Signa EXCITE to HDxt 1.5T System Upgrade

OPERATING DOCUMENTATION

5166005
Revision 13.0

WARNING

STRONG MAGNETIC FIELD

NO PACEMAKERS*
NO NEUROSTIMULATORS*
NO CONDUCTIVE/METALLIC IMPLANTS*

Persons with pacemakers, neurostimulators or metallic implants must not enter this area.

Serious injury may result.

* In general, patients with conductive (e.g. metallic) implants are contraindicated for MR scans. For patients with implants that are labeled as 'MR Safe' or 'MR Conditional', consult the implant device manufacturer's documentation.

* WARNING: Only use quadrature transmit for 'MR Conditional' devices.

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Important Information

LANGUAGE

ПРЕДУПРЕЖДЕНИЕ (BG)

Това упътване за работа е налично само на английски език.

- Ако доставчикът на услугата на клиента изиска друг език, 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 пациента в резултат на токов удар, механична или друга опасност.

警告 (ZH-CN)

本维修手册仅提供英文版本。

- 如果客户的维修服务人员需要非英文版本，则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服务人员、操作人员或患者造成电击、机械伤害或其他形式的伤害。

警告 (ZH-HK)

本服務手冊僅提供英文版本。

- 倘若客戶的服務供應商需要英文以外之服務手冊，客戶有責任提供翻譯服務。
- 除非已參閱本服務手冊及明白其內容，否則切勿嘗試維修設備。
- 不遵從本警告或會令服務供應商、網絡供應商或病人受到觸電、機械性或其他的危險。

警告 (ZH-TW)

本維修手冊僅有英文版。

- 若客戶的維修廠商需要英文版以外的語言，應由客戶自行提供翻譯服務。
- 請勿試圖維修本設備，除非 您已查閱並瞭解本維修手冊。
- 若未留意本警告，可能導致維修廠商、操作員或病患因觸電、機械或其他危險而受傷。

UPOZORENJE (HR)

Ovaj servisni priručnik dostupan je na engleskom jeziku.

- Ako davatelj usluge klijenta treba neki drugi jezik, klijent je dužan osigurati prijevod.
- Ne pokušavajte servisirati opremu ako niste u potpunosti pročitali i razumjeli ovaj servisni priručnik.
- Zanemarite li ovo upozorenje, može doći do ozljede davatelja usluge, operatera ili pacijenta uslijed strujnog udara, mehaničkih ili drugih rizika.

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 uden at læse og forstå denne servicemanual.
- Manglende overholdelse af denne advarsel kan medføre skade på grund af elektrisk stød, 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 alvorens 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.

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, mechanical or other hazards.

HOIATUS (ET)

See 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 d’installation et de maintenance est disponible uniquement en anglais.

- Si le technicien d'un client a besoin de ce manuel dans une langue autre que l'anglais, il incombe au client de le faire traduire.
- Ne pas tenter d'intervenir sur les équipements tant que ce manuel d’installation et de maintenance 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 μόνο στα αγγλικά.

- Εάν ο τεχνικός σέρβις ενός πελάτη απαιτεί το παρόν εγχειρίδιο σε γλώσσα εκτός των αγγλικών, αποτελεί ευθύνη του πελάτη να παρέχει τις υπηρεσίες μετάφρασης.
- Μην επιχειρήσετε την εκτέλεση εργασιών σέρβις στον εξοπλισμό αν δεν έχετε συμβουλευτεί και κατανοήσει το παρόν εγχειρίδιο σέρβις.
- Αν δεν προσέξετε την προειδοποίηση αυτή, ενδέχεται να προκληθεί τραυματισμός στον τεχνικό 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 aðeins 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 lingua inglese.

- Se un addetto alla manutenzione richiede il manuale in una lingua diversa, il cliente è tenuto a provvedere direttamente alla traduzione.
- Procedere alla manutenzione dell'apparecchiatura solo dopo aver consultato il presente manuale ed averne compreso il contenuto.
- Il mancato rispetto della presente avvertenza potrebbe causare lesioni all'addetto alla manutenzione, all'operatore o ai pazienti provocate da scosse elettriche, urti meccanici o 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 매뉴얼은 영어로만 이용하실 수 있습니다.

- 고객의 서비스 제공자가 영어 이외의 언어를 요구할 경우, 번역 서비스를 제공하는 것은 고객의 책임입니다.
- 본 서비스 매뉴얼을 참조하여 숙지하지 않은 이상 해당 장비를 수리하려고 시도하지 마십시오.
- 본 경고 사항에 유의하지 않으면 전기 쇼크, 기계적 위험, 또는 기타 위험으로 인해 서비스 제공자, 사용자 또는 환자에게 부상을 입힐 수 있습니다.

BRĪDINĀJUMS (LV)

Šī apkopes rokasgrāmata ir pieejama tikai angļu valodā.

- Ja klienta apkopes sniedzējam nepieciešama informācija citā valodā, klienta pienākums ir nodrošināt tulkojumu.
- Neveiciet aprīkojuma apkopi bez apkopes rokasgrāmatas izlasīšanas un saprašanas.
- Šī brīdinājuma neievērošanas rezultātā var rasties elektriskās strāvas trieciena, mehānisku vai citu faktoru izraisītu traumu risks apkopes sniedzējam, operatoram vai pacientam.

ĮSPĖJIMAS (LT)

Šis eksploatavimo vadovas yra tik anglų kalba.

- Jei kliento paslaugų tiekėjas reikalauja vadovo kita kalba – ne anglų, suteikti vertimo paslaugas privalo klientas.
- Nemėginkite atlikti įrangos techninės priežiūros, jei neperskaitėte ar nesupratote šio eksploatavimo vadovo.
- Jei nepaisysite šio įspėjimo, galimi paslaugų tiekėjo, operatoriaus ar paciento sužalojimai dėl elektros šoko, mechaninių ar kitų pavojų.

ADVARSEL (NO)

Denne servicehåndboken finnes bare på engelsk.

- Hvis kundens serviceleverandør har bruk for 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 serwisant klienta wymaga języka innego niż angielski, zapewnienie usługi tłumaczenia jest obowiązkiem klienta.
- Nie próbować serwisować urządzenia bez zapoznania się z niniejszym podręcznikiem serwisowym i zrozumienia go.
- Niezastosowanie się do tego ostrzeżenia może doprowadzić do obrażeń serwisanta, operatora lub pacjenta w wyniku porażenia prądem elektrycznym, zagrożenia mechanicznego bądź innego.

ATENÇÃO (PT-BR)

Este manual de assistência técnica encontra-se disponível unicamente em inglês.

- Se outro serviço de assistência técnica solicitar a tradução deste manual, caberá ao cliente fornecer os serviços de tradução.
- Não tente reparar o equipamento sem ter consultado e compreendido este manual de assistência técnica.
- A não observância deste aviso pode ocasionar ferimentos no técnico, operador ou paciente decorrentes de choques elétricos, mecânicos ou outros.

ATENÇÃO (PT-PT)

Este manual de assistência técnica só se encontra disponível em inglês.

- Se qualquer outro serviço de assistência técnica solicitar este manual noutro idioma, é da responsabilidade do cliente fornecer os serviços de tradução.
- Não tente reparar o equipamento sem ter consultado e compreendido este manual de assistência técnica.
- O não cumprimento deste aviso pode colocar em perigo a segurança do técnico, do operador ou do paciente devido a choques eléctricos, mecânicos ou outros.

ATENŢIE (RO)

Acest manual de service este disponibil doar 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 și 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 техническому обслуживанию представлено 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 техническим обслуживанием оборудования обязательно обратитесь к данному руководству и поймите изложенные в нем сведения.
- Несоблюдение требований данного предупреждения может привести к тому, что специалист по техобслуживанию, оператор или пациент получит удар электрическим током, механическую травму или другое повреждение.

UPOZORENJE (SR)

Ovo servisno uputstvo je dostupno samo na engleskom jeziku.

- Ako klijentov serviser zahteva neki drugi jezik, klijent je dužan da obezbedi prevodilačke usluge.
- Ne pokušavajte da opravite uređaj ako niste pročitali i razumeli ovo servisno uputstvo.
- Zanemarivanje ovog upozorenja može dovesti do povređivanja servisera, rukovaoca ili pacijenta usled strujnog udara ili mehaničkih i drugih opasnosti.

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 zodpovednosťou zákazníka.
- Nepokúšajte sa o obsluhu zariadenia, kým si neprečítate návod na obluhu a neporozumiete mu.
- Zanedbanie tohto upozornenia môže spôsobiť zranenie poskytovateľa služieb, obsluhujúcej osoby alebo pacienta elektrickým prúdom, mechanické alebo iné ohrozenie.

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 servicetekniker, operatören eller patienten till följd av elektriska stötar, mekaniska faror eller andra faror.

OPOZORILO (SL)

Ta servisni priročnik je na voljo samo v angleškem jeziku.

- Če ponudnik storitve stranke potrebuje priročnik v drugem jeziku, mora stranka zagotoviti prevod.
- Ne poskušajte servisirati opreme, če tega priročnika niste v celoti prebrali in razumeli.
- Če tega opozorila ne upoštevate, se lahko zaradi električnega udara, mehanskih ali drugih nevarnosti poškoduje ponudnik storitev, operater ali bolnik.

DİKKAT (TR)

Bu servis kılavuzunun sadece ingilizcesi mevcuttur.

- Eğer müşteri teknisyeni bu kılavuzu ingilizce dışında bir başka lisandan talep ederse, bunu tercüme ettirmek müşteriye düşer.
- Servis kılavuzunu okuyup anlamadan ekipmanlara müdahale etmeyiniz.
- Bu uyarıya uyulmaması, elektrik, mekanik veya diğer tehlikelerden dolayı teknisyen, operatör veya hastanın yaralanmasına yol açabilir.

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Revision History

Revision	Date	Description
1.0	May 7, 2006	Initial release.
2.0	June 11, 2006	Section 2-3: Added CAUTION note to upgrade flowchart that refers to the IIS Key and SaveINFO operation. Revised s/w load instructions and added LCD monitor adjustments (MRIhc15805, MRIhc16251). Added blocks for restoreINFO, ICW, and update of eLicense (MRIhc15873, MRIhc15892, MRIhc16209). Section 6-5-10-1: Updated the type of fastener used to attach the 16 Channel Switch mounting plate for a welded or bolted rear pedestal. Section 7: Added note informing the installer not to connect additional monitors to host computer prior to operating sustem software load (MRIhc15870). Clarified the installation of jumpers when setting up the DVD module is the SCSI tower.
3.0	October 22, 2006	Section 6: updated PAC replacement instructions with information on removing the PAC Control Housing (MRIhc17607).
4.0	February 22, 2007	Section 2: Reversed flowchart procedures Software Option Install w/eLicense and Install and Calibration Wizard. Section 4: Added note for instructions on storing Service Cable Kit (CQA 13094026). Section 6: Removed PAC2B part number. Section 7: Added information on cable disconnection from existing GOC. For installing Run 1323, added notes for routing with Run 1322 and that CAT6 cable must replace existing CAT5 cable. Added note that Humidity iButton can be installed in either direction. Section 8: Updated MGD chassis install information. Revised installation location of ICN brackets (CQA 13078452). Updated board installation instructions for upgrading to 16 channels. Added instructions for storing Service Cable Kit.
5.0	May 14, 2007	Section 7: Added iButton installation and Environmental Sensors Block Diagram to Section 7-6, Temperature and Humidity Sensor Kit Installation. Section 8: Updated APS Board part numbers from 2294300-14 to 2294300-16 (ECO 2044030). Adding existing cables connected to Term Server (CQA13112624).
6.0	August 10, 2007	Section 6: Updated the Hybrid Splitter upgrade, Section 6-4-7, by adding the Netcom Hybrid Splitter which has different Isolation Filter mounting brackets than the existing Teledyne Hybrid Splitter.
7.0	June 17, 2008	Section 2: Added True Mobile flowchart (MRIhc37270). Section 4: Updated cable map to show OW component and cable upgrades. Updated cable maps to show new Temperature and humidity Sensor installation and cables. Corrected the J3 and J4 connection designations at the hybrid splitter (PQR 13172263). Section 6: Added instructions for installing gradient lead board (PQR13162916) and rear pedestal stabilization. Section 7: Revised entire section for replacing the PC computer in the GOC, and other components, if required. Also revised temperature/humidity sensor installation to reflect the new design.
8.0	September 18, 2008	Section 1: Added HDxt (Release 15.x) information to Introduction. Section 8: Revised section to incoporate the new SUN ICN modules for upgrades.
9.0	June 17, 2009	Section 4: Added Subsection 4-4 which provides information about dsicarding Runs 1189, 1190 and 1082 for Mobile sites. Added note on cable maps and in Subsection 4-3 that indicates a new Run 1329 is provided for Mobile sites (PQR 13255521). Section 6: Removed instructions for installation of rating plates (PQR 13246367). Added instructions on applying laser labels on WideOpen and Horizon style enclosures (PQR 13246299).
10.0	July 27, 2010	Section 2: Updated eLicense model type from Signa HDx to MR per Direction 2397845). Section 4: Updated cable maps for removal of OW components and installation of Z400 GOC (ECO 2096124). Section 7: Updated instructions for removal of obsolete components and GOC. Added instructions for installing Z400 GOC (ECO 2096124). Section 8: Removed second set of ICN brackets in cabinet because new Sun 4170 ICN replaces two ICN's installed in previous upgrades (ECO 2101939).
11.0	August 1, 2011	Changes made to reflect HD 16.0v2 update, ICN end-of-life, and IRF2b & RRF-DIF3 hardware configurations. Section 1: Updated instructions for return of Boards and cables removed from the System cabinet. Section 8: Revised upgrading of modules in System Cabinet to reflect product updates via release 16.0 v2. Updated references throughout manual to release 16.x or later".
12.0	January 30, 2012	Section 2: Updated flowchart for optional SSM to ASC upgrade. Added Section 8-12 for sites with older system cabinet that are updating to HD23.x. (SPR HCSDM00101291)

13.0	February 3, 2014	Converted manual from Interleaf to CLS which reformatted the manual with new chapter and section numbers. Chapter 1: Added material return address for Asia region. Chapter 6: Added instructions for installing SRI module on site (ECO 2165703). Chapter 8: Revised MGD Chassis board upgrade procedures by removing instructions for installing IRF2, IRF I/O2, and RRF-DIF3 boards.

Table of Contents

Chapter 1 Getting Started

1 Getting Started

1.1 Upgrade Introduction

This publication documents the mechanical installation information for upgrading a Signa® 1.5T EXCITE (Release 11.x, EXCITE II) to Signa HDxt 1.5T (Release 16.x or later). Refer to Illustration 1-1 for pictorial overview of upgraded system.

⚠WARNING

FERROUS MATERIAL HAZARD!
DELIVERY EQUIPMENT AND OTHER TOOLS AND PARTS REQUIRED FOR THIS INSTALLATION CONTAIN FERROUS MATERIAL AND WILL BE STRONGLY ATTRACTED TO MAGNET AND MAY BECOME DANGEROUS PROJECTILES.
KEEP ALL FERROUS TOOLS AT LEAST 10 FEET AWAY FROM THE MAGNET.

1.2 Site Ready Check

Pre-installation work must be completed before equipment is delivered to avoid delays and confusion.

Tools and test equipment to install and calibrate the Signa HDxt1.5T system are listed in the Signa HDx 1.5T Upgrade Pre-Installation manual, Section 10, TOOLS AND TEST EQUIPMENT.

Service installation tools used in this manual that may not be included in above references lists include:

46-301450G1 Fiber Optic Cable Connector Repair kit

1.3 Damage in Transportation

All packages should be closely examined at time of delivery. If damage is apparent, have notation **"damage in shipment"** written on **all** copies of the freight or express bill **before** delivery is accepted or "signed for" by a General Electric 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.

File a report with

- Call 1-800-548-3366. Select "Install Support Services for FOA and MIS"
- Contact your local service coordinator for more information on this process.

1.4 Upgrade Schedule Considerations

FMIs, periodic maintenance, installation of prerequisite upgrades and/or options will directly add to the man-hour and system down-time total. The IIS key will need to be re-generated. Be sure that all planned activity is considered when predicting the return of system to customer. Also verify Application Specialist is scheduled at the end of the installation to instruct users. Additional time must also be scheduled to instruct users following completion of upgrade.

1.5 Pre-Delivery FDO Checks

Before the shipment is made, Be sure that FDO review has been completed by consultation with the Signa 1.5T Upgrade Specialist. Also verify the Surface coil compatibility issues have also been resolved.

1.6 Product Delivery Instructions and Packing

The "Shipping Document" lists catalog numbers delivered. **Review and confirm that order is delivered complete.** Check impact on installation schedule if Catalogs and/or packing boxes are missing and/or noted as shipped short.

Labels that are attached to the outside of packing boxes summarize box contents. PDI (Product Delivery Instructions) specify box contents, part numbers, and shipping procedure. The PDI is numbered according to the catalog number. Lists of items included with each box are detailed by separate checklists, or a separate sheet that provides a summary of that box contents. Refer to PDI and packing lists for information specific to your shipment.

A set of service and operator manuals is delivered with the Fixed Site Kit. Refer to checklists packed with "Technical Publication" boxes for a list of delivered documents.

1.7 Discarded Material Return Policy

The equipment or material being removed by the upgrade have a potential value for service of the installed base. The disposition of such must be controlled by GE. Disposition of the removed material is per GE Medical Systems Policy and Procedures.

1.7.1 Material Policy Overview

1.7.1.1 Returned Material

Per GE Healthcare Policy 3.9: all requested material is to be returned, as directed, intact and promptly either to GoldSeal or Renewable Resources. Do not remove or swap any parts from the material to be returned.

1.7.1.2 Disposed Material

Regulations governing the disposal of this equipment or material vary from location to location and from country to country. In order to insure compliance with all local, state, or national environment, health, and safety regulations, dispose of all items in the per local GEMS policy and procedures and other applicable published guidance. Contact GEMS Recycling Center for assistance.

1.7.2 Material to be Returned

Return all parts, cables, modules, and equipment de-installed for the HDx Release 14.x upgrade to GoldSeal which includes:

- GOC and Operator Workspace components
- Driver Module
- SRI 2
- 8 Channel Switch
- LPCA
- Front and Rear Split Bridge
- All replaced Circuit Boards
- Cables
- RF Body Coil (TRM only)

All RF-DIF, IRF, and IRF-I/O boards should be contained in anti-static bags (reused from new boards) for return. Follow proper procedures for handling of ESD-sensitive components. Return all old boards and cables in upgrade packaging if possible. Mark and send each box as follows:

- Mark each box: MR HDx UPGRADE
- Send the boxes to the following address:

```
GE Renewable Resources
Attn: Asset Recovery Leader, Harvest
7624 South 10th Street
Oak Creek, WI 53154
```

1.7.3 Return Kit

Packaging and/or transportation details can be obtained through the local Installation Specialist. If unavailable, call GoldSeal. The following material may have been provided to facilitate return of material.

- Shipping labels
- Waybill
- Address labels
- Reuse appropriate containers that new hardware and modules were shipped to site for return of above material.
- Packing material

1.7.4 Deinstallation Procedures

Refer to instructions in this manual for deinstallation procedures of site.

1.7.5 Region Specific Return Information

1.7.5.1 Sites in Americas

A GoldSeal return pre-printed BAX waybill and mailing label(s) may be included with the upgrade kit. The upgrade returns kit (p/n 2352804) consists of:

- 2358604 - Waybill
- 2357240 - GoldSeal Return Labels
- 2357241- Upgrade Return Envelope (waybill and return labels)

Gold Seal Address and contact for coordination of transportation arrangements and packaging:

```
GE Medical Systems - GoldSeal
3114 North Grandview Blvd
Waukesha, WI 53188
Phone: 1-877-251-4468 or 262-513-4147
```

For non-GoldSeal Returns, utilize GEMS Renewable Resources. For coordination of transportation arrangements and packaging:

```
Phone: (414)-747-6997 or Dial Comm 8*579-6997
Fax: (414)-747-6855
Field ASPEN: 1-800-525-1516, Box #26041
```

1.7.5.2 Sites in Asia

Return procedure for GEMS–Asia countries, contact:

```
GE HEALTHCARE JAPAN CORPORATION
ATTN: Yoshiaki Tsujii (SWaP/HARVEST)
67-4, Takakura-machi,Hachioji-shi-Tokyo
192-0033 Japan
Contact at Destination: 81-426-48-2595
FAX: 81-426-48-2902
```

1.7.5.3 Sites in Europe

The GoldSeal Returns Coordinator contacts each site individually and reviews the material to be returned and the logistics for the return. A list of material and a printable shipping label is sent to the site's primary FE, service providers, and forwarders.

GoldSeal Europe return information:

```
GEMS-E - GOLD SEAL OPERATION & RECYCLING CENTER
GEODIS LOGISTICS - CD 26 - Pièce de la Remise - Bâtiment EVL
```

```
Quai 45 à 49 - 91090 LISSES - FRANC
Tel: (+33) 1-60-91-57-35 or (+33) 1 64 97 55 41
Fax: (+33) 1-60-86-12-31
```

For non-Gold Seal returns in Europe:

```
European Renewable Resources Center
GEODIS LOGISTICS - CD 26 - Pièce de la Remise - Bâtiment EVL2
Quai 45 à 49 - 91090 LISSES - FRANCE
TEL = (+33)-1-64-97-55-41 FAX = (+33)-1-60-86-12-31
```

1.7.6 Product Locator Information

Process product locator information for all serialized components removed from the system according to policy. Refer to Section .

1.8 Product Locator

The Global Install Base Database (also known as Product Locator System) tracks shipment, trans-shipment, and field location of the serialized models. There are now two methods for submitting Product Locator information.

1. At this time, for **U.S. ONLY**, the preferred method of submitting information is the FE Site Verification Web Site at:

   http://gein2.med.ge.com/gib

   The FE Site Verification consists of three components that are available on the web from the main menu. They are:

   - Install/deinstall product locator model and serial numbers
   - Add/modify ship to address information
   - Update CARES FE data for primary/secondary FEs

   To obtain a copy of the FE training tutorial for using this website, a downloadable copy is available at the following: Product Locator Support Central Page - http://supportcentral.ge.com/15563

2. One "Shipping Card" is filled out and submitted when shipped (extra cards are supplied for trans-shipments between storage and distribution points), and the "Installation Card" and extra shipment cards are attached.

Verify that serial and model number on each rating plate matches installation card numbers before removing installation card. Note that there may be one or more shipment cards and bar code labels with the installation card. These shipment cards are used to trace the transfer of serialized units between various inventory storage and distribution points until the product reaches its final installation destination. Process just the installation card and discard any extra shipment cards and labels.

1.9 Upgrade Sequence

Follow the system Upgrade Flow chart in SECTION 2 for best installation efficiency.

NOTE: All on-site construction must be completed before equipment is delivered and installation starts. Attempting to install the system while construction is being completed will impact installation efficiency and further delay site completion. Making sure that all pre-installation and construction work is completed before equipment is delivered will usually result in an earlier turnover date.

Note that many procedures may be performed in parallel and may be performed in any order according to the specific situation of each site. However all parallel tasks are to be completed prior to the next task.

The general sequence of events is:

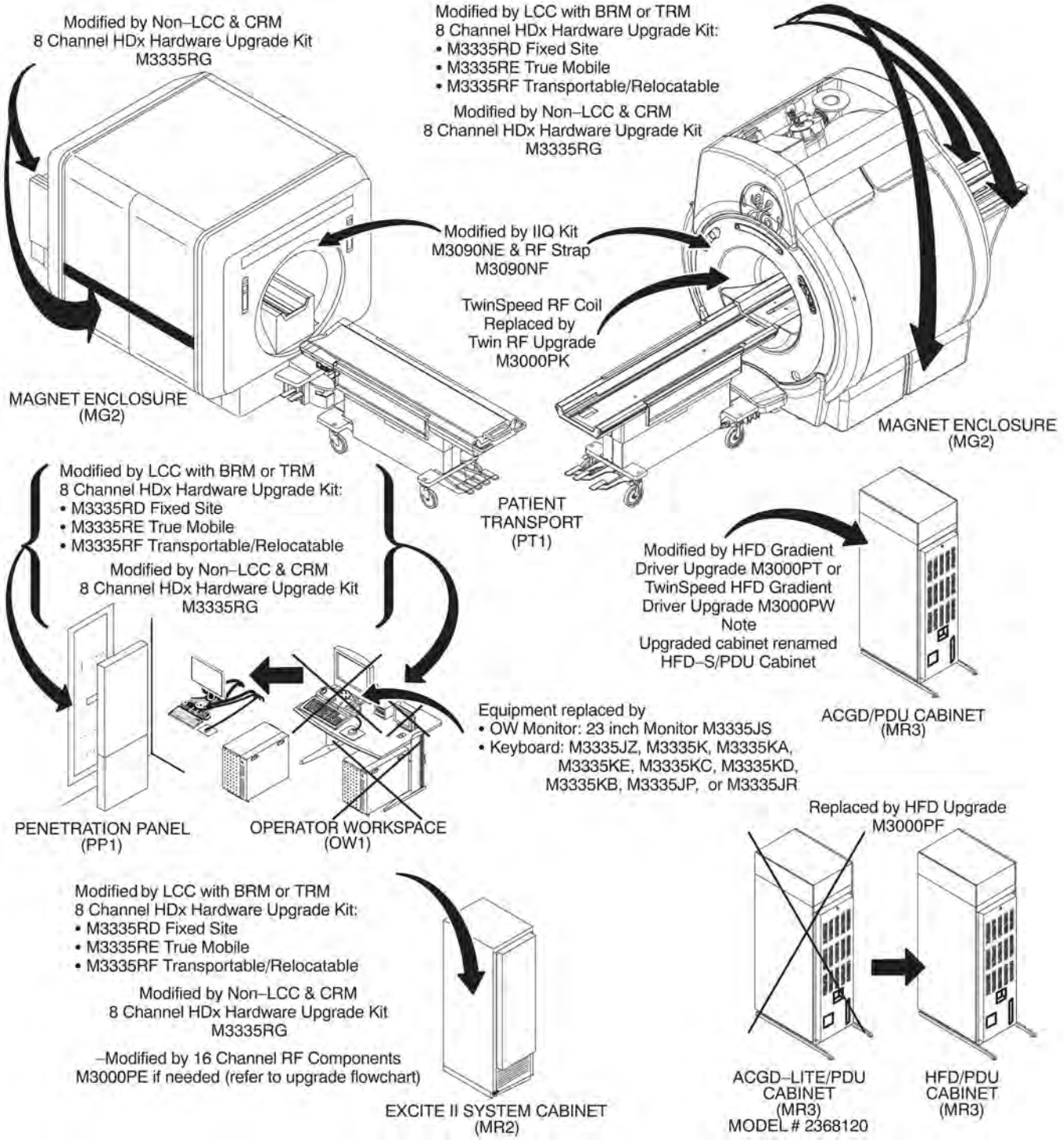
- Verify that all required upgrades have arrived complete and site is ready to shut down.
- Perform SaveInfo using DVD if possible.
- Shut site down.
- Remove obsolete equipment and cables.

  NOTE: Removing and installing cables is more efficient and accurate when the equipment room is uncluttered. It is strongly recommended that this be done after old equipment is removed and before new equipment is positioned. This house cleaning will make the installation tasks much easier.
- Route new cables
- Install new equipment and modify existing equipment.
- All discarded material (i.e. removed/discarded hardware, packing material) must be returned in accordance with GE recycling policy
- Power up
- Load software.
- Perform Functional Checks, System calibrations, and System performance checks
- Replace covers, complete final tasks, and return site to customer.

1.10 Upgrade System Configuration

The following Illustration shows the major equipment replaced and modified by Signa 1.5T EXCITE (11.x) to HDxt (16.x or later) Upgrade.

Illustration 1-1: 1.5T Release 11.x to Release 16.x Upgrade Catalogs without Magnet Upgrade Modified Equipment



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Chapter 2 Upgrade Installation Process

1 Upgrade Process

1.1 Site Readiness

All on-site construction must be completed before equipment is delivered and installation starts. Attempting to upgrade the system while construction is being completed will impact installation efficiency and further delay site completion. Making sure that all preinstallation and construction work is completed before equipment is delivered will usually result in an earlier turnover date.

⚠WARNING

FERROUS MATERIAL HAZARD!
DELIVERY EQUIPMENT AND OTHER TOOLS AND PARTS REQUIRED FOR THIS UPGRADE CONTAIN FERROUS MATERIAL AND WILL BE STRONGLY ATTRACTED TO MAGNET AND MAY BECOME DANGEROUS PROJECTILES. KEEP ALL FERROUS TOOLS AT LEAST 10 FEET AWAY FROM THE MAGNET.

1.2 Upgrade Procedure

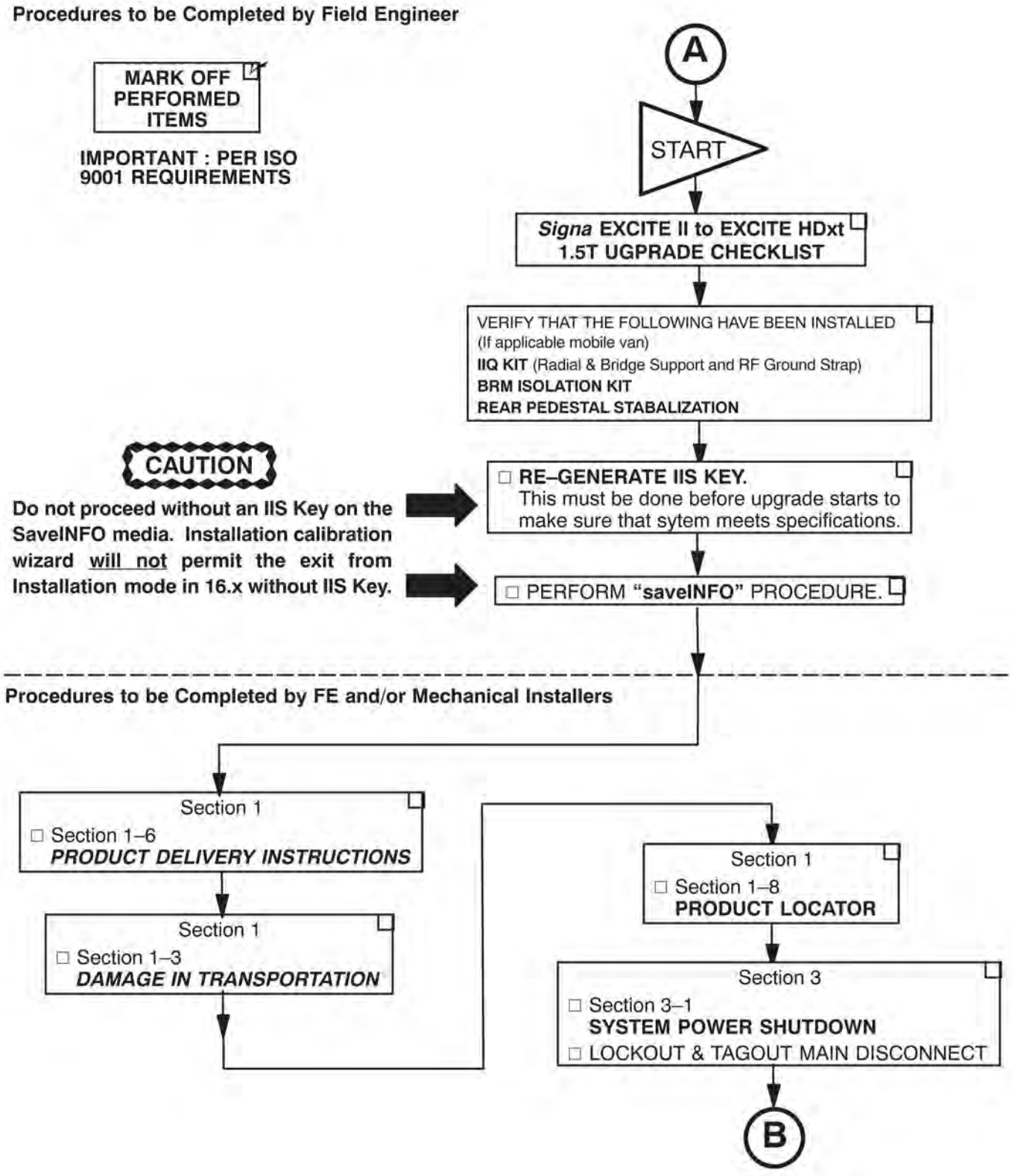
The following upgrade flow charts contain information for upgrading to Signa HDx 1.5T, Release 16.x or later. Select the appropriate flowchart for the site being upgraded:

- Fixed Site, Section 1.3
- True Mobile, Section 1.4

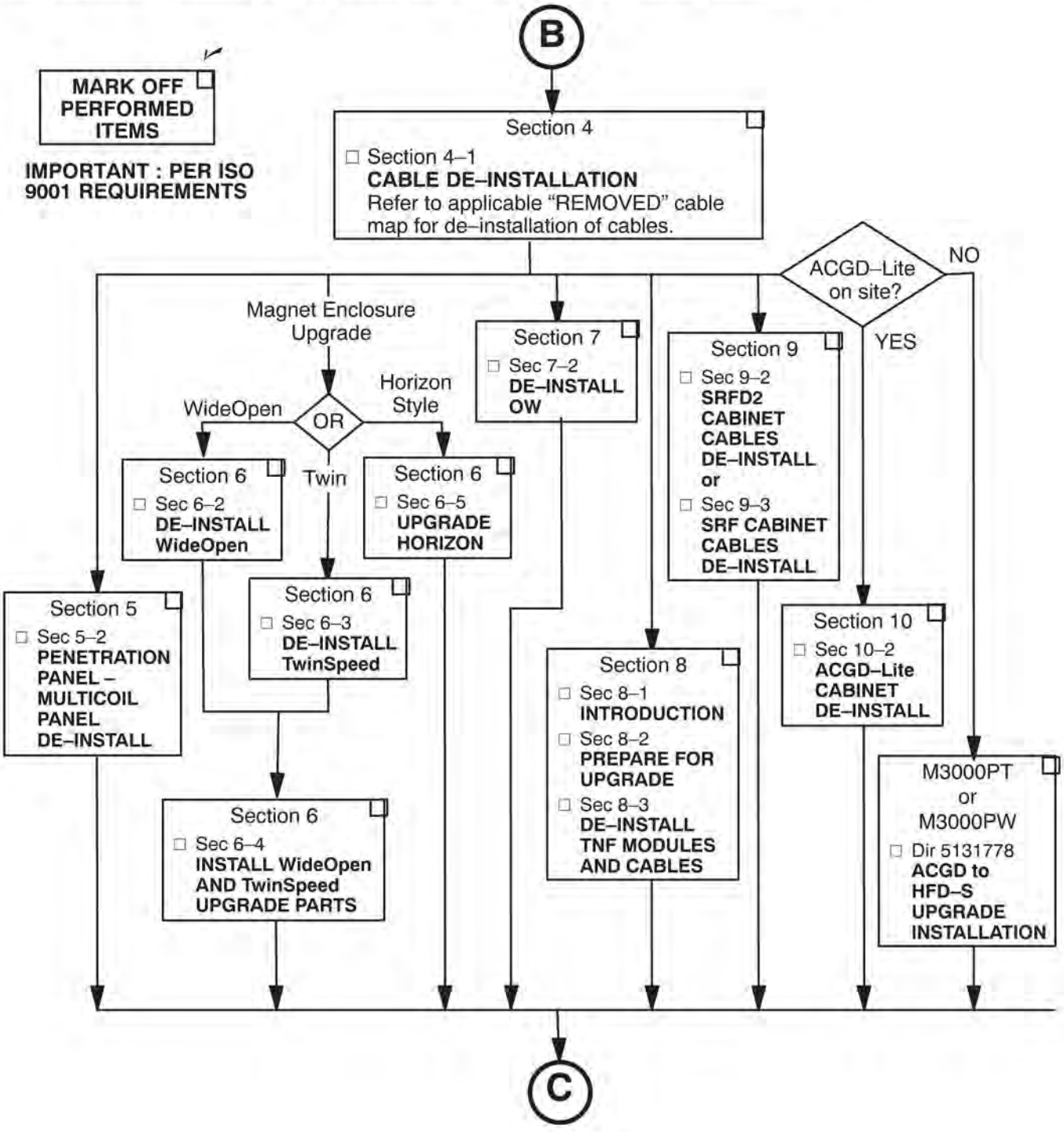
The upgrade flow chart should be followed for an orderly and efficient installation. Note that procedures may be performed in parallel and may be performed in any order according to the specific situation of each site.

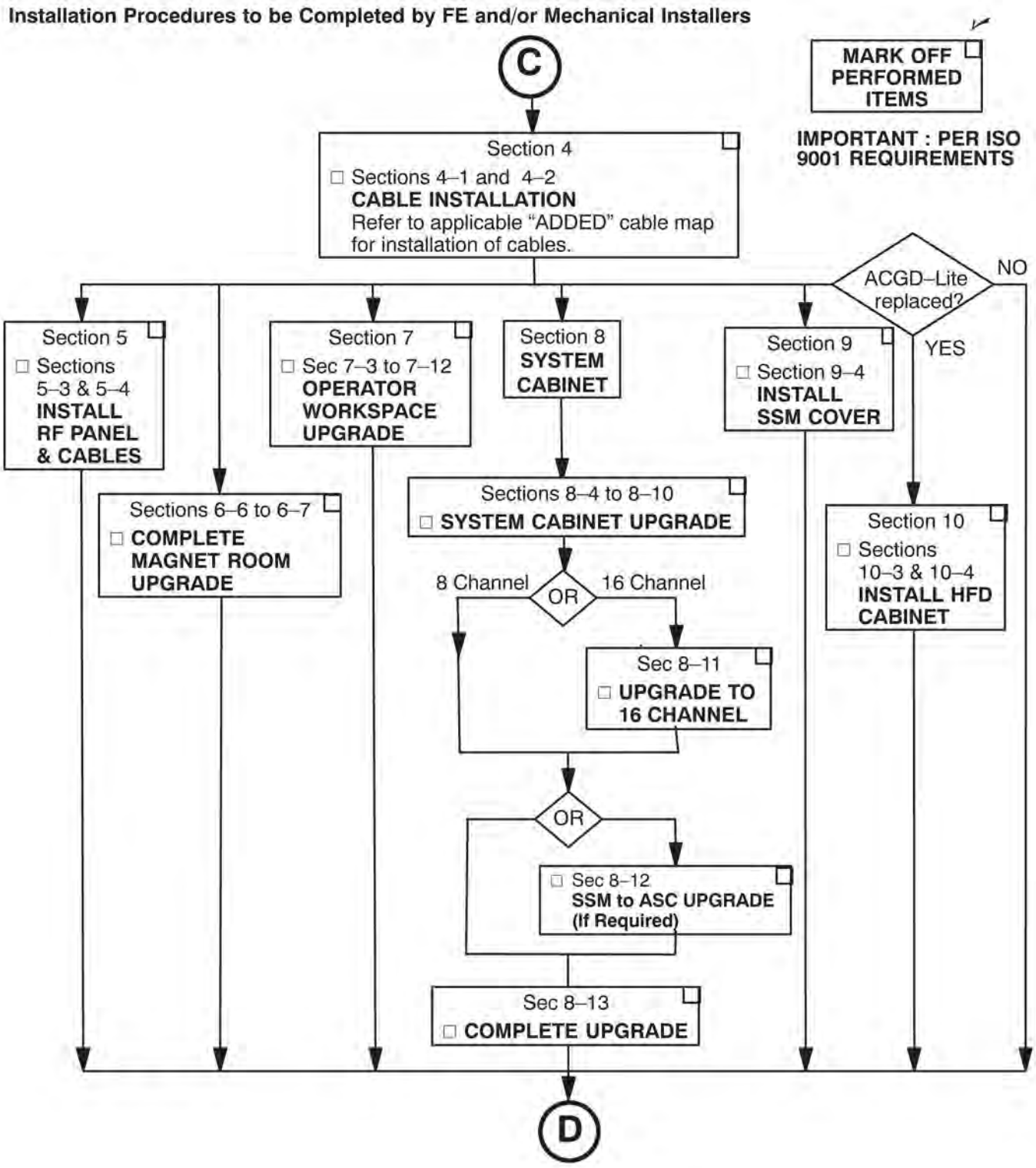
This upgrade flowchart has been developed assuming that all Signa EXCITE HD equipment has been delivered together. **Make sure that every part required is available before starting.**

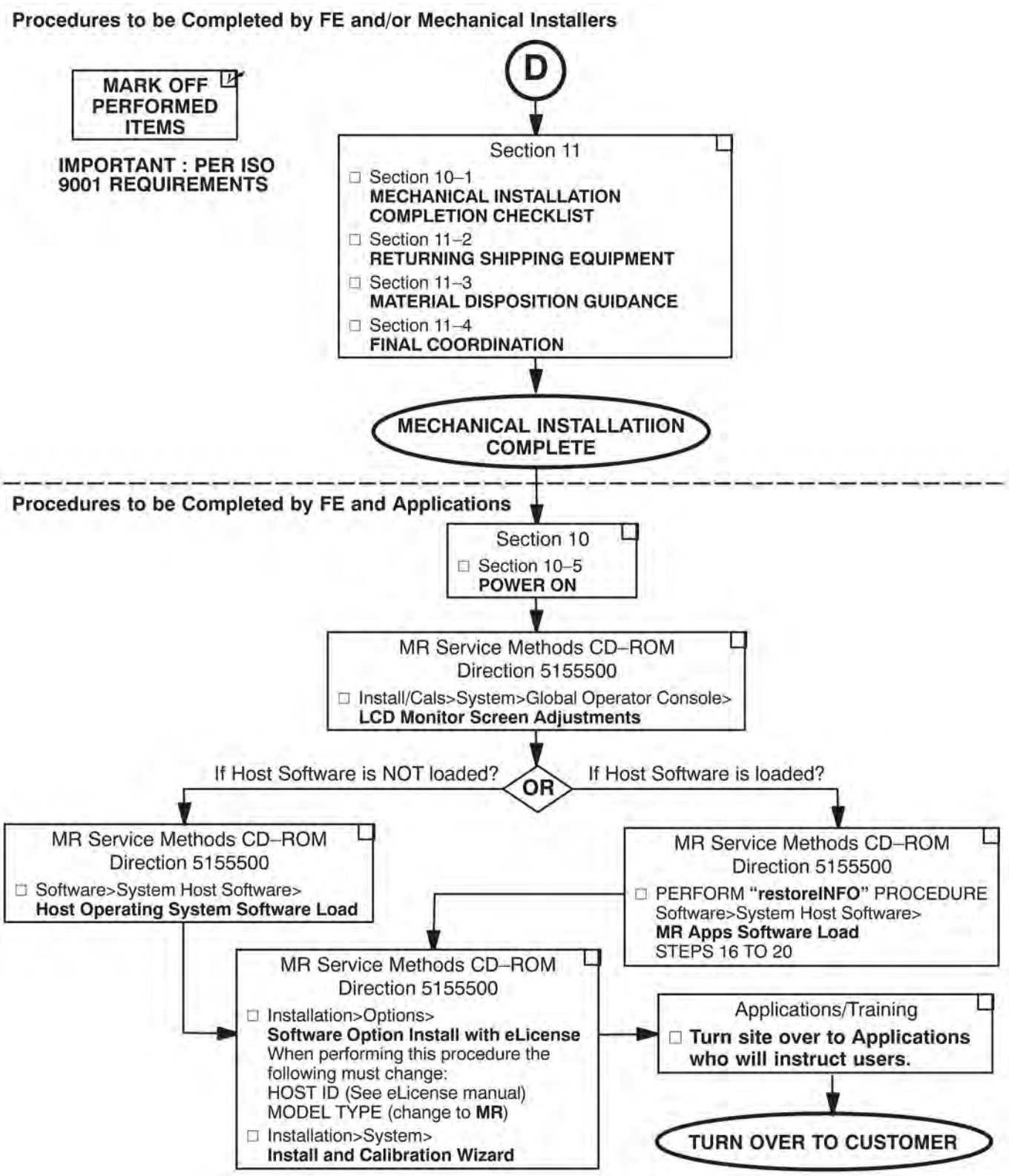
1.3 Fixed Site System Mechanical Upgrade Flowchart



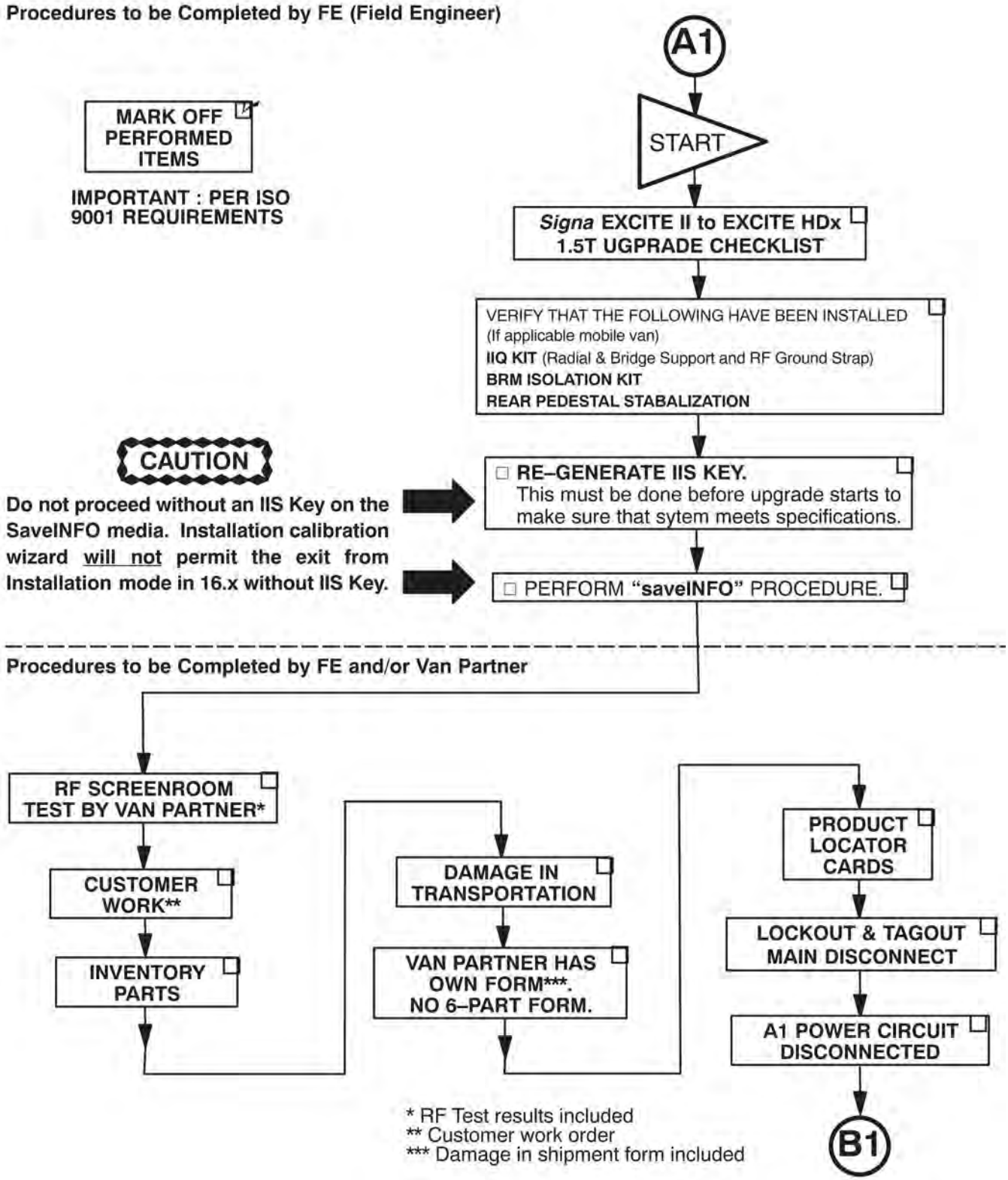
De–Installation Procedures to be Completed by FE and/or Mechanical Installers



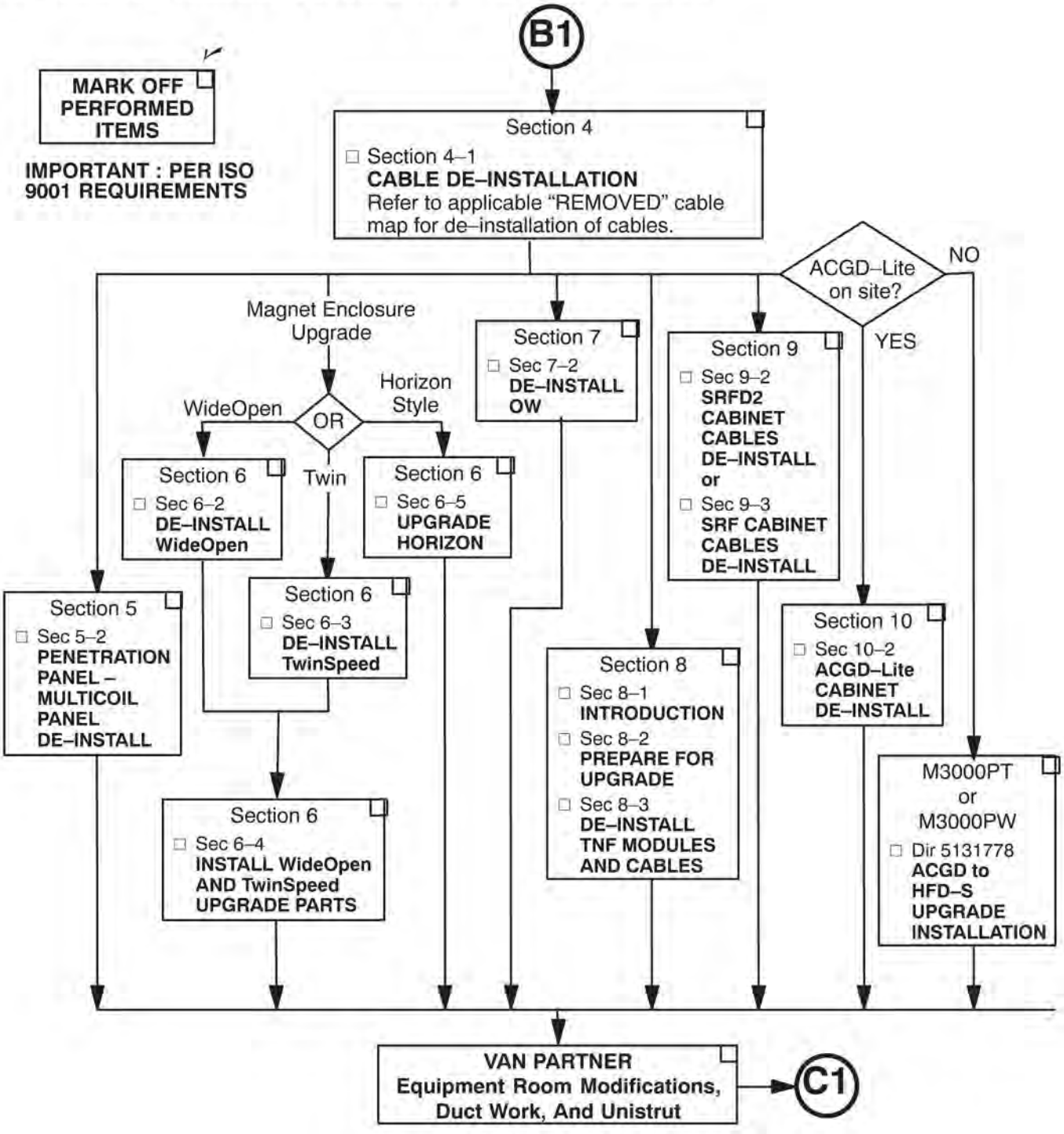

Installation Procedures to be Completed by FE and/or Mechanical Installers
C
MARK OFF PERFORMED ITEMS
IMPORTANT : PER ISO 9001 REQUIREMENTS
Section 4
☐ Sections 4–1 and 4–2
CABLE INSTALLATION
Refer to applicable "ADDED" cable map for installation of cables.
ACGD–Lite replaced?
NO
YES
Section 5
☐ Sections 5–3 & 5–4
INSTALL RF PANEL & CABLES
Section 7
☐ Sec 7–3 to 7–12
OPERATOR WORKSPACE UPGRADE
Section 8
SYSTEM CABINET
Section 9
☐ Section 9–4
INSTALL SSM COVER
Sections 6–6 to 6–7
☐ COMPLETE MAGNET ROOM UPGRADE
Sections 8–4 to 8–10
☐ SYSTEM CABINET UPGRADE
Section 10
☐ Sections 10–3 & 10–4
INSTALL HFD CABINET
8 Channel
OR
16 Channel
Sec 8–11
☐ UPGRADE TO 16 CHANNEL
OR
☐ Sec 8–12
SSM to ASC UPGRADE (If Required)
Sec 8–13
☐ COMPLETE UPGRADE
D


Procedures to be Completed by FE and/or Mechanical Installers
MARK OFF PERFORMED ITEMS
IMPORTANT : PER ISO 9001 REQUIREMENTS
D
Section 11
☐ Section 10–1 MECHANICAL INSTALLATION COMPLETION CHECKLIST
☐ Section 11–2 RETURNING SHIPPING EQUIPMENT
☐ Section 11–3 MATERIAL DISPOSITION GUIDANCE
☐ Section 11–4 FINAL COORDINATION
MECHANICAL INSTALLATIION COMPLETE
Procedures to be Completed by FE and Applications
Section 10
☐ Section 10–5 POWER ON
MR Service Methods CD–ROM Direction 5155500
☐ Install/Cals>System>Global Operator Console> LCD Monitor Screen Adjustments
If Host Software is NOT loaded?
OR
If Host Software is loaded?
MR Service Methods CD–ROM Direction 5155500
☐ Software>System Host Software> Host Operating System Software Load
MR Service Methods CD–ROM Direction 5155500
☐ PERFORM "restoreINFO" PROCEDURE Software>System Host Software> MR Apps Software Load STEPS 16 TO 20
MR Service Methods CD–ROM Direction 5155500
☐ Installation>Options> Software Option Install with eLicense When performing this procedure the following must change: HOST ID (See eLicense manual) MODEL TYPE (change to MR)
☐ Installation>System> Install and Calibration Wizard
Applications/Training
☐ Turn site over to Applications who will instruct users.
TURN OVER TO CUSTOMER

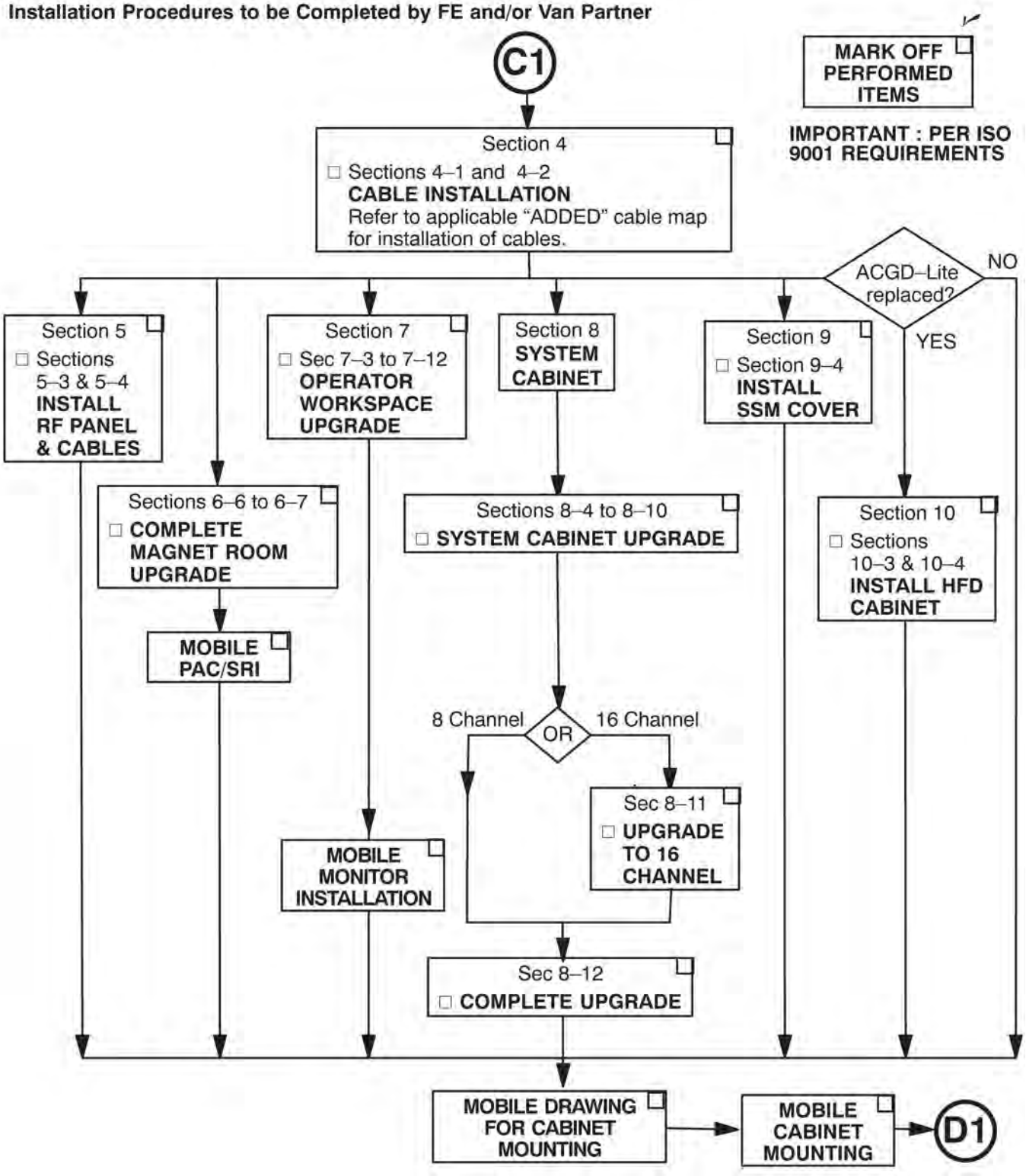
1.4 True Mobile System Mechanical Upgrade Flowchart

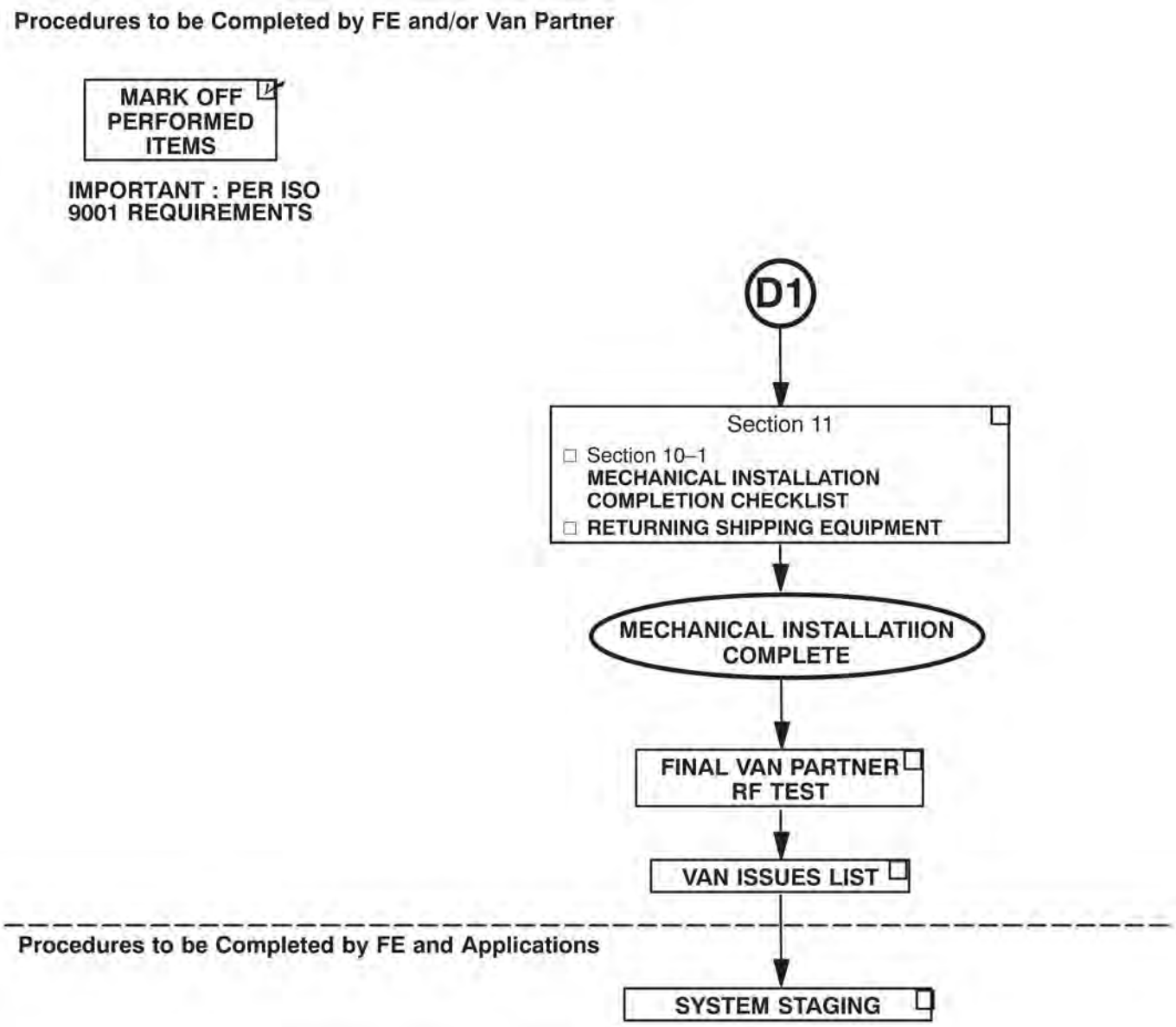


De–Installation Procedures to be Completed by FE and/or Van Partner



Installation Procedures to be Completed by FE and/or Van Partner




Procedures to be Completed by FE and/or Van Partner
MARK OFF PERFORMED ITEMS
IMPORTANT : PER ISO 9001 REQUIREMENTS
D1
Section 11
Section 10–1 MECHANICAL INSTALLATION COMPLETION CHECKLIST
RETURNING SHIPPING EQUIPMENT
MECHANICAL INSTALLATIION COMPLETE
FINAL VAN PARTNER RF TEST
VAN ISSUES LIST
Procedures to be Completed by FE and Applications
SYSTEM STAGING

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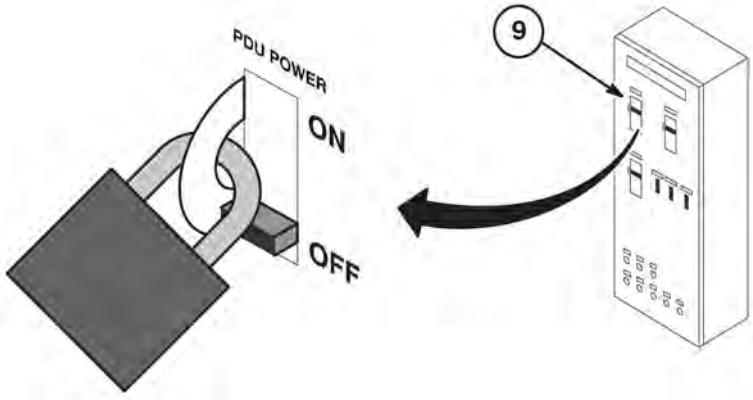
Chapter 3 Power Off

1 System Power Shutdown

DANGER

FATAL ELECTRIC SHOCK HAZARD!!
LETHAL VOLTAGES ARE PRESENT WITHIN THE PDU EVEN IF ALL PDU BREAKERS ARE OFF.
TO PREVENT POSSIBLE FATAL ELECTRIC SHOCK VERIFY THAT FACILITY DISCONNECT IS OFF, LOCKED OUT, AND TAGGED BEFORE PROCEEDING. SERIOUS INJURY OR DEATH BY ELECTROCUTION MAY OTHERWISE RESULT.

1. Verify that System performance baseline measurements have been obtained, especially:
   - SPT Full Test Mode
   - White Pixel Test
   - LV Shim
   - IIS
2. Make sure that site customer has archived all patient information. Execute "Save Info" using a DVD.
3. Record center frequency.
4. Ensure that Patient Transport is undocked with cradle in place and Head Coil carriage is at rear of travel.
5. Perform normal software shutdown procedures.
6. Press the FULL OFF button on the PDU front control panel.
7. Notify field service and other installation personnel that are working at the site that the PDU main disconnect is to be shut off, locked out, and tagged.
8. Locate and shut off main disconnect supplying power to the PDU.



9. Perform lock out and tag out procedures at main disconnect to prevent inadvertent power restoration.
10. Verify absence of power in the PDU by checking for 0 volts on incoming power wiring

Chapter 4 System Upgrade Cables

1 Cable Information

1.1 Introduction

This section provides information on removing, relabeling and installing system cables for upgrading to Signa HDxt 1.5T Release 16.x or later.

1.2 Sorting and Routing Cables

NOTICE

Ty-wraps must be cut flush with no protruding sharp edges or points. Failure to do so can result in numerous laceration hazards when servicing the equipment.

System power, ground, and data cables are color coded at each end by destination per colors shown on Cable Map.

NOTE: The Service Cable Kit (5160683) is a collection of service cables delivered to site in a plastic bag. Refer to Chapter 8, System Cabinet for instructions on storage of this kit within System cabinet.

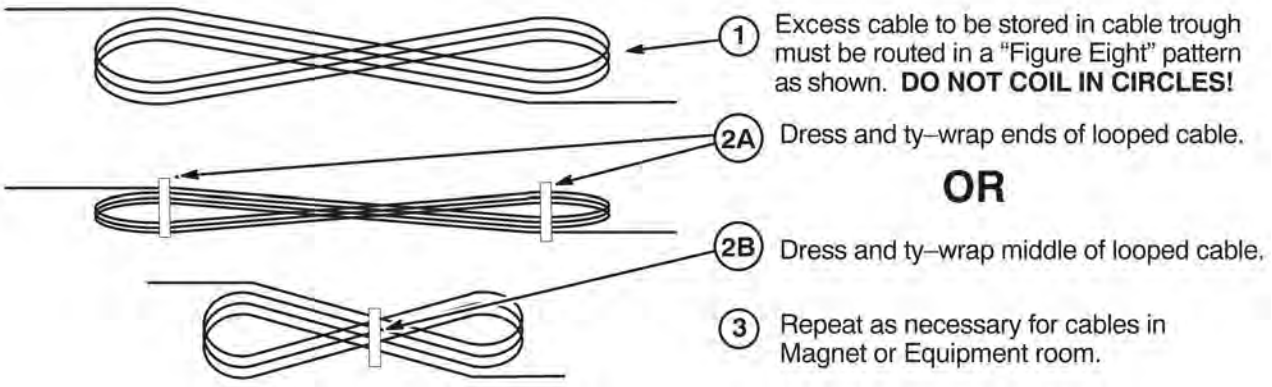
1. Sort cables by destination. Normally, it is best to sort cables originating from the farthest cabinet or component from the PDU first. This will make it easier to pull cables through the troughs.

   NOTE: Carefully review architectural drawings to insure that all ducts are properly installed and that all signal and power cables are accounted for before starting to route cable runs.

2. Unroll coiled cables along the intended route to insure that they will lay freely without twists or kinks. Route cables in accordance with the applicable System Interconnect Diagram.

3. Plan for storage location of coiled cable excess length if cables are to remain at delivered length. See . Some cables are usually cut to length such as gradient cables, power cables, Head and Body RF, and Fiber-optic cables.

Illustration 4-1: Proper Storage of Excess Cables



4. Place cables in provided troughs, conduit, or ducts. Leave sufficient slack for later connection when cabinets are in final position according to site architectural plans. Route cables inside exam room to Rear Pedestal area with sufficient length remaining to complete routing and connecting within Magnet Enclosure.
5. Rear Pedestal Cables - It is desired to keep the gradient cables separated from the signal and bias cables.

1.3 Cable Re-Labeling

Relabel existing cables as described below:

- The new GOC upgrades the WIM to a GOCAA. This requires that Run 1084 be re-labled as Run 1255. Attach blank label to each end of cable and mark with information below.
- Swap and relabel existing equipment room cable Run 1030 as instructed below.

Table 4-1: Relabel Run 1084 and Run 1030

ONE END		OTHER END	
NEW LABEL	**NEW LABEL**	**OLD LABEL**	**NEW LABEL**
RUN #1084 MR1-A11-J26 2354601	RUN #1255 MR2-A11-J26 5120763-3	RUN #1084 OW1-J21-J6 VIA RUN #1062 2354601	RUN #1255 OW1-A21-J18 5120763-3
RUN #1030 (See Note) PP1-J78 2329624	RUN #1329 (See Note) PP1-J78 5160765	RUN #1030 (See Note) MR2-A11-J61 2329624	RUN #1329 (See Note) MR2-DVR-J10 5160765

NOTE: Relabeling of Run 1030 to 1329 is for Fixed sites only. Mobile system upgrades will be provided a new Run 1329.

1.4 Extra Mobile Upgrade Cables

For Mobile upgrades, Runs 1189, 1190, and 1082 are shipped to site, but not installed. Discard Runs 1189, 1190, and 1082 for Mobile upgrades.

1.5 Cable Maps

Refer to the applicable "Removed" and "Added" cable map on the following pages for the system that is being upgraded.

The "Affected" (removed) Cable maps are located on the following pages.

- 1.5T EXCITE with ACGD Cabinet
- 1.5T EXCITE SmartSpeed with ACGD-Lite Cabinet
- 1.5T EXCITE TwinSpeed with ACGD Cabinet
- 1.5T EXCITE Non-LCC Magnet with ACGD Cabinet

The "Affected" (added) Cable maps are located on the following pages.

- 1.5T EXCITE with ACGD Cabinet
- 1.5T EXCITE SmartSpeed with ACGD-Lite Cabinet
- 1.5T EXCITE TwinSpeed with ACGD Cabinet
- 1.5T EXCITE Non-LCC Magnet with ACGD Cabinet

Tape map in a convenient location to check off routed cable. Additional information on each cable is located in the Appendix. Upon completion of connecting cables, return fold-out map to the binder for future reference.

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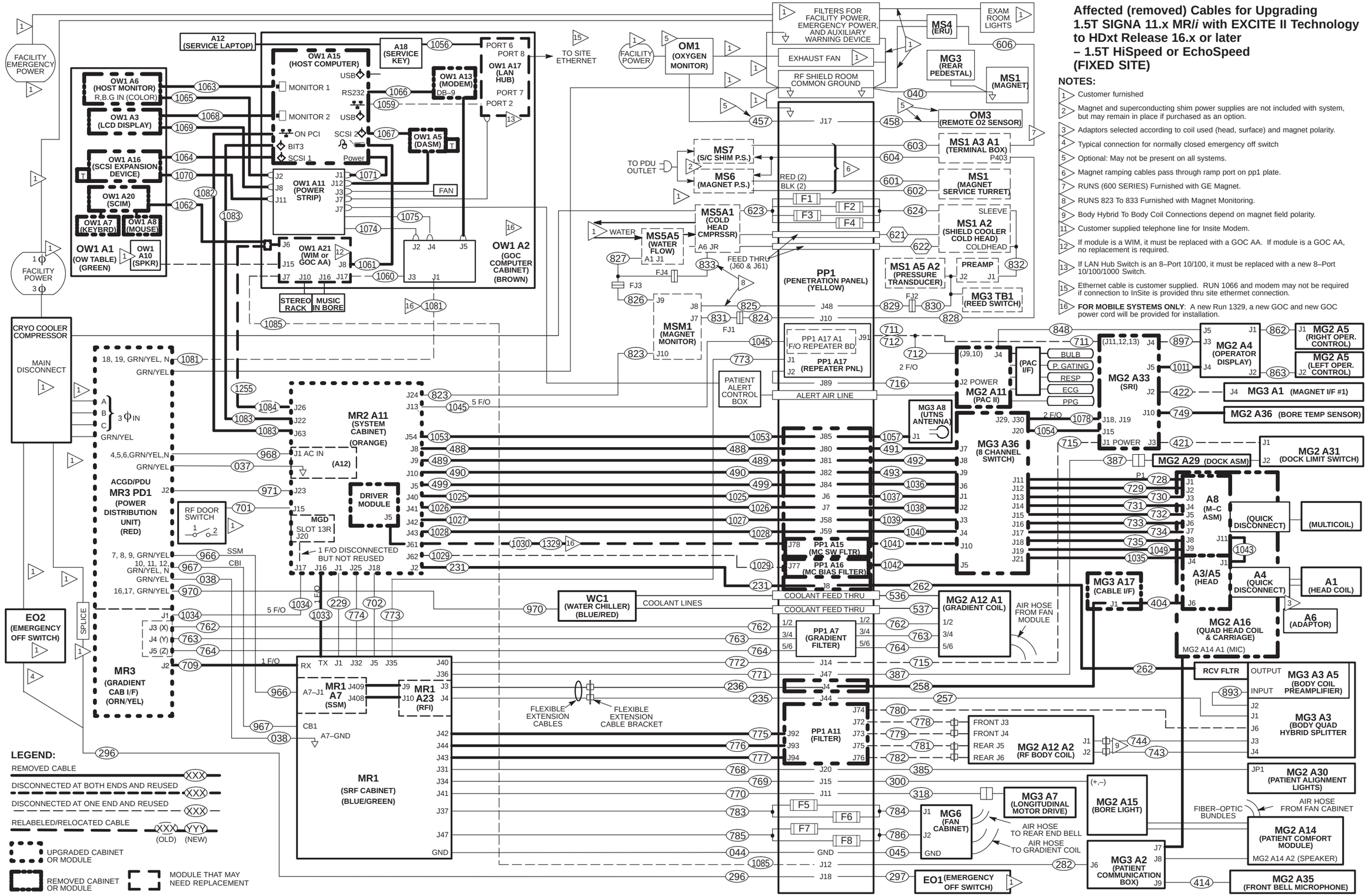
Affected (removed) Cables for Upgrading 1.5T SIGNA 11.x MR/*i* with EXCITE II Technology to HDxt Release 16.x or later – 1.5T HiSpeed or EchoSpeed (FIXED SITE)

NOTES:

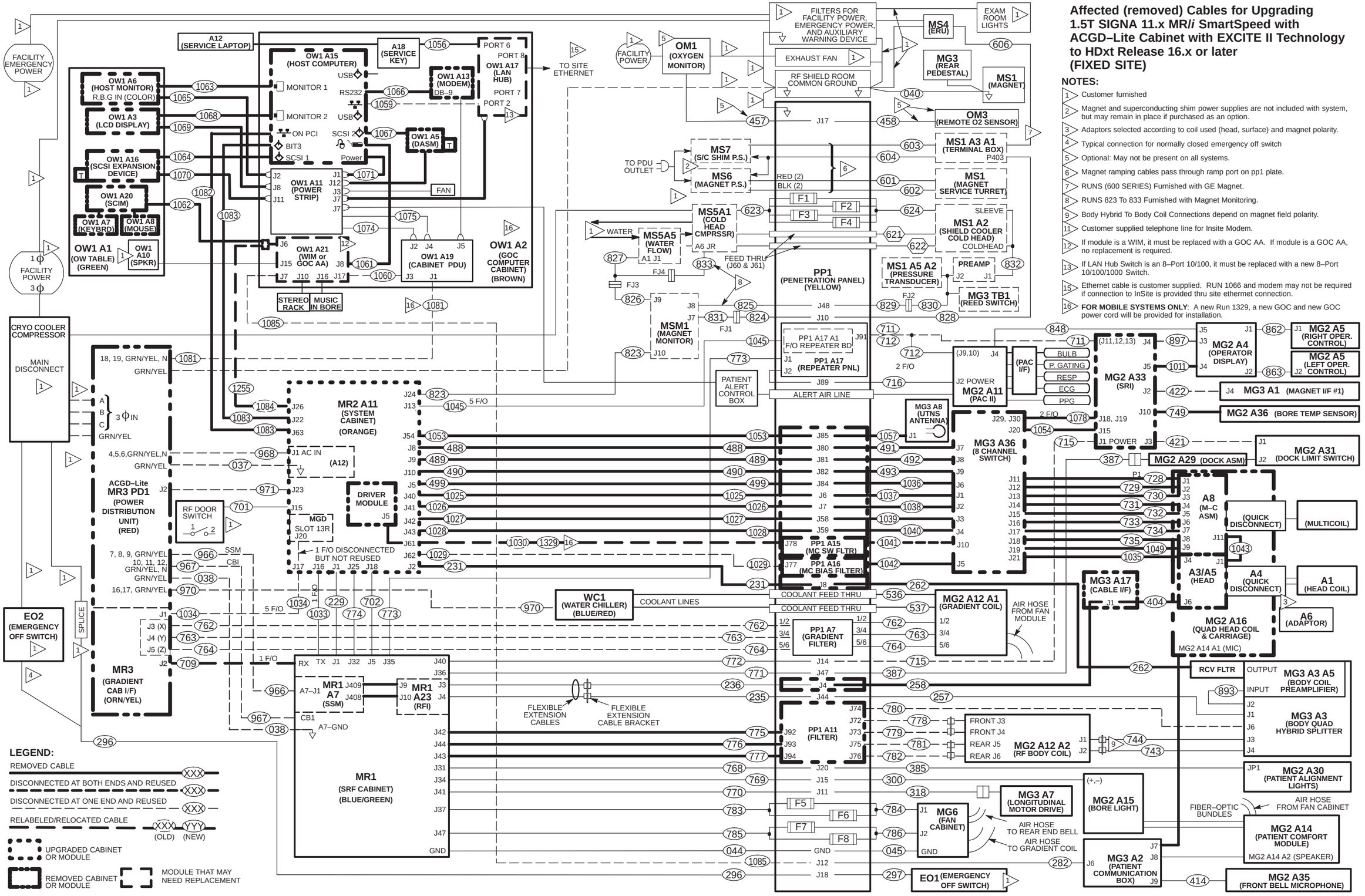
1. Customer furnished
2. Magnet and superconducting shim power supplies are not included with system, but may remain in place if purchased as an option.
3. Adaptors selected according to coil used (head, surface) and magnet polarity.
4. Typical connection for normally closed emergency off switch
5. Optional: May not be present on all systems.
6. Magnet ramping cables pass through ramp port on pp1 plate.
7. RUNS (600 SERIES) Furnished with GE Magnet.
8. RUNS 823 To 833 Furnished with Magnet Monitoring.
9. Body Hybrid To Body Coil Connections depend on magnet field polarity.
11. Customer supplied telephone line for Insite Modem.
12. If module is a WIM, it must be replaced with a GOC AA. If module is a GOC AA, no replacement is required.
13. If LAN Hub Switch is an 8–Port 10/100, it must be replaced with a new 8–Port 10/100/1000 Switch.
15. Ethernet cable is customer supplied. RUN 1066 and modem may not be required if connection to InSite is provided thru site ethermet connection.
16. **FOR MOBILE SYSTEMS ONLY**: A new Run 1329, a new GOC and new GOC power cord will be provided for installation.

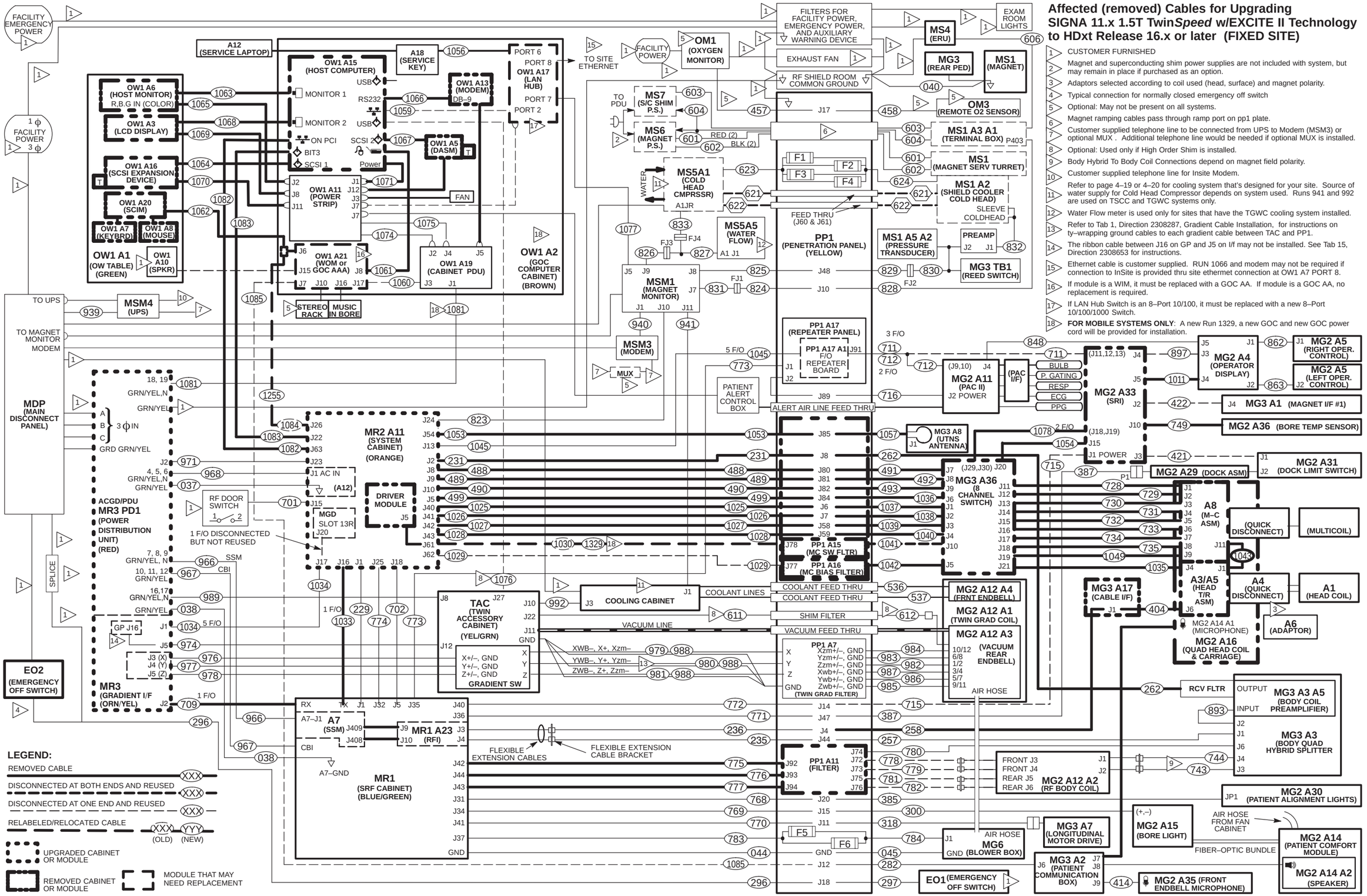


Affected (removed) Cables for Upgrading 1.5T SIGNA 11.x MR/*i* SmartSpeed with ACGD–Lite Cabinet with EXCITE II Technology to HDxt Release 16.x or later (FIXED SITE)

NOTES:

1. Customer furnished
2. Magnet and superconducting shim power supplies are not included with system, but may remain in place if purchased as an option.
3. Adaptors selected according to coil used (head, surface) and magnet polarity.
4. Typical connection for normally closed emergency off switch
5. Optional: May not be present on all systems.
6. Magnet ramping cables pass through ramp port on pp1 plate.
7. RUNS (600 SERIES) Furnished with GE Magnet.
8. RUNS 823 To 833 Furnished with Magnet Monitoring.
9. Body Hybrid To Body Coil Connections depend on magnet field polarity.
11. Customer supplied telephone line for Insite Modem.
12. If module is a WIM, it must be replaced with a GOC AA. If module is a GOC AA, no replacement is required.
13. If LAN Hub Switch is an 8–Port 10/100, it must be replaced with a new 8–Port 10/100/1000 Switch.
15. Ethernet cable is customer supplied. RUN 1066 and modem may not be required if connection to InSite is provided thru site ethermet connection.
16. **FOR MOBILE SYSTEMS ONLY**: A new Run 1329, a new GOC and new GOC power cord will be provided for installation.





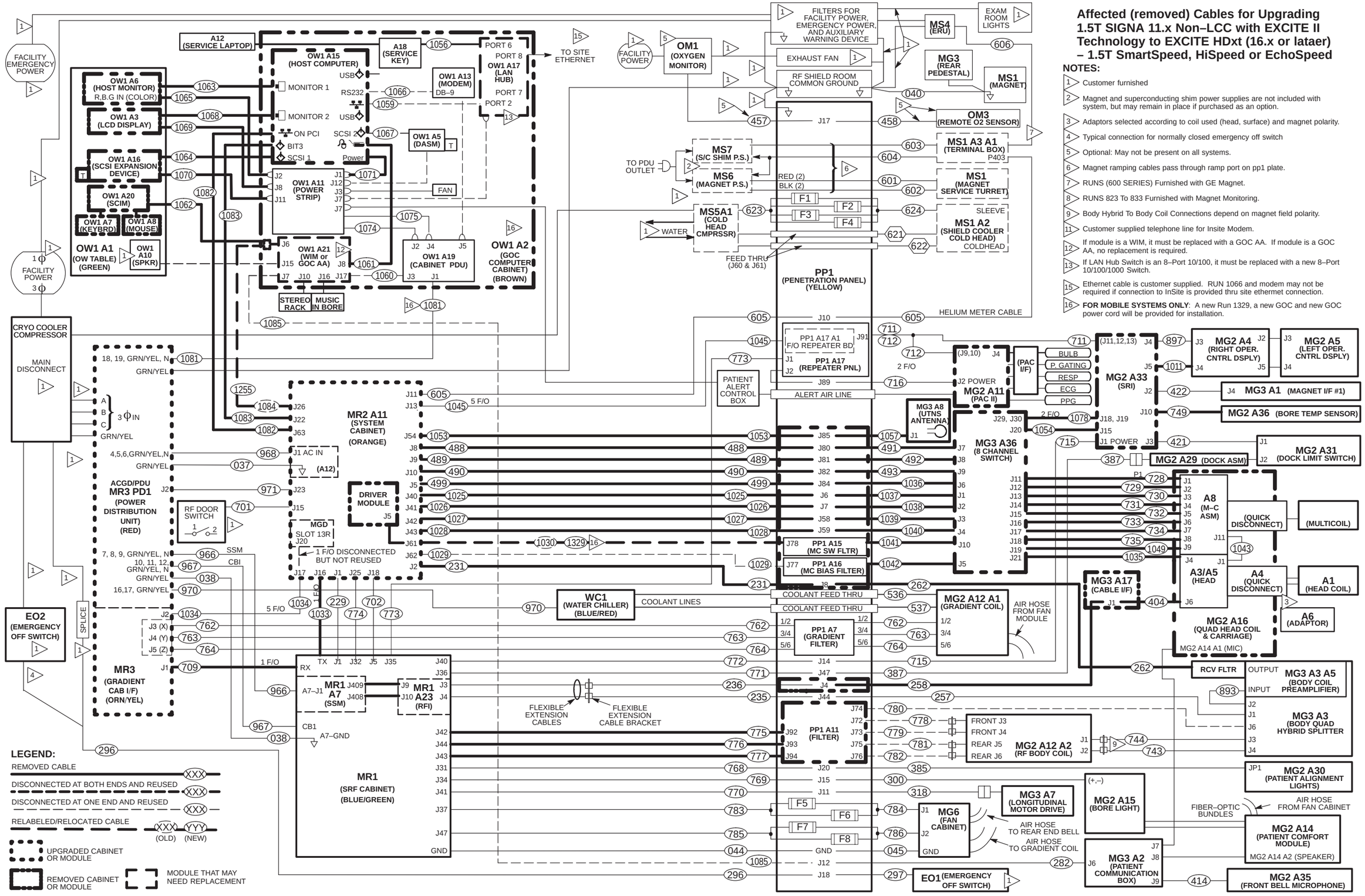
Affected (removed) Cables for Upgrading SIGNA 11.x 1.5T Twin*Speed* w/EXCITE II Technology to HDxt Release 16.x or later (FIXED SITE)

1. CUSTOMER FURNISHED
2. Magnet and superconducting shim power supplies are not included with system, but may remain in place if purchased as an option.
3. Adaptors selected according to coil used (head, surface) and magnet polarity.
4. Typical connection for normally closed emergency off switch
5. Optional: May not be present on all systems.
6. Magnet ramping cables pass through ramp port on pp1 plate.
7. Customer supplied telephone line to be connected from UPS to Modem (MSM3) or optional MUX . Additional telephone line would be needed if optional MUX is installed.
8. Optional: Used only if High Order Shim is installed.
9. Body Hybrid To Body Coil Connections depend on magnet field polarity.
10. Customer supplied telephone line for Insite Modem.
11. Refer to page 4–19 or 4–20 for cooling system that's designed for your site. Source of water supply for Cold Head Compressor depends on system used. Runs 941 and 992 are used on TSCC and TGWC systems only.
12. Water Flow meter is used only for sites that have the TGWC cooling system installed.
13. Refer to Tab 1, Direction 2308287, Gradient Cable Installation, for instructions on ty–wrapping ground cables to each gradient cable between TAC and PP1.
14. The ribbon cable between J16 on GP and J5 on I/f may not be installed. See Tab 15, Direction 2308653 for instructions.
15. Ethernet cable is customer supplied. RUN 1066 and modem may not be required if connection to InSite is provided thru site ethermet connection at OW1 A7 PORT 8.
16. If module is a WIM, it must be replaced with a GOC AA. If module is a GOC AA, no replacement is required.
17. If LAN Hub Switch is an 8–Port 10/100, it must be replaced with a new 8–Port 10/100/1000 Switch.
18. **FOR MOBILE SYSTEMS ONLY**: A new Run 1329, a new GOC and new GOC power cord will be provided for installation.

Affected (removed) Cables for Upgrading 1.5T SIGNA 11.x Non–LCC with EXCITE II Technology to EXCITE HDxt (16.x or lataer) – 1.5T SmartSpeed, HiSpeed or EchoSpeed

NOTES:

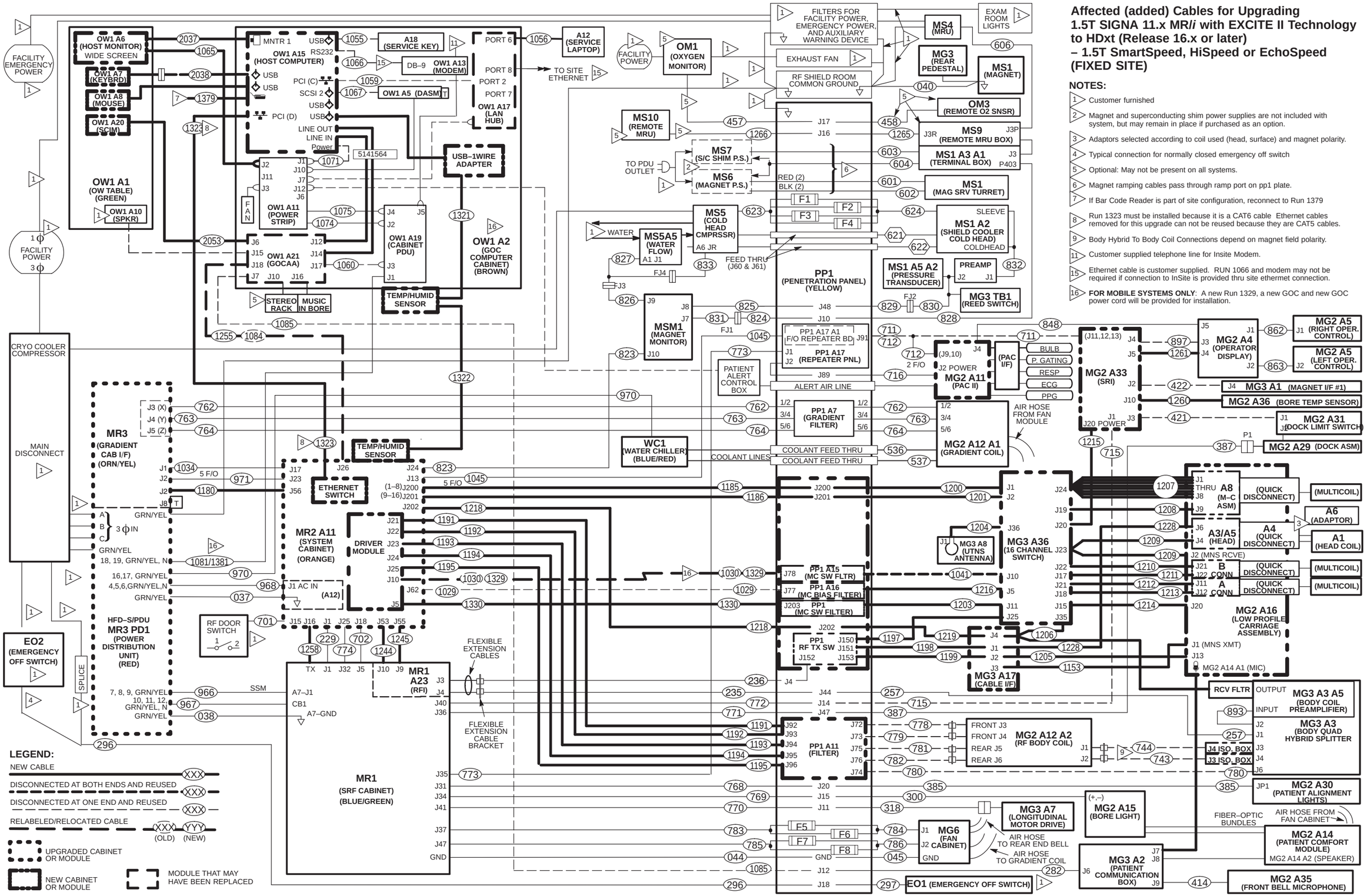
1. Customer furnished
2. Magnet and superconducting shim power supplies are not included with system, but may remain in place if purchased as an option.
3. Adaptors selected according to coil used (head, surface) and magnet polarity.
4. Typical connection for normally closed emergency off switch
5. Optional: May not be present on all systems.
6. Magnet ramping cables pass through ramp port on pp1 plate.
7. RUNS (600 SERIES) Furnished with GE Magnet.
8. RUNS 823 To 833 Furnished with Magnet Monitoring.
9. Body Hybrid To Body Coil Connections depend on magnet field polarity.
11. Customer supplied telephone line for Insite Modem.
12. If module is a WIM, it must be replaced with a GOC AA. If module is a GOC AA, no replacement is required.
13. If LAN Hub Switch is an 8–Port 10/100, it must be replaced with a new 8–Port 10/100/1000 Switch.
15. Ethernet cable is customer supplied. RUN 1066 and modem may not be required if connection to InSite is provided thru site ethermet connection.
16. **FOR MOBILE SYSTEMS ONLY**: A new Run 1329, a new GOC and new GOC power cord will be provided for installation.



Affected (added) Cables for Upgrading 1.5T SIGNA 11.x MR/*i* with EXCITE II Technology to HDxt (Release 16.x or later) – 1.5T SmartSpeed, HiSpeed or EchoSpeed (FIXED SITE)

NOTES:

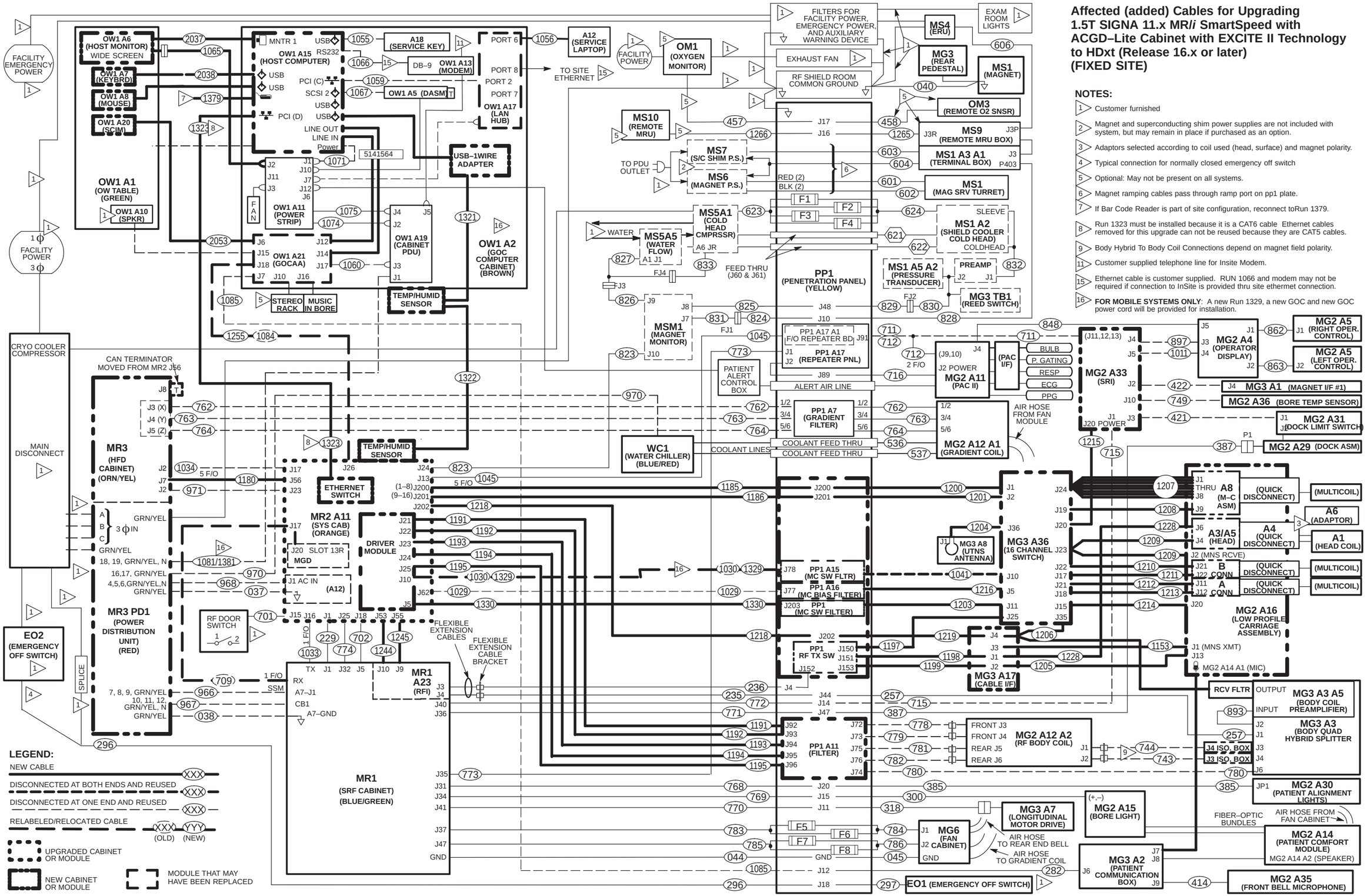
1. Customer furnished
2. Magnet and superconducting shim power supplies are not included with system, but may remain in place if purchased as an option.
3. Adaptors selected according to coil used (head, surface) and magnet polarity.
4. Typical connection for normally closed emergency off switch
5. Optional: May not be present on all systems.
6. Magnet ramping cables pass through ramp port on pp1 plate.
7. If Bar Code Reader is part of site configuration, reconnect to Run 1379
8. Run 1323 must be installed because it is a CAT6 cable Ethernet cables removed for this upgrade can not be reused because they are CAT5 cables.
9. Body Hybrid To Body Coil Connections depend on magnet field polarity.
11. Customer supplied telephone line for Insite Modem.
15. Ethernet cable is customer supplied. RUN 1066 and modem may not be required if connection to InSite is provided thru site ethermet connection.
16. **FOR MOBILE SYSTEMS ONLY**: A new Run 1329, a new GOC and new GOC power cord will be provided for installation.



Affected (added) Cables for Upgrading 1.5T SIGNA 11.x MR/*i* SmartSpeed with ACGD–Lite Cabinet with EXCITE II Technology to HDxt (Release 16.x or later) (FIXED SITE)

NOTES:

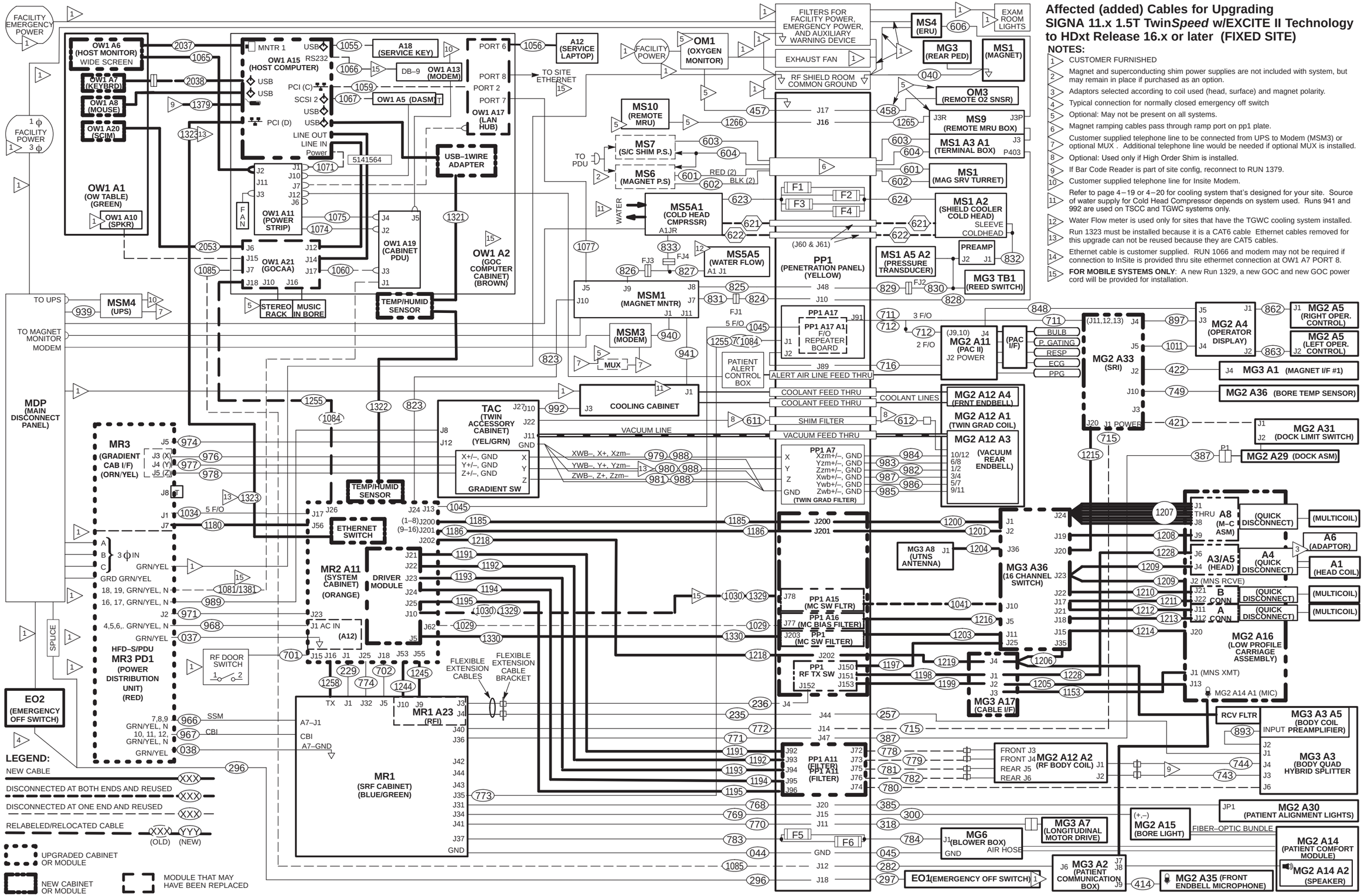
1. Customer furnished
2. Magnet and superconducting shim power supplies are not included with system, but may remain in place if purchased as an option.
3. Adaptors selected according to coil used (head, surface) and magnet polarity.
4. Typical connection for normally closed emergency off switch
5. Optional: May not be present on all systems.
6. Magnet ramping cables pass through ramp port on pp1 plate.
7. If Bar Code Reader is part of site configuration, reconnect toRun 1379.
8. Run 1323 must be installed because it is a CAT6 cable Ethernet cables removed for this upgrade can not be reused because they are CAT5 cables.
9. Body Hybrid To Body Coil Connections depend on magnet field polarity.
11. Customer supplied telephone line for Insite Modem.
15. Ethernet cable is customer supplied. RUN 1066 and modem may not be required if connection to InSite is provided thru site ethermet connection.
16. **FOR MOBILE SYSTEMS ONLY**: A new Run 1329, a new GOC and new GOC power cord will be provided for installation.



Affected (added) Cables for Upgrading SIGNA 11.x 1.5T Twin*Speed* w/EXCITE II Technology to HDxt Release 16.x or later (FIXED SITE)

NOTES:

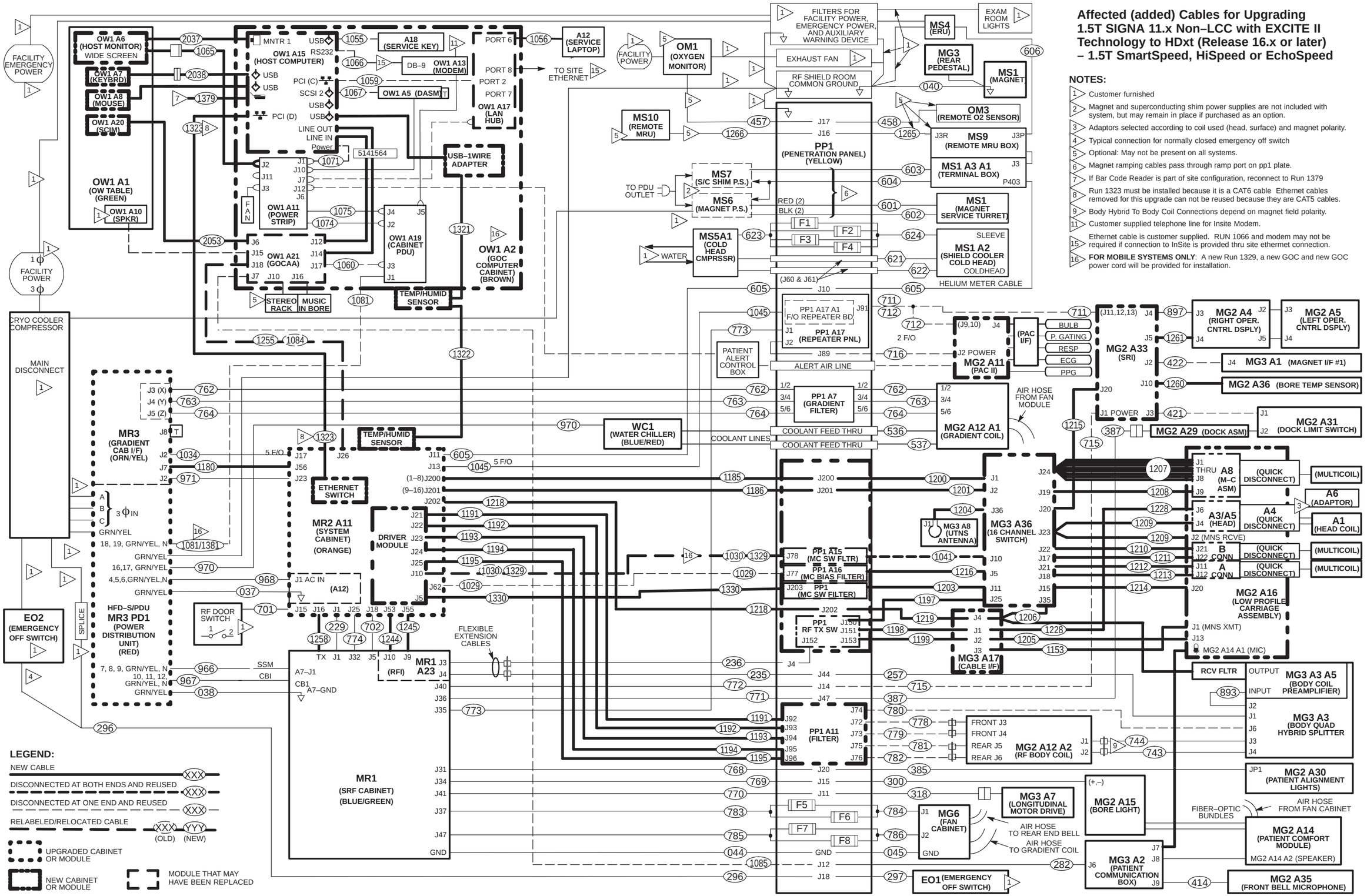
1. CUSTOMER FURNISHED
2. Magnet and superconducting shim power supplies are not included with system, but may remain in place if purchased as an option.
3. Adaptors selected according to coil used (head, surface) and magnet polarity.
4. Typical connection for normally closed emergency off switch
5. Optional: May not be present on all systems.
6. Magnet ramping cables pass through ramp port on pp1 plate.
7. Customer supplied telephone line to be connected from UPS to Modem (MSM3) or optional MUX . Additional telephone line would be needed if optional MUX is installed.
8. Optional: Used only if High Order Shim is installed.
9. If Bar Code Reader is part of site config, reconnect to RUN 1379.
10. Customer supplied telephone line for Insite Modem.
11. Refer to page 4–19 or 4–20 for cooling system that's designed for your site. Source of water supply for Cold Head Compressor depends on system used. Runs 941 and 992 are used on TSCC and TGWC systems only.
12. Water Flow meter is used only for sites that have the TGWC cooling system installed.
13. Run 1323 must be installed because it is a CAT6 cable Ethernet cables removed for this upgrade can not be reused because they are CAT5 cables.
14. Ethernet cable is customer supplied. RUN 1066 and modem may not be required if connection to InSite is provided thru site ethermet connection at OW1 A7 PORT 8.
15. **FOR MOBILE SYSTEMS ONLY**: A new Run 1329, a new GOC and new GOC power cord will be provided for installation.



Affected (added) Cables for Upgrading 1.5T SIGNA 11.x Non–LCC with EXCITE II Technology to HDxt (Release 16.x or later) – 1.5T SmartSpeed, HiSpeed or EchoSpeed

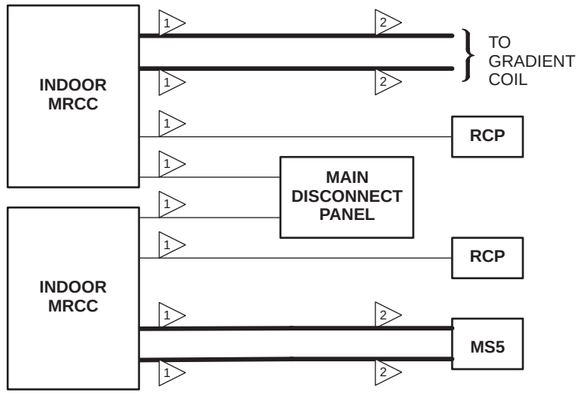
NOTES:

1. Customer furnished
2. Magnet and superconducting shim power supplies are not included with system, but may remain in place if purchased as an option.
3. Adaptors selected according to coil used (head, surface) and magnet polarity.
4. Typical connection for normally closed emergency off switch
5. Optional: May not be present on all systems.
6. Magnet ramping cables pass through ramp port on pp1 plate.
7. If Bar Code Reader is part of site configuration, reconnect to Run 1379
8. Run 1323 must be installed because it is a CAT6 cable Ethernet cables removed for this upgrade can not be reused because they are CAT5 cables.
9. Body Hybrid To Body Coil Connections depend on magnet field polarity.
11. Customer supplied telephone line for Insite Modem.
15. Ethernet cable is customer supplied. RUN 1066 and modem may not be required if connection to InSite is provided thru site ethermet connection.
16. **FOR MOBILE SYSTEMS ONLY**: A new Run 1329, a new GOC and new GOC power cord will be provided for installation.



LEGEND:

- NEW CABLE
- DISCONNECTED AT BOTH ENDS AND REUSED
- DISCONNECTED AT ONE END AND REUSED
- RELABELED/RELOCATED CABLE (OLD) (NEW)
- UPGRADED CABINET OR MODULE
- NEW CABINET OR MODULE
- MODULE THAT MAY HAVE BEEN REPLACED



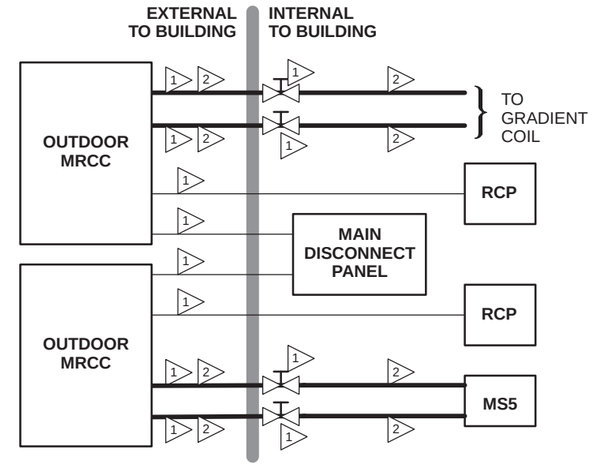
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO MRCC SUBSYSTEM EQUIPMENT SHOWN HERE.

DUAL INDOOR MRCC SUBSYSTEM GROUP INTERCONNECT DIAGRAM



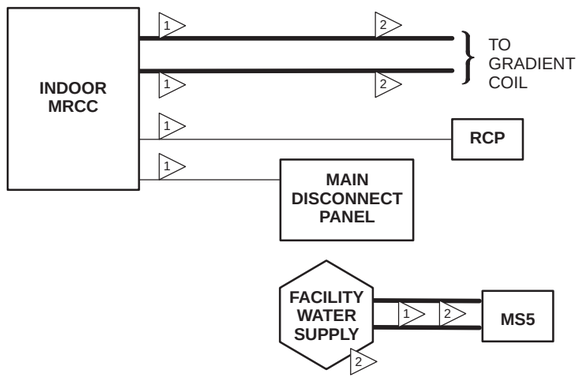
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO MRCC SUBSYSTEM EQUIPMENT SHOWN HERE.

DUAL OUTDOOR MRCC SUBSYSTEM GROUP INTERCONNECT DIAGRAM



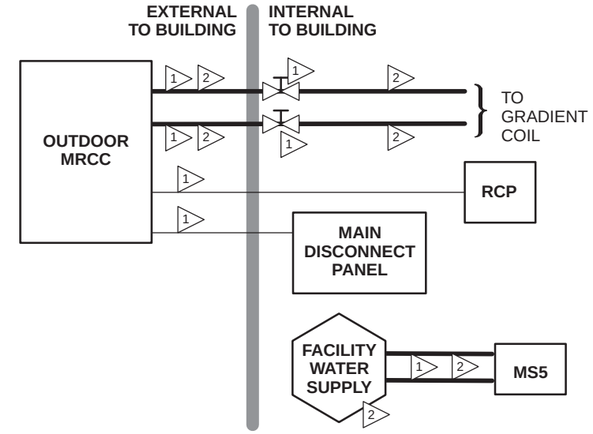
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO MRCC SUBSYSTEM EQUIPMENT SHOWN HERE.

INDOOR MRCC SUBSYSTEM GROUP INTERCONNECT DIAGRAM



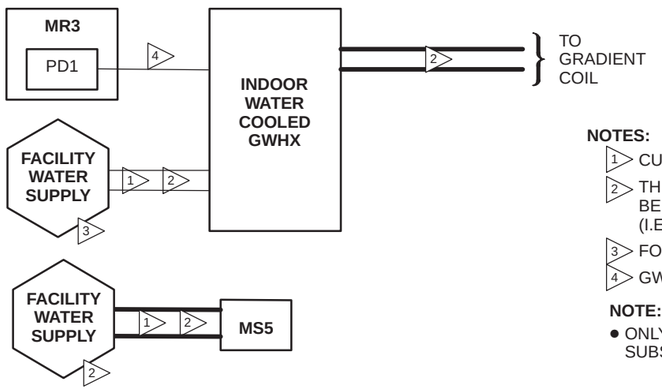
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO MRCC SUBSYSTEM EQUIPMENT SHOWN HERE.

OUTDOOR MRCC SUBSYSTEM GROUP INTERCONNECT DIAGRAM



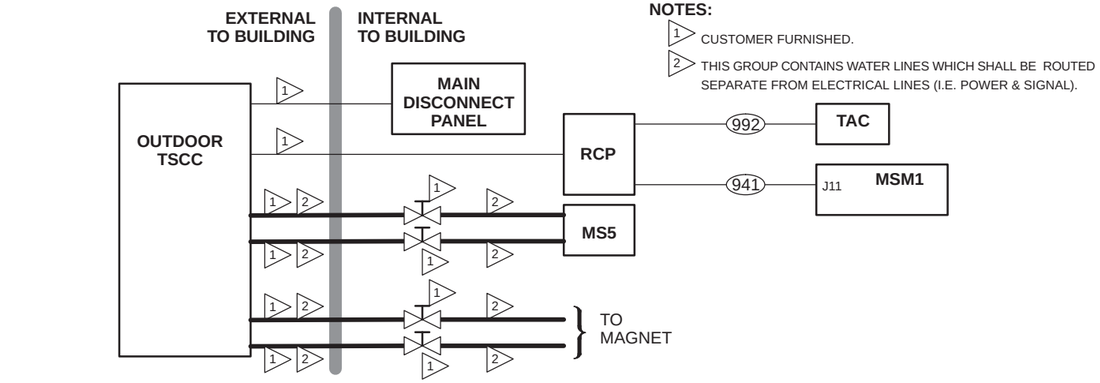
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).
3. FOR INDOOR WATER COOLED GWHX ONLY.
4. GWHX PROVIDED CABLE.

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO GWHX SUBSYSTEM EQUIPMENT SHOWN HERE.

INDOOR GWHX SUBSYSTEM GROUP INTERCONNECT DIAGRAM



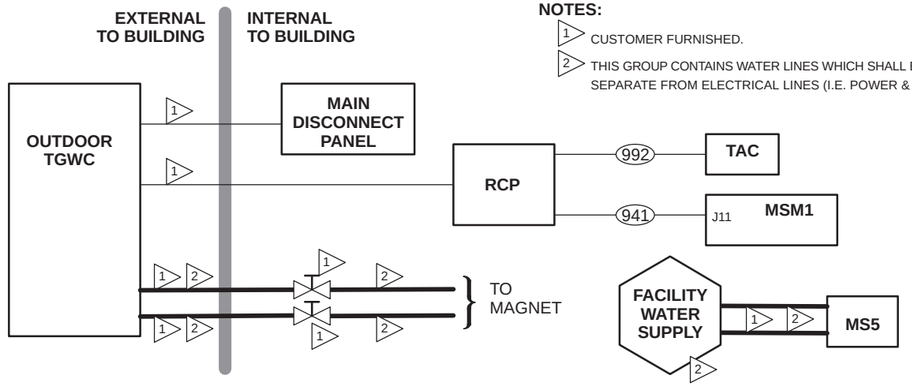
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO TSCC SUBSYSTEM EQUIPMENT SHOWN HERE.

OUTDOOR TSCC & RCP SUBSYSTEM GROUP INTERCONNECT DIAGRAM



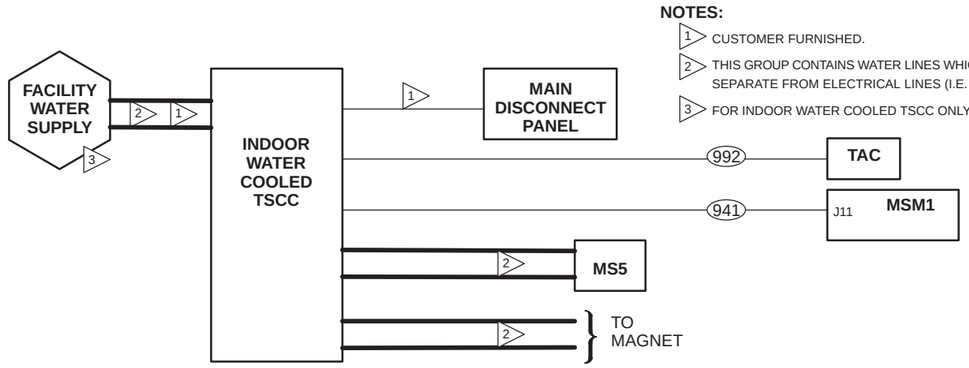
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO TGWC SUBSYSTEM EQUIPMENT SHOWN HERE.

OUTDOOR TGWC & RCP SUBSYSTEM GROUP INTERCONNECT DIAGRAM



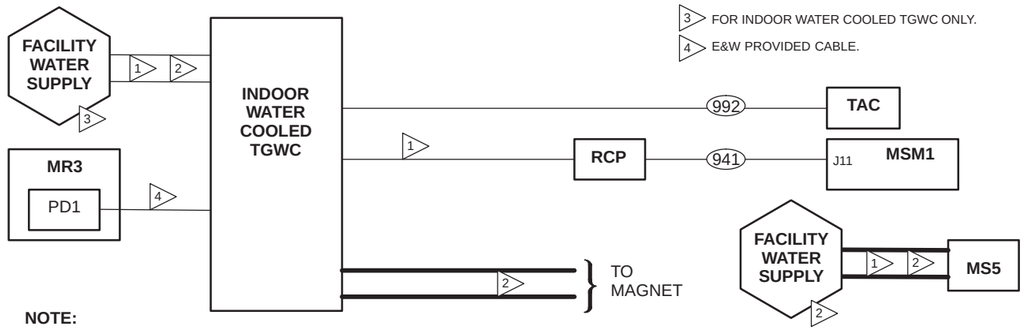
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).
3. FOR INDOOR WATER COOLED TSCC ONLY.

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO TSCC SUBSYSTEM EQUIPMENT SHOWN HERE.

INDOOR WATER COOLED TSCC SUBSYSTEM GROUP INTERCONNECT DIAGRAM



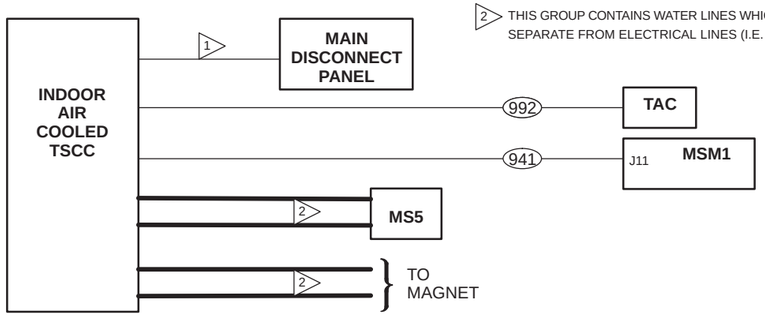
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).
3. FOR INDOOR WATER COOLED TGWC ONLY.
4. E&W PROVIDED CABLE.

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO TGWC SUBSYSTEM EQUIPMENT SHOWN HERE.

INDOOR WATER COOLED TGWC SUBSYSTEM GROUP INTERCONNECT DIAGRAM



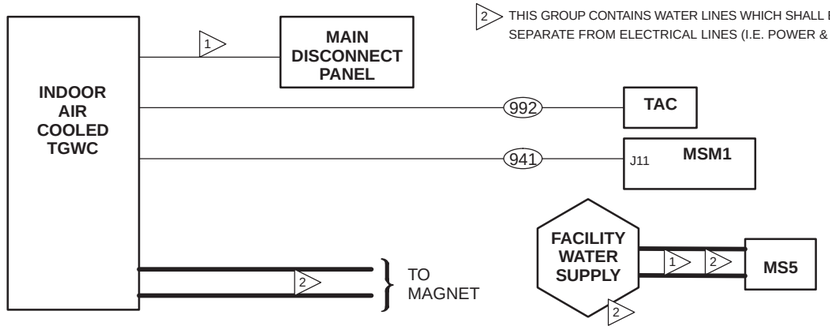
NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO TSCC SUBSYSTEM EQUIPMENT SHOWN HERE.

INDOOR AIR COOLED TSCC SUBSYSTEM GROUP INTERCONNECT DIAGRAM



NOTES:

1. CUSTOMER FURNISHED.
2. THIS GROUP CONTAINS WATER LINES WHICH SHALL BE ROUTED SEPARATE FROM ELECTRICAL LINES (I.E. POWER & SIGNAL).

NOTE:

- ONLY INTERCONNECTS SPECIFIC TO TGWC SUBSYSTEM EQUIPMENT SHOWN HERE.

INDOOR AIR COOLED TGWC SUBSYSTEM GROUP INTERCONNECT DIAGRAM

Chapter 5 Penetration panel

1 Penetration Panel Upgrade

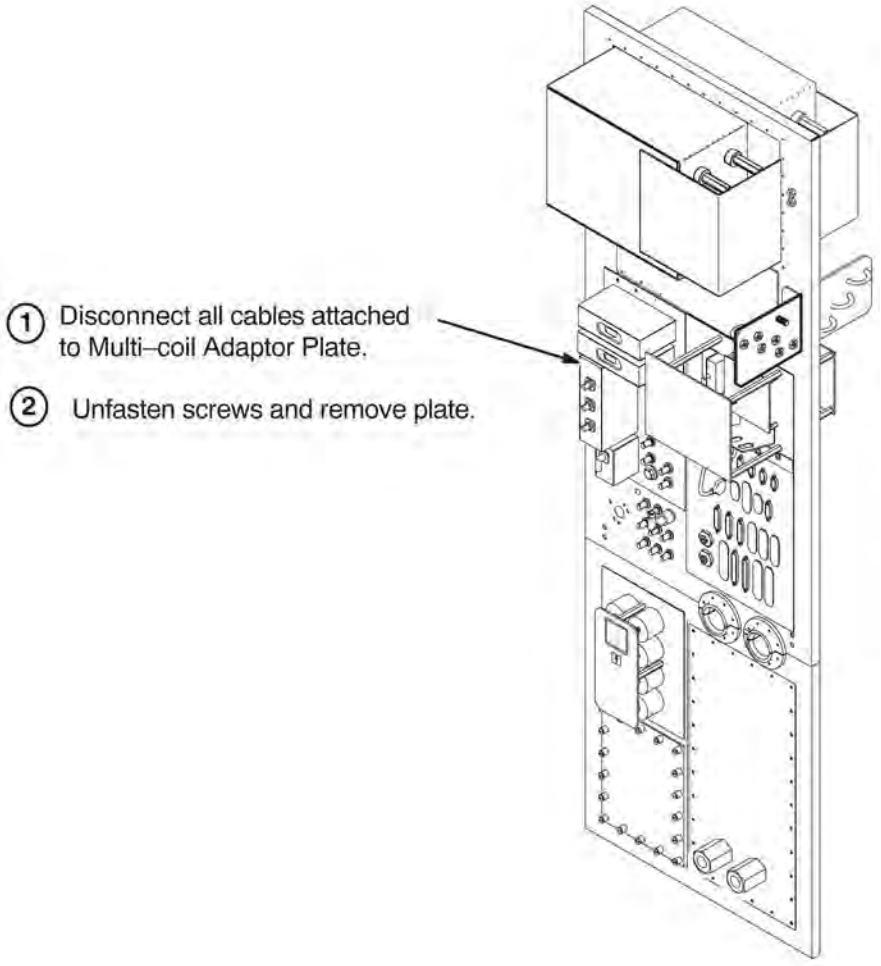
DANGER

ELECTROCUTION HAZARD!
HIGH VOLTAGE PRESENT.
POWER TO SYSTEM MUST BE OFF, LOCKED AND TAGGED, BEFORE STARTING ANY UPGRADE PROCEDURES. REFER TO SECTION 3 FOR POWER OFF PROCEDURES.

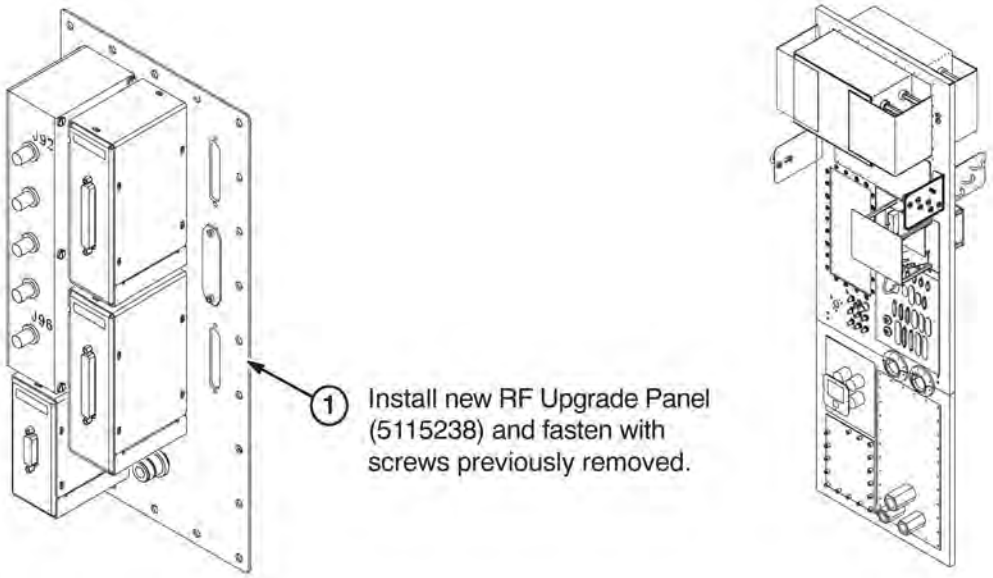
1.1 Introduction

The Multi-coil Adaptor Plate will be replaced by the RF Upgrade Panel (5115238).

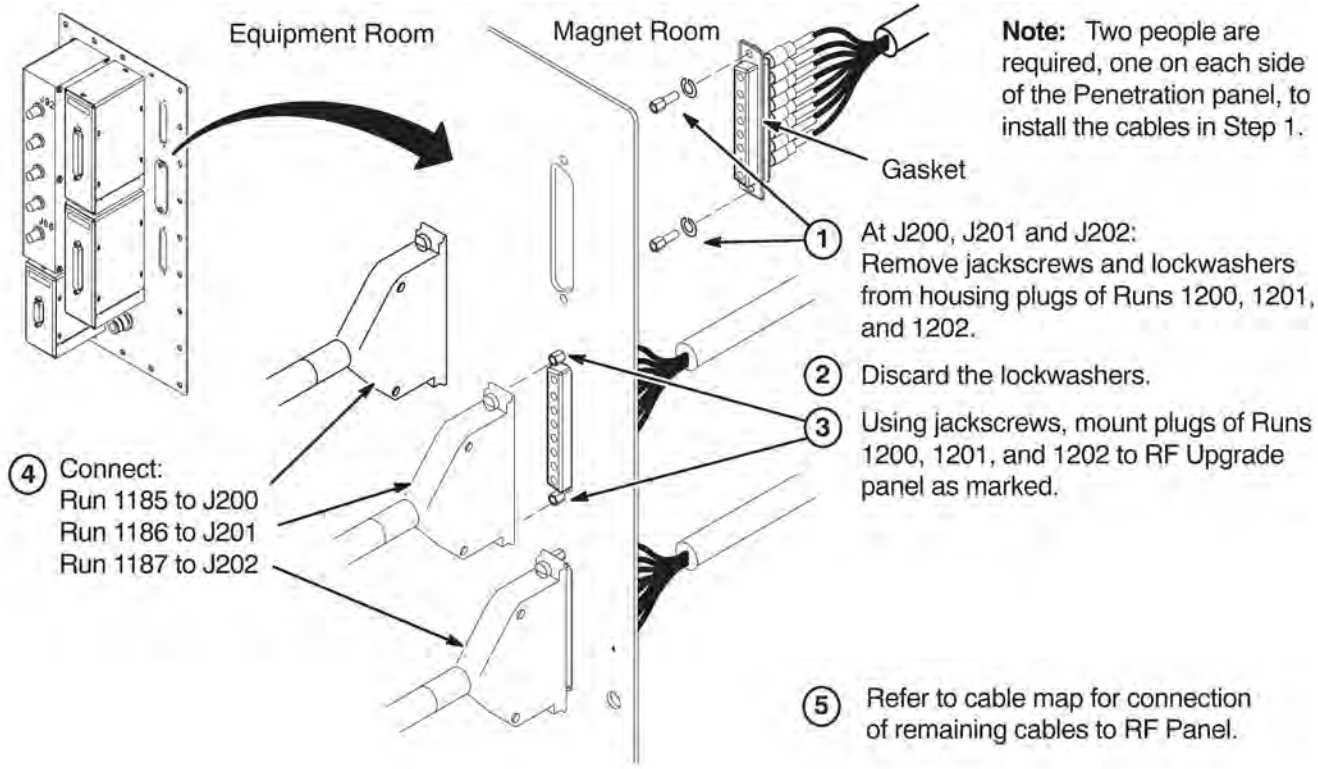
1.2 Remove Multi-Coil Adaptor Plate from Penetration Panel



1.3 Install New Excite RF Panel



1.4 Installation of Cables at J200, J201, and J202



Chapter 6 Magnet Room

1 Introduction

NOTICE

MAKE SURE POWER TO SYSTEM IS OFF, LOCKED AND TAGGED, BEFORE STARTING ANY UPGRADE PROCEDURES. REFER TO CHAPTER 3 FOR POWER OFF PROCEDURES.

Modules on the Rear Pedestal, the front and rear Split Bridge on WideOpen style enclosures, LPCA and Cable Track, SRI, and PAC will be replaced.

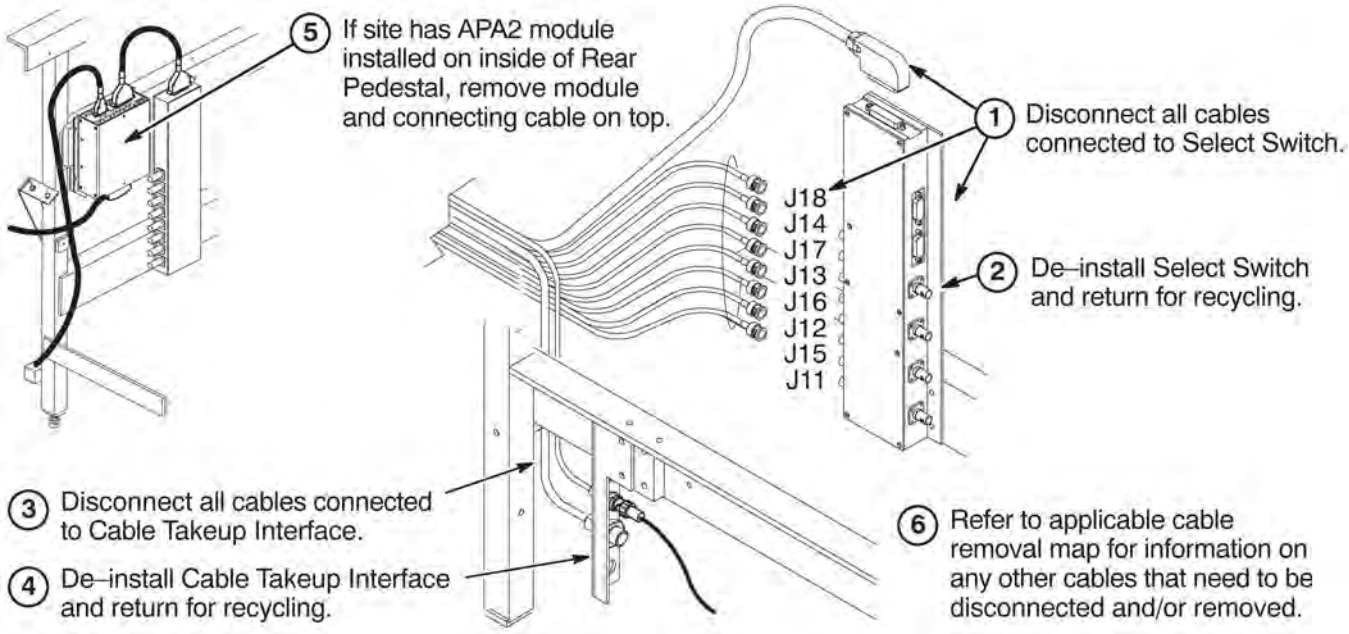
A new Dual Thermal Sensor cable, Run 1260, will be installed along with other new cables that will be routed and connected. Several other cables will also be removed and replaced with new cables. Refer to Section 4 cable maps for information on removing and installing cables

- Refer toPrerequisite Upgrade Procedures for WideOpen and Installation of New WideOpen & TwinSpeed Parts for upgrading a system with a LCC magnet and a WideOpen Enclosure
- Refer to Prerequisite Upgrade Procedures for TwinSpeed and Installation of New WideOpen & TwinSpeed Parts for upgrading a system with a LCC magnet and a TwinSpeed Enclosure
- Refer to Upgrade Procedures for Horizon Enclosures for upgrading a system with a Non-LCC magnet and a Horizon style Enclosure
- Complete Times Microwave RF Cables Installation for all systems
- Also included are the instructions for upgrading the Cradle Release on the Patient Table. Refer to Patient Table Cradle Release Upgrade if this upgrade has not already been performed at this site.

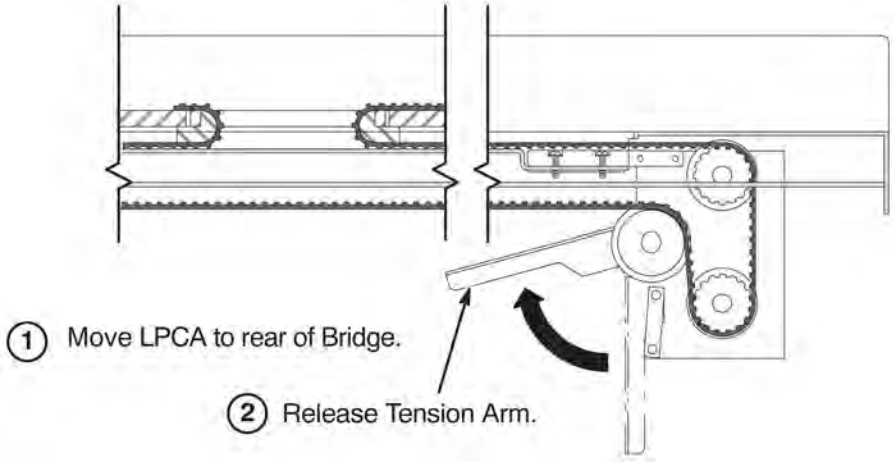
2 Prerequisite Upgrade Procedures for WideOpen Enclosure

2.1 De-install Existing LPCA & Cable Track

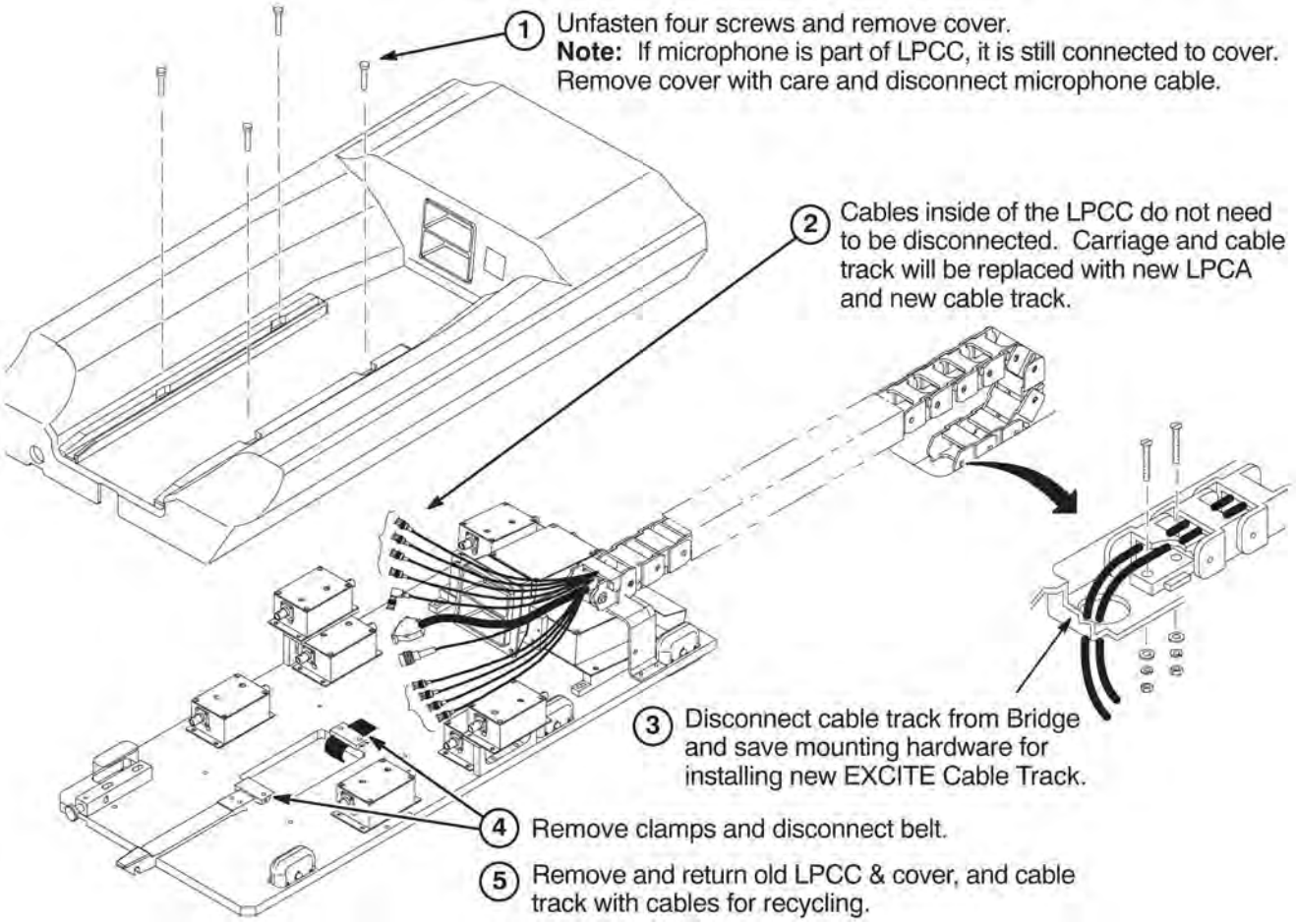
2.1.1 Disconnect Cables In Rear Pedestal



2.1.2 Relese Tension Arm Under Rear Pedestal



2.1.3 Disconnect Low Profile Carriage Cover & Cable Track

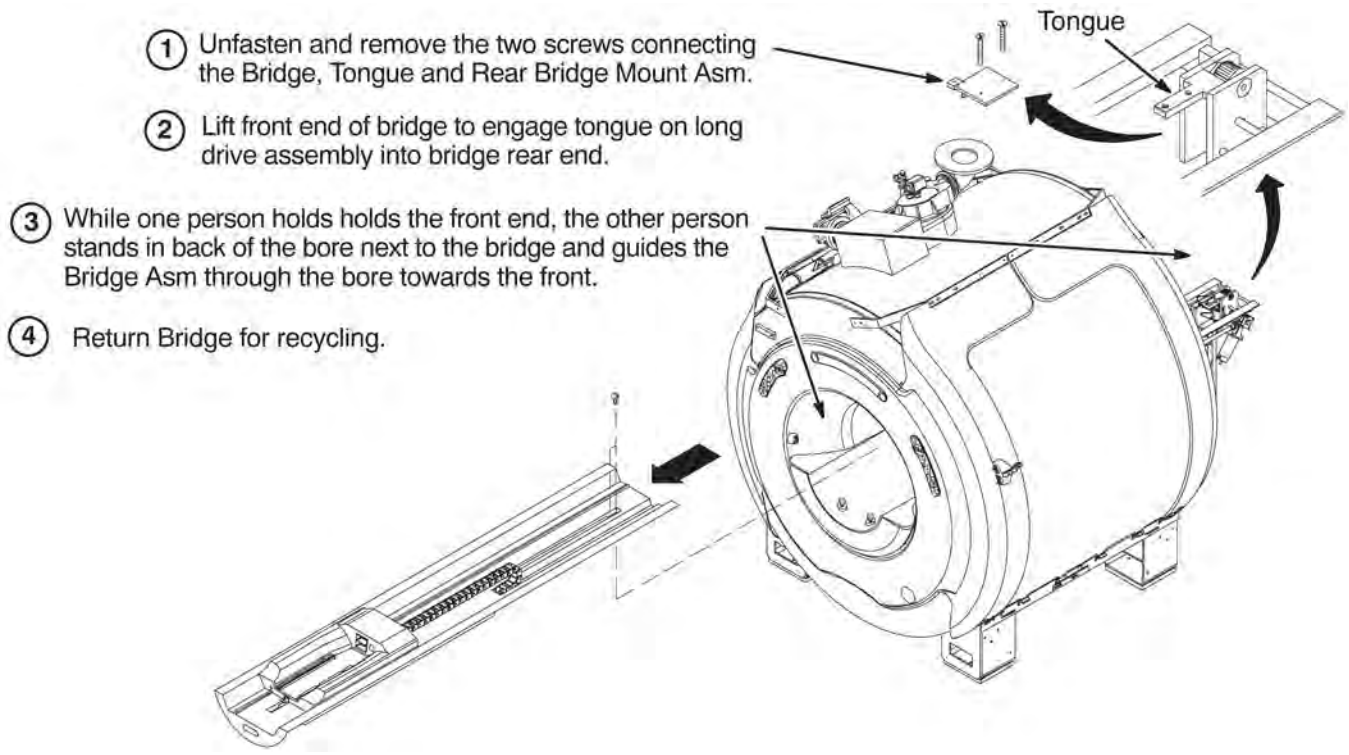


2.2 De-install Bridge for WideOpen

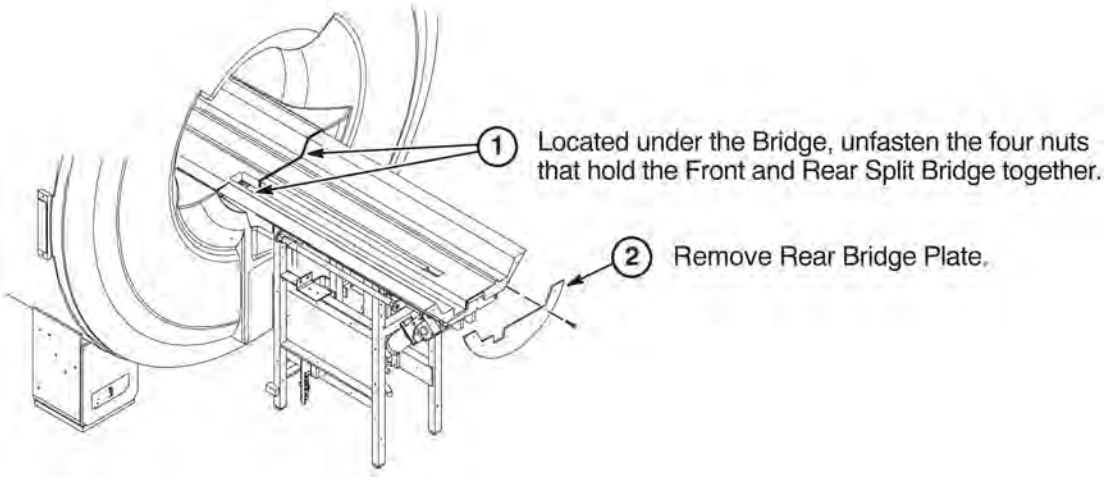
Upgrading to HDx requires a new Front and Rear Split Bridge. Early production versions of the WideOpen enclosure were installed with the long single-piece Bridge. Later versions used the Split Bridge. Either existing bridge type will need to be removed for installation of the new dual-track Split Bridge. Refer to one of the following for instructions of removing the bridge at site being upgraded.

- Refer to Section 2.2.1 for the de-installation of the long single-piece bridge.
- Refer to Section 2.2.2 through Section 2.2.4 for the de-installation of the single-track split bridge.

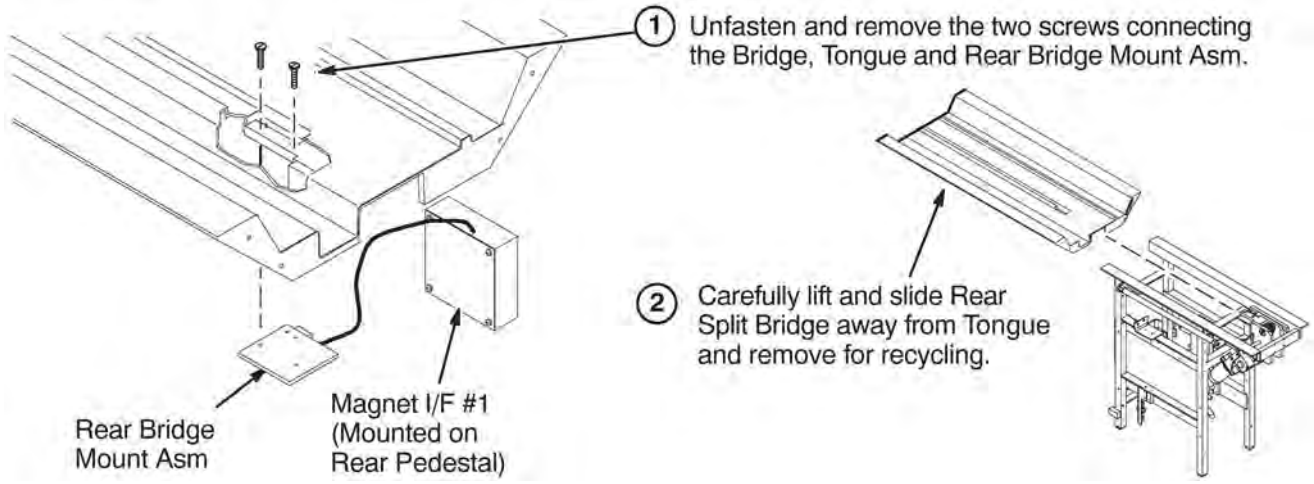
2.2.1 Remove Long Bridge



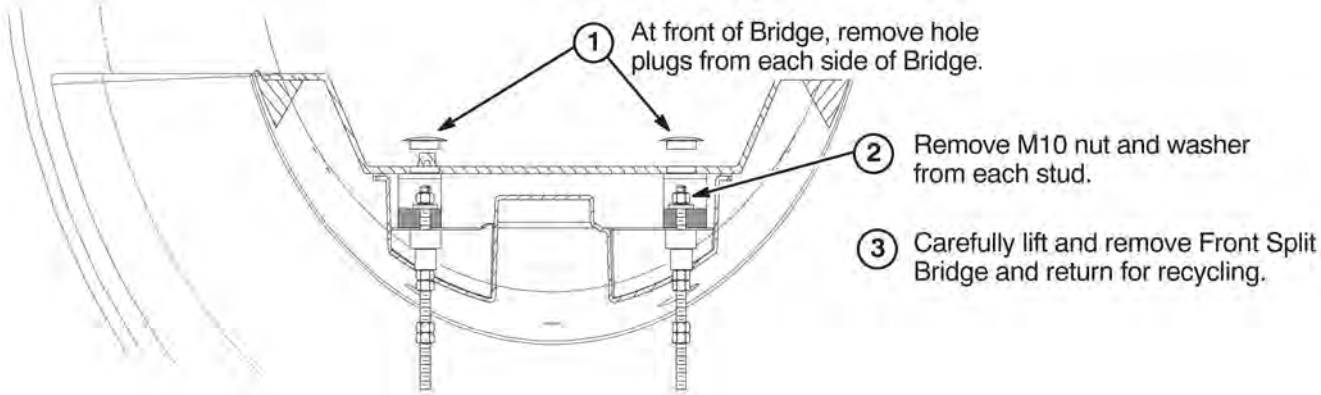
2.2.2 Unfasten Rear Split Bridge



2.2.3 Remove Rear Split Bridge

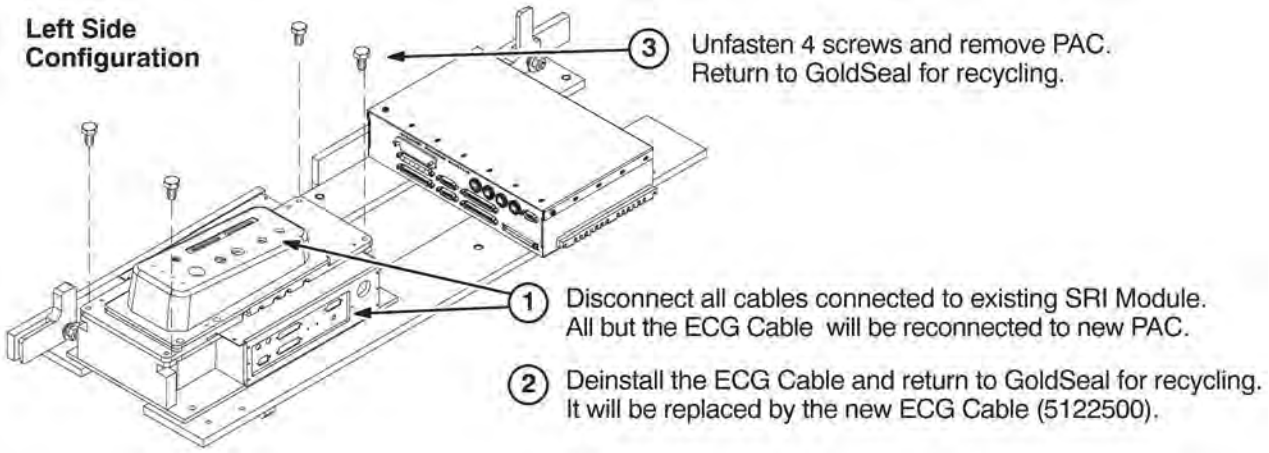


2.2.4 Remove Front Split Bridge



2.3 De-install PAC Module for WideOpen

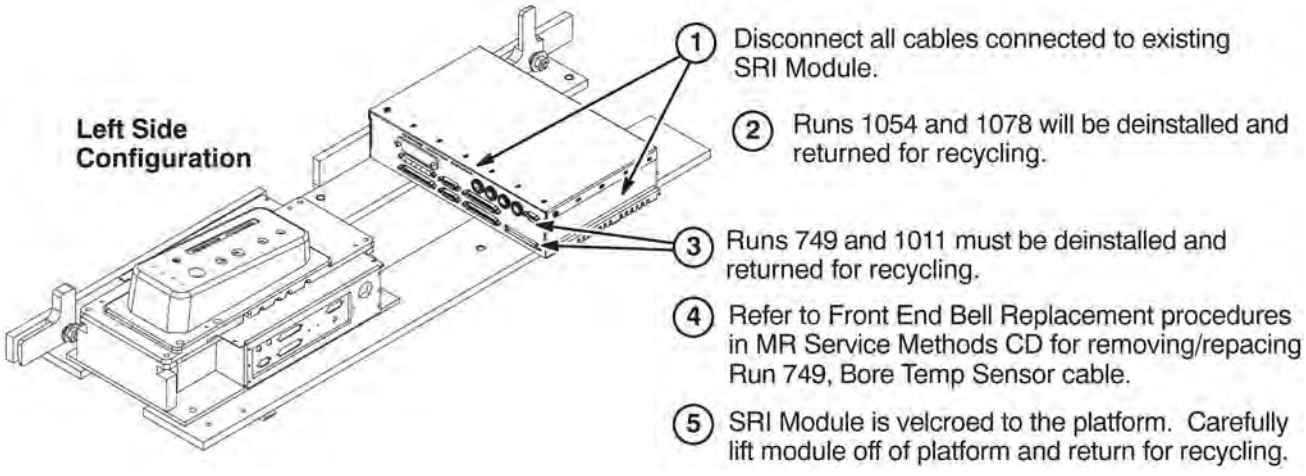
The existing PAC Module will be replaced by a new PAC Module with independent vector gating.



2.4 De-install SRI Module for WideOpen

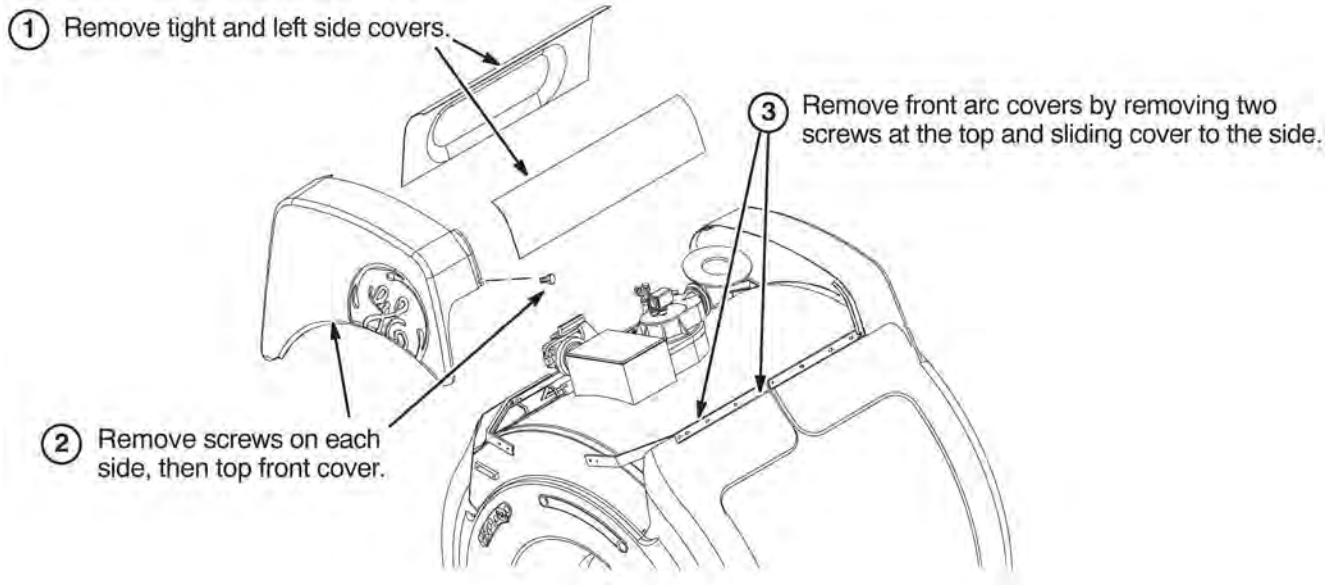
The existing SRI Module will be replaced by the SRI-3 or SRI-5 Module.

NOTE: Existing Runs 749 and 1011 must be removed and replaced with new Runs 1260 and 1261. There is a functionality difference.

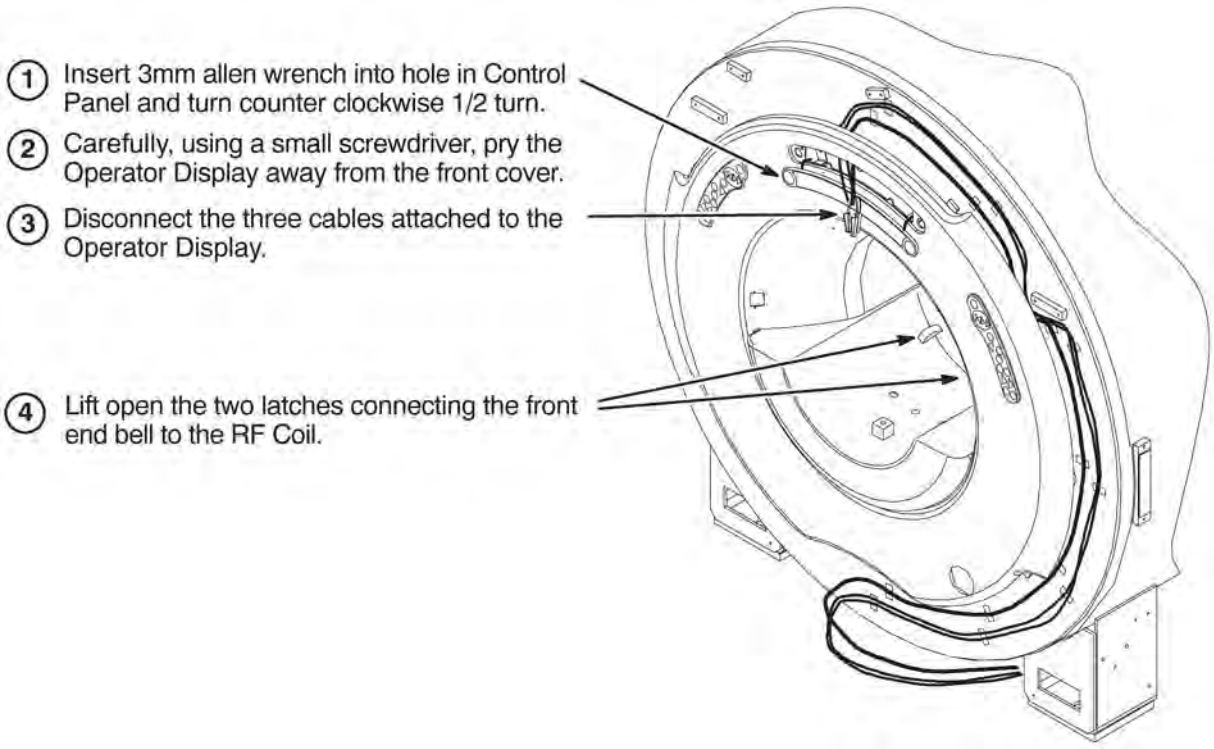


2.5 De-install Front End Bell

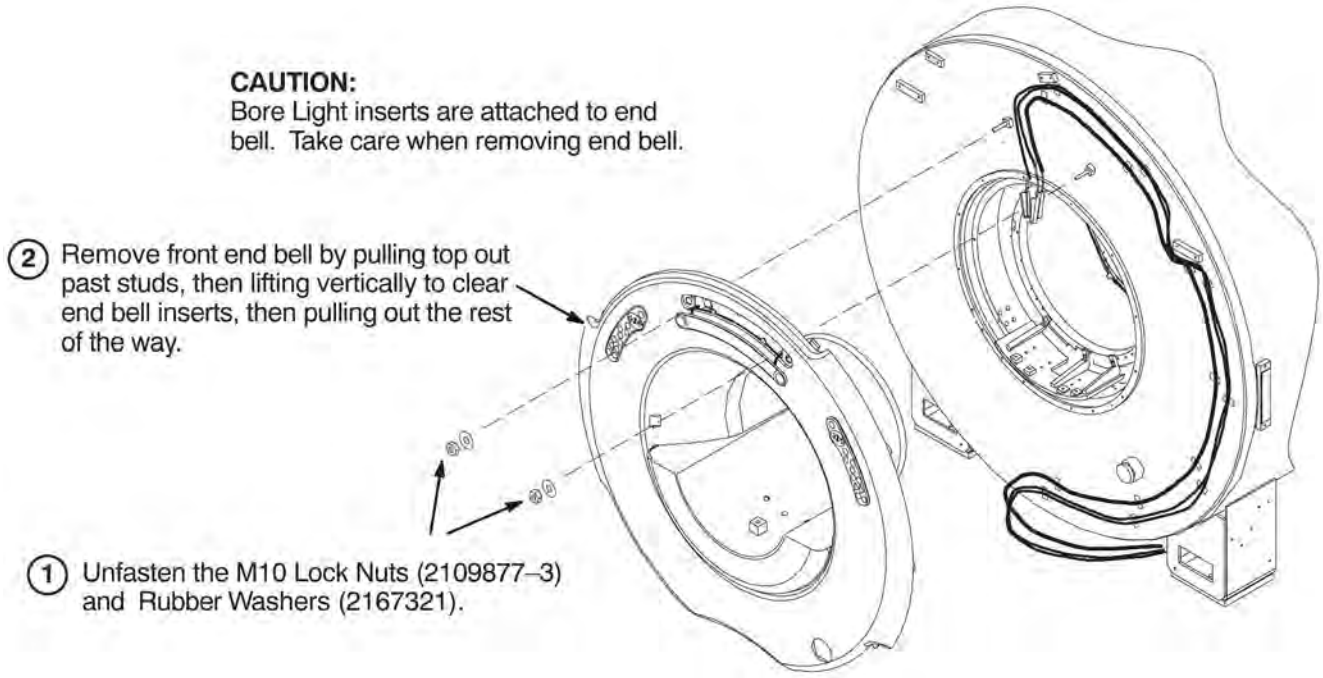
2.5.1 Remove WideOpen Enclosure Covers



2.5.2 Disconnect Operator Control Panel



2.5.3 Remove Front End Bell



2.6 Install IIQ Kit (If Required)

Prior to this upgrade, the site should have been audited to determine if the IIQ Kit (M3090NE) and the RF Ground Strap (M3090NF) have been installed.

The IIQ Kit includes parts and instructions for the installation of the Gradient Radial Support and the Bridge Support. It would be required for earlier versions of the WideOpen enclosure. If this upgrade has not been performed on the existing enclosure, then M3090NE should have been ordered and must be installed at this point of the EXCITE HD upgrade.

Refer to steering Direction 2401983, included in M3090NE, for guidance. Directions 2318581, Signa Cx/K4 Magnet WideOpen Enclosure Bridge Support and Direction 2319693, Signa Gradient Radial Support Upgrade, along with associated parts, are also included in M3090NE.

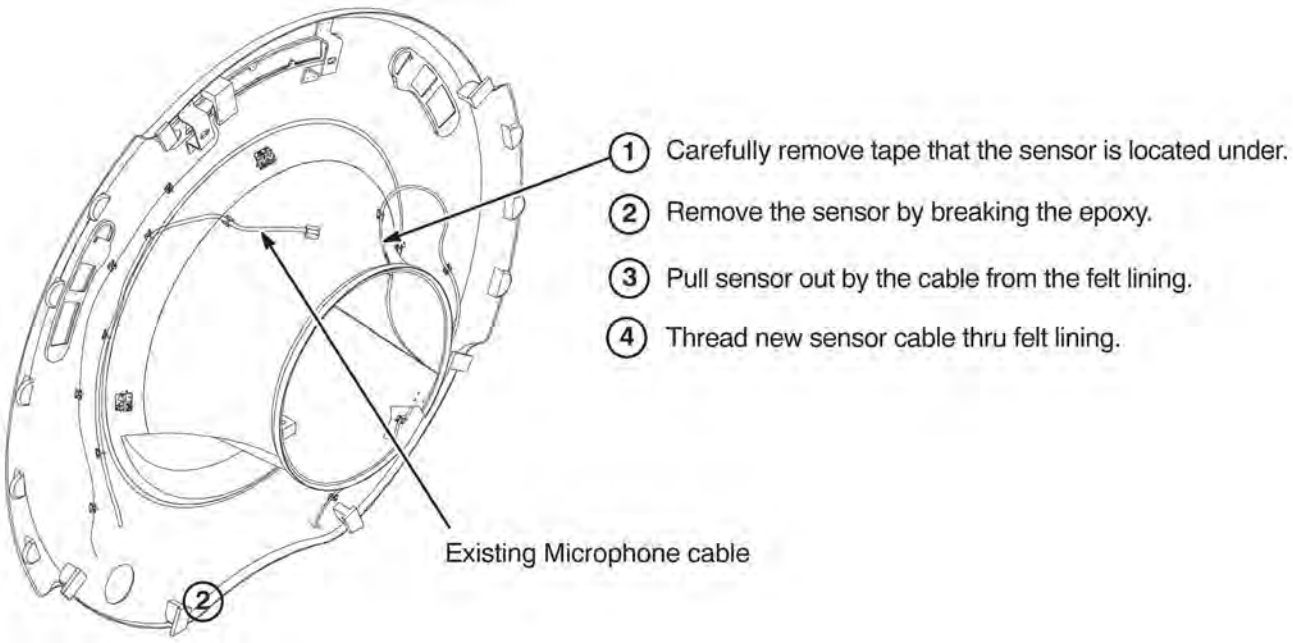
Also, the RF Ground Strap (M3090NF) must be installed if this upgrade hasn't been performed previously. This kit includes parts and instructions for installation of the RF Ground Strap. Refer to Direction 2319685, BRM of CRM RF Shield Grounding Upgrade, for instructions on installing this kit.

NOTE: If this procedure is not completed by Mechanical Installer or Van Partner, make sure that the GE Field Engineer has been notified that this upgrade procedure needs to be completed. For Van Partner, refer to the Design Review Checklist to report status of completion.

2.7 Install New Dual Temperature Sensor Cable, Run 1260

2.7.1 Temperature Sensor Cable Removal

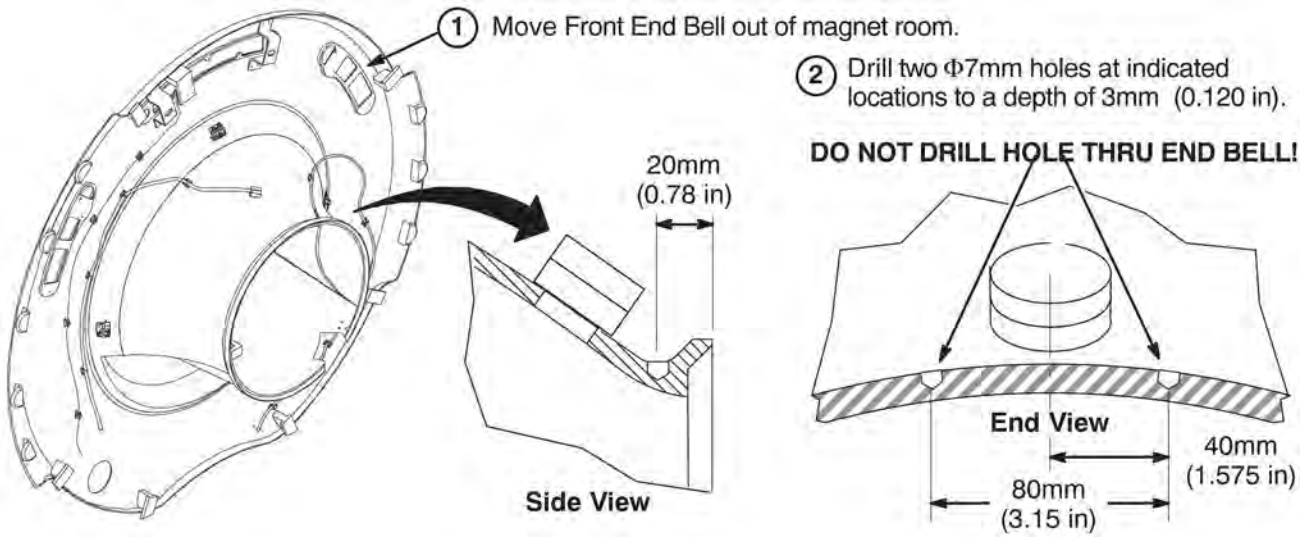
The site may have upgraded to a Dual Thermal Sensor Run 749 recently, but this cable has to be removed and replaced with new Dual Thermal Sensor cable, Run 1260 (5123812). EXCITE HD requires Run 1260 to be installed.



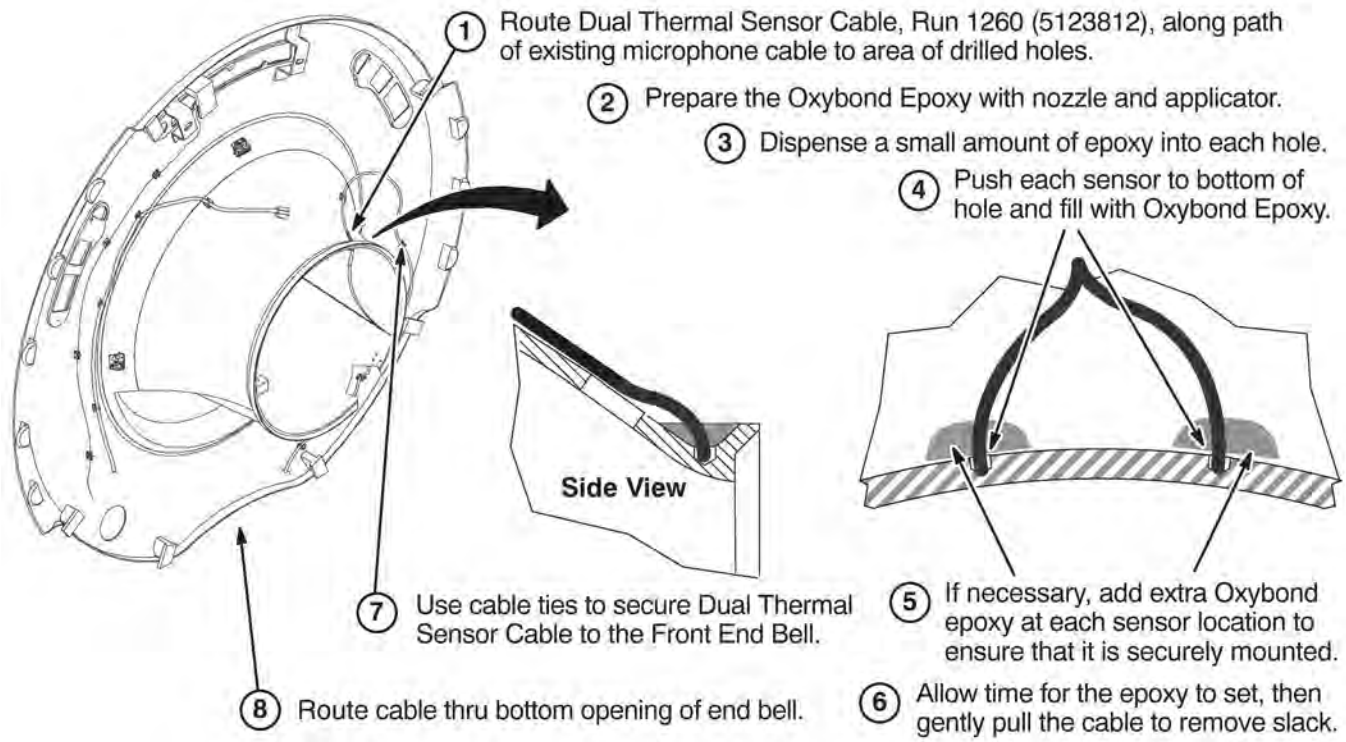
2.7.2 Prepare End Bell for Installation of Dual Thermal Sensor Cable

⚠WARNING

FERROUS MATERIAL HAZARD!
TOOLS AND PARTS REQUIRED FOR THIS UPGRADE CONTAIN FERROUS MATERIAL.
DO NOT DRILL, HAMMER, CHISEL, ETC. OR USE ANY FERROUS TOOLS IN MAGNET ROOM UNLESS MAGNET IS RAMPED DOWN!



2.7.3 Attach Dual Thermal Sensor Cable



2.7.4 Install Front End Bell

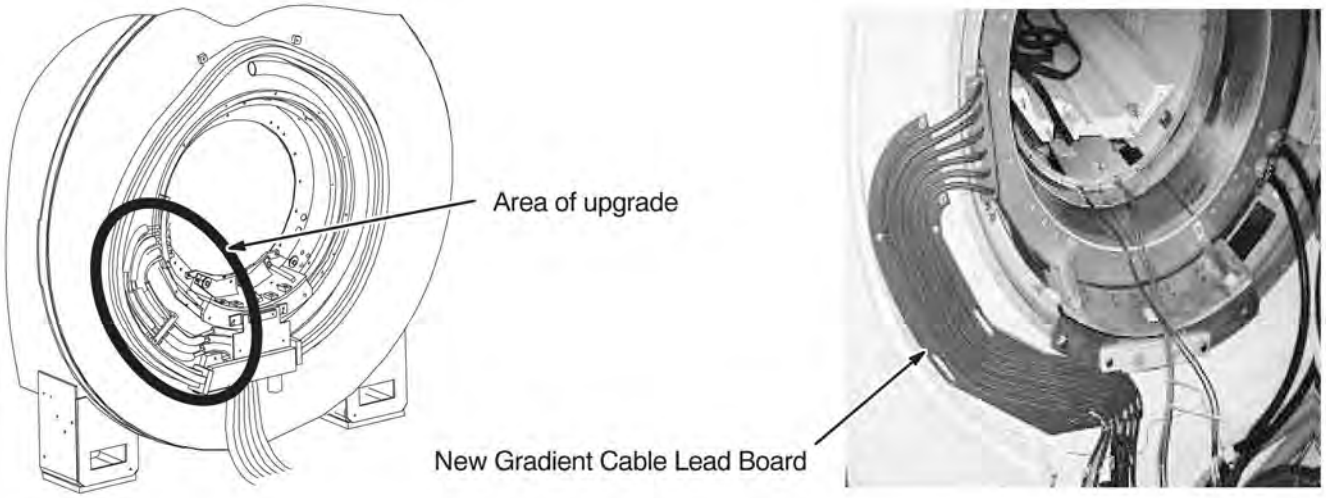
Reverse the Front End Bell Removal procedure in this section to reinstall the front end bell.

2.8 Install BRM Gradient Cable Lead Board (MR/i or CV/i Systems Only)

NOTE: For a system being upgraded, whether it is a fixed-site or a mobile, if the gradient lead restraint is using the 90 degree mobile van bracket or the IIQ "S" bracket assembly, do not modify or upgrade it. If the system being upgraded does not contain either of these, then install the IIQ "S" bracket assembly.

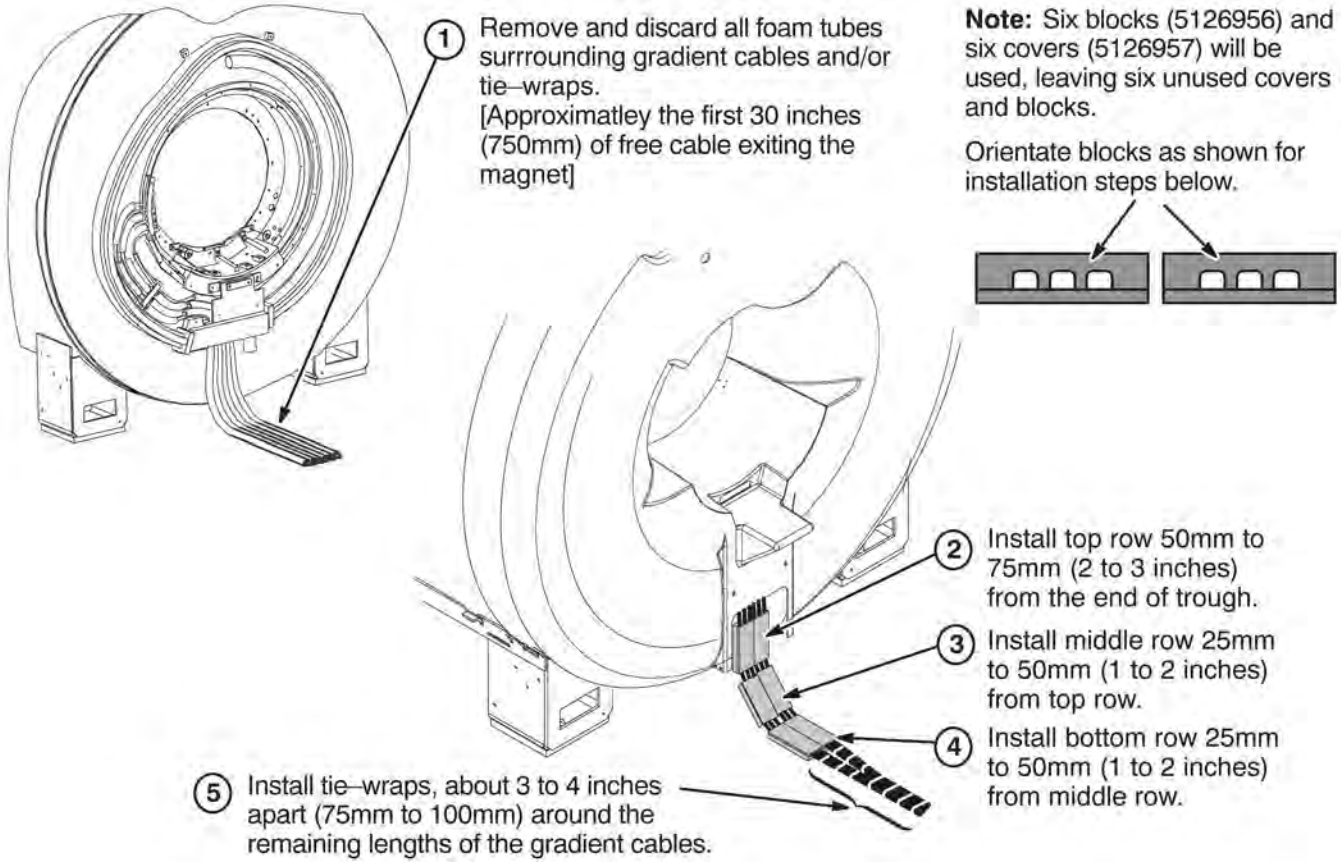
For fixed sites only, the mounting of the gradient cables at the rear of the magnet must use the Gradient Cable lead Board, also known as the "S" bracket assembly. If the cables are routed as shown in the illustration below, then the upgrade must be installed. This upgrade is part of M3335BD, LCC WideOpen IIQ Upgrade. Refer to Direction 2404642, provided with Gradient Cable Lead Board collector (5110336), for instructions on how to install the new design.

M3335BD also include parts and instructions for installing the Rear Pedestal Stabilization kit (5198961). Refer to , Install Rear Split Bridge sub-section.



2.9 Replace Gradient Cable Foam Tubes with Clamp Blocks

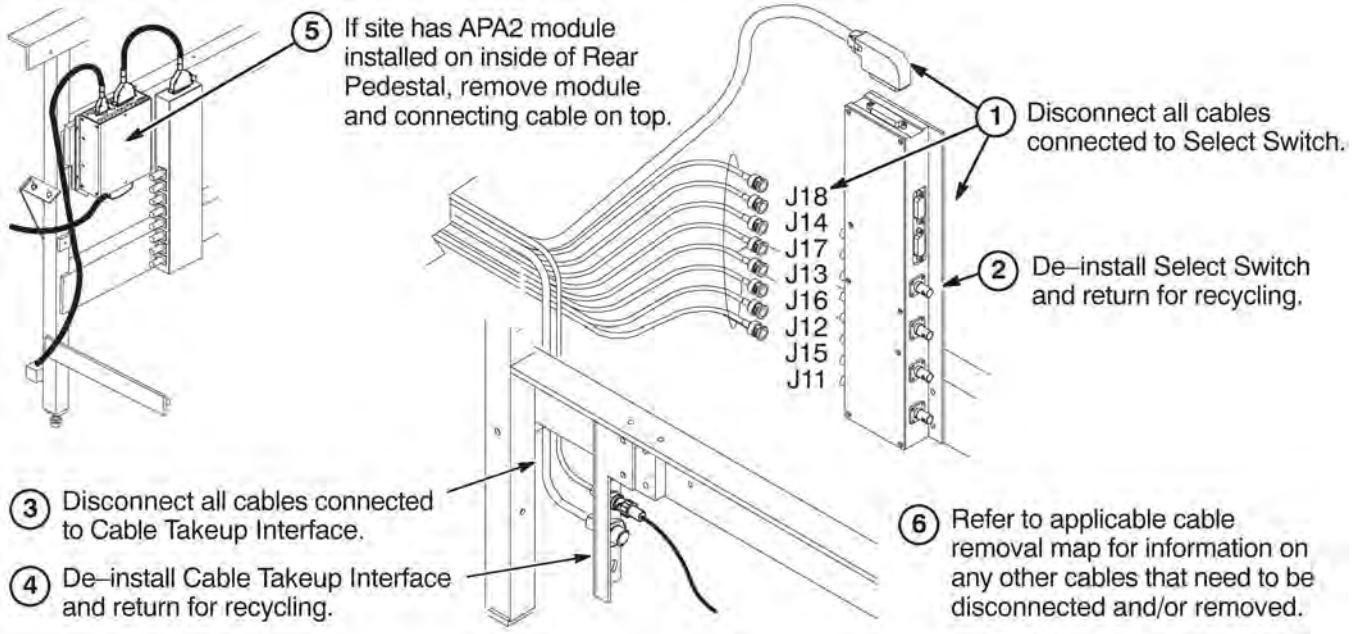
The existing foam tubes that are wrapped around the gradient cables at the rear of the magnet are to be removed and replaced with cable clamp blocks.



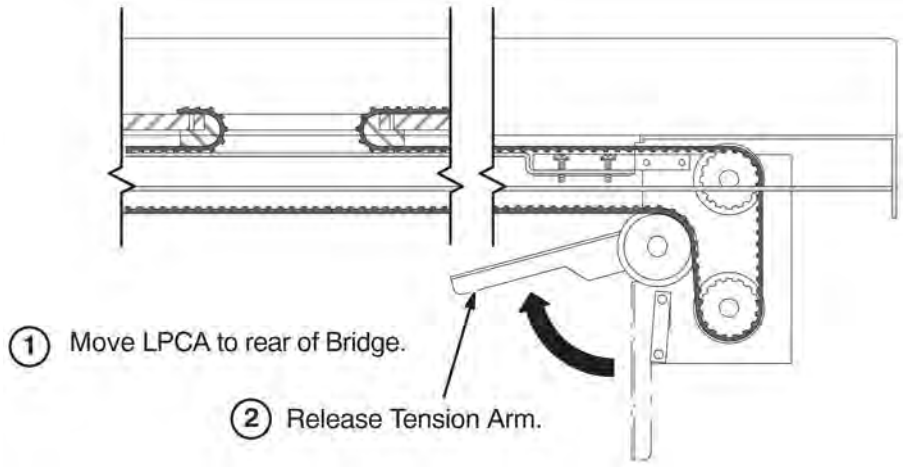
3 Prerequisite Upgrade Procedures for TwinSpeed Enclosure

3.1 De-install Existing LPCA & Cable Track for TwinSpeed

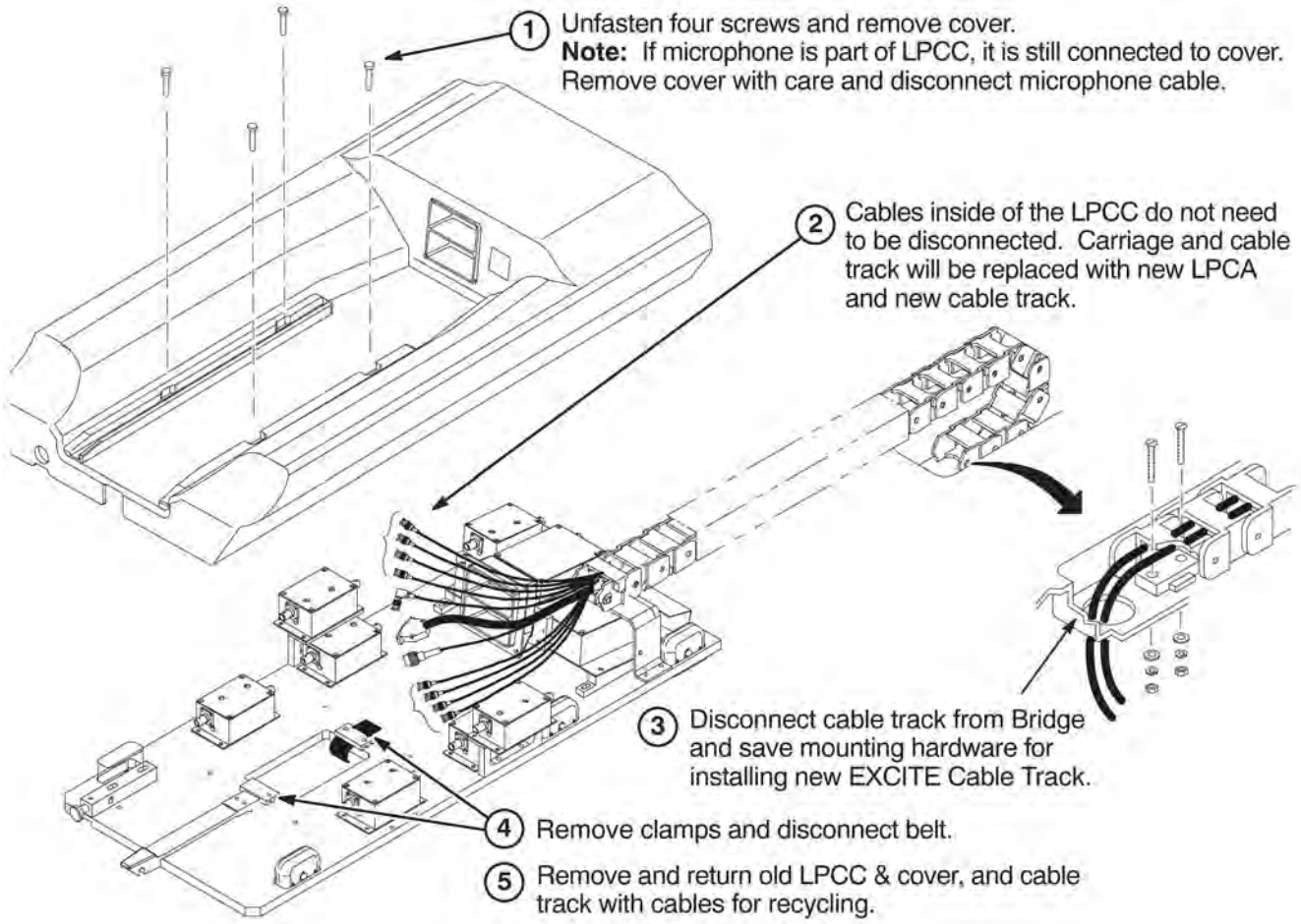
3.1.1 Disconnect Cables In Rear Pedestal



3.1.2 Relese Tension Arm Under Rear Pedestal



3.1.3 Disconnect Low Profile Carriage Cover & Cable Track

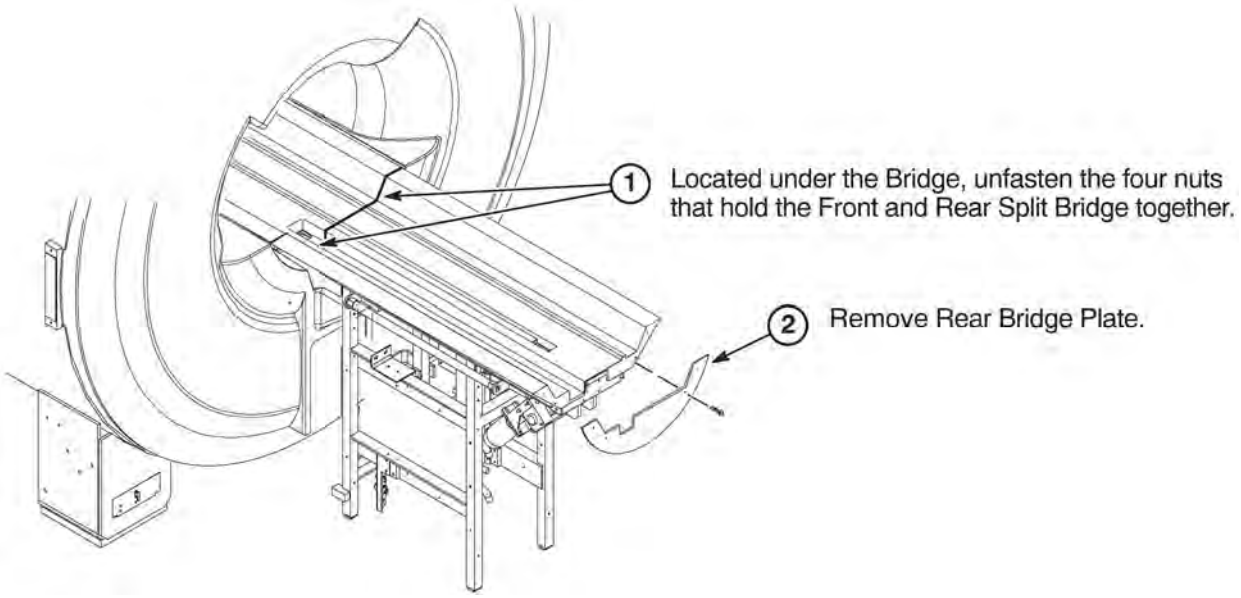


3.2 De-install Bridge for TwinSpeed

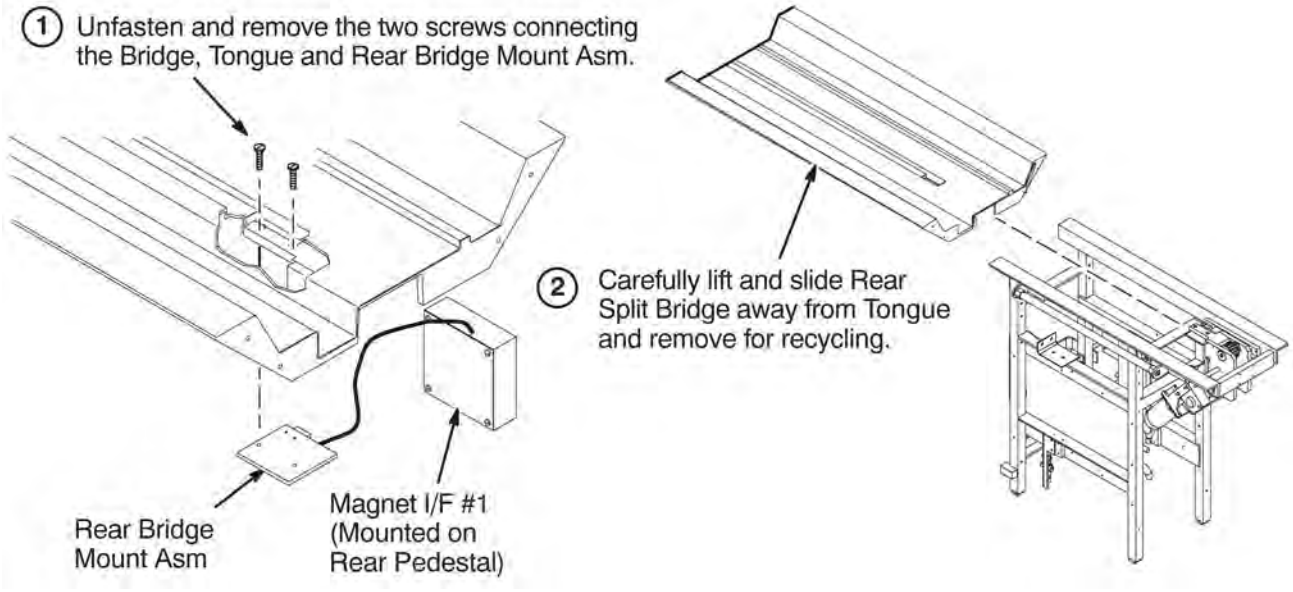
Upgrading to EXCITE TwinSpeed Release 12.x requires a new Front and Rear Split Bridge. The method of attachment at the front of the Bridge is different between a bridge that was installed for a forward production (new) installation and a Long bridge that was upgraded from a non-TwinSpeed WideOpen enclosure to TwinSpeed.

- Refer to Section 3.2.1 through Section 3.2.3 for the deinstallation of a forward production installed bridge.
- Refer to Section 3.2.4 through Section 3.2.6 for the deinstallation of the upgraded bridge.

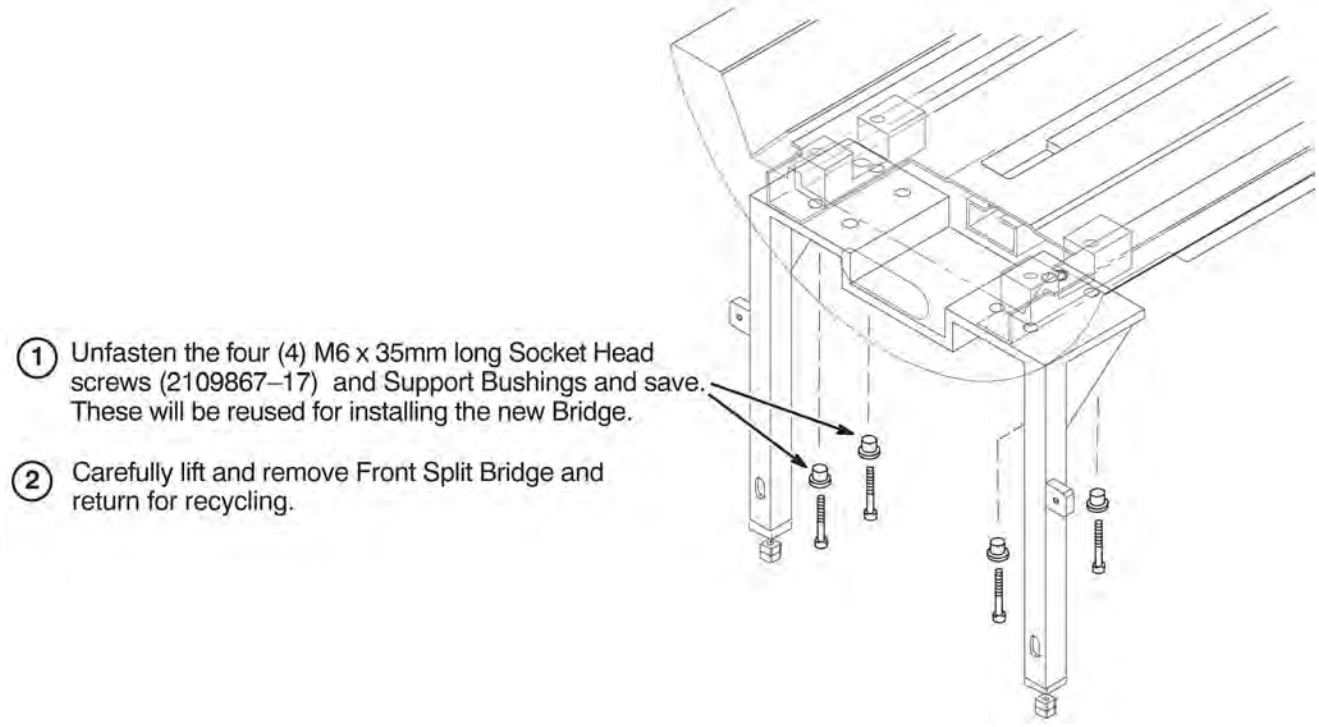
3.2.1 Unfasten Rear Split Bridge



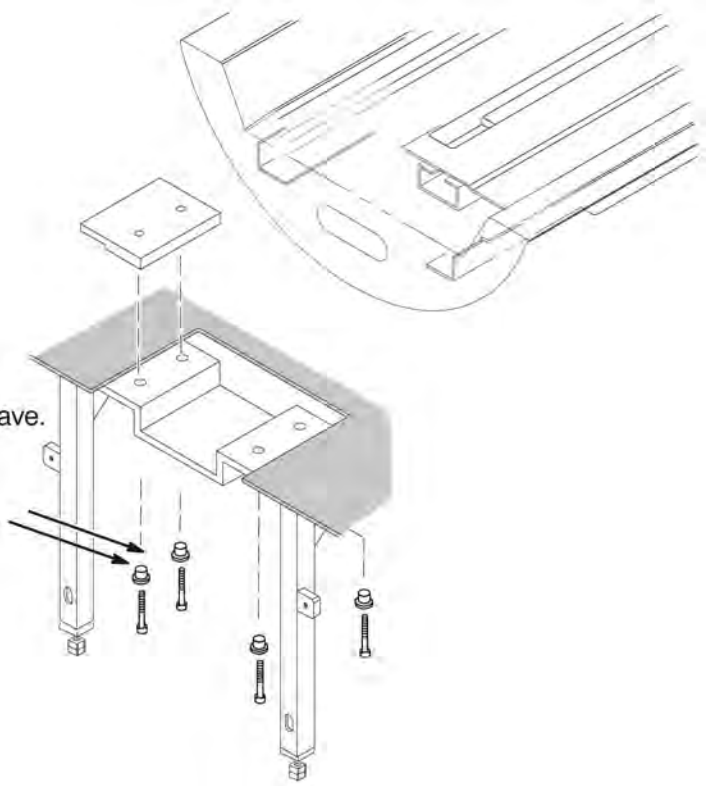
3.2.2 Remove Rear Split Bridge



3.2.3 Remove Forward Production Installed Front Split Bridge

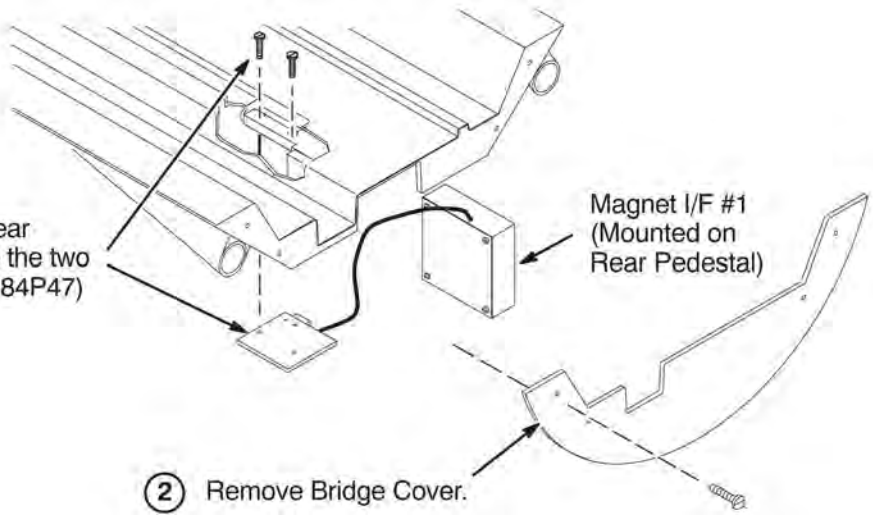


3.2.4 Unfasten Front of Upgraded Bridge



(3) Unfasten the four (4) M6 x 35mm long Socket Head screws (2109867–17) and Support Bushings and save. These will be reused for installing the new Bridge.

3.2.5 Disconnect Bridge Mount Asm

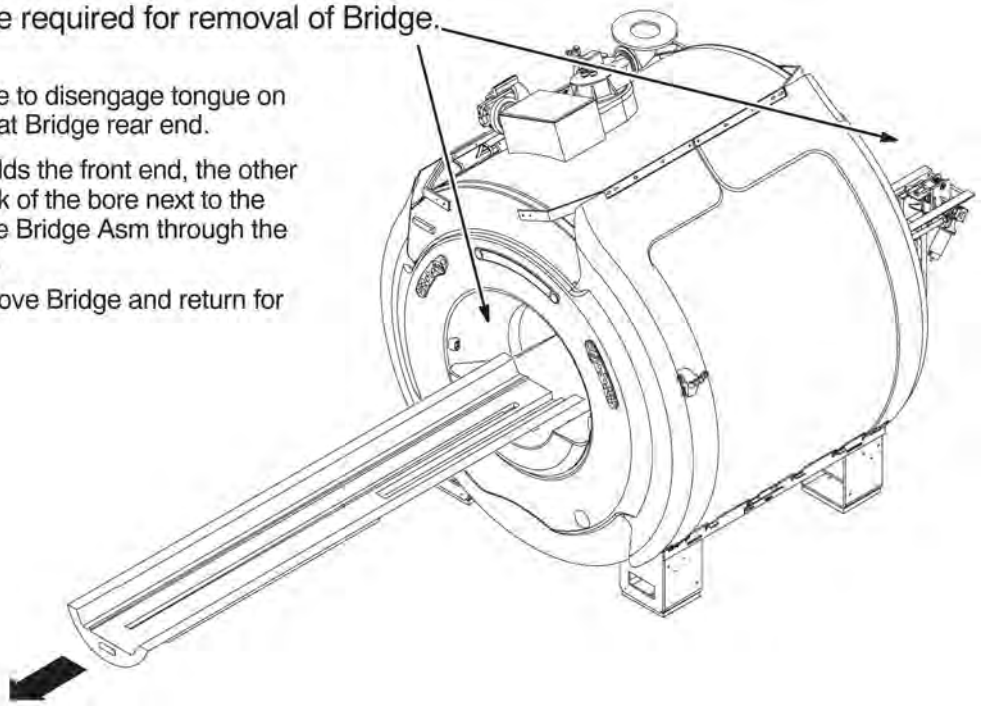


(1) Unfasten the Bridge, Tongue and Rear Bridge Mount Asm (2132034). Save the two (2) 10–32 x 1–3/8 Screws (46–220184P47) for refastening later.

3.2.6 Remove Upgrade Long Bridge

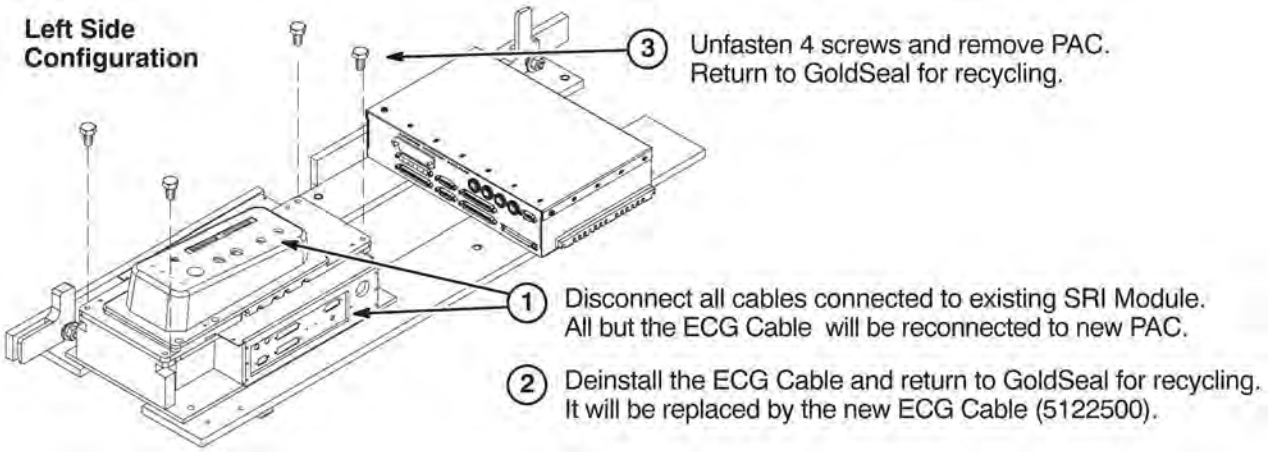
NOTE: Two people are required for removal of Bridge.

1. Lift front end of bridge to disengage tongue on long drive assembly at Bridge rear end.
2. While one person holds the front end, the other person stands in back of the bore next to the bridge and guides the Bridge Asm through the bore to the front end.
3. Carefully lift and remove Bridge and return for recycling.



3.3 De-install PAC Module for TwinSpeed

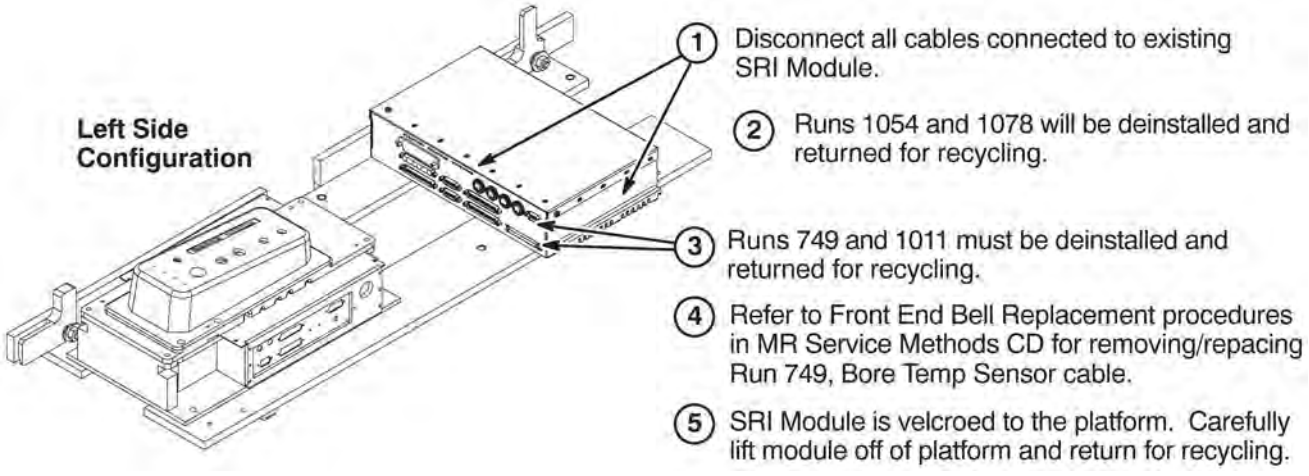
The existing PAC Module will be replaced by a new PAC Module with independent vector gating.



3.4 De-install SRI Module for TwinSpeed

The existing SRI Module will be replaced by the SRI-3 or SRI-5 Module.

NOTE: Existing Runs 749 and 1011 must be removed and replaced with new Runs 1260 and 1261. There is a functionality difference.



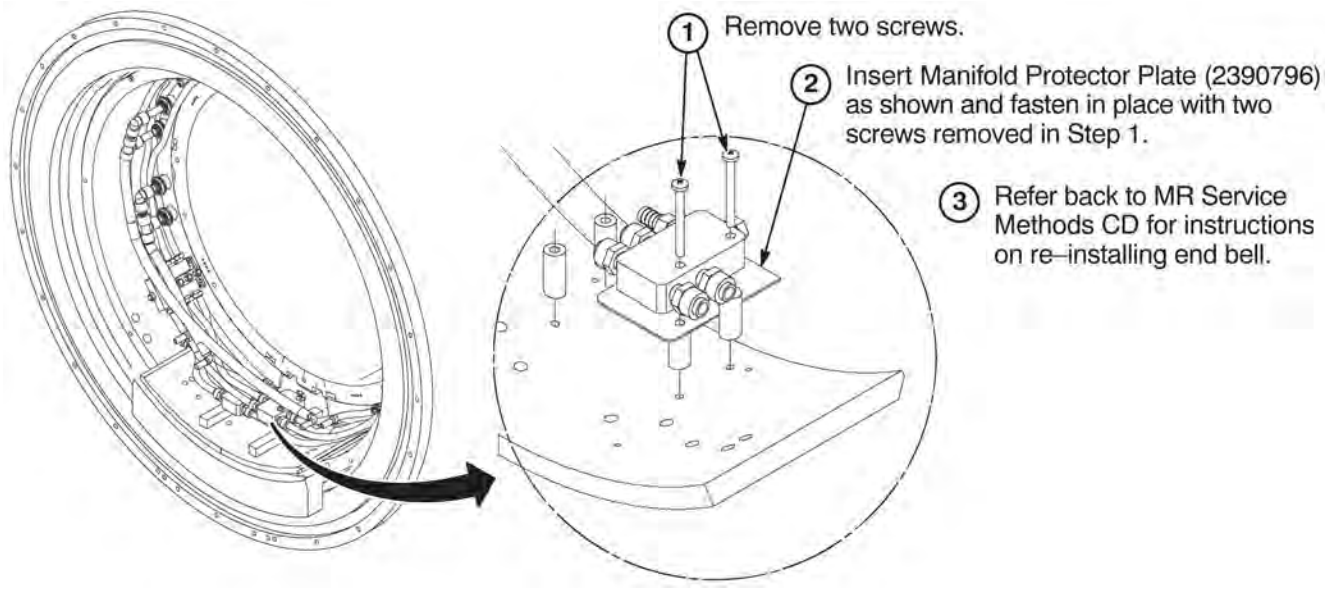
3.5 1.5T TwinSpeed RF Body Coil Replacement

For replacement procedure, refer to applicable MR Service Methods CD-ROM and go to:

Replacements/1.5T Twin RF Body Coil Replacement Procedure.

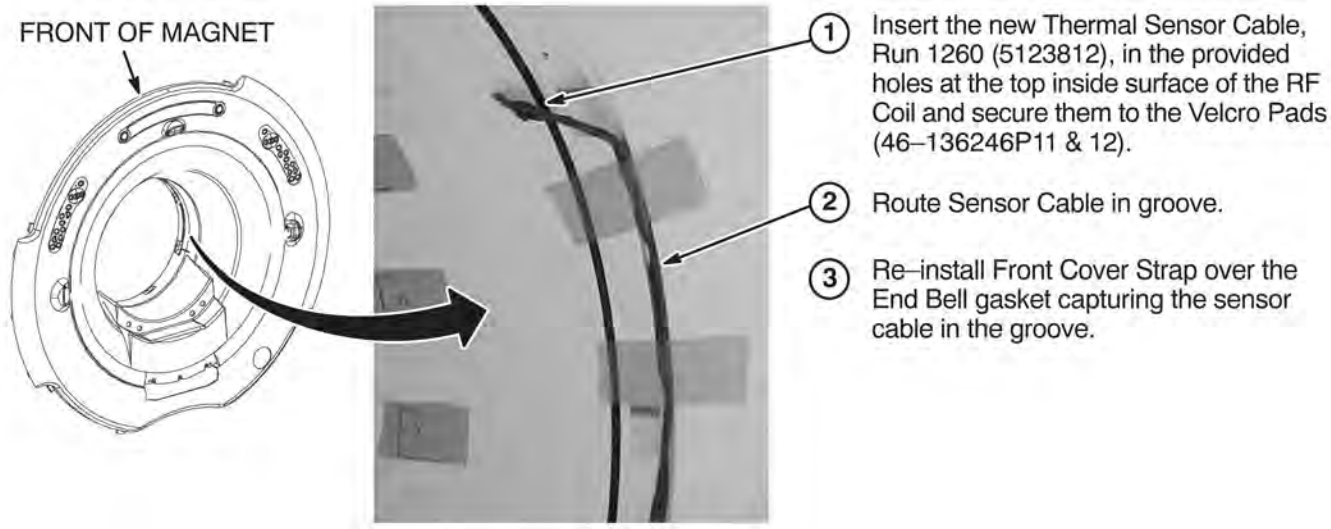
After Front End Bell is removed, perform Section 3.6 for installing the Manifold Protector plate.

3.6 Install Manifold Protector Plate



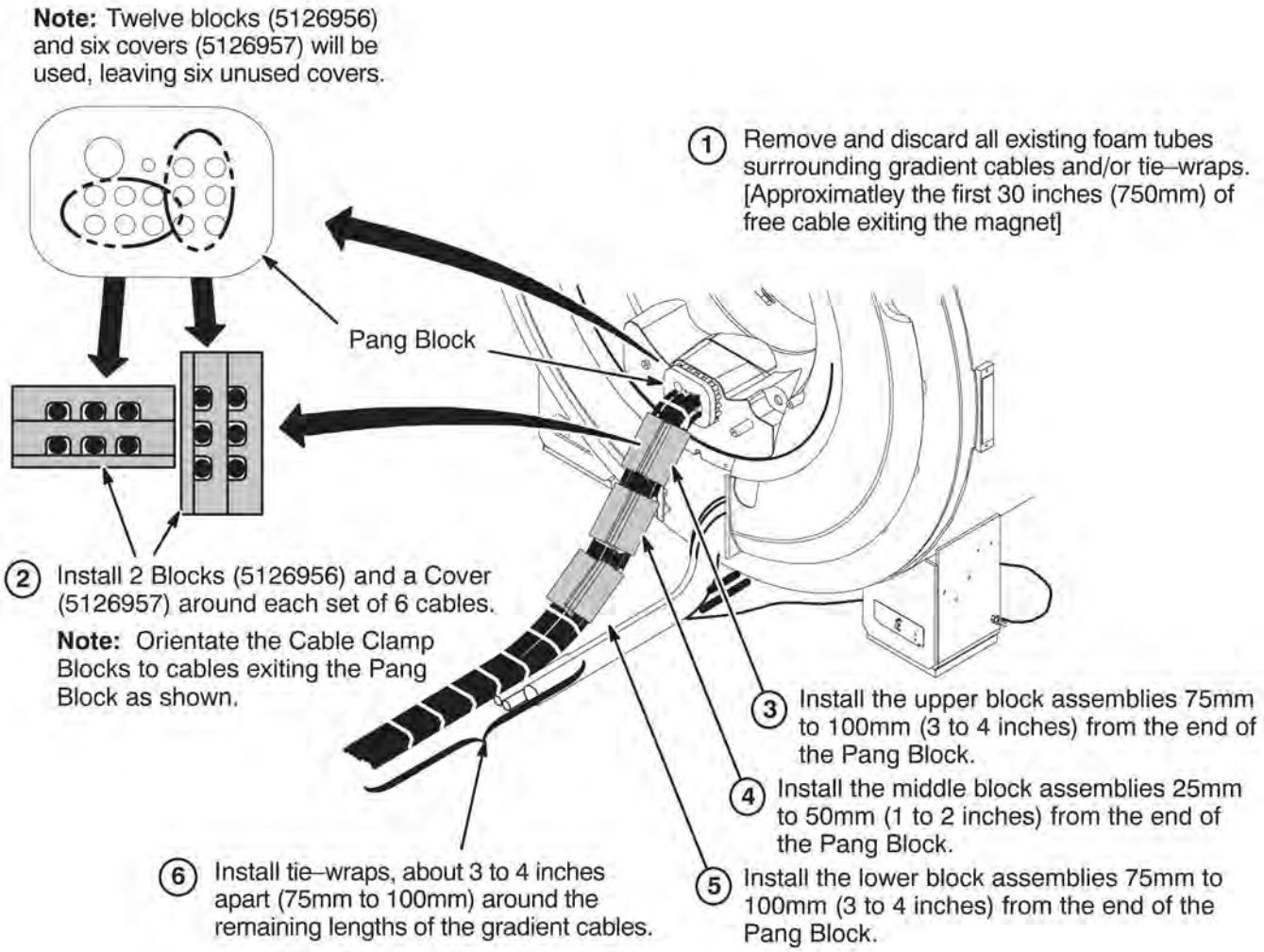
3.7 Install New Dual Temperature Sensor Cable, Run 1260

Install Run 1260 after the new RF Body Coil and front and rear end bells have been installed. Refer to the RF Body Coil Replacement procedure in Section for more detailed steps.



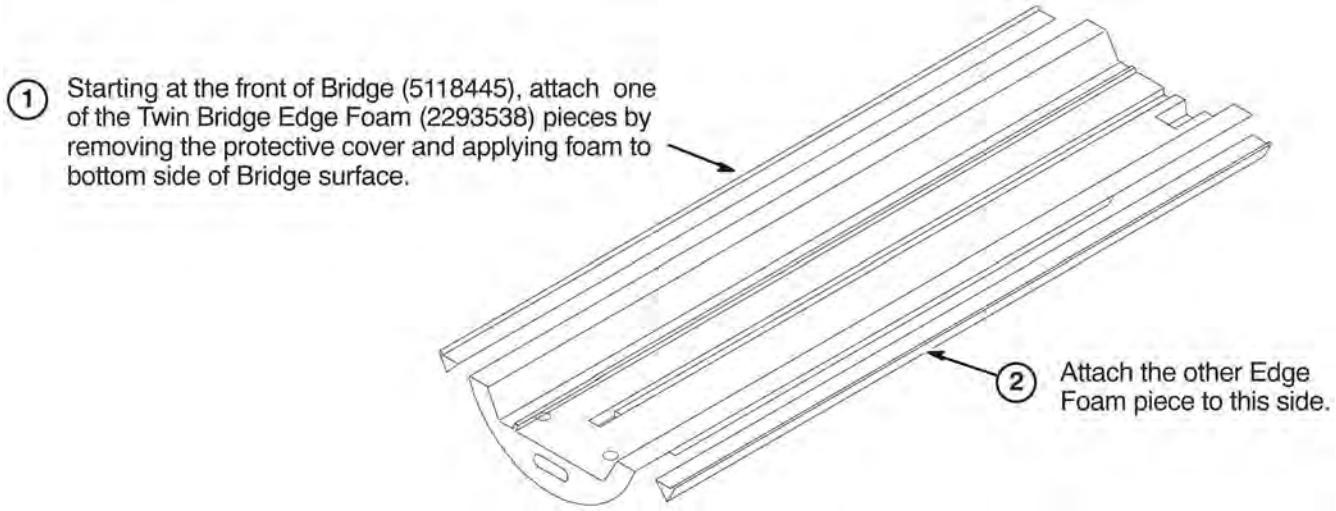
3.8 Replace Gradient Cable Foam Tubes with Clamp Blocks

The existing foam tubes that are wrapped around the gradient cables at the rear of the magnet are to be removed and replaced with cable clamp blocks.

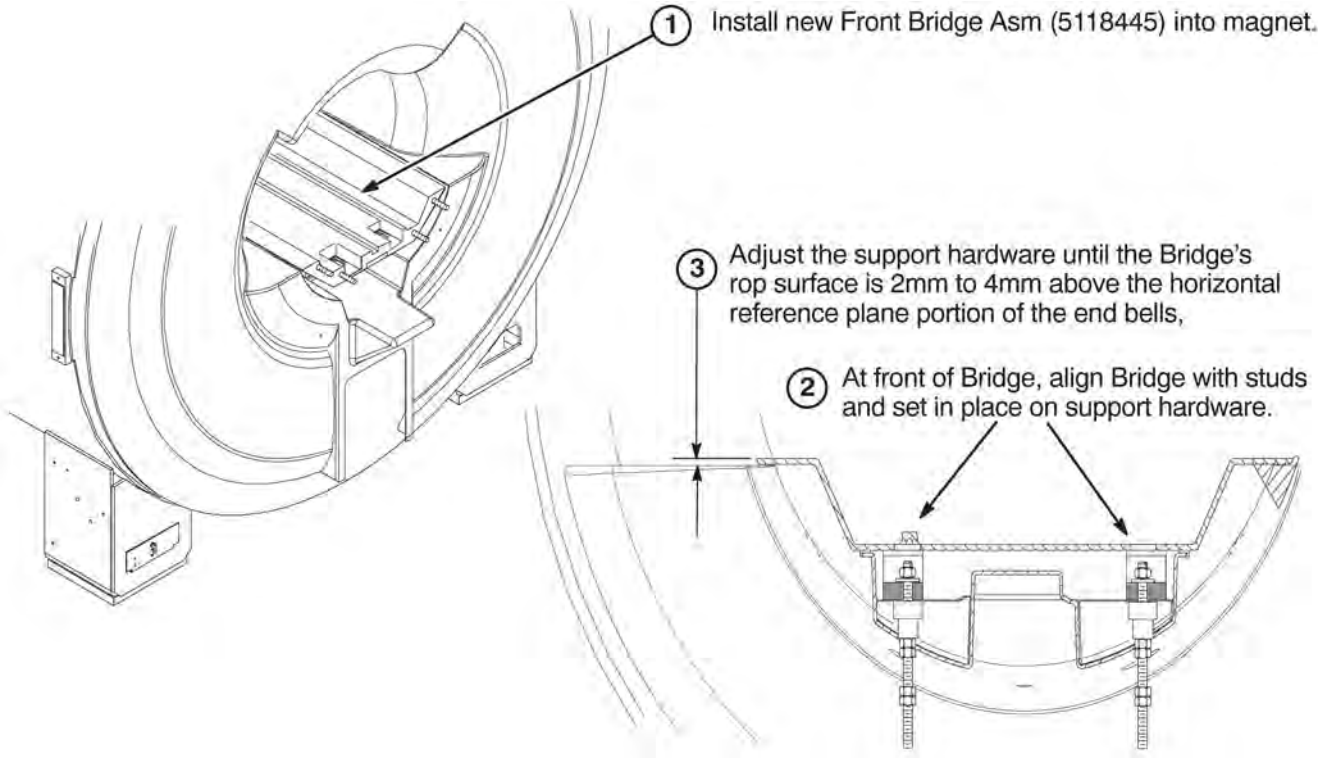


4 Installation of New WideOpen and TwinSpeed Parts

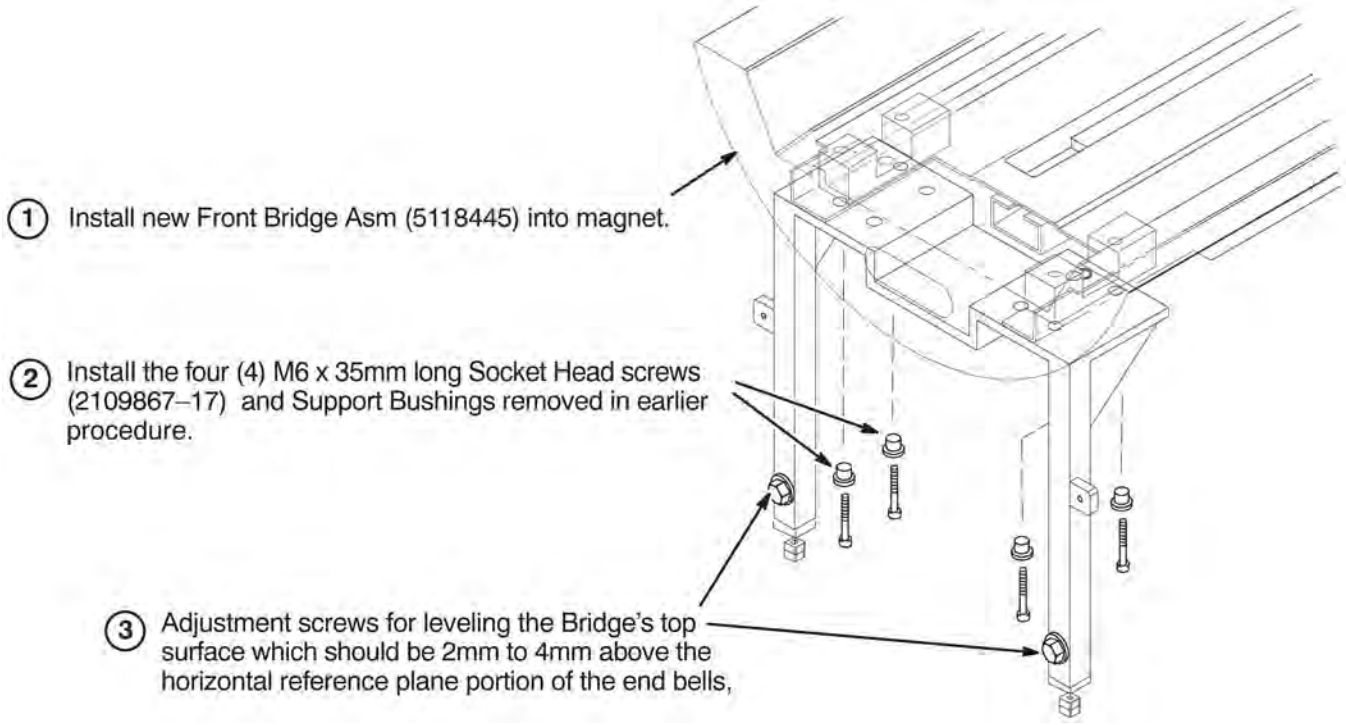
4.1 Attach Edge Foam to Bridge



4.2 Installation of Front Bridge for WideOpen



4.3 Installation of Front Bridge for TwinSpeed



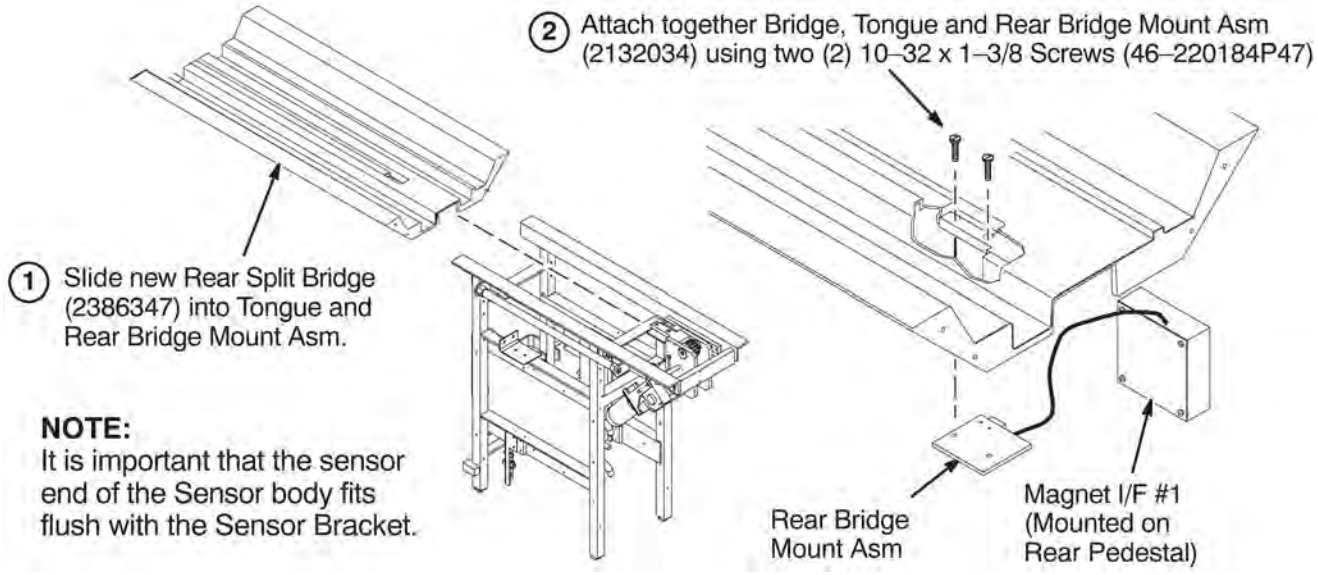
4.4 Install Rear Split Bridge

Prior to this upgrade, the site should have been audited to determine if the Rear Pedestal Stabilization Kit (5198961) has been installed. This kit includes parts and instructions for the installation of the kit. It would be required for earlier versions of the WideOpen style enclosure. If this upgrade has not been performed on the existing enclosure, then the applicable catalog should have been ordered and it must be installed at this point of the HDx upgrade.

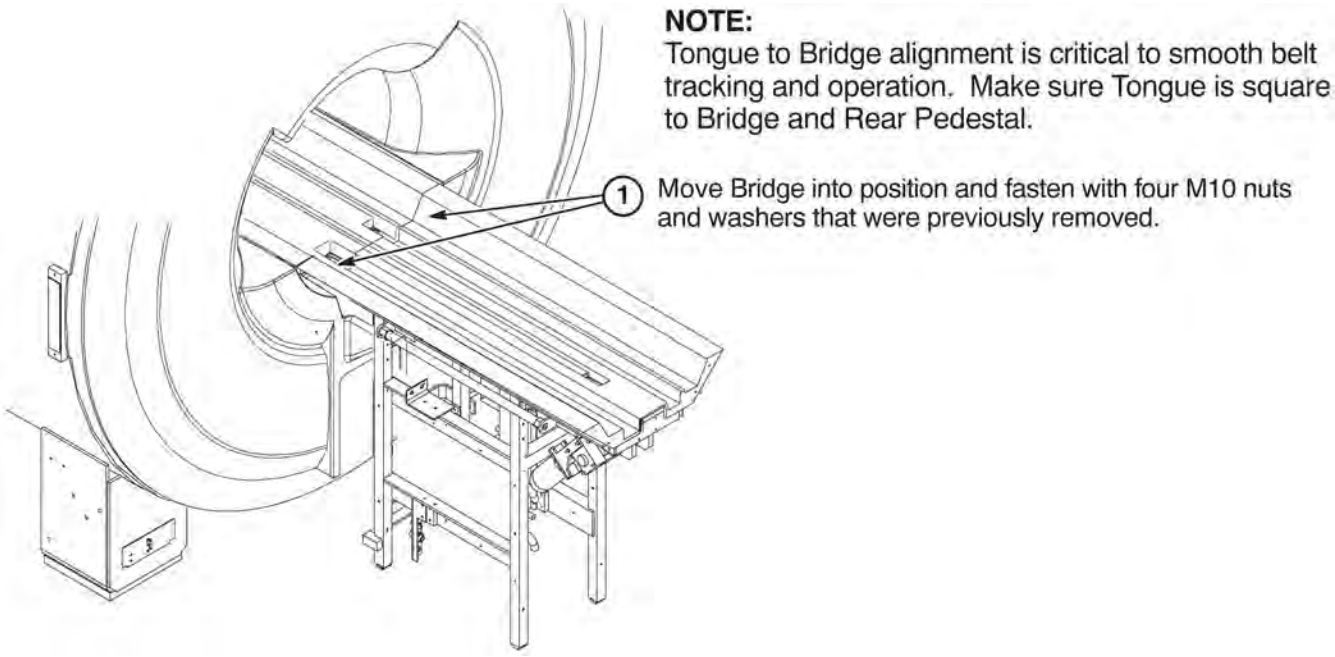
Refer to steering Direction 5244044, included in the kit, for guidance.

NOTE: If this procedure is not completed by Mechanical Installer or Van Partner, make sure that the GE Field Engineer has been notified that this upgrade procedure needs to be completed. For Van Partner, refer to the Design Review Checklist to report status of completion.

4.4.1 Install Rear Split Bridge on Rear Pedestal



4.4.2 Connect Rear Split Bridge to Front Split Bridge

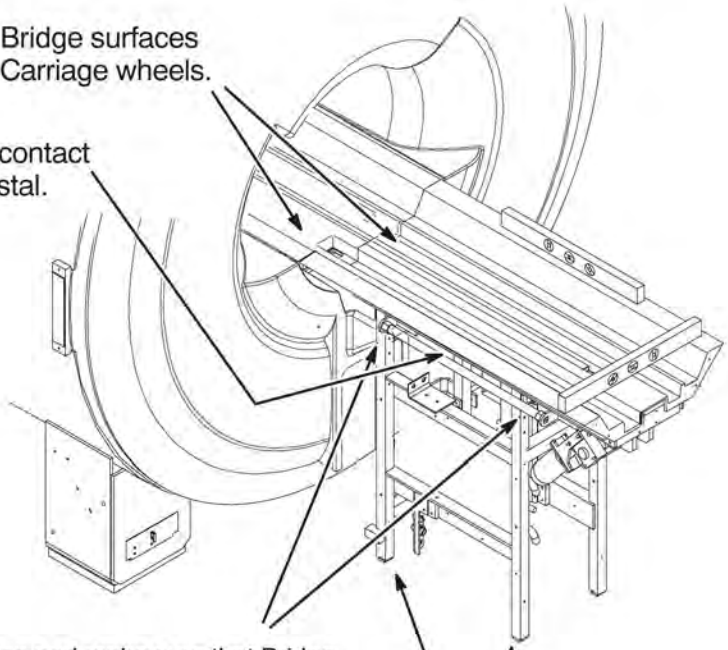


4.4.3 Level Bridge

NOTE:
Make sure that surfaces between front and rear Bridge surfaces are even. This will provide smooth travel for the Carriage wheels.

NOTE:
Rear Pedestal must be adjusted to maintain full contact between bottom of Bridge and top of Rear Pedestal.

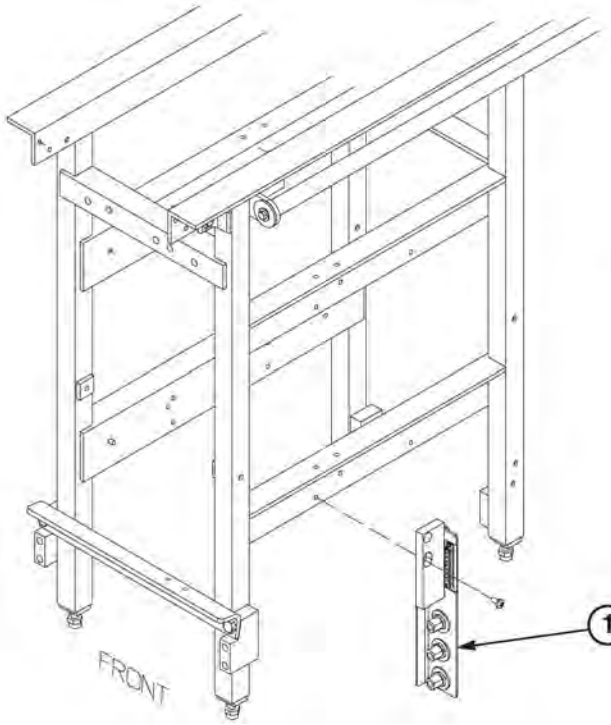
2mm to 4mm above End Bell surface.



① Level Bridge and make sure that Bridge surface is no less than 2mm and no more than 4mm above the surface of front and rear End Bells, as indicated in photos at left. Tighten Vertical Adjustment Fasteners.

② Adjust leg screws on both sides as needed to level Rear Pedetal.

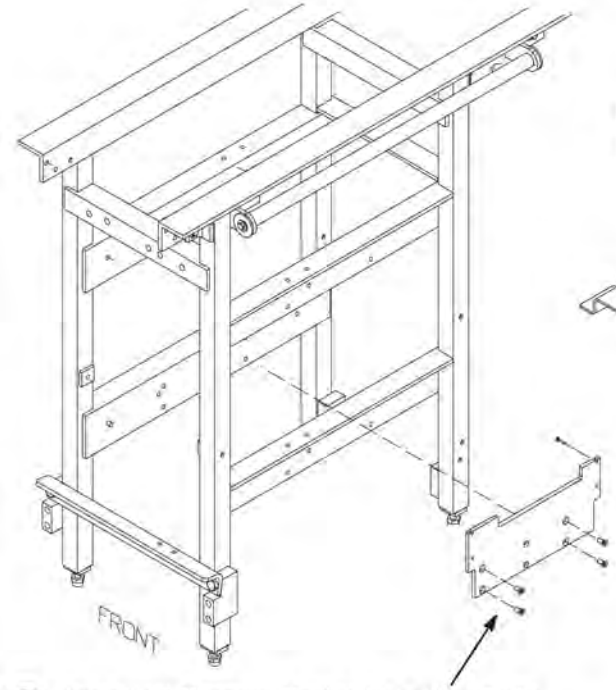
4.5 Install Bulkhead Interface



NOTE: Components and cables not shown on Rear Pedestal for clarity.

1. Install new Bulkhead Interface (5113250) using Loctite 242 (46–170686P2) and two M6 x 12mm pane Head Screws (2109873–24).

4.6 Install 16 Channel Switch



NOTE: Components and cables not shown on Rear Pedestal for clarity.

Part of Rear Pedestal

3. Connect Run 1204 (5116105) as shown.

1. Install 16 Channel Switch Mounting Plate (5110428) using Loctite 242 (46–170686P2) and four M6 x 12mm Slotted Flat Head Screws (25120369–86) in the four larger outside holes.

2. Attach 16 Channel Switch (5109645) to Mounting Plate using Loctite 242 (46–170686P2) and four M3 x 12mm Pan Head screws (46–312342P24).

4.7 Hybrid Splitter Upgrade

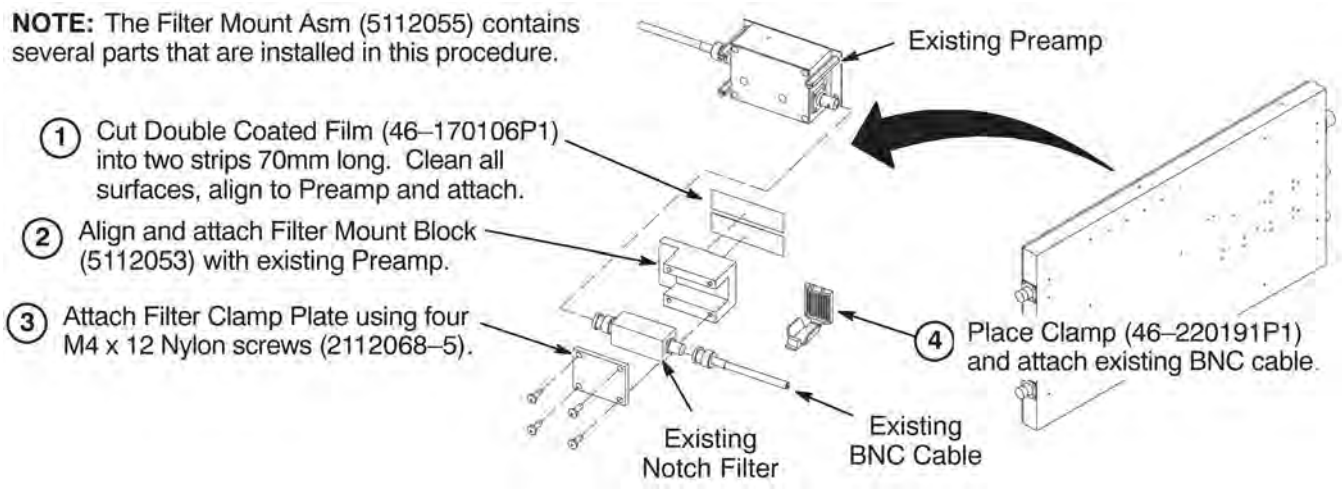
Depending on Rear Pedestal design, the Body Splitter may be in the horizontal or vertical position. Also:

- Refer to Section 4.7.1 for systems that do not have mount assembly for the Notch Filter
- Refer to Section 4.7.2 for instructions on installing Isolation Filters on systems with Netcom Hybrid Splitter
- Refer to Section 4.7.3 for instructions on installing Isolation Filters on systems with Teledyne Splitter

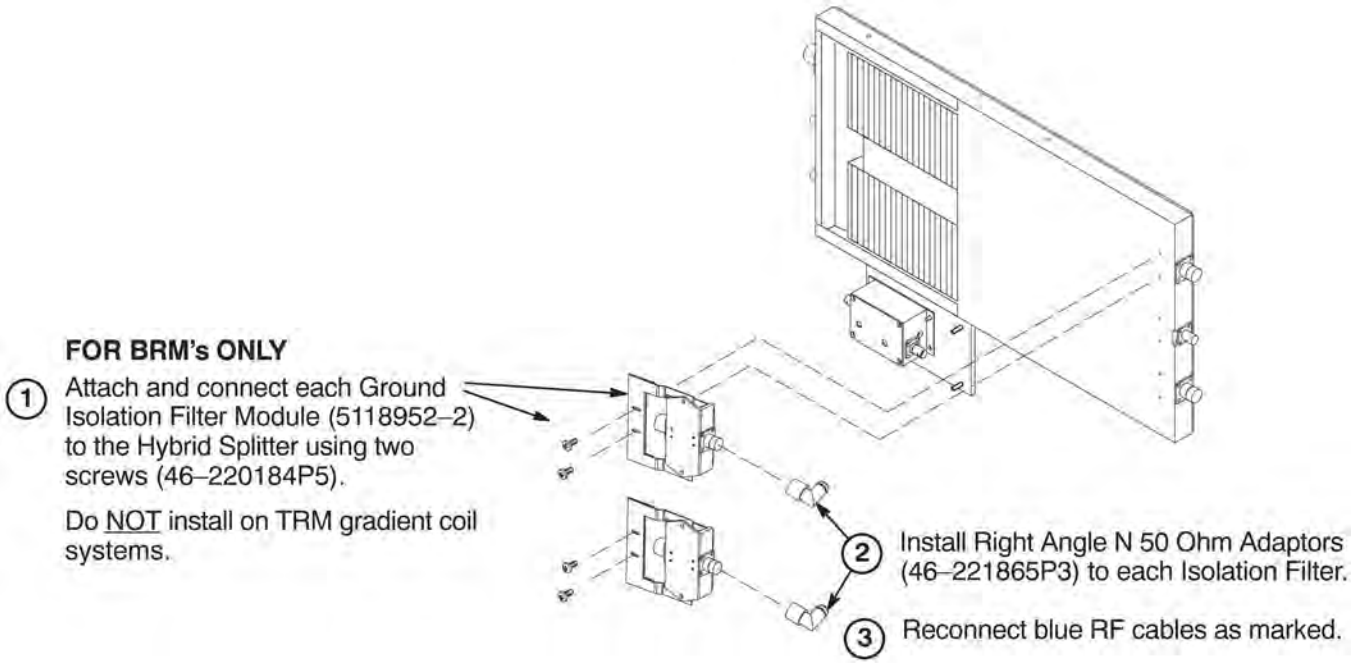
The Ground Isolation Filter Modules are only installed on systems with BRM gradient coils. Do NOT install on systems with TRM gradient coils (TwinSpeed).

4.7.1 Install Filter Mount Asm to Body Hybrid Splitter

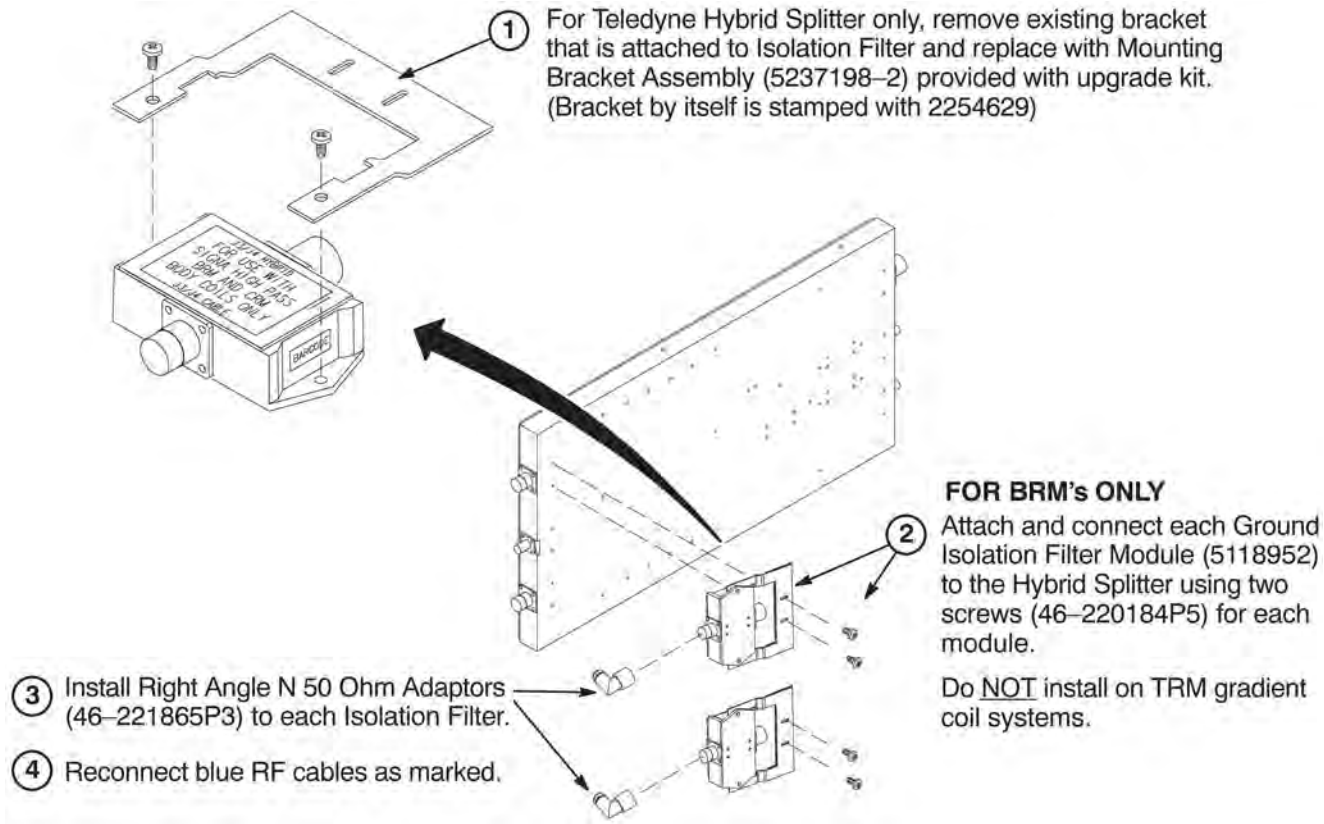
This Filter Mount assembly may not be required on newer Netcom Hybrid Spitter as it may already have a Notch Filter mounting clamp of a different style installed.



4.7.2 Install Isolation Filters to Netcom Body Hybrid Splitter (BRM Only)



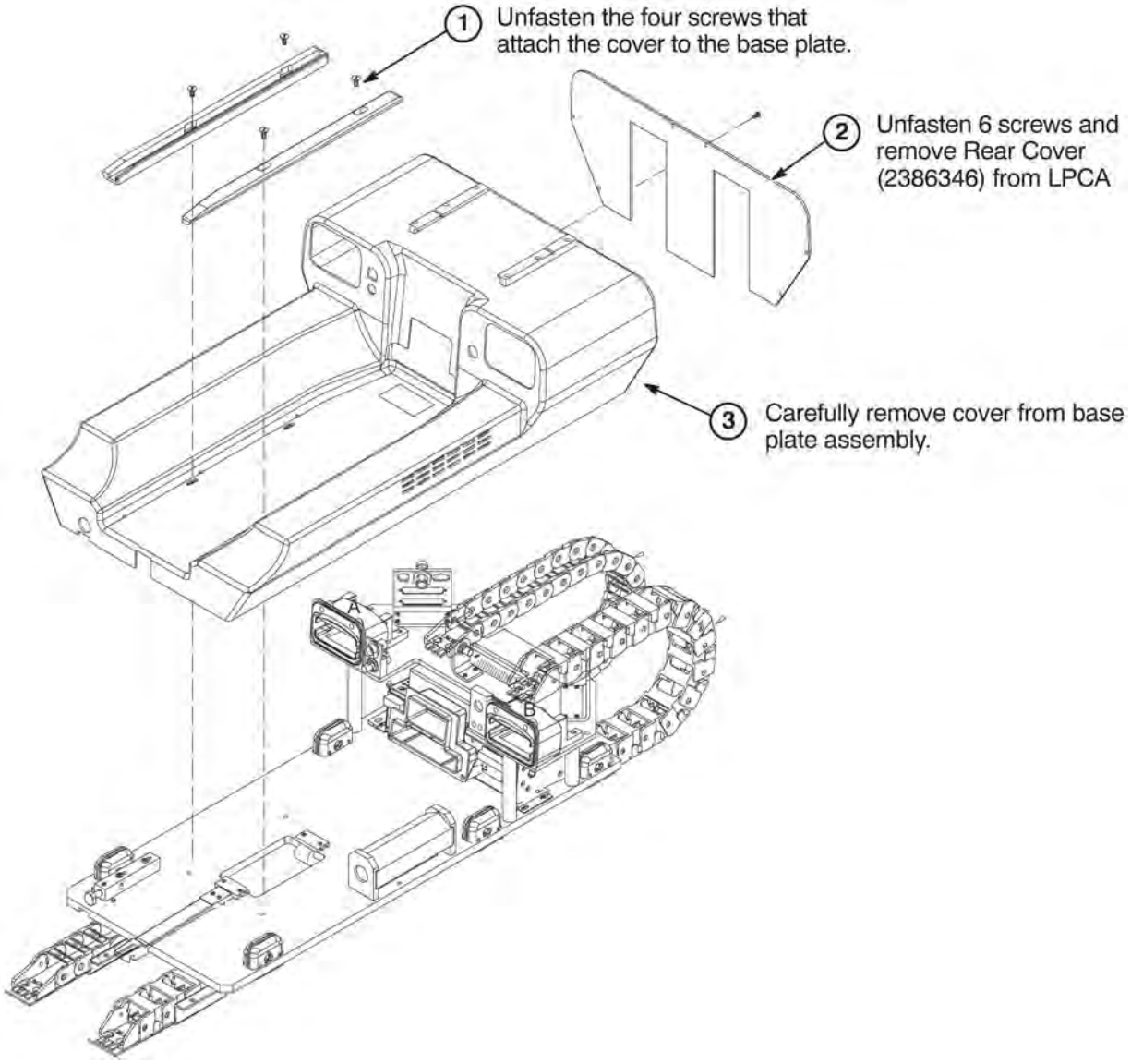
4.7.3 Install Isolation Filters to Teledyne Body Hybrid Splitter (BRM Only)



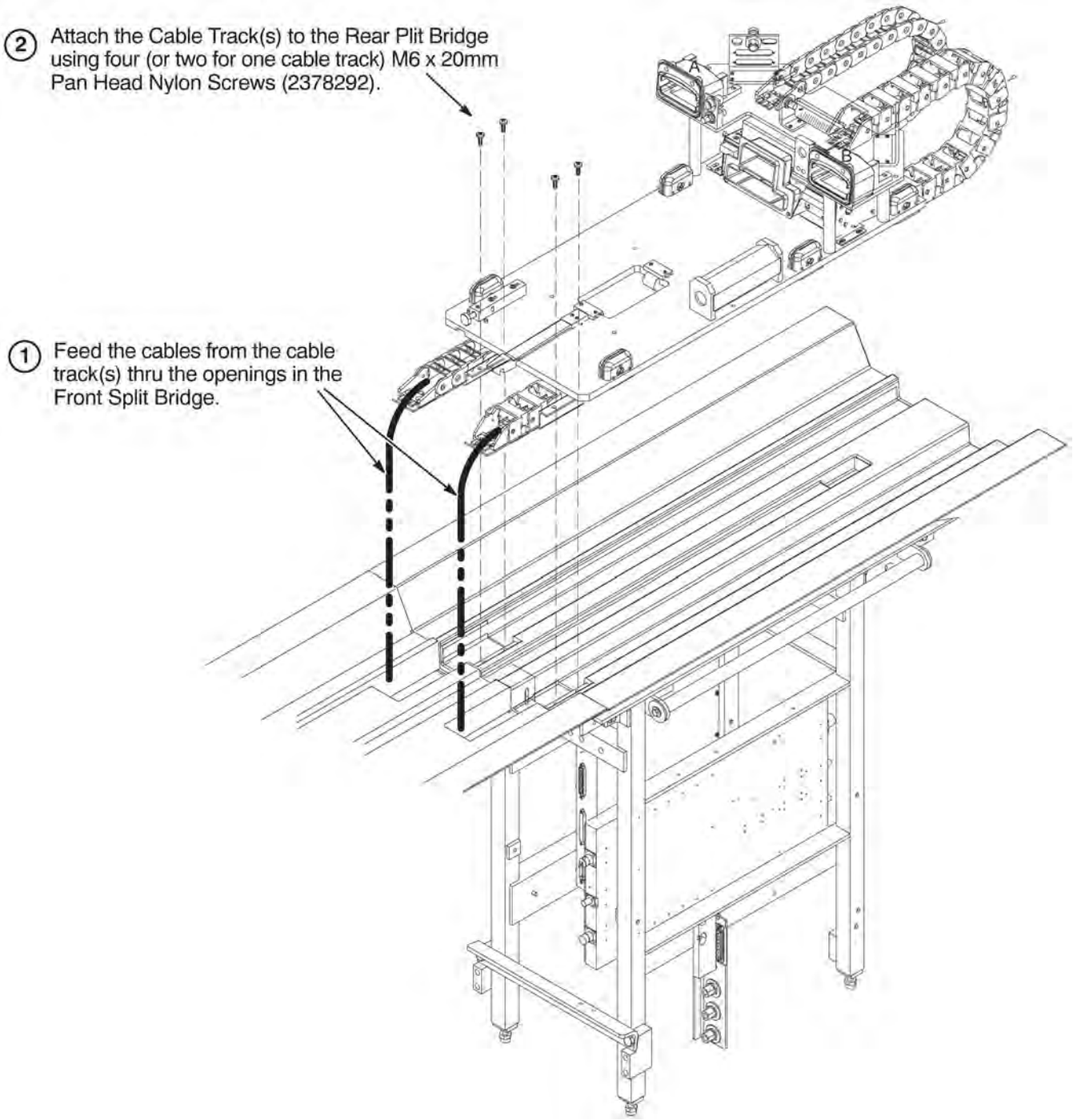
4.8 Install LPCA and Cable Track(s)

The WideOpen style enclosure will be upgraded to an LPCA with a dual cable track. The S-Series and Cx magnet enclosures will install a new LPCA with only one cable track.

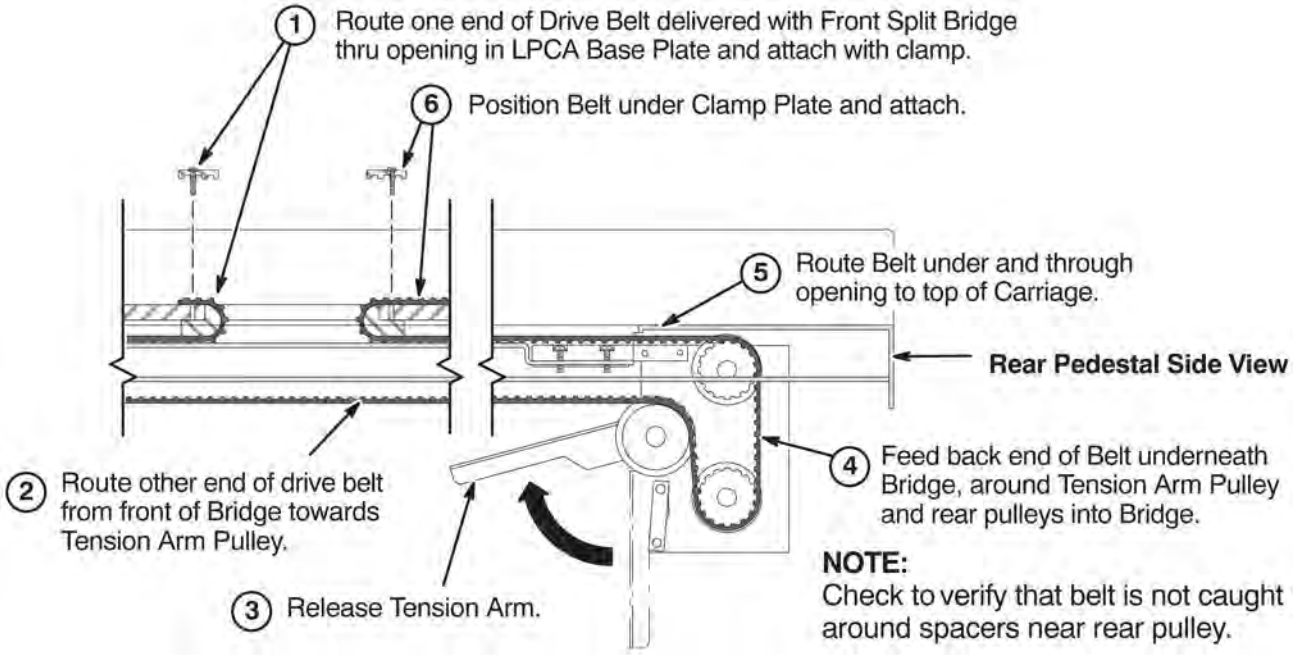
4.8.1 Remove LPCA Cover



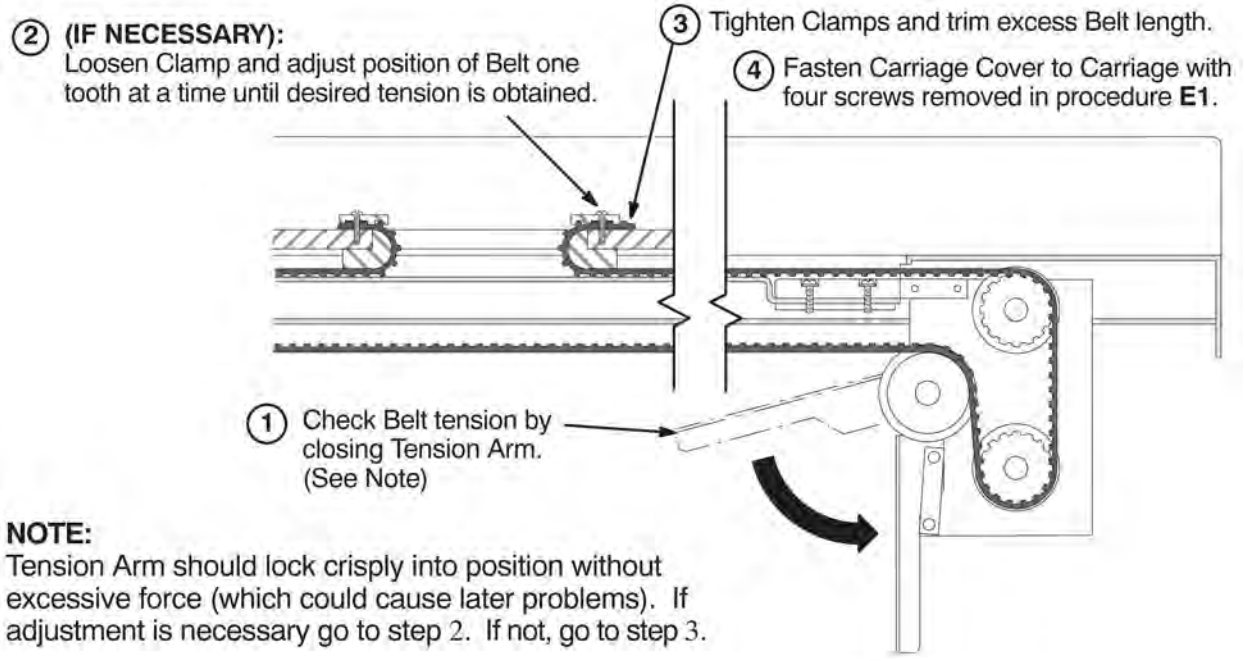
4.8.2 Attach Cable Track(s) to Bridge



4.8.3 Route and Attach Drive Belt



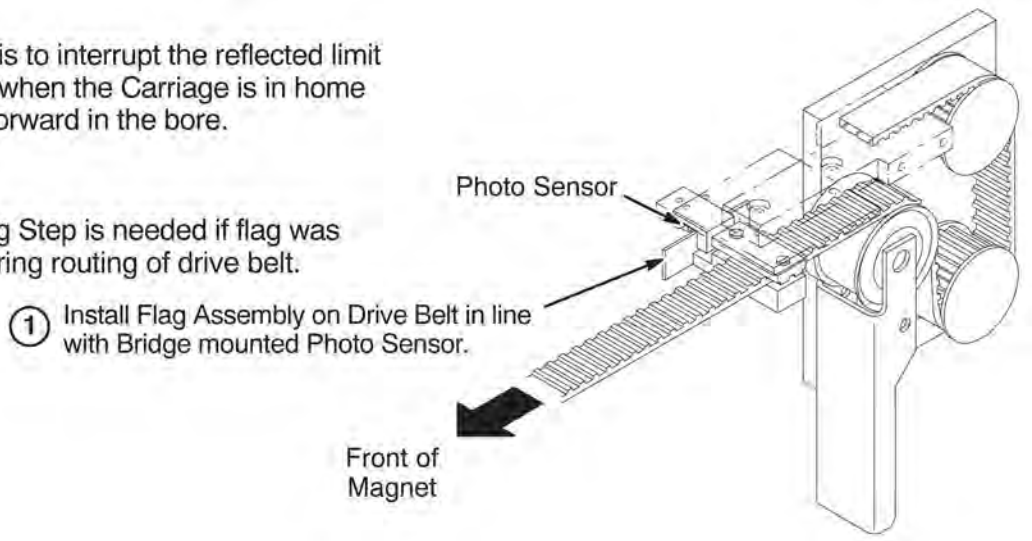
4.8.4 Final Adjustment of Drive Belt



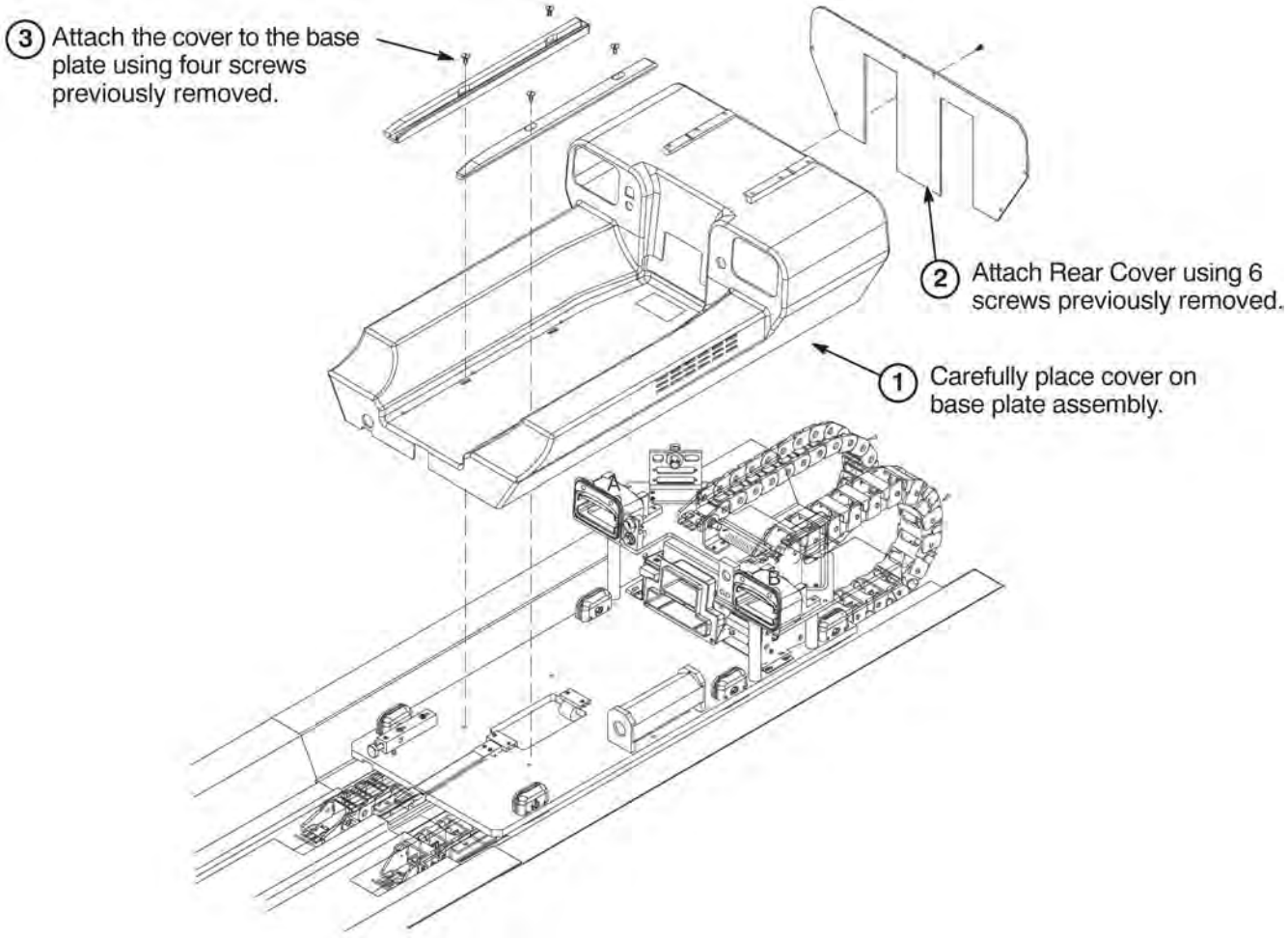
4.8.5 Installation of Sensor Flag

NOTE:
Function of the Flag is to interrupt the reflected limit switch sensor beam when the Carriage is in home position all the way forward in the bore.

NOTE:
The following Step is needed if flag was removed during routing of drive belt.



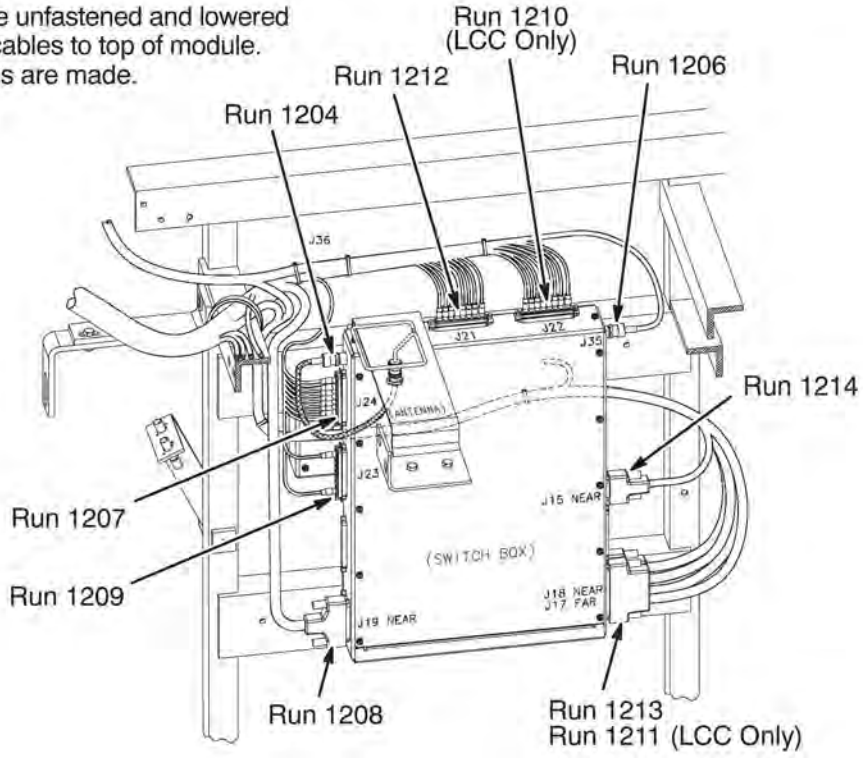
4.8.6 Installation of LPCA Cover



4.8.7 Connect Cables from Cable Track to 16 Channel Switch Module

(1) 16 Channnel Switch may need to be unfastened and lowered from mounting position to connect cables to top of module. Re–mount module after connections are made.

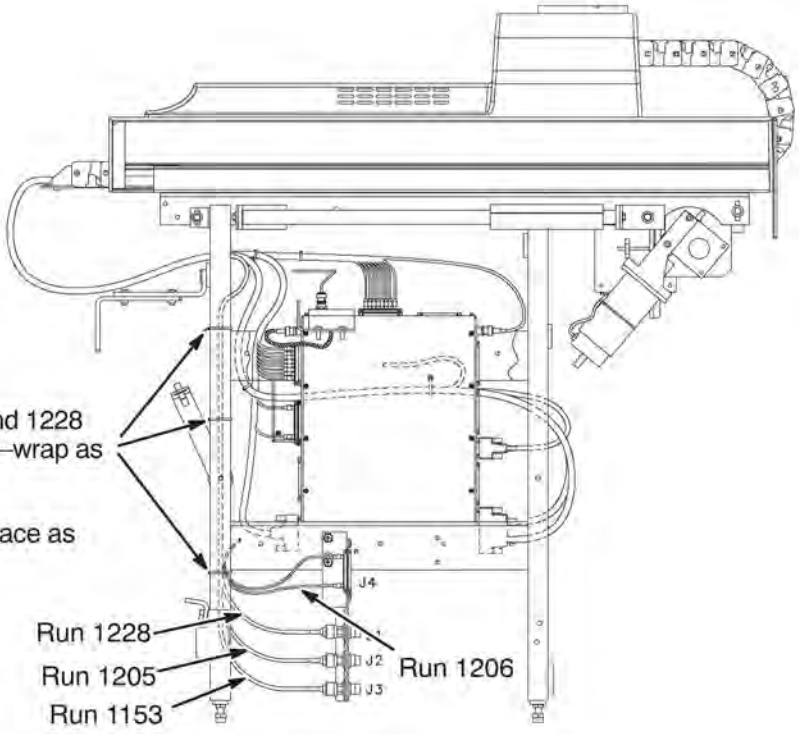
(2) Connect cable Runs as indicated.



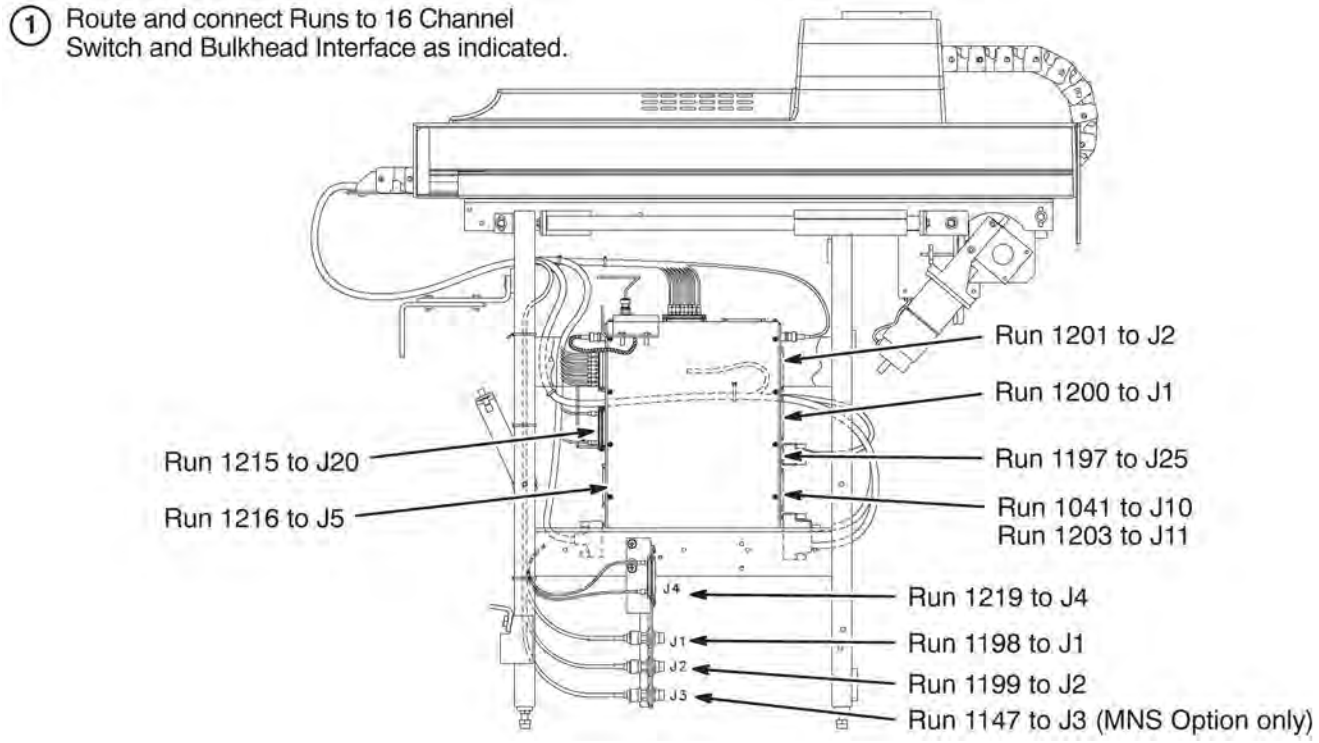
4.8.8 Connect Cables from Cable Track to Bulkhead Interface

(1) Route Runs 1153, 1205, 1206, and 1228 along leg of Rear Pedestal and ty–wrap as indicated to leg.

(2) Connect Runs to Bulkhead Interface as indicated.

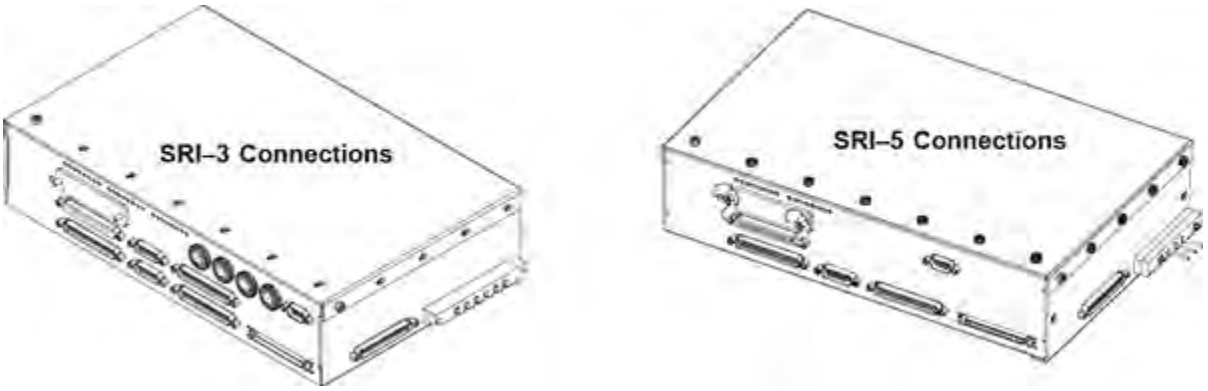


4.9 Connect Remaining Cables to Rear Pedestal



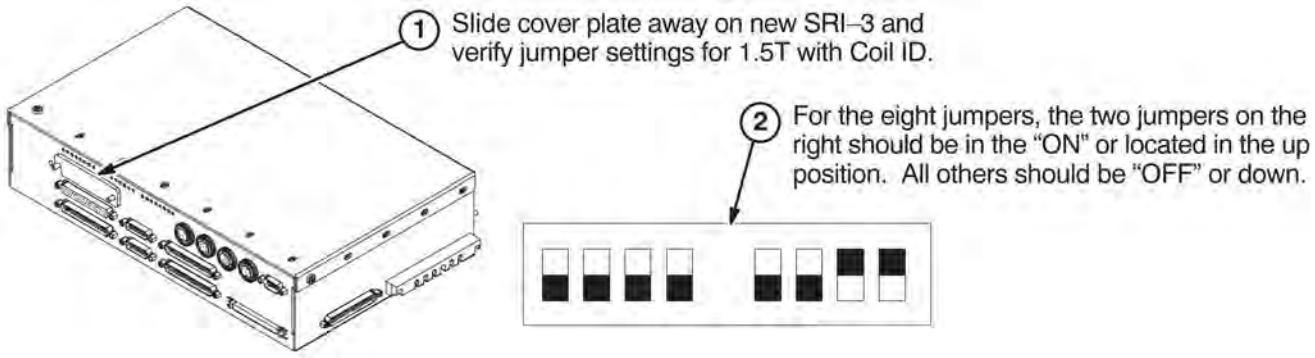
4.10 Install SRI Module

The instructions for installing the SRI-3 or SRI-5 are the same. All cables are connected to the same J— numbers on each module. The differences of the modules is shown in the following illustration.

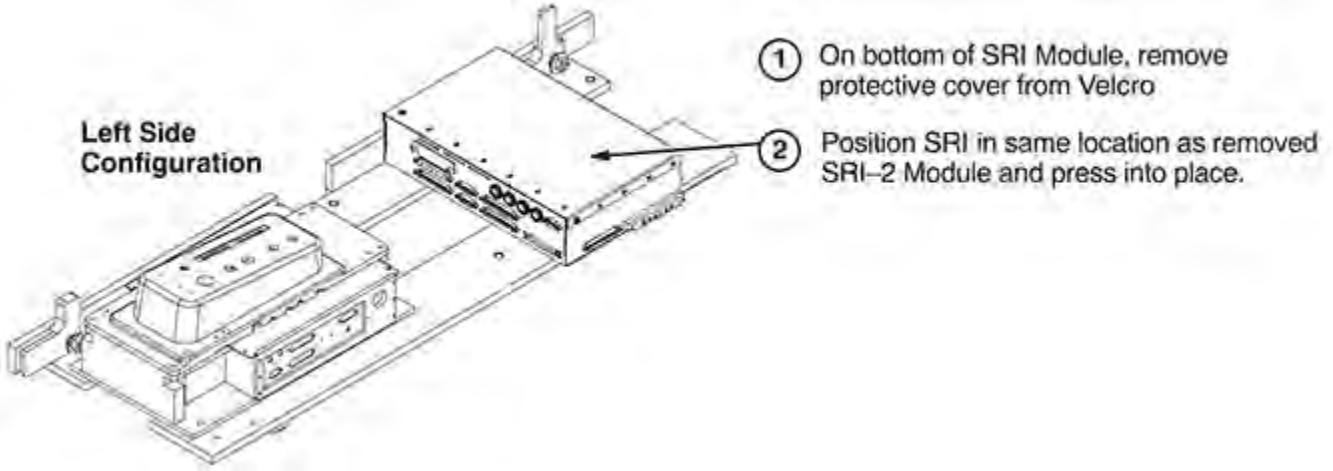


4.10.1 Verify SRI-3 Jumper Settings

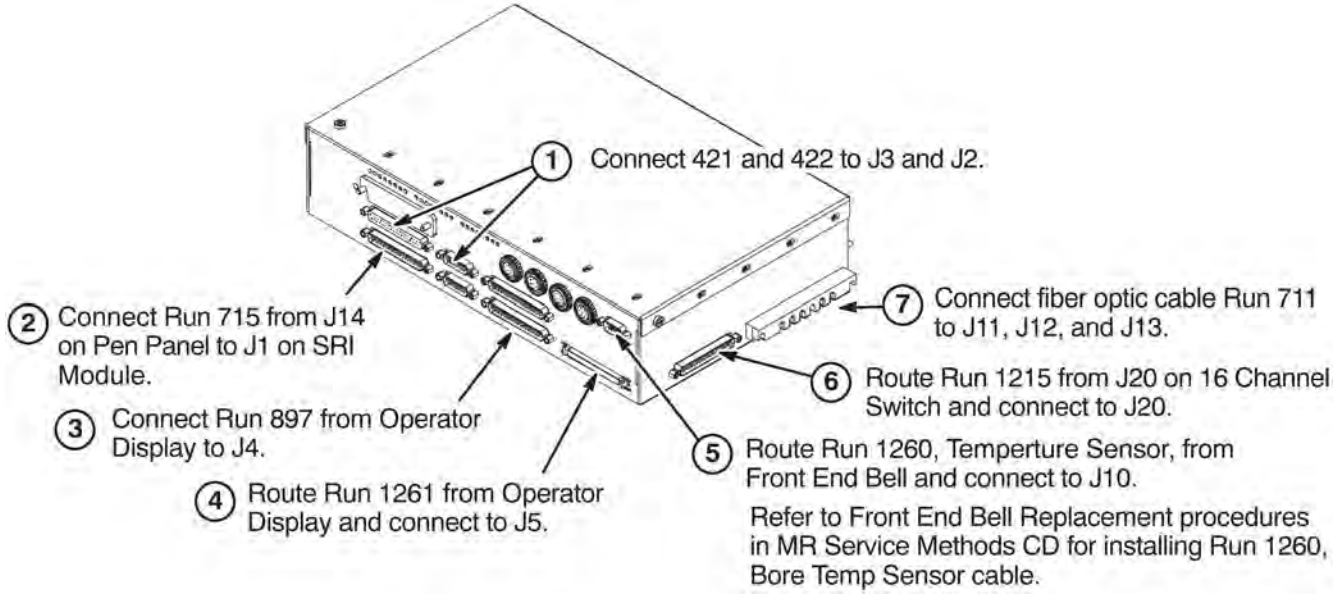
If the site is installing an SRI-5, then jumper settings do not have to verified.



4.10.2 Position Module on Platform

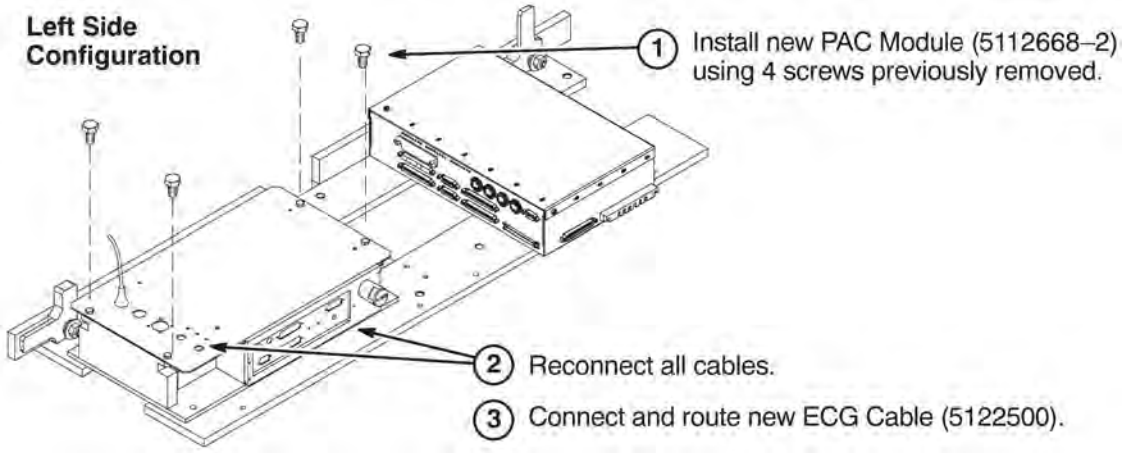


4.10.3 Connect Cables to SRI Module

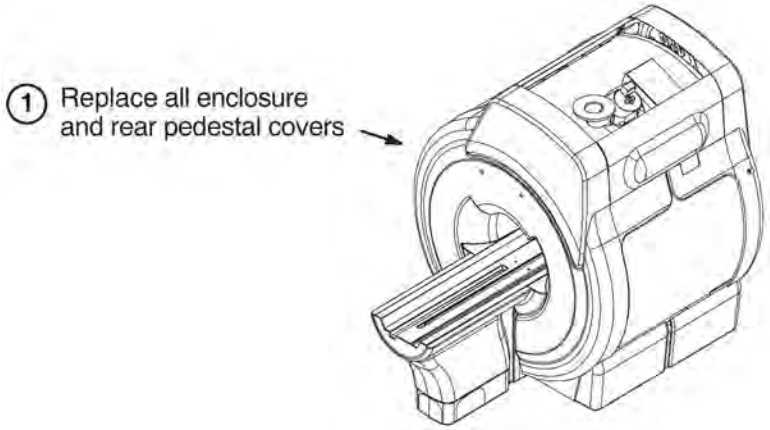


4.11 Install PAC Module and ECG Cable

Reverse the deinstallation steps for installation of the new PAC Module. Also install the new ECG Cable.



4.12 Install Covers

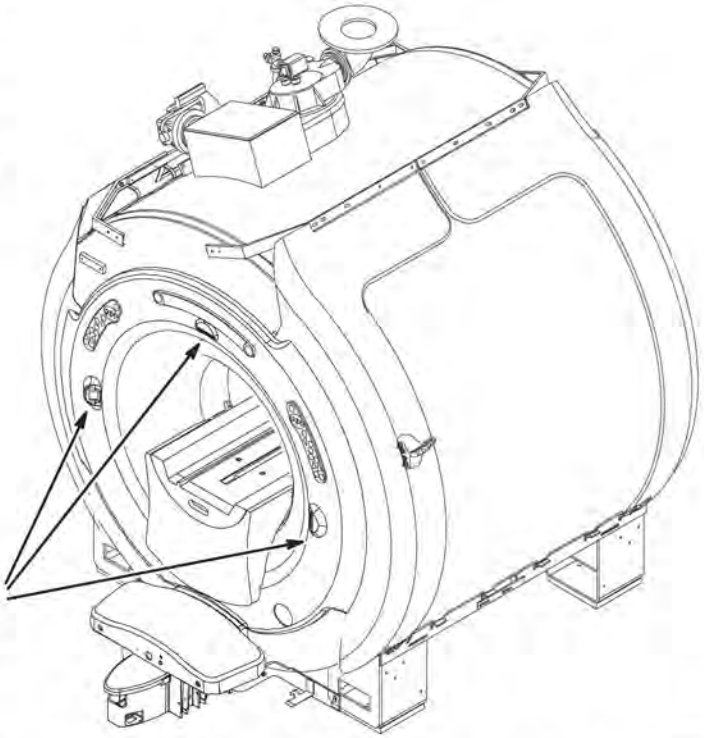


4.13 Install Laser Alignment Light Warning Labels

A sheet of Laser Alignment Light Warning Labels has been supplied with the magnet, attached to the magnet bridge.

The magnet enclosure is shipped with a label in English attached below each of the three laser lights.

English



① For those sites which require a label other than English, peel off the appropriate label and affix over the English labels at the three laser light locations.

French

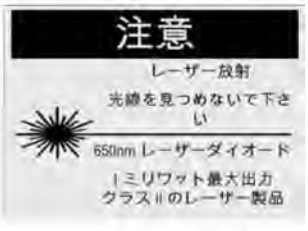
German

Portuguese

Spanish

Italian

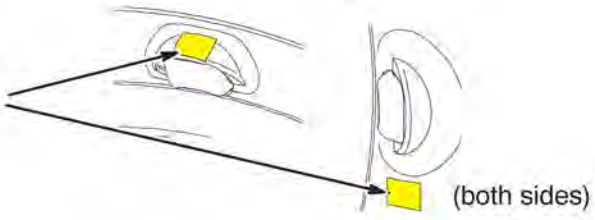
Swedish



Japanese

Chinese

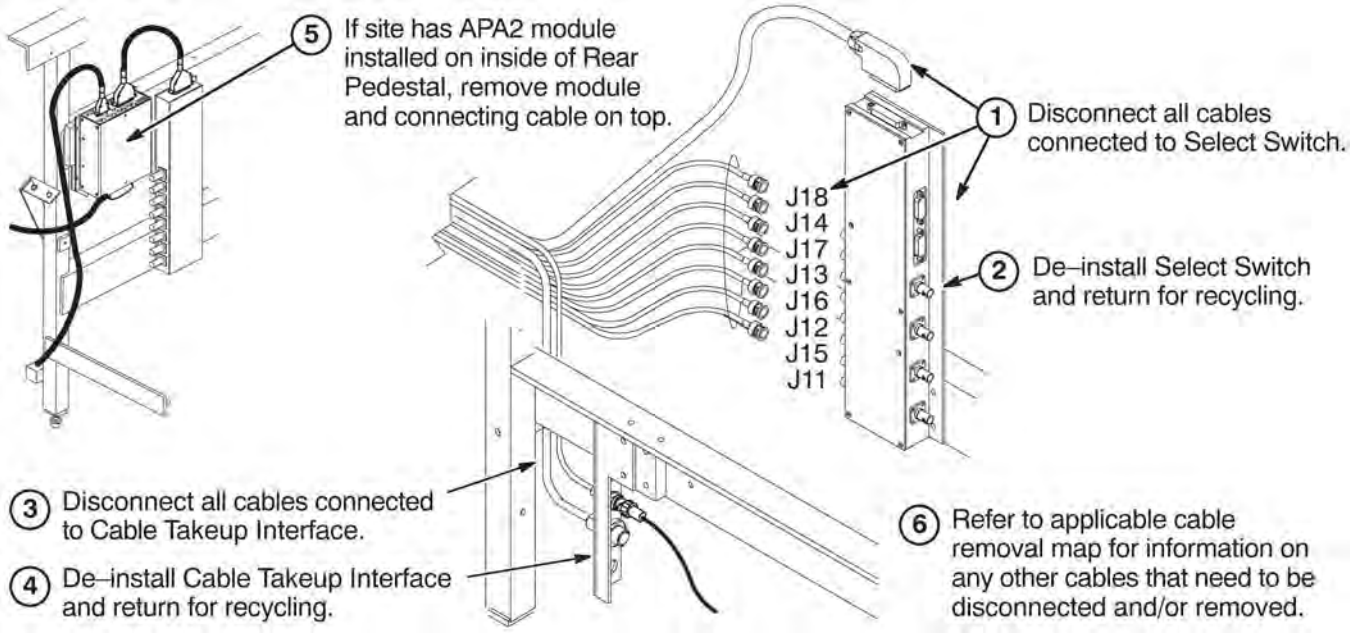
② If enclosure does not have labels attached, attach new labels as indicated.



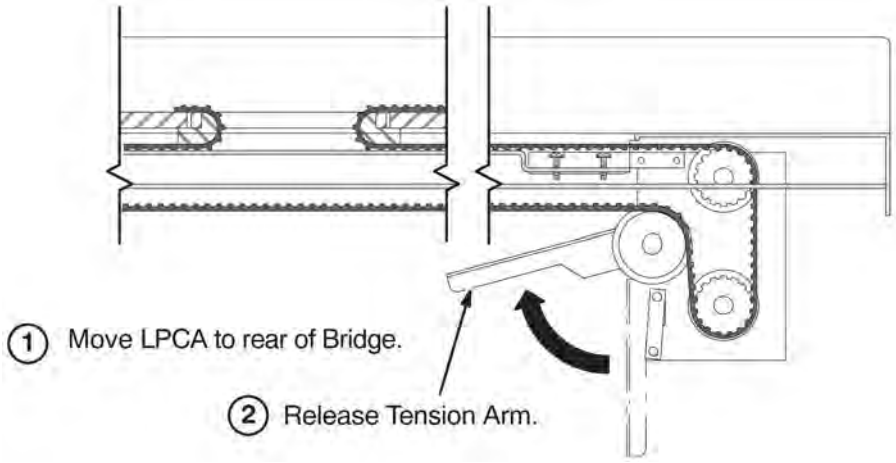
5 Upgrade Procedures for Horizon Style Magnet Enclosures

5.1 De-install Existing LPCA & Cable Track

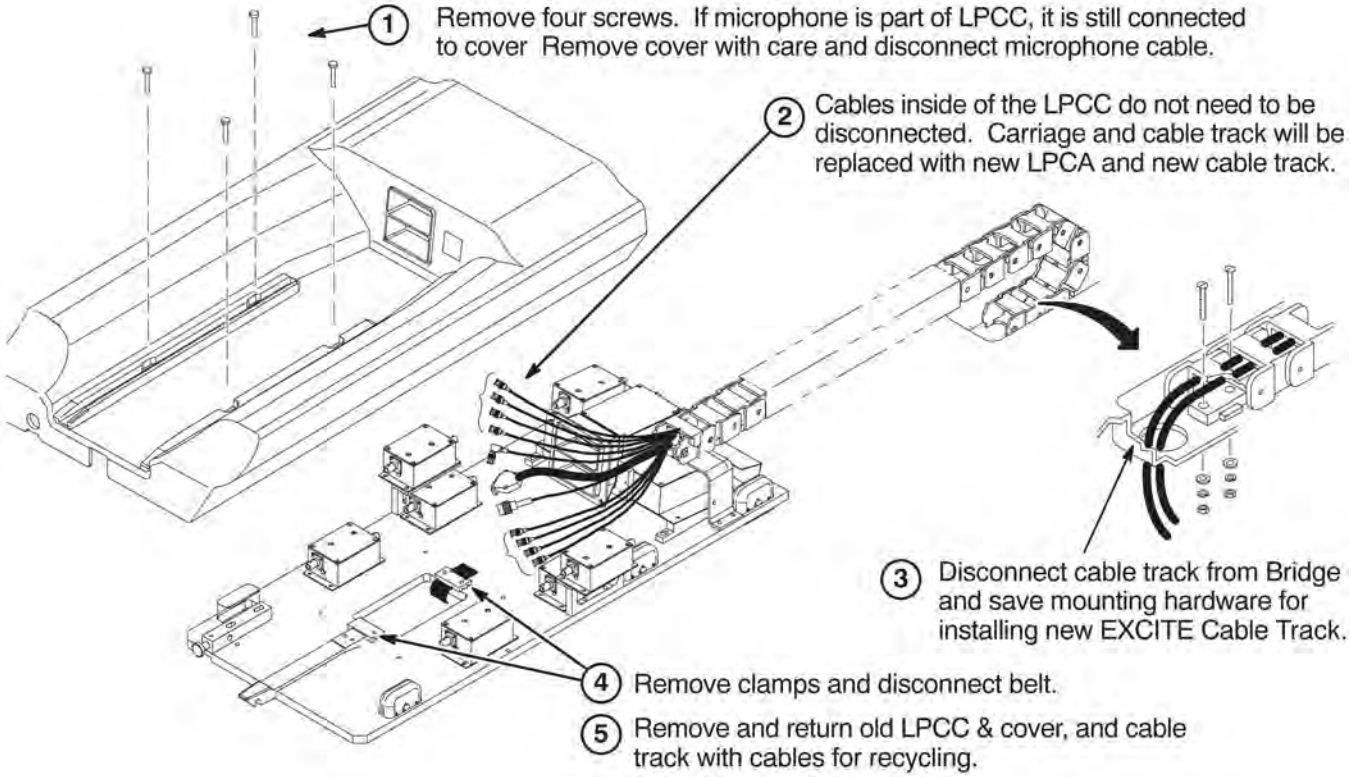
5.1.1 Disconnect Cables In Rear Pedestal



5.1.2 Relese Tension Arm Under Rear Pedestal

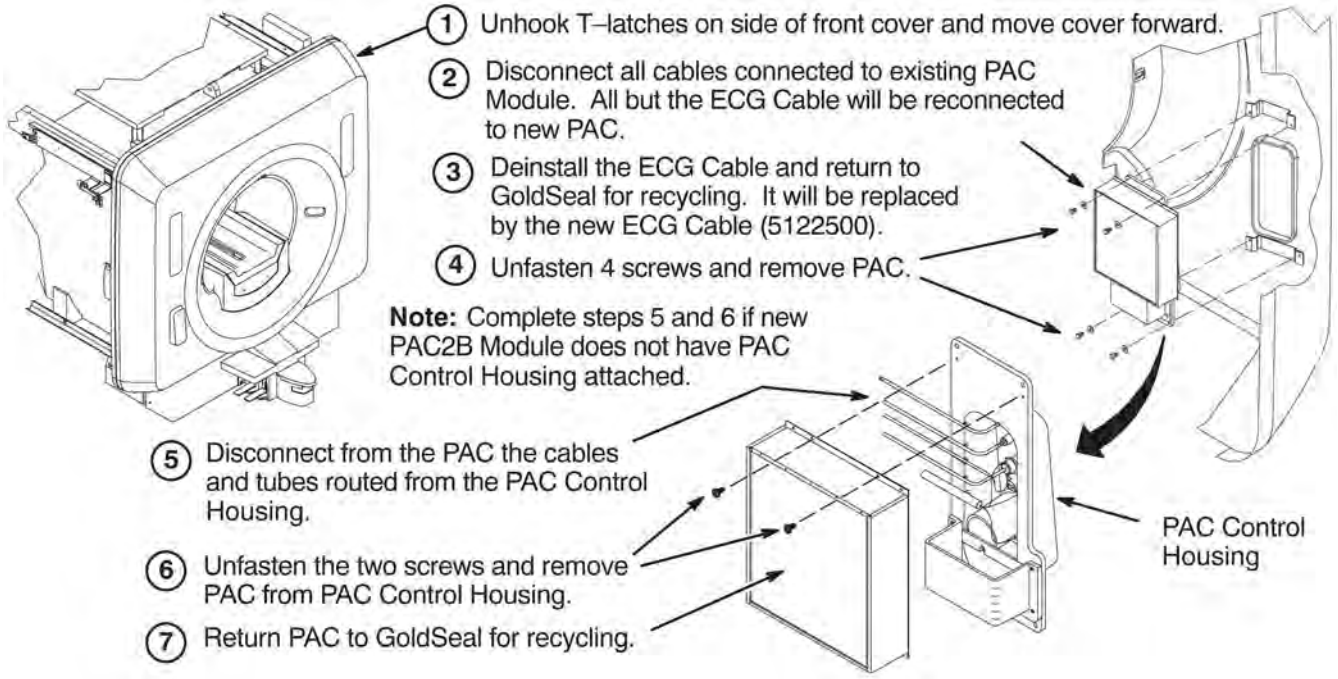


5.1.3 Remove Existing Low Profile Carriage Cover & Cable Track



5.2 De-install PAC Module

The existing PAC Module will be replaced by a new PAC Module with independent vector gating.

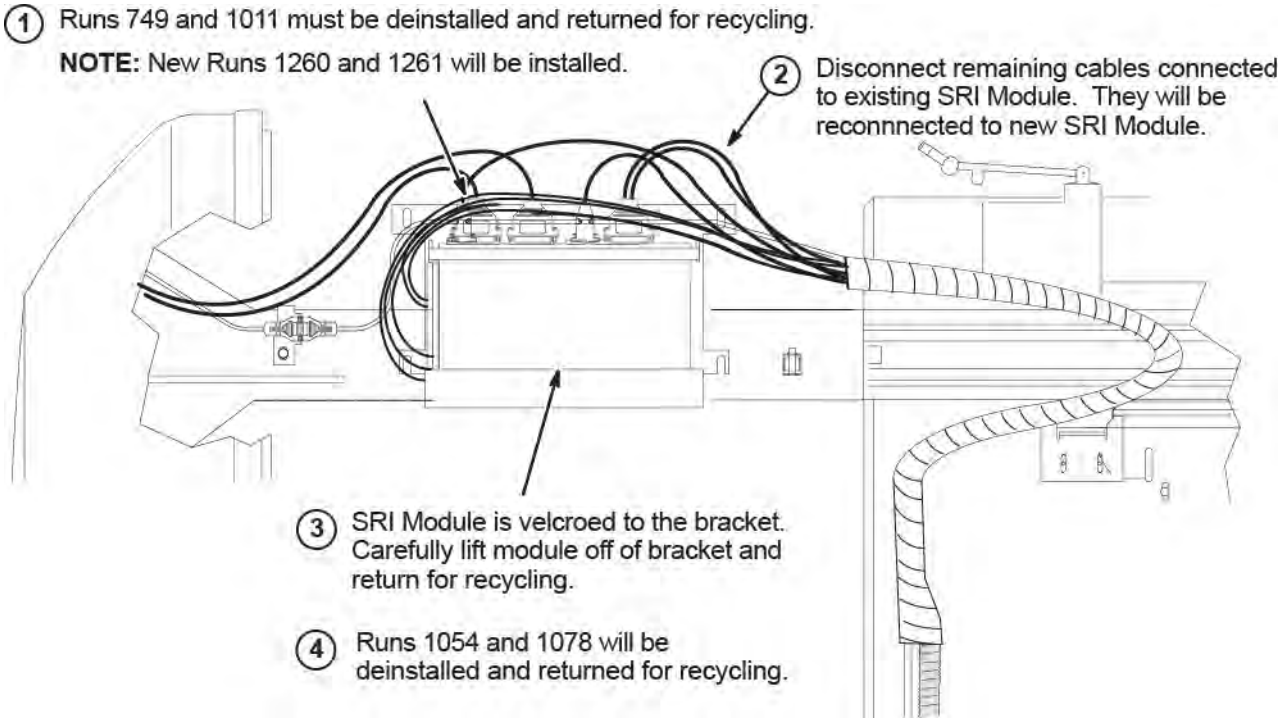


5.3 De-install SRI Module

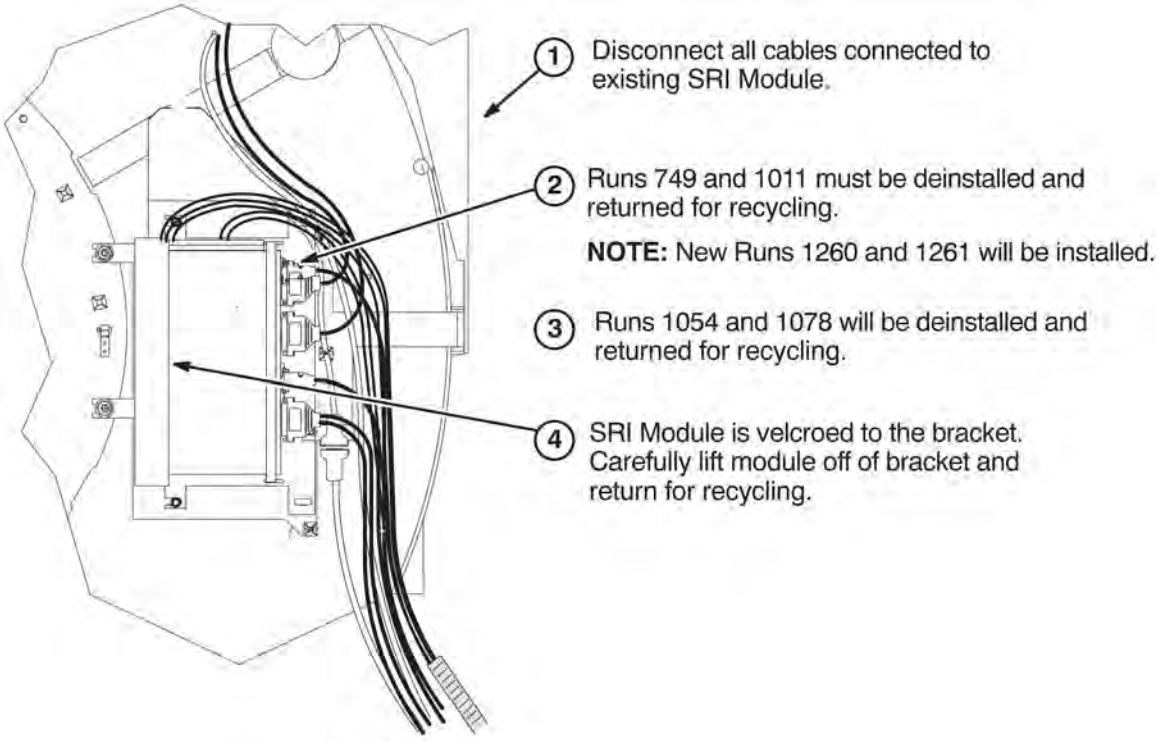
Section 5.3.1 contains instructions for removing the existing SRI module on an S-Series magnet.

Section 5.3.2 contains instructions for removing the existing SRI module on an Cx magnet.

5.3.1 Remove SRI Module for S-Series Enclosure



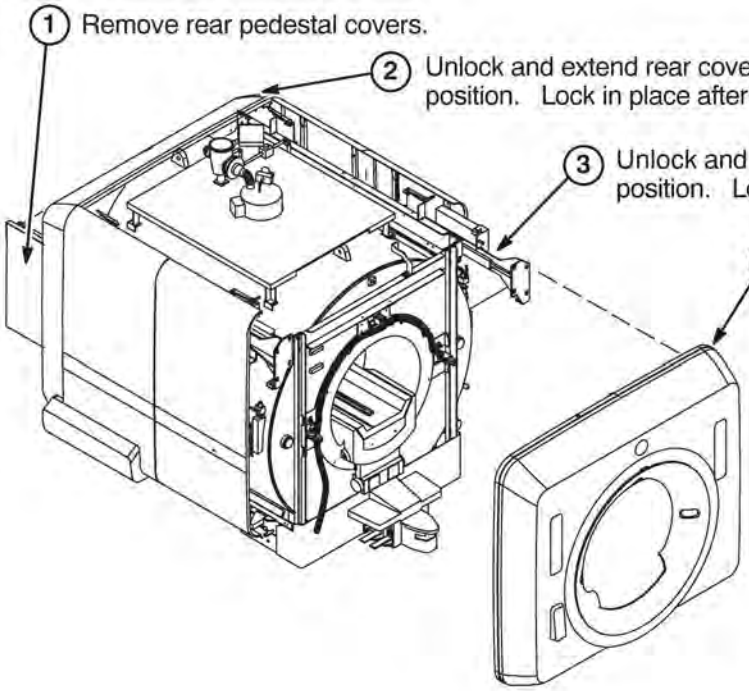
5.3.2 Remove SRI Module for Cx or LCC Horizon Enclosure



5.4 Prepare End Bell for Installation of New Dual Thermal Sensor Cable

The Bridge needs to be repositioned or removed prior to removal of the Front End Bell. Review Section 5.4.3 and Section 5.4.4. Determine which method would best fit the needs of site being upgraded.

5.4.1 Removal of Enclosure Covers

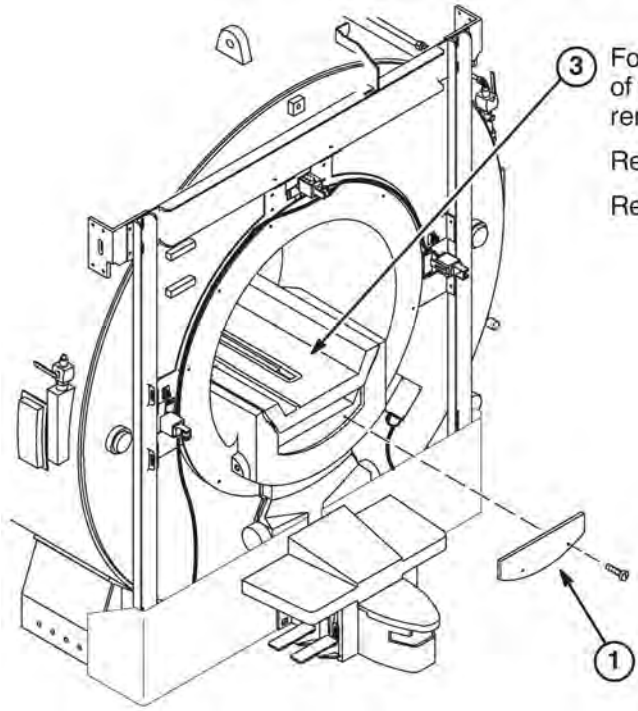


1. Remove rear pedestal covers.
2. Unlock and extend rear cover to service position. Lock in place after extension.
3. Unlock and extend front cover to service position. Lock in place after extension.
4. For ease of removal of Front End Bell, front cover may need to be removed. If so, make sure to follow WARNING below.

WARNING!

PERSONAL INJURY AND/OR EQUIPMENT DAMAGE POSSIBILITY! FRONT ENCLOSURE COVER IS HEAVY AND CUMBERSOME. AT LEAST TWO PEOPLE ARE REQUIRED TO LIFT AND MOVE IT; THREE IS PREFERABLE.

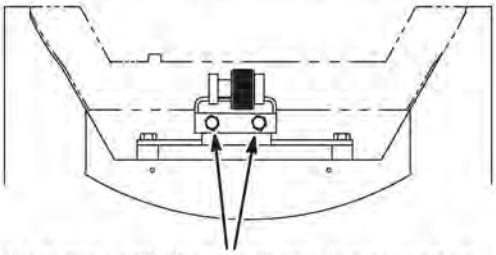
5.4.2 Removal of Front End Bell Panel



3. For removal of Front End Bell, Bridge must be moved out of the way either by lifting the front end or complete removal.

   Refer to Section **6–5–4–3** for procedure to lift the Bridge.

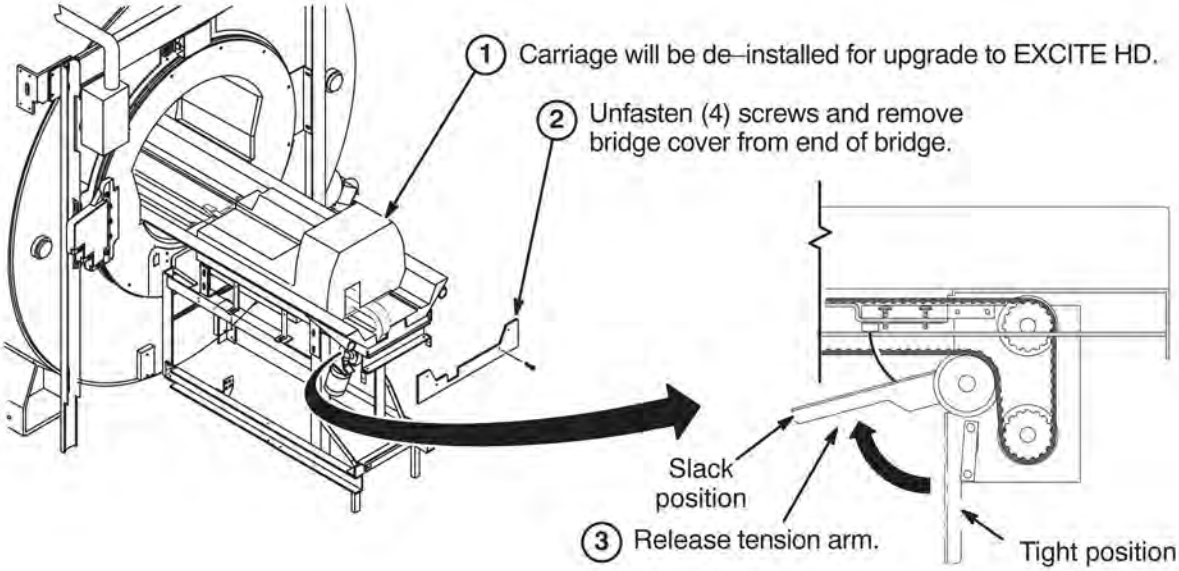
   Refer to Section **6–5–4–4** for removal of Bridge.

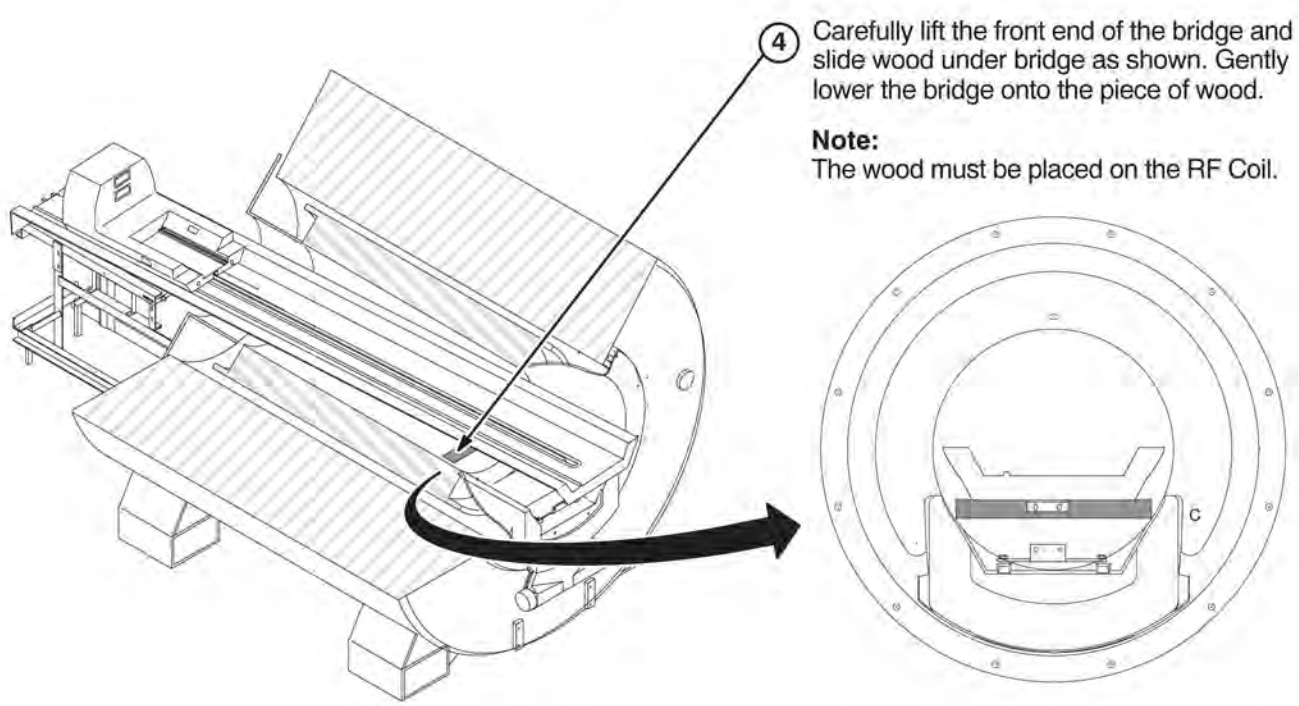


2. Unfasten M10 flat washers, lock washers, and screws attaching front end of bridge asm to front end bell.

1. Unfasten (2) M6 x 25 pan screws and remove end bell panel.

5.4.3 Lifting Front End Of Bridge Method

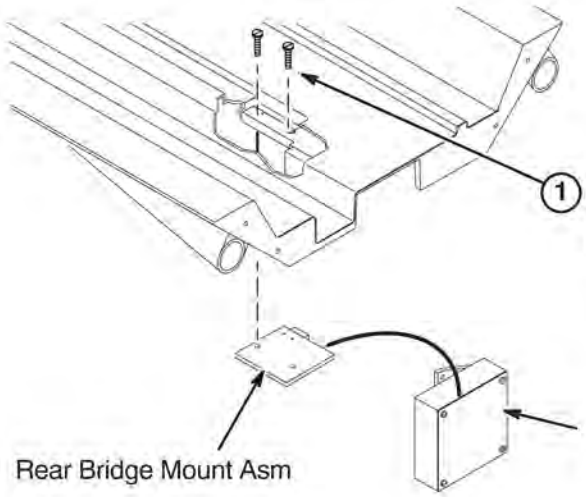


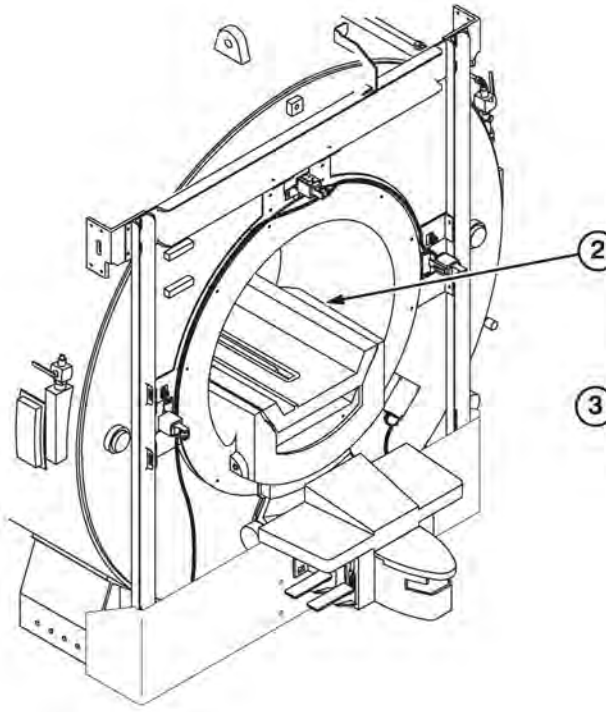


5.4.4 Removal of Bridge Method

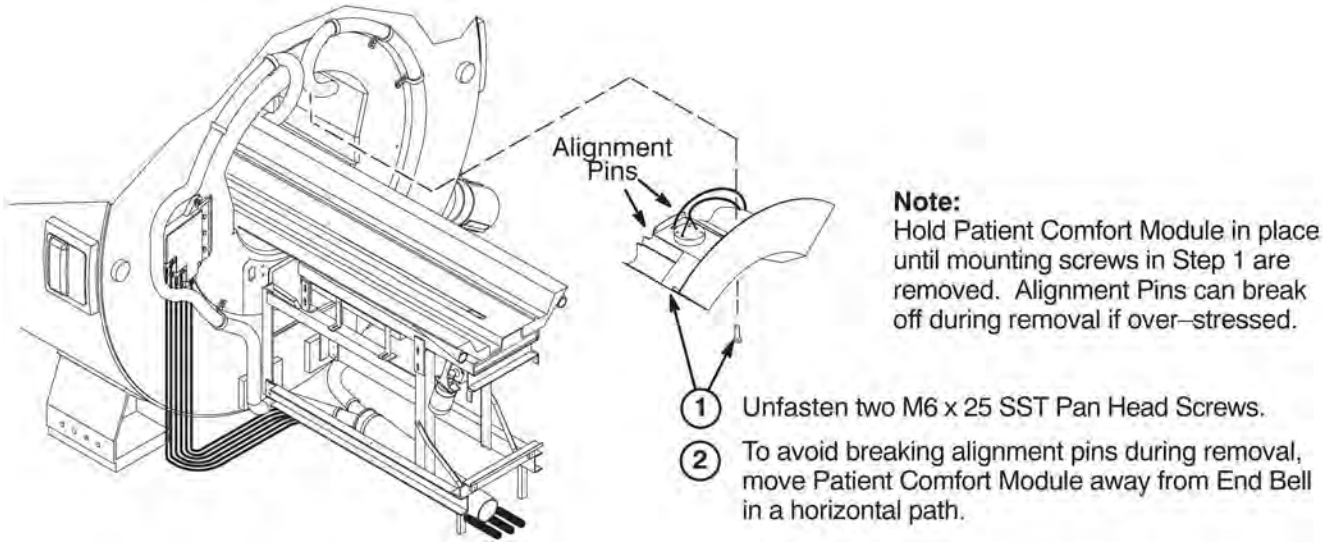
⚠CAUTION

Possible equipment damage!
The home flag is fragile and can easily be damaged.
Be careful not to damage the home flag on the drive belt when removing or replacing the bridge.



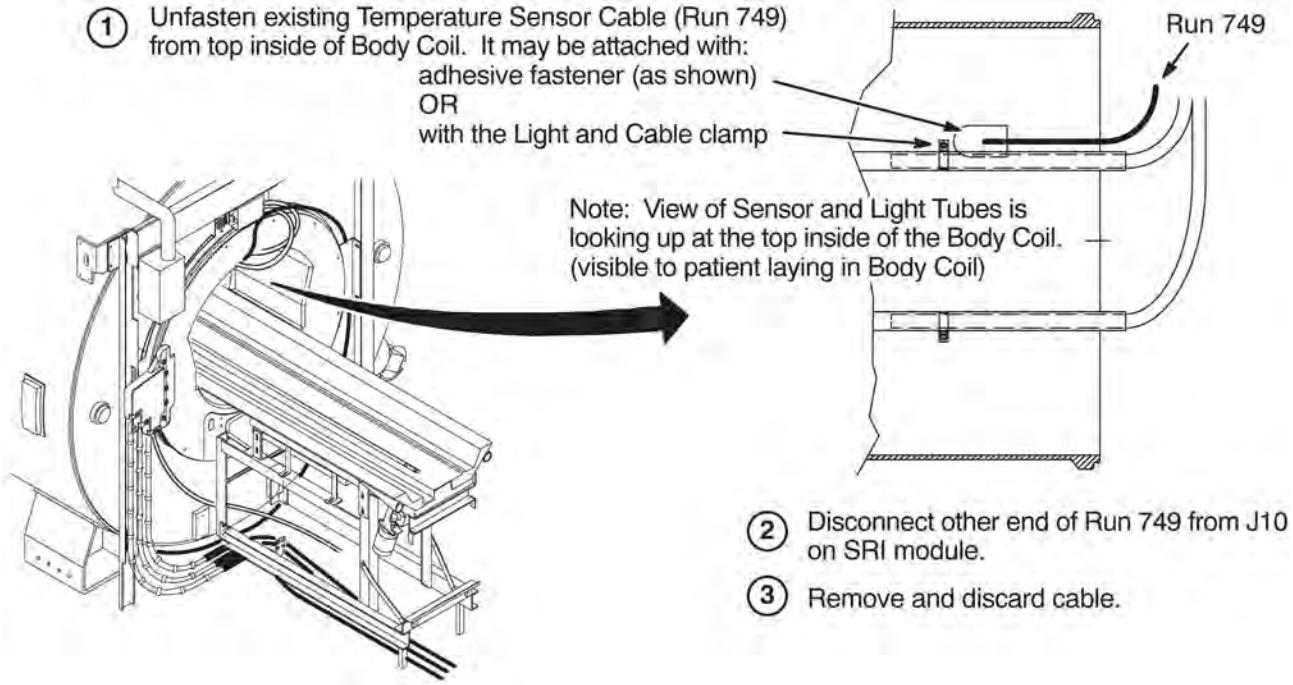


5.4.5 Remove Patient Comfort Module



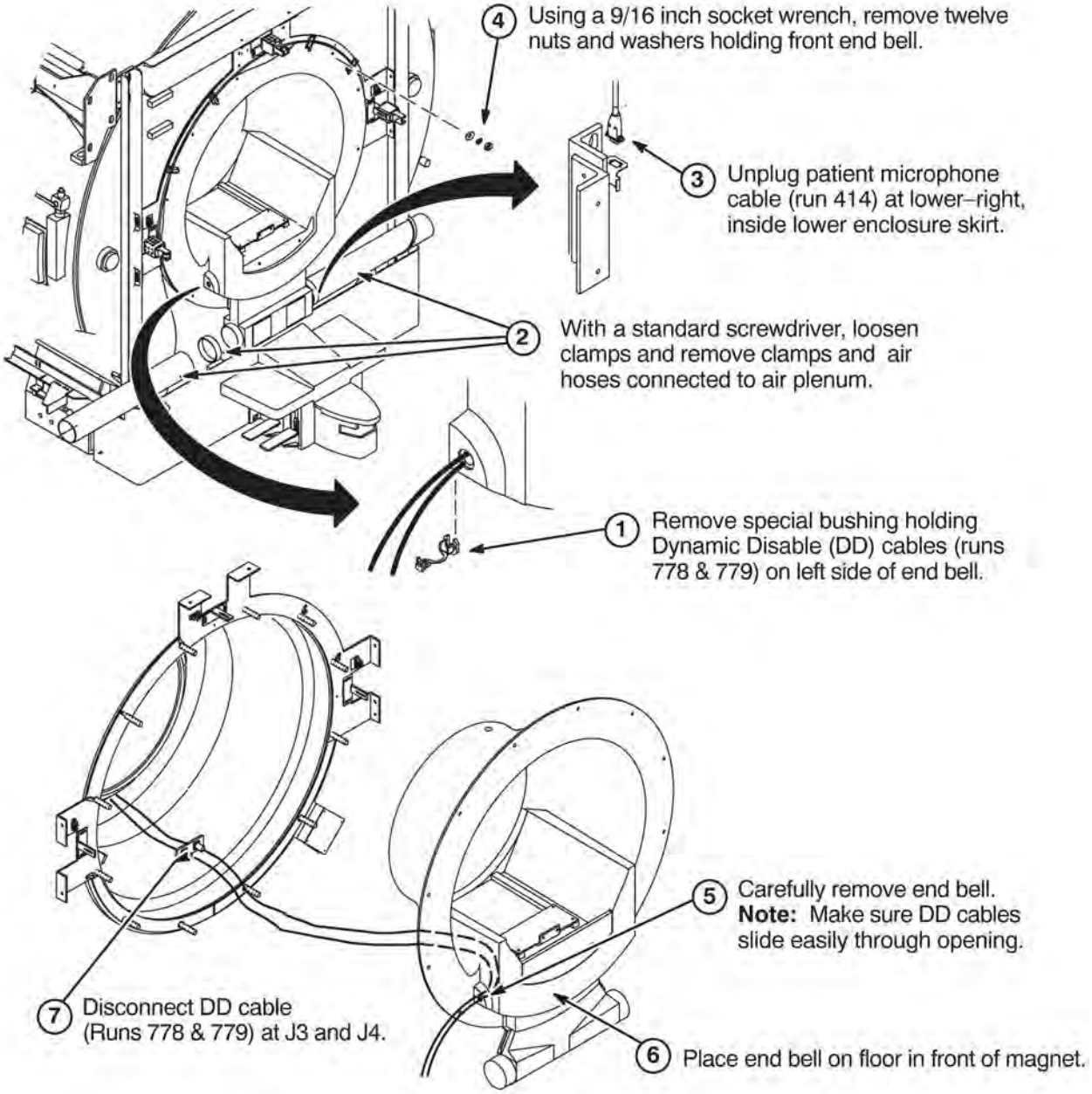
The site can have the existing Temperature Sensor Cable routed to the Rear end bell (earlier location) or Front end bell (later location). Either way, the cable needs to be removed and replaced with new cable, Run 1260. One of the two following procedures will be applicable to your site.

5.4.6 Remove Existing Single Temperature Sensor Cable at Rear End Bell Location



5.4.7 Unfasten Front End Bell

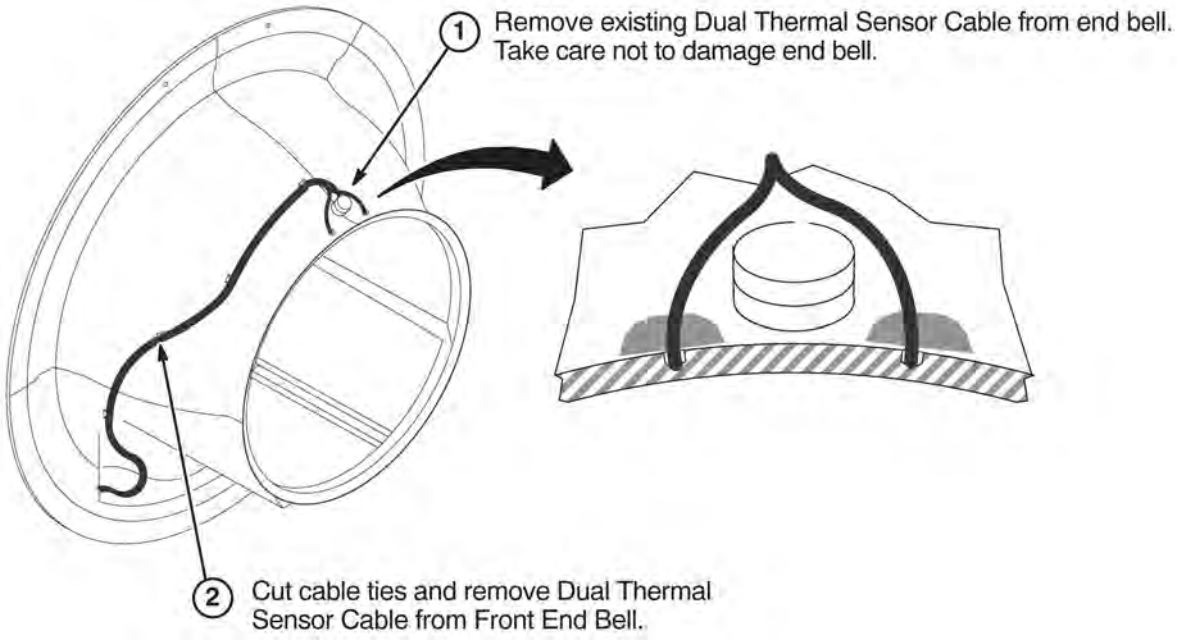
The site may have upgraded to a Dual Thermal Sensor Run 749 recently, but this cable has to be removed and replaced with new Dual Thermal Sensor cable, Run 1260 (5123812). EXCITE HD requires Run 1260 to be installed.



5.4.8 Existing Dual Temperature Sensor Cable Removal from Front End Bell (If applicable)

⚠WARNING

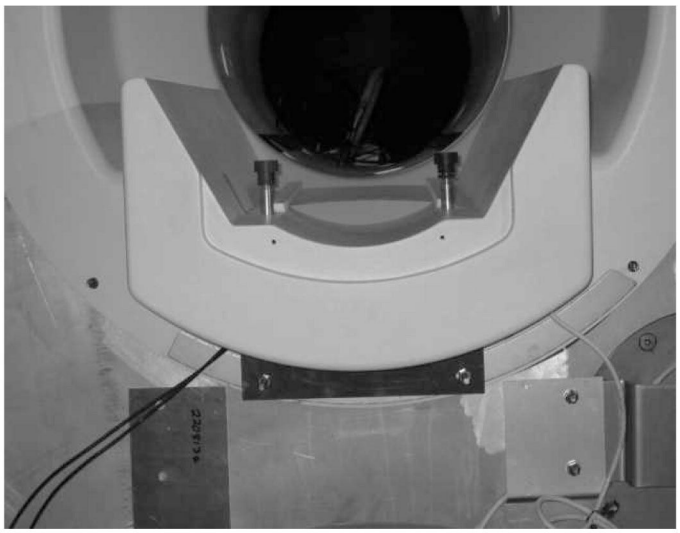
FERROUS MATERIAL HAZARD!
TOOLS AND PARTS REQUIRED FOR THIS UPGRADE CONTAIN FERROUS MATERIAL.
DO NOT DRILL, HAMMER, CHISEL, ETC. OR USE ANY FERROUS TOOLS IN MAGNET ROOM UNLESS MAGNET IS RAMPED DOWN!



5.5 Install IIQ Kit and RF Ground Strap (If Required)

Prior to this upgrade, the site should have been audited to determine if the IIQ Kit (M3090NE) has been installed. The IIQ Kit includes parts and instructions for the installation of the Gradient Radial Support and the Bridge Support. It is required for all magnets with Horizon style enclosures. If this upgrade has not been performed on the existing enclosure, then M3090NE should have been ordered and must be installed at this point of the HDx ugprade.

Refer to steering Direction 2401983, included in M3090NE, for guidance. Directions 2401984, S-Series Magnet Bridge Support (shown below) and Direction 2319693, Signa Gradient Radial Support Upgrade, along with associated parts, are also included in M3090NE.



Also, the RF Ground Strap (M3090NF) must be installed if this upgrade hasn't been performed previously. This kit includes parts and instructions for installation of the RF Ground Strap. Refer to Direction 2319685, BRM of CRM RF Shield Grounding Upgrade, for instructions on installing this kit.

For fixed sites only, the mounting of the gradient cables at the rear of the magnet must be upgraded. This upgrade is part of M3335BD, LCC WideOpen IIQ Upgrade. Refer to Direction 2404642, provided with Gradient Cable Lead Board collector (5110336), for instructions on how to install the new design.

5.6 Install Gradient Lead Board and Restraint Blocks (If Required for Fixed-Sites Only)

Prior to this upgrade, the site should have been audited to determine if the Gradient Lead Board Kit has been installed. This kit includes parts and instructions for the installation of the Gradient Lead Board at the rear of the magnet.

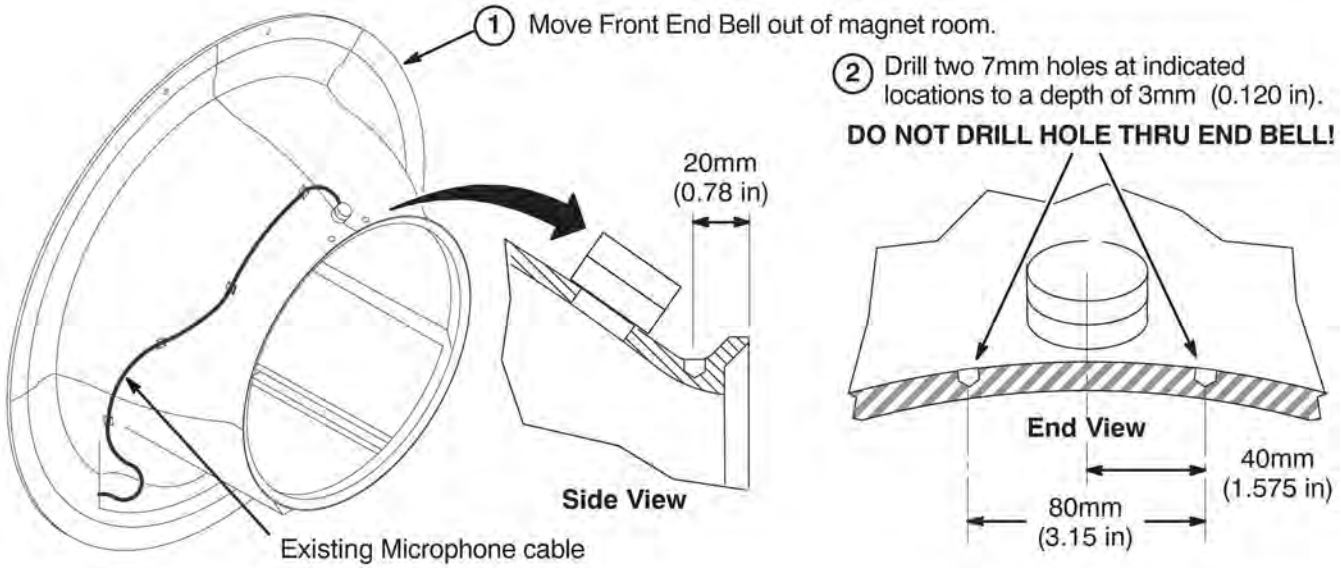
Also, the gradient cable Restraint Blocks Kit (5186281-2) should have been installed.

These kits are required for all magnets with Horizon style enclosures. If these upgrades has not been performed on the existing enclosure, then the following should have been ordered and it must be installed at this point of the HDx ugprade.

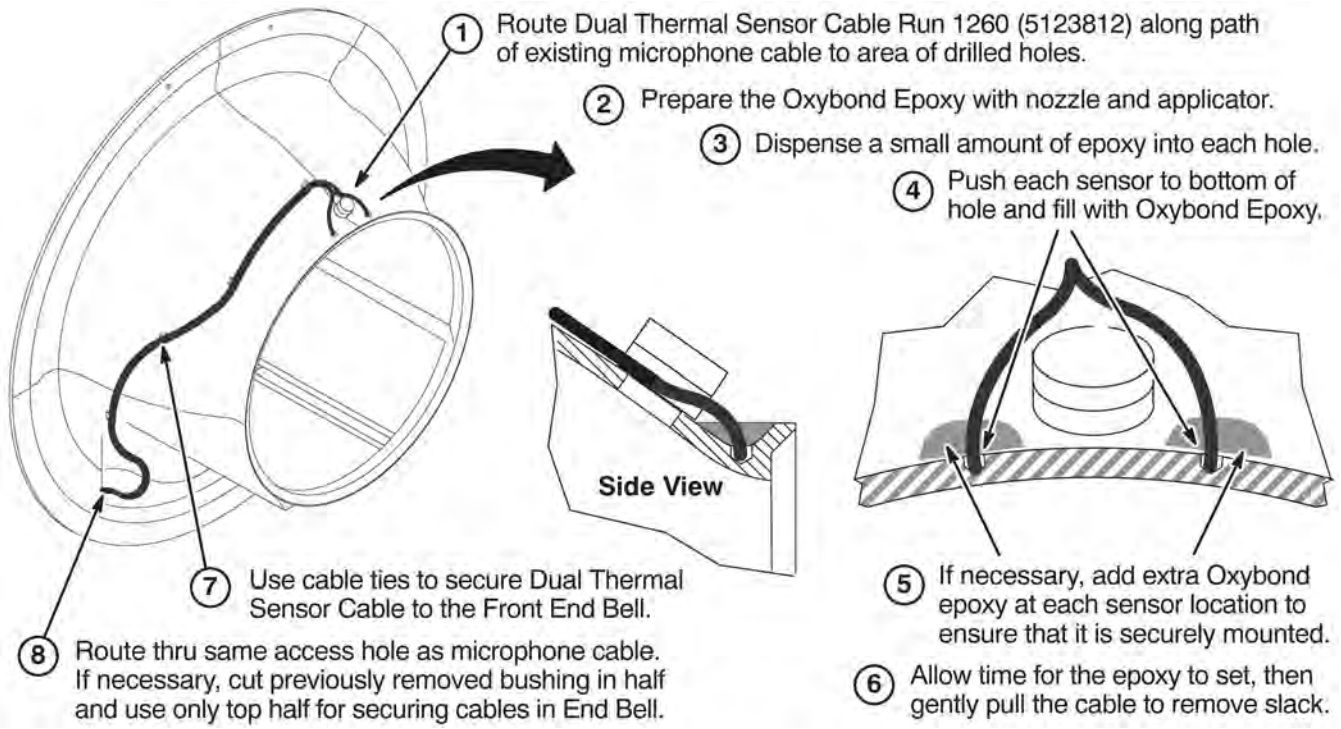
- LCC Early WideOpen - M3335BC
- LCC Horizon - M3335BB
- Cx - M3335BB
- S-Series - M3335BA

5.7 Install New Dual Temperature Sensor Cable, Run 1260

5.7.1 Preparation of Front End Bell



5.7.2 Attach Dual Thermal Sensor Cable

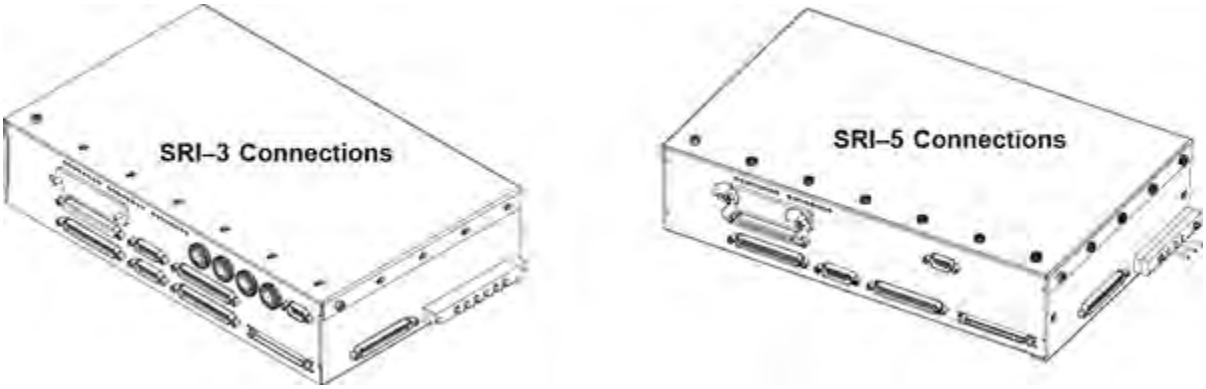


5.8 Re-install Front End Bell, Comfort Module, and Bridge

Reverse the applicable Front End Bell Removal procedures (Section 5.4) to reinstall the end bell, comfort module, and bridge.

5.9 Install SRI Module

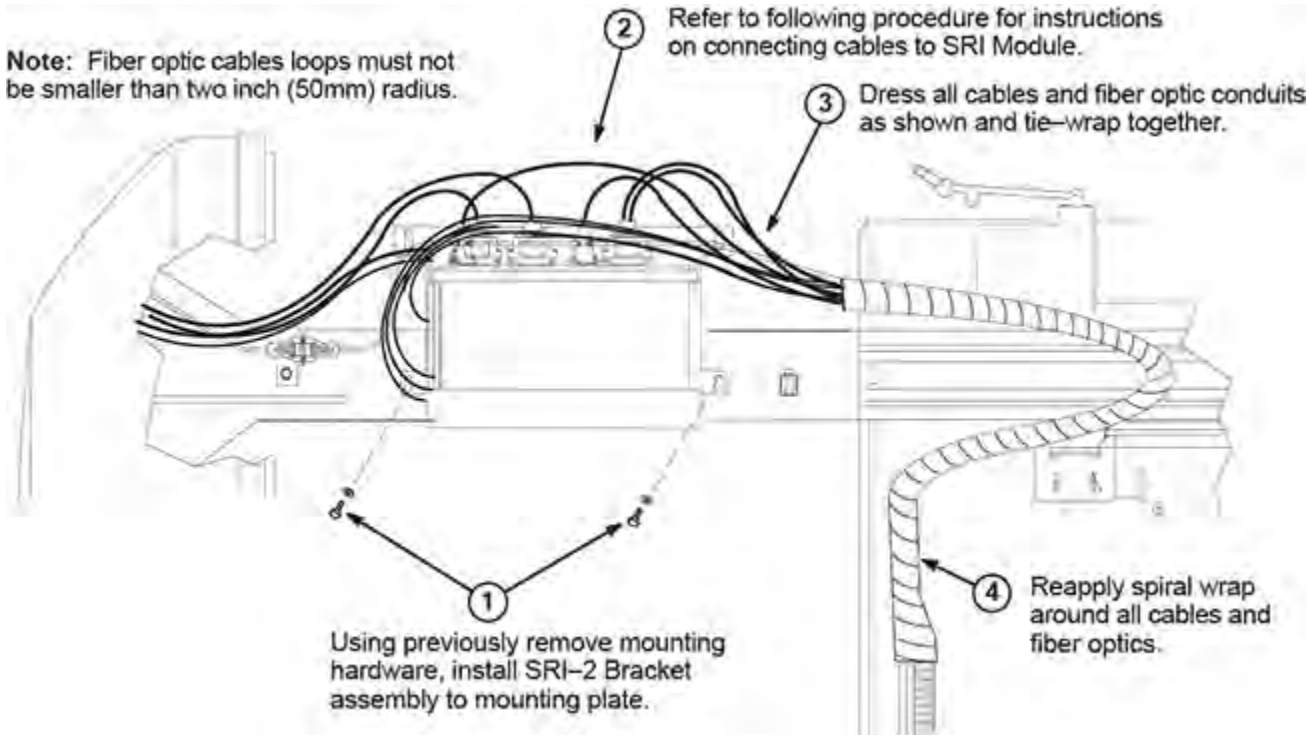
The instructions for installing and SRI-3 or SRI-5 are the same. All cables are connected to the same J— numbers on each module. The differences of the modules is shown in the following illustration.



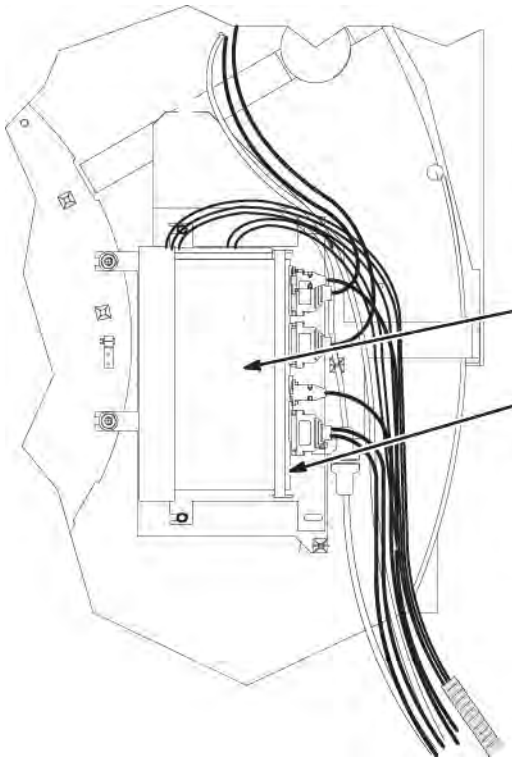
For site with S-series magnet, complete procedure in Section 5.9.1.

For site with Cx magnet, complete procedure in Section 5.9.2.

5.9.1 Install SRI Module for S-Series Enclosure

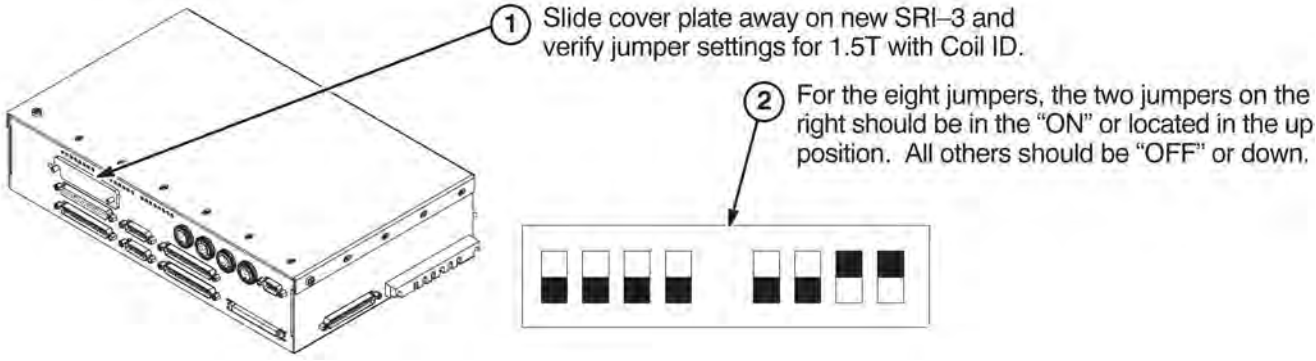


5.9.2 Install SRI Module for Cx or LCC Horizon Enclosure



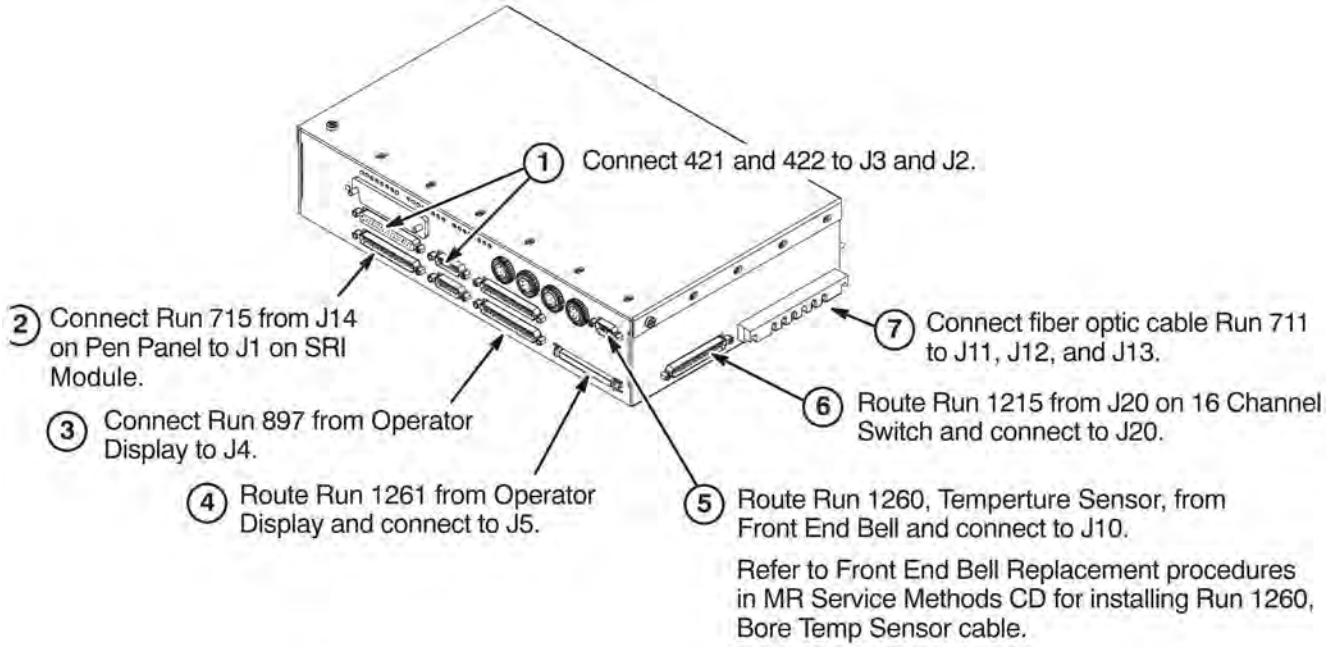
1. On bottom of the SRI Module, remove protective cover from Velcro
2. Position the SRI in same location as removed SRI–2 Module and press into place.
3. Refer to following procedure to verifying jumper positions if SRI–3 is being installed.
4. Refer to following procedure for cable connections.

5.9.3 Verify SRI-3 Jumper Settings



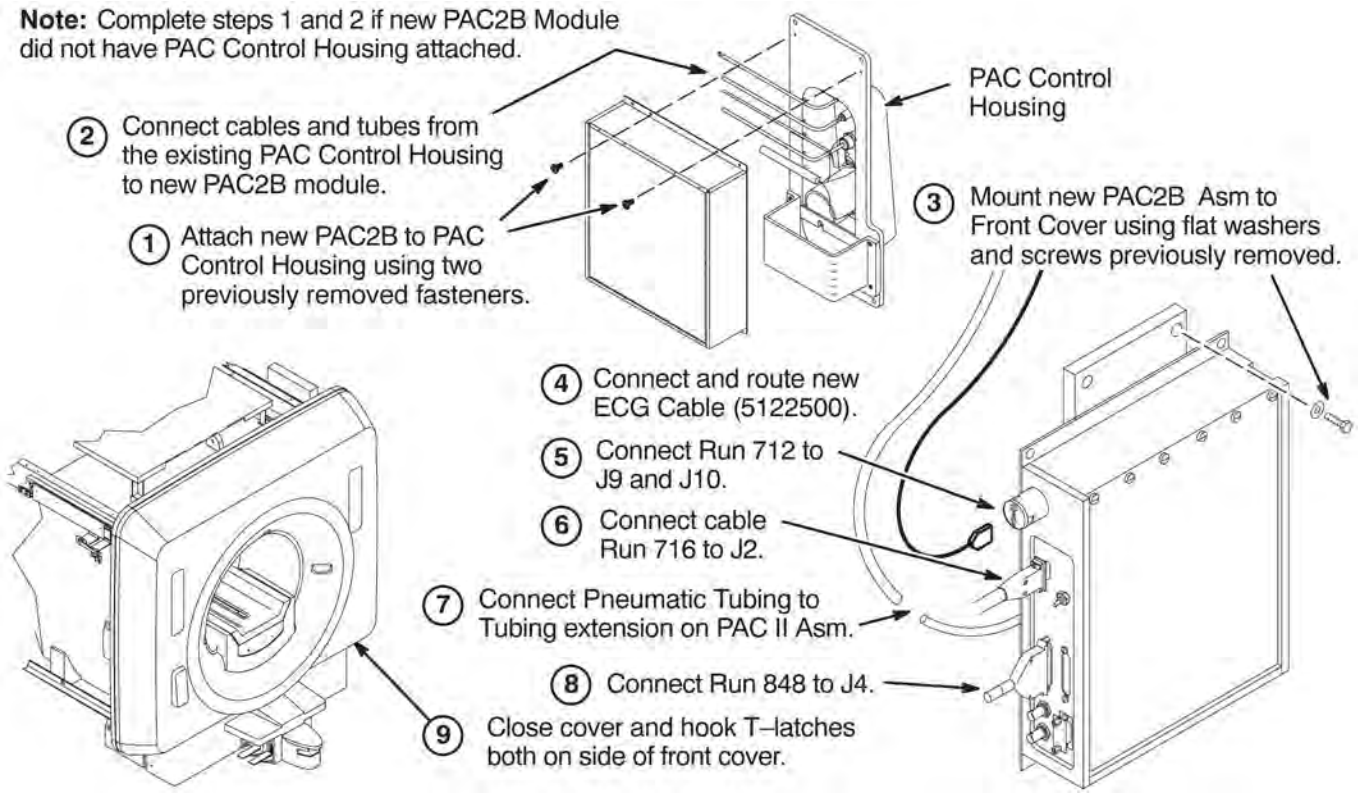
1. Slide cover plate away on new SRI–3 and verify jumper settings for 1.5T with Coil ID.
2. For the eight jumpers, the two jumpers on the right should be in the "ON" or located in the up position. All others should be "OFF" or down.

5.9.4 Connect Cables to SRI Module



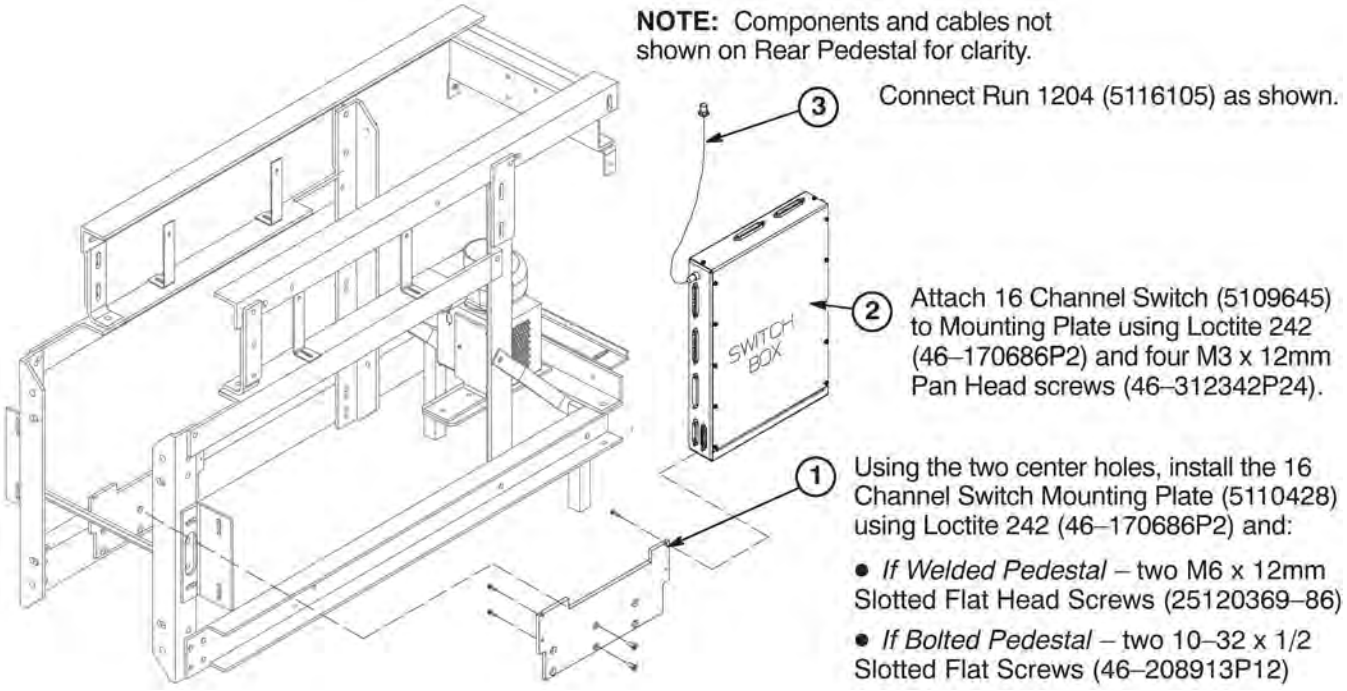
5.10 Install New PAC Module and ECG Cable

Reverse the deinstallation steps for installation of the new PAC Module. Also install the new ECG Cable.

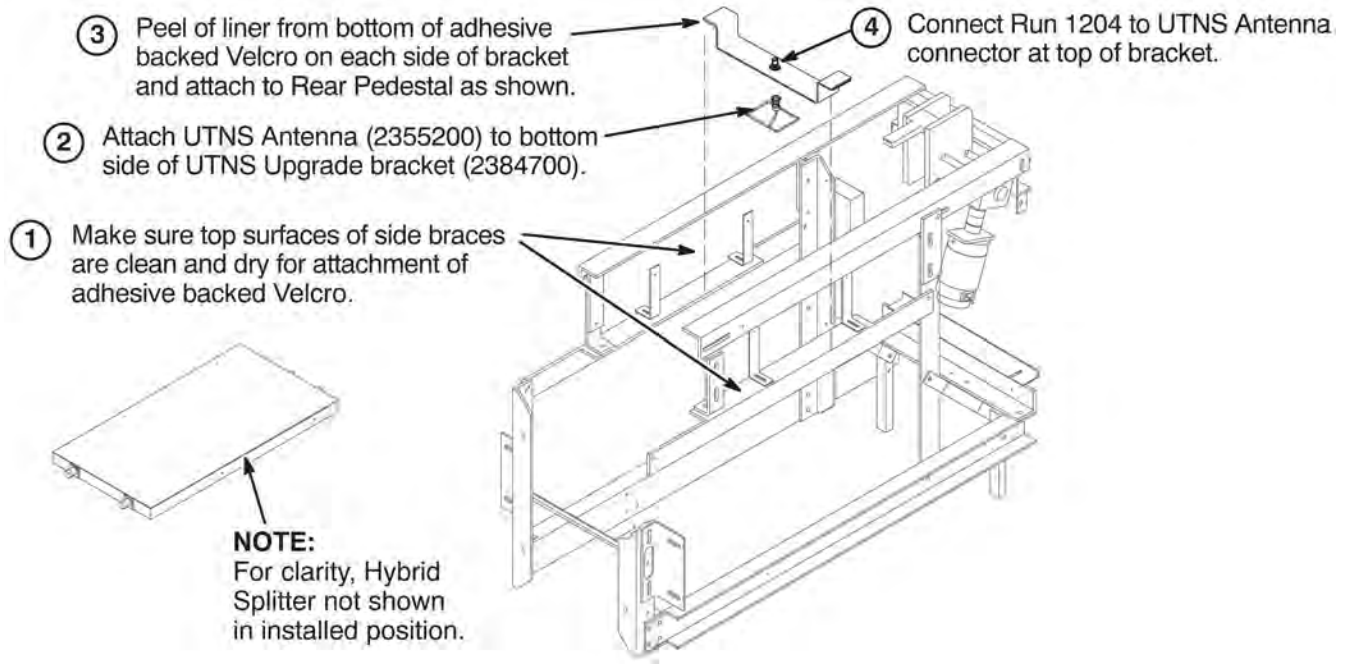


5.11 Install New Components On Rear Pedestal

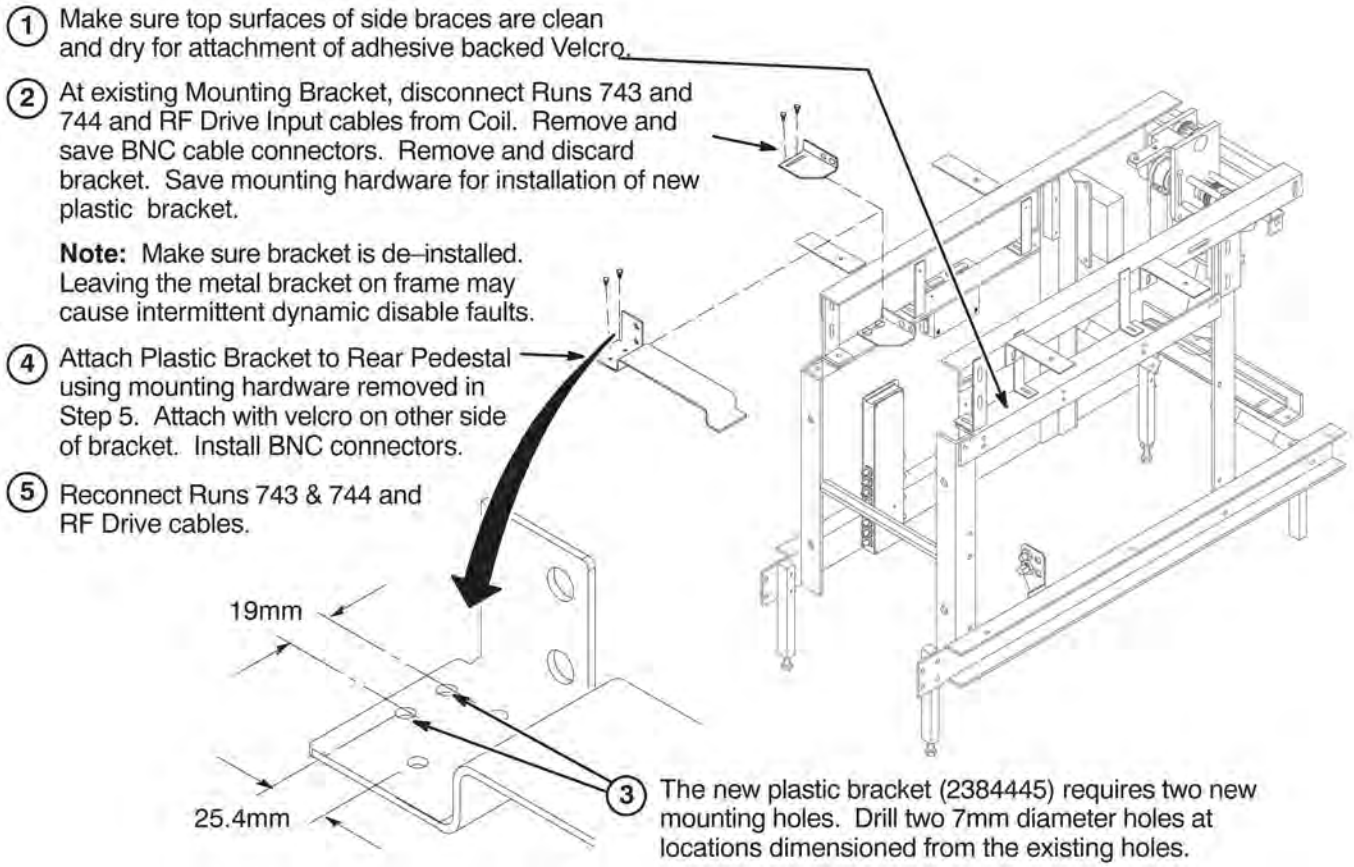
5.11.1 Install 16 Channel Switch



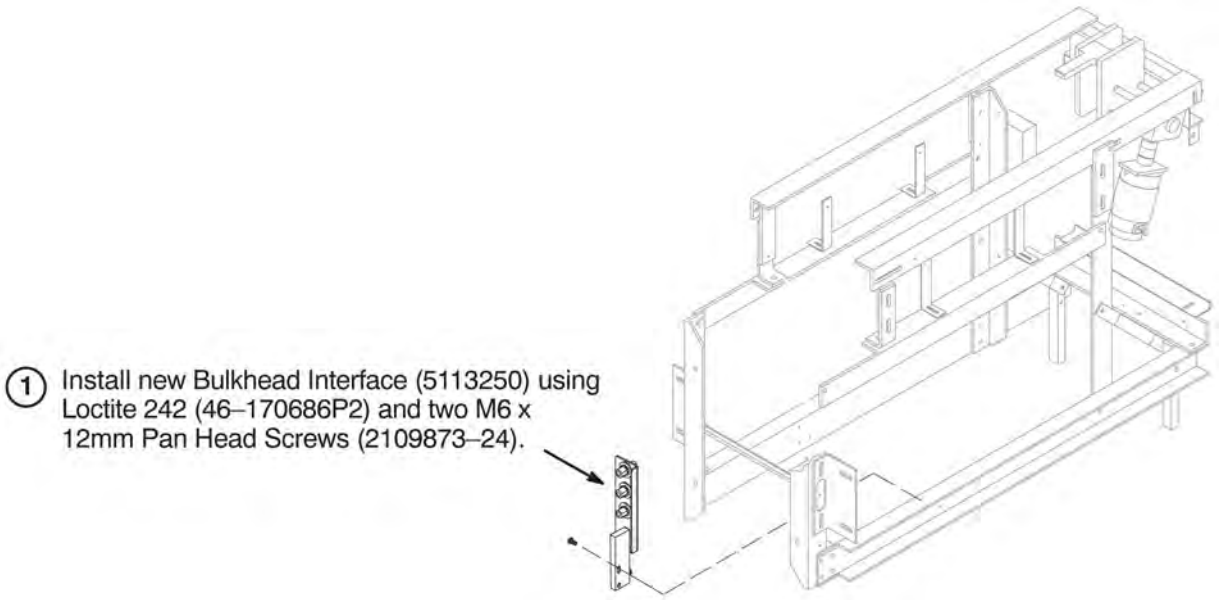
5.11.2 Install UTNS Antenna



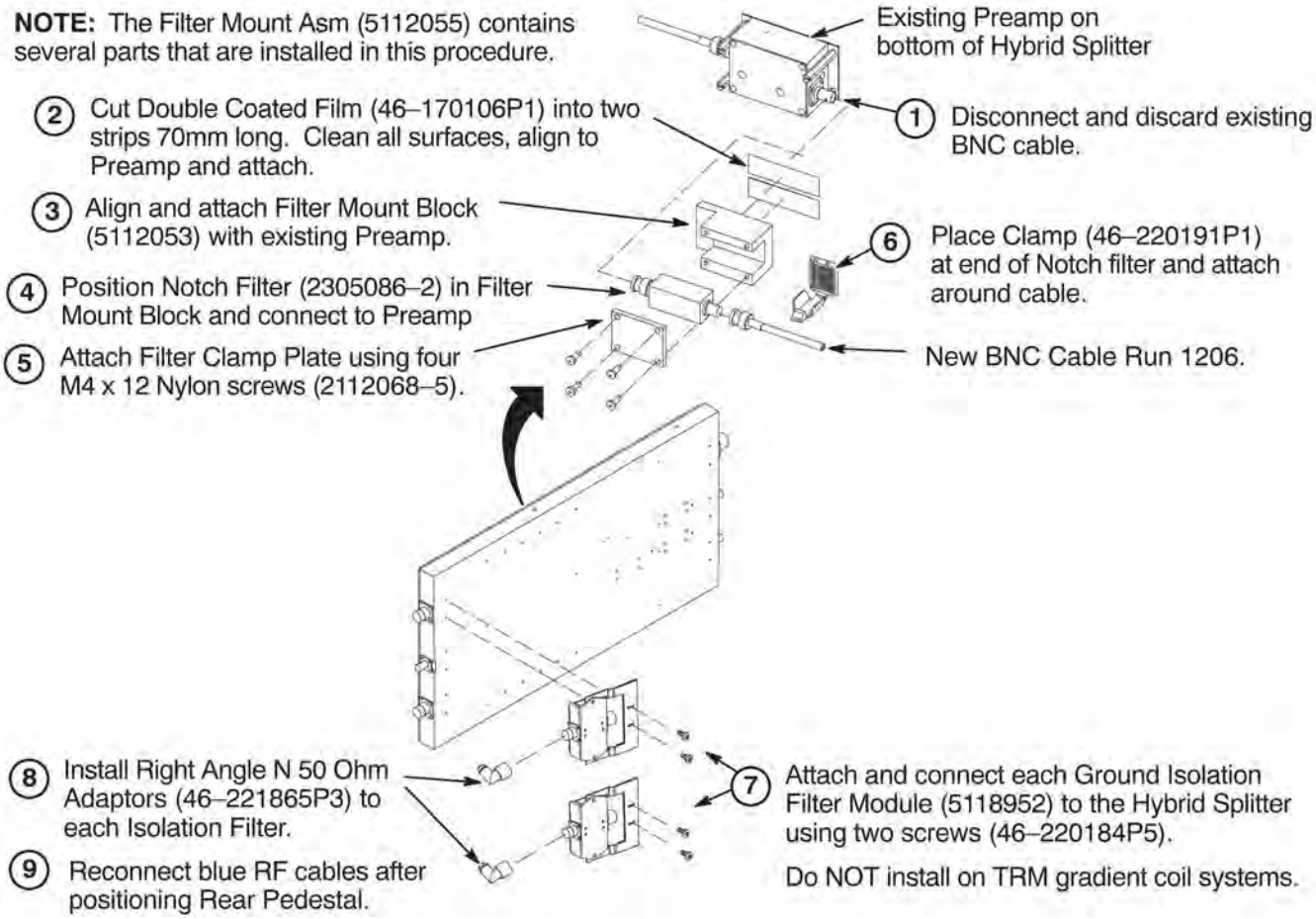
5.11.3 Install RF Drive Cable Mounting Bracket for LCC and Cx Magnets Only



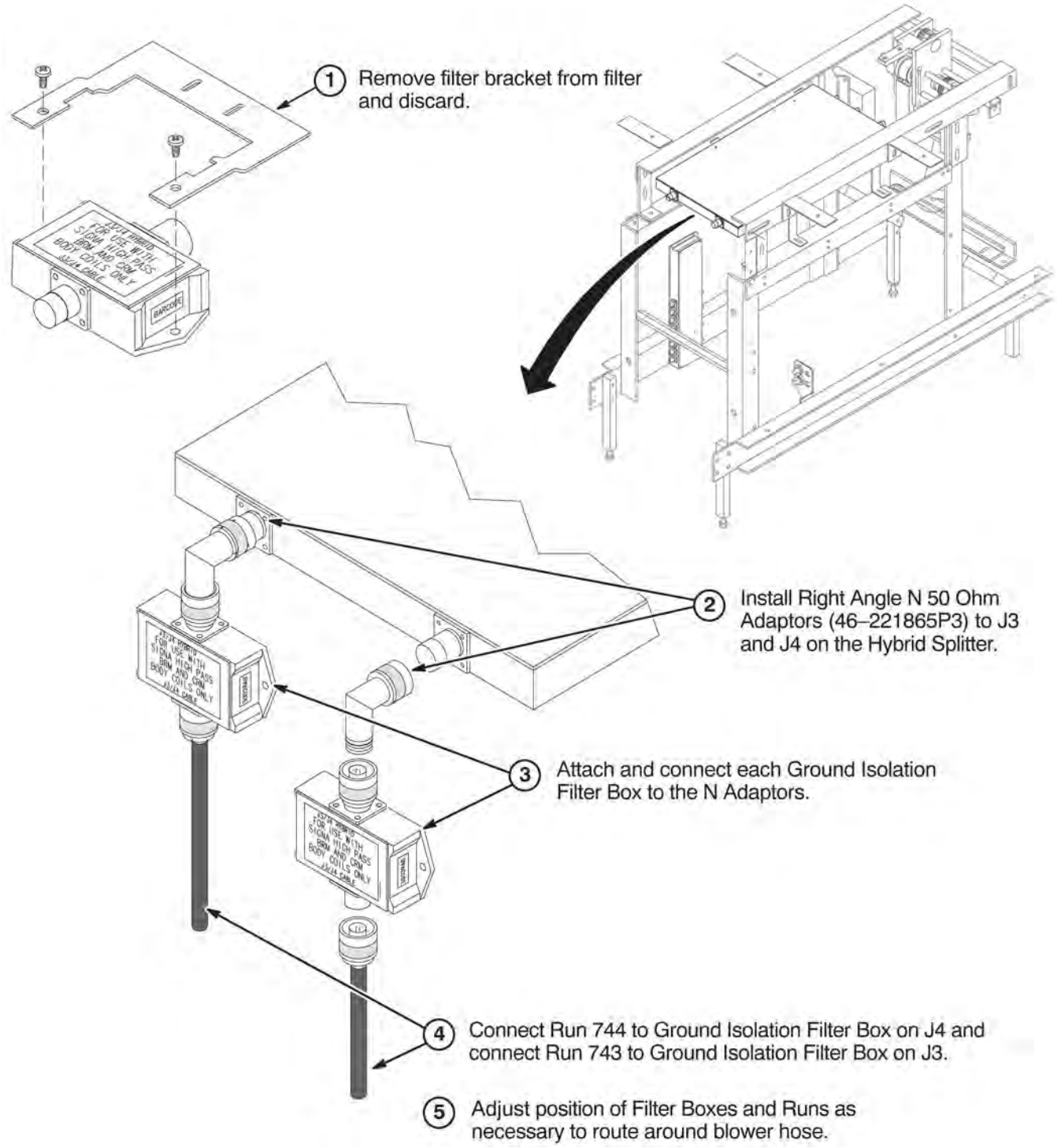
5.11.4 Install Bulkhead Interface



5.11.5 Install Filter Mount Asm and Isolation Filters to Body Hybrid Splitter

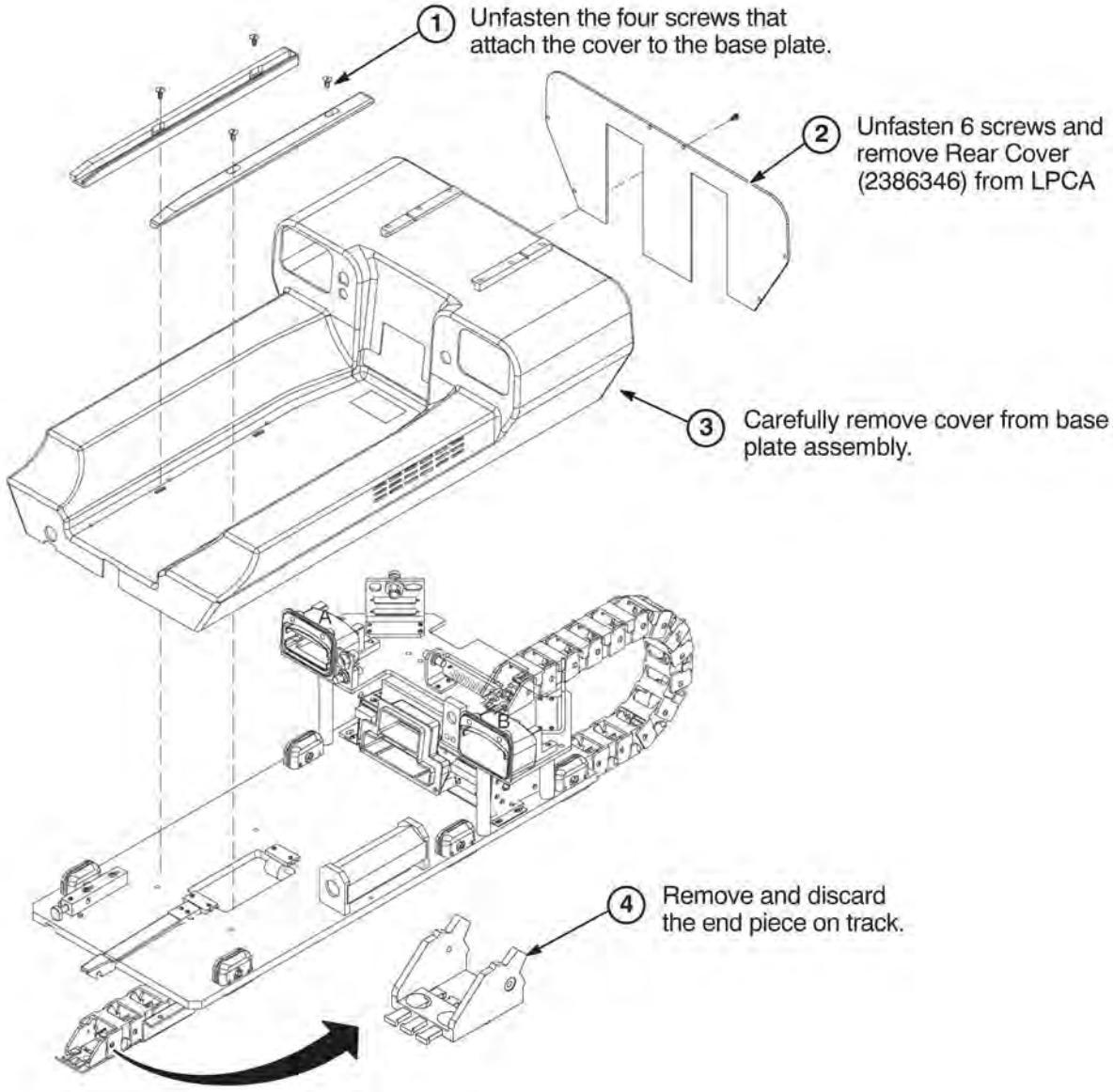


5.11.6 Alternative Ground Isolation Filter Installation for LCC Magnet with Horizon Enclosure

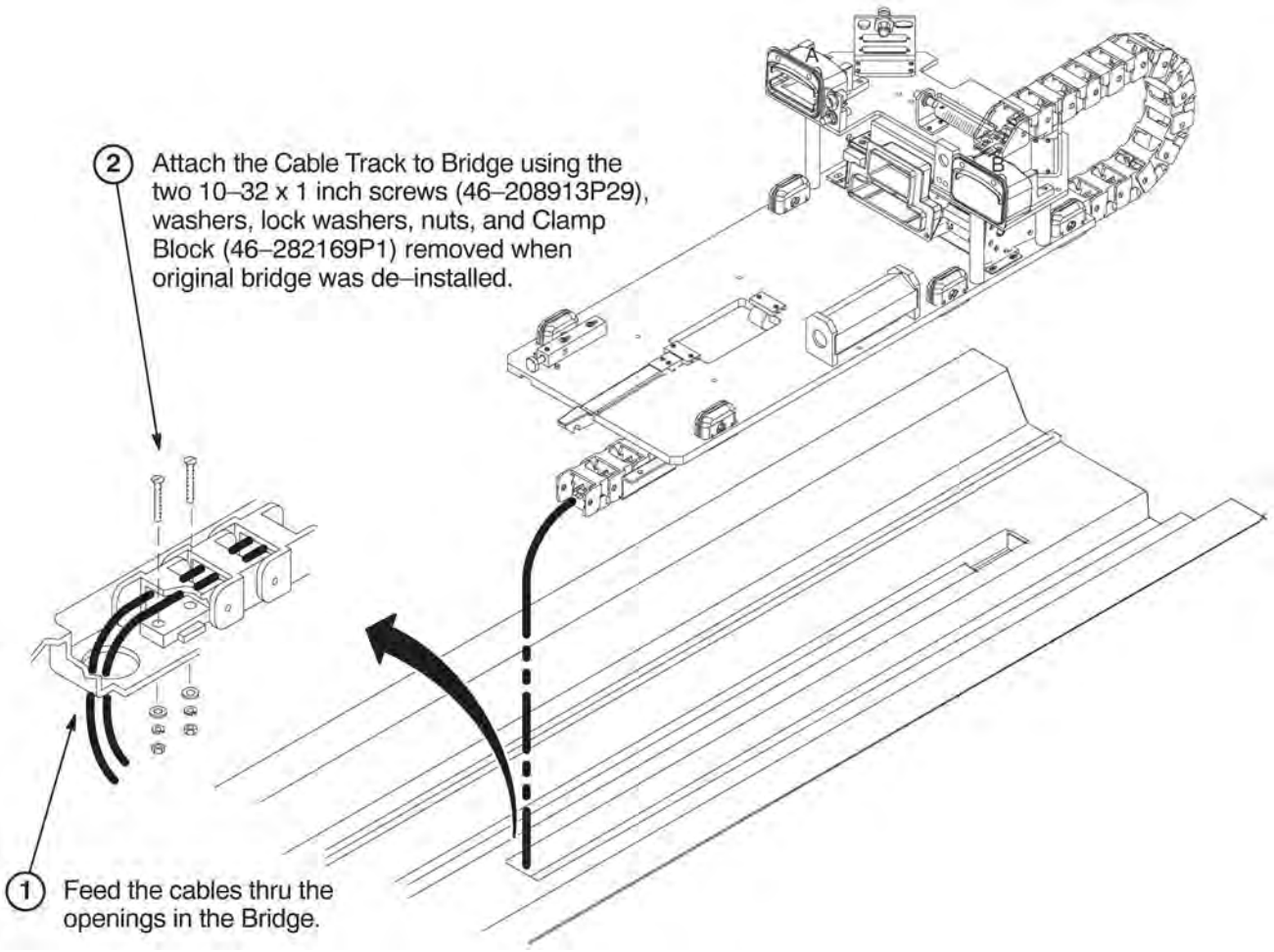


5.12 Install LPCA and Cable Track

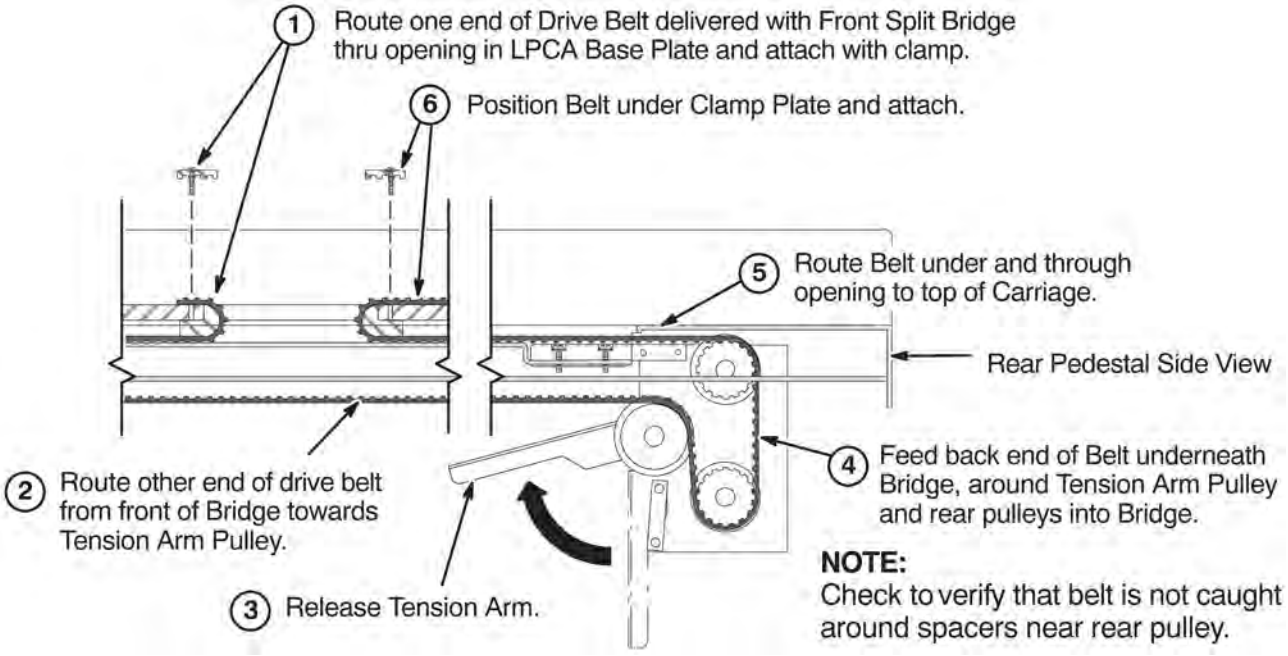
5.12.1 Remove LPCA Cover



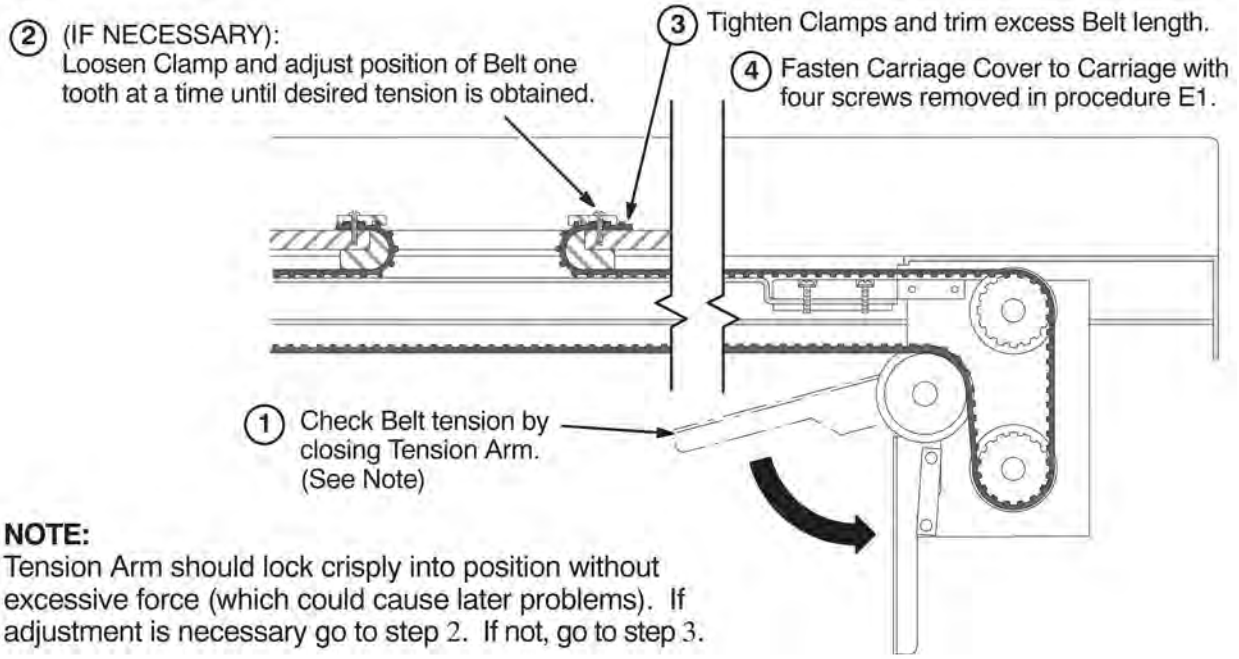
5.12.2 Attach Cable Track to Bridge



5.12.3 Route and Attach Drive Belt



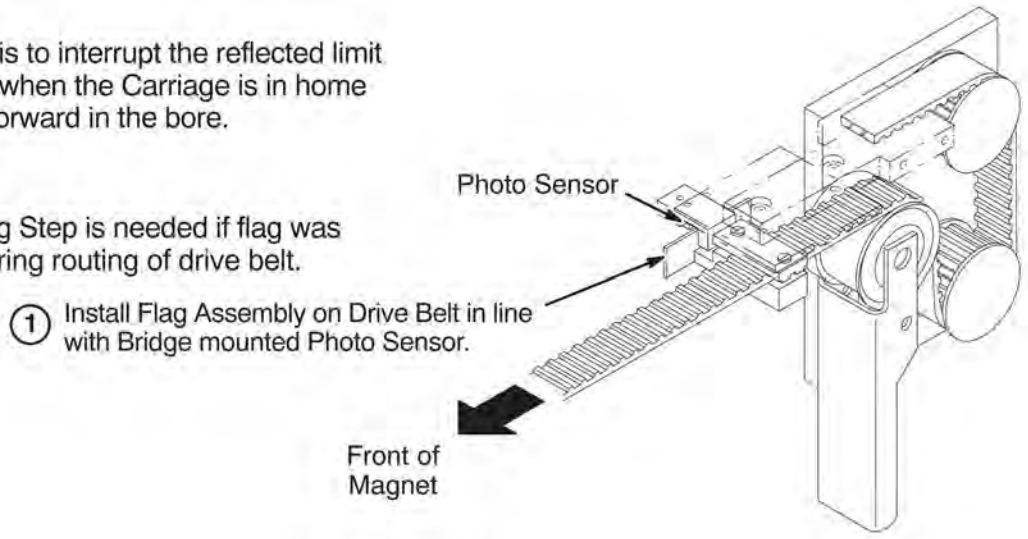
5.12.4 Final Adjustment of Drive Belt



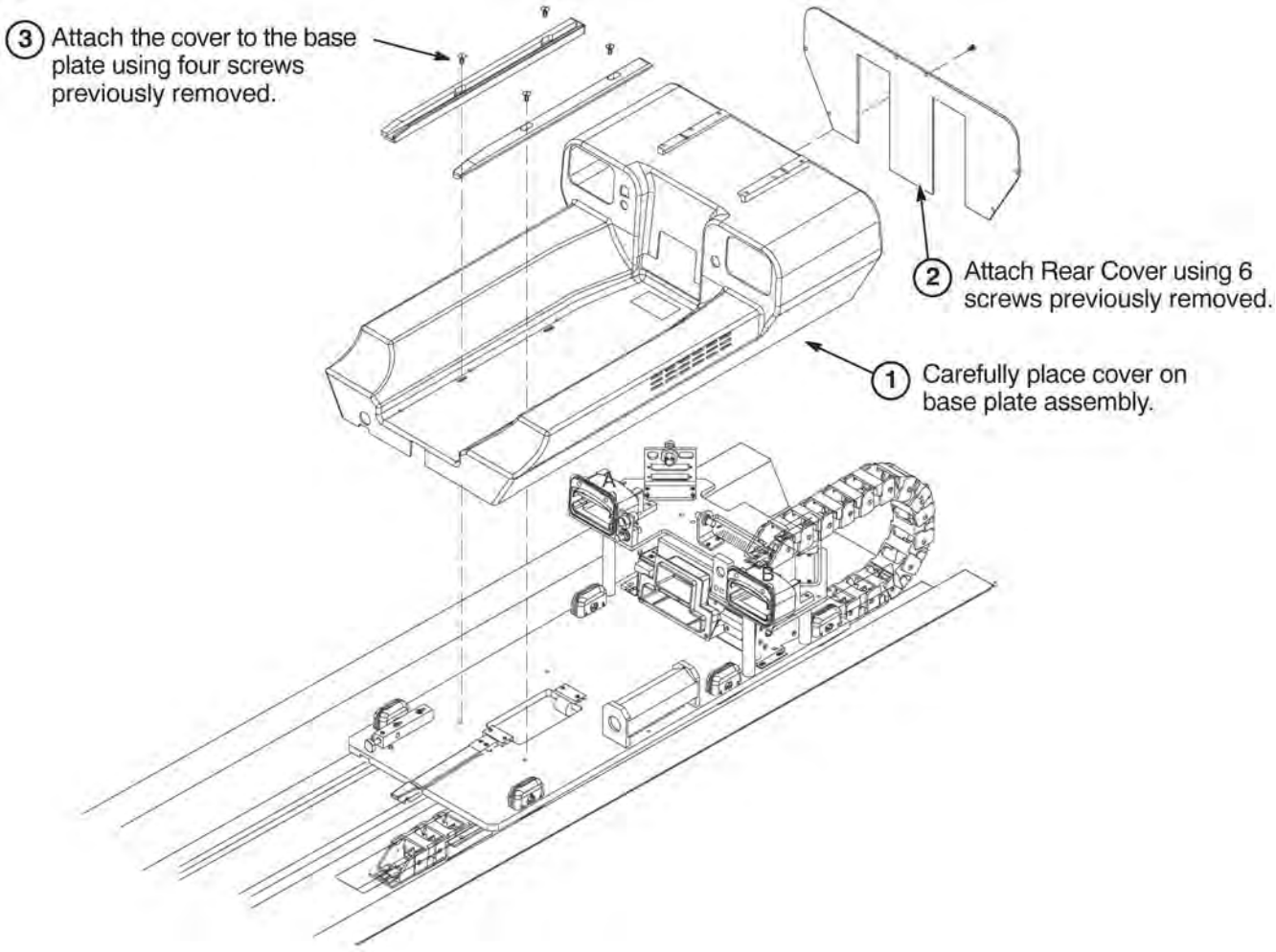
5.12.5 Installation of Sensor Flag

NOTE:
Function of the Flag is to interrupt the reflected limit switch sensor beam when the Carriage is in home position all the way forward in the bore.

NOTE:
The following Step is needed if flag was removed during routing of drive belt.



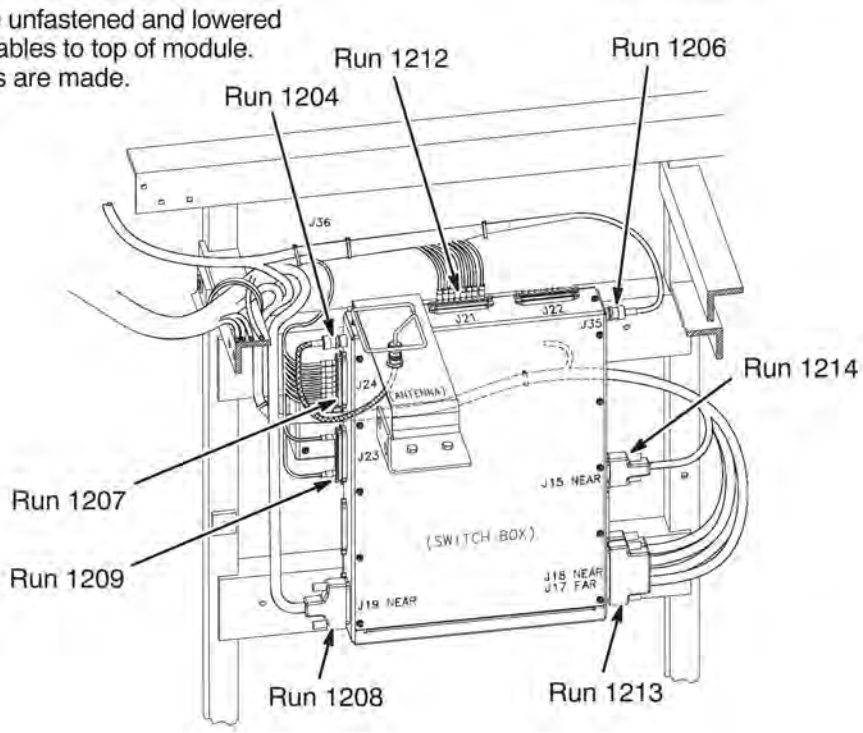
5.12.6 Installation of LPCA Cover



5.12.7 Connect Cables from Cable Track to 16 Channel Switch Module

(1) 16 Channnel Switch may need to be unfastened and lowered from mounting position to connect cables to top of module. Re–mount module after connections are made.

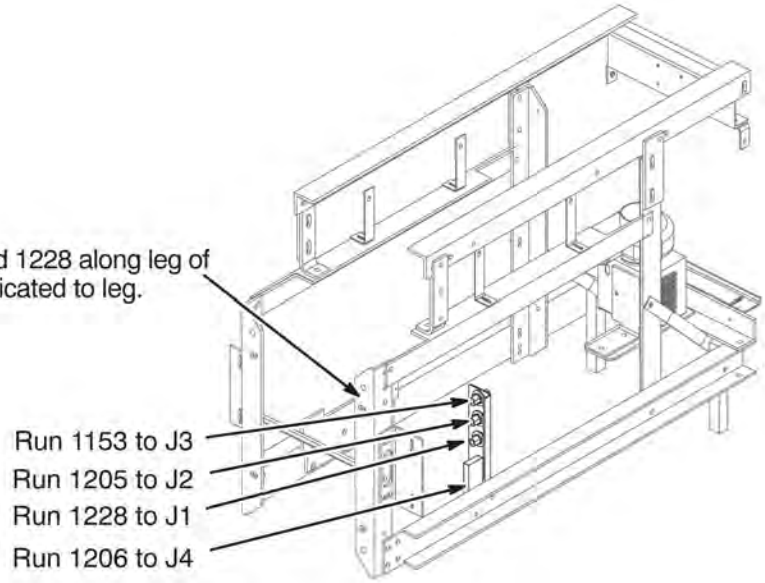
(2) Connect cable Runs as indicated.



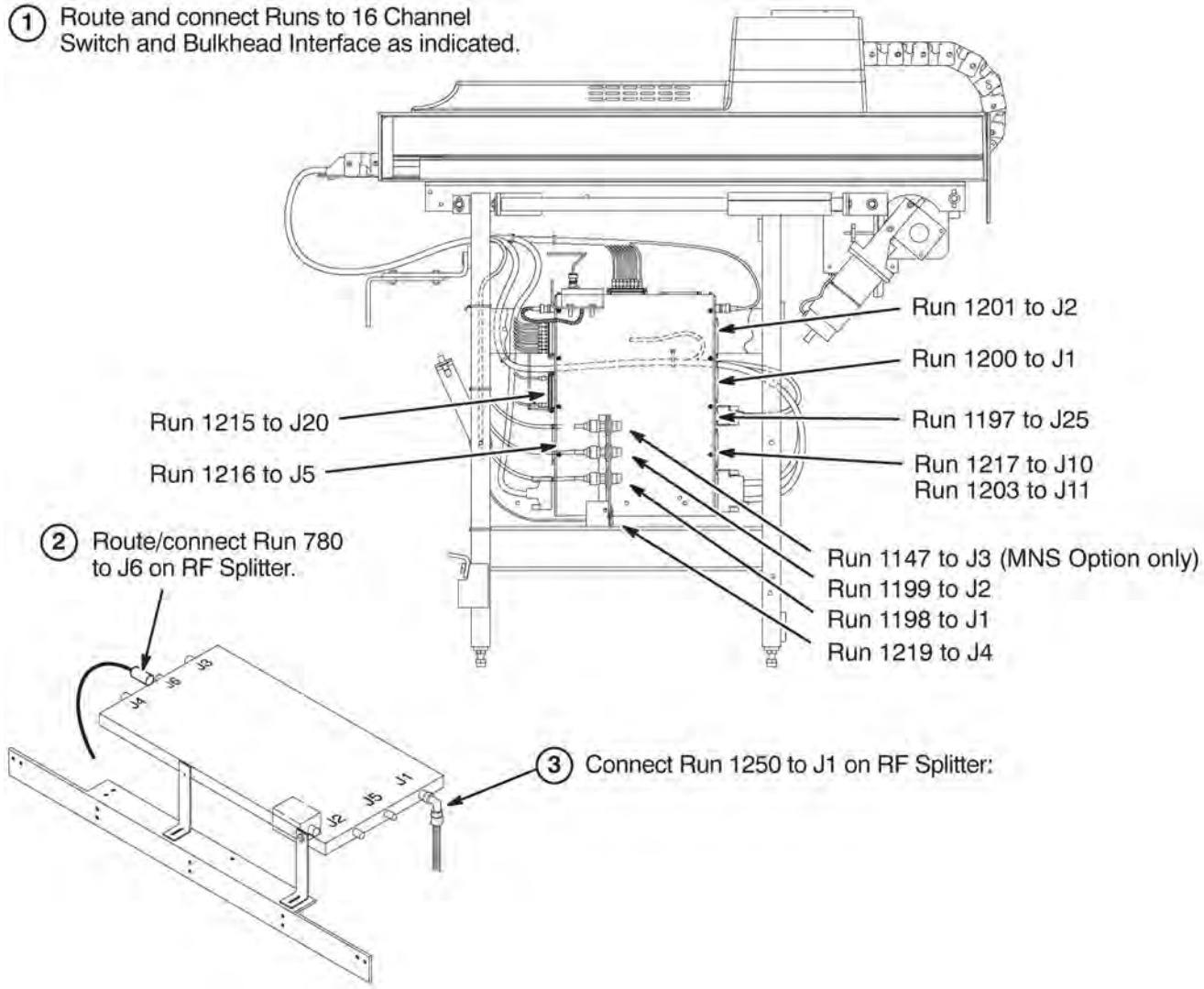
5.12.8 Connect Cables from Cable Track to Bulkhead Interface

(1) Route Runs 1153, 1205, 1206, and 1228 along leg of Rear Pedestal and ty–wrap as indicated to leg.

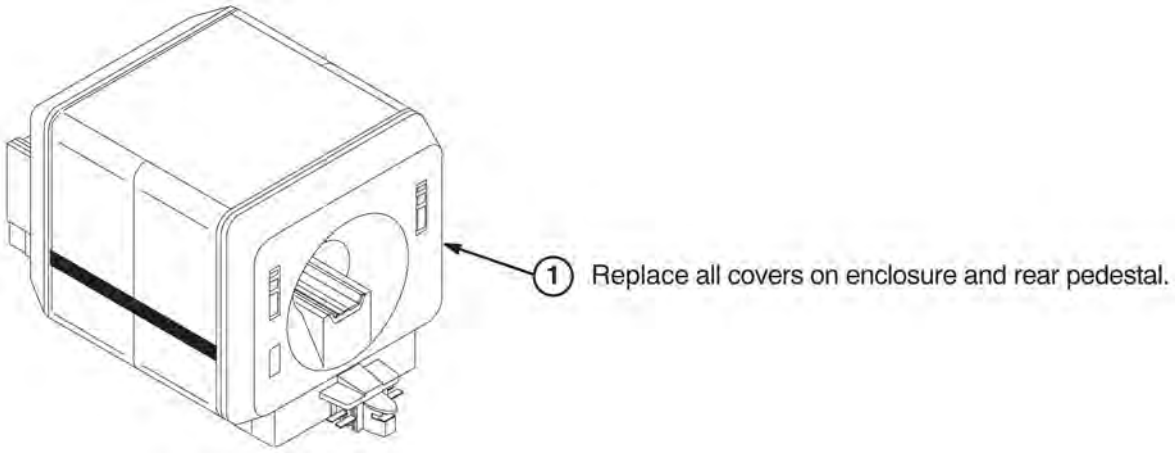
(2) Connect Runs to Bulkhead Interface as indicated.



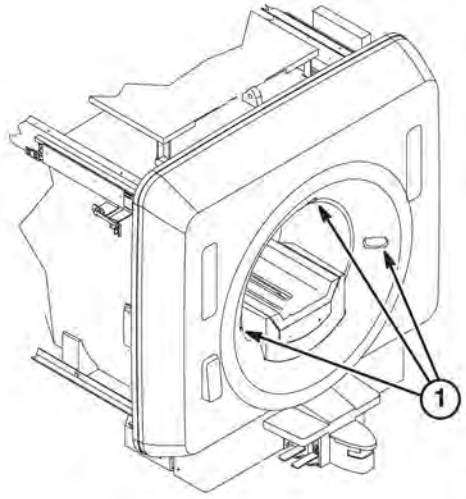
5.13 Connect Remaining Cables to Rear Pedestal



5.14 Install Covers



5.15 Install Laser Alignment Light Warning Labels



A sheet of Laser Alignment Light Warning Labels has been supplied with the magnet, attached to the magnet bridge.

The magnet enclosure is shipped with a label in English attached below each of the three laser lights.

For those sites which require a label other than English, peel off the appropriate label and affix over the English labels at the three laser light locations.

French

German

Portuguese

Spanish

Italian

Swedish

Japanese

Chinese

6 Times Microwave RF Cables Installation

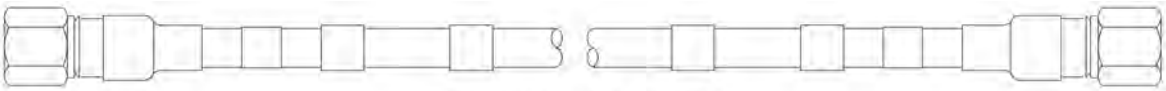
6.1 Cable Information

Two cables are to be created and other associated parts to be installed are provided for this procedure. Also provided is a Times Microwave stripping tool for the LMR 600 (2352193), and a Times Microwave cutting tool (5111565).

NOTICE

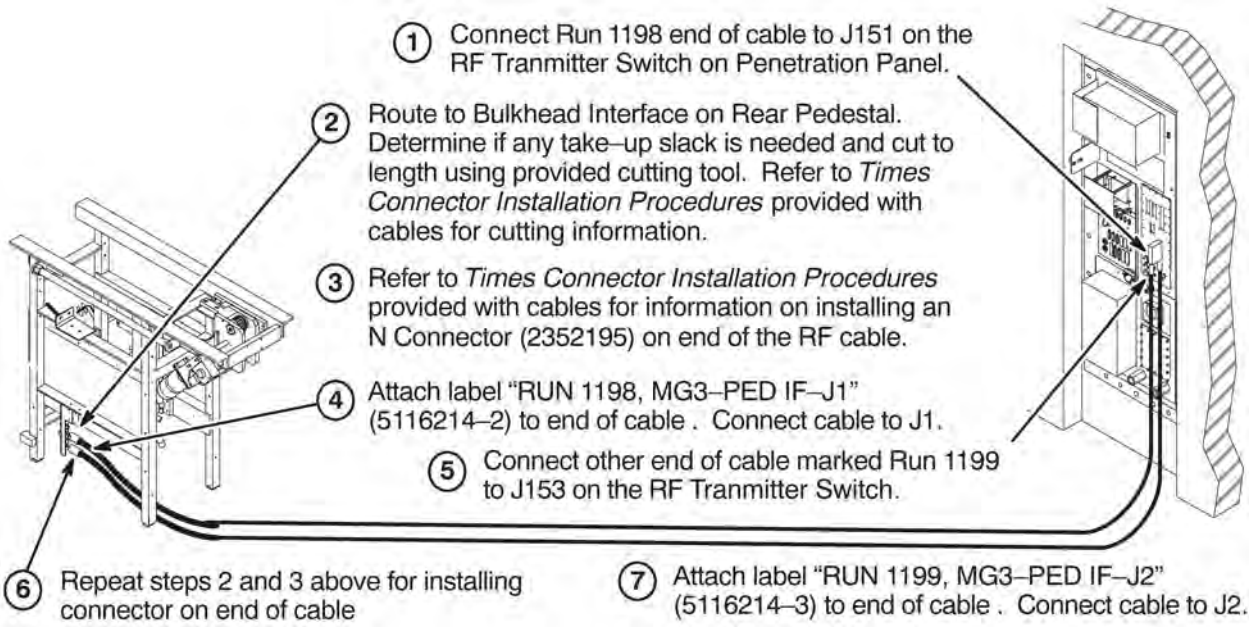
Do not subject LMR-600FR cable to a bend radius less than 3 inches (75mm). The cables will be permanently damaged if it is kinked by a bend radius less than the specified minimum.

Cable 5115915, will be cut to length to create two cables, Runs 1198 and 1199, and terminated for routing in the scan room. The remaining connectors, fasteners, and labels will be installed as directed in the following steps.



Run 1198 and Run 1199

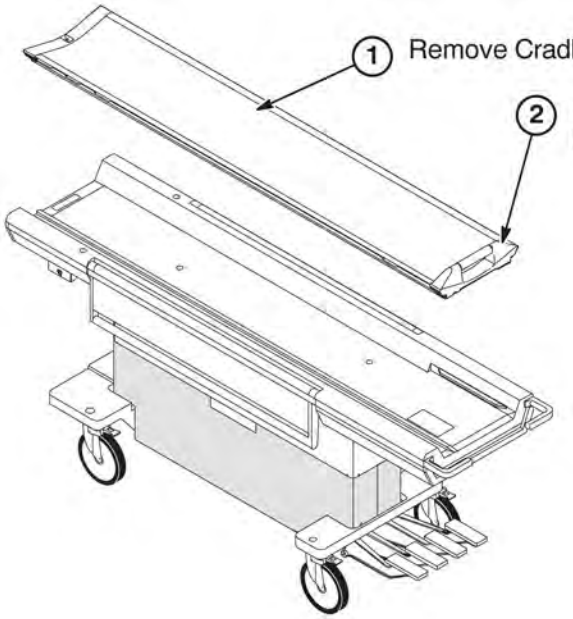
6.2 Route, Terminate, and Connect RF Cables



7 Patient Table Cradle Release Upgrade

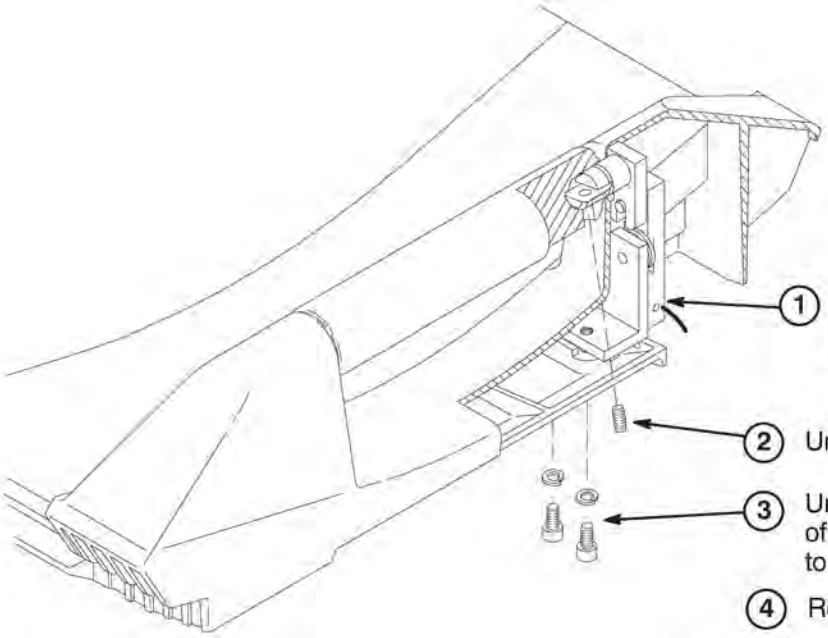
This upgrade is performed to improve the release mechanism and improve image quality.

7.1 Prepare Cradle for Upgrade



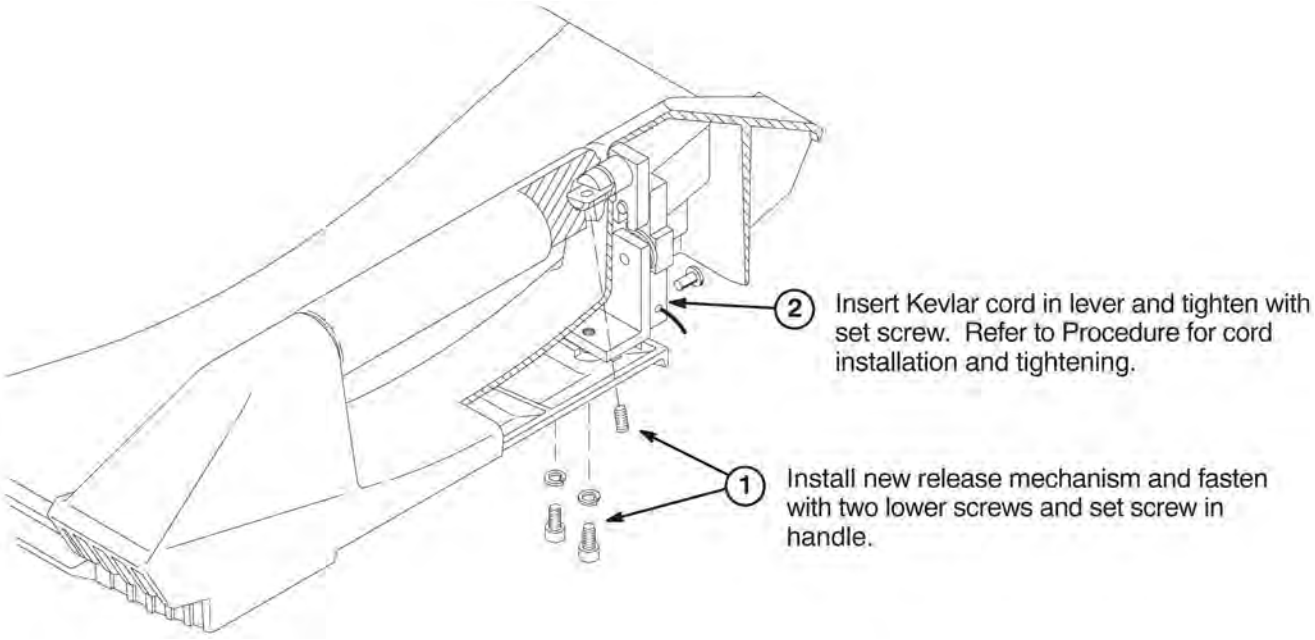
1. Remove Cradle from patient table.
2. Position Cradle to access release mechanism located under this corner of cradle.
3. The new mechnism is designed with two washers and two bushings inserted into the lever. The lever has also been widened in the center portion.

7.2 Remove Existing Release Mechanism

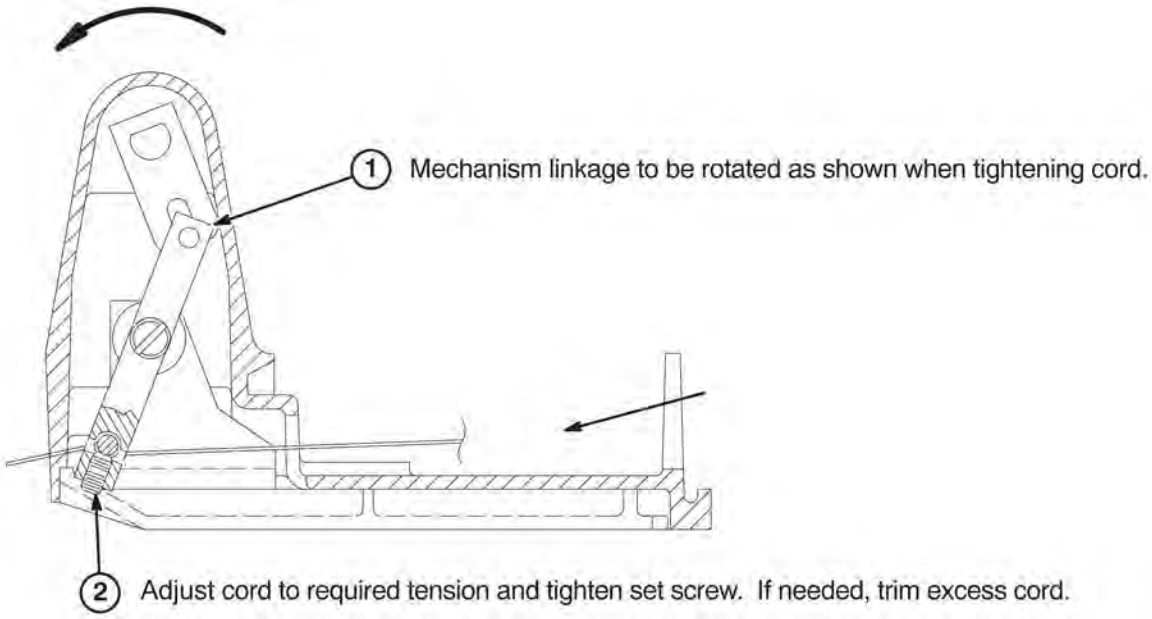


1. Unfasten set screw at bottom of lever and remove Kevlar cord from lever. Retain set screw and flat head rivet for transfer to new mechanism if required.
2. Unfasten set screw at bottom of cradle handle.
3. Unfasten two screws and washers at bottom of cradle that attach the existing mechanism to cradle.
4. Remove old release mechanism.

7.3 Install New Release Mechanism



7.4 Attach Cord



Chapter 7 Operator Workspace

1 Operator Workspace Upgrade Procedures

1.1 Introduction

A new Monitor, SCIM, and Keyboard will replace existing components on the Operator Workspace Table. Also, the new Temperature and Humidy kit will be installed along with the new Z400 computer.

A new Z400 computer is also installed for this upgrade. Depending on site requirements, there are two options for this computer upgrade. They are:

- A replacement of the existing GOC with a new GOC containing the Z400 computer. Refer to Section 1.2.
- A replacement of only the existing computer with the new Z400 computer. Refer to Section 1.3.

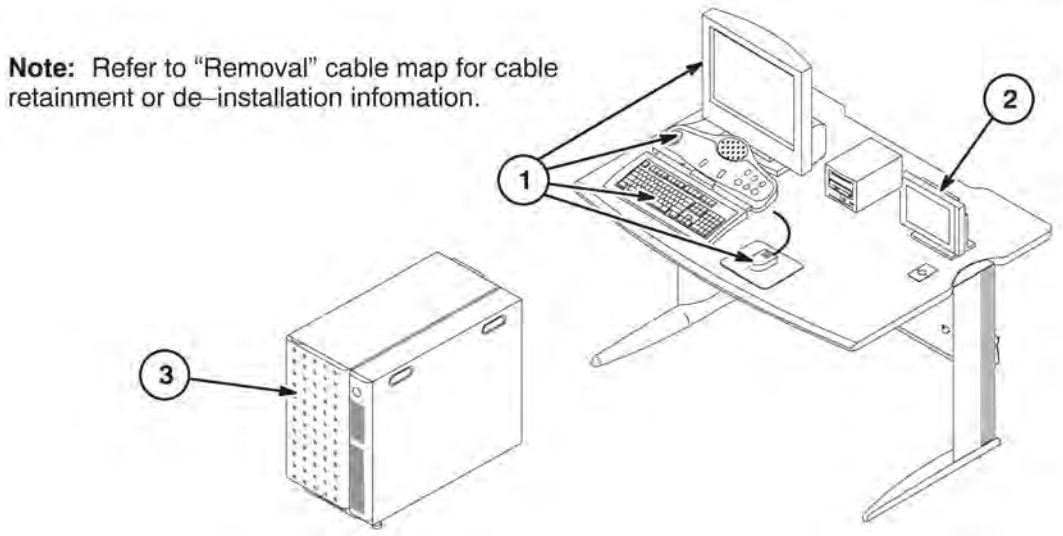
After completing one of the above options, continue the Operator Workspace upgrade with Section 1.4.

1.2 Install New GOC Containing Z400 Computer

1.2.1 De-install Operator Workspace Components

NOTICE

POWER TO SYSTEM MUST BE OFF, LOCKED AND TAGGED, BEFORE STARTING ANY UPGRADE PROCEDURES. REFER TO CHAPTER 3 FOR POWER OFF PROCEDURES.

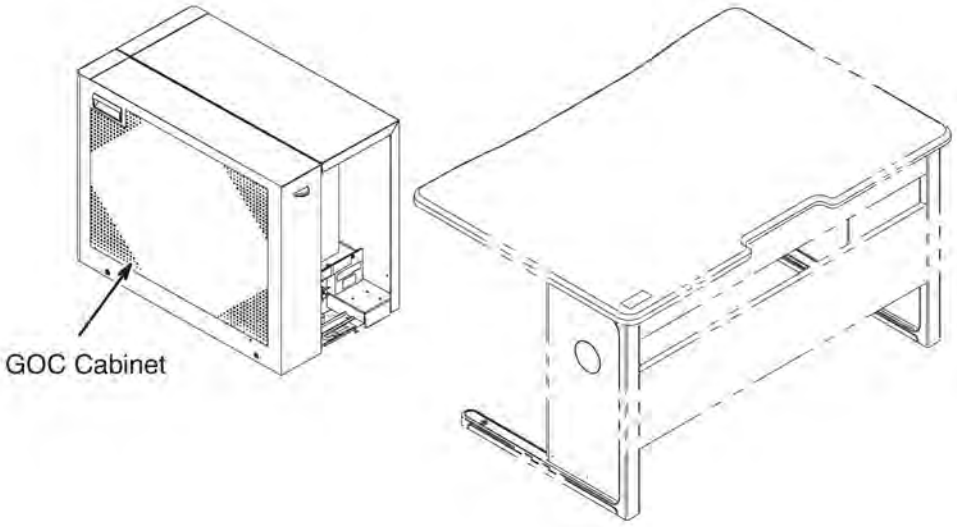


1. Existing Monitor including Runs 1063 and 1065, SCIM, Keyboard, and Mouse will be de-installed and returned for recycling.

   NOTE: If Run 1062 is connected to the SCIM, remove and return for recycling. Install new Run 2053 which is provided with this upgrade (A few early versions of the cable upgrade kit provided a new Run 1256, without the short cables for connecting the keyboard and mouse. If received at this site, relabel as Run 2053). If existing SCIM cable is Run 1256, retain and reconnect to new SCIM.

2. De-install LCD Display, Runs 1068 and 1069, and return for recycling.
3. Existing GOC will be replaced by a new GOC containing the Z400 computer:

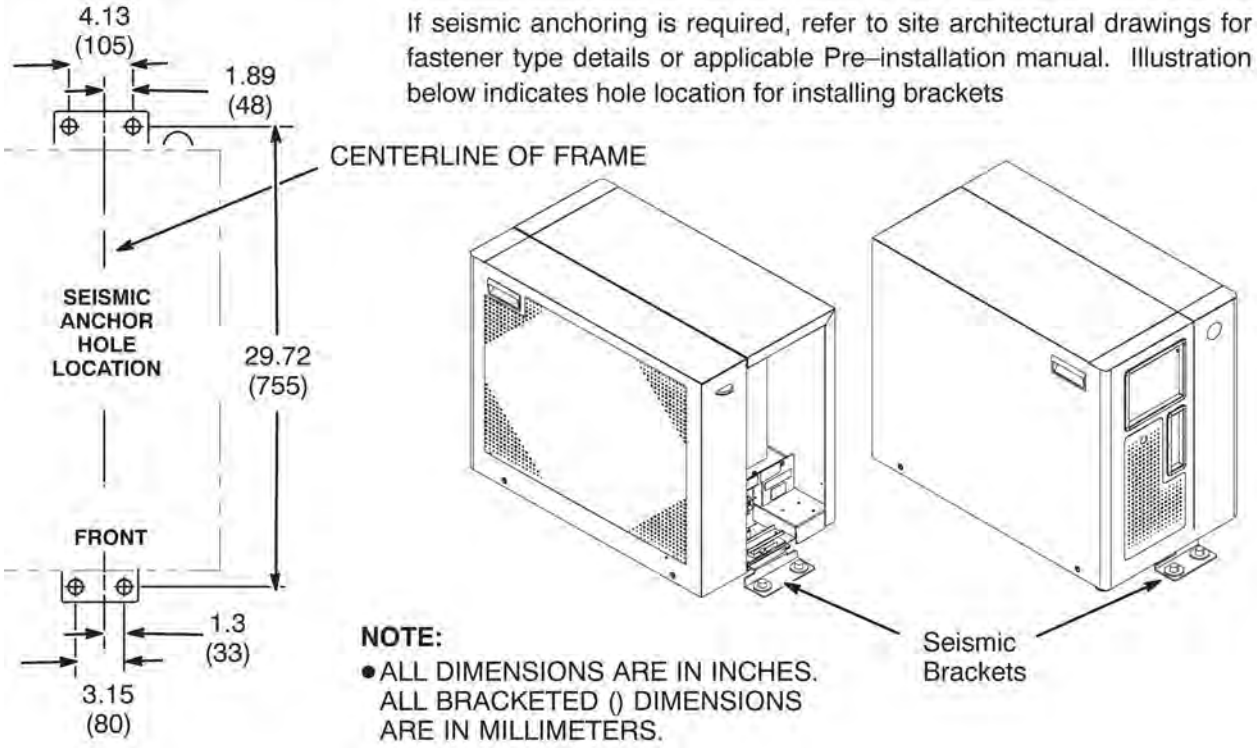
1.2.2 Position Computer Cabinet



Consult with Site customer for exact location of Global Operator Console (GOC). The location could be underneath the left or right side of the Operator Workspace table, or on the outside left or right side of the table.

1.2.3 Seismic Anchoring (If Required)

GOC Seismic Mount kit is shipped with GOC. Find kit inside of plastic bag.

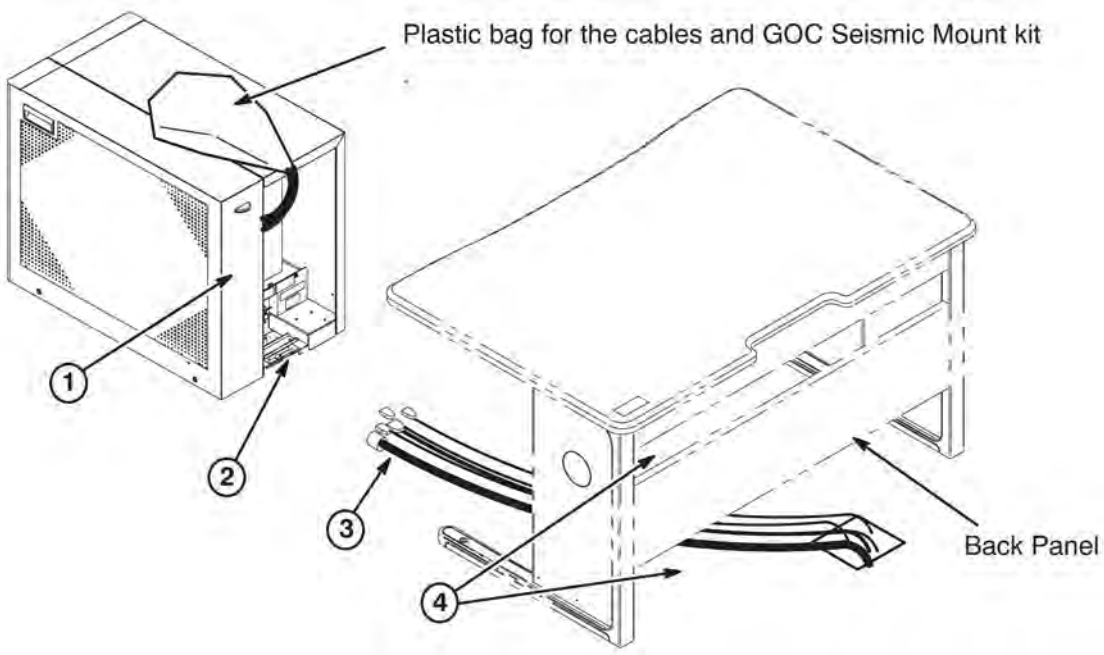


1.2.4 Computer Cabinet Cable Routing and Connections

The GOC (Computer) Cabinet is shipped with cables connected to the computer that will be routed and connected to equipment that will be installed on the top of the OW Table. The cables are:

- Two power cords
- One video ouput cable
- Keyboard output cable
- SCIM output cable
- SCSI output cable
- Modem output cable

These cables are already connected to the computer and routed thru the opening located at the top of the rear of the GOC cabinet as shown in the illustration below. The remainder of the cables to be connected to designated modules within the GOC Cabinet will have to be routed thru the lower opening.



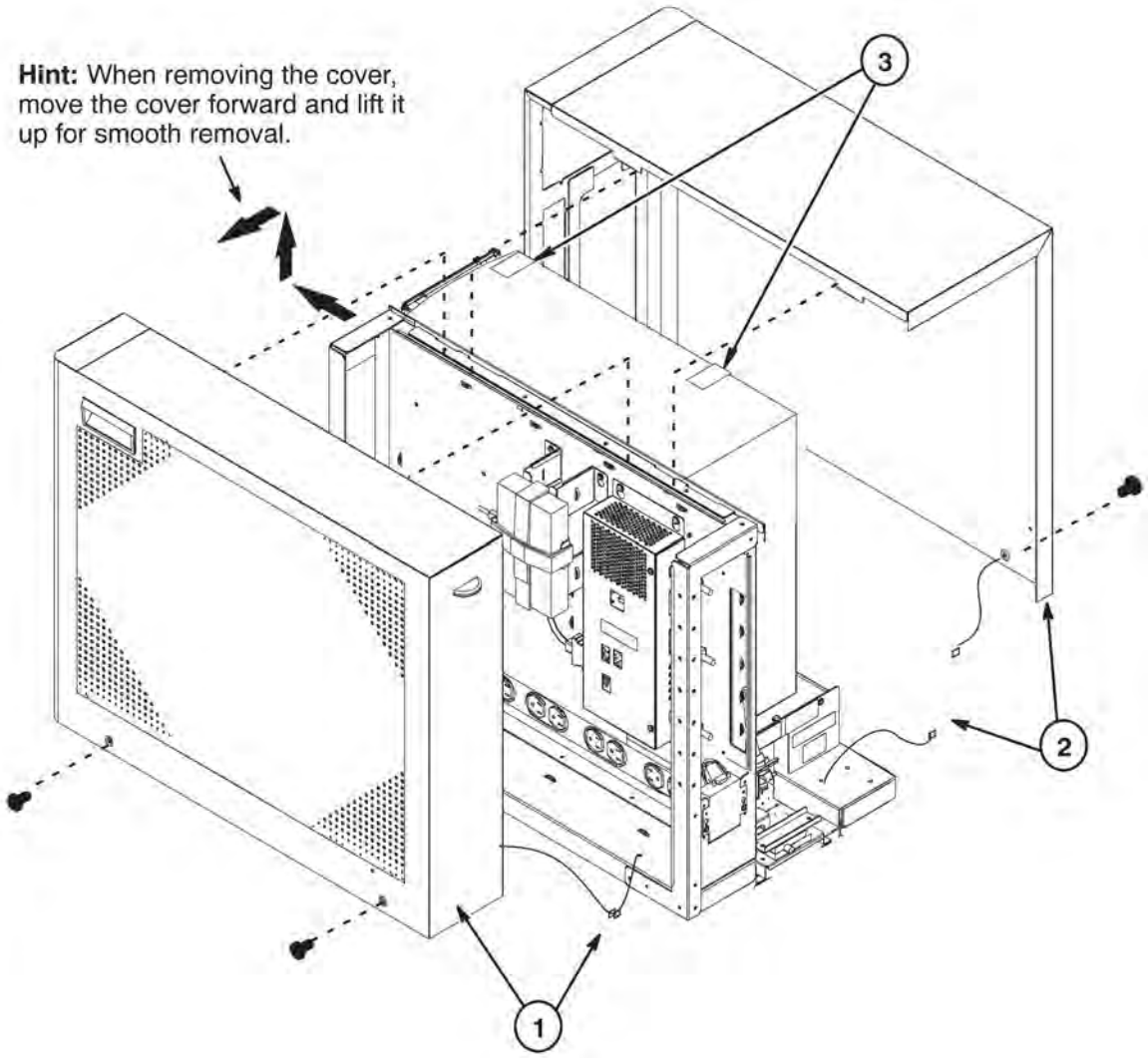
1. Runs 1064, 1070, E0015, E3045, E3046, E3047 and E3048 are pre-connected to computer and are routed at top of opening.

   (These cables are inside of plastic bag)

2. Runs 1381, 1085, 1255, 1371, power cord for the Patient Alert system, and any other option cables will be routed thru lower opening.
3. Route all cables before connecting any cables. Refer to cable map for connection information.

4. If GOC Cabinet is to be located under OW Table, the cable coming out of the top opening of the cabinet will be routed above the Back Panel. The cables coming out of the lower opening will be routed below the Back Panel.

1.2.5 GOC Cabinet Cover Removal



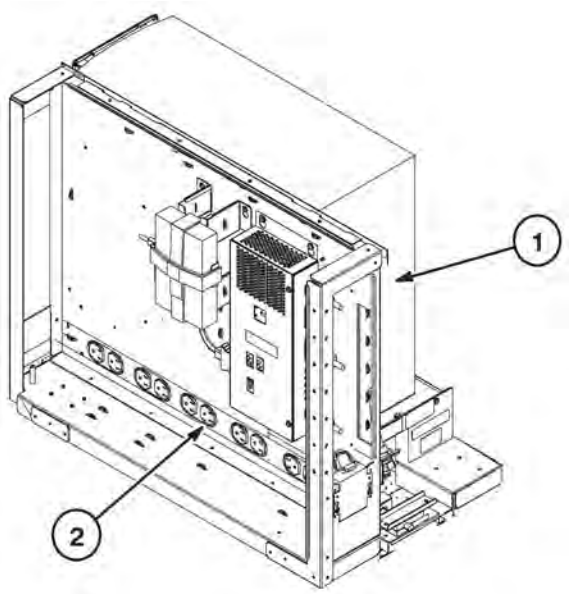
The Computer Cabinet covers need to be removed to access the cable connection points.

1. For right side cover, remove two screws and lift up. Disconnect Ground cable connector and remove the cover.
2. For left side cover, remove two screws and lift up. Disconnect Ground cable connector and remove the cover.

   NOTE: A ground wire is connected to each side cover. Use care when removing side covers.
3. Peel the two shipping tapes off from PC.

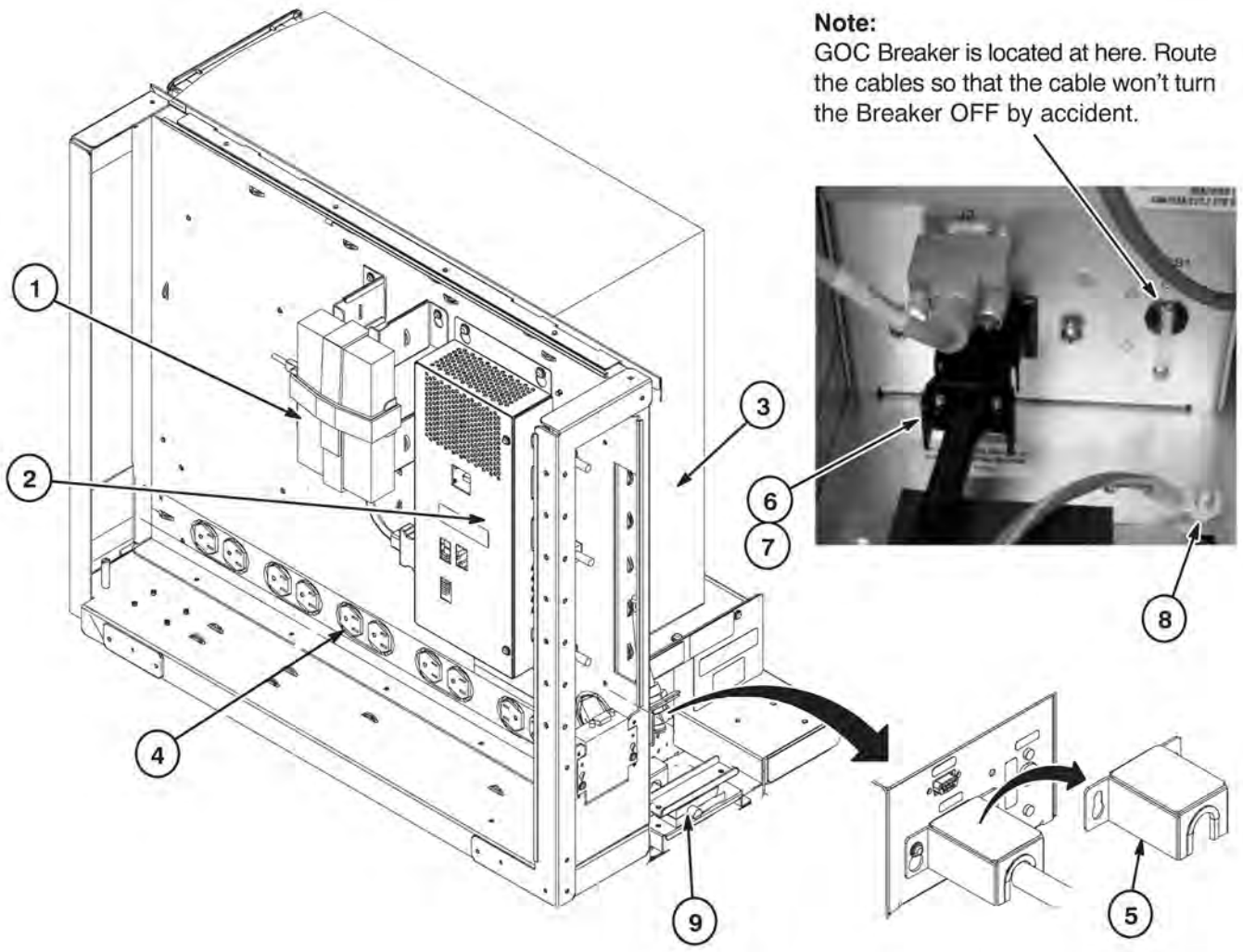
1.2.6 Install Modem Cable to GOC Cabinet (If Applicable)

If Modem is part of system installation or upgrade, it will be placed on Operator Table or GOC.



1. Modem cable to the Linux PC is provided. Connect Run E3045 to Modem.
2. Modem power cord must be connected to J7 on GOC PDU Module. Route this cable to the rear top of the GOC Cabinet.

1.2.7 GOC Cable Connections



Refer to cable map for information on cables to be connected through lower area of rear opening.

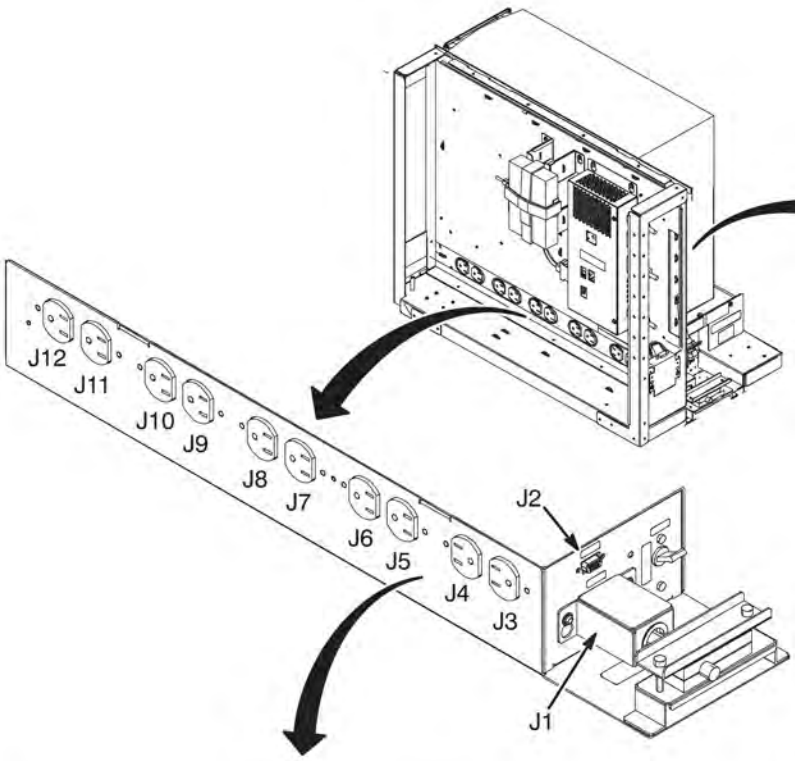
1. Route and connect Ethernet cables to Lan Hub.

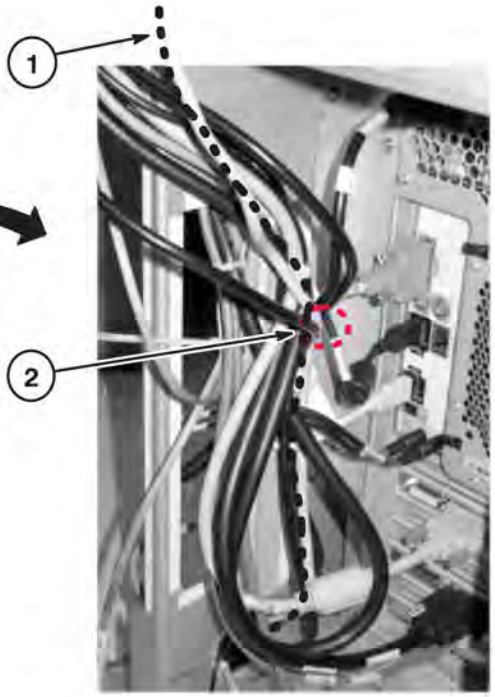
   NOTE: Use ports 3, 7 or 8 for connecting site ethernet cables such as AW. Don not use any other ports for site ethernet cables.

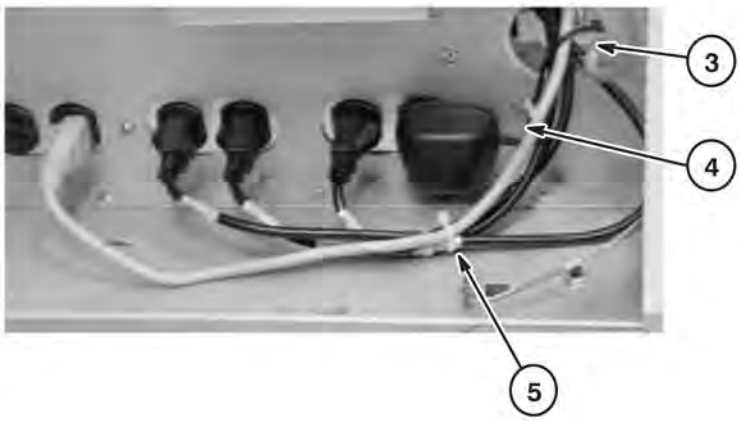
2. Connect Run 1085 to J7 and Run 1255 to J18 on GOC AA.
3. Refer to Section 8-2-9 for all cables connected to Linux PC computer.
4. Refer to for power cable connections to GOC PDU. Make sure Patient Alert power is connected to J3. If Modem is installed, power cable is connected to J7.
5. Before connecting GOC power cable Run 1381 to J1, loosen screws and remove cover.
6. Route and connect GOC power cable Run 1381 to J1 on PDU.

7. Confirm that GOC Power Cable is firmly connected to J1 by pulling the cable once. Re-install cover removed in Step 5 after connecting cable and tighten screws.
8. Connect Run 1382 to GND. Make sure nut securing GND cable is firmly tightened to GND stud.
9. Tighten clamp to secure cables in place.

1.2.8 Power Cable Connections







POSITION	NAME
J1	GOC Input
J2	GOCAA
J3	Patient Alert
J4	Host Computer
J5	Host LCD
J6	SCSI Tower
J7	Modem
J8	
J9	LAN Hub
J10	
J11	
J12	One Wire Hub

The illustration shows the power cable connection locations to the power strip in the GOC cabinet. Make sure power cables are attached as shown.

Also refer to cable map for information on power cable connections to OW1-PDM.

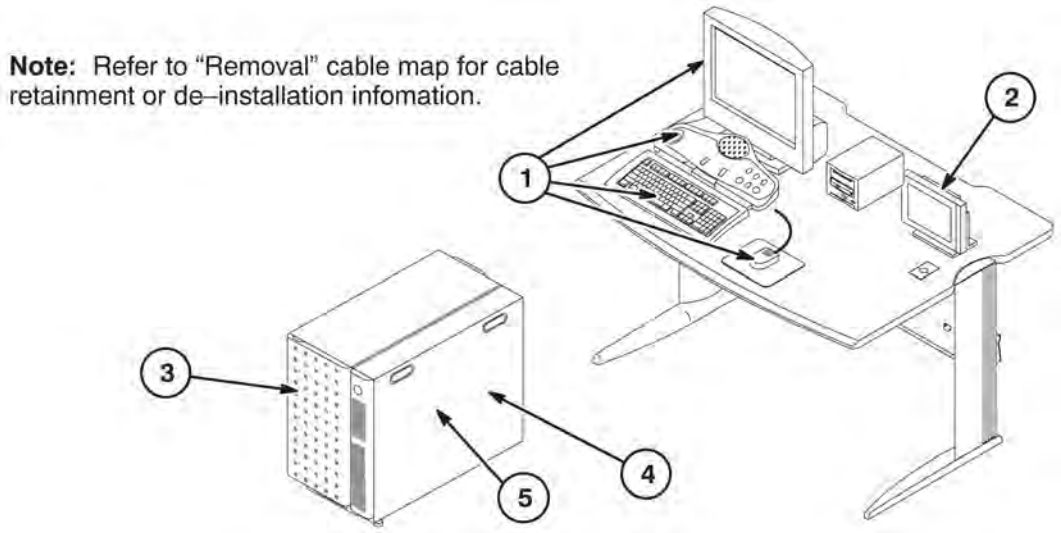
1. If Modem is installed, route power cable and connect to J7.
2. Tie-wrap point for Modem power cable.
3. Route power cables connected to J3 through J7 through access hole.
4. route and connect Patient Alert power cable to J3 and tie-wrap at this point.
5. Tie-wrap power cables J4 to J7 at this point.

1.3 Install New Z400 Computer in Existing GOC

1.3.1 De-install Operator Workspace Components

NOTICE

POWER TO SYSTEM MUST BE OFF, LOCKED AND TAGGED, BEFORE STARTING ANY UPGRADE PROCEDURES. REFER TO CHAPTER 3 FOR POWER OFF PROCEDURES.



1. Existing Monitor including Runs 1063 and 1065, SCIM, Keyboard, and Mouse will be de-installed and returned for recycling.

   NOTE: If Run 1062 is connected to the SCIM, remove and return for recycling. Install new Run 2053 which is provided with this upgrade (A few early versions of the cable upgrade kit provided a new Run 1256, without the short cables for connecting the keyboard and mouse. If received at this site, relabel as Run 2053). If existing SCIM cable is Run 1256, retain and reconnect to new SCIM.

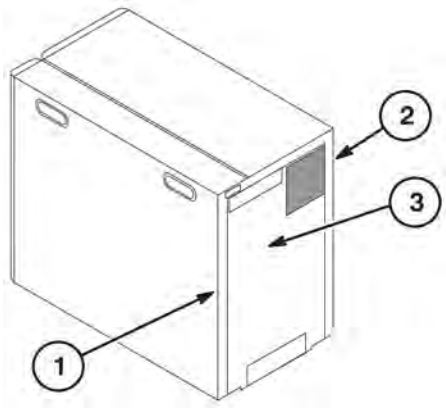
2. De-install LCD Display, Runs 1068 and 1069, and return for recycling.
3. Existing PC computer in the GOC will be replaced by a new computer:
   - If the existing GOC is old style (screws securing covers from rear), secure the new PC using straps.
   - If the existing GOC is new (screws securing covers from side), the new PC must be secured to the GOC using the conversion kit, part number 5389531.
4. The GOC AA module has been delivered as part of the upgrade kit.
   - If the existing GOC already has a GOC AA module installed, the new GOC AA is not required.
   - If the existing GOC has a WIM installed, it must be replaced by the new GOC AA module.

5. An 8-Port 10/100/1000 Mbps Gigabit Etherent Switch has been delivered as part of the upgrade kit.
   - If the existing GOC already has this Switch installed, the new Switch is not required.
   - If the existing LAN Hub Switch is an 8-Port 10/100, then it must be replaced by the new10/100/1000 Switch.

1.3.2 GOC Cabinet Cover Removal

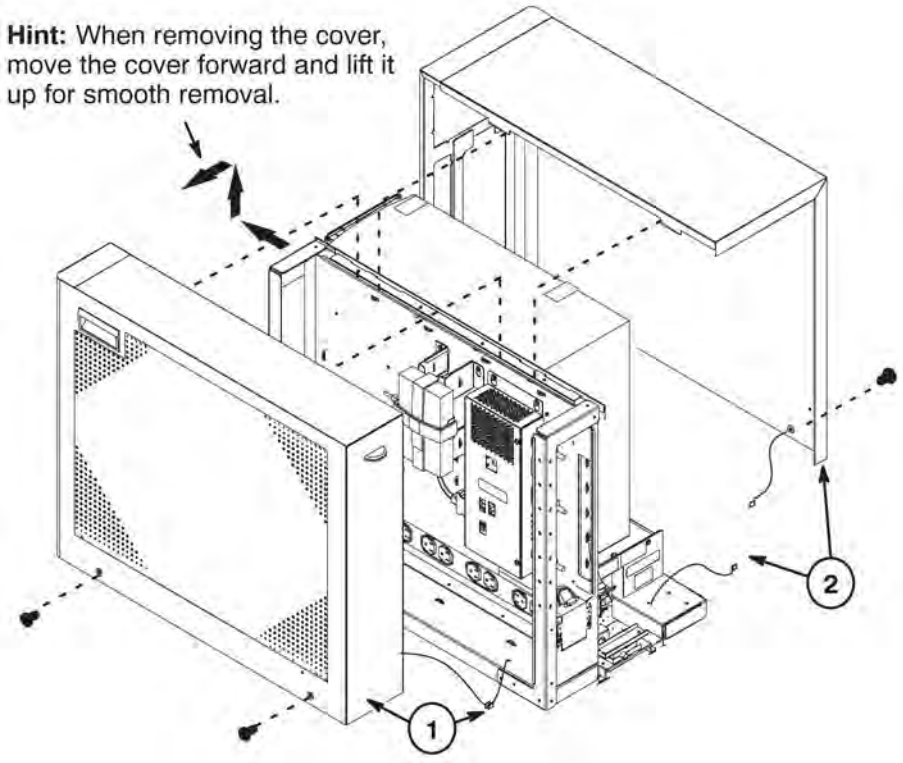
The Computer Cabinet covers need to be removed to access the cable connection points.

1.3.2.1 Older Style GOC Covers



1. For right side cover, remove three screws at rear of cover, slide toward rear of cabinet and then lift up.
2. For left side cover, remove four screws at rear of cover, slide toward rear of cabinet and then lift up.
3. Loosen four screws holding the back cover. Lift and remove cover.

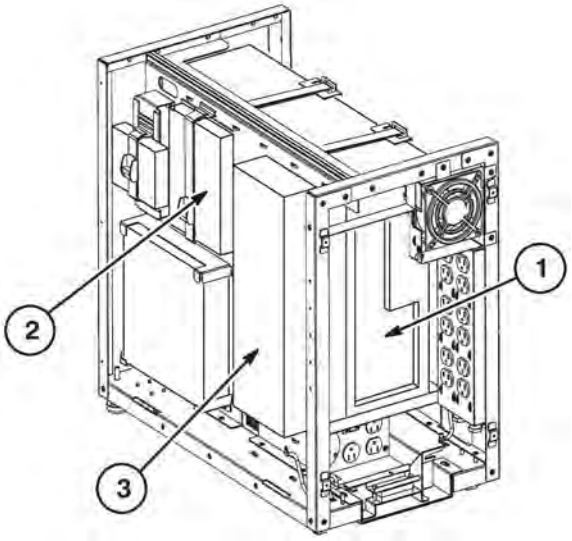
1.3.2.2 Newer Style GOC Covers



NOTE: A ground wire is connected to each side cover. Use care when removing side covers.

1. For right side cover, remove two screws and lift up. Disconnect Ground cable connector and remove the cover.
2. For left side cover, remove two screws and lift up. Disconnect Ground cable connector and remove the cover.

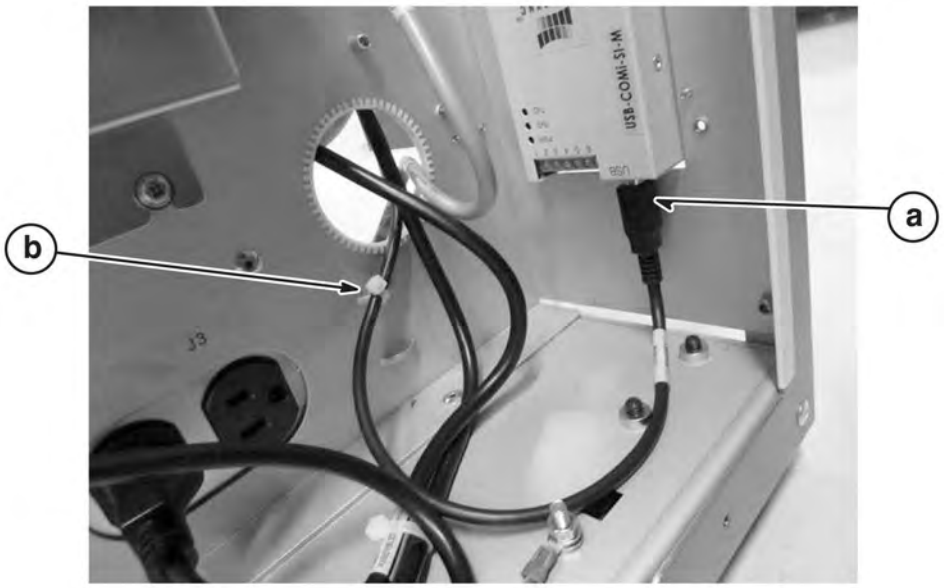
1.3.3 GOC Component Replacement



Refer to applicable cable removal map for de-installation of existing cables that will be replace by new cables. The cable maps also show which cables will be disconnected from existing components and reconnected to new components.

1. Disconnect all cables from existing computer. Make sure they are properly labeled.
2. If required, replace existing LAN Hub Switch with new 10/100/1000 Mbps Gigabit Ethernet Switch (5139480-2).
3. If required, replace existing WIM with new GOC AA module (2395043).

1.3.4 Installation of New GOC Components



1. Replace the Host to USB-Serial Converter USB Cable.

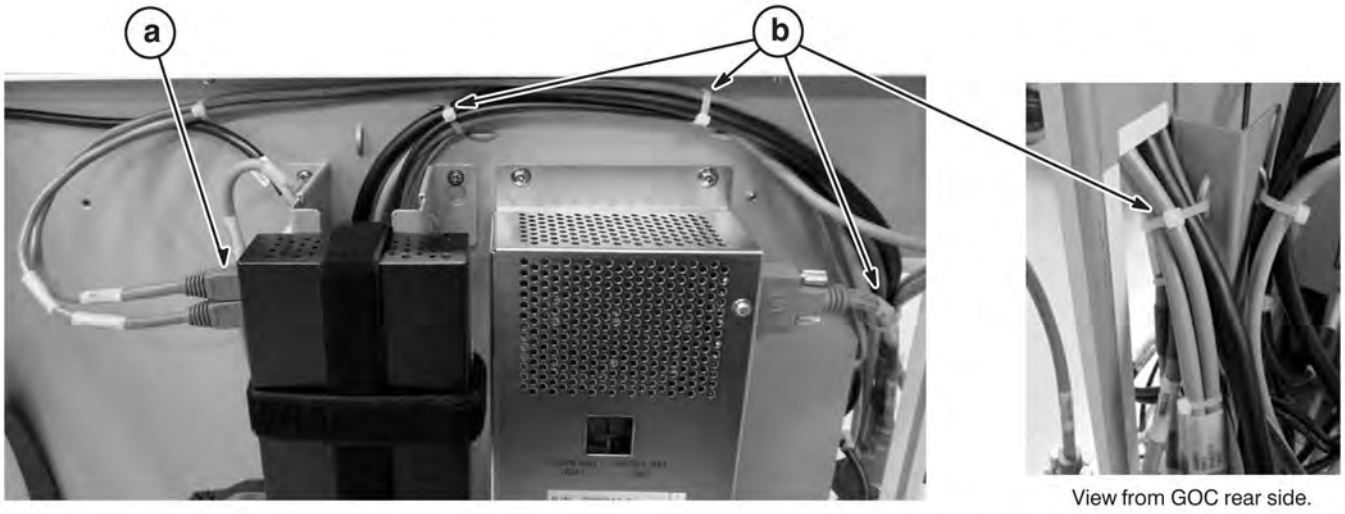
a. Replace the Host to USB-Serial Converter USB Cable with the new cable (5330295-2) supplied in the Conversion Kit.

b. Cut and restore tie-wrap(s) as required during cable replacement.

2. Replace the Audio Cable Assembly.

   a. Replace the Audio Cable Assembly, connected to J12 and J14 on GOCAA with the new cable (5330301) supplied in the Conversion Kit.

   b. Cut and restore tie-wrap(s) as required during cable replacement.



View from GOC rear side.

3. Replace the Host-Hub Ethernet Cable.

   a. Replace the Ethernet Cable between the Host and Port 1 of Ethernet Switch Hub with the newEthernet Cable (5330309) provided in the Conversion Kit.

   b. Cut and restore tie-wrap(s) as required during cable replacement.

1.3.5 GOC Computer Replacement

Dependent on model of Host PC Computer being replaced, there are two different procedures for upgrading to a Z400 computer.

- For sites with an existing older style GOC, refer to for upgrade instructions.
- For sites with an existing newer style GOC, refer to for upgrade instructions.

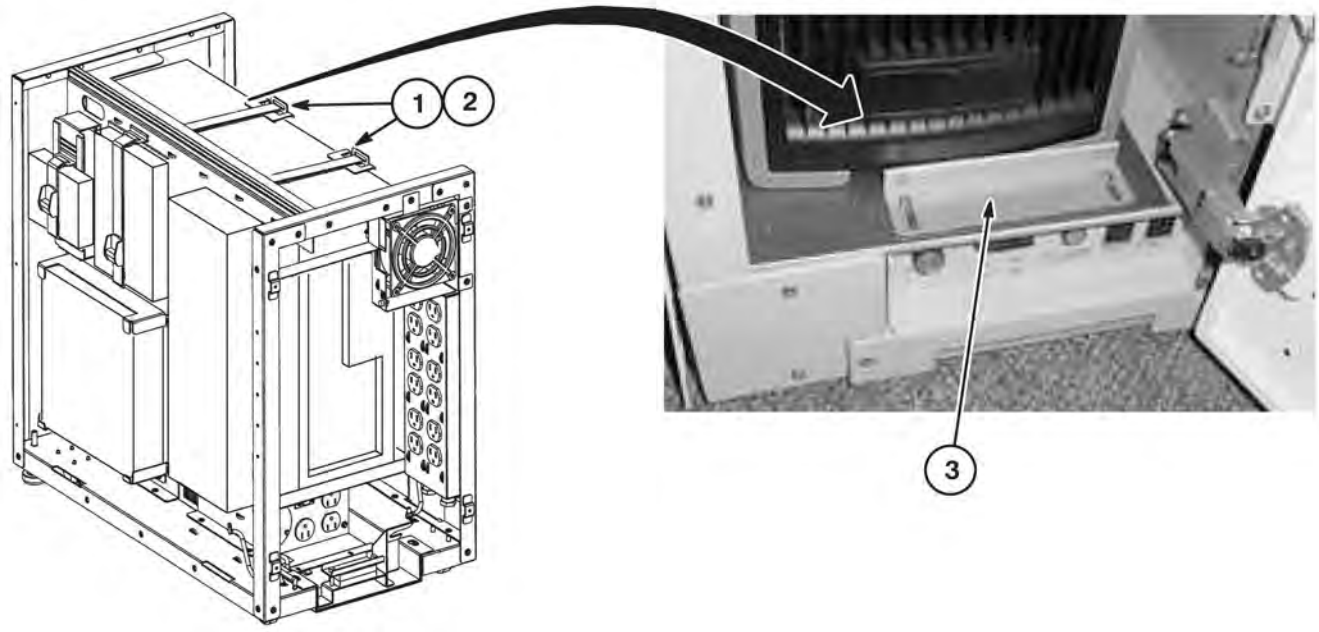
NOTICE

XW8000, 8200, 8400, or 9300 PC internal hardware, such as any hard drive, is not compatible with the Z400 computer. Do not attempt to transfer any internal hardware between any of these and the Z400 computer.

⚠CAUTION

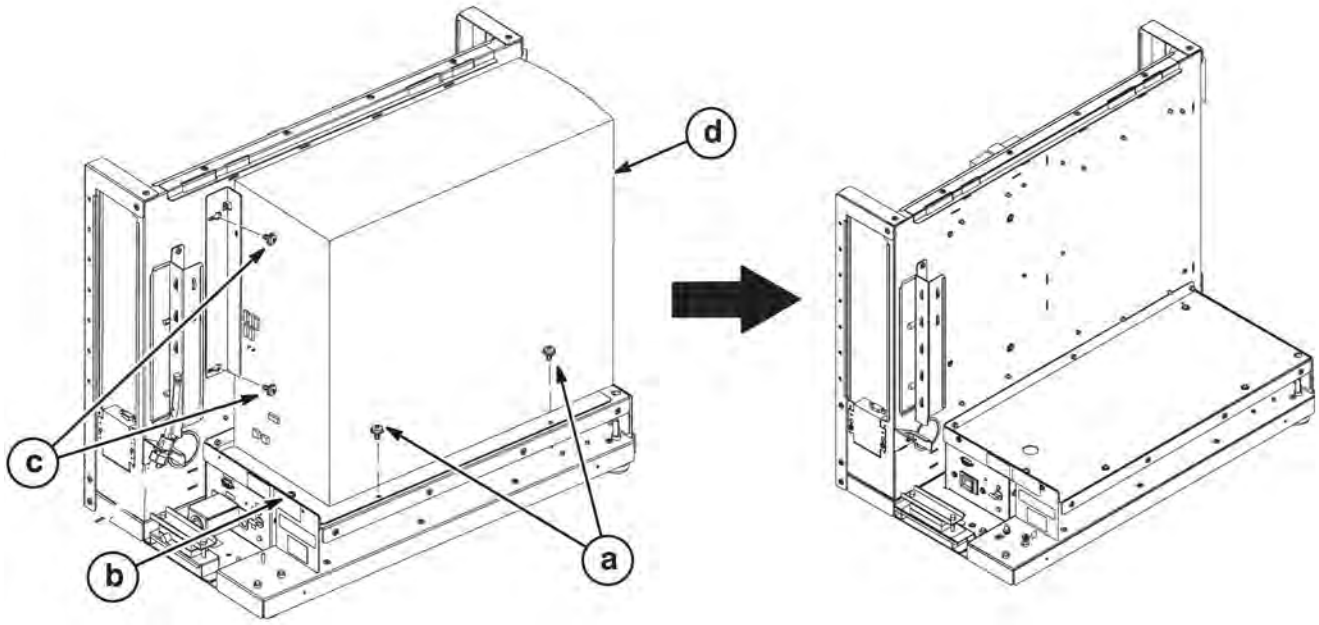
Possible Muscle Strain!
The computer weighs about 50 pounds (23Kg).
This requires two people to handle the computer.

1.3.5.1 Computer Replacement in Old Style GOC

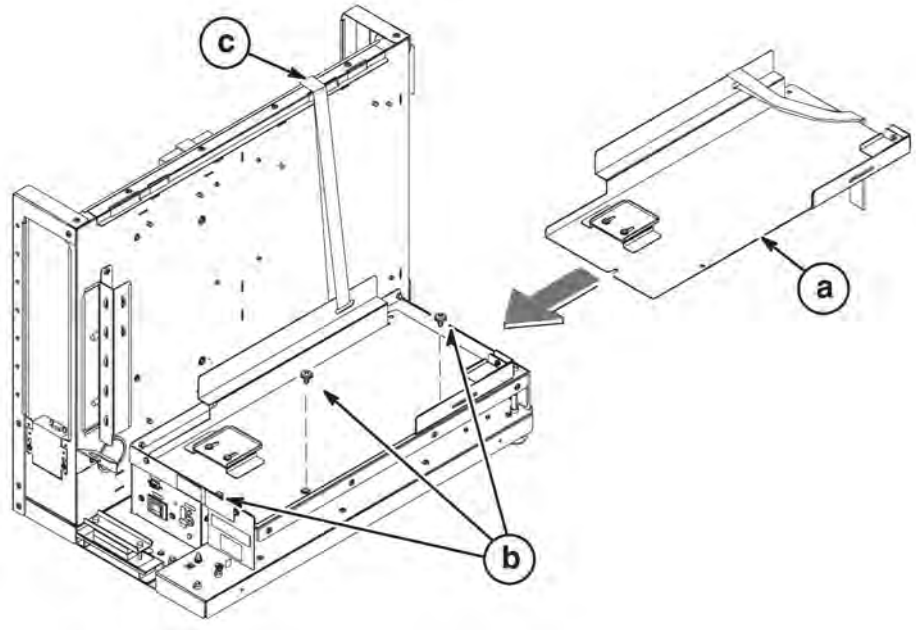


1. Unfasten straps and carefully remove computer.
2. Because the new Z400 computer is shorter than the original PC being replaced, install the new computer to the rear-most position and secure in place with straps.
3. If required, install PC Stopper Bracket (5127954) at front of computer using existing screws.

1.3.5.2 Computer Replacement in New Style GOC



1. Remove the XW8400 Computer that is secured with back and bottom brackets as follows:
   a. Remove the two screws securing the side of the bottom plate of the PC to the GOC frame.
   b. Loosen the one screw securing the rear of the bottom plate of the PC to the GOC frame.
   c. Remove the two screws from the back bracket.
   d. Carefully remove the computer with back and bottom brackets from the GOC

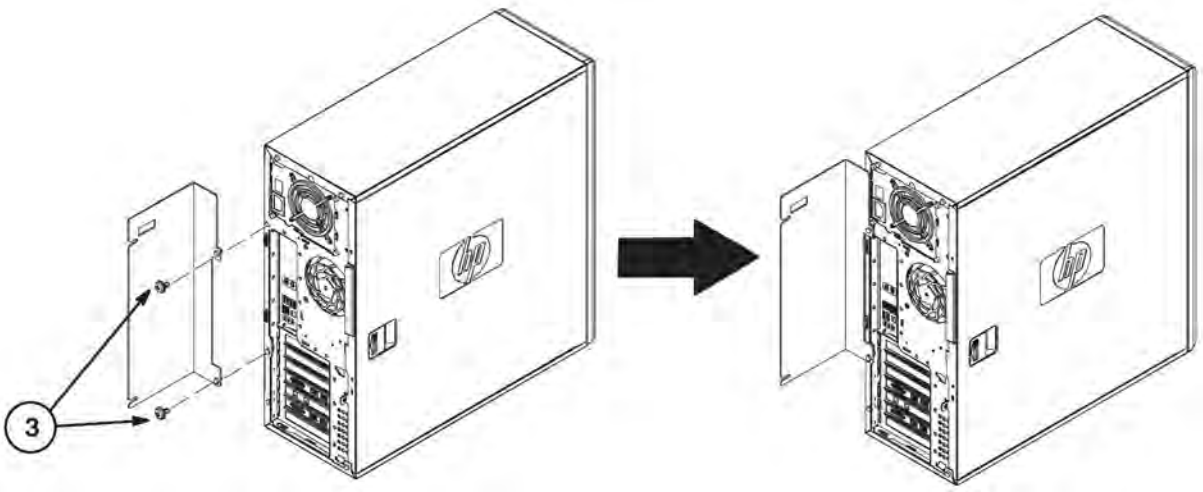


2. Install the Host Mounting Plate for the Z400 computer as follows:

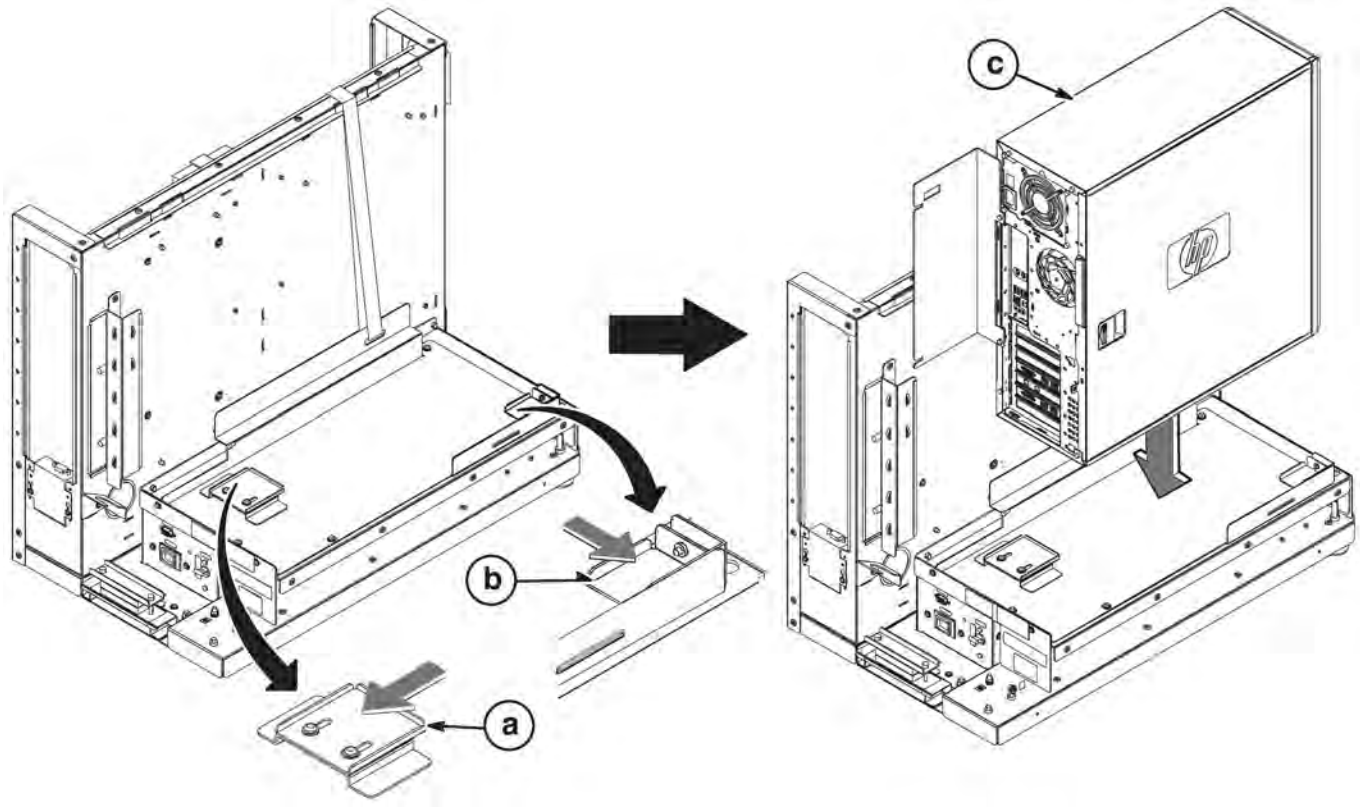
a. Insert the Host Mounting Plate so that the GOC chassis screw holes are visible through the plate.

b. Tighten the one screw at the rear and the two screws on the left as shown below.

c. Temporarily hang the strap on the opposite side.



3. Install the back bracket to the computer with the two screws.

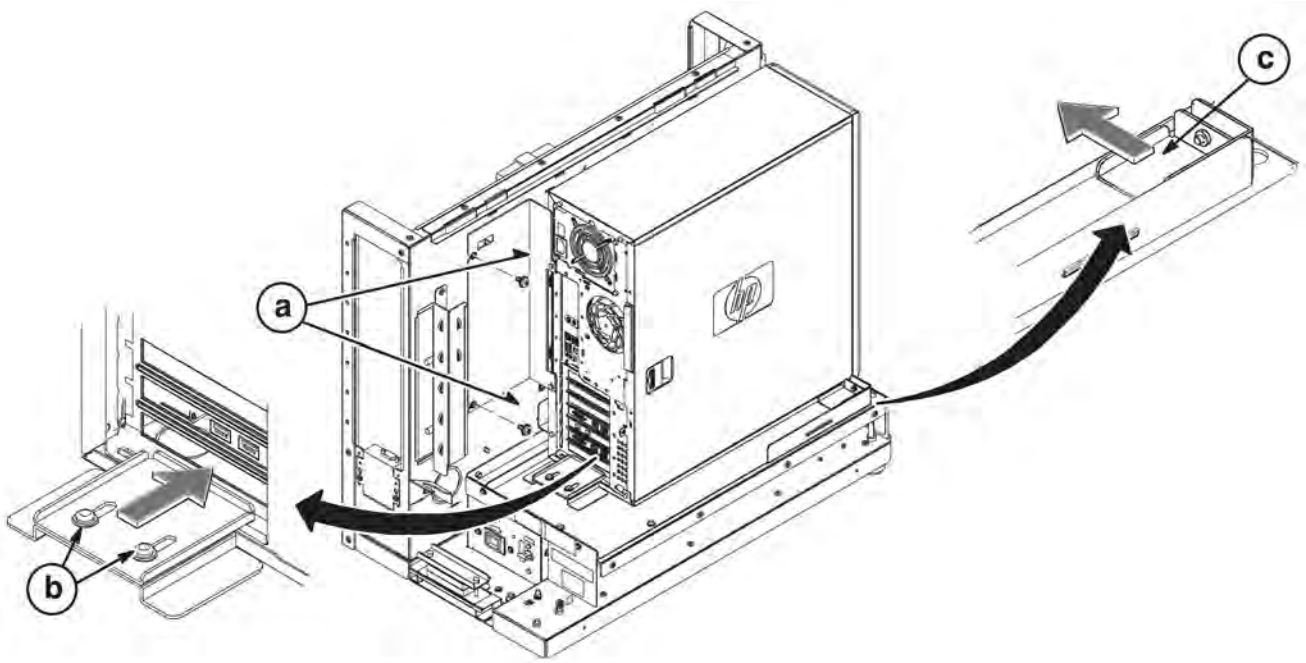


4. Position the PC as follows:

a. Loosen the two screws on the back slide plate, and slide the plate backward.

b. Loosen the two screws on the side slide plate, and slide the plate in the direction of the arrow as shown.

c. Carefully place the Z400 Computer on the mounting plate.

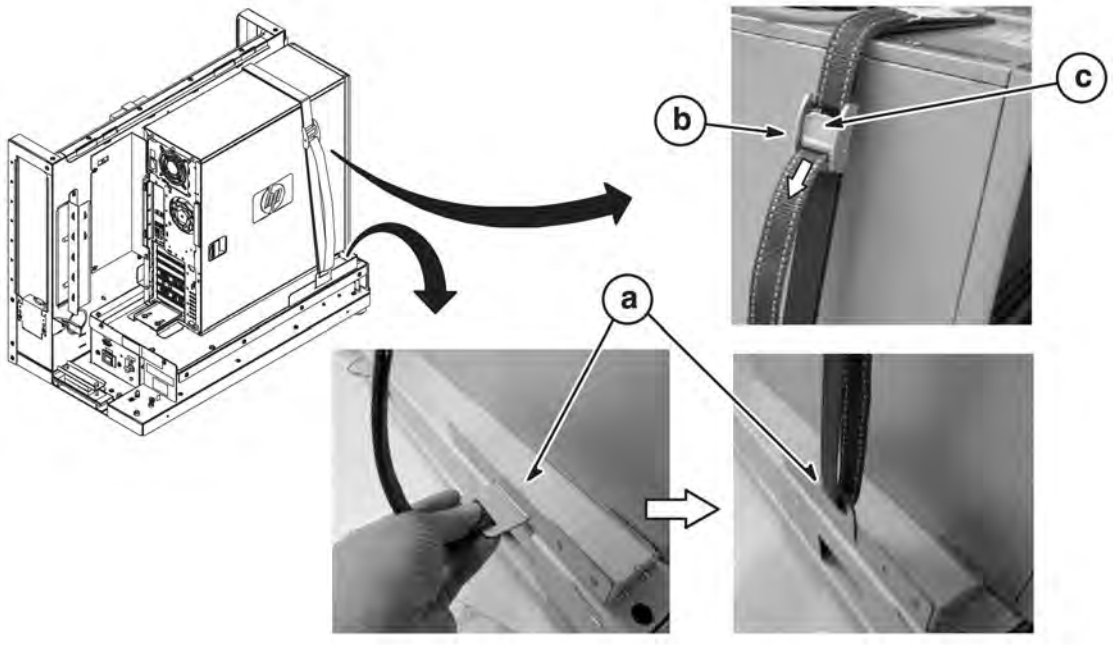


5. Secure the computer as follows:

   a. Secure the back bracket to GOC frame with two screws.

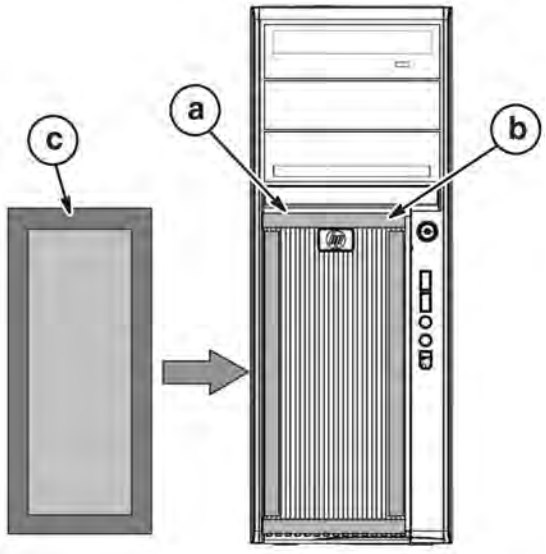
   b. Slide the back slide plate forward until it makes contact with the computer, and tighten the two screws.

   c. Slide the side slide plate until it makes contact with the computer, and tighten the two screws.



NOTE: To loosen the strap, press the release lever on the strap.

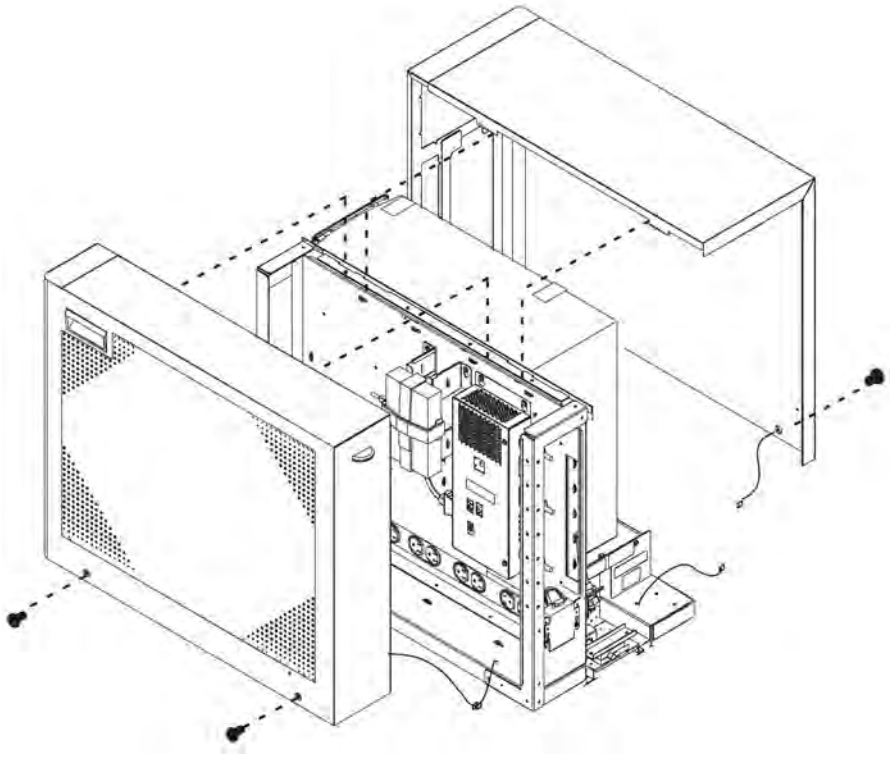
6. Tighten the strap around the computer as follows:
   a. Hook the bracket onto the slot of bottom plate.
   b. Pull and tighten the strap to secure the computer.
   c. **Note:** To loosen strap, press the release lever on the strap.



7. Attach the Dust Filter to the front panel after following the cleaning instructions below.
   a. Clean the velcro area of front panel with alcohol and cloth. Peel the velcro from backside of filter.

b. Attach the velcro around front panel.

c. Attach the filter to front panel.



NOTICE

Make sure the Z400 computer is installed at the rear-most position before installing covers. This position will aid in connecting existing cables to rear of Z400 computer.

8. Replace the GOC covers, using the new left cover for the Z400 computer that shipped with the GOC Conversion Kit.

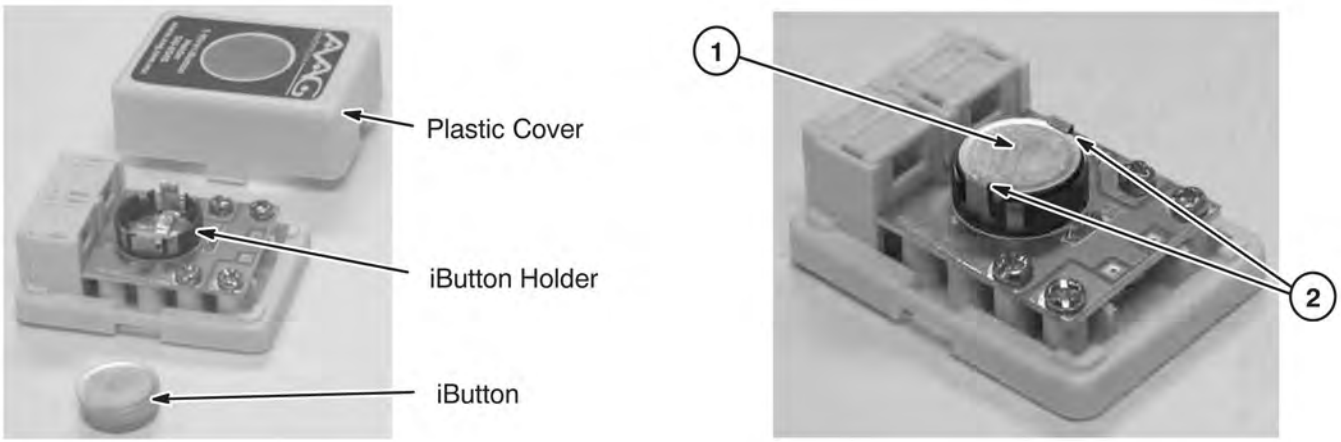
1.4 Temperature and Humidity Sensor Kit Installation

The components of the Temperature and Humidity Sensor Kit (5147136-2) will be installed on the back of the GOC cabinet and on the back of the System Cabinet with one cable routed from the GOC and connected to it.

1.4.1 Install iButton into Holder

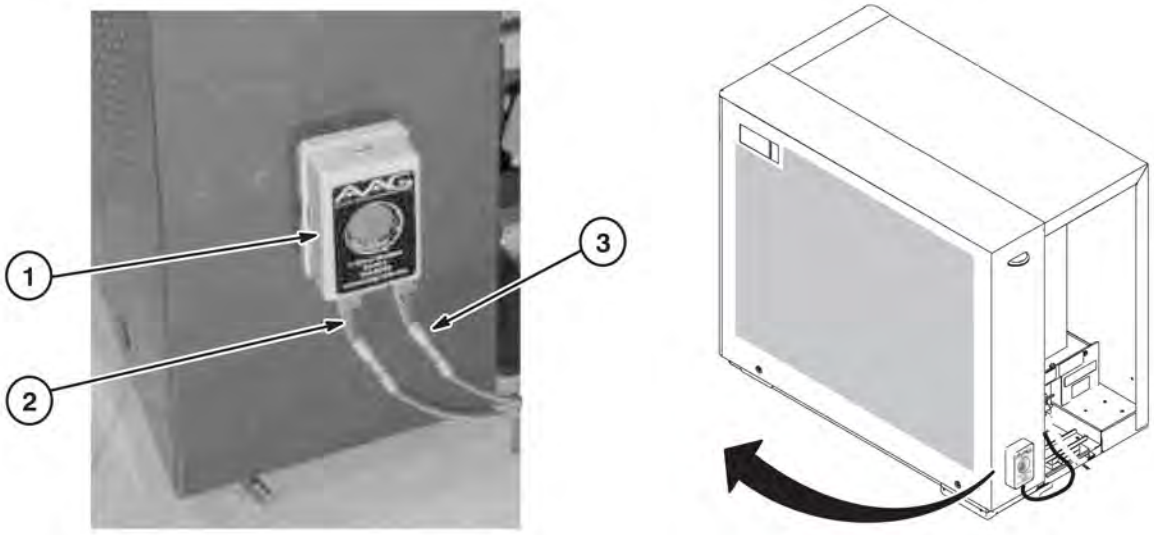
Install the iButton into the holder in the orientation shown in the illustration.

NOTE: The pictures below show the plastic cover removed although this is not necessary to install the iButton.



1. Install the iButton in the holder so that the solid part of the case is exposed.
2. Make sure the "fingers" latch over the top of the iButton and secure it in the holder.
3. If removed, reinstall the Plastic Cover.

1.4.2 Install Temperature & Humidity Sensor on GOC



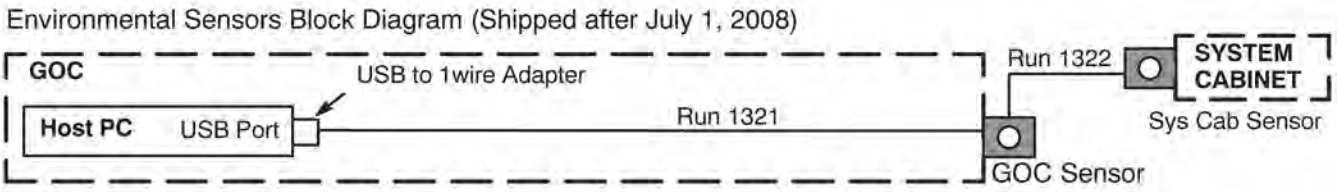
1. Attach iButton Sensor assembly (Holder, 5141856, and iButton 5141857-5), to back of GOC Cabinet at this location using Dual Locking Velcro Tape (2341779 & 2341779-2).
2. Route and connect Run 1322 (5143794-2) from System cabinet to Sensor at back of GOC.
3. Connect cable Run 1321 (5143794-2) to Sensor and route other end thru bottom opening of GOC and connect to USB to 1-Wire Adapter (5307784) installed in GOC USB port. Refer to step 10 in Section .

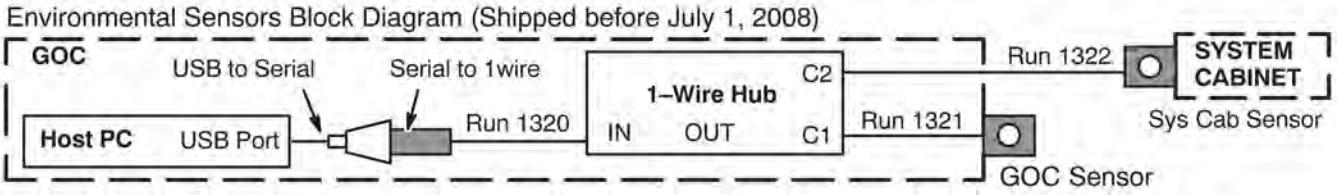
1.4.3 Install Temperature & Humidity Sensor on System Cabinet

NOTE: iButton Holders are unique to each location. Make sure to install 5141857-4 to System Cabinet and 5141857-5 to GOC.

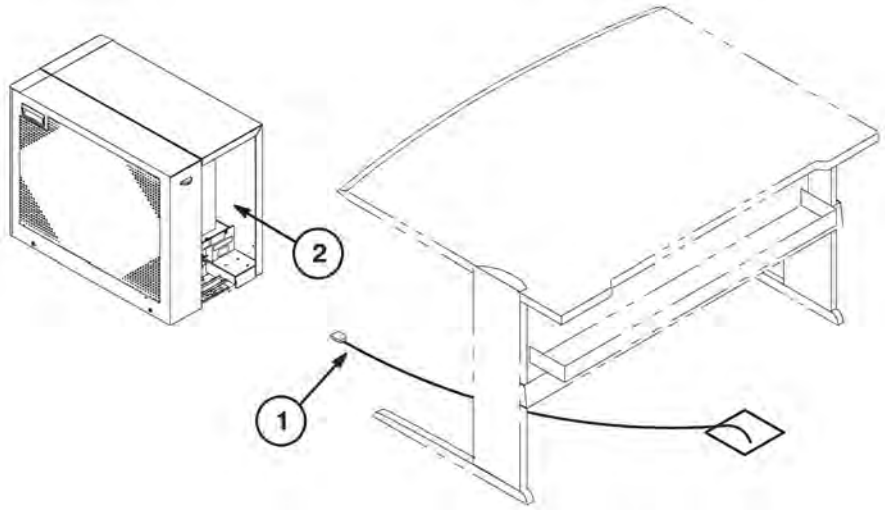
1. Attach iButton Sensor assembly (Holder, 5141856, and Humidity iButton (5141857-4), to back of System/RFS Cabinet at this location using Dual Locking Velcro Tape (2341779 & 2341779-2).
2. Route and connect cable Run 1322 (5143794) from GOC rear cover.

1.4.4 Temperature & Humidity Sensor Wiring Schematics





1.5 Route Run 1323

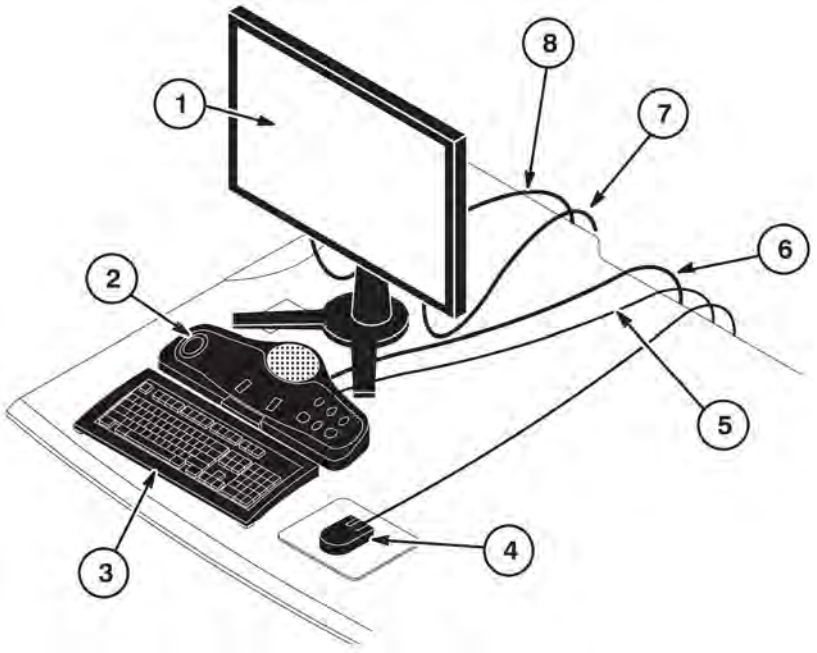


1. Route Run 1323 from RFS or System Cabinet to location of GOC. This is a new CAT6 cable that must be installed. Existing CAT5 cables cannot be reused.

   NOTE: For optimal efficiency, route Run 1322, Section , at the same time as Rune 1323. It is also routed between RFS/System Cabinet and GOC.

2. Cable will be routed thru the lower rear opening.

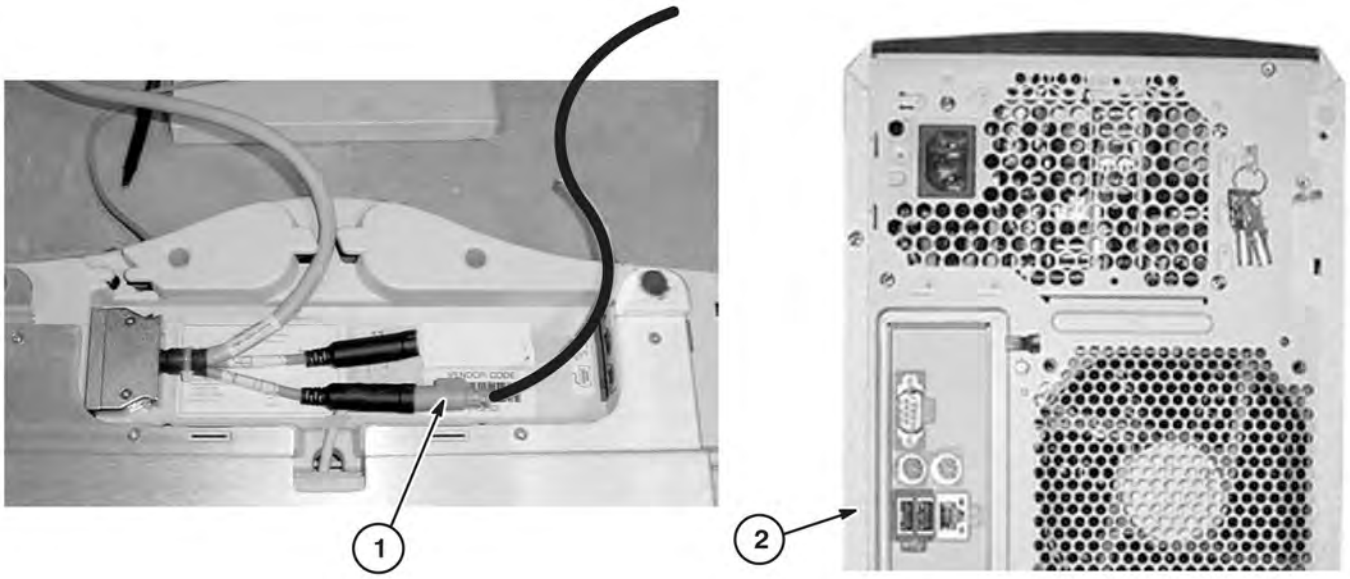
1.6 Install New OW Table Top Components



1. Install new Monitor on table.
2. Place new SCIM (5148388-x) on table.
3. Place new Keyboard (5143798-x) on table.
4. Install new Mouse (5143798-6) on table and route USB cable to computer in GOC. Attach provided extension USB cable if necessary.
5. Connect extension cable Run 2038 to USB Keyboard cable and route to computer in GOC.
6. Connect Run 2053 (or 1256) to SCIM and route to rear of GOC.
7. Connect provided monitor power cable to monitor. Connect other end of cable to Run 1065, which is connected to OW power strip.
8. Connect DVI cable, Run 2037, to monitor and route to rear of computer in GOC.

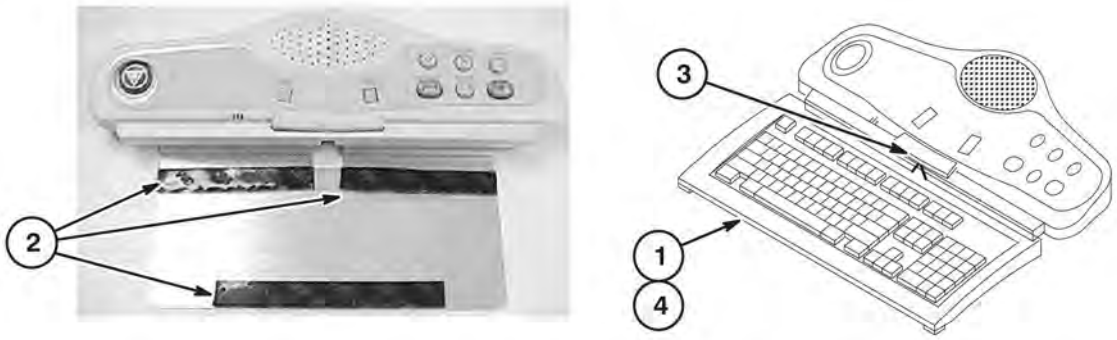
   NOTE: Do not use or connect provided VGA cable.

1.7 Connect Bar Code Reader (If Part of Site Configuration)



1. If Run1256 is present - Disconnect the Bar Code Reader cable from Run 1256 Y-connector under SCIM.
2. Connect cable Run 1379 to rear of computer and Bar Code Reader.

1.8 Install SCIM/Keyboard



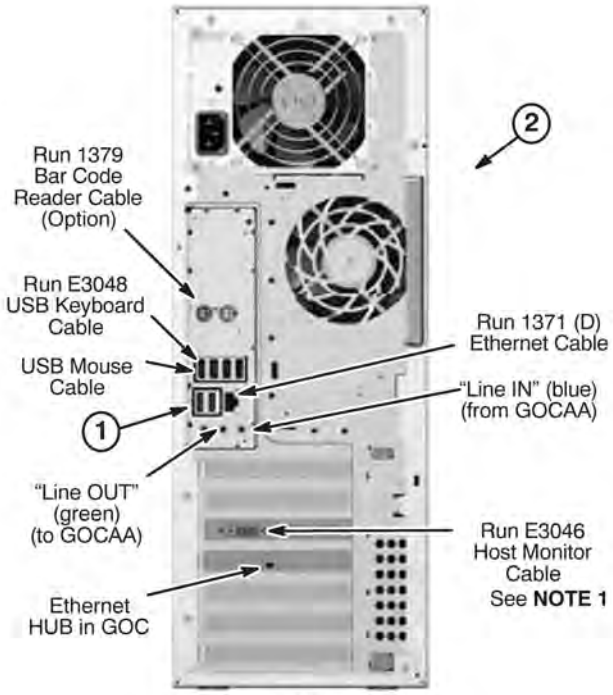
Note

The adhesive on the velcro takes 24 hours to completely adhere to the bottom of the keyboard. Allow the adhesive to dry completely before removing keyboard from SCIM base.

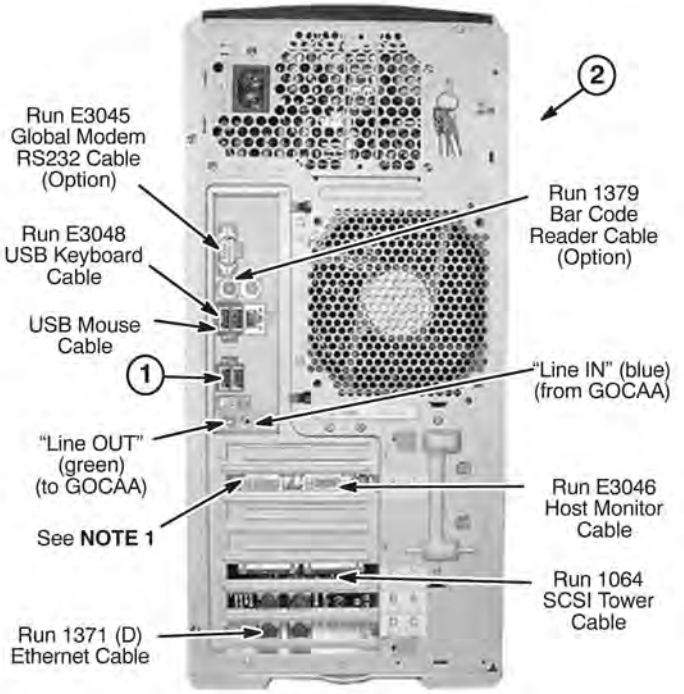
1. Place keyboard in front of SCIM, pull the keyboard forward, flip it, and place on top of the SCIM up side down.
2. Remove the plastic strips from the velcro located on SCIM plate, exposing the adhesive surface.
3. Guide the cable back into the center notched opening until all the cable is under the SCIM base.

4. Place the keyboard tight against the SCIM, Center it as best as possible, and drop into place. The Velcro pads will now be sticking to the bottom of the keyboard.

1.9 Connect Cables to Z400 Computer



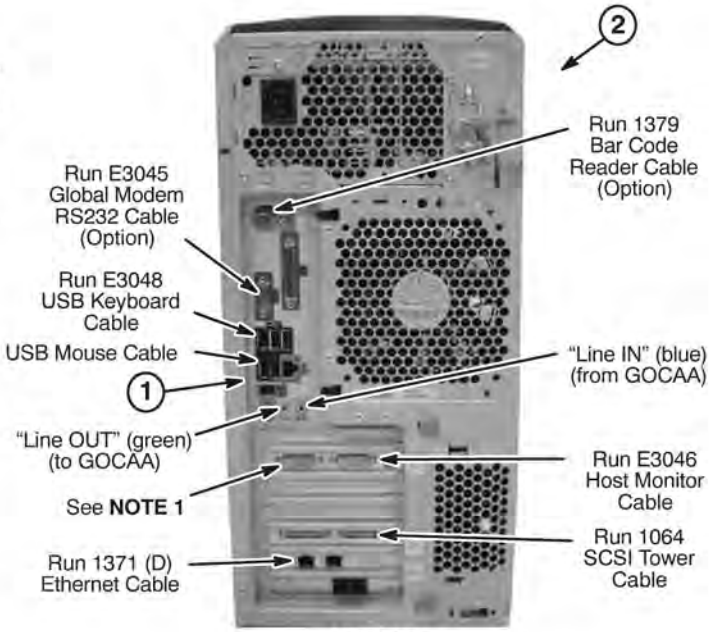
Z400
See **NOTE 2**



XW9300

NOTE 1:
Do not connect any additional monitors prior to loading operating system software. Doing so will cause boot–up to stop.

NOTE 2:
SCSI Tower and DASM are not supported for Z400PC.



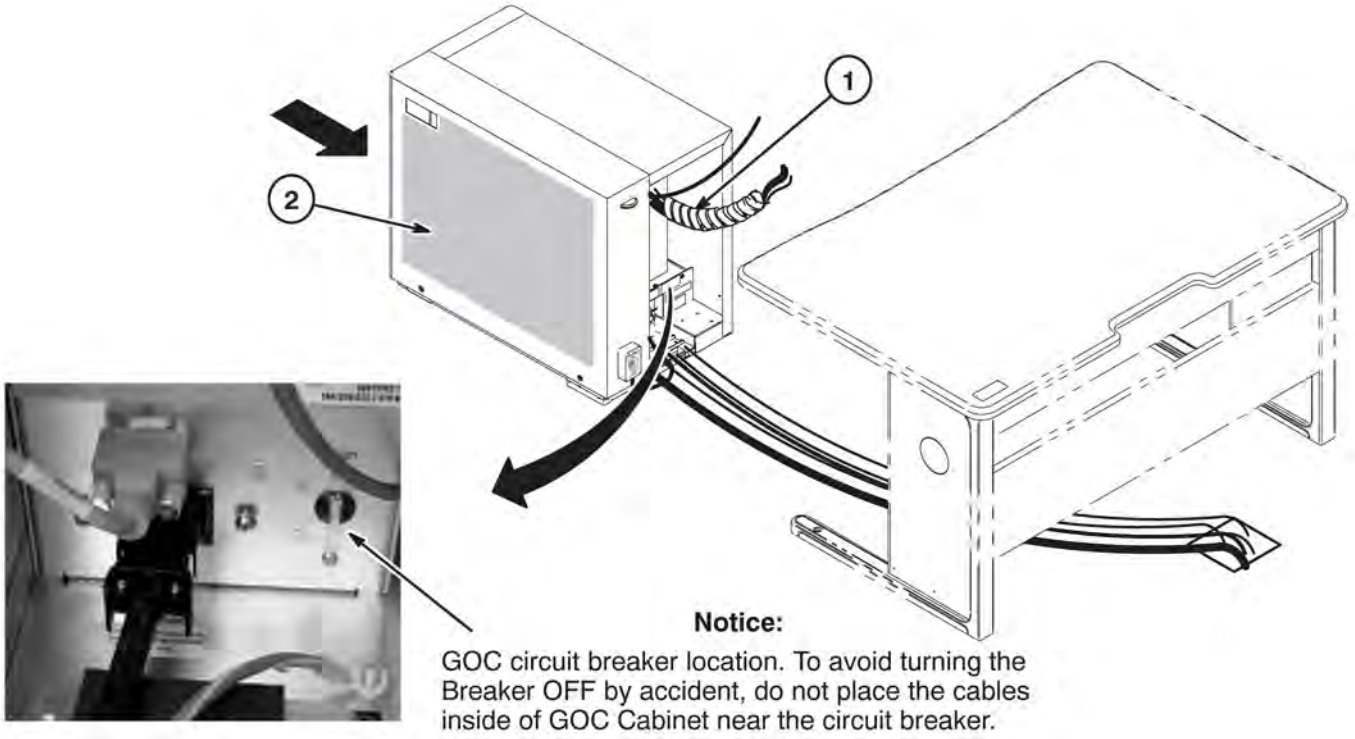
XW8400

1. Refer to Section for installing the USB to 1-Wire Adapter (5307784) to USB port.

2. Connect remaining cables as marked at rear of computer.

1.10 Final Positioning of GOC Cabinet

Complete positioning of GOC Cabinet.



1. Use the spiral tube to bind the following cabes. (Length of spiral tube is about 1 m).

   NOTE: Do Not include Modem power cable in Spiral Tube.

   - Two power cords
   - One video cable
   - Keyboard cable
   - SCIM cable
   - Modem cable (If applicable)

2. Place cabinet in final position as determined by customer.

1.11 Power-on Information

Refer to Chapter 11, Completion for power-on procedures.

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Chapter 8 System Cabinet

1 System Cabinet Upgrade Procedures

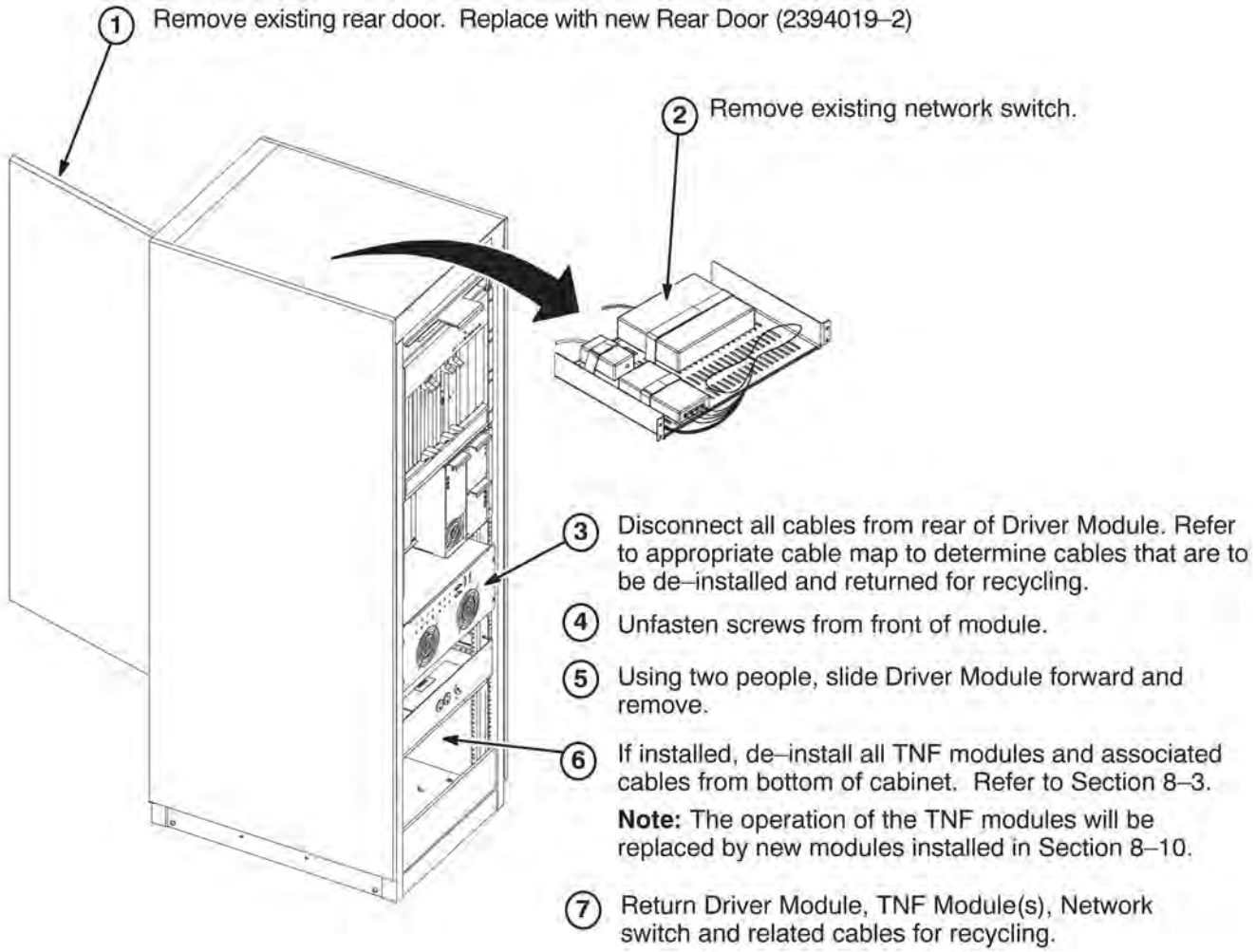
NOTICE

POWER TO SYSTEM MUST BE OFF, LOCKED AND TAGGED, BEFORE STARTING ANY UPGRADE PROCEDURES. REFER TO SECTION 3 FOR POWER OFF PROCEDURES.

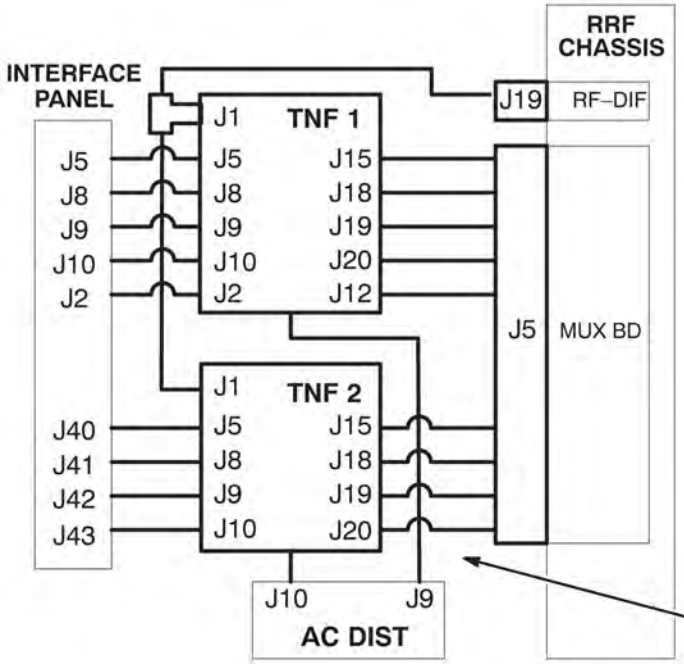
1.1 Introduction

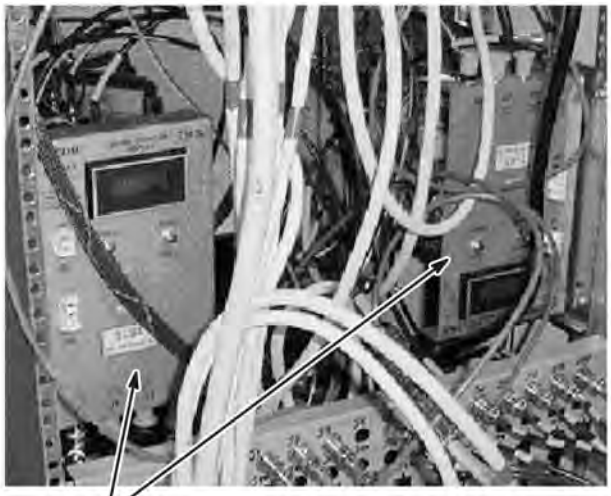
The System cabinet will be modified for the upgrade to HDxt Release 16.x or later. Refer to cable maps in Chapter 4 for disconnection and removal of existing cables and installation of new cables. Refer to the following steps for the upgrade procedures that pertain to your site.

1.2 Prepare System Cabinet for Upgrade



1.3 De-install TNF Modules and Cables





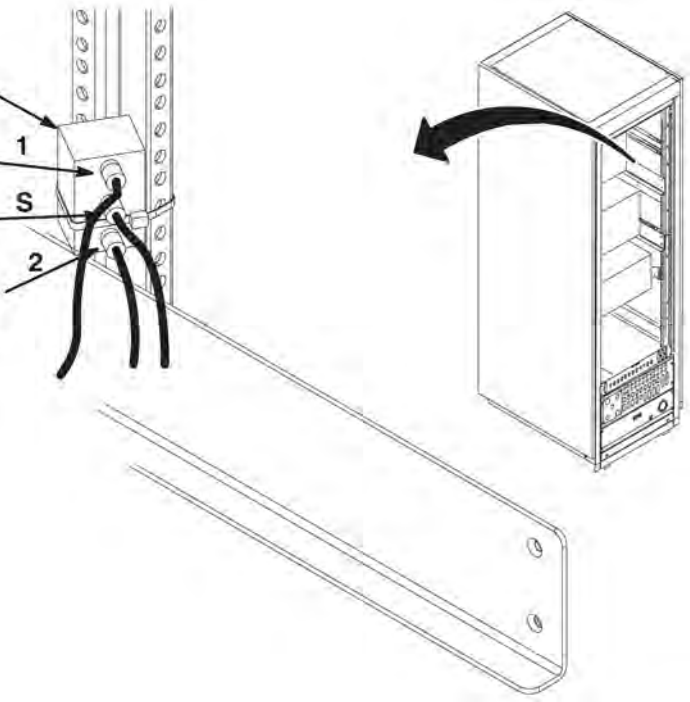
1 TNF 1 and, if installed, TNF 2 modules and associated cables will be removed and returned for recycling.

2 = Cables and modules to be de–installed.

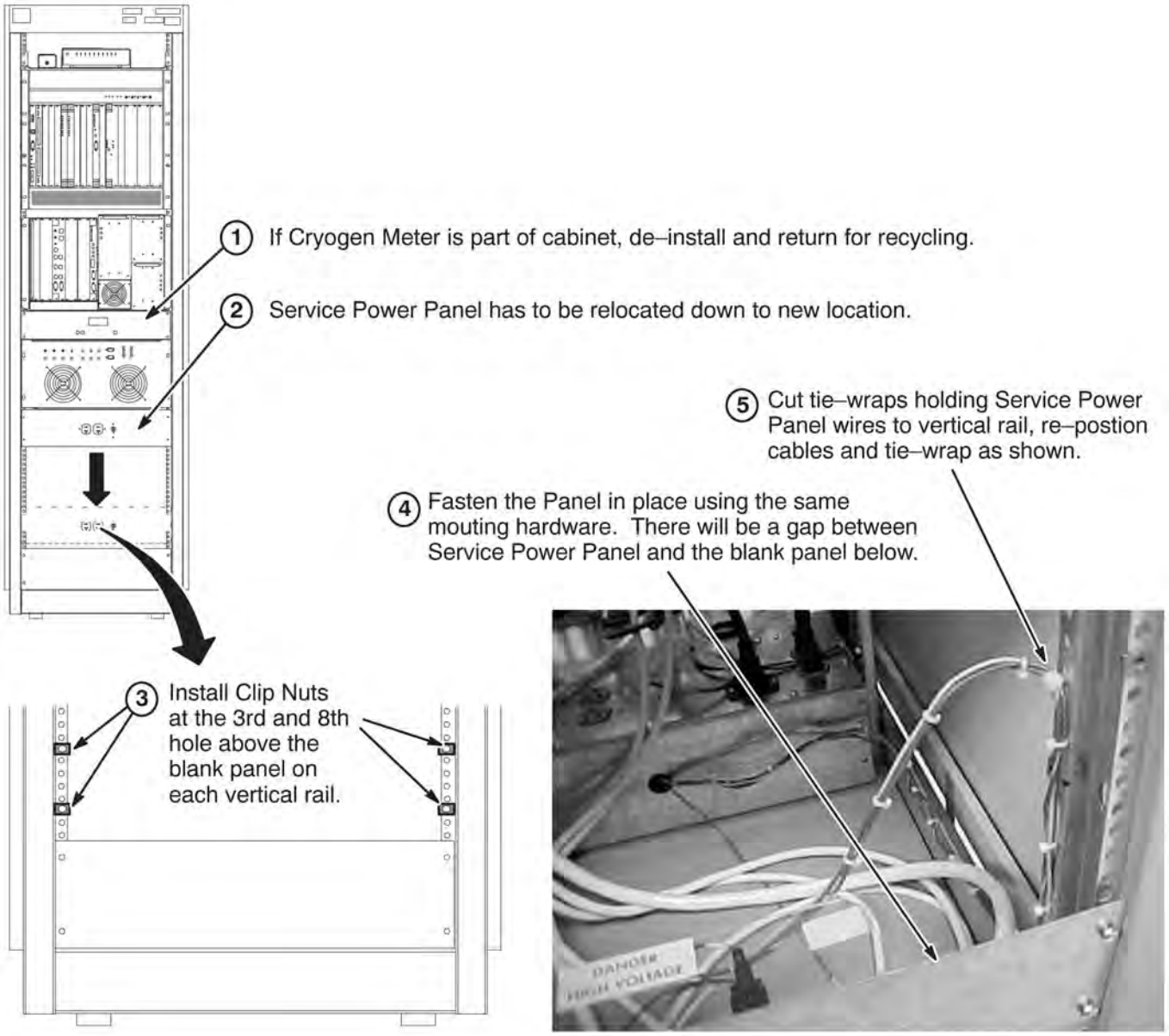
1.4 Install Coax Power Splitter

1. Install BNC Coax Power Splitter (5125176) on vertical rail.
2. Connect cable from slot 12R J31 at rear of RRF Chassis to "1" on Splitter.
3. Connect cable from Interface Panel J202 to "S" on Splitter.
4. Install 50 Ohm BNC Terminator (46–296817P1) on "2" of Splitter if site is NOT being upgraded to a 16 channel system.

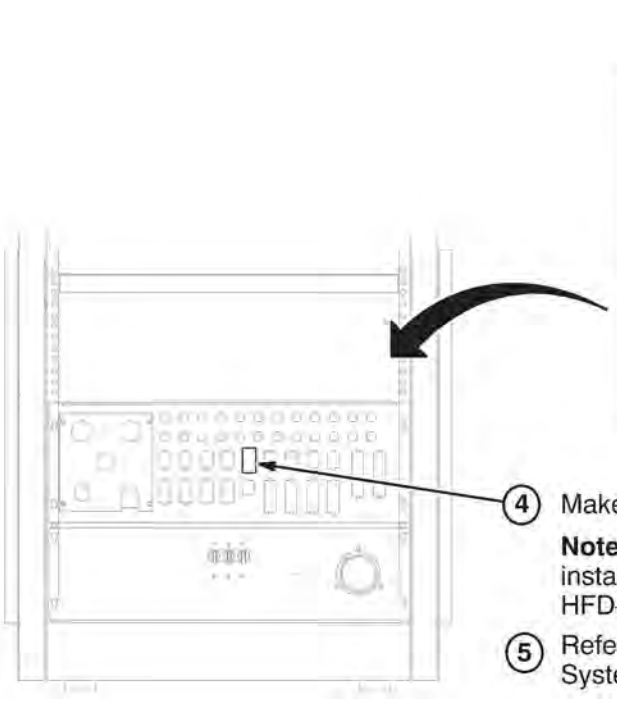
   If 16 Channel is installed, connect cable from slot 3R J31 at rear of RRF Chassis to "2" on Splitter.



1.5 Relocate Service Power Panel



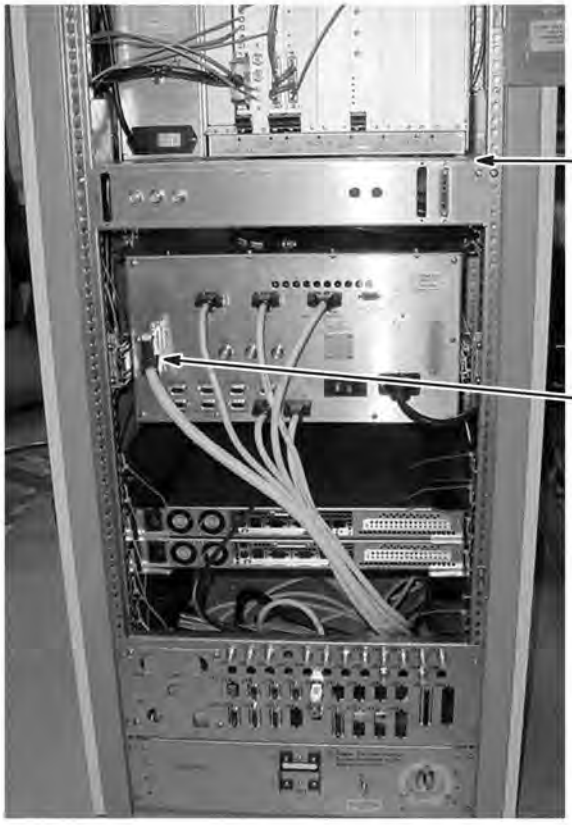
1.6 Install New Driver Module



1. Using two people, slide new Driver Module into position.
2. Secure in place with previously removed screws.
3. Refer to Section 8–8 for information on connection of cables to Driver Module.
4. Make sure CAN Terminator (2303317) is connected to J56.

   Note: If ACGD Cabinet is upgraded to HFD–S, and Run 1180 is installed and connected to J56, move CAN Terminator to J8 on HFD–S Cabinet.
5. Refer to applicable cable map for connection of cables to System Cabinet Interface Panel.

1.7 Install New Interface Panel



1. At rear of cabinet, install 1.5T upgrade Interface Panel Assembly (5151361). Align top of Panel to with bottom of RRF Chassis.
2. Fasten with four (4) M5 x 16mm Pan head screw (2279742–2).
3. Reconnect door ground wire.
4. Disconnect and remove cable routed from Driver Module J5 to Interface Panel J61. New cable Run 1330 will connect directly to J5.
5. Use table in Section 8–8 for connecting cables in the System Cabinet. All the cables connected to the new I/O Panel are pre–installed on the I/O Panel.

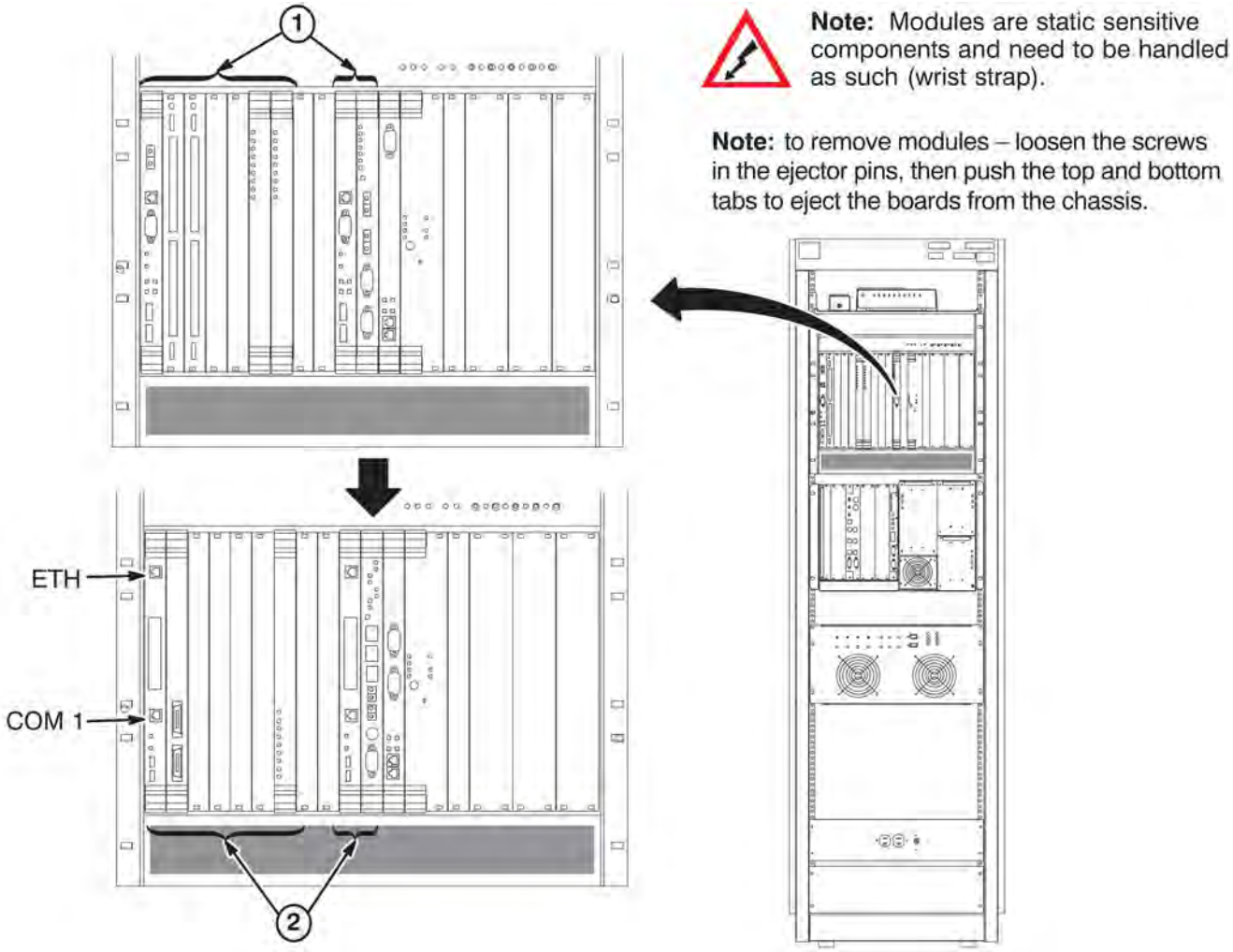
1.8 Connect Cables from Interface Panel and Driver Module

The following table provides information for connecting existing and new cables within the System Cabinet.

Table 8-1:

CABLE PART #	ONE END	OTHER END
2363363	Driver Module J1	System Cabinet Interface Panel J56
2323878-3	Driver Module J2	RF Slot 10F J23
5117295	Driver Module J4	MGD Slot 11R J21
2374675	Driver Module J8	I/O Panel J4
2374675-2	Driver Module J7	I/O Panel J53
2374675-3	Driver Module J6	I/O Panel J55
2394870-3	RF Slot 14R J5	I/O Panel J200
2394870-4	RF Slot 5R J5	I/O Panel J201
5115416	Splitter S and RF Slot 14R J13	I/O Panel J202

1.9 Procedures to Upgrade an Existing 8-Channel System



Note: Modules are static sensitive components and need to be handled as such (wrist strap).

Note: to remove modules – loosen the screws in the ejector pins, then push the top and bottom tabs to eject the boards from the chassis.

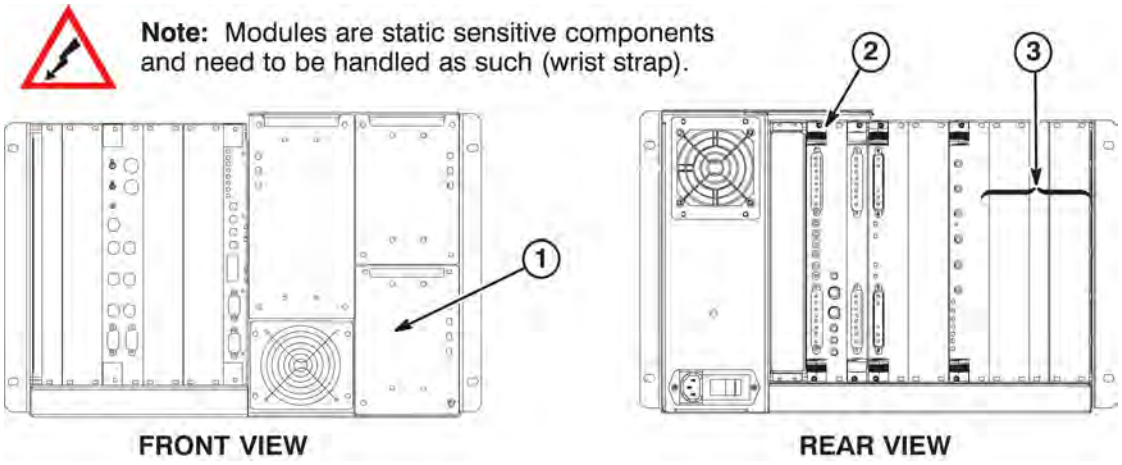
1. De-install and return for recycling the following boards:
   - Slot 1 - APS Board
   - Slots 2 & 3 -Two AP Boards (2325947-14) and the ribbon cables (2325947-5) between the boards
   - Slots 4 to 7 - Two (or four) DRF1 Boards
   - Slot 10 - AGP Board
2. Install the following new boards:
   - Slot 1 - APS Board (2294300-18)
   - Slot 2 - Infiniband Board (5139563)
   - Slots 3 to 6 - blank cover (2319152)

- Slot 7 - DRF2 Board (2298332)
- Slot 10 - AGP Board (2294300-18)

1.10 Procedures for Upgrading to 16 Channel

1.10.1 Remove Existing Components from RRF Chassis

Note: Modules are static sensitive components and need to be handled as such (wrist strap).



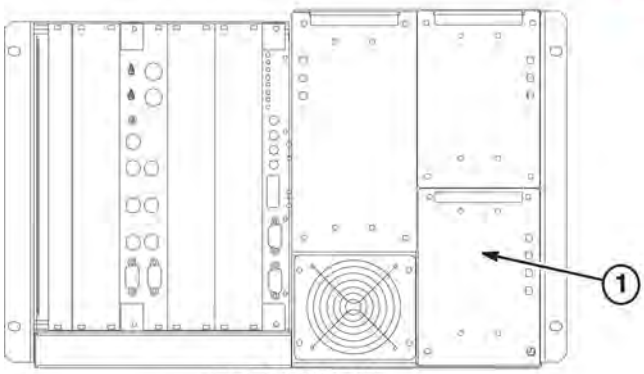
NOTICE

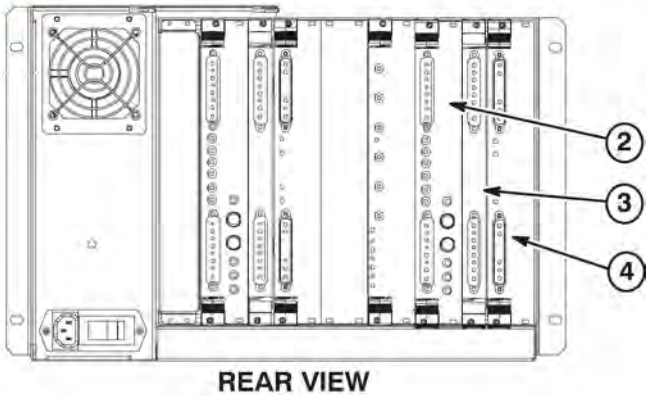
All de-installed boards are to be returned for recycling.

1. The 5 Volt Power Supply will be replaced. Unfasten the four screw at bottom of power supply. The module should easily slide out.
2. **Note:** It is recommended that the existing MUX board be at the same part number and revision level as the new MUX board being installed in slots 4 & 5.
3. De-install blank panels or boards from slots 1 to 5 at rear of chassis.

1.10.2 Install New Modules in RRF Chassis

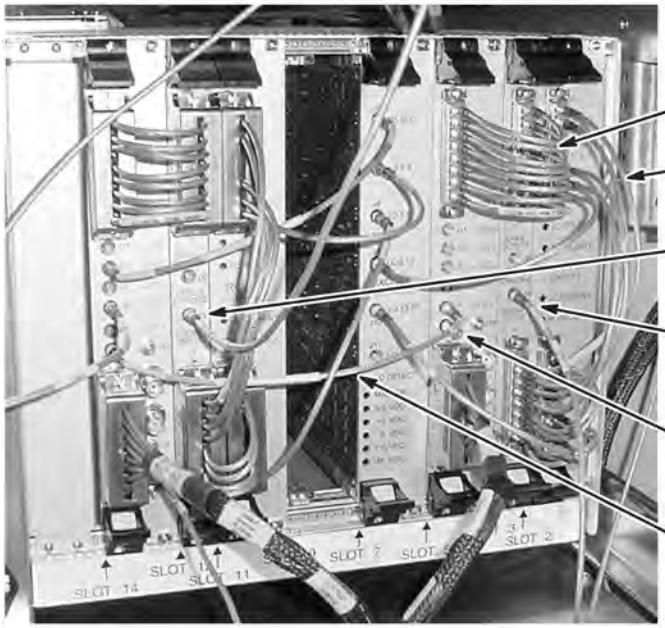
Note: Modules are static sensitive components and need to be handled as such (wrist strap).





1. Slide in new 5V Power Supply (2292267-2). Make sure that it is properly seated before tightening the four screws.
2. Install MUX Board (5250106) in slots 4 & 5.
3. Install UTNS3 Board (2366218-2) in slot 3.
4. Install RCVR II Board (2349808-2) in slots 1 & 2.

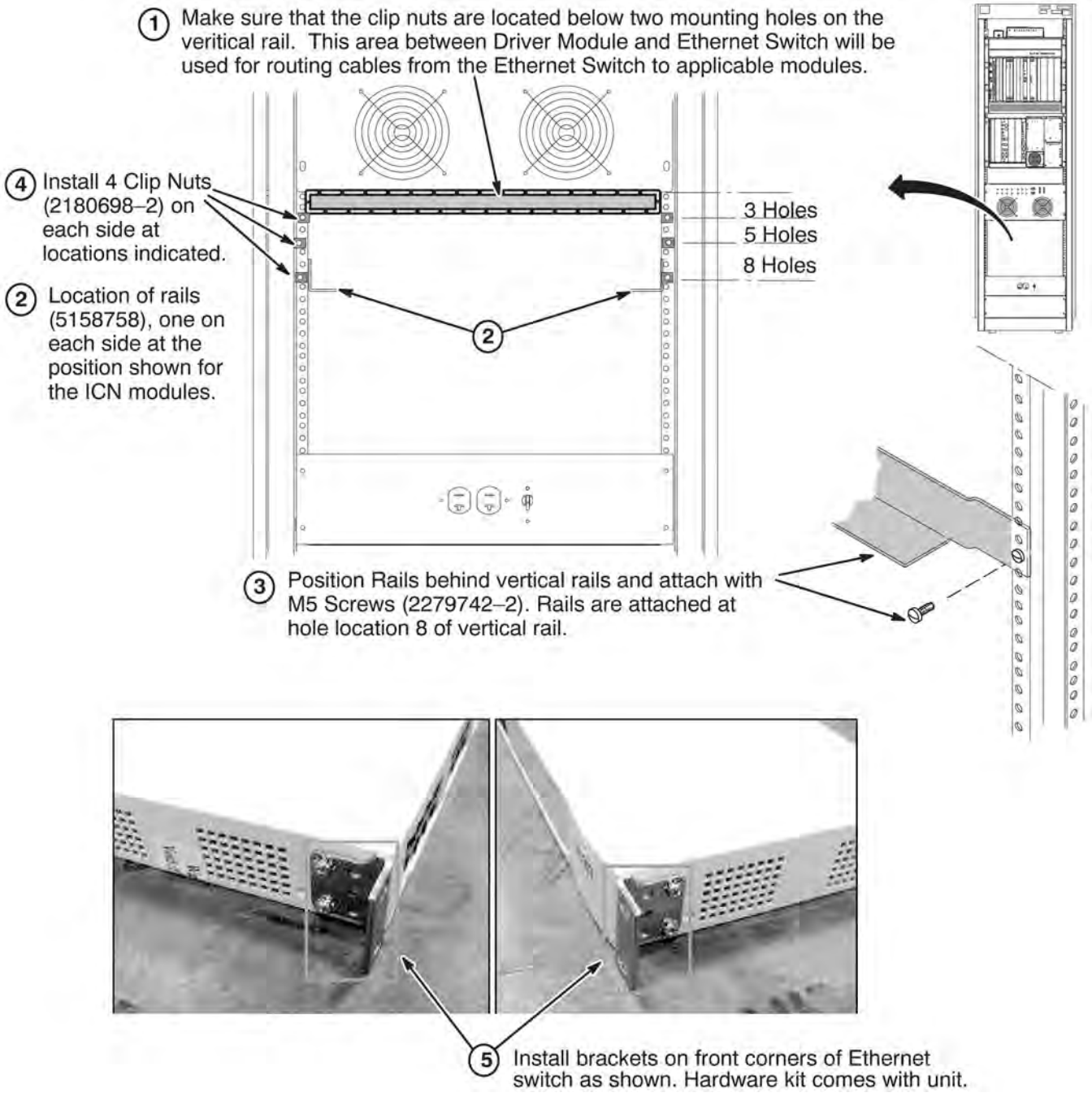
1.10.3 Install Cables at Rear of RRF Chassis



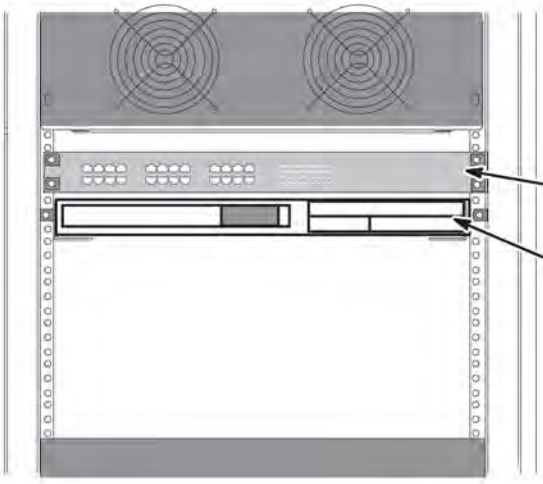
1. Connect cable 5123706 as marked.
2. Connect cable 5113193–2 as marked.
3. Make sure cable 5115417 slot 12R J31 is connected as marked. it should be routed and connect to Coax Power Splitter “1”.
4. Connect cable 5115417–2 as marked. Route and connect to Coax Power Splitter “2”. Remove 50 Ohm terminator if installed at “2”.
5. Move 50 Ohm Terminator from Mux1 J6 (slots 13 & 14) to Mux2 J6 (slots 4 & 5).
6. Connect cable 5115630 as marked.

1.11 Install VRE Components

1.11.1 Install VRE Module Rails



1.11.2 Install VRE Module



(1) Install 2 (5306485) Brackets on the ICN as shown.

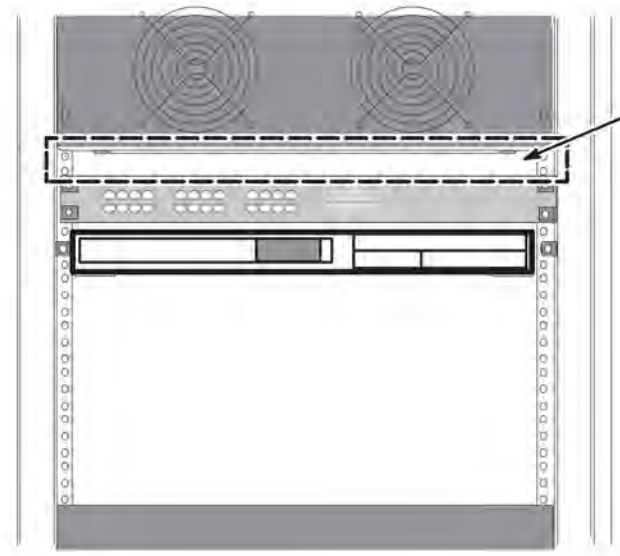
On the left side, the bracket is installed downward and snapped into place.

On the right side, the bracket must be installed upward at a 45 degree angle and then snapped into place.

(2) Install Ethernet Switch at this location using M5 Screws (2279742–2).

(3) Install ICN Module on Rail at the location shown. Tighten PEM screws on the ICN brackets to secure.

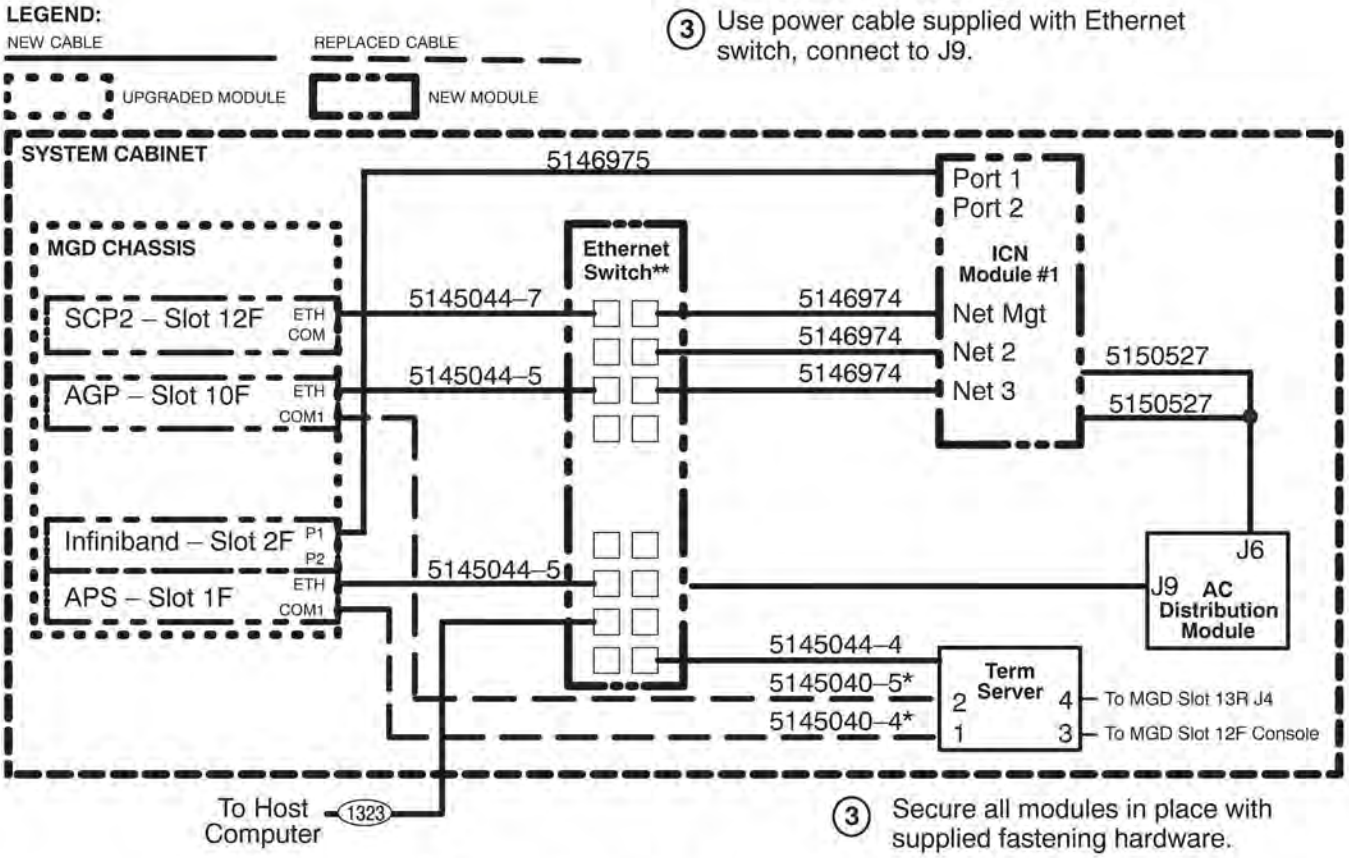
1.11.3 Install VRE Cables



1. All cables connecting between Ethernet Module and ICN Modules must be routed thru area above Ethernet Switch. Ethernet cables routed to Ethernet Switch can be connected to any ethernet port.

NOTE: Any existing cables connected to the MGD Chassis, or any other modules, that are not identified below should remain connected. They are not affected by this upgrade.

2. Route and connect new VRE Cables as shown below. Cables 5145040–4 and 5145040–5 are replacing existing cables.
3. Use power cable supplied with Ethernet switch, connect to J9.



3. Secure all modules in place with supplied fastening hardware.

* = New cable replacing existing cable
** = Ethernet cables routed to Ethernet Switch can be connected to any port.

1.12 SSM to ASC Upgrade

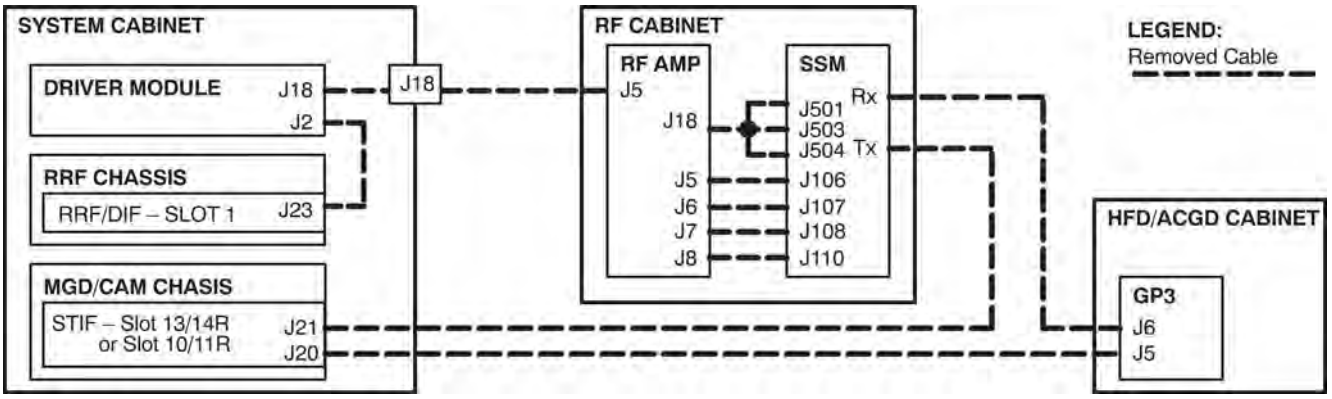
The upgrade procedure is this section applies to systems that do not have an ASC Chassis or CAM Chassis and are being upgraded to HD23.

- For sites without MNS - Components in catalogs M3341JE will be installed. This upgrade applies to sites with EXCITE System Cabinet p/n 2294302 or EXCITE II SystemCabinet p/n 2357500-2 having a common RF Cabinet p/n 2315350. TheSystem Cabinet houses the MGD Chassis, Driver Module, and RF Modules. The RF Cabinet houses the RF Amplifier and SSM Module. Refer to for cable removal, then proceed to .
- For sites with MNS - Components in catalogs M3341JE and M3341JF will be installed. This upgrade applies to sites with EXCITE System Cabinet p/n 2294302 or EXCITE II System Cabinet p/n 2357500-2 having a common RF Cabinet with MNS p/n 2391014. The System Cabinet houses the MGD Chassis, Driver Module, and RF Modules. The RF Cabinet houses the MNS Amplifier, RF Amplifier, and SSM Module. Refer to for cable removal, then proceed to .

All de-installed modules and materials are to be returned for harvest.

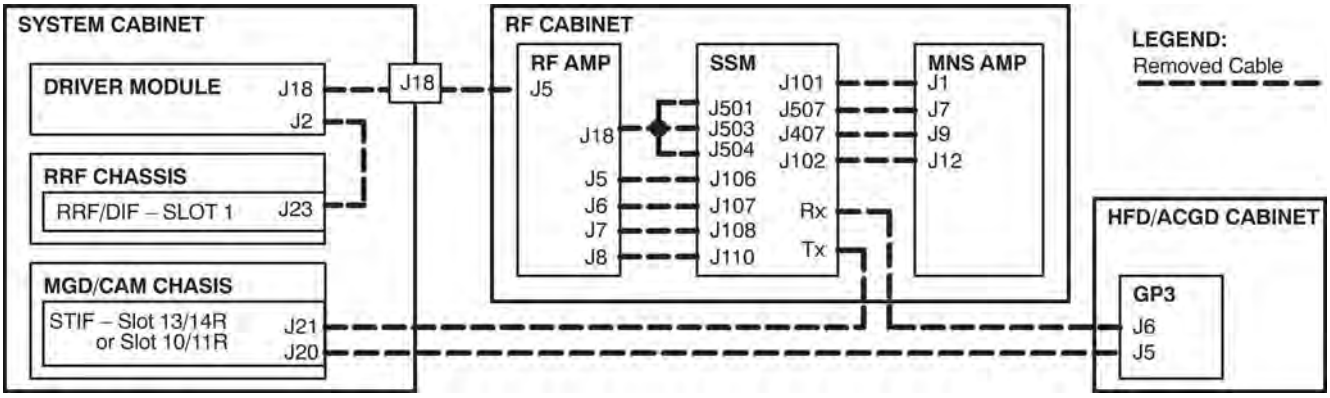
1.12.1 Cable Removal Procedure for Sites without MNS

Refer to the following illustration for removal of existing cables.

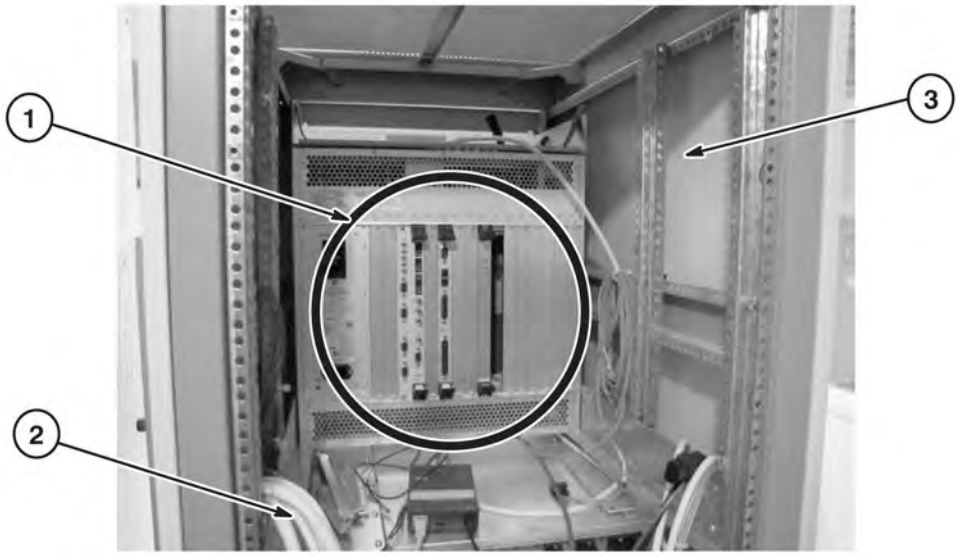


1.12.2 Cable Removal Procedure for Sites with MNS

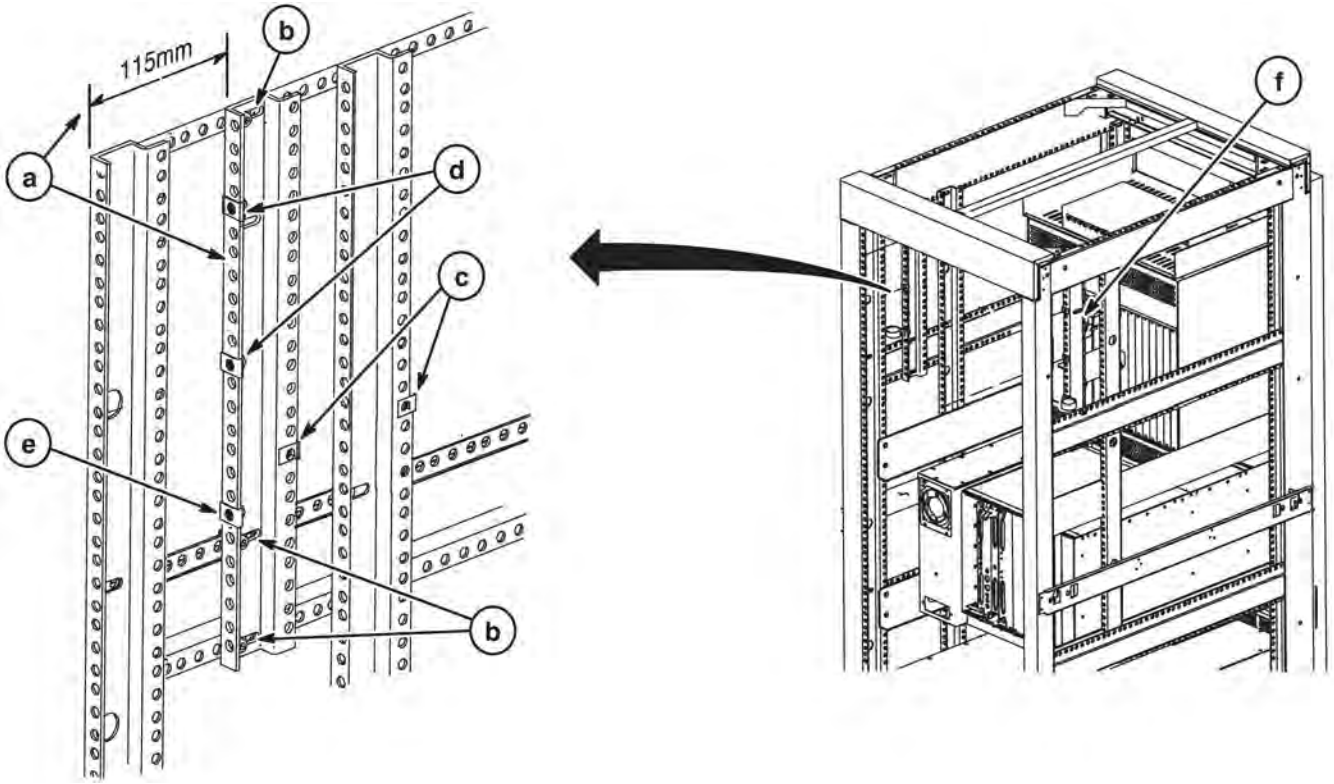
Refer to the following illustration for removal of existing cables.



1.12.3 Install ASC Chassis in Cabinet



1. Disconnect and move out of the way all cables from rear of MGD Chassis. Make note of the connection points for reconnecting at the end of the procedure.
2. Make sure all cables are moved out of the way for ASC Chassis installation.
3. Refer to next illustration for the location of the Vertical Mounting Rail (5434656) and the installation of the sixteen (16) M5 Clip Nuts (2180698-2).



a. Temporarily locate the Vertical Mounting Rail (5434656) at a distance of 115mm from the cabinet vertical rail.

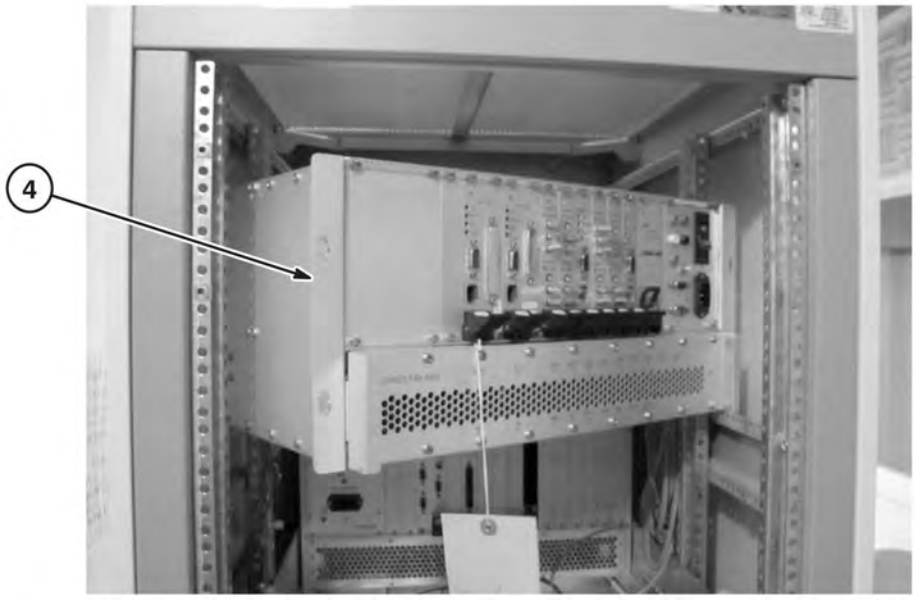
b. Install three (3) M5 Clip Nuts (2180698-2) on the existing horizontal rails as indicated. Remove the vertical rail. Do not install any screws at this time.

c. Install two (2) M5 Clip Nuts (2180698-2), one at hole location 9 from the bottom of the Vertical Mounting Rail and the other on the adjacent vertical rail at the same level.

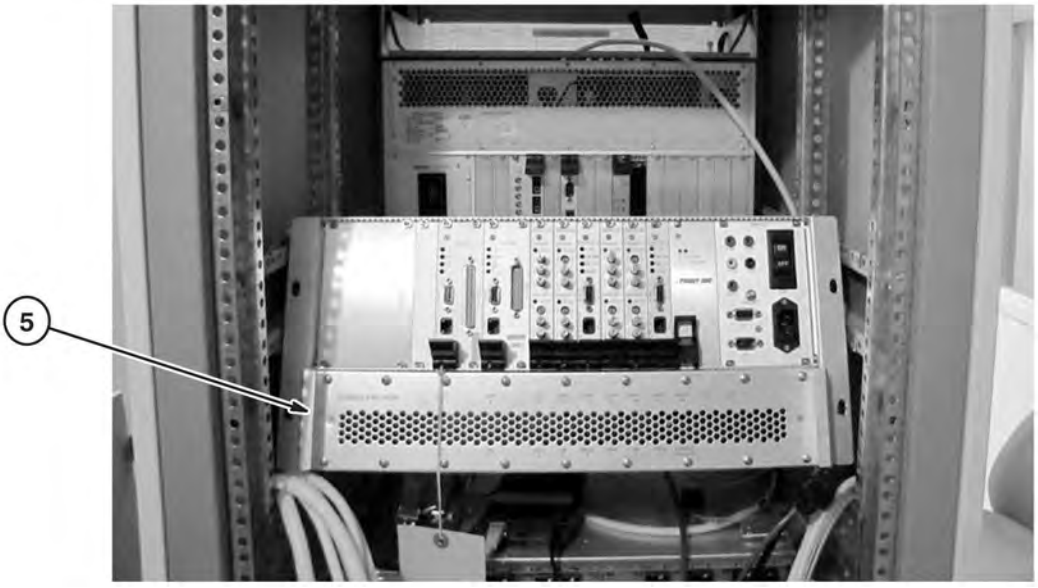
d. Install two (2) M5 Clip Nuts (2180698-2) at hole locations 14 and 21 from the bottom of the Vertical Mounting Rail.

e. At hole location 7 from the bottom of the Vertical Mounting Rail, install a M5 Clip Nut (2180698-2).

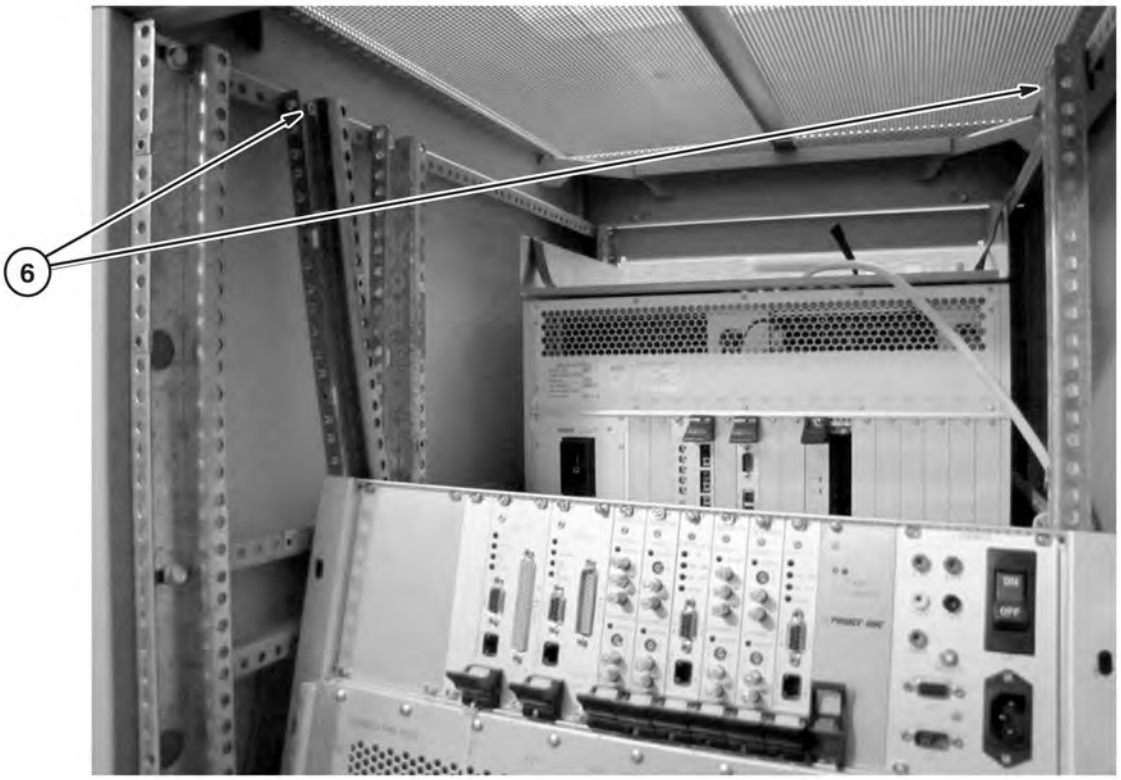
f. Repeat the above steps for installing the brackets on the other side of the rear of the cabinet.



4. Carefully lift and angle in the ASC Chassis into the back of the System Cabinet.



5. Lower the ASC Chassis so it rests on top of the Driver Module. The front of the ASC Chassis will not sit flat on Driver Module due to the ear brackets on the chassis.



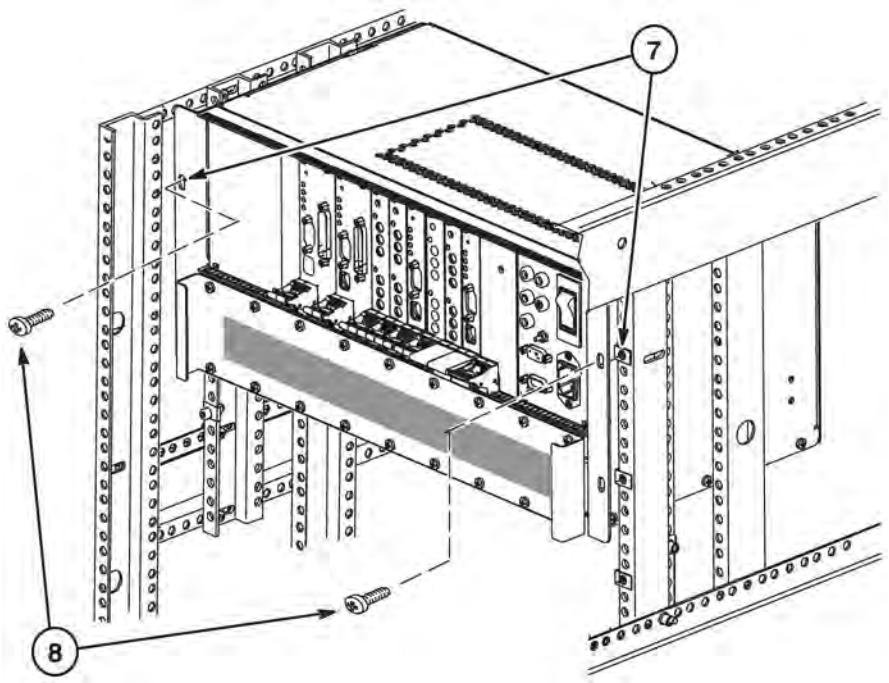
6. Install, but do not tighten, the vertical rail at only the top location on each side of cabinet using a M5 x 16mm Hex Head Cap Screw (1000-M5C016-04).

⚠WARNING

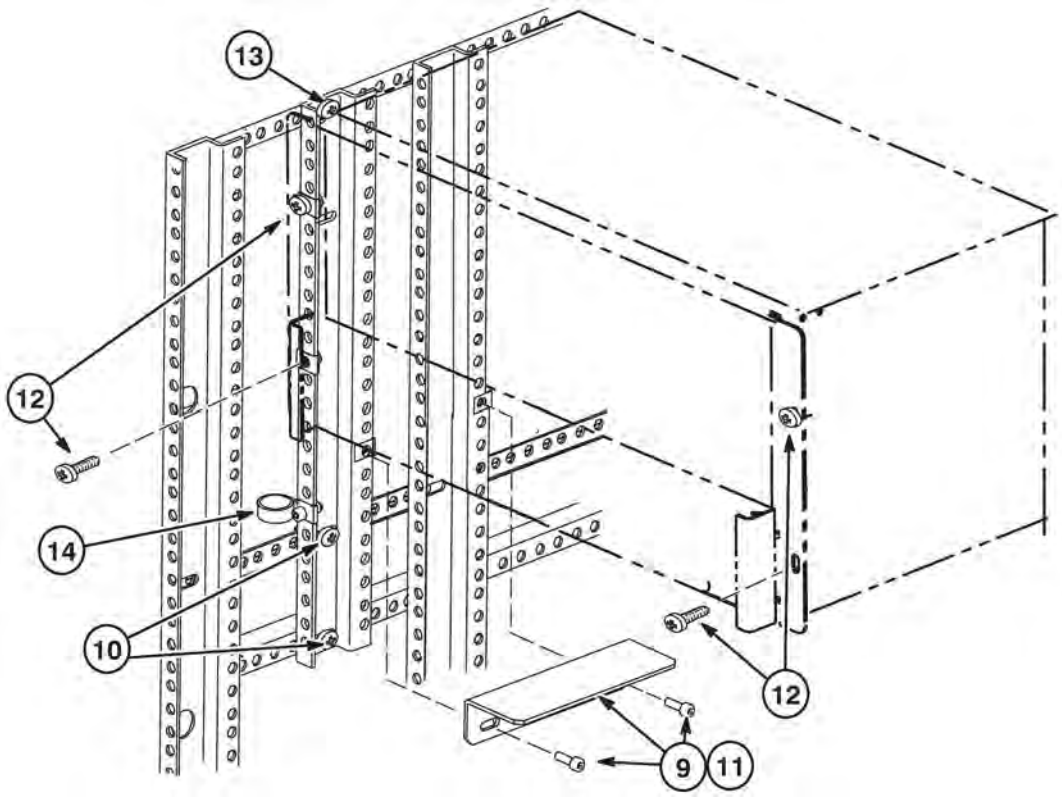
POSSIBLE PERSONAL INJURY

THE ASC CHASSIS IS HEAVY AND THE AREA FOR INSTALLING THE CHASSIS IS SMALL.

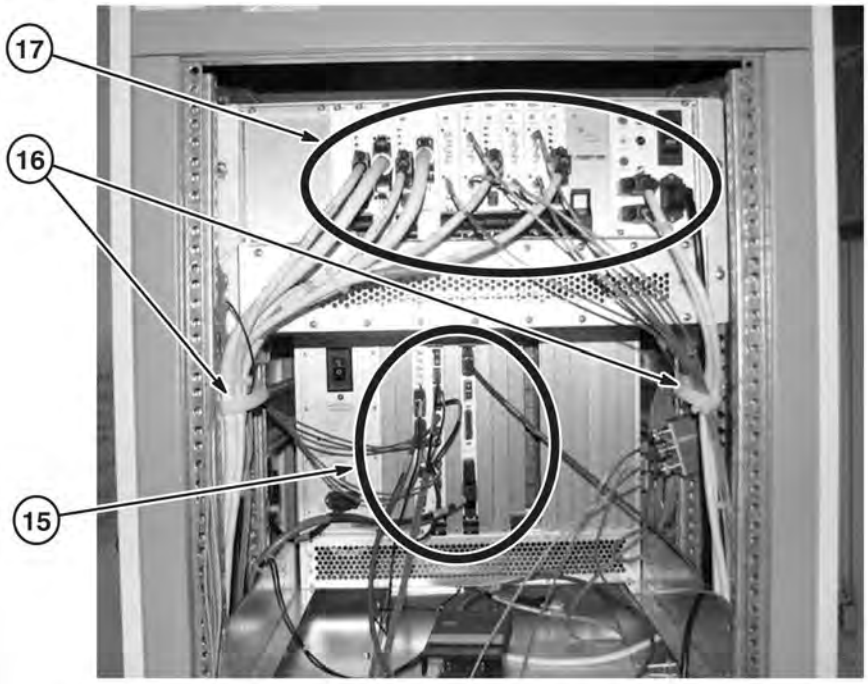
DO NOT ATTEMPT TO LIFT AND SECURE THE ASC CHASSIS TO THE RAILS IN THE CABINET UNLESS TWO PEOPLE ARE AVAILABLE TO COMPLETE THIS TASK.



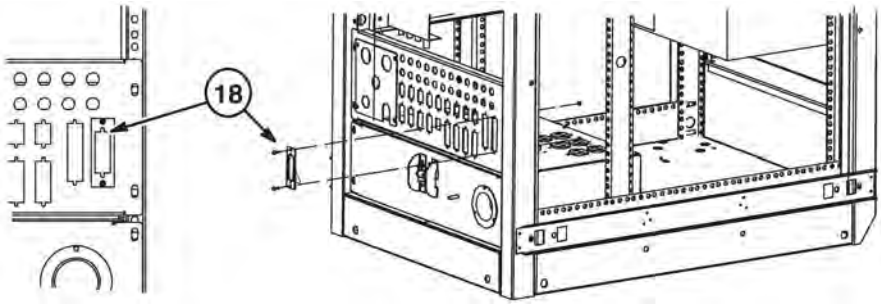
7. Lift the ASC Chassis and align the mounting ear holes with the (4) clip nut locations on the vertical rail.
8. At the top hole locations on each side, install one M5 x 16mm Hex Head Cap Screw (1000-M5C016-04). Do not fully tighten. Screws should be loose but threaded enough to support the chassis.



9. Install the ASC Support Bracket (5434655) using two (2) M5 x 16mm Hex Head Cap Screws (1000-M5C016-04) Do not fully tighten. The ASC Chassis will be repositioned as the Support Bracket is being attached. Repeat step for Support Bracket on other side of cabinet.
10. At the two lower locations of the vertical rail, install and tighten a M5 x 16mm Hex Head Cap Screws (1000-M5C016-04). Repeat for other side of cabinet.
11. Tighten the screws attaching the Support Brackets on each side of cabinet. They must be supporting the ASC Chassis.
12. Install the remaining two M5 x 16mm Hex Head Cap Screws (1000-M5C016-04) at the lower locations on the ASC Chassis mounting ears. Tighten all four screws to the vertical bracket.
13. Tighten the screw at the top of the vertical rail.
14. Attach the Wire Harness Clip (5149590) using a M5 x 16mm Hex Head Cap Screw (1000-M5C016-04). Repeat for other side of cabinet.



15. Reconnect all cables to MGD Module.
16. Route cables through the Wire Harness Clips as shown when installing ASC Chassis cables.
17. Refer to one of the following applicable sections for routing the new ASC Chassis cables dependent on whether MNS is installed or not.

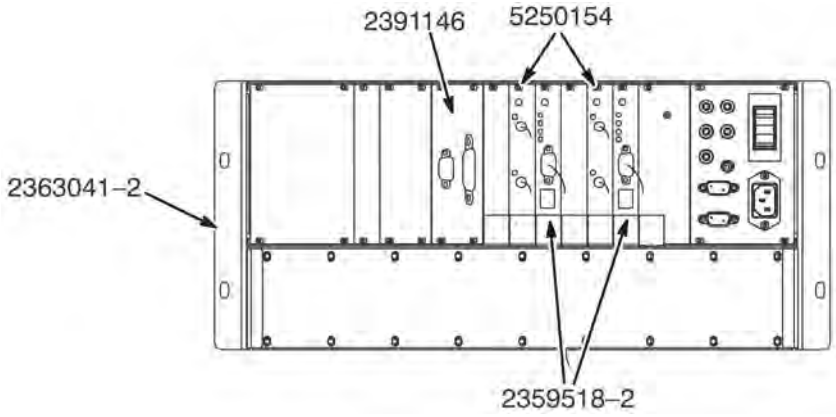


18. If MNS is being installed - At J66 on the I/F panel, install 25 Pin Adaptor Plate (5447051) using two (2) M3 x 10mm Hex Socket Head Cap Screws (1000-M3C010-04) and two (2) M3 Hex Nuts (3000-Mc3-04).

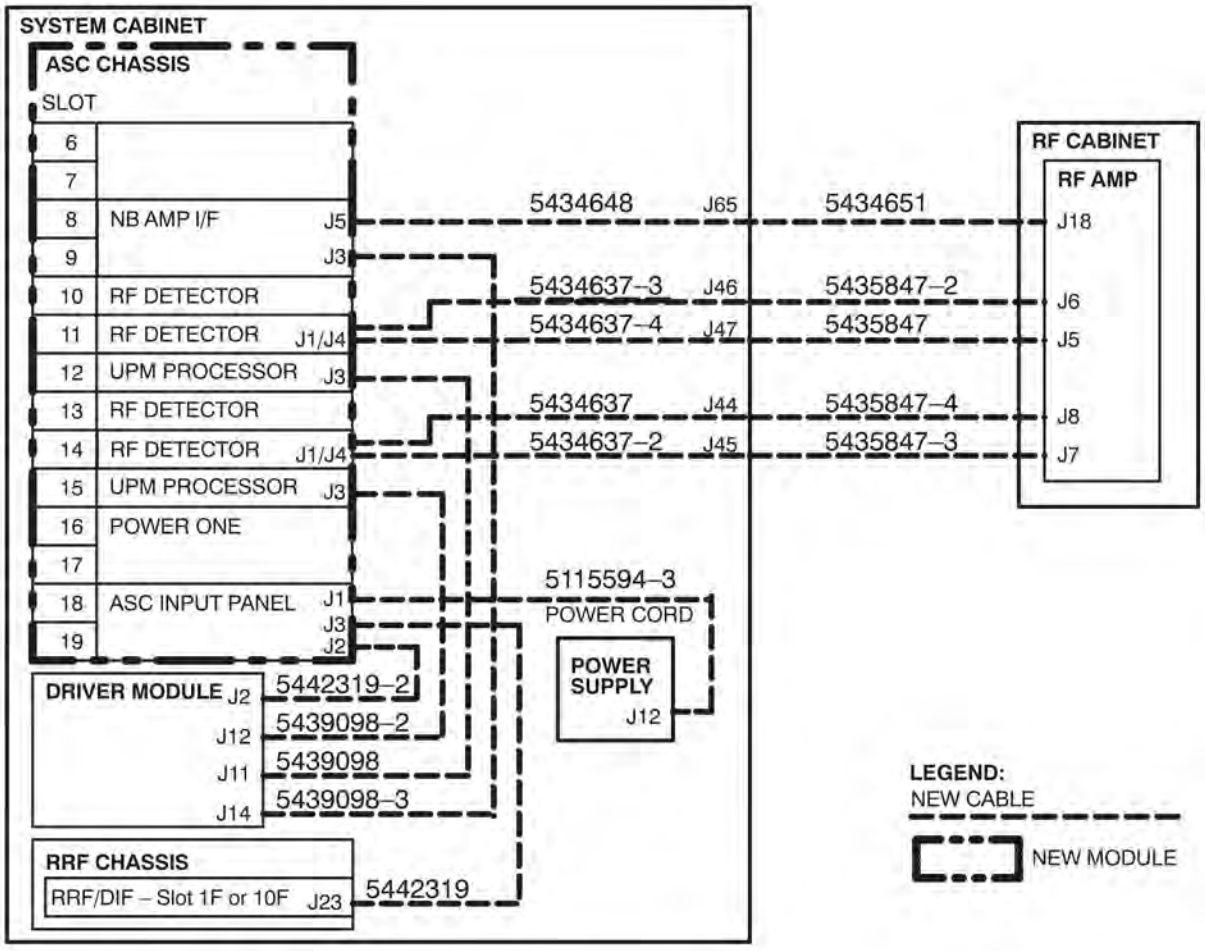
1.12.4 Installation of ASC Modules and Cables

1.12.4.1 For Sites without MNS

Install the two (2) RF Detector boards (5250154), one (1) Narrow Band Amplifier I/F board (2391146), and two (2) UPM Processor Boards (2359518-2) in the slots as indicated in the following illustration.

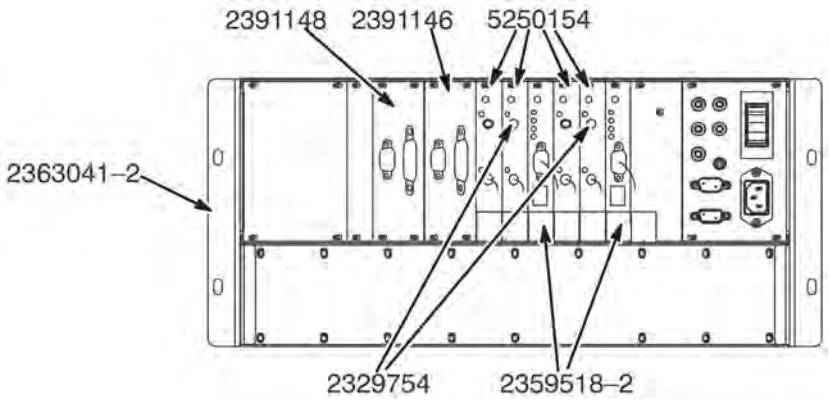


Refer to the following illustration for installation and connection points of new cables.

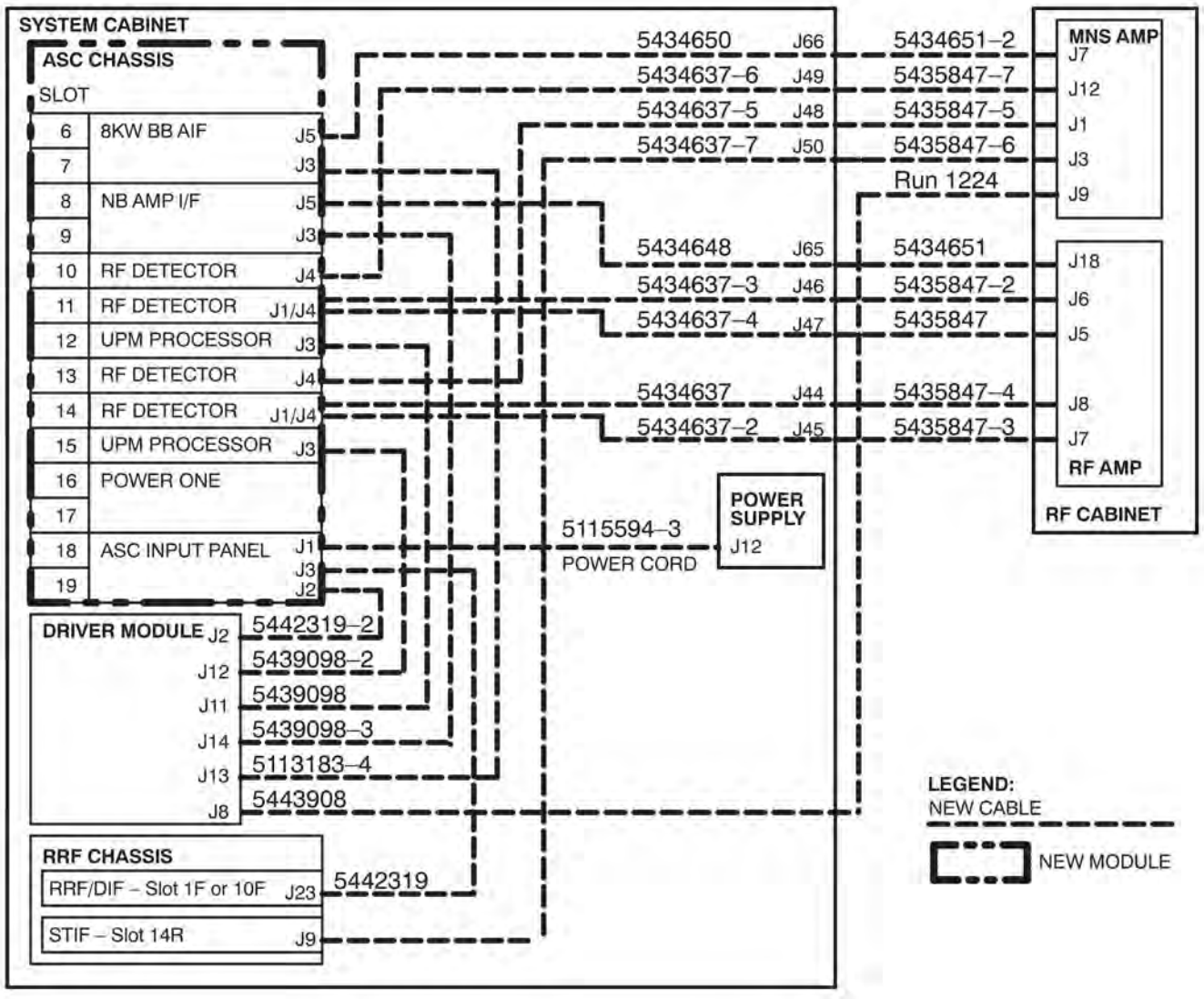


1.12.4.2 For Sites with MNS

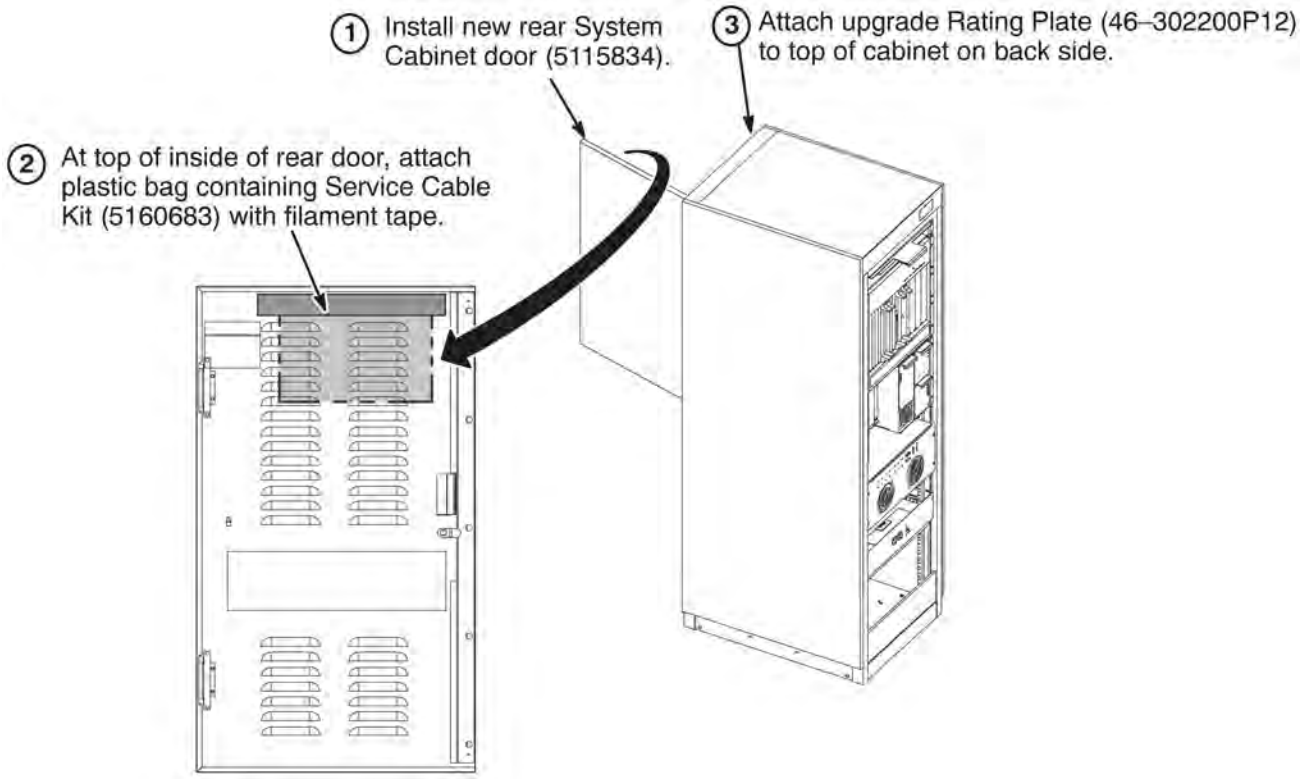
Install the four (4) RF Detector boards (5250154), one (1) Narrow Band Amplifier I/F board (2391146), one (1) Broad Band Amplifier I/F Board (2391148), and two (2) UPM Processor Boards (2359518-2) in the slots as indicated in the following illustration. Also install two (2) 50 Ohm Terminators (2329754) on the empty J1 ports on RF Detector Boards in slots 10 and 13



Refer to the following illustration for installation and connection points of new cables.



1.13 Install New Rear Door and Rating Plate



Chapter 9 SRF or SRF2 Cabinet

1 SRF Or SRFD2 Cabinet Upgrade Procedures

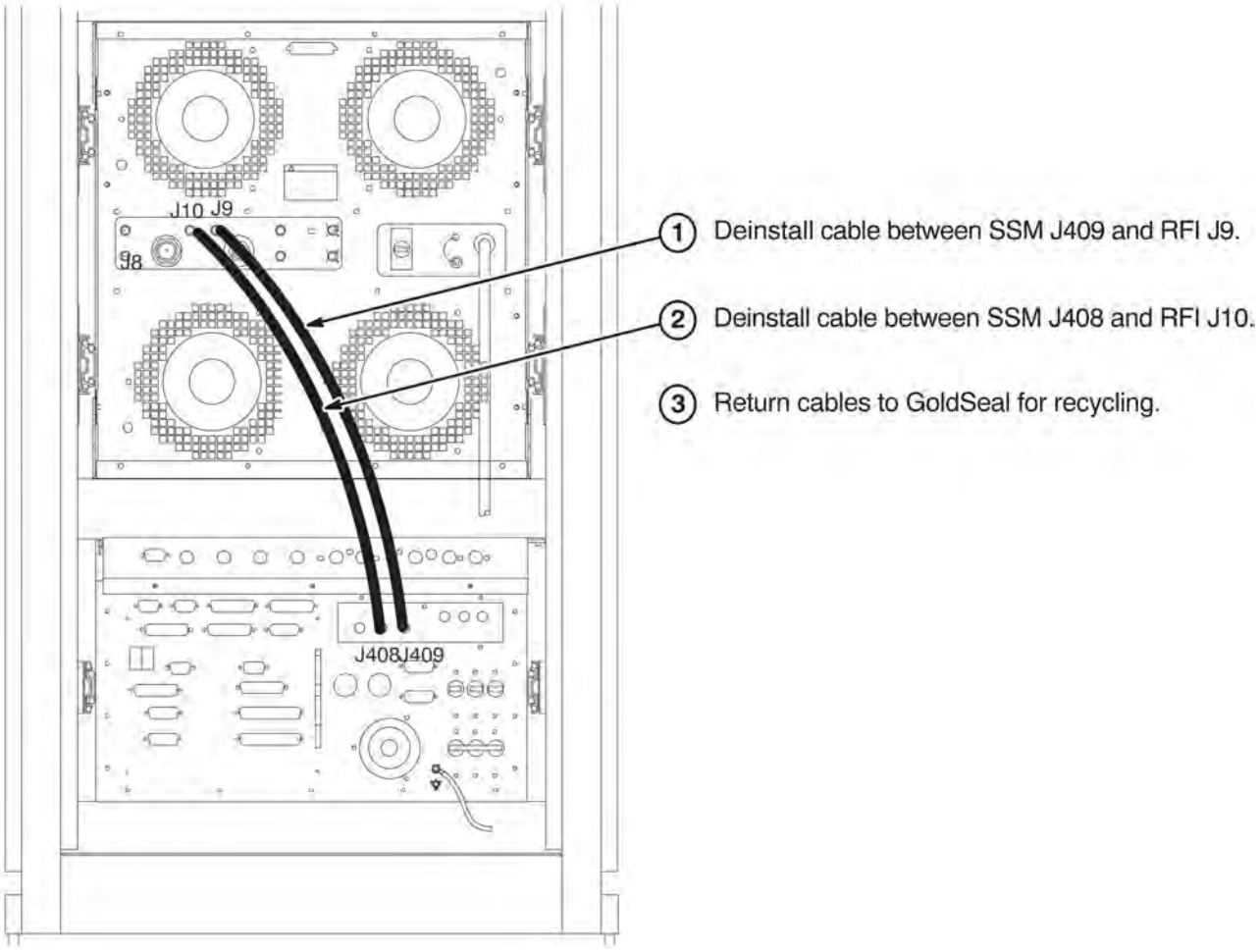
NOTICE

POWER TO SYSTEM MUST BE OFF, LOCKED AND TAGGED, BEFORE STARTING ANY UPGRADE PROCEDURES. REFER TO SECTION 3 FOR POWER OFF PROCEDURES.

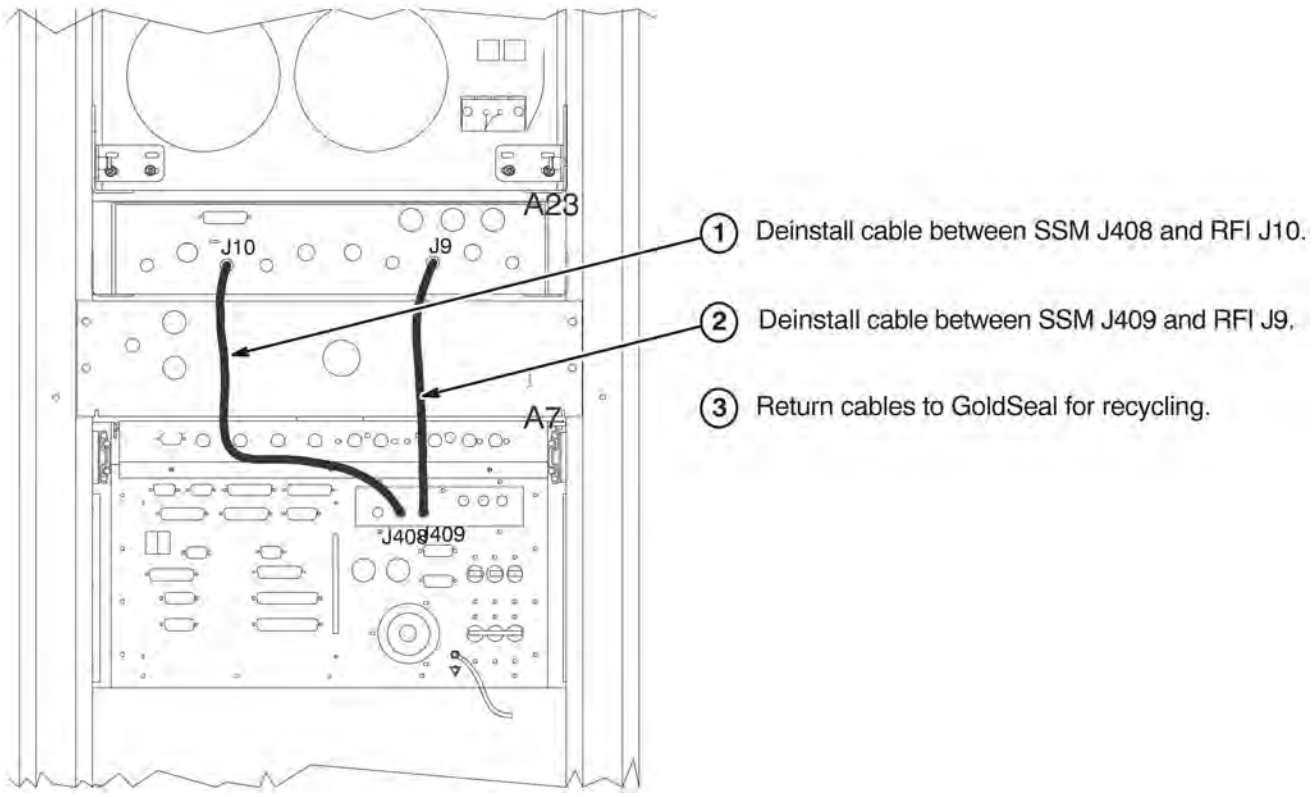
1.1 Introduction

The existing SRF Cabinet will have only a few changes. Some of the functionality of the SSM Module is being transferred to the new Driver Module in the System Cabinet. The following procedures describe the steps needed to accomplish this change.

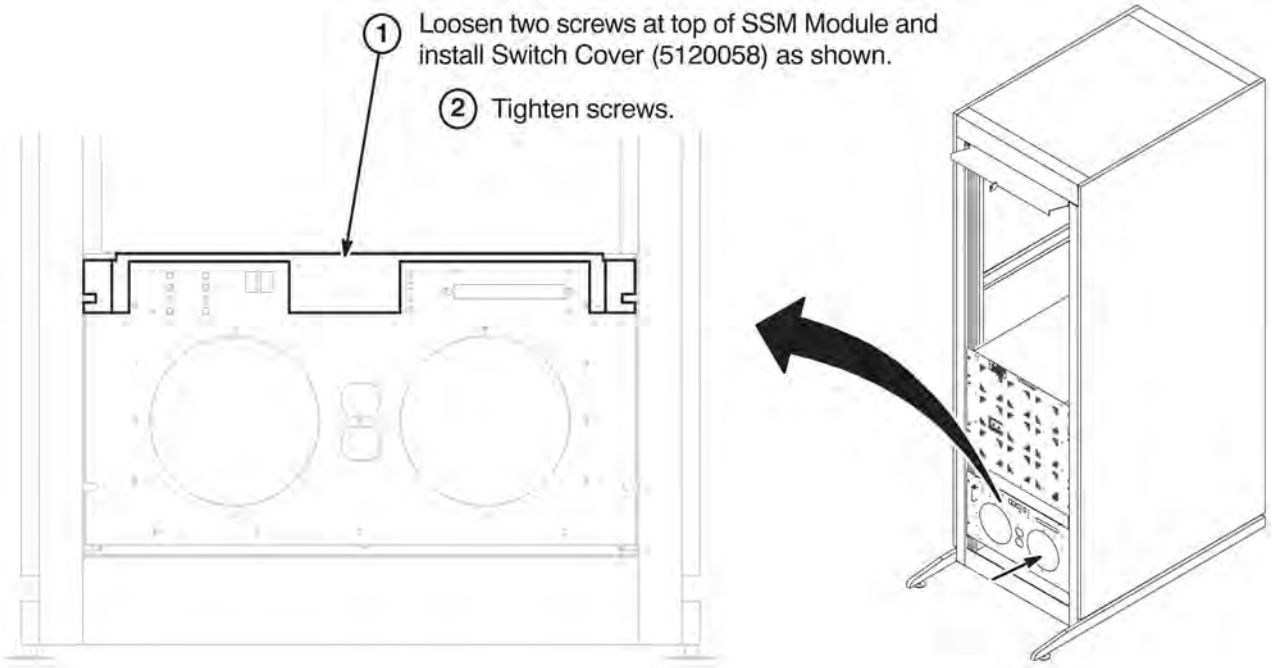
1.2 Deinstall Cables in SRFD2 Cabinet



1.3 Deinstall Cables in SRF Cabinet



1.4 Install Switch Cover on Front of SSM Module



Chapter 10 ACGD/HFD Cabinet

1 ACGD/HFD Cabinet

NOTICE

POWER TO SYSTEM MUST BE OFF, LOCKED AND TAGGED, BEFORE STARTING ANY UPGRADE PROCEDURES. REFER TO CHAPTER 3 FOR POWER OFF PROCEDURES.

1.1 Introduction

The ACGD/PDU Cabinet **WILL NOT BE** replaced but **WILL BE** upgraded to HFD-S when upgrading a site from EXCITE 11.x to 12.x. Instruction for the upgrade are found in Direction 5131778, ACGD to HFD-S Upgrade Installation, which is shipped with the M3000PT or M3000PW collector of parts.

The ACGD-Lite/PDU cabinet **WILL BE** replaced by an HFD Cabinet if the site is an MR/i SmartSpeed with an ACGD-Lite Cabinet. Refer to Section 4 for additional information and instructions on disconnecting, removing, relabeling, and/or reconnecting of cables when upgrading to EXCITE.

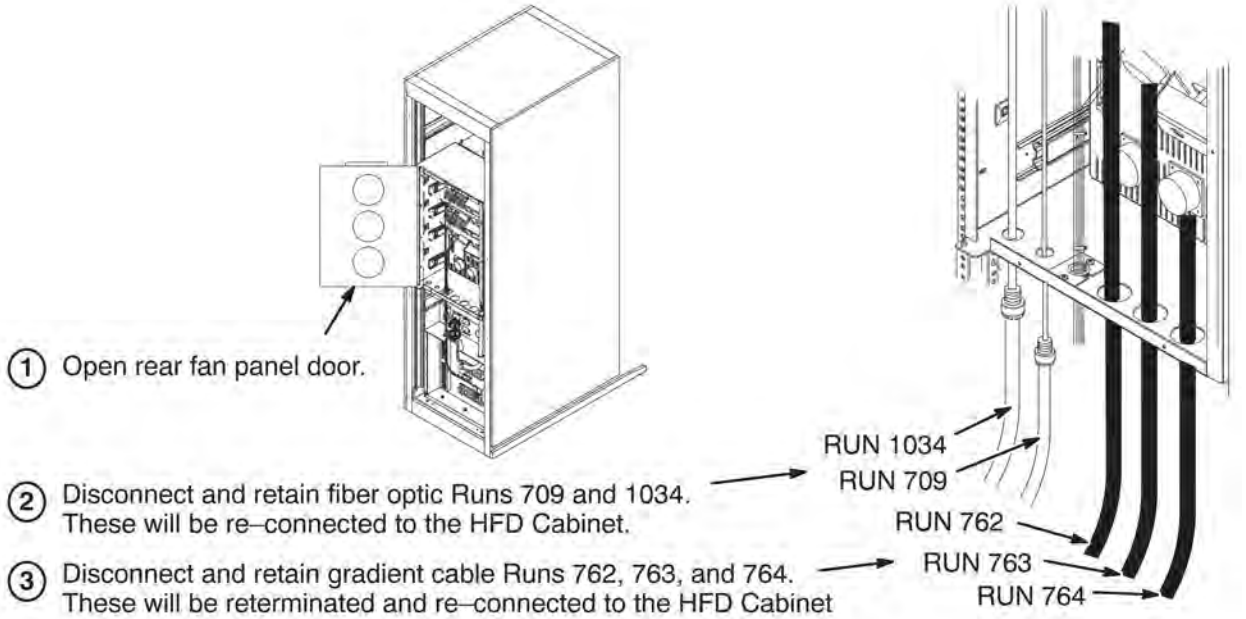
Refer to the following sub-sections for removal of existing ACGD-Lite Cabinet and installation of the new HFD Cabinet.

1.2 Deinstall ACGD-Lite Cabinet

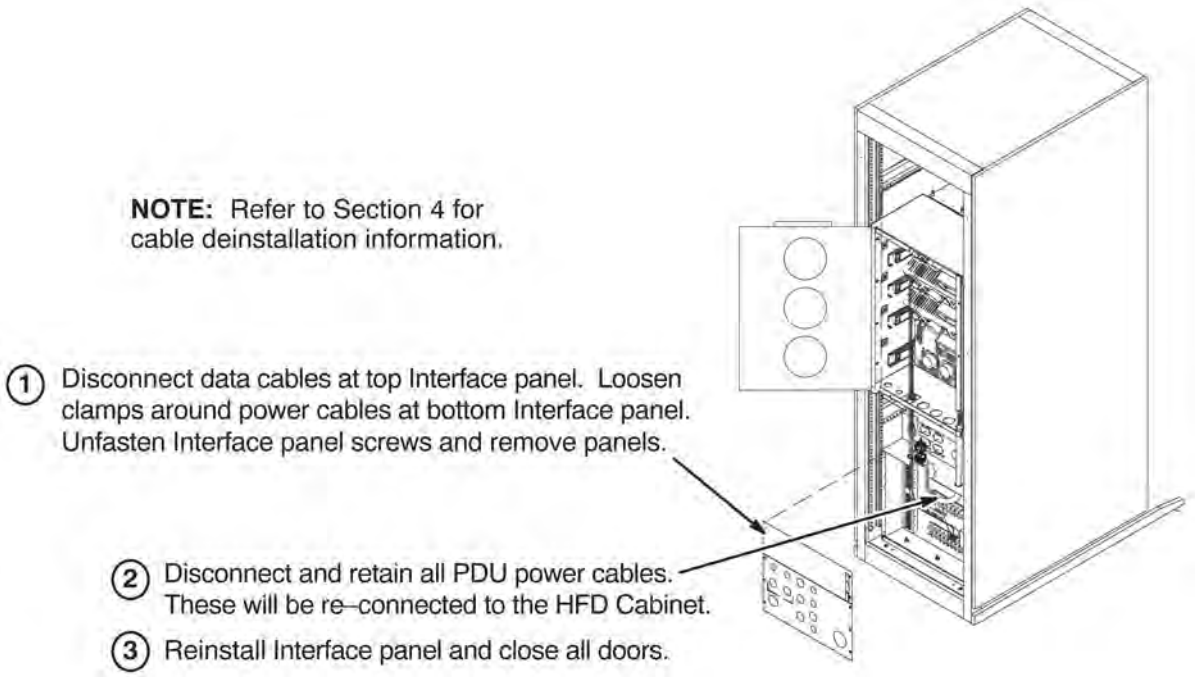
DANGER

FATAL ELECTRIC SHOCK HAZARD!!
LETHAL VOLTAGES ARE PRESENT WITHIN THE PDU.
MAKE SURE THAT POWER AT THE MAIN DISCONNECT IS OFF, LOCKED, AND TAGGED BEFORE PROCEEDING.

1.2.1 Disconnect Fiber Optic and Gradient Cables



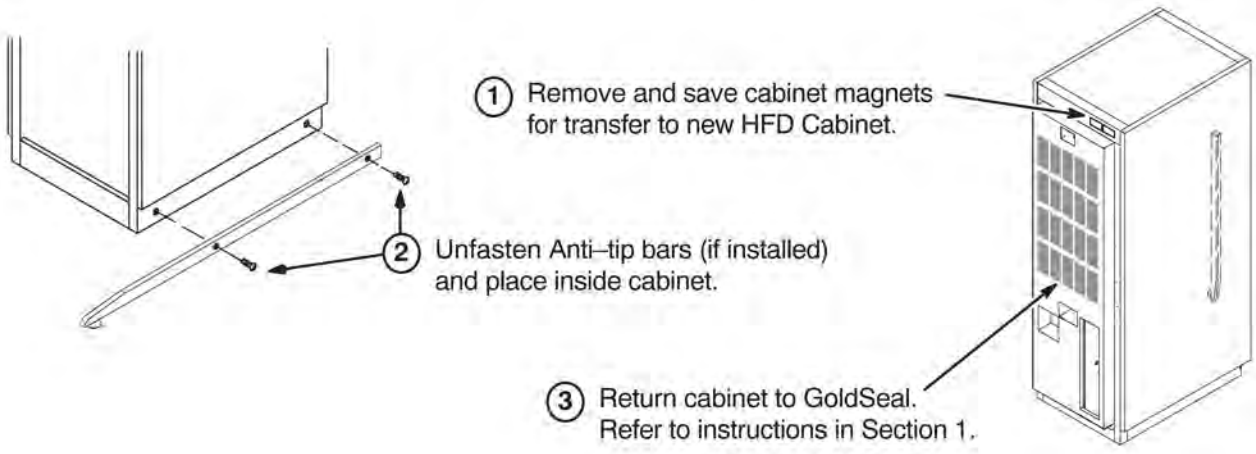
1.2.2 Disconnect Power and Data Cables



1.2.3 Remove ACGD-Lite Cabinet

⚠WARNING

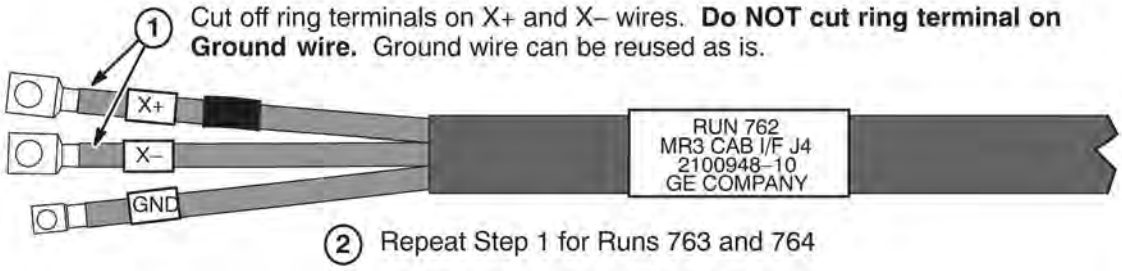
POSSIBLE PERSONAL INJURY!
CABINET IS HEAVY.
DUE TO WEIGHT OF CABINET, AT LEAST TWO PEOPLE ARE REQUIRED TO MOVE CABINET



1.3 Reterminate Gradient Cable Runs 762, 763, and 764

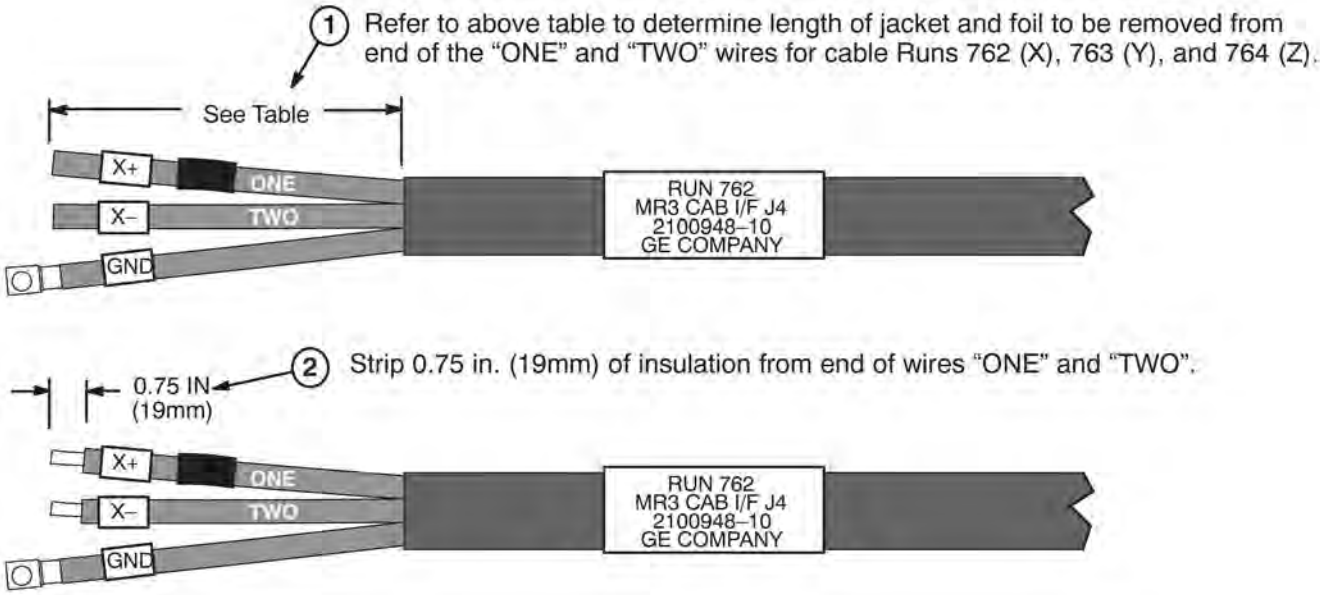
The Gradient cables will be reused but have to be reterminated. The HFD Cabinet uses pressure connectors. Refer to the follwing steps for the alteration to the "ONE" and "TWO" wires.

1.3.1 Remove Existing Ring Terminals



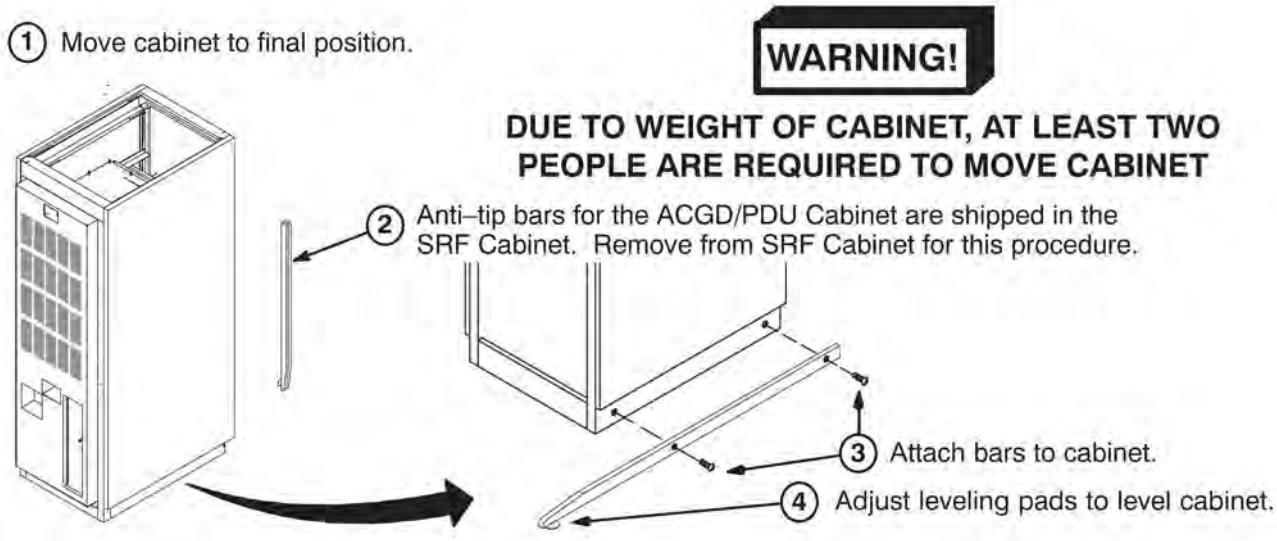
1.3.2 Terminate Runs 762, 763, and 764 for HFD Cabinet

	Run 762	Run 763	Run 764
Recommended Jacket Length to be Removed	8.0 IN (203mm)	11.0 IN (280mm)	14.0 IN (356mm)

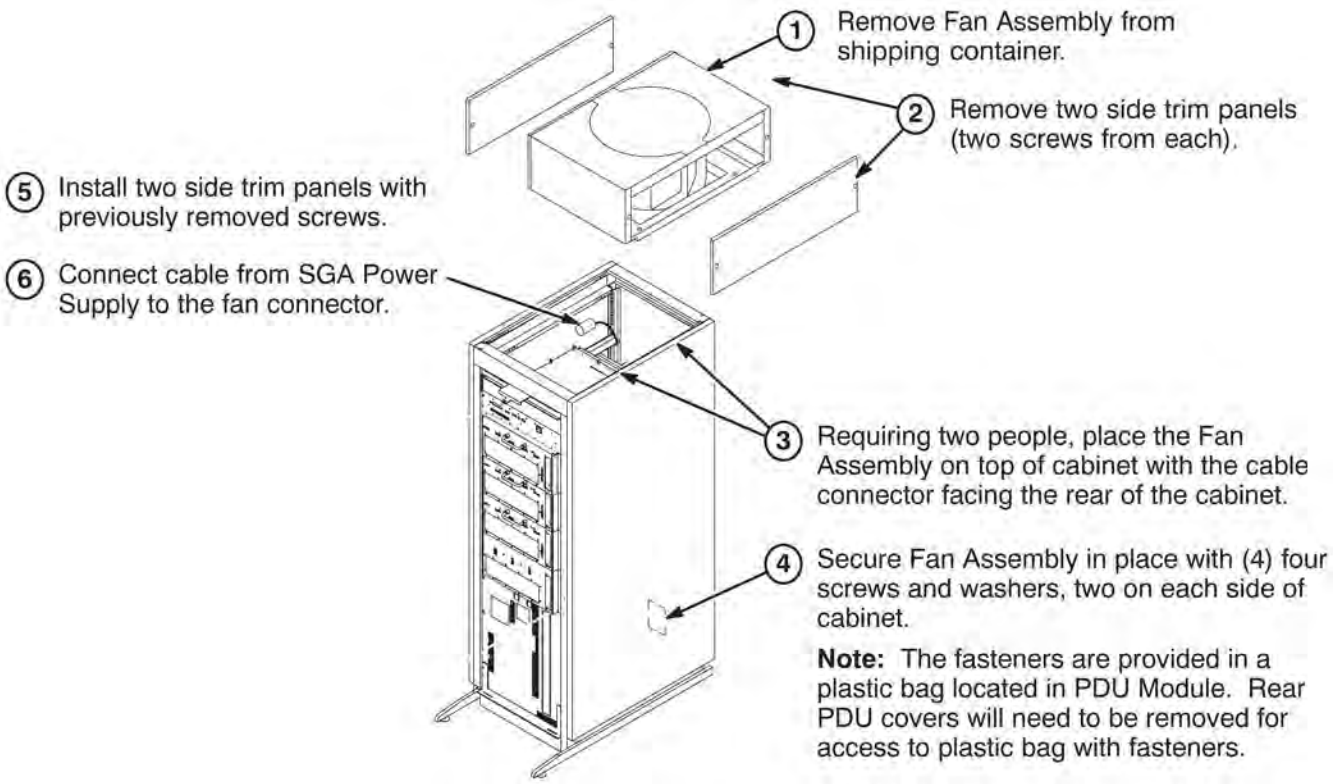


1.4 Installation of HFD Cabinet

1.4.1 Position HFD Cabinet



1.4.2 Install Fan Assembly and Attach Insite Magnet

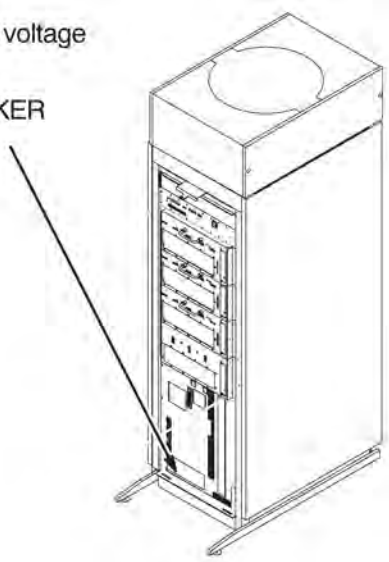


DANGER

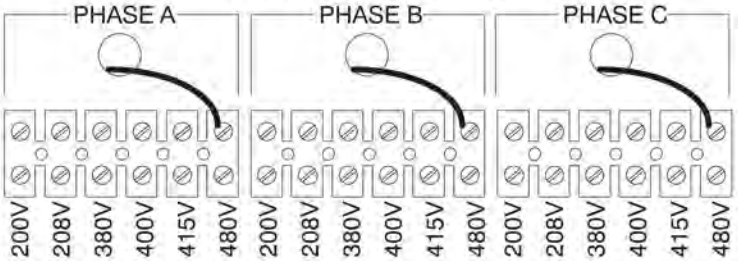
FATAL ELECTRIC SHOCK HAZARD!!
LETHAL VOLTAGES ARE PRESENT WITHIN THE PDU.
MAKE SURE THAT POWER AT THE MAIN DISCONNECT IS OFF, LOCKED, AND TAGGED BEFORE PROCEEDING.

1.4.3 Input Voltage Selection

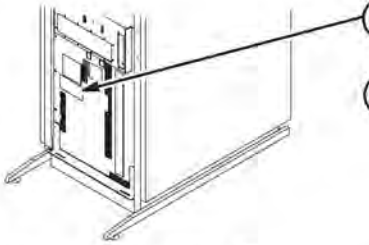
1. Using a voltmeter or other voltage indicating device, check to be sure that no voltage is being applied to the input of the PDU.
2. Remove the plate from the front of the PDU marked INPUT CIRCUIT BREAKER CURRENT SELECT / INPUT VOLTAGE SELECT.
3. For each of the three phases, be sure the wire is connected to the proper terminal for the actual input voltage at the site and that the terminal screw is tight to make a good connection.



(SHOWN WIRED FOR 480V)



1.4.4 Circuit Breaker DIP Switch Settings



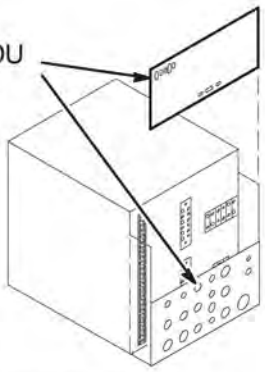
1. Remove small cover plate under the main circuit breaker to access DIP switches controlling the circuit breaker operation.
2. Table below shows the position of the DIP switches for each input voltage selection. The switches immediately under the letter "L" and "I" are the only ones that should be changed.

INPUT VOLTAGE	DIP SWITCH "L" SETTING	L	I	DIP SWITCH "I" SETTING	INPUT VOLTAGE
200V		 Set these switches according to the input voltage shown at the left.	 Set these switches according to the input voltage shown at the right.		200V
208V					208V
380V					380V
400V					400V
415V		 If these switches are present, set both of them in the **DOWN** position as shown.			415V
480V					480V

1.4.5 Facility Power and Ground Connection

WARNING!

IF 3 PHASE WYE WITH NEUTRAL AND GROUND (5 WIRE SYSTEM) INPUT IS USED THE NEUTRAL MUST BE TERMINATED INSIDE THE MAIN DISCONNECT CONTROL AND NOT BROUGHT TO THE ACGD/PDU CABINET.



1. Remove rear PDU module covers.

6. Connect RF screen room ground conductor to Ground Bus Bar.
5. Connect facility input dedicated ground conductor to Ground (GRN/YEL) Bus Bar.
4. Connect L1–L3 conductors to terminal block.
3. **NOTE:** Air flow thru cabinet must exit thru top of cabinet. If not, fan at top of cabinet is rotating in wrong direction. To reverse rotation of fan, switch any two of the three incoming L1–L3 power wires.

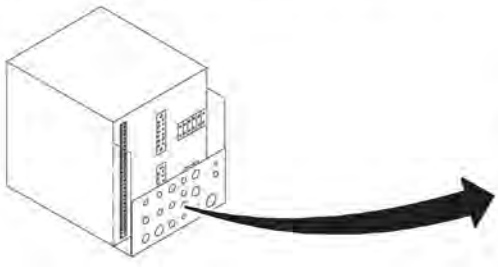
DANGER!

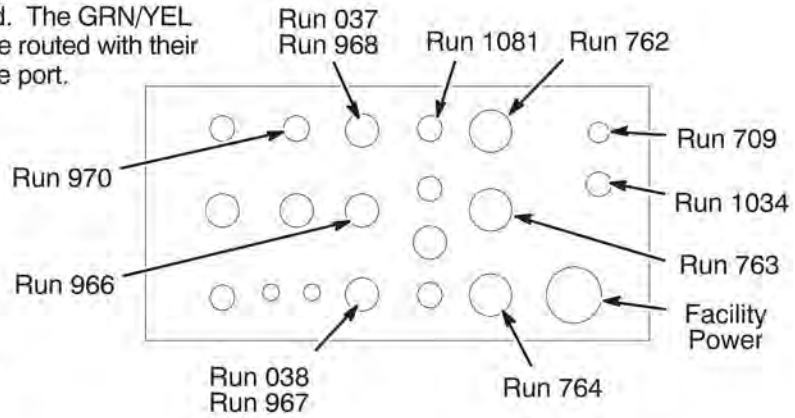
MAKE SURE ALL POWER TO CABINET IS OFF, LOCKED, & TAGGED BEFORE SWITCHING ANY ABOVE WIRES.

2. Route facility input power cable and ground wire thru interface panel.

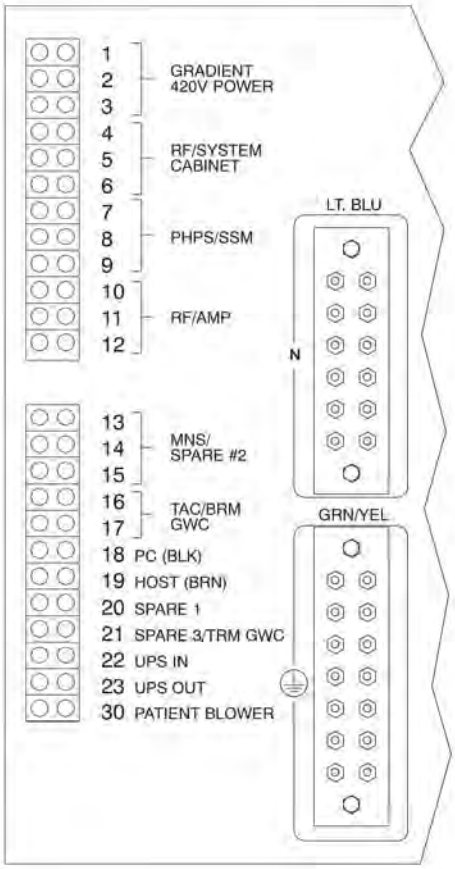
1.4.6 Route Power Cables thru Interface Panel

1. Route Runs thru interface panel as marked. The GRN/YEL ground wires (Runs 037 and 038) **MUST** be routed with their respective power cable Runs thru the same port.
2. Route any option Runs as marked.



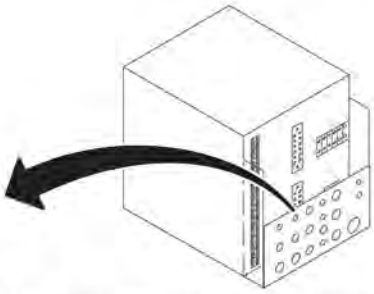


1.4.7 Connect Power Cables to PDU Module



WARNING!

ALL POWER CABLES LISTED BELOW MUST BE CONNECTED TO PDU MODULE LOCATED WITHIN ACGD/PDU CABINET.



1. Route/connect power cables to pressure connectors and studs on back of PDU module as shown in Table below.
2. Trim and connect ground wire cables (Runs 037 and 038) to ground bus connectors.
3. Tighten clamps of interface panel to secure cables in place.

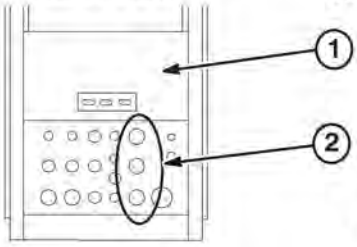
CONNECT TO	RUN	PHASE	DESTINATION
4,5,6	968	ϕ A, B, C	System Cabinet 3ϕ, Neutral, Ground
7,8,9	966	ϕ A, B, C	SSM 3ϕ Neutral, Ground
10,11,12	967	ϕ A, B, C	RFI/AMP 3ϕ, Ground
16,17	970*	ϕ A,B	Water Chiller Single ϕ, Ground
18,19	1081	ϕ C,A	Operator Workspace Single ϕ, Neutral, GND
20	973*	ϕ A	Heat Exchanger Single ϕ, Neutral, GND
GRN/YEL	037		System Cabinet Ground Wire
GRN/YEL	038		SRF Cabinet Ground Wire

COLOR CODE: for remainder of cables: 3ϕ= Black, Red, Orange
Single ϕ = Brown, Black
Neutral = Light blue Gnd = Grn/Yel

* Non–WideOpen sites

1.4.8 Gradient Output Cable Interface Panel Access

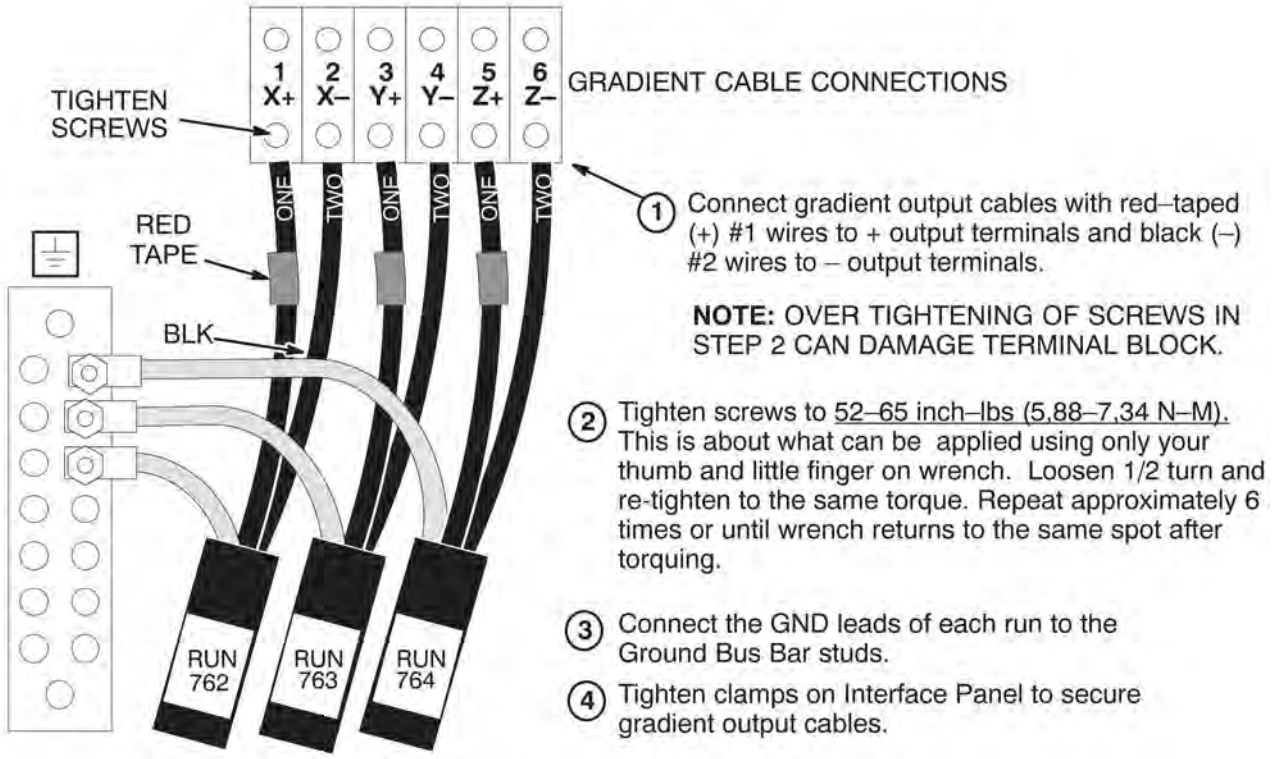
HFD CABINET
(REAR VIEW)



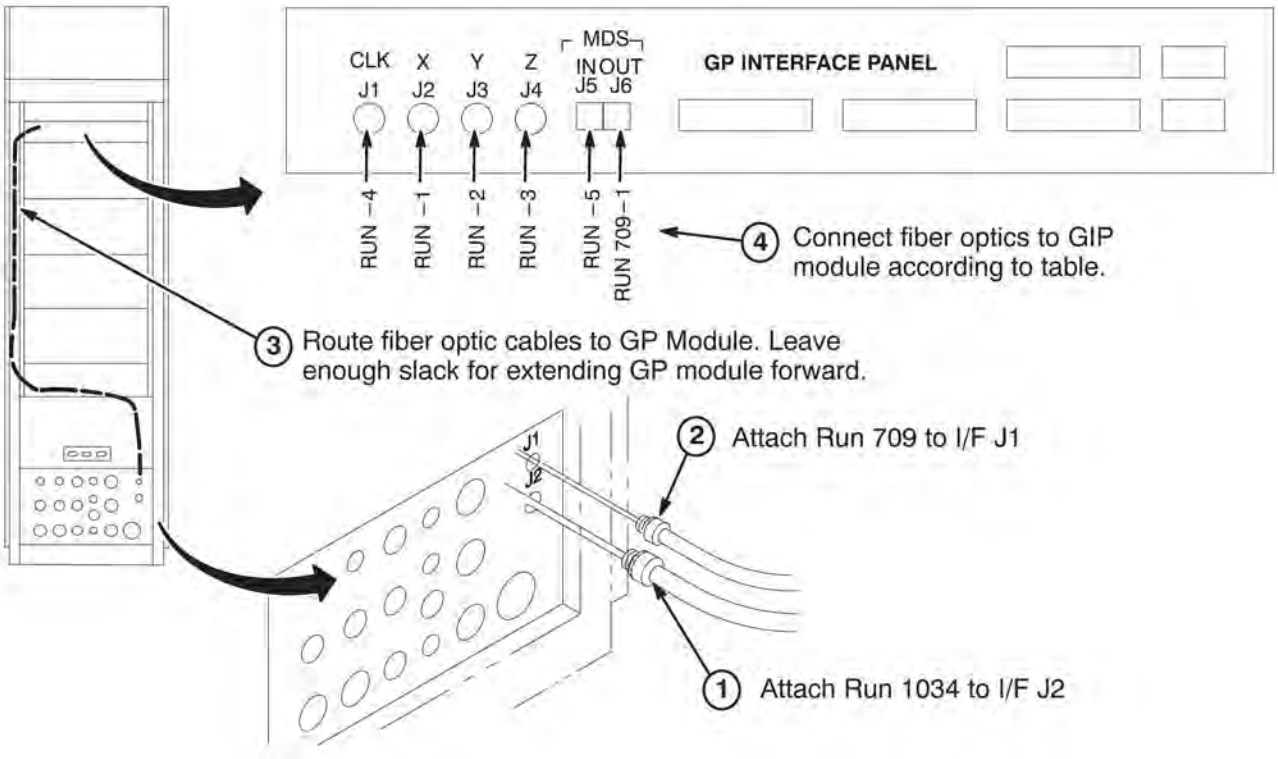
NOTE: Output cables (Runs 762, 763, and 764) were previously routed, cut to length, and terminated.

1. Remove Rear Cover Plate by removing seven screws that hold it in place.
2. Loosen screws on clamps for gradient output cables. Insert ends of gradient output cables into Cabinet Interface as marked. (Runs 762 into J3, Run 763 into J4, and Run 764 into J5)

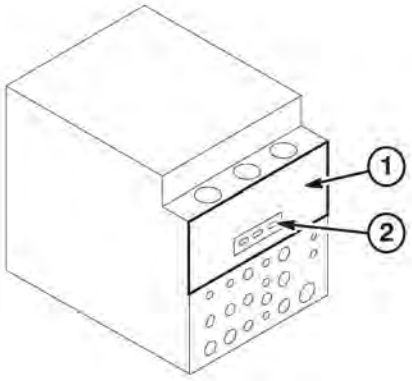
1.4.9 Gradient Output Cable Routing



1.4.10 Connect Fiber Optics to GP Module

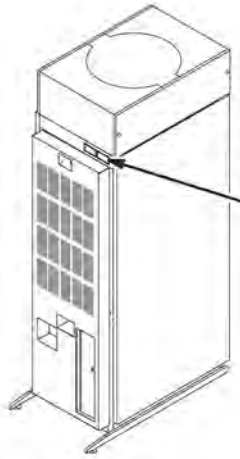


1.4.11 Connect Runs 971 to PDU Module



1. Attach rear PDU module covers removed in Procedure **B1.**
2. Connect Run 971 to J2.

1.4.12 Attach Insite Cabinet Magnets



1. Attach front and rear covers.
2. Attach the "Gradient" cabinet magnet (46–320095P7) and the "PDU" cabinet magnet (46–320095P4) to front of cabinet as shown. These were transferred from the ACGD –Lite Cabinet.

Chapter 11 Completion

1 Completion

1.1 Mechanical Installation Completion

The following steps need to be reviewed & completed by GE Field Engineer, especially if the system was installed by non-GE personnel. Check off boxes at the front of each item below when complete.

- ☐ Check mechanical flowchart to make sure all steps are complete (Section 2)
- ☐ Resolve shipment shortages
- ☐ Resolve omissions by mechanical contractors
- ☐ Make sure all rating plates are installed
- ☐ Recheck all wiring connections using cable map (Section 4)
- ☐ Correct for wiring errors if necessary
- ☐ Complete Section 1.2, Section 1.3 and Section 1.4.

1.2 Returning Shipping Equipment

The shipping material must be returned **as soon as possible**. Prompt return is required so that production shipments can continue with these labor saving dollies. These can be included with the obsolete equipment and materials being returned in Section . Recycling Operation will route them to appropriate location.

1.3 Material Disposition Guidance

Refer to section titled *Discarded Material Return Policy* in Chapter 1, Getting Started. The equipment or material being disposed by the upgrade have a potential value for service of the installed base. The disposition of such must be controlled by GE. Disposition of the removed material is per GE Medical Systems Policy and Procedures.

1.4 Final Coordination

1. Replace cabinet covers that have not been previously replaced.
2. Replace Magnet Enclosure covers and Rear Pedestal covers
3. Dock Patient Transport in position at front of bore.
4. Record and enter applicable data into applicable site configuration files and records.
5. Complete Product Locator information in Chapter 1, Getting Started.

   NOTE: Failure to fill out and return Product Locator Cards may result in failure of your site to receive future FMI's.

6. Leave the site's set of Manuals and CD-ROM at site. Organize and set up reference cabinet for the Manuals.
7. Locate any new Material Safety Data Sheets (MSDS). They must be retained on site. Customer is to be informed that material with MSDS information was brought into site and customer should know/decide where MSDS be retained.
8. Verify that coordination of application support for instruction of site users on Software Release 16.0v2 or later has been made before returning system to the users. Turn site over to applications who will instruct users.

1.5 Power On

1. Notify field service and other installation personnel that are working at the site that the PDU main disconnect locks and tags will be removed so PDU power can be turned on.
2. Restore power to the PDU from main disconnect.
3. Refer to the CD-ROM, Installation Calibration Flow, and perform the following:
   - PDU Voltage Checks Compact > PDU E-Stop Check
   - Startup Checks Compact
   - Transformer Taps Compact
4. Press the FULL ON button on the PDU front control panel.
5. Except for the ACGD Gradient power modules, switch all cabinet circuit breakers to ON. The ACGD Gradient power module circuit breakers should remain OFF for one hour after HVAC power up to allow room humidity to stabilize.

NOTICE

When turning on the circuit breaker in the PDU, both the PC and Host circuit breakers must be energized.

6. **Make sure the UPS circuit breaker is switched to the ON position.** This is required to feed power to the Operator Workspace.
7. Operator Workspace power-on procedure:

   NOTE: When powering up the GOC, there is a Main breaker located in the front of the GOC. There are also two switches for the GOC AA and Modem power.

   a. Restore power to the GOC, boot software, and ensure proper system operation.

      NOTE: If necessary, reconnect the optional UPS accessory and ensure power is restored.

   b. Perform the applicable Loading Host System Software procedure to load software and applications onto the operating system.

      NOTE: The Load from Cold must be performed to properly transfer customer options

   c. Update the elicense with the new Host ID.

d. Perform a scan to ensure the system and applications are working properly.

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