GE Healthcare

LightSpeed Family

Detector Change Procedure

OPERATING DOCUMENTATION

2335850-100
Rev. 06

LEGAL NOTES

TRADEMARKS

Aero Duster® is a registered trademark of Miller-Stephenson.

All other products and their name brands are trademarks of their respective holders.

End of Legal Notes

IMPORTANT PRECAUTIONS

LANGUAGE

WARNING

(EN)

- This Service Manual is available in English only.
- If a customer's service provider requires a language other than English, it is the customer's responsibility to provide translation services.
- Do not attempt to service the equipment unless this service manual has been consulted and is understood.
- Failure to heed this warning may result in injury to the service provider, operator, or patient, from electric shock or from mechanical or other hazards.

Предупреждение

(BG)

- ТОВА УПЪТВАНЕ ЗА РАБОТА Е НАЛИЧНО САМО НА АНГЛИЙСКИ ЕЗИК.
- АКО ДОСТАВЧИКЪТ НА УСЛУГАТА НА КЛИЕНТА ИЗИСКА ЕЗИК, РАЗЛИЧЕН ОТ АНГЛИЙСКИ, ЗАДЪЛЖЕНИЕ НА КЛИЕНТА Е ДА ОСИГУРИ ПРЕВОД.
- НЕ ИЗПОЛЗВАЙТЕ ОБОРУДВАНЕТО ПРЕДИ ДА СТЕ СЕ КОНСУЛТИРАЛИ И РАЗБРАЛИ УПЪТВАНЕТО ЗА РАБОТА.
- НЕСПАЗВАНЕТО НА ТОВА ПРЕДУПРЕЖДЕНИЕ МОЖЕ ДА ДОВЕДЕ ДО НАРАНЯВАНЕ НА ДОСТАВЧИКА НА УСЛУГАТА, ОПЕРАТОРА ИЛИ ПАЦИЕНТ В РЕЗУЛТАТ НА ТОКОВ УДАР ИЛИ МЕХАНИЧНА ИЛИ ДРУГА ОПАСНОСТ.

警告

(ZH-CN)

- 本维修手册仅提供英文版本。
- 如果维修服务提供商需要非英文版本，客户需自行提供翻译服务。
- 未详细阅读和完全理解本维修手册之前，不得进行维修。
- 忽略本警告可能对维修人员，操作员或患者造成触电、机械伤害或其他形式的伤害。

VÝSTRAHA

(CS)

- Tento provozní návod existuje pouze v anglickém jazyce.
- V případě, že externí služba zákazníkům potřebuje návod v jiném jazyce, je zajištění překladu do odpovídajícího jazyka úkolem zákazníka.
- Nesnažte se o údržbu tohoto zařízení, aniž byste si přečetli tento provozní návod a pochopili jeho obsah.
- V případě nedodržování této výstrahy může dojít k poranění pracovníka prodejního servisu, obslužného personálu nebo pacientů vlivem elektrického proudu, respektive vlivem mechanických či jiných rizik.

ADVARSEL

(DA)

- Denne servicemanual findes kun på engelsk.
- Hvis en kundes tekniker har brug for et andet sprog end engelsk, er det kundens ansvar at sørge for oversættelse.
- Forsøg ikke at servicere udstyret medmindre denne servicemanual har været konsulteret og er forstået.
- Manglende overholdelse af denne advarsel kan medføre skade på grund af elektrisk, mekanisk eller anden fare for teknikeren, operatøren eller patienten.

WAARSCHUWING

(NL)

- Deze onderhoudshandleiding is enkel in het Engels verkrijgbaar.
- Als het onderhoudspersoneel een andere taal vereist, dan is de klant verantwoordelijk voor de vertaling ervan.
- Probeer de apparatuur niet te onderhouden voordat deze onderhoudshandleiding werd geraadpleegd en begrepen is.
- Indien deze waarschuwing niet wordt opgevolgd, zou het onderhoudspersoneel, de operator of een patiënt gewond kunnen raken als gevolg van een elektrische schok, mechanische of andere gevaren.

HOIATUS

(ET)

- Käesolev teenindusjuhend on saadaval ainult inglise keeles.
- Kui klienditeeninduse osutaja nõuab juhendit inglise keelest erinevas keeles, vastutab klient tõlketeenuse osutamise eest.
- Ärge üritage seadmeid teenindada enne eelnevalt käesoleva teenindusjuhendiga tutvumist ja sellest aru saamist.
- Käesoleva hoiatuse eiramine võib põhjustada teenuseosutaja, operaatori või patsiendi vigastamist elektrilöögi, mehaanilise või muu ohu tagajärjel.

VAROITUS

(FI)

- Tämä huolto-ohje on saatavilla vain englanniksi.
- Jos asiakkaan huoltohenkilöstö vaatii muuta kuin englanninkielistä materiaalia, tarvittavan käännöksen hankkiminen on asiakkaan vastuulla.
- Älä yritä korjata laitteistoa ennen kuin olet varmasti lukenut ja ymmärtänyt tämän huolto-ohjeen.
- Mikäli tätä varoitusta ei noudateta, seurauksena voi olla huoltohenkilöstön, laitteiston käyttäjän tai potilaan vahingoittuminen sähköiskun, mekaanisen vian tai muun vaaratilanteen vuoksi.

ATTENTION

(FR)

- Ce manuel de service n'est disponible qu'en anglais.
- Si le technicien du client a besoin de ce manuel dans une autre langue que l'anglais, c'est au client qu'il incombe de le faire traduire.
- Ne pas tenter d'intervenir sur les équipements tant que le manuel service n'a pas été consulté et compris.
- Le non-respect de cet avertissement peut entraîner chez le technicien, l'opérateur ou le patient des blessures dues à des dangers électriques, mécaniques ou autres.

WARNUNG

(DE)

- Diese Serviceanleitung existiert nur in Englischer Sprache.
- Falls ein fremder Kundendienst eine andere Sprache benötigt, ist es aufgabe des Kunden für eine Entsprechende Übersetzung zu sorgen.
- Versuchen Sie nicht diese Anlage zu warten, ohne diese Serviceanleitung gelesen und verstanden zu haben.
- Wird diese Warnung nicht beachtet, so kann es zu Verletzungen des Kundendiensttechnikers, des Bedieners oder des Patienten durch stromschläge, Mechanische oder Sonstige gefahren kommen.

ΠΡΟΕΙΔΟΠΟΙΗΣΗ

(EL)

- Το παρόν εγχειρίδιο σέρβις διατίθεται στα αγγλικά μόνο.
- Εάν το άτομο παροχής σέρβις ενός πελάτη απαιτεί το παρόν εγχειρίδιο σε γλώσσα εκτός των αγγλικών, αποτελεί ευθύνη του πελάτη να παρέχει υπηρεσίες μετάφρασης.
- Μην επιχειρήσετε την εκτέλεση εργασιών σέρβις στον εξοπλισμό εκτός εαν έχετε συμβουλευτεί και έχετε κατανοήσει το παρόν εγχειρίδιο σέρβις.
- Εαν δε λάβετε υπόψη την προειδοποίηση αυτή, ενδέχεται να προκληθεί τραυματισμός στο άτομο παροχής σέρβις, στο χειριστή ή στον ασθενή από ηλεκτροπληξία, μηχανικούς ή άλλους κινδύνους.

FIGYELMEZTETÉS

(HU)

- Ezen karbantartási kézikönyv kizárólag angol nyelven érhető el.
- Ha a vevő szolgáltatója angoltól eltérő nyelvre tart igényt, akkor a vevő felelőssége a fordítás elkészíttetése.
- Ne próbálja elkezdeni használni a berendezést, amíg a karbantartási kézikönyvben leírtakat nem értelmezték.
- Ezen figyelmeztetés figyelmen kívül hagyása a szolgáltató, működtető vagy a beteg áramütés, mechanikai vagy egyéb veszélyhelyzet miatti sérülését eredményezheti.

AÐVÖRUN

(IS)

- Þessi þjónustuhandbók er eingöngu fáanleg á ensku.
- Ef að þjónustuveitandi viðskiptamanns þarfnast annas tungumáls en ensku, er það skylda viðskiptamanns að skaffa tungumálaþjónustu.
- Reynið ekki að afgreiða tækið nema að þessi þjónustuhandbók hefur verið skoðuð og skilin.
- Brot á sinna þessari aðvörun getur leitt til meiðsla á þjónustuveitanda, stjórnanda eða sjúklings frá raflosti, vélrænu eða öðrum áhættum.

AVVERTENZA
(IT)

- Il presente manuale di manutenzione è disponibile soltanto in inglese.
- Se un addetto alla manutenzione richiede il manuale in una lingua diversa, il cliente è tenuto a provvedere direttamente alla traduzione.
- Si proceda alla manutenzione dell'apparecchiatura solo dopo aver consultato il presente manuale ed averne compreso il contenuto.
- Il non rispetto della presente avvertenza potrebbe far compiere operazioni da cui derivino lesioni all'addetto, alla manutenzione, all'utilizzatore ed al paziente per folgorazione elettrica, per urti meccanici od altri rischi.

警告
(JA)

- このサービスマニュアルには英語版しかありません。
- サービスを担当される業者が英語以外の言語を要求される場合、翻訳作業はその業者の責任で行うものとさせていただきます。
- このサービスマニュアルを熟読し理解せずに、装置のサービスを行わないでください。
- この警告に従わない場合、サービスを担当される方、操作員あるいは患者さんが、感電や機械的又はその他の危険により負傷する可能性があります。

경고
(KO)

- 본 서비스 지침서는 영어로만 이용하실 수 있습니다 .
- 고객의 서비스 제공자가 영어 이외의 언어를 요구할 경우 , 번역 서비스를 제공하는 것은 고객의 책임입니다 .
- 본 서비스 지침서를 참고했고 이해하지 않는 한은 해당 장비를 수리하려고 시도하지 마십시오 .
- 이 경고에 유의하지 않으면 전기 쇼크 , 기계상의 혹은 다른 위험으로부터 서비스 제공자 , 운영자 혹은 환자에게 위해를 가할 수 있습니다 .

BRDINJUMS
(LV)

- Šī apkalpes rokasgrāmata ir pieejama tikai angļu valodā.
- Ja klienta apkalpes sniedzējam nepieciešama informācija citā valodā, nevis angļu, klienta pienākums ir nodrošināt tulkošanu.
- Neveiciet aprīkojuma apkalpi bez apkalpes rokasgrāmatas izlasīšanas un saprašanas.
- Šī brīdinājuma neievērošana var radīt elektriskās strāvas trieciena, mehānisku vai citu risku izraisītu traumu apkalpes sniedzējam, operatoram vai pacientam.

ĮSPĖJIMAS
(LT)

- Šis eksploatavimo vadovas yra prieinamas tik anglų kalba.
- Jei kliento paslaugų tiekėjas reikalauja vadovo kita kalba – ne anglų, numatyti vertimo paslaugas yra kliento atsakomybė.
- Nemėginkite atlikti įrangos techninės priežiūros, nebent atsižvelgėte į šį eksploatavimo vadovą ir jį supratote.
- Jei neatkreipsite dėmesio į šį perspėjimą, galimi sužalojimai dėl elektros šoko, mechaninių ar kitų pavojų paslaugų tiekėjui, operatoriui ar pacientui.

ADVARSEL

(NO)

- Denne servicehåndboken finnes bare på engelsk.
- Hvis kundens serviceleverandør trenger et annet språk, er det kundens ansvar å sørge for oversettelse.
- Ikke forsøk å reparere utstyret uten at denne servicehåndboken er lest og forstått.
- Manglende hensyn til denne advarselen kan føre til at serviceleverandøren, operatøren eller pasienten skades på grunn av elektrisk støt, mekaniske eller andre farer.

OSTRZEŻENIE

(PL)

- Niniejszy podręcznik serwisowy dostępny jest jedynie w języku angielskim.
- Jeśli dostawca usług klienta wymaga języka innego niż angielski, zapewnienie usługi tłumaczenia jest obowiązkiem klienta.
- Nie próbować serwisować wyposażenia bez zapoznania się i zrozumienia niniejszego podręcznika serwisowego.
- Niezastosowanie się do tego ostrzeżenia może spowodować urazy dostawcy usług, operatora lub pacjenta w wyniku porażenia elektrycznego, zagrożenia mechanicznego bądź innego.

ATENÇÃO

(PT)

- Este manual de assistência técnica só se encontra disponível em inglês.
- Se qualquer outro serviço de assistência técnica solicitar estes manuais noutro idioma, é da responsabilidade do cliente fornecer os serviços de tradução.
- Não tente consertar o equipamento sem ter consultado e compreendido este manual de assistência técnica.
- O não cumprimento deste aviso pode pôr em perigo a segurança do técnico, do operador ou do paciente devido a choques elétricos, mecânicos ou outros.

ATENȚIE

(RO)

- Acest manual de service este disponibil numai în limba engleză.
- Dacă un furnizor de servicii pentru clienți necesită o altă limbă decât cea engleză, este de datoria clientului să furnizeze o traducere.
- Nu încercați să reparați echipamentul decât ulterior consultării şi înțelegerii acestui manual de service.
- Ignorarea acestui avertisment ar putea duce la rănirea depanatorului, operatorului sau pacientului în urma pericolelor de electrocutare, mecanice sau de altă natură.

ОСТОРОЖНО!

(RU)

- Данное руководство по обслуживанию предлагается только на английском языке.
- Если сервисному персоналу клиента необходимо руководство не на английском, а на каком-то другом языке, клиенту следует самостоятельно обеспечить перевод.
- Перед обслуживанием оборудования обязательно обратитесь к данному руководству и поймите изложенные в нем сведения.
- Несоблюдение требований данного предупреждения может привести к тому, что специалист по обслуживанию, оператор или пациент получат удар электрическим током, механическую травму или другое повреждение.

UPOZORNENIE

(SK)

- Tento návod na obsluhu je k dispozícii len v angličtine.
- Ak zákazníkov poskytovateľ služieb vyžaduje iný jazyk ako angličtinu, poskytnutie prekladateľských služieb je zodpovednos″ou zákazníka.
- Nepokúšajte sa o obsluhu zariadenia skôr, ako si neprečítate návod na obluhu a neporozumiete mu.
- Zanedbanie tohto upozornenia môže vyústi″ do zranenia poskytovateľa služieb, obsluhujúcej osoby alebo pacienta elektrickým prúdom, do mechanického alebo iného nebezpečenstva.

ATENCION

(ES)

- Este manual de servicio sólo existe en inglés.
- Si el encargado de mantenimiento de un cliente necesita un idioma que no sea el inglés, el cliente deberá encargarse de la traducción del manual.
- No se deberá dar servicio técnico al equipo, sin haber consultado y comprendido este manual de servicio.
- La no observancia del presente aviso puede dar lugar a que el proveedor de servicios, el operador o el paciente sufran lesiones provocadas por causas eléctricas, mecánicas o de otra naturaleza.

VARNING

(SV)

- Den här servicehandboken finns bara tillgänglig på engelska.
- Om en kunds servicetekniker har behov av ett annat språk än engelska ansvarar kunden för att tillhandahålla översättningstjänster.
- Försök inte utföra service på utrustningen om du inte har läst och förstår den här servicehandboken.
- Om du inte tar hänsyn till den här varningen kan det resultera i skador på serviceteknikern, operatören eller patienten till följd av elektriska stötar, mekaniska faror eller andra faror.

DIKKAT

(TR)

- Bu servis kilavuzunun sadece ingilizcesi mevcuttur.
- Eğer müşteri teknisyeni bu kilavuzu ingilizce dişinda bir başka lisandan talep ederse, bunu tercüme ettirmek müşteriye düşer.
- Servis kilavuzunu okuyup anlamadan ekipmanlara müdahale etmeyiniz.
- Bu uyariya uyulmamasi, elektrik, mekanik veya diğer tehlikelerden dolayi teknisyen, operatör veya hastanin yaralanmasina yol açabilir.

DAMAGE IN TRANSPORTATION

Check for damage to property that may have occurred at the site during delivery, such as damage to floors, door frames or walls.

All packages should be closely examined at time of delivery. If damage is apparent, have the notation *Damage in Shipment* written on **all** copies of the freight or express bill before delivery is accepted or signed for by a GE Healthcare representative or a hospital receiving agent. Whether noted or concealed, damage MUST be reported to the carrier immediately upon discovery, or in any event, within 14 days after receipt, and the contents and containers held for inspection by the carrier. A transportation company will not pay a claim for damage if an inspection is not requested within this 14-day period.

To file a report:

Call 1-800-548-3366, and use option 8.

Fill out a report on http://egems.med.ge.com/edq/home.jsp

Contact the local service coordinator for more information about this process.

Rev. September 17, 2006

CERTIFIED ELECTRICAL CONTRACTOR STATEMENT

All electrical installations that are preliminary to positioning of the equipment at the site prepared for the equipment shall be performed by licensed electrical contractors. In addition, electrical feeds into the Power Distribution Unit shall be performed by licensed electrical contractors. Other connections between pieces of electrical equipment, calibrations and testing shall be performed by qualified GE Healthcare personnel. The products involved (and the accompanying electrical installations) are highly sophisticated, and special engineering competence is required. In performing all electrical work on these products, GE will use its own specially trained field engineers. All of GE's electrical work on these products will comply with the requirements of the applicable electrical codes.

The purchaser of GE equipment shall only utilize qualified personnel (i.e., GE's field engineers, personnel of third-party service companies with equivalent training, or licensed electricians) to perform electrical servicing on the equipment.

IMPORTANT...X-RAY PROTECTION

X-ray equipment, if not properly used, may cause injury. Accordingly, the instructions herein contained should be thoroughly read and understood by everyone who will use the equipment before attempting to place this equipment in operation. The General Electric Company, GE Healthcare Group, will be glad to assist and cooperate in placing this equipment in use.

Although this apparatus incorporates a high degree of protection against x-radiation other than the useful beam, no practical design of equipment can provide complete protection. Nor can any practical design compel the operator to take adequate precautions to prevent the possibility of any persons carelessly exposing themselves or others to radiation.

It is important that anyone having anything to do with x-radiation be properly trained and fully acquainted with the recommendations of the National Council on Radiation Protection and Measurements as published in NCRP Reports available from NCRP Publications, 7910 Woodmont Avenue, Room 1016, Bethesda, Maryland 20814, and of the International Commission on Radiation Protection, and take adequate steps to protect against injury.

The equipment is sold with the understanding that the General Electric Company, GE Healthcare Group, its agents, and representatives have no responsibility for injury or damage which may result from improper use of the equipment.

Various protective materials and devices are available. It is urged that such materials or devices be used

IMPORTANT...RADIOACTIVE MATERIAL HANDLING

Only employees formally trained in radioactive materials handling and this equipment are authorized by the GE Healthcare Radiation Safety Officer to use radioactive materials to service this equipment.

GE Healthcare is required to notify the applicable U.S. state agency PRIOR to any source service event involving pin source handling. See NUC/PET radioactive material guides for specific instruction or contact your EHS Specialist.

A radiation survey must be performed when a pin source has been removed and replaced. See Radiation Survey Form Instructions or contact your EHS Specialist.

Rev 2 (July 21, 2005)

LITHIUM BATTERY CAUTIONARY STATEMENTS

⚠ **CAUTION** **Risk of Explosion**

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

⚠ **ATTENTION** **Danger d'Explosion**

Il y a danger d'explosion s'il y a replacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rébut les batteries usagées conformément aux instructions du fabricant.

OMISSIONS & ERRORS

Customers: please contact the GE Healthcare Sales or Service representatives.

GE personnel: please use the GE Healthcare iTrak/PQR Process to report all omissions, errors, and defects in this publication.

Revision History

Rev	Date	Reason for change
0	03/11/02	Document creation
1	09/24/02	Updated to include 16-slice hardware
2	03/07/03	General updates
3	11/04/03	Updates for LightSpeed RT
4	05/06/04	Added Lockout/Tagout warning to Detector Removal procedure
5	02/03/06	For PQR 13033841, updated final system alignments.
6	1/31/08	• Updated Legal Notes • Updated and added additional language translation statements in Important Precautions section. Also updated warning statements. • For European Medical Coach vans (only) - In Detector Removal procedure, added Notice to follow the instructions in Prepare Mobile Scan Room for Component Replacement, located on the Service CD. • **Note:** Document page numbers and Table of Contents page numbers are the same, but both differ from PDF page numbers. (Add 4 to get the PDF number.)

End of Revision History

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Publication Conventions

Section 1.0
Safety & Hazard Information

1.1 Text and Character Representation

Within this publication, different paragraph and character styles have been used to indicated potential hazards. Paragraph prefixes, such as hazard, caution, danger and warning, are used to identify important safety information. Text (Hazard) styles are applied to the paragraph contents that is applicable to each specific safety statement. Words describe the type of potential hazard that may be encountered and are placed immediately before the paragraph it modifies. Safety information will normally include:

- Type of potential Hazard
- Nature of potential injury
- Causative condition
- How to avoid or correct the causative condition

EXAMPLES OF HAZARD STATEMENTS

⚠ **DANGER SEVERE PERSONAL INJURY**

DANGER IS USED WHEN A HAZARD EXISTS THAT WILL CAUSE SEVERE PERSONAL INJURY OR DEATH IF INSTRUCTIONS ARE IGNORED. EXAMPLES INCLUDE:

- **ELECTROCUTION**
- **CRUSHING**

⚠ **WARNING SERIOUS PERSONAL INJURY**

WARNING IS USED WHEN A HAZARD EXISTS THAT COULD OR CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH IF INSTRUCTIONS ARE IGNORED. EXAMPLES INCLUDE:

- **POTENTIAL FOR SHOCK**
- **FAILURE TO TAG AND LOCKOUT SYSTEM POWER COULD ALLOW FOR UN-COMMANDED MOTION.**

⚠ **CAUTION Minor Personal Injury**

Caution is used when a hazard exists which can or could cause minor injury to self or others if instructions are ignored. Examples include:

- **Loss of critical patient data**
- **Crush or pinch points**

⚠ **NOTICE Property Damage Only**

Notice is used when a hazard is present that can cause property damage but has absolutely no personal injury risk.They can include:

- **Disk drive will be destroyed**
- **Internal mechanical damage, such as to the x-ray tube**

1.2 Graphical Representation

Important information will always be preceded by the exclamation point ⚠ contained within a triangle, as seen throughout the Preface. In addition to text, several different icons (symbols) may be used to make you aware of specific types of hazards that could possibly cause harm.

HAZARDS

ELECTRICAL

MECHANICAL

RADIATION

LASER

HEAT

PINCH

.

PROCEDURAL

AVOID STATIC ELECTRICITY

TAG AND LOCK OUT

WEAR EYE PROTECTION

Section 2.0
Publication Conventions

2.1 General Paragraph and Character Styles

Prefixes are used to highlight important non-safety related information.Text styles are applied to the text within each paragraph modified by the specific prefix.

EXAMPLES OF PREFIXES USED FOR GENERAL INFORMATION

Note: Conveys information that should be considered important to the reader.

Comment: *Represents "additional" information that may or may not be relevant to your situation.*

2.2 Buttons, Switches and Keyboard Inputs (Hard & Soft Keys)

"Soft keys" and "hard keys" are represented differently in this publication. Physical hardware, such as buttons and switches, are called hard keys because they are hard wired or mechanical in nature. A keyboard or on/off switch would be a hard key. Software or computer generated buttons are called soft keys because they are software generated. Software driven menu buttons are an example of such keys.

Example: Hard Keys — A power switch **ON/OFF** or a keyboard key like **ENTER** is indicated by applying a character style that uses both over and under-lined bold text that is bold. This is a hard key.

Example: Soft Keys — Whereas the computer MENU button that you would click with your mouse or touch with your hand uses over and under-lined regular text. This is a soft key.

Detector Replacement Procedure

Section 1.0
ESD Management Process

Through continuing research we have improved our ESD management processes thus minimizing the potential of damaging the Detector and other electronics. This section address the changes to previously established ESD management processes.

ESD MANAGEMENT TOOLS FOR DETECTOR REPLACEMENT

GEMS CT has evaluated current ESD process and recommends the following items be utilized to aid in the prevention of materials damage due to ESD events.

1.) Anti-Static kit
   - Work Station Monitor
   - Wrist Strap
   - 20 foot grounding cord
   - Anti-static mat (Field Supplied)

2.) Aero Duster Air Spray System

3.) Aero Duster Spray (Field Supplied)

4.) High Output Ionizing Fan

5.) ESD Smock

6.) Safe Skin Nitrile Gloves

7.) Amax Contact and Circuit Board Cleaner (Field Supplied)

8.) ESD Flex Boots (4 and 8 Slice Detectors)

9.) Elastomer Tweezers (4 and 8 Slice Detectors)

10.) Elastomer Removal Pick (4 and 8 Slice Detectors)

11.) Spare Elastomers w/container (4 and 8 Slice Detectors)

12.) Alcohol Pads 91% (4 and 8 Slice Detectors)

13.) 16 Slice ESD Boots (16 Slice Detectors)

Process Differences

1.) Nitrile Gloves replace Finger Cots.
   a.) Finger cots can leave black particles on surfaces.
   b.) Incorrect dressing of finger cots results in skin oils contamination.

2.) Aero Duster Spray System replaces Metal Tube used for Canned Air.

   Can spray angle is critical. No Liquid Spray allowed. New Aero Duster Spray System provides user the flexibility of access to components while the Aero Duster can remains upright.

3.) High Output Ionizing Fan

   Applies physics laws to dissipate charge on insulating materials.

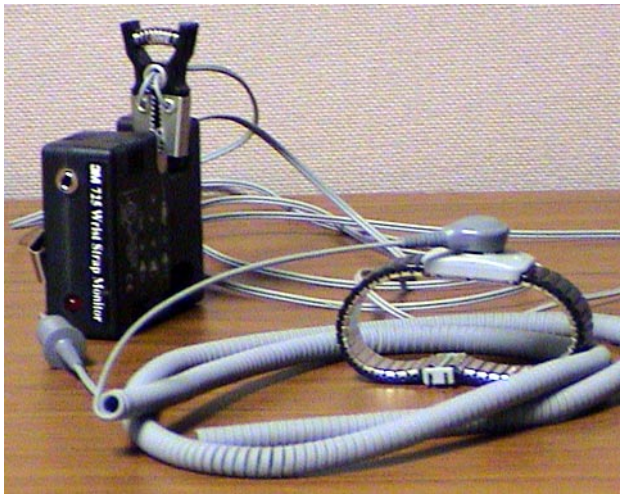


Figure 1-1 ESD Workstation Monitor and Wrist Strap

- Monitor requires a 9 volt battery.
- Monitor will “Beep” when you are not properly grounded.
- Wrist strap must contact your skin. Do not place on top of clothing or Nitrile gloves.

Figure 1-2 DAS/Detector Interface Tools

- ESD Flex Boot Covers to protect detector from ESD damage
- Alcohol wipes to clean flex leads prior to installation on the DAS/Detector Interface (DDIF).
- Plastic tweezers and pick to remove and install elastomers.
- Aero Duster attachment to remove debris from the DDIF assembly.

Figure 1-3 ESD Nitrile Glove and Full Length Smock

- Nitrile gloves to prevent skin oil contamination. DO NOT use any other type of glove.
- ESD smock to prevent static discharge from your clothing. The wrist strap will not remove static charge from your clothing. The ESD smock will not remove charge from you clothing, it is a barrier to prevent ESD damage.

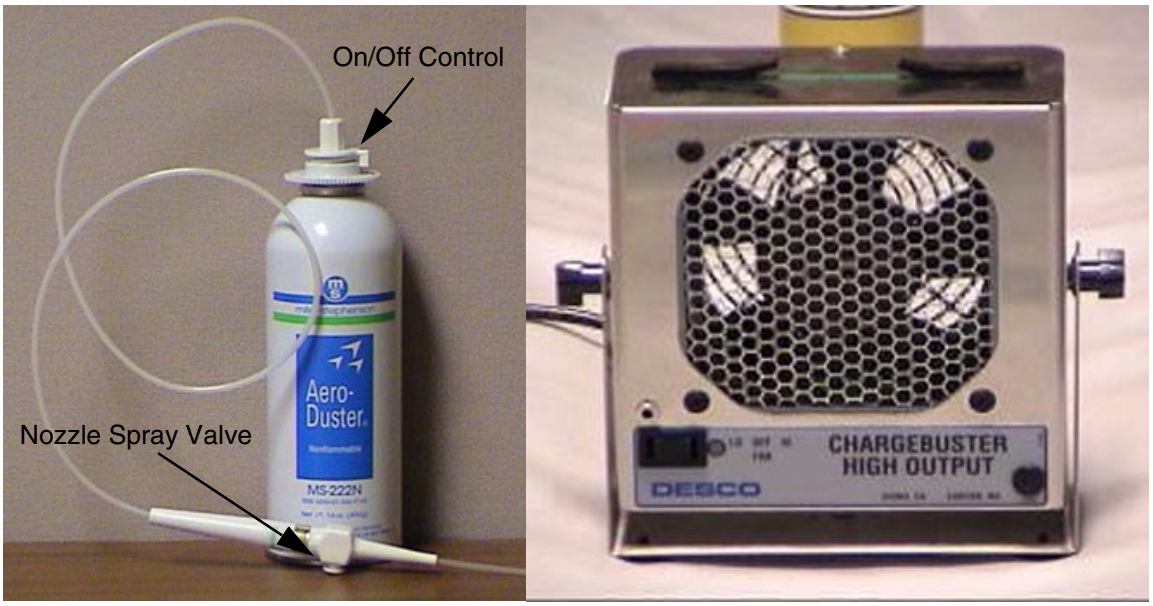


Figure 1-4 Aero Duster and Spray System Attachment and Ionizing Fan

- Remove the standard Aero Duster trigger.
- Rotate Aero Duster Attachment to the OFF position.
- Snap onto top of Aero Duster can. (Set attachment to OFF position before removal)

Section 2.0
Service ESD Tool Usage

NOTICE **When using aero duster to remove debris, do not allow liquid to contact any components. The evaporation of this liquid will generate static charge resulting in microphonic noise or ESD damage.**

Figure 1-5 Wrong Angles will generate Liquid Spray

- Do not use Aero Duster Spray as shown in Figure 1-5. This will create a liquid stream which will charge the surface as it evaporates.
- Always hold can upright as in Figure 1-4 and clear the hose attachment by spraying away from any surface. Do this to ensure no liquid is discharged.
- Liquid discharge can be seen as a mist at the output of the nozzle and a frosting on surfaces.
- You want to HEAR the spray, NOT see it.

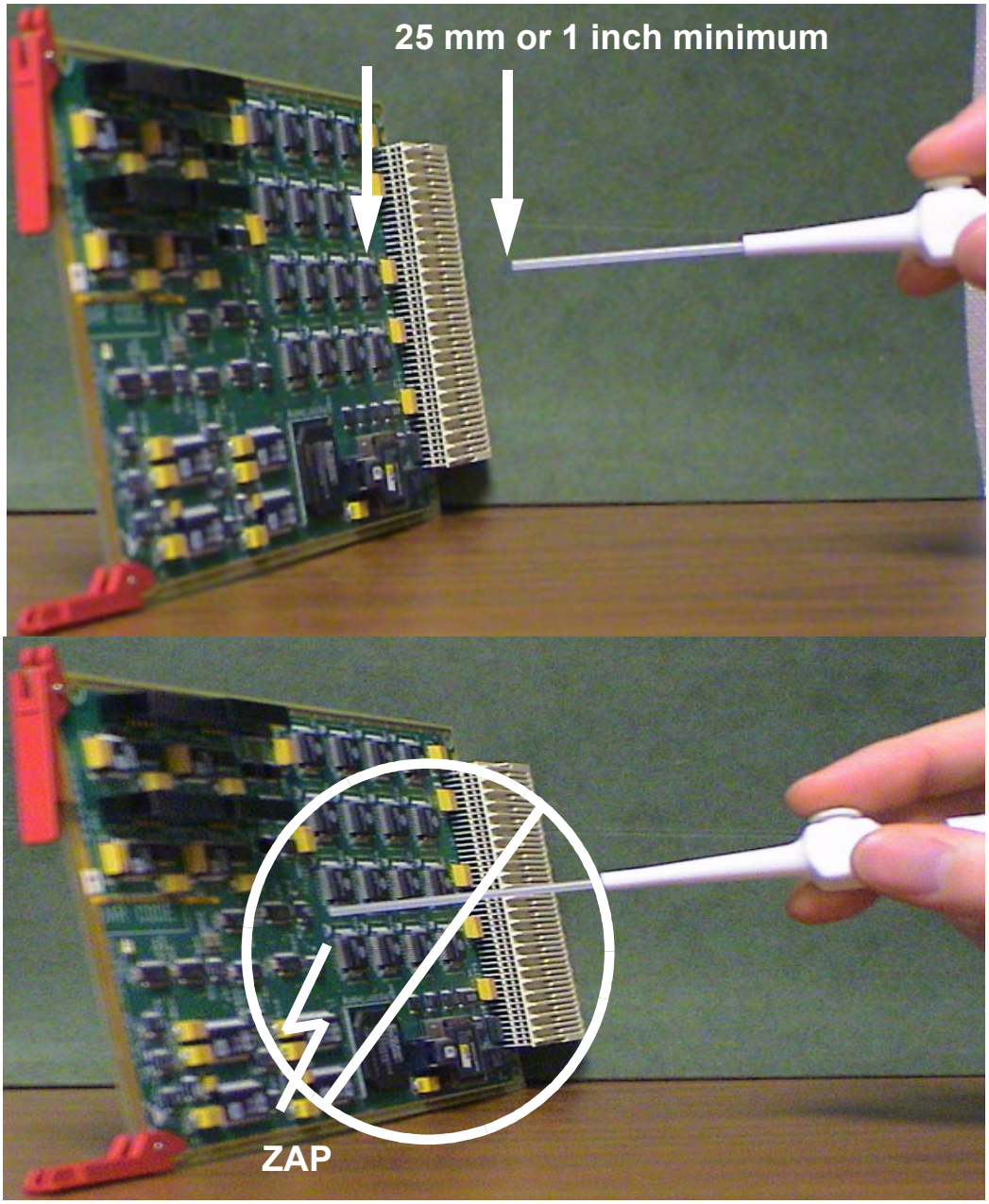


Figure 1-6 Proper Aero Duster Nozzle Usage

- Never touch the tip of the nozzle to any surface. The tip can be charged in excess of 10,000 volts. This can result in severe ESD damage and/or microphonics noise.
- Charge on the nozzle tip will not be transferred by the flow of gaseous spray. Maintain at least 25 mm or 1 inch from any surface.
- Always clear the nozzle, away from surfaces, of any potential liquid spray.

Figure 1-7 Amax Cleaner Correct and Incorrect Usage

- Amax Contact and Circuit board cleaner can be used to dissipate static charge.
- Amax Contact Cleaner should not be used on the elastomers. The elastomers will absorb the liquid preventing proper evaporation. The result will be microphonics noise and artifacts.
- Do not attach the Aero Duster attachment to any other chemicals.

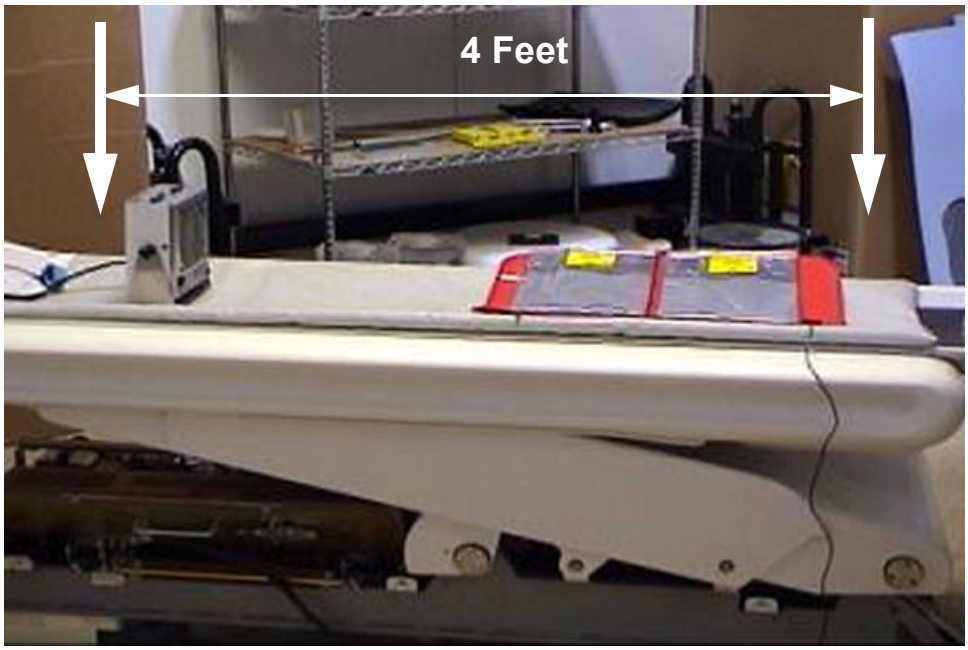


Figure 1-8 Preparing your work area

- Place the static mat near the end of the cradle. Connect the ground lead to the Threaded Rod for the Gantry Balance Trim Weights on either side of the DAS.
- Place the Ionizing Fan on the cradle blowing across the static mat. Set the fan speed to high. The effective coverage of the fan is less than 6 feet.
- Use the table service outlet to power the Ionizing Fan.

Figure 1-9 Using the Ionizing Fan to dissipate charge at the DDIF

- At various stages you will be instructed to use the fan to dissipate charge.
- Use the service outlet on the right side of the gantry for power.
- It takes about 6 seconds for the fan to dissipate any charge.
- Slowly direct the Ionized airflow across the DDIF. Make several passes by moving the fan from one end to the other.
- There are no visual or physical indications to show effectiveness in this process.
- When the fan is not being used on the DDIF, it should be on the patient table, blowing across the static mat.

Section 3.0
Detector Removal

3.1 Prepare Detector Container

WARNING **POTENTIAL FOR SHOCK.**
VOLTAGE MAY BE PRESENT.
USE PROPER LOCKOUT/TAGOUT PROCEDURES BEFORE REPLACING COMPONENTS.

NOTICE **Ensure that you are properly grounded by using the appropriate ESD wrist strap and cord connected to a good ground point in the Gantry.**

NOTICE **For European mobile units manufactured by Medical Coaches, Inc. (sometimes known as Medcoach vans), before proceding with these instructions, follow the *"Prepare Mobile Scan Room for Component Replacement"* instructions on the LightSpeed 5.X HP60 Service Methods CD under *Parts Replacement > Gantry > Medical Coach Euro-Van*.**

1.) Remove gantry covers and shut OFF power: **AXIAL ENABLE**, **HVDC ENABLE**, **120 VAC**.
2.) Lock the gantry in position (12 o'clock), and remove the DAS air plenum.
3.) Position replacement Detector Inner Container next to gantry as shown in Figure 1-10.
   a.) Remove inner container from outer container.
   b.) Move metal Detector container to service side of gantry.
   c.) Attach metal Detector grounding wire to DAS/Detector Plate.

Figure 1-10 Detector Shipping Crate and Boom Extension

   d.) Remove metal container top cover.
   e.) Use De-Ionizing fan to dissipate charge on the new detector.
   f.) Reposition the metal container so that the empty side is closer to the Gantry.
   g.) Ensure ground wire is connected to detector and gantry detector plate.
   The detector ground hole is on the end opposite the lifting eye. This hole may be found on the end or top surface of the bottom detector rail.
   h.) Remove boom extension from wooden crate foam storage compartment.
   i.) Install boom extension on tube change boom.
   Install open end from bottom, using two provided locking pins.

3.2 Remove Failed Detector

3.2.1 All Hardware Configurations

NOTICE **Follow ALL Electro-Static Discharge procedures:**

- **Always use ESD Wrist Strap, grounding cords and ESD Smock. The use of a ground monitor is mandatory.**
- **When handling Detector Flex ends, elastomers, covers and DAS Backplane connections, use Nitrile Gloves to prevent dirt and oils from accumulating on low signal electrical connections.**
- **When disconnecting flex leads, always protect the flex from ESD and debris by installing Flex boots.**

1.) Disconnect heater/thermistor cable.
16 Slice & RT (widebore) detectors have heater plugs on both sides of the DAS/Detector plate.

2.) Disconnect Detector Memory Board (**DMB**) assembly from mounting bracket.

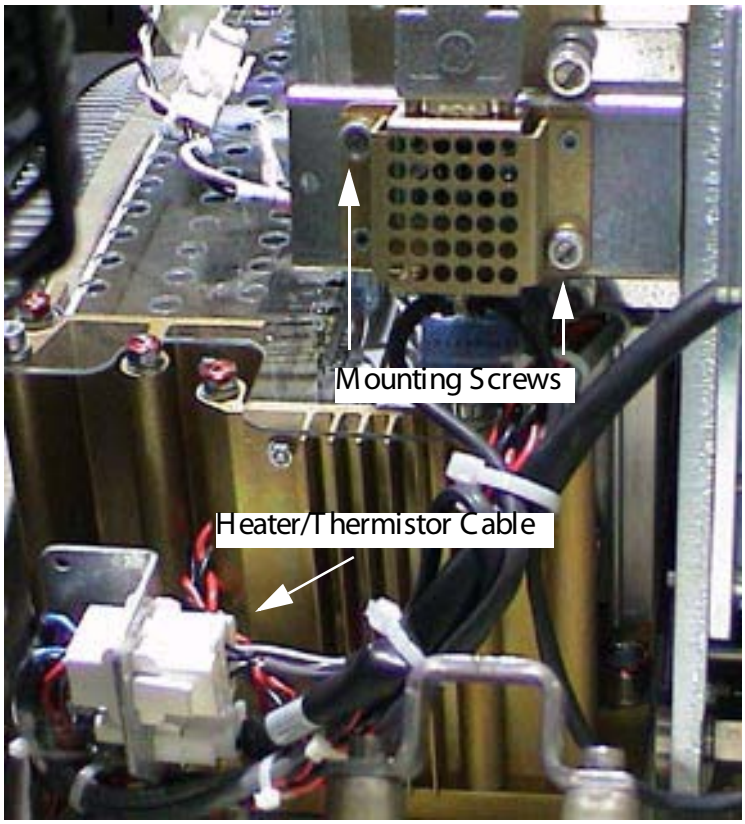


Figure 1-11 Detector DMB Module, 4 and 8 Slice System Shown

3.2.2 Disconnect Detector flexes from DAS Backplane

3.2.2.1 4 and 8 Slice Hardware Only

1.) With wrist strap still attached to gantry, remove package of protective covering boots from inner container.

2.) Remove the A side elastomeric covers by removing the clamps. Use a 2.5mm Hex screwdriver bit. There are 2 clamps per cover.

3.) Place the covers on the static mat. The fan will dissipate any charge.

NOTICE
Potential for equipment damage

Flex damage can result if not handled properly.

4.) With the flex covers removed, carefully lift each flex from the flex housing and alignment pins. Do not use a metal tool.

5.) After each flex is lifted, attach dissipative boots to each flex connector and bend each A side flex to be perpendicular to the Detector window (Straight out towards the table to gain access to the B side).

6.) Remove the B side elastomeric covers by removing the clamps. Use a 2.5mm Hex screwdriver bit. There are 2 clamps per cover.

7.) With the flex covers removed, carefully lift each flex from the flex housing and alignment pins. Do not use a metal tool.

8.) After each flex is lifted, attach dissipative boots to each flex connector and bend each B side flex towards the A side so that the flexes do not interfere when removing the Detector.

3.2.2.2 16 Slice Hardware Only

1.) With wrist strap still attached to gantry, use flex removal tool and disconnect “A side” flexes. See Figure 1-12.

Figure 1-12 16 Slice Flex Removal Tool Usage

NOTICE **Flex damage can result if these precautions are not followed.**

- Do not tug on flexes with the removal tool. Let the tool do the work.
- Excessive plunger force indicates a problem.
  - Make sure flex removal tool is perpendicular to flex.
  - Incorrect flex tool pin pitch.
    * Too much pitch and dust shield tabs spread out beyond pin ends.
    * Too little pitch and dust shield tabs do not spread and unlock flex.
    * Pin angle 1 does not equal pin angle 2.
    * Use pliers or small crescent wrench to adjust angle on tool. See Figure 1-13.

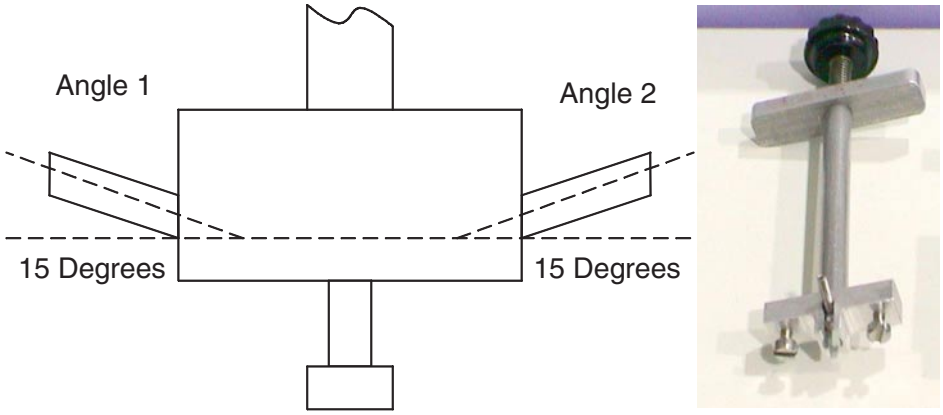


Figure 1-13 16 Slice Flex Removal Tool Pin Pitch

2.) Install flex ESD boots. See Figure 1-14.
3.) Disconnect 'B side' flexes using flex removal tool.
4.) Install flex ESD boots.

Figure 1-14 16 Slice Hardware, Flex Removal and ESD Boot Installation

3.2.3 Removing Detector from Gantry - All Hardware Configurations

WARNING

POTENTIAL FOR INJURY

1.) Disengage the rotational lock, and slowly rotate the Gantry so that the Detector is positioned at 3:00. Once again, engage the rotational lock.

2.) Attach chain hoist hook to the detector lifting loop in such a manner that the hook does not damage the Detector thermistor or cabling.

3.) Remove the two outside socket head mounting bolts. Keep the micro-adjuster from turning. This will aid in better initial Detector positioning when installing the replacement Detector.

Figure 1-15 “Upper” end of detector assembly (viewed with assembly at 3 o’clock)

4.) Loosen the center hex head mounting bolt using a 10mm open-end wrench. Again, try to keep the micro-adjuster from turning.

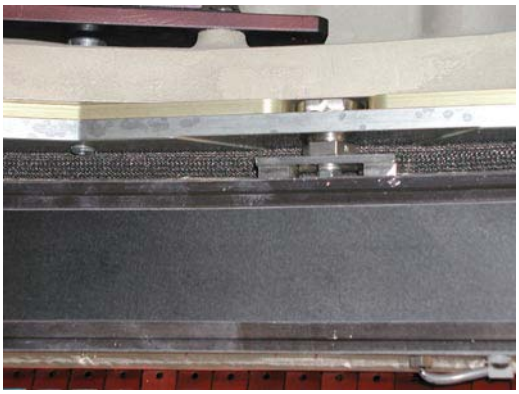


Figure 1-16 Center detector mounting bolt (edge view of assembly)

5.) Continue loosening the center hex head mounting bolt, while guiding the detector along the guide pins, until the detector is off of the guide pins and supported solely by the lifting chain and hoist.

6.) Ensure that the plastic insulators are not left on the guide pins.

7.) Carefully swing the detector out of the gantry and over the vacant spot in the inner container.

8.) Place Detector in the empty side of the Detector Shipping Container.

a.) Lower the detector so the bottom mount aligns with the bottom threaded mounting hole (M10 for 16-slice and 4-slice RT, M6 for all other 4 & 8-slice detectors).

b.) Loosely start the bottom mounting screw, approximately 2 to 3 threads.

c.) Carefully release chain tension so the center mounting screw aligns with the center threaded mounting hole.

d.) Snug the center mounting bolt.

e.) Install the top mounting bolt.

f.) Remove lifting hook from the Detector.

g.) Tighten the screws to the specifications for the detector type in the following table:

Detector	N-M	in-lbs
Warp3/DCS	7.9	70
16slice /RT (widebore)	38.4	340

Section 4.0
DAS/Detector Interface Inspection

NOTICE ***For detailed information on servicing the DAS Detector Interface (DDIF), refer to the appropriate System Service Manual for your specific system. Failure to use proper service procedures can result in serious damage to the equipment, especially the 16 slice hardware.***

1.) Using a bright flashlight and magnifying glass if necessary.

For 4 and 8 Slice hardware, inspect the elastomers and housing for debris.

a.) Use Aero Duster to carefully blow off and particles. Start at the top and work down. See Figure 1-5 on page 20 and Figure 1-6 on page 21.

b.) Replace any elastomers that look suspicious, fell out, or were not cleaned by the Aero Duster spray.

Do not use AMAX on 4 and 8 slice elastomeric housings. This will result in extreme pop/noise and artifact failures.

For 16 slice hardware, inspect the Interposers for debris and bent pins.

a.) Use Aero Duster to carefully blow off and particles. Start at the top and work down. See Figure 1-5 on page 20 and Figure 1-6 on page 21.

WARNING

EYE PROTECTION

b.) Use AMAX spray for heavy debris if necessary. Use eye protection.

Note: When using AMAX, remove the dust shields and allow plenty of time for AMAX to dry.

c.) Replace any damaged retainer clips, dust shields or interposers as necessary.

- Torque dust shield screws to 0.3 N-m (2.65 lbs-in). Use provided screwdriver tip.
- The Interposer Removal Tool works similar to the Flex Removal Tool.
  - i.) Position tool over the interposer with the closed end of the tool on the outside edge of the DDIF. Dust shield must be removed.
  - ii.) Tool rests on the backplane.
  - iii.) Depress plunger and allow tool to engage and remove the interposer.
- Refer to System Service manual for retainer clip replacement details.

2.) After the DDIF inspection is complete, use the Ionizing Fan to dissipate any charge. See Figure 1-9 on page 23.

3.) Return fan to patient table to maintain the static free work environment.

Figure 1-17 DDIF Service Tools

Section 5.0
Install New Detector

1.) Remove New Detector from shipping crate.

a.) Rotate the shipping crate 180 degrees so the Chain Slot of the new detector is on top. See Figure 1-10 on page 24.

b.) Connect all grounding wires.

c.) Carefully remove the detector.

i.) Connect chain hook and apply light tension.

ii.) Remove top mounting screw and loosen bottom mounting screw so 3 thread engagement remain.

iii.) Loosen center captive screw until free.

iv.) Remove bottom screw.

NOTICE **Use original mounting screw if the new screws are not the same. These screws should be black metal oxide.**

STEP 2 APPLIES TO 8 SLICE HARDWARE ONLY (non-RT/widebore)

NOTICE **Failure to verify adjusters can result in BOW alignment failures. The new DCS detector requires additional adjustment range that the old adjusters do not provide.**

2.) Inspect the three (3) BOW Adjusters. There must be a number 3 stamped onto each.

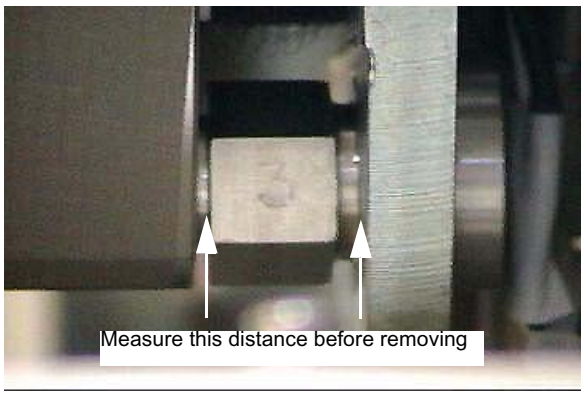


Figure 1-18 DCS Detector BOW Adjuster

a.) The original WARP 3 detector (no DMB Module) used the original adjusters. These must be replaced with the ones provided in the kit.

b.) Before removing the adjuster, carefully measure the distance from the Detector plate to the head of the adjuster. See Figure 1-18. The nominal height of the end BOW Adjusters is 18.95mm, and for the center it is 9.45mm.

c.) Install new DCS BOW Adjusters and preset as follows;

* Center = Measured distance - 2.00mm
* Ends = Measured distance - 2.00mm

d.) The nominal height of the DCS Adjusters are 16.95mm at the Ends, and 7.45 at the Center adjusters.

3.) Mount Detector on Gantry

a.) Raise detector to proper height required for meeting the two locating pins on the gantry, while swinging the detector towards the gantry mounting surface.

b.) Carefully pre-bend the 'B Flexes' to ease detector installation. See Figure 1-19.

* Do not bend flex at the detector.
* Do not crease any part of the flex.
* Use all ESD precautions.

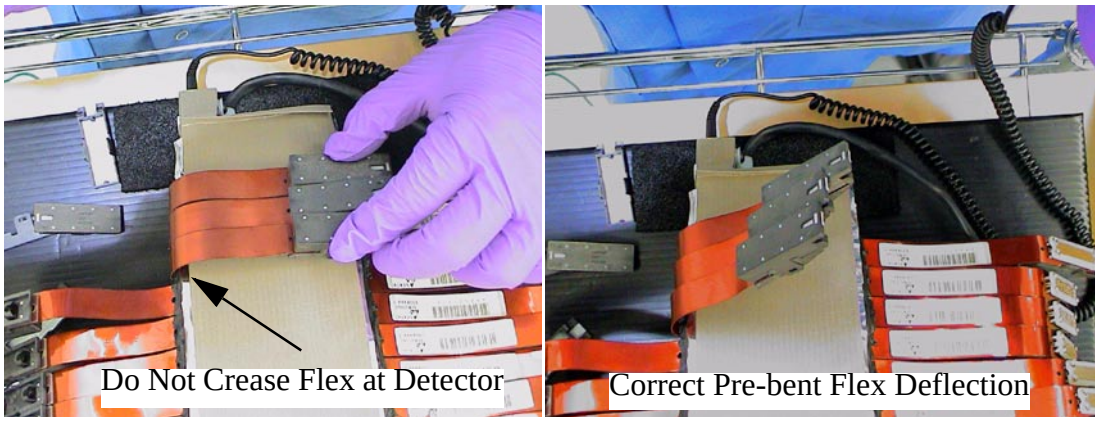


Figure 1-19 Pre-bending the 'B Flexes' for Detector Installation

c.) Carefully pre-bend the 'A Flexes' to help prevent microphonics noise.

* Pre-bending helps to limit flex to B Flex back-shell contact.
* Do not crease any part of the flex.
* Use all ESD precautions.

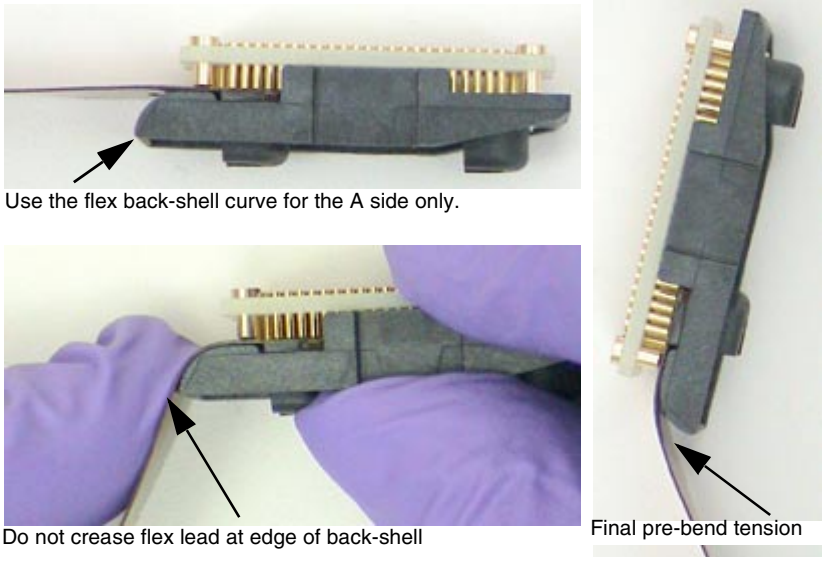


Figure 1-20 Pre-bending the 'A Flexes' for Detector Installation

⚠ **CAUTION** **Make sure the rear flexes are not pinched, creased or otherwise damaged while installing the detector.**

d.) Position the detector on the mounting pins while guiding the center hex mounting bolt into position for threading.

Note: You must start and secure the center mounting screw first. Do not force the detector onto the guide pins for this reason.

e.) Tighten center mounting bolt until snug (~10 in-lbs (1.13 N-m)).

4 and 8 Slice Hardware Only (non-RT/widebore)

i.) Install the two (2) outer M6 Detector mounting screws. Torque the two outer Detector mounting screws to 13.56 N-m (120 lbs-in), using a torque wrench and a 5mm Hex-bit socket.

ii.) Tighten the center Detector mounting bolt using a 10mm open-end wrench. Torque to 13.56 N-m (120 lbs-in), about 1 flat past tight.

16 Slice and RT (widebore) Hardware Only

i.) Install the two (2) outer M10 Detector mounting screws. Torque the two outer Detector mounting screws to 30.5 N-m (22.5 lbs-ft), using a torque wrench and the 8mm ball hex blade in the provided service tool kit.

ii.) Tighten the center Detector mounting bolt using a 10mm open-end wrench. Torque to 13.56 N-m (120 lbs-in), about 1 flat past tight.

5.1 Remove Container

1.) Remove ground wire from inner container
2.) Move the inner container to a convenient spot.
3.) Add cover to inner container.
4.) Put inner container back on lower part of outer container.
5.) Put outer container cover back on, and return to Detector Engineering using the Address on the shipping label.
6.) Remove lifting hook from the detector.
7.) Remove chain hoist from the crane and return to storage.
8.) Move Gantry Crane to normal retained position.
9.) Disengage the rotational lock, rotate the gantry until the **DAS** is at 12 o'clock, and reengage the lock.

5.2 Install and Test Flexes

PHYSICAL CONNECTIONS

Change your Nitrile Gloves as needed. Do not use if contaminated by the sticky black sealant used in detector construction.See Figure 1-21.

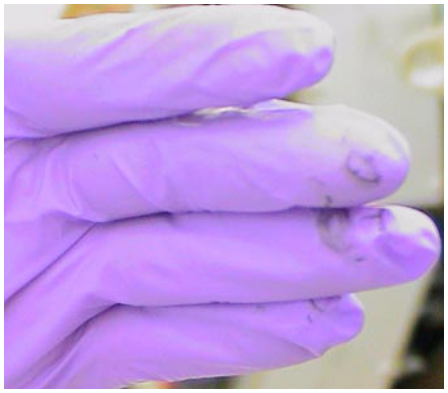


Figure 1-21 Contaminated Nitrile Gloves

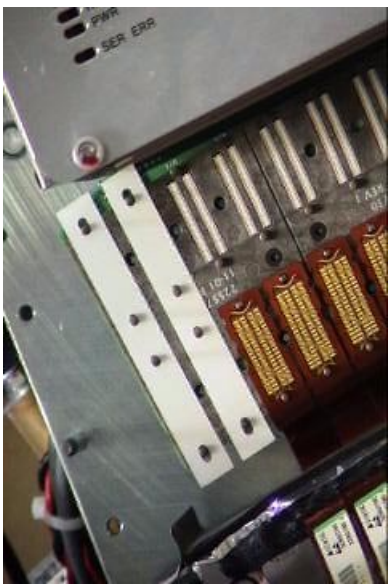
5.2.1 4 and 8 Slice Hardware Only

1.) Connect flexible circuit connectors:

a.) Inspect DDIF again for debris. Clean off any particles using Aero Duster as before.

b.) Use the Ionizing fan on the DDIF and detector flex assembly as before.

c.) Return fan to table to maintain the housing covers static free environment.



DCB and DAS Channel # 1 on left picture require 2 spacers.

DAS Channel # 768 on right picture requires 1 spacer.

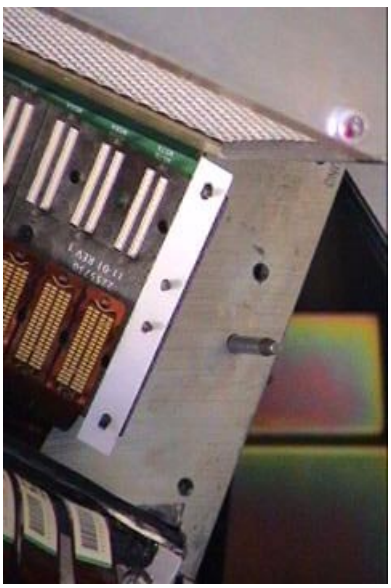


Figure 1-22 DDIF End Spacers, 4 and 8 Slice Hardware Only

2.) Put inner flexes on the connectors by installing flexes over Flex alignment pins. The Channel 1 housing will use only two flexes because of the two spacers. The the Channel 768 housing will use three flexes because of the single spacer.

a.) Remove only enough flex boots to provide a clear working area.

Wipe flexes with alcohol pad and let dry before installing onto DDIF.

b.) Add Top cover on B side as soon as a set of four flexes is in place.

c.) Loosely fasten top cover clamps to less than 13 in-lbs (1.47 N-m) on both screws using a 2.5mm allen.

d.) Continue until all B side flexes are connected.

e.) Use the Ionizing fan on the DDIF and detector flex assembly as before.

f.) Return fan to table to maintain the housing covers static free environment.

g.) Torque ALL Inner housing to 13 in-lbs (1.47 N-m).

3.) Install Outer flexes using the same procedure as the Inner flexes.

a.) Add top covers on A side as soon as a set of four flexes is in place.

b.) Use the Ionizing fan on the DDIF and detector flex assembly as before.

c.) Return fan to table to maintain the housing covers static free environment.

d.) Fasten connector pressure plate to 13 in-lbs (1.47 N-m) on both screws.

5.2.2 16 Slice Hardware Only

1.) Connect 'B Flexes'.

a.) Inspect DDIF again for debris. Clean off any particles using Aero Duster as before.

b.) Use the Ionizing fan on the DDIF and detector flex assembly as before.

c.) Return fan to table to maintain the static free work environment.

d.) Use your nitrile gloved hands only to install the flexes. No Tools.

e.) Do not force flex seating. Bent/broken interposer pins will result.

f.) Remove ESD boots using both hands, thumbs on ESD Boot locking tabs.

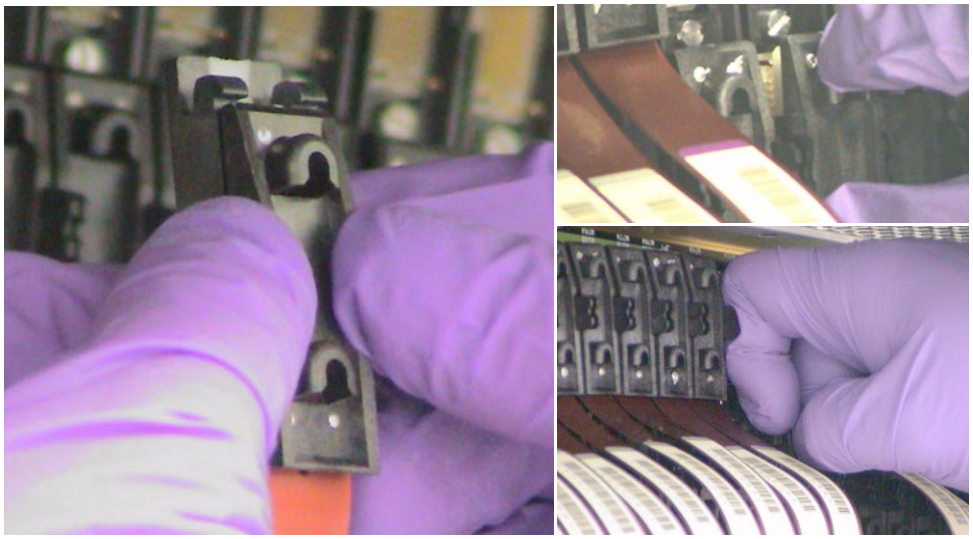


Figure 1-23 ESD Boot Removal and Flex Installation

2.) Connect 'A Flexes'. Same procedure as 'B Flexes'.

5.2.3 All Hardware Configurations

1.) Fasten DMB module. See Figure 1-11 on page 25.

2.) Connect heater/thermistor cables and tie down with Ty-Raps. See Figure 1-11 on page 25.

3.) Use the Ionizing fan on the DDIF and detector flex assembly one last time.

Section 6.0
Cleanup and Functional Testing

1.) Clean and Replace Air Plenum.
2.) Restore power to the gantry.
3.) Perform a Hardware reset.
4.) Allow DAS and Detector to warm-up a minimum of 20 minutes

6.1 Functional Test

6.1.1 Preliminary Checkout

This step is used to verify gross failures, short and opens, caused by bad elastomer connections or ESD damage the Detector itself. Correct any failure before proceeding to DAS Integration.

1.) Launch DASTOOLS from Service Desktop and run 1 pass of XRAY Verification.
2.) Review DASTOOLS Errorlog and correct any failures.

NOTICE **Detector temperature should be warm and stabilized before running DAS Integration or Air and Phantom calibrations. Approximate warm-up time is 1 hour.**

6.1.2 DAS Integration

This section tests the DDIF and DAS Assembly. Failures should be related to microphonics or DAS components. Correct all failures before proceeding to System Alignments.

1.) Run 1 Pass Auto Test
2.) Review DASTOOLS Errorlog and correct any failures.

6.2 System Alignments

Refer to the appropriate System Service Manual for details.

1.) Complete all Tube/Detector alignments.
2.) Install gantry covers.
3.) Run z-slope, DAS gain, collimator cal, detailed calibration, FastCal, and CT Number adjust.

Note: Upon running the FastCal the first time, Daily IQ check may fail, and can generally be ignored, provided the images look good.

6.3 Image Quality

Refer to the appropriate System Service Manual for details.

1.) Perform the 1X Image series.
2.) Perform 1X Image series analysis.

Section 7.0
Tools Return Policy

Re-package all provided service tools, in the original packages, and place into the metal detector shipping container. Failure to return these items will result in your Service Contract being billed the significant cost of these tools.

- ESD Monitor Workstation, 10 ft cord and wrist strap.
- High Output Ionizing Fan.
- ESD Smock.
- Detector Hoist Boom Extension.
- 16 Slice Flex and Interposer Removal Tools

Appendix
ESD Basics

ESD FACTS

1.) Electrostatic discharge is defined as the transfer of charge between bodies at different electrical potentials.

2.) Charged surfaces can attract and hold contaminants, making removal from the environment difficult.

3.) Electrostatic charge is most commonly created by the contact and separation of two materials. A circuit board sliding into or out of a bag for example.

4.) Electrostatic charge also may be created on a material in other ways such as by induction, ion bombardment, or contact with another charged object.

5.) Electrostatic charge also may be created on a material by rapid evaporation of liquids such as compressed gases, i.e. Aero Duster.

6.) Electrostatic charge also may be created on a material by simple air movement if that material is not mechanically bonded to a conductive or semi-conductive surface.

GENERATION METHOD	10 - 25% RH	65 - 90% RH
Walking across a carpet	35,000 volts	1,500 volts
Walking across vinyl tile	12,000 volts	250 volts
Working at a bench	6,000 volts	100 volts
Poly bag picked up from a bench	20,000 volts	1,200 volts
Chair with urethane foam	18,000 volts	1,500 volts

Table A-1 General Static Generating Events

There are 3 basic material types:

A.) Insulators

A considerable amount of charge can be generated on the surface of an insulator. Because an insulator does not readily allow the flow of electrons, both positive and negative charges can reside on a single surface at the same time, at different locations.

B.) Conductors

When a conductive material becomes charged, the charge will be uniformly distributed across the surface of the material. If this charged conductor makes contact with another conductive material, the electrons will easily transfer between the materials. If the second conductor is connected to earth ground, the electrons will flow to ground and the excess charge will be shunted or neutralized.

C.) Static Dissipative Materials

There can be electron flow across or through the dissipative material, but it is controlled by the surface resistance or volume resistance of the material. The static dissipative material will allow the transfer of charge to ground or other conductive objects. This transfer is faster than insulators but slower than conductors.

MATERIAL	SURFACE RESISTIVITY	VOLUME RESISTIVITY
Insulators	1×10^{12} ohms/sq	1×10^{11} ohm-cm
Conductors	less than 1×10^{5} ohms/sq	less than 1×10^{4} ohm-cm
Static Dissipative	1×10^{5} - 1×10^{12} ohms/sq	1×10^{4} - 1×10^{11} ohm-cm

Table A-2 Generalized Materials Resistivity Characteristics

COMPONENT	SENSITIVITY LEVEL
MOSFETS	0 - 1,999 volts
JFETS	0 - 1,999 volts
Precision voltage regulator diodes	0 - 1,999 volts
Operational amplifiers	0 - 1,999 volts
Integrated circuits	0 - 1,999 volts
Thin film resistors	0 - 1,999 volts
Silicon controlled rectifiers	0 - 1,999 volts

Table A-3 Generalized Electronic Component ESD Sensitivity

Glossary

TERM	DEFINITION
BOW	Beam on Window. A measurable and adjustable relationship
CT	**C**omputed **T**omography. CT scanners use conventional X-Ray technology to generate images of the internal structure of objects.
DAS	Data Acquisition System
DDIF	DAS Detector Interface
DMB	Detector Memory Board
ESD	Electro-Static Discharge. A transfer of electrons from one surface to another. Can result in severe damage to electronic components and devices.
Elastomer	A signal transmitting device used to connect the detector flex leads to the DAS back plane.
Flex boots	A non-conductive flexible hood used to protect the detector flex leads from ESD events.
GE	**G**eneral **E**lectric.
GEMS	**G**eneral **E**lectric **M**edical **S**ystems. GEMS is an internationally recognized manufacturer of quality medical diagnostic machinery, including CT, PET and MR Scanners.
Microphonics	Signal noise generation created by undesired movement or vibration of Detector, DDIF and DAS components. Dust can generate such noise. Signal levels in the nano- to milliamp range.
Nitrile Gloves	A non-allergenic material which contains no powders and is made of dissipative material. It's purpose is to prevent skin oil contamination of the detector flex leads and DDIF components.

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