



Systems 500 / 500E

CALIBRATION PROCEDURE

SYSTEM 500 AND 500E CALIBRATION PROCEDURE

PRECALIBRATION INSPECTION

Many times acceptors with poor or no acceptance can be cured by a few easy steps without any calibration. Calibration should only be performed semi-annually or annually. If frequent calibration is required contact your nearest service center.

1. Turn power off.
2. Pull the upper track up to expose the lower track.
3. Check the track cells on the lower track to make sure they are clean of obstructions (Dirt, lint, soda). If obstructions can be cleaned by brush or blowing with air, do that. If dirt needs to be cleaned by solvent, do this only with the power off. And turn the power back on when you are sure the track cells are 100% dry.

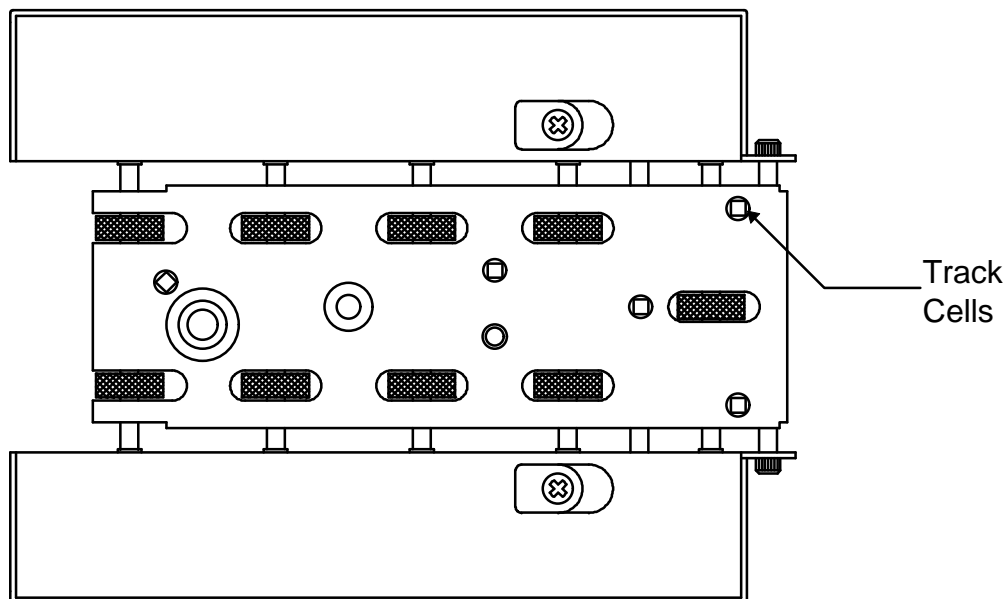


Figure 1
Top Down View of Lower Track

4. Inspect the upper chroma dome (hole in the upper track) for lint and dust build up. The chroma dome can be cleaned by using pressurized air. (i.e., air hose, canned air or brush supplied in the kit. See Figure 2 below.

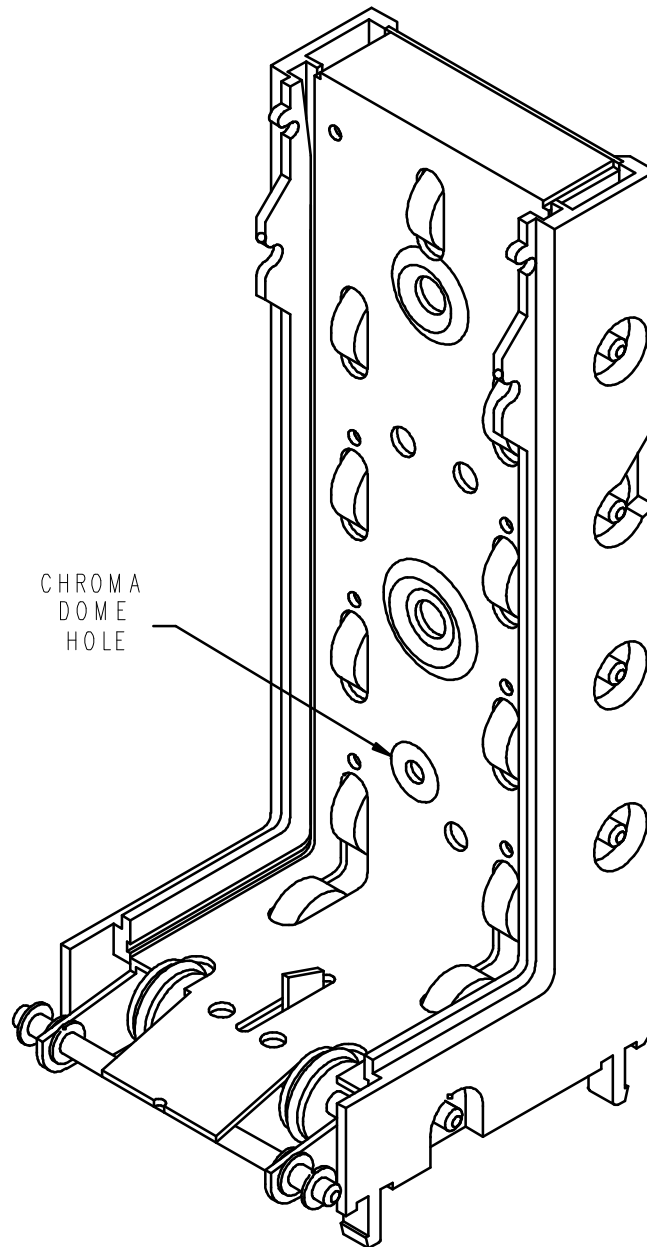


Figure 2
Unattached View of Upper Track

5. Place upper track into position.
6. Turn power back on and test for improved bill acceptance. If acceptance is still poor, proceed to the next section.

STEPS FOR PROPER CALIBRATION

1. Calibration temperature should be between 70°F - 80°F. In the situation where the changer is in a high temperature environment wait until evening when temperatures are cooler. If the unit cannot be set at 70°F - 80°F dismount acceptor and take it to an area that is 70°F - 80°F. Leave for 20-30 minutes unpowered. Mount the acceptor back into the changer cabinet and proceed to step #2.
2. Turn on power. Run an upside down bill into the acceptor at least 10 times to warm the electronic circuitry. Remove the cover to the CPU board on the note acceptor. This will be done in one of two ways, depending on the style of the note acceptor. Figure 3 shows a 500 note acceptor with the D.C. board located on the right hand side. Remove the four outside phillips screws and swing this board down to reveal the CPU board.

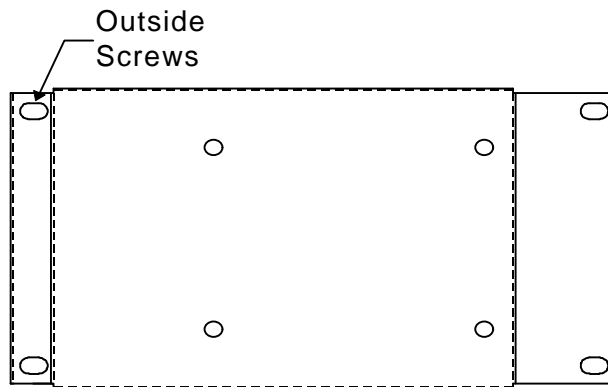


Figure 3

Figure 4 shows the side panel of a 500 that the outside screws also need to be removed to reveal the CPU board.

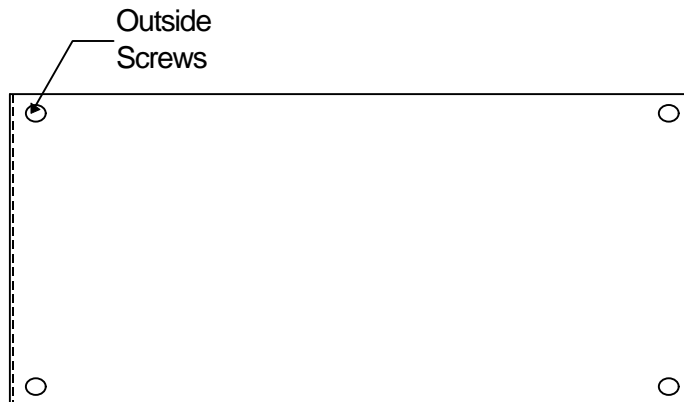
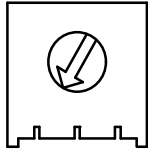
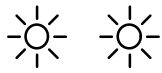


Figure 4

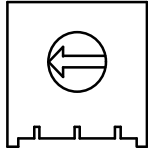
(On 500E systems there is an access cover to the calibration pots.)

3. Once the CPU board is revealed, you are ready to start calibration.

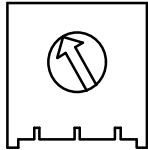
4. Calibration of most note acceptors will result with the pots approximately in these positions.



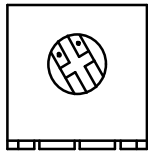
Pot #1 - Typically calibrated in the 7 o'clock position.



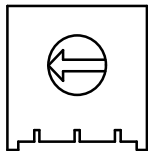
Pot #2 - Typically calibrated in the 9 o'clock position.



Pot #3 - Typically calibrated in the 11 o'clock position.



Pot #4 - Typically calibrated in the 11 o'clock position.
Do not touch this pot during calibration,
see note for upper track flex.



Pot #5 - Typically calibrated in the 9 o'clock position.

Figure 5
Typical Calibration Positions

CALIBRATION NOTE:

The note acceptor calibration process is identical for each potentiometer. There are two lights (led's) used to indicate the direction the potentiometer must be turned in order to achieve calibration (See Figure 5). The led on the left, when lit indicates that the potentiometer being adjusted should be turned clockwise. If the led on the right is lit the potentiometer should be turned counter clockwise.

Proper adjustment of the potentiometer is indicated by both led's being off at the same time. The screw driver, used to adjust the potentiometer should be removed during the time that both led's are off. Advance to the next adjustment when both led's turn on at the same time. Once more, the calibration process is the same for each potentiometer adjusted. And must be done in sequential order.

1. Insert a new calibration card into the note acceptor.

Adjust Pot #1 - See "CALIBRATION NOTE"

Adjust Pot #2 - See "CALIBRATION NOTE"

Adjust Pot #3 - See "CALIBRATION NOTE"

Adjust Pot #4 - Set this potentiometer to 11 o'clock position Remove the upper track cover. This can be accomplished by unsnapping the rear cover panel (black plastic cover on rear of note acceptor) then sliding the upper track cover out of the note acceptor (See Figure 6). Find the potentiometer located closet to the rear cover panel. Adjust the potentiometer using the led indicators on the CPU board in the same procedure as described in the "CALIBRATION NOTE". When finished move to the potentiometer #5 adjustment. Do not adjust potentiometer #4 at this point.

Adjust Pot #5 - See "CALIBRATION NOTE"

2. The calibration process is now complete and the note acceptor will reject your calibration card. Discard your calibration card after use.

Note: Always test unit after completing calibration.

SPECIAL NOTES: Feed a new calibration card into the note acceptor.

Note: If A pot is already in calibration..... Both L.E.D.'s will light. Calibration will then advance to the next lower pot. The calibration pots are the blue or gray squares with the white dot located in the center. Calibration once started must be performed for all five of the pots.

Note: On some 500E Note Acceptors there is a 6th adjustment to do during calibration as shown by number sequence 1 thru 6.

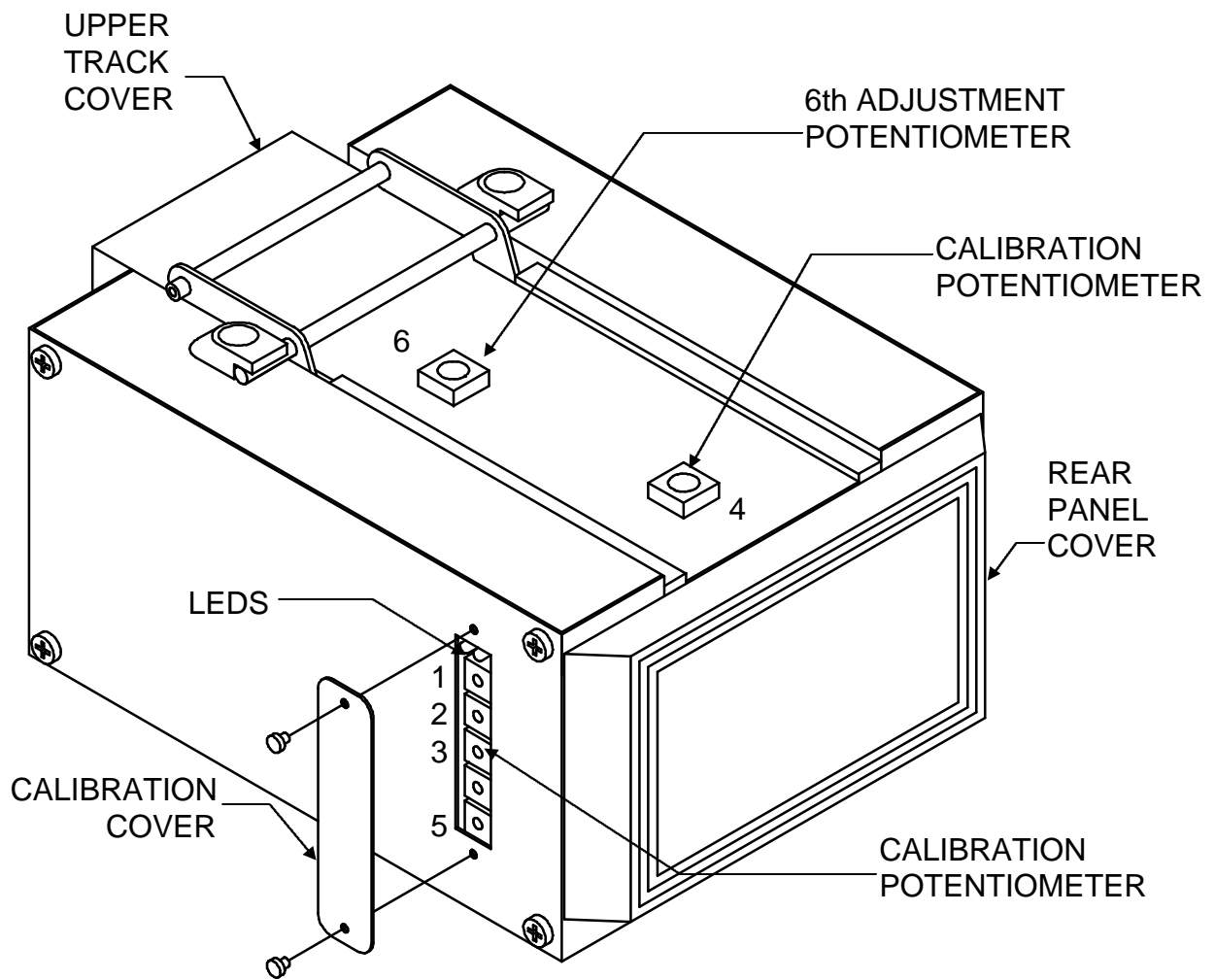


Figure 6
Left side of acceptor showing calibration pots.

SYSTEM 500 AND 500E

AUTO CALIBRATION PROCEDURE FOR CHANGERS EQUIPPED WITH A KEYBOARD

Note: Note acceptors equipped with 8051 CPU assemblies only. No tools are required to perform calibration only a clean unused balance card is required.

CALIBRATION STEPS:

1. Initiate the “auto-calibration mode” by pressing the “DISPLAY AUDIT” button on the keyboard. See Fig 1. This allows the balance card to be accepted. The card will be rejected if the calibration mode is not initiated.
2. Insert the balance card into the note acceptor in the direction indicated on the card. The auto-calibration sequence will take approximately one second. When complete the card will automatically be rejected.
3. Remove the rejected card from the acceptor. At this point a message will appear on the keyboard indicating the result of the auto-calibration.

GOOD CAL - indicates a successful calibration.

BAD CAL - indicates a non-successful calibration. Re-insert the calibration card at this point.

4. Exit the auto calibration mode by pressing the EXIT button on the keyboard. The message on the keyboard will disappear and the machine will be ready for service.

CALIBRATION NOTES:

- Your note acceptor does not require frequent calibration. Testing has shown that a minimum of
- 50,000 bills (any denomination) can be processed before calibration is required. If your acceptor is not achieving this level of performance please contact your nearest service center. Calibrating your acceptor on a more frequent basis will not result in poor performance as long as “good” calibration cards are used.
- Never use a balance card more than once. Dispose of the balance card after one use.
- Store unused balance cards in a cool dry area out of direct sunlight.
- Never store unused balance cards for more than one year.
- Once the balance card sequence has been started, do not press any keys on the keyboard until the calibration sequence is finished and the card is rejected.
- Always perform calibration at room temperature between 70 and 80 degrees Fahrenheit. Failure to do so will result in improper calibration and poor acceptance and security.
- The auto calibration sequence will take no longer than 6 seconds.
- No tools are required to perform auto calibration.

PROGRAMMING KEYBOARD

TWENTY DOLLAR	VALUE	1	2	3
TEN DOLLAR	HOPPER A	4	5	6
FIVE DOLLAR	HOPPER B	7	8	9
DOLLAR <u>BILL</u> COIN	HOPPER C	CLEAR ENTRY	0	EXIT
QUARTER	HOPPER D	DISPLAY AUDIT	DUM P HOPPER(S)	CLEAR AUDIT
DIME	ACCUM-ULATE		STACKER PRO-GRAM	RESET

AUTO-CALIBRATION BUTTON