-01

650467-01 Driver board

450822-02BC##00 Hanger Bracket (right side) Dual Stacker

^ You need #29 drill and 8/32 tap for new hole on older dual stackers.

Single Stacker

210731-02 Micro Switch

212751-01 Relay

212869-01 Retainer Spring for relay

307527-01 Driver card (small plug-in)

350393-01 Chute

350396-01 Motor assembly

450346-01 Bill Box You can also use
450346-03

350660-04 BC##00 Bracket (right side)
Single

Single and dual stackers

250961-01 Foam block for either bill box

Motor Brake parts

270233-02 Brake pawl for (Molon/Multi motors)

270299-02 Brake arm with rivet (Molon/Multi motors)

255548-01 Brake Kit for stacker motors (Merkle-Korff)

A STACKER BRUNO BEAR NOTE

“Keep the bill changer on line“

The changer will work without a stacker if you leave it disconnected. You can remove the single stacker or the dual stacker. On the dual stacker you can remove the lower section from the mounting plate by removing the six (6) screws which hold the stacker section to the mounting plate. Once the stacker section is removed, you can replace the acceptor frame and acceptor and the bill changer is back on line. You can place a box in the changer to collect the falling bills.

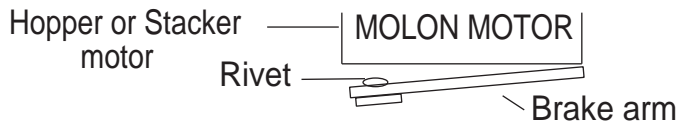
o o o

Remove the six [6]
screws

o o o

Hopper or Stacker Molon motor coasting ! Dropping extra Coins.

Hopper and stacker motors can have brake failures which cause the motor to coast. Many older motors had a hole in the brake arm but no non-magnet rivet was not installed. This rivet prevents residual magnetism the brake arm from sticking to the motor frame after the power has been removed. This holding of the brake arm can cause extra coins to be dispensed or a stacker to coast by the stop micro switch. The rivet is a very small headed rivet You can order a new brake arm which has the rivet installed (270299-02) or add a small non-magnet rivet in the old brake.



Some people have tried to use a brass or staimless screw or rivet but they did not work because they were not pure but actually just plated brass or stainless. Always check the piece a magnet before using it.

You must program Dual Stacker
Value to UPPER or LOWER

When programing a BCxx00 bill changer with a dual stacker, you can ALTErnate or SEPARate the bills. When you select SEPARate, all the bills are directed to the upper bill box **unless** you use the VALUE button to direct the bills [\$1,\$2,\$5,\$10, \$20] to the UPPER or LOWER bill box.

SEP - then press
the VALUE button.



Bruno

See the value of the
last 3 bills accepted

You can see the value of
the last 3 bills accepted
by BCxx00 changers. With the
programing switch still off,
just press the HOPPER button.

LAST \$5 \$1 \$1



Bucket power ON

There is too much information about Bucket Power on related material to put into into a little Bear note block. At some point in time you should check out my other BEAR NOTEBOOK articles including Bucket Power On. They contain a great deal of related information. They are posted on: <http://www.eastcoastamusements.com/> where you will find Bruno's page.



Jackpotting and Bucket power ON

Do you have the -02 power supply
update board in the changer ?
^ If not, get the -02 update board !
Any bucket solenoids cooked ?
Did you get an error code ?
When did the problem occur :
When changer first turned on ?
Just standing there ?
When giving out coins ?
What jackpot value was it ?
Was it more then just one value ?
Error message after pressing "RESET" ?
Read my Voltage problem bear note !



At some point in time you may want to check out my other Bear notebook articles because they contain a great deal of related material. You will find them on Bruno's Page in <http://www.eastcoastamusements.com/> then: left click on: **Visit his page for service notes and tips.** **OR:** <http://www.eastcoastamusements.com/services.htm> and then click on the BEAR with the flower!!

Note: These files were checked with Acrobat Reader 7.0. Earlier versions **may not** view/print correctly. I know version 5.0 will not work correctly.

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You will want to check the East Coast Amusements site for revised or new articles. I do have more titles in the works. Here are some the posted articles.

ROWE 4900 ACCEPTOR ISSUES
ROWE BC-1 BILL CHANGER
THE MAGIC WAND (Dick's - my favorite)!
CONNECTORS - FIXING AND TESTING (another good one)
ROWE BILL CHANGER HOPPER REPAIR
MEASURING VOLTAGES
BUCKET POWER ON ERRORS
ROWE STACKERS
MAG HEAD LOOP SECRETS
DREMEL & ROWE STUFF
FEK MOTOR TEST UNIT
OBA ACCEPTORS
JACKPOTTING, FS, BUCKET POWER ON & CRASHES
BC-8 to BC-35 Bill Changers
CBA_UCBA
Basics_101
BCxx00_bill_changers

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To East Coast Amusements
> THANKS ! Bruno

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