ABBOTT ADD	INDEX TECHNICAL SERVICE BULLETIN

PRODUCT: **TDxFLx® (67)**	DATE: **22-APR-98**

TSB #	IMPLEMENTATION	SUBJECT	EFFECTIVITY DATE
67-013	O - SEE TSB	TDxFLx® Analyzer Revision 3.0 Software Upgrade	01-MAY-98
67-012	O - SEE TSB	CE-Mark Certified TDxFLx® Instruments and Modification	08-DEC-95
67-011	O - SEE TSB	TDxFLx Revision 2.1 Software	12-JAN-94
67-010	N - SEE TSB	Thermal Printer Controller Board Retrofit	30-AUG-93
67-009	O - SEE TSB	Rev. 2.0 Software	13-AUG-93
67-008B	N - SEE TSB	LAMP Socket Assembly	04-JUN-93
67-007	F - SEE TSB	PANASONIC Thermal Printer	08-JAN-93
67-006	N - SEE TSB	Power Supply Board	03-DEC-92
67-005	NONE	VDE Instrumentation	17-AUG-93
67-004	N - ALL	Lamp Housing Lens Gasket	15-JUL-92
67-003	I - SEE TSB	Software Upgrade of All Instruments to Rev 1.2	18-NOV-91
67-002A	N - SEE TSB	Improved Waste Container Sensor	13-MAR-92
67-001A	I - *SEE TSB	Hardware/Software Upgrade Demo Instruments	14-AUG-91

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

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
TDxFLx® Analyzer Revision 3.0 Software Upgrade

TSB#: **67-013**

ORIGINATOR: **Kyle Hranitzky**
APPROVED: **Bob Schabel 04/16/98**

PRODUCT:

REF. ECO:

IMPLEMENTATION:	TSB Part/Kit #: **LN 06D93-01**	Upgrade Time: **0.5 hours**
○ Immediate ○ Next Service Call ○ Next Failure ● Optional	TSB Effectivity/ Part(s) Availability: **01-MAY-98**	Validation Time: **2.5 hours**
Instruments Requiring Modification: **See Administrative Notes**	**TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ○ YES ● NO	Total Mod. Time: **3.0 hours** ****NOTE** The instrument must be at TSB Level n/a prior to performing this TSB.**

I. DISTRIBUTION:

Worldwide

II. PURPOSE:

The purpose of this TSB is to:

- provide an overview of the new features introduced in Revision 3.0 software
- instruct the field on how to install Revision 3.0 software

III. ADMINISTRATIVE NOTES:

- This TSB is applicable to all TDxFLx instruments.
- This modification will need to be performed on all instruments. It has an effectivity of OPTIONAL.
- After the worldwide upgrade for all TDxFLx Analyzers is complete, support of the TDxFLx System Software prior to Revision 3.0 will be discontinued.
- This software upgrade must be performed prior to January 1, 2000, in order for the TDxFLx Analyzer to run in the year 2000 and beyond.
- The upgrade may be performed from any version of TDxFLx software, however if a customer is upgrading from Rev 1.2 directly to Rev 3.0, a Printed Circuit Board (PCB) #6 must be ordered separately.

U.S.A.: This software revision will be distributed through the RZZ system. The software will be mailed directly to the Customer. If an FSR installs the software, he/she should follow the installation instructions in this TSB.

International: This software will be distributed through the order entry system. Each country should send forecast requirements to its respective logistics organization. Please reference LN 06D93-01 in forecast requirements.

CONTENTS OF THIS TSB

WHAT'S NEW IN REVISION 3.0?

The major enhancements in Revision 3.0 software include:

- Software modifications to accommodate the year 2000.
- Software changes have been incorporated to allow correct reagent pack database management in the year 2000 and beyond.
- Improvements to Single Wedge Reagent Pack runs.
- The handling of single wedge reagent pack runs has been modified to reduce the occurrence of the message "A C HTR BRK FAIL" after a bar code failure.
- Bar Code Read improvements.
- The software that controls the R-boom's batch reagent pack bar code reads has been modified to produce more accurate reads.
- Deletion of unused assays.

What's new in Revision 3.0? (cont)

The following assays have been removed from the module:

19	Dibekacin	39	Creatinine	67	Digoxin NXT	80	Norfluoxetine
20	Streptomycin	41	Iron/TIBC	68	Haloperidol	82	Amitriptyline
21	Kanamycin	42	HDL Cholesterol	69	THC S	83	Nortriptyline
28	Fluoxetine	45	Amphet-classU	70	IgA	84	Desipramine
34	Glucose	47	LDH	71	IgG	85	Imipramine
35	BUN	49	Cotinine	72	IgM	86	Cy A (P/S)
36	Cholesterol	52	Norclomipramine	73	Transferrin		
37	Uric Acid	54	5-HIAA	74	Total Doxepins		
38	Amylase	55	Clomipramine	77	MAO Activity		

- Assay Parameter update.
- The MN POLA (XX.16) and MN SPAN (XX.17) parameters were adjusted where appropriate.
- Expanded “Test Used” Function.
- Software changes allow the use of the existing “test used” function of the FLM II assay. The number of tests used or tests left will be displayed during an FLM II run and printed on the results printout. The Reagent Tabulation Report will contain the number of tests used and tests left information pertaining to the FLM II assay.
- RS-232 Interface Information.
- Changes to the software, including those made to accommodate the year 2000, will not impact interface software.

IV. SPECIAL TOOLS:

None

V. PARTS:

TDXFLX Revision 3.0 Software Enhancement Kit	L/N	06D93-01
All information in the kit is multilingual.		
The Enhancement Kit contains:		
TDXFLX System Software Module Revision 3.0	P/N	45086-110
Product Information Letter	Co-Nr	69-0404/R1
TDXFLX System Installation Instructions for Software Revision 3.0	C0-Nr	66-9822/R1
TDXFLX Revision 3.0 Software Enhancement Features	C0-Nr	66-9823/R1
Software Shipping Carton, Software Module Return Form		
Parts not provided in the kit but required if the TDXFLX Analyzer is at Rev 1.2:		
Board #6	C/N	3-45270-03
Bar Code Hand Wand (if required by customer)	L/N	4A24-15
TDXFLX System Operations Manual	L/N	4A24-51

REPLACED PARTS:
N/A

COMPATIBILITY:
N/A

VI. PROCEDURE:

INSTALLING THE REVISION 3.0 SOFTWARE
Time: 3 hours

CAUTION: It is extremely important to perform these procedures in the order given.
NOTE: Before performing the upgrade, determine the software revision.
Press: **SYSTEM 1.6 DISPLAY**
If the analyzer contains Revision 1.2 or below, a new printed circuit board (PCB) #6 must be installed in steps 8/9.
Ensure that you have this new board **before proceeding** with the software Revision 3.0 upgrade.

1. Perform a Photo Check (Test 2.2).
2. Perform a Pipet Check (Test 2.3).
3. Print the System 2, 3, 6, 7, 9 and 10 parameters and label as “ORIGINAL.” Also print System 11 parameters if the software is Rev 2.0 or higher.
4. Print assay parameters for all assays calibrated on the TDxFLx Analyzer and label as “ORIGINAL.”
5. Turn off the power to the TDxFLx Analyzer.
6. Unplug the AC power cord from the wall outlet.
7. Remove the rear panel by removing the RS232 cable, if applicable, and the rear-panel retaining screws.

NOTE: If the current software is Rev 2.0 or 2.1, omit steps 8 and 9. Proceed to step 10.
If the current software is Rev 1.2 or below, proceed to step 8.

8. Remove the Printed Circuit Board (PCB) #6 from the card cage.
9. Install the new PCB #6.
10. Remove the Printed Circuit Board (PCB) from slot #2.

Procedure (cont)

11. Remove the software memory module that is attached to PCB #2.
12. Install the Revision 3.0 Software memory module on PCB #2.
13. Reinstall PCB #2 (with the new memory module attached) into slot #2.
14. Reinstall the rear panel, and reinstall the RS232 cable, if applicable.
15. Plug in the power cord.
16. Turn on the analyzer.
17. Enter the current date.
18. Enter the correct military (24-hour) time.
19. Perform Factory Set. Press: **TEST 6.2 RUN** (Password: 247)
20. Edit System 2, 3, 6, 7, 9 and 10 parameters to match the parameter printouts marked "ORIGINAL."

NOTE: If the analyzer software revision is Rev 2.0 or 2.1, proceed to step 21.
If you are upgrading from software revision 1.2, omit Step 21. Go to step 22.

21. Verify System 11 parameters against the "ORIGINAL" printout and edit if necessary.
22. Print a copy of System 2, 3, 6, 7, 9 and 10 parameters. Also print System 11 parameters if you are upgrading from software Rev 2.0 or higher.
    a. Label this printout "NEW."
    b. Compare this "NEW" printout to the "ORIGINAL" printout obtained in step 3 to verify that the new values were entered correctly.
    c. If the value was not entered correctly, enter the correct value.
    d. Retain the "NEW" printout for the customer for future reference.
23. Using the assay parameters marked ORIGINAL obtained in step 4, with the exception of MN POLA (XX.16) and MN SPAN (XX.17), edit the parameters to "ORIGINAL" parameter values.

Procedure (cont)

[The MN POLA (XX.16) and MN SPAN (XX.17) parameters have been updated for many assays. After the TDxFLx System Revision 3.0 software has been installed, all previous MN POLA and MN SPAN values are not applicable. **DO NOT** edit the MN POLA or MN SPAN parameters to their original values unless the activation letter specifies DXFLX System Revision 3.0.]

24. Perform a Photo Check (Test 2.2).
25. Perform a Pipet Check (Test 2.3).
26. Press: **ASSAY 88.21 DISPLAY**
    If a MN TR value less than 10,000 but greater than 0 is displayed, the Pipet Check was successful. If the display shows [MN TR 0], repeat the Pipet Check.
27. Run all levels of controls for all calibrated assays on the instrument.
28. Mark off TSB 13 on the Modification Control Sticker.
29. Update the Revision Log of the TDxFLx System Operation Manual for each analyzer installed with Revision 3.0 Software. Also indicate that Product Information #69-0404/R1 was retained in the front pocket of the manual.
30. Complete the software module return form.
31. Return the old memory module to Abbott Laboratories in the postage-prepaid shipping carton provided.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

MODIFICATION STEPS:
See procedure above.

CHECKOUT:
See procedure above.

MODIFICATION CONTROL STICKER UPDATE:
See procedure above.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
CE-MARK CERTIFIED TDxFLx® INSTRUMENTS and MODIFICATION

TSB#: **67-012**

ORIGINATOR: **Buddy Bokony**
APPROVED: **Mark Slater 11/30/95**

PRODUCT:
TDxFLx® (67)

REF. ECO:

IMPLEMENTATION:	TSB Part/Kit #: **3-45454-01**	Upgrade Time: **0.25 Hrs.**
○ **Immediate** ○ **Next Service Call** ○ **Next Failure** ● **Optional**	TSB Effectivity/ Part(s) Availability: **08-DEC-95**	Validation Time: **0.25 Hrs.**
	TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)	Total Mod. Time: **0.50 Hrs.**
	○ YES ● NO	****NOTE** The instrument must be at TSB Level 011 prior to performing this TSB.**
Instruments Requiring Modification: Dallas built S/N 50000 to 59999 and S/N 62000 and ABOVE		

I. DISTRIBUTION:
Worldwide

II. PURPOSE:
This Technical Service Bulletin (TSB) is to inform and provide modification instructions to the Worldwide Service Organizations of the release of a CE-Mark certified TDxFLx® instrument configuration. The CE Mark configured instruments are being marketed in Europe only. Countries (i.e., USA, Japan, Canada, etc.) not required to comply with CE Mark directives will not be affected by this TSB.

TDxFLx instruments built to or modified to the CE Mark configuration will have a new size code in the product list number: **04A24-86** ; the -86 denotes the CE Mark configuration.
Re-manufactured non-CE Mark TDxFLx instruments will continue to have list number 04A24-96.

III. ADMINISTRATIVE NOTES:

This is an Optional TSB.

Countries (i.e., USA, Japan, Canada, etc...) not required to comply with the CE Mark directives will not be affected by this TSB.

Instruments currently in customer accounts in European Union countries complying with CE Mark directives will be modified at the Country Manager's discretion.

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

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

Instruments Requiring Modification: (within the European Union)
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 for the European Union: (Effective 01/01/96)
New Equipment; Equipment not previously operated by an end user (customer) within the European Union as of 01/01/96.

2nd Hand Equipment: Equipment previously operated by an end user (customer) 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 complying Countries)
Effective 01/01/96 TDxFLx instruments shipped from Remanufacturing to countries complying with CE Mark directives will be of the CE Mark configuration under List Number (LN) 04A24-86. On the modification control sticker located in the instrument number 12 will be marked.

Servicing: activities as of 01/01/96

1. TDxFLx 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 following TSB's must be installed prior to performing the CE Mark modification.

TSB 67-005	VDE Instrumentation
TSB 67-006	Power Supply Board
TSB 67-007	Panasonic Thermal Printer
TSB 67-010	Thermal Printer Controller
TSB 67-011	TDxFLx Rev. 2.1 Software

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

New Placements: (AOW not required to comply with CE Mark Directives, i.e. USA, Canada, Japan, etc...)
TDxFLx instruments shipped from Remanufacturing to AOW (Areas Of the World) not required to comply with CE Mark directives will continue to receive the current non-CE Mark production instrument under List Number (LN) 04A24-96.

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

IV. SPECIAL TOOLS:

Standard FSR/FSE tool kit

V. PARTS:

REPLACED PARTS:
There are no parts for return when performing this modification.

COMPATIBILITY:
Field Service parts:
Thermal printer (3-45340-01), Thermal Printer Replacement Kit (3-45339-01), and the Main Display Logic cable (3-31046-01) **without** the black clip-on ferrite are **NOT** CE-Mark approved parts.

Attaching the black clip-on ferrite onto these components will make these components CE-Mark approved. These ferrites are mandatory on service replacement parts for any TDxFLx® instrument which is CE-Mark approved. The ferrite may be removed from the defective CE Mark part and placed on the replacement part.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

All other components on a VDE configured TDxFLx instrument are considered CE-Mark approved components.

VI. PROCEDURE:

MODIFICATION STEPS:
(VDE configured TDxFLx instrument to CE-Mark Configuration)
[If the TDxFLx instrument is not of the VDE configuration (TSB 67-005 completed); DO NOT PERFORM THIS MODIFICATION.]

1. Turn the power to the VDE configured TDxFLx instrument OFF.
2. Open the main access door, remove the three 4-40 screws that hold the Operational Display Splash guard to the Main Display bracket and remove the splash guard.
3. Locate the two (2) printer wire bundles going to the motherboard connectors (J9 and J10). Insert both bundles into the black round ferrite (P/N 14108-048) and snap the ferrite halves together. Guarantee that the wires in the bundles are not "pinched". The ferrite should easily slide back and forth on the wire bundles.
4. Locate the large data ribbon cable going from the Main Display to the motherboard. Snap the black flat ferrite (P/N 14108-046) onto the data cable. To guarantee that the cable is not "pinched", the ferrite should easily slide back and forth on the data cable.
5. Install the splash guard using the three 4-40 screws.
6. Close the access door and apply the CE Mark label (64296-102) to the back of the instrument in close proximity and to the left of the CAUTION NOTICE label.
7. Using a black permanent marker, write on the new serial number label (45082-102), provided in the upgrade kit, the instrument serial number. Beside the 04A24 on the new label write -86 to indicate that this instrument is now a CE Mark configured TDxFLx instrument.
8. Remove the current serial number label that is attached to the instrument. Attach the new label in the same location by removing the adhesive backing and pressing the new label onto the instrument.
9. Turn the instrument ON.

CHECKOUT:

1. Using the keyboard, enter the proper DATE and TIME.
2. **READY** is displayed when the "Warm-Up" period completes.
3. Perform the Print Test routine (Test 5.4 RUN). Insure the printouts are correct. Also perform the Display / Keyboard Test routine (Test 5.6.2 RUN). The display will scroll across the screen then illuminate the complete screen. When completed the test will display DONE. Perform the Keyboard test (Test 5.6.1 RUN). Touch each key on the front panel. When pressed each key will have a corresponding alphanumeric value displayed.
   Key pressed = Displayed value:

RUN = J	ASSAY = D	7 = 7	8 = 8	9 = 9	PRINT = B
PRIME = M	TEST = F	4 = 4	5 = 5	6 = 6	DISPLAY = A
STOP = K	SYSTEM = E	1 = 1	2 = 2	3 = 3	EDIT = C

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

CLEAR = G "." = "." 0 = 0 STORE = H NEXT = @

To exit the Display / Keyboard Test press STOP STOP.

MODIFICATION CONTROL STICKER UPDATE:

1. Mark through # 12 on the TSB sticker located on the instrument.
2. Close the service call and on the service documentation indicate that TSB 67-012 has been completed.

END OF DOCUMENT

END OF DOCUMENT

ABBOTT ADD

TECHNICAL SERVICE BULLETIN

SUBJECT:
TDxFLx® REVISION 2.1 SOFTWARE

TSB#: **67-011**

ORIGINATOR: **GUY CUMMINGS**
APPROVED: **Bob Schabel 12/Jan/94**

PRODUCT:
TDxFLx® (67)

REF. ECN: **TDX 7214**

IMPLEMENTATION: ○ **Immediate** ○ **Next Service Call** ○ **Next Failure** ● **Optional** Instruments Requiring Modification: **S/N 32456 & BELOW,** **50,000 - 50,215** **60,000 - 62,549**	TSB Part/Kit #: **N/A** TSB Effectivity/ Part(s) Availibility: **12-JAN-94** **TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ○ YES ● NO	Upgrade Time: **1 Hr.** Validation Time: **2 Hrs.** Total Mod. Time: **3 Hrs.** ****NOTE** The instrument must be at TSB Level n/a prior to performing this TSB.**

I. DISTRIBUTION:
Worldwide

II. PURPOSE:
This is an informational TSB which describes the parts and installation procedures required to upgrade the TDxFLx® analyzer with revision 2.1 software.

Installation procedures are provided for both rev 1.0/1.2 to rev 2.1 and rev 2.0 to 2.1 upgrades.

Software Changes:
New pipetting modes 42 and 43 have been added to run the new Methotrexate II assay. This is a 4 POT assay.

System 1.6, Software revision, will now appear as "Rev X.X MM/DD/YY" to reflect the version date.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Installation Misc.:

US: TMRs will upgrade the US Methotrexate customers starting in Dec 93. Any subsequent service requiring software will be performed by the FSR.

International: The individual country managers will determine how the software will be installed. Each country will be responsible for all costs associated with this product enhancement (i.e. material cost of software and installation labor).

III. ADMINISTRATIVE NOTES:

N/A

IV. SPECIAL TOOLS:

N/A

V. PARTS:

UPGRADE KIT: From: Rev. 1.0/ 1.2/ 2.0 To: Rev. 2.1

LN	Description	Contents
4A24-59	TDxFLx® Rev 2.1 Software Upgrade Kit	Rev 2.1 software module, Operations Manual update, 2.0 to 2.1 Installation Guide, 1.2 to 2.1 Installation Guide, Customer Letter, Activation Information

Repair Parts

CN - LN	Description	Kit	Kit Qty	Return
4A24-60	Rev 2.1 Software module	No	0	Y
3- 45270- 03	Rev 2.0 Bd 6	FLx	1	Y
4A24 - 15	Barcode hand wand	No	0	Y

Rev 2.0/2.1 Interface Specification- LN 4A24-32

U.S.: The Rev. 2.1 Software Module will replace the Rev 2.0 module in the remote depots.

International: International service locations should send their forecast/orders via the regular spare parts channels.

Service Kit Impact

No parts will be added to the TDxFLx parts kit

Replaced Parts

Parts replaced as part of an upgrade should be coded as:

Service Code	Trouble Code	Repair Code
03	11	93

Parts used to repair and not upgrade should be coded accordingly. Return all parts listed on the above table including rev 1.0/1.2 Bd 6 with your regular return parts shipment.

Compatibility

Rev 2.1 requires board 6, CN: 3- 45270-03. To verify Bd 6 is correct, check I.C. U5. The Eprom revision must be "TDXFLX Rev. 2.0".

Interface Specifications for Rev 2.1 are the same as Rev 2.0. Interface Specifications can be ordered no charge from CSC.

All barcode wands shipped after 7/26/93 are already configured for Rev 2.0/2.1. Reconfiguration of the new wands is not required.

VI. PROCEDURE:

1. Follow the attached instruction guides:
   a. Rev 1.2 to 2.1 Installation Instructions (use for 1.0 to 2.1 also)
   b. Rev 2.0 to 2.1 Installation Instructions

   NOTE: Ensure that systems upgraded from 1.0/1.2 are upgraded with the latest revision board 6 (3-45270-03). Perform a 4 POT BOOM CAL, TEST 3.7.

VII. MODIFICATION STICKER UPDATE:

Ensure TSB Modification Sticker is updated to TSB 11.

PLEASE REFERENCE REV 1.2 TO 2.1 AND REV 2.0 TO 2.1 INSTALLATION INSTRUCTIONS PREVIOUSLY MAILED TO YOU IN A PAPER FORMAT. CONTACT CSE FOR ADDITIONAL INFORMATION.

END OF DOCUMENT

ABBOTT ADD

TECHNICAL SERVICE BULLETIN

SUBJECT:
TDxFLx® THERMAL PRINTER CONTROLLER BD. RETROFIT

TSB#: **67-010**

ORIGINATOR:
Guy Cummings

PRODUCT:
TDxFLx® (67)

APPROVED: **Bob Schabel 9/7/93**

REF. ECN: **TDX-7112**

IMPLEMENTATION: ☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional** Instruments Requiring Modification: **See List on Page 4**	TSB Part/Kit #: **45401-101** TSB Effectivity/ Part(s) Availibility: **30-AUG-93**	Upgrade Time: **20 min.** Validation Time: **20 min.** Total Mod. Time: **40 min.**

****NOTE** The instrument must be at TSB Level 7 prior to performing this TSB.**

I. DISTRIBUTION:
Worldwide

II. PURPOSE:
Some TDxFLx® Analyzers with thermal printers have experienced intermittent printing errors - dots and dashes printed "on top of" the normal printout. The problem is due to a critical timing issue during data transfer between the CPU board C/N 3-45260-01 and the Thermal Printer Controller board C/N 3-45835-01.

Implementation of this TSB is intended to improve the reliability of the thermal printer by replacing U3, a PLCC (Plastic Leaded Chip Carrier) gate array on the Thermal Printer Controller board. U3 has been reprogrammed to increase timing tolerances between the printer and the Z80 processor on the CPU board.

This TSB details the steps required to replace U3 and complete the modification.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

III. ADMINISTRATIVE NOTES:

N/A

IV. SPECIAL TOOLS:

A PLCC Extraction Tool, P/N 14207-112, will be added to each FSE Standard Tool Kit in order to perform the TSB.

V. PARTS:

Qty:	C/n / P/N	Description
By IRL	45401-101	Packaged Gate Array (contains one 45900-102 gate array)

A. U.S.:

CSE will coordinate with Field Service logistics and Service Planning to distribute the required number of I.C.s per FSE as referenced in the Instrument Responsibility List (IRL). Also, two additional gate arrays will be sent to each FSE to upgrade both Thermal Printer Controller boards in the FSE TDxFLx® Kit. See Section C, Service Kit Impact.

B. International:

International Field Service Logistics managers should ensure that all Thermal Printer Controller boards, C/N 3-45835-01, and Thermal Printer Upgrade Kits, 3-45339-01, including both Field Service Kits stock and depot stock are retrofitted.

International service locations should order/forecast TSB parts via the regular spare parts channels.

C. Service Kit Impact:

No parts will be added to the FSE kit.

The Extraction Tool, P/N 14207-112 is being added to the FSE Standard Tool Kit.

Both the Thermal Printer Upgrade Kit C/N 3-45339-01 and the Thermal Bd. 9 C/N 3-45835-01 will be retrofitted by the TSB.

D. Replace Parts:

Discard the old gate array. This gate array cannot be reprogrammed.

E. Compatibility:

There are no known compatibility concerns with gate array P/N 45401-101.

VI. PROCEDURE:

Modify your FSE Kit stock as soon as you receive the TSB parts. This includes both the Thermal Printer Upgrade Kit C/N 3-45339-01 and the C/N 3-45835-01, Thermal Printer Controller Board.

International: Each FSE should identify the serial number of TDxFLx® Analyzers that have been Field upgraded from the impact printer to the thermal printer with TSB 67-007.

A. Modification Steps:

NOTE: *Both the "-102" and "-103" versions of the Thermal Printer controller board are electronically equivalent. Only the manner of securing capacitor C13 differs, "-102" used hot melt adhesive, "-103" uses a tie-wrap.*

STEP 1. Print out System 2, 3, 6, 7, 8, 9, and 10 parameters.
STEP 2. Turn off the TDxFLx® power switch and unplug the power cord from the wall.
STEP 3. Remove the backpanel and Thermal Printer Controller board (Bd. 9) from the analyzer.
STEP 4. Observing proper static precautions, place Bd. 9 on a static mat and locate U3. (See Figures 1 and 2 for location.)
STEP 5. Before removing the gate array from the socket, find the orientation dot on the gate array. See Figure 2.
STEP 6. Insert the extraction tool fingers into the slots of the I.C. socket. The slots are diagonally across from one another. See Figure 3 for slot position.
STEP 7. By squeezing together the handles of the tool, the I.C. will be held firmly. Rock the tool back and forth while lifting the I.C. from the socket.
STEP 8. Locate orientation dot on top of replacement I.C. and ensure part number of chip is 45900-102.
STEP 9. Note the arrow in the bottom of the socket. With your fingers, insert the replacement gate array in the socket so that the arrow points to the orientation dot. See Figures 2 and 3 for proper orientation.
STEP 10. Press the I.C. down firmly so that it is flush with the top of the I.C. socket.
STEP 11. Reinstall Bd. #9 in cardcage slot #9. Extend power interlock switch to service position.
STEP 12. Reattach the power cord and turn the TDxFLx® power switch to on.
STEP 13. The printer should give a single paper advance and the display should show "Date __.__.__". Enter date and time.

B. Validation:

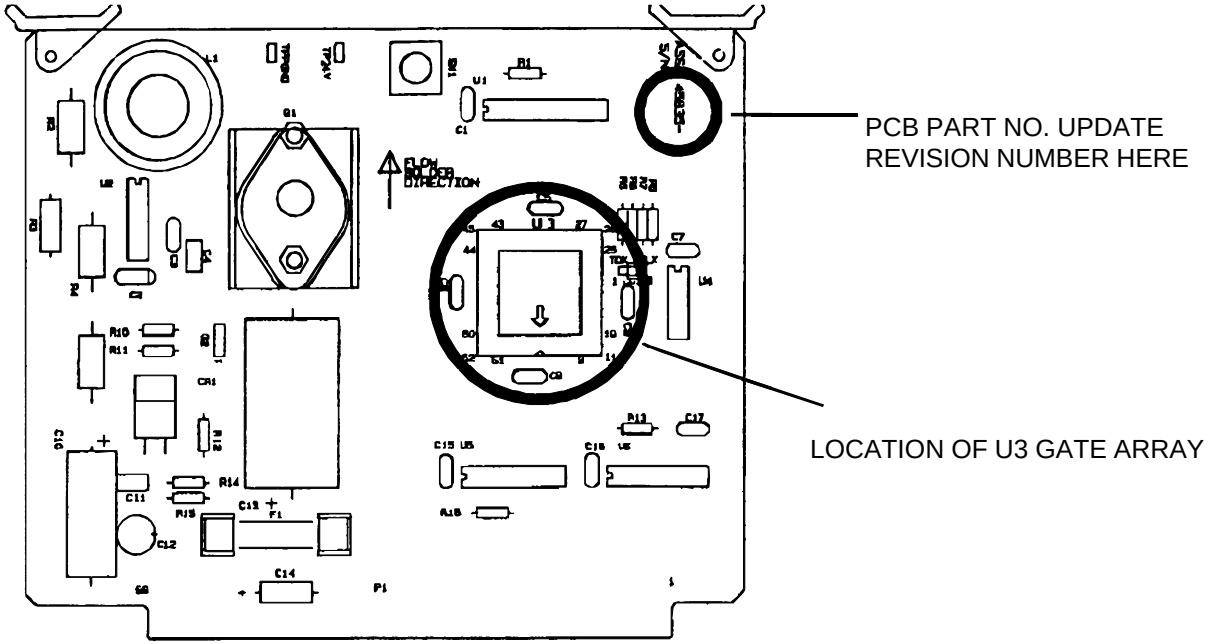
STEP 1. Perform the printer diagnostic test, TEST 5.4 RUN. (This procedure includes both the long and short print test.) Once complete, press **STOP** then **PRINT** to advance the paper to see the short print test results.
STEP 2. Print all parameters, TEST 6.6 RUN, stop printout at assay number 2, Tobramycin. Ensure print quality is good. Check for any incorrect characters.

C. Modification Control Sticker Update:

STEP 1. Release the power interlock switch and turn off analyzer power switch.
STEP 2. Observing static precautions, remove Bd. #9 from cardcage. See Figure 1 for part number location on the PCB. Remove the "-102" or "-103" revision number sticker from the PCB.
STEP 3. **Use a fine point permanent marker to update the board revision number to "-104".**
STEP 4. Place Bd. #9 back into slot #9 on the instrument card cage.
STEP 5. Replace the instrument back panel.
STEP 6. Turn on the analyzer power switch.
STEP 7. Mark TSB control sticker with TSB 10 complete.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

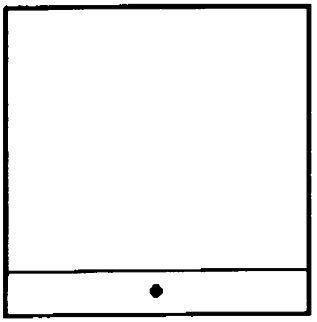
Figure 1



TDxFLx® THERMAL PRINTER CONTROLLER BD.
C/N 3-45835-01 (BD. 9)

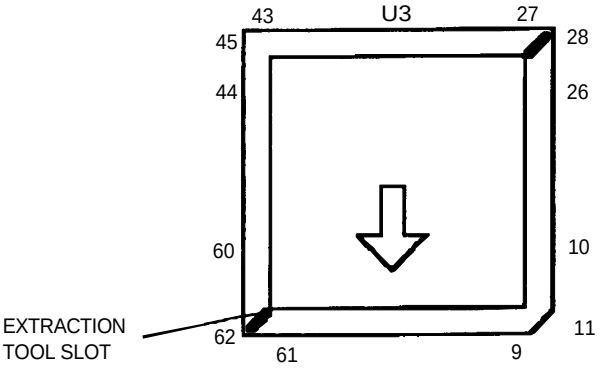
Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Figure 2



TOP VIEW OF GATE ARRAY (NOTE ORIENTATION DOT)

Figure 3



TOP VIEW OF U3 SOCKET WITH GATE ARRAY REMOVED. (NOTE ARROW DIRECTION)

Serial Number Effectivity
NON "-96" Serial Numbers

30000 Series	50000 Series	60000 Series
SN 31660 to 31665	SN 50067 to 50072	SN 62008 to 62010
SN 31718 to 32152	SN 50133 to 50215	SN 62021 to 62381

"-96" Serial Numbers

30061-96	30758-96	31934-96
30083-96	30775-96	31936-96
30111-96	30881-96	31953-96
30236-96	30884-96	31995-96
30238-96	31208-96	60015-96
30281-96	31312-96	60109-96
30286-96	31390-96	60114-96
30306-96	31418-96	60116-96
30307-96	31456-96	60119-96
30470-96	31584-96	60214-96

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

30491-96	31668-96	60231-96
30545-96	31775-96	60547-96
30547-96	31798-96	60644-96
30559-96	31880-96	60868-96
30730-96	31918-96	

U.S. TDxFLx® Analyzers field upgraded with TSB 67-007

30044	30585	31460
30054	30586	31565
30060	30587	31573
30073	30601	31589
30090	30619	31602
30108	30697	31658
30109	30816	50051
30214	30836	60267
30222	31106	60272
30227	31125	60413
30302	31126	60434
30310	31200	60481
30325	31221	60546
30369	31225	60560
30537	31283	60842
30552	31429	60846-96
30574	31447	60873

AKL Serial Numbers

K90335, K90336, and K90366 to K90464

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
TDxFLx REV. 2.0 SOFTWARE

TSB#: **67-009**

ORIGINATOR:
Ron Elston

PRODUCT:
TDxFLx® (67)

APPROVED: **Bob Schabel 30/July/93**

REF. ECN: **7103**

IMPLEMENTATION:	TSB Part/Kit #: **04A24-16**	Upgrade Time: **1.0 Hrs.**
☐ **Immediate** ☐ **Next Service Call** ☐ **Next Failure** ☒ **Optional**	TSB Effectivity/ Part(s) Availibility: **13-AUG-93**	Validation Time: **2.0 Hrs.** Total Mod. Time: **3.0 Hrs.**
Instruments Requiring Modification: **See TSB**		

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

I. DISTRIBUTION:

Worldwide

II. GENERAL:

A. Purpose:

This is an INFORMATIONAL TSB. United States: TDxFLx Revision 2.0 software is to be installed by Field Sales. International: Service Managers will determine the method of upgrading their customer's instruments. A copy of the installation procedure and customer letter is included with this TSB. The customer letter lists the enhancements incorporated in this software upgrade. A brief summary of enhancements is also included in this TSB. Instruments requiring modification are 30000 to 32044, 50000 to 50215, and 60000 to 62437.

The customer upgrade kit will include a Rev 2.0 Memory Module, Reagent Display Drive PCB #6, and TDxFLx System Operation Manual Update, TDxFLx Assay Manual Update, and QC Barcode Label.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

B. Administrative Notes: N/A

C. Time Required: 3 hours is required to perform the upgrade.

D. Tools Required: Standard FSE Tool Kit.

E. Parts:

a. USA

Part needed to perform upgrade:
Reagent Dsply Drvr PCB #6 (3-45270-03) and TDxFLx Mem Cart Rev. 2.0 (3-45086-04)
Note: If an upgrade to Rev. 2.0 is required order the complete upgrade kit (04A24-16)

FSE Kit 67 will be upgraded with Reagent Display Drvr PCB #6 (3-45270-03) only. The PCB #6 will be replaced only when the #6 PCB (3-45270-02) is returned using a 0-DEF call.

NOTE: It is IMPORTANT that the Rev. 1.2 Memory Module (3-45086-03) and Reagent Display Driver PCB #6 (3-45270-02) be returned in your next weekly shipment back to Dallas. To return these two parts, open a 0-DEF call, show usage of the part with a trouble code of Z7. Mark return tag "Returned TSB Part, TSB 67-009".

b. INTERNATIONAL

The International Service Manager should send forecast requirements to their responsible logistics organizations. Each country should send returned parts directly to Abbott-Irving. Parts for return should be marked "Returned TSB Part, TSB 67-009" to receive proper credit.

F. Software Enhancements:

CHANGES:

1. The diluent Syringe is in the down position (filled with buffer) at the [READY] state.
2. New Pipe Check passing criteria: "RNG l" values must be ≤ 250. Printed error indicated is "Rng l out of spec".
3. MEAN TEST BETWEEN FAILURE (MTBF) counter now includes Unit Dose and Random Access.
4. System 3 parameters: previously 3.1 to 3.34; now 3.1 to 3.18.
5. New Auto Probe Positioning and Boom Calibration (Test 3.10).
6. Automated Probe Decontamination (Test 6.8).
7. At run completion, paper advances to allow printout to travel beyond tear-off point.
8. Factory set password (358) removed for T4 calculations.

ASSAYS REMOVED:

ASSAY 28 T4 PLUS
ASSAY 52 TRIGLYCERIDES
ASSAY 55 MHPG
ASSAY 68 "LYTES"

ASSAY 76 ASTROMYCIN
ASSAY 80 CANNABINOIDS GS

NEW ASSAYS: (Not Released)
ASSAY 28 FLUOXETINE
ASSAY 52 NORCLOMIPRAMINE
ASSAY 55 CLOMIPRAMINE
ASSAY 76 APRINDINE
ASSAY 80 NORFLUOXETINE

ASSAY ORDER CHANGE:
HALOPERIDOL ASSAY 89 TO ASSAY 68

III. PROCEDURE:

1. Follow the installation instruction included in this TSB.
2. Mark number 9 on the TSB sticker.

NOTE: IT IS VERY IMPORTANT THAT INSTRUMENT IS FACTORY SET DURING APPROPRIATE STEP OF INSTALLATION INSTRUCTIONS.

IV. ATTACHMENTS: (Reference Hardcopy Sent Out, not included in Notes Document)

Attachment A: Customer Letter (45384-101)
Attachment B: TDxFLx System Operation Manual (45122-105), pp. 3-32 to 3-35.
Attachment C: TDxFLx System Operation Manual (45122-105), pp. 4-36 to 4-39.
Attachment D: TDxFLx System Operation Manual (45122-105), pp. 3-38 to 3-49.
Attachment E: TDxFLx System Operation Manual (45122-105), p. 3-6.
Attachment F: TDxFLx System Operation Manual (45122-105), p. 5-32.
Attachment G: TDxFLx System Operation Manual (45122-105), p. 3-5.
Attachment H: TDxFLx System Operation Manual (45122-105), p. 1-21.
Attachment I: Software Revision 2.0 Installation Instructions (45385-101).

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
LAMP SOCKET ASSEMBLY

TSB#: **67-008B**

ORIGINATOR:
Ron Elston

PRODUCT:
TDxFLx® (67)

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

REF. ECN: **TDx-6835**

IMPLEMENTATION:	TSB Part/Kit #: **3-31053-01**	Upgrade Time: **6 min.**
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **01-FEB-93**	Validation Time: **8 min.** Total Mod. Time: **14 min.**
Instruments Requiring Modification: **See Below**		

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

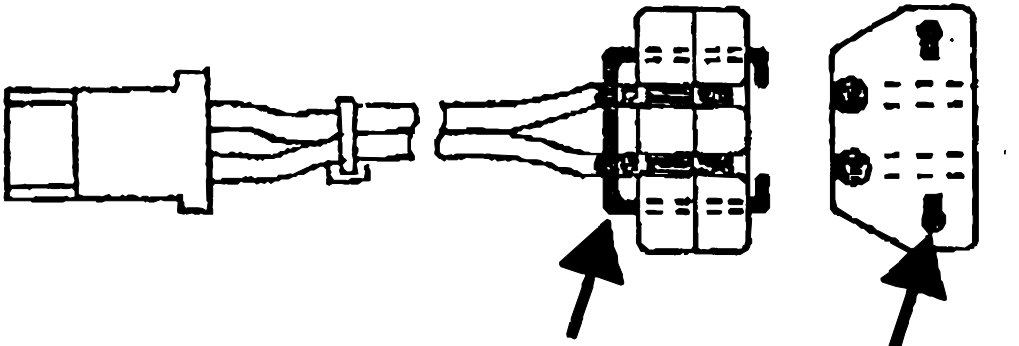
I. DISTRIBUTION:

Worldwide

II. 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. Instruments to be modified are: TDxFLx 30000-31743, 50000-50148, 60000-62024, K40000-K40164, and K90000-K90329.



➔ This TSB supersedes TSB 67-008A. 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 (08)

Repair Code (93)

C. TIME REQUIRED: 14 minutes

Modification: 6 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.

III. PROCEDURE:

1. Print system parameters 2, 3, 6, 7, 8, and 10.
2. Turn the TDxFLx® Analyzer off and unplug the instrument from the wall outlet.
3. Open the front access door and reagent display door.
4. Remove the splash guard.
5. Remove the lamp housing cover.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

6. Remove lamp from lamp housing and disconnect lamp from lamp socket assembly.
7. Disconnect lamp socket assembly from the power cable.
8. Connect lamp socket assembly with wire retainer to power cable.
9. Connect lamp to lamp socket assembly.
10. Install lamp into lamp housing.
11. Install lamp housing cover.
12. Install splash guard.
13. Close the reagent display door and the front access door.
14. Plug instrument into wall outlet and turn TDxFLx® Analyzer on.
15. Run the following tests:
    A. Lamp operation with Test 4.2 RUN PRIME.
    B. Photo Check
16. Update the modification control label by crossing off block -08.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
TDxFLx® PANASONIC® Thermal Printer

TSB#: **67-007**

ORIGINATOR:
Guy Cummings

PRODUCT:
TDxFLx® (67)

APPROVED: **Bob Schabel 10/24/92**

REF. ECN: **TDxFLx 6810**

IMPLEMENTATION:	TSB Part/Kit #: **3-45339-01**	Upgrade Time: **45 min.**
☐ **Immediate** ☐ **Next Service Call** ☒ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **08-JAN-93 or earlier**	Validation Time: **10 min.** Total Mod. Time: **55 min.**
Instruments Requiring Modification: **See TSB Section II: Purpose**		

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

I. DISTRIBUTION:
Worldwide

II. PURPOSE:
The Impact Printer Assembly and Printer Driver PCB used in the TDxFLx® analyzer have been replaced by a Thermal Printer Assembly and Thermal Printer Controller PCB Assembly. For reasons of supply and increased reliability, a Panasonic thermal printer is now being used in place of the DH Print impact printer. This TSB details the parts and installation information necessary to upgrade the TDxFLx analyzer with the Thermal Printer Assembly and Thermal Printer Controller PCB. Instruments requiring modification are S/N 60000 to 62020, S/N 50000 to 50136, S/N 30000 to 31718.

III. ADMINISTRATIVE NOTES:
N/A

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

IV. SPECIAL TOOLS:

N/A

V. PARTS:

TSB Printer Replacement Kit C/N (Catalog Number) 3-45339-01 contains:

Qty	C/N / P/N	Description
1	3-45340-01	Thermal Printer / Platform Assembly
1	3-45835-01	Printer Controller PCB Assembly
1	3-45335-01	Printer Cover Assembly
1	3-30923-01	Printer Spindle
4	14246-049	Thermal Paper
1	45341-101	TDxFLx Thermal Printer Operation Supplement with Customer Letter
1	N/A	TDxFLx TSB 7 - "Panasonic Thermal Printer"

A. U.S.: Each FSE will receive one Printer Replacement Kit to be included in the TDxFLx kit.

B. International: International service locations should order/forecast TSB parts via their regular spare part channels.

C. Service Kit Impact:

Description	C/N / P/N	Qty.
TDxFLx Kit Additions:		
Printer Replacement Kit	3-45339-01	1
Printer/Platform Assembly	3-45340-01	1
Thermal Printer Controller PCB	3-45835-01	1
Common X Kit Additions:		
Printer Paper, Thermal	14246-049	2
TDx Kit Quantity Change:		
Printer Tub Assembly	3-31014-01	1 (formerly 2)
IMx Kit Deletions:		
Printer Paper, Thermal	14246-049	3
ADx Kit Deletions:		
Printer Paper, Thermal	14246-049	3

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

The FSE should move the IMx® and ADx® thermal paper to the Common X kit. The current combined kit quantity of 6 will be reduced to 2 as shown above.

The Printer Replacement Kit should only be used to **UPGRADE** a TDxFLx. Use the individual Thermal Printer parts added to the TDxFLx kit to service a TDxFLx already upgraded with the Thermal Printer.

D. Replaced Parts: The Impact Printer Assembly C/N 3-31014-01 and the Impact Printer Driver PCB C/N 3-31023-01 should be tagged and coded as service code ,"03". Description of Failure should indicate failure mode or if replaced for printer door paper jams, state, "replaced per TSB 7." Return the tagged parts with your regular parts shipment. The old Printer Cover Assembly can be discarded.

E. Compatibility:
THE THERMAL PRINTER ASSEMBLY CAN ONLY BE USED WITH THE THERMAL PRINTER CONTROLLER PCB! IF THE THERMAL PRINTER IS USED WITH THE IMPACT DRIVER PCB OR THE IMPACT PRINTER IS USED WITH THE THERMAL CONTROLLER PCB FAILURE WILL RESULT!!!

VI. PROCEDURE:

A. Modification Steps:

1. Print out System 2,3,6,7,8,9, and 10 parameters.
2. Turn off the TDxFLx power switch and unplug the power cord from the wall.
3. Remove the cardcage backpanel and Impact Printer Driver PCB (#9), C/N 3-31023-01.
4. Check jumper JU1 on the Thermal Printer Controller PCB. Ensure the jumper is set for "FLX".
5. Insert THERMAL Printer Controller PCB (#9), C/N 3-45835-01 in card cage slot # 9.

NOTE: *ONE PCB EJECTOR TAB IS COLORED GREEN TO DIFFERENTIATE THE OLD FROM THE NEW PRINTER CONTROLLER PCB!*

6. Open the access door and remove the upper splashguard, 3 small phillips head screws.
7. Disconnect printer harness connectors P9 and P10 from the upper left corner of the mother board.
8. Remove the printer door by pulling the door from its hinge pins.
9. Remove the 4 phillips head screws which mount the Impact Printer Assembly in the printer compartment.
10. Remove the Impact Printer Assembly from the instrument by feeding the harness through the enclosure one connector at a time.
11. Mount the THERMAL Printer/Platform Assembly in the printer compartment with the 4 Phillips head screws. Feed connectors P9 and P10 through the enclosure one at a time.
12. Connect P9 and P10 to J9 and J10 on the mother board. Ensure the harness is connected to the Printer Interface PCB by reseating the plug P1 into connector J4 and closing lock tabs.
13. Insert paper spindle into the thermal paper roll; load, and feed paper into printer. Paper should feed from the bottom of the roll. See operation supplement for details.
14. Reconnect power cord, pull out on interlock switch, turn on power switch. Printer should give a single line feed.

B. CHECKOUT

1. Run Printer Test, TEST 5.4 RUN. Print image should be sharp and legible. Also print assay list, ASSAY PRINT. Here again, all characters should be sharp and legible. If print is too light, check the jumper on the Thermal Printer Controller PCB (#9). Ensure it is set for "FLX" operation. The jumper may not be making good contact with the pins. Spread the pins slightly then put the jumper on.

NOTE: *The last line of all printouts will remain under the printhead. Press PRINT one time to advance the paper just above the printhead. TDxFLx software version 2.0 will correct the linefeed*.

2. Check paper alignment through the printer door. Set paper to the left edge of the plastic paper guide on top of the printer assembly. Feed paper through the printer door opening. Ensure that the paper does not rub to the left or right of the opening. If necessary, loosen the four small phillips hinge screws, adjust the door, and resecure the hinge screws.
3. Once good print quality has been verified, continue with the Total Call and reinstall the cardcage backpanel and the upper splashguard.
4. Leave the customer supplement package, P/N 45341-101, and the remaining three rolls of paper on the instrument. Inform the customer that the thermal printer upgrade has been performed.

C. MODIFICATION CONTROL STICKER UPDATE:

1. Mark off TSB 7 complete.

SEE CUSTOMER LETTER AND THERMAL PRINTER SUPPLEMENT SENT OUT WITH ORIGINAL HARD COPY TSB.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
Power Supply Board

TSB#: **67-006**

ORIGINATOR:
Ron Elston

PRODUCT:
TDxFLx® (67)

APPROVED: **Bob Schabel 12/7/92**

REF. ECN: **TDx-6679**

IMPLEMENTATION:	TSB Part/Kit #: **3-31021-01**	Upgrade Time: **15 min.**
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **07-OCT-92**	Validation Time: **45 min.** Total Mod. Time: **1 Hr.**
Instruments Requiring Modification: **see attached**		

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

I. DISTRIBUTION:

Worldwide

II. GENERAL:

A. Purpose:

Check IC 1A (see attached diagrams) on the TDxFLx #10 board to determine if the IC is manufactured by MOTOROLA®.

The X SYSTEMS™ Failure Analysis Lab has determined that during various power-up sequences on the TDxFLx® that the MOTOROLA IC will fail and cause blank display.

B. Time Required:

Modification: 15 minutes.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Validation: 45 minutes

C. Tools Required:

Standard FSE tool kit.

D. Parts:

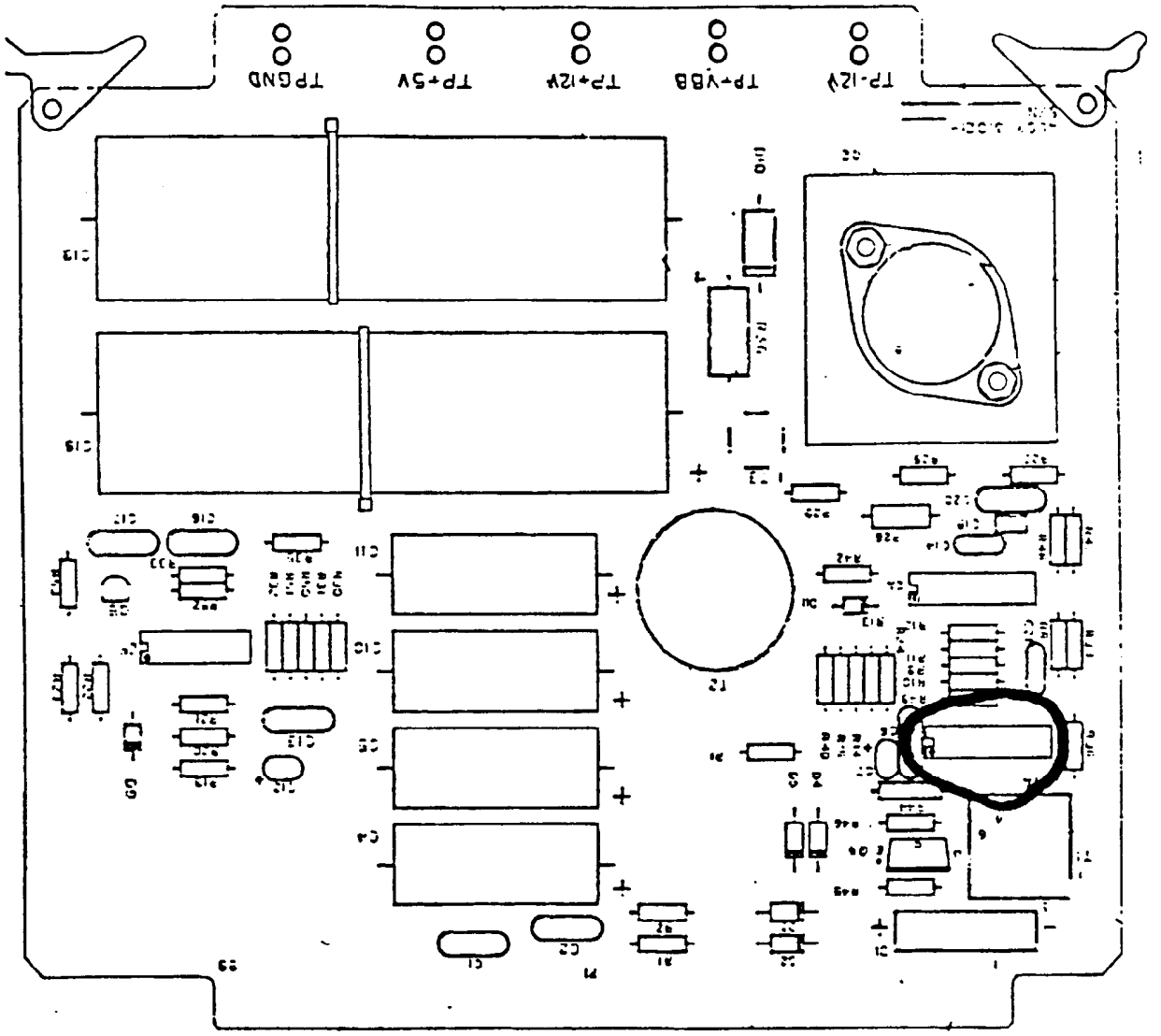
Domestic: 3-31021-01 TDxFLx #10 board. Quantity (1). Tag the board and return to Dallas. FSE is to check all TDxFLx #10 boards in kit. If kit contains a TDxFLx #10 board with a Motorola IC. Open a 0DEF call and record usage of the board with a trouble code of Z7.

International: The International Service Manager should send forecast requirements to their responsible logistics organizations. Return defective TDxFLx #10 boards for 100% credit.

III. PROCEDURE:

1. Print system parameters 2, 3, 6, 7, and 8, and 10.
2. Turn the TDxFLx) Analyzer off and unplug the instrument from the wall outlet.
3. Remove the PCB access panel to gain access to the PC boards.
4. Remove board #10.
5. Refer to diagram #1 to locate IC 1A.
6. Check to determine if IC 1A (see attached diagrams) is manufactured by MOTOROLA). If it is not MOTOROLA) IC, stop here and re-install the board, and proceed to step #8.
7. If the board is determined to have a MOTOROLA) IC. Replace the board.
8. Install board #10. Replace the PCB access panel and run the following tests.
   a. Controls for each reagent system.
9. Update the Modification Control Label by crossing off block #06.
10. Complete the Total Service Call.

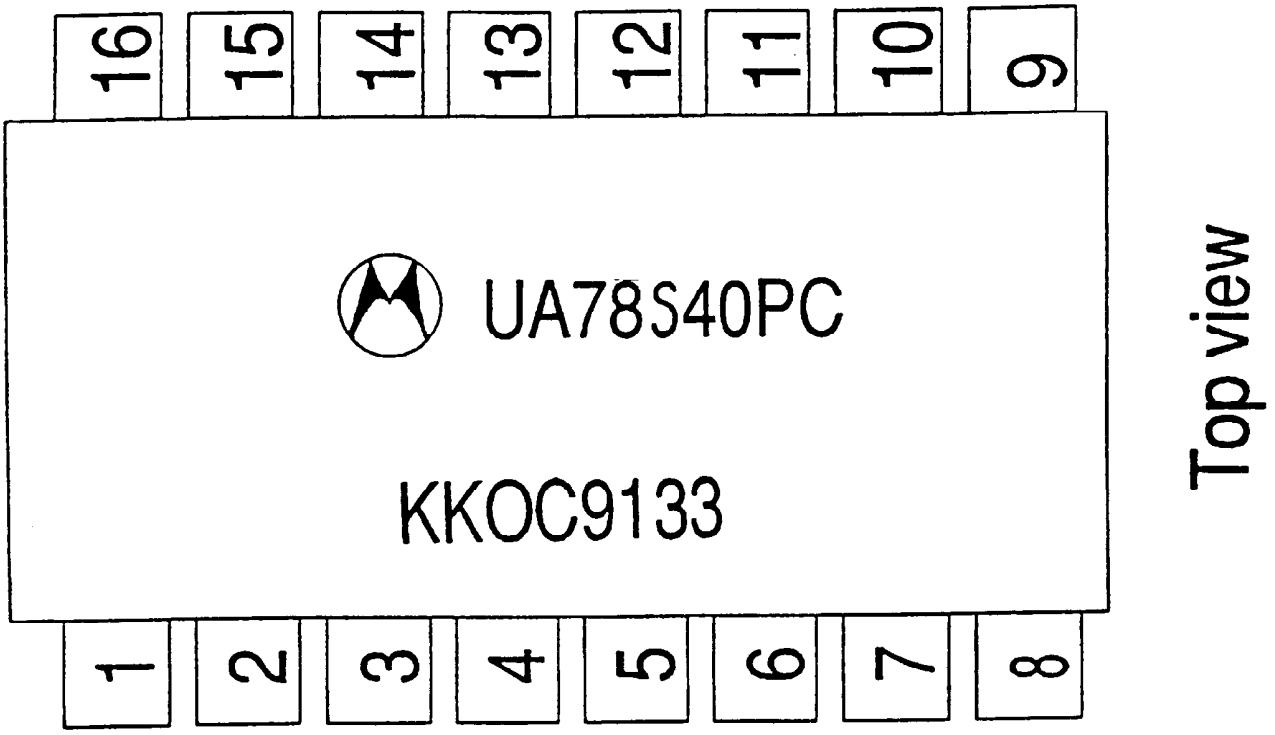
Diagram #1



TDxFLx® #10
3-31021-01

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Diagram #2



Motorola IC

NOTE: KK0C9133 IS A MANUFACTURING DATE CODE AND COULD BE DIFFERENT FOR EACH IC.

TDxFLx® INSTRUMENTS SHIPPED NOV 1991 TO JUN 24, 1992 REQUIRE MODIFICATION. THE SERIAL NUMBERS ARE:

30029-96	30778	30819-96	30860	30901
30075-96	30779	30820	30861	30902
30078-96	30780	30821	30862	30903
30106-96	30781	30822	30863	30904
30126-96	30782	30823	30864-96	30905
30141-96	30783	30824	30865	30906
30165-96	30784	30825	30866	30907
30198-96	30785	30826	30867	30908
30216-96	30786	30827	30868	30909
30219-96	30787	30828-96	30869	30910
30225-96	30788	30829	30870	30911
30312-96	30789	30830	30871	30912
30349-96	30790	30831	30872	30913
30385-96	30791	30832	30873	30914
30405-96	30792	30833	30874	30915
30417-96	30793	30834	30875	30916
30429-96	30794	30835	30876	30917
30441-96	30795	30836	30877	30918
30457-96	30796	30837	30878	30919
30569-96	30797	30838	30879	30920
30593-96	30798	30839	30880	30921
30650-96	30799	30840	30881	30922
30669-96	30800	30841	30882	30923
30692-96	30801	30842	30883	30924
30696-96	30802	30843	30884	30925
30716	30803	30844	30885	30926
30753	30804	30845	30886	30927
30758	30805	30846	30887	30928
30759	30806	30847	30888	30929
30763	30807	30848	30889	30930
30764	30808	30849	30890	30931
30765	30809	30850	30891	30932
30766	30810	30851	30892	30933
30767	30811	30852	30893	30934
30770	30812	30853	30894	30935
30771	30813	30854	30895	30936
30772	30814	30855	30896	30937
30773	30815	30856	30897	30938

30774	30816	30857	30898	30939
30776	30817	30858	30899	30940
30777	30818	30859	30900	30941

TDxFLx® INSTRUMENTS SHIPPED NOV 1991 TO JUN 24, 1992 (cont'd)

30942	30985	31028	31072	31117
30943	30986	31029	31073	31119
30944	30987	31030	31074	31120
30945	30988	31031	31075	31121
30946	30989	31032	31076	31122
30947	30990	31033-96	31077	31123
30948	30991	31034	31078	31125
30949	30992	31035	31080	31126
30950	30993	31036	31081	31127
30951	30994	31037	31082	31128
30952	30995	31038	31083	31129
30953	30996	31039	31084	31130
30954	30997	31040	31085	31131
30955	30998	31042	31086	31132
30956	30999	31044	31087	31133
30957	31000	31045	31088	31134
30958	31001	31046	31089	31135
30959	31002	31047	31090	31136
30960	31003	31048	31091	31137
30961	31004	31049	31092-96	31138
30962	31005	31049	31093	31139
30963	31006	31050	31094	31140
30964	31007	31051	31095	31141
30965	31008	31052	31096	31142
30966	31009	31053	31097	31143
30967	31010	31054	31098	31144
30968	31011	31055	31099	31145
30969	31012	31056	31100	31146
30970	31013	31057	31101	31147
30971	31014	31058	31102	31148
30972	31015	31059	31103	31149
30973	31016	31060	31104	31150
30974	31017	31061	31105	31151
30975	31018	31062	31106	31152
30976	31019	31063	31107	31153
30977	31020	31064	31108	31154
30978	31021	31065	31109	31155
30979	31022	31066	31110	31156
30980	31023	31067	31111	31157

30981	31024	31068	31112	31158
30982	31025	31069	31114	31159
30983	31026	31070	31115	31160
30984	31027	31071	31116	31161

TDxFLx® INSTRUMENTS SHIPPED NOV 1991 TO JUN 24, 1992 (cont'd)

31162	31205	31248	31291	31334
31163	31206	31249	31292	31335
31164	31207	31250	31293	31336
31165	31208	31251	31294	31337
31166	31209	31252	31295	31338
31167	31210	31253	31296	31339
31168	31211	31254	31297	31340
31169	31212	31255	31298	31341
31170	31213	31256	31299	31342
31171	31214	31257	31300	31343
31172	31215	31258	31301	31344
31173	31216	31259	31302	31345
31174	31217	31260	31303	31346
31175	31218	31261	31304	31347
31176	31219	31262	31305	31348
31177	31220	31263	31306	31349
31178	31221	31264	31307	31350
31179	31222	31265	31308	31351
31180	31223	31266	31309	31352
31181	31224	31267	31310	31353
31182	31225	31268	31311	31354
31183	31226	31269	31312	31355
31184-96	31227	31270	31313	31356
31185	31228	31271	31314	31357
31186	31229	31272	31315	31358
31187	31230	31273	31316	31359
31188	31231	31274	31317	31360
31189	31232	31275	31318	31361
31190	31233	31276	31319	31362
31191	31234	31277	31320	31363
31192	31235	31278	31321	31364
31193	31236	31279	31322	31365
31194	31237	31280	31323	31366
31195	31238	31281	31324	31367
31196	31239	31282	31325	31368
31197	31240	31283	31326	31369
31198	31241	31284	31327	31370
31199-96	31242	31285	31328	31371
31200	31243	31286	31329	31372

31201	31244	31287	31330	31373
31202	31245	31288	31331	31374
31203	31246	31289	31332	31375
31204	31247	31290	31333	31376

TDxFLx® INSTRUMENTS SHIPPED NOV 1991 TO JUN 24, 1992 (cont'd)

31377	31421	31470	31512	60976
31378	31422	31471	31513	60977
31379	31423	31472	31514	60978
31380	31424	31473	31515	60979
31381	31425	31474	31516	60980
31382	31426	31475	31517	60981
31383	31427	31476	31518	60982
31384	31428	31477	31519	60983
31385	31429	31478	31520	60984
31386	31430	31479	31521	60985
31387	31431	31480	31522	60986
31388	31432	31481	31523	60987
31389	31434	31481	31524	60988
31390	31435	31482	31525	60989
31391	31436	31483	31527	60990
31392	31437	31484	31529	60991
31393	31438	31485	31530	60992
31394	31439	31486	31532	60993
31395	31441	31487	31534	60994
31396	31443	31488	31536	60995
31397	31444	31489	31540	60996
31398	31445	31490	31541	60997
31399	31446	31491	31542	60998
31400	31447	31492	31543	60999
31401	31448	31493	31544	61000
31402	31449	31494	31549	61001
31403	31450	31495	60028-96	61002
31404	31451	31496	60479-96	61003
31405	31452	31497	60535-96	61004
31406	31453	31498	60552-96	61005
31407	31454	31499	60584-96	61006
31408	31457	31500	60591-96	61007
31409	31458-96	31501	60640-96	61008
31410	31459	31502	60964	61009
31411	31460	31503	60967	61010
31412	31461	31504	60968	61011
31413	31462	31505	60969	61012
31414	31464	31506	60970	61013
31415	31465	31507	60971	61014

31416	31466	31508	60972	61015
31417	31467	31509	60973	61016
31418	31468	31510	60974	61017
31420	31469	31511	60975	61018

TDxFLx® INSTRUMENTS SHIPPED NOV 1991 TO JUN 24, 1992 (cont'd)

61019	61062	61105	61148	61191
61020	61063	61106	61149	61192
61021	61064	61107	61150	61193
61022	61065	61108	61151	61194
61023	61066	61109	61152	61195
61024	61067	61110	61153	61196
61025	61068	61111	61154	61197
61026	61069	61112	61155	61198
61027	61070	61113	61156	61199
61028	61071	61114	61157	61200
61029	61072	61115	61158	61201
61030	61073	61116	61159	61202
61031	61074	61117	61160	61203
61032	61075	61118	61161	61204
61033	61076	61119	61162	61205
61034	61077	61120	61163	61206
61035	61078	61121	61164	61207
61036	61079	61122	61165	61208
61037	61080	61123	61166	61209
61038	61081	61124	61167	61210
61039	61082	61125	61168	61211
61040	61083	61126	61168	61212
61041	61084	61127	61169	61213
61042	61085	61128	61170	61214
61043	61086	61129	61171	61215
61044	61087	61130	61172	61216
61045	61088	61131	61173	61217
61046	61089	61132	61174	61218
61047	61090	61133	61175	61219
61048	61091	61134	61176	61220
61049	61092	61135	61177	61221
61050	61093	61136	61178	61222
61051	61094	61137	61179	61223
61052	61095	61138	61180	61224
61053	61096	61139	61181	61225
61054	61097	61140	61182	61226
61055	61098	61141	61183	61227
61056	61099	61142	61184	61229
61057	61100	61143	61185	

61058	61101	61144	61187
61059	61102	61145	61188
61060	61103	61146	61189
61061	61104	61147	61190

NOTE: The following instruments are also to be checked for possible defective TDxFLx #10 boards: K40043-K40093 and K90120-K90273.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
VDE INSTRUMENTATION

TSB#: **67-005**

ORIGINATOR:
Buddy Bokony

PRODUCT:
TDxFLx® (67)

APPROVED: **Bob Schabel August 17, 1993**

REF. ECN: **TDx-6599**

IMPLEMENTATION:	TSB Part/Kit #: **None**	Upgrade Time: **None**
☐ **Immediate** ☐ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **N/A**	Validation Time: **None** Total Mod. Time: **None**
Instruments Requiring Modification: **N/A**		

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

INFORMATIONAL TSB ONLY - THIS TSB IS NOT TO BE USED TO MODIFY INSTRUMENTS.

I. DISTRIBUTION:

Worldwide

II. GENERAL:

A. Purpose:

This TSB is to inform the Worldwide Service Organizations of an additional TDxFLx® Configuration. This configuration allows ABBOTT LABORATORIES to continue to market the TDxFLx Analyzer in the European Market where VDE certification for new instruments is now required.

B. Administrative Notes:

1. COUNTRIES REQUIRED TO COMPLY WITH VDE GUIDELINES:

Countries complying with VDE guidelines **MUST** service VDE approved new build and VDE approved refurbished

instruments with VDE approved parts.

NOTE: If a VDE certified instrument is serviced with NON-VDE approved parts, the "GS (VDE)" certification label MUST be removed from the back of the instrument!!!

NON-VDE instruments currently in countries complying with VDE guidelines may be maintained with either VDE and/or NON-VDE approved parts.

2. COUNTRIES NOT REQUIRED TO COMPLY WITH VDE GUIDELINES:

Countries NOT complying with VDE guidelines may maintain VDE and NON-VDE instruments with either VDE and/or NON-VDE approved parts.

NOTE: If a VDE certified instrument is serviced with NON-VDE approved parts, the "GS (VDE)" certification label MUST be removed from the back of the instrument!!!

C. Time Required:

None

D. Tools Required:

None

E. Parts:

None

III. INSTRUMENT IDENTIFICATION:

Identification of the VDE certified instruments will be through the use of serial numbers. This allows both manufacturing location and initial instrument configuration to be identified from the serial number.

Instruments that are at the VDE configuration will have #5 marked through on the Modification Control Sticker.

VDE CONFIGURATION		**(LOCATION MANUFACTURED)**
S/N 62000 - HIGHER	VDE configured NEW TDxFLx® Instrument	(DALLAS)
S/N 50000 - 59999	NON VDE TDxFLx Instrument reconfigured to VDE	(DALLAS)
S/N K90377 - HIGHER	VDE configured NEW TDxFLx Instrument	(KOREA)

NON - VDE CONFIGURATION		**(LOCATION MANUFACTURED)**
S/N 30000 - 39999	TDx® Instrument reconfigured to a NON-VDE TDxFLx Instrument	(DALLAS)
S/N 60000 - 61999	NEW NON-VDE configured TDxFLx Instrument	(DALLAS)
S/N K40000 - K49999	TDx Instrument reconfigured to a NON-VDE TDxFLx Instrument	(KOREA)
S/N K90000 - K90376	NEW NON-VDE configured TDxFLx Instrument	(KOREA)

REFURBISHED INSTRUMENTS **(DALLAS)**

-96 will be added to all instrument configurations being returned to DALLAS for refurbishment.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

KOREA does not refurbish instruments.

IV. COMPONENT COMPATIBILITIES:

Three VDE approved components are NOT directly compatible with NON-VDE instruments. The three components are the; VDE POWER ENTRY ASSEMBLY (3-45302-01), VDE CARD CAGE ASSEMBLY (3-45003-02), and the MOTHERBOARD PCB (45240-101). The transformer used in the VDE POWER ENTRY ASSEMBLY is an isolation transformer and uses a four (4) pin AMP connection to the MOTHERBOARD PCB.

VDE PART NUMBER/ DESCRIPTION	TO	NON-VDE PART NUMBER/ DESCRIPTION	COMPATIBLE? Y/N
45240-101 MOTHERBOARD PCB (VDE)	to	3-31002-01 NON-VDE POWER ENTRY ASSY	NO
3-45003-02 CARD CAGE ASSY (VDE)	to	3-31002-01 NON-VDE POWER ENTRY ASSY	NO
3-45302-01 POWER ENTRY ASSY (VDE)	to	45290-102 NON-VDE MOTHERBOARD ASSY	YES with ADAPTER CABLE 45330-101
3-45302-01 POWER ENTRY ASSY (VDE)	to	3-45003-01 NON-VDE CARD CAGE ASSY	YES with ADAPTER CABLE 45330-101

NOTE: NEVER ATTEMPT TO USE THE ADAPTER CABLE TO CONNECT THE NON-VDE POWER ENTRY ASSEMBLY (3-31002-01) TO THE VDE MOTHERBOARD or VDE CARD CAGE!

V. PARTS (TABLE):

The TABLE below provides the Part Numbers and Descriptions affected by VDE compliance. Drawings start on page 6.

TABLE

VDE PART/ CATALOG NUMBER	PART DESCRIPTION	NON-VDE PART/ CATALOG NUMBER	RETURN? Y/N
3-31020-02	POWER ENTRY PCB #12	3-31020-01	Y
3-45302-01	POWER ENTRY ASSEMBLY	3-31002-01	Y

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

3-45003-02	CARD CAGE ASSEMBLY	3-45003-01	Y
3-31009-01	PMT HIGH VOLTAGE SUPPLY	3-31009-01	Y
3-31040-01	AIR HEATER/SENSE CABLE ASSY	3-31040-01	NO
3-41606-01	LIQUID HEATER/BRACKET ASSY	3-41606-01	NO
45240-101	MOTHERBOARD PCB (only)	45290-102	Y
45171-104	BASEPLATE, MODIFIED	45171-103	NO
45257-102	BARCODE WAND HARNESS ASSY	45257-101	NO
45303-101	COVER, LIQUID HEATER	NEW PART	NO
45319-101	SPILL GUARD	NEW PART	NO
45320-101	SPILL GUARD SEAL	NEW PART	NO
45327-101	GROUND STRAP #3	NEW PART	NO
45330-101	ADAPTER CABLE, 31002 to 45302	NEW PART	NO
14108-020	FERRITE BEAD, TOROIDAL	NEW PART	NO
14108-047	FERRITE, ROUND CABLE	NEW PART	NO
14108-046	FERRITE, FLAT CABLE	NEW PART	NO

NOTE: Other parts used to maintain the TDxFLx® System are not deemed to concern VDE.

VI. PARTS (DESCRIPTION): Differences between VDE and NON-VDE components.
Drawings start on page 6.

Power Entry PCB #12 VDE (3-31020-02) NON-VDE (3-31020-01)
Components and board operations are the same for both PCB versions. The VDE approved PCB has different spacing for the conductor runs on the PCB.
NOTE: VDE approved Power Entry PCB #12 will have a sticker with "VDE" on the board and the board container.
Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Power Entry Assembly **VDE (3-45302-02)** **NON-VDE (3-45302-01)**
New power switch is not located directly above the power cord and mounted in a horizontal orientation. A different transformer internally with P16 now being a 4 pin AMP connector. The filter capacitor located inside the assembly will now have a protective shield over it.

Card Cage Assembly **VDE (3-45003-02)** **NON-VDE (3-45003-01)**
A grommet edging protects the AC fan cable. The card cage fan cable is double insulated. The motherboard's conductor runs are spaced differently. P16 on the motherboard is a 4 pin AMP connector. **The VDE card cage assembly is NOT compatible with the NON-VDE Power entry assembly.**

PMT High Voltage Supply **VDE (3-31009-01)** **NON-VDE (3-31009-01)**
The VDE approved supply has a "CAUTION" label on it.

Air Heater/Sense Cable Assembly **VDE (3-31040-01)** **NON-VDE (3-31040-01)**
The AC power cord for the heater is double insulated.

Liquid Heater/Bracket Assembly **VDE (3-41606-01)** **NON-VDE (3-41606-01)**
The AC power cord for the heater is double insulated.

Motherboard PCB **VDE (45240-101)** **NON-VDE (45290-102)**
P16 on the motherboard is a 4 pin AMP connector. **This VDE Motherboard PCB is NOT compatible with the NON-VDE Power entry assembly.** P17, SEL1, and SEL2 are removed from the VDE Motherboard PCB. The motherboard's conductor runs are spaced differently.

Baseplate, Modified **VDE (45171-104)** **NON-VDE (45171-103)**
VDE baseplate has three holes drilled through it under the openings on the Air Duct cover. Two holes are for draining fluid that spills through the air duct openings. The third is for the screw that attaches the Spill Guard to the baseplate.

Barcode Wand Harness **VDE (45257-102)** **NON-VDE (45257-101)**
This is a shielded cable harness from the Motherboard PCB to the instrument back panel. The NON-VDE cable was not shielded.

Cover, Liquid Heater **New Part** **VDE (45303-101)**
This screw attached cover prevents liquid from leaking behind the Liquid Heater Assembly.

Spill Guard **New Part** **VDE (45319-101)**
Spill Guard Seal **New Part** **VDE (45320-101)**
The adhesive backed seal is attached to the guard. Together they are mounted to the VDE baseplate and prevents fluid that is spilled through the air duct openings from reaching the Air Heater Assembly.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

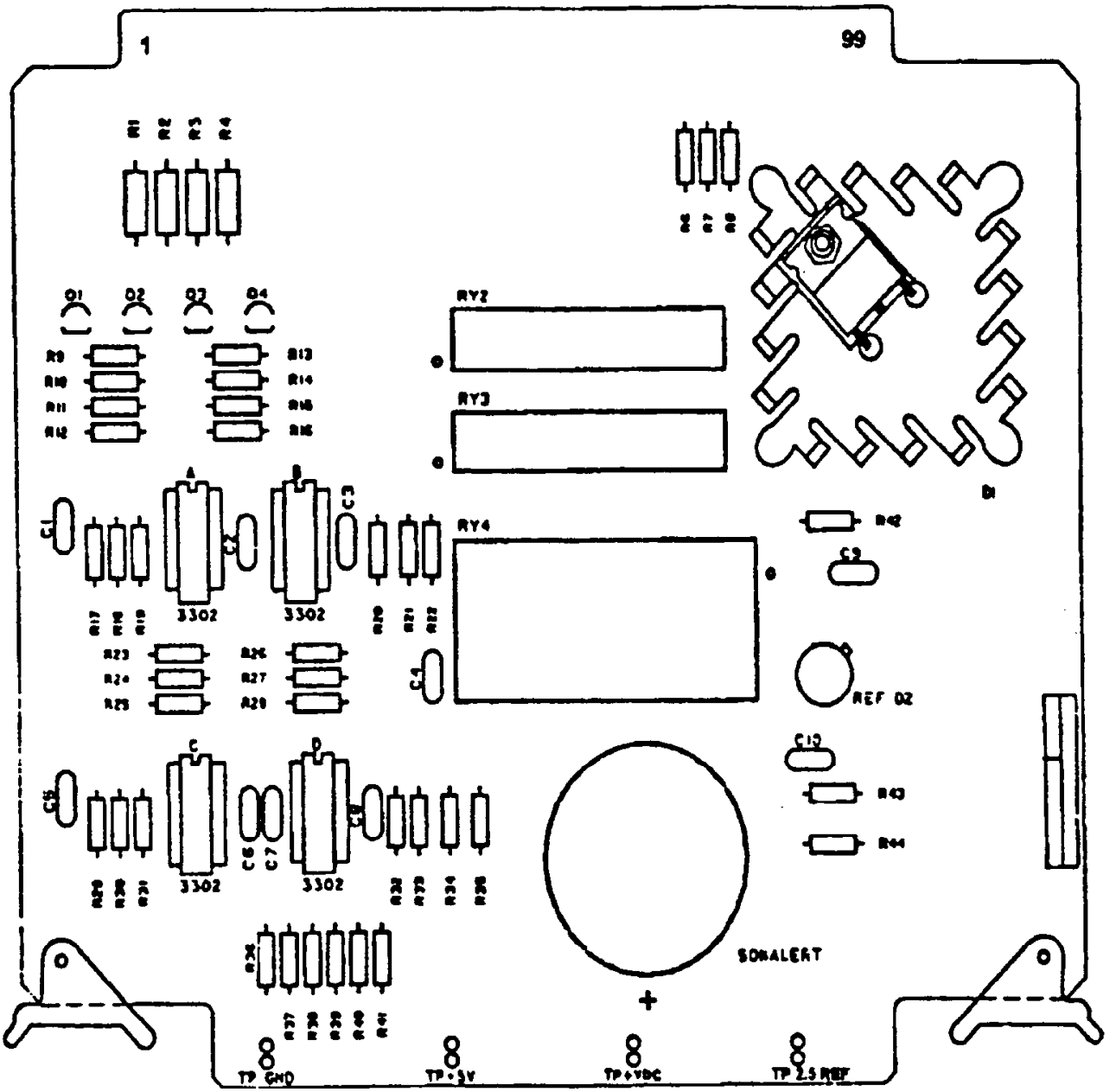
Ground Strap #3 **New Part** **(45327-101)**
This grounds the Pump Assembly and the Buffer Platform to the Power Entry Assembly.

Adapter Cable, 31002 to 45302 **New Part** **(45330-101)**
This cable allows the use of the VDE Power Entry Assembly (3-45302-01) with the NON-VDE Card Cage Assembly (3-45003-01).
NOTE: Do not use this cable between the NON-VDE Power Entry Assembly and a VDE Card Cage Assembly.

Toroidal Ferrite Bead **New Part** **(14108-020)**
This suppresses the RFI on the cable. This ferrite bead is found on the Barcode Wand Harness.

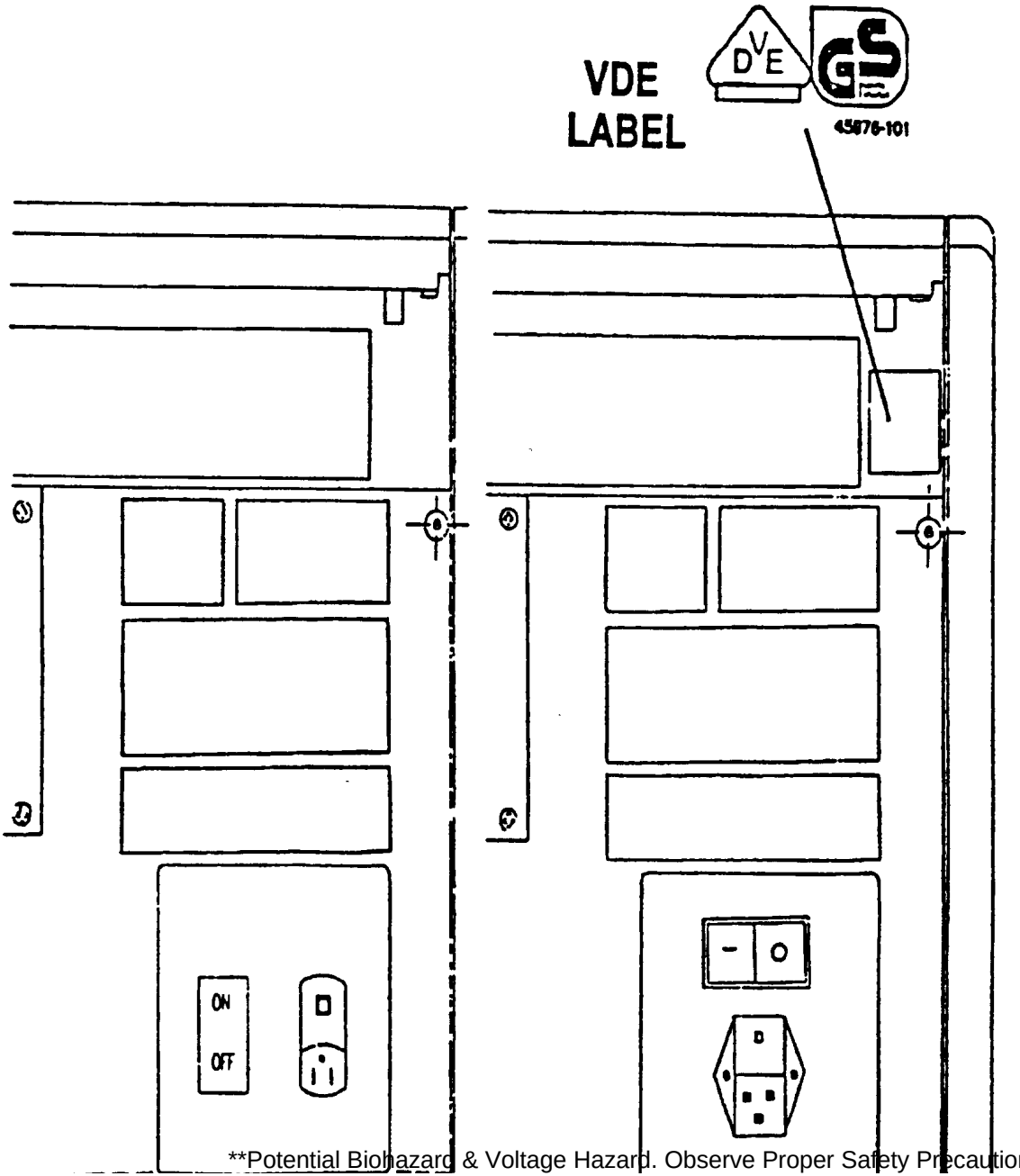
Round Cable Ferrite **New Part** **(14108-047)**
This suppresses the RFI on the cable. This ferrite is found on the ground straps attached to the Power Entry Assembly.

Flat Cable Ferrite **New Part** **(14108-046)**
This suppresses the RFI on the cable. This ferrite is found on the cable for the Reagent Display panel.



Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

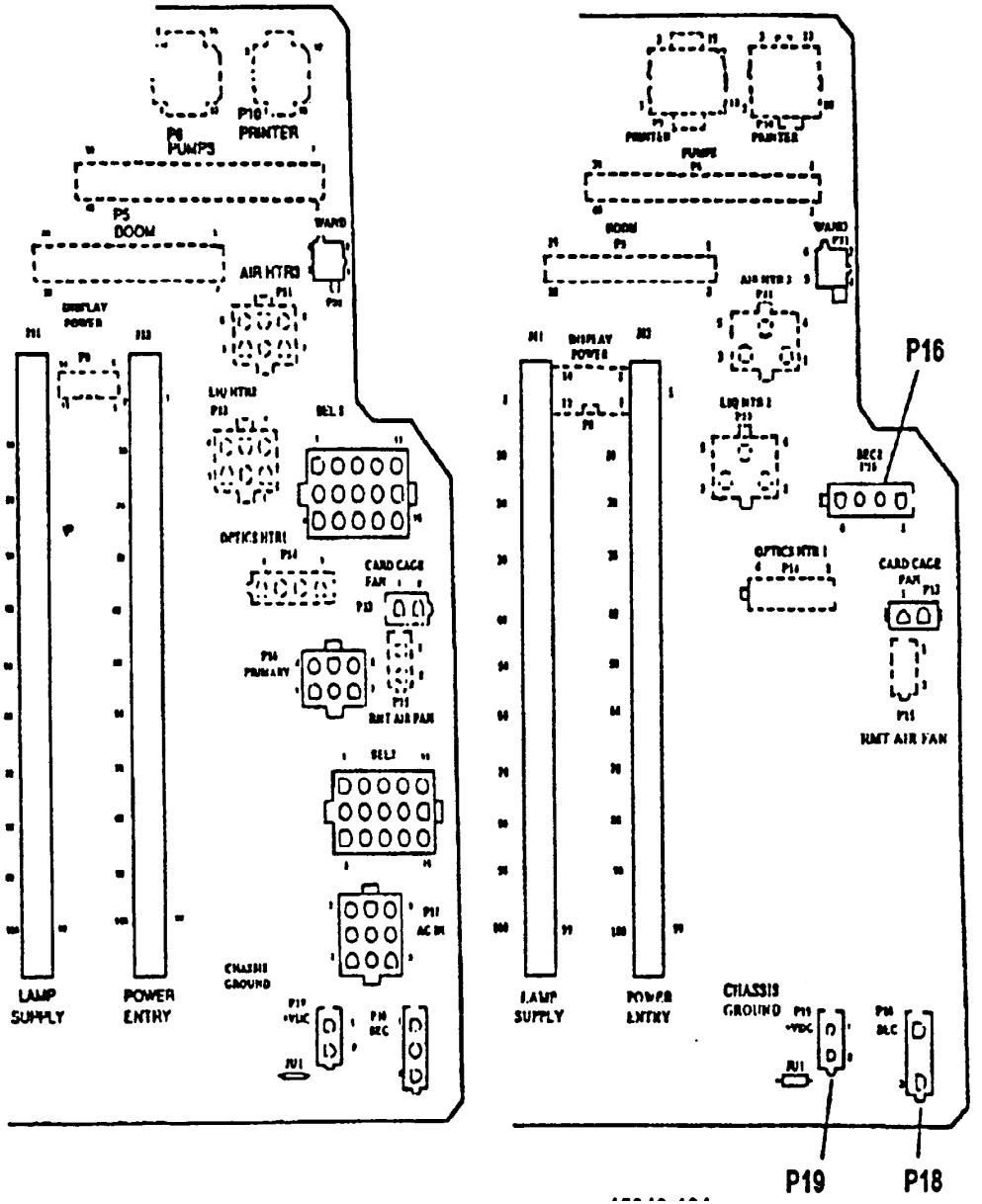
3-31020-02
VDE
POWER ENTRY PCB #12



Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

3-31002-01
NON-VDE
POWER ENTRY
ASSEMBLY

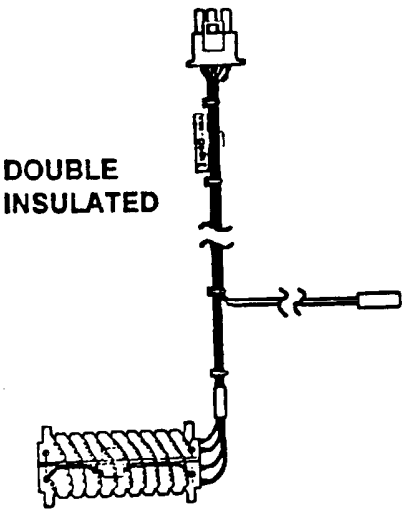
3-45302-01
VDE
POWER ENTRY
ASSEMBLY



Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

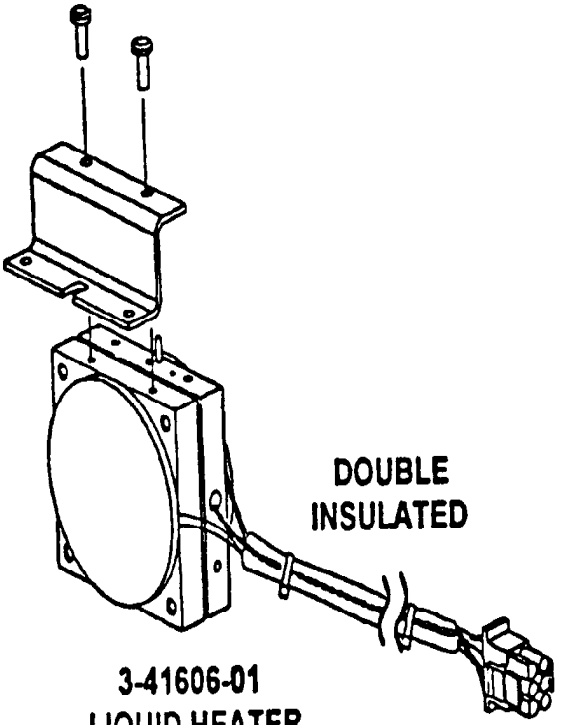
45290-102
NON-VDE
MOTHERBOARD

45240-101
VDE
MOTHERBOARD



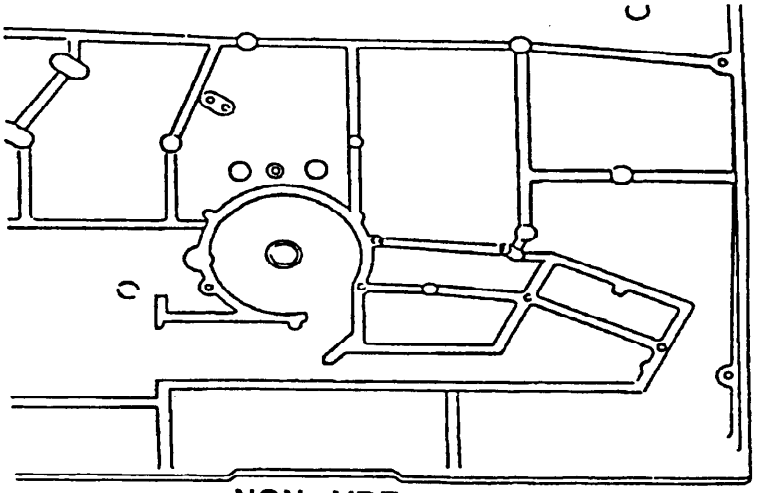
3-31040-01
AIR HEATER /
SENSE CABLE

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

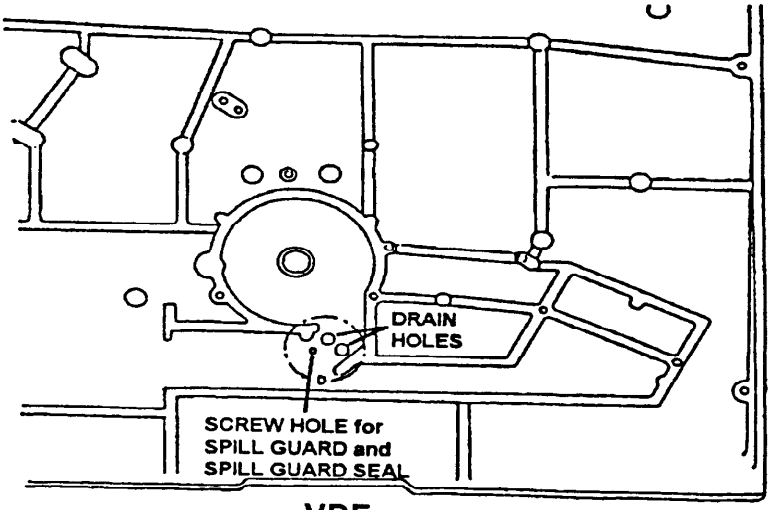


3-41606-01
LIQUID HEATER
and
BRACKET

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

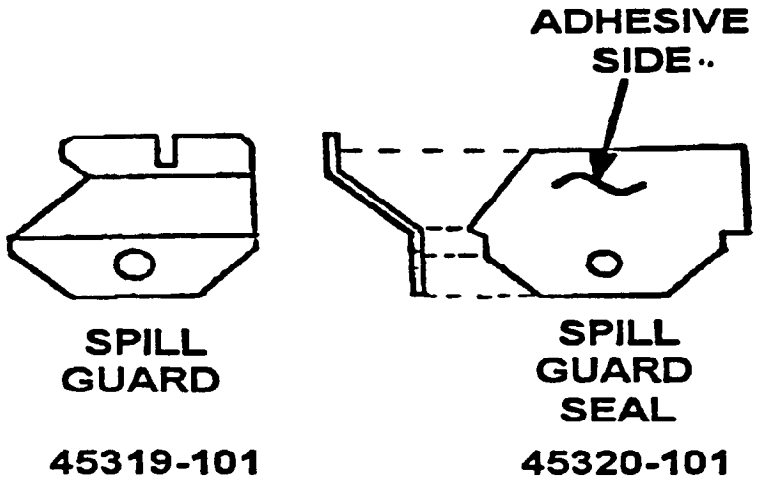


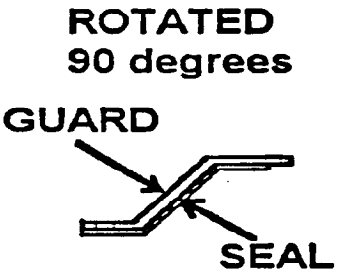
NON - VDE
BASEPLATE
45171-103

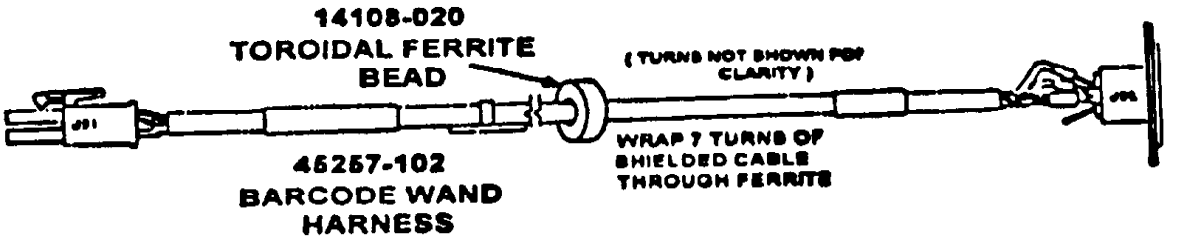


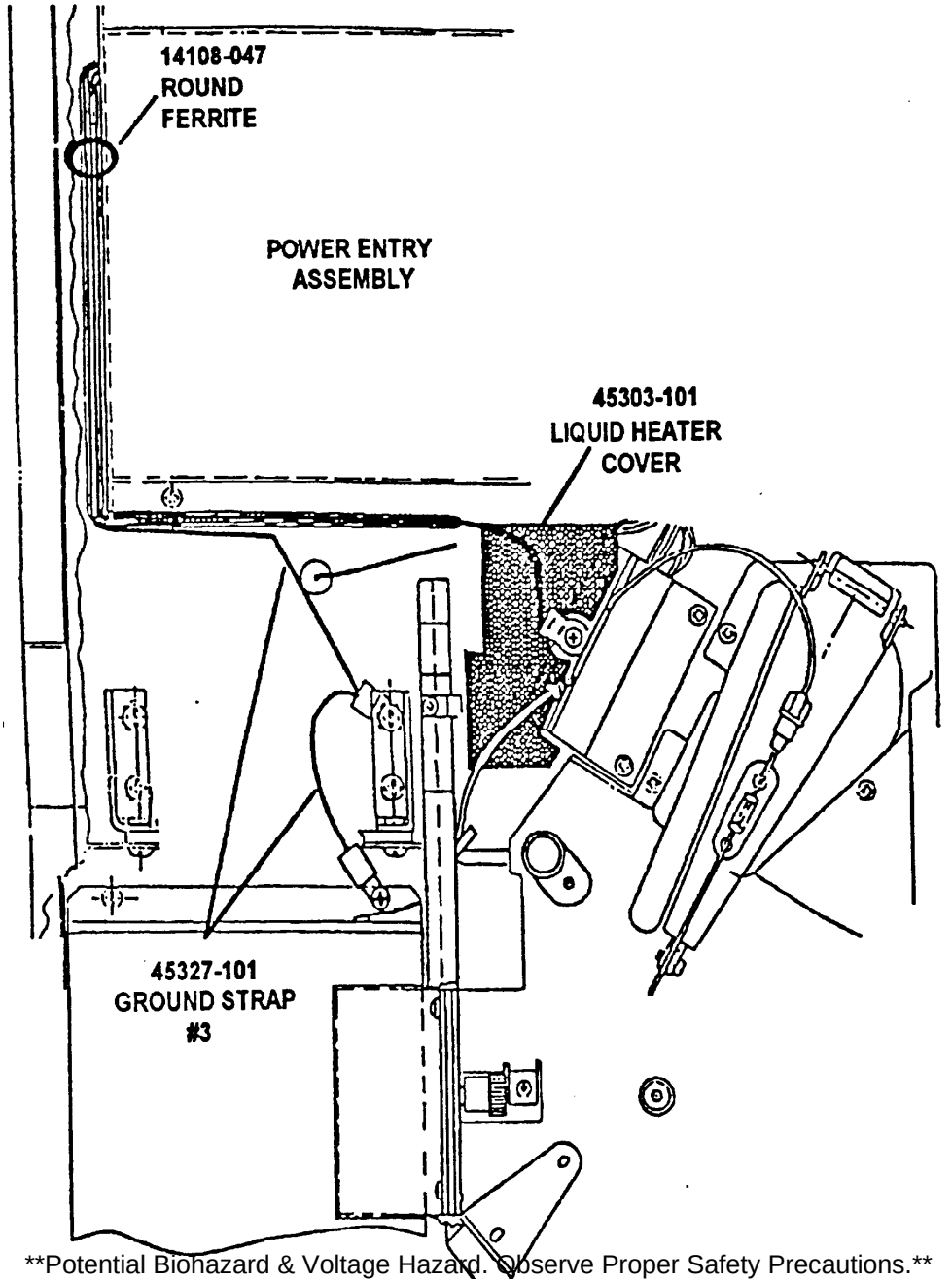
VDE
BASEPLATE
45171-104

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.


ADHESIVE SIDE
SPILL GUARD
45319-101
SPILL GUARD SEAL
45320-101


ROTATED
90 degrees
GUARD
SEAL


14108-020
TOROIDAL FERRITE
BEAD
(TURNS NOT SHOWN FOR
CLARITY)
WRAP 7 TURNS OF
SHIELDED CABLE
THROUGH FERRITE
45257-102
BARCODE WAND
HARNESS



Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
LAMP HOUSING LENS GASKET

TSB#: **67-004**

ORIGINATOR:
Bambi White

PRODUCT:
TDxFLx® (67)

APPROVED:

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: **07-15-92**	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 67-004 completed and the call coded as:

Service Code (03) Modification
Trouble Code (04) TSB 004

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

2. The TDxFLx 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:

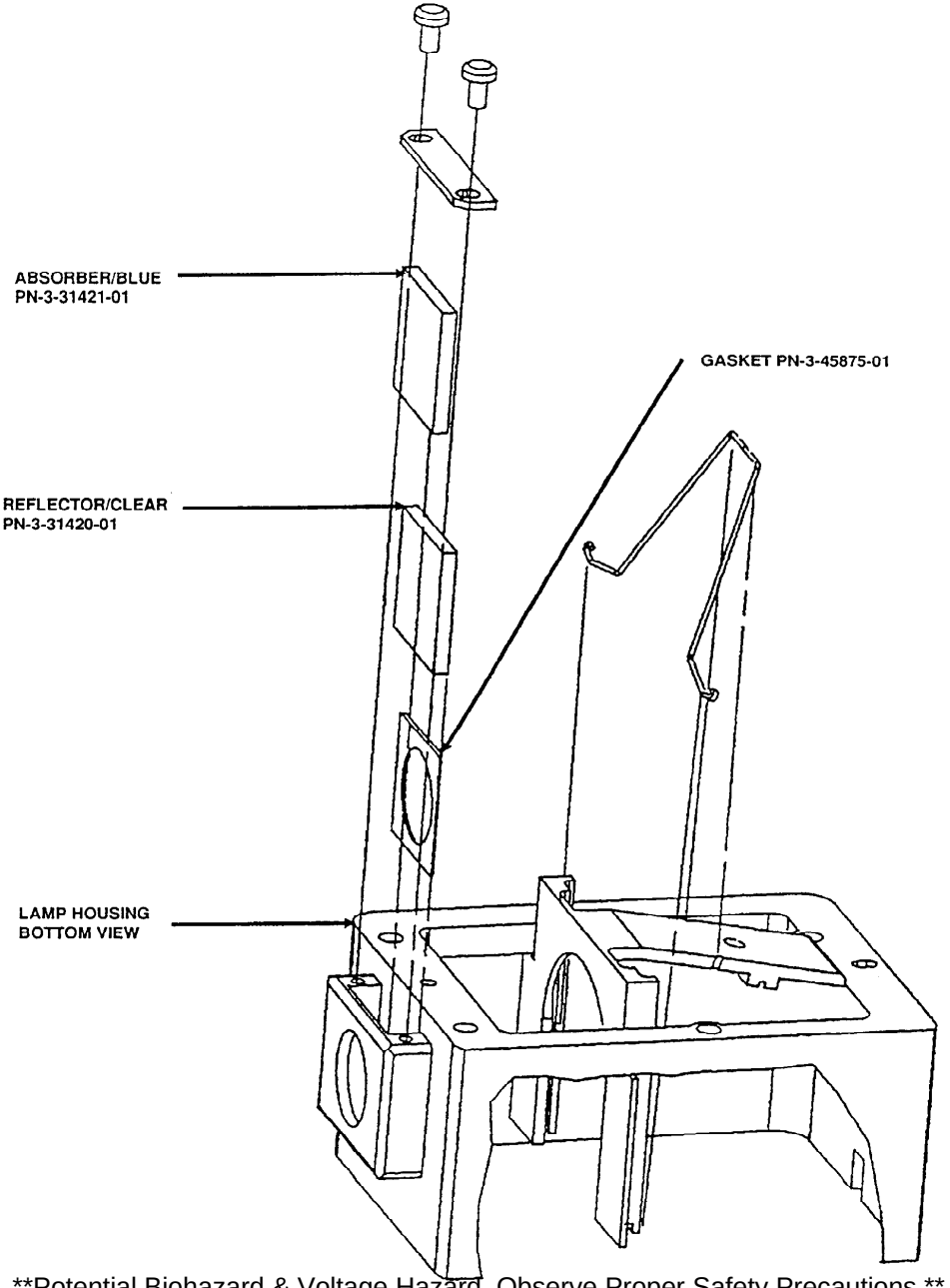
The International Service Managers will send forecast requirements for parts to Field Service Logistics in Dallas.

VII. MODIFICATION STEPS:

1. Turn the TDxFLx **OFF**.
2. Open the front and right side doors of FLx, and remove the splash guard.
3. Remove the lamp cover, then remove the lamp and socket assembly.
4. Remove the lamp housing by removing the four screws connecting it to the instrument base.
5. Remove the lamp filter retainer, held by two screws on the bottom of the lamp housing, and remove the two heat glasses.
6. Clean the heat glasses with lens paper and replace them in the 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).
7. Replace the lamp filter retainer, and reinstall the lamp housing, lamp and socket assembly, and splash guard.
8. Close the front and right doors.
9. Remove the rear panel to gain access to BD11 (Lamp Supply BD). Pull out the safety interlock, and turn the TDxFLx **ON**.
10. Press **"TEST 4.1 RUN"**, then **"PRIME"**. The lamp should turn **ON**. check the lamp supply voltage by connecting your meter to TP +7.5 and TP GND. The lamp voltage should be 6.5 to 8.0 Volts D.C.
11. Turn the TDxFLx **OFF** and replace the rear access cover.
12. Turn the power **ON** to the analyzer.
13. Perform Photo Check, then, if necessary, perform Photo Calibration.
14. Run controls on two assays.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

15. Complete Total Service Call.
16. Mark off TSB 04 on Mod Control Sticker.



Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
SOFTWARE UPGRADE FOR ALL TDxFLx INSTRUMENTS TO REV 1.2

TSB#: **67-003**

ORIGINATOR:
Jim Rydberg

PRODUCT:
TDxFLx® (67)

APPROVED: **Bob Schabel 12/2/91**

REF. ECN: **6321**

IMPLEMENTATION:	TSB Part/Kit #: **04A24-07**	Upgrade Time: **10 min.**
☒ **Immediate** ☐ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **11/18/91**	Validation Time: **1 Hr., 50 Min.** Total Mod. Time:
Instruments Requiring Modification: **See TSB**		

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

I. DISTRIBUTION:

Domestic and International

II. GENERAL:

A. PURPOSE

This is an INFORMATIONAL TSB. TDxFLx Revision 1.2 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) in the event an upgrade by service is required. The customer letter included lists the enhancements incorporated in this upgrade.

The customer upgrade kit will include a Rev 1.2 Memory Cartridge, Reagent Display Driver PCB #6, and System Operation manual inserts.

B. SERIAL NUMBERS OF INSTRUMENTS REQUIRING TSB

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Series 60 Instrument serial numbers below 60967 excluding 60827 and 60964.
Series 30 Instrument serial numbers below 30741 excluding 30078-96, 30692-96, 30696-96, 30716 and 30727.

III. PARTS:

A. DOMESTIC

The following parts are required for the upgrade:
3-45270-02 Reagent Dsply Drvr PCB #6
3-45086-03 TDx/FLx Mem Cart Rev. 1.2

FSE KIT 67 will be upgraded automatically.

NOTE: It is IMPORTANT that the Memory Cartridge and Reagent Display Drive PCB #6 be returned to your the next weekly shipment back to Dallas.

B. INTERNATIONAL

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

PLEASE REFERENCE CUSTOMER LETTER AND INSTALLATION INSTRUCTIONS MAILED OUT IN PAPER COPY PREVIOUSLY. CONTACT CSE WITH QUESTIONS.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
TDxFLx IMPROVED WASTE CONTAINER SENSOR

TSB#: **67-002A**

ORIGINATOR:
Jim Rydberg

PRODUCT:
TDxFLx® (67)

APPROVED:

REF. ECN: **TDx 6046**

IMPLEMENTATION:	TSB Part/Kit #: **45249-101**	Upgrade Time: **40 Min.**
☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional**	TSB Effectivity/ Part(s) Availibility: **3/13/92**	Validation Time: **5 Min.** Total Mod. Time:
Instruments Requiring Modification: **S/N 60568 & below** **30362 & below**		

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

NOTE: This TSB supersedes TSB 67-002, Remove and destroy.

I. DISTRIBUTION
Domestic and International

II. GENERAL
A. PURPOSE
Installation of an improved Waste Container Sensor assembly. The Waste Sensor has an improved depth of field that will improve sensing of the Waste Container. Instruments requiring modification are:

SERIES 60 INSTRUMENTS: Serial numbers 60568 and below.
SERIES 30 INSTRUMENTS: Serial numbers 30362 and below.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

B. ADMINISTRATIVE NOTES:

Domestic Fse's

1. When the modification is completed the Service Order should be closed out as TSB 67-002A completed and the call coded as:
   Service code (03), Modification
   Trouble code (02), TSB 02
   Repair code (93), TSB installed
2. The TDxFLx CSE in conjunction with the "X-Systems" Field Service Parts Planner will be responsible for distribution of parts to the parts kit.

International Fse's

The International Service Managers will set up the protocol to follow for this TSB.

C. TIME REQUIRED:

45 minutes

D. SPECIAL TOOLS

Standard FSE Tool Kit.

E. PARTS:

Domestic

FSE Parts Kit 67 for TDxFLx will be upgraded with the following parts:
3-45068-02 Waste Sensor Assy.
3-45215-01 Sensor Retainer

TSB Kit **P/N 45249-101** contains the following parts:
3-45068-02 Waste Sensor Assy
3-45215-01 Sensor Retainer

International

The International Service Managers will send forecast requirements for parts to Field Service Parts in Dallas.

III. PROCEDURE

A. COMPONENT REMOVAL AND INSTALLATION

1. Power the TDxFLx off and unplug the power cord.
2. Remove the Rear Splash Guard and Keyboard/Display Splash Guard, this will allow access to the Mother Board to unplug the Pump for removal.
3. Remove the Pump. The Pump will be reinstalled after installation of the Waste Sensor.
4. (See enclosed drawing for sensor location.) Remove the screws holding the Waste Sensor and bracket. Unplug the sensor from the Harness.
5. Install the Sensor Retainer into the hole in the base, the fit is snug and may require extra force to insert.

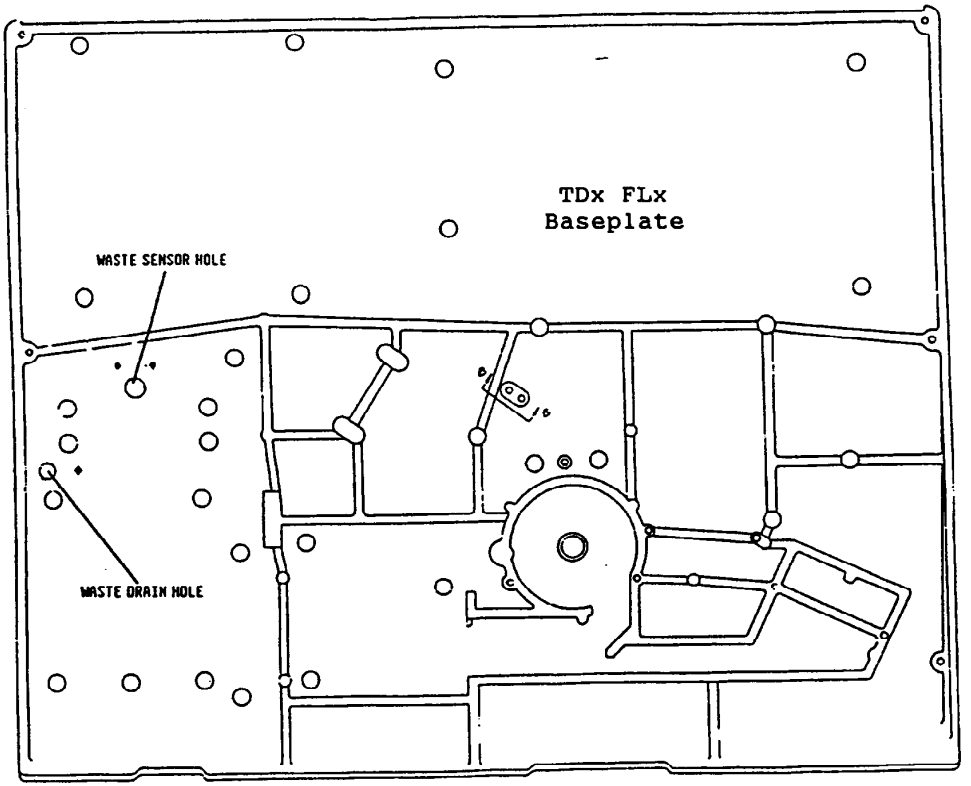
Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

6. Screw the Sensor into the Retainer and plug into the Harness.
7. Install the Pump, the Rear Splash Guard and the Keypad/Display Splash Guard.

NOTE: TUCK THE KEYPAD/DISPLAY SPLASH GUARD BEHIND THE REAR SPLASH GUARD.

B. SENSOR CHECK OUT

1. Sensor operation is checked by the following procedure:
   a. Press **SYSTEM 2.11 EDIT 2 STORE**.
   b. Press **RUN**. With the Waste Container removed display should read *"NO WASTE CUP"*. Press **STOP**.
   c. Place the Waste Container underneath the instrument in its proper location. Press **RUN**. The *"NO WASTE CUP"* message should not be displayed. Press **STOP**.



END OF DOCUMENT

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
Hardware/Software Upgrade of Demo

TSB#: **67-001A**

ORIGINATOR:
Jim Rydberg

PRODUCT:
TDxFLx® (67)

APPROVED:

REF. ECN: **TDX-6049**

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: **See list below.**		

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

I. DISTRIBUTION:

Domestic and International

II. GENERAL:

A. Purpose:

This procedure describes the upgrade of TDxFLx Demo and R&D instruments to the latest market configuration. This upgrade will include both hardware and software updates. Instruments requiring modification are:

Serial number 60179 and below including 60184 and 60186, except 60174.
Serial number 30040 and below including 30042, 30058, and 30059, except 30004 and 30021.

* This TSB supersedes TSB 67-001. The revision contains updated part and catalog numbers located on page 2.

B. Administrative Notes:

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

1. The cost of labor and travel to complete this TSB is to be charged back to the TDxFLx program. To ensure this billing occurs, the following actions are required:

   DOMESTIC FSE'S
   When the modification is completed, the Service Order should be closed out as "TSB 67-001 completed and the call coded as:
   Service code (03), Modification Trouble code (01), TSB 01 Repair code (93), TSB installed.
   Consumables and accessories should be charged **to the Sales District. Note** this in the billing comments.

2. The TDxFLx CSE, in conjunction with the "X-Systems" Field Service Parts Planner, will be responsible for shipping out TSB 67-001 parts kits for each TDxFLx Analyzer to be upgraded. A listing of S/N's and locations will be kept by the CSE so that distribution can be accomplished efficiently.
3. Sales/Marketing personnel will be responsible for identification, removal, transportation and delivery of the TDxFLx Analyzer from its current location toe the local Sales Office.
4. This TSB will not be performed at a customers site.
5. Sales/Marketing personnel will be responsible for ordering appropriate Reagents, Calibrators and Controls for functional testing for the TDxFLx Analyzer. The following is a list of items that will be required:
   - 1 Batch Pack (with smartpack label)
   - 3 Wedge Reagent Packs
   - Calibrators, and Controls for each
   - Cuvettes
   - sample Cartridges
   - Buffer
   - Sample Carousel
   - Reagent Carousel
   - Dispo Pipettes
   - Precision Pipettor with tips
   - Photometric Standards Carousel

   When the TSB kit is shipped to the District Offices, The District Service and Sales Managers will be notified.

   INTERNATIONAL FSE'S
   The European Customer Service Manager will set up the protocol to follow for recovery of labor and travel expenses associated with this TSB.

C. Time Required:
5 hours.

D. Special Tools:
Standard FSE Tool Kit.

E. Parts:

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

TSB Modification Kit (p/n 45219-101).

DOMESTIC:

This kit is controlled/allocated by the TDxFLx CSE. The FSE cannot orders this kit.
Reagent Kit (supplied by Sales/Marketing).
The following is a list of all the parts that are included in the Modification Kit:

	P/N	Description
	3-45002-01	Boom Assembly
*	45004- 103	Reagent Platform Assy
*	3-45086-02	Memory Module
*	3-45270-01	Reagent Display/Driver Bd
*	3-45036-01	Reagent Display/Door Assy
	3-45252-01	Reagent Dsply Pwr Harness
	3-45078-01	Waste Drain
	3-45183-01	Waste Drain Tubing
*	45091-102	System Ops Manual
*	45096-106	Assay Manual
*	45202-101	Barcode Scanner
*	45205-101	Harness Grnd Strap #l
*	45206-101	Harness Grnd Strap #2
		3/4" piece of Tygon Tubing (Norton B-44-3)

The following parts need to be returned:

Boom Assembly
Memory Module
Reagent Display/Driver Bd #6
Reagent Display/Door Assembly

Use part number 45219-101 when sending these back through your normal parts shipment to Dallas.

INTERNATIONAL:

Send forecast requirements for P/N 45219-101 to Field Service Parts in Dallas.

HARDWARE/SOFTWARE MODIFICATION SECTION

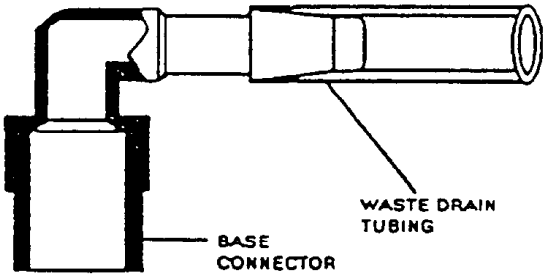
III. PROCEDURE:

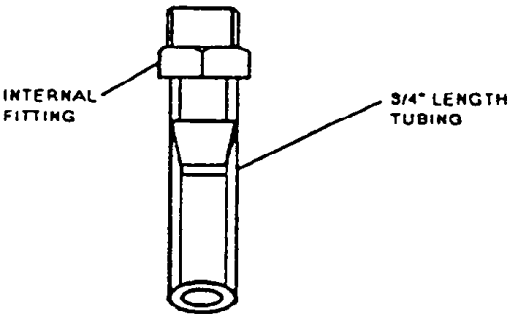
A. COMPONENT REMOVAL AND INSTALLATION

1. Print System parameters 2, 3, 7, 8 and 10. Save the print out for later use.
2. Power the TDxFLx off and unplug the power cord.
3. Remove the Rear Cover and Rear Panel of the instrument to expose the Card Cage.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

4. Remove the Rear Splash Guard and Keypad/Display Splash Guard.
5. Remove the Reagent Display Door. Disconnect the Power Cable, Data Cable, Keypad Cable. The Door is removed by pushing the hinge pins out.
6. Remove the Top Panel assembly. Disconnect the Printer Cables from the Mother Board. For screw location refer to ISA 67-001.
7. Remove the Boom Assembly.
8. The Waste Drain Tube is disconnected from the Base Connector Assembly located behind the buffer platform. Disconnect the Reagent Barcode Reader Cable. Remove Platform Assembly.
9. See Figure 1. Locate the 3/4 in. length of Tygon tubing and the new Base Connector in the kit. The components will be used to modify the waste drain assembly of the TDxFLx. Locate the drain hole in the base of the TDxFLx. Inspect the Base Connector to see if the internal fitting is included. If the fitting is present, push the 3/4 in. tube onto the fitting. If the internal fitting is not present push the tube onto the fitting inside the new Base Connector from the kit. Turn the tube counter clockwise and unscrew the internal fitting from the Base Connector. The internal fitting with the tube attached is now installed into the Base Connector in the base of the TDxFLx.





10. Install grounding cable #l and #2. See Figures 2A, 2B and Top Assembly drawings for the location and attachment of each cable. The ends are attached to the grounding lug inside the power entry module.
11. ***NOTE 1: The point of attachment on the back panel must be scraped to remove the paint for better contact.**

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

12. ***NOTE 2: The lugs on the cable may need to be enlarged using a rat tail file.**

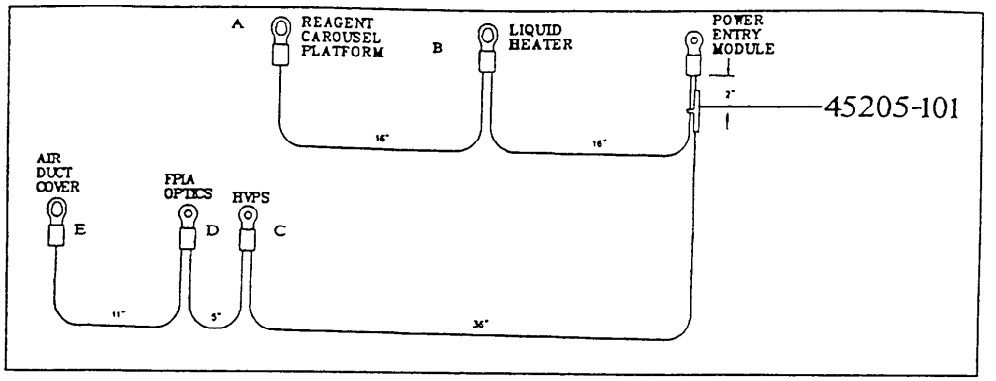
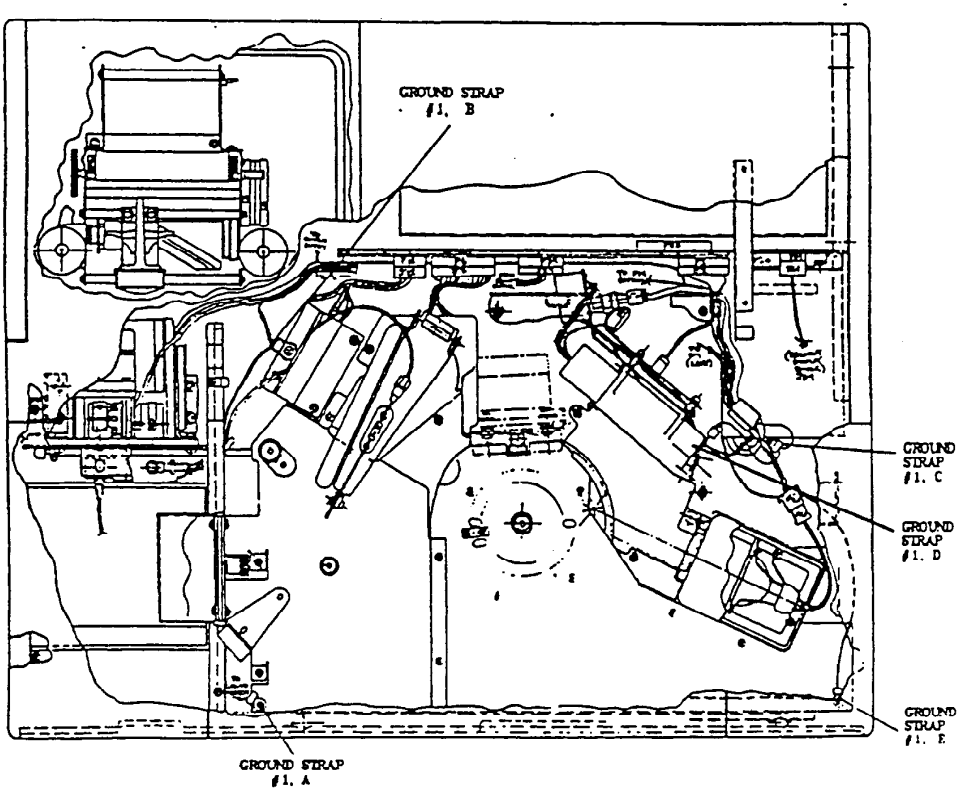


Figure 2A



Top Assembly Drawing

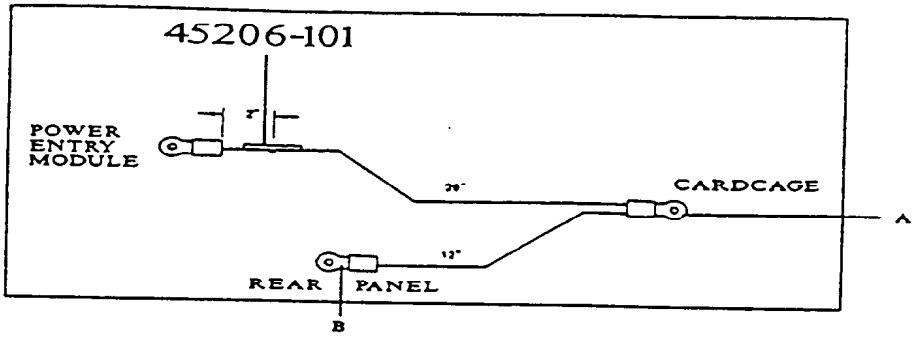
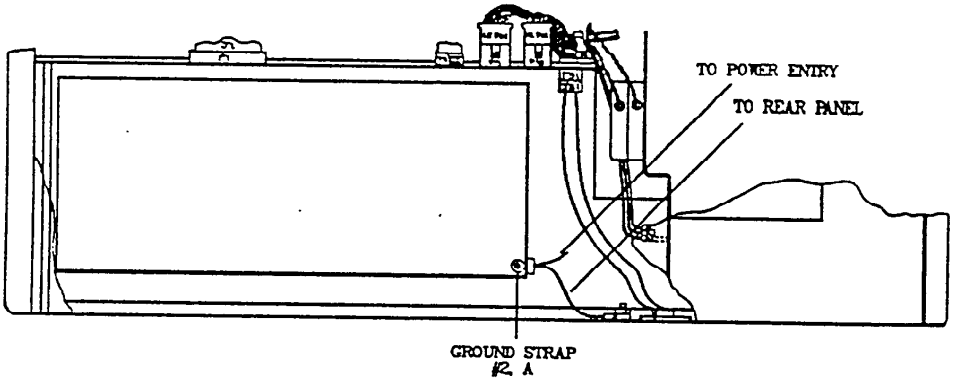
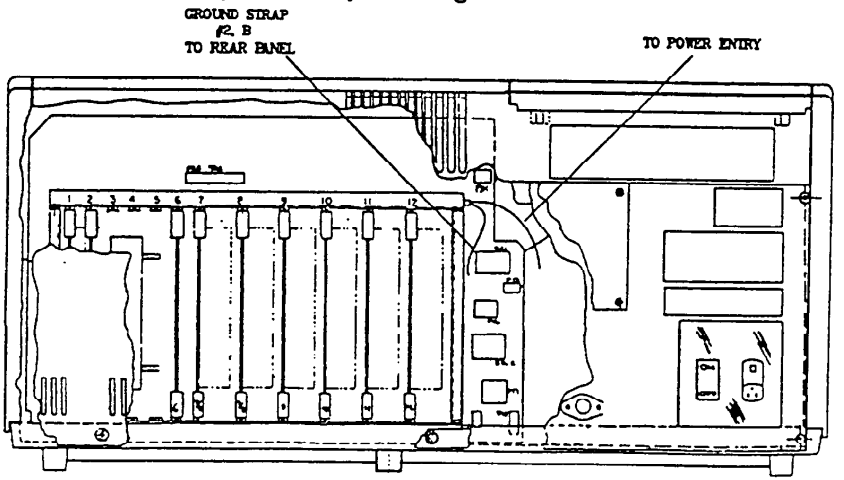


Figure 2B

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.



Top Assembly Drawing



Top Assembly Drawing

13. Install the Reagent Platform Assembly. Attach the Waste Drain Tubing first. Pay particular attention to cable routing for the Carousel Motor. Insure that the Waste Drain Tubing is not crimped before tightening the screws on the platform.
14. Install the new Boom Assembly. Insure that the cabling does not interfere with R-Boom movement and that the cable is routed correctly to the Mother Board.
15. Install the Top Panel. Reconnect the Printer cables to the Mother Board.
16. Install the new Reagent Display Door. Disconnect the old Power Cable from the Mother Board and discard. Connect the new Keyed Power Cable to the Mother Board. Connect the other cables paying attention to cable routing when doing so.
17. Reinstall the Rear and Keypad/Display Splash Guards.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

18. Remove CPU Bd, PCB #2. Remove the Memory Cartridge and install the Cartridge from the kit. Reinstall PCB #2.
19. Remove Reagent Display Driver Bd, PCB #6. Install PCB #6 from the kit.
20. Install the Rear Panel.
21. Install the Rear Cover Panel.
22. Connect the Power Cord and power the system on. A "Check Sum Error" should be displayed. Enter password "955251" to clear the error.
23. Factory Set the system. Password is "247".
24. Enter System parameters that were saved in step one.
25. Install the Barcode Scanner. To check out the Scanner, Barcode override procedure will need to be used.
26. Perform the following checks/calibrations using your TDx service manual and your TDxFLx booklet (sent with your video training). Boom Barcode Reader Adjustment (Height/Lateral) (TDx Service Manual) Perform, Probe positioning. (TDx Service Manual), Z-Boom Height Adjustment (TDx Service Manual), Boom Calibration. (TDx Service Manual), Auto Dac Procedure. (Key strokes necessary are Test 4.4 Run, Run.) A Reagent pack with a "smart pack label" must be used. (TDxFLx Booklet) Reagent Carousel Calibration. Reagent Wedge is positioned in A. (Key strokes necessary are Test 3.13 Run.) (TDxFLx Booklet), Reagent Z-Boom Calibration. (TDxFLx Booklet), Reagent Barcode Reader Adjustment Using 3 reagent wedges perform the barcode reader adjustment. (TDxFLx Booklet), Temp Verification. (TDx Service Manual) Photo Check. (TDx Service Manual), Calibrate a Batch Assay. Calibrate a Random Access Assay.
27. Mark out TSB 1 on the sticker, located on the Reagent Display Door, when finished.

END OF DOCUMENT