

AXIOM Luminos dRF

Installation Instructions System

Beginning with Serial Number 4001, with Software VD ..

The Installation Instructions, XPD3-500.812.02..., must also be used for installation of the 2nd plane with Ysio Fully Synchronized.

Document Version

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1.1 Prerequisites

1.1.1 Overview

Fig. 1: Luminos dRF



1.1.2 Required Tools and Aids

All tools, measuring equipment and aids, with the exception of the "standard installation tool kit", are listed and specified in the Service Tools Catalogue.

Tab. 1 Recommended List

■ Standard installation tools	
■ Torque wrench, 20 - 100 Nm	44 30 906 RH090
■ Torque wrench, 40 - 200 Nm	80 86 142 RE999
■ Socket head attachment, 14 mm	52 66 564
■ Spirit level (measuring accuracy 1.0 mm per meter)	
■ Spring balance (200 N)	44 15 113

- Transport castors 11 53 654 G5338
- Loctite 221

A maximum admissible tolerance of $\pm 10\%$ applies for the above listed torque wrenches.

1.1.3 Additionally Required Documents

- Project Plan
- XP Installation Certificate
- DCS-F (Option) Installation Instructions AXD0-100.812.01...
- Radiation Shield and OR Lamp (Option) Installation Instructions AXA4-100.814.21...

Documents for the 2nd Plane with the Ysio VS (Option)

- Installation Instructions for 2nd Plane with BWS / Ysio VS 3D AXD3-500.812.02...

1.2 Notes

1.2.1 General Safety Information



Always observe the general safety information for medical products when performing work steps and checks. See the RAD FLUORO Safety Information, XRPF-000.860.10.

1.2.2 Hazard Keys

The following hazard keys are integrated into this document.

- hm_serv_SafetyAttachment

WARNING

System Operation

Injuries caused by falling parts, suspended parts, instability.

Risk of injury!

Carriage or transverse carriage moving over the rails.

- » Secure mechanical end stops and wheels, secure the mechanical end stops and wheels during installation. Check mounting during periodic maintenance. Check point in the Installation Instructions and Maintenance Instructions.

- For German users only!

Nur für deutschsprachige Anwender. Sinngemäße Übersetzung des oben genannten Hazard Key: hm_serv_SafetyAttachment

- » Verletzungsgefahr für den Anwender durch herunterfallende Teile.

An Deckenschienen montierte Längs- oder Querwagen.

Laufrollen und mechanische Endstops müssen bereits während der Montage installiert und gesichert werden.

- hm_serv_Wheels_Loose

WARNING

System Operation

Injuries caused by falling parts, suspended parts, instability.

Risk of injury!

Carriage or transverse carriage moving over the rails.

- » Wheels have to be tightened, wheels can come loose. Wheels have to be tightened. Check point in the Installation Instructions and Maintenance Instructions.

- For German users only!
Nur für deutschsprachige Anwender. Sinngemäße Übersetzung des oben genannten Hazard Key: hm_serv_Wheels_Loose
 - » Verletzungsgefahr für den Anwender durch herunterfallende Teile.
An Deckenschienen montierte Längs- oder Querwagen.
Laufrollen müssen korrekt befestigt, gesichert und erneut überprüft werden, da sie sich wieder lockern können.
- hm_serv_Parallelism_Rails



WARNING

System Operation

Injuries caused by falling parts, suspended parts, instability.

Risk of injury!

Insufficient parallelism between rails.

- » **Sufficient parallelism between the rails: check to ensure that there is sufficient parallelism between the rails.**

- For German users only!
Nur für deutschsprachige Anwender. Sinngemäße Übersetzung des oben genannten Hazard Key: hm_serv_Parallelism_Rails
 - » Verletzungsgefahr für den Anwender durch herunterfallende Teile.
Ungenügende Parallelität der Deckenschienen.
Die korrekte Parallelität der Deckenschienen muß sichergestellt und überprüft werden.
- hm_serv_Fail_in_Screw_fixing



WARNING

System Operation

Injuries caused by falling parts, suspended parts, instability.

Risk of injury!

Failure in screw tightness: failure in screw tightness between ceiling mounted devices (e.g. collimator, column, tube carriage arm, carriage, rails).

- » **Check for potential failure in screw tightness: check for potential failure in screw tightness between ceiling mounted devices (collimator, column, tube carriage arm, carriage, rails,..).**

- For German users only!
Nur für deutschsprachige Anwender. Sinngemäße Übersetzung des oben genannten Hazard Key: hm_serv_Fail_in_Screw_fixing
 - » Verletzungsgefahr für den Anwender durch herunterfallende Teile.
Falsche Anzugsmomente von Schrauben an deckenmontierten Komponenten (z.B. Tiefenblende, Säule, Röhrenträger, Laufwagen, Schienen usw.).
Die Anzugsmomente von Schrauben an deckenmontierten Komponenten müssen überprüft und die die Schrauben korrekt angezogen werden.
- hm_serv_Lifting_Device



WARNING

System Operation

Injuries caused by falling parts, suspended parts, instability.

Risk of injury!

Stand falls down during installation.

- » **Note in Installation Instructions and Replacement of Parts: note in Installation Instructions and Replacement of Parts on how to handle lifting device.**

- For German users only!
Nur für deutschsprachige Anwender. Sinngemäße Übersetzung des oben genannten Hazard Key: hm_serv_Lifting_Device
 - » Verletzungsgefahr für den Anwender durch herunterfallende Teile.
Herunterfallen des 3D Deckenstativs.
Der korrekte Umgang mit Hebevorrichtungen / -gestellen muß beschrieben sein.
- hm_serv_PV_Secure_the_cabinet



WARNING

Secure the cabinet.

Risk of death, serious physical injury or damage to property!

- » **Secure the cabinet. When doing this, observe the applicable national regulations.**
- » **Use the spacer brackets to secure the cabinets to the wall.**
- » **Secure the cabinet to the floor with appropriate expansion bolts.**

- hm_serv_detector_toxic_material



WARNING

Portable detector 5500

Contamination of persons or pollution of environment with thallium particles.

Risk of injury!

Detector is damaged: due to mechanical shock, the detector is damaged and thallium-doped particles are dispersed.

- » Note in service documents about toxic materials: make a note in the service documents, Installation Instructions, Startup Instructions and Replacement of Parts. How these parts are disposed of in an environmentally friendly manner has to be documented in the Disposal Instructions. Cause: Toxic materials, possible consequences: Toxic contamination if detector panel is broken by mechanical shock. Remedy: Handle portable detector with care! If the detector is broken, do not use it; inspect to determine whether any particles have spilled. Leaked particles have to be collected and kept in a sealed container. Spilled particles have to be returned to Siemens.

- For German users only!

Nur für deutschsprachige Anwender. Sinngemäße Übersetzung des oben genannten Hazard Key: hm_serv_detector_toxic_material

- » Kontaminations- und Verletzungsgefahr durch Thallium Partikel

Wenn der Detektor beschädigt wird (z.B. durch Herunterfallen) besteht die Gefahr des Austretens von Thallium Partikeln.

Der Detektor ist grundsätzlich vorsichtig zu behandeln. Wurde der Detektor beschädigt, so darf er nicht mehr verwendet werden und es ist zu überprüfen, ob Materialien ausgetreten sind. Sind Materialien ausgetreten, so sind diese einzusammeln (Schutzbekleidung und Handschuhe verwenden) und zusammen mit dem Detektor in einem versiegelten Container mit entsprechendem Hinweis an Siemens zurückzuschicken. Kontaminierte Flächen sind entsprechend zu reinigen.

1.2.3 Safety Information, General

- Work Sequence



The work sequence in the document is described so that all hazard keys can be taken into consideration.

For this reason, make absolutely sure to observe the work sequence.

- Specialists

**WARNING****Trained Specialists**

If not observed, death or serious bodily injury can occur.

- » These work steps may be performed only by qualified technical personnel. Qualified in this context means that the personnel have been trained accordingly or have acquired the necessary experience in practice.
- » Only trained specialists may performed the work steps listed in this document.

- Screws (Paneling Screws)



Only original screws may be used.

If not observed, cables can be damaged.

- Original Parts



Damaged or worn parts may be replaced only with original parts.

1.2.4 General Notes

1.2.4.1 Use of transport frames

Transport frames are aids to move the stands to the installation site. They are suitable for movement over smooth, even transport routes.

Suitable materials should be put down to protect flooring (e.g. aluminum plates).

1.2.4.2 Product-specific Information

Checking the cabling and power connection

- For safety reasons, only a trained electrician may connect the system to the line voltage.

1.2.4.3 Completing the Installation Certificate

The Installation Certificate, XPO-000.813.01..., must be filled out by the responsible service contractor during installation and while laying the cables. The installation result must be confirmed by signature of the responsible service provider and of the Project Manager.

1.2.5 Conventions and Abbreviations

Unless otherwise stated, all dimensions in this document are in mm.

ISK	= Allen screw
SW	= Wrench size
DCS	= Display Ceiling Suspension (MTS, Monitor Trolley System)
Monitor trolley	= Monitor Trolley
3D / TS	= Tube unit stand (with rails, installed on the ceiling) / Tube Stand
Catapult Bucky	= Detector Bucky in the table (Agile 2nd Plane)
FD	= Flat Panel Detector
MD	= Power distributor / main distributor
FLC	= Fluorospot Compact
TFT monitor	= flat screen
BWS	= Bucky wall stand, Vertix (VTX)
VS	= Fully synchronized (Ysio)

1.2.6 Replacement for Damaged or Lost Screws / Installation Accessories

Damaged or lost screws may be replaced only with screw types that meet specifications, made of steel and that have the specified hardness rating.

Unless another value is stated in the instructions, all Allen screws must always be hardness rated 8.8.

Damaged or lost installation accessories (such as steel cables, washers, etc.) may be replaced only with original parts.

1.2.7 Tolerance Data

1.2.7.1 General tolerances for linear dimensions according to ISO 2768

Limit values for the nominal range	over 3 mm to 6 mm	over 6 mm to 30 mm	over 30 mm to 120 mm	over 120 mm to 400 mm	over 400 mm to 1000 mm	over 1000 mm to 2000 mm	over 2000 mm to 4000 mm
Admissible tolerance	± 0,5 mm	± 1 mm	± 1,5 mm	± 2,5 mm	± 4 mm	± 6 mm	± 8 mm

These tolerances apply to all dimensions given in these instructions, unless another tolerance is expressly indicated after the value.

1.2.7.2 Torque Values

A tolerance of $\pm 10\%$ is permitted for torque values.

1.2.8 Paint Colors Used

Medical white, C610	dRF Unit, Ysio 3D / BWS	Spray:	Part No.: 08427734
		Paint stick:	Part No.: 03444403
Light gray, RAL 7035	Lifting / Tilting Base	Spray:	Part No.: n.a.
		Paint stick:	Part No.: 10547039
Window gray		Spray:	Part No.: 10548955
		Paint stick:	Part No.: 10548971
Medical blue, metallic	Control console front bumper, compression	Spray:	Part No.: 04011586
		Paint stick:	Part No.: 04011594
Signal white, RAL 9003	FL-C New, System Components	Spray:	Part No.: 10548945
		Paint stick:	Part No.: 10548970
White aluminum, RAL 9006	Column top	Spray:	Part No.: 04718755
		Paint stick:	Part No.: 10546654
Medical blue	Table Bucky, Ysio 3D / BWS	Spray:	Part No.: 05507046
		Paint stick:	Part No.: 05507087

1.2.9 Emphasized Texts

All texts marked with "**CAUTION**" contain information about risks and measures to avoid accidents.

All texts marked with "**NOTE**" contain additional information about the work step that follows and provides a better understanding or a warning about unnecessary and avoidable difficulties.

1.3 Prerequisites for Disassembly

1.3.1 Unit Positions

The system must be moved into the transport position for installation of the transport carriages.

1.3.1.1 dRF transport position

Checking and manually Setting the Transport Positions

- Move the tube unit column to the 120 mm SID (end position). This should be measured with the rear wall of the column opened, from the bottom edge of the column carriage to the column bottom panel.
- Move the tube unit column to the head end (left) until the longitudinal carriage is 220 mm away from outside edge of the table body.
- Rotate the tube unit to -88° (collimator flange is at the foot end / right).
- Move the lifting base up and set a space of 455 mm between the top edge of the lifting base plate and the bottom edge of the extender.
- Move the tabletop in the longitudinal direction so it is flush on the right and left.
- Move the tabletop in the transverse direction until both transport safety screws can be inserted.

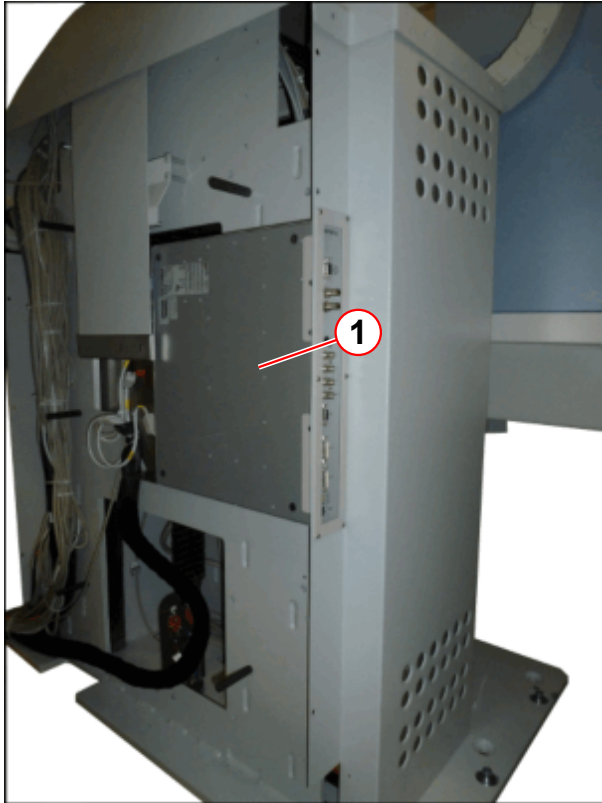
2.1 Installation

2.1.1 Video Manager (option)



If a video manager is in the order, it must be installed in the lifting base. Because access to the rear is required, route the cables before positioning the lifting base (see the "Options" chapter).

Fig. 2: Video Manager, Overview of Installation



Video Manager (Pos. 1)

For installation and connection, see the chapter "Options".

2.1.2 Checking the Installation Preparations

- The floor covering must be removed in the area of the base plate and a flat surface must be provided.

The base must be flat and clean of coarse dust.

Normally, the lifting base is installed on the floor.



If the lifting base plate is recessed into the floor, under no circumstances may the top edge of the finished floor be higher than the top edge of the lifting base plate.

If alternate holes for floor mounting are used, the holes not used must be filled with high-strength mortar.

2.1.3 Accessory Pack for the Lifting Base

The following installation parts are shipped along with the lifting base:

- 8 HSL-TZ **M12/50** anchor bolts
- 8 HSL-G-TZ **M12/100** anchor bolts
- 8 black washers (40 mm diameter, 5 mm thickness)
- Cover caps for the floor plate plate
- Shims
- Drilling template

2.1.4 Transport Frame

Fig. 3:



Installation:

1. Fasten the 4 transport castors to the transport frame using two M12 x 25 Allen screws and washers each, see figure on the left.
2. Use the spindles to slightly raise the lifting base.
3. Remove the transport pallet from the lifting base. **The four M12x40 transport screws will be needed later to level the lifting base.**
4. Use the spindles to lower the lifting base to just above the floor and move it to the examination room.

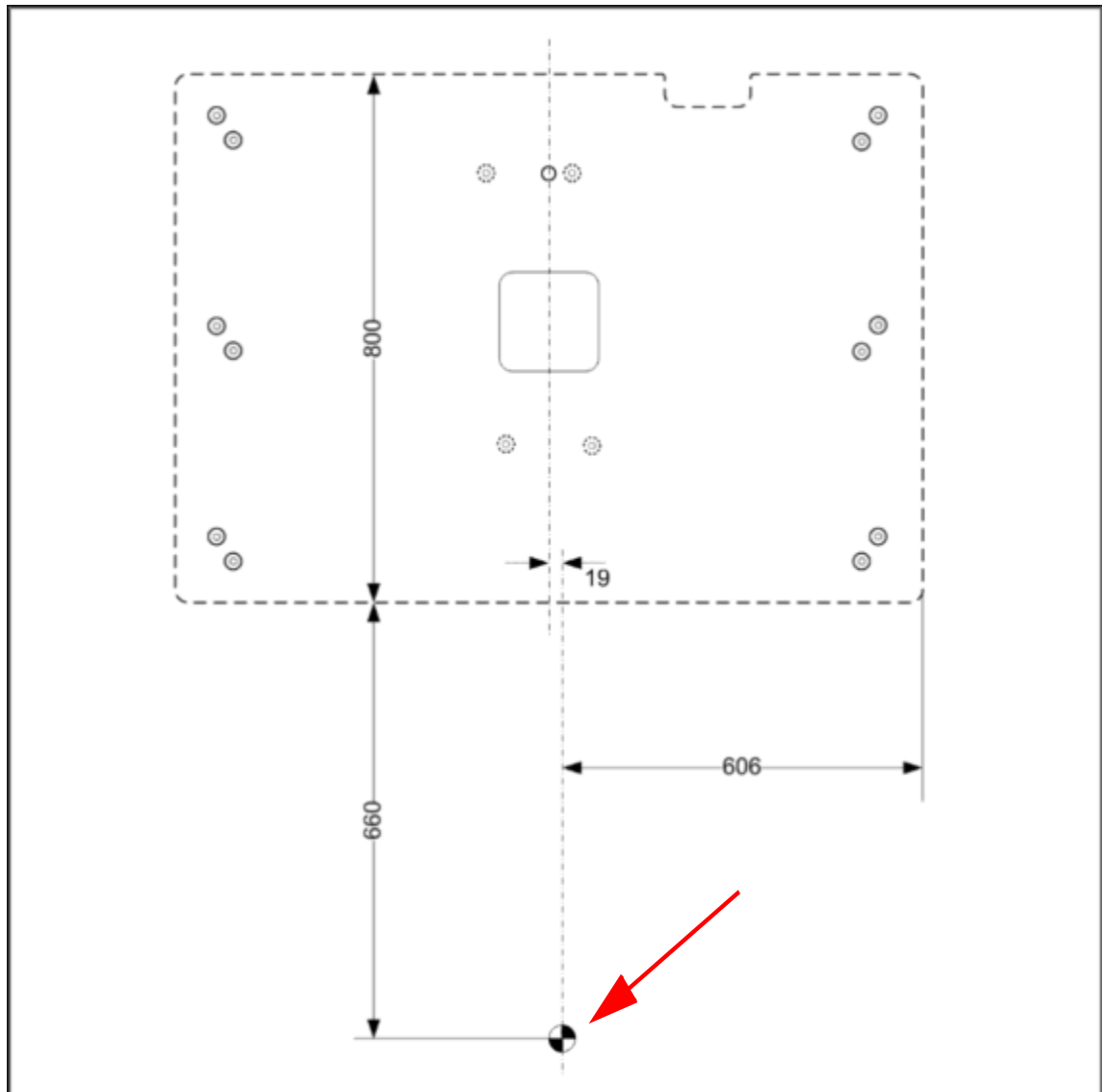
2.1.5 Positioning

Position the lifting base according to the orientation point in the Project Plan. (The orientation point is the focus point of the X-ray tube and is labeled in the Project Plan with a black/white quartered circle; see also the arrow in (→ Fig. 4 Page 19).

- Trace the right edge (606 mm) and the front edge (660 mm) on the floor.

- Place the lifting base plate down per the marks and level it.

Fig. 4: Lifting base position with orientation point

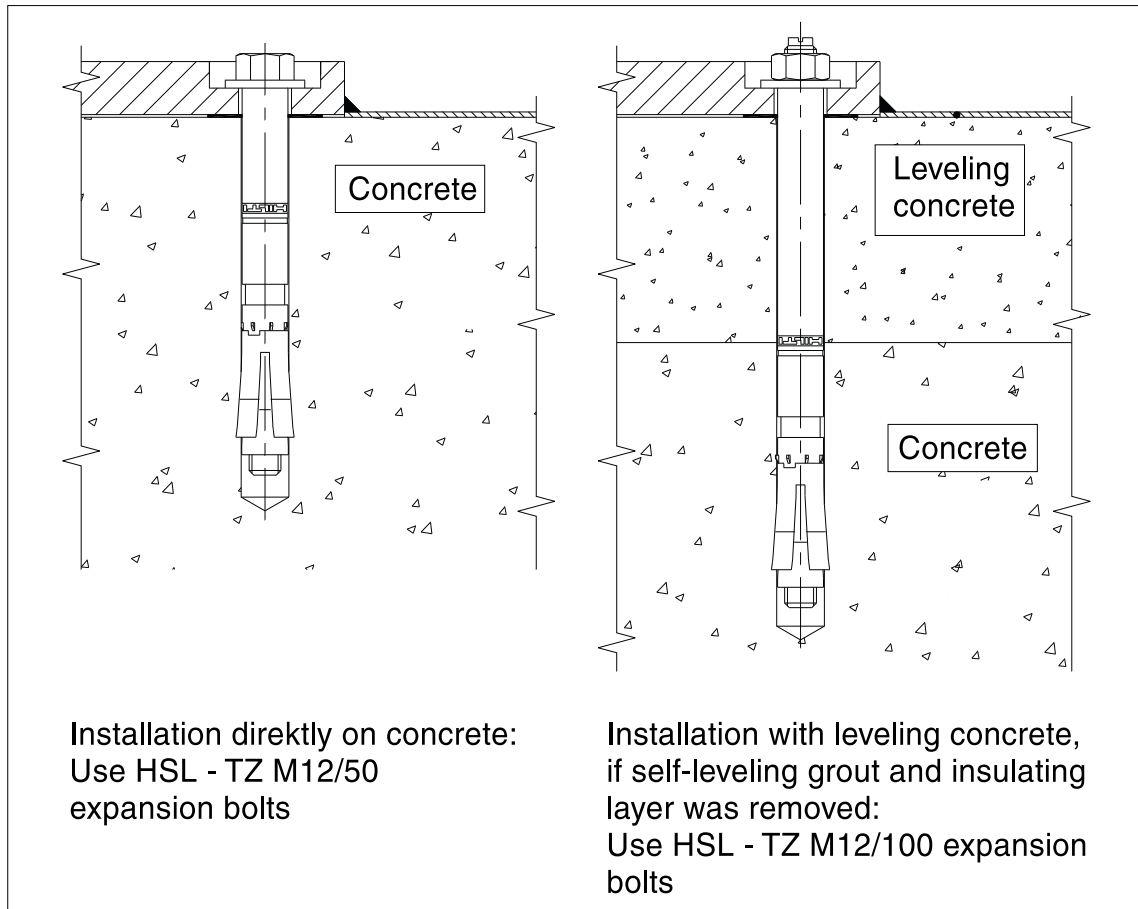


If the unit is to be installed near the back wall, the rear cover panel of the lifting base must first be installed.

The mounting screws for the cover panel will not be accessible afterwards, or accessible only with difficulty.

2.1.6 Installation

Fig. 5:



The relevant type of safety anchors must be installed according to the floor condition (also refer to the Project Plan).

If installing on an installation frame, the M12 screws, hardness rated 8.8, must be provided by the customer.

The black washers provided (40 mm) must be used as plate washers when securing the screws.

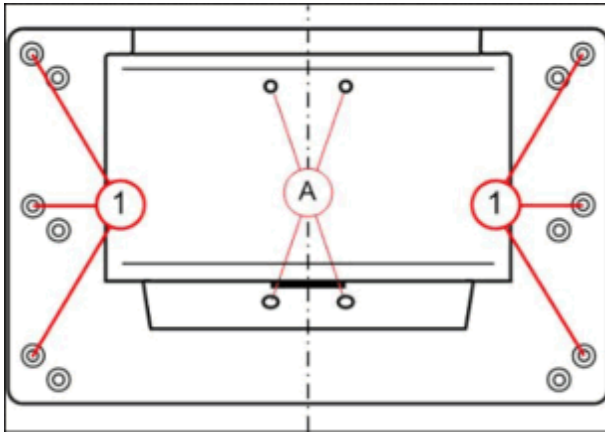
Other types of mounting and their torque values must be determined by Project Management in discussion with a structural engineer. The mounting materials required for this with the data for use must be available on site.

2.1.7 Mounting



To install the Luminos dRF floor plate, only 6 mounting points are provided!

Fig. 6:

**Placing on the lifting base:**

1. Unscrew all transport mounts and castors from the lifting base.
2. Drill 6 holes (1) through the plate in the floor. If one of the six outer holes cannot be used, an inner alternative hole can be used.

The holes (A) are not intended for mounting with the Luminos dRF. (Do not insert screw anchors or screws!)

3. Remove the drilling dust.
4. Insert the 6 anchor bolts and lightly tighten them.

Fill the holes not used with high-strength mortar.

2.1.8 Leveling



As of 11/2012, the lifting base is installed at a unit-specific tilt angle. The degree of tilt is noted on a label on the lifting base. See (→ 2/ Fig. 7 Page 22) and (→ 3/ Fig. 8 Page 23). (Negative values = tilt towards the back)

The data applies only if the extender is not yet installed!

If a label is not present, then the lifting base is installed at a tilt angle of -0.4° .

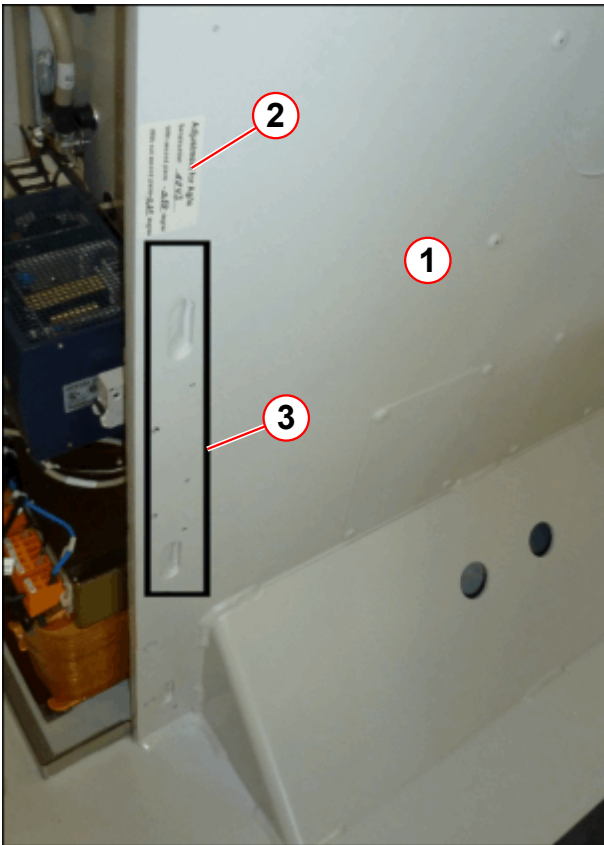
A slight lateral tilt (max. $\pm 0.2^\circ$) can be leveled out again with installation of the extender.

NOTICE

Avoiding an incorrect Adjustment

- » The location where to place the spirit level for measurement of the tilt angle absolutely must be maintained, because this is where the special tilt angle value is determined. (→ 3/ Fig. 7 Page 22) / (→ 2/ Fig. 8 Page 23)

Fig. 7: Lifting Base Tilt Angle



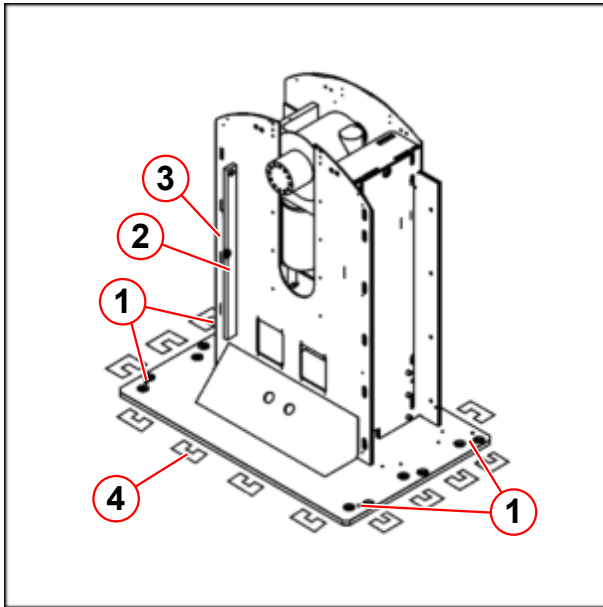
Unit-specific Tilt Angle

- The specific tilt angle is noted on the label (→ 2/Fig. 7 Page 22) on the left side of the lifting base (negative value = tilt towards the back).
- **Measure** the particular tilt angle **as accurately as possible in this area** (with longer spirit levels, extend the measurement area towards the top) and adjust by using shims under the lifting base (→ 3/Fig. 7 Page 22).
 - **Important!! Measure only in this location (left side on the lifting base).** (→ 3/Fig. 7 Page 22)
 - To ensure that inconsistencies in the weld construction have as little effect as possible on the measurement result, use a measuring device (e.g. a spirit level) with a minimum length of 500 mm.
- If the tilt angle listed on the label is two places after the decimal, it is possible to round up or down by one place.
 - e.g., $-0.17 = -0.2^\circ$
 - e.g., $-0.13 = -0.1^\circ$



Exact maintenance of the specific lifting base tilt angle is prerequisite for correct function of the system.

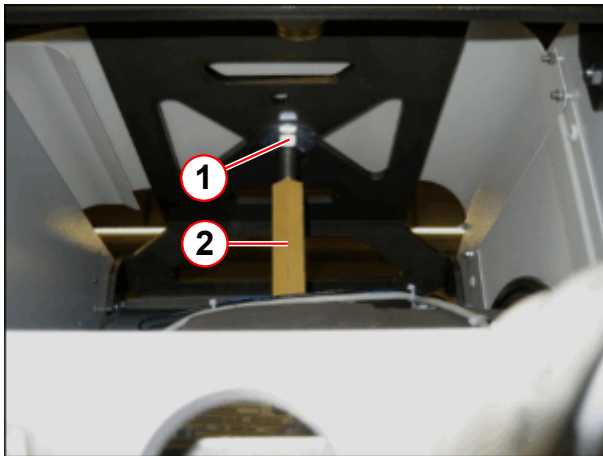
Fig. 8: Leveling the lifting base



1. Turn in the leveling screws (M12 x 40 transport screws) (1) and level the lifting base using the spirit level (2).
2. If needed, use the supplied shims (3) along the outside edges of the base plate. Place shims around the cut-out in the center of the base plate.
3. Loosen the leveling screws.
4. Tighten the expansion bolts or screws to check leveling to a maximum of **50 Nm**. Check the leveling with the spirit level (2); if needed, add or remove shims until the lifting base is at tilt angle shown on label (3).
5. The expansion bolts or screws may be tightened to a torque of **80 Nm** only if the leveling is okay when the screws are tightened.
6. Cover the large screw holes in the lifting base plate with the plastic caps that are included in the shipment.

2.1.9 Removing the Transport Safety Device

Fig. 9: Lifting base transport safety device



- Loosen the nut on the top of the lifting base and remove it.
- Turn the nut (1) downward.
- Loosen the stud (2) and unscrew it carefully to prevent loose parts from falling into the lifting base.

2.1.10 Installing the Extender

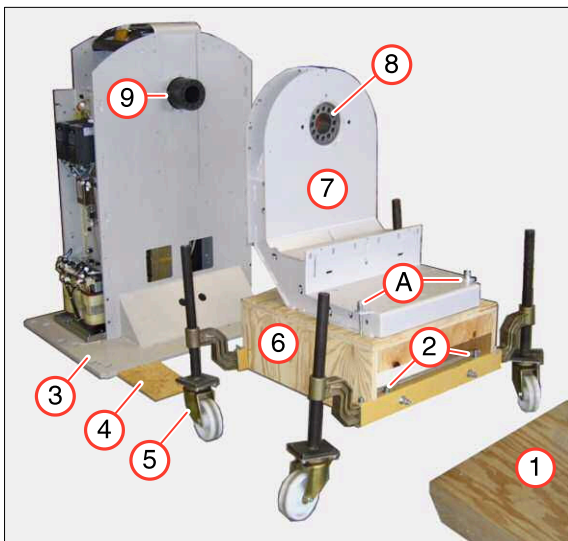
! WARNING

Risk of tip-over

The Luminos extender can tilt after loosening the screws (→ A/ Fig. 10 Page 24).

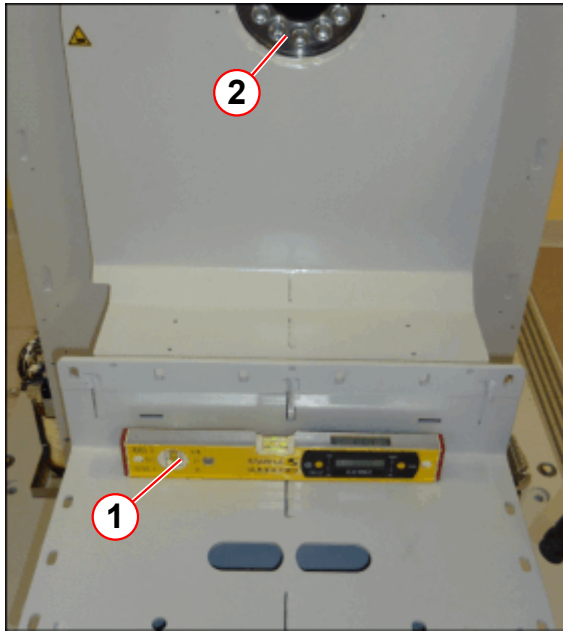
- » Loosen the screws (A) only after the extender has been mounted to the lifting base.

Fig. 10: Installation of the extender



1. Fasten the 4 transport castors (5) to the transport frame (6) using two M12 x 25 Allen screws and washers each.
2. Remove the transport pallet by removing the 4 screws (2).
3. Move the extender (7) using the transport aids (4) to the lifting base (3) and raise it up to the required height.
4. Slide the extender (7) on to the axle (9).
5. Apply Loctite 221 to the twelve M16 x 40 mounting screws (8) and lightly tighten them.
6. Remove the transport carriage from the extender (A).

Fig. 11: Ausleger ausrichten



Aligning the Extender:

- Place a spirit level (1) from left to right on the extender and align the extender so it is level by pivoting it to the right or left.
- Then tighten the 12 screws (M16x40) (Pos. 2) for extender mounting alternately on the diagonal to **200 Nm**.

3.1 Transporting the Unit Support into the Examination Room

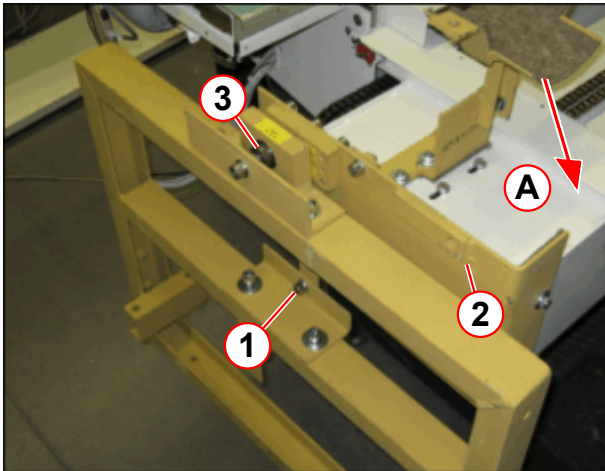


If there are narrow transport pathways, the unit support can be turned in the transport frame (column to the rear, downward).

If the freight elevators are small, the transport castors can be repositioned to the inside to shorten the transport frame. (See the next section, "Repositioning the Transport Castors".)

3.1.1 Preparing the Unit Support

Fig. 12: Transport frame, right



Pivoting the Unit Support:

1. Completely lower the unit support with the spindles until the transport frame is down on the floor.
2. Have one person secure the unit support and remove the safety screw (Pos. 1) on the unit support at the head and foot ends.
3. Loosen the lock nuts (Pos. 3) for the rotation axis.
4. Pivot the unit support down 90° with the column (direction (arrow A)) and resecure it at point (Pos. 2) using the screw (Pos. 1).

Fig. 13: Pivoting the unit support



Pivoting the Unit Support

- Pivot the unit support to the rear.

Fig. 14: Transport frame



Transport carriage:

1. Height-adjustable transport castors
2. Head-end side section
3. Head-end mount
4. Foot-end mount
5. Foot-end side section
6. Longitudinal struts

3.1.2 Repositioning the Transport Castors

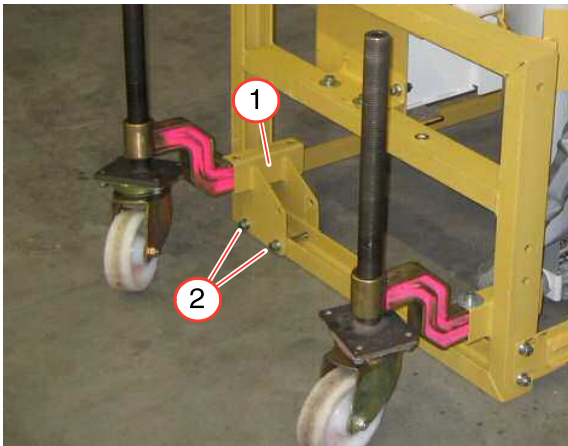
! DANGER

Risk of tip-over!

The center of gravity of the transport frame is elevated.

» **Move the unit support carefully!**

Fig. 15: Repositioning the castors



Repositioning the Castors

- Completely lower the transport frame with the spindles.
- Using the two screws (2), reposition the castor mount (1) to the inside.
- Using the spindles, raise the unit support again so that it can be moved.

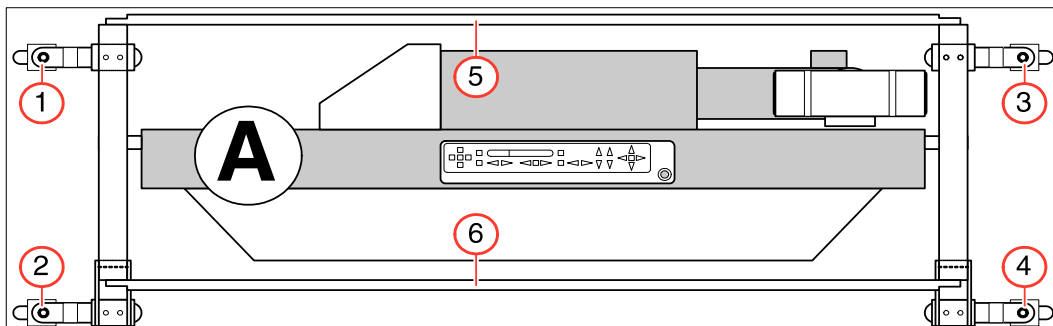
3.1.2.1 Installing the Castors

The following describes the different positions for mounting the transport castors (illustrations shown in top view). Note that castor 3 must never be repositioned to the inside due to the risk of serious damage to the paint.

1. Secure Installation (A), Top-down View

No repositioning of struts 5 and 6 required.

Fig. 16: Castor position A



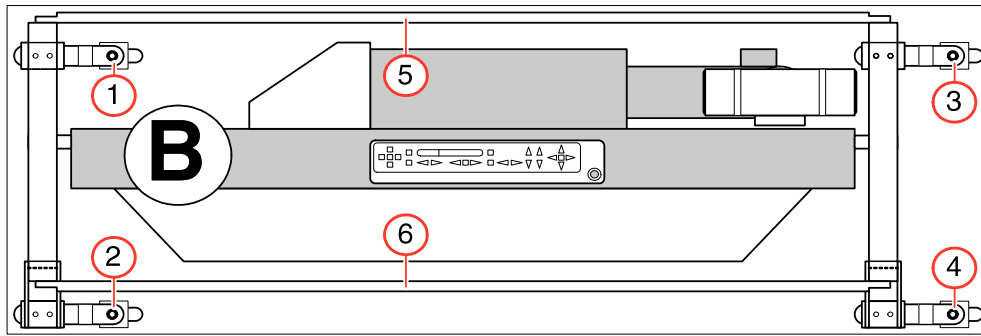
2. Short Installation (B), Top-down View

Repositioning of struts 5 and 6 to top position required.



Castor 3 must not be repositioned to the inside on the long side (damage to the paint). In short elevators, castors 3 and 4 must be removed.

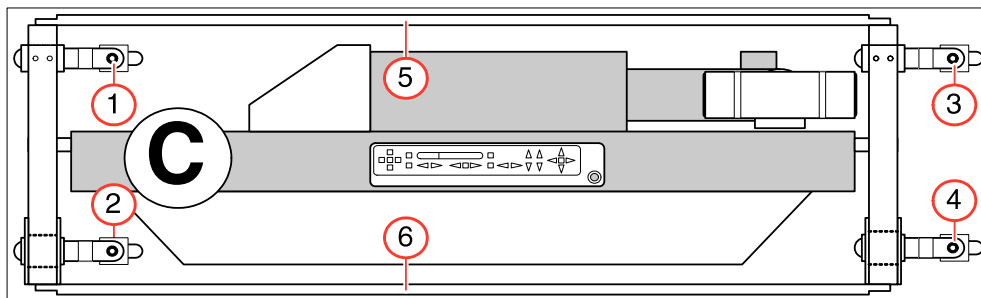
Fig. 17: Castor position B



3. Short and Narrow Installation (C), Top-down View; Caution: High risk of tip-over
 Repositioning of struts 5 and 6 to top position required.

i Castor 3 must not be repositioned to the inside on the long side (damage to the paint).
 In short elevators, castors 3 and 4 must be removed.

Fig. 18: Castor position C



4.1 Installation

4.1.1 Installing the M1 Power Supply Assembly

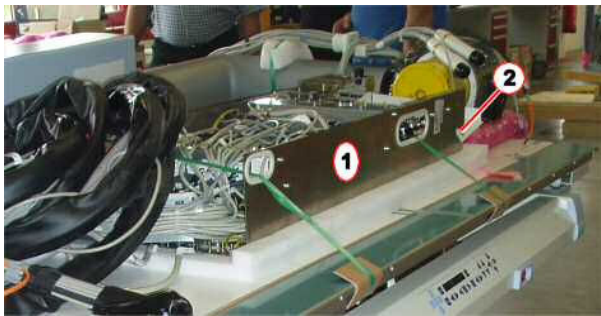
Sequence:

1. Move the unit support into the examination room and position it approx. 50 cm in front of the extender.
2. Remove the M1 power supply assembly from the table.
3. Carry the M1 around to the back of the table and hook it onto the lifting base. When doing this, guide the cables over the extender.
4. Secure the unit support to the extender.
5. Secure the flexible plastic chain to the extender.



When installing the power supply assembly, the wiring harness may not be twisted.

Fig. 19: Power supply assembly



Preparation:

1. Remove the power supply assembly (1) from the table.
2. Pre-arrange the cables to the M1 (the long holes (2) are at the bottom).

The picture still shows the old M1 with VC10

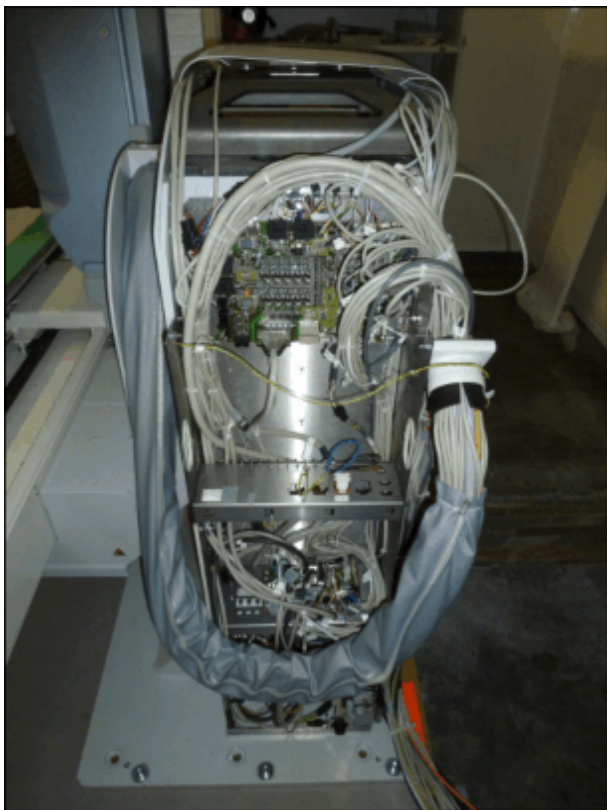
Fig. 20: M1 installation



Preparation:

1. Lift the power assembly (1) from the table and place it down behind the table on the right side of the lifting base.
2. Take the M1 from the table and hook it in the lower long holes on the right side of the lifting base.

Fig. 21: M1 connections

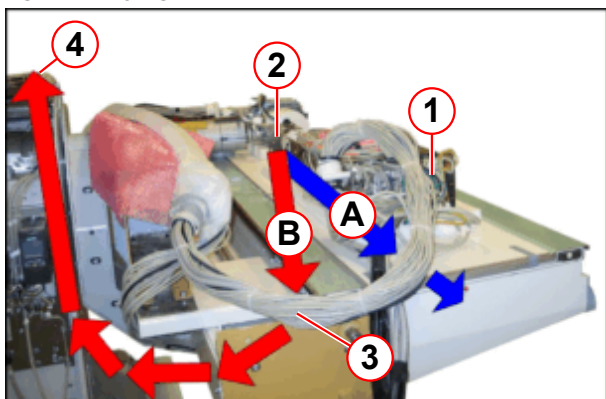


When inserting the M1, make sure that the cables do not get twisted.

- Secure the power assembly above on the lifting base with two no. 8 Allen screws.
- Route the cable to the generator toward the back.

4.1.2 Installing the M1 on the Lifting Base

Fig. 22: Laying the M1 cable



Reposition the M1 if the table is already installed on the extender.

1. Pull the the top of the M1 (1), in the direction of the arrow, to the edge of the table.
2. Lift the cable at (3).
3. Pull the bottom of the M1 (2), in the direction of the arrow (B) through below the cable (3) and lift it over the lifting base (4).

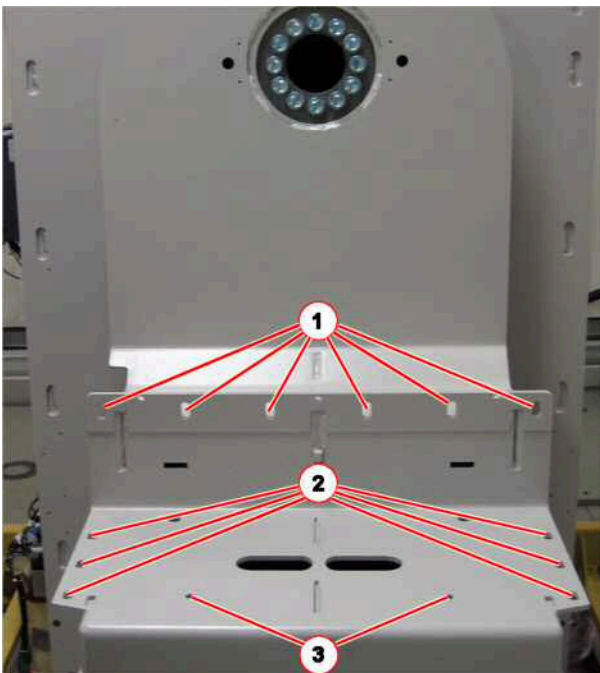
4.1.3 Installing the Unit Support



Fig. 23: Unit support with assembly



Fig. 24: Location of the mounting screws



Move the unit support back into the horizontal position and move it to the extender.

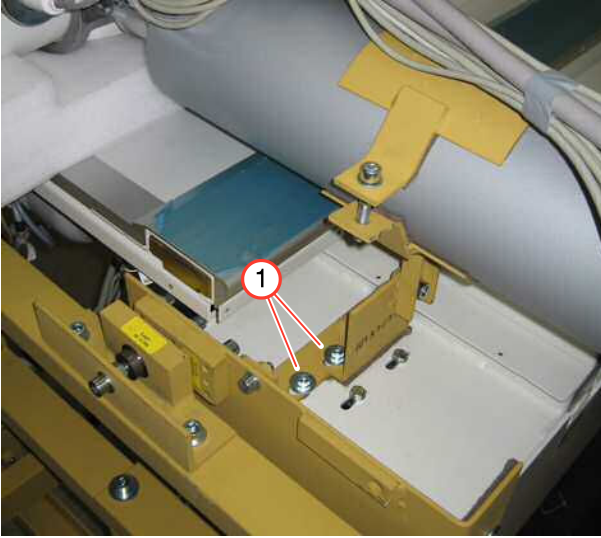
NOTE: Prior to installing the unit support, make sure that the blue cover panel is removed from the back of the column.

Securing the Unit Support

1. Position the unit support over the extender and lower it with the transport castors using the spindles so that the unit support rests on the extender.
2. Secure the unit support with 14 screws (1) (2) (3), toothed washers and M10 x 25 plate washers. Apply **Loctite 221** to the threads and tighten the screws to **50 Nm**.

Use contact washers for the front 2 screws (3).

Fig. 25: Column mount



- Remove the two screws on the column surface (1) only **after** standing up the column.
- Unscrew the complete transport frame (all yellow parts) from the unit support.

4.1.4 Transport Safety Devices

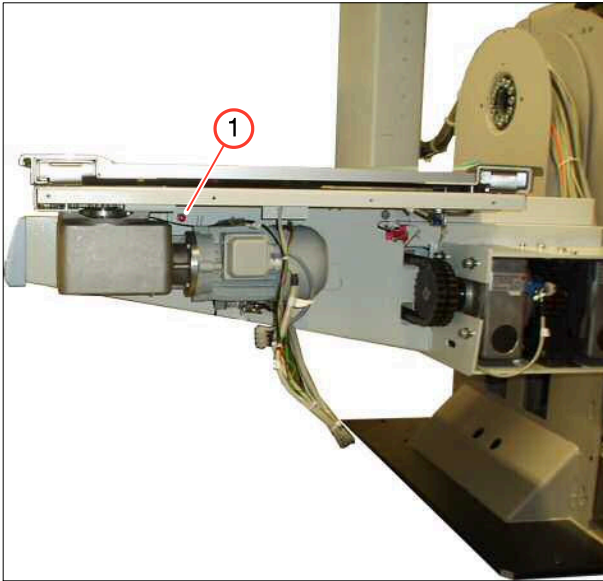
Fig. 26: Transport safety devices, left



Transport safety devices, left

1. Remove the cover panel (1) on the master drive assembly and remove the transport safety device for the master drive assembly (2 padded strips).
2. Remove the transport safety device (screw with the red head) at the head end of the table (2).

Fig. 27: Transport safety device, right



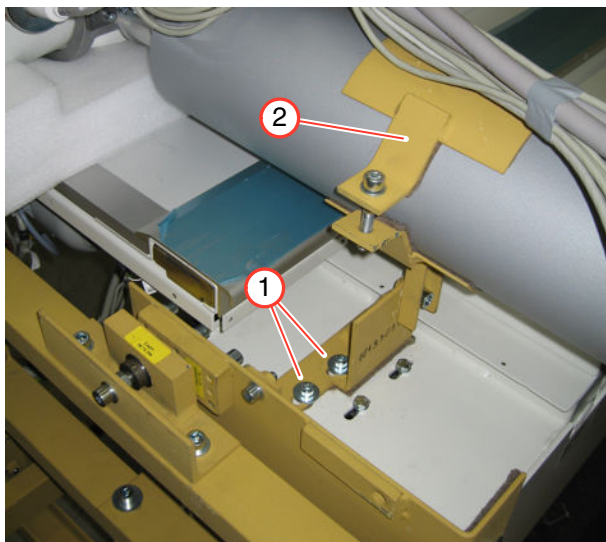
Transport safety device, right

1. Remove the transport safety device (screw with the red head) at the foot end (between the drive motor and the gear).

5.1 Installing the Column

5.1.1 Removing the Transport Frame

Fig. 28: Column surface



- Remove the **top** part of the column surface (2).
- Remove the two screws on the column surface (1) only after standing up the column.

Fig. 29: Installing the column



- Unscrew the screws on the column and on the base and detach the mount (1).

(1) Transport safety device

5.1.2 Standing Up and Centering the Tube Unit Column

Unlike with previous systems, the tube unit remains installed during transport. Because of this, the weight to be held is increased when standing up the column.

⚠ WARNING

Risk of tipping over.

If the column is not sufficiently secured when standing it up, it can tip over unexpectedly.

- » During this procedure, one person must stand on the unit support (→ Fig. 30 Page 37) so that the column can be secured while it is being positioned upright.

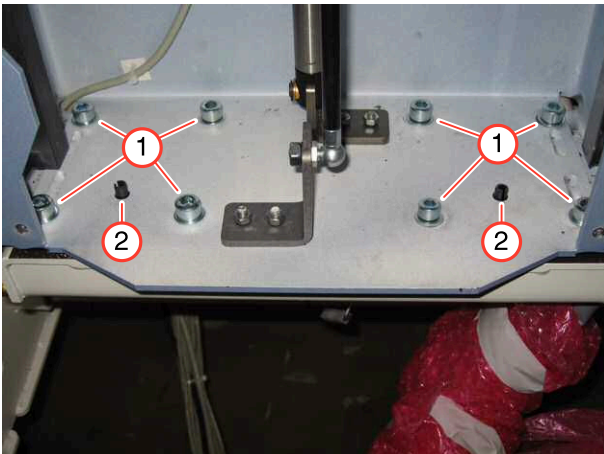
Fig. 30: Standing up the column



Carefully stand up the column and **immediately secure it** again (→ 1/ Fig. 31 Page 37) by threading in one mounting screw on the right side.



Fig. 31: Installing the column



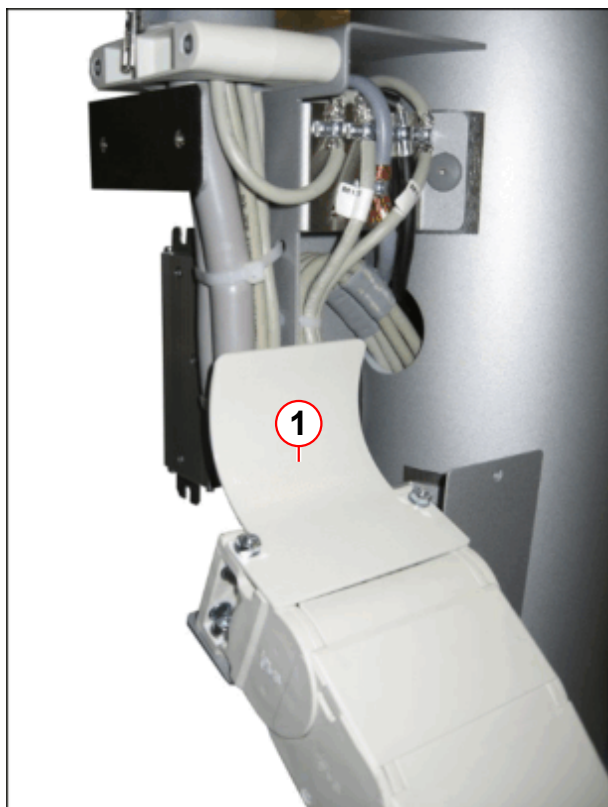
1. Apply Loctite 221 to the 8 mounting screws (1) and lightly tighten them.
2. Tap the two centering pins into the centering holes (2).
3. Tighten the 8 mounting screws (1) to **50 Nm**.

Fig. 32: Column hinge



- Remove the shipping hinge (1) (eight No. 8 Allen screws) and cover over the mounting holes for the hinge with the adhesive covers included in the shipment.

Fig. 33: Cable guide plate



- Install the flexible plastic chain and the cable guide plate (Pos. 1) on the mount.

5.1.3 Patient Switch Strip

Fig. 34: Switch unit



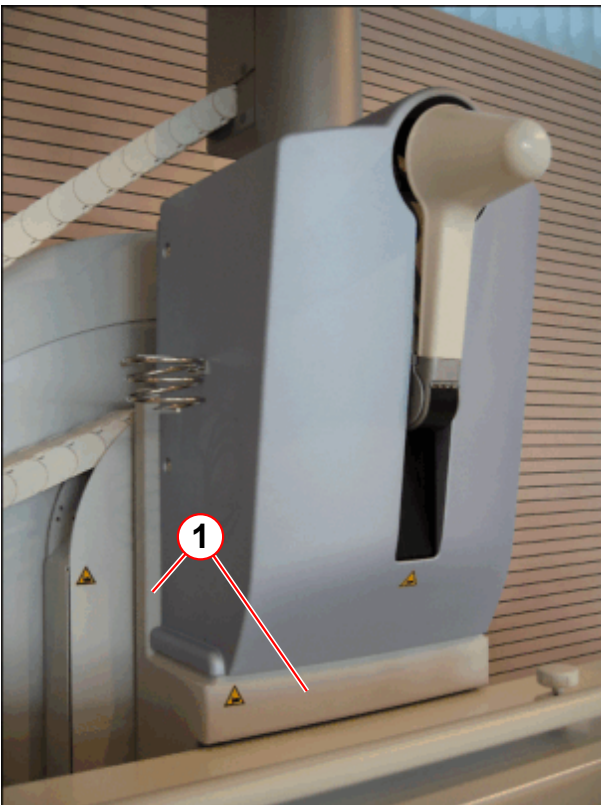
Installation:

- Slide the switch unit over the column from the front and secure it in place with the paneling screws on the column.

Caution!

Do not kink or pinch the black fiber optic cables.

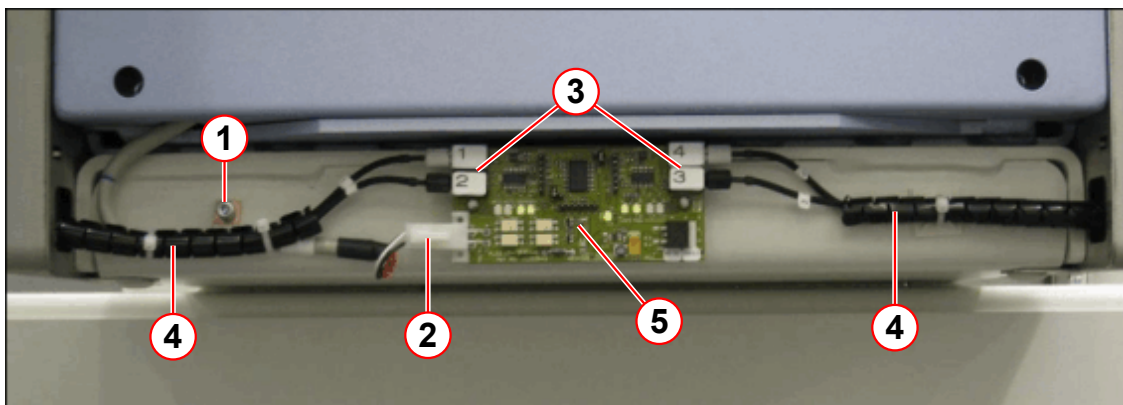
Fig. 35: Patient switch strip



Design:

- The switch strip is comprised of plastic foam and is sensitive to strong pressure.
- Handle the surface with care.

Fig. 36: Laying the switch strip cables



Connection of the Trigger Board:

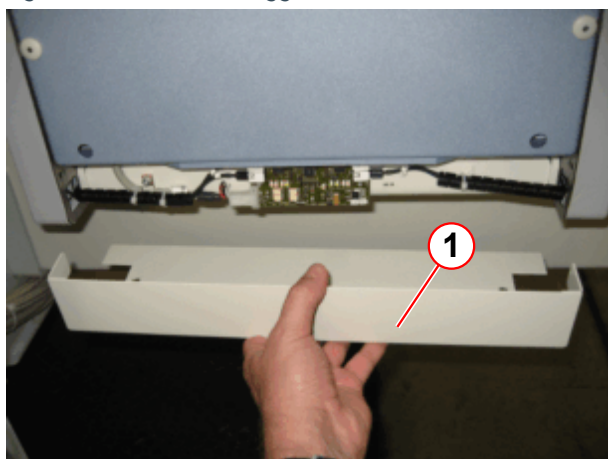
- Place the board (→ 5/ Fig. 36 Page 40) for the switch unit on the two plastic supports.
- Remove the plastic bag from the switch cable. Connect the shielding for the switch cable (→ 1/ Fig. 36 Page 40) and plug in the connector (→ 2/ Fig. 36 Page 40) on the board.
- Unscrew the 4 knurled nuts on the plug-in connectors (→ 3/ Fig. 36 Page 40), plug in the fiber optic cables per the designations and retighten the knurled nuts.



The fiber optic cables are very sensitive to pressure.

The fiber optic cables must be freely movable in the protective hoses (→ 4/ Fig. 36 Page 40). The protective hoses may not be squeezed while tightening them.

Fig. 37: Cover on the trigger board



Cover Panel:

- Insert the cover panel (1) and secure it in place on the bottom of the column with 2 paneling screws.

5.1.4 Compression (optional)

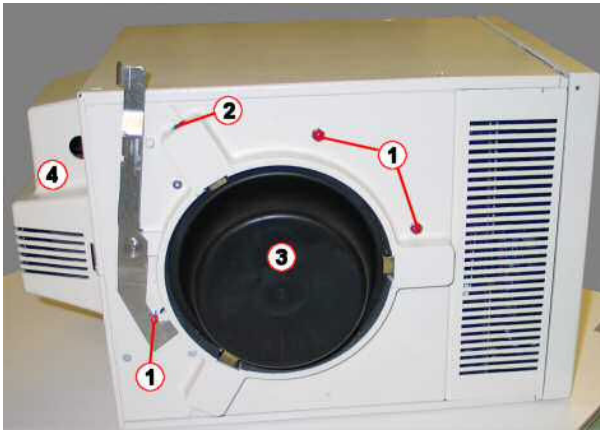
For installation, see "Options and 2nd Plane". (→ Compression (optional) / Page 76)

5.1.5 Installing the Collimator



Due to the installed tube unit, the collimator must be attached to the tube unit in an oblique position (→ Fig. 39 Page 41).

Fig. 38: Collimator



1. Remove the red transport safety screws on the collimator (1).
2. Unscrew the 3 adjustment screws (2) and remove the protective cap (3).
Caution! The lead plates underneath are very fragile.
3. Remove the cover (4).

Fig. 39: Installing the collimator



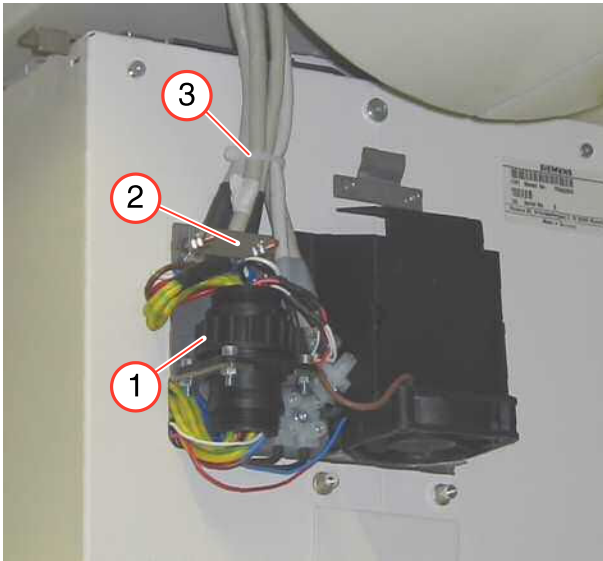
- Due to the oblique position of the tube unit, 2 persons are needed for the installation.

CAUTION!

Be careful when placing the collimator on the tube unit. The collimator plates (3/collimator) are very sensitive and can easily be damaged.

- Install the collimator on the tube assembly flange and align it.
 - Tighten the 3 screws (→ 2/ Fig. 38 Page 41) evenly until the collimator can just no longer be turned. Then slightly loosen the screws again so that rotation with a force of about 40 N (30-50 N measured with a spring balance at the outside end of the release lever) is possible.

Fig. 40: Collimator connection



Connect the collimator:

- Remove the cover panel (→ 4/Fig. 38 Page 41).
- Remove the 2 strain-relief plates (2).
- Thread in the collimator connector (1) and secure the cables (2 each) one on top of the other using the two strain-relief plates (2) and a cable tie (3).
- Reinstall the cover panel (→ 4/Fig. 38 Page 41).

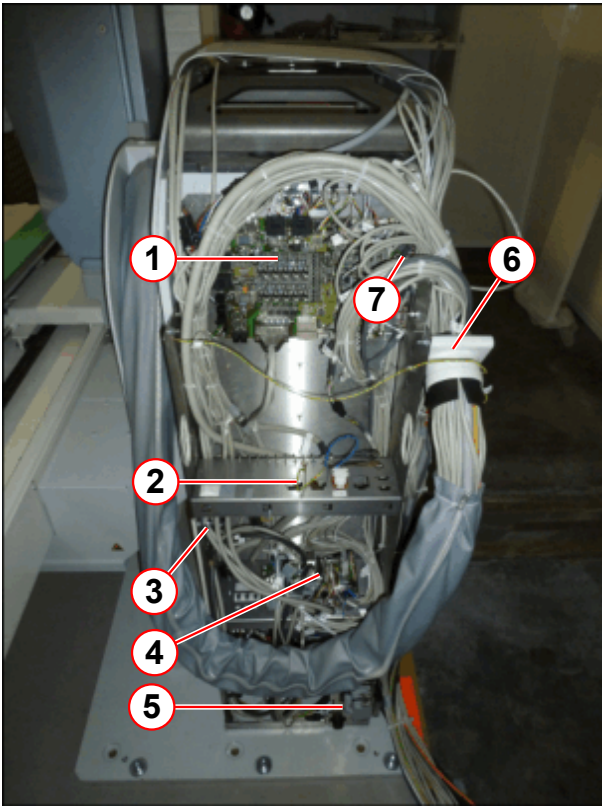
5.1.6 KermaX

The DAP (**D**ose **A**rea **P**roduct) chamber is installed in the collimator and cabled internally.

- No further cabling is required.

6.1 Connections

Fig. 41: M1 connections



Cable Routing to the M1

- Secure the flexible plastic chain on the extender with 2 screws (6).
- Remove any cable ties or insulation tape.
- Connect the cables per the designations.

Coming from M2 above:

- D60.X5 (CAN)
- D60.X3
- D60.X10

Coming from M2 below:

- M1.X22
- M1.X21
- M1.X20 (Power)
- M1.X23 (Safety circuit)

Coming from lifting base potentiometer:

- D60.X44 (Pos.7)
- D60.X45 (Pos.7)

Important! The cable was retracted during removal, and as a result the connectors may be somewhat tucked away.

- (1) = D60
- (2) = M1 X1, X3, X13
- (3) = F10
- (4) = D35 (RCCCB board)
- (5) = X702 (injector option)

Route the cables to the generator behind the lifting base as low as possible so that when there is lift movement, a collision with the plastic curtain is prevented.

Install the zipper hose such that the zipper faces upward.

Fig. 42: Cable from M1

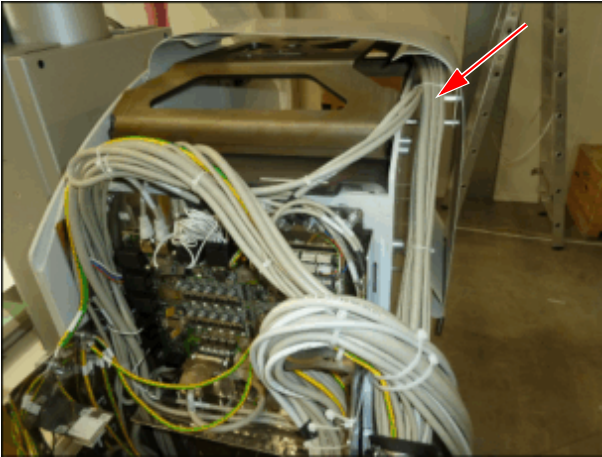


Fig. 43: Cable to M2

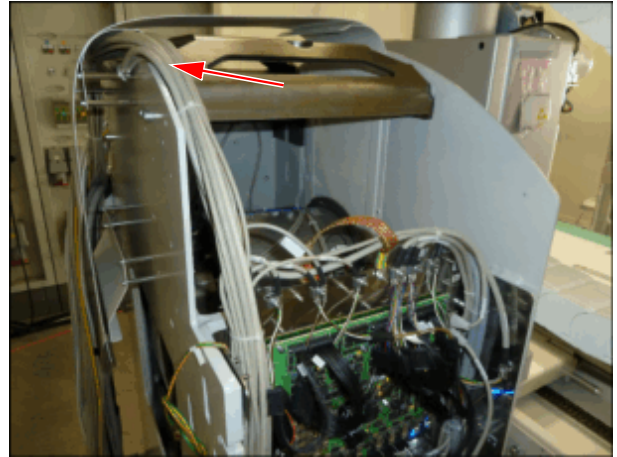
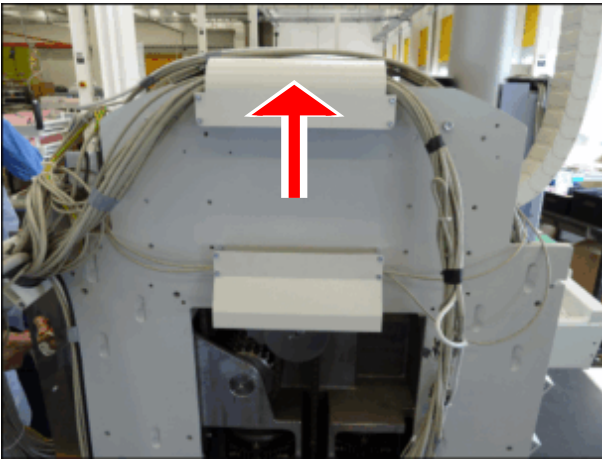


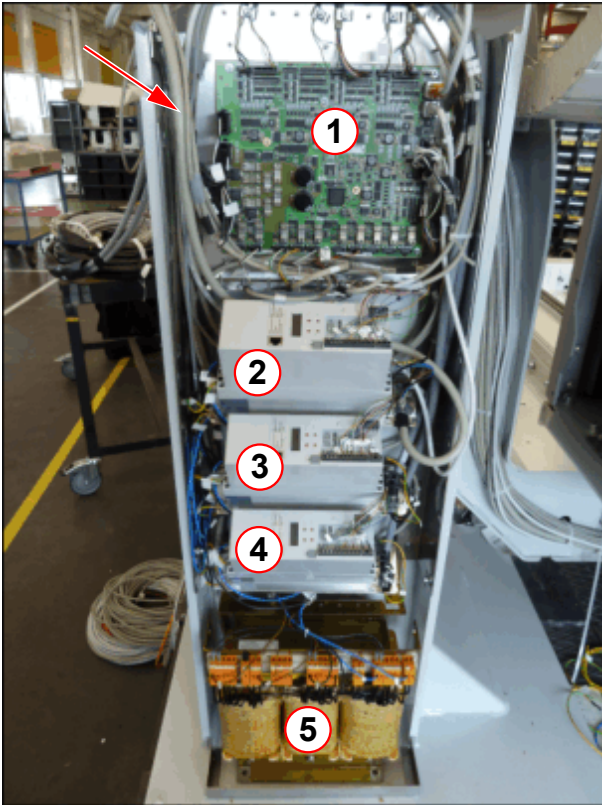
Fig. 44: Routing cables between M1 and M2



Cable from M1 to M2

- Route the cable over the holder (arrow)

Fig. 45: Connections on M2



Lay the cable on the inside and downward toward M2 (arrow). Make sure the shielding has been applied to the connectors.

- Connect the cables per the designations.

- D20.X8
- D20.X5 (CAN)
- D20.X31
- D20.X51

M2 X11 connect intermediate plug

- M2.X15
- M2.X25
- M2.X34
- M2.X54
- M2.X55
- M2.X60

- M2.K80 (column drive brake)
- U160 (right) Power
(U=brn ; V=blk ; W=blu; Gnd=yel/grn)

(1) M2 D20

(2) U160

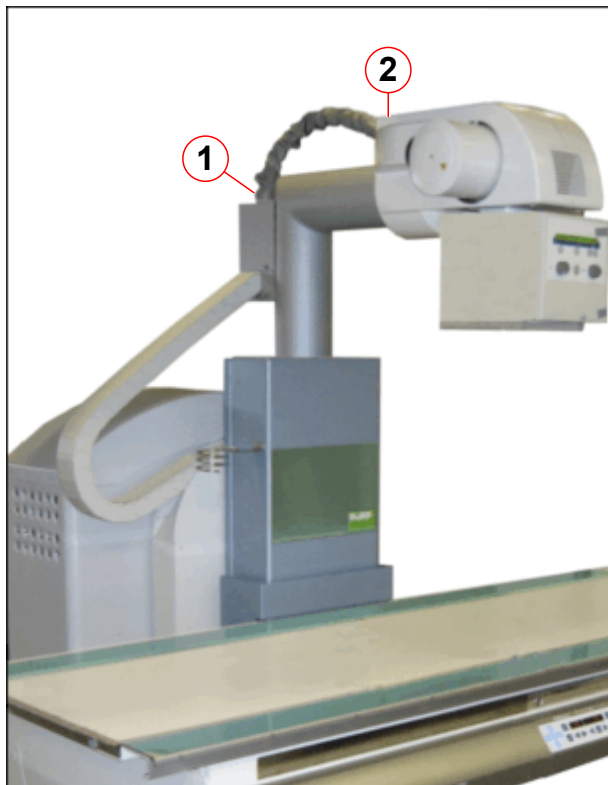
(3) U150

(4) U140

(5) T1

6.2 Routing Cables

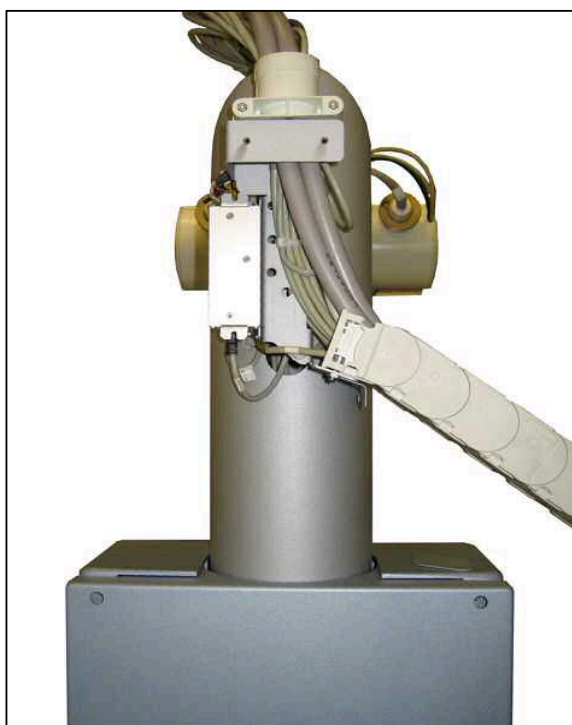
Fig. 46: Cable routing on the column



Cable Routing

1. When the tube unit is rotated later by max. 180°, the cables may not be stressed or scrape against any edges.
 - » The outside length of the tube unit cable from the top edge of the mount on the column (1) to the mount on the tube unit (2) is > 81 cm.

Fig. 47: Cable holder

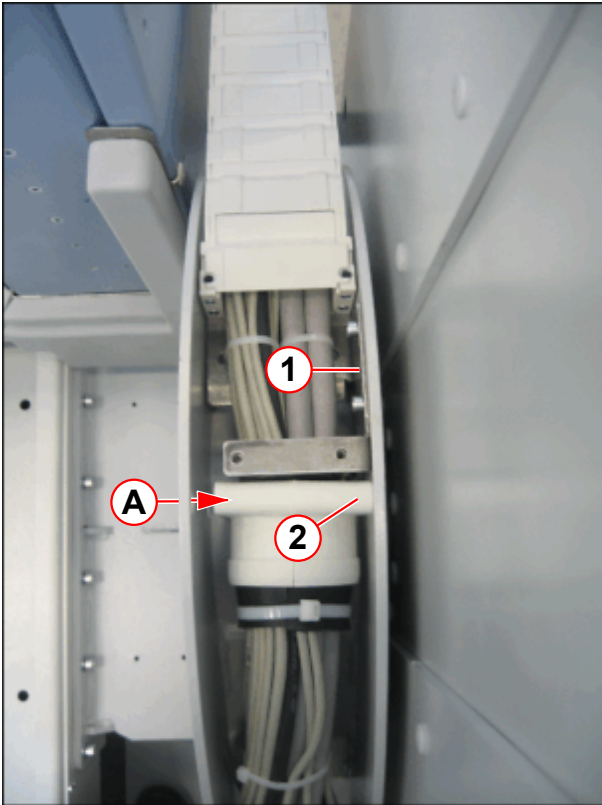


Cable Holder on the Column

1. Secure the flexible plastic chain to the mounting plate and lay it to the extender of the lifting base.
2. Secure the cable clamps to the outlet.

The blue tube unit column rear wall must be installed prior to securing the flexible plastic chain!

Fig. 48: Cables on the extension



Cable Holder on the Extension

1. Install the cable clamp (2) on the extension through the installation openings (A).
2. Secure the flexible plastic chain to the mounting plate (1).

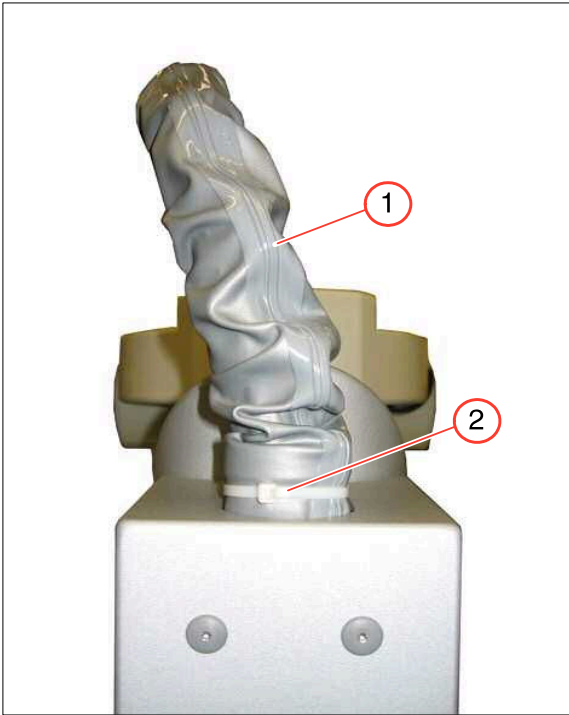
Fig. 49: Cable routing to the tube unit



Cable routing to the tube unit:

- Lay the cables to the cover panel as shown on the left.

Fig. 50: Zipper hose



Installing the Protective Hoses

1. Cover the cables with the protective hose (1).
2. Secure the protective hose to the cable clamp using a cable tie (2).
3. Lightly pull the protective hoses over the entire length (slide them together).

For protective hoses with zipper sleeve, close the hose with the special tool.

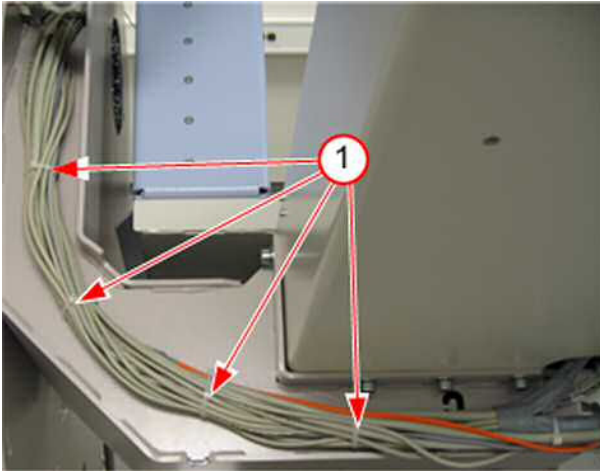
Fig. 51: Zipper hose



For protective hoses with a zipper, fold in the excess length.

6.3 Laying the Cables to the Lifting Base/Extender

Fig. 52: Cable routing to the extender



(1) Cable ties

1. Secure the wiring harness to the side of the extender using cable ties (1). When doing this, make sure the cables are **laid flat** (cover panel).

Fig. 53: System cabling



Laying cables in the table

1. Guide the cables and fiber optic cables to the detector suspension.

7.1 Working with the Detector

7.1.1 Vibrations



For detectors without shock sensors on the packaging, evaluation for vibrations is no longer necessary.

Fig. 54: Shock sensor



Shock sensors on the external packaging:

- The indicator on the shipping packaging may not have turned red. (Red = the sensor has responded)

- **If the shock sensor has responded:**

- In this case, carefully open the external packaging.
As long as no external damage can be seen and the inner plastic packaging contains no loose parts, repack the detector securely in the transport carton. Its function will be tested during startup.
- If the detector is obviously seriously damaged (e.g. loose parts in the inside packaging, scratches on the black front panel), inform the Project Manager.
- Make a note in the Installation Certificate if the shock indicator has responded.



7.1.2 Storage up to the Time of Startup

It must be possible to move the unit support with the motor in order to install the detector. The detector is therefore installed later during startup.



Store the detector in the original packaging in a secure location where the temperature is held at a normal level until startup is begun. Preferably store the detector in the examination room to acclimatize it for installation.

8.1 Fiber optic cable connection - Luminos unit to FLC

8.1.1 Luminos systems, SW versions VD and lower

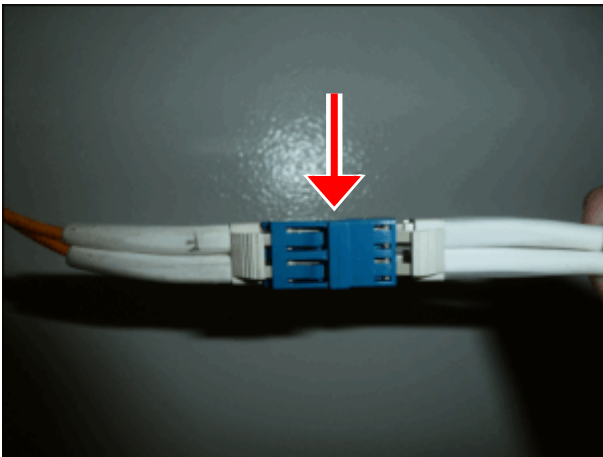
8.1.1.1 Unit cable harness with long fiber optic cable

The fiber optic cable should be routed directly through the bottom of the generator to the FLC. If the FLC W500 cable harness does happen to have a fiber optic cable integrated into it, this cable must not be used. (The ends will be sealed with shrink tube at the factory.)

8.1.1.2 Unit cable harness with short fiber optic cable (about 3 m at the generator end)

The fiber optic cable in the unit's cable harness should be connected via a coupling (→ Fig. 55 Page 52) to the fiber optic cable in the W500 cable harness (generator-FLC).

Fig. 55: FOC connection



Connection when short fiber optic cable is present

- Connect the two fiber optic cables (FLC to generator, and generator to Luminos unit) in the generator using the supplied jumper connector (shown at arrow).

8.2 Installation

8.2.1 Positioning the generator

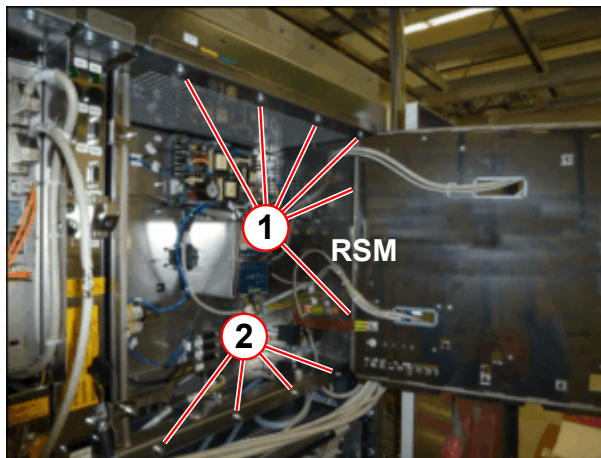
- Transport the generator in a reclined position to the installation location (according to the Project Plan).

8.2.2 Removing the RSM

For easier positioning of the generator (weight), the RSM can be removed from the generator cabinet in reclined position.

- Open the front of the RSM.
- Disconnect the connection cables at the connection points and mounting points.
 - D801 X31
 - D802. X6 and X7
 - RSM.X801 - PU X10

Fig. 56: RSM installation



Loosen the mounting screws and remove them.

- Top: 4x Torx (Pos.1)
- Right: 2x Torx (Pos.1)
- Bottom: 4x Allen screws (Pos.2)

- Remove the RSM from the generator cabinet and place in a safe location.

8.2.3 Standing up the generator

- Have at least 2 persons stand up the generator and align it at the intended location (if needed, use shims).
- Secure the cabinet. When doing this, observe the applicable national regulations.
 - Use the spacer brackets to secure the cabinets to the wall.
 - Secure the cabinet to the floor with appropriate expansion bolts.

The spacer brackets are included in the shipment, the installation materials must be obtained locally.

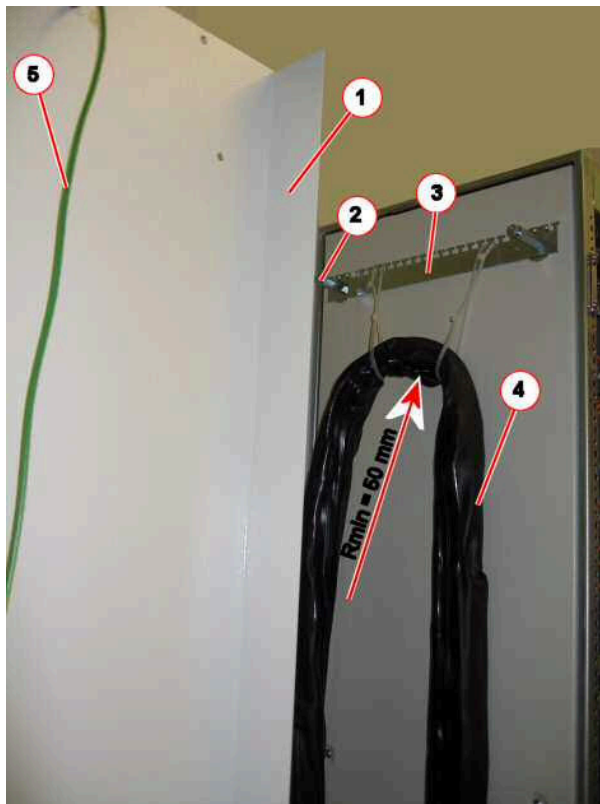
8.2.4 Reinstall the RSM

- Have 2 people move the RSM to the installation location. (pay attention to the cables)
- Reinsert the 10 mounting screws (Torx and Allen screws) and tighten.
- Reattach the cable connections and shielding.

8.2.5 Installing the Cabinet for Cable Storage (Option)

The cable storage compartment 04429937 can be installed as an option to store excess cable lengths

Fig. 57: Cables in the storage compartment



Installation on the Generator Cabinet

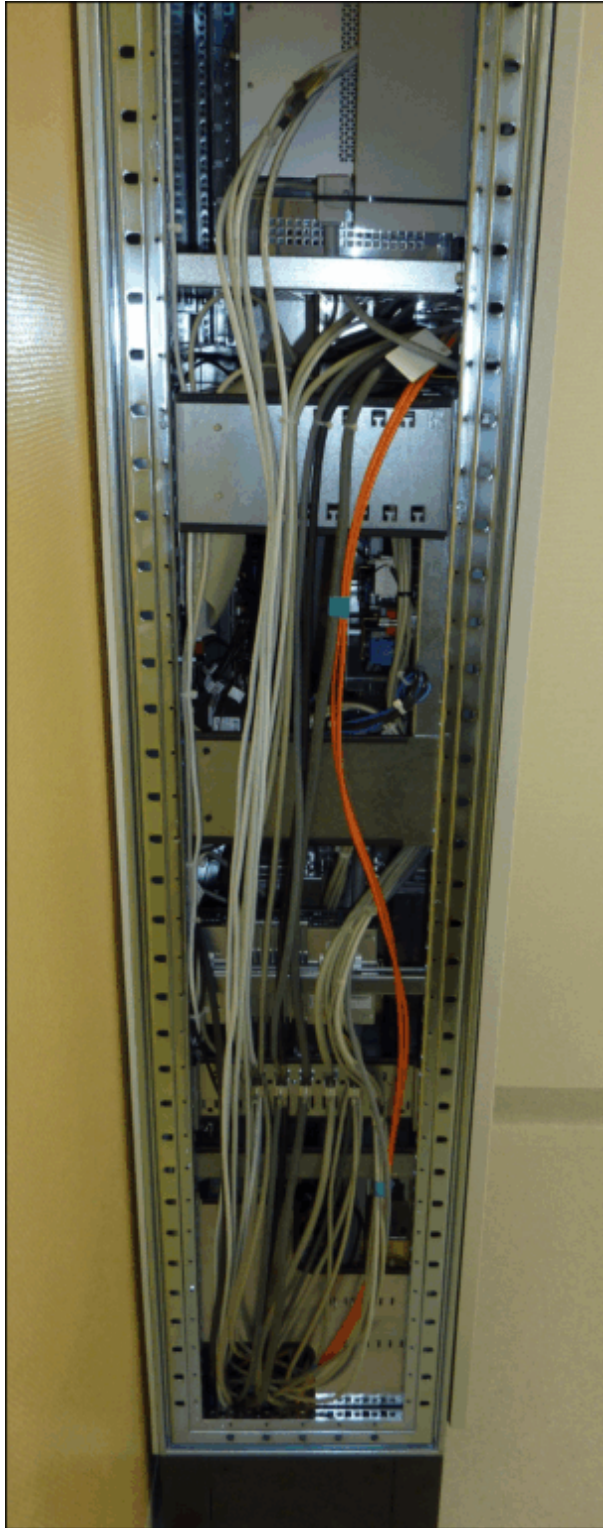
1. Install the spacers (Pos. 2) with the hanger strips (Pos. 3) on the side panel of the generator cabinet.
When doing this, place spacer washers (2 each) between the hanger strips and the side panel.
2. Hang the cables (Pos. 4) with the largest radius possible (min. 50 mm, see the arrow) in a random fashion.
3. Connect the ground wire (Pos. 5) to the generator cabinet.
4. Install the new side cover panel (Pos. 1).

8.2.6 Laying Cables

The following points must be observed during cabling:

1. Do not kink fiber optic cables (bending radius more than 50 mm).
2. Strain-relieve the cables, connect the shielding.
3. Lay excess cable lengths in a snake-like fashion.
4. Make sure the units can be pivoted.

Fig. 58: Laterally laid cables



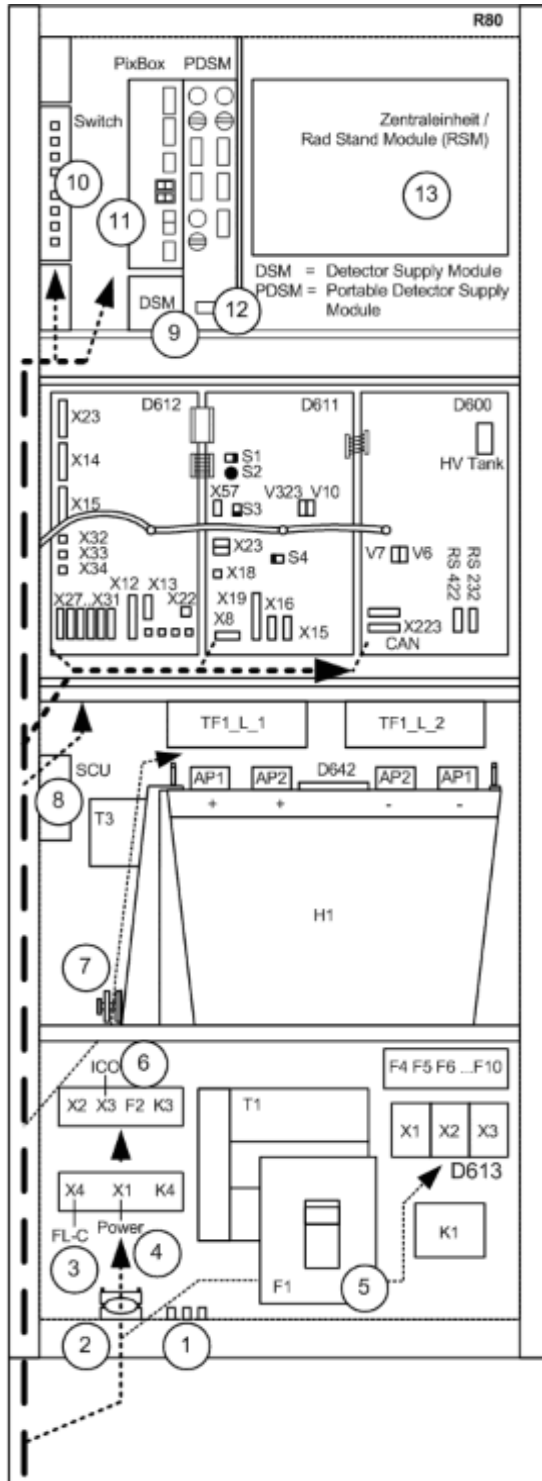
Cable Routing:

- Guide up the cables neatly on the left side of the generator as shown at the left.
- Connect the cables to the shielding clamps.

8.3 Cabling and Connections

8.3.1 Overview F80

Fig. 59: Overview of the F80 generator



Lay the cables as shown on the left by dotted lines and connect them per the designations.

The shielding connectors must be used for correct connection of the cables.

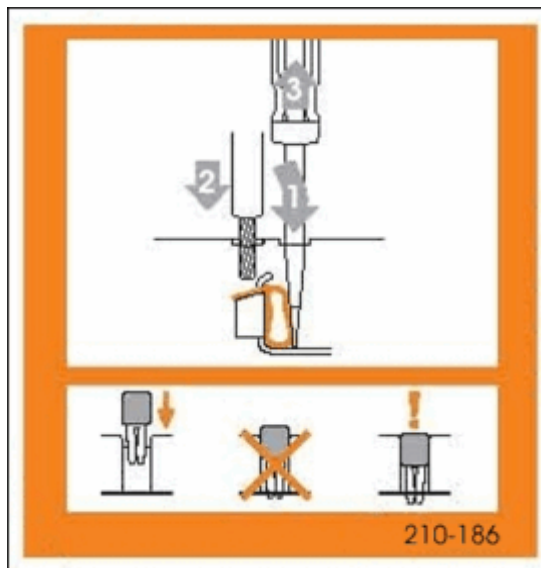
When laying the high voltage cables, make sure there is the largest possible spacing to electronic components.

Overview:

1. Ground wire connection points
2. Guide clamp for the generator power line connection
3. FL-C (X4) power line connection
4. Generator (X1) power line connection
5. System main switch (F1)
6. Unit (X3) power line connection
7. Clamp for the high voltage cables (**insulation on the high voltage cables is stripped at this location.**)
8. System Control Unit (SCU)
9. X8 Detector Supply Module (DSM), (X7 is not connected)
10. System Switch (all inputs are parallel circuited)
11. Detector PixBox (**communication switch must be set to Aurora.**)
Newer detectors do not have a PixBox (integrated into the detector)
12. Portable Detector Supply Module (PDSM)
Without the PDSM (only cassette operation in the BWS), an adapter is installed on D802 X3.A7 and X3.A10. The X825 and X826 connectors are plugged in there.
13. Rad Stand Module (RSM) Central Unit with the D801 and D802

8.3.2 X1 Power Line Connection

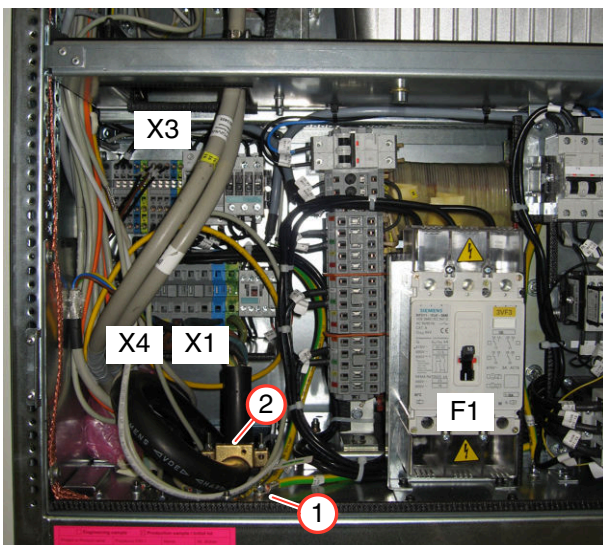
Fig. 60: X1 power terminal



As shown in the illustration on the side, the X1 power terminal in the generator must be pressed.

8.3.3 Connecting the F80 Generator

Fig. 61: F80 connections



Ground wires

- Connect the ground wires to the connection points (1) provided for this.

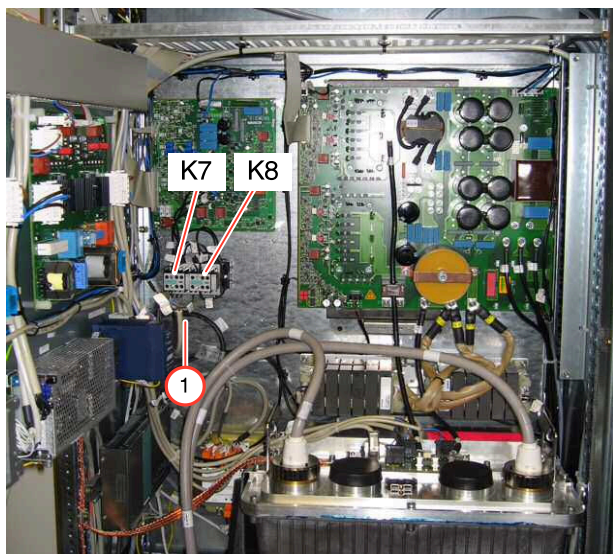
Power line connection

- Connect the power line leads L1, L2, L3, N, Gnd to the X1 terminal strip.

Open the clamps by inserting a 5 mm screwdriver into the clamp opening, insert the stripped end of the cable and then pull out the screwdriver.

- Strain-relieve the power line cable using the screw clamp (2) provided for this.

Fig. 62: Rotating anode connections

**Rotating anode connection:**

Secure the cable with the clamp for securing the shielding (1) and connect them to the K7 relay per the designation.

Unit Tube Assembly 1 (K7, Workplace 1)

- R2 1, K7.2T1
- R4 0, K7.4T2
- R6 2, K7.6T3

Tube Assembly 2, 3D (K7, Workplace 2)

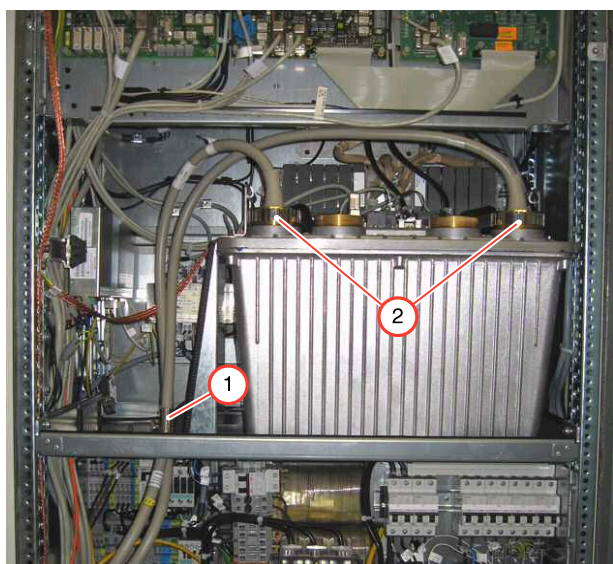
- R2 1, K8.2T1
- R4 0, K8.4T2
- R6 2, K8.6T3

Be careful when connecting the 2nd workplace to the K8 relay. Only the single leads 1, 0, 2 are labeled.

Oil pressure switch

- Tube unit 1 - unit - WS1
 - Connect the cable to generator D612 X14, 1 and 2.

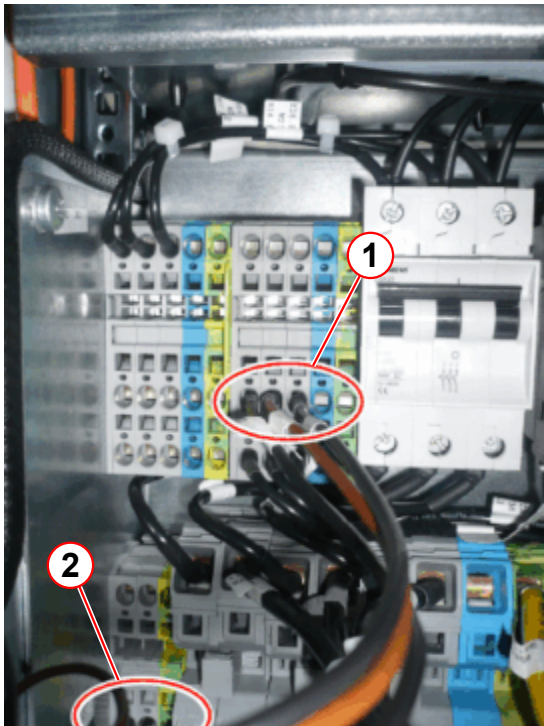
Fig. 63: High voltage cables

**High voltage cables**

1. Run the high voltage cables up to the connections on the H1. Lay the cables so that they can be secured at the clamping location (1).
2. Assemble the high voltage connectors. When doing this, use a silicon disk (corona disk with the nib pointing to the connector) and silicon oil. (Silicon rings are not used.)
3. Plug in the high voltage cables per the designations on the H1, tighten the collar nuts (2) and secure them with set screws.

8.3.4 Component Connections

Fig. 64: Connection X3 and X4



- (1) X3
- (2) X4

Luminos Unit

1. Connect the L1, L2, L3 power cable leads (with ground wire with the Luminos Agile) to the **X3** terminal strip (Pos. 1).
2. Strain-relieve the cable using the screw clamps provided for this.

Fluorospot

1. Connect the L1 (L11) and N (L22) power cable leads to the **X4** terminal strip (Pos. 2).
2. Connect Gnd to the generator.
3. Strain-relieve the cable using the screw clamps provided for this and clamp down the shielding.
4. Plug in the Fluorosopot HS trigger cable at D611 X15.

8.3.5 RSM (Rad Stand Module)

Fig. 65: Outside RSM connections

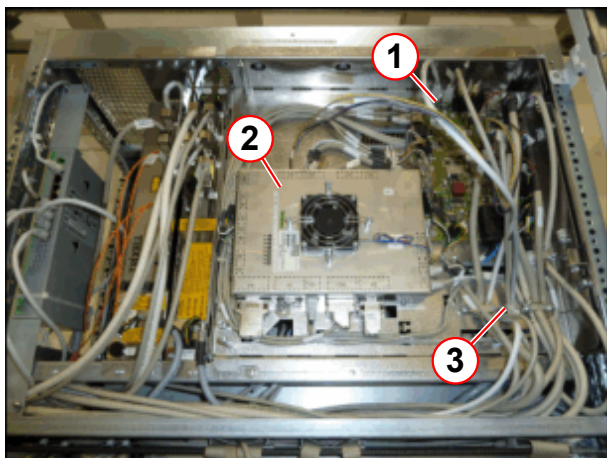
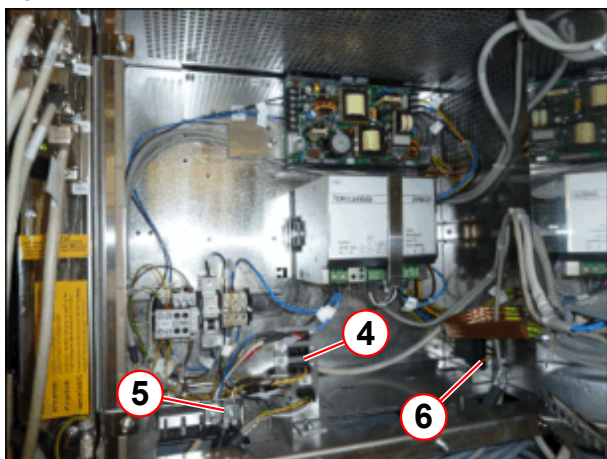


Fig. 66: Inside RSM connections



Overview:

An RSM is always built into the generator for software versions VD10 and higher

RSM outside

- D802 (1)
- D801 (2)
- Shielding connections (3)

RSM Inside

- X.805/X806/X807 (4)
(X806 not occupied with the Luminos Agile)
- Shielding connections (5)
- X.801 (6)

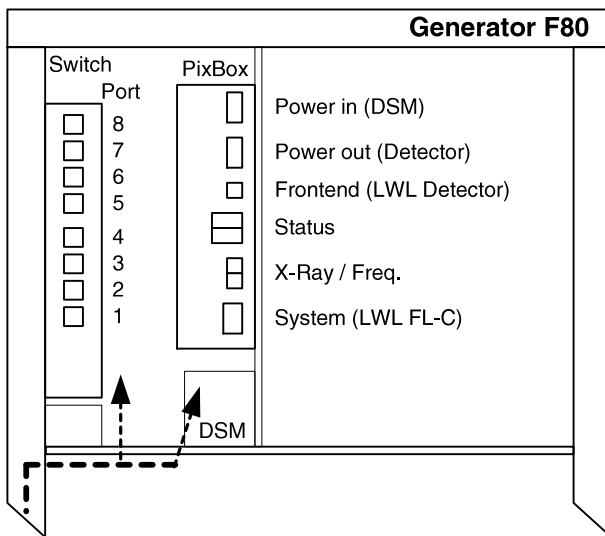
RSM connections from base unit:

- D802.X3
- D802.X4
- D802.X5
- D802.X8
- D802.X25 (CAN)
- D802.X48 (CAN)
- RSM.X808

8.3.6 PixBox with Detector F4343 F (the detector model can be seen on the packaging)

- The PixBox is always connected for an "F" detector

Fig. 67: Connection of the Switch / PixBox

**4343 F FD Detector**

- Connect the PixBox and the Detector Supply Module (DSM) per the designations.

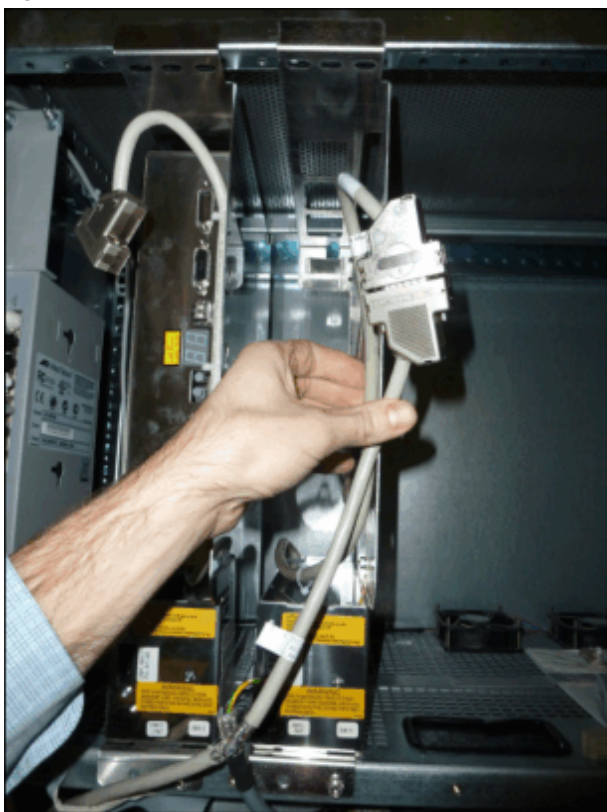
Switch

- Connect the switch per the designations.

8.3.7 Without the PixBox but with F3 4343 Detector (the detector model can be seen on the packaging)

- With this "F3" detector, the Pix Box is already integrated into the detector.
For safety reasons, a Pix Box is integrated into the generator for the first systems, but is not used. (it will be eliminated at a later time)
- In this case (F3 detector with integrated PixBox), the connections for the power supply (Power In and Power Out) are connected together and the fiber optic cable is connected to a plug-in jumper (see the cable labeling)

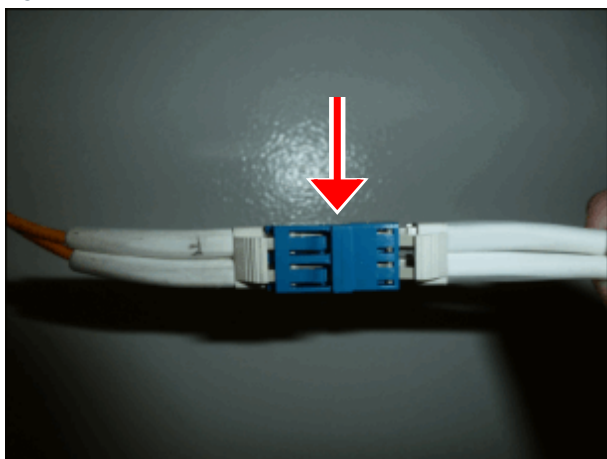
Fig. 68: Detector Power



Detector Power Cable without the Pix Box:

- Connect the detector power cables to one another in the generator. Use the hexagon bolts supplied.

Fig. 69: FOC connection



Fiber Optic Cable Connection without the Pix Box

- Connect the two fiber-optic cables with the plug-in jumper supplied (arrow).
- Lay the fiber optic cable with large bending radii.

8.3.8 Overview of the F80 Connections

With all cables, the shielding at the bottom left in the generator must be secured at the shielding clamps provided.

Connection	Use
Control System	

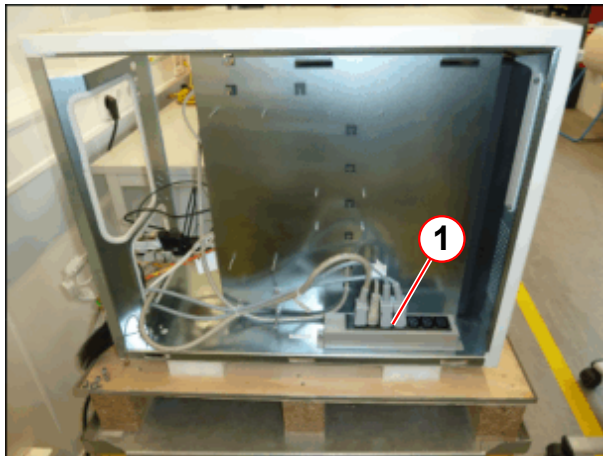
Connection	Use
D600 X223	CAN out
D611.X15	FL-C Interface
D611.X18	KermaX
D611.X19	Control Console
D612.X32, X33, X34	AEC chambers
Monitoring Devices and Displays for Radiation Safety	
D612.X23, 4, 5, 6 and 7, 8	External radiation display, potential-free
WS1. D612.X14, 7/8	Workstation-related radiation display (24 V / 5 W); WS 1 via FLC M59.X1.
WS1: D612.X14, 1/2	WS 1 oil pressure switch
WS1: D612.X14, 3/4. 24V from the generator.	Door Contacts to Block Radiation With interventional workstations, no door contacts may be connected!
External Connections	
D612.X23, 2/3	Room light control
D611.X23, 1/2	Emergency power
D611.X21, 1/2. 24V from the generator	X-ray disable
Switch	
Port 5;	System control console
Port 6;	FLC (M59.X2)
Port 7;	-
Port 8;	SCU Ethernet (Uplink)
PixBox	
System;	M59.FDR1 (fiber optic cable, Aurora)
Front End;	Detector (fiber optic cable)
Front End Power;	Detector power supply
Power In;	DSM (Detector Supply Module)

9.1 Overview

- For service on the FL-C, it is necessary that the cables to the FL-C floor outlet have a free length of approx. 1 m.
- Because of the length specified, the incoming wiring harness from the generator (PU) should be secured to the FL-C at the left (as viewed from behind).

9.1.1 Monitor Power Supply

Fig. 70: Power supply for the monitors

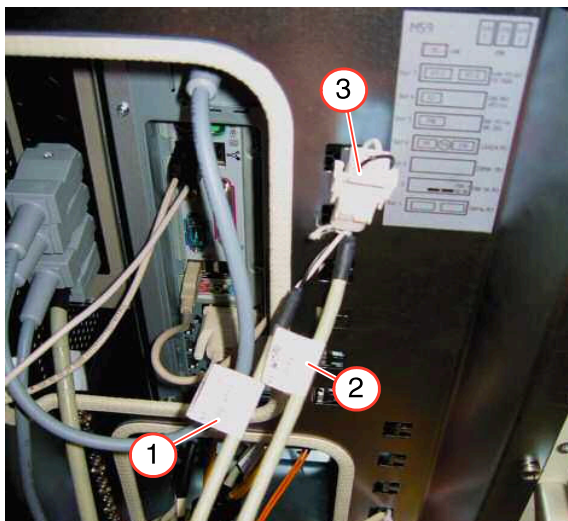


Terminal connector

- The connector strip is installed on the side of the FL-C. To plug in the cables, remove the left side wall of the FL-C.
For type W510 computers, remove the right side panel.

9.1.2 Plug-in Connector for the Radiation Display

Fig. 71: Radiation indicator



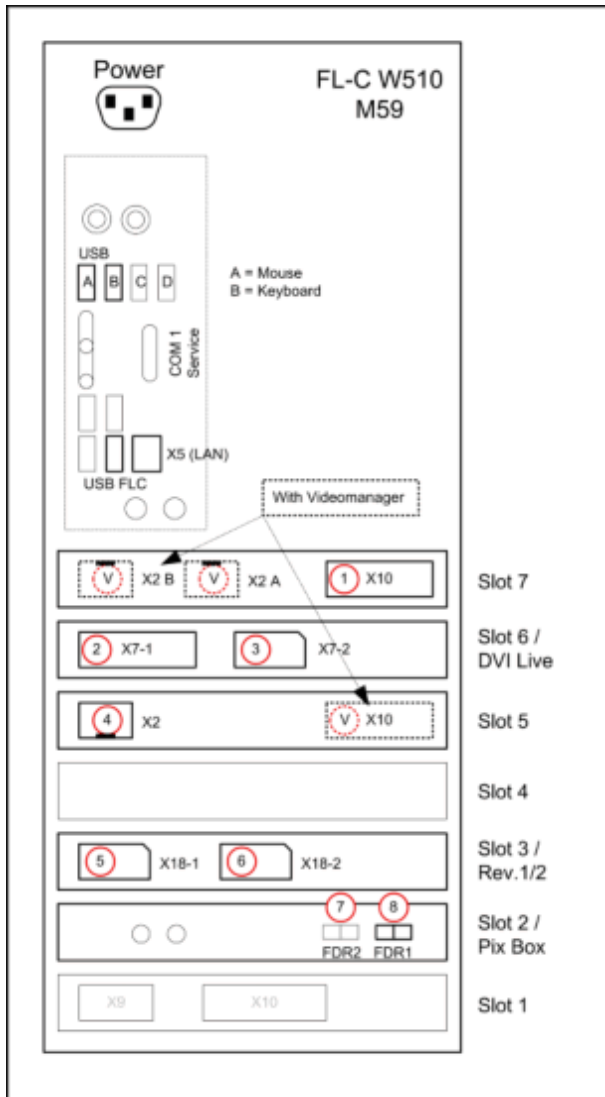
Radiation Display Connection

- Trolley/DCS - FLC M59 X1 - Generator D612 X14
Connect the cable for the radiation display in the monitor carriage or DCS (1) on the back of the FL-C to the generator (2) with a jumper (3).
- Secure the connector at a suitable location with cable ties.

9.1.3 Fluorospot W510 (for software versions VC10E, VD10 and higher)

9.1.3.1 Connection

Fig. 72: FL-C W510 M59



Overview of Connections:

- USB A - Mouse
- USB B - Keyboard
- USB FL-C - internal USB, front of FL-C
- COM 1, Service PC
- X5, System LAN Connection (in newer systems, by means of 10 kV isolation on the left side of the computer)

Without video manager:

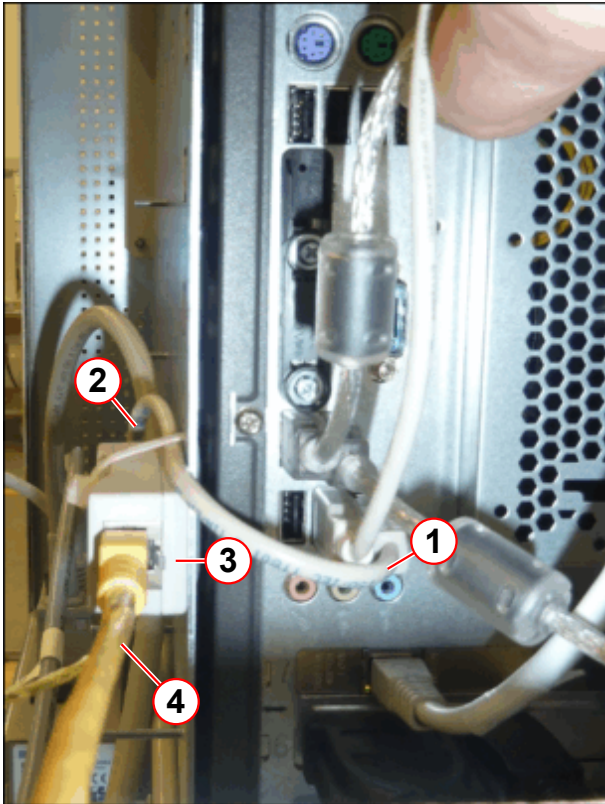
1. CAN connection to the generator D611.X15
2. Live monitor (table in control room) via DVI cable reference monitor (DCS / monitor cart), via DP DVI and DVI CAT adapters
3. Live monitor (DCS / monitor cart) via DP DVI and DVI CAT adapters
4. XCS generator switch
5. Reference monitor (table in control room) via **DP Adapter (Display Port)**
6. Reference monitor (DCS / monitor cart) via DP DVI and DVI CAT adapters
7. Fiber optic cable connection to the PixBox in the generator. (FDR1 detector in the table).
8. Fiber optic cable connection to the PixBox in the generator. (FDR2 detector in the BWS).

With video manager:

- X2-A Slot 7: XCS generator switch
- X2-B Slot 7: Video Manager
- X10 Slot 5: CAN connection to the generator D611.X15

9.1.3.2 10 kV LAN Isolation

Fig. 73: Potential separation



LAN Connection to the Clinic Network

- The LAN connection (Pos. 4) to the FL-C in newer systems is made by means of a 10 kV isolation (Pos. 3) if it is installed from the factory.
- The isolation is installed on the left of the computer housing and is connected to the FL-C with Pos. 1 and Pos. 2.

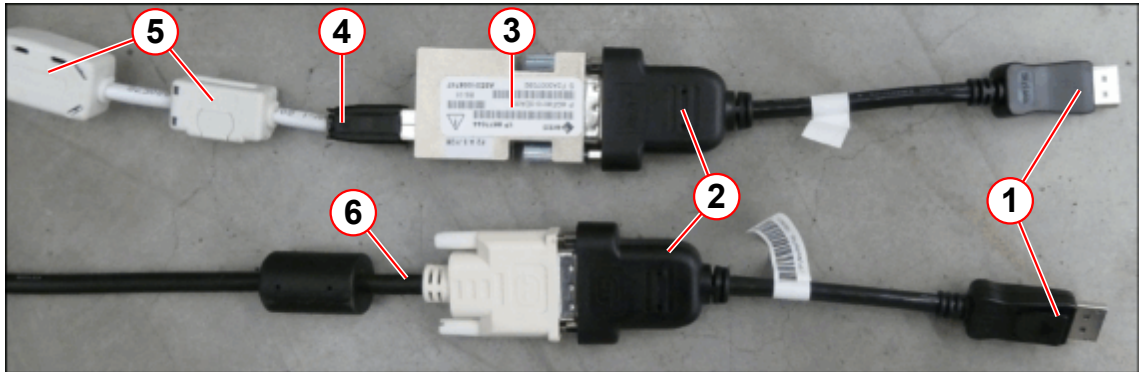
9.1.4 Video Cabling

All monitors are powered via their DVI input. The monitors are connected in the examination room via CAT7 cables and a CAT7 DVI converter.

- A DVI output on the FL-C is provided for the Live monitor in the control room. It is connected to the monitor by a DVI cable.
- A "DP" connector (display port) on the FL-C is provided for the Live monitor in the examination room. A DP DVI adapter is installed between the FL-C and the DVI CAT7 transmitter.
- The Reference monitors in the control room and in the examination room are also connected to the FL-C via CAT7 cables, CAT7 DVI transmitters and DVI DP cable adapters.
- The monitors in the examination room must be connected to the DVI CAT7 transmitters, CAT7 Ethernet cables and CAT7 DVI receivers.

9.1.4.1 Connection

Fig. 74: DP - DVI - CAT7 adapter



- (1) DP in the FL-C
- (2) DVI
- (3) DVI - CAT7 adapter
- (4) CAT 7 to monitor
- (5) Filters
- (6) DVI to monitor

10.1 Installation

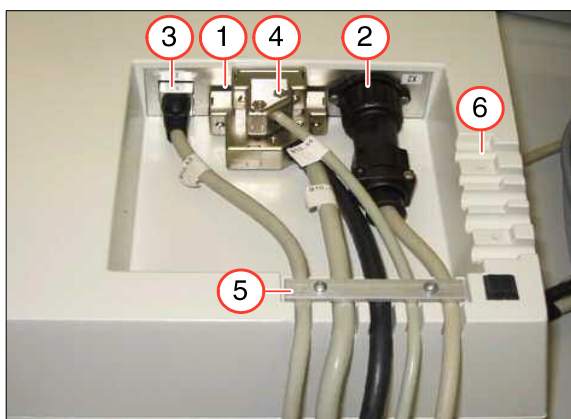
10.1.1 System Control Console

Fig. 75: Control console



The Luminos dRF control console contains all system functions. (The FL-C remote control is no longer configured.)

Fig. 76: Control console connection



Connect the cables per the designations.

- X1, control cable (1)
- X2, second fluoro footswitch (2)
- X3, TUI display (3)
- X4, ON/OFF signal (4)
- An additional X5 plug-in location (DMG for Ortho) is provided on newer systems.

If the X5 cable is sheathed, then route it inside the console but do not connect it.

Feed the control console cable out at the locations provided (5) or (6) and strain-relieve it.

Position the console on the table per the Project Plan.

10.1.2 Monitors

10.1.2.1 Installation and Connection of the Monitor

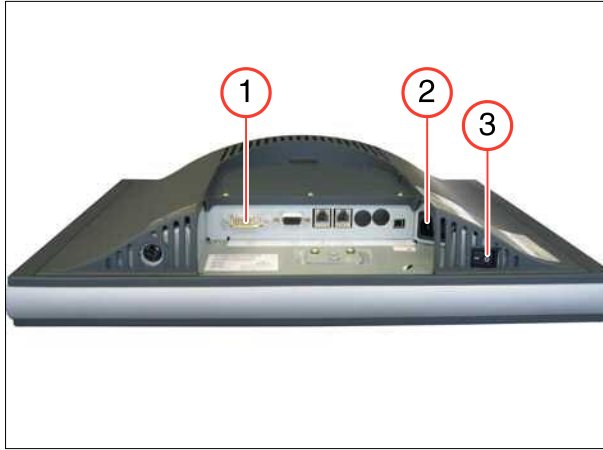
Installation sequence:

1. Feed the cables through the monitor base.
2. Connect the monitor.

3. Mount the monitor to the Vesa monitor base (M4x15).

10.1.2.2 Siemens DSB 1906-DC 19 Monitor

Fig. 77: DSB 1906 monitor



Connection of 19" B/W monitor:

Remove the cover on the cable conduit and the middle rear wall. Pull the cables through the base and connected them per the designations.

DVI Input (1)

Power connection (2)

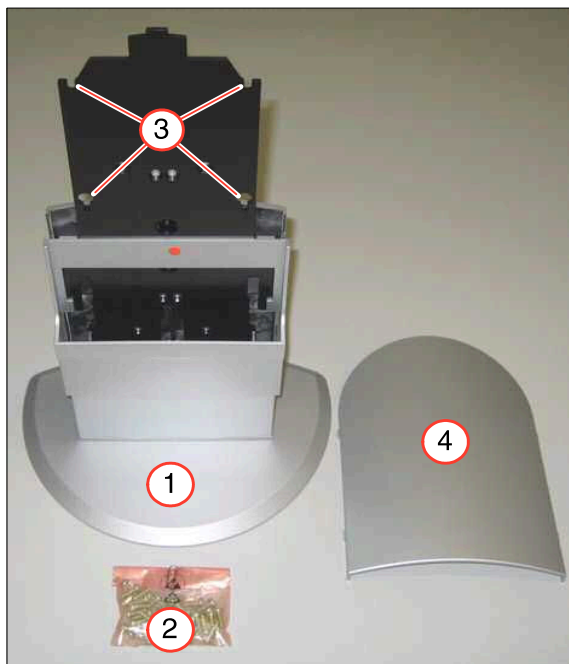
Off / On switch (3)

The ground connection is made on the base plate (middle).

Thread a cable tie through the base plate to strain-relieve the power connector.

10.1.2.3 Monitor Base

Fig. 78: Monitor base



Install the TFT monitors on the monitor base (1).

- Lay the cables through the monitor base and connect them to the monitor.
- Install the monitor on the plate (8) with four M4x15 screws (2). When doing this, pull the cables back to the final length.
- Place the plastic panel (4) on the back.
- Pay attention to the movement of the base.

Caution!

Do not use longer screws, since these can damage the monitor.

Fig. 79: Laying the monitor cables



Laying cables:

- Lay the cables according to the on-site conditions and secure them with cable ties.

10.1.3 Mouse and Keyboard

Set up the mouse and keyboard and connect them to the M59 (FL-C) at USB 1 and 2. If needed, use the USB extensions.

11.1 Components

11.1.1 Video Manager (VM)

- Install the cable plate (→ 1/ Fig. 80 Page 71) as shown in the illustrations.
 - For this, remove the 4 original screws and use the longer screws from the VM installation materials (see the arrows in the illustrations below).

Fig. 80: VM cable plate installation

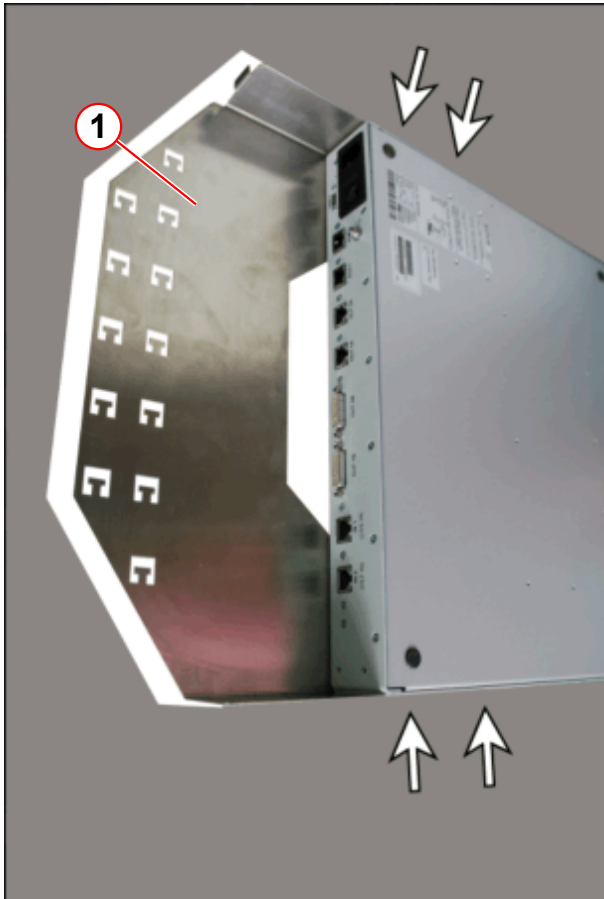


Fig. 81: Securing the VM cable plate in place

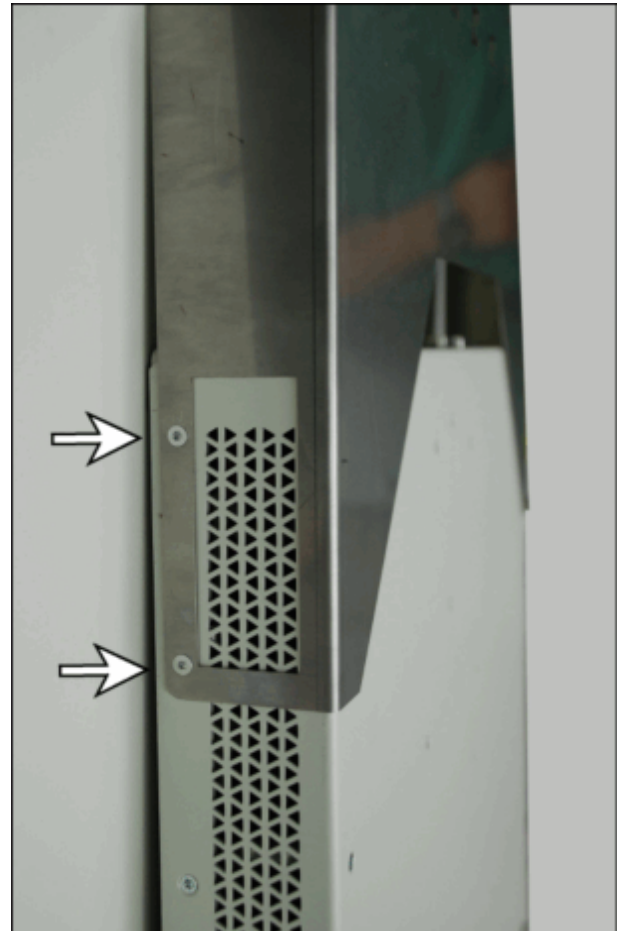
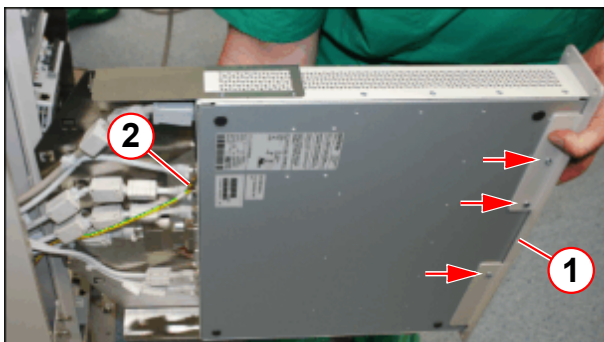


Fig. 82: VM front panel and grounding



Installing the Front Panel

- Secure the front panel (Pos.1) in place with 7 screws from the VM installation materials (3 at the bottom (arrows)) and 4 at the top.
- Location of the VM Ground Wire Connection (Pos.2)

11.1.1.1 Installation in the Unit Base

- The Video Manager (→ 1/Fig. 83 Page 72) is tested in the factory, but not installed in the unit base.
- There is an opening for installation in the left side panel on the rear of the unit lifting base (→ 2/Fig. 83 Page 72).
- Cables should be routed (→ 3/Fig. 83 Page 72) before the lifting base is placed in its final location, especially if the base is to be next to the wall.
- For better access, remove the rear panel on the lifting base.

Fig. 83: Overview

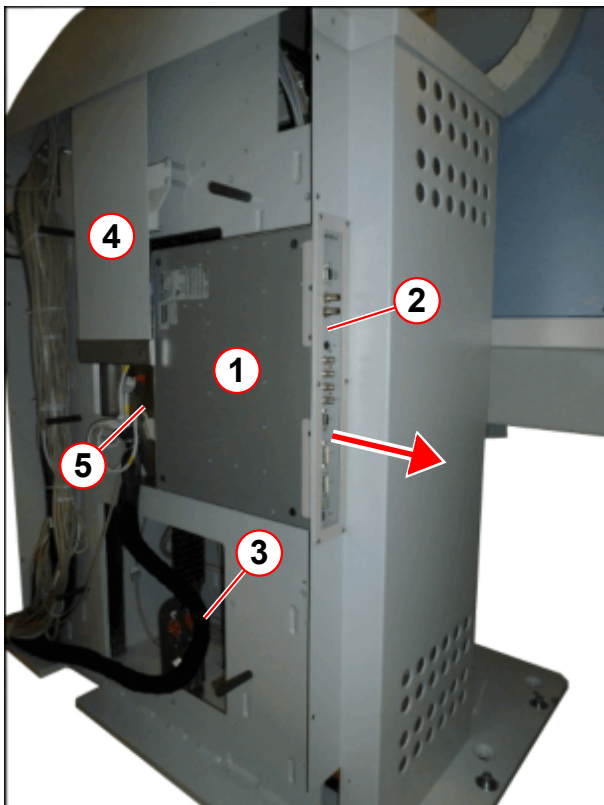
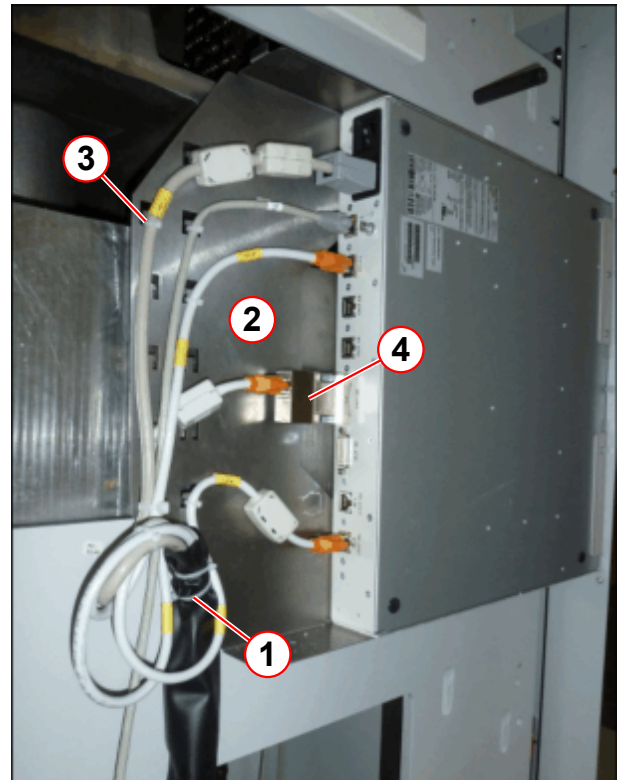


Fig. 84: Connection on the unit base



Make sure the connector is correctly seated on the connector panel. Lay the cables in a wide loop so that they are as straight as possible at the connector. Secure the cables in this position at the installation plate (→ 2/Fig. 84 Page 72) with cable ties.

11.1.1.2 Installation

- Wiring harness W650VM (→ 3/Fig. 83 Page 72) is included in the shipment for connection to the FL-C.
- The length of the cable on the unit base has to be long enough to allow the Video Manager to be removed again from the side (→ Pfeil/Fig. 83 Page 72).
- Lay the cables in the base (→ 5/Fig. 83 Page 72) and establish the connection to the FL-C and generator (ETH2 hangs from the wiring harness to the generator).



If necessary, install the rear panel back on the unit base.

- Transport the unit base to the installation location.
- Complete cabling for the unit.
- Route the cable from inside outward through the notch in the left panel (→ 2/Fig. 83 Page 72).
- Install the side panel of the lifting base.
- Plug in all of the cable harness connectors (→ 1/Fig. 84 Page 72) to the Video Manager.
 - Connect the ground to the VM.
- Secure the wire harness (→ 1/Fig. 84 Page 72) and cable (→ 3/Fig. 84 Page 72) on the cable guide plate (→ 2/Fig. 84 Page 72).
- Insert the video manager and secure to the side panel with 6 screws.
- Make sure that the plastic cover (→ 4/Fig. 83 Page 72) can move downward freely.
- Switch the video manager "ON" on the back of the unit.

11.1.1.3 Connection on the FL-C

Connect the W650VM wire harness from the Luminos unit base to the FL-C per the designation.

Fig. 85: Overview of the Video Manager

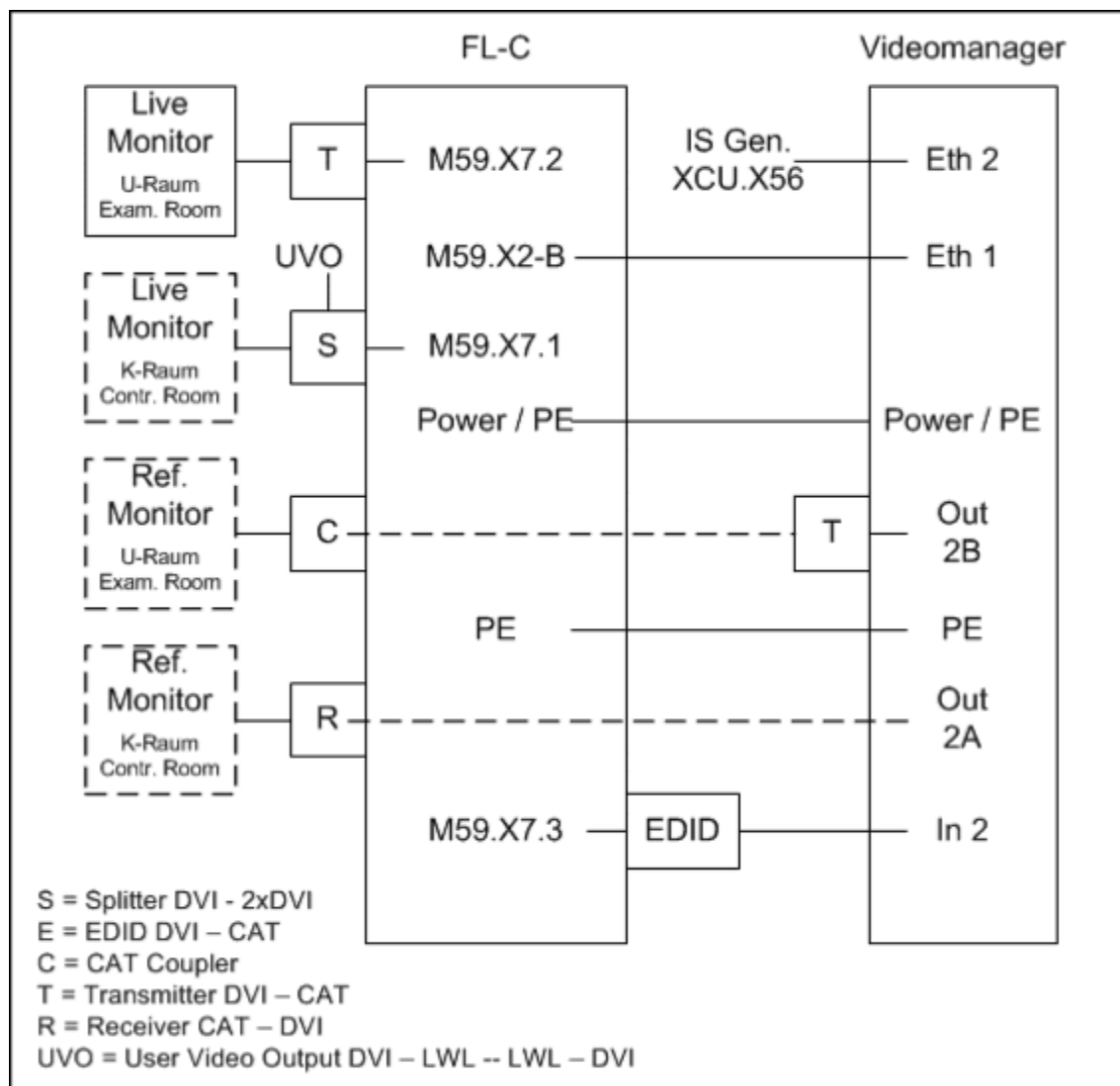
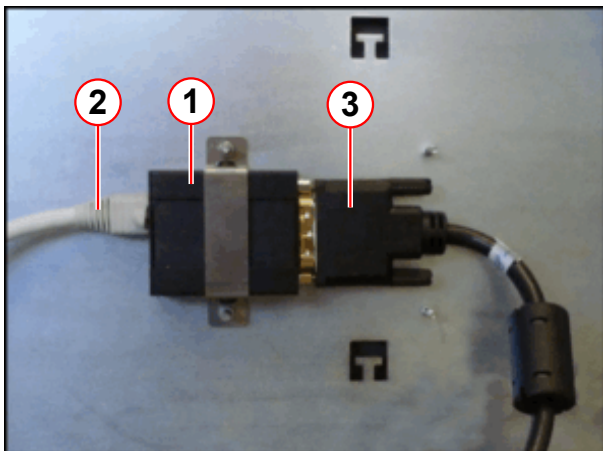


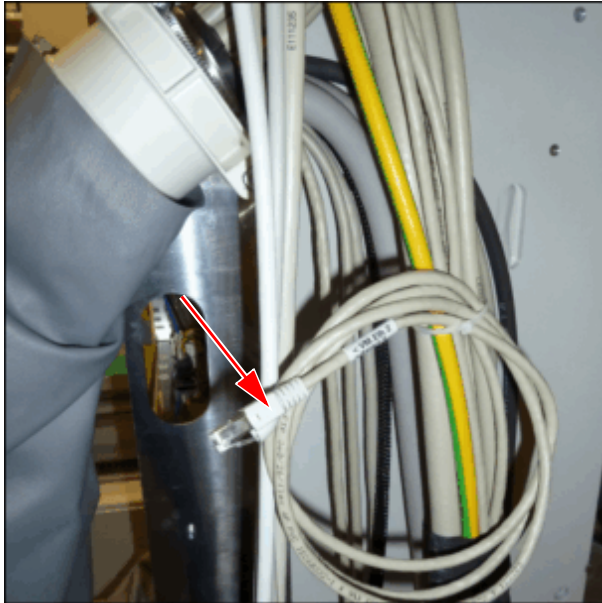
Fig. 86: EDID Emulator



- EDID Emulator in the FL-C M59 (Pos. 1)
- Video Manager In2 (Pos. 2)
- FL-C M59.X7.3 (Pos. 3)

11.1.1.4 Connection to the Generator

Fig. 87: ETH2 connection

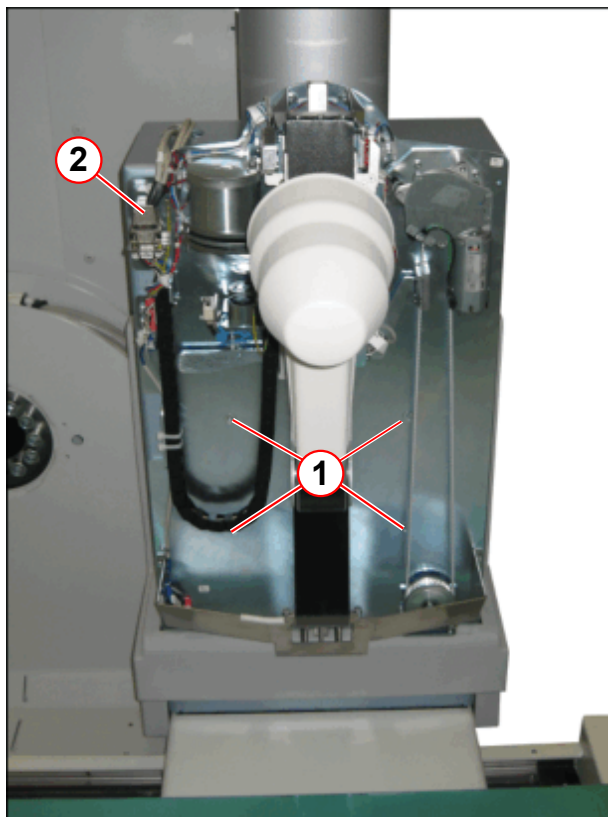


- Plug in the ETH2 connection (arrow) from the unit lifting base to the Video Manager.

VM ETH2, Generator Switch on the pico XCU

11.1.2 Compression (optional)

Fig. 88: Compression



Installing the Compression:

- Secure the base plate to the column with 4 screws (Pos. 1).
- Guide the M6 X100 and M6.X101 connectors from the column up through the opening and plug them in on the base plate (Pos. 2) and secure them with the screws.

Keep the softcover for the compression cone (option) with the accessories.

Fig. 89: Softcover



11.1.3 Second Fluoro Footswitch (Option)

Connect the second footswitch for radiation release to the unit control console.

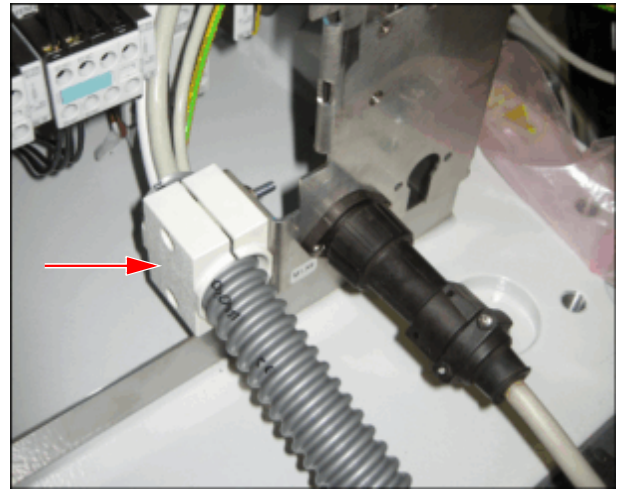
11.1.4 Second Unit Control Console (Option)

Fig. 90: Mobile control console



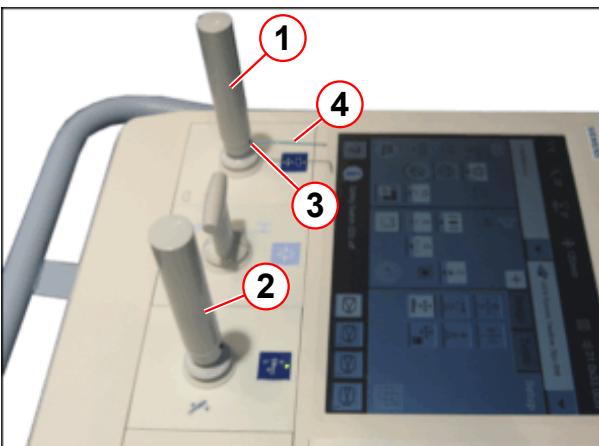
1. Take the control console cart with the installed unit control console out of the packaging.
2. Lay the cables according to the Project Plan (→ 1/ Fig. 113 Page 94) and connect them to the M1 in the lifting base. To do this, insert the corrugated hose into the strain relief provided (bottom arrow).

Fig. 91: Strain relief



11.1.5 Operating Lever for Japan (option)

Fig. 92: Stick extension

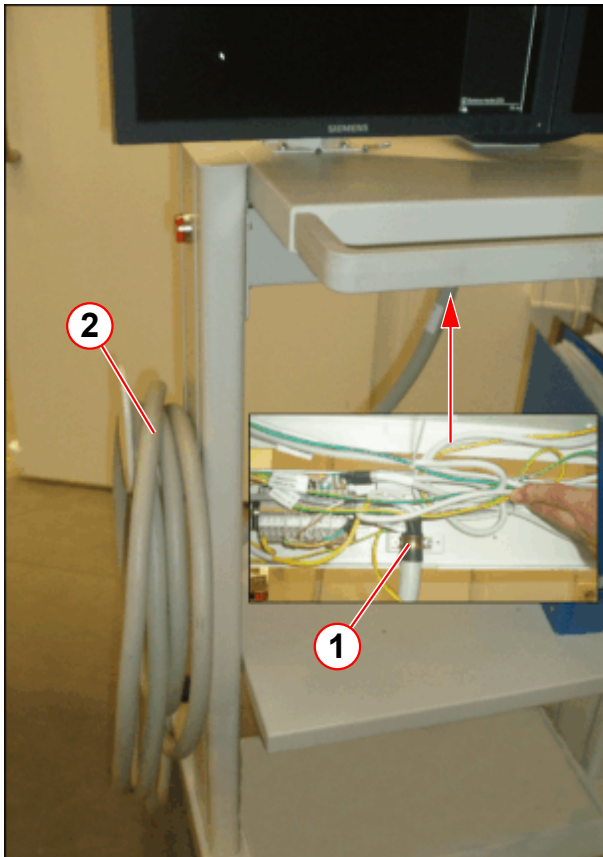


Attach the joystick extension for Japanese control consoles.

- Install the extensions on the operating levers for compression (Pos. 1) and table tilt (Pos. 2).
- Align the Allen screws (Pos. 3) in the direction of the display and tighten them using an Allen wrench (Pos. 4).

11.1.6 Monitor Trolley in the Examination Room (option)

Fig. 93: Monitor trolley



Connection:

- Lay the connection cable (Pos. 2) from the monitor trolley to the FL-C and connect it to the FL-C.

11.1.7 CLARSON PUBLIC III CE Intercom System



The intercom system service and installation instructions should be filed in the blue system binder following installation.

Installation:

- Installation must be performed per the Room Plan and the **enclosed service and installation instructions** with supplement. The corresponding mounting materials are described in the packing list.
- If the position of the microphone in the examination room is not specified in the Room Plan, clarify this with the Project Manager.

The microphone can be installed permanently on the ceiling or can be installed suspended from the ceiling. The mounting materials required for this are described in the instructions and are included.

- **Optionally**, a footswitch is included in the shipment.

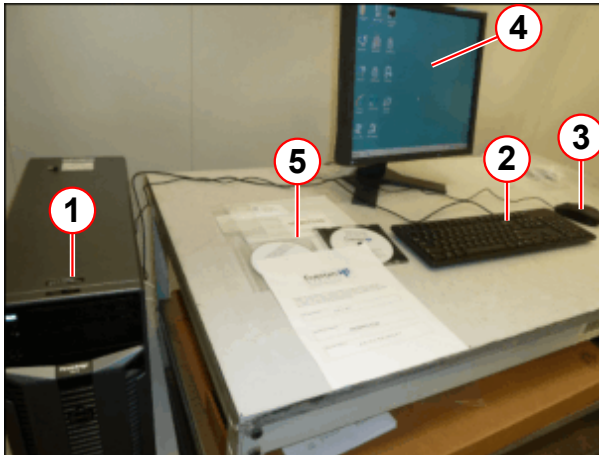


The rubber grommet on the microphone cable (instructions, Pos. 8) is used as a insertion guide and may be removed only after passing the cable through the ceiling.

11.1.8 Riverain Soft View

Riverain Soft View is a workstation for automatic diagnosis of patient images with the following components.

Fig. 94: Riverain



- (1) Computer
- (2) Keyboard
- (3) Mouse
- (4) Monitor
- (5) Software and Licenses (blue binder)

Installation:

- Set up the hardware per the Project Plan and the Installation and Startup Instructions, XPRF-RSV.814.02... (in the blue binder) and connect the cables per the designations.
- Attach the remaining accessory parts in a plastic bag to the computer.

11.1.9 User Video Output (UVO) on the FL-C

An optional video output is provided for connection of external video components (e.g. monitors, computers, video recorders).

The components have already been installed in the FL-C at the factory.

- Connect the control room monitor to the splitter (local output).
- Roll up the fiber optic cable as much as needed, lay it from the FL-C to the video components (do not kink the fiber optic cable). Connect the 4 leads on both sides to the DVI coupler in the same color sequence. Store the remainder of the fiber optic cable in the FL-C or cable conduit.
- Connect the power unit (5 V) to an in-house outlet and to the DVI couplers on the video component.

- Connect the DVI converter to the video component and to the FL-C (output).

Fig. 95: External video connection

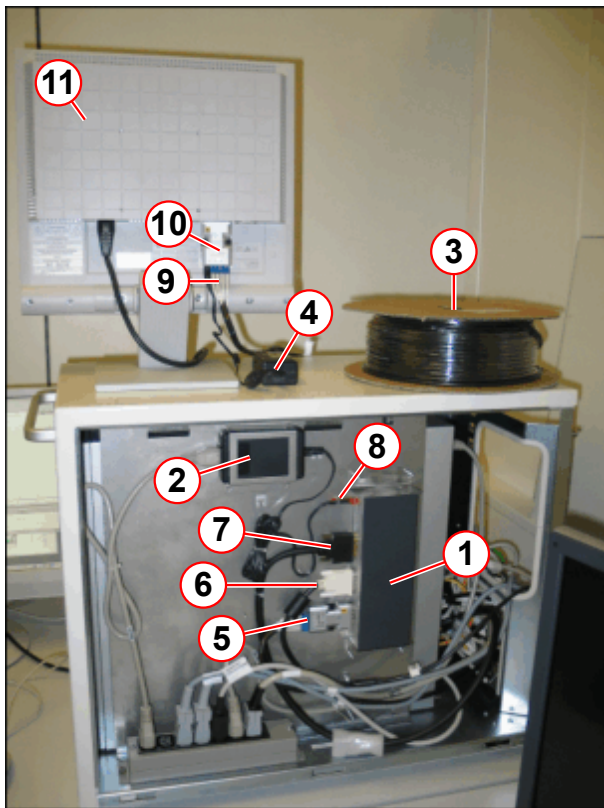


Fig. 96: External video connection beginning with VC10



External Video Connection on the FL-C M460 (front, left USB connector) up to Software VB10

1. Splitter (access on the right side of the FL-C)
2. Power supply for splitter
3. Fiber-optic cable, 35 m (stow excess length carefully in the FLC or cable duct)
4. Power supply for DVI coupler (to be connected to customer power outlet)
5. DVI coupler with fiber-optic cable connection
6. DVI-out to live monitor in control room
7. DVI connection from FLC graphics card
8. Power Connection for the Splitter
9. Fiber-optic cable - input (4-strand fiber-optic cable)
10. DVI coupler with fiber-optic cable connection
11. External video components (monitor, recorder, ...)

W380

A modified computer is shipped beginning with the new VC10 software (front, right USB connector).

The computer is installed turned sideways to the M460. The video splitter connections remain the same, however access is on the left side of the FL-C.

11.1.10 DCSF (Option)

Install the DCS-12F per the Project Plan and Installation Instructions, AXD0-100.812.01...

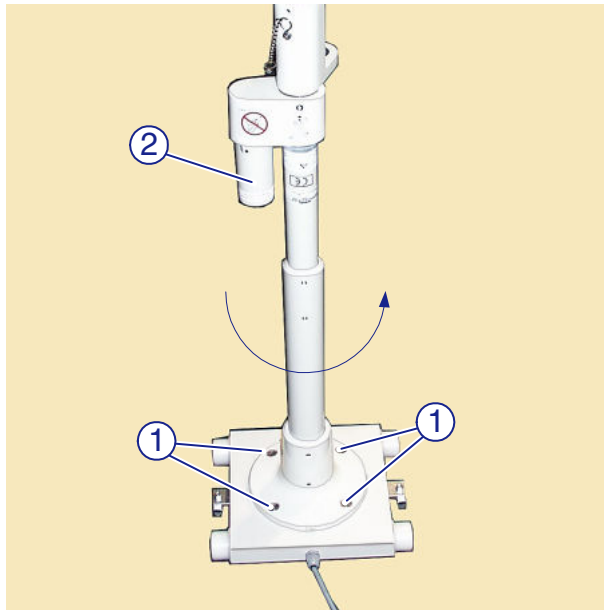
11.1.11 Radiation Shield and OR Lamp (Option)

Install the Portegra radiation shield and the surgery lamp per the Project Plan and the accompanying Mavid installation instructions.

Perform the XP-specific installation steps per the Installation and Startup Instructions (X-ray Protection, XPRF-000.814.01..) in the blue binder.

If needed, and in discussion with the Project Manager, the column for the hangers can be turned 90° to adapt the location of the lamp and the radiation shield to the room conditions.

Fig. 97: Turning the stand column 90°



- Place the overhead carriage on the floor, remove the cover cap and the 4 Allen screws (1) under it.
- Turn the column 90° to bring the hangers (Pos. 2) into the desired position.
- Apply Loctite 221 to the 4 Allen screws (1) and tighten them to **22 Nm**. Reinstall the cover.

11.1.12 Finger Guard

If a transparent finger guard was ordered, it should be installed only during startup. Place the unit in the original packaging for the service materials.

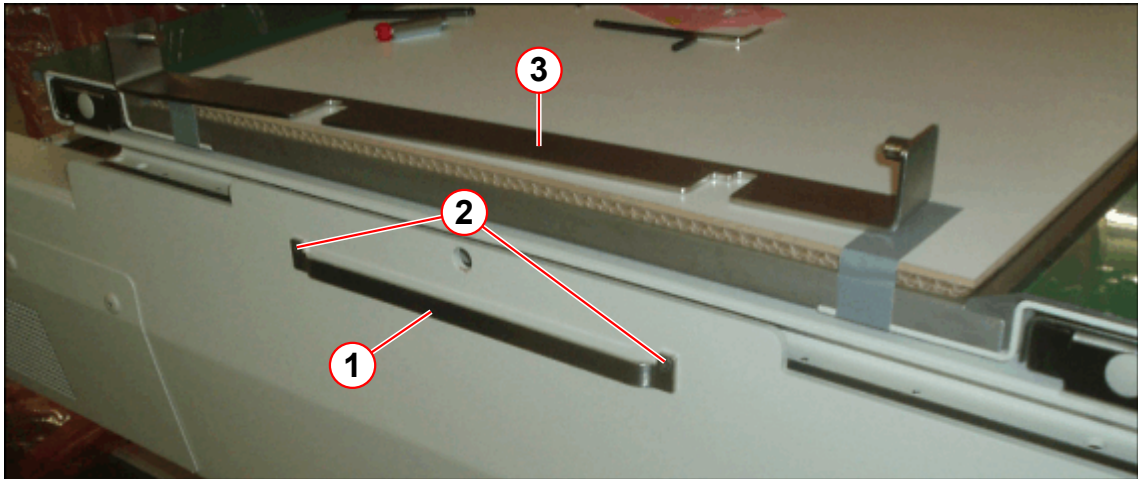
11.1.13 Urology Bag Holder

The bag holder is installed at the left end of the table.

To to this:

- Take the small mounting bracket (→ 1/Fig. 98 Page 82) out of the packaging and secure it to the table with the screws included in the shipment (→ 2/Fig. 98 Page 82). (Mounting straps facing up.)
- Keep the removable bag holder (→ 3/Fig. 98 Page 82) with the other accessories in a safe location.

Fig. 98: Urology bag holder



11.1.14 Interventional Kit

Do not unpack the interventional kit. Make the closed box available to the user in a secure location.

11.1.15 KermaX label printer

- No label printer is provided for the Luminos dRF.
- See the "2nd Plane" section for the connection at the 2nd plane.

11.1.16 Prognost XPE

Fig. 99: Prognost XPE



If the Prognost XPE patient table is configured as an option, depending on the order, it must be completely installed.

Among other things, installation of a detector Bucky may be required.

The correct power supply voltage is set using a jumper (JP1) (230 V or 115 V).

The fuses must be selected depending on the voltage.

For this, see the Installation Instructions and the Operator Manual included in the shipment.

11.2 UPS

11.2.1 APC 1500 Image System UPS



WARNING

Danger caused by Electrical Voltage

If the connector (→ 16/Fig. 101 Page 84) is plugged in on the UPS, output voltage can be present on the UPS.

- » Prior to beginning installation, make sure that the connector has been unplugged.

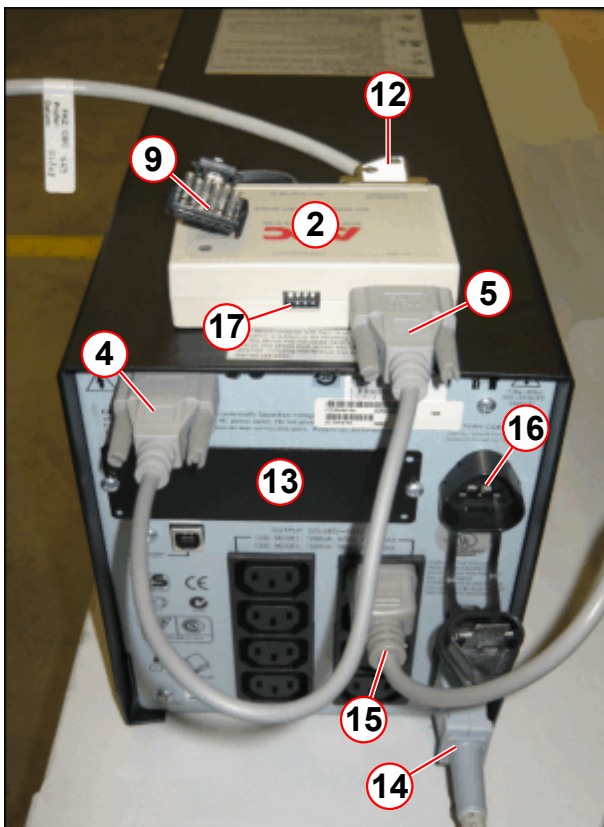
RPO contact in the Emergency Off switch:

- The image system UPS is equipped with a control to shut it off when the system EMERGENCY OFF is pressed (RPO). (Remote Power Off)
- **A two-wire "REPO" control cable must be laid by the local technician according to the Planning Guide from the system EMERGENCY OFF to the UPS.**

Fig. 100: UPS Remote Power Off (RPO)



Fig. 101: FLC UPS with RPO



UPS APC 1500 with Remote Power Off

- RPO Packaging (Pos. 1)
- Mount the control unit (Pos. 2) close to the rear of the UPS using the Velcro strips (Pos. 11).
- Screw the short UPS control cable (Pos. 3) to the UPS (Pos. 13) at the point (Pos. 4) and the "To UPS" control unit (Pos. 5).
- The WUPS control cable (Pos. 12) (21 m) is laid from the control unit (Pos. 2) "To Server or Accessories" plug-in point to the D612 generator and connected to X9 and X90.
- Plug in the RJ11 cable (Pos. 6) or (Pos. 7); depending on the length required, to the connector (Pos. 8) on the control box at "RPO/Cascade IN" ("Cascade OUT" remains unoccupied). Plug in the connector (Pos. 9) at the other end of the RJ11 cable.
- A two-wire "REPO" cable must be installed locally per the Planning Guide.
Lay the "RPO" cable from the emergency off control to the connector (Pos. 9) to Pins 2 and 5 and crimp with the cap (Pos. 10).
Alternatively, a phone jack can be installed into which the RJ11 cable (Pos. 6) or (Pos. 7) can be plugged without connector (Pos. 9).
- **The DIP "1 and 3" switches (Pos. 17) on the back of the control unit must be set so they are pointing down (on), the remaining switches must be pointing up (off).**
- The image system power is supplied via a connection cable (Pos. 15) to the input of the image system.

- Connection of the REPO contact (contact in the "emergency off" in the examination room) is made at the clamping terminal (→ 9/Fig. 101 Page 84), Pins 2 and 5). For detailed information, see the System Startup Instructions.



The plug-in connector (→ 16/Fig. 101 Page 84) is not plugged in until startup.

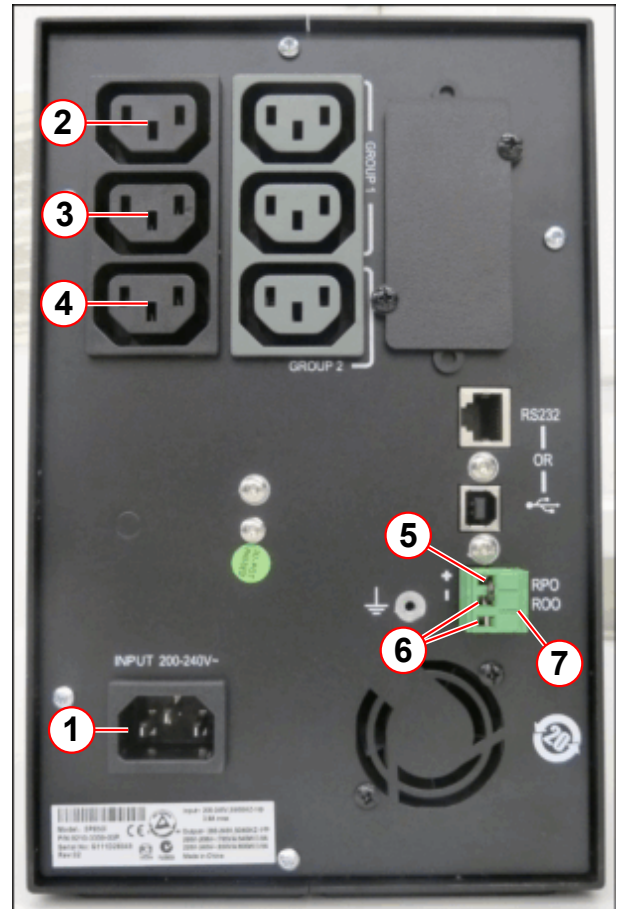
11.2.2 Eaton 5P 850i Image System UPS

Set up the UPS per the Project Pland and connect it as described below.

Fig. 102: Eaton 850, front



Fig. 103: Eaton 850, back



- (1) UPS power connection
- (2) Live 1 Monitor
- (3) FL-C computer
- (4) DVI splitter (with the UVO option)
- (5) RPO jumper
- (6) ROO connection
- (7) Emergency Off Connector

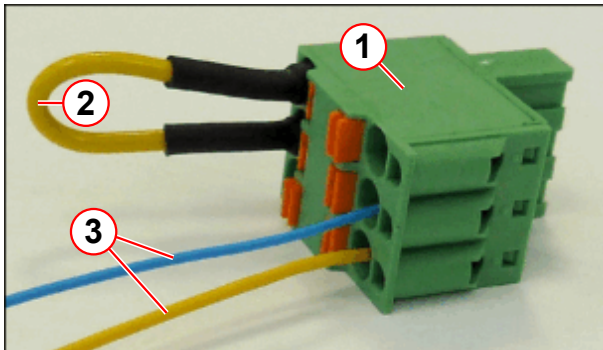
11.2.2.1 Connecting the UPS

- UPS power supply (→ 1/Fig. 103 Page 85) from the power strip in the FL-C.
- The power supply for the FL-C (→ 2/Fig. 103 Page 85) to the power line input of the FL-C computer.
- Power supply for the Live monitor in the control room (→ 3/Fig. 103 Page 85) to the power line input of the Live monitor.

- ROO (Remote ON/Off) contact from the “Emergency Off” switch (opener)
 - Leave the RPO jumper (→ 5/Fig. 103 Page 85) on the UPS and connect the ROO contact for the “Emergency Off” switch at the two bottom terminals (→ 6/Fig. 103 Page 85).

For systems that have been pre-tested in XP production, a two-row connector for easy connection of the emergency off contact (→ 7/Fig. 103 Page 85) is provided. This connector and connector jumper are included in the system parts for retrofit of a UPS.

Fig. 104: ROO emergency off connection



- (1) Connector
- (2) RPO jumper
- (3) ROO emergency off connection

Emergency Off Connector

- For systems that have been pre-tested in XP production, a two-row connector for easy connection of the emergency off contact (→ 1/Fig. 104 Page 86) is installed on the base (→ 7/Fig. 103 Page 85). This connector and connector jumper are included in the system parts for retrofit of a UPS.

The connector behind the front panels for the battery is connected only during startup.

11.2.3 System UPS

Powerware 9390 40 KVA, 9355 15 KVA; for the unit, generator and imaging system

- The UPS must be prepared per the Project Plan. If a UPS is in the order, the Planning Guide, AXA4-770.891.02... is shipped in the blue System Binder. Cabling depends on the system and is described in the PG.

12.1 2. plane (option)

12.1.1 Installing the fully synchronous Ysio System with the mobile Detector

For installation of the 2nd plane, use Installation instructions AXD3-500.812.02... in addition to these instructions.

13.1 General

13.1.1 Take note!



The following points must be observed during cabling:

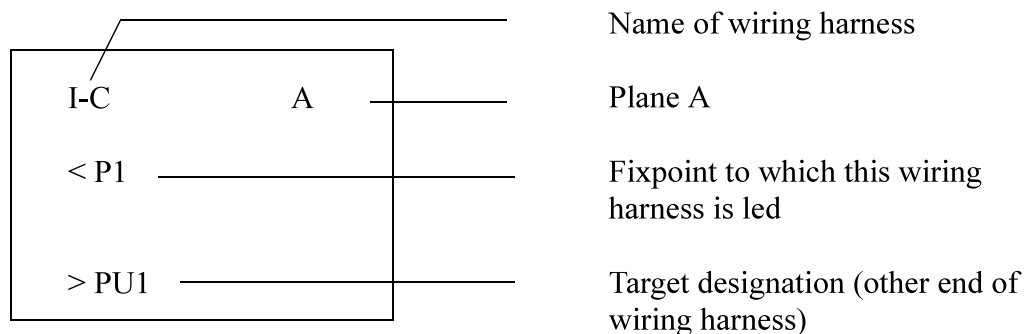
1. Do not exert mechanical stress on the fiber optic cables and do not kink them (bending radius more than 50 mm).
2. Strain-relieve the cables, connect the shielding.
3. Lay excess cable lengths in a snake-like fashion.
4. Make sure the units can be pivoted.
5. Observe the Installation Instructions for the 2nd plane (if configured).

13.1.2 Labeling the Wiring Harnesses

- The wiring harnesses included in the shipment are labeled at the ends of the protective hoses.

Example of a wiring harness label:

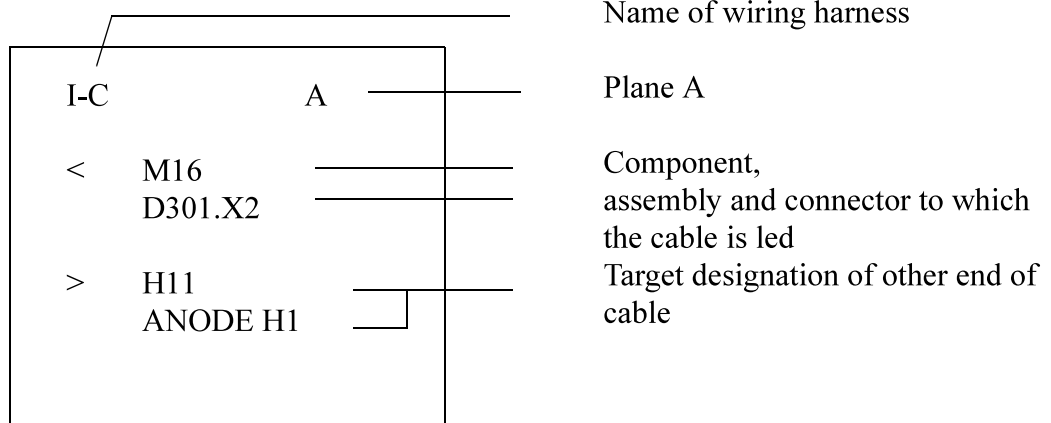
Fig. 105:



- Lay the wiring harnesses according to the fixpoint designations.
- The cables are labeled and provided with connection elements.

Example of a cable label:

Fig. 106:



13.1.3 Fixpoint List

Fixpoint	Subsystem
CR1	Control room distributor (generator control console)
D1	DCS 1/2F
D2	Monitor carriage
D3	Monitor in the examination room
IS	FL Compact Container
P1	Unit
PU1	Generator
R2	Hardcopy
X	Loudspeaker in the examination room
Y	Intercom system control unit
Z	Intercom system amplifier

13.1.4 Wiring Harnesses (W)

From		Cable		To
Luminos dRF tube unit	---	W100	---	Polydoros F80
FL-C (M59)	---	W200	---	DCS (1 mon.)
FL-C (M59)	---	W300	---	DCS (2 mon.)

From		Cable		To
Luminos dRF (M1)	---	W400	---	Polydoros F80
FL-C (M59)	---	W500	---	Polydoros F80
FL-C (M59)	---	W600	---	Monitor on the Trolley
FL-C (M59)	---	W700	---	Monitor on the table

14.1 Installing the Cover Panels

14.1.1 Ground Connections

While installing the cover panels, make sure that all ground connections are connected.

14.1.2 Tube Unit Column

Fig. 107: Tube unit cover panel



Tube unit cover panel:

- Place on the two halves of the tube unit cover panel (1). When doing this, snap on the front grid (2).

During installation the tube unit is still in the vertical position. For this reason, attach the lower half first.

- Lay the cables in a loop. See also the "Laying Cables to the X-ray Tube" Installation Instructions.

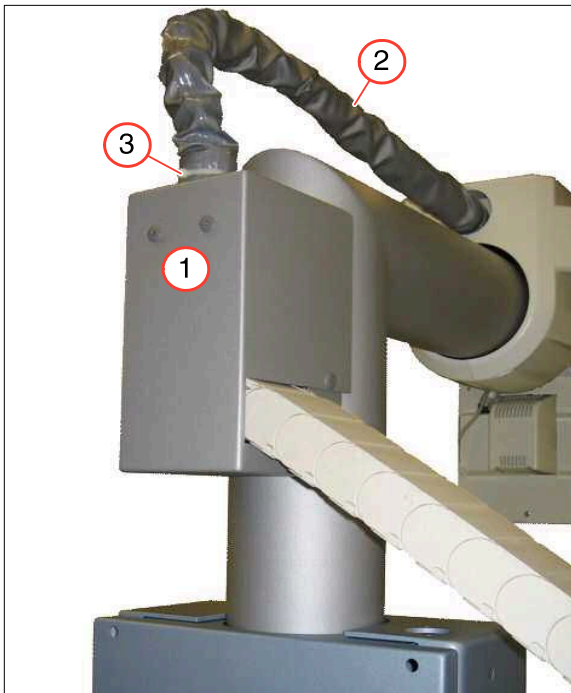
Fig. 108: Cable routing to the tube unit



Cable routing to the tube unit:

- Lay the cables to the cover panel as shown on the left.

Fig. 109: Column cover panel



Controller unit cover:

- Position the cover (1) over the cable holder and attach it with four 2.5 Allen-head paneling screws.
- Attach the cover hose (2) and secure it with a cable tie (3).



The rear column cover panel may be installed only when the unit is in the 0° position and the column is vertical.

Fig. 110: Bottom column cover panel

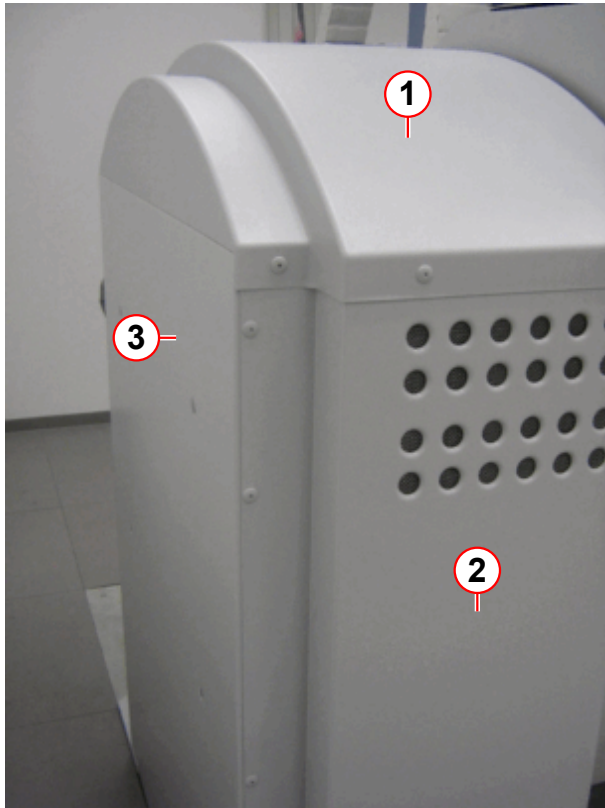


Back of column:

- Install the column cover panel on the back of the column using ten No. 4 Allen screws (arrow).
- The blue adhesive cover labels (10 pieces) that are affixed on the side of the column are placed over the holes of the rear column cover panel only at the end of **start-up**.

14.1.3 Lifting Base

Fig. 111: Lifting base cover panel



Install the cover panels on the lifting base in the following sequence:

1. Rear wall of the lifting base (3)
(→ Fig. 112 Page 93)
2. Side panels of the lifting base (2)
3. Cover of the lifting base (1)

When doing this, pay attention to the length of the front mounting screws (M4x10).

Fig. 112: Lifting base, rear cover panel



Install the back wall on the spacer studs.

If the system is installed close to a rear wall, install the cover panel prior to installing the lifting base (see the chapter "Installing the Lifting Base").

Fig. 113: Cover panel; openings

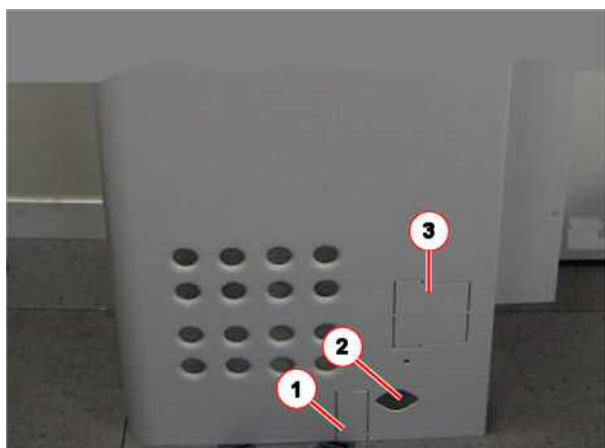
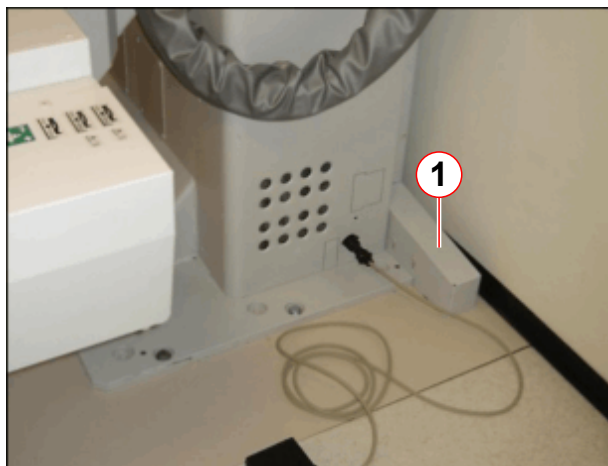


Fig. 114: Cable outlet on the lifting base



Outlets on the Lifting Base

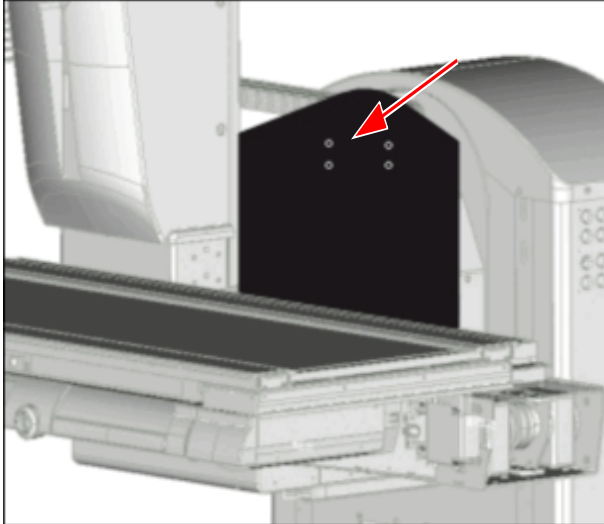
- (Pos. 1) Perform 2nd Control Console Corrugated Hose (only with the Luminos dRF)
- (Pos. 2) Footswitch
- (Pos. 3) Injector Connection

Install the cable outlet (Pos. 1) according to the position of the cable channel and the cable guide on the lifting base. To do this, secure the mounting bracket on the floor plate, left or right rear, and fasten the cable outlet with 4 paneling screws. (Long holes)

14.1.4 Extender

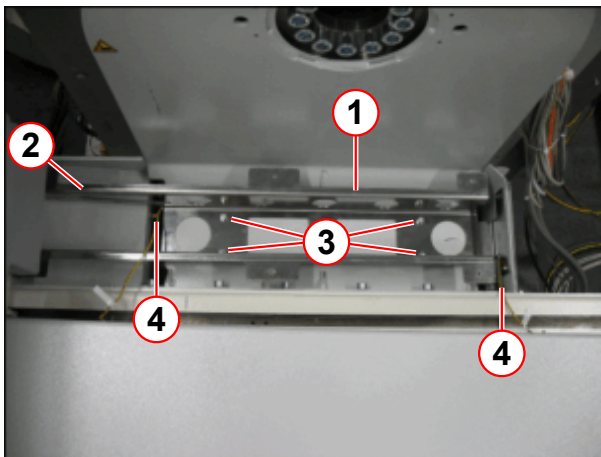
14.1.4.1 Crush Protection

Fig. 115: Crush protection on the extension



- On new systems, a safety plate (arrow) is attached to the extension. The plate protects against crushing between the columns and extension.

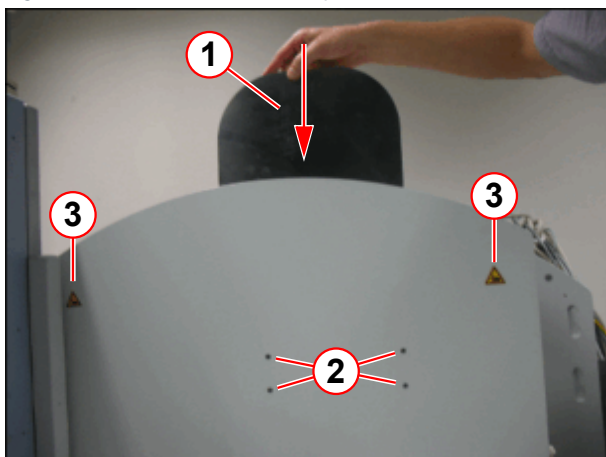
Fig. 116: Mounting strut on the extender



Mounting Strut:

- Before the crush protector and the cover panels can be installed, the strut (Pos. 1) must be installed at 4 points (Pos. 3). Here, the longer end (Pos. 2) must be pointing to the left.
- The crush protector is installed on the strut with 6 screws (if the mounting holes cannot be accessed without moving the column, the screws should be taped to the protector in a plastic bag).
- Plug in the ground wire (Pos. 4) for the side panels on the strut.

Fig. 117: Front view of crush protector



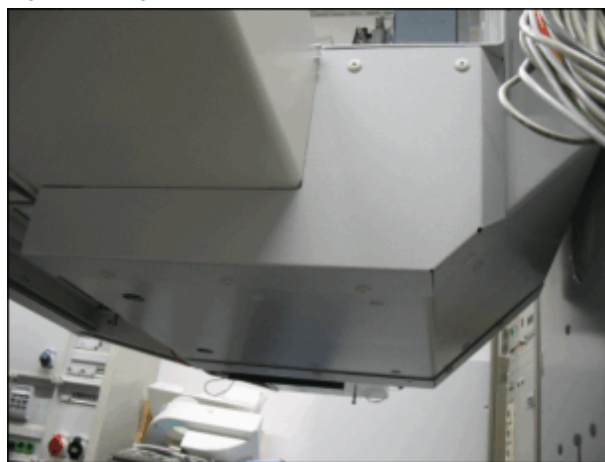
Installation

- Slide the spacer (Pos. 1) between the extender and the crush protector and insert it into the mounting screws with the long holes (Pos. 2).
- Secure the crush protector on the extender (Pos. 2) with 6 screws on the strut.
- Place on the two warning labels (Pos. 3) (Risk of Crushing).
- Then connect the side cover panels on the extender with the grounding wires and secure the panels in place (see the illustrations below).

Fig. 118: Left extender cover



Fig. 119: Right extender cover



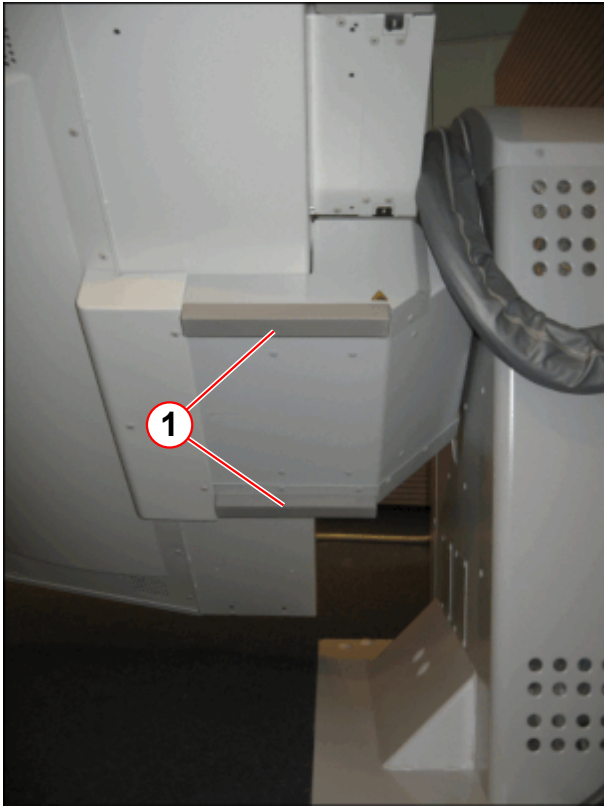
14.1.5 Unit Support



With all cover panels, make sure that the ground wires are connected and laid so that they cannot be pinched.

14.1.5.1 Safety Cushions

Fig. 120: Safety cushions



- Take the two safety cushions (Pos. 1) out of the packaging and secure them in place on the extension with double-sided tape.

14.1.5.2 Foot End beginning with System Serial Number 10048

Fig. 121: Table cover panel, right

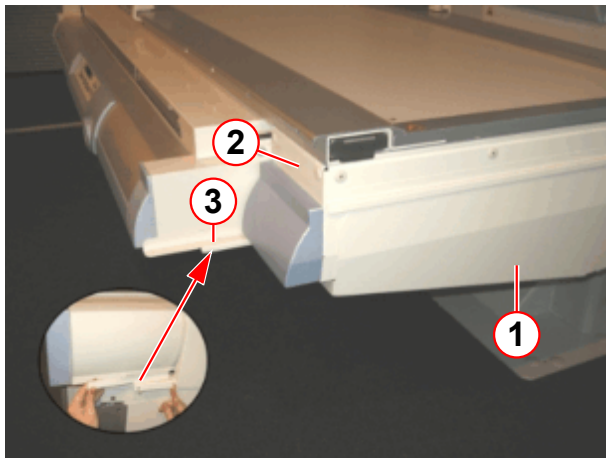


Fig. 122: Protective bracket



Install the foot-end cover panels in the following sequence:

1. Side cover panel
 - Install the side cover panel (Pos. 1).
 - Secure with paneling screws.
2. Front cover panel
 - Insert the front cover panel (Pos. 2) from the front into the side cover panel.
 - Secure with paneling screws.
3. As shown in the red outline, insert the protective bracket (Pos. 3).
 - Secure the bracket in place with 1 paneling screw from below.

14.1.5.3 Head End

Fig. 123: Head-end cover panel



- Install the head-end cover on the motor controller (arrow) and secure it with paneling screws.

14.1.6 Unit Support and Column



The rear chain cover (→ 1/Fig. 126 Page 100) for the table longitudinal drive is installed during startup (it must be possible to move the table for this). Following system installation, keep the cover panel in a safe location that is accessible to the startup technician.

14.1.6.1 Sequence for Installing the Cover Panels during Startup

1. Install the chain cover on the back of the table.
2. Install the cover panel on the compression.
3. Install the patient contact safety device on the bottom of the column.



The rear chain cover (→ 1/Fig. 126 Page 100) can also be installed with the compression installed if the aluminum front panel (→ 1/Fig. 125 Page 99) for the table is removed and the cover panel (→ 2/Fig. 125 Page 99) has been pulled forward.

Fig. 124: Front panel from below

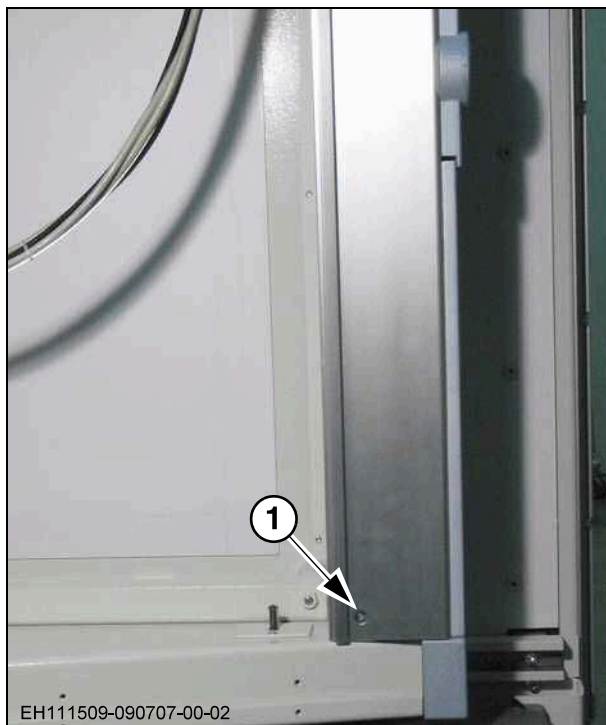
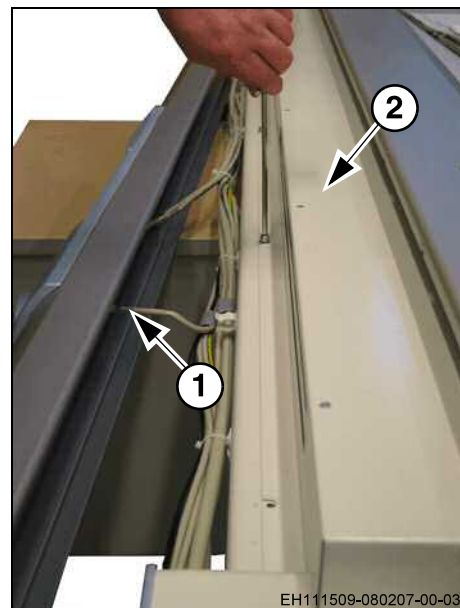
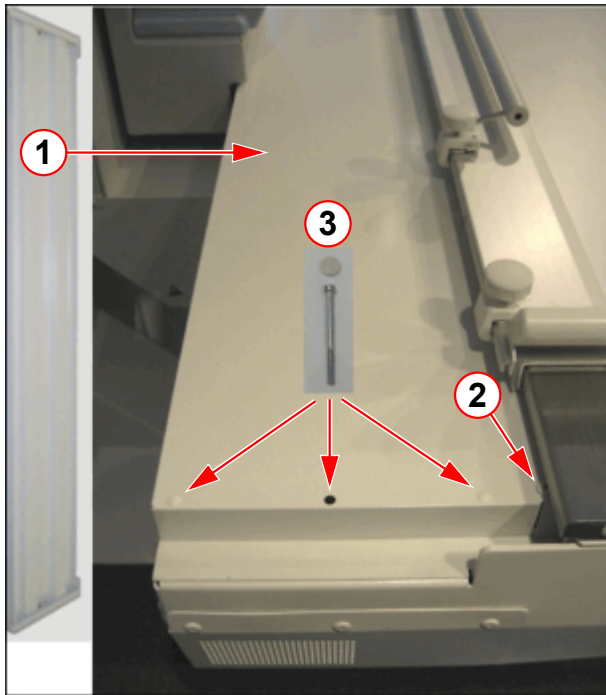


Fig. 125: Front panel



Pull off the front panel towards the front by removing the 2 screws (→ 1/Fig. 124 Page 99). Then remove the accessible mounting of the table cover panel (→ 2/Fig. 125 Page 99) and pull the cover forward.

Fig. 126: Chain cover



Installation of the chain cover without removing the front panel:

- Move the patient table all the way forward.
- If a patient switch strip (→ 1/ Fig. 127 Page 101) that is already installed, remove it (6 paneling screws), slightly spread it open and slide it up.
- Position the cover panel as shown on the left ((Pos. 1) arrow). When doing this, insert the edge on the table so that it is completely guided.

Head and foot ends:

- Secure with the paneling screws (Pos. 2).
- Insert the 4x35 Allen screws (Pos. 3) into the holes (arrows) and tighten them.
- Place the plastic covers (Pos. 3) over the holes.

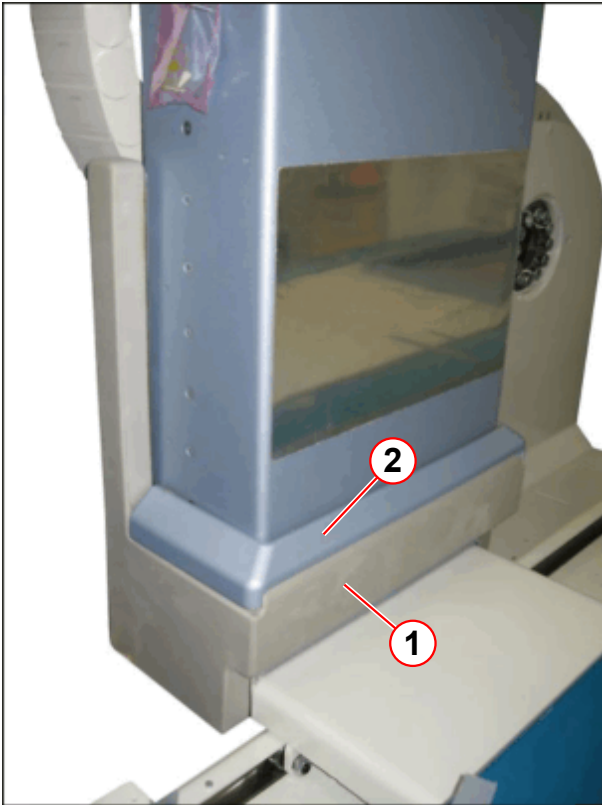
14.1.7 Cover Panel on the Patient Switch Strip without Compression

If compression is not configured, an edge cover panel is installed over the patient switches strip on the X-ray tube column.



The edge cover panel is installed only during startup and until then should be kept in a safe place.

Fig. 127: Switch strip without compression



Install the cover panel during startup:

- The cover panel (→ 2/Fig. 127 Page 101) is attached approx. 2mm over the patient switch strip (→ 1/Fig. 127 Page 101).

14.1.8 Compression Cover Panel



The surface of the compression cover panel is very sensitive.

When handling it and during installation, always make sure that it does not get scratched or dented.

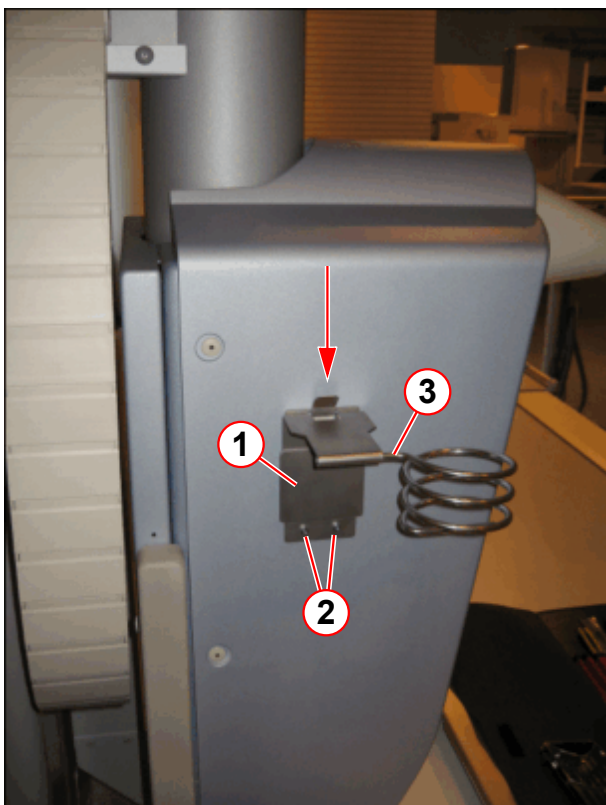
Fig. 128: Compression cover panel

**Compression cover panel:**

Secure the cover panel to the column with 2 screws (Pos. 1).

Attach the arm cover (Pos. 2) in a bag to the column (wait unit startup to install).

Fig. 129: Removable cup holder

**Removable Cup Holder**

If compression is configured, the holder is installed on the left side of the cover panel. (spring facing forward).

If there is no compression, secure the holder directly to the column

Installation:

Install the holder (1) on the column with the two screws (Pos. 2) and insert the spiral holder (Pos. 3) from above and snap it in place.

Fig. 130: "Excel Edition" label



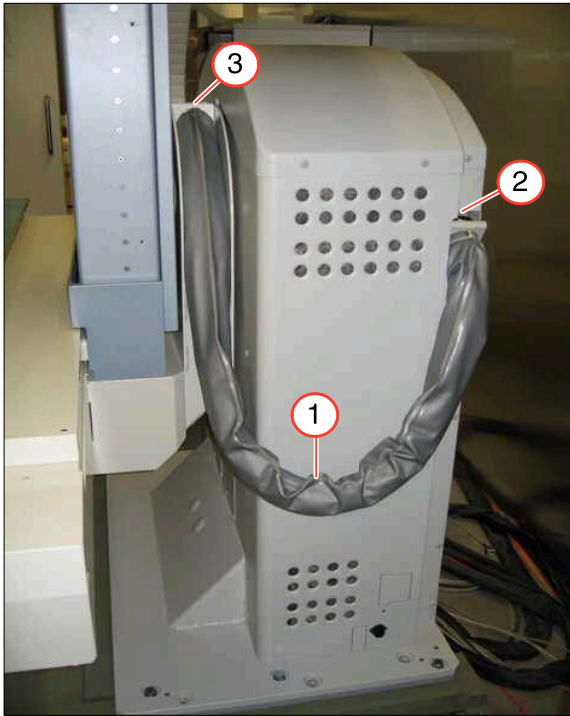
"Excel Edition" Label

If compression is configured **and** an "Excel Edition" label is affixed on the system control console, the "Excel Edition" label included in the shipment must be affixed to the compression cover panel.

To do this, pull off the protective film on the back, place the label parallel to the edge as shown in the illustration, press down on it and press down on the printed image with a soft object. Then carefully remove the top protective film.

14.1.9 Cable Cover on the Lifting Base

Fig. 131: Cable cover

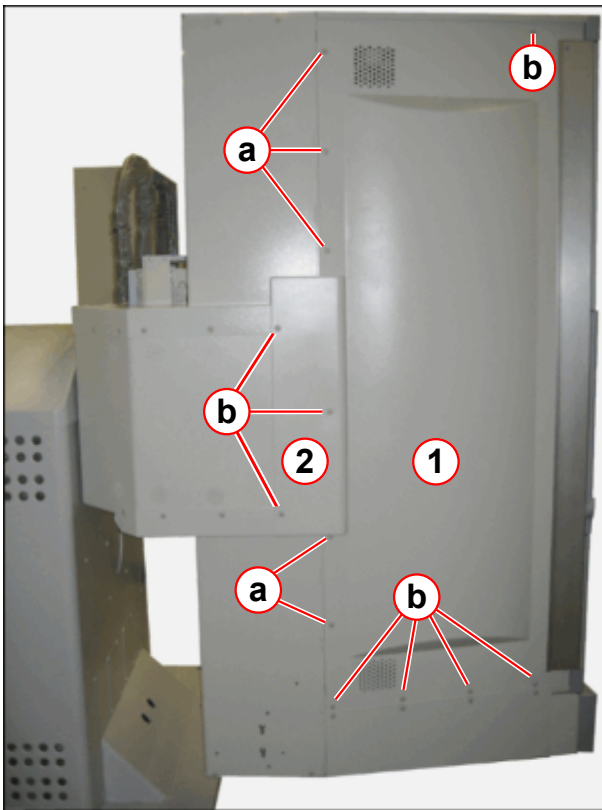


- Arrange the cables evenly and make sure that any cable ties or tape have been removed from the cable bundle. (It should be possible to move the cables freely in the zipper hose.)
- Place on the zipper hose (Pos. 1) and secure it with cable ties at locations (Pos. 2) and (Pos. 3).

When doing this, make sure that the zipper is facing up (to prevent damaging the paint finish on the lifting base)

14.1.10 Bottom Table Cover Panels

Fig. 132: dRF body unit cover panel



The bottom body unit cover panel (1) and the cover (2) are installed during startup (following installation of the detector).

These cover panels must be stored by the installation team in a safe location in the vicinity of the system up to when the system is started up.

15.1 Prior to Turnover

15.1.1 Cleaning and Touching Up Chips/Scratches in the Paint

- Clean the system. If needed, use an enamel cleaning agent.
- Touch up any visible damage to the paint finish.

15.1.2 Closing Up the Unit Base

- To make sure that no moisture can penetrate under the unit base, the unit base must be sealed all around using the silicon caulking included in the shipment.
- Cover over the holes in the unit base with the plastic covers included in the shipment. When doing this, use the high covers for the long expansion bolts, the flat covers for the short expansion bolts.
- Install the small rubber covers, use glue if needed.

15.1.3 Completing the Installation Certificate

The Installation Certificate, XP00-000.813.01..., must be filled during installation and while laying the cables. After completing installation, the results must be confirmed by signature of the responsible service provider and of the Project Manager. Send the certificate to the address listed on the form. Both the responsible service provider and the person responsible for the project should receive a copy.

Installation of Luminos dRF Version <11> replaces <Version 10>.

Chapter	Change
General Information	Prerequisites for disassembly added.
Options	Installation of the finger guard removed.
All	Editorial revisions.

Training Requirements	
Due to significant changes in this document / new publication of this document, user training is required.	<input type="checkbox"/>
Due to slight changes in this document, user training is not required.	<input checked="" type="checkbox"/>

There are no Hazard IDs in this document.

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Print No.: XPD3-500.812.01.11.02 | Replaces: XPD3-500.812.01.10.02
Doc. Gen. Date: 08.15 | Language: English
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