Money Controls

Technical Bulletin 47x261 Rev 3.

Updating IBA4 and WACS-Eagle

Electronic Enhancements

1. Connecting analog and digital grounds to improve stability and accuracy of analog circuitry.
2. Addition of (2) 10K resistors to insure proper power up sequence. Revision 2 – April 19, 2002
3. Change JPR1 0 Ohm to 470 Ohm to add protection to smart cassette pin of FPGA during "hot plugging" of bill acceptor head. Revision 3 – May 17, 2002

Materials Required

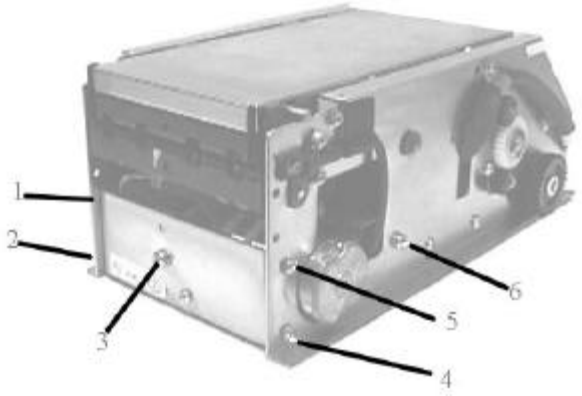
- 2X7056 (EPROM outside) or 2X7057 (EPROM inside) DSP Micro Board
- Medium sized Phillips (Cross Point) Screwdriver
- Soldering Iron with fine tips & Solder
- Wire Cutters
- Computer with Hyper Terminal and functional serial port
- 49X307 Calibration card
- Cable to connect serial port on P.C. to DB-25M on interface board
  (25 PIN female connector on PC is typically a parallel printer port, not a serial port)
- Acceptor chassis & Cash Box
- About 15 Minutes each for experienced technician
  About 45 Minutes each for inexperienced technician
- Money Controls 49X315 cleaning card
- (2) 10K ¼ Watt 10% resistors
- (1) 470 Ohm surface mount resistor

Note: Always remember to be ESD protected when handling PCB.

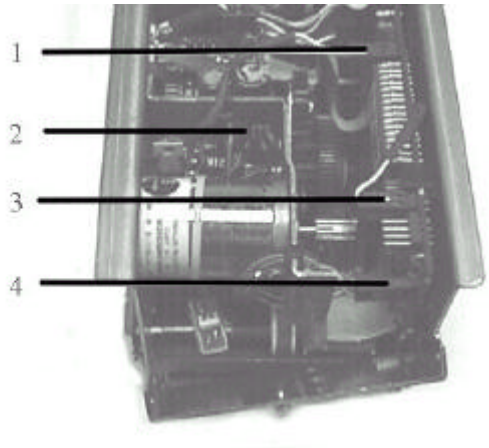
1

Disassembly and Repair

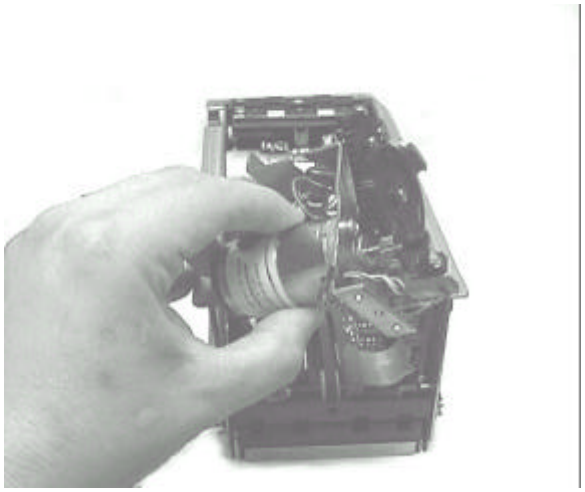
1.1 Remove note entrance
1.2 Remove (6) screws and then remove front plate



1.3 Remove stacker motor and string sensor connections (See Below)

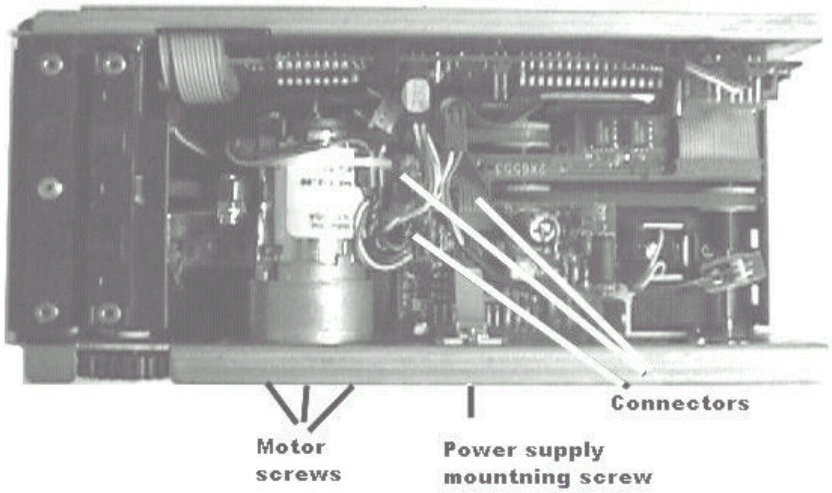


1.4 Remove stacker motor assembly



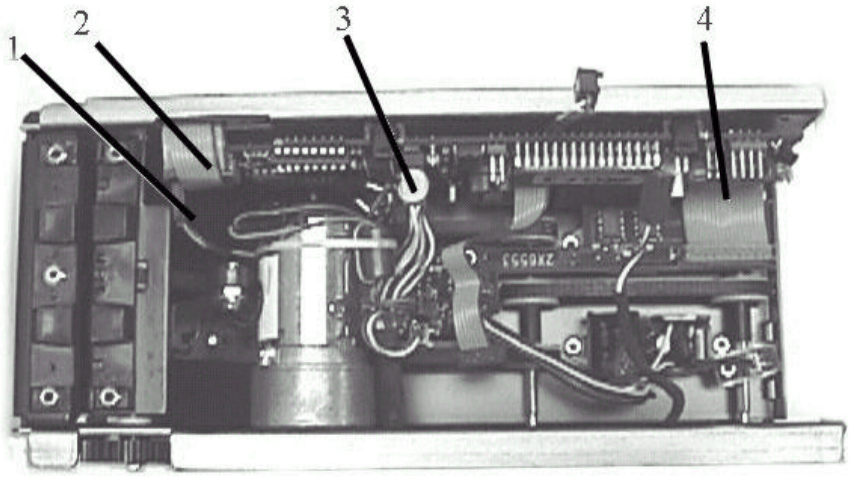
1.5 Remove motor drive / power supply board connectors.

1.6 Remove motor drive / power supply mounting screw. (See Below)

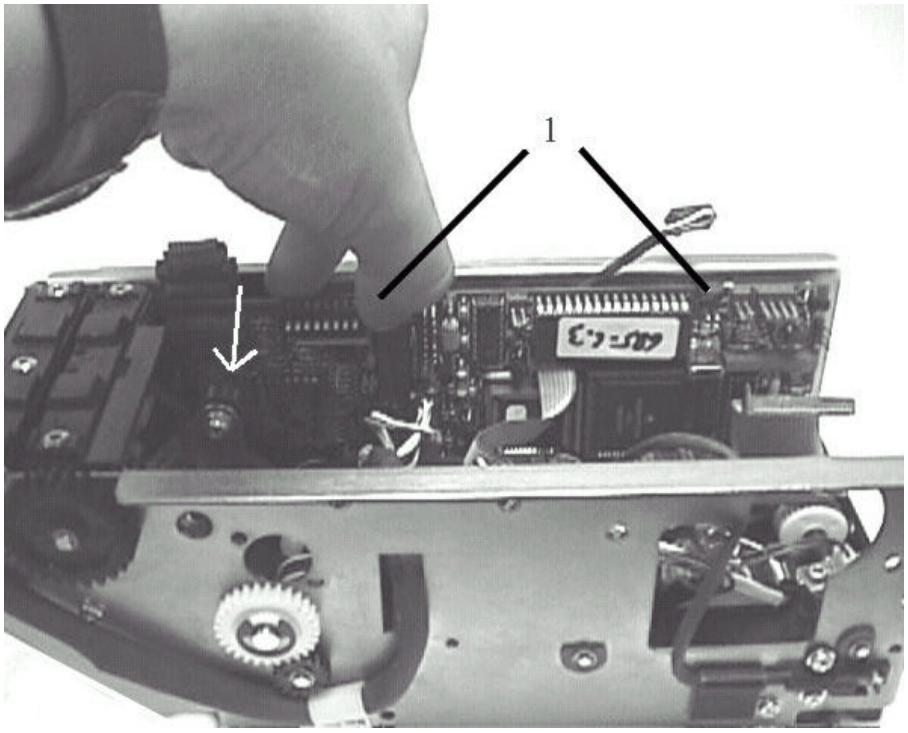


1.7 Remove remaining motor connectors
1.8 Remove (3) screws on transport motor (see above) and remove motor

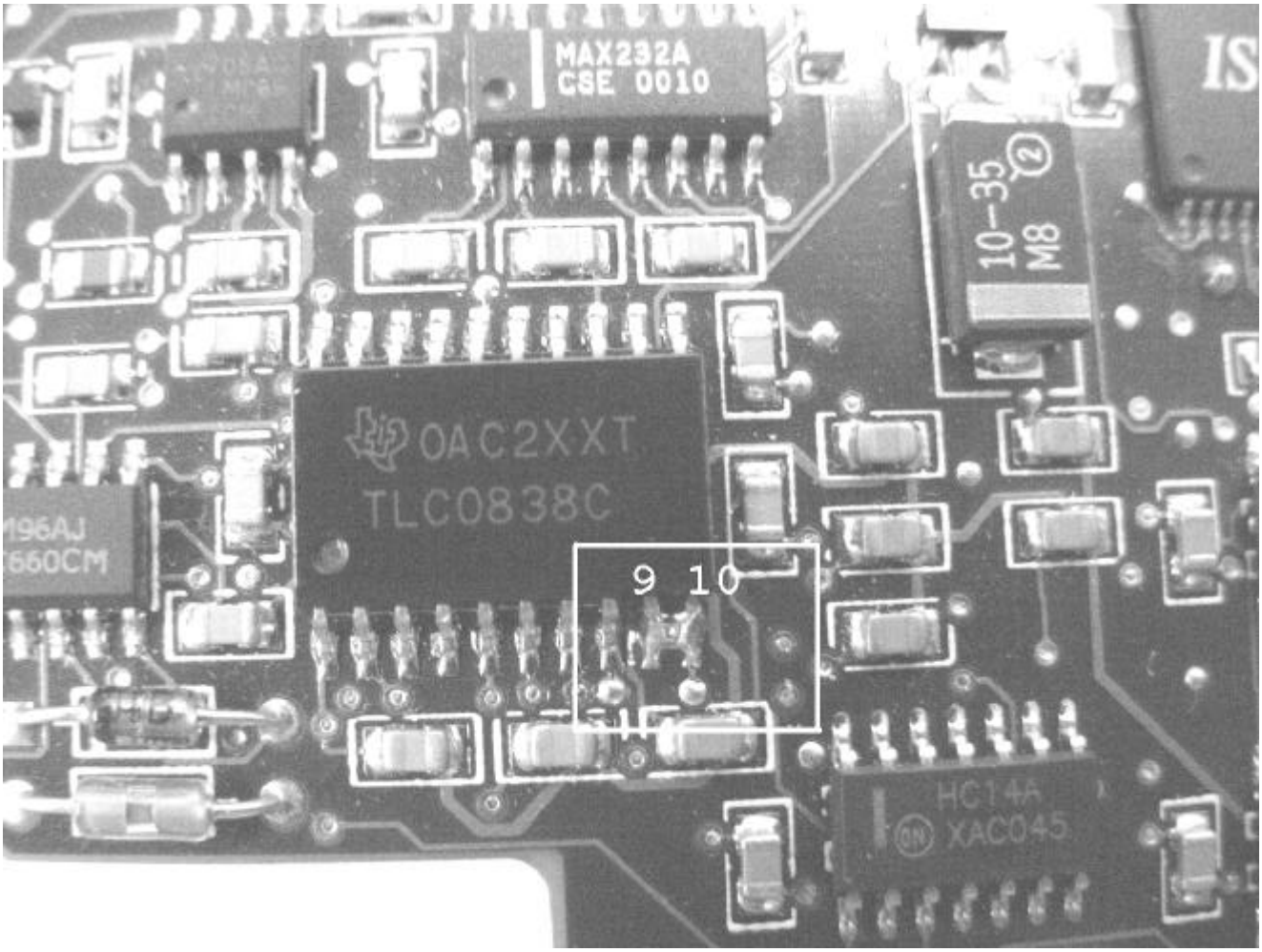
1.9 Remove all remaining connections inside unit (below)
(Item 1 is transport tach, Item 2 are (2) ribbon cables)
(Item 3 is 14 position I/O cable and Item 4 is 20-pin ribbon cable)



1.10 Remove microprocessor board by gently pulling up on two plastic clips while pulling board away from side plate.

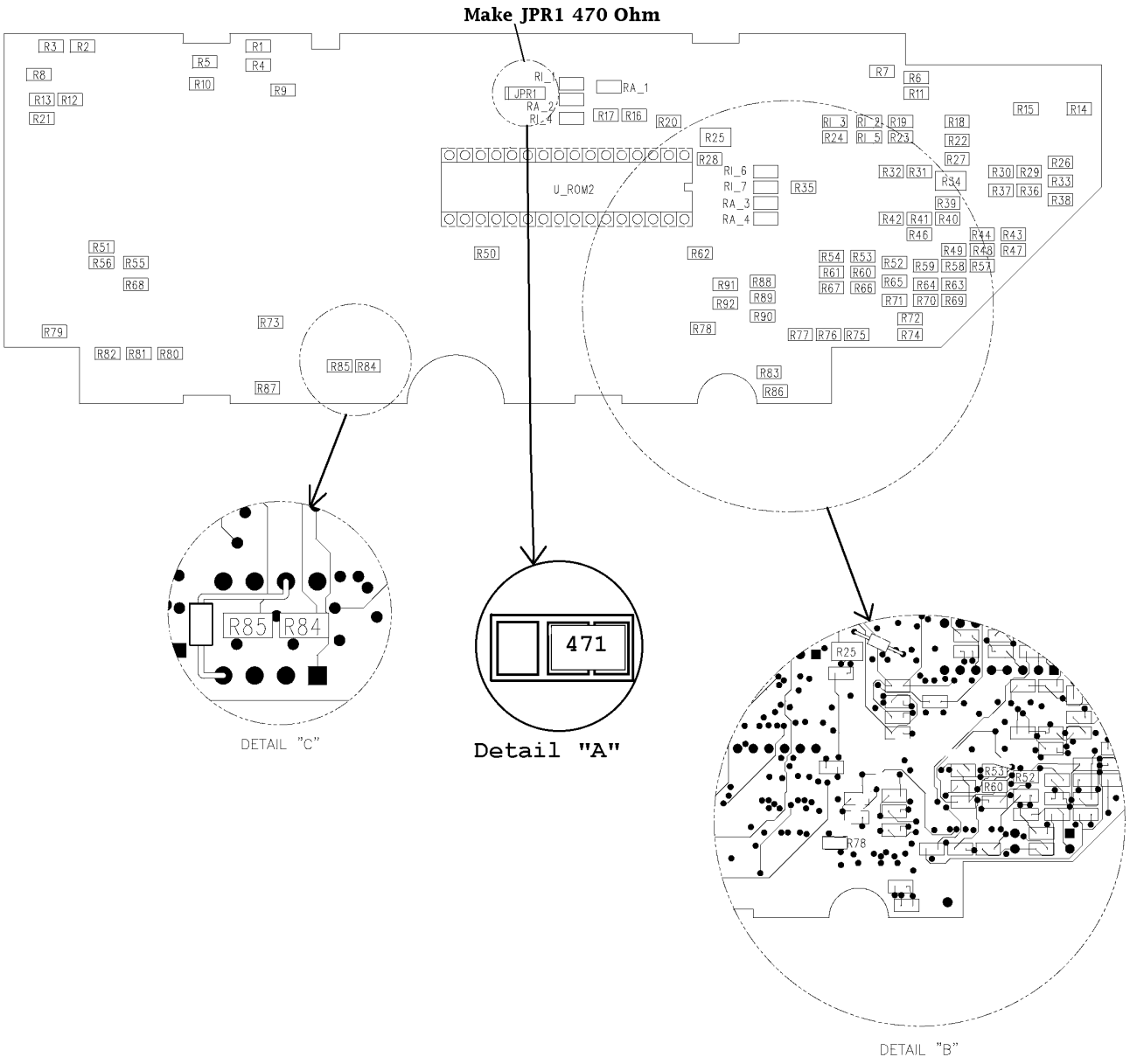


1.11 If you have a 2X7056 assembly (61X748 PCB) or a 2X2057 assembly (61X749 PCB), orient microprocessor board as shown and add solder bridge connection to U6 on pins 9 and 10.



1.12 Measure between pins 9 and 10 on the TLC0838 analog to Digital Converter and verify that it is zero ohms.

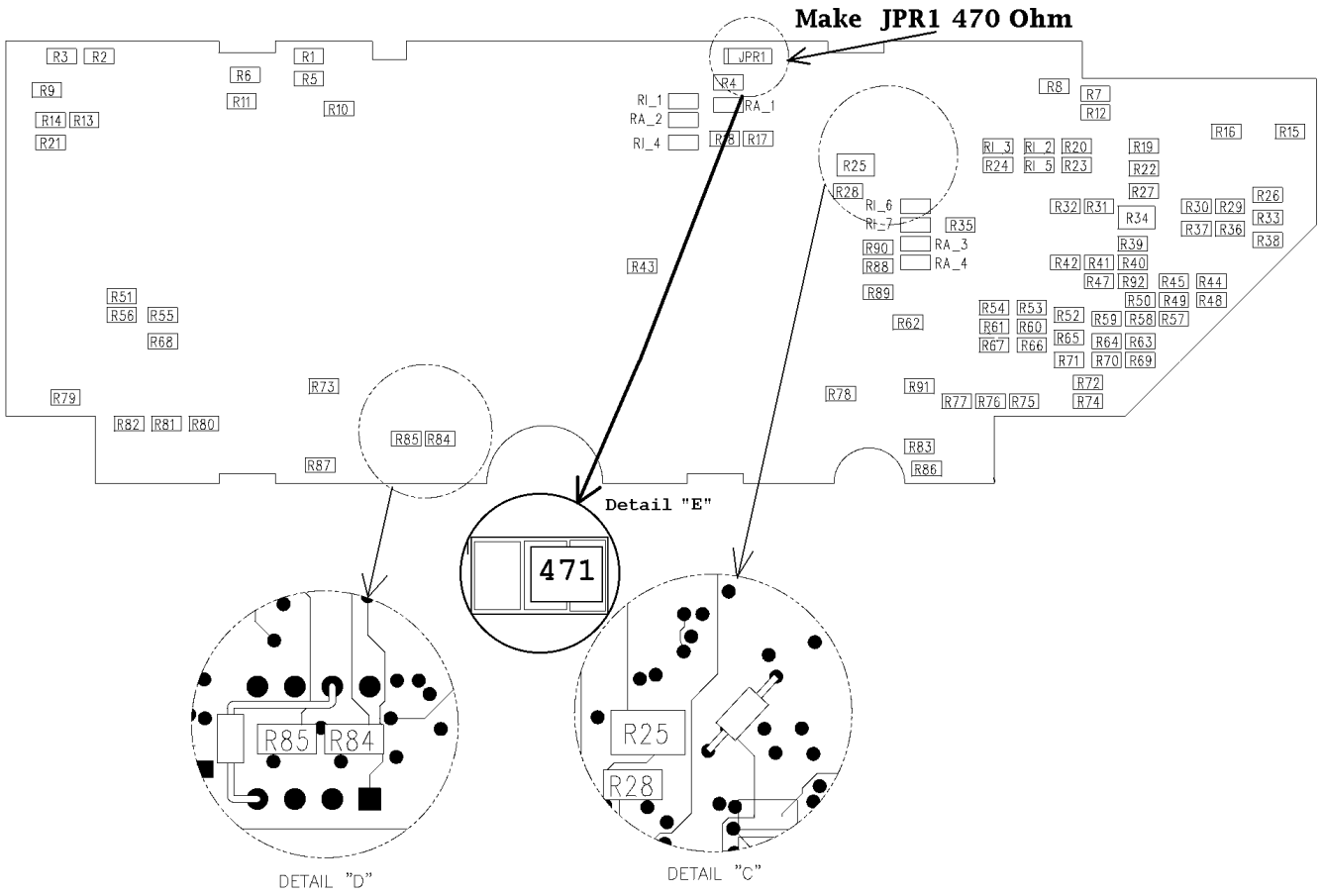
1.13 If you are using a 2X7056 assembly (61X748 PCB), add (2) 10K resistors as shown below in details “B” and “C”.



1.14 Test resistance of JPR1. If resistance is 470 ohms +/- 5%, do not do step 1.15

1.15 Change JPR1 from 0 Ohm (000 on resistor) to 470 Ohm (471 on resistor) as shown above in detail “A”.

1.16 If you are using a 2X7057 assembly (61x749 PCB), add (2) 10K resistors and as shown below in details “C” and “D”.



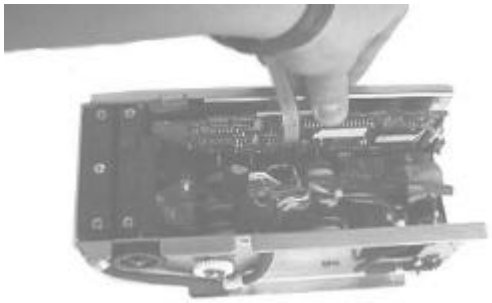
1.17 Test resistance of JPR1. If resistance is 470 ohms +/- 5%, do not do step 1.18

1.18 Change JPR1 to from 0 Ohm (000 on resistor) to 470 Ohm (471 on resistor) as shown above in detail “E”.

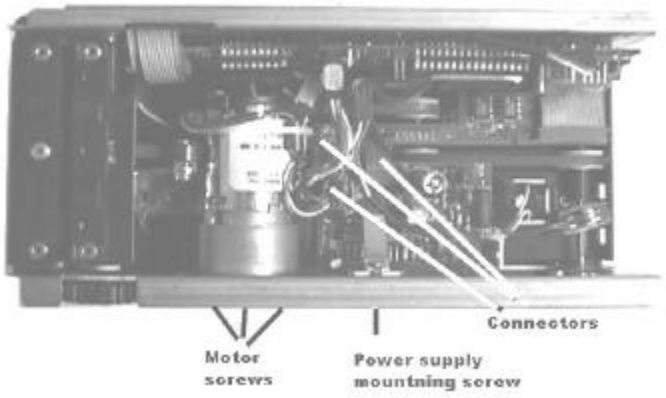
2

Reinstall DSP Micro and Reassemble

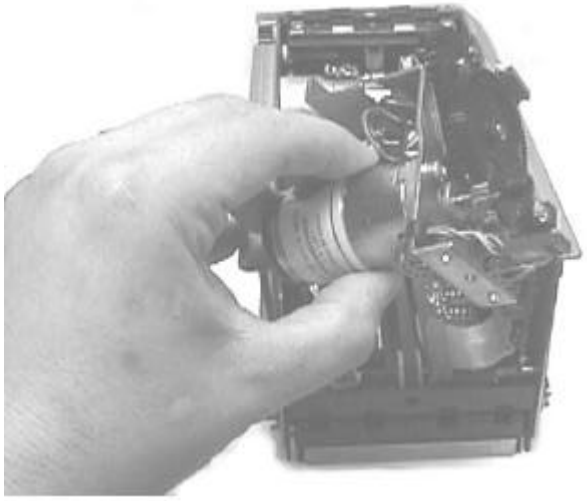
2.1 Place micro board on bottom board clips with the two red connectors to the left as shown. (Make sure string sensor wire is behind micro board and left of front board clip)
2.2 Gently clip micro board into top board clips
2.3 Reconnect two red connectors on left and one on right.



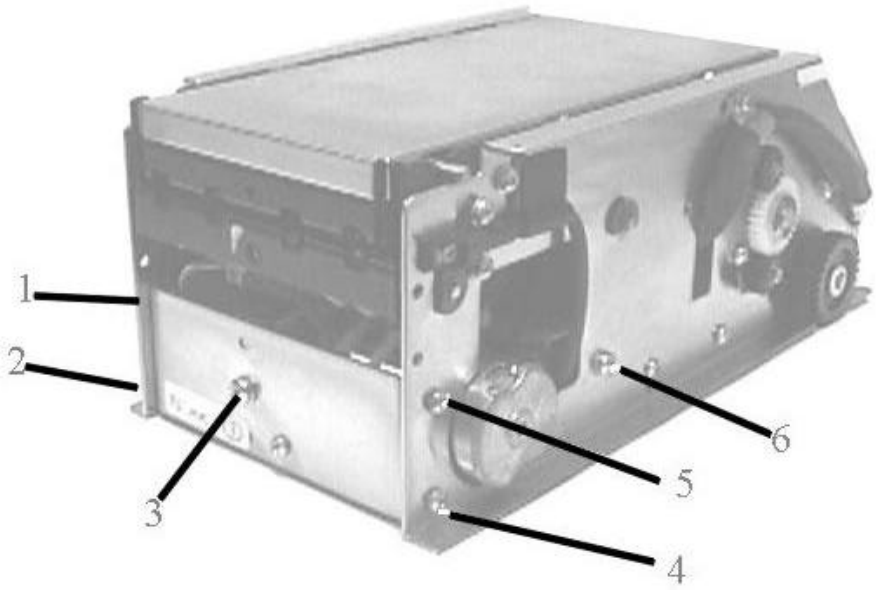
2.4 Reinstall the transport motor and LOOSELY install 3 fine thread motor screws.
2.5 Pull motor away from larger gear to set gear lash
2.6 While pulling motor away, tighten the three motor screws
2.7 Reinstall motor driver / power supply board with one 4-40 screw
2.8 Reconnect motor driver / power supply connectors. Connector with orange/White and green wires should go closest to large L298 Motor drive chip. The red and black wires go closest to micro board.



2.9 Reconnect cables to micro board
2.10 Reinstall stacker motor assembly
2.11 Reconnect stacker motor, tach and all other connections

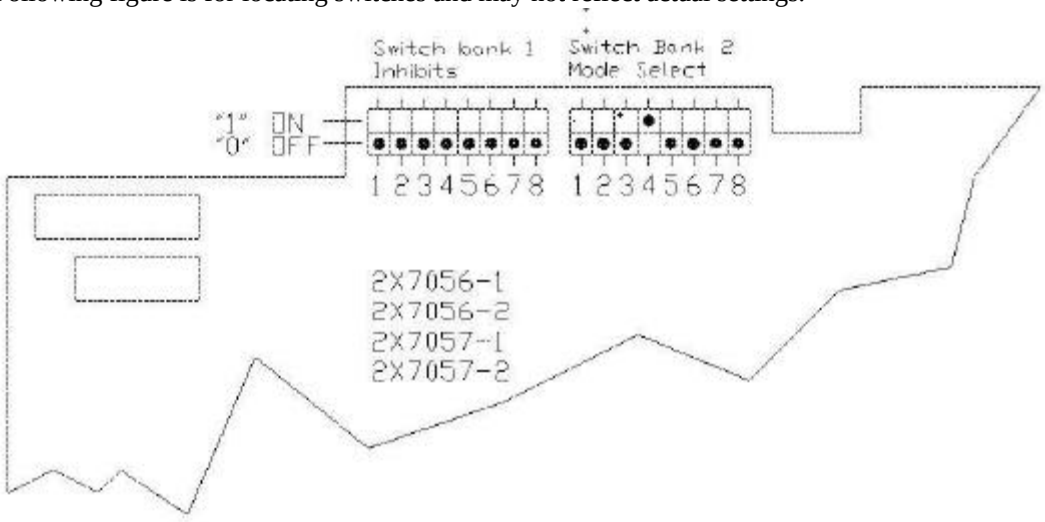


2.12 Reinstall front plate

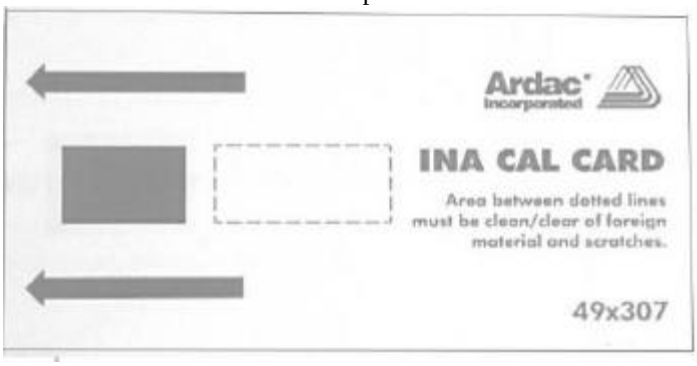


3
Recalibrate and retest

3.1 Connect the system to a PC as described in the manuals 44x497 (WACS Eagle) and 44x494 (IB4).
3.2 Following figure is for locating switches and may not reflect actual settings.



3.3 Apply power to unit wait for stacker to cycle.
3.4 Press <ESC> <ESC> <ESC> <B> <ENTER> to enter diagnostics mode as described in the manuals.
3.5 Press <V> to display voltages as described in the manuals.
3.6 Verify that display shows “Calibration Passed”
3.7 Type <A> <C> <A> <L> to enter calibration mode.
3.8 Use INA/WACS calibration card part number 49X307 to recalibrate



3.9 When prompted, insert calibration card face up, arrows first as shown.

3.10 Verify that display shows “Calibration Passed”
3.11 Insert notes and verify that they are accepted and proper denomination is displayed on the screen.
3.12 Turn off diagnostics mode and set switches on acceptor microprocessor board for the proper communications protocol that will be used in the host machine.