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Abbott architect i2000sr operation manual

5 Instrument Overview .... Review troubleshooting reference documentation (ISA, troubleshooting database, Service and Support Manual, diagrams, etc.) 4. o Inspect buffer dispense system 3. 83. Action: Locate or Remove the components related to temperature. Assay Reagents Define Reagent Kits • Reagent kits are 2 or more bottles for an ARCHITECT iSystem assay • Septums are placed on all open reagent bottles prior to loading reagent bottle on the system. Refer to the Service and Support Manual, Section 1, General Data, i2000SR Module Overview, CMIA Optics. Do customers have access to M&D 6007 Touchscreen Monitor Calibration? Precision is measured by: • Performing a minimum of 20 replicates • Reviewing run results CV% • Comparing CV% results with the expected result listed in a similar assay level in the assay insert Precision Activity Time = 30 minutes Purpose: To familiarize participants with calibrations and QC configuration using the service and support manual procedure P-24 Precision Run. 8 Basic Troubleshooting .... Pipettor, LLS, and PM AST Tools Activity Action: Practice troubleshooting and identifying ticket codes and other necessary data for service situations. Day 2 Card Cage Boards ARCHITECT i2000SR Global Field Service Training Program (Participant) 37 of 104 80000348-101 For Internal Use Only Topic Reference Power & Card Cage Troubleshooting (Optional) Instructor-Led Group Activity Time = 15 minutes Purpose: to familiarize participants with troubleshooting procedures used to assist with initialization errors Service Tips: • Minimum Board Configuration allows the instrument to boot to the Stopped status with only the Module Controller and the CMIA Optics Boards. ________________________ g.) Is the power supply a high cost part? ________________________ ________________________ Record Ticket Data If you replaced the RV Loader Wheel Motor to resolve the error above, record the following: Use the Ticket Code Tool to find: e) Work Done Code: ________________________ f) Action taken for the part: ________________________ g) Reason for Action Code: ________________________ h) Process Path Motor part number: ________________________ 50. • Ensure WZ Thermistor tubing is placed at the middle of the WZ probe. How would you know this is a HCP? General Service Tips • Motors, valves, and vortexers all use 36VDC • All robotic motors have a holding current shortly after power on that provides resistance when attempting to manually move a component • Home sensor and encoder signals are routed and monitored at the Indexer Board • Motor speed and direction movement data routes from an Indexer to a Motor Driver Board. Service tips: • Ensure all front and back covers are in place prior to performing M&D 1020 CMIA Optics Background • Shutter spring may be easily dislodged during service (if service personnel hands are in the optic shutter location during instrument service) • Cover light pipe whenever removing optics to prevent reader PMT excitation • Ensure optics data are entered correctly into configuration parameters Action: Perform the following diagnostic procedures M&D 1020 Optics Background M&D 1030 Shutter Test Action: Perform the following R&R procedures R&R C1.01 CMIA Reader R&R C1.02 Shutter Assembly Repeat M&D 1020 Optics Background and M&D 1030 Shutter Test Discussion: Instructor will check learner understanding through observation during the activity and responses to review questions, then clarify key points Troubleshooting & AST Tools Activity Time = 20 minutes Purpose: To practice solving optics failures, coding tickets, and using AST Tools. Note: This activity may be performed as an instructor-led activity. List other documents in the ISA.4. ________________________ 16. Use service documentation (KM, Service and Support Manual, assay inserts, message history, etc.) and tools appropriately, including test equipment Identify abnormal system conditions Locate system components and use proper terminology Resolve basic error situations independently, with minimal instructor guidance Use effective or logical troubleshooting methods to resolve unknown error conditions Demonstrate basic customer interaction (ASE) skills Activity Instructions In order to complete this exercise, follow the scenario provided by the instructor. ________________________ ________________________ 77. Assay(s) and level(s): ________________________ Order and run assay calibration(s) designated by instructor.2. Assay(s) to calibrate: ________________________ Order and perform precision run (20 replicates [2 cups of 10 per assay]) or as3. • After the LLS system detects liquid contact, a pressure profile is: o generated during aspirations o routed from the PM board to digitize the signal o digitized signal is sent to the LLS board for evaluation of a normal pattern • If an abnormal pressure pattern is detected, an aspiration error will be generated. Day 2 Card Cage Boards ARCHITECT i2000SR Global Field Service Training Program (Participant) 38 of 104 80000348-101 For Internal Use Only Topic Reference Power & Card Cage Troubleshooting (Optional) Instructor-Led Group Activity continued Connect Instrument debug cables to the card cage port Connect adapter cable to the correct back Com port number you configured Connect instrument cable to the SCC adaptor cable Power On the instrument Observe boot sequence on SCC monitor Record errors encountered during instrument boot-up and use KM to assist with troubleshooting. a) Log into AbbottLink and record the area that provides you a quick view of instrument error messages without downloading log files. 60. Day 3 Fluidics I – Trigger/Pre-Trigger Fluidics ARCHITECT i2000SR Global Field Service Training Program (Participant) 59 of 104 80000348-101 For Internal Use Only Fluidics I – Trigger/Pre-Trigger Fluidics Objectives • Identify functions and physical location of subsystem components • Describe key fluid pathways for the Trigger/Pre-Trigger (T/PT) components • Perform key removal, replacement, verification, and alignment procedures • Use diagnostic tools and interpret data to isolate root cause of Trigger/ Pre-Trigger fluidics system failures Component Function/Description DELIVERY METHOD: Review components and function at the instrument. Pressure monitoring is used only during aspirations. z. Reagent: refer to problems with Reagent, Calibrators and/or Controls such as: − Improperly stored products − Expired Reagent, Calibrators and/or Controls − Control ranges established incorrectly 4. Appendix Appendix A: i Systems Comparison Table ARCHITECT i2000SR Global Field Service Training Program (Participant) 89 of 104 80000348-101 For Internal Use Only Appendix Appendix 90. View online or download Architect i2000SR Immunoassay Analyzer Service Manual Home All Categories Laboratory Immunoassay Systems Abbott - ARCHITECT i2000SR Documents The ARCHITECT i2000SR immunoassay analyzer offers a maximum throughput of up to 200 tests per hour. Procedure? b. These flags—abbreviations or symbols—may appear in the flag column on the displayed screen. Task Manager Task Manager provides service personnel access to the system's hard drive for the following situations: • Performance of an ISA or TSB • Obtain data for investigation(s) • SCC installation procedures • Troubleshoot system or software related errors • Setup or edit printer or replacement • Perform touch screen calibration FS logon is required to access the Task Manager from the system area. 87. Also, refer to current ISA 116-128 PM procedures related to the Reagent Carousel. Select the following options to filter the data, and record the top 10 parts. If a Quad Board failed and 5VDC was not present at the Card Cage, where would you measure the 5VDC voltage output specifically? Day 1 Assay Configuration ARCHITECT i2000SR Global Field Service Training Program (Participant) 22 of 104 80000348-101 For Internal Use Only Assay Calibration Topic Reference DELIVERY METHOD: Perform software screen review at the instrument. Select: SYSTEMS Task Manager Type: EXPLORER Select: Program Files ARCHITECT Terminal Open ARCHITECT Terminal.exe file Select: File New Connection: − Open Port − Com X where X = the port Note: Recommend using ARM port COM 4 for F platforms and higher. Day 4 Temperature ARCHITECT i2000SR Global Field Service Training Program (Participant) 74 of 104 80000348-101 For Internal Use Only Summary – Temperature, Vacuum, and Waste Troubleshooting Component Common Related Errors Related Procedures iARM • 0016 Motor stall error • 0030 Conductivity sensor unplugged Error • 0014 ASTM 1381 timeout error (communication error) • Leaks or 0006 Flood error • ISA ARCH-13 ARCHITECT iARM Procedures & Troubleshooting • ISA ARCH-12 ARCHITECT iARM Presite and Installation • iARM M&D: o Valves Test o Pump Motor Test o Flush o Instrument Port Configuration o Instrument Check (port test) ARM • Inlet Water quality too low • Inlet water temperature out of range • Output buffer conductivity too low/ high • Outlet buffer pressure too low/ high • Motor stalls or leaks • P-06 ARCHITECT ARM Troubleshooting Information o Service Mode (remove jumper J35 on Main Board) o Adjust Input Regulator • TSB-116-083 ARM Low Conductivity Correction Temperature • 7001 temperature failed channel (7) (reagent cooler) • 7002 channel (7) below minimum temperature (reagent cooler) • Negative temperature displayed • Fans failure • M&D 3520 Temperature Status • Physically check reagent area temperature • Check Refrigerator: o Power Switch ON o Fans are functional WAM (Wash Aspirate Monitoring) • Vacuum system malfunction • WZ Probe or tubing o Clogged or bent probe o Old (opaque), obstructed damaged, or cut tubing • Buffer dispense system malfunction o Failed thermistor or WZ Valve Insufficient vacuum Diverter is not properly seated to route RVs • Daily Maintenance incomplete • M&D 2050 WZ Aspiration Test • M&D 2026 Wash Zone 1 Gravimetric – visual comparison • M&D 2027 Wash Zone 2 Gravimetric – visual comparison • M&D 2006 Wash Zone 1 Check • M&D 2007 Wash Zone 2 Check • M&D 3520 Temperature Status • M&D 3177 Vacuum System Test • M&D 2151 Prime Wash Zone • 6041 Daily Maintenance • Visually inspect/replace thermistor tubing if needed • M&D 6200 CLI Commands 75. 76. Refer also to ISA 116-128 PM. • Accomplished by placing a pressure transducer in the fluid line between the syringe and probe • During liquid aspiration, the full pressure profile is measured and analyzed for conformance to a normal pattern. To create a backup, select:1. • Ensure samples, controls, and reagent bottles are devoid of foam and bubbles; correctly remove any foam and bubbles present. Refer to the ARCHITECT System Operations Manual. ________________________ b. • Ensure bottles are securely seated and barcode label positioned facing the inside toward the barcode reader. Refer to MyGSS/ ARCHITECT/ Assay Information/ Assay Quick Reference Guide. ________________________2. Day 4 Planned Maintenance (PM) ARCHITECT i2000SR Global Field Service Training Program (Participant) 86 of 104 80000348-101 For Internal Use Only DAY 4 REVIEW QUESTIONS 1. Yes/ No (circle one) h.) What indicators are available to inform you the part is a HCP? ARCHITECT RHS laboratory equipment pdf manual download. Copy the backup to external media 15. Day 4 Temperature ARCHITECT i2000SR Global Field Service Training Program (Participant) 73 of 104 80000348-101 For Internal Use Only Topic Reference Temperature and AST Tools Activity Time = 30min Purpose: Perform key procedure(s) for servicing top errors related to the Temperature and Wash Zone system components Service Tips: • Valve Removal Tool is used for valve removals and only to check the installed valve is tight. w. Assay Calibration Calibration Requirements: • Assays must be calibrated before samples can be analyzed on the ARCHITECT System. The following troubleshooting STEPs were performed and the issues were unresolved. The Information is presented "AS IS" and may include technical inaccuracies or typographical errors. 2. x. 5. 10. Check for understanding by observing the activity, and clarify any key points. Participants will perform a QC RUN and troubleshoot any issues that occur during the run. 100%(1)100% found this document useful (1 vote)762 views2,488 pagesABBOTT_ARCHITECT_C16000Download as pdf or txtSaveSave ABBOTT_ARCHITECT_C16000c8000i2000i2000srci8200ci16... Control #1 results CV%: ________________________ Pass / Fail (circle one) Control #2 results CV%: ________________________ Pass / Fail (circle one) Troubleshooting for failed assay(s): ________________________ ________________________ Note: Once assay run is initiated the instructor may request that you return to class to continue precision run/activity discussion. All samples (printouts, graphics, displays, screens, etc.) are for information and illustration purposes only and shall not be used for clinical or maintenance evaluations. • Ensure WZ probes, valves, tubing, and cable connections are properly routed and connected. 1.) 6.) 2.) 7.) 3.) 8.) 4.) 9.) 5.) 10.) Continued on the next page 13. Unit Cost (Local) column and place a checkmark next to a part if the cost is >1000 to indicate a high cost part. Service Tips: • Use new or specifically designated probe tubing and PM sensor for the M&D 2055 WZ Valve Pressure Check to prevent damage to system components. Actual printouts, graphics, displays, screens, etc., may vary depending on software revision, hardware revision, and instrument configuration. Day 3 Fluidics I – Trigger/Pre-Trigger Fluidics ARCHITECT i2000SR Global Field Service Training Program (Participant) 60 of 104 80000348-101 For Internal Use Only Topic Reference Buffer Systems & P/PT Fluidics Activity Instructor-Led Group Activity Time = 15 minutes Purpose: To practice valve integrity service diagnostics. Refer to the Service and Support Manual, Section 1, General Data, i2000SR Module Overview, Temperature and Wash Aspirate Monitoring. PRE-VISIT ACTIVITIES • Be Ready- Review o ONeview: Instrument Health Notification/ POM Alert o Key customer metrics [note red customer KPIs for all calls] o Knowledge Management check, ensure accuracy • Receiving o Initiate contact and plan timely intervention (Planned Service) o Assure customer of proactive approach – ALWAYS ON DURING VISIT • Understanding: o Demonstrate Active Sense Technology – provide visual o Share Instrument Health Notification / POM Alert o Provide more detailed visual • Helping: o Perform Proactive service call o Utilize Knowledge Management o Utilize Chat or FaceTime with SME if needed o Perform Total Call (address reasons for red KPIs in ONeview) • Keeping: o Conversation with the Customer re: Account health o Ensure AbbottLink connectivity o Discuss proactive actions for red customer KPIs (high CPY in ONeview) o Provide Service Report • Follow Up: o Follow up with customer next day o Utilize ASE Skills o Continue to monitor instrument to confirm resolution 11. Refer to ARCHITECT i2000SR Service and Support Manual Section 1 General Data, Liquid Level Sense and Pressure Monitoring and Section 2 Troubleshooting, Block/Functional Diagrams, LLS and PM Board Fluid Detection • Liquid Level Sensing (LLS) • Pressure Monitoring (PM) LLS and PM are used to detect liquid and ensure that the aspiration of sample and reagents occur correctly in the assay reaction sequence. • Add nonconductive grease to sensor and motor connector when replaced to prevent damage from leaks • Identification is done by pump part number only Pre-Trigger (PT) Pump • 100 µL unique, single-head 36VDC pump o Pump disassembly will result in imprecision. Refer also to ISA 117-128 PM & Total Call LLS and pipettor component related areas, as needed R&R E2.08 Pressure Monitor Probe Block Kit R&R E1.04 Pipettor Z-limit Crash Sensor R&R E1.04 Continued on the next page 55. This guide was developed and produced by US Commercial Training in Irving, TX. Liquid Level Sense • LLS hardware is used to detect when the pipettor probe makes contact with liquid • LLS Board enables pipettors to detect signals transmitted from the probe and monitoring the pressure in the fluid lines during aspirations. Identify the i2000SR components labeled in the picture below. 62. o Verify RV loading and sensor function 2. If an instrument is unavailable then refer to the following service documents: • ARM: Service and Support Manual, Section 1 General Data, ARM Overview • iARM: ISA ARCH-012 ARCHITECT iARM Pre-site and Installation and ARCH-013 ARCHITECT iARM, Procedures and Troubleshooting. a. Complete the following using this information. • The Sample Pipettor and STAT Pipettor can use the same LLS frequency because they do not aspirate at the same time Pipettor LLS Board LLS Board Upper Slot Location # Frequency Sample Pipettor LLS Board #0 10 100 kHz STAT Pipettor LLS Board #3 4 100 kHz R1 Pipettor LLS Board #1 8 150 kHz R2 Pipettor LLS Board #2 6 125 kHz Example R1 Pipettor LLS and PM Circuitry 103. • Monitors system power & input/ output control signals to card cage backplane Heater Board 27VAC • Provides 27VAC and fuse protection on the Heater Board for: o Process Path Heaters o Wash Zone 1 and 2 Heater o Trigger Heater o Pre-Trigger Heater • Status LEDs display heating cycle o 2 LEDs are unused/ spare- F9 & F12 • Voltage is supplied directly to 6 process path heaters DC Modules Quad Board 5VDC, +12VDC, 24VDC • LEDs indicate 5VDC & +12VDC, fuse protected, power o powers card cage logic backplane area o protected by card cage backplane fuses o board contains replaceable fuses • Provides 24VDC directly to cooling fans- unfused 36VDC Module Board (middle) 36VDC • LED indicates 36 VDC, fuse protected, power to: o card cage power backplane area o protected by card cage backplane fuses o board contains replaceable fuses 36VDC Sample Handler Board 36VDC Fans (2) 24VDC • Fans (2): 24VDC from Quad Board o replaceable • Refer to the ARCHITECT i2000SR Service &Support Manual, Section 5 Parts List or GPPM to ensure i Systems compatibility. • Sample handler • SCC • Processing module Components and Subsystems Review the major components of each of these subsystems (locations, names, general description) (no specific order). Yes/ No (circle 1) Replace with the good probe and return defective probe to the instructor Note: This CLI command checks the Vacuum System and component Integrity. Day 1 Basic Troubleshooting ARCHITECT i2000SR Global Field Service Training Program (Participant) 12 of 104 80000348-101 For Internal Use Only Topic Reference Global Service Reports (GSR) Activity Time = 20 minutes Purpose: Gain competency using the GSR Active Sense Technology (AST) Tools and begin awareness of high cost components. Record AST Tools used. Remove, and/or locate key, components as directed below: Turn Processing Module System Power OFF 2. Day 3 Fluidics II – Vacuum and Waste ARCHITECT i2000SR Global Field Service Training Program (Participant) 66 of 104 80000348-101 For Internal Use Only DAY 3 REVIEW QUESTIONS 1. • Move Carrier Transport to extreme left of RSH to remove it or perform maintenance to prevent damage to transport sensors. • STAT: this assay protocol is designed as a shorter incubation and total processing time. Refer also to ARCHITECT i2000SR Service &Support Manual, Section 2 Troubleshooting, i2000SR System Electronics. Assay(s) and level(s): ________________________ Confirm precision data results4. • During sample processing when the probe contacts fluid, pressure monitoring circuitry is activated • During the aspiration process, the LLS and PM systems verify conditions are in specification prior to allowing the dispense process. Day 4 RSH ARCHITECT i2000SR Global Field Service Training Program (Participant) 81 of 104 80000348-101 For Internal Use Only Summary – RSH Robotics Common Related Errors Related Procedures RSH • 5408 Carrier transport not aligned with tray section • 5419 Carrier transport not aligned with carrier positioner • 5409 Step loss detected on (Carrier Positioner 1 or 2 Motor), actual [expected] (y) • 5417 (Section Align, Carrier Positioner, or Rail Guide) sensor failure • Motor command timeout Carrier Positioner motor • Status Indicator LED does not light • 5365 post failed, sensor interface board. System Inventory Instrument supplies, bulk solutions, and waste are checked and updated using the Supply Status screen. 24. What is the expected total %CV recovery for a 20 replicate precision on TSH with a mean of approximately 5.5? Continued on the next page. Day 5 Troubleshooting Practical and Final Assessment ARCHITECT i2000SR Global Field Service Training Program (Participant) 88 of 104 80000348-101 For Internal Use Only Troubleshooting Practical and Final Assessment Objectives • Demonstrate knowledge and competence on the i2000SR System through written and practical assessments Topic Reference DELIVERY METHOD: This section is completed as an activity at the instrument. Appendix Appendix B: Supplemental Information ARCHITECT i2000SR Global Field Service Training Program (Participant) 98 of 104 80000348-101 For Internal Use Only B.3 Chemiluminescent Reaction (CMIA) Reaction Topic Reference CMIA Overview Refer to the ARCHITECT Operations Manual; principles of operation, for more information. o Verify operation of temperature system 73. • Replaced probe and calibrated • Checked reagent bottle for bubbles • Ensured reagent was properly seated • No leaks observed • All maintenance up to date Develop A Repair Plan Use KM and write first troubleshooting recommendation. Day 2 Card Cage Boards ARCHITECT i2000SR Global Field Service Training Program (Participant) 35 of 104 80000348-101 For Internal Use Only Card Cage Boards Topic Reference DELIVERY METHOD: Review components at the instrument. • Motors are under the Process Path and damaged if PP leaks occur. Service personnel should keep their laptop updated to contain current revision levels of materials. Type CLI Commands as follows: SET_MODULE X HOME 0 0 OMS 0 JG1000 3. o Once a bottle contains a septum, Prevent bottles from tipping to prevent leakage and possible reagent contamination. o The following can be performed in any status Order patient samples Load RVs Empty waste • A RUN can be initiated during the Stopped, Ready status or Scheduled Pause status • QC and calibration orders should only be performed in the Running status to ensure the system calculates the required sample volume • Reagents can only be loaded in the Reagent Carousel during status Offline, Stopped, Warming, or Ready. Permission to use the Information is granted, provided that the copyright notice appears on all copies; use of the Information is for operation of Abbott products by Abbott-trained personnel or informational use only; the Information is not modified in any way; and no graphics are used separate from accompanying text. WZ Valve Peak Slope Pass/ Fail Actions Required 1 2 3 Discussion: Instructor will check learner understanding and clarify key points. Day 2 Robotics I – Process Path and RV Loader ARCHITECT i2000SR Global Field Service Training Program (Participant) 42 of 104 80000348-101 For Internal Use Only Topic Reference DELIVERY METHOD: Review components at the instrument. 10 Basic Operations.. Develop a Repair Plan 1. o Do not use reagent if the microparticles do not resuspend. Day 3 Robotics III – Pipettor, Liquid Level Sensing (LLS), and Pressure Monitoring (PM) ARCHITECT i2000SR Global Field Service Training Program (Participant) 51 of 104 80000348-101 For Internal Use Only Day 3 Review Topics from Day 2 • Review PM Checklist • Service Tools II • Robotics I – Process Path and RV Loader • Robotics II – Reagent Management Robotics III – Pipettor, Liquid Level Sensing (LLS), and Pressure Monitoring (PM) Objectives • Identify the physical location and functions for pipettor, LLS, &PM components • Perform key removal, replacement, verification, and alignment procedures • Use diagnostic tools and interpret data to isolate the root cause of pipettor, LLS, & PM-related errors Topic Reference DELIVERY METHOD: Component review is at the instrument. 78 SCC Overview and Instrument Installation .... Which pumps is interchangeable, Buffer, WZ, Trigger, or Trigger Pumps? Day 1 Assay Configuration ARCHITECT i2000SR Global Field Service Training Program (Participant) 21 of 104 80000348-101 For Internal Use Only Topic Reference Assay Installation and QC Configuration Activity Time = 30 minutes Purpose: to familiarize participants with assay installation required at a customer site as part of system installation Action: perform the following procedures Refer to the ARCHITECT Operations Manual, Section 2, Installation Procedures and Special Requirements – System Configuration – Configuration Screen – QC – Cal Settings View Select M&D 6114 Install/Delete Assays o Install an assay as recommended by instructor, ________________________ Configure QC for assay installed At the Snapshot screen select − System/Configuration/QC-Cal Settings/QC-Single Analyte − Select the assay − Configure (F6) Click the drop-down box next to lot no and select New Lot Type the following information for the New Level − Name: Service Precision − Control Name: FSPrec 1 − Expiration Date: enter 1 year from current date − Expected Mean: 5000 − Expected SD: 5000 Select − Add Level − Done − System radio button − Assay parameters − Enable the assay at assay availability Locate the assay number for the assay installed above: Select: − System/ Configuration/ Assay Parameters/ Assay Installed/ Details Record the assay number: ________________________ Select M&D 6114 Install/Delete Assays and delete configured assay Discussion: Assay installation and calibration is part of installation verification. Is fluid dispensed into the RV? Data is on file with Abbott. RSH Rail Lubrication M&D 1119 Carrier Transport Calibration M&D 1111 Sample Pipettor Calibration (i2000SR) M&D 1117 STAT Pipettor Calibration (i2000SR) M&D 1120 Sample Pipettor Calibration (c8000) – perform for integrated systems M&D 3220 SH Bar Code Calibration M&D 3317 RSH Test Note: For training, insert only a few carriers/ trays for testing to learn the M&D function. Refer also to Appendix B for the CMIA Reaction Overview. Observe Process Path Cover for slight movement indicating obstructions or debris in Process Path or Cover. • Trigger and pre-trigger bulk solutions can be loaded during an Offline, Stopped, Warming, or Ready status • Wash buffer solution can be loaded during Stopped, Warming, Ready, Scheduled Pause, or Running status 17. Participants should be in front of the analyzer for this section. • Use the sensor boards on the pumps to assist with troubleshooting. Day 1 Training Overview ARCHITECT i2000SR Global Field Service Training Program (Participant) 3 of 104 80000348-101 For Internal Use Only The Abbott ARCHITECT System is manufactured and/or distributed by Abbott Laboratories, USA, Abbott Park, IL 60064. Top Area Options Left Side Options • Instrument: ARCHITECT i2000SR • Date Range for Closed tickets: recent 6 months • Experience Codes Scope: 4 character code • Top Codes: 20 o Select "Submit" from the top left to filter data a.) How many are "Proactive" listed in the first column? 87 Troubleshooting Practical and Final Assessment.. They have no functionality during dispensing. • Unique and not interchangeable with other pumps • Add nonconductive grease to sensor and motor connector when replaced to prevent damage from leaks T/PT Manifold • Dispenses warm pre-trigger and trigger solutions for the CMIA reaction process o tubing is wrapped with a heater to pre-warm the reagent before dispense into the RV • Contains 2 valves 36VDC each for Trigger and Pre-trigger dispense o a dispense valve used to dispense warm T/PT to RV o a waste valve routes unwanted waste T/PT to liquid waste manifold • Proper input and output tubing connections on the manifold are required for correct fluid flow T/PT Level Sensor • Magnetic float sensors indicate T/PT bottle levels Note: If cracks or dried solution is observed at the top, area of straw then replace it to prevent errors and assay imprecision. Is the Optics a high cost part? levels designated by instructor. • Before reinstalling the loader, check the RV drops smoothly at 3 locations: o from the Orienter Wheel to the drop point o the loader insertion point to the PP disk o above loader space at PP disk by manual insertion of RV into PP Action: Use ISA 116-085 RV Loader Services, VIII. Are special tools required to complete the PM? Day 3 Fluidics I – Trigger/Pre-Trigger Fluidics ARCHITECT i2000SR Global Field Service Training Program (Participant) 61 of 104 80000348-101 For Internal Use Only Topic Reference Buffer Systems and T/PT Fluidics Activity continued Action: Perform the following commonly used verification procedures for fluidics related troubleshooting and repairs. Perform M&D 5715 Turn 36V Power off and on then record changes to LEDs on the power supply boards. Day 3 Robotics III – Pipettor, Liquid Level Sensing (LLS), and Pressure Monitoring (PM) ARCHITECT i2000SR Global Field Service Training Program (Participant) 56 of 104 80000348-101 For Internal Use Only Summary – Robotics Troubleshooting Robotics Common Related Errors Related Procedures Process Path And RV Loader • 5900 step loss errors or jams • Dirt from leaks • Improperly assembled process path-related components • Noisy operation • Initialize RSH and PM to Running status • M&D 3131 RV Loader Sensor Calibration • M&D 3150 Diverter Test • M&D 4080 Module Initialization • M&D 5120 Motor Tests • M&D 4200 Functional Area Tests • M&D 3115 Vortexer Test • M&D 5100 - PP & Carousel Motor Tests • M&D 5160 Pump Motors Tests • M&D 5400 Crash Sensor Test • M&D 5716 Turn 36V Power Off and On Reagent Management Area • Motor step loss Reagent Carousel • Noisy operation • Inspect v-wheels • Initialize RSH and PM to Running status • M&D 3000 Reagent Carousel Test • M&D 5100 - PP & Carousel Motor Tests • M&D 4200 Functional Area Tests • M&D 4080 Module Initialization • M&D 5716 Turn 36V Power Off and On Fluid Detection – LLS And PM • Sample/reagent aspiration errors • Sample/reagent LLS errors • Damaged, misaligned, or incorrectly assembled components • M&D 1115 Wash Station Pre-alignment • M&D 1111 Sample Pipettor Calibration • M&D 1117 STAT Pipettor Calibration • M&D 1112 R1 Pipettor Calibration • M&D 1113 R2 Pipettor Calibration • M&D 1100 Pipettor Test • M&D 3600 LLS Test • M&D 3800 Pressure Monitoring Test • M&D 5110 Pipettor & Syringe Motor Tests • M&D 5400 Crash Sensor Test • M&D 6200 CLI Commands – LLS related • Measure probe frequency • Observe LLS antenna LEDs 57. All rights reserved. • Lubricate with SuperLube grease annually • Replaceable syringe sensor board for home positioning and valve control Syringe Valve and O-rings (2) • Customer replaceable valve • Normally closed • Uses 36VDC power from DC I/O Driver Board 59. Day 4 Fluidics III – ARM/ iARM ARCHITECT i2000SR Global Field Service Training Program (Participant) 69 of 104 80000348-101 For Internal Use Only Topic Reference Instructor-led iARM Activity (optional) Time = 20 minutes Purpose: To become familiar with iARM components, software, and features. Appendix Appendix B: Supplemental Information ARCHITECT i2000SR Global Field Service Training Program (Participant) 96 of 104 80000348-101 For Internal Use Only Appendix B: Supplemental Information B.1 Process Path Components Functionality The table below describes the activities and positions along the process path. Planned Maintenance (PM) and Total Call Overview Review benefits of PM & Total Call: • PM is performed annually • Total Call is performed at the end of each site visit repair Use the PM and Total Call to: • Review all documents in the ISA • Review tools and materials • Discuss AbbottLink message history review as preparation for the visit • Identify best practices, organization, time, and areas of efficiency in completing the PM • Review PM benefits Note: PM procedures were practiced throughout class to learn the system. Preventive Maintenance (PM) Introduction Refer to the Planned Maintenance section in the service manual to access the document link and answer the following questions. What symptom(s) would you expect to observe if the trigger and pre-trigger solutions were switched? Day 2 Power Supply Components ARCHITECT i2000SR Global Field Service Training Program (Participant) 33 of 104 80000348-101 For Internal Use Only Topic Reference Power Activity (Continued) Purpose: To familiarize participants with power distribution, voltage, and Service Tools related to the i2000SR power. ________________________ ________________________ Action: Perform M&Ds and observe the Power Supply LED patterns. Discussion: Where can the acceptable %CV for an assay be located? c) What is the name of this RV Loader sensor position? • Proper Belt positioning is important for proper operation. Shutter Assembly • Read errors • Homing Failure or Step loss detected • M&D 1030 Shutter Test Trigger/PreTrigger Manifold Valves • Leaking • 6000 Zero reads detected • 1006 unable to process test, background read failure • M&D 2152 Prime Trigger/Pre-trigger • M&D 2004 Pre-trigger Check (precision) • M&D 2005 Trigger Check (precision) • M&D 2130 Flush Fluids 78. 3. Appendix Appendix B: Supplemental Information ARCHITECT i2000SR Global Field Service Training Program (Participant) 104 of 104 80000348-101 For Internal Use Only End of Participant Training Guide The ARCHITECT i2000SR immunoassay analyzer meets your laboratory's high standards by delivering STAT results when you need them. COMPONENT ROUTINE 1-STEP ROUTINE 2-STEP STAT 1-STEP STAT 2-STEP DELAYED 1-STEP Sample Pipettor Stat Pipettor Stat Vortexer R1 Pipettor Vortexer 1 R2 Pipettor Vortexer 2 Vortexer 3 Wash Zone 1 Wash Zone 2 51. Action: Perform the following procedures: Note: Refer also to ISA 116-128 PM vacuum related areas. y. Appendix Appendix A: i Systems Comparison Table ARCHITECT i2000SR Global Field Service Training Program (Participant) 91 of 104 80000348-101 For Internal Use Only i2000SR System i1000SR System HARDWARE – STORAGE and WASTE CENTER Pre- trigger/trigger storage area Same – compatible • Tray • Level sensors Same – compatible • Tray • Level sensors Wash buffer storage area • 25 L wash buffer reservoir • 12 L wash buffer reservoir Waste storage area • Solid waste container • Solid waste container • Optional 10 L liquid waste container HARDWARE – PROCESSING CENTER RV loader Not compatible with i1000SR • RV loader o RV hopper o RV loader wheel o RV transport • Sensor board 6 Not compatible with i2000SR • New design of RV loader o Upper and lower hopper o RV picker o RV load chute • No sensor board 6 Process path Not compatible with i1000SR • Process path o 112 process path positions o Rotates counterclockwise o Indexes one RV position every 18 seconds Not compatible with i2000SR • Process path o 23 process path positions o Rotates counterclockwise o Indexes one RV position (832 steps) every 18 seconds Pipettor Not compatible with i1000SR • 4 pipettors o Sample pipettor o Stat pipettor o Reagent 1 pipettor o Reagent 2 pipettor Not compatible with i2000SR • 1 pipettor (new design) o Aspirates and dispenses sample and reagent Probe Same – compatible Same – compatible Wash zone Not compatible with i1000SR • 2 wash zone manifolds Not compatible with i2000SR • 1 wash zone manifold Wash cup Not compatible with i1000SR • 4 cups Not compatible with i2000SR • New 1 cup design Vortexers Same – vortexer is compatible • 4 vortexers Same – vortexer is compatible • New 1 cup design Diverters Not compatible with i1000SR • 4 diverters o Load o Unload o Wash zone o Stat Not compatible with i2000SR • 3 diverters o Inlet o Outlet o Unload • RV unloader (passive) Continued 92. Day 2 Service Tools ARCHITECT i2000SR Global Field Service Training Program (Participant) 28 of 104 80000348-101 For Internal Use Only Day 2 Review/Debrief Day 1 – 10 minutes • Review PM Checklist • Basic troubleshooting • Instrument overview • Basic operations o Assay configuration o QC and precision Service Tools Objectives • Access information on MyGSS necessary to identify and resolve operational and hardware errors • Reinforce when/how to use Service Tools in service tasks • Review Task Manager location, log on, and functions • Demonstrate AbbottLink screen data, instrument monitoring, and investigative tool activities Topic Reference DELIVERY METHOD: Review information at the instrument or classroom. ________________________ 2. • The septum should remain on the bottle until empty and discarded. Identify the components used for each assay protocol listed in the table below. Locate Buffer Manifold and Active Wash Valve Block Continued On The Next Page 61. Refer to the ARCHITECT Operations Manual, Section 5, Operating instructions, Quality Control Analysis, Levey-Jennings graph screen, and QC summary review screen. Minimum Board Configuration Power OFF the processing module Release all top card cage boards from the backplane except the CMIA Optics and Module Controller Power ON the i2000SR Observe card cage LEDs and system status Power off the processing module and reseat all removed card cage boards Power on and observe card cage LEDs and system status When would the minimum board configuration be useful? m. Day 4 Planned Maintenance (PM) ARCHITECT i2000SR Global Field Service Training Program (Participant) 85 of 104 80000348-101 For Internal Use Only Planned Maintenance (PM) Objectives • Locate and describe the purpose of the PM and Total Call checklist associated with the i2000SR • Review PM and Total Call Procedures i2000SR FS Guides; review document format and icons • Explain the importance and benefits of completing Total Call procedures Topic Reference DELIVERY METHOD: Review in classroom and components at the instrument. Day 1 Training Overview ARCHITECT i2000SR Global Field Service Training Program (Participant) 7 of 104 80000348-101 For Internal Use Only Safety Hazards The i2000SR has been designed for optimum operator safety. Appendix Appendix A: i Systems Comparison Table ARCHITECT i2000SR Global Field Service Training Program (Participant) 94 of 104 80000348-101 For Internal Use Only i2000SR System i1000SR System HARDWARE – POWER and CIRCUITRY (Continued) Distribution boards Not used on i2000SR • i2000SR uses component local sensor boards Not compatible with i2000SR • 4 boards located throughout system o Fluidics distribution board o RSH distribution board o Reagent distribution board o Processing distribution board Other boards Not compatible with i1000SR • Other boards o Carrier transport PCB o Pipettor board(s) o LLS antenna boards (7) Not compatible with i2000SR • Other boards o Carrier transport PCB o Pipettor board o LLS antenna boards (3) SPECIFICATIONS Power requirements • Voltage – 200-240 ± 10% V AC (176-264 VAC) • Frequency – 50 or 60 Hz (47-63 Hz) • US with reset circuit breaker o With UPS – 30 amp Without UPS – 20 amp • Voltage – 110 - 120 or 200 - 240 ±10% VAC (99-264V AC) • Frequency – 50 or 60 Hz, self-adjusting • US with reset circuit breaker o 110V – 20 amp o 220V – 10 amp Plug (North America) Outlet within 7' (2.1 m) of the assay module • NEMA L6-30, 250V, twist lock • IEC 309 (220V - 30A 250V) Outlet within 7' (2.1m) of the processing module • NEMA L5-20R (125 VAC, 20A, twist lock) • NEMA L6-20R (250 VAC, 20A, twist lock) • *Refer to parts section for country-specific connection style Power cord length 15' (4.6 m) 8' (2.5 m) Rated power consumption 3000 volt amp (3 kVA) maximum 1760 volt amp (1.76 kVA) maximum Weight 1081 lbs. Is the ARCHITECT iARM the same as the ARM? Day 2 Card Cage Boards ARCHITECT i2000SR Global Field Service Training Program (Participant) 39 of 104 80000348-101 For Internal Use Only Summary – Power and Boards Troubleshooting Component Common Related Errors Related Procedures Power Supply • Breaker automatically shuts down • No power distribution from power supply to Processing Module or RSH • Processing Module and/or RSH Offline status • Check power supply frequency and voltage jumper setting • Observe power supply LEDs • Card cage test point voltage check • Incoming voltage check • Check power supply fuses • M&D 5716 Turn 36V Power Off and On • Check UPS and setting is RUN Mode • Ensure power supply securely connected to card cage • ARCHITECT Terminal Card Cage • Processing Module and/or RSH Offline status • No holding current on motor(s) • OFFLINE status • Card Cage Board LEDs display Red after boot-up initialization • M&D 5720 Fuse Status o Check backplane fuses • Review Message History files • Observe Card Cage Board LEDs • Card Cage jumper incorrectly configured • Minimum Board Configuration • ARCHITECT Terminal Boards • No holding current on motor(s) • LLS or PM errors • Motor step loss • Component homing failure • Frequency absent at Pipettor Probe • OFFLINE status • Check DC I/O Driver Board display segment is clear o Check board fuses • Minimum Board Configuration • M&D 6200 CLI Terminal Simulator – CLI Commands • M&D 4200 Functional Test Areas • M&D 5716 Turn 36V Power Off and On • M&D 6035 PC Board Test • Measure LLS frequency at the probes • Check distribution board LEDs • M&D 4150 Functional Test Areas • ARCHITECT Terminal 40. Refer to the Service and Support Manual, Section 2 Troubleshooting/ Block Diagrams/ Temperature Heater Control. Day 2 Robotics II – Reagent Management ARCHITECT i2000SR Global Field Service Training Program (Participant) 47 of 104 80000348-101 For Internal Use Only Robotics II – Reagent Management Objectives • Identify the functions and physical location of reagent-related area components • Perform key removal, replacement, verification, and alignment procedures • Use diagnostic tools and interpret data to isolate the root cause of reagent management-related errors Topic Reference DELIVERY METHOD: Review components at the instrument. Day 2 Robotics II – Reagent Management ARCHITECT i2000SR Global Field Service Training Program (Participant) 48 of 104 80000348-101 For Internal Use Only Topic Reference Robotics II Activity Time = 45 minutes Purpose: To practice service procedures associated with the robotics subsystem. q. Action: Perform removal and replacement of the components below, unless indicated by the instructor. Day 1 Training Overview ARCHITECT i2000SR Global Field Service Training Program (Participant) 2 of 104 80000348-101 For Internal Use Only This Page Intentionally Left Blank 3. Look for characteristics such as: • Is the assay affected: o a single or multiple assays affected o 1-step or 2-step o Pre-treatment assay o STAT or Routine • Review Sample and reagent volumes • Calibration Protocol • Verify assay parameters settings with the assay-specific package insert Possible sources of error include: • Loose or broken tubing connections (e.g., tubing connections to the pipettor probes, pressure transducers, and syringe assemblies) • Leaking syringe assemblies or valves • Improperly seated Wash Zone manifold (tilted, not flush) on the Process Path Cover • Improper Wash Zone or Pipettor Probe positioning, unsecure, or bent probes • Worn Vortexer • Imprecision from Syringe assemblies, Wash Zone or Pipettors 101. The information, documents, and related graphics published herein (the "Information") are the sole property of Abbott Laboratories. Identify the following codes for the part used. Log OFF/ON Review user access levels and log on options. Revision Status Document Control Number Revision Date Content or Pages Revised, Added, or Deleted 80000348-101 December 2015 New Release Any product information in training materials should be used in conjunction with the latest version of the Operations/Service Manual; Operations Manual addendum; ISA or TSB; or Product Information Letter. • Ensure the pulley-locking wheel is loosened prior to using the Tension Release Bolt to prevent damage. Optics Hardware Component Function CMIA Reader Assembly • Detects light photons produced from CMIA reaction • Consists of light pipe that collects photons and directs them and a PMT • Factory label contains Normalization and Linearity data o Optics label data required to be entered into system configuration parameters Reader Magnet • Attracts the paramagnetic microparticles contained in the reaction mixture to the wall or RV. Bulk solutions • Trigger (T) – sodium hydroxide solution used to produce chemiluminescent reaction in the final read • Pre-trigger (PT) – hydrogen peroxide solution used to split the acridinium dye from the conjugate bound to the microparticle complex o removal process prepares the acridinium dye for the addition of trigger solution o Refrigerated in a dark container o Has a 10-day on-board stability when running Estradiol assay; special configuration for tracking this exception • Wash buffer – used throughout assay processing o used at the pipettors and the wash zones o made manually or using the ARM or iARM at a 9:1 dilution of water to wash buffer Note: The following tasks are permitted during Running status: Adding wash buffer, and RVs ordering samples emptying waste System Maintenance M&D 6041 Daily Maintenance: cleans and verifies backup performed in

- wv food handlers card test answers
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