ABBOTT
ADD

INDEX
TECHNICAL SERVICE BULLETIN

PRODUCT:	DATE:
ADx® (59)	**24-JAN-96**

TSB #	IMPLEMENTATION	SUBJECT	EFFECTIVITY DATE
59-017	O - N/A	CE Mark Certified ADx® Instruments and Modification	22-JAN-96
59-016A	N - S/N2728	Carousel Motor Speed Modified with Expanded Boom CAL Procedure	06-AUG-94
59-015B	N - S/N 2697	Lamp Socket Assembly	06-AUG-93
59-014	N - ALL	Lamp Housing Lens Gasket	15-JUL-92
59-013	O - S/N 2528	ADx REV 3.2 Software Upgrade	07-APR-92
59-012	F - S/N 2401	ASIC Board	18-DEC-91
59-011	O - S/N 2401	3.1 Software	31-JAN-92
59-010		Printer Washers	CANCELLED
59-009	N - S/N 2300	Fan Gasket	30-AUG-91
59-008	F - S/N 1599	Carousel Motor Replacement	26-JUN-90
59-007A	N - S/N 1961	Internal Thermometer Mod.	04-MAY-90
59-006	N - S/N 1590	ADx System Power Supply	12-NOV-89
59-005A	O - S/N 1590	Revision 2.0 Software Mod.	13-JUN-89
59-004	N - S/N 1228	PMT Socket Replacement	06-JAN-89
59-003	O - S/N 1090	50 Test Enhancement	01-DEC-88
59-001	O - S/N 721	Revision 1.5 Software Mod.	OBSOLETE

PENDING - TSB index number has been reserved for a future TSB.
CANCELLED - TSB index number is cancelled.
INCORPORATED - TSB was incorporated into another document or manual.
OBSOLETE - TSB no longer applies.
COMPLETE - TSB implementation is complete.

END OF DOCUMENT

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TECHNICAL SERVICE BULLETIN

SUBJECT:
CE Mark Certified ADx® Instruments and Modification

TSB#: **59-017**

ORIGINATOR: **Buddy Bokony**
APPROVED: **Mark Slater 1/24/96**

PRODUCT:
ADx® (59)

REF. ECO:

IMPLEMENTATION: ○ **Immediate** ○ **Next Service Call** ○ **Next Failure** ● **Optional** Instruments Requiring Modification: **n/a**	TSB Part/Kit #: **3-47667-01** TSB Effectivity/ Part(s) Availability: **22-JAN-96** **TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ○ YES ● NO	Upgrade Time: **1 .0 Hrs.** Validation Time: **1 .0 Hrs.** Total Mod. Time: **2.0 Hrs.** ****NOTE** The instrument must be at TSB Level 16A prior to performing this TSB.**

I. DISTRIBUTION:
Worldwide

II. PURPOSE:
This Technical Service Bulletin (TSB) is to inform the Worldwide Service Organizations of the release of a CE Mark certified ADx® instrument configuration. This configuration for newly manufactured instruments is mandatory for countries in the European Community (EC) only. This TSB also provides modification instructions to the affected European service organizations on the steps needed to upgrade current non-CE Mark ADx instruments to the CE Mark configuration.

The "Communauté Européenne" (CE) Mark is a label placed on a product to indicate conformance to the European Union (EU) directives. In this case the CE Mark is related to the emissions of, or susceptibility to, electro-magnetic disturbances, specified in the Electro Magnetic Compatibility (EMC) directive. The product may also conform to other directives necessary to insure that electrical equipment placed in the EC does not endanger the safety of persons, domestic animals, or property when installed, maintained, and used in applications for which it was made.

ADx instruments built to or modified to the CE Mark configuration will have a new size code in the product list number;

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

9684-86. The -86 denotes the CE Mark configuration.
Remanufactured non-CE Mark ADx instruments will continue to have list number; 9684-19.

III. ADMINISTRATIVE NOTES:

This is an Optional TSB.

Definition: Countries, that are complying to European Community directives are specified as CE Mark countries in this document.
Countries, that are not complying with European Community directives are specified as non-CE Mark countries in this document.

Non-CE Mark countries (i.e., USA, Japan, Canada, etc...) will not be affected by this TSB.
Instruments currently in customer accounts in CE Mark countries, will be modified at the Country Manager's discretion, or upon specific customer's request.

Manufacturing will support CE and non-CE Mark instruments and field service spare parts for both configurations. Service organizations in the EC will be responsible for forecasting/ ordering CE Mark modification kits and CE Mark service spare parts through normal channels.

ADx instruments built to or modified to the CE Mark configuration MUST be serviced with CE Mark approved parts only. Non-CE Mark ADx instruments MUST be serviced with non-CE Mark parts only.

Instruments Requiring Modification: (within the CE Mark countries)
Instruments that receive complete reconditioning (complete disassembly and upgrading), defined as Level III Servicing, must be upgraded to the CE Mark configuration.

Definitions related to CE Mark Countries: (Effective 01/01/96)
New Equipment; Equipment not previously operated by an end user (customer) within the CE Mark countries as of 01/01/96.

2nd Hand Equipment: Equipment previously operated by an end user (customer) within the CE Mark countries as of 01/01/96 and has not been remanufactured.

Remanufactured Equipment: Instruments that receive complete reconditioning; like new condition (complete disassembly and upgrading), defined as Level III Servicing.

Repaired Equipment: Equipment that has been serviced with replacement of damaged/ worn parts with equivalent parts; activity performed at a customer site or Abbott designated facility. Repair includes;

1. Performing Mandatory TSB's
2. Cleaning and decontaminating operator accessible areas
3. Making repairs if needed
4. Confirming instrument operation

5. Checking or assessing physical appearance (i.e. condition of covers, etc...)
   NOTE: Repair does not include remanufacturing (complete disassembly and upgrade).

New Placements: (CE Mark Countries)
Effective 01/01/96 ADx instruments shipped from Remanufacturing to CE Mark countries will be of the CE Mark configuration under List Number (LN) 9684-86. On the TSB modification control sticker located in the instrument number 17 will be marked.

Servicing: activities as of 01/01/96

1. ADx instruments installed after 01/01/96 and identified with the CE Mark label **MUST** be serviced with CE approved parts only.
2. Instruments in customer accounts prior to 01/01/96, considered 2nd hand instruments, MUST be serviced/repaired with non-CE Mark approved parts.
3. Instruments modified to the CE Mark configuration, MUST be serviced with CE Mark approved parts only. No deviations or exceptions are authorized when performing the modification. The Power Supply Assembly (3-30968-02) **MUST** be of the ZYTEC style. The following TSB's and the ZYTEC Power Supply must be installed prior to performing the CE Mark modification.

   TSB 59-007A Internal Thermometer Modification
   TSB 59-013 ADx REV. 3.2 Software Upgrade
   TSB 59-016A Carousel Motor Speed Modification

   NOTE 1: Field update/ modification may be performed at the customers request and the country manager's discretion.

   NOTE 2: As this TSB is Optional , **no credit** will be issued neither for Labour & Travel expenses nor for Parts used to perform upgrade.

New Placements: (Non-CE Mark countries, i.e. USA, Canada, Japan, etc...)
ADx instruments shipped from Remanufacturing to non-CE Mark countries will continue to receive the current non-CE Mark production instrument under List Number (LN) 9684-96.

Servicing: No Impact to current service practices.
Service non-CE Mark instruments with non-CE Mark approved parts.
Instruments in non-CE Mark countries MUST NOT be modified.

IV. SPECIAL TOOLS:

Standard FSR/FSE tool kit

V. PARTS:

REPLACED PARTS:
Return non-CE Interface Modules (3-44301-01) through normal return parts channels.

COMPATIBILITY:
Service non-CE Mark instruments with non-CE Mark approved parts.
Instruments built to or modified to the CE Mark configuration MUST be serviced with CE Mark approved parts only.

VI. PROCEDURE:

MODIFICATION STEPS:
The following TSB's and a ZYTEC Power Supply MUST be incorporated in the instrument prior to performing the upgrade:

TSB 59-007A Internal Thermometer Modification
TSB 59-013 ADx REV. 3.2 Software Upgrade
TSB 59-016A Carousel Motor Speed Modification

Power Entry Module Removal (30975-103)

1. Turn the power to the ADx off. Disconnect the power cord from the back of the instrument.
2. Remove and set aside the non-CE Top Cover assy.
3. Disconnect P10 from the System/ ASIC PCB. Disconnect P1 from the Power Supply PCB.
4. Remove, from the back of the instrument, the 2 (6 x 32 x .50) screws that secure the Power Entry Module to the instrument.
5. Remove the Power Input Cover that the Interlock Switch protrudes through.
6. Disconnect the Interlock Switch from the instrument.
7. Remove the ground wires from the chassis ground stud. Save the hardware that is removed.
8. Lift the interlock switch and the AC power cable harness so the round ferrite can be removed from around the standoff.
9. Slide the power entry module, the Interlock Switch, and cable harness out the back of the instrument.

Power Entry Module Installation (3-47661-01)

1. Verify proper cable connections;
   Power Entry Module terminal "B", black wire to terminal 2 on Interlock Switch
   Power Entry Module terminal "F", white wire to terminal 1 on Interlock Switch
   Power Entry Module ground wire has a ring terminal connector for attaching to the chassis ground stud.
   Interlock Switch terminal 5, white wire to J1 pin 3
   Interlock Switch terminal 6, black wire to J1 pin 2
   J1 pin 1 ground wire has ring terminal connector for attaching to chassis ground stud.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

2. Insert the new cable harness, round ferrite, Interlock Switch, and Power Entry Module into the instrument through the opening for the Power Entry Module in the back of the instrument.
3. DO NOT ATTEMPT to install the round ferrite of the new harness over the standoff. Lay the ferrite in the bottom of the instrument.
4. Attach the ground wires and hardware on the chassis ground stud in the following order;
   a. Split lock washer
   b. Power Entry Module ground wire
   c. Lock nut
   d. J1 pin 1 ground wire
   e. Lock nut
   f. Ground cable assy
   g. Lock nut
5. Tighten each lock nut securely.
6. Attach the new Interlock switch to the standoffs and attach the Power Entry Module to the back of the instrument.
7. Install the Power Input Cover so the Interlock Switch protrudes through the opening. Secure the cover with the two 6x32 screws that were removed earlier.

Printer Ground Wire

1. Remove the 16.5 cm. (6.5 in.) ground wire from the upgrade kit.
2. Attach the #6 ring terminal of the ground wire to the screw securing the PMT High Voltage Supply to the instrument.
3. On the printer, remove the 4x40 screw from the right side, back top corner.
4. Locate the #4 External Tooth Washer from the upgrade kit.
5. Insert the 4x40 printer screw through the #4 ring terminal on the ground wire, place the #4 external tooth washer over the screw between the ground wire lug and the side of the printer.
6. Tighten the printer screw so that the external tooth washer "cuts" into the side of the printer.

Air Heater / Sense Cable Replacement

Refer to the Removal and Replacement Procedures for this assembly in the ADx Service Manual.

Interface Module Ground Wire (Air Duct Cover connection)

1. Locate the two Keypad ground wires with quick disconnect terminals in the upgrade kit.
2. Locate the #8 External Tooth washer in the upgrade kit.
3. On the Air Duct Cover, locate and remove the screw holding the system ground wire located in front of the Lamp Housing assembly.
4. Attach the #8 External Tooth washer, the longer (19 cm.) Keypad ground wire and the system ground wire to the Air Duct Cover such that the washer is between the ground wires and the cover.
5. Tighten the screw so that the washer "cuts" into the Air Duct Cover.

Interface Module Ground Wire connection

1. On the Interface Module, locate and remove the #8 hex nut that secures the black ground strap to the module cover.
2. Using the hex nut, attach the second (9 cm.) Keypad ground wire and black ground strap to the module cover.

PMT High Voltage Guard

1. Loosen the two back screws that secure the printer to the standoffs.
2. Slide the guard under the screws so the notches are under the screw heads.
3. Gently tighten the screws without breaking the guard.

Top Cover Assembly (3-47663-01)

Install the new Top Cover Assembly.
Connect the quick disconnect terminals together.

On the back of the instrument place the **CE** Mark label above the CSA label.
Remove the Fuse Warning Label on the back of the instrument and replace it with the new label from the upgrade kit. Using a permanent black marker identify the correct voltage and fuse rating.
Remove the new Serial number label from the upgrade kit. Using a permanent black marker write the instrument serial number on the new label. Beside the 9684 on the new label write -86 to indicate that this instrument is now a CE Mark configured instrument.

Remove the current serial number label that is attached to the instrument. Attach the new label in the same location as the previous label.
Plug the power cord into the instrument and turn the instrument ON.

CHECKOUT:

1. Allow the instrument to proceed through it's normal "Warm-up" until READY...SYSTEM is displayed.
2. Perform a Temp Check.
3. Perform a Total Service Call

MODIFICATION CONTROL STICKER UPDATE:

1. Mark through #17 on the TSB sticker located in the instrument.
2. Close the service call indicating TSB 59-017 is complete and in the service documentation in the text of the call enter the following statement:
   "This instrument has been modified to the CE Mark configuration as indicated by the List Number size code of the new Serial Number label."

END OF DOCUMENT

END OF DOCUMENT

ABBOTT ADD	**TECHNICAL SERVICE BULLETIN**

SUBJECT: TSB#: **59-016A**
CAROUSEL MOTOR SPEED MODIFICATION WITH EXPANDED BOOM CAL PROCEDURE

ORIGINATOR:
Kyle Hranitzky

PRODUCT:
ADx® (59)

APPROVED: **Bob Schabel 6/Aug/93**

REF. ECN: **TDX-7058**

IMPLEMENTATION:	TSB Part/Kit #: **N/A**	Upgrade Time: **15 min.**
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **N/A**	Validation Time: **45 min.** Total Mod. Time: **60 min.**
Instruments Requiring Modification: **S/N 2728 & below**		

****NOTE** The instrument must be at TSB Level 13 prior to performing this TSB.**

➔ **NOTE: VERIFY THAT THE CAROUSEL MOTOR GEAR IS ALIGNED AND MOTOR HEIGHT IS ADJUSTED AS DETAILED IN ISA #59-008.**

I. DISTRIBUTION:
Worldwide

II. PURPOSE:
➔ This TSB supersedes TSB 59-016. TSB 59-016 was released for limited evaluation of carousel motor speed modification. Reduce the likelihood of carousel step loss by decreasing the carousel motor ramp and stop drive parameters. Overall purpose is to increase the reliability of the ADx® System without compromising the analysis of patient samples.

III. ADMINISTRATIVE NOTES:
Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

N/A

IV. SPECIAL TOOLS:

Kit item C/N: 3-45573-01 (ADx System boom alignment tool) is required.

V. PARTS:

A. Replaced Parts:

N/A

B. Compatibility:

The instrument must be at TSB Level 13 (upgrade to software version 3.2) prior to performing this TSB. After this TSB has been performed, the new carousel motor speed parameters will need to be reentered whenever: (a) the SYSTEM BOARD is replaced and the field service memory module is not available to transfer the data from the original system board, or (b) if the SYSTEM FILE is factory reset.

VI. PROCEDURE:

A. Modification Steps:

1. Press **STOP** so that the system display shows "READY/SYSTEM".
2. Press **3.6.2.4 ENTER ENTER** to print out the SYSTEM file parameters.
3. Circle parameters 26 (RAMP STOP) and 27 (RAMP SLOPE).
4. Press **STOP** so that the system display shows "READY/SYSTEM".
5. Press **4.5 ENTER** to reach the ACTIVATE ASSAY menu.
6. Press **ENTER**. Display now shows: "ACTIVATE ASSAY/ACT OPTION:___".
7. Press **2 ENTER**.
8. At the "ALTER ASSAY/A:___" prompt, press **31024.4 ENTER**.
9. At B:___ press **45116.87 ENTER**.
10. At C:___ press **01113.961 ENTER**.
11. At D:___ press **46113.89 ENTER**.
12. At E:___ press **01112.211 ENTER**.
13. At F:___ press **61455.4544 ENTER**.
14. At G:___ press **ENTER**.
15. If the activation has been successful, the display will read "READY". If the activation was not successful, you will have to repeat the activation procedure.
16. Press **STOP** so that the system display reads "READY/SYSTEM".
17. Press **3.6.2.4 ENTER ENTER** to print out the SYSTEM file parameters.
18. Verify that SYSTEM parameters 26 is now 750 and that parameter 27 is now 900.
19. Perform a CAROUSEL CAL (press **3.3.5 ENTER**), BOOM CALIBRATION (press **3.3.1 ENTER**) and an XBOOM CALIBRATION using the ADx® System boom alignment tool (Kit Item C/N 3-45573-01). The procedure for the XBOOM CALIBRATION is:
    a. Place the 4 pot alignment tool in the R position on the carousel.
    b. Place the carousel in the instrument.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

c. Press **3.5.6 ENTER** (X BOOM CAL under the SPECIAL menu).
d. Press **ENTER** and the boom moves to the "W" (outermost) reagent vial.
e. Use the **CLR** and/or **DOT** keys to adjust the carousel front to back.
f. Use the **4** and/or **6** keys to adjust the boom left to right.
g. Check the accuracy of the alignment by using either the **2** or **3** key to move the probe down and the **8** key to move the boom up.

NOTE: The 9 key is used to toggle between the TAB and STEP mode.

h. If further adjustment is required, use the **4, 6, CLR**, and/or **DOT** keys.
i. Once probe positioning is optimized, press **ENTER**. The parameters for the "W" vial are stored and the boom moves to the "T" vial.
j. Repeat steps e - i to optimize the "T", "P", and "S" vial positions.
k. After adjusting the "S" vial (innermost vial location), press **ENTER**. The boom moves to the sample cartridge location. Press **EXIT**. Verification of the procedure will be indicated by the printed message "4 LOCATION(S) UPDATED".
l. Do not use X BOOM CAL to set sample cartridge positions. Do not use the **STOP** key as it clears all locations just trained.
m. Print the TRAINED LOCATION FILE (press **3.6.2.1 ENTER ENTER**) and leave this with the customer along with information outlined in C. step 2 below.

B. Checkout Steps:

1. Prepare a carousel with three reagent packs at positions 11, 13 and 15.
2. Scroll to the HANDLERS menu under DIAGNOSTICS and press **ENTER**.
3. Scroll to REVOLVER and press **ENTER**.
4. Use the **4** or **6** key so that the revolver is in the BARC mode.
5. Press the **9** key to toggle to the TAB mode. Place the carousel in the instrument.
6. Press the **0** key to home the carousel.
7. Press the **CLR** key. The carousel rotates clockwise quickly.
8. No grinding noise (carousel step loss) or uneven rotation should be manifested.
9. Repeat steps 6 - 8 ten times.
10. Run controls for 2 assays in PANEL mode to verify operation of the instrument.
11. Complete remainder of Total Service Call.

C. Modification Control Sticker Update:

1. When the modification is completed, box 16 on the modification control sticker should be marked, the Service Order should be closed out as "TSB 59-016 COMPLETED" and the call code as:

U.S. Only: Service code (03), Modification
Trouble code (16)
Repair code (93), TSB installed

For International Use: Use appropriate service codes.
Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

2. The Field Service report to the customer must include the following information:
   a. Modification was performed to reduce the likelihood of carousel step loss. A perceivable change in the sound of the motor will be evident and carousel movements will appear to be slower.
   b. Process times for ADx® Assays have not changed significantly.
   c. Check to be sure controls are in range for each assay before reporting results.

If customer had been counter-wieghting the carousel, please advise customer to discontinue doing so.
If you have any questions please call the X-SYSTEMS™ CSE group.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
LAMP SOCKET ASSEMBLY

TSB#: **59-015B**

ORIGINATOR:
Ron Elston

PRODUCT:
ADx® (59)

APPROVED: **Bob Schabel 8/3/93**

REF. ECN: **TDx-6835**

IMPLEMENTATION:	TSB Part/Kit #: **3-31053-01**	Upgrade Time: **2 min.**
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **02/01/93**	Validation Time: **8 min.** Total Mod. Time: **10 min.**
Instruments Requiring Modification: **S/N 2697 & below**		

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

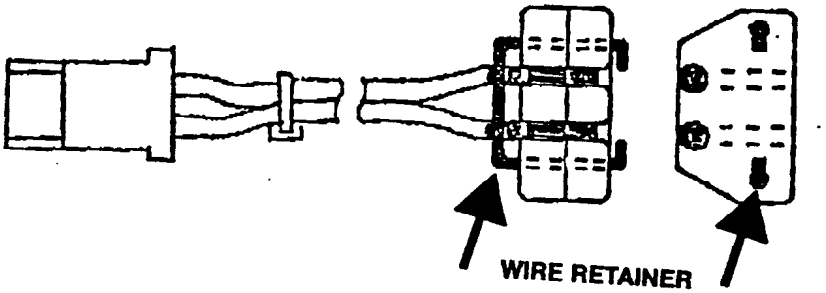
IV. DISTRIBUTION:

Worldwide

V. GENERAL

A. PURPOSE:

A wire retainer was added to the Lamp Socket to relieve stress on the wires during lamp replacement. This improvement is made to reduce LAMP OUT errors.



➔ This TSB supersedes TSB 59-015A. The revision contains additional information under Section B. ADMINISTRATIVE NOTES.

B. ADMINISTRATIVE NOTES:

USA FSEs ONLY:

When the modification is completed, the call should be closed out in FieldWatch as follows:

Service Code (03)

➔ Trouble Code (15)

Repair Code (93)

C. TIME REQUIRED:

10 minutes

Modification: 2 minutes
Validation: 8 minutes

D. TOOLS REQUIRED:

Standard FSE Tool Kit

E. PARTS:

1. U.S.A.: FSEs will receive six Lamp Sockets C/N 3-31053-01 to upgrade FSE-KIT-9X (TDx® Common Kit). FSE should ensure that all lamp sockets in parts kit contain a wire retainer.
2. INTERNATIONAL: The International Service Manager should send forecast requirements to their responsible logistics organization. Please reference TSB 09-037B on forecast requirements.

VI. PROCEDURE:

16. Print trained location.
17. Turn the ADx® Analyzer off and unplug the instrument from the wall outlet.
18. Open the keypad door.
19. Remove the lamp housing cover.
20. Remove lamp from lamp housing and disconnect lamp socket assembly.
21. Disconnect lamp socket assembly from the power cable.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

22. Connect lamp socket assembly with wire retainer to power cable.
23. Connect lamp to lamp socket assembly.
24. Install lamp into lamp housing.
25. Install lamp housing cover.
26. Close the keypad door.
27. Plug instrument into wall outlet and turn ADx Analyzer on.
28. Run the following tests:
    a. Lamp operation with System 3.4.2 [ENTER] [ENTER] [PRIME] to check lamp operation.
    b. Photo Check
29. Update the modification control label by crossing off block #15.

END OF DOCUMENT

ABBOTT ADD

TECHNICAL SERVICE BULLETIN

SUBJECT:
LAMP HOUSING LENS GASKET

TSB#: **59-014**

ORIGINATOR:
Bambi White

PRODUCT:
ADx® (59)

APPROVED: **Bob Schabel**

REF. ECN: **TDx-6407**

IMPLEMENTATION:	TSB Part/Kit #: **3-45875-01**	Upgrade Time: **30 min.**
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **05-08-92**	Validation Time: Total Mod. Time:
Instruments Requiring Modification: **n/a**		

****NOTE** The instrument must be at TSB Level n/a prior to performing this TSB.**

I. DISTRIBUTION:
Worldwide

II. PURPOSE:
To reduce the dust collection in the Lamp Housing Aperture area.

III. ADMINISTRATIVE NOTES:
A. DOMESTIC FSE'S
1. When the modification is completed the Service Order should be closed out as TSB 59-014 completed and the call coded as:

Service Code (03) Modification
Trouble Code (14) TSB 004

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

2. The TDx/ADx CSE in conjunction with the "X SYSTEMS" Parts Planner will be responsible for distribution of parts to the Parts Kit.

B. INTERNATIONAL FSE's
The International Service Managers will set up the protocol to follow for this TSB.

IV. TOOLS:
Standard FSE Tool Kit

V. PARTS:
3-45875-01 Lens Gasket

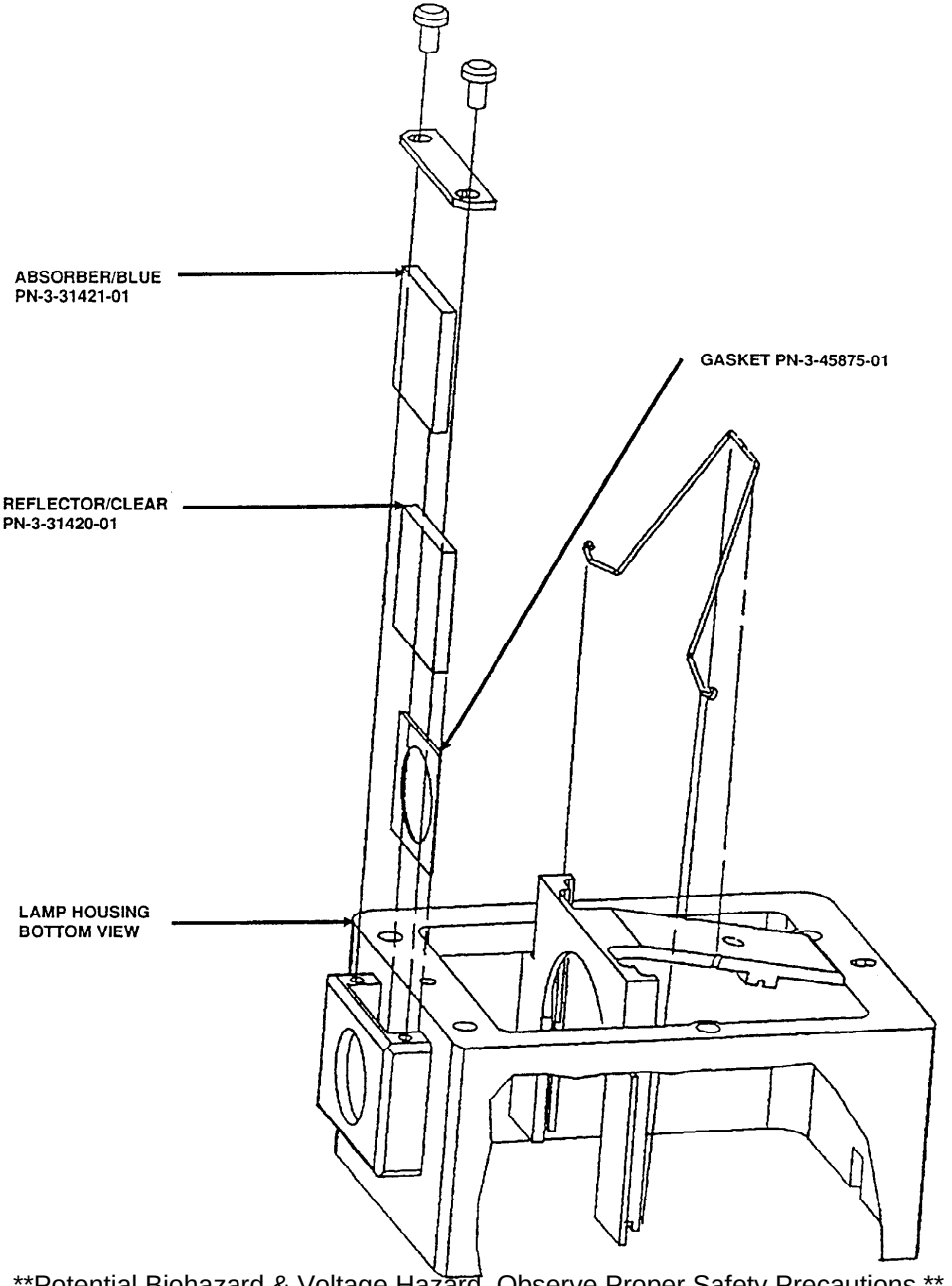
VI. PARTS LOGISTICS:

A. DOMESTIC:
FSE Parts Kit - 9X Common X Kit will be upgraded with twenty 3-45875-01 Lens Gasket

B. INTERNATIONAL:
The International Service Managers will send forecast requirements for parts to Field Service Logistics in Dallas.

VII. MODIFICATION STEPS:

1. Open the front and right side doors of ADx, and remove the splash guard.
2. Remove the lamp cover, then remove the lamp and socket assembly.
3. Remove the lamp housing by removing the four screws connecting it to the instrument base.
4. Remove the lamp filter retainer, held by two screws on the bottom of the lamp housing, and remove the two heat glasses.
5. Clean the heat glasses with lens paper and replace them in the lamp housing (See ISA 09-078 for proper placement). Insert one or two gaskets (PN 3-45875-01), as necessary, to create an airtight fit between the body of the lamp housing and the heat reflector (see drawing).
6. Replace the lamp filter retainer, and reinstall the lamp housing, lamp and socket assembly, and splash guard.
7. With the ADx display at "SYSTEM READY" scroll to "DIAGNOSTICS", press "**ENTER**", scroll to "HANDLERS", press "**ENTER**", scroll to "PHOTOMETER", press "**ENTER**", press "**PRIME**" to turn the lamp **ON**, press "**4**" then press "**9**" to display lamp ref voltage. Reading should be greater than 4VDC.
8. Press "**EXIT**" twice, scroll to "CHECKS", perform Photo Check, if necessary perform Photo Calibration.
9. Run controls on at least two assays.
10. Complete Total Service Call.
11. Mark off TSB 14 on Modification Control Sticker.



Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
ADx Rev. 3.2 SOFTWARE UPGRADE

TSB#: **59-013**

ORIGINATOR:
Chuck Reynolds

PRODUCT:
ADx® (59)

APPROVED: **Bob Schabel 4/10/92 (signature on file)**

REF. ECN: **TDx 6501**

IMPLEMENTATION:	TSB Part/Kit #: **9684-56**	Upgrade Time: **1 Hour**
☐ **Immediate** ☐ **Next Service Call** ☐ **Next Failure** ☒ **Optional**	TSB Effectivity/ Part(s) Availibility: **07-APR-92**	Validation Time: **1.5 Hours** Total Mod. Time: **2.5 Hours**
Instruments Requiring Modification: **S/N 2528 & Below**		

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

I. DISTRIBUTION

Domestic and International

II. PURPOSE

Revision 3.2 software will be a mandatory customer upgrade. If an FSE is required to perform the upgrade, I have included the upgrade instructions and the customer letter that is sent with the software upgrade kit. This software eliminates the need for all the extra steps involved in installing Rev. 3.1 software.

III. PARTS

A. DOMESTIC

Qty 1 Rev. 3.2 module (9684-55), will be added to FSE-Kit-59.

The List Numbers for Rev. 3.2 software are:

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

9684-55 for the Rev 3.2 module
9684-56 for the upgrade kit

B. INTERNATIONAL

The International Service Managers will be responsible for forecasting and ordering of parts through Dallas Field Service parts.

Dear ADx® Customer:

Abbott is pleased to announce an ADx System enhancement. The ADx Revision 3.2 software provides a serial communication RS232 port for interfacing with a host computer system, new assays and numerous software enhancements including:

the early termination of assay runs when all samples have errors
improvements to the assay activation procedure
a "user friendly" units conversion procedure for all assays.

If you are currently using ADx Revision 2.3 software, please note that the serial communication interface included in ADx Revision 3.2 software is the same. No changes are required to your DataTrac™ or other host software to use this new software revision.

If you are currently using ADx Revision 3.1 software, please note that this is a mandatory software upgrade. Please upgrade your analyzer and ADx Operator's Guide at your earliest convenience.

Installation of the Revision 3.2 software is designed to be performed quickly and easily by following the enclosed instructions. Please be sure to review and save the attached Activation Instructions.

The ADx System continues to be the system of choice for abused drug detection and toxicology. We thank you for your support of the ADx program and are pleased we can provide these enhancements to your ADx System.

If any questions arise, please call the Customer Support Center at 1-800-527-1869.

Sincerely,

Carol Killeen
Senior Product Manager

3/92
45656-I04

ADX® SYSTEM

REVISION 3.2 SOFTWARE

CUSTOMER

INSTALLATION INSTRUCTIONS

NOTE: If you are upgrading from ADx Revision 1.5 Software to Revision 3.2 Software, call the Customer Support Center before proceeding (1-800-527-1869 in the U.S.A.) .

3/92
45656-I04

Included in the ADx Revision 3.2 Software Retrofit Kit are:

1. Revision 3.2 software cartridge.

   OPEN THE BOX CAREFULLY: IT WILL BE USED AS THE RETURN SHIPPER FOR YOUR PRESENT VERSION SOFTWARE CARTRIDGE.

2. Revision 3.2 Installation Instructions.

3. ADx Operator's Guide update.

4. ADx Instruction Guide.

5. X SYSTEMS™ wrench (2).

6. Software update form.

   THIS FORM MUST BE COMPLETED WITH YOUR INSTITUTION'S NAME, FULL ADDRESS, CUSTOMER NUMBER, DATE OF REVISION 3.2 INSTALLATION, AND ADx SYSTEM SERIAL NUMBER.

3/92
45656-I04

The following is the step-by-step procedure for installing the ADx Revision 3.2 software cartridge:

1. Turn the ADx analyzer power **OFF.**

2. Unplug the AC power cord from the wall outlet.

3. Open the printer access door.

4. Disconnect both the cable to the keyboard and the cable to the display board.

5. Loosen the ADx cover by pushing backward on all four latches (two on each side) on the bottom left and right edges of the ADx base. (If present, remove the retaining screw from the analyzer baseplate that locks the right front clip into position.) If necessary, refer to Maintenance, Section 10, in the ADx Operator's Guide for instructions on the ADx Analyzer Top Cover Removal and Replacement procedure.

6. Lift up the ADx analyzer cover and remove it from the instrument. Locate the ADx software cartridge on the right end of the System board, behind the printer.

7. Loosen the thumbscrews holding the old ADx Software cartridge onto the System board and remove the cartridge.

   NOTE: PLEASE MAIL OLD SOFTWARE CARTRIDGE BACK TO ABBOTT - REPACKING PROCEDURE FOLLOWS INSTALLATION.

8. Remove the new ADx Revision 3.2 software cartridge from the packing box and secure it onto the System board. Tighten the screws on the cartridge, fingertight.

9. Replace the ADx analyzer cover. Be careful not to crimp cables. Ensure that the cover is seated properly and relock the four latches on the ADx base by pulling them forward.
   (Replace the retaining screw into the analyzer baseplate, if removed in step 5.)

10. Reconnect both the keyboard cable and the display cable. Close the printer access door.

11. Plug in the ADx analyzer.

12. Turn the ADx analyzer power **ON.**

NOTE: While the analyzer is updating parameters, status messages will print. Once the ADx analyzer prints the following status message:

WELCOME TO ADx SYSTEM VERSION: V3.2

the upgrade of your analyzer to Revision 3.2 software has been successfully completed.

WARNING: IT IS NOT POSSIBLE TO REVERT TO THE PREVIOUS SOFTWARE AFTER REVISION 3.2 SOFTWARE IS INSTALLED. DO NOT ATTEMPT TO RE-INSTALL THE OLD SOFTWARE CARTRIDGE AFTER THE REVISION 3.2 SOFTWARE CARTRIDGE IS INSTALLED! ALL PARAMETERS WILL BE LOST!

3/92
45656-I04

13. Check printed date and time. If incorrect, refer to SYSTEM. . . Menu, Section 5, in the ADx Operator's Guide for details.

14. Perform a Boom Calibration (refer to DIAGNOSTICS. . . Menu, Section 7, in the ADx Operator's Guide for instructions).

15. Remove the software update form from the packing box. Complete the form, printing the name of your institution, full address, customer number, date of Revision 3.2 installation, and your ADx System serial number on the software update form.

16. Replace the contents of the ADx Operator's Guide with the new contents. Instructions are included with the manual update.

17. The ADx Instruction Guide included in this upgrade package supports both Revision 3.1 and Revision 3.2 software. If you are currently using Revision 3.1 software, the instruction guide provided is an extra copy for the laboratory. If you are currently using Revision 2.3 or lower software, replace the old ADx Instruction Guide, in the instruction guide compartment, with the new guide.

18. Update the ASSAYS. . . menu with the following assays now available with Revision 3.2 software:

18a. Scroll to ASSAYS. . ., and press **PRINT.**

18b. If BARBITURATES **S** is not in the ASSAYS. . .menu printout, add the assay to the menu:
1. Scroll to PROCEDURES. . ., press **ENTER.**
2. Scroll to ACTIVATE ASSAY, press **ENTER.**
3. At ACT OPTION:, press **1 ENTER.**
4. At ADD ASSAY:, press **64 ENTER.**

18c. If BENZODIAZEPINES **S** is not in the ASSAYS. . . menu printout, add the assay to the menu:

18d. If COTININE **U** is not in the **ASSAYS**. . . menu printout, add the assay to the menu:

1. If the display is not already at ACTIVATE ASSAY, scroll to PROCEDURES. . ., press **ENTER.**

2. Scroll to ACTIVATE ASSAY, press **ENTER.**

3. At ACT OPTION:, press **I ENTER.**

4. At ADD ASSAY:, press **49 ENTER**.

3/92
45656-I04

18e. If Methadone U is not in the **ASSAYS**. . . menu printout, add the assay to the menu:

1. If the display is not already at ACTIVATE ASSAY, scroll to PROCEDURES. . ., press **ENTER.**
2. Scroll to ACTIVATE ASSAY, press **ENTER.**
3. At ACT OPTION:, press **1 ENTER.**
4. At ADD ASSAY:, press **48 ENTER.**

18f. Verify the assay menu:

1. Press **EXIT.**

2. Scroll to **ASSAYS.** . ., and press **PRINT.**

3. The assays just added should print in the **ASSAYS**. . . menu.

NOTE: YOU DO NOT HAVE TO UPDATE THE FOLLOWING ASSAYS IF YOU ARE PRESENTLY USING THEM. THE UPDATE STEPS WILL DELETE THE CALIBRATION CURVE, REQUIRING THAT THE ASSAY BE RECALIBRATED BEFORE IT CAN BE USED AGAIN. IF YOU HAVE ANY QUESTIONS, PLEASE CALL THE CUSTOMER SUPPORT CENTER.

19. If you are currently using the ADx Amphetamine/Methamphetamine II assay, SKIP THIS STEP. Proceed to step 02. Otherwise, update the assay parameters by adding the assay to the ASSAYS. . . menu:

1. Scroll to PROCEDURES. . ., press **ENTER.**
2. Scroll to ACTIVATE ASSAY, press **ENTER.**
3. At ACT OPTION:, press **1 ENTER.**
4. At ADD ASSAY:, press **57 ENTER.**
5. At ENTER OR EXIT, press **ENTER.**
6. You will need to calibrate this assay BEFORE running samples.

20. If you are currently using the ADx Barbiturates II U assay, SKIP THIS STEP. Proceed to step 21. Otherwise, update the assay parameters by adding the assay to the ASSAYS. . .menu:

1. If the display is not already at ACTIVATE ASSAY, scroll to PROCEDURES. . ., press **ENTER.**
2. Scroll to ACTIVATE ASSAY, press **ENTER.**
3. At ACT OPTION:, press **I ENTER.**
4. At ADD ASSAY:, press **58 ENTER.**
5. At ENTER OR EXIT, press **ENTER.**
6. You will need to calibrate this assay BEFORE running samples.

21. If you are currently using the ADx Phencyclidine II assay, SKIP THIS STEP. Proceed to step 22. Otherwise, update the assay parameters by adding the assay to the ASSAYS . . .menu:

1. If the display is not already at ACTIVATE ASSAY, scroll to PROCEDURES. . ., press **ENTER.**
2. Scroll to ACTIVATE ASSAY, press **ENTER.**
3. At ACT OPTION:, press **1 ENTER.**
4. At ADD ASSAY:, press **61 ENTER**
5. At ENTER OR EXIT, press **ENTER.**
6. You will need to calibrate this assay BEFORE running samples.

3/92
45656-I04

22. Repack and return the old software cartridge. If you are upgrading more than one analyzer, please return a separate software update form with each cartridge:
    1. Place old software cartridge into shipper box.
    2. Enclose the completed software update form containing institution's name, full address, customer number, date of Revision 3.2 installation and ADx System serial number.
    3. Peel adhesive strip, close box and seal.
    4. Put in the U.S. Mail promptly (postage is prepaid).

3/92
45656-I04

IMPORTANT NOTE:

Due to our production schedules, you may receive or may already have reagent packs with activation Instructions that refer only to software Revisions 2.0 and 2.3. To activate these assays after software Revision 3.2 has been installed, use the procedure on the following page.

If you receive reagent packs with activation Instructions for software Revisions 3.0 or 3.1, use those instructions with Revision 3.2.

Please alert other ADx operators in your laboratory to these instructions.

PLACE THE FOLLOWING INSTRUCTIONS IN THE FRONT OF YOUR AD OPERATOR'S GUIDE FOR FUTURE REFERENCE

3/92 45656-I04

ASSAY ACTIVATION INSTRUCTIONS **SAVE THIS PAGE**

This activation procedure should be used to perform an activation when the activation letter does not include instructions for Revisions 3.0, 3.1 or 3.2 software. Store these instructions in the front your ADx Operator's Guide for future reference.

NOTES: IF THE ACTIVATION LETTER INCLUDES INSTRUCTIONS FOR REVISIONS 3.0 OR 3.1 SOFTWARE, FOLLOW THOSE INSTRUCTIONS WITH REVISION 3.2 SOFTWARE. IF THE ACTIVATION LETTER HAS BEEN PERFORMED WITH REVISION 2.0 OR 2.3 SOFTWARE, NO FURTHER ACTIVATION OR RECALIBRATION IS REQUIRED.

This procedure applies only to the following assays and lot numbers. If you need to activate an assay for a lower lot number, or an assay that is not listed, contact the Customer Support Center for assistance.

Assay Name	Assay No.	Lot No.	Activation Letter No.
Acetaminophen	30	44029*xx* or higher	85-4869/R3
Amphetamine/Methamphetamine II	57	50021SV or higher	85-5144/R4
Benzodiazepines U	63	49646Q100 or higher	85-5274/R4
Cannabinoids Using Delta-9 Calibrators/ Controls	60	49875SV or higher	85-5297/R1
Methadone	48	46928SV or higher	85-5145/R3
Salicylate	31	41772*xx* or higher	85-4835/R4
Tricyclic Antidepressants	56	38772*xx* or higher *xx* = SV, Q1 or Q2	85-4596/R3

Revision 3.2 Assay Activation Procedure for the Assays Listed

NOTE: COMPARE ASSAY PARAMETERS STORED IN THE ANALYZER AGAINST THOSE LISTED ON THE ACTIVATION LETTER FOR THE ASSAY (SEE STEPS 7 AND 8 BELOW). IF ANY DIFFER, PERFORM THE ACTIVATION PROCEDURE. THE ASSAY MUST BE RECALIBRATED AFTER PERFORMING THIS ACTIVATION PROCEDURE.

1. Scroll to PROCEDURES. . ., press **ENTER.**
2. Scroll to ACTIVATE ASSAY, press **ENTER.**
3. At ACT OPTION:, press **1 ENTER.**
4. At ADD ASSAY:, press **YY ENTER** where **YY** is the assay number being updated (e.g., 30 for Acetaminophen).
5. At YY ALRDY ACTIVE, ENTER OR EXIT, press **ENTER.**
6. At ACTIVATE ASSAY, press **EXIT.**
7. Scroll to ASSAYS. . ., press **ENTER.**
8. Scroll to the assay just updated and press **PRINT.** Compare the printout to the assay parameters listed in the assay activation letter for correctness. If any differ from the corresponding list, edit to the value listed.

NOTE: The concentration units in the ADx Amphetamine/Methamphetamine II and ADx Methadone activation letters are expressed in ug/mL (UNITS = 0) while the units on the instrument printouts are expressed in ng/mL (UNITS = 1). If necessary, call the Customer Support Center for assistance in verifying the correct assay parameters for the Amphetamine/Methamphetamine II or Methadone assays.

9. Ensure that the assay control ranges are correct.
10. You will need to calibrate the assay BEFORE running samples.
11. If you have any problems with the assay activation, or any questions, please call the Customer Support Center (1-800 527-1869 in the U.S.A.).

3/92
45656-104

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
ADx SYSTEM ASIC BOARD

TSB#: **59-012**

ORIGINATOR:
Chuck Reynolds

PRODUCT:
ADx® (59)

APPROVED: **Bob Schabel 12/19/91 (signature on file)**

REF. ECN: **6246**

IMPLEMENTATION:	TSB Part/Kit #: **n/a**	Upgrade Time: **45 min.**
☐ **Immediate** ☐ **Next Service Call** ☒ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **01-NOV-91**	Validation Time: **90 min.** Total Mod. Time: **2 hrs. and 15 min.**
Instruments Requiring Modification: **n/a**		

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

I. TOOLS REQUIRED:

Standard FSE Tool Kit

II. PARTS REQUIRED:

ADx ASIC System Board Part Number 3-44840-01

III. PURPOSE:

The purpose of this TSB is to inform and instruct the Field on the installation of the new ADx ASIC system/cpu board. This board will be installed upon the next failure of the current ADx CPU board. This ASIC board combines the system logic board and the CPU board into one PC board. The ADx ASIC board is being installed in new ADx analyzers starting with Serial Number 2401.

IV. PARTS LOGISTICS:

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

A. Domestic

Domestic FSE's will receive an ADx ASIC board whenever they order a new CPU board for the ADx.

B. International

Send forecast requirements for P/N 44840-102 to Field Service Parts in Dallas.

V. PROCEDURE

STEP 1. If possible, download all system information onto the Field Service Memory Module.

STEP 2. Turn the ADx analyzer OFF and unplug the instrument from the wall outlet.

STEP 3. Open the keypad access door and disconnect the two cables from the keypad.

STEP 4. Slide the clamps that hold down the ADx enclosure being careful to remove the safety screw from the clamp on the inside right front.

STEP 5. Remove the ADx enclosure.

STEP 6. Remove both the CPU and the System printed circuit board.

STEP 7. Install the new ASIC System board in place of the old System logic board.

NOTE: *The new ASIC board does not use the mother board in the ADx. It can be left in the system.*

STEP 8. Replace the ADx enclosure.

STEP 9. Re-connect the two cables on the keypad door.

STEP 10. Install the FSMM on the ASIC board

STEP 11. Turn on power to the ADx.

STEP 12. Transfer the data from the FSMM to the ASIC board.

STEP 13. Turn off power to the ADx and install the operational software module.

NOTE: *If you are using REV. 3.1 software you will need to perform a carousel cal, boom cal and extended boom cal before continuing.*

STEP 14. Mark off number 12 on the modification control sticker.

STEP 15. When the ADx comes out of warm up, perform a Temp Check, Photo Check and Pipette Check.

STEP 16. When closing the call, use the catalog number of the ASIC board. Do not show usage of the CPU board or the System Logic board.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
REV 3.1 SOFTWARE

TSB#: **59-011**

ORIGINATOR:
Chuck Reynolds

PRODUCT:
ADx® (59)

APPROVED: **Bob Schabel 1/30/92**

REF. ECN: **6177**

IMPLEMENTATION:	TSB Part/Kit #: **9684-48**	Upgrade Time: **1 Hr.**
☐ **Immediate** ☐ **Next Service Call** ☐ **Next Failure** ☒ **Optional**	TSB Effectivity/ Part(s) Availibility: **10-31-91**	Validation Time: **1.5 Hrs.** Total Mod. Time:
Instruments Requiring Modification: **S/N 2401 & below**		

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

I. PURPOSE:

This is an informational TSB only. Revision 3.1 will be installed by the TMR's. Included in this TSB are copies of the revision 3.0 functional specs, the revision 3.1 changes, and a copy of the revision 3.1 installation instructions if an upgrade by Field Service is required. If you have any questions please contact a CSE.

II. PARTS

A. DOMESTIC

The list numbers for Revision 3.1 software are:

9684-48 for the upgrade kit
9684-47 for the rev 3.1 module

B. INTERNATIONAL

The International Service Managers will be responsible for forecasting and ordering of parts through ADD Germany.

IMPORTANT NOTE: *If the FSMM revision 1 is used when replacing a system board, it will be necessary to perform the carousel cal and the boom cal before continuing on with any other testing.*

PLEASE REFERENCE PAPER COPY THAT WAS DISTRIBUTED EARLIER FOR COPIES OF REVISION 3.0 FUNCTIONAL SPECS, REVISION 3.1 CHANGES, AND REVISION 3.1 INSTALLATION INSTRUCTIONS. IF YOU NEED ASSISTANCE, CONTACT X-SYSTEMS CSE.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
Fan Gasket

TSB#: **59-009**

ORIGINATOR:
Chuck Reynolds

PRODUCT:
ADx® (59)

APPROVED: **Bob Schabel 8/14/91**

REF. ECN: **TDX-5887**

IMPLEMENTATION:	TSB Part/Kit #:	Upgrade Time:
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **08-14-91**	Validation Time: Total Mod. Time:
Instruments Requiring Modification: **All serial numbers.**		

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

I. TIME REQUIRED:

1 Hour

II. TOOLS REQUIRED:

Standard FSE Tool Kit

III. PARTS REQUIRED:

Fan Gasket Assembly Part Number 45642-102

IV. PURPOSE:

This TSB is to instruct the FSE's on how to install the approved fan gasket assembly on the ADx. This gasket will improve the air flow out of the ADx and decrease the incidence of liquid heater temperature problems in the field.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

V. PARTS LOGISTICS:

Domestic: All FSE's will receive a quantity of two fan gasket assemblies.
International: Send forecast requirements for P/N 45642-102 to Field Service Parts in Dallas.

VI. PROCEDURE:

1. Turn the ADx analyzer OFF and unplug the instrument from the wall outlet.
2. Open the keypad access door and disconnect the two cables from the keypad.
3. Slide back the clamps that hold down the ADx enclosure being careful to remove the safety screw from the clamp on the inside right front.
4. Remove the ADx enclosure.
5. Locate the system fan on the left side of the instrument PCB enclosure. See Figure 1.

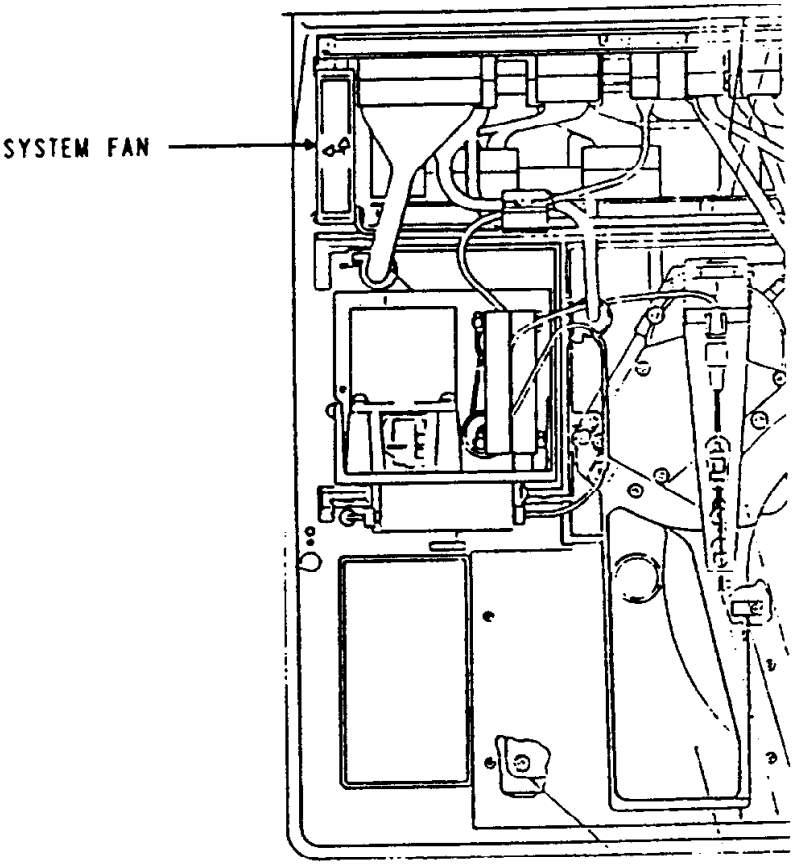


Figure 1
Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

6. Remove the two mounting screws that hold the fan to the fan bracket.
7. Place the fan gasket over the fan being sure that the rubber portion of the gasket faces away from the fan.

NOTE: The gasket will only fit one way. Hold the gasket as shown in Figure 2 with the two mounting holes on the right side.

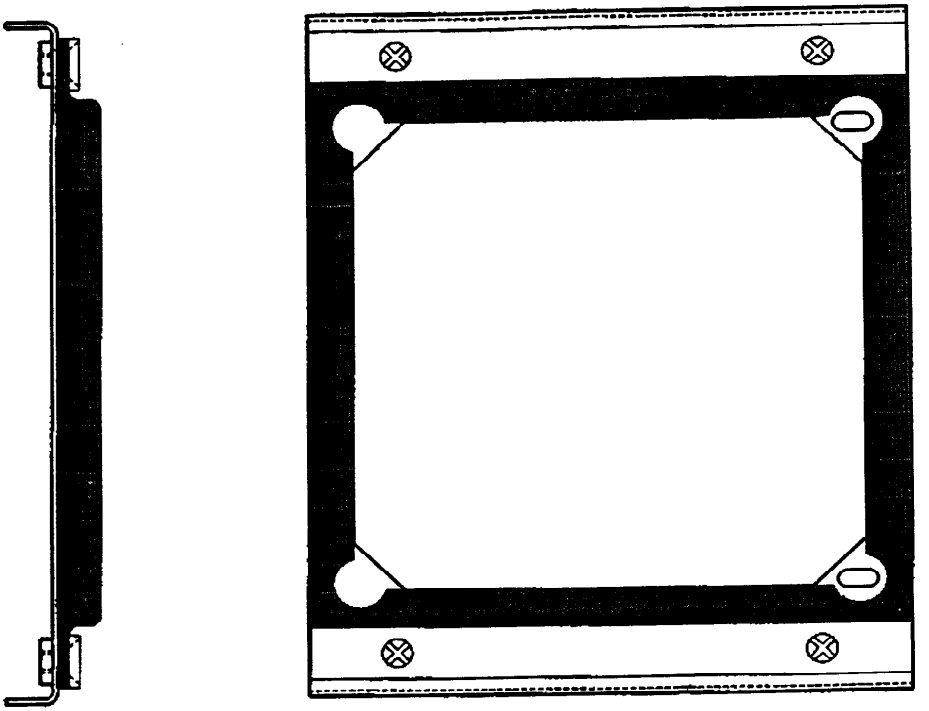


Figure 2

8. Secure the fan and gasket to the mounting bracket.
9. Re-assemble the ADx and power ON the instrument.
10. Mark out number 9 on the modification control sticker.
11. When the ADx comes out of warm-up, perform a Temp Check and Temp Verify.
12. Close out the call as per OP instructions.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
Carousel Motor Replacement

TSB#: **59-008**

ORIGINATOR:
Dan Armstrong

PRODUCT:
ADx® (59)

APPROVED: **Glenn Pittluck 6-26-90**

REF. ECN:

IMPLEMENTATION:	TSB Part/Kit #:	Upgrade Time:
☐ **Immediate** ☐ **Next Service Call** ☒ **Next Failure** ☐ **Optional** Instruments Requiring Modification: **S/N 1 to 1599**	TSB Effectivity/ Part(s) Availibility: **6-26-90**	Validation Time: Total Mod. Time:

****NOTE** The instrument must be at TSB Level n/a prior to performing this TSB.**

I. DISTRIBUTION:

International and Domestic FSE's.

II. GENERAL:

PURPOSE:

Technical Service Bulletin #59-008

This TSB is to be incorporated on ADx® instruments experiencing erratic results and controls out of range.

Some instruments experienced functional test failures during testing in the factory. The investigation of these failures found a hysteresis problem with the carousel motor. This occurred when the instrument rotated the carousel in different directions. The braking resistor (390 Ohms) was changed to 120 Ohms. This resulted in a slight hysteresis improvement. The carousel motor was changed next and hysteresis of the carousel movement was greatly improved. The current version of the

instrument incorporates a 120 Ohms resistor and a carousel motor built by Superior (blue in color). This motor incorporates a connector which will make changing it in the future easier.

TOOLS REQUIRED: Standard FSE Tool Kit and a Soldering Iron
Carousel Motor Height Alignment Tool 3-31290-01
Carousel Home Tool 3-31291-01

TIME REQUIRED: Approximately 60 minutes

PARTS: Carousel Motor Catalog Number 3-30961-01
Resistor (120 Ohms) Part Number 10561-102

III. PROCEDURE:

1. Print the following parameters:
   SYSTEM 1.0
   CONFIGURE 1.4
   DIAGNOSTICS/PARAMETERS 3.1
   PROCEDURES/TABULATION 4.4
2. Turn the ADx® analyzer off and unplug the power cord.
3. Remove the top cover assembly.
4. Remove the System/Logic PCB from the instrument. Use anti-static measures when working with this PCB.
5. Locate resistor R-17 using Figure "A" of this TSB.
6. Using side cutters remove the resistor leaving the leads in the board.
7. Solder the replacement resistor to the leads you left protruding from the board.
8. Re-install the System/Logic PCB, verify all connectors are connected.
9. Remove the boom assembly, optics cover and air duct cover to gain access to the carousel motor assembly.
10. Remove the carousel motor/external thermistor/carousel home sensor assembly.
11. Remove the mounting bracket from the old motor assembly and install it on the Superior motor.
12. After the bracket has been installed, re-install the new carousel motor/external thermistor/carousel home sensor assembly.
13. Use the carousel motor height tool to adjust the carousel motor gear on the shaft of the carousel motor.
14. Re-install the air duct cover and the boom assembly.
15. Using a feeler gauge verify the motor height position with the carousel motor height tool. Measure the distance between the bottom of the tool and the air duct cover at the carousel motor gear position. Then measure the distance between the carousel motor height tool and the air duct cover between the two pins the carousel rotates on. The difference between the two measurements should be .005 to .010 inches higher at the carousel motor gear position. Adjust the motor until this specification is met.
16. Re-assemble the instrument. Install the optics cover and the top cover of the ADx®.

IV. AFTER RE-ASSEMBLY OF INSTRUMENT PERFORM THE FOLLOWING:

1. Plug in the instrument power cord and turn the instrument on.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

2. Verify the parameters have not changed you printed in Step 1. If the numbers have changed perform the necessary procedures to reset to the original numbers.
3. Perform carousel home calibration.
4. Perform boom calibration.
5. After "warm-up", perform photo check.
6. Perform an assay run with controls to verify operation.
7. Complete Total Service Call.
8. Mark out Number 8 on the Modification Control Sticker and close out the call as per Field Service Operation Procedures.

SYSTEM/LOGIC PRINTED CIRCUIT BOARD

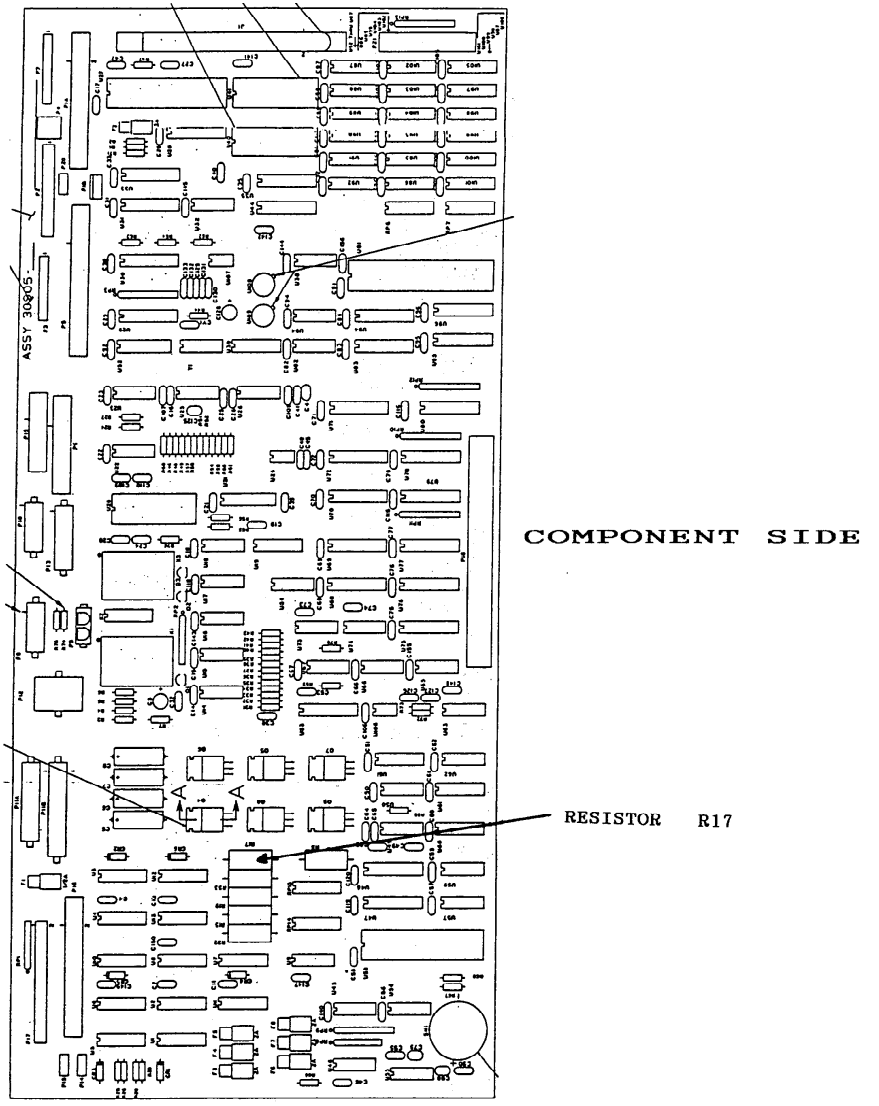


Figure "A"

END OF DOCUMENT

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

ABBOTT ADD	**TECHNICAL SERVICE BULLETIN**

SUBJECT:
Internal Thermometer Modification

TSB#: **59-007A**

ORIGINATOR:
Dan Armstrong

PRODUCT:
ADx® (59)

APPROVED: **Brian McGraw**

REF. ECN:

IMPLEMENTATION:	TSB Part/Kit #:	Upgrade Time:
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional** Instruments Requiring Modification: **S/N 001 to 1960** **Date for Refurb 3-19-90**	TSB Effectivity/ Part(s) Availibility: **05-04-90**	Validation Time: Total Mod. Time:

****NOTE** The instrument must be at TSB Level n/a prior to performing this TSB.**

This TSB is separated into different sections (which refer to different serial number groups). Please refer to the correct section to upgrade the ADx™ analyzer in question. This TSB is to be utilized only after Revision 2.0 has been installed.

The System/Logic PCBS (-102, -103, and -104) must be modified before the internal thermometer is installed. Refer to Figure "A" for the location where the capacitor must be added to the System/Logic PCB. this capacitor reduces noise being transmitted to the input of the multiplexer. If this capacitor is not in place, Temp Cal and Temp Verify may fail.

When performing this modification verify the correct part number of the optics assembly and System/Logic board which will indicate the parts needed to modify. Optics assembly part number is 30957-103 (or higher). This assembly has the connector and circuit for the internal thermometer assembly. System/Logic board part number is 30905-102 (or higher). This assembly is modified for the internal probe assembly. If the part number is correct but the wires on the back of the board are broken use drawing Figure "A" to repair the broken wires.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

If an Optics or System/Logic PCB has a lower dash number than the one called for in this TSB and an upgrade kit was not issued for this serial number, please use your own parts and list them on your service order.

CUSTOMER INSTRUMENTS ONLY

SECTION "A" Will be used to upgrade instruments with serial number 400 and higher. the Optics assembly must be at 30957-103 or higher. The System/Logic PCB must be a 30905-102 or higher. If a lower dash number of the Optics or System/Logic PCB is found during the inspection then use Section "B" of this TSB on these instruments.

SECTION "B" Will be used to upgrade instruments with serial number 399 and below. The Optics assembly in these instruments will be a 30957-102 or lower. The System/Logic PCB will be a 30905-101. If the Optics and System/Logic PCB dash numbers correspond to the ones in Section "A" then you will not need to replace them, just use Section "A" of this TSB.

SECTION "A" INSTRUMENTS SERIAL NUMBERS 400 AND UP

PARTS REQUIRED:

Part Number is "44881-101" this contains the following:

Internal Thermometer Assembly	Part Number	44419-102
Optics Module Cover Assembly	Part Number	44387-102
Extender Cable (for Customer)	Part Number	44623-101
Manual Insert (for Customer)	Part Number	44847-101

TOOLS REQUIRED: Field Service Tool Kit
Carousel Home Alignment Tool (31291-101)
Internal Thermometer Circuit Test Box (44400-101)
ADx™ System ISA 002

APPROXIMATE TIME REQUIRED IS 50 MINUTES.

PERFORM THE FOLLOWING:

1. Power down the instrument and disconnect the power cord.
2. Remove the top cover assembly.
3. Remove the optics cover and discard.
4. Disconnect the cable (P-4) from the optics assembly and remove the 3 screws holding the optics in place.
5. Raise the optics assembly up and connect the internal probe intermediate cable assembly to the connector on the Optics PCB.
6. Reassemble the optics and cover assembly, remove the cable clamp attached to the back wall if required (see Figure "B").
7. Replace the top cover assembly and reconnect the power cord and power the instrument up.
8. The instrument should go through warm-up procedures, while this is taking place, press "3.6.1.4" "ENTER". The display should say "INT PROBE OVR: Y" change the "Y" to "N".

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

9. Use ISA 002 instructions and attach the internal thermometer circuit test box. Check for proper operation of the thermometer circuit. After this check, disconnect the test box and attach the internal probe assembly to the connector in the new optics cover assembly.
10. Perform carousel calibration using the carousel home alignment tool part number 31291-101. This procedure is found on page 3-8 of the ADx™ Analyzer Field Service Manual.
11. Perform the following Cals and checks. "Remember most Cals and checks procedures can be found by pressing "PRINT" once you have the Cal or check in the display."
    - Boom Calibration
    - Temperature Calibration (use new Internal Thermometer)
    - Temperature Verification (use new Internal Thermometer)
    - Airset Check (3.5.5) (A quick diagnostic test to verify proper temperature before a complete temperature check)
    - Temperature Check
12. Leave the manual insert and the extender cable with the customer.
13. Mark the Modification Control Sticker.
14. Proceed with repairs or Total Service Call.

SECTION "B" CUSTOMER INSTRUMENT SERIAL NUMBER 399 AND BELOW

SECTION "B" The Optics assembly must be a 30957-102 or lower. The System/Logic PCB must be a 30905-101.

PARTS REQUIRED:

Part Number is "44881-102":

System/Logic PCB	Part Number	30905-102 (or higher)
Optics Assembly	Part Number	30957-103 (or higher)

Part Number "44881-101" is also required

TOOLS REQUIRED:
Field Service Tool Kit
Carousel Home Alignment Tool (31291-101)
Internal Therm. Circuit Test Box (44400-101)
ADx™ System ISA 005
ADx™ System ISA 001, 002
Field Service Memory Module
Buffer Plat. Cal. Weights (41777-101 & 41670-101)
Pipe Check Solution

APPROXIMATE TIME REQUIRED IS 1 HOUR AND 40 MINUTES.

PERFORM THE FOLLOWING: OBTAIN PRINTOUTS OF THE FOLLOWING MENUS. SYSTEM, CONFIGURE, PARAMETERS, AND TABULATION.

1. Power down the instrument, disconnect the power cord, and remove the top cover assembly.
2. Refer to ISA 001 and save the data from the System/Logic PCB Novrams, by using the field service memory module. Power must be re-applied to use the F.S.S.M..
3. After you have saved the Novram data, power down the instrument, disconnect the power cord and remove the top cover assembly.
4. Disconnect the cables (P-4) from the optics assembly and remove the optics assembly.
5. Install the replacement optics assembly and connect the internal probe intermediate cable assembly to the connector on the Optics PCB.
6. Reassemble the optics and cover assembly, remove the cable clamp attached to the back wall if required (see Figure "B").
7. Disconnect the cables from the System/Logic PCB and remove the old PCB.
8. Install the replacement System/Logic PCB being careful not to pull the wires off the back of the board. If this should happen refer to Figure "A" to repair them.
9. Connect all cables to the System/Logic PCB and install the F.S.M.M. and replace the top cover assembly.
10. Reconnect the power cord and power the instrument up. Use the proper procedures to reload the data you stored earlier.
11. Power the instrument down and replace the Field Service Memory Module with the Revision 2.0 software.
12. The instrument should go through warm-up procedures, while this is taking place, press "3.6.1.4" "ENTER". The display should say "INT PROBE OVR: Y" change the "Y" to "N".
13. Verify the parameters you printed prior to using the Field Service Memory Module.
14. Use ISA 002 instructions and attach the internal thermometer circuit test box. Check for proper operation of the thermometer circuit. After this check, disconnect the test box and attach the internal probe assembly to the connector on the new optics cover assembly.
15. Perform Carousel Calibration using the carousel home alignment tool part number 31291-101. This procedure is found on page 3-8 of the ADx™ Analyzer Field Service Manual.
16. Perform the following Cals and Checks. "Remember most Cals and Checks procedures can be found by pressing "PRINT" once you have the Cal or Check in the display."
    - Perform Buffer Set Calibration using the 75 gram and 500 gram buffer weights part number 41777-101 and 41670-101. This procedure is found on page 3-9 of the ADx™ Analyzer Field Service Manual.
    - Boom Calibration
    - Temperature Calibration (use new internal thermometer)
    - Temperature Verification (use new internal thermometer)
    - Airset Check (3.5.5) (A quick diagnostic test to verify proper temperature before a complete Temperature Check)
    - Temperature Check
    - Photo Calibration
    - Photo Check
    - Pipe Check
17. Leave the manual insert and the extender cable with the customer.
18. Mark the Modification Control Sticker.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

19. When returning the Optics and System/Logic PCB, please mark the Defective/Return Goods tag with TSB 7.
20. Proceed with repairs and/or complete Total Service Call.

DEMO STATUS INSTRUMENTS (SALES/TECH SUPPORT/TRAINING)

SECTION "C" DEMO INSTRUMENTS SERIAL NUMBER 401 AND HIGHER

This requires the instrument to have revision 2.0 software installed or available for installation. Your software is for service calls not for updating sales demo instrument.

PARTS REQUIRED: Part number is "44881-101"

TOOLS REQUIRED: Field Service Tool Kit
Carousel Home Alignment Tool (31291-101)
Internal Thermometer Circuit Test Box (44400-101)
ADx™ System ISA 005

APPROXIMATE TIME REQUIRED IS 50 MINUTES.

PERFORM THE FOLLOWING:

1. Power down the instrument and disconnect the power cord.
2. Remove the top cover assembly.
3. Remove the optics cover and discard.
4. Disconnect the cable (P-4) from the optics assembly and remove the 3 screws holding the optics in place.
5. Raise the optics assembly up and connect the internal probe intermediate cable assembly to the connector on the Optics PCB.
6. Reassemble the optics and cover assembly, remove the cable clamp attached to the back wall if required (see Figure "B").
7. Replace the top cover assembly and reconnect the power cord and power the instrument up.
8. The instrument should go through warm-up procedures, while this is taking place, press "3.6.1.4" "ENTER". The display should say "INT PROBE OVR: Y" change the "Y" to "N".
9. Use ISA 002 instructions and attach the internal thermometer circuit test box. Check for proper operation of the thermometer circuit. After this check, disconnect the test box and attach the internal probe assembly to the connector in the new optics cover assembly.
10. Perform Carousel Calibration using the carousel home alignment tool part number 31291-101. This procedure is found on page 3-8 of the ADx™ Analyzer Field Service Manual.
11. Perform the following Cals and Checks. "Remember most Cals and Checks procedures can be found by pressing "PRINT" once you have the Cal or Check in the display."
    - Boom Calibration
    - Temperature Calibration (use new internal thermometer)

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

- Temperature Verification (use new internal thermometer)
- Airset Check (3.5.5) (A quick diagnostic test to verify proper temperature before a complete Temperature Check)
- Temperature Check

12. Leave the manual insert and the extender cable with the customer.
13. Mark the Modification Control Sticker.
14. Proceed with repairs or Total Service Call.

SECTION "D" DEMO INSTRUMENTS SERIAL NUMBER RANGE 188 THROUGH 400

PARTS REQUIRED:

Part Number is "44881-102":

System/Logic PCB	Part Number	30905-102 (or higher)
Optics Assembly	Part Number	30957-103 (or higher)

Part Number "44881-101" is also required

TOOLS REQUIRED: Field Service Tool Kit
Carousel Home Alignment Tool (31291-101)
Internal Therm. Circuit Test Box (44400-101)
ADx™ System ISA 005
ADx™ System ISA 001, 002
Field Service Memory Module
Buffer Plat. Cal. Weights (41777-101 & 41670-101)
Pipe Check Solution

APPROXIMATE TIME REQUIRED IS 1 HOUR AND 40 MINUTES.

PERFORM THE FOLLOWING: OBTAIN PRINTOUTS OF THE FOLLOWING MENUS. SYSTEM, CONFIGURE, PARAMETERS, AND TABULATION.

1. Power down the instrument, disconnect the power cord, and remove the top cover assembly.
2. Refer to ISA 001 and save the data from the System/Logic PCB Novrams, by using the field service memory module. Power must be re-applied to use the F.S.S.M..
3. After you have saved the Novram data, power down the instrument, disconnect the power cord and remove the top cover assembly.
4. Remove the optics cover and discard.
5. Disconnect the cables (P-4) from the optics assembly and remove the optics assembly.
6. Install the replacement optics assembly and connect the internal probe intermediate cable assembly to the connector on the Optics PCB.
7. Reassemble the optics and cover assembly, remove the cable clamp attached to the back wall if required (see Figure "B").

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

8. Disconnect the cables from the System/Logic PCB and remove the old PCB.
9. Install the replacement System/Logic PCB being careful not to pull the wires off the back of the board. If this should happen refer to Figure "A" to repair them.
10. Connect all cables to the System/Logic PCB and install the F.S.M.M. and replace the top cover assembly.
11. Reconnect the power cord and power the instrument up. Use the proper procedures to reload the data you stored earlier.
12. Power the instrument down and replace the Field Service Memory Module with the Revision 2.0 software.
13. The instrument should go through warm-up procedures, while this is taking place, press "3.6.1.4" "ENTER". The display should say "INT PROBE OVR: Y" change the "Y" to "N".
14. Verify the parameters you printed prior to using the Field Service Memory Module.
15. Use ISA 002 instructions and attach the internal thermometer circuit test box. Check for proper operation of the thermometer circuit. After this check, disconnect the test box and attach the internal probe assembly to the connector on the new optics cover assembly.
16. Perform Carousel Calibration using the carousel home alignment tool part number 31291-101. This procedure is found on page 3-8 of the ADx™ Analyzer Field Service Manual.
17. Perform the following Cals and Checks. "Remember most Cals and Checks procedures can be found by pressing "PRINT" once you have the Cal or Check in the display."
    - Perform Buffer Set Calibration using the 75 gram and 500 gram buffer weights part number 41777-101 and 41670-101. This procedure is found on page 3-9 of the ADx™ Analyzer Field Service Manual.
    - Boom Calibration
    - Temperature Calibration (use new internal thermometer)
    - Temperature Verification (use new internal thermometer)
    - Airset Check (3.5.5) (A quick diagnostic test to verify proper temperature before a complete Temperature Check)
    - Temperature Check
    - Photo Calibration
    - Photo Check
    - Pipe Check
18. Leave the manual insert and the extender cable with the customer.
19. Mark the Modification Control Sticker.
20. When returning the Optics and System/Logic PCB, please mark the Defective/Return Goods tag with TSB 7.
21. Proceed with repairs and/or complete Total Service Call.

SECTION "E" DEMO INSTRUMENTS SERIAL NUMBER RANGE 1 THROUGH 188

PARTS REQUIRED:

Part Number is "44881-101"
"44881-102"
44881-103" This contains the following:
Boom Weight (31877-102)

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Buffer Platform (44027-101)

TOOLS REQUIRED: Field Service Tool Kit
Carousel Home Alignment Tool (31291-101)
Internal Therm. Circuit Test Box (44400-101)
ADx™ System ISA 005
ADx™ System ISA 001, 002
Field Service Memory Module
Buffer Plat. Cal. Weights (41777-101 & 41670-101)
Pipe Check Solution

APPROXIMATE TIME REQUIRED IS 1 HOUR AND 40 MINUTES.

PERFORM THE FOLLOWING: OBTAIN PRINTOUTS OF THE FOLLOWING MENUS. SYSTEM, CONFIGURE, PARAMETERS, AND TABULATION.

1. Power down the instrument, disconnect the power cord, and remove the top cover assembly.
2. Refer to ISA 001 and save the data from the System/Logic PCB Novrams, by using the field service memory module. Power must be re-applied to use the F.S.S.M..
3. After you have saved the Novram data, power down the instrument, disconnect the power cord and remove the top cover assembly.
4. Remove the optics cover and discard.
5. Disconnect the cables (P-4) from the optics assembly and remove the optics assembly.
6. Install the replacement optics assembly and connect the internal probe intermediate cable assembly to the connector on the Optics PCB.
7. Reassemble the optics and cover assembly, remove the cable clamp attached to the back wall if required (see Figure "B").
8. Disconnect the cables from the System/Logic PCB and remove the old PCB.
9. Install the replacement System/Logic PCB being careful not to pull the wires off the back of the board. If this should happen refer to Figure "A" to repair them.
10. Connect all cables to the System/Logic PCB and install the F.S.M.M.. Remove the old style buffer platform, use Figure "C" to set the transducer gap adjustment. Install the new buffer platform. If the boom needs the boom weight added do it at this time. Figure "D" indicated the location for the boom weight.
11. Replace the top cover assembly, reconnect the power cord and power the instrument up. Use the proper procedures to reload the data you stored earlier.
12. Power the instrument down and replace the Field Service Memory Module with the Revision 2.0 software.
13. The instrument should go through warm-up procedures, while this is taking place, press "3.6.1.4" "ENTER". The display should say "INT PROBE OVR: Y" change the "Y" to "N".
14. Verify the parameters you printed prior to using the Field Service Memory Module.
15. Use ISA 002 instructions and attach the internal thermometer circuit test box. Check for proper operation of the thermometer circuit. After this check, disconnect the test box and attach the internal probe assembly to the

connector on the new optics cover assembly.

16. Perform Carousel Calibration using the carousel home alignment tool part number 31291-101. This procedure is found on page 3-8 of the ADx™ Analyzer Field Service Manual.
17. Perform the following Cals and Checks. "Remember most Cals and Checks procedures can be found by pressing "PRINT" once you have the Cal or Check in the display."
    - Perform Buffer Set Calibration using the 75 gram and 500 gram buffer weights part number 41777-101 and 41670-101. This procedure is found on page 3-9 of the ADx™ Analyzer Field Service Manual.
    - Boom Calibration
    - Temperature Calibration (use new internal thermometer)
    - Temperature Verification (use new internal thermometer)
    - Airset Check (3.5.5) (A quick diagnostic test to verify proper temperature before a complete Temperature Check)
    - Temperature Check
    - Photo Calibration
    - Photo Check
    - Pipe Check
18. Leave the manual insert and the extender cable with the instrument.
19. Mark the Modification Control Sticker.
20. When returning the Optics and System/Logic PCB, please mark the Defective/Return Goods tag with TSB 7.
21. Proceed with repairs and/or complete Total Service Call.

APPENDIX A - - PARTS DISTRIBUTION

DOMESTIC

CUSTOMER UPDATES

Domestic Engineers will receive parts as indicated by the current IRL for their respective ID numbers. Engineers in clusters will have the updates sent to one engineer. This person will be identified by Vic Caranna.

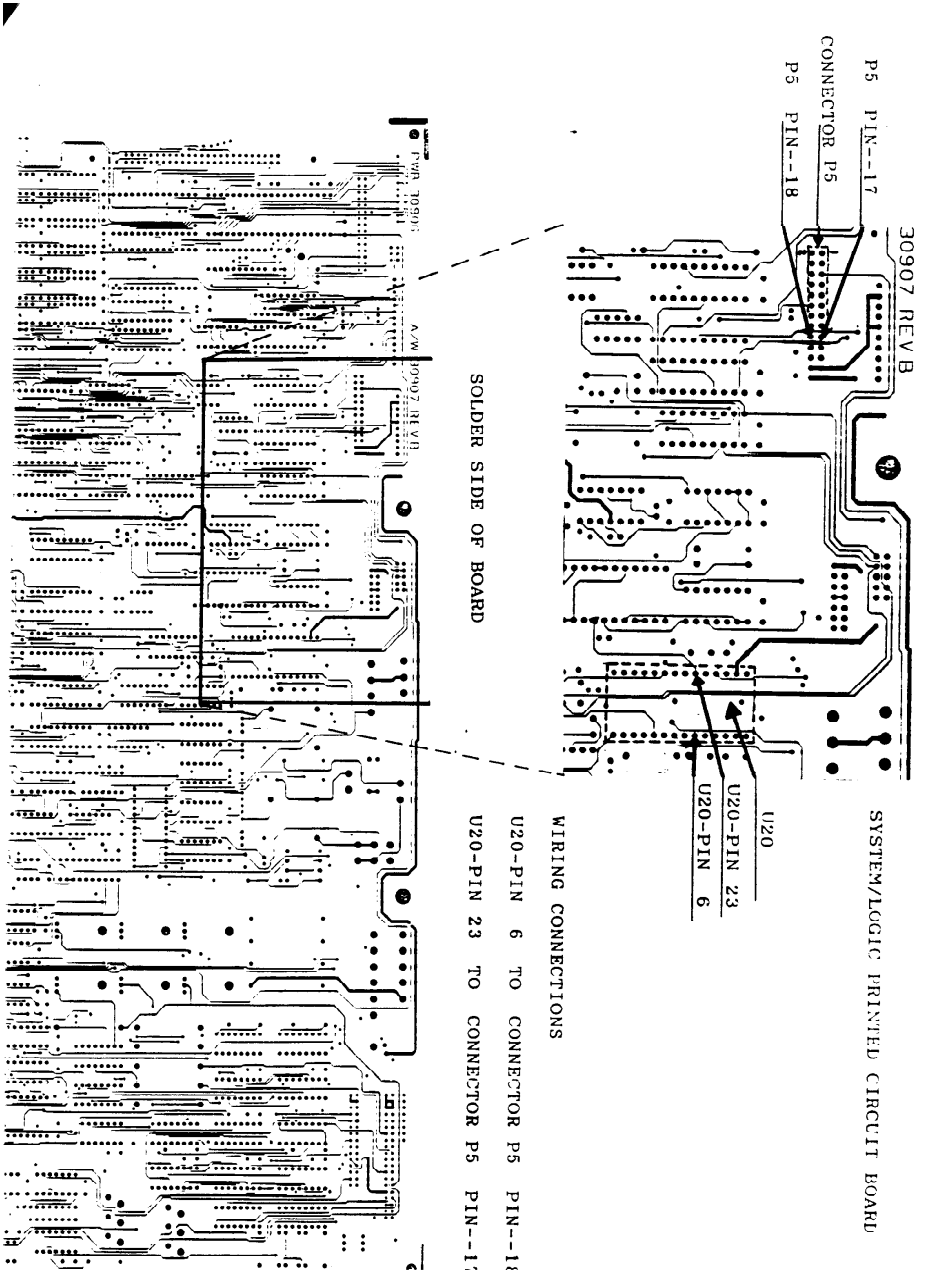
SALES DEMOS

These update kits will be sent directly to the Regional or District office where the ADx™ instruments are assigned.

IF YOU REQUIRE ADDITIONAL UPDATE KITS PLEASE CONTACT DAN ARMSTRONG, ADx TECHNICAL SERVICE SPECIALIST.

INTERNATIONAL

These parts will be ordered by the respective planners for the countries involved.



Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Figure "A"

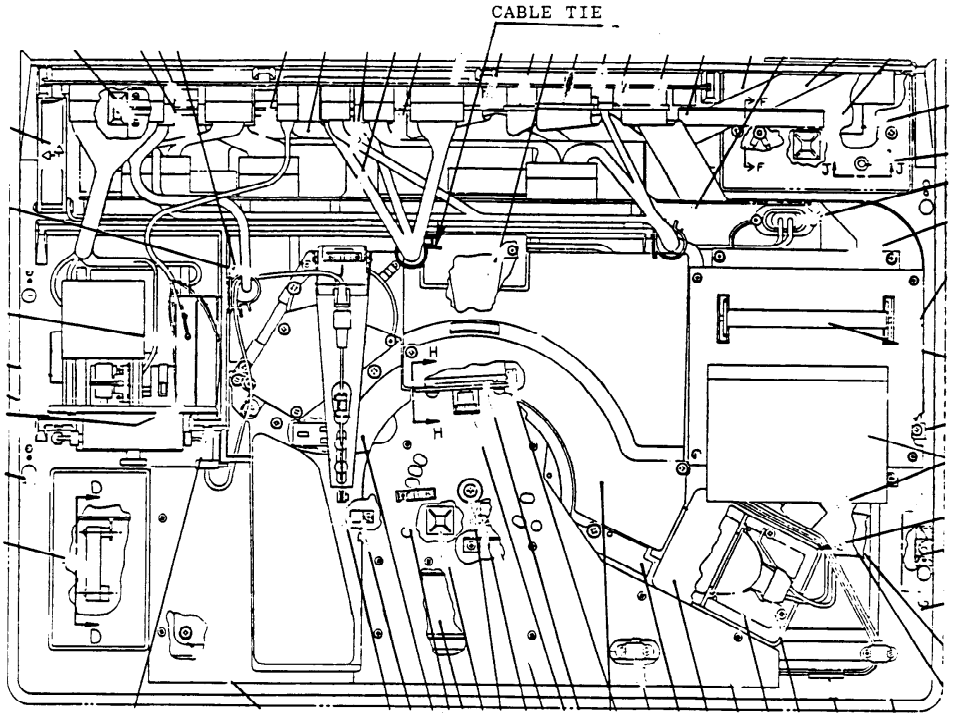
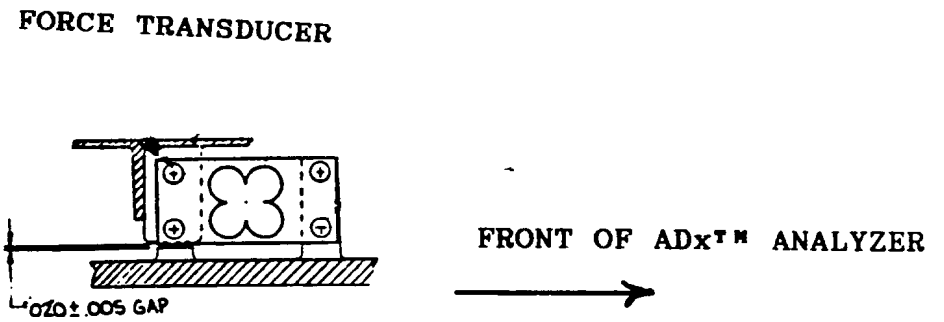


Figure "B"



LEFT SIDE VIEW

Figure "C"

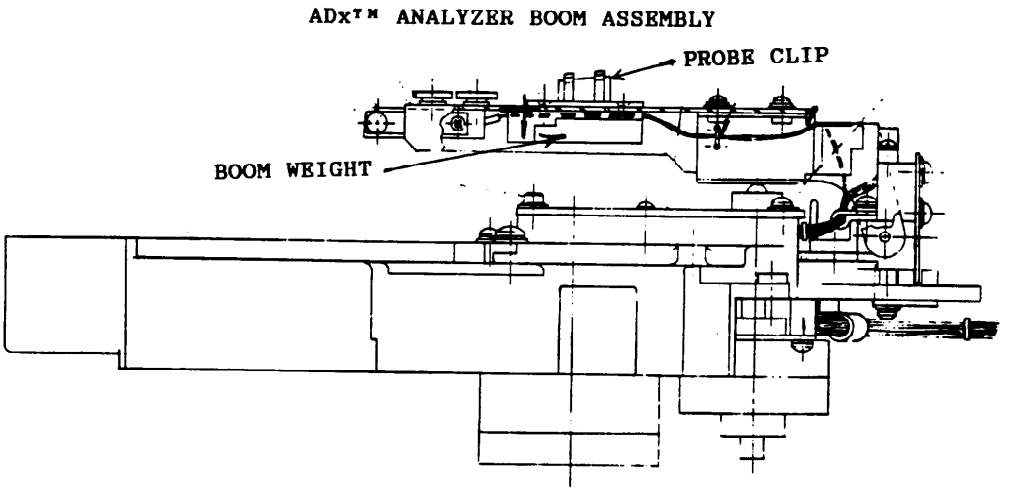


Figure "D"

END OF DOCUMENT

ABBOTT ADD

TECHNICAL SERVICE BULLETIN

SUBJECT:
ADx(TM) System Power Supply "Z-Boom Not Home Errors"

TSB#: **59-006**

ORIGINATOR:
Dan Armstrong

PRODUCT:
ADx® (59)

APPROVED: **Chuck Philipps 11-12-89**

REF. ECN:

IMPLEMENTATION:	TSB Part/Kit #:	Upgrade Time:
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **11-12-89**	Validation Time: Total Mod. Time:
Instruments Requiring Modification: **S/N 2 to 1590**		

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

The ADx™ Instrument has been bothered with the error code "Z-Boom not Home" for awhile. Field Service and Factory Technicians have corrected the failures by replacing System/Logic Printed Circuit Boards, Power Supply Boards, and Boom Arms. The replacement of one, two or all of these parts may still have to be done to correct "Z-Boom not Home" errors; but a factory engineer working on the problem has found a fix. He discovered a difference of potential between the logic and chassis grounds which caused "Z-Boom not Home" errors.

Kirk Hazard (Refurb Technician Specialist) and Shiou Huang (Electrical Engineer) identified a design change in the MPC (Modern Power Conversion Inc.) Power Supply. The design change had a capacitor added between the AC Power / chassis ground and the ADx™ System logic ground. This separation of grounds caused the difference of potential. The original design for the power supply indicated this connection should be directly coupled not capacitive coupled. By replacing the capacitor with a jumper wire the "Z-Boom not Home" error was corrected. This modification may not be a complete cure-all for the problem but "X-Systems" Engineering believes it will help lower the number of "Z-Boom not Home" errors currently occurring with the System.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

I. DISTRIBUTION:
International and Domestic FSE's

II. GENERAL:
PURPOSE:
Technical Service Bulletin #59-006
To remove the capacitor separating the logic and chassis grounds and replace it with a jumper wire. This capacitor is "C 226" which is located on the component side of the power supply board in the upper right corner (see Figure "A").

TOOLS REQUIRED: Standard FSE Tool case as well as a soldering iron

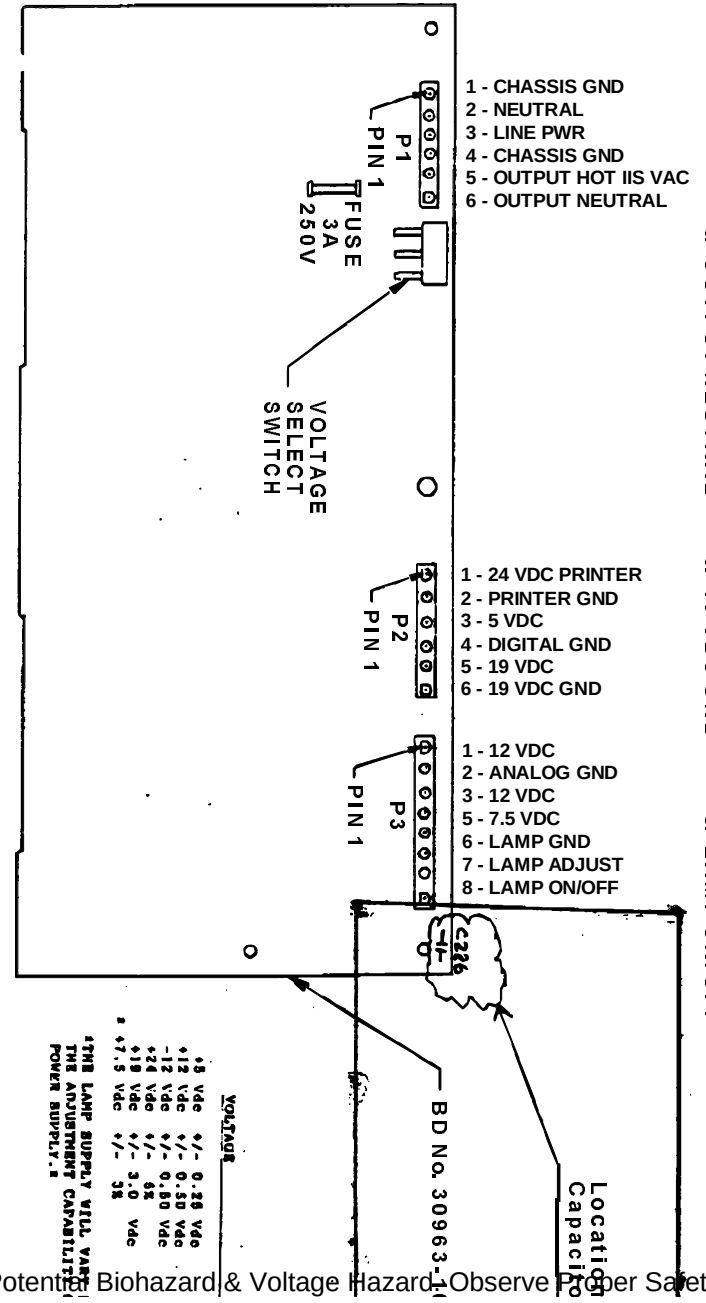
TIME REQUIRED: Approximately 30 minutes

PARTS: Buss Wire (AWG 20 guage)

III. PROCEDURE:
1. Print the following parameters:
   SYSTEM 1.0
   CONFIGURE 1.4
   DIAGNOSTICS/PARAMETERS 3.1
   PROCEDURES/TABULATION 4.4
2. Turn the ADx™ Analyzer off and unplug the power cord.
3. Remove the top cover assembly and rotate the instrument to have the back of the ADx™ System facing you.
4. Locate capacitor C 226 (see Figure "A").
5. Remove the capacitor with sidecutters.
6. Solder a section of buss wire across where the capacitor was.
7. Re-assemble the ADx™ Instrument by replacing the cover assembly.

IV. AFTER ASSEMBLY OF INSTRUMENT PERFORM THE FOLLOWING:
1. Plug in the instrument power cord and turn the instrument on.
2. After "Warm-up" is complete, re-print the parameters you printed in Step 1. Verify the parameters have not changed. If the numbers have changed perform the necessary procedures to reset to the original numbers.
3. Run and Boom Calibration.
4. Check Assay Controls.
5. Complete Total Service Call.
6. Mark out Number 6 on the Modification Control Sticker and close out the call as per Field Service Operation Procedures.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.



Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Figure "A"

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
Revision 2.0 Upgrade

TSB#: **59-005A**

ORIGINATOR:
Dan Armstrong

PRODUCT:
ADx® (59)

APPROVED: **Chuck Philipp**

REF. ECN:

IMPLEMENTATION:	TSB Part/Kit #:	Upgrade Time:
☐ **Immediate** ☐ **Next Service Call** ☐ **Next Failure** ☒ **Optional** Instruments Requiring Modification: **S/N 2 - 1589**	TSB Effectivity/ Part(s) Availibility: **05-31-89**	Validation Time: Total Mod. Time:

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

DISTRIBUTION:
Worldwide

PURPOSE:
This is an informational TSB only. Revision 2.0 will be installed by customers (Domestic). I have included a copy of the installation procedure with this TSB (for International Service as well as for Domestic Service if an upgrade by Service is required). Enhancement sheets are attached containing changes incorporated with this Software upgrade. If you have any questions concerning changes listed on the Enhancement sheets use the ADx™ System Operation Manual or contact a T.S.S..

CUSTOMER ENHANCEMENTS

New Assays - - The software has been updated to accommodate new assays which have been added and will be added in

the foreseeable future. In addition current assays have been updated, eliminating the need for activation codes.

Multiple calibrations (up to 3) can be run on this software version. Follow instructions in the Operators Manual.

Sample ID/Control ID:	The scheme has been implemented which allows the information to be recalled.
Control Barcode Tabs:	Tabs have been developed which can be placed on the carousel. This will allow assays which have specific controls to be run on a Panel Run.
Barcode Override:	This error code has been changed to display "BARCODE?" instead of the previous "BARCODE/CUVETTE?".
Redisplay Data:	This function is now operable. Use Operators Manual.
Assays Not Calibrated:	An assay will not run on the ADx™ analyzer unless a valid curve is present in Novram. The override to perform an assay which has not been calibrated is press "17 RUN" or "17 PANEL".
Countdown Clock:	This has been added to assay runs, panel runs, or assay calibrations. This informs the customer of the time the assay will take to complete.
Pipette Check Level Sense:	The instrument will now check the pipette check solution level to insure adequate volume before the pipette check starts.
Instrument Power Up/Warm Up:	The instrument will not go through a "WARM TO EQUILIBRIUM" cycle when powered up. This cycle may last from 5 minutes to 2 hours. Field Service has been provided with an override to perform all necessary mechanical adjustments during this time.
Temperature Calibration:	This procedure is now automated for use with the new internal thermistor assembly (not released yet) and takes approximately 10 minutes to complete.
Temperature Verification:	This is a new diagnostic check. Requires the new internal thermistor assembly (not released yet).
Temper Handler:	Key 5 will now activate the internal thermistor assembly (not released yet) for temperature readings.
Odometer Counts:	These have been added to Tabulation, a factory set is available to reset them.
Overrides:	These have been added to assist in time required for the factory and Field Service to setup the instruments.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Airset Check: This has been added to assist the factory and Field Service in obtaining the correct airset setting for temperature check. Use instrument "HELPS" for assistance.

MENU ADDITIONS

3.5 SPECIAL ... (use "GO TO" format)
3.5.1 Factory Set
Set Options
1 - Reload System File
2 - Freshen Assay File
3 - Reload Training File
4 - Reload Hisys File
5 - Reload Temp File
6 - Zero Cal Info
7 - Zero Odometers
8 - Purge/Reload Assay File
9 - Zero Patch File

3.6 ETCETERA ... (use "GO TO" format)
3.6.1 Overrides ...
3.6.1.1 Door Ovr: N
3.6.1.2 Buffer Ovr: N
3.6.1.3 Warmup Ovr: N
3.6.1.4 Int Probe Ovr: N
3.6.1.5 Incubate Ovr: N

3.6.2 Printer ...
3.6.2.1 Print Trained (Trained Location File)

PLEASE REFERENCE REVISION 2.0 SOFTWARE CUSTOMER INSTALLATION INSTRUCTIONS THAT WERE SENT OUT WITH PAPER COPY OF THIS TSB, OR CONTACT CSE.

END OF DOCUMENT

ABBOTT ADD

TECHNICAL SERVICE BULLETIN

SUBJECT:
PMT Socket Replacement

TSB#: **59-004**

ORIGINATOR:
Dan Armstrong

PRODUCT:
ADx® (59)

APPROVED:

REF. ECN: **TDx-4100**

IMPLEMENTATION:	TSB Part/Kit #:	Upgrade Time:
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **01-01-89**	Validation Time: Total Mod. Time:
Instruments Requiring Modification: **SEE ADx™ Serial Number List**		

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

SERIAL NUMBER LIST 849 TO 1227
AS WELL AS THE FOLLOWING:
263, 425, 531, 775, 598-96, 1066-96, 359, 447, 557, 821, 488-96, 684-96, 402, 508, 560, 8, 356-96, 288-96, 416, 521, 676, 195, 497-96, 118-96, 440-96, 282-96, 469-96, 179-96, 778-96, 719-96, 286-96, 210-96, 382-96.

I. DISTRIBUTION:

International and Domestic FSE's

II. GENERAL:

PURPOSE:

This TSB is intended to identify and remove all non-conforming "Opto-Switch" AND "Sota PMT Sockets" from the field and replace them with "Hamamatsu PMT Sockets". The "Opto-switch" and "Sota Sockets" have shown excessive leakage during in-house quality testing.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

TOOLS: Standard FSE Tool Kit

TIME REQUIRED: Inspection 30 minutes, Modification 2.0 Hrs.

PARTS: Hamamatsu PMT Socket Assembly P/N 41077-101

SERVICE PARTS KITS: Inspect the spare Optics Assembly. If the PMT Socket is a "Sota or an Opto-switch" replace the Socket assembly per this TSB. Use the section for PMT Socket replacement. You will need to use Steps 2 --- 5.

INTERNATIONAL SERVICE REFER TO YOUR MANAGER.

DOMESTIC ENGINEERS REFER TO THE FOLLOWING PARAGRAPH.

PARTS RETURNS: To obtain a replacement socket assembly, if you repaired an Optics in your kit, use the lap top computer and follow the logistics procedure below.

Open a call for the following site: øDEF
Close the call with following codes:

SC	ø3
TC	A6
RC	81
URG	ø

Show the part number used in parts field.
Return the defective socket and mark the material / repair tag with Replaced Per TSB #04.

III. PROCEDURE:

1. Print the following parameters:

SYSTEM	1.0
CONFIGURE	1.3
DIAGNOSTICS/PARAMETERS	3.1
PROCEDURES/TABULATION	4.4

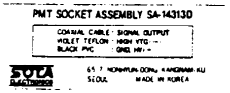
2. Turn the ADx™ analyzer off and unplug the power cord.
3. Open the main door and remove the splash guard to gain access to the Optics Assembly.
4. Inspect the PMT Socket for a manufacturer's identification label (See Figure 1). Hamamatsu and Sota Sockets will have a Silver Label with light blue print. It is IMPERATIVE the label be read to determine its type. Opto Switch Sockets DO NOT have a silver label. they are stamped with WHITE INK. If sockets are found which do not have any labels at all, they are to be treated as NON-CONFORMING sockets.

TIP: A dental mirror will greatly aid reading the label without having to remove the optics. If you can not accurately read the label, remove the optics

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

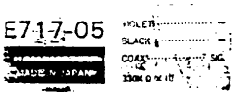
assembly.

LABEL Types



Sota Electronics

Opto Switch



Hamamatsu

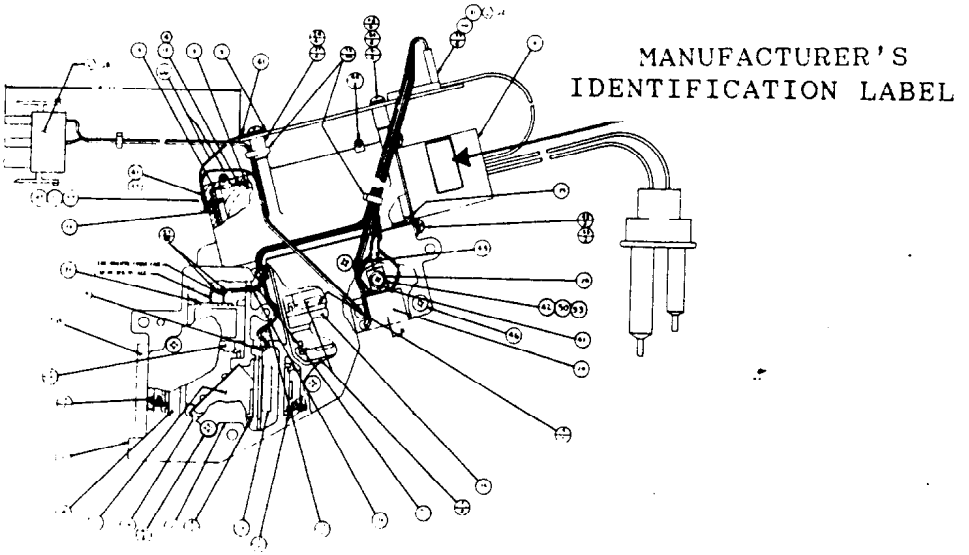


Figure 1

5. Replace all PMT Sockets which do not have the Hamamatsu Label.
6. If the socket is correct, re-assemble the ADx™ instrument. Use the following procedure after power up of the instrument and "Warm-up" is complete.
   a. If the Optics WAS NOT removed,
      GO TO STEP 5 (IF OK, SKIP 6 AND 7) CONTINUE ON WITH STEP 8 OF THE AFTER RE-ASSEMBLY PROCEDURE.
   b. If the optics WAS removed to verify the label,
      GO TO STEP 1 OF THE AFTER RE-ASSEMBLY PROCEDURE AND PROCEED WITH CALS AND CHECKS.

REPLACEMENT OF THE PMT SOCKET IF REQUIRED

1. Disconnect the Optics ribbon cable, HV connector cable, and Optics heater cable, remove the three screws holding the Optics in place and then remove the Optics Assembly from the ADx™.
   Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

2. Disconnect the PMT HV coaxial cable from P5 on the Optics PCB.
3. Remove the two screws from the PMT socket flange and unplug the socket from the PMT, taking care not to lose the O-ring. Leave the PMT in the housing.

   CAUTION: DO NOT TWIST THE PMT WHILE UNPLUGGING THE SOCKET. IF THE PMT BEGINS TO PULL OUT OF ITS HOUSING STOP! USE A SMALL SCREWDRIVER TO SEPARATE THE PMT SOCKET FROM THE TUBE.

4. Re-assemble the Optics Assembly using a new Hamamatsu PMT socket assembly (P/N 41077-101).
   a. Place the O-ring on the end of the socket next to the flange.
   b. Plug the socket onto the PMT and attach with the two screws and washer which you removed from the flange before in Step 3.
   c. Attach the PMT HV coaxial cable from the socket to the Optics PCB connector P5.
5. Re-assemble the ADx™ instrument by placing the optics back into the instrument, Remember to connect the HV cable to the HV Power Supply connector, the Optics heater cable, and the Optics PCB ribbon cable. Replace the splash guard.

IV. AFTER RE-ASSEMBLY OF INSTRUMENT PERFORM THE FOLLOWING:

1. Plug the instrument power cord in and turn the instrument on.
2. After "Warm-up" is complete, re-print the parameters you printed in Step 1. Verify the parameters have not changed. If the numbers have changed perform the necessary procedures to reset to the original numbers.
3. Perform a Carousel Alignment Calibration using the Alignment Tool P/N 31291-101.
4. Run Photo Calibration.
5. Run Photo Check.
6. Run Pipe Check.
7. Run Temp/Verification Check.
8. Check Assay Controls.
9. Complete Total Service Call.
10. Mark out Number 4 on the Modification Control Sticker and close out the call as per Field Service Operation Procedures.

END OF DOCUMENT

ABBOTT ADD

TECHNICAL SERVICE BULLETIN

SUBJECT: TSB#: **59-003**
ADx(TM) 50 Test Enhancement Protocol Revision 1.5 Only (Next Software it will be included)

ORIGINATOR:
Dan Armstrong

PRODUCT:
ADx® (59)

APPROVED: **Cassie Stern**

REF. ECN:

IMPLEMENTATION:	TSB Part/Kit #:	Upgrade Time:
☐ **Immediate** ☐ **Next Service Call** ☐ **Next Failure** ☒ **Optional**	TSB Effectivity/ Part(s) Availibility: **Dec. 1, 1988**	Validation Time: Total Mod. Time:
Instruments Requiring Modification: **S/N 1 to 1089**		

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

DOMESTIC CSC GROUP HAS CALLED CUSTOMER WITH THESE SERIAL NUMBERS. THE FACTORY STARTED THIS MOD WITH SERIAL NUMBER 1090.

This Procedure is to allow the current ADx™ Customers to run the 50 Test Reagent Assays.

The Reagents will be released prior to the end of December, 1988. There will not be an across the board change of the number of tests. As the current stock of 25 test kits are used they will be replaced with new 50 Test Packs.

This change will not affect the 25 Test capability of the instrument. The change is being made to the trained location file. This change is required so the probe will enter the center of the reagent vials of the 50 Test Pack configuration. One of these vials will have an insert in it.

IF THE SYSTEM/LOGIC PCB IS REPLACED OR IF FACTORY SET IS RUN ON THE TRAINED LOCATION FILE THIS

PROCEDURE WILL BE REQUIRED.

"CAUTION"
THIS PROCEDURE MUST NOT BE DONE MORE THAN ONCE.

DOMESTIC: This procedure is being accomplished by the CSC Group. They are calling the Customers and the Customer is performing the changes required via the telephone. The Customer is being asked to update the Modification Control Sticker at position #3.

The procedure is on page 2. A copy of the CSC phone procedure has been included for your information.

VERIFICATION PROCEDURE
To verify if the instrument has been set for the 50 Test Kits print out the Trained Location File. **IT IS IMPORTANT THAT THIS BE DONE TO ASSURE THAT THE ENHANCEMENT PROCEDURE BE FOLLOWED ONCE ONLY.**

To Print out the Trained Location File perform the following:
Press "9.11.11.11"
Verify display reads: GO TO 9.11.11.11
Press "ENTER" The trained location file will be printed.

Use the following printout to assist you in the Verification procedure. The number **-44**, below which is circled, is the correct number after the Modification has been done. If the instrument is not modified the number will be **-39**.

TRAINED LOCATIONS

269	1639	1117	784	954	530	0	0
11	103	0	0	0	68	6	0
141	0	153	156	0	0	-44	0
114	186	0	0	0	186	6	0
65	153	176	179	0	0	0	0
63	0	153	156	0	0	2	0
21	70	0	0	0	70	0	0
81	68	73	75	0	38	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
11	68	0	0	0	0	0	0
0	0	0	0	0	0	0	0
65	0	152	156	2	0	0	0
81	150	155	157	0	120	6	0
89	0	153	156	0	0	4	0
115	0	153	156	0	0	-6	0
-5	0	0	0	0	0	0	0

If the Trained Location File is set correctly and #3 has been marked on the Modification Control Sticker nothing further has to be done concerning this change.

If the Trained location file is set correctly and #3 has not been marked, then mark #3 of the Modification Control Sticker and nothing further has to be done concerning this change.

If the Trained location file is set incorrectly then follow the Procedure below.

<u>50 TEST ENHANCEMENT PROCEDURE</u>

1. Press "9.23.23.23"
   Verify display reads: GO TO 9.23.23.23
   Press "ENTER"
2. Press "9.11.11.11"
   Verify display reads: GO TO 9.11.11.1
   Press "ENTER"
   The trained location file will be printed.
   Save this printout.
3. Press "9.50.2.45"
   Verify display reads: GO TO 9.50.2.45
   Press "ENTER"

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4. Press "9.52.6.5"
   Verify display reads: GO TO 9.52.6.5
   Press "ENTER"
   Verify the following message was printed:

   TRAINED 2 IS NOW
   XXX 0 XXX XXX 0 0 -44 0
   (NOTE: XXX DENOTES A NUMBER THAT IS VARIABLE FROM ADx TO ADx)

5. Turn the ADx™ power off.
6. Wait 30 seconds, turn the ADx power on.
7. Verify the Date and Time are correct, press "ENTER".
8. Mark the Modification Control Sticker #3.

The ADx will now run 25 and 50 Test Reagent Packs.

END OF DOCUMENT