



GE Medical Systems

Technical Publications

2165897–100

Revision 2

RS 85 Interface Package for Compax 40E CE Marked Systems

sm Service Manual

do not duplicate

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ATTENTION

LES APPAREILS À RAYONS X SONT DANGEREUX À LA FOIS POUR LE PATIENT ET POUR LE MANIPULATEUR SI LES MESURES DE PROTECTION NE SONT PAS STRICTEMENT APPLIQUEES

Bien que cet appareil soit construit selon les normes de sécurité les plus sévères, la source de rayonnement X représente un danger lorsque le manipulateur est non qualifié ou non averti. Une exposition excessive au rayonnement X entraîne des dommages à l'organisme.

Par conséquent, toutes les précautions doivent être prises pour éviter que les personnes non autorisées ou non qualifiées utilisent cet appareil créant ainsi un danger pour les autres et pour elles-mêmes.

Avant chaque manipulation, les personnes qualifiées et autorisées à se servir de cet appareil doivent se renseigner sur les mesures de protection établies par la Commission Internationale de la Protection Radiologique, Annales 26 : Recommandations de la Commission Internationale sur la Protection Radiologique et les normes nationales en vigueur.

WARNING

X-RAY EQUIPMENT IS DANGEROUS TO BOTH PATIENT AND OPERATOR UNLESS MEASURES OF PROTECTION ARE STRICTLY OBSERVED

Though this equipment is built to the highest standards of electrical and mechanical safety, the useful x-ray beam becomes a source of danger in the hands of the unauthorized or unqualified operator. Excessive exposure to x-radiation causes damage to human tissue.

Therefore, adequate precautions must be taken to prevent unauthorized or unqualified persons from operating this equipment or exposing themselves or others to its radiation.

Before operation, persons qualified and authorized to operate this equipment should be familiar with the Recommendations of the International Commission on Radiological Protection, contained in Annals Number 26 of the ICRP, and with applicable national standards.

ATENCIÓN

LOS APARATOS DE RAYOS X SON PELIGROSOS PARA EL PACIENTE Y EL MANIPULADOR CUANDO LAS NORMAS DE PROTECCIÓN NO ESTAN OBSERVADAS

Aunque este aparato está construido según las normas de seguridad más estrictas, la radiación X constituye un peligro al ser manipulado por personas no autorizadas o incompetentes. Una exposición excesiva a la radiación X puede causar daños al organismo.

Por consiguiente, se deberán tomar todas las precauciones necesarias para evitar que las personas incompetentes o no autorizadas utilicen este aparato, lo que sería un peligro para los demás y para sí mismas.

Antes de efectuar las manipulaciones, las personas habilitadas y competentes en el uso de este aparato, deberán informarse sobre las normas de protección fijadas por la Comisión Internacional de la Protección Radiológica, Anales No 26: Recomendaciones de la Comisión Internacional sobre la Protección Radiológica y normas nacionales.

ACHTUNG

RÖNTGENAPPARATE SIND EINE GEFAHR FÜR PATIENTEN SOWIE BEDienungSPERSONAL, WENN DIE GELTENDEN SICHERHEITSVORKEHRUNGEN NICHT GENAU BEACHTET WERDEN

Dieser Apparat entspricht in seiner Bauweise strengsten elektrischen und mechanischen Sicherheitsnormen, doch in den Händen unbefugter oder unqualifizierter Personen wird er zu einer Gefahrenquelle. Übermäßige Röntgenbestrahlung ist für den menschlichen Organismus schädlich.

Deswegen sind hinreichende Vorsichtsmaßnahmen erforderlich, um zu verhindern, daß unbefugte oder unqualifizierte Personen solche Geräte bedienen oder sich selbst und andere Personen deren Bestrahlung aussetzen können.

Vor Inbetriebnahme dieses Apparats sollte sich das qualifizierte und befugte Bedienungspersonal mit den geltenden Kriterien für den gefahrlosen Strahleneinsatz durch sorgfältiges Studium des Hefts Nr. 26 der Internationalen Kommission für Strahlenschutz (ICRP) vertraut machen: Empfehlungen der Internationalen Kommission für Strahlenschutz und anderer nationaler Normenbehörden.

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WILL RESULT IN SEVERE INJURY IF THE INSTRUCTIONS ARE NOT FOLLOWED.



AN OPERATING OR MAINTENANCE PROCEDURE, PRACTICE, CONDITION, ETC., WHICH, IF NOT STRICTLY OBSERVED, COULD RESULT IN SERIOUS INJURY.



Hazard exists which will, or could, cause a minor injury.

Notice:

A notice indicates possible equipment damage.

Note:

An essential operating, installation, or maintenance: procedure, practice, condition, etc., which must be highlighted.

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WARNING

- 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.

AVERTISSEMENT

- CE MANUEL DE MAINTENANCE N'EST DISPONIBLE QU'EN ANGLAIS.
- SI LE TECHNICIEN DU CLIENT A BESOIN DE CE MANUEL DANS UNE AUTRE LANGUE QUE L'ANGLAIS, C'EST AU CLIENT QU'IL INCOMBE DE LE FAIRE TRADUIRE.
- NE PAS TENTER D'INTERVENTION SUR LES ÉQUIPEMENTS TANT QUE LE MANUEL SERVICE N'A PAS ÉTÉ CONSULTÉ ET COMPRIS.
- LE NON-RESPECT DE CET AVERTISSEMENT PEUT ENTRAÎNER CHEZ LE TECHNICIEN, L'OPÉRATEUR OU LE PATIENT DES BLESSURES DUES À DES DANGERS ÉLECTRIQUES, MÉCANIQUES OU AUTRES.

WARNUNG

- DIESES KUNDENDIENST-HANDBUCH 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, DAS GERÄT ZU REPARIEREN, BEVOR DIESES KUNDENDIENST-HANDBUCH NICHT ZU RATE GEZOGEN UND VERSTANDEN WURDE.
- WIRD DIESE WARNUNG NICHT BEACHTET, SO KANN ES ZU VERLETZUNGEN DES KUNDENDIENSTTECHNIKERS, DES BEDIENERS ODER DES PATIENTEN DURCH ELEKTRISCHE SCHLÄGE, MECHANISCHE ODER SONSTIGE GEFAHREN KOMMEN.

AVISO

- ESTE MANUAL DE SERVICIO SÓLO EXISTE EN INGLÉS.
- SI ALGÚN PROVEEDOR DE SERVICIOS AJENO A GEMS SOLICITA UN IDIOMA QUE NO SEA EL INGLÉS, ES RESPONSABILIDAD DEL CLIENTE OFRECER UN SERVICIO DE TRADUCCIÓN.
- 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.

ATENÇÃO

- ESTE MANUAL DE ASSISTÊNCIA TÉCNICA SÓ SE ENCONTRA DISPONÍVEL EM INGLÊS.
- SE QUALQUER OUTRO SERVIÇO DE ASSISTÊNCIA TÉCNICA, QUE NÃO A GEMS, SOLICITAR ESTES MANUAIS NOUTRO IDIOMA, É DA RESPONSABILIDADE DO CLIENTE FORNECER OS SERVIÇOS DE TRADUÇÃO.
- NÃO TENHA TENTADO REPARAR O EQUIPAMENTO SEM TER CONSULTADO E COMPREENDIDO ESTE MANUAL DE ASSISTÊNCIA TÉCNICA.
- O NÃO CUMPRIMENTO DESTA AVISO PODE POR EM PERIGO A SEGURANÇA DO TÉCNICO, OPERADOR OU PACIENTE DEVIDO A CHOQUES ELÉTRICOS, MECÂNICOS OU OUTROS.

AVVERTENZA

- IL PRESENTE MANUALE DI MANUTENZIONE È DISPONIBILE SOLTANTO IN INGLESE.
- SE UN ADDETTO ALLA MANUTENZIONE ESTERNO ALLA GEMS RICHIEDE IL MANUALE IN UNA LINGUA DIVERSA, IL CLIENTE È TENUTO A PROVVEDERE DIRETTAMENTE ALLA TRADUZIONE.
- SI PROCEDA ALLA MANUTENZIONE DELL'APPARECCHIATURA SOLO DOPO AVER CONSULTATO IL PRESENTE MANUALE ED AVERNE COMPRESO IL CONTENUTO.
- NON TENERE CONTO DELLA PRESENTE AVVERTENZA POTREBBE FAR COMPIERE OPERAZIONI DA CUI DERIVINO LESIONI ALL'ADDETTO ALLA MANUTENZIONE, ALL'UTILIZZATORE ED AL PAZIENTE PER FOLGORAZIONE ELETTRICA, PER URTI MECCANICI OD ALTRI RISCHI.

警告

- ・ このサービスマニュアルには英語版しかありません。
- ・ GEMS以外で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下さい。
- ・ 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。

注意：

- 本维修手册仅存有英文本。
- 非 GEMS 公司的维修员要求非英文本的维修手册时，客户需自行负责翻译。
- 未详细阅读和完全了解本手册之前，不得进行维修。
- 忽略本注意事项会对维修员，操作员或病人造成触电，机械伤害或其他伤害。

REVISION HISTORY

REV	DATE	REASON FOR CHANGE
0	June, 1997	Initial Realease
1	August, 1997	Powerpax removed
2	December, 1997	Updated (SPR BUCge 29344)

LIST OF EFFECTIVE PAGES

PAGE NUMBER	REVISION NUMBER	PAGE NUMBER	REVISION NUMBER	PAGE NUMBER	REVISION NUMBER
Title page	2				
Safety Instructions	2				
i thru viii	2				
1–1 thru 1–8	2				
2–1 thru 2–6	2				
3–1 thru 3–10	2				
4–i thru 4–ii	2				
4–1 thru 4–8	2				
5–1 thru 5–4	2				

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CHAPTER 1 – INSTALLATION

SECTION 1 INTRODUCTION

The RS 85 Interface package provides parts and instructions to interface the RS 85 CE Marked tube stand with Ultramet SA/SM collimators, Compax 40E CE Marked Table, MPH 50/65/80 Generators, Maxiray MX–100/18, Tube (1.0/2.0 – 0.6/1.25 and 0.3/1 on special order) and SG 60 or SG 100 CE Marked wall stand.

Note: The interface package should be installed after the tube stand is installed.

Note: Collimator Ultramet SA & SM are delivered without accessory rails.

WARNING

IT IS STRICTLY FORBIDDEN, TO MOUNT ACCESSORY RAILS. THE TUBE STAND COUNTERWEIGHT IS NOT ADAPTED TO THE USE OF ACCESSORY CONES AND A HAZARDOUS IMBALANCE COULD RESULT.

The interface package consists of a set of system cables (which is different for an automatic and for a manual system). For this reason, the package number will be:

- 2163736 for an automatic system and
- 2163737 for a manual system.

In both cases (automatic and manual collimator):

- 2163735 → CE Marked RS 85 Tubestand P/N.
- 45434201 → RS 85 CE Marked Power Supply P/N.

TABLE 1-1
INTERFACE PACKAGES

This package will contain the following cables:

INTERFACE PACKAGE FOR AN AUTOMATIC SYSTEM: 2163736	
GEMSE PART NUMBER	DESIGNATION
2145653	MIS 27239: Stator cable.
2165548	MIS 27238: Power supply cable between MPH AC distribution and RS 85 power supply.
2140362	MIS 27302: Ground cable between MPH AC distribution and RS 85 tube stand.
2165547	MIS 27237: Cable between I/P and RS 85 (X3/X4).
2165546	MIS 27236: Cable between I/P and collimator SA (P1).
Delivered by Pausch	MIS 27303: Lock cable between RS 85 (X3) and collimator SA (P2).
2171350	MIS 27304: 24 VDC RS 85 power supply.
INTERFACE PACKAGE FOR MANUAL SYSTEM 2163737	
GEMSE PART NUMBER	DESIGNATION
2145653	MIS 27239: Stator cable.
2165548	MIS 27238: Power supply cable between MPH AC distribution and RS 85 power supply.
2140362	MIS 27302: Ground cable between MPH AC distribution and RS 85 tube stand.
2165551	MIS 27293: Collimator lamp 24 VAC power supply from C40E (J12).
2165550	MIS 27292: Cable between C40E (J21) and RS 85 (X3/X4): SID/Detent.
Delivered by Pausch	MIS 27303: Lock cable between RS 85 (X3) and collimator SM (P2).
2171350	MIS 27304: 24 VDC RS 85 power supply.

SECTION 2 POWER CONNECTIONS

2–1 Ultramet SA (Automatic Collimator)

Note: Be sure to locate the tube stand in the appropriate place with regard to the table and wall bucky. Refer to room layout drawings, RS 85 PIM 2172805 and template.

Note: Tube stand power supply is located and already installed in the system cabinet (upper cabinet MPH) when it arrives on-site.

1. Identify the set of interface cables # 2163736 (see Table 1–1 for detailed description of the content).
2. Connect the RS 85 24 VDC power supply cable # 2171350 as indicated in MIS Chart # 27304.
3. Connect the RS 85 power supply cable number 2165548 from generator AC distribution to the RS 85 power supply as indicated in MIS Chart # 27238.
4. Connect the green/yellow ground cable number 2140362 from the grounding screw next to the tube stand X3 terminal strip to the system ground point. Refer to Ground MIS Map located in the SSM document 2154260.

Note: Collimator lamp power supply (24 VAC) is delivered by the RAFL–S via the Intermediate Panel and the tube stand. Refer to MIS Charts # 27237 and # 27303.

2–2 Ultramet SM (Manual Collimator)

Note: Be sure to place the tube stand in the appropriate place with regard to the table and wall bucky. Refer to room layout drawings, RS 85 PIM document 2172805 and template.

1. Identify set of interface cables # 2163737 (see Table 1–1 for detailed description of the content).
2. Connect the RS 85 24 VDC power supply cable # 2171350 as indicated in MIS Chart # 27304.
3. Connect the RS 85 power supply cable number 2165548 from generator AC distribution to the RS 85 power supply as indicated in MIS Chart # 27238.
4. Connect cable number 2165551 from Compax 40E Table fuse panel to the RS 85 as indicated in MIS Chart # 27293 for Collimator lamp power supply (24 VAC).
5. Connect the green/yellow ground cable number 2140362 from the grounding screw next to the tube stand X3 terminal strip to the system ground point. Refer to ground MIS Maps located in the SSM document 2154260.

Note: Collimator lamp power supply (24 VAC) is delivered by Compax 40E table (fuse panel J12) and via RS 85 tube stand. Refer to MIS Chart # 27293 and # 27303.

SECTION 3 CONTROL CONNECTIONS

3-1 Ultranet SA Configuration

1. Connect the collimator control cable number 2165546 from the Intermediate Panel to the collimator as indicated in MIS Chart # 27236.
2. Connect the cable number 2165547 from the Intermediate panel to the RS 85 tube stand tower as indicated in MIS Chart # 27237. This will allow tube stand SID tracking, Vertical Detent, Longitudinal SID interlocks and Collimator lamp power supply.



On the RS 85 side, this cable must be clamped in the grounding stand OFF, next to the X3 terminal.

Note:

Calculated SID information going from the table to the collimator electronics is located on the interconnection cable, MIS Chart # 27231.

3. Connect Lock cable manufactured by Pausch from RS 85 tube stand to Ultranet SA collimator as indicated in MIS Chart # 27303.

3-2 Ultranet SM Configuration

1. Connect cable number 2165550 from the RS 85 tube stand to the Compax 40E table I/O panel as indicated in MIS Chart # 27292. This will allow tube stand SID tracking, Vertical detent signal to go to the table.



On the RS 85 side, this cable must be clamped in the grounding stand OFF, next to the X3 terminal.

2. Connect Lock cable manufactured by Pausch from RS 85 tube stand to the Ultranet SM collimator as indicated in MIS Chart # 27303.

SECTION 4 VERTICAL SID

4-1 Vertical SID tracking

Vertical SID tracking is a functionality delivered to the system by a height potentiometer installed in the RS 85 as well as in the table. In addition, the table constantly performs the subtraction of those two heights and displays the current result which is the vertical SID.

Note:

Refer to Compax 40E Service Manual (Chapter 3) to adjust the RS 85 height sensing potentiometer and set the 40 inch (101 cm) Vertical SID Detent.

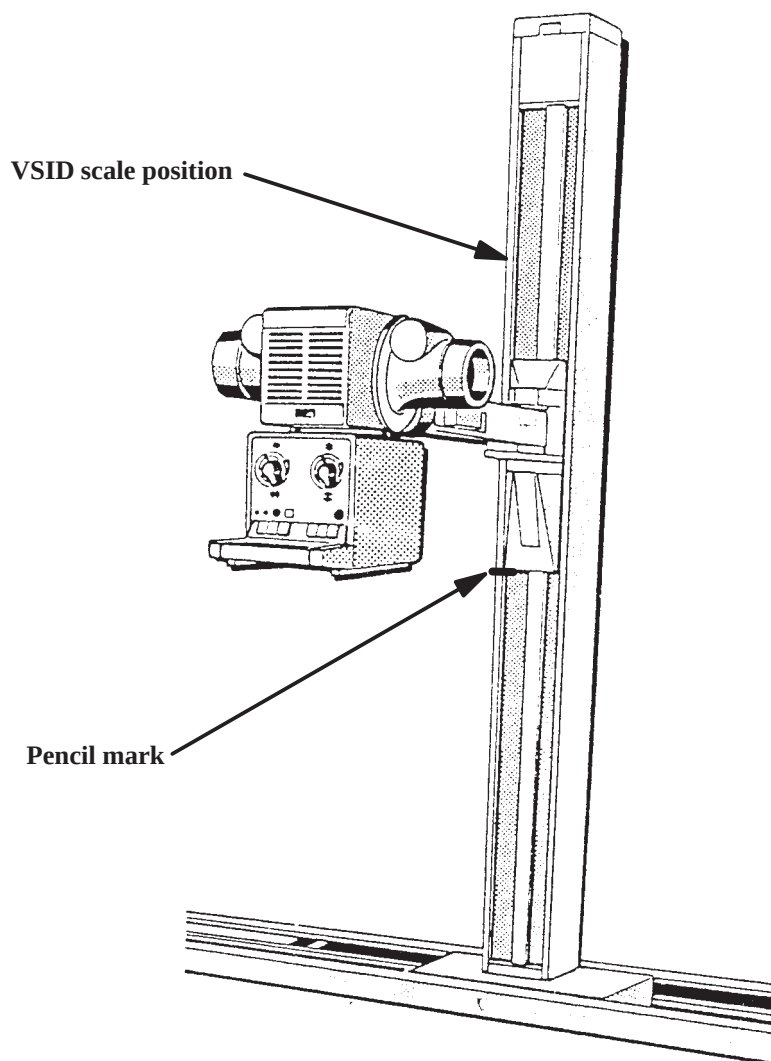
4–2 Vertical SID scale

1. Position the 40E Patient Support at the “intermediate height (720 mm)” detent point.
2. Accurately set tube unit at 40 inches (100 cm) using tape measure on collimator. Hold tape measure perpendicular to film plane and note that the film plane is 0.2 inches (5 mm) beyond surface of the film cassette. To prevent sag of cassette, do not extend cassette more than 1 inch (2.5 cm) from table top.
3. Make a pencil mark on the front left side of the column corresponding to the bottom edge of the vertical carriage (see Illustration 1–1).
4. Strip backing off SID scale and affix to column left side with 40 inch (100 cm) indicator at the pencil mark you made on the column (see Illustration 1–1).

Note:

The metric vertical SID scale consists of 2 half scales. The lower half is marked from 40 to 120 cm and the upper half is marked from 121 to 188 cm). The upper half must be affixed to the column above the lower scale, properly aligned.

ILLUSTRATION 1-1
VERTICAL SID SCALE INSTALLATION



SECTION 5 HORIZONTAL SID

5–1 Horizontal SID adjustments

The RS 85 allows only two horizontal SIDs for Vertical Chest Unit work.

Refer to RS 85 Mounting instructions Manual (Chapter 3) to adjust SID switches and Utranet RAFL–S Service Manual (Chapter 3) to calibrate RAFL SIDs M1 and M2.

Note: Within layout limitations, the Customer should decide on the SID positions. Normally these distances are those on the Collimator field size Selector, namely 40, 44, 48, 60 or 72 inches (100, 110, 102, 150, 180 cm) or appropriate ones for standard X–Ray techniques and grid focal.

5–2 Horizontal SID indicators

1. Identify the indicator labels needed according to the room configuration and the customer's preferences on SIDs. The labels are grouped in a plastic bag P/N 2179511-2 supplied with the RS85 column. See Illustration 1–2.
2. Apply the self-adhesive horizontal SID indicator labels on the most appropriate place on the wall facing the back of the RS85 column, so that they correspond to the pre-selected SIDs and RS85 switch activation settings.

Note: For RS85 systems with Utranet SA collimator, the green LED on the front panel of the collimator illuminates when the actuators of the longitudinal SID switches S8-S9 pass over the switching rod located on the rear floor profile (RS85 rail) adjusted in Section 5–1.

ILLUSTRATION 1-2
HORIZONTAL SID INDICATORS



SECTION 6 OPERATION

6–1 Collimator Operation

Note: For Collimator Operation, refer to the Ultramet SA (SM) Service Manual for further information.

General collimator functions applicable to the RS 85 tube stand include:

- Longitudinal Locks, Vertical Locks, Tube Angulation Locks and Vertical Detent function.
- Vertical SID Tracking:
- Horizontal SID positions (HSID) (40" (101cm) and 72" (183 cm)).
- Cassette size sensing.

AUTOMATIC MODE

With RS 85 the Ultramet SA Collimator enters Auto Mode as described below:

Technique Selection	Table	Tube Unit/Collimator	Wall Bucky
Table Work	● Cassette IN	● Vertical position $\pm 10^\circ$ ● $90 < \text{SID} < 180\text{cm}$ ($36 < \text{SID} < 72\text{ in}$)	● No Cassette
Vertical Wall Bucky Work	● No Cassette	● $+90^\circ$ if WB at foot end ● -90° if WB at head end ● On one of the two proper SIDs	● Cassette IN ● WB in Vertical position ● Cassette holder in position 0° or 180°
Horizontal Wall Bucky Work	● No Cassette	● Vertical position $\pm 10^\circ$ ● $90 < \text{SID} < 180$ ($36 < \text{SID} < 72\text{ in}$)	● Cassette IN ● WB in Horizontal position ● Cassette holder in position 0° or 180°

MANUAL MODE

The System automatically enters MANUAL mode when at least one of the following conditions is present:

1. No cassettes in either Bucky, but "Direct Technique" selected at the Generator Console.
2. Tube unit–collimator angled between $+10^{\circ}$ and $+80^{\circ}$, or -10° and -80° .
3. Wall Bucky is neither Horizontal or Vertical.
4. Vertical SID is between 50 cm and 90 cm (20 in and 36 in).

EXPOSURE HOLD MODE

The System automatically enters EXPOSURE HOLD mode when at least one of the following conditions is present:

1. Cassettes in both Buckies (*).
2. Non–valid SID with vertical Wall Bucky.
3. Vertical SID less than 50cm (20in).
4. Cassette in the Wall Bucky is not at 0° or 180° .
5. Horizontal Bucky not at a proper height.
6. X–Ray beam directed away from the Bucky.

Note:

(*) This is for non–Advantx systems only.

In an Advantx system the operator selects the Bucky intended for the X–Ray exposure.

The EXPOSURE HOLD mode is enabled when the red LED is ON.

Exposure is not allowed.

6–2 RS 85 Operation

RS 85 movements are controlled from Ultramet collimator front panel.

ANG	Button to release the rotation of the tube arm. (Button activated = button enabled)
DET	With X–ray beam vertical, the RS 85 locks (for vertical movement) operate at a privileged SID (chosen at installation time). With X–ray beam horizontal, the RS 85 locks do not operate at each valid horizontal SID. Stickers should be installed in an appropriate position in the room to help the user to manually bring the source to the right horizontal SID.
AUX	Not used
VERT	Button to enable the vertical movement of the tube arm. (Button activated = release enabled)
TRANS.	Not active with RS 85.
LONG	Button to enable the longitudinal movement of the column. (Button activated = release enabled)
SENSITIVE HANDLE :	When the handle is squeezed, the vertical and transverse movements of the tube arm and longitudinal movement of the column are free, provided that VERT , TRANS. and LONG controls are enabled.

SECTION 7

CALIBRATION & FUNCTIONAL CHECKS

Calibrate the Automatic Collimator as indicated in the "Ultramet SA+RAFL" Service Manual (Chapter 3) and in the "Compax 40E" Service Manual (Chapter 3) for RS 85 SID sensing potentiometer setting.

After calibrating the Collimator, verify that the Tube Stand and Collimator function correctly:

- Horizontal, vertical and angulation locks work correctly.
- During operations with the table, verify that the Collimator works as indicated in Section 6–1 of this chapter.
- During operations with the wall stand, verify that the Collimator works as indicated in Section 6–1 of this chapter.

SECTION 8

COMPATIBILITY CABLES

In order for the system to be completely and correctly interfaced, you will find in Chapter 2, four MIS Maps:

- Two corresponding to the configuration, RS 85/Compax 40E/MPH auto and manual collimation.
- Two others corresponding to the configuration, RS 85/Compax 40E/Powerpax auto and manual collimation.

CHAPTER 2 – MIS MAPS

ILLUSTRATION 2-1

STANDARD CONFIGURATION MIS MAP (C40E AUTO / MPH50/65/80 / RS 85 / SINGLE ROOM)

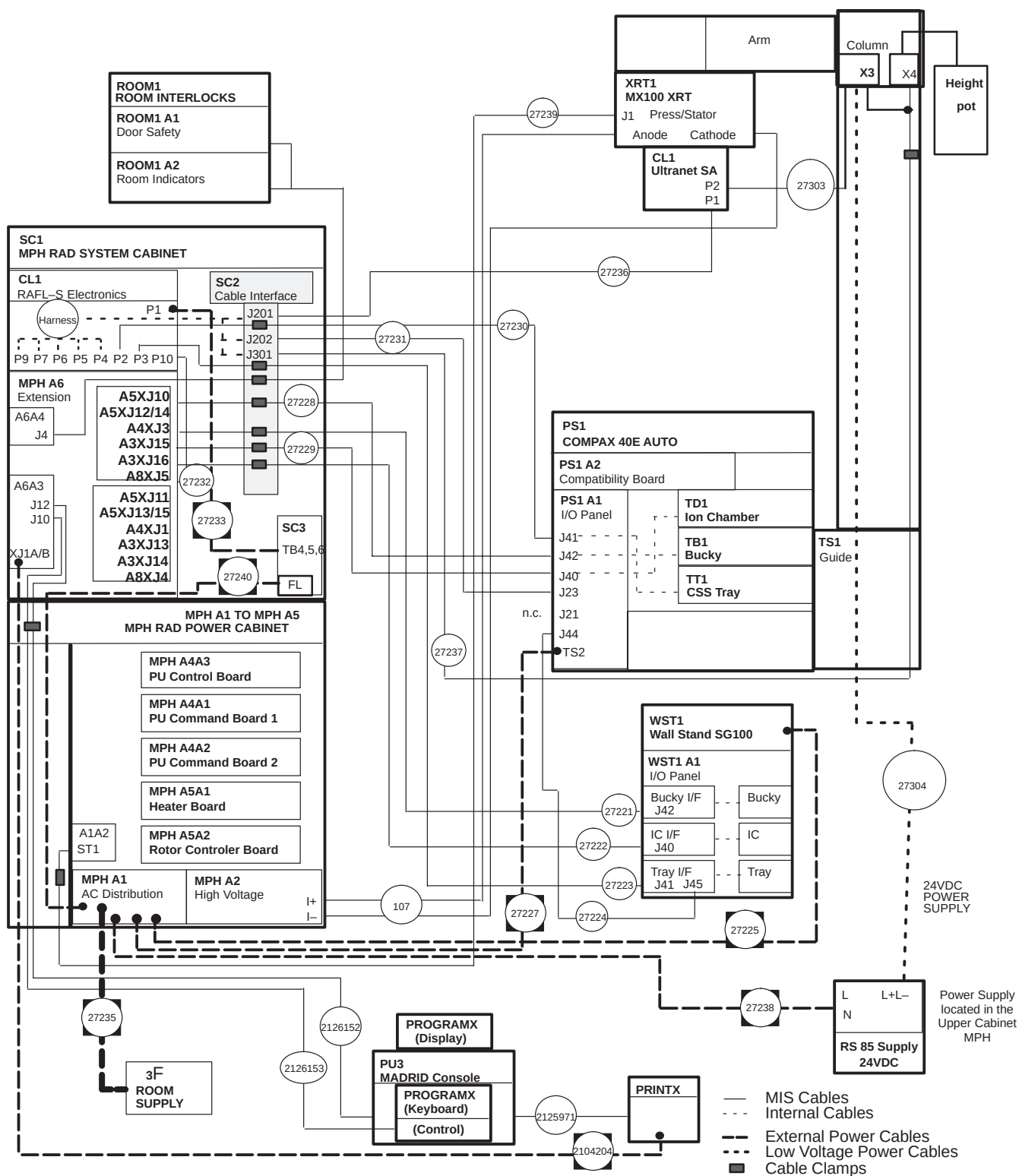


ILLUSTRATION 2-2

STANDARD CONFIGURATION MIS MAP (C40E MANUAL / MPH50 / 65 / 80 / R 85 / SINGLE ROOM)

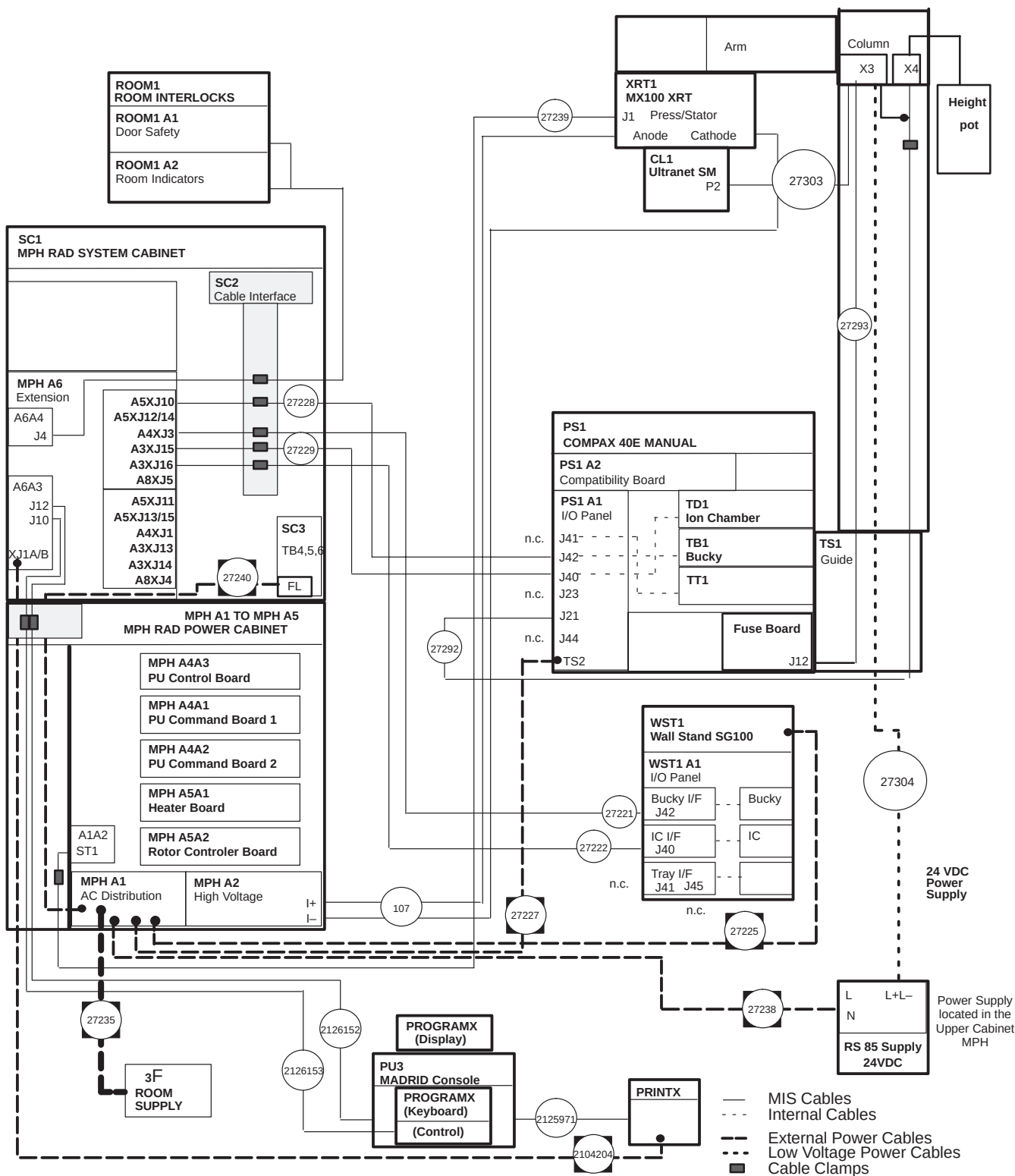
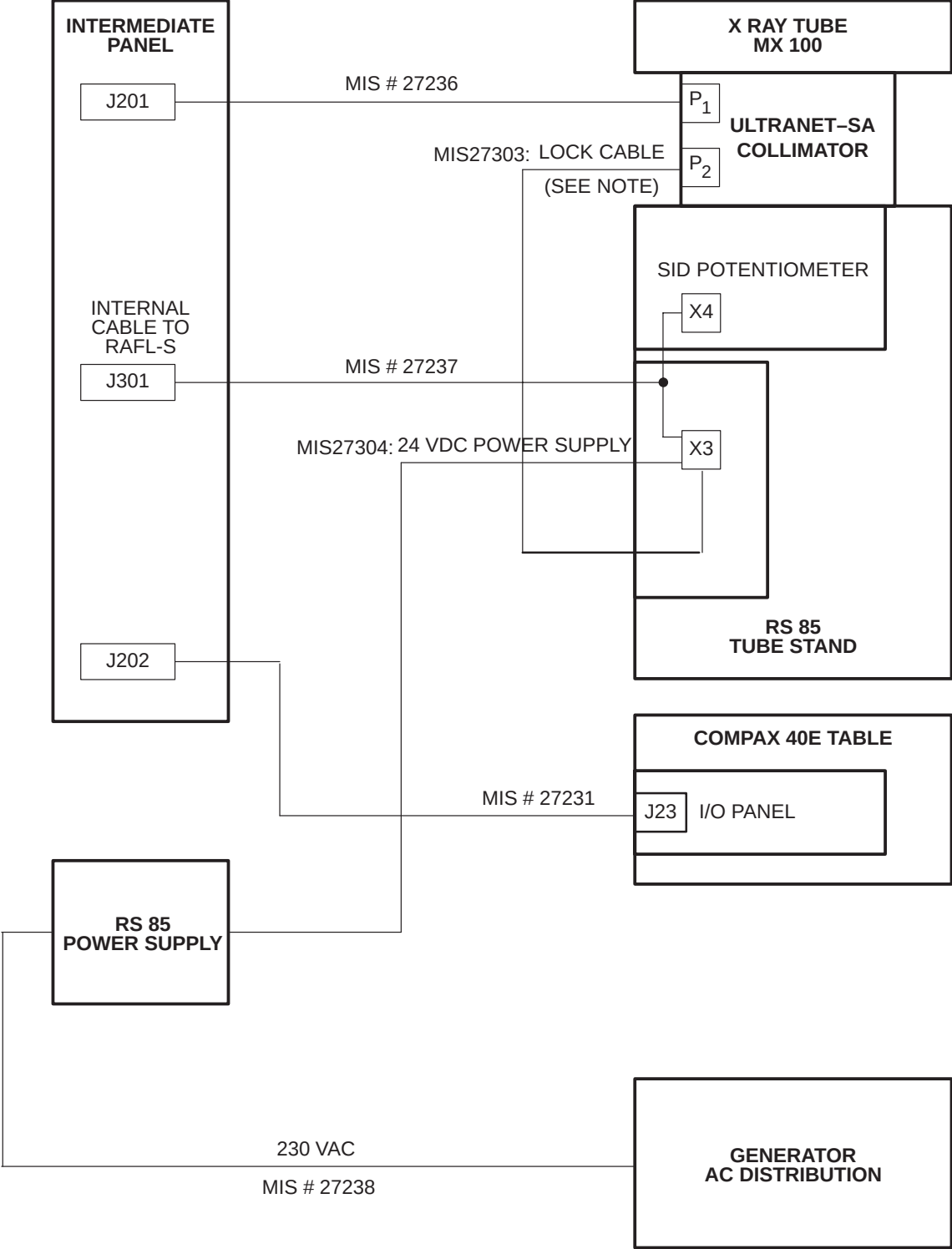
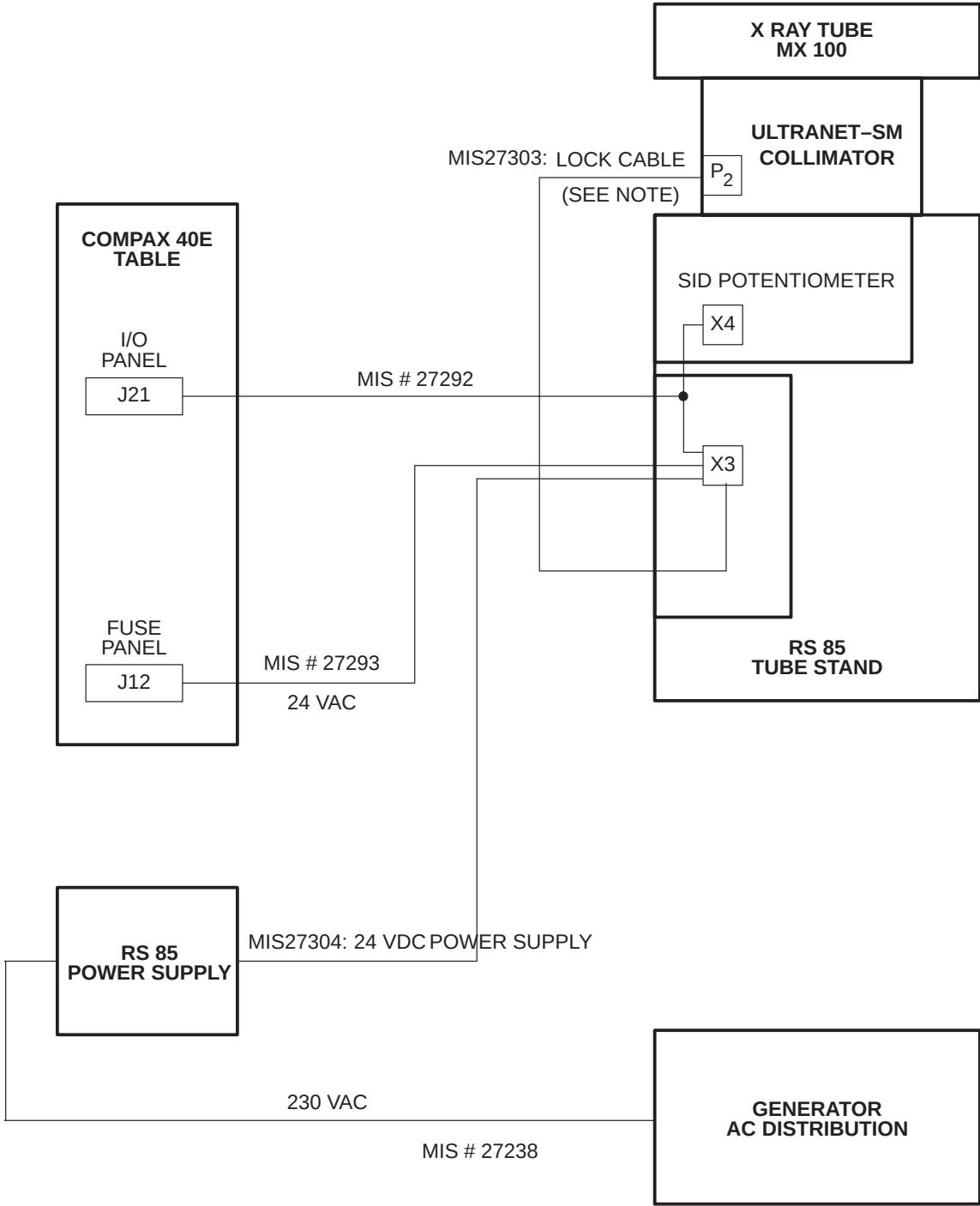


ILLUSTRATION 2-3
RS 85 TUBE STAND I/F WITH ULTRANET SA AUTO COLLIMATOR FOR COMPAX 40E TABLE



Note: Lock cable and 24 VDC Power Supply cable are supplied with RS 85 Unit

ILLUSTRATION 2-4
RS 85 TUBE STAND I/F WITH ULTRANET SM MANUAL COLLIMATOR FOR COMPAX 40E TABLE



INSTALLATION

Note: Lock cable and 24 VDC Power Supply Cable are supplied with RS 85 Unit

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CHAPTER 3 – MIS CHARTS

SECTION 1

CONFIGURATION COMPAX 40E / RS 85 / MPH MANUAL

1–1 Description

- **MIS Chart # 27238:** 230VAC power supply cable from MPH AC distribution to RS 85 external AC/DC Power Supply.
- **MIS Chart # 27292:** Cable between RS 85 tower (X3 and X4 connectors) and Compax 40E Table I/O Panel (J21 connector): detent control, RS 85 height potentiometer, Ultramet collimator buttons control, etc...



This cable must be clamped for EMC reason at the top of the column in the area of X3 Terminal and before splitting to X3 and X4 (Height Potentiometer).

- **MIS Chart # 27239:** X–Ray Tube housing interconnections layout.
- **MIS Chart # 27293:** Cable between RS 85 tower (X3 connector) and Compax 40E Table Fuse Panel (J12 connector) : 24 VAC delivered by the table for the collimator lamp.
- **MIS CHART # 27304:** RS 85 power supply cable (24 VDC) between the power supply and the RS 85 tower (X3 connector).

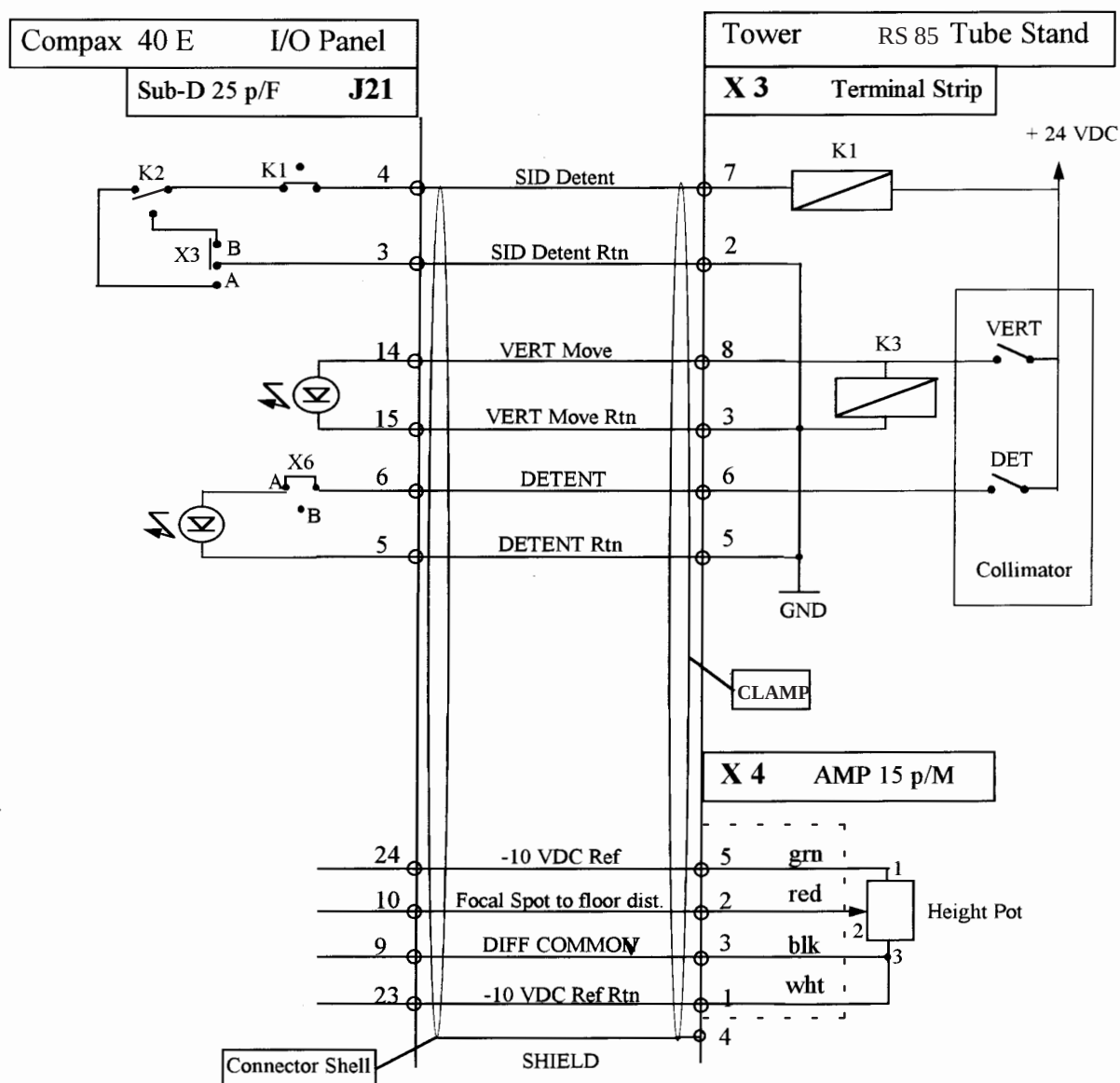
Note:

Lock cable located between the RS 85 (X1 connector) and the collimator (P2 connector) is manufactured by Pausch (MIS CHART 27303).

1-2 MIS CHARTS

ILLUSTRATION 3-1
MIS CHART # 27292

Cable # 2165550

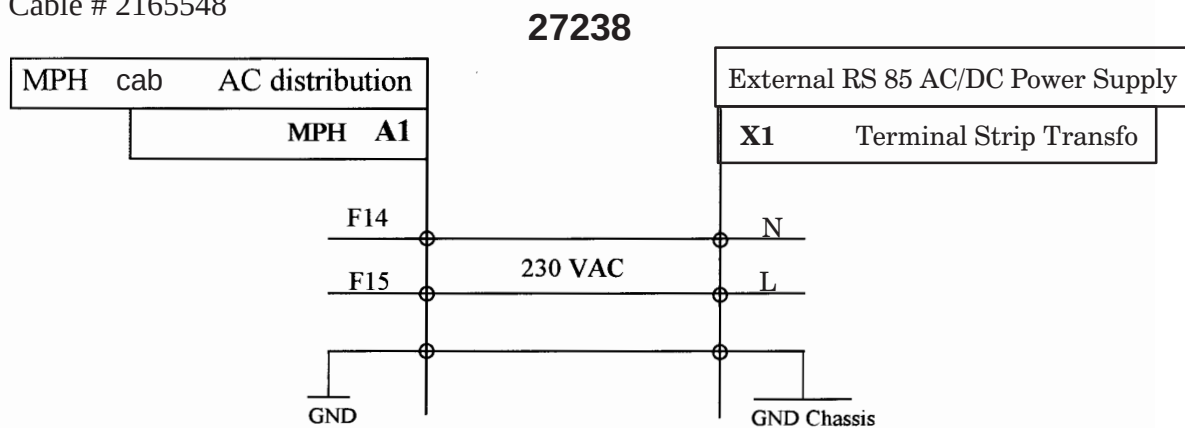
27292**Note:**

- * K1_{table} energized if cassette in place in the Wall Stand
- * K2_{table} energized when SID reaches the reference SID
- * Select jumper X3 - B
- * Select jumper X6 - A

- * K1_{RS85} is energized when the SID calculated on the 40E table has reached the SID reference.
- * Vert move signal locks the SID display of the Table only if DET button is released

ILLUSTRATION 3-2
MIS CHART # 27238

Cable # 2165548



Note:

- * The RS 85 Power supply is connected to the 230 VAC isolated Output of the MPH AC Distribution.
- * On the MPH side, conductor is stripped and nozzle crimped.
- * On RS 85 side, conductor is also stripped.

ILLUSTRATION 3-3
MISCHART # 27239

Cable #2145653

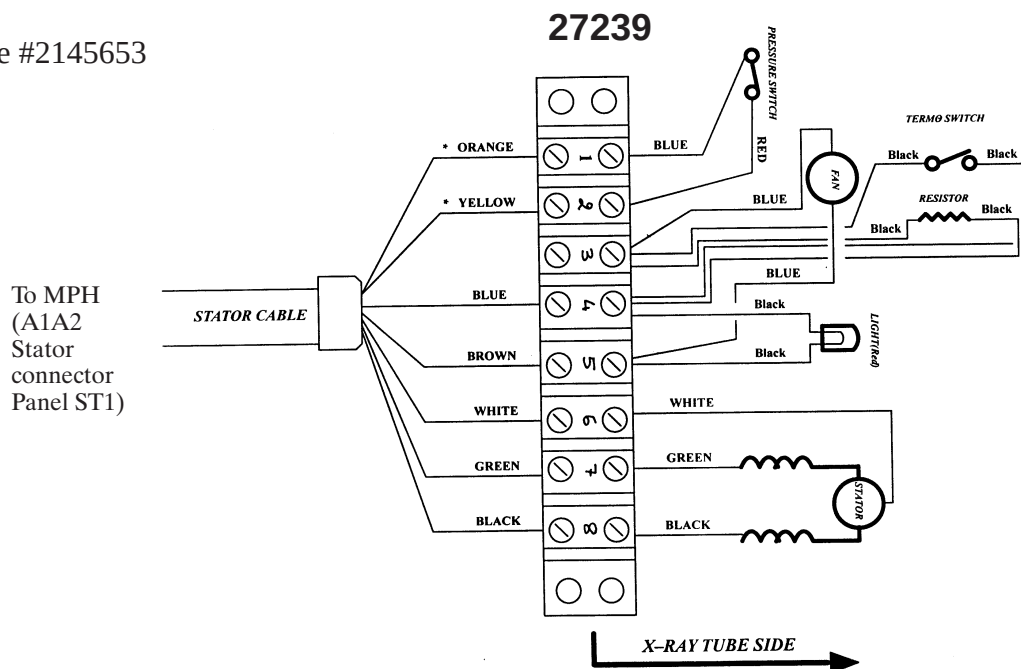
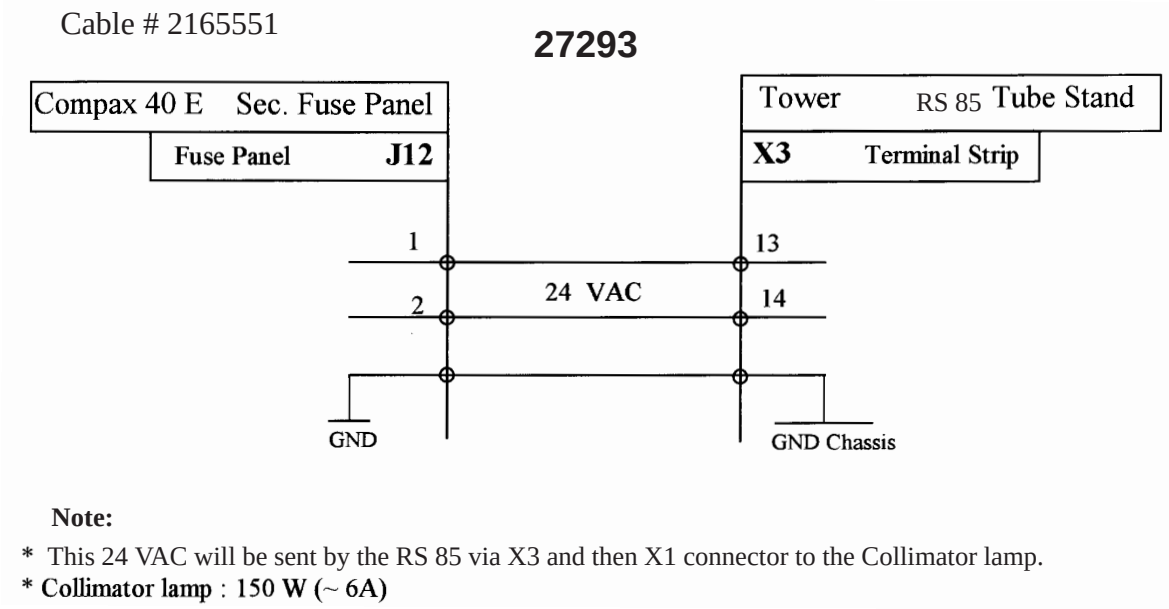


ILLUSTRATION 3-4
MIS CHART # 27293



ADJUSTMENTS

SECTION 2
CONFIGURATION COMPAX 40E / RS85 / MPH AUTOMATIC

2–1 Description



- **MIS Chart # 27237 :** Cable between the RS 85 tower (X3 and X4 connector) and Intermediate Panel (J 301 connector).

This cable must be clamped for EMC reason at the top of the column in the area of X3 Terminal and before splitting to X3 and X4 (Height Potentiometer).

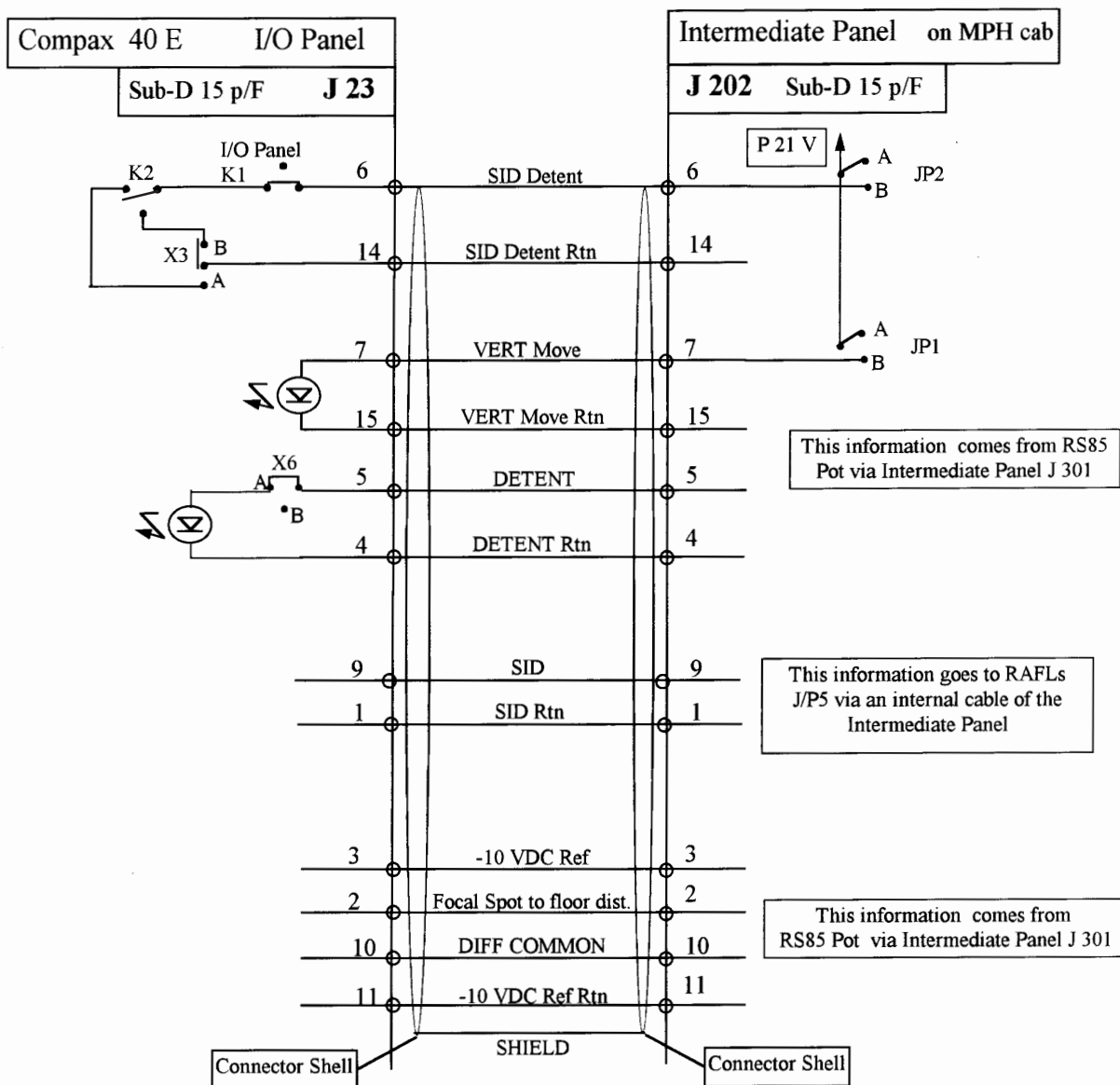
- **MIS Chart # 27231 :** Cable between the Intermediate Panel (J 202 connector) and the Compax 40E Table I/O panel (J 23 connector).
- **MIS Chart # 27236 :** Cable between the Intermediate Panel (J 201 connector) and the Ultramet SA collimator (P1 connector).
- **MIS Chart # 27239:** X–Ray Tube Housing interconnections layout.
- **MIS Chart #27304 :** RS 85 Power supply cable (24 VDC) between the AC/DC Power supply and the RS 85 tower (X3 connector).

Note: Lock cable located between the RS 85 (X1 connector) and the Collimator (P2 connector) is manufactured by Pausch.

2-2 MIS Charts

ILLUSTRATION 3-5
MIS CHART # 27231

Cable # 2145655

27231**Note:**

- * K1_{table} energized if cassette in place in the Wall Stand
- * K2_{table} energized when SID reaches the reference SID
- * Select jumper X3 - B
- * Select jumper X6 - A

- * Select jumper JP1 - A
- * Select jumper JP2 - A
- * P21V comes from XT susp. when XT is configured.
- * -10 VDC Ref comes from the Rafls in Auto mode but from the Table in Manual mode

ILLUSTRATION 3-6
MIS CHART # 27237

Cable # 2165547

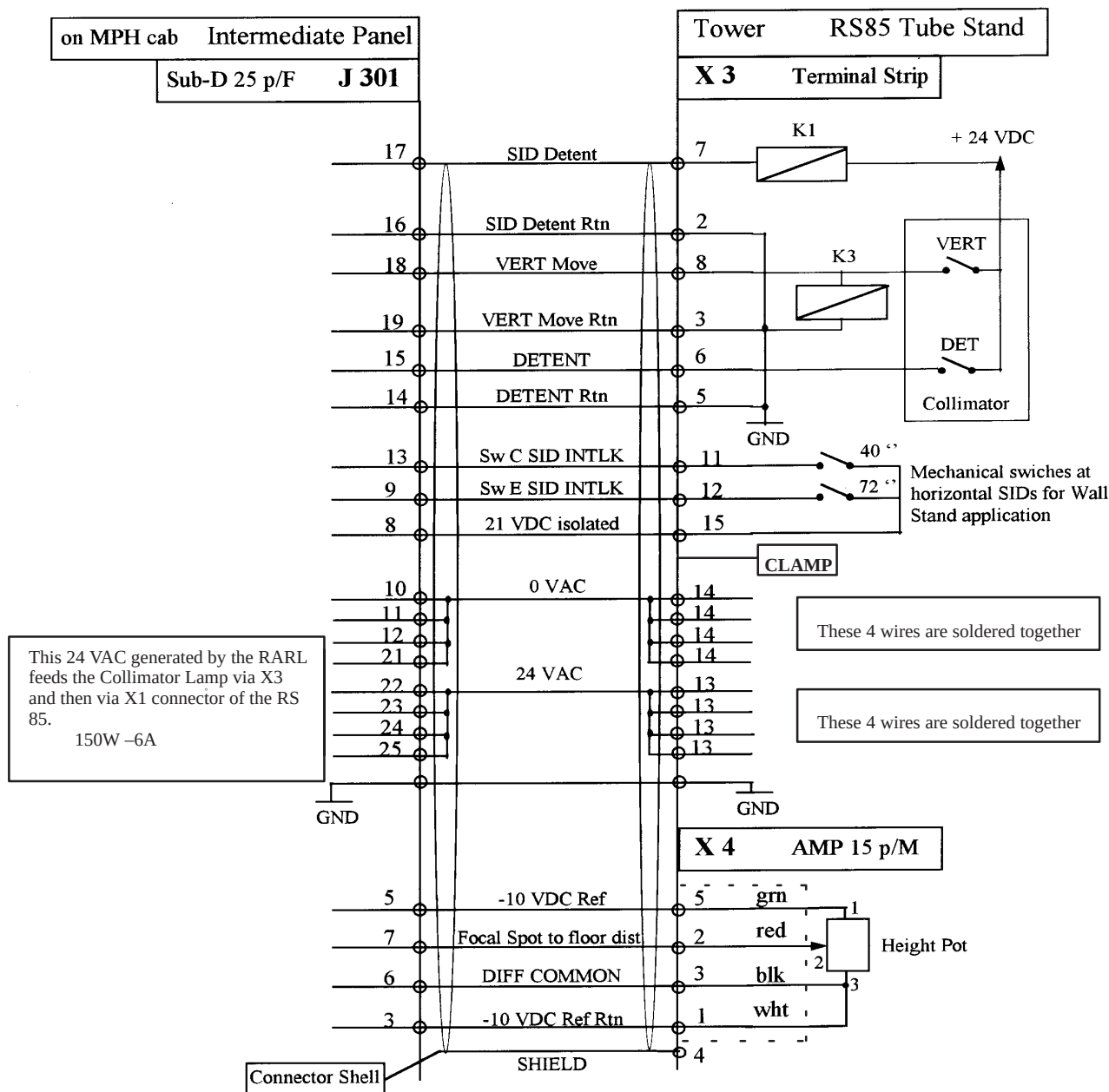
27237

ILLUSTRATION 3-7
MIS CHART # 27236

Cable # 2165546

27236

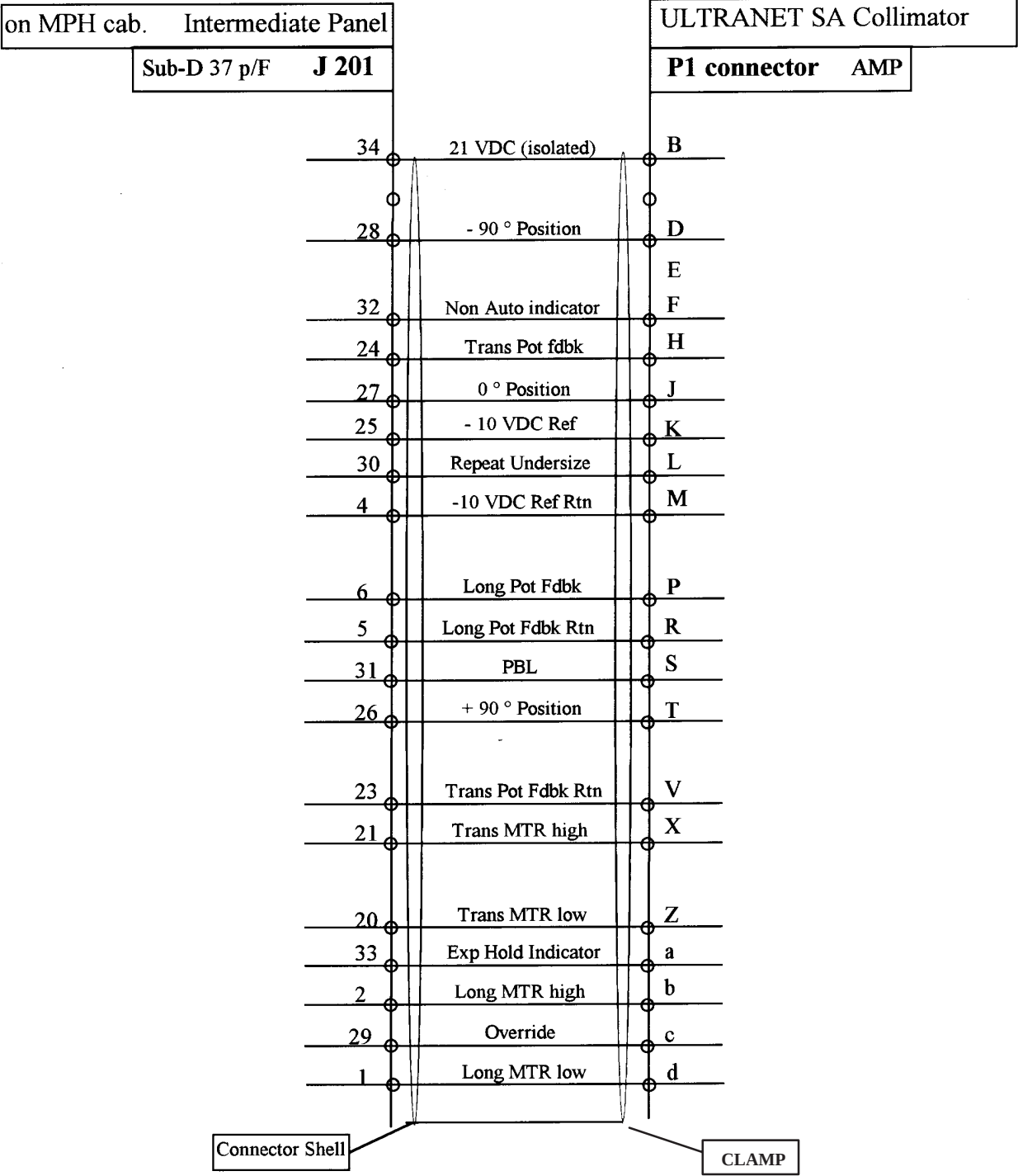
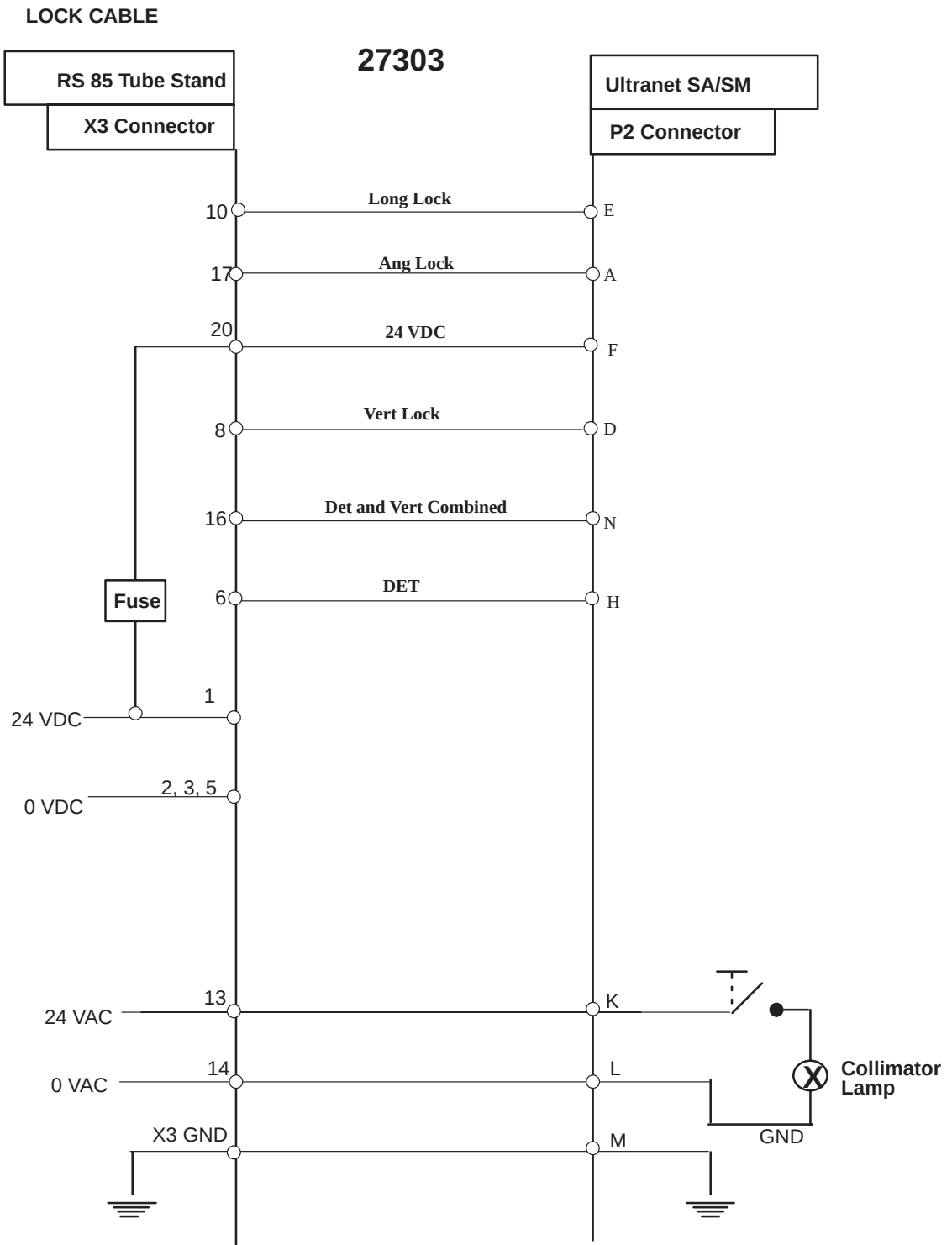


ILLUSTRATION 3–8
MIS CHART: 27303

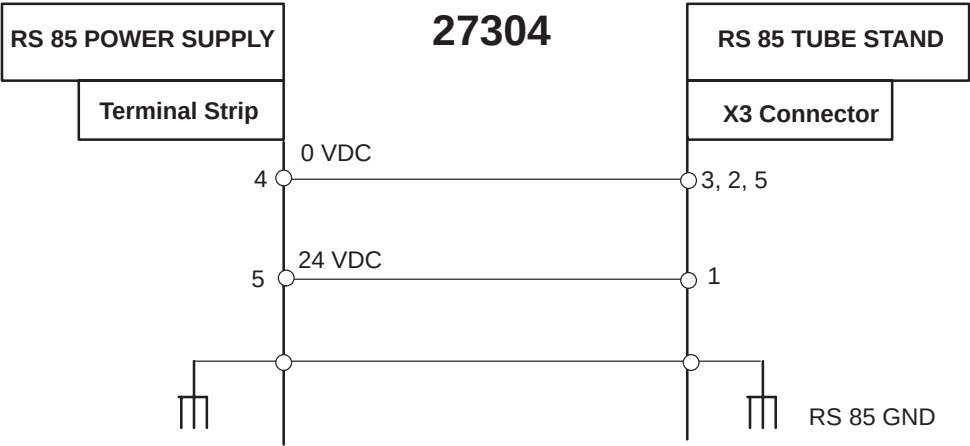


Note: This cable is manufactured by Pausch

ILLUSTRATION 3-9
MIS CHART: 27304

Cable # 2171350

24 VDC RS 85 POWER SUPPLY



ADJUSTMENTS

CHAPTER 4 – RENEWAL PARTS

ILLUSTRATION 4–1 – RS 85 I/F PACKAGE – ULTRANET SA 4–3

ILLUSTRATION 4–2 – RS 85 I/F PACKAGE – ULTRANET SM 4–4

ILLUSTRATION 4–3 – SUBSYSTEM COMPONENTS 4–5

ILLUSTRATION 4–4 – MPH/ULTRANET SM I/F CABLES 4–6

ILLUSTRATION 4–5 – MPH/ULTRANET SA I/F CABLES 4–7

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ABBREVIATIONS

ITEM NO.	
–	Not illustrated.
– 6	Item No. 6 not illustrated.

FRU	Field Replaceable Unit.
1	Critical.
2	Not critical.
N	Not available.

REP	
Y	Repairable.

QTY	
PL	Previously listed as an assembly or subassembly.
AR	As required.

APP	Applies to.
	Viewing direction.

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ILLUSTRATION 4–1
RS 85 I/F PACKAGE – ULTRANET SA

ITEM NO.	PART NO.	FRU	REP	DESCRIPTION	QTY	APP
				1 2 3 4 5		
–	2163736–2	N		• I/F CABLE SET (MPH/ULTRANET SA) 18m	1	
–	2163736–3	N		• I/F CABLE SET (MPH/ULTRANET SA) 24m	1	
–	03277223	2	N	• RS 85 MOUNTING INSTRUCTIONS MANUAL	1	
–	2165897–100	2	N	• RS 85 I/F PACKAGE FOR COMPAX 40E CE MARKED SYSTEMS SERVICE MANUAL	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – ENGLISH	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – FRENCH	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – SPANISH	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – GERMAN	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – ITALIAN	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – PORTUGUESE	1	

ILLUSTRATION 4-2
RS 85 I/F PACKAGE – ULTRANET SM

ITEM NO.	PART NO.	FRU	REP	DESCRIPTION	QTY	APP
				1 2 3 4 5		
–	2163737-2	N		• I/F CABLE SET (MPH/ULTRANET SM) 18M	1	
–	2163737-3	N		• I/F CABLE SET (MPH/ULTRANET SM) 24M	1	
–	03277223	2	N	• RS 85 MOUNTING INSTRUCTIONS MANUAL	1	
–	2165897-100	2	N	• RS 85 I/F PACKAGE FOR COMPAX 40E CE MARKED SYSTEMS SERVICE MANUAL	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – ENGLISH	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – FRENCH	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – SPANISH	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – GERMAN	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – ITALIAN	1	
–	03277323	2	N	• RS 85 OPERATOR MANUAL – PORTUGUESE	1	

ILLUSTRATION 4-3
SUBSYSTEM COMPONENTS

ITEM NO.	PART NO.	FRU	REP	DESCRIPTION	QTY	APP
–	D2341R	1	Y	X-RAY TUBE MX LW-18 (1.0-2.0) HIGH SPEED	1	
–	D2301R	1	Y	X-RAY TUBE MX 100-18 (0.6-1.25) LOW SPEED	1	
–	36002081	1	N	HV CABLES 18M	2	
–	36002084	1	N	HV CABLES 24M	2	
–	45296950	1	Y	ULTRANET SM COLLIMATOR (RS 85) HHS	1	
–	45296489	1	Y	ULTRANET SA COLLIMATOR (RS 85)	1	
–	2150565	1	Y	RAFL-S	1	
–	2150568	2	N	INTERMEDIATE PANEL FOR AUTOMATIC COLLIMATION (ULTRANET SA) AND MPH	1	
–	2195043-2	2	N	CABLE CONCEALMENT RS85 TO WALL BOX	1	
–	2195043-3	2	N	CABLE CONCEALMENT RS85 TUBE ARM	1	
–	46-907998 P02	2	N	VERTICAL SID SCALE (INCH)	1	
–	46-907998 P03	2	N	VERTICAL SID SCALE (CM)	1	
–	46-909391 G01	2	N	WALL BOX	1	
–	2179511-2	2	N	HORIZONTAL SID INDICATORS	1	

ILLUSTRATION 4-4
MPH/ULTRANET SM I/F CABLES

ITEM NO.	PART NO.	FRU	REP	DESCRIPTION	QTY	APP
	2163737-2	N		I/F CABLE SET (MPH/ULTRANET SM) 18M	1	
—	2165548	2	N	• MAINS SUPPLY CABLE (MIS27238) (FIXED SHORT LENGTH)	1	
—	2140362-2	2	N	• GROUND CABLE (MIS 27302)	1	
—	2145653-2	2	N	• STATOR CABLE (MIS27239)	1	
—	2165551-2	2	N	• 24 VAC SUPPLY CABLE (MIS27293)	1	
—	2165550-2	2	N	• SID/DETENT CABLE (MIS27292)	1	
—	2171350-2	2	N	• 24VDC SUPPLY CABLE (MIS27304)		
	2163737-3	N		I/F CABLE SET (MPH/ULTRANET SM) 24M	1	
—	2165548	2	N	• MAINS SUPPLY CABLE (MIS27238) (FIXED SHORT LENGTH)	1	
—	2140362-3	2	N	• GROUND CABLE (MIS 27302)	1	
—	2145653-3	2	N	• STATOR CABLE (MIS27239)	1	
—	2165551-2	2	N	• 24 VAC SUPPLY CABLE (MIS27293) (CABLE LENGTH MUST BE 18M)	1	
—	2165550-3	2	N	• SID/DETENT CABLE (MIS27292)	1	
—	2171350-3	2	N	• 24VDC SUPPLY CABLE (MIS27304)	1	

ILLUSTRATION 4-5
MPH/ULTRANET SA I/F CABLES

ITEM NO.	PART NO.	FRU	REP	DESCRIPTION	QTY	APP
	2163736-2	N		I/F CABLE SET (MPH/ULTRANET SA) 18M	1	
—	2165548	2	N	• MAINS SUPPLY CABLE (MIS27238) (FIXED SHORT LENGTH)	1	
—	2140362-2	2	N	• GROUND CABLE (MIS27302)	1	
—	2145653-2	2	N	• STATOR CABLE (MIS27239)	1	
—	2165547-2	2	N	• I/P – SID – DETENT CABLE (MIS27237)	1	
—	2165546-2	2	N	• COLLIMATOR CABLE (MIS27236)	1	
—	2171350-2	2	N	• 24VDC SUPPLY CABLE (MIS27304)		
	2163736-3	N		I/F CABLE SET (MPH/ULTRANET SA) 24M	1	
—	2165548	2	N	• MAINS SUPPLY CABLE (MIS27238) (FIXED SHORT LENGTH)	1	
—	2140362-3	2	N	• GROUND CABLE (MIS27302)	1	
—	2145653-3	2	N	• STATOR CABLE (MIS27239)	1	
—	2165547-3	2	N	• I/P – SID – DETENT CABLE (MIS27237) / 22M ONLY	1	
—	2165546-3	2	N	• COLLIMATOR CABLE (MIS27236)	1	
—	2171350-3	2	N	• 24VDC SUPPLY CABLE (MIS27304)		

RS 85 RECOMMENDED RENEWAL PARTS LIST

Only the following renewal part list is kept in stock. For any other renewal part, a special request should be made to Service Engineering.

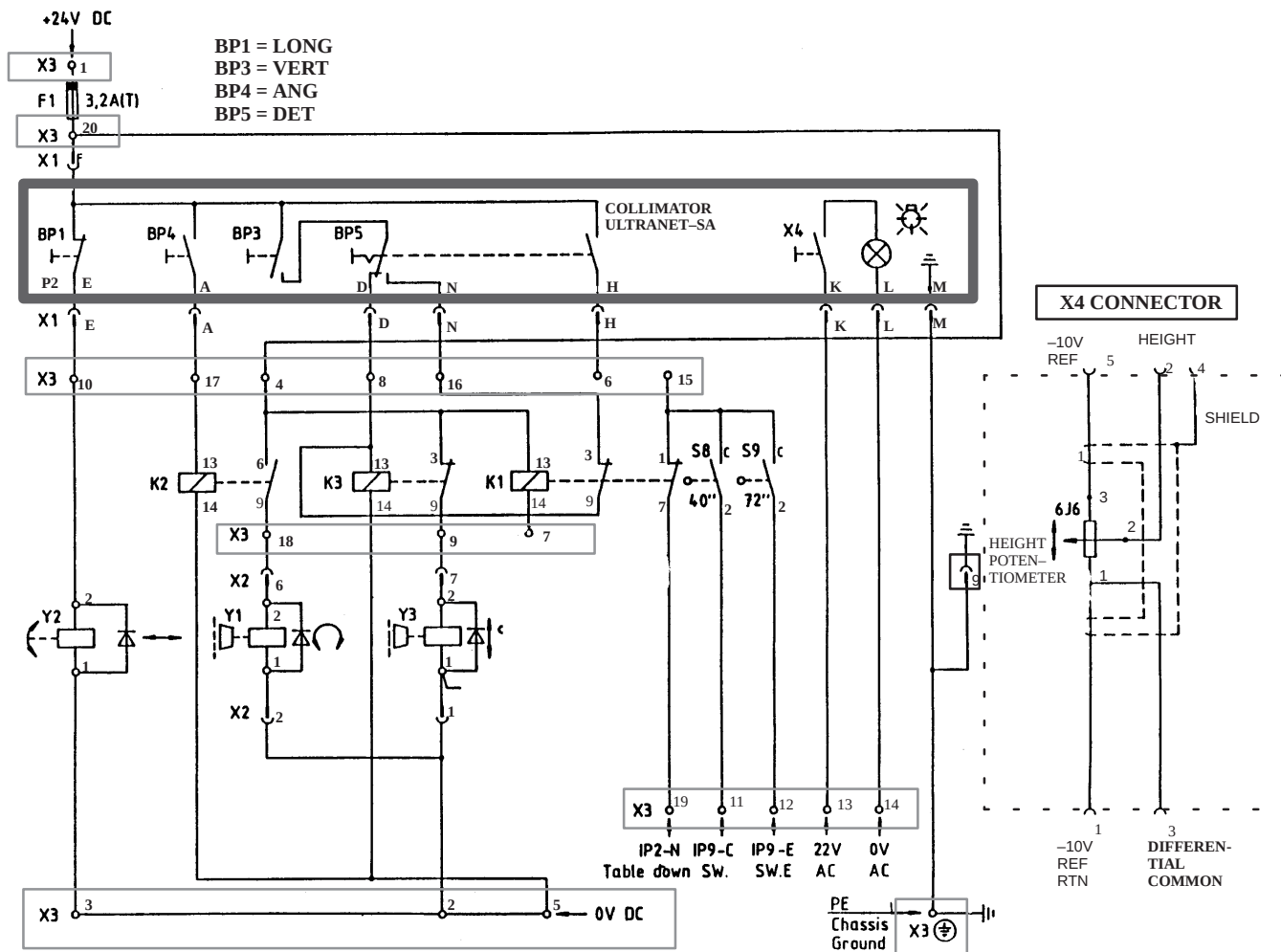
TABLE 4-1
SPARE PART LIST

Note: For Drawing & Position Ref. listed below, refer to RS 85 Mounting Instructions Manual. (03277223) in the Renewal Parts section (Chapter 4.3).

DESCRIPTION	FRU	PAUSCH REF.	GE-CGR REF.	DRAWING & POSITION REF.
LOCK CABLE	1	0327 0494	45432579	65
HEIGHT POTENTIOMETER	1	0006 0240-C	45432580	3A
HEIGHT POTENTIOMETER CABLE	2	03270629	2181292	4A
SNAP RING	2	22000041	45432582	7
PULLEY	1	0327 0334	45432583	32
GUIDE PULLEY	1	0327 0335	45432584	33
MAGNET	1	0105 0148	45432585	37 & 116
PLATE SPRING	1	0327 0342	45432586	39
DIODE	1	0006 0179	45432587	45
SWITCH ASSY	1	0327 0321	45432588	50
RELAY SOCKET	1	0006 0287	45432589	72
RELAY	1	0006 0286b	45432590	73
ROPE	1	0327 0440	45432591	95
SPRING	1	0005 0151j	45432592	105
PLATE SPRING	1	0327 0462	45432593	117
BALL Ø16	1	2900 0004	45432594	126
ROTATING ARM	1	0327 0500	45432595	133
CABLE	1	0327 0510	45432596	140
CAP	1	0322 0058	45432597	149
DETENT QUICK RELEASE ASSY	1	0327 0720	2166832	155
TUBE SUPPORT ARM GE	1	0327 0700d	2169060	152
LOW VOLTAGE POWER SUPPLY	1	0327 0125	2179445	ILL. 5-2
FUSE BAG	2	1,6 AT 0,8 AT 3,2 AT	2181167	ILL. 5-2 ILL. 5-2 99

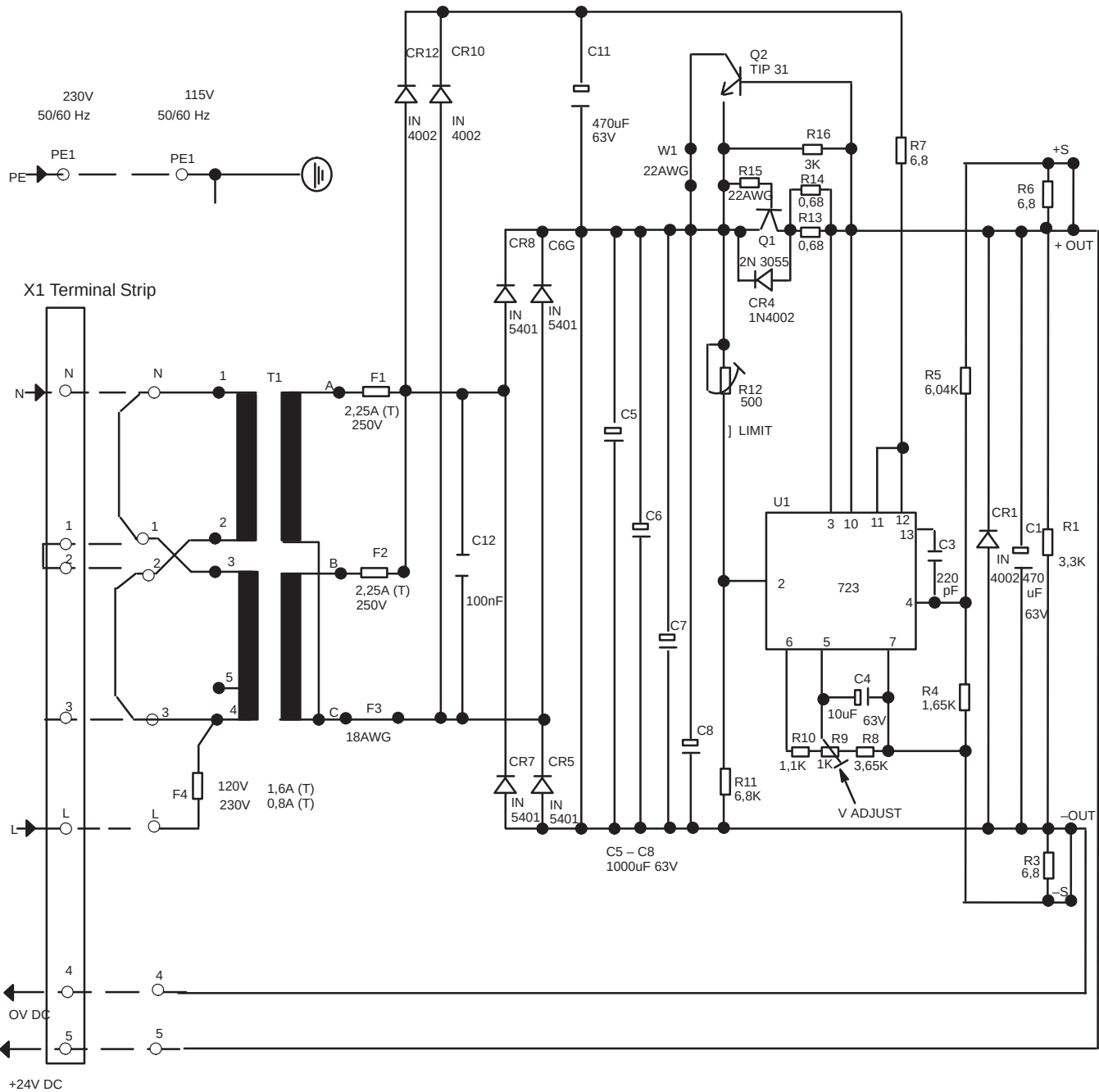
CHAPTER 5 – SCHEMATICS

ILLUSTRATION 5-1



PAUSCH REFERENCE
03270016

ILLUSTRATION 5-2 LOW VOLTAGE POWER SUPPLY



PAUSCH REFERENCE
0327 0125

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