LIST OF PAGES AND MODULES MODULE CODE NUMBER: 4512-988-01871 REV AA

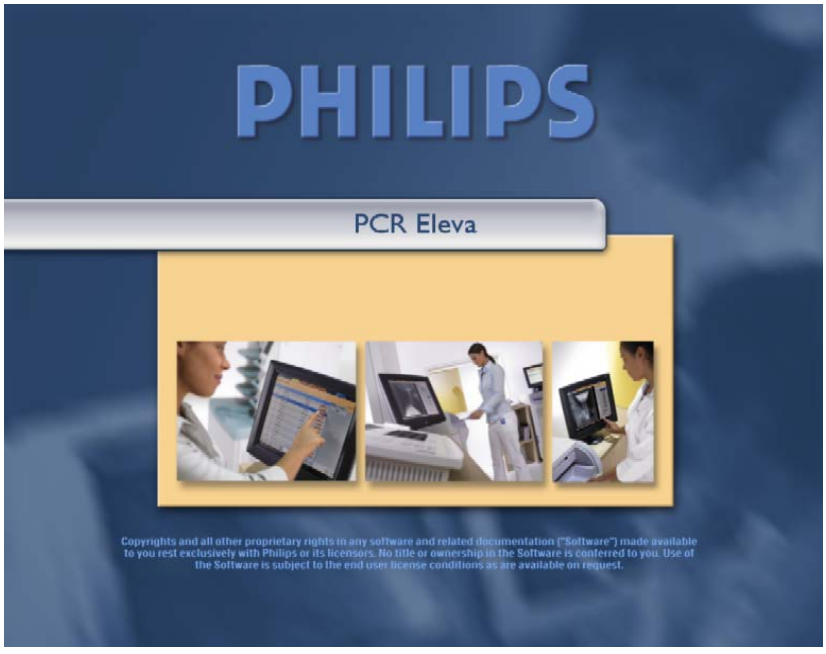
1 ... 118 (06.0)

System Manual for Installation (SMI)

PCR Eleva System

Release 1.0.1

Level 0 Documentation



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Contents

1 INTRODUCTION

The information contained in this document has been carefully checked and is believed to be entirely reliable. However, as Philips Medical Systems improves the reliability, function, and design of their products, the possibility exists that information may not be current.

1.1 CONVENTIONS USED IN THE TEXT

- Functionality located in the User Interface (UI) of the application SW is shown as follows: **UI: System Tab → General → "Restart"**
- Functionality located in the Field Service Framework (FSF) is shown as follows: **FSF: General functions → Export → "Transfer developer logs"**
- Directories and path descriptions are given in the following format ***F:\transfer\logs***
- Hardware keys (keys on the keyboard) are shown between the < > marks (e.g.: <**Enter**>, <**Esc**>, <**Y**>)
- Software keys (keys on the screen) are shown between the [ ] brackets (e.g.: [**OK**], [**Cancel**])
- When two or more keys are to be pressed at the same time, a + sign is used as a separator (e.g.: <**Ctrl**> + <**C**>)

1.2 ABBREVIATIONS AND ACRONYMS

Abbreviation	Explanation
CL	Console = Workspot PC
CR	Computed Radiography
DICOM	Digital Imaging and Communication in Medicine
DRR	Dynamic Range Reconstruction (Philips Image Processing algorithm)
EPX Tool	Examination Programming Tool
EV	EasyVision
FSE	Field Service Engineer
FSF	Field Service Framework
FTP	File Transfer Protocol
HIS	Hospital Information System
HW	Hardware
IE	Microsoft Internet Explorer
NFS	Network File System
OS	Operating system software
PACS	Picture Archiving and Communication System
PCR	Philips Computed Radiography
PMS	Philips Medical Systems
PMSNet	Philips proprietary communication standard
RIS	Radiology Information System
RU	Reader unit
SW	Software
TCP/IP	Transmission Control Protocol / Internet Protocol
USB	Universal Serial Bus
WIN	Windows®
WLM	Work List Management
XPe	XP embedded

2 UNPACK, TRANSPORT, MOUNT

2.1 LOCAL MATERIAL

What needs to be supplied locally ?

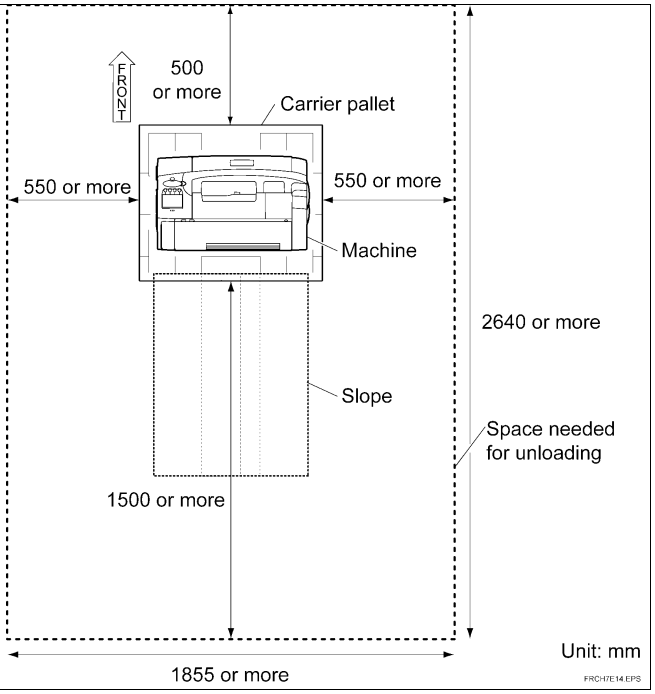
- If necessary, AC socket boards
- If necessary, network cable in sufficient length (2 x 3m come with each workspot PC)
- At least one network switch or hub in order to
    - connect workspot PC and PCR reader
    - configure each workspot PC

2.2 PCR READER

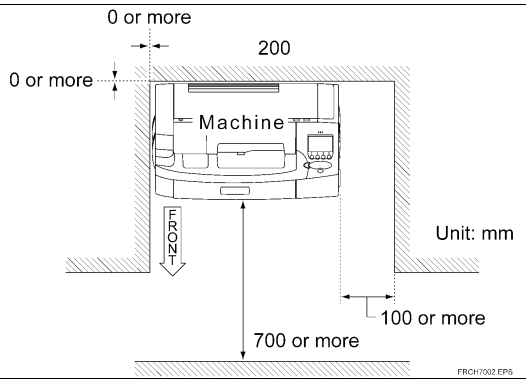
2.2.1 ELEVA S / S PLUS READER

2.2.1.1 Required Space

Space for unloading:

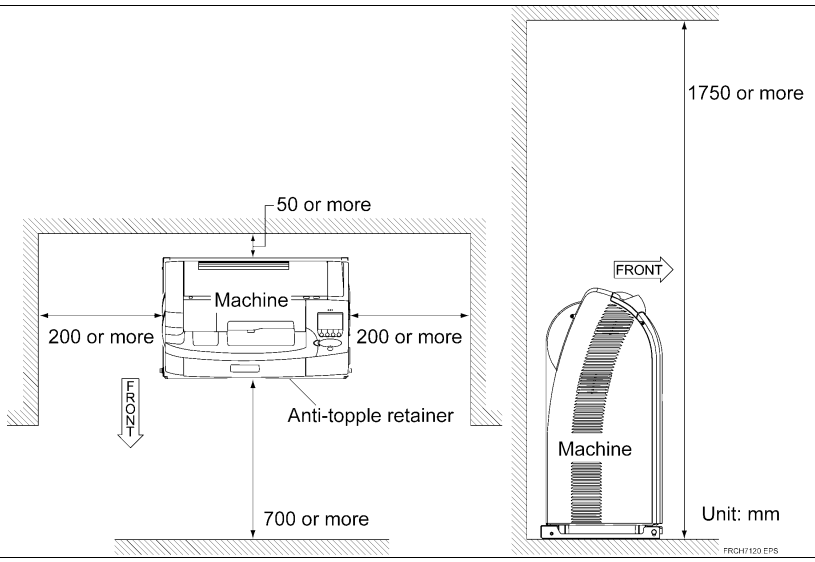


Space for final placement (standard):



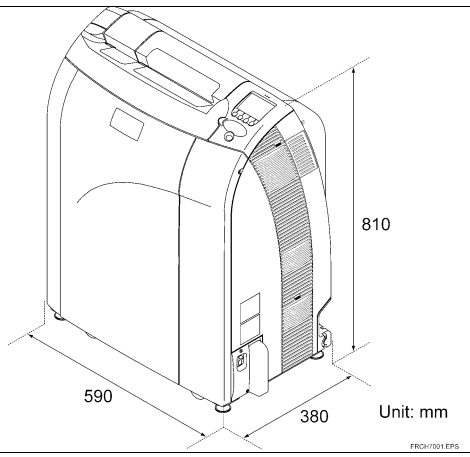
Space for final placement where long cassettes are used:

The larger place on the floor is only needed if a so called anti-topple retainer is used to increase the stability.



Dimensions: 590 × 380 × 810 mm (WxDxH)

Weight: 105 kg approx.

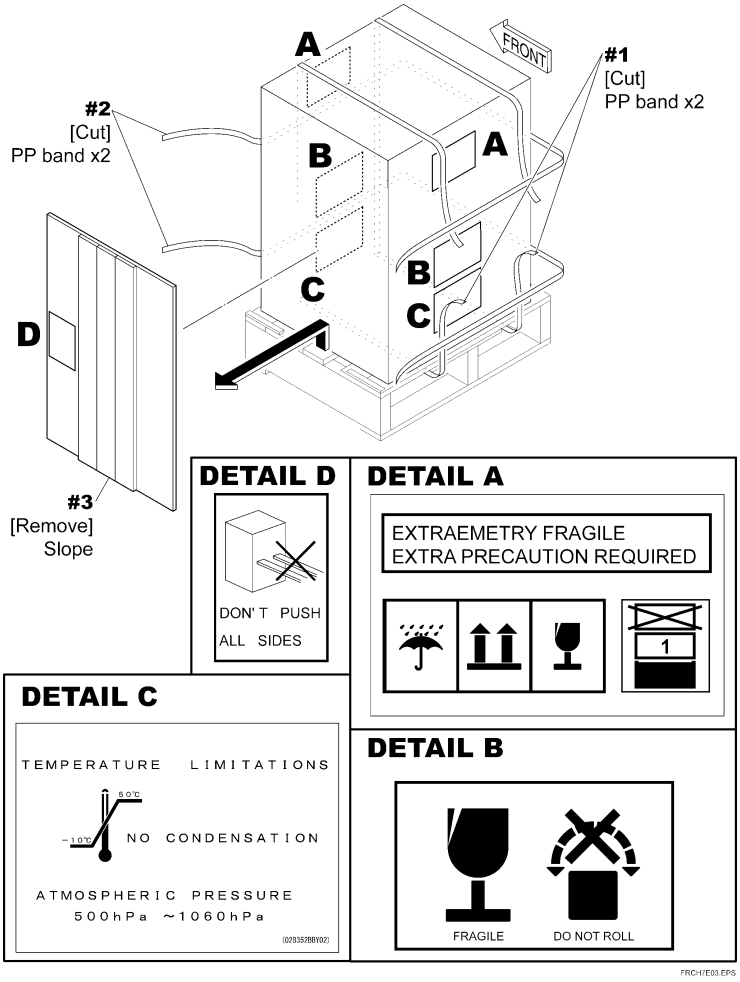


2.2.1.2 Unpack the Reader

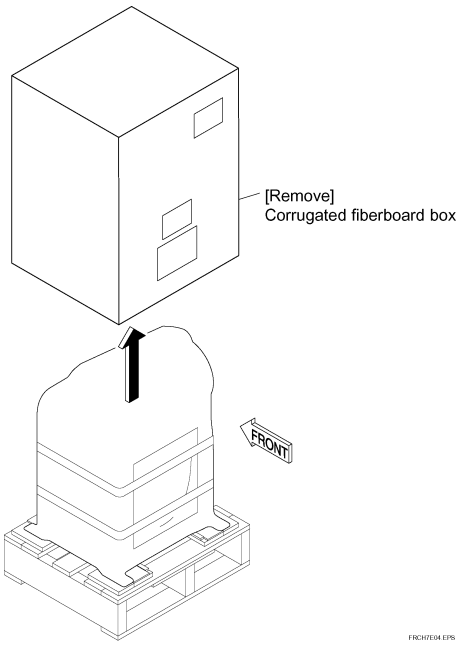
Note:

- When unloading the machine, two persons should always cooperate to do so.
- Before unloading the machine, secure a proper machine transfer route.
- Unload the machine on a flat space as close to the installation space as possible.
  If there are many steps or bumps in the machine transfer route, load may be applied to casters, causing damage.
- Secure a necessary space for unloading and unpacking before.

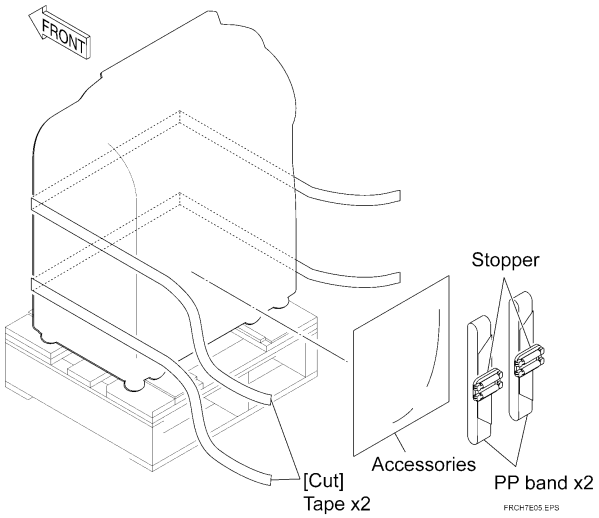
- Cut the polypropylene (PP) band, and remove the slope.



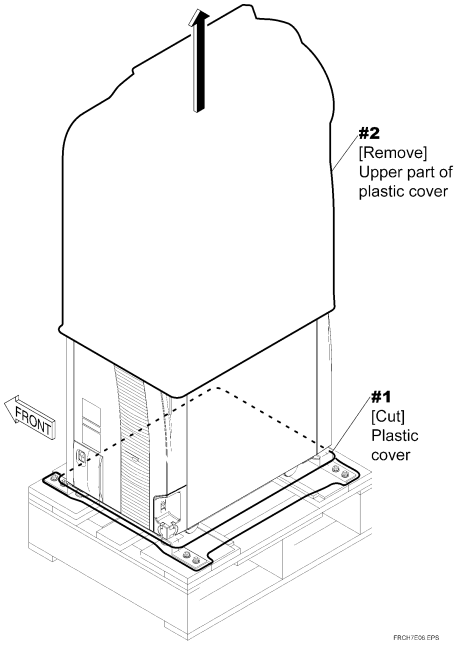
- Remove the corrugated fiberboard box.



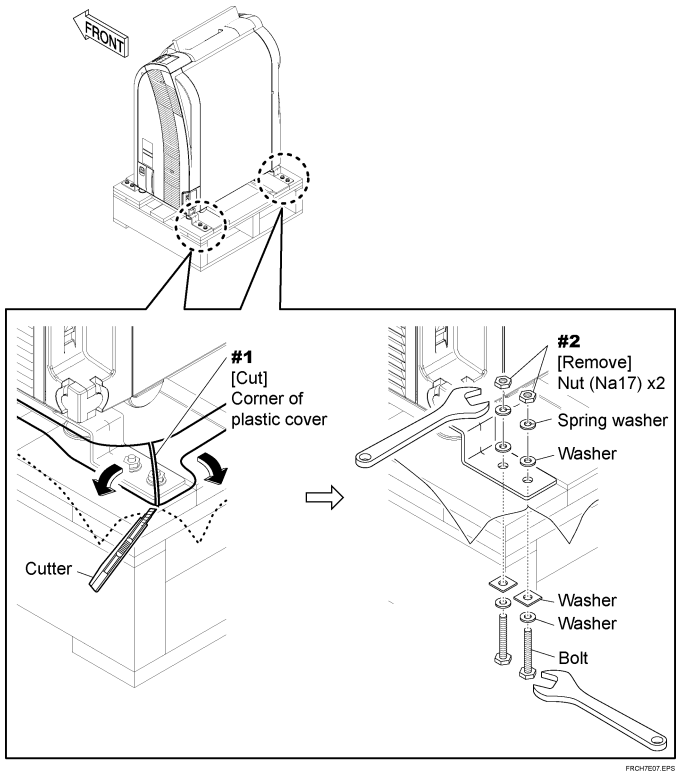
- Cut the tapes, and remove the PP bands with stoppers and the bag containing the accessories.



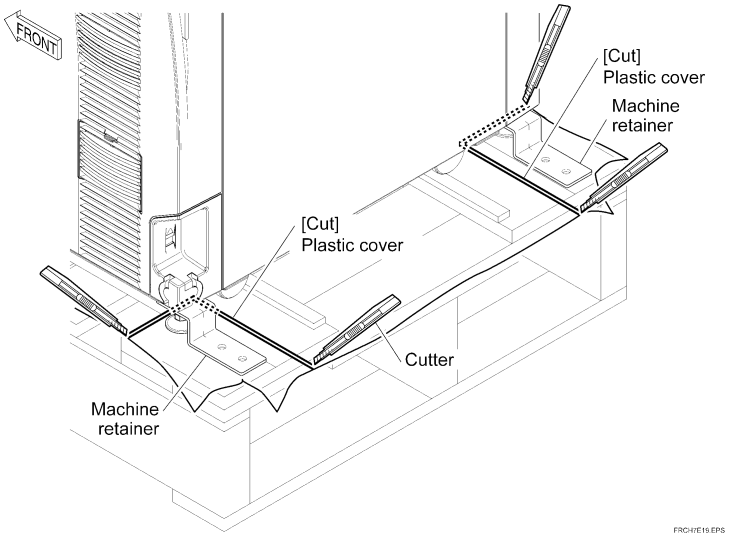
- Cut the lower part of the plastic cover which protects the machine. Remove the upper part of the plastic cover.



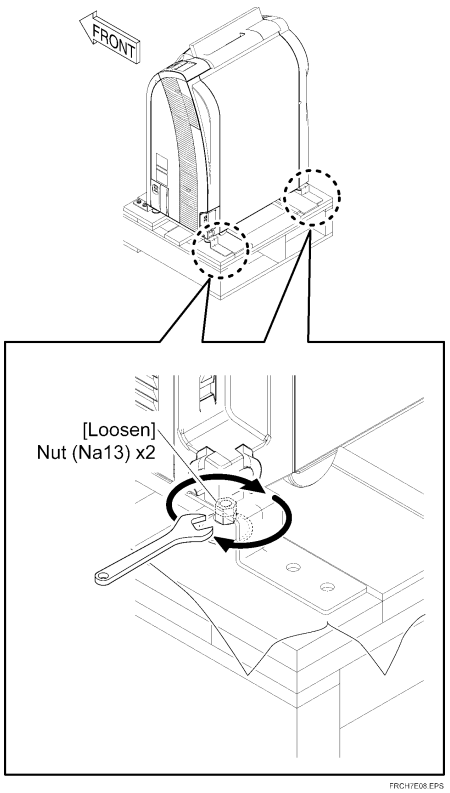
- Cut the corners of the plastic cover which cover two right and left machine retainers on the rear of the machine. Then remove the bolts which retain the machine retainers on the rear of the machine.



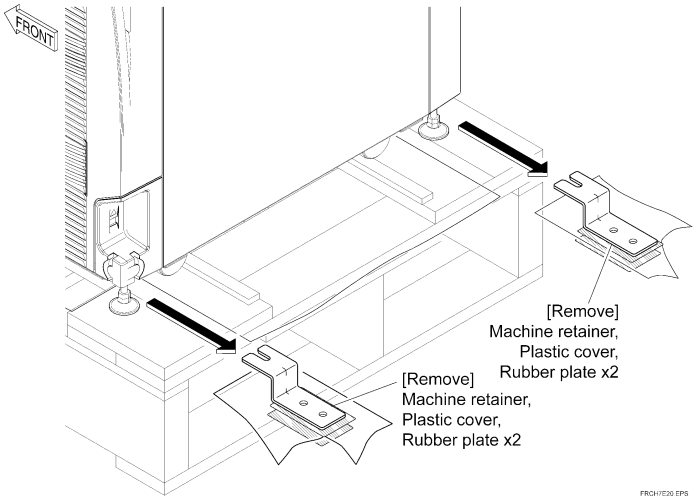
- Cut the plastic cover around the machine retainer in an L-shape by a cutter, for easy removal of the two right and left machine retainers on the rear of the machine.



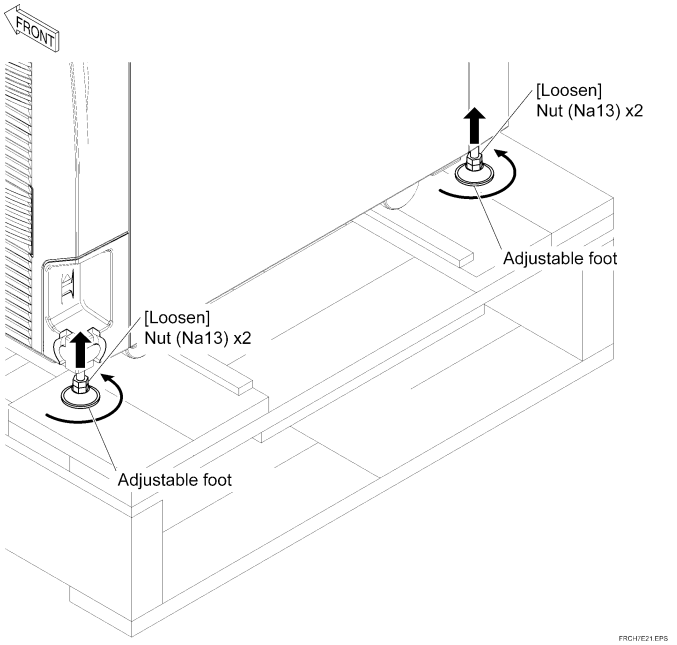
- Once loosen the adjustable feet for removing the two right and left machine retainers on the rear of the machine.



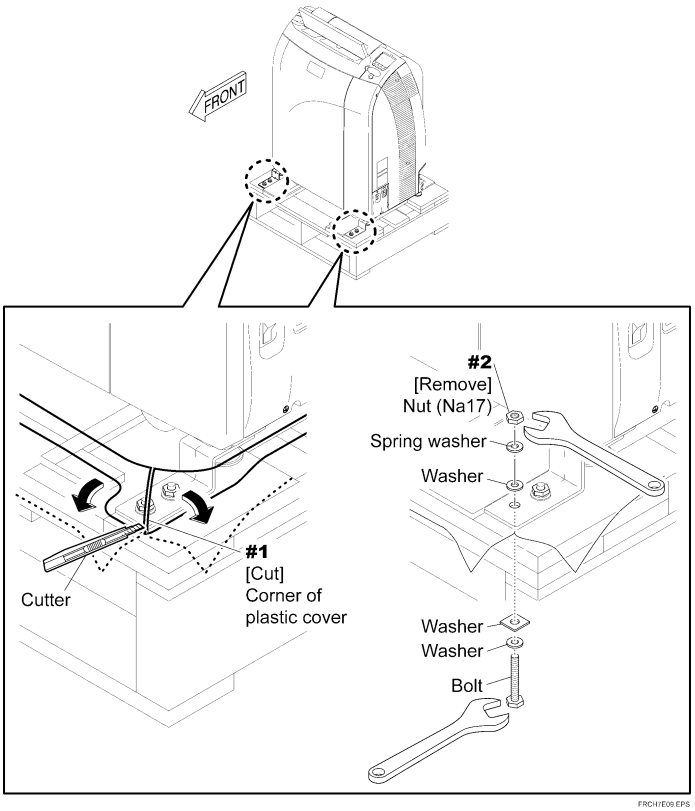
- Remove the two machine retainers on the right- and left-hand on the rear of the machine together with their sealing plastic covers and rubber plates.



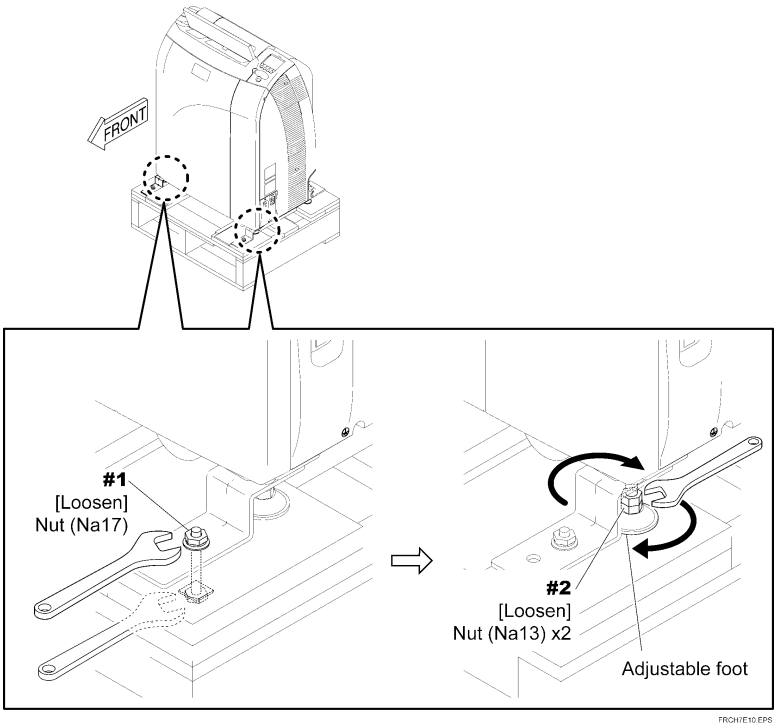
- Raise the two adjustable feet on the right- and left-hand on the rear of the machine to the uppermost position.



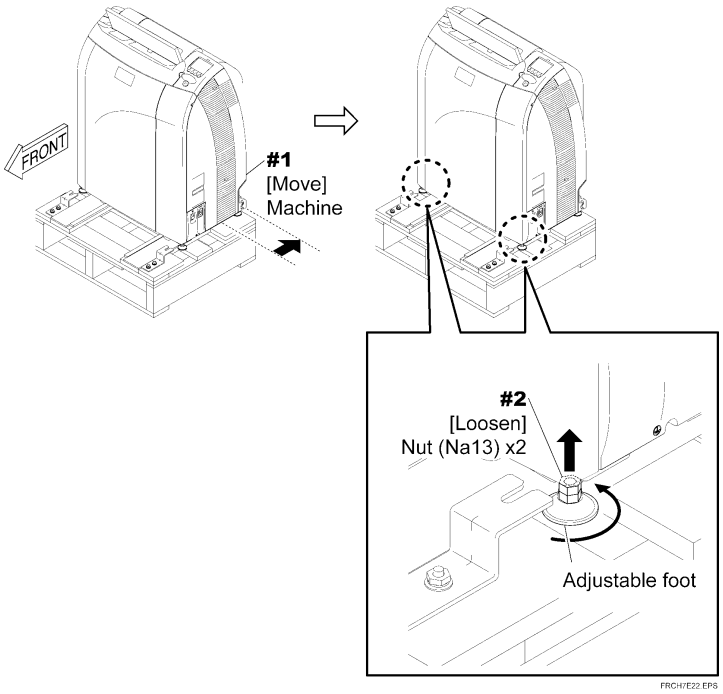
- Cut the corners of the plastic covers which cover the two machine retainers on the right- and left-hand on the front of the machine by a cutter, and remove the front bolt of the two bolts retaining the machine retainer on the front of the machine.



- Loosen the bolts which retain the two right and left machine retainers on the front of the machine, and then once loosen the adjustable feet on the front of the machine.

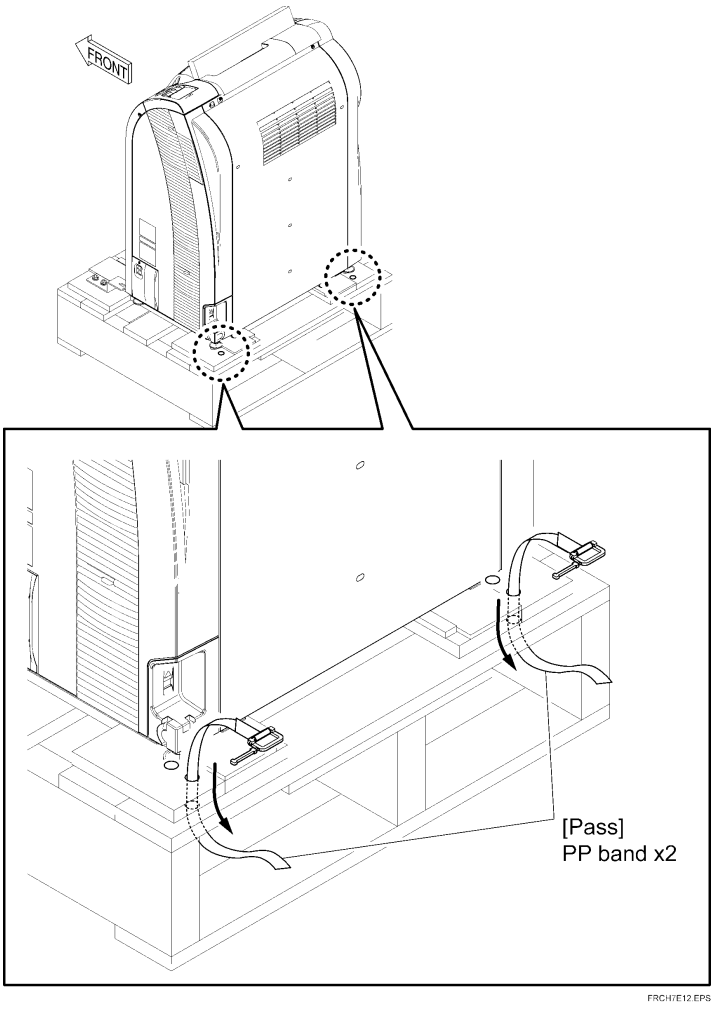


- Move the machine on the carrier pallet until the machine disengages from the machine retainers. Then raise the adjustable feet on the front of the machine to the uppermost position.

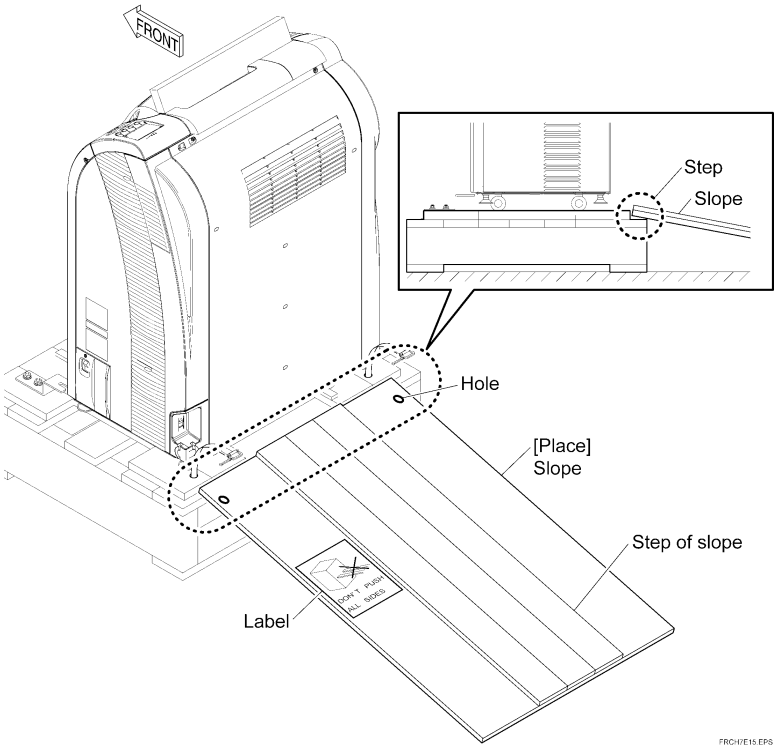


- Remove the PP bands for retaining the slope from the accessory bags, and pass the PP bands through the holes on the carrier pallet.

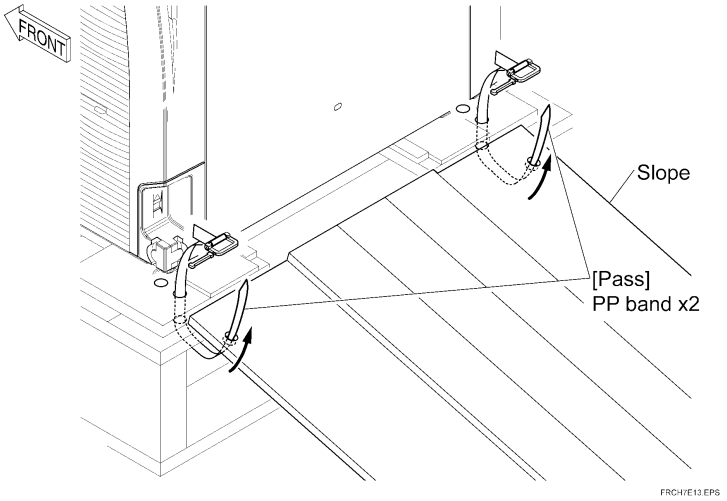
  Make sure that the rubber plate has been removed, before passing the PP band.
  Otherwise, the adjustable foot might get caught on the rubber plate, causing the machine to topple down, when the machine is unloaded from the carrier pallet.



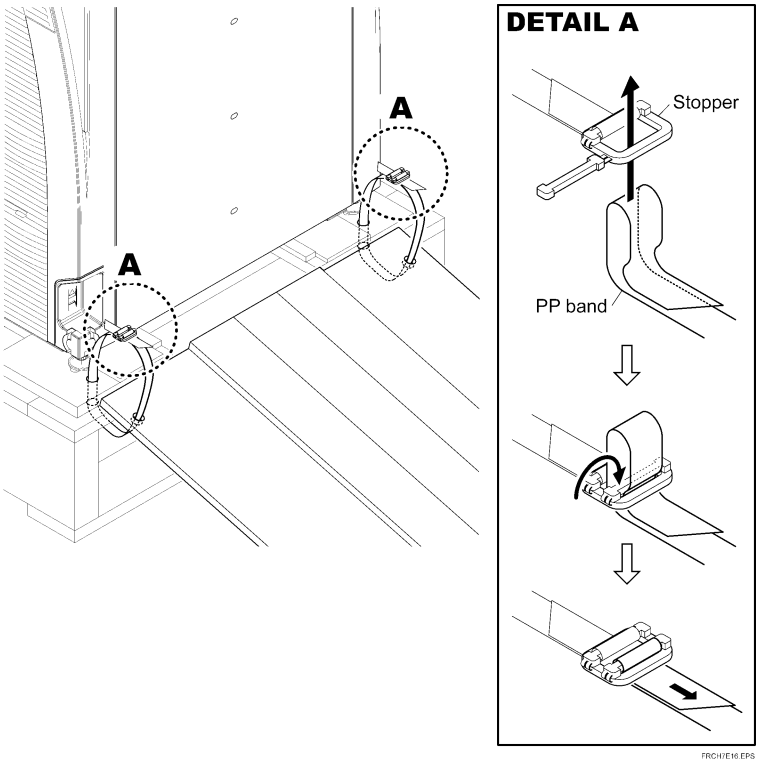
- Place the slope over the step of the carrier pallet.



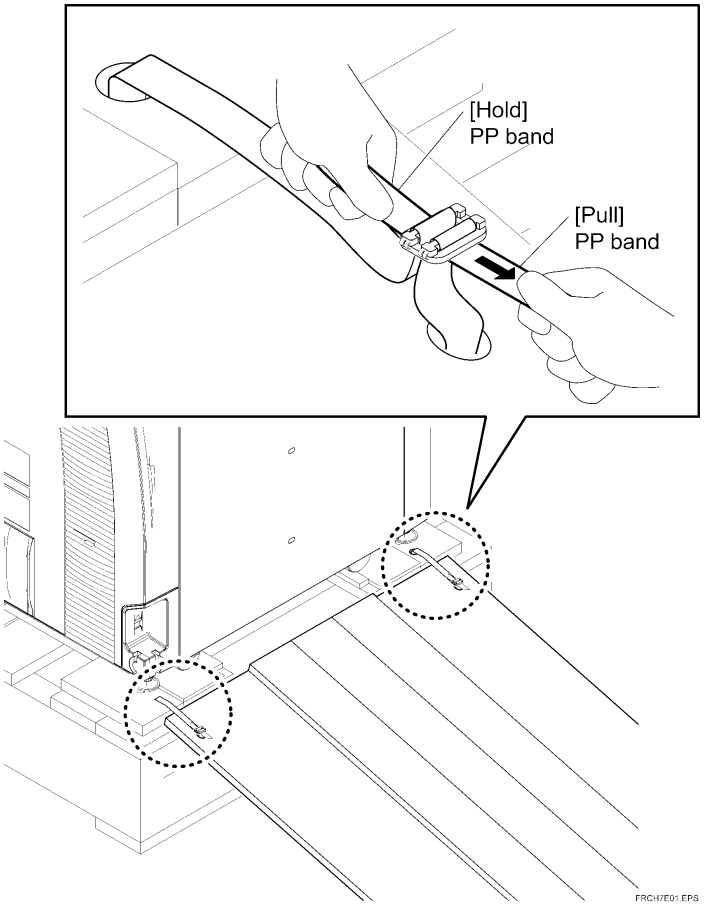
- Pass the PP bands through the holes of the slope.



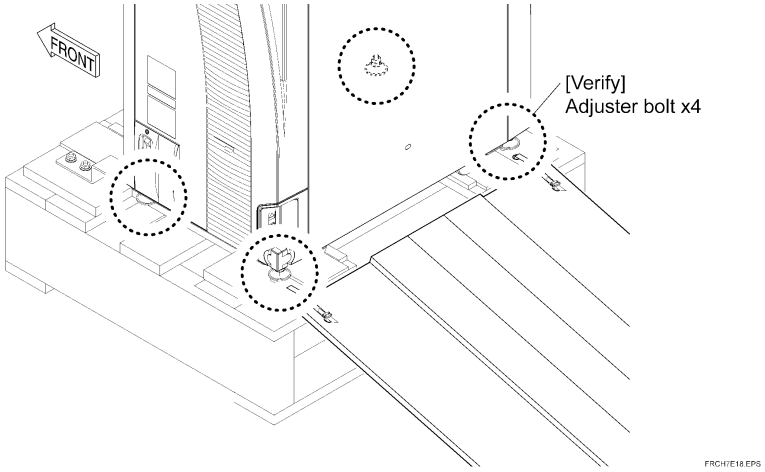
- Put the PP band on the stopper.



- Tighten the PP band, and fix the slope to the carrier pallet.

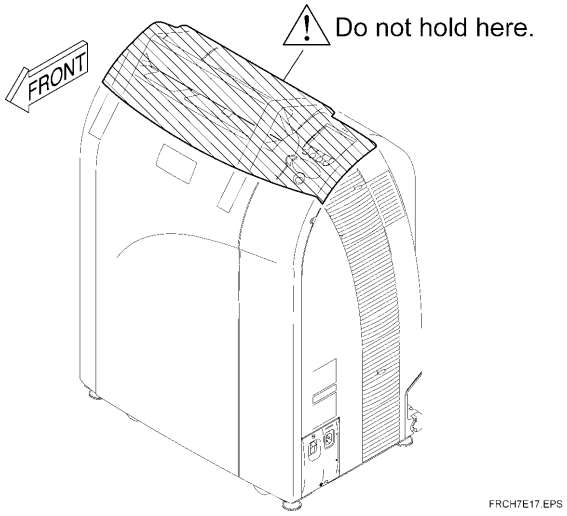


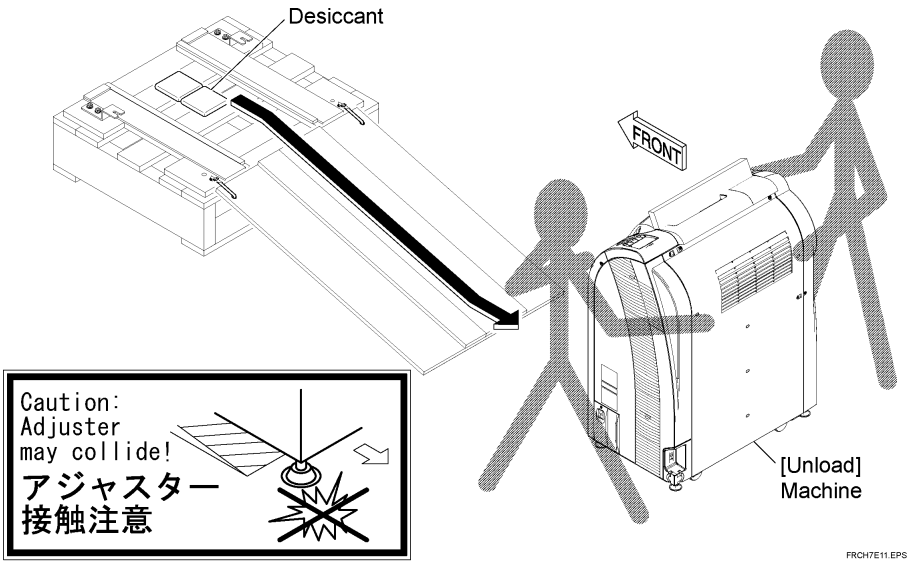
- Check to make sure that the four adjustable feet are raised to the uppermost position, before unloading the machine from the carrier pallet.



- Unload the machine from the carrier pallet.

  Be sure to unload the machine with two persons, and support the machine from both side faces of the machine. Hold the rear and the side faces of the machine when supporting the machine.
  Do not hold in the vicinity of the cassette inserting entrance or the vicinity of the operation panel.



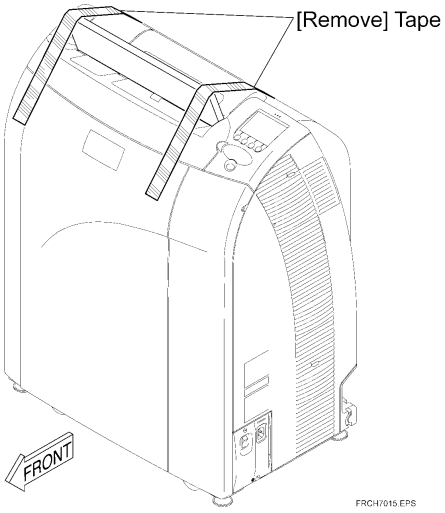


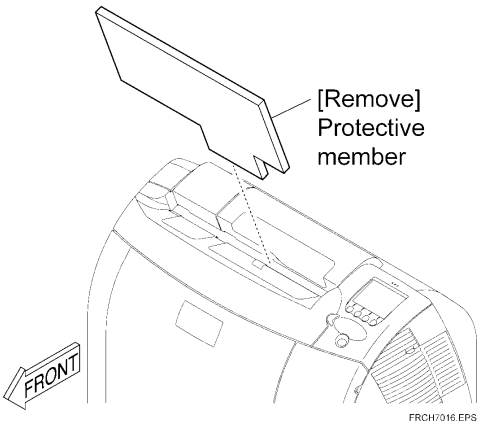
2.2.1.3 Checking the items supplied

Item	Qty.	Remark	Check
Machine-specific data	1	CD-R	
CD-ROM (Reader software)	1		
Fuse set	1	Spare (1/1.6/2/3.2/5 A)	
Cassette insertion operation label	2		
Exposure markers precaution label	1		
Exposure marker caution label	1		
Power cable 230V	1	Europe (not U.K.)	
Spur gear	2	327N1122501, 327N1121608	
Screw	15	TP3x6, BR4x8, DT3x6	
KL ring	5	KL4	
Cover	1	For power supply inlet	
Test result sheet	1		
Anti-topple retainer kit	1	optional	

2.2.1.4 Removing the packing materials

- Remove the tapes and the protective member.





2.2.2 COSIMAX / CORADO / ELEVA HI-RES READER

2.2.2.1 Unloading

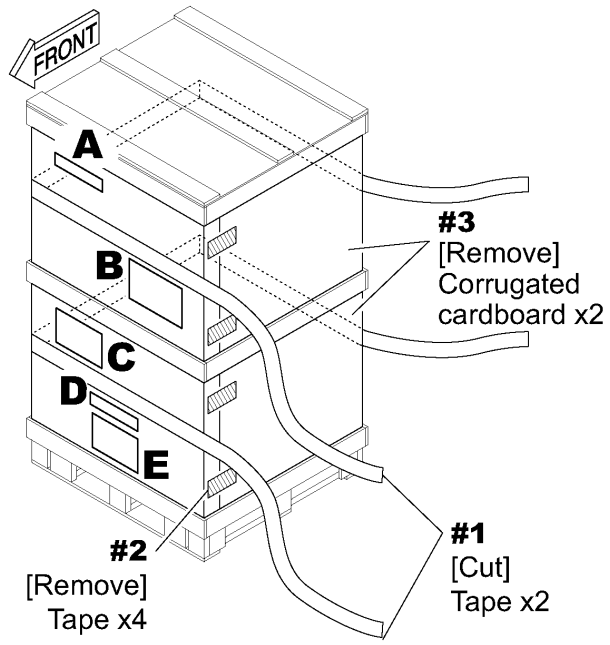
CAUTION

- When unloading the machine, two persons should always cooperate to do so.
- Before unloading the machine, secure a proper machine transfer route.

REFERENCE

Before unloading the machine, together with the carrier pallet, from the load-carrying platform of the truck, make sure that there is enough space (2700 mm or more) on the rear side of the machine.

- Move down the machine together with the carrier pallet from the load-carrying platform of the truck.
- Remove the corrugated cardboards.

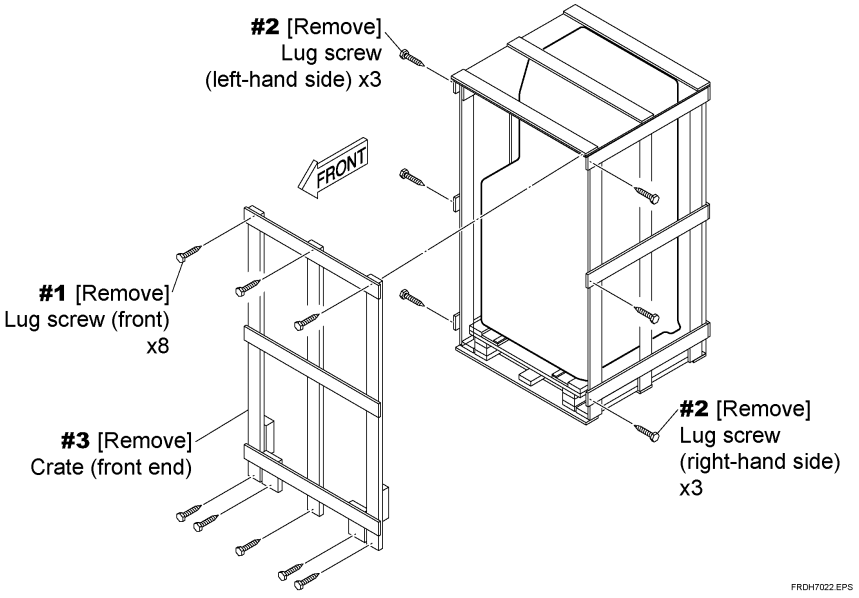


- Remove the front end of the crate.

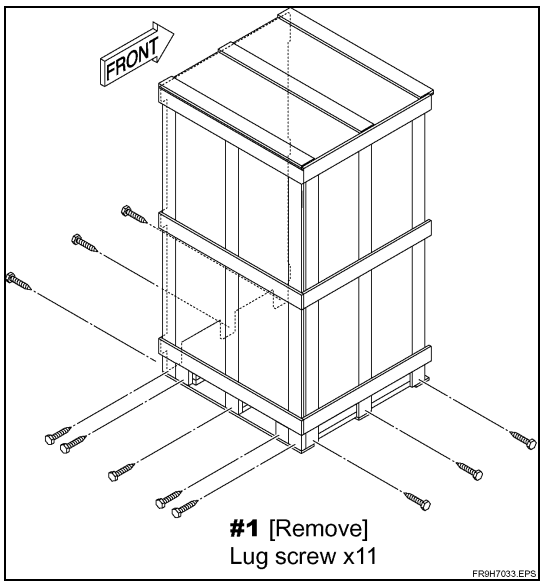
NOTES

The six lug screws located on the front should be removed first. Otherwise, the crate may topple down, causing you injury.

The removed crate should be moved away to an unobstructive place.



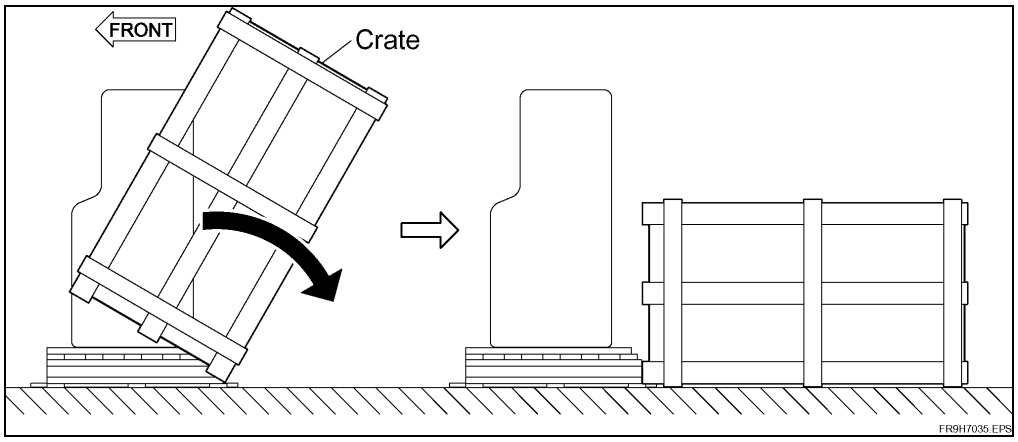
- Remove the screws from the crate.



- Incline the crate to take it out.

CAUTION

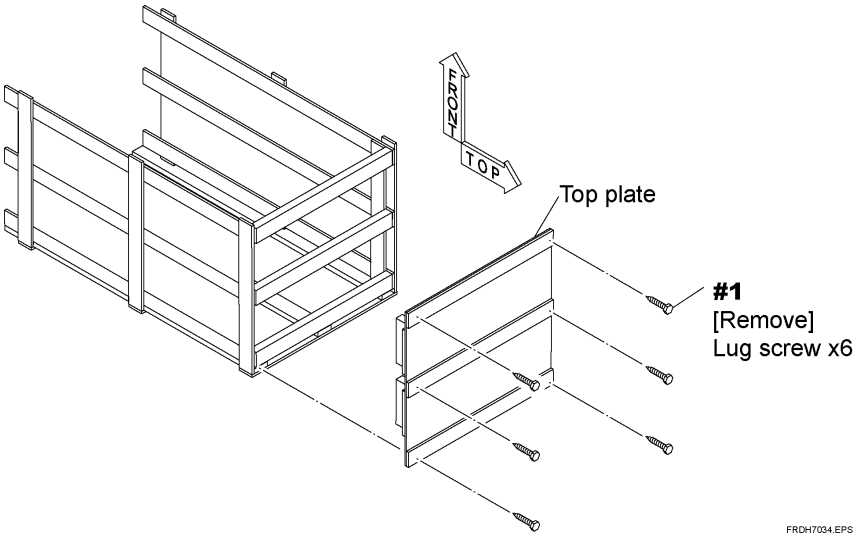
When removing the crate, incline the crate to take it out. If you try to move the crate, it might hit the machine, thereby damaging the machine.



- Remove the top plate from the crate.

CAUTION

The top plate should not be disassembled, because it will be used when lowering the machine from the carrier pallet.



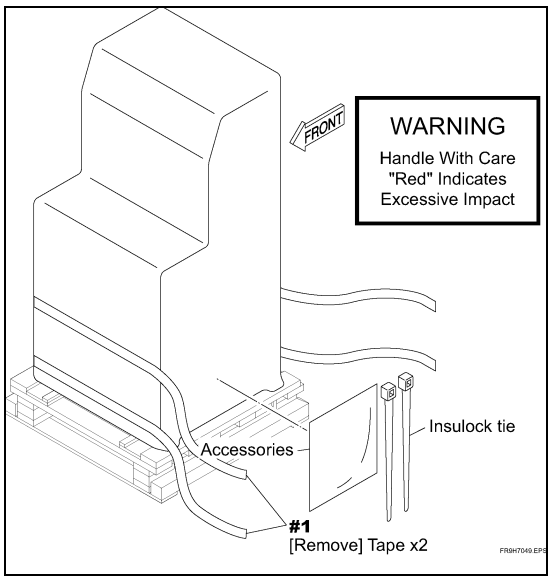
REFERENCES

After the top plate is removed, break up the crate and put the resulting pieces together for conveyance.

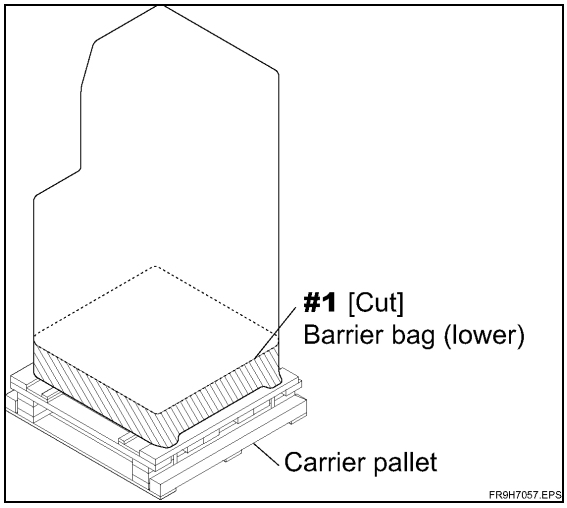
Because the crate is assembled with nails, hit it with a hammer or the like from inside to break up the crate.

Use care not to get injured by protruding nails when breaking up the crate.

- Remove the accessories-containing bug.



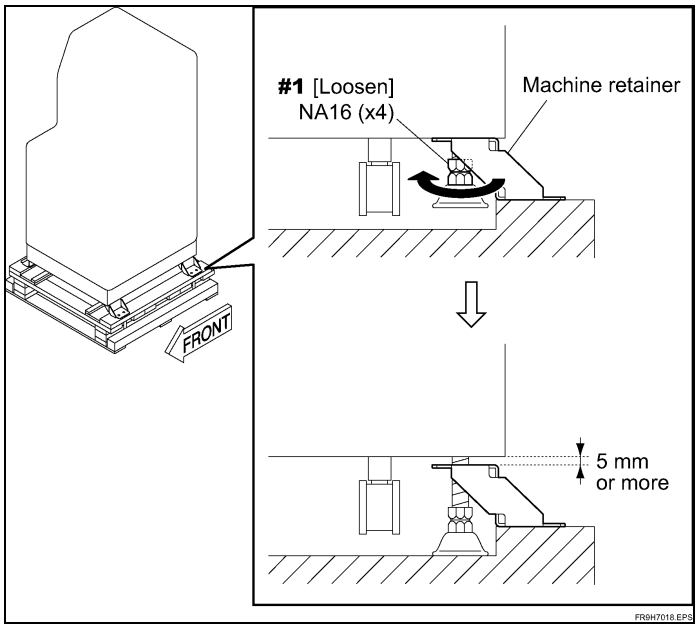
- Remove the lower portion of the barrier bag that protects the machine.



- Lower the adjustable feet bolts to lift up the machine.

CAUTION

Unless the machine is lifted up by the adjustable feet, the machine retainers could not be removed.

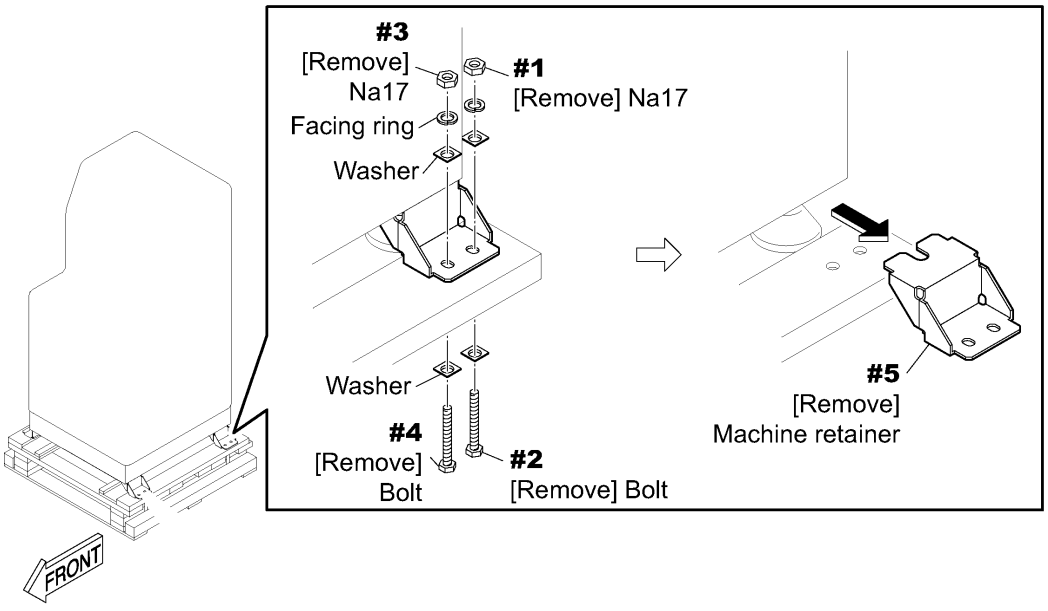


- Remove the four machine retainers.

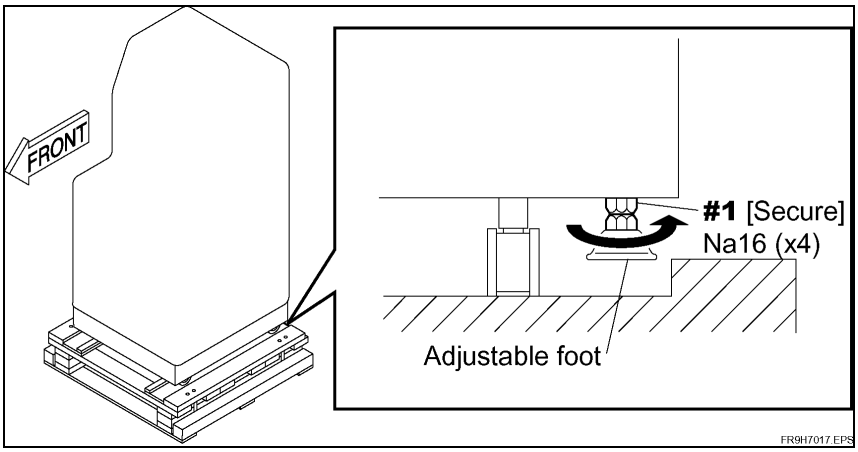
When the four nuts are loosened, the machine retainers lower accordingly, so that the machine moves down onto the carrier pallet.

CAUTION

When the nut is loosened, the machine may incline by its own weight. So, use care not to get your finger pinched by the machine retainer or adjustable foot.



- Raise the adjustable feet up to their upper limit.

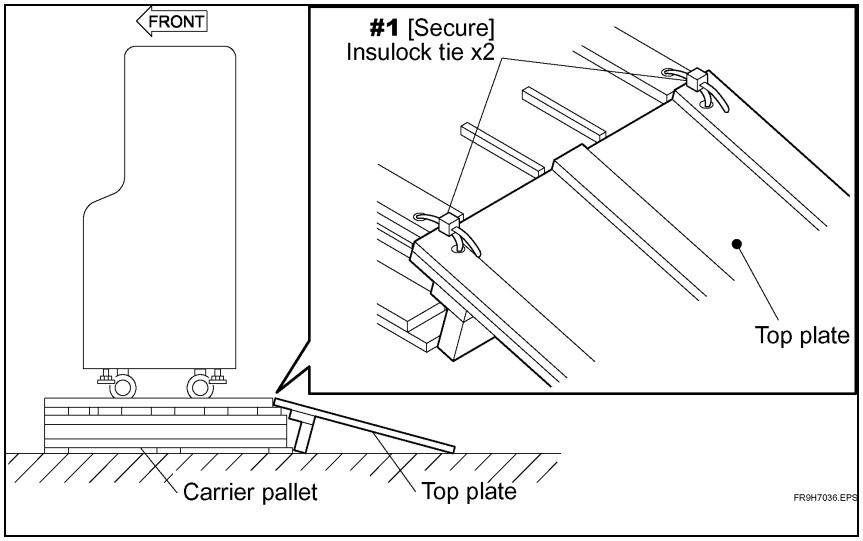


- Secure the top plate removed at step 6 onto the carrier pallet.

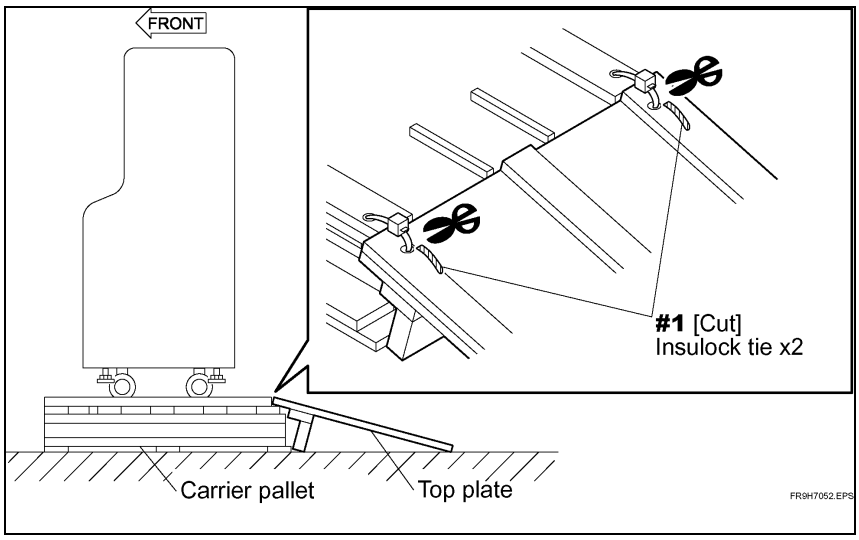
CAUTION

Use the insulock ties to fix the top plate onto the carrier pallet securely.

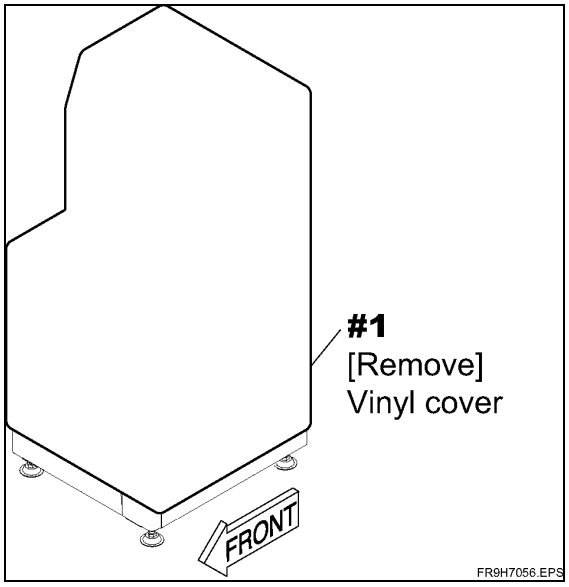
Be sure to secure the top plate on the rear side of the machine. The carrier pallet is designed so that the top plate cannot be secured on the front side of the machine.



- Cut the Insulock ties.



- Remove the vinyl cover that protects the machine.



INSTRUCTION

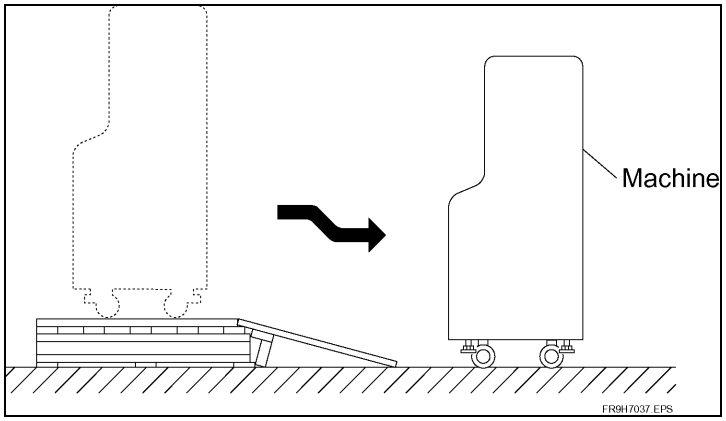
During the winter season, allow the machine to stand under its cover-attached condition for sufficient time before unpacking it.

If the vinyl cover is removed immediately after the machine is carried into the room, moisture condensation may occur on the machine.

- Lower the machine from the carrier pallet.

CAUTION

When lowering the machine from the carrier pallet, one person should be positioned on the right-hand side of the machine, and the other on its left-hand side.



2.2.2.2 Transfer

CAUTION

When unloading the machine, two persons should always cooperate to do so.

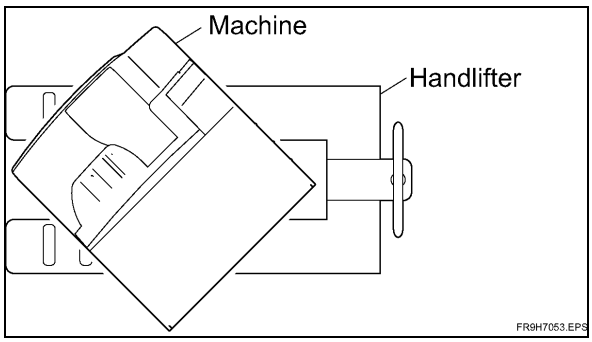
When transferring the machine by use of its casters, raise the adjustable feet of the machine all the way up to their upper limit.

When bringing the machine into the installation place, support it so that it will not topple down.

When supporting the machine, grasp the sides and rear of the machine. If the plastic portion of the machine's front is grasped, the machine may be damaged.

When the machine should be moved over some step or bump, move it as slowly as possible to avoid shock to it. Note that the step over which the machine may move is about 10 mm high at most.

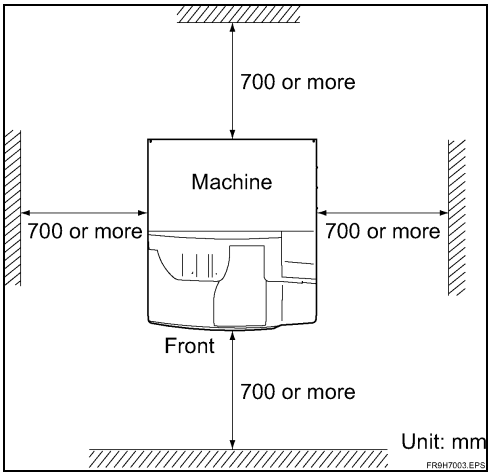
- Put the hand lifter underneath the machine. The hand lifter should be oriented aslant with respect to the machine.

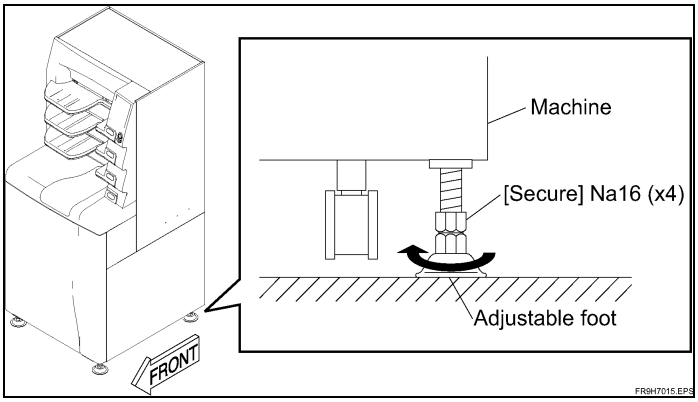


- Transfer the machine into the installation place.

2.2.2.3 Temporary Placement

- Secure the machine with the adjustable feet in place.





2.2.2.4 Checking the Items Supplied

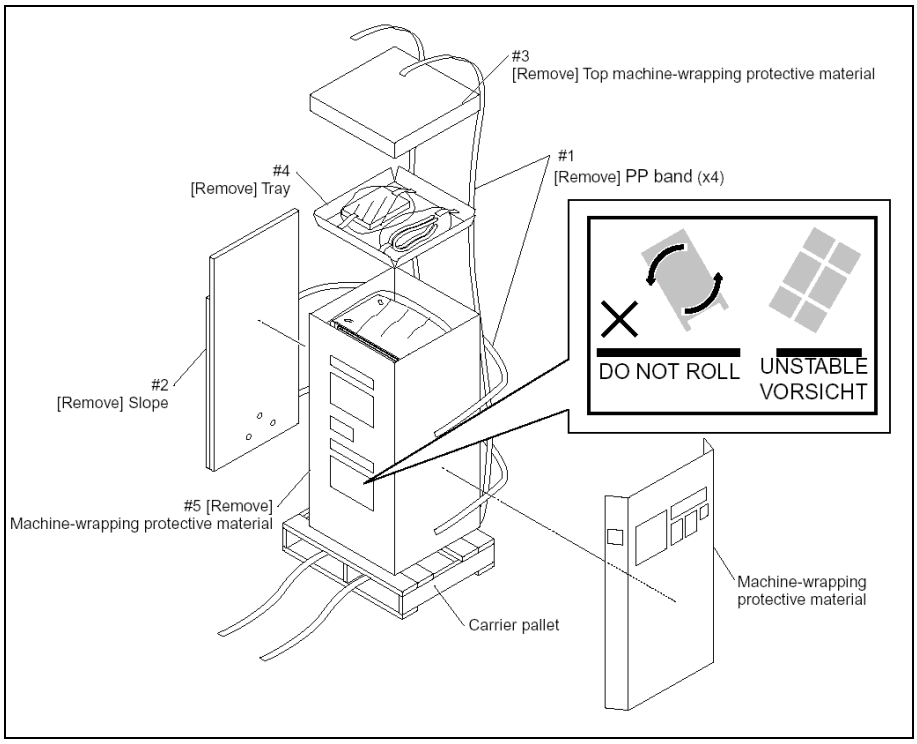
- Check whether all the accessories are supplied in accordance with the PACKING LIST that is contained in each carton.

	Qty.	Remark	Check
Test result sheet	1		
Machine-specific data floppy diskette	1	3.5-inch/1.44 MB	
CD-ROM	1	Reader software	
Fuse set	1	Spare	
Clamp	2		
Insulock tie	2		
Label	1	Cassette insert operation label	
	1	Exposure markers precaution label	
Spur gear	1		
Timing belt wheel	1	324N3164	
	1	324N3165	
Screw	5	TP3x6	
	2	T4x8	

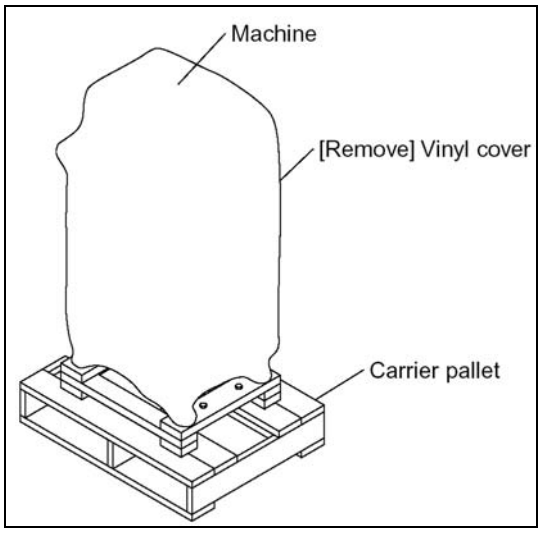
2.2.3 COMPANO READER

2.2.3.1 Unpack the Reader

- Remove the machine-wrapping protective material.

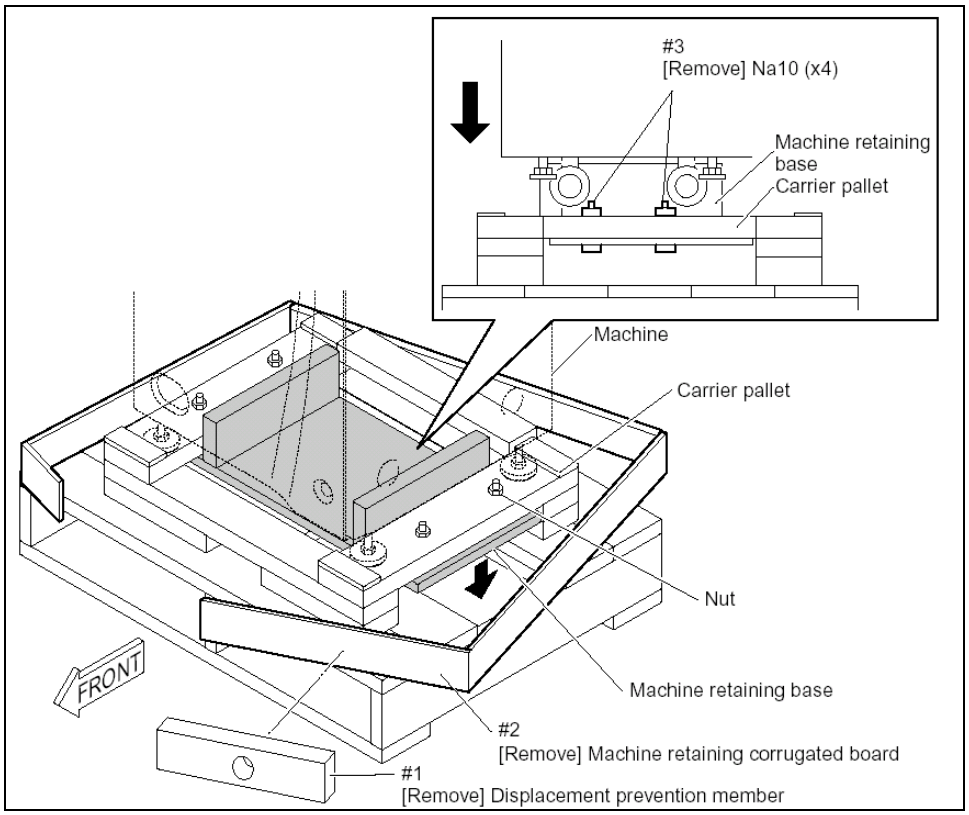


- Remove the vinyl cover.
  During the winter season, allow the machine to stand under its packaged condition for sufficient time before unpacking it. If the machine is unpacked immediately after it is carried into the room, moisture condensation may occur on the machine.

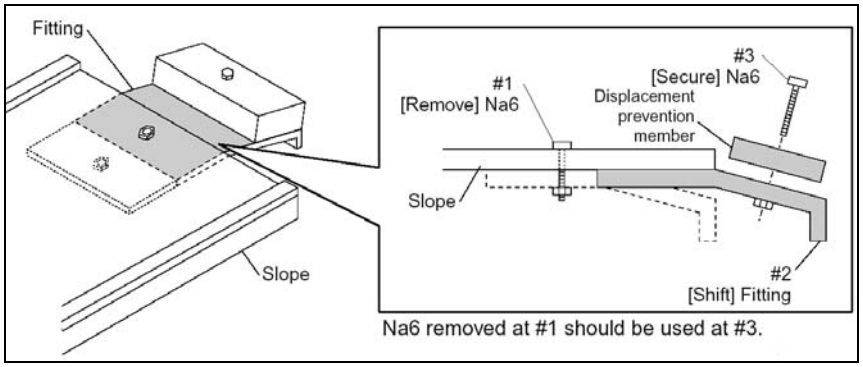


- Lower the machine onto the carrier pallet. As the four nuts are loosened, the machine retaining base is lowered, so that the machine rests down on the carrier pallet.

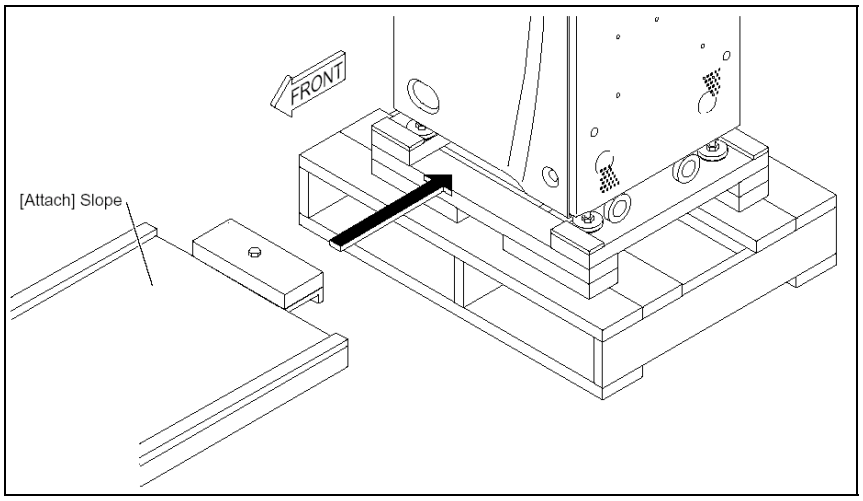
  To remove the four nuts that secure the machine retaining base and carrier pallet, loosen the four nuts evenly one by one, and then remove them.



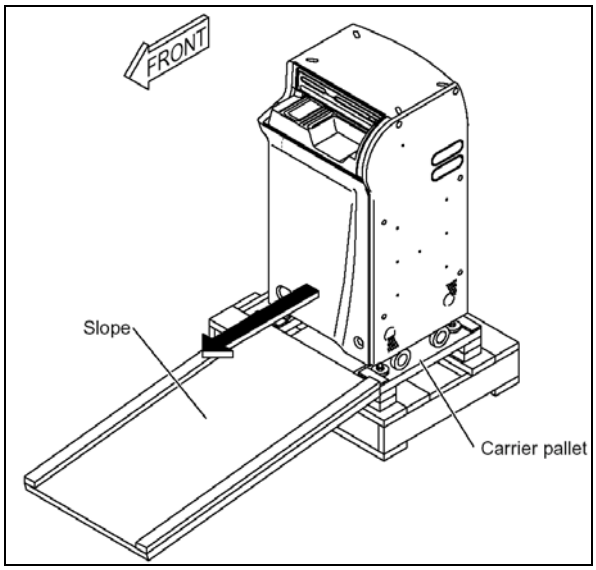
- Attach the displacement prevention member.



- Slide the position of the fitting of the slope. The slope may be attached only to the front side of the machine.



- Move the reader from the pallet. When unloading the machine from the carrier pallet, two persons should cooperate to do so using care to prevent it from toppling down. In this case, the two persons should be positioned, one at the right-hand side and the other at the left-hand side of the machine

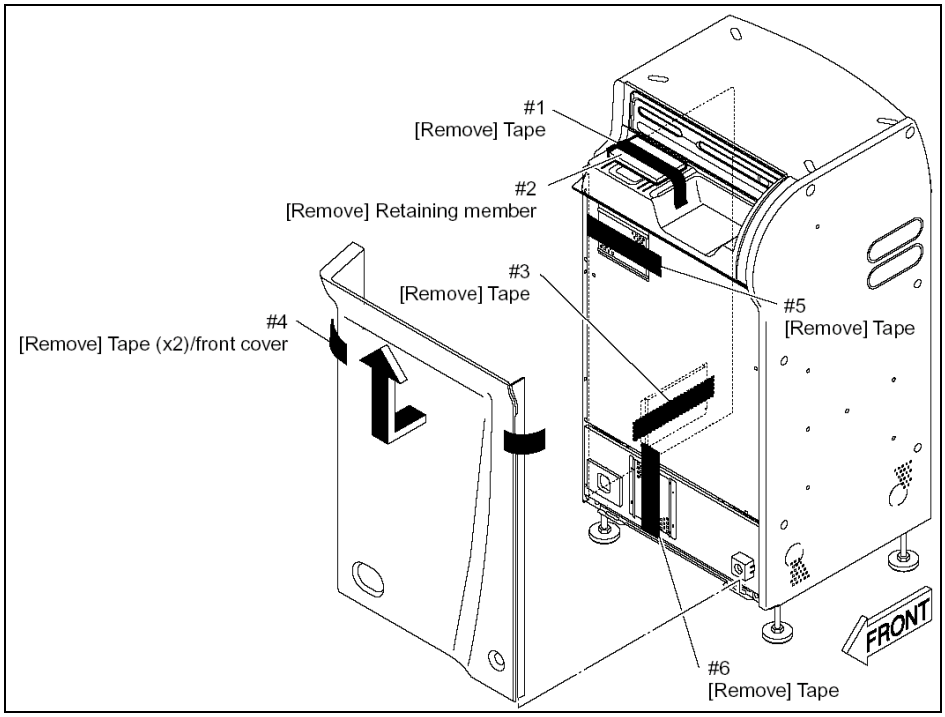


2.2.3.2 Checking the items supplied

Item	Qty.	Remark	Check
Machine-specific data floppy	1		
CD-ROM (Reader software)	1		
Fuse set	1	Spare	
Ferrite bead	1	For network cable	
Inch/metric label	1		
Exposure marker caution label	1		
Power cable 230V	1	Europe (not U.K.)	
Test result sheet	1		

2.2.3.3 Removing the packing materials

- Remove the packing materials as shown below.



2.3 WORKSPOT PC AND ACCESSORIES

- Unpack the PC.
- Unpack the monitor.
- Unpack the barcode scanner
- Unpack the SW package
- Check the items supplied:

Item	Qty.	Remark	Check
PC			
Keyboard	1	U.S. layout default, other are options	
Mouse	1	PS/2	
Serial cable, 5 m (Nullmodem)	1	Used for servicing the Compano Reader	
Power cable 115 V	3	U.S.	
Power cable 230 V	1	Europe (not U.K.)	
STP patch cable	3	network	
Application License Order sheet	1		
Instruction manual	1		
Monitor (touch screen optional)			
Monitor	1		
External power supply + cable	1	Optional, depending on type of monitor	
CD-ROM	1	Optional, driver software for touch screen	
User's guide	1		
Barcode Scanner			
Barcode scanner	1		
Holder	1		
User's guide	1		
Software			
Application SW	1	CD	
Windows XP embedded	2	CD	
License file	1	CD	

2.4 WALLMOUNT FOR WORKSPOT PC AND MONITOR

- Install the optional wall mount devices according to the installation instruction delivered by the manufacturer.
  Pay attention to the viewing angle of the monitor and the limited cable length.

3 INSTALLATION

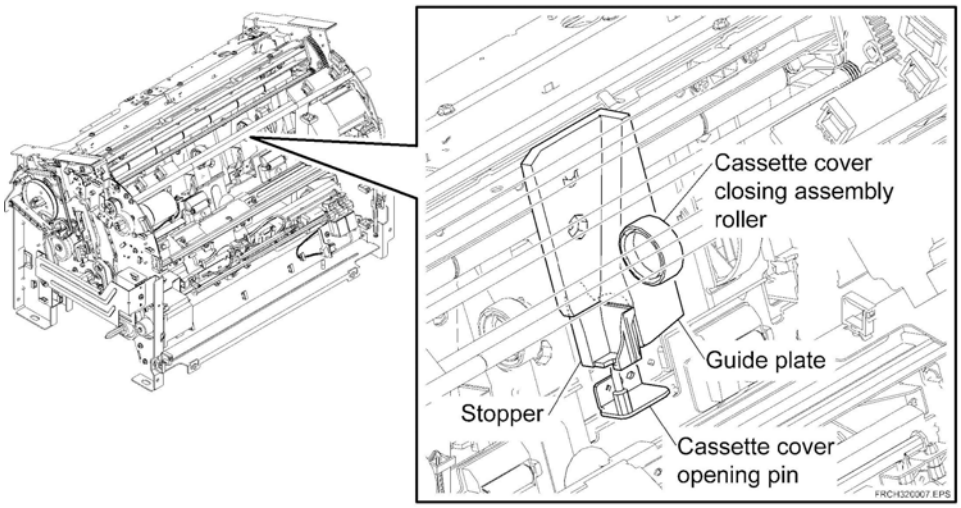
3.1 PCR READER

3.1.1 ELEVA S / S PLUS READER

3.1.1.1 Setup for inch cassettes

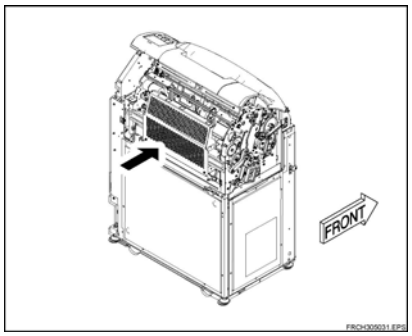
The Reader is factory set for metric cassettes. For using inch cassettes you need to adapt the cassette set unit and to change the software configuration.

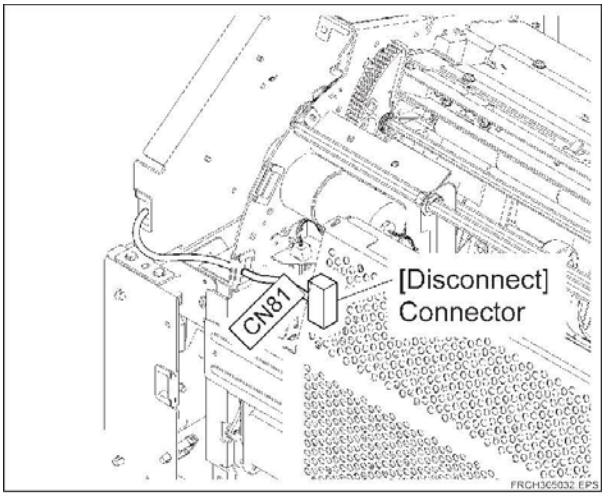
Parts whose mounting positions need to be changed:



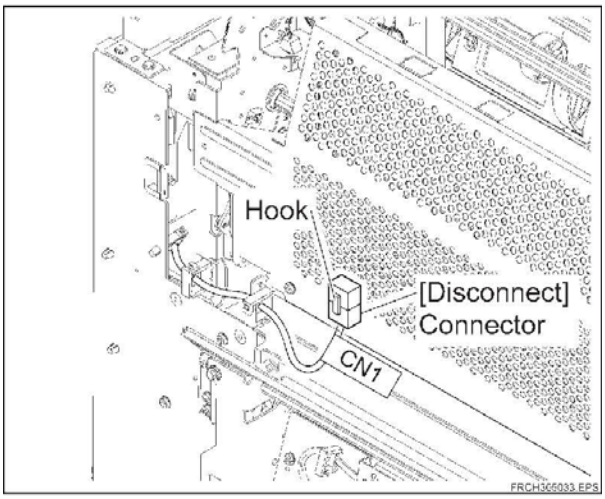
- Remove the following covers:
  - Front cover
  - Right-hand side cover
  - Rear cover
  - Left-hand side cover

- Disconnect the connector CN81.

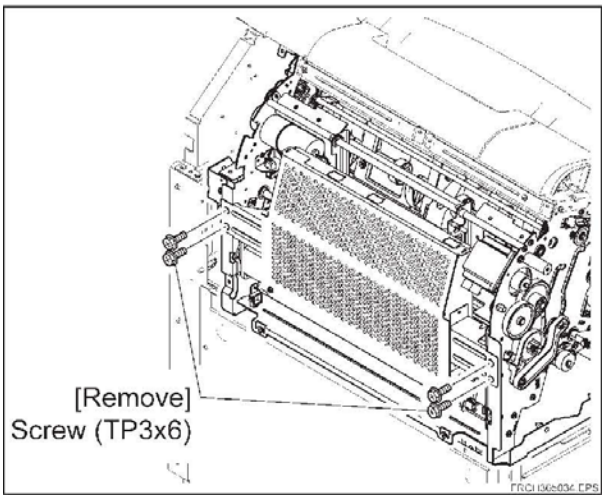




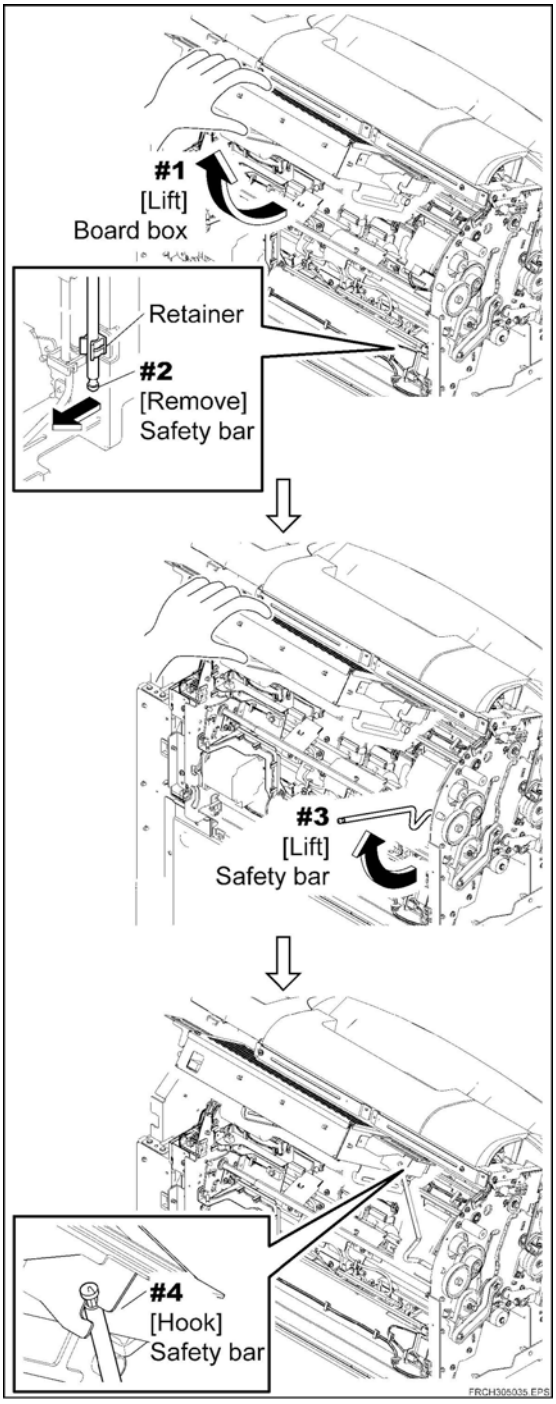
- Disconnect the connector CN1 while pushing the hook of the connector.



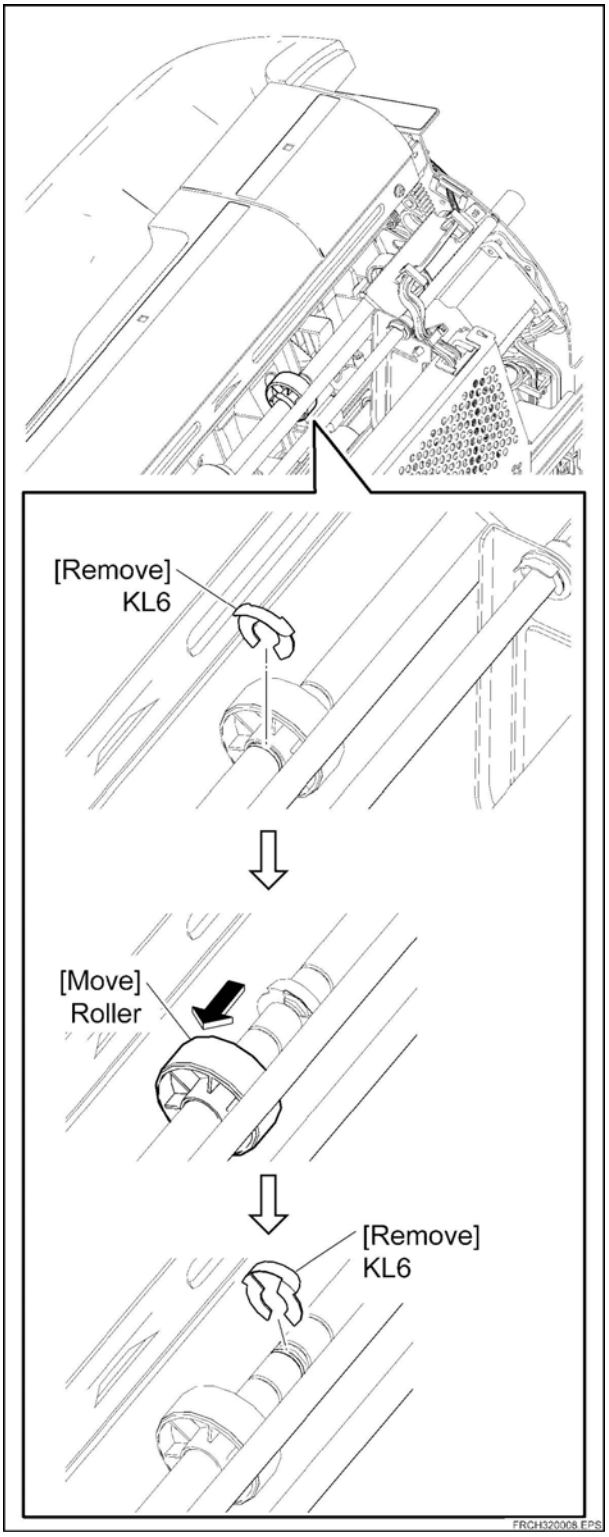
- Remove 4 screws.



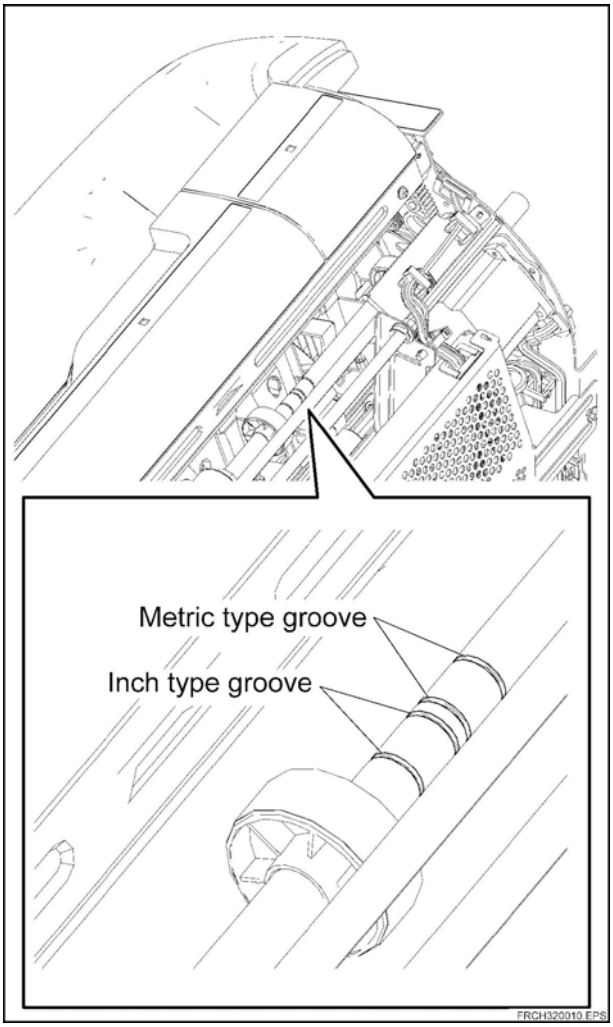
- Lift the board box and remove the safety bar from the retainer. Lift the safety bar and hook it on the bracket of the board box.



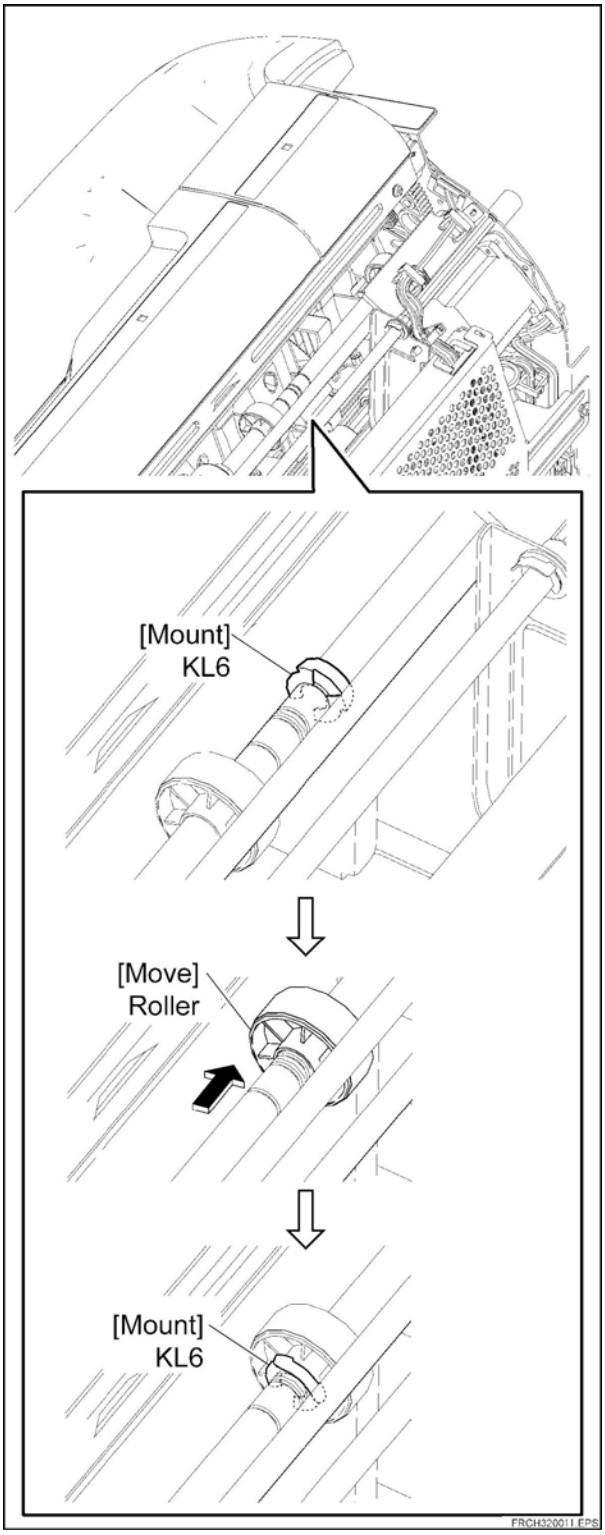
- Remove the KL ring that retains the roller left-hand side. Move the roller leftward, and then remove the KL ring that retains the roller right-hand side.



- Locate the roller mounting position and KL ring mounting grooves in accordance with the IP type (inch/metric).



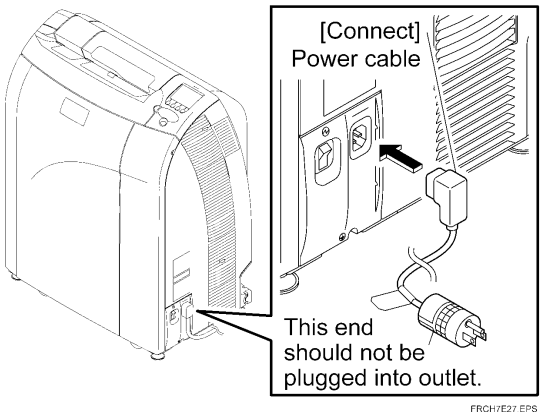
- Mount the roller right-hand side retaining KL ring in the grooves. Move the roller rightward, and then mount the roller left-hand retaining KL ring.

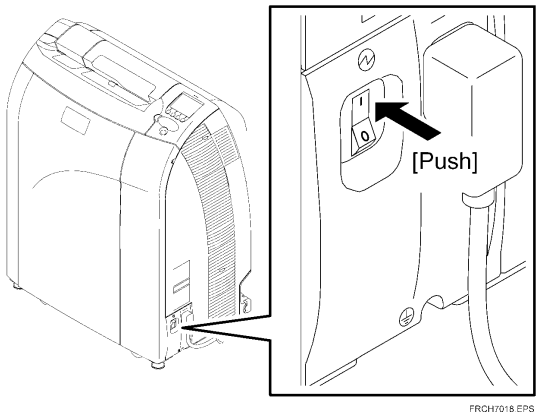


- Close the board box
- Reinstall the covers:
  - Left-hand side cover
  - Rear cover
  - Right-hand side cover
  - Front cover

3.1.1.2 Connecting the cables

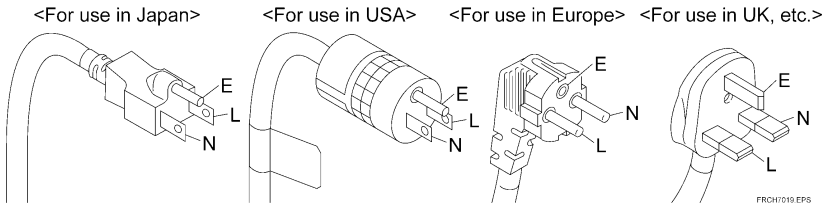
- Connect the power cable to the Reader, and place the breaker switch in the ON position.



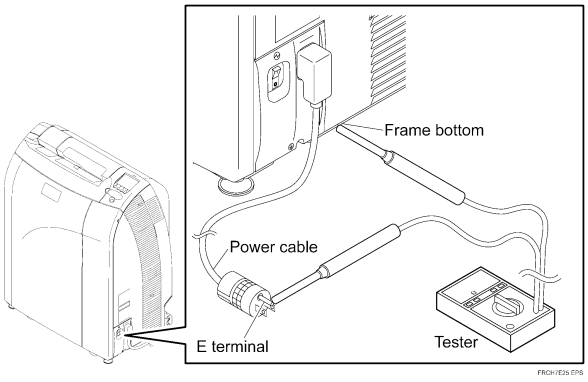


- Measure the resistance value of the power cable.

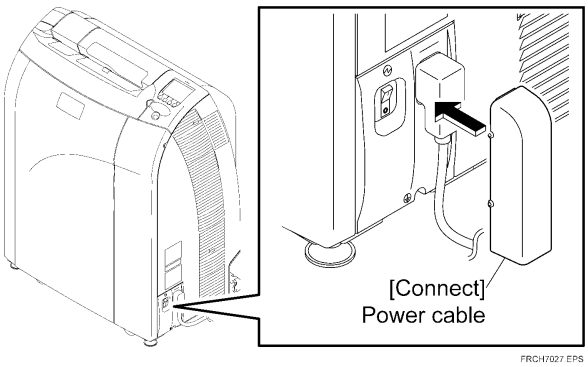
Terminal	L - N	L - E	N - E
Resistance value	100kΩ -	∞	∞



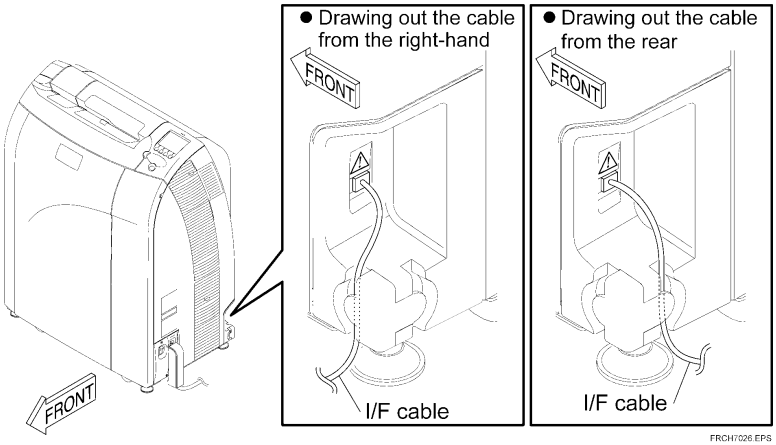
- Measure the resistance value between the E terminal of the power cable and the bottom of the machine frame, and make sure that there is continuity.



- Place the breaker switch in the OFF position.
- Install the power cable cover.



- Connect the network cable (STP cat 5 or better) to the Reader and a switch.

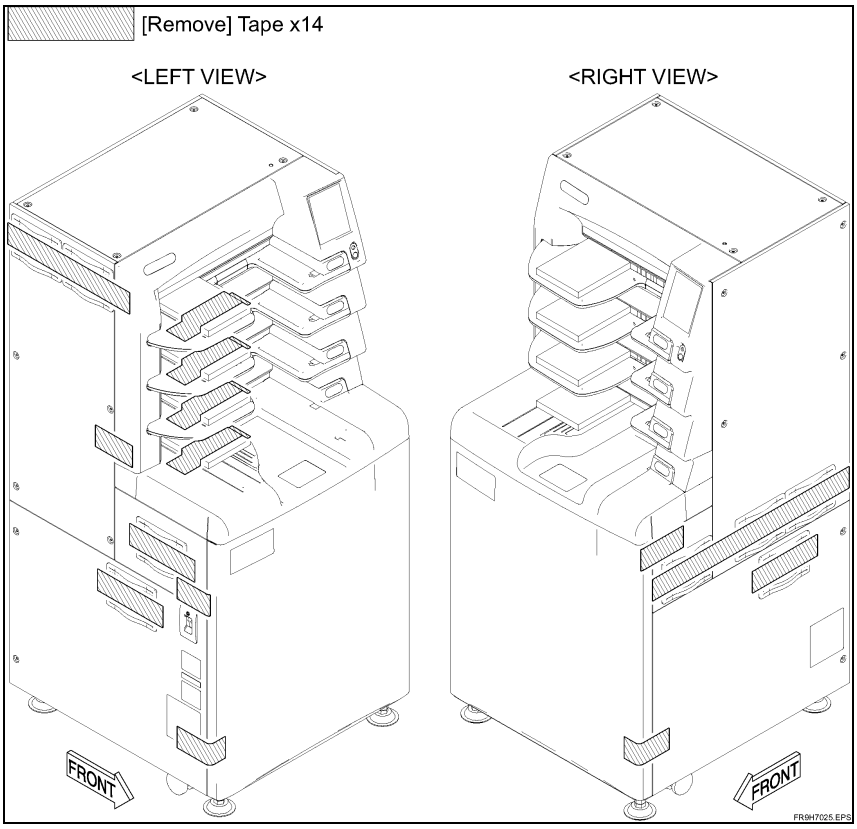


- Plug the power cable into the wall outlet.

3.1.2 COSIMAX / CORADO / ELEVA S HI-RES READER

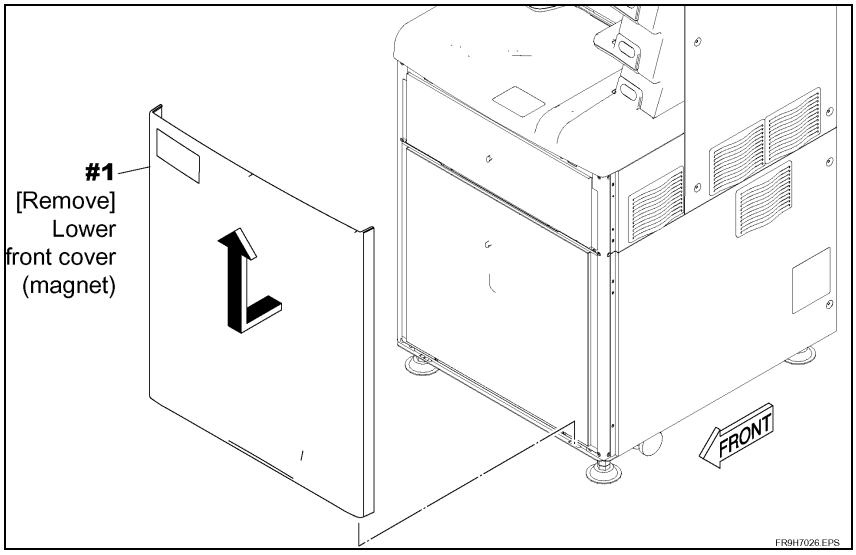
3.1.2.1 Removing Tapes from the Machine

- Remove the tapes.

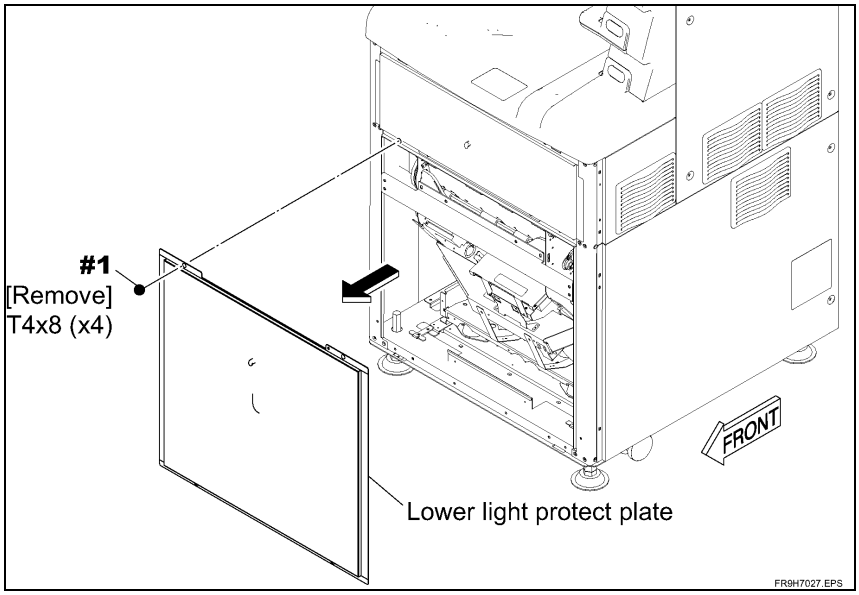


3.1.2.2 Removing the Light Protect Plates

- Remove the lower front cover.



- Remove the lower light protect plate.

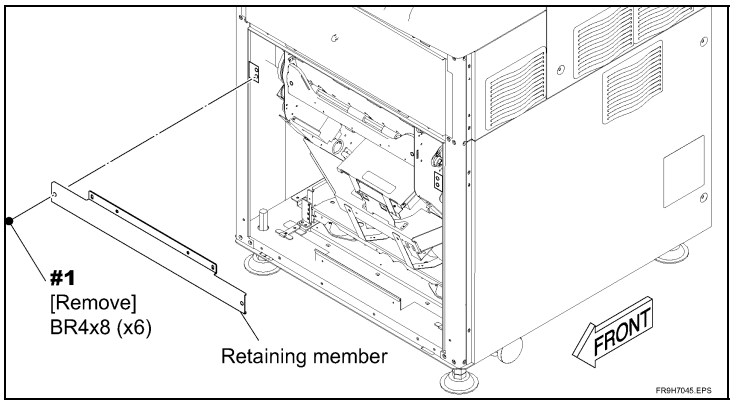


3.1.2.3 Repositioning the Retaining Members

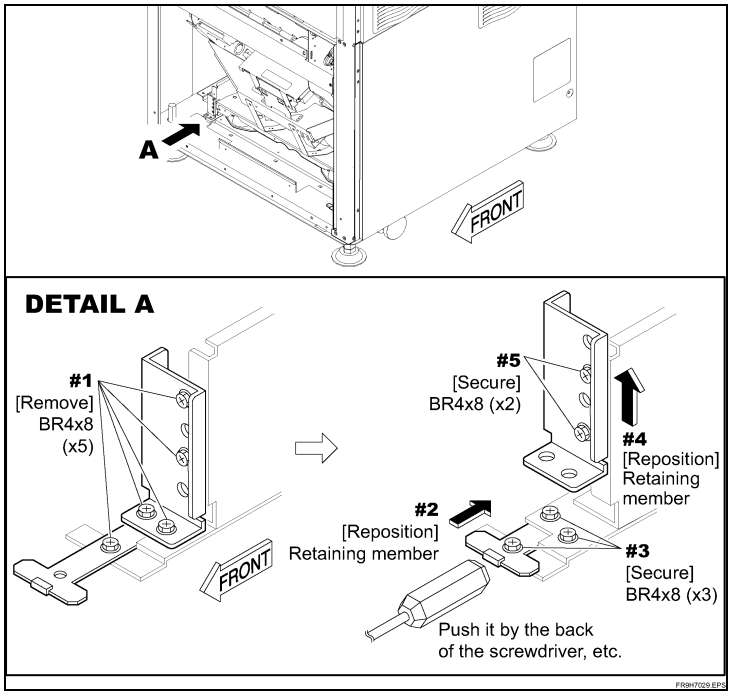
REFERENCE

The retaining members may be removed along the rope.

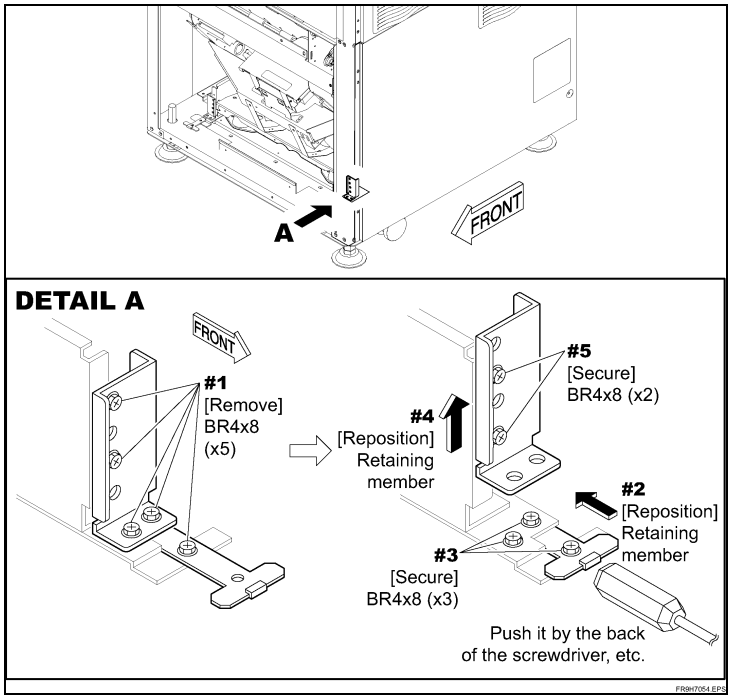
- Remove the upper retaining member.



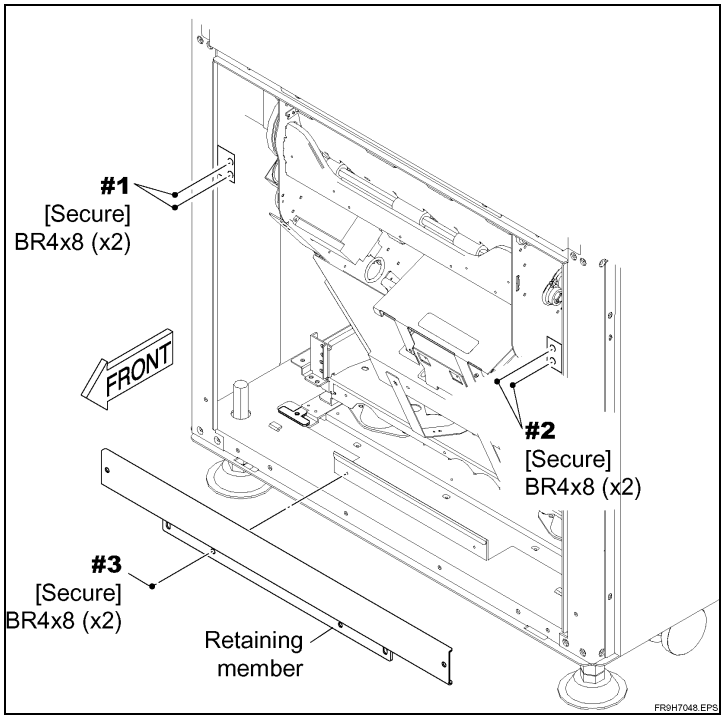
- Reposition the lower retaining members.



- Reposition the lower retaining members.

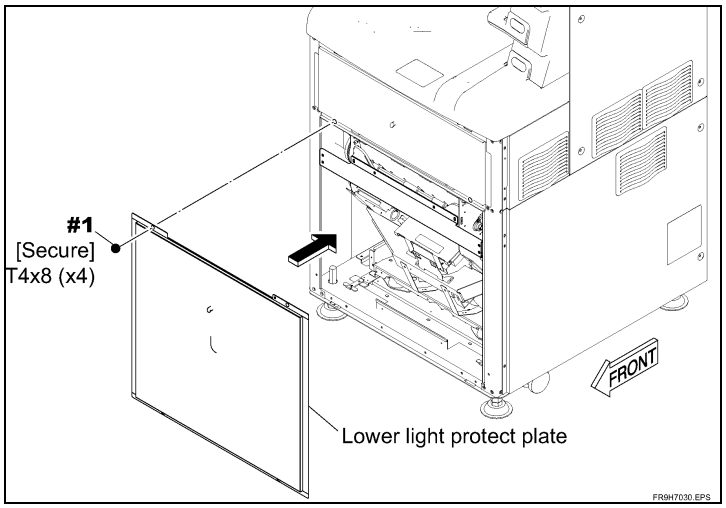


- Attach the screws and upper retaining member.

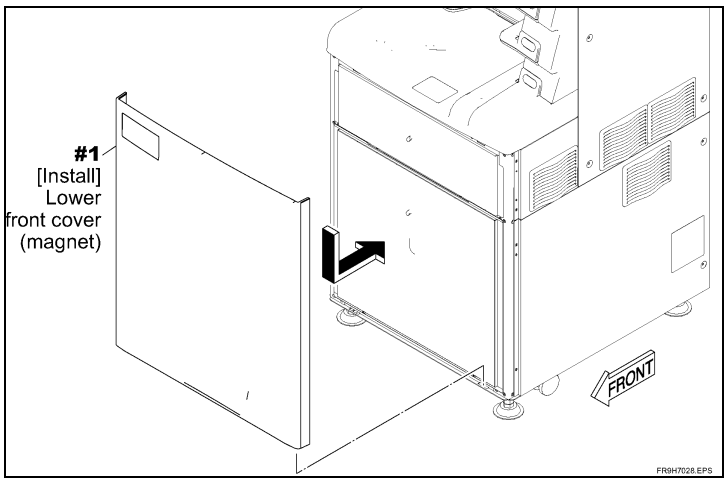


3.1.2.4 Installing the Cover

- Install the lower light protect plate.



- Install the front cover.



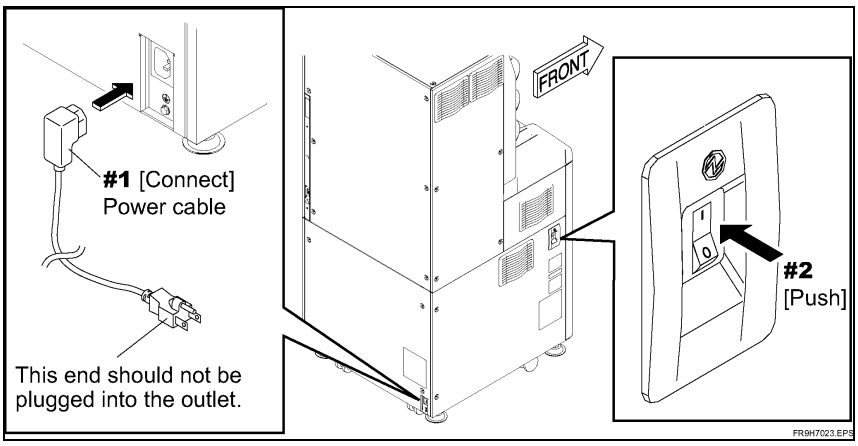
3.1.2.5 Connecting the Power Cable and Checking Resistance Value

CAUTION

Before measuring the resistance value, make sure that the power plug is unplugged from the outlet.

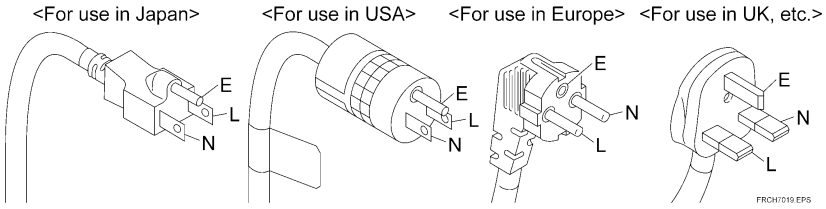
If the machine is to be installed in the patient environment, see "APPENDIX 1. ADDITIONAL PROTECTIVE GROUNDING."

- Connect the power cable to the machine, and place the breaker switch in the ON position.



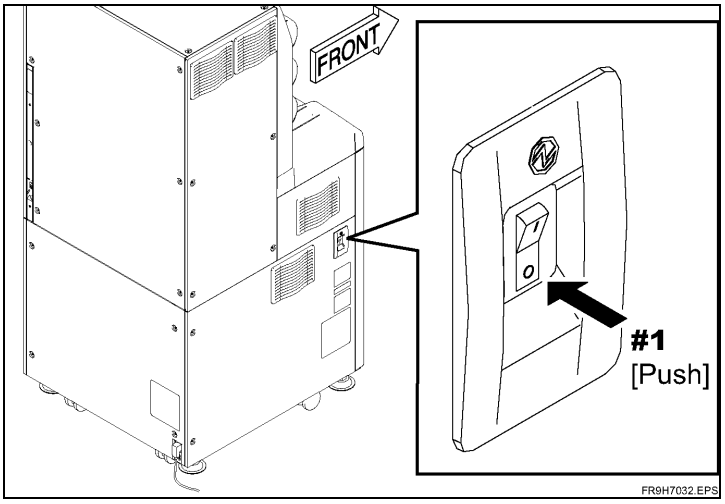
- Measure the resistance value of the power cable.

Terminal	L - N	L - E	N - E
Resistance value	100kΩ -	∞	∞



- Measure the resistance value between the E terminal of the power cable and the bottom of the machine frame, and make sure that there is continuity.

- Place the breaker switch in the OFF position.



3.1.2.6 Connecting the Interface Cable

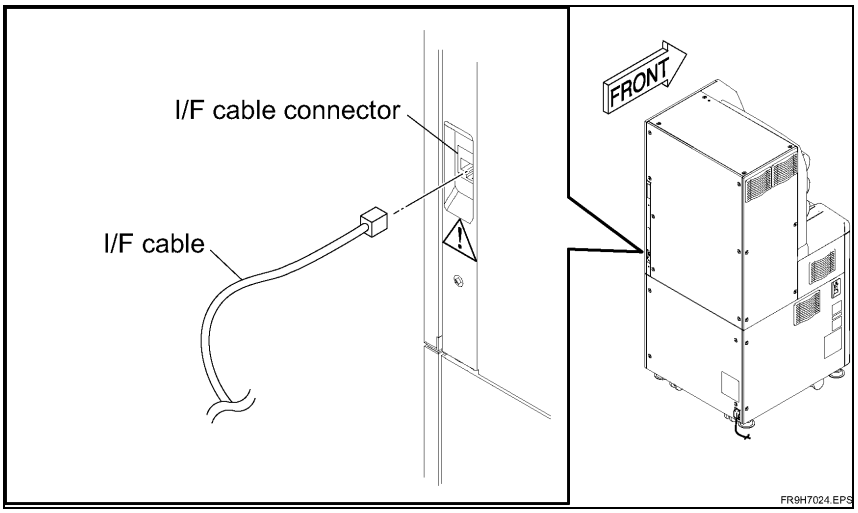
CAUTION

A telephone cable should not be plugged into the I/F cable connector.

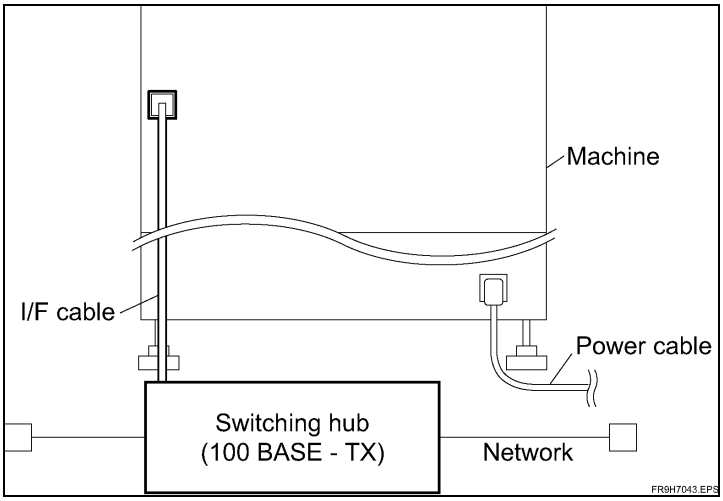
The type of cable compatible with this machine is an IEC950/UL1950-listed cable only.

For the I/F cable, only the straight cable of UTP type should be used.

- Connect the I/F cable to the I/F cable connector of the machine.



- Connect the I/F cable to the switching hub.



3.1.2.7 Final Placement

For final placement of the machine, check the requests of the user, and observe the procedures described below to secure the machine and cables in place.

When the machine is to be secured by use of the anchor nuts, see "Appendix 4. Securing the Machine with the Anchor Nuts"

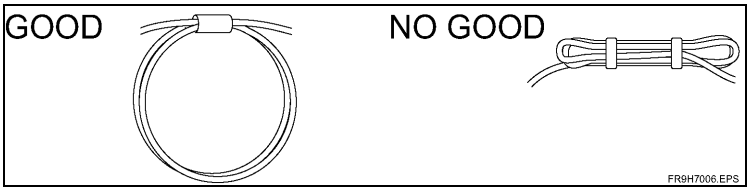
- Secure the Cable

CAUTION

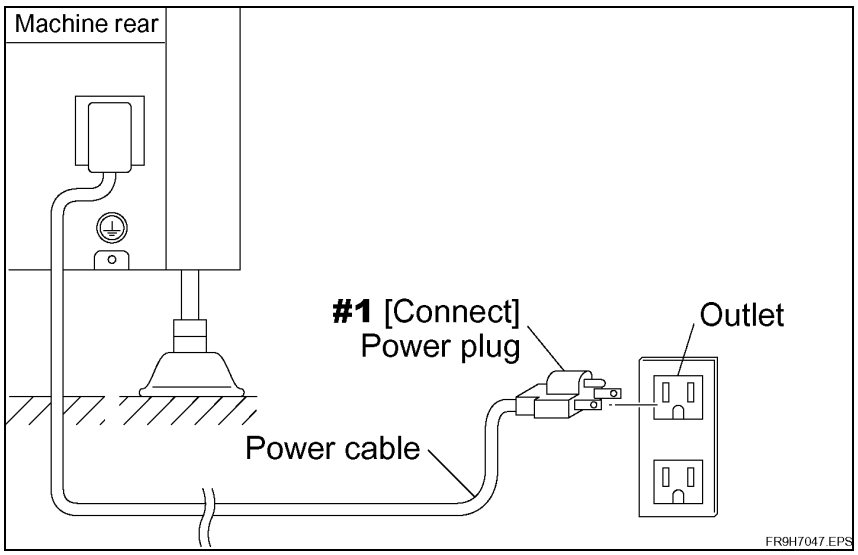
If the machine is to be installed in the patient environment, see "APPENDIX 1. ADDITIONAL PROTECTIVE GROUNDING."

CAUTION

Do not tie or bundle the power cable in such a manner that it is overloaded.



- Plug the power cable into the outlet.



- Secure the four adjustable feet down onto the floor.

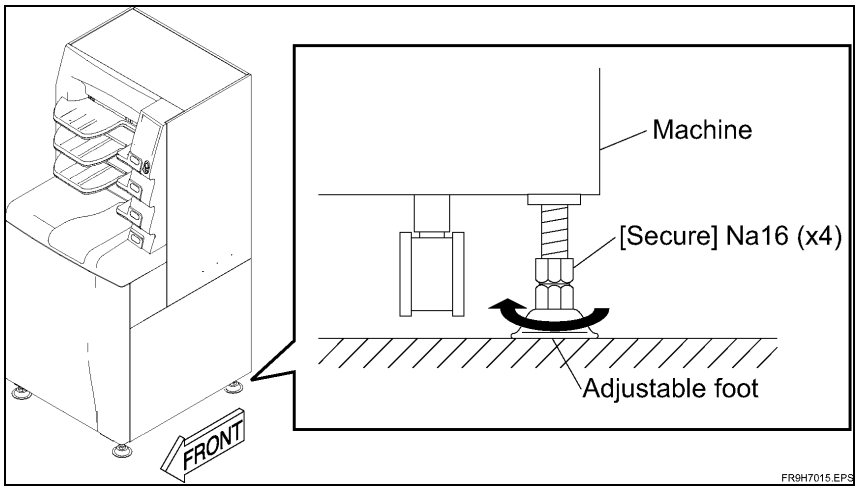
NOTE

When securing the adjustable feet, pay attention to the following points:

- The four adjustable feet should be evenly loaded.

  However, if there is too little space on the right and left sides in the machine installation place to secure the adjustable feet on the rear side, the two adjustable feet on the front side should be secured in place. In this case, the two adjustable feet and two casters should be evenly loaded.

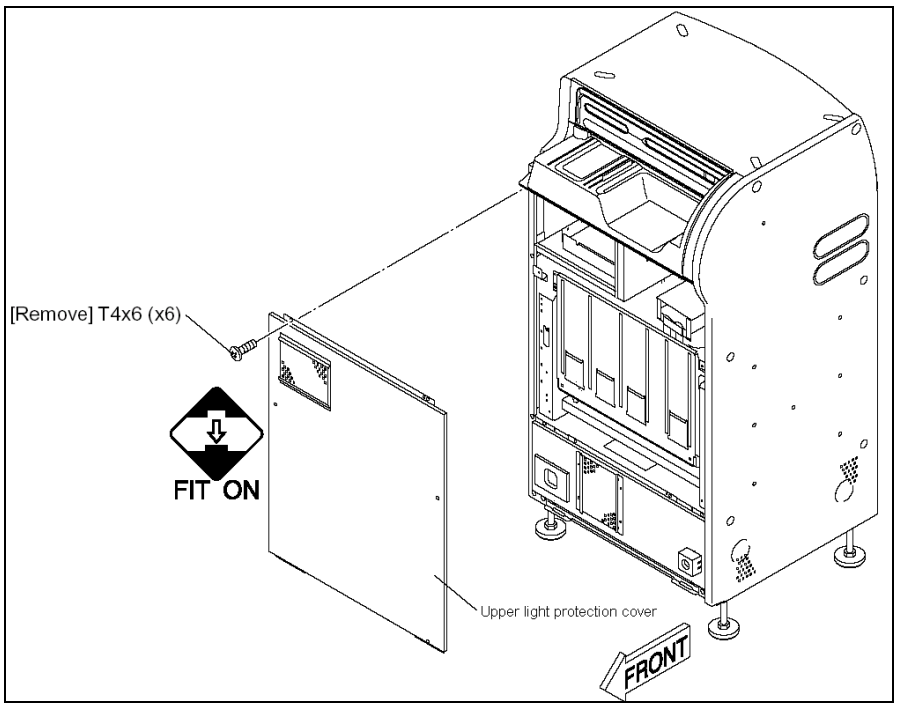
- When the adjustable feet are secured, the casters should be detached from the floor.



3.1.3 COMPANO READER

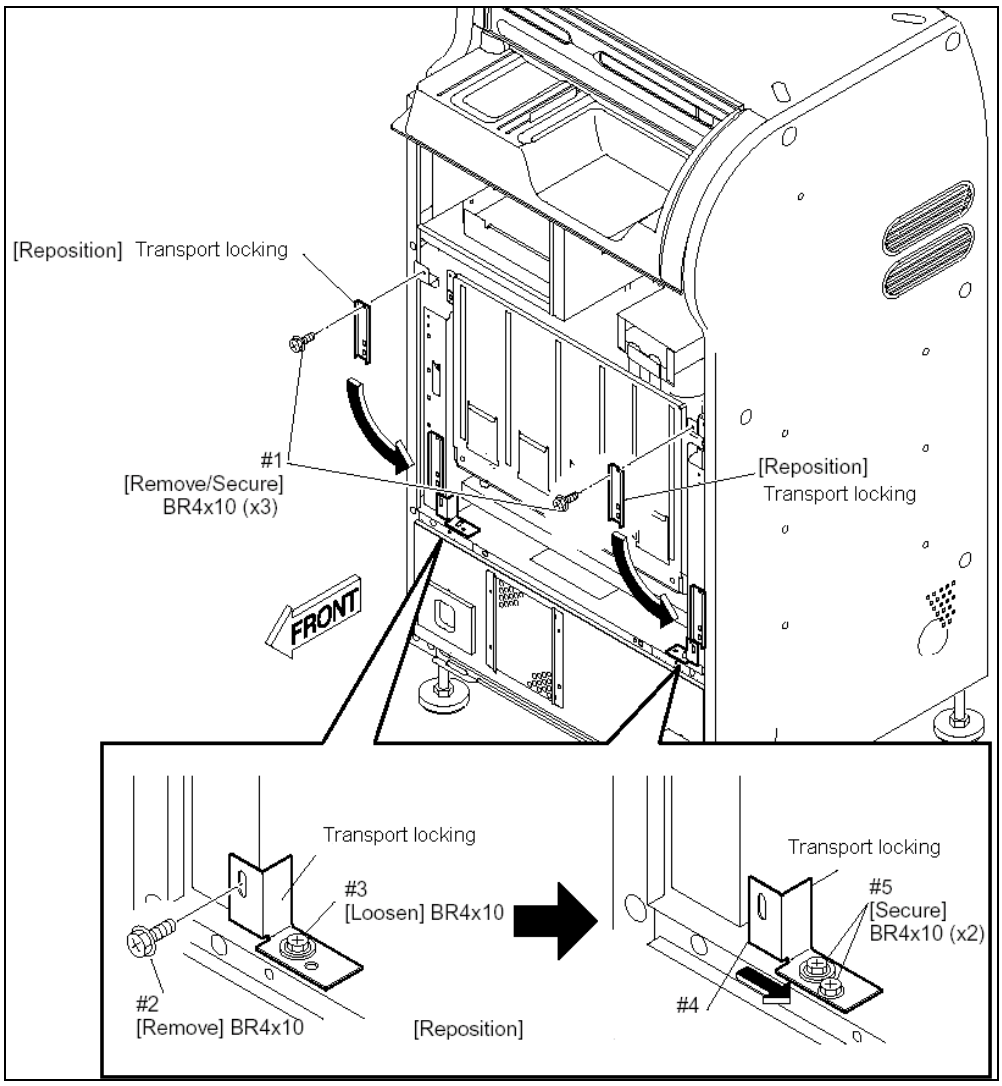
3.1.3.1 Removing the transport lockings

- Remove the upper light protection cover.



- Remove the 4 transport lockings and park them as shown. One screw for each of the right and left lockings removed at step #2 should be used at step #5.

  The transport lockings may be removed along the rope.



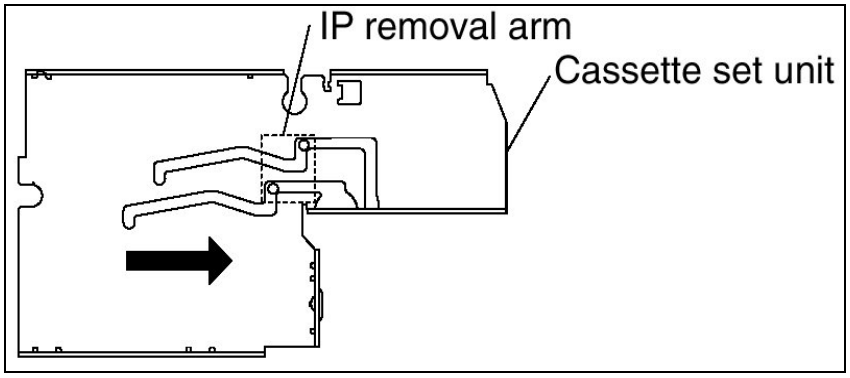
- Re-install the covers.

3.1.3.2 Setup for inch cassettes

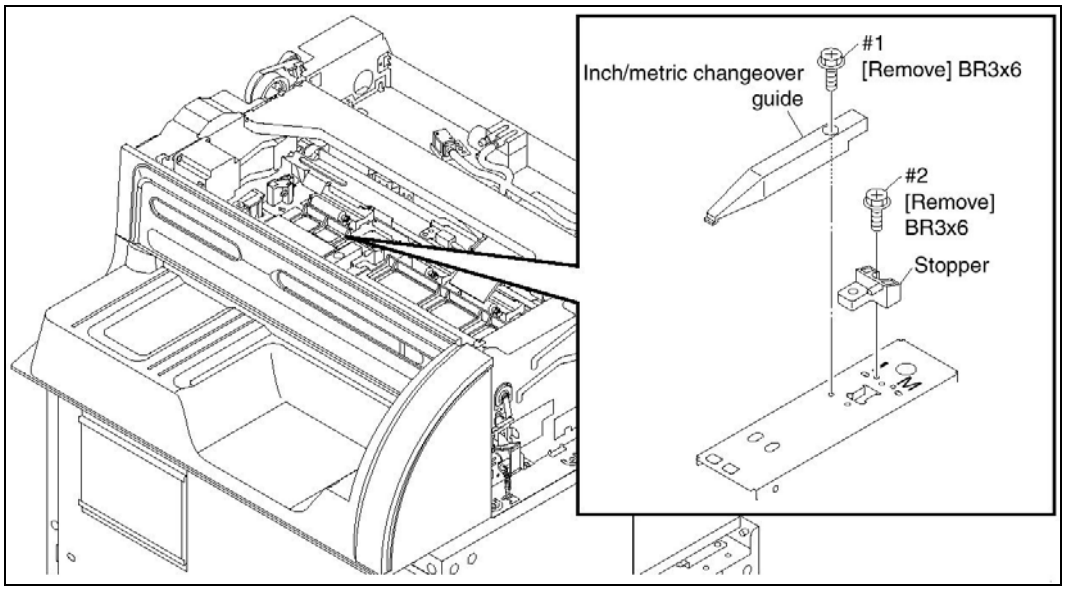
The Reader is factory set for metric cassettes. For using inch cassettes you need to adapt the cassette set unit and change the DIP switch settings on the CPU board. Please follow the instructions below.

- Remove the covers:
  - Front cover
  - Right-hand side cover
  - Left-hand side cover
  - Top cover

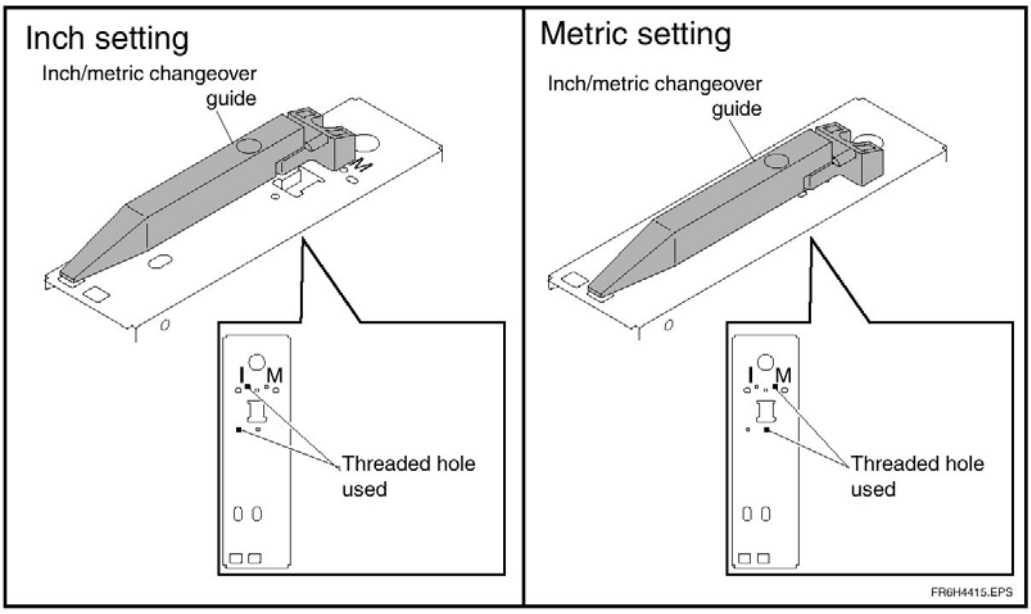
- Move the IP removal arm to its home position before performing the procedures.



- Remove the inch/metric changeover guide.



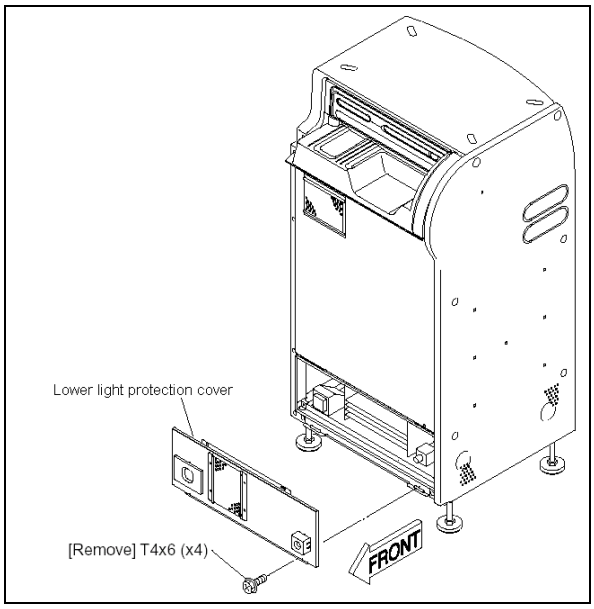
- Install the inch/metric changeover guide as instructed in the illustration below according to the setting selected.



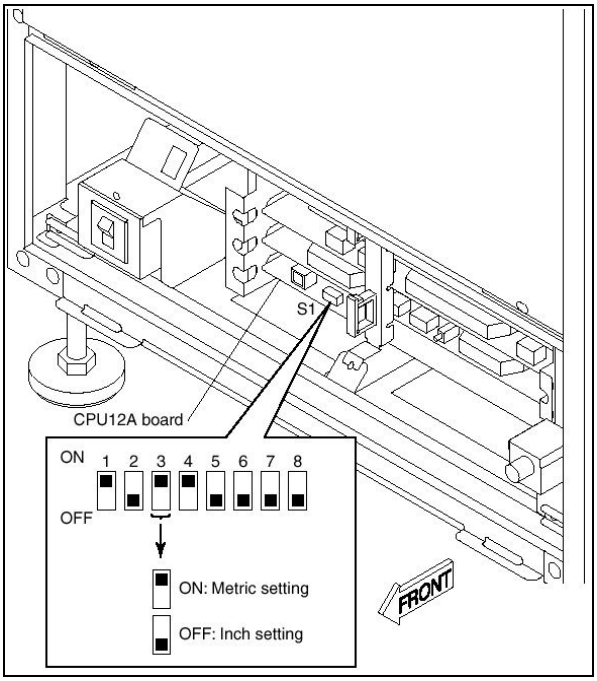
- Re-install the covers.

3.1.3.3 Checking the CPU settings

- Remove the lower light protection cover.



- Check the DIP-switch settings on the CPU board.



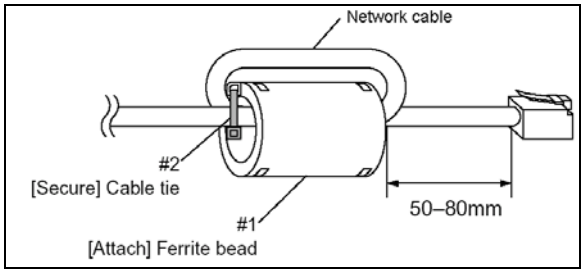
Set switch 3 according to the cassette sizes used.

- Reseat the lower light protection cover.
- Reseat the front cover.

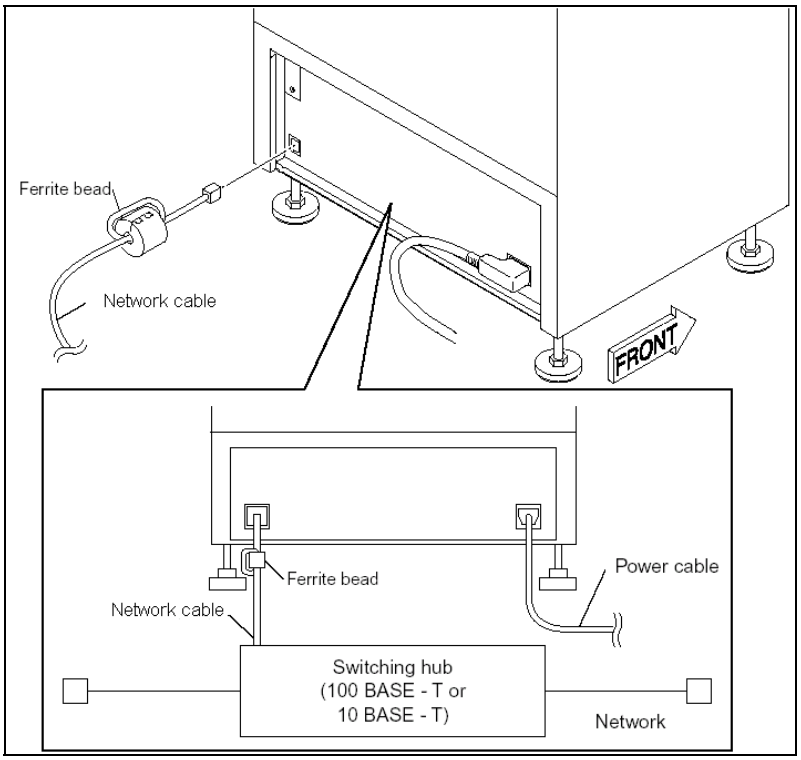
3.1.3.4 Connecting the cables

Either the UTP type or STP type for the network connection may be connected to the Reader. However, even when the cable is of shielded type (STP type), the ferrite bead should be attached to it.
Make sure that 50 to 80 mm of the cable protrudes from the ferrite bead on the side you will install attach to the Reader.

- Attach the ferrite bead to the network cable.



- Connect network and power cables to the Reader.



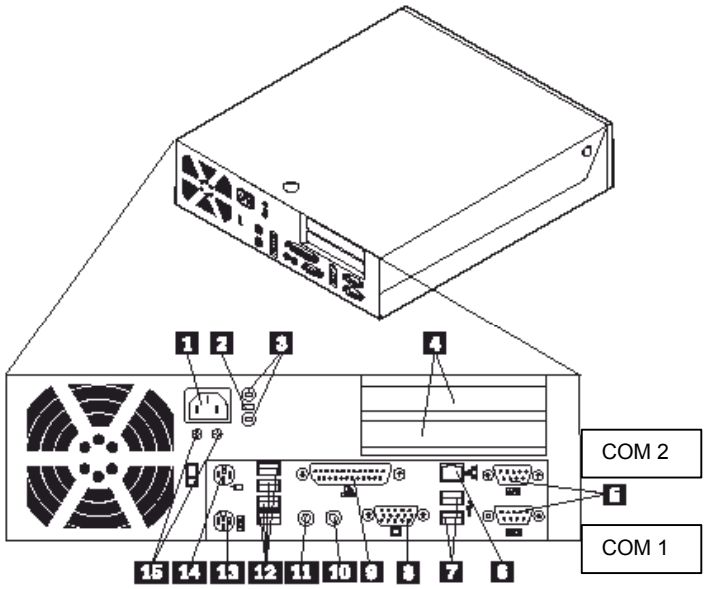
- Do not switch on the reader yet.

3.2 WORKSPOT PC

3.2.1 LOCATION OF CONNECTORS

For installing the PC itself please observe also the original IBM installation instructions delivered with the PC.

1. Power cord connector
2. Cable lock latch
3. Rope clip holes
4. DVI-D Connection Adapter
5. Serial connectors (lower = COM 1)
6. Ethernet connector
7. USB connectors (2)
8. VGA monitor connector
9. Parallel connector
10. Audio line-in connector
11. Audio line-out connector
12. USB connectors (4)
13. PS/2 keyboard connector
14. PS/2 mouse connector
15. LEDs



3.2.2 POWER CORDS

In some cases, the power cord supplied with this system may not be compatible with the AC wall outlet in your country. If this is true, you must obtain a suitable power cord that meets the following criteria:

- The cord must be rated for use at the AC voltage available, with a current rating that is at least 125% of the current rating of the product.
- The AC plug end must be terminated in a grounding–type male plug designed for use in your country.
- The cord must be labeled or marked to indicate it has been certified by an agency acceptable in your country.
- The connector at the product end must be an EN60320 female connector (or the equivalent IEC 320 connector, sheets C13-14).
- The cord must be less than 4.5 m (14.8 feet) long and be created with <HAR> (harmonized) cordage.

3.2.3 INPUT VOLTAGE SELECTION

- Select the AC input voltage range: 115 V or 230 V (default: 230 V)

3.2.4 WIRING

- Connect the mouse and the standard (US) keyboard.

NOTE

If you want to use a country specific keyboard, this should be connected later (see further install descriptions).
Start your work with the default (US) keyboard!

- Connect the monitor cable.
- If applicable, connect the RS232 or USB cable of the touch screen monitor to COM1 respectively to the USB port.

NOTE

Do not use the 2 USB ports below the Ethernet connector (marked as 7).
They may produce problems!

- Connect the patch cable to the network. **During setting-to-work a separate switch is recommended.**
- Connect the power supply cable.

3.2.5 CERTIFICATE OF AUTHENTICITY

The **Certificate of Authenticity** for Windows ® XP embedded is filed in the CE- folder delivered with each PCR system. The license sticker must not be fixed to the PC. Keep it with the original system documentation.

- Check for existence of the license and the license sticker inside the CE folder.

3.3 BARCODE SCANNER

The barcode scanner for PCR Eleva is a **HHP - Hand Held Linear Imager - Imageteam 3800/3900**
Other scanners will not work.

- Connect the USB barcode scanner to one of the USB ports (rear 4-port block) of the workspot.
- Mount the holder at the wall or place it on the desk.

3.3.1 SETTING THE BARCODE SCANNER

Before you use the barcode scanner to link an image plate, scan the 4 following bar codes as minimum programming:

3.3.1.1 Factory Defaults

Resets your imager to default settings (see manufacturer manual 12-1).

3.3.1.2 USB Terminal Interface

Programs the imager to work as a USB Keyboard Device (see manufacturer manual 1-11).

3.3.1.3 Auto Trigger

Hands free, scans continuously at full power (see manufacturer manual 3-5).

3.3.1.4 Reread Delay = Long (1000ms)

Sets a delay before the imager can read the same bar code again.
Avoids scanning the same IP twice (see manufacturer manual 3-3).

3.3.1.5 Scanning patient and examination data

If the customer wants to use the barcode scanner to enter barcoded patient and examination data, the scanner has to be programmed for the proper keyboard country (see manufacturer manual 2-4).

For a carriage return suffix see manufacturer manual 4-3.

For further programmings like symbology (default: code 39) etc. see the original manufacturer manual.

3.4 EASY VISION RAD (OPTION)

The EasyVision RAD is a temporary option used for stitching images and recording on CD.

That's why it isn't fully integrated here and the specific service manuals have to be used.

- Unpack the EasyVison RAD and its components including the monitor.
- If applicable, set the power selector switch of the computer to the correct mains voltage.
- Connect the hardware components of the EasyVision RAD like monitor and external CD writer according to the belonging sub-system service manual .
- Connect power cable to mains.
- Connect network cable (STP) to the network.

4 SETTING-TO-WORK

4.1 PRECONDITIONS

4.1.1 LOCAL MATERIAL

- If necessary, AC socket boards
- If necessary, network cable in sufficient length (2 x 3m come with each workspot PC)
- At least one network switch or hub in order to
  - connect workspot PC and PCR reader
  - configure each workspot PC

4.1.2 NETWORK DATA

When the system will be hooked up to a network, please refer to the information in the network questionnaire (4512 982 00491) or in the network data template (4512 982 02071). Both documents are part of the Planning Reference Data (PRD) and should already be filled during the site preparation phase!.

If the required data is not yet available, the default installation time will be exceeded. Contact the network administrator now for getting the network questionnaire filled. Use the network data template at the end of this SMI.

4.1.3 NAMING CONVENTIONS FOR PCR ELEVA WORKSPOTS

The default names for
- Local system ID
- Application Entity Title (AET)
- Host name

are set to "**PCREleva01**".
These defaults can be used without further changes whenever a standalone system is installed.

Unique system naming
A unique system naming within one location/hospital is a basic requirement for later retrieval of each unit.
So if setting up a cluster with multiple PCR Eleva workspots, it is recommended to keep the first part of the name "**PCREleva**" and just to alter the attached number ("**PCREleva01**", "…**02**", "…**03**" etc.).

If setting up several clusters of PCR Eleva workspots in a larger hospital environment, start with e.g. "**PCREleva01**", "…**02**", "…**03**" for the first cluster, then use "**PCREleva11**", "…**12**", "…**13**" for the next one, and so on.

This depends, of course, on the available information and the naming conventions on site.

4.1.4 ADDITIONAL INFORMATION

Please note that a lot of useful information is available within the Help Area of the Field Service Framework (FSF). At the right hand side of most FSF procedures, dedicated help information is available for parameters, settings and for the usage of the procedures.
Configurations are done via FSF, **customizations** are done via the User Interface (UI) of the PCR Eleva application software.

The descriptions in this manual are valid for a first time installation and setting-to-work of a new PCR Eleva system.

In case of a software (SW) upgrade or a SW re-installation, follow the instructions in the Release Bulletin.

4.2 WORKSPOT PC

4.2.1 PREPARATIONS

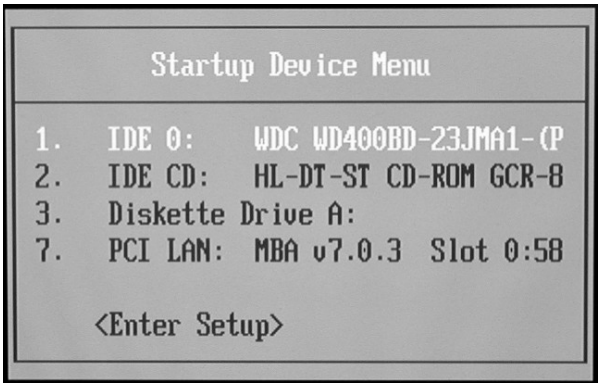
- Switch on the workspot PC and the monitor.
- Insert the CD-ROM **PCR Eleva Operating System Software Disc 1**.
- Switch off the workspot PC.
- Make sure that the workspot PC is not connected to the local network!

4.2.2 SETTING THE BOOT SEQUENCE OF THE WORKSPOT PC

- Switch on the workspot PC and during PC startup, immediately press <**F12**>.

For an ***IBM Netvista M42***, a Startup Device Menu as shown on the right will appear.

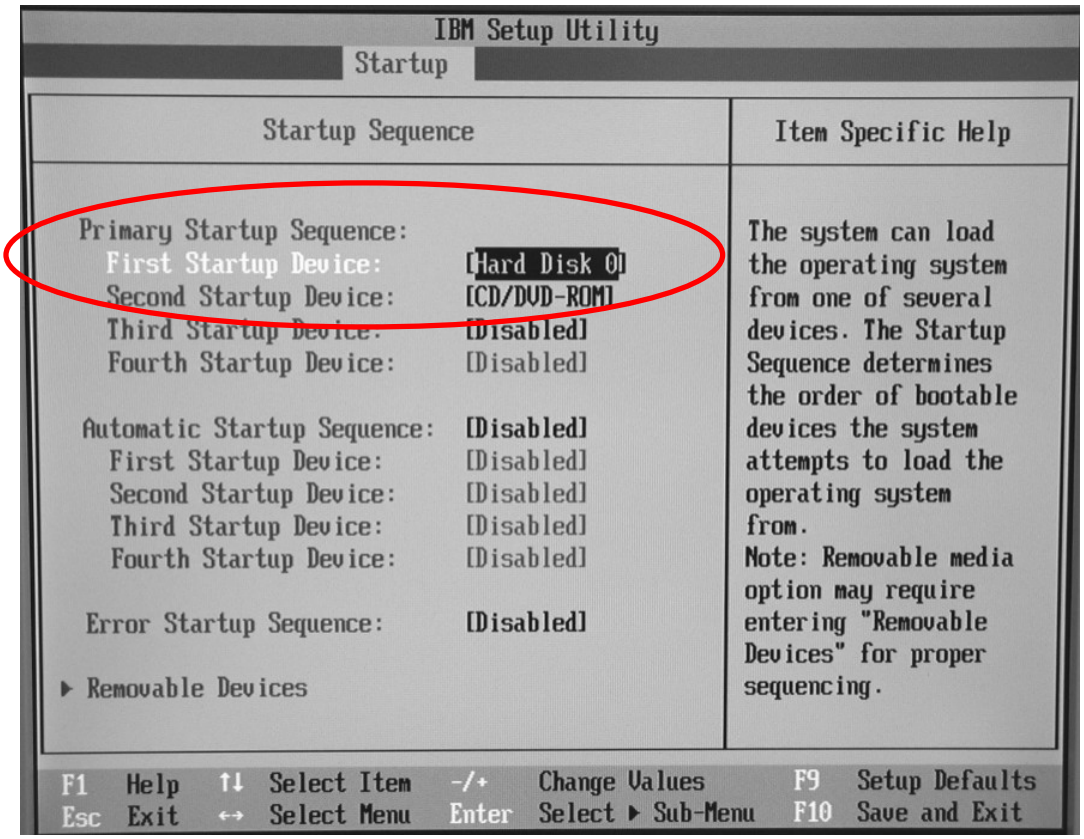
For an ***IBM ThinkCentre S51***, a Startup Device Menu as shown on the right will appear.



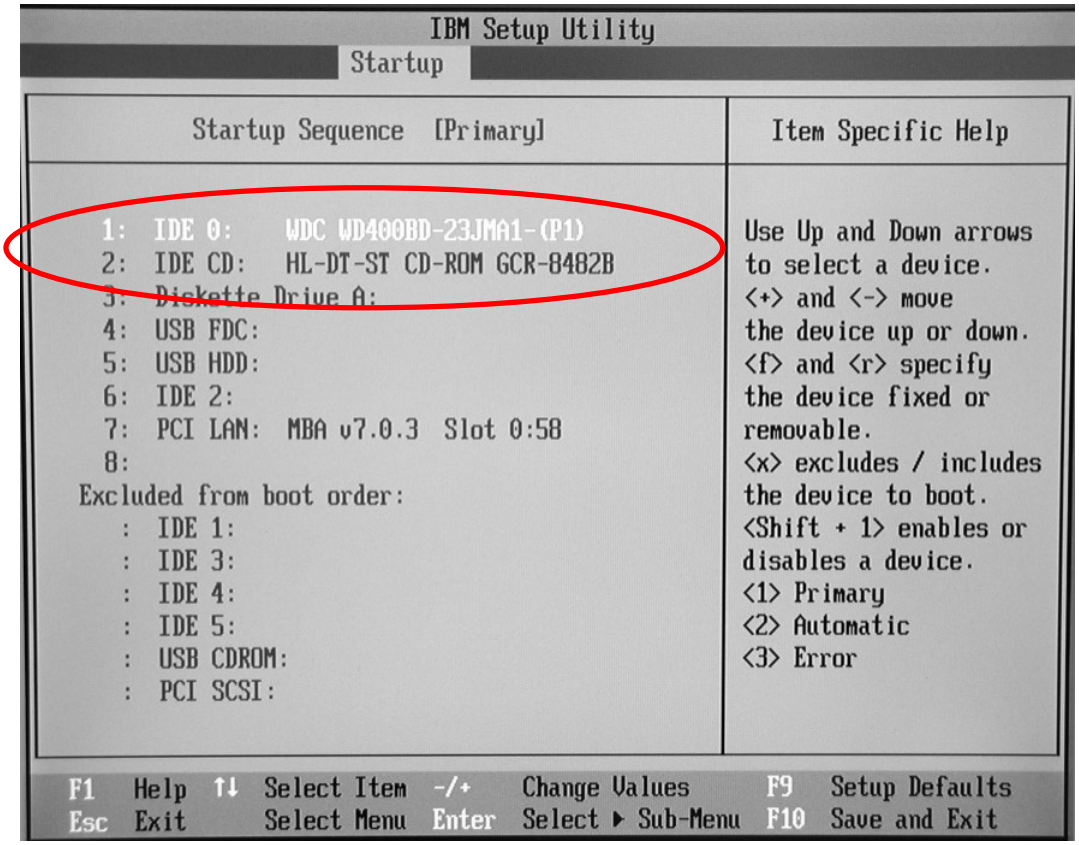
- Check the order of the startup devices:
  - If the displayed sequence **equals** the one shown above, select the **2. item** (i.e. the CD-ROM Drive) and press <**Enter**> so that the system temporarily boots from CD! Proceed with 4.2.3 Installing the operating system software .
  - If the displayed sequence **differs** from the one shown here, select <**Enter Setup**>, go to **Startup** and change the primary startup sequence permanently to:

IBM Setup Utility		
Startup Sequence [Primary]		
	IBM Netvista M42	***IBM ThinkCentre S51***
1.	First Startup Device: [Hard Disk 0]	IDE 0: WDC xxxx
2.	Second Startup Device: [CD/DVD-ROM]	IDE CD: xxx CD-ROM xxx

For an ***IBM Netvista M42***, the setup must look like this:



For an ***IBM ThinkCentre S51***, the setup must look like this:



.

- After changing the startup sequence, press <**F10**> to save your changes.
- The PC will reboot now. During the following PC startup, immediately press <**F12**> again.
- The Startup Device Menu as shown on the previous pages will appear. Select the **2. item** (i.e. the CD-ROM Drive) and press <**Enter**> so that the system temporarily boots from CD!

4.2.3 INSTALLING THE OPERATING SYSTEM SOFTWARE

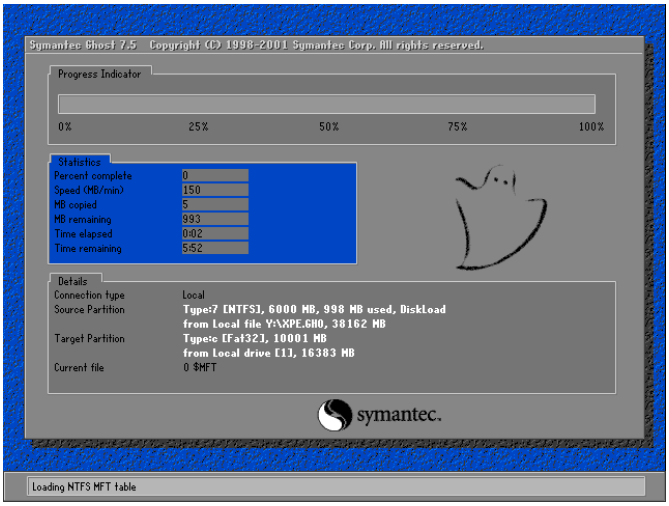
- After booting from the CD-ROM **PCR Eleva Operating System Software Disc 1**, the MS-DOS Startup Menu appears:

MS-DOS 6.22 Startup Menu

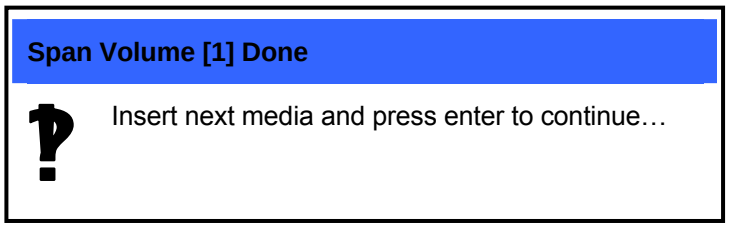
1. Install OS completely (Win XPe for IBM M42 / S51) - deletes all inst. SW
2. Transfer OS only (Win XPe for IBM M42 / S51) - applicat. SW will remain
3. Exit

Enter a choice: 1

- The choice [**1.**] is preselected, so just press [**Enter**] to install the first part of the Operating System (OS) SW. The Symantec Ghost window informs you about the status of the installation:

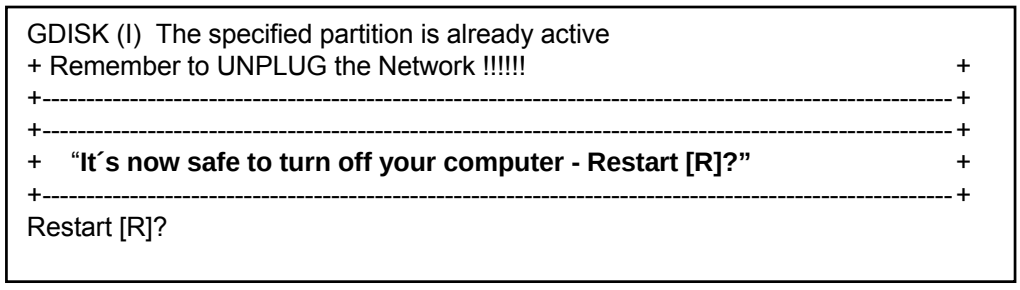


- After 5 – 10 minutes a message window appears:



- Replace the CD in the drive with the CD-ROM **PCR Eleva Operating System Software Disc 2**.
- Click the [**OK**] button or just press [**Enter**]. The second part of the automatic OS installation is now performed. The Symantec Ghost window continues to inform you about the status of the installation.

- After another 5 – 10 minutes, the OS installation is finished. The following message appears:



- Press [**R**] to restart the computer. Do not remove the CD yet!

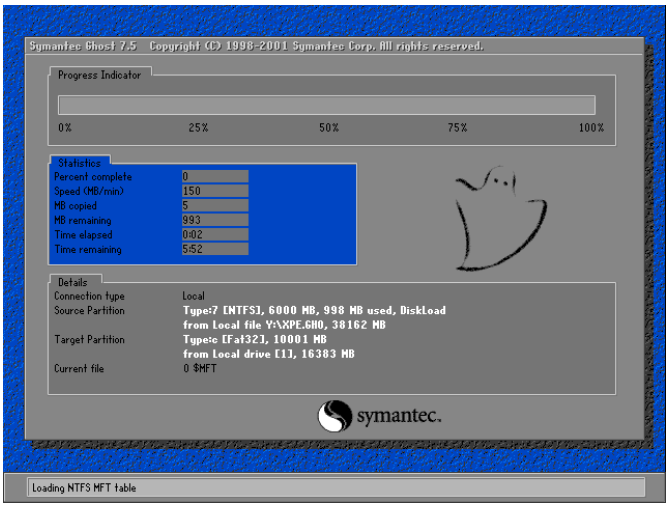
- The PC is now booting from the hard disc of the workspot PC and the following menu appears:

```
+-------------------------------------------------------------------------------------------------- +
+ Image Installation Tool                                                                           +
+-------------------------------------------------------------------------------------------------- +
…
…
+ Please insert either an
+  a)  Operatings System Image CD for update,  or
+  b)  Application Software Image CD
+  into the CD-Rom drive
+-------------------------------------------------------------------------------------------------- +
Press any key to continue . . .
```

- Remove the Operating System CD.

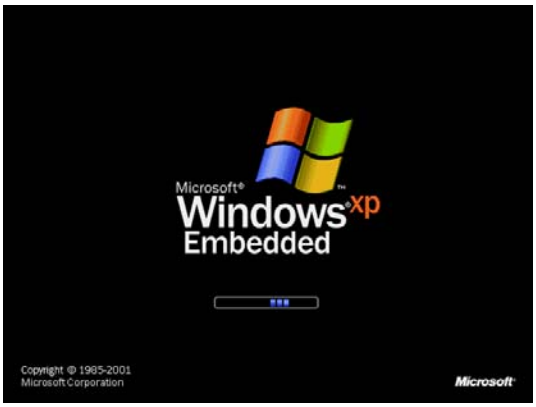
4.2.4 INSTALLING THE PCR ELEVA APPLICATION SOFTWARE

- Insert the **PCR Eleva application SW CD**.
- Press any key to continue.
- The Symantec Ghost window informs you about the status of the installation. Because the application SW will initially be installed on 2 partitions of the HD, the Progress Indicator will run through twice.



After approx. 10 minutes, the SW installation is finished. The system restarts automatically and the following installation process is initiated. The process will take several minutes – keep patient.

The WIN XPe screen appears:



This is followed by a blue screen. A DOS command window shows up – keep patient.

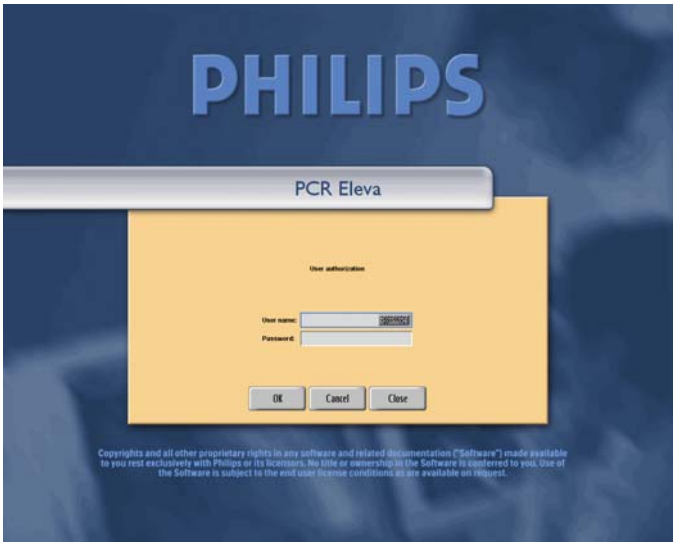
NOTE

If the message "System Settings Changed" (see below) is displayed during the startup process, just ignore it! ***Do not press the [Yes] button!***
The startup process will continue in the background.
Several restarts have to be done when further setting up the system, anyhow.

After a while, the PCR Eleva background screen comes up.

Another system reboot is initiated, Windows XPe shows up again, followed by the PCR Eleva background screen.

- Wait until the login screen of the PCR Eleva application SW appears permanently:



- Remove the Application SW CD.

4.2.5 STARTING THE PCR ELEVA APPLICATION SOFTWARE

- Log in as user “Service” or user “eleva”.
- **Do not insert your service hardware key (dongle) yet!**

  The system date and time is not properly set up yet. A security feature will always store the last dongle usage on the hardware key. The following use on a system with a time difference more than 36 hours (e.g. on this system after you have set the date and time correctly) will result in a lock of the dongle!
- Set the proper date via **UI: System → Administration → System administration**

NOTE

The time setting will be done later.

4.2.6 SELECTING THE MONITOR TYPE

- Switch to **UI: System → Quality assurance → Monitor**
- **Monitor settings** area:
  - Select the used monitor type. Currently, 3 types of monitors are available with the PCR Eleva system. There are two types of **17” touch** screens, the third is a **17” color** (non touch). The specific drivers for these monitors are part of the customized operating system SW.
  - Select the Viewing conditions. If in doubt, leave “Normal light”.
- **Verification** area:
  - Press the [**Apply**] button.

Do not perform the individual monitor LUT calibration yet.

- **Calibration** area:
  - If a touch monitor is used, press [**Touch Screen Adjustment**] to activate the touch screen calibration. Follow the descriptions on the monitor.

    In case additional touch monitor settings need to be adapted (e.g. the sound volume), use the key combination <**Ctrl**> + <**Alt**> + <**t**>

4.2.7 INSTALLING THE APPLICATION LICENSES

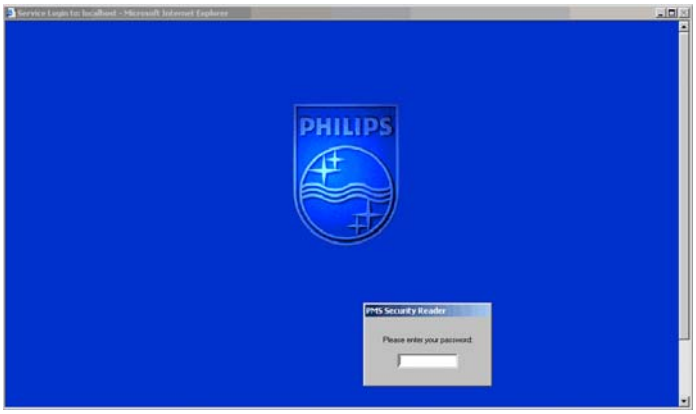
- Switch to **UI: System → General**
- Insert media with application license file.
- Press [**Import**] and browse to media with license file. The SW automatically scans all external devices and directories (CD/DVD, USB device, service partition).
- When finished, an automatic restart will be initiated by the SW.

4.2.8 STARTING THE FIELD SERVICE FRAMEWORK (FSF)

- Insert your service hardware key (dongle) into one of the USB ports.
- Start the Field Service Framework (FSF) via **UI: System → General** Service Tool [**Start**] or via the key combination <**Ctrl**> + <**Alt**> + <**s**>.

NOTE

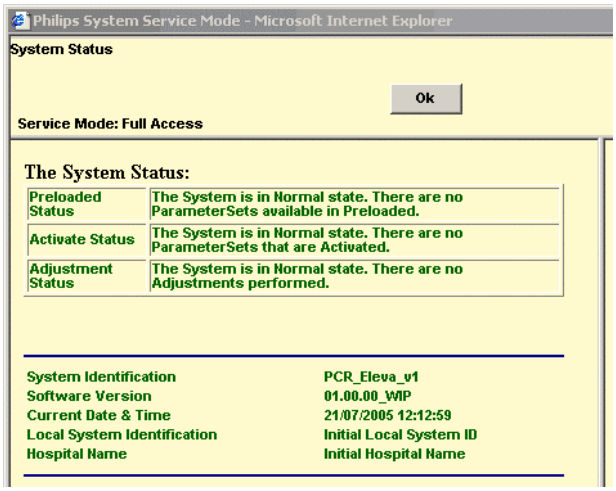
The FSF can be started with the shortcut <Ctrl> + <Alt> + <s> from any task area of the UI as well as from the login screen.



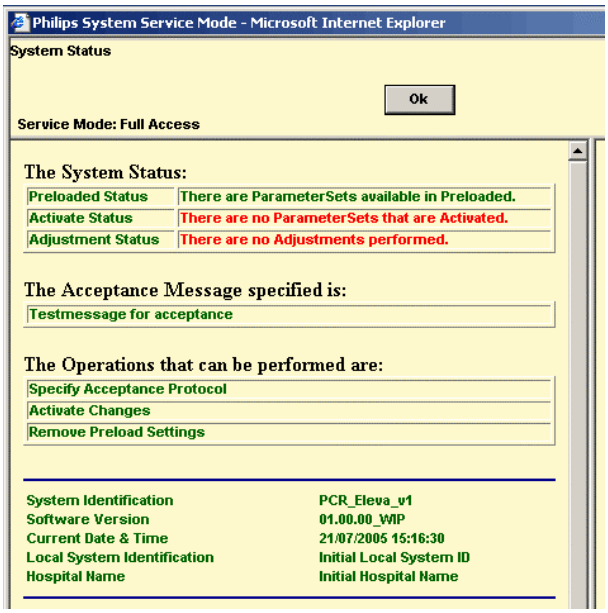
- Enter the specific password for your service hardware key (dongle).
- The FSF login screens appear.
- Enter your name as [**Username**].
- Enter [**General Remarks**] (optional).
- A fixed sequence of entry screens appears. Fill in the required information.

4.2.8.1 Activating preload settings

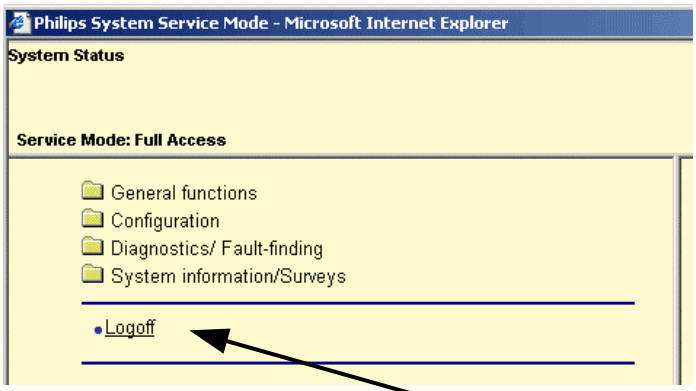
- One of the typical FSF entry screens informs about the current status of the configuration settings. On first entry to the system, the appearing message should show:



- If a screen with **red text** appears, there are preload settings available that should be activated. Detailed information about the activation mechanism is available in the “FSF basics manual”.



- Finally, the FSF menu tree appears:



Leaving the Field Service Framework (FSF) shall only be done via “Logoff “!

The following settings must be made for each workspot PC

During initial system configuration, do not click any other links than the ones described. You may risk a malfunction of the FSF.

If this happens, switch to the PCR Eleva application with <**Alt**> + <**Tab**> and restart the system via **UI: System → General → Restart**

4.2.9 SETTING THE TIME/TIMEZONE

- Select: **FSF: Configuration → Local workspot PC → Timezone**
  - Set the "Time Zones" according to the local requirements.
  - Set the "Daylight saving" as required.
- Press [**Apply**], then [**Ok**].
- You can either activate these procedure settings now or you may activate all modified settings at once before you leave the FSF. *The general activation of modified settings is done via **FSF: General functions → Activate changes***

4.2.10 SETTING THE KEYBOARD DRIVER

The default keyboard type is U.S. standard.

If you want to connect a country specific keyboard type, this has to be configured via FSF. The following drivers can be selected:

Available keyboard drivers		
Danish	French (Belgian)	Italian (Standard)
Dutch (Belgium)	French (Canadian)	Norwegian
Dutch (Netherlands)	French (Standard)	Portuguese (Portugal)
English (Canadian)	German (Standard)	Russian(1)
English (US)	Hebrew(1)	Spanish (Spain)
		Swedish

(1) Does not work with Rel 1.0.1 – can be configured via FSF, but has no effect in UI and is not tested with EVA tool or RIS data

- Select: **FSF: Configuration → Local workspot PC → Keyboard**
- Select the keyboard type.
- Press [**Apply**], then [**Ok**].
- You can either activate these procedure settings now or you may activate all modified settings at once before you leave the FSF. *The general activation of modified settings is done via **FSF: General functions → Activate changes***
- Connect the keyboard. It will work properly after the next reboot.

If you connect country specific keyboards, keep at least one default U.S. keyboard in a safe place. It may be necessary to connect it during future software reinstallations or upgrades.

4.2.11 CONFIGURING THE LOCAL NETWORK NODE

4.2.11.1 TCP/IP settings

- Select **FSF: Configuration → Network → System/Local network node → TCP/IP settings**

Default: “172.16.1.20” or “172.16.1.30”
If the workspot PC shall be used as a **PCR Compano reader workspot** (reader server), do not change the default IP address yet!
Else enter the IP address and the netmask as defined in the network data sheet!

Please note that the system is only able to handle static IP addresses.

- Press [**Apply**], then [**Ok**].
- You can either activate these procedure settings now or you may activate all modified settings at once before you leave the FSF. *The general activation of modified settings is done via **FSF: General functions → Activate changes***

NOTE

*Do not bother if the IP address displayed via **UI: System → General → Workspot data** is 127.0.0.1. This is the case if no network connection is established (which is fully correct at this moment).*

4.2.11.2 Host name

- Select **FSF: Configuration → Network → System/Local network node → Host name**
- Set the host name as defined by the network administrator (refer to network data sheet). If you are able to define a free name, choose one which is unique within the whole location/hospital.

If the local conditions allow, use “**PCREleva01**” as the host name. If several workspots shall be set up, just modify the number within the host name (“**PCREleva01**”, “…**02**”, “…**03**” etc).

- Press [**Apply**], then [**Ok**].
- You can either activate these procedure settings now or you may activate all modified settings at once before you leave the FSF. *The general activation of modified settings is done via **FSF: General functions → Activate changes***

4.2.11.3 DICOM settings

- Select **FSF: Configuration → Network → System/Local network node → DICOM settings**

Each PCR Eleva workspot is a separate DICOM modality. If the local conditions allow, use “**PCREleva01**” as the application entity title (AET). If several workspots shall be set up, just modify the number within the AET (“**PCREleva01**”, “…**02**”, “…**03**” etc).

- Press [**Apply**], then [**Ok**].
- You can either activate these procedure settings now or you may activate all modified settings at once before you leave the FSF. *The general activation of modified settings is done via **FSF: General functions → Activate changes***

4.2.12 ENTERING THE SITE INFORMATION

- Select **FSF: Configuration → Local workspot PC → Site information**

Make the Local System ID equal to the host name of this workspot PC (e.g. "**PCREleva01**", "…**02**", "…**03**" etc).

- Press [**Apply**], then [**Ok**].
- You can either activate these procedure settings now or you may activate all modified settings at once before you leave the FSF. *The general activation of modified settings is done via **FSF: General functions → Activate changes***

4.2.13 CONTINUATION

- Activate your settings (if not already done) via **FSF: General functions → Activate changes**
- Leave the FSF via **FSF:** [**Logoff**]. Accept the changed settings.
- Shut down the system via **UI: System → General → Exit**
- **Connect the system to a network device or to the local network!**

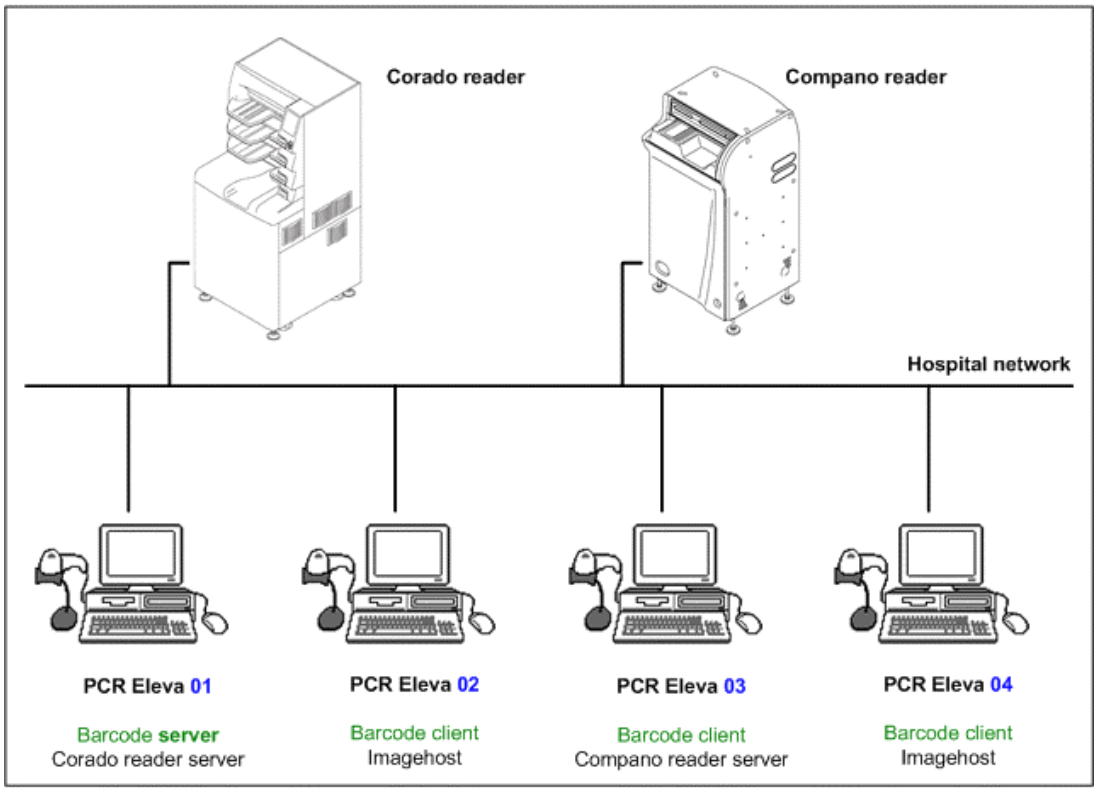
Some kind of **network connection must always be installed**. Connect at least a hub or switch to the workspot PC. Else the IP settings will not be properly applied.

- Switch ON the workspot PC. The PCR Eleva application SW will start automatically.
- Log in as user "Service"
- Set the proper time via **UI: System → Administration → System administration**

4.2.14 SETTING THE BARCODE SCANNER

Besides the scanner programming (see installation part of the SMI), there is no additional setting for the barcode scanner.
If you want to work **without barcode scanner**, this must be programmed via **UI: System → General → Settings → User interface** [**Workflow – Use barcode reader**]

4.2.15 DEFINING THE WORKSPOT STATUS



If this workspot PC shall be used as a **Reader server** for a PCR reader, the reader application software has to be installed on the local workspot PC. Do this according to the descriptions under 4.2.16 Configuring a PCR reader workspot (reader server).

If **no PCR reader** shall be connected, the local workspot PC is used as a so-called **Imagehost**. Do the following:

- Select **FSF: Configuration → Network → Workspot Status for PCR reader**
- **Reader type**: select “Imagehost”
- **Reader name**: Enter a dummy text (e.g. “xxx”).
- Press [**Apply**], then [**Ok**].
- You can either activate these procedure settings now or you may activate all modified settings at once before you leave the FSF. *The general activation of modified settings is done via **FSF: General functions → Activate changes***
- Proceed with 4.2.17 Setting up the patient database.

4.2.16 CONFIGURING A PCR READER WORKSPOT (READER SERVER)

If this workspot PC shall be used as a **server for a PCR reader**, the reader needs to be prepared and the reader application software has to be installed on the local PC according to the following description.

4.2.16.1 Eleva S / S plus Reader: SW Installation

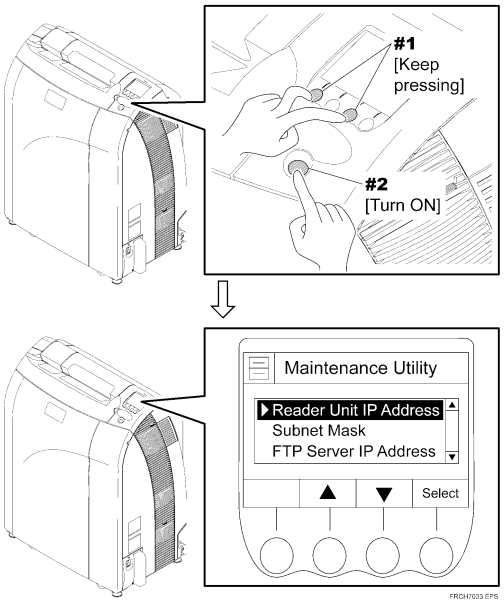
Preconditions:

– During software installation both units should not be connected to the official hospital network.

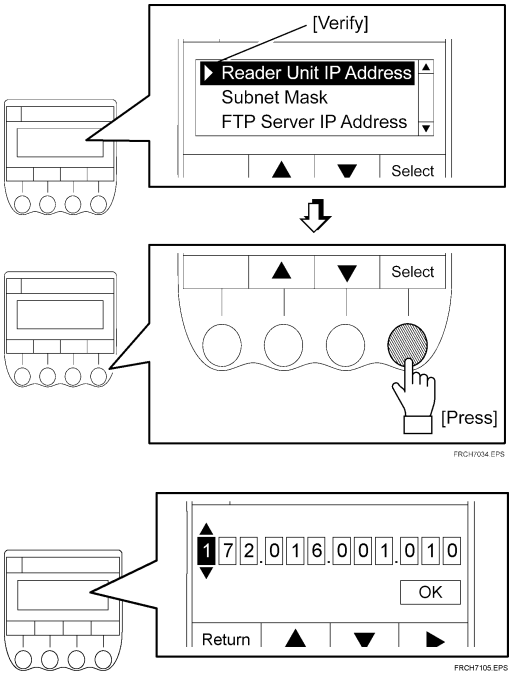
– The Reader and the workspot PC are linked together via an own local Fast Ethernet switch. A cross cable is not recommended.

4.2.16.1.1 Setting the IP Addresses at the Reader

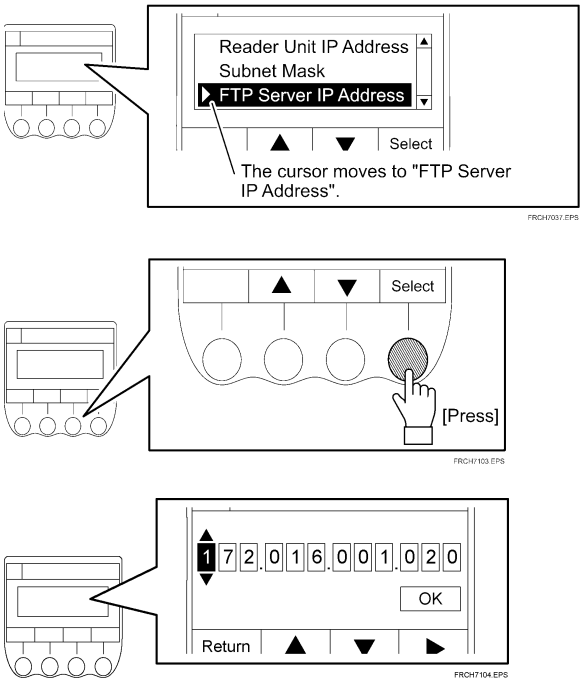
- Turn ON the circuit breaker of the Reader and start up the PC the Reader is connected to.
- Turn ON the RU power while pressing the first and third buttons from the left on the operation panel. Keep pressing the first and third buttons from the left until the “Maintenance Utility” window appears on the operation panel.



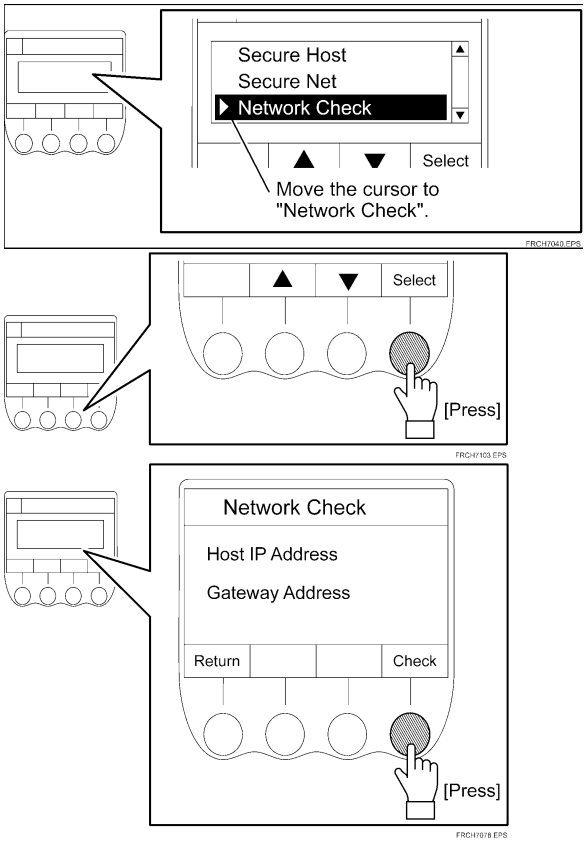
- Set the IP address of the Reader.



- Set the IP address of the PC (FTP Server) at the Reader.



- Check the network connection.

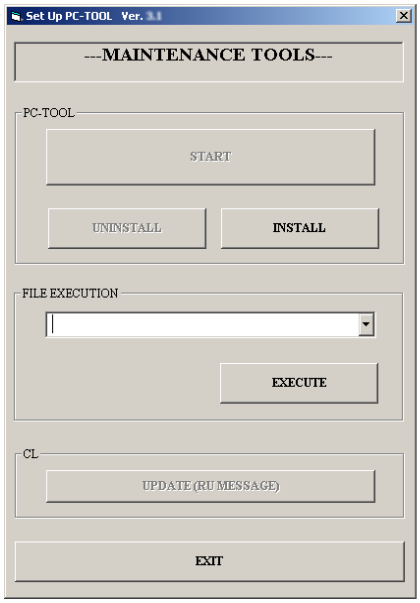


4.2.16.1.2 Installing the RU PC- Tool on the PC (FTP- Server)

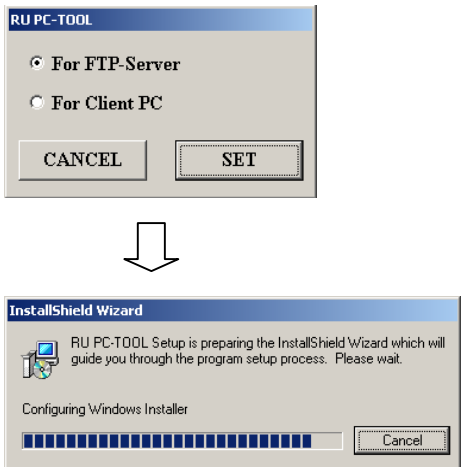
- Insert the CD 'CR-IR 356/357 APL Software Version ...' into the CD-ROM drive of the PC and start the service procedure **FSF: General functions → Install software → PCR Reader software**

  A set- up program is started from CD.

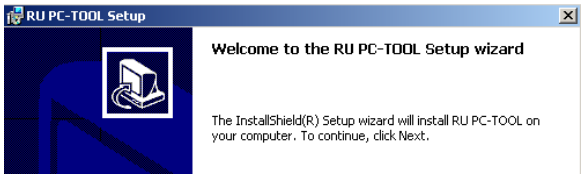
- Click [**Install**].



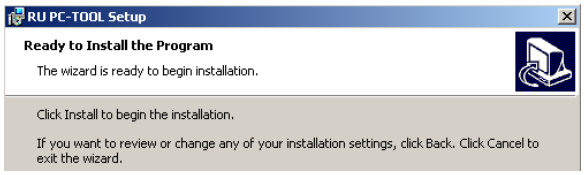
- Select “For FTP-Server”, and click on [**SET**].



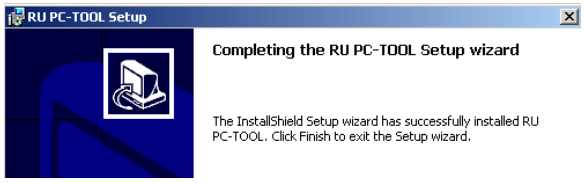
- Click [**Next**].



- Click [**Install**].

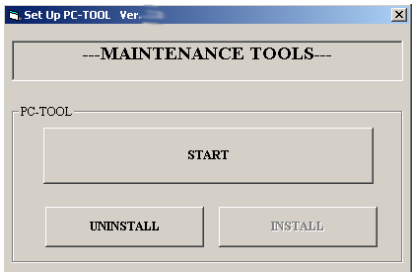


- Click [**Finish**].

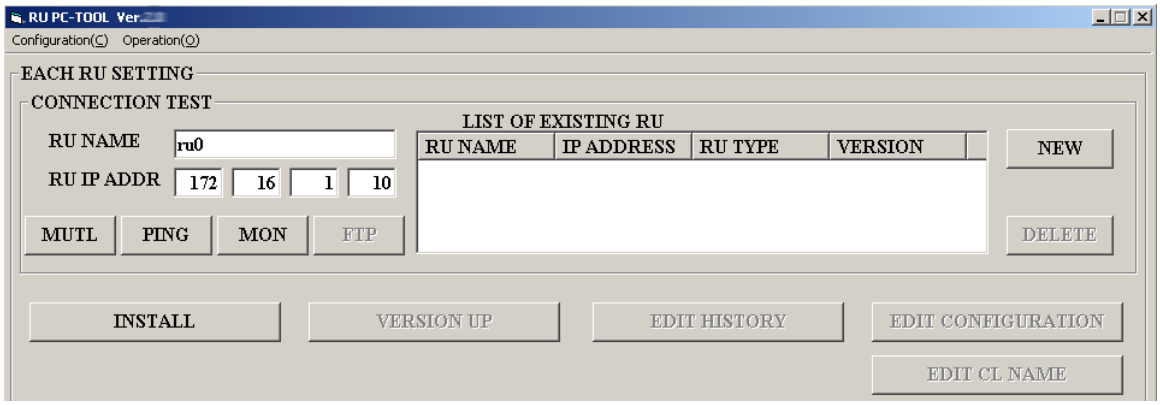


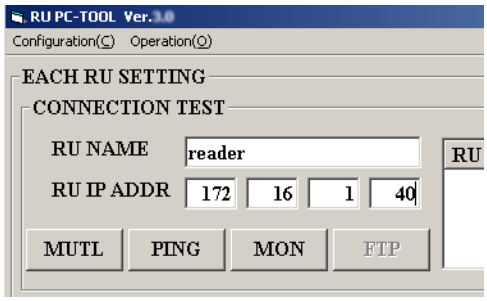
4.2.16.1.3 Installing the Application Software of the Reader on the PC

- In the set- up program click [**Start**] to install the application software of the Reader.

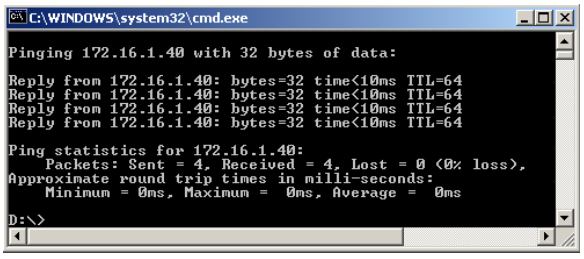


- Click [**New**] and enter the RU name and RU IP address of the Reader.



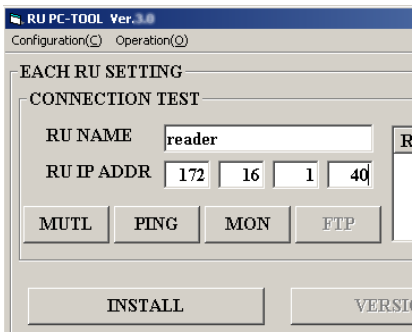


- Click [**PING**] to check the communication. The following window must be displayed.

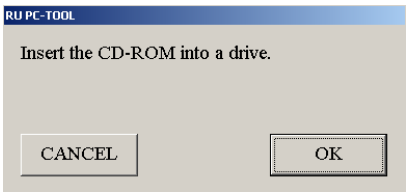


Close this window.

- Click [**Install**].

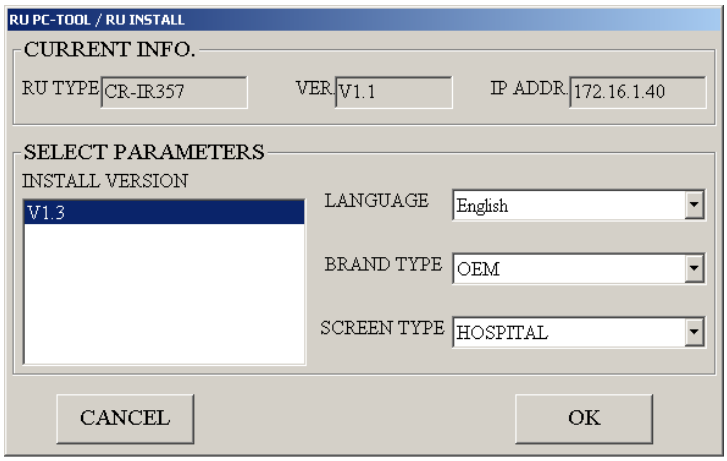


- Click [**OK**].

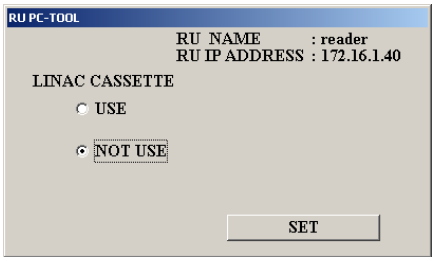


- Select the following items and click [**OK**]:

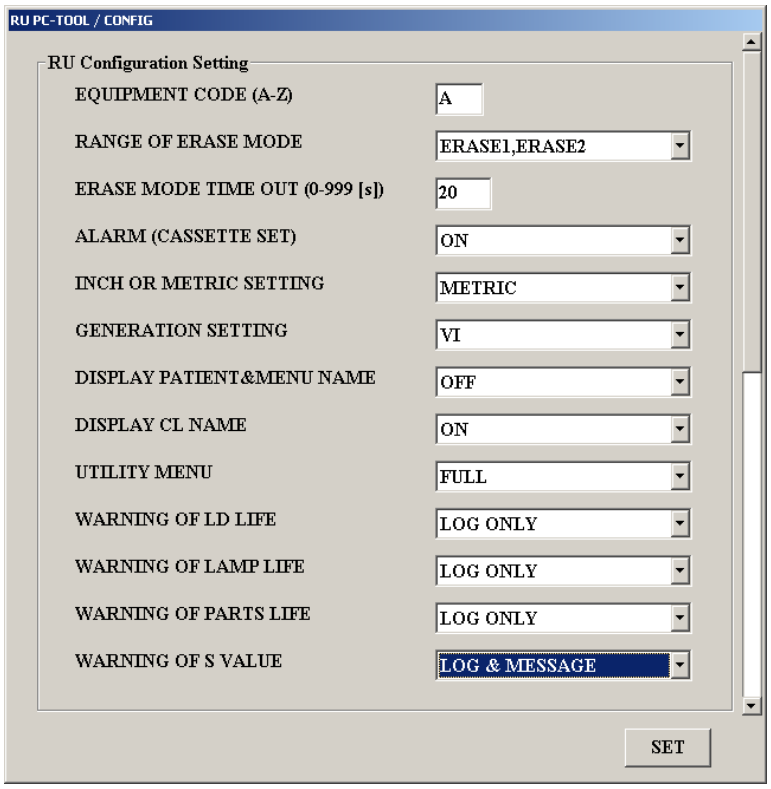
  - Language: The language for the display panel of the Reader.
  - Brand Type: **OEM**
  - Screen Type: **HOSPITAL**
  - Install Version: **1.3** (example only, select the highest of the listed versions)



- Select **NOT USE** and click [**SET**].

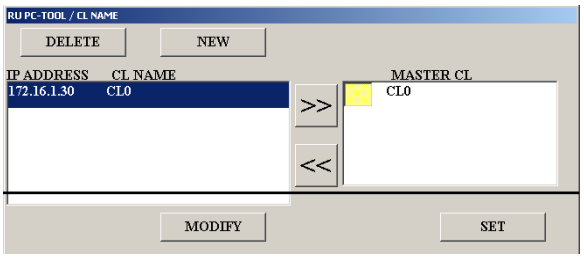


- Enter the configuration data and click [**SET**].

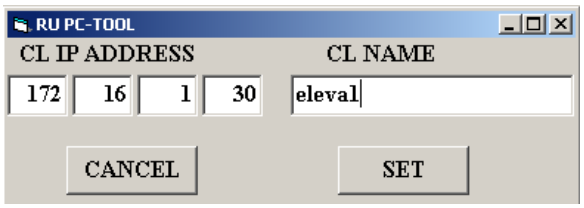


EQUIPMENT CODE	Sets the identification code A…Z of a Reader. Use always 'A'
RANGE OF ERASE MODE	Sets the erasure mode which can be selected by the “Mode change” button of the Reader. Default: ERASE 1, ERASE 2 - ERASE 1: Primary erasure can be selected. - ERASE 1, ERASE 2: Both primary and secondary erasures can be selected.
ERASE MODE TIMEOUT	Sets the period of time since “primary erasure” or “secondary erasure” is selected by the “Mode change” button of the Reader until “Image reading” is automatically restored in the display unit. When “0” is set, the mode is kept changed to “primary erasure” or “secondary erasure”. Default : 20 sec
ALARM (CASSETTE SET)	Sets alarm ON/OFF when cassette is inserted. - ON : Alarm sounds. - OFF : Alarm does not sound
INCH OR METRIC SETTING	To be selected **according to the mechanical configuration** ! (mechanical default: METRIC) - INCH - METRIC
GENERATION SETTING	Selects the IP type to be used in the machine. - VI (default): VI-type IP is to be used - VN: Also VN-type IP is to be used (increases the erasure times also for VI)
DISPLAY PATIENT & MENU NAME	Always set to “OFF”.
DISPLAY CL NAME	- OFF (default): The CR Console name (workspot) is not displayed. - ON: The CR Console name (workspot) is displayed.
UTILITY MENU	Specifies the menu items to be displayed when the “Utility” button on the operation panel is pressed. Use always FULL.
WARNING OF LD LIFE	Sets the warning indication of the laser life. - LOG ONLY (default): Only write into the error log - LOG & MESSAGE: Write into the error log and display of the error message.
WARNING OF LAMP LIFE	Sets the warning indication of the erasure lamp life. - LOG ONLY (default): Only write into the error log - LOG & MESSAGE: Write into the error log and display of the error message.
WARNING OF PARTS LIFE	Sets the warning indication of the PM part life. - LOG ONLY (default): Only write into the error log - LOG & MESSAGE: Write into the error log and display of the error message.
WARNING OF S VALUE	Sets the warning indication of the S value. - LOG ONLY (default): Only write into the error log - LOG & MESSAGE: Write into the error log and display of the error message.

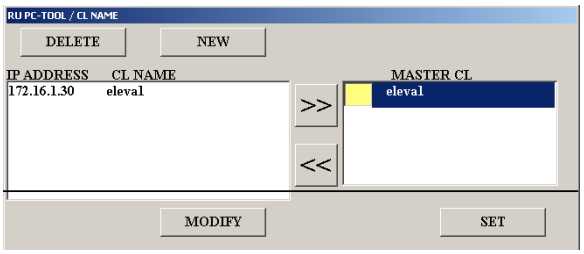
- Select the default IP address and click [**Modify**].



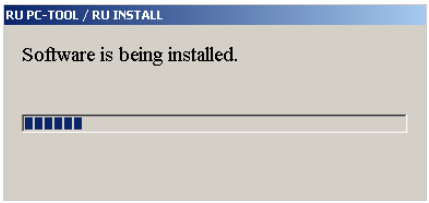
- Enter the IP address and the IP name of the PC and click [**SET**].



- Click [**SET**].

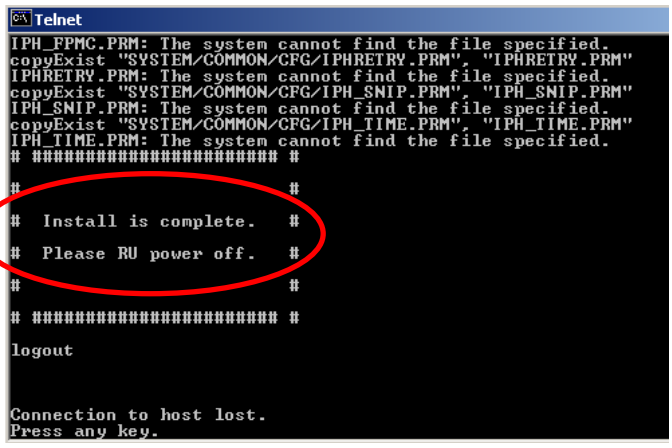


The following window is displayed:



After some seconds, a Telnet session window appears, showing the status of the SW installation.

If it does not appear, press [**Alt**] + [**Tab**] to bring it into the foreground.



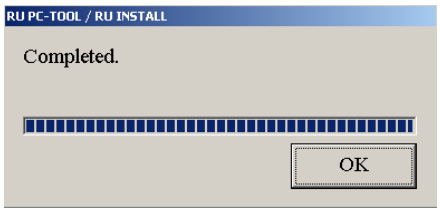
- Wait until the “Install is complete…” message appears in the Telnet session window.
- Press <**Enter**>.

CAUTION

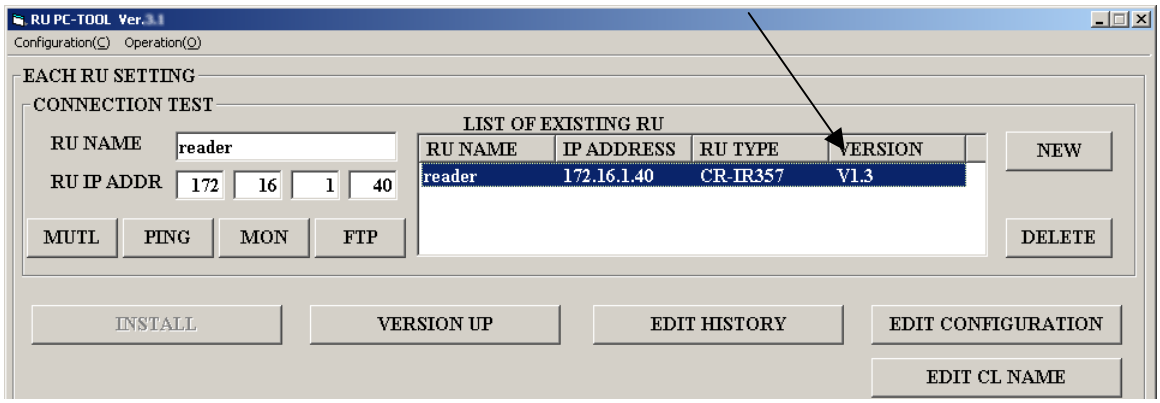
While data is being written into the FLASH ROM of the Reader, never turn OFF the power.

If the power is turned OFF, the program residing in the memory is corrupted, so that the Reader cannot be rebooted.
Writing into the FLASHROM will take a few minutes.
During the upgrade all the LED's of the display are switched on.

- Wait until the “Install is complete” message appears in the Telnet session window. Press <**Enter**>.
- Click [**OK**] to finish the installation.



- Check the version of the Reader software: --> **1.3** (example only)



- Click [**X**] to close the RU PC- Tool.
- Click [**EXIT**] to close the set-up program.
- Remove the CD.
- **Restart** the Reader.

4.2.16.1.4 Defining the local workspot PC as a Reader server

If everything works fine, the PCR reader will now be in the ready status.
But: Image plate reading is not yet possible. The role of the local workspot PC as a **Reader server** must first be defined. Do the following:

- Select **FSF: Configuration → Network → Workspot Status for PCR reader**
- **Reader type**: Select “Server”
- **Reader name**: Enter the IP address of the Reader (e.g. 172.16.1.10; do not use leading zeros like ~~172.016.001.010~~)
- Press [**Apply**], then [**Ok**].
- Leave the FSF, activate your changes.
- **Restart** the PCR Eleva application SW, introduce a test patient and check the possibility to read in an image plate.

4.2.16.1.5 Connecting PCR reader and Reader server to the hospital network

Just connect the Reader and the workspot PC to the network. No additional actions regarding network and TCP/IP settings required.

4.2.16.2 Corado / CosimaX / S Hi-res Reader: SW Installation

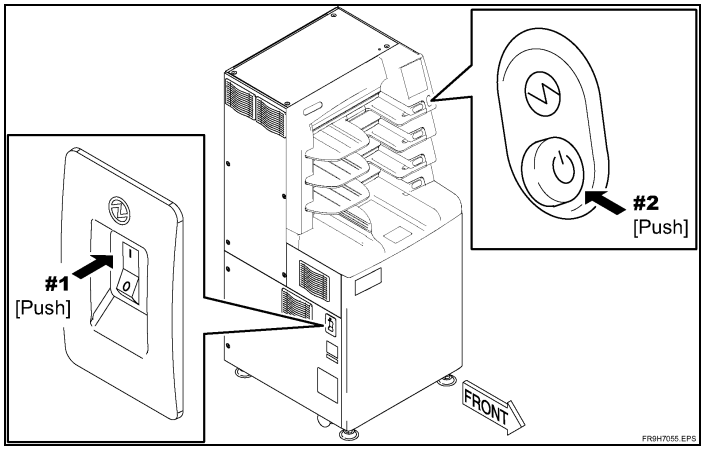
Preconditions:

– During software installation both units should not be connected to the official hospital network.

– The Reader and the workspot PC are linked together via an own local Fast Ethernet switch. A cross cable is not recommended.

4.2.16.2.1 Setting the IP Addresses at the Reader

- Turn ON the power of the RU (Reader unit).



- Select [**Utility**] to bring the RU in the Maintenance Mode.
- After the **Utility** screen appears, sequentially touch the upper left and upper right corners of the touch panel.
- The **Maintenance** screen comes up.

◆ NOTE ◆

Because the IP address of the FTP server (workspot PC) has not been set yet, it takes about three minutes until the main screen appears.

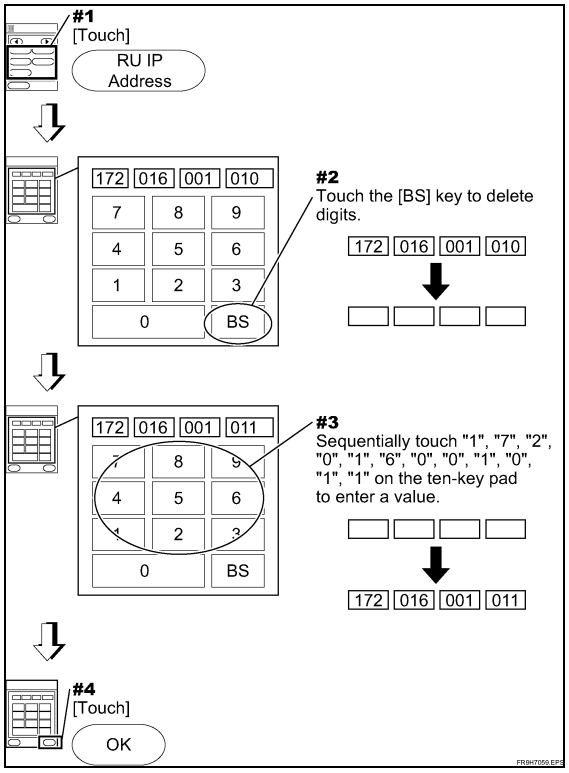
◆ REFERENCE ◆

If your touch is accepted by the panel, a "beep" alarm sound is generated.

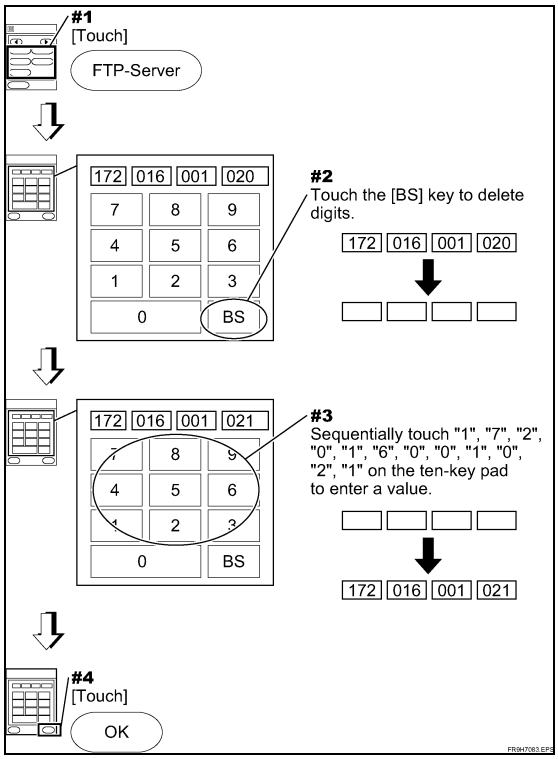
◆ INSTRUCTION ◆

If you cannot put the RU into the Maintenance Mode, turn OFF the power of the RU and then reboot the RU all over again.

- Set the IP address of the RU.



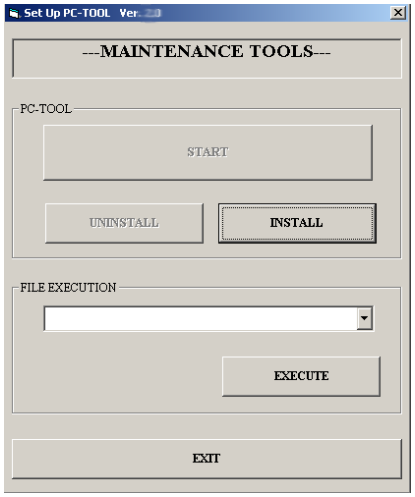
- Set the IP address of the FTP server (workspot PC used as the Reader server).



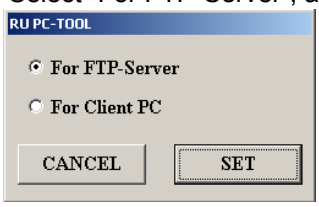
4.2.16.2.2 Installing the RU PC- Tool on the PC (FTP- Server)

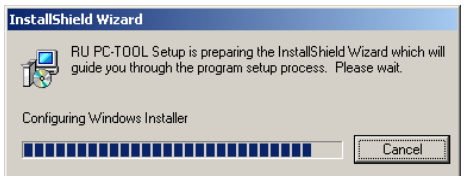
- Insert the CD
  - **CR-IR 362/363 APL Software Version ...** for the Corado / CosimaX reader
  - **CR-IR 368 APL Software Version ...** for the Eleva S Hi-res reader

  into the CD-ROM drive of the PC.
- Select **FSF: General functions → Install software → PCR reader SW**. After a few clicks a set-up program is started.
- Click [**Install**].

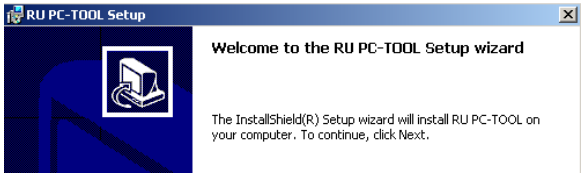


- Select “For FTP-Server”, and click on [**SET**] if this screen appears e.g. for the S Hi-res Reader.

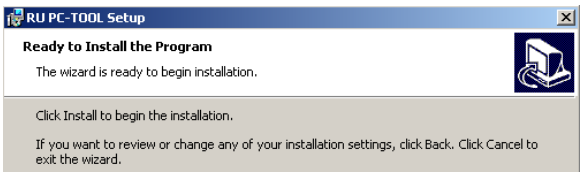




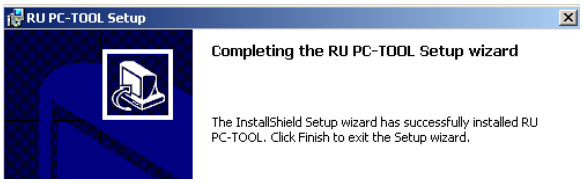
- Click [**Next**].



- Click [**Install**].



- Click [**Finish**].

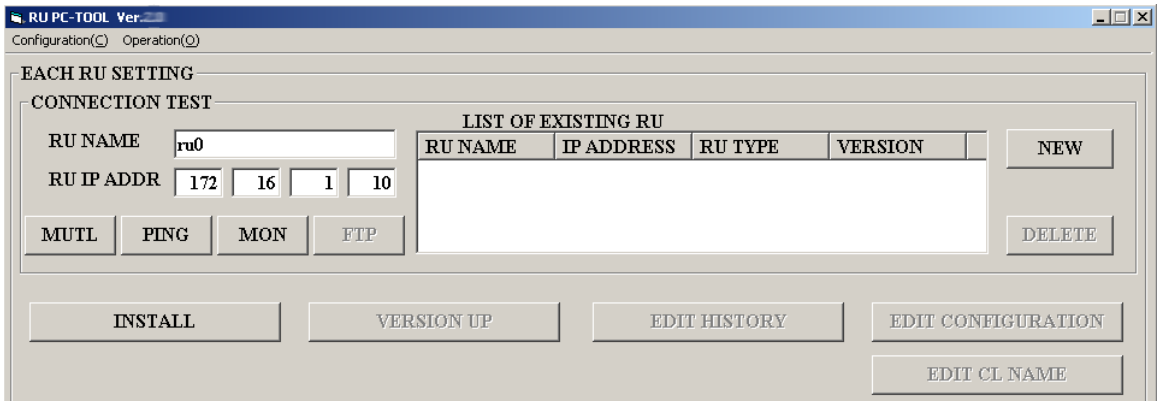


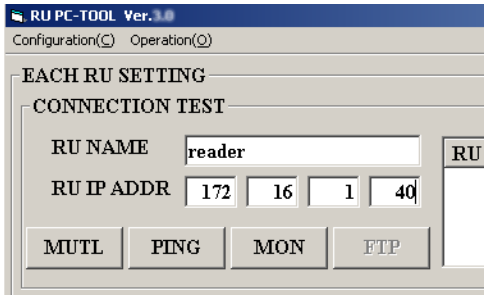
- Click [**OK**] to reboot the PC if asked for.

4.2.16.2.3 Installing the Application Software of the Reader on the PC

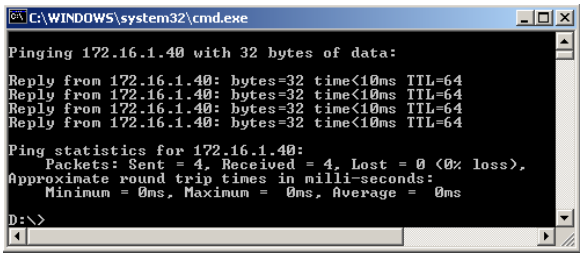
After a reboot of the workspot PC, open the FSF again and select **FSF: Configuration → PCR Reader → Reader configuration via PC-MUTL**.

- Click [**New**] and enter the RU name and RU IP address of the Reader.



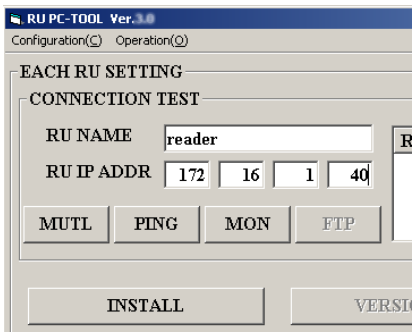


- Click [**PING**] to check the communication. The following window must be displayed.

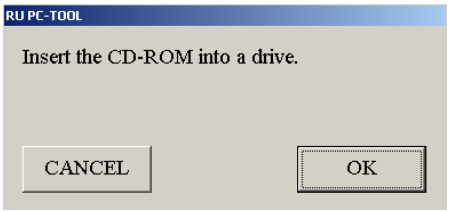


Close this window.

- Click [**Install**].

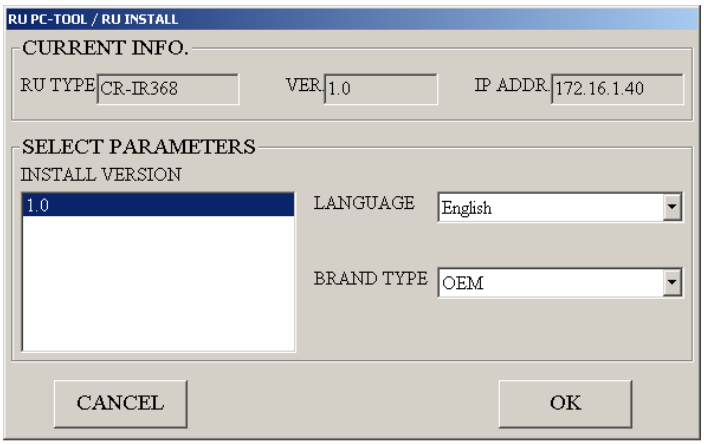


- Click [**OK**].



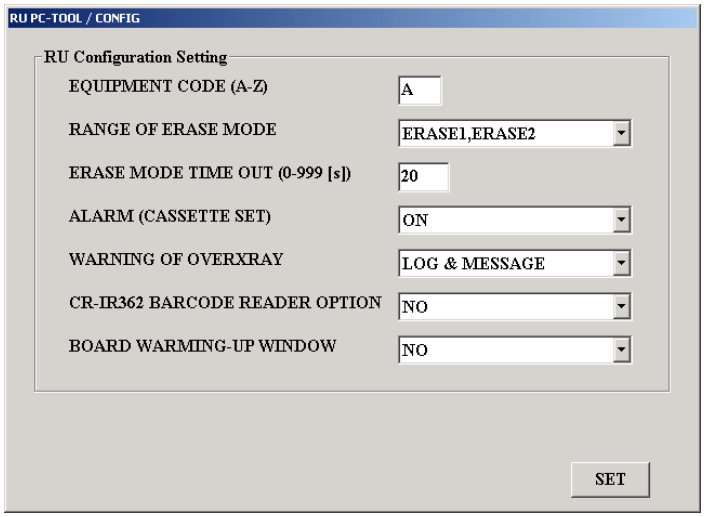
- Select the following items and click [**OK**]:

  - Language: The language for the display panel of the Reader
  - Brand Type: **OEM**
  - Install Version: **1.0** (example only, select the highest of the listed versions)



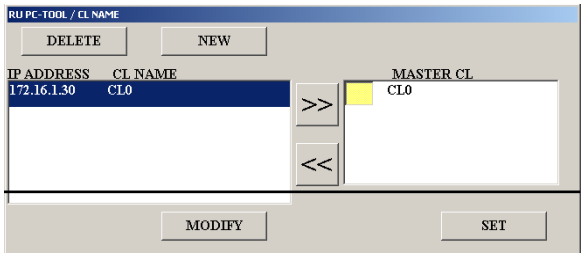
CR-IR 362 = Corado
CR-IR 363 = CosimaX
CR-IR 368 = Eleva S Hi-res

- Enter the configuration data and click [**SET**].

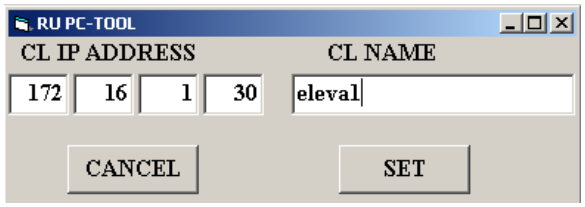


EQUIPMENT CODE	Use always 'A'
RANGE OF ERASE MODE	Specifies the erasure mode range. ERASE 1: Primary erasure can be selected. ERASE 1, ERASE 2: Both primary and secondary erasures can be selected.
ERASE MODE TIMEOUT	Default : 20 sec
ALARM (CASSETTE SET)	Sets alarm ON/OFF when cassette is inserted. ON : Alarm sounds. OFF : Alarm does not sound
WARNING OF OVERXRAY	Selects X-ray over-exposure IP warning method. LOG & MESSAGE: Warning by log and message. LOG: Warning by log. NONE: No warning issued .
CR-IR362 BARCODE READER OPTION	Select NO (not applicable for S Hi-res)
BOARD WARMING-UP WINDOW	Select NO

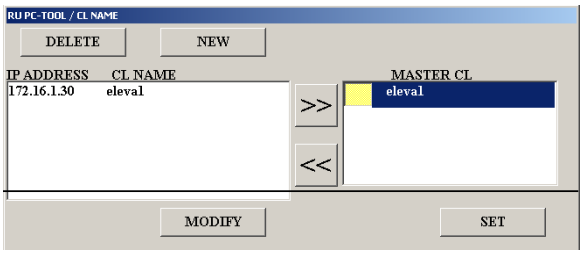
- Select the default IP address and click [**Modify**].



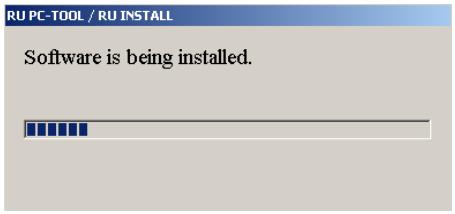
- Enter the IP address and the IP name of the PC and click [**SET**].



- Click [**SET**].

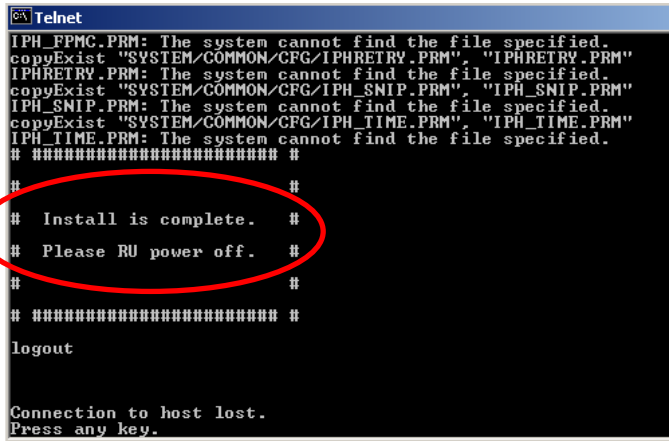


The following window is displayed:



After some seconds, a Telnet session window appears, showing the status of the SW installation.

If it does not appear, press [**Alt**] + [**Tab**] to bring it into the foreground.

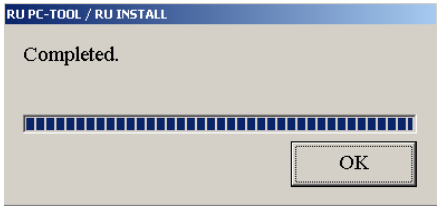


- Wait until the “Install is complete…” message appears in the Telnet session window.
- Press <**Enter**>.

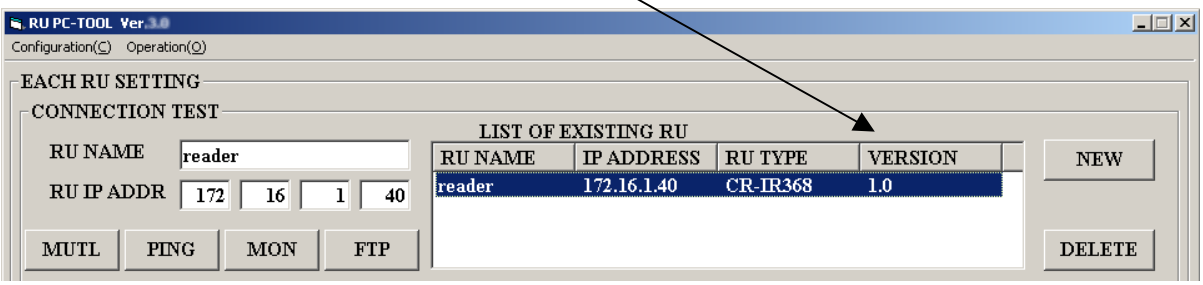
CAUTION

While data is being written into the FLASH ROM of the Reader, never turn OFF the power.
If the power is turned OFF, the program residing in the memory is corrupted,
so that the Reader cannot be rebooted.
Writing into the FLASHROM will take about four minutes.
During the upgrade the LED's of the four cassette slots are flashing.

- Click [**OK**] to finish the installation.



- Check the version of the Reader software: --> **1.0** (example only)



- Click [**X**] to close the RU PC- Tool.
- Press [**Alt**] + [**Tab**] to switch back to the FSF.
- Click [**OK**] to exit.
- Remove the CD.
- **Restart** the Reader.

4.2.16.2.4 Defining the local workspot PC as a Reader server

If everything works fine, the PCR reader will now be in the ready status.
But: Image plate reading is not yet possible. The role of the local workspot PC as a **Reader server** must first be defined. Do the following:

- Select **FSF: Configuration → Network → Workspot Status for PCR reader**
- **Reader type**: Select “Server”
- **Reader name**: Enter the IP address of the Reader (e.g. 172.16.1.10; do not use leading zeros like ~~172.016.001.010~~)
- Press [**Apply**], then [**Ok**].
- Leave the FSF, activate your changes.
- **Restart** the PCR Eleva application SW, introduce a test patient and check the possibility to read in an image plate.

4.2.16.2.5 Connecting PCR reader and Reader server to the hospital network

Just connect the Reader and the workspot PC to the network. No additional actions regarding network and TCP/IP settings required.

4.2.16.3 Compano Reader: SW Installation

Software installation and configuration have to be done via the workspot/console PC, usually via a network connection. **The Reader expects the following network data for it's first set-up:**

IP address Reader:	172.16.1.10
IP address workspot/console PC:	172.16.1.20(1)

(1) The default IP address for the workspot/console PC is already prepared for these demands. The IP address of 172.16.1.20. is part of the customized operating system software.

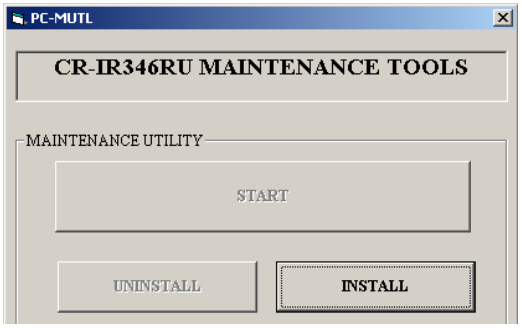
If you have already configured other IP addresses, please change to these settings first!

If the Reader is going to be hooked up to a hospital network, it can be possible that the network administrator doesn't allow you to connect Reader and Reader server PC using the default IP addresses. In that case a separate network hub should be used.
If not available, the Compano Reader can also be set up via serial port (see chapter "MUTL via the Serial Port" in the Release Bulletin of the Reader). This is always advised if you want to make sure that the reader setup is working properly.

Do not use a cross cable to connect workspot/console PC and PCR reader!
Use a hub or switch or the local network.

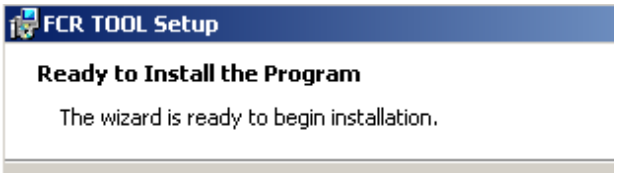
4.2.16.3.1 Installing the Compano Reader SW

- Make sure that both workspot/console PC and PCR reader are connected via the network (see remarks above) and both are switched on.
- Insert the Reader's application SW CD into the CD-ROM drive of the workspot/console PC.
- If not already done, start the FSF as described under 0
- Select **FSF: General functions → Install software → PCR reader SW**. After a few clicks the CR-IR 346RU Maintenance Tool is started.

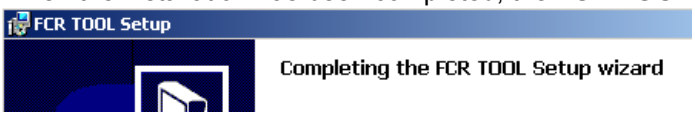


- Click [**Install**].

- Click [**Next**] - The FCR TOOL Setup/Ready to Install... window opens.



- Click [**Install**].
- When the installation has been completed, the **FCR TOOL Setup/Completing the...** window opens.



- Click [**Finish**].
  The system returns to the **CR-IR 346RU MAINTENANCE TOOLS** window.

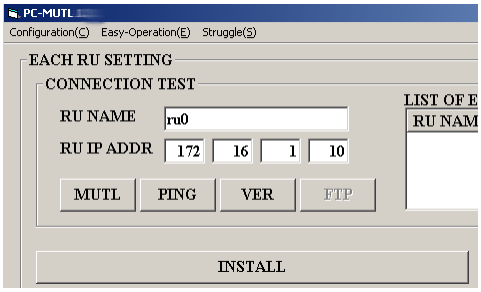
4.2.16.3.2 Configuring the Compano Reader

This setting can be done directly after the SW installation. Alternatively, the Reader setup can be initiated via **FSF: Configuration → PCR Reader → Reader configuration via PC-MUTL**

- Click [**Start**] to start the PC MAINTENANCE UTILITY (PC MUTL).

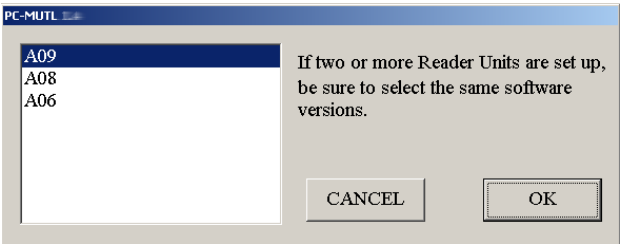
- The default address for the Reader is already entered. This address is used to initially communicate with the Reader even if the address will be changed later on.

  To check the communication click [**PING**].



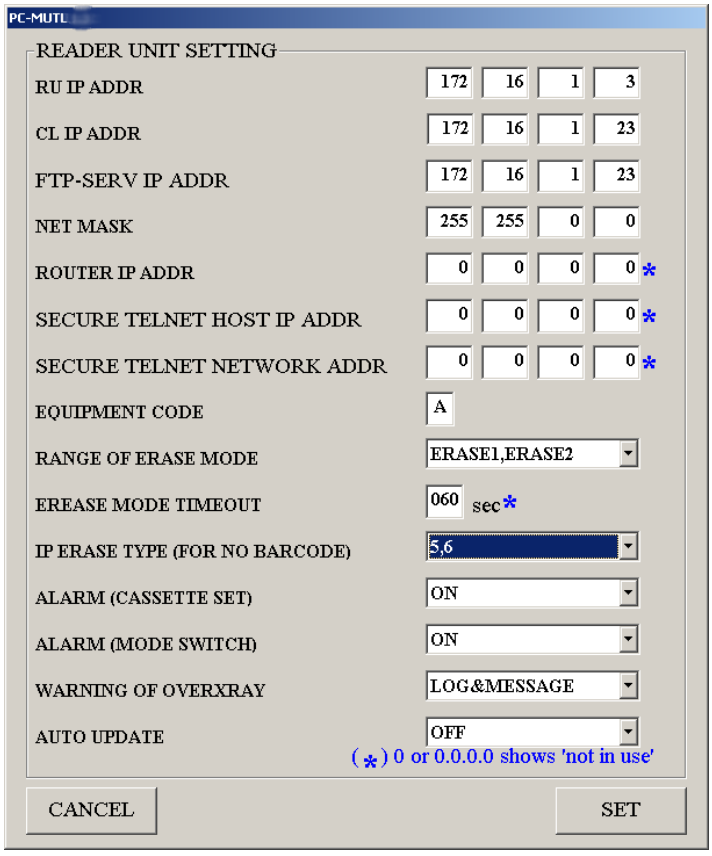
- Click [**Install**].
- When asked for, make sure the CD is inserted and click [**OK**].

- Make sure the most recent software has been selected and click [**OK**]:

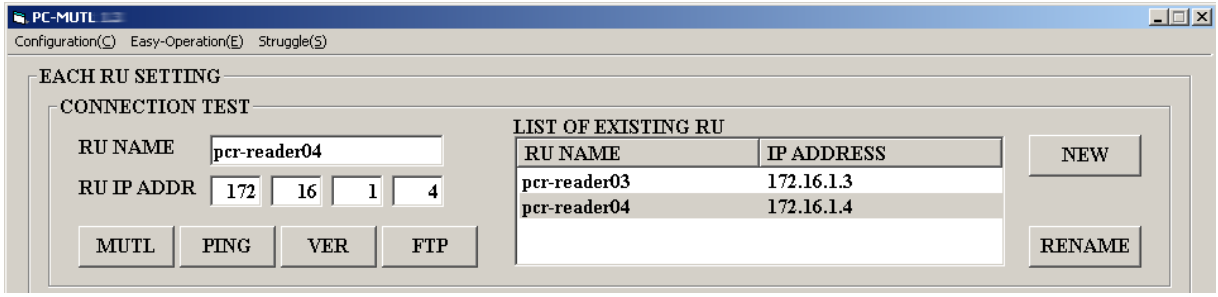


- Now enter the configuration data:

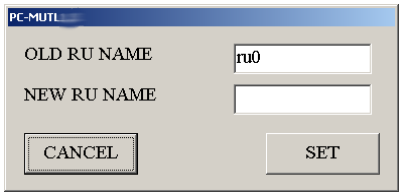
RU IP ADDR	IP address of the Reader
CL IP ADDR	IP address of the PC
FTP-SERV IP ADDR	IP address of the PC
NET MASK	Net mask, to be set as narrow as possible
ROUTER IP ADDR	IP address of the default gateway or router
SECURE TELNET HOST IP ADDRESS	Default: 0.0.0.0
SECURE TELNET NETWORK ADDRESS	Default: 0.0.0.0
EQUIPMENT CODE	Reader unique ID, must be different in a cluster
RANGE OF ERASE MODE	Specifies the erasure mode range. ERASE 1: Primary erasure can be selected. ERASE 1, ERASE 2: Both primary and secondary erasures can be selected.
ERASE MODE TIMEOUT	Default : 60 sec
IP ERASE TYPE	Setup needed if no barcode Reader is installed. 5, 6 :Types V and VI mixed. 6 : Type VI
ALARM (CASSETTE SET)	Sets alarm ON/OFF when cassette is inserted. ON : Alarm sounds. OFF : Alarm does not sound
ALARM (MODE SWITCH)	Sets alarm ON/OFF when erasure processing is selected. ON : Alarm sounds. OFF : Alarm does not sound.
WARNING OF OVERXRAY	Selects X-ray over-exposure IP warning method. LOG & MESSAGE: Warning by log and message. LOG: Warning by log. NONE: No warning issued .
AUTO UPDATE	Select OFF



- Click [**SET**] to store the configuration data onto hard disk and in the Reader.
  During transfer of the configuration data the Reader is giving a few beeps and the LEDs at the front panel are flashing. Never turn off the power of the Reader in this situation. Wait until transfer has been finished and the window has been closed.
- When the **Completed** message is displayed, click [**OK**].
- To change the name of the Reader select the Reader and click on [**RENAME**].



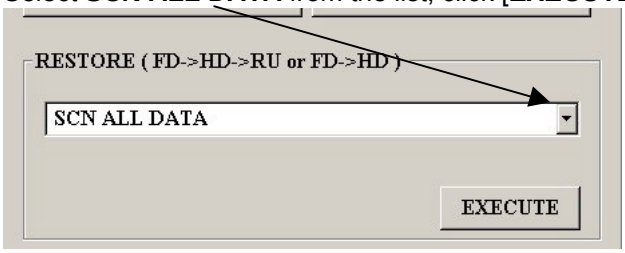
- Enter the new name of the Reader and click [**SET**].



During data transfer the Reader is giving a few beeps and the LEDs at the front panel are flashing. **Never turn off the power of the Reader in this situation!** Wait until transfer has been finished and the

window has been closed.

- Insert the floppy disk **Machine Shipment Data** that came with the Reader into the floppy drive.
- Select **SCN ALL DATA** from the list, click [**EXECUTE**] , then [**OK**].



During transfer of the scanner data the Reader is giving a few beeps and the LEDs at the front panel are flashing. **Never turn off the power of the Reader in this situation!** Wait until transfer has been finished and the window has been closed.

- When the **Completed** message is displayed, click [**OK**].
- Click [**X**] to close the Maintenance utility window.
- Click [**EXIT**] to close the Maintenance tool window.
- Remove CD and floppy from the drives.
- **Restart** the Reader.

4.2.16.3.3 Defining the local workspot PC as a Reader server

If everything works fine, the PCR reader will now be in the ready status. **But:** Image plate reading is not yet possible. The role of the local workspot/console PC as a **Reader workspot** or **Reader server** must first be defined. Do the following:

- Select **FSF: Configuration → Network → Workspot Status for PCR reader**
- **Reader type**: Select “Server”
- **Reader name**: Enter the IP address of the Reader (e.g. 172.16.1.10; do not use leading zeros like ~~172.016.001.010~~)
- Press [**Apply**], then [**Ok**].
- **Restart** the PCR Eleva application SW, introduce a test patient and check the possibility to read in an image plate.
- If reading an image is successfully possible, the following steps are necessary:

4.2.16.3.4 Connecting PCR reader and Reader server to the hospital network

If the default IP addresses

IP address Reader:	172.16.1.10
IP address workspot/console PC:	172.16.1.20

cannot be used for operating the units in the local network, IP settings have to be changed now according to the requirements of the network.

Do the following:

- **FSF: Configuration → PCR reader configuration via PC-MUTL**. Change the IP settings.
- **FSF: Configuration → System/Local network node → TCP/IP settings**. Change the IP settings.

- **Restart** the Reader.
- **Reboot** the system and check for proper operation afterwards.

4.2.17 SETTING UP THE PATIENT DATABASE

- Select **FSF: Configuration → Local workspot PC → Patient database**
- **Short system ID**: Enter a number which is unique within the hospital. If possible, make this ID equal to the unique number that is used within the host name, the AET and the local system ID of this workspot PC (e.g. host name = AET = LocSysID = "PCREleva01" => **short system ID = "01"**).
- Unless specific information is available, leave the rest of the defaults unchanged.

4.2.18 CONFIGURING NETWORK NODES

EVRad, RIS, PACS, Printers etc. are external DICOM nodes. They must be configured in FSF, based on predefined templates.
An association with a network node can be established if the following basic values are known:

- AETitle
- PortNumber
- IPAddress / IPHostName

For adding a DICOM network node, just select the proper "DICOM node" template and fill the basic information.
In most cases, this is already fully sufficient to set up proper DICOM communication !

In case of insufficient communication with the network node, you may
1. modify the Advanced Settings. This requires specific DICOM knowledge.
2. use the "Autoconfiguration" function. But be aware that the autoconfiguration will spoil the predefined settings of the templates!

4.2.18.1 Configuring a RIS node

4.2.18.1.1 DICOM RIS node

Connecting several PCR Eleva workspots (e.g. in a multi terminal surrounding)
Each workspot does its own RIS query and each workspot displays and exports its own images only! There is no possibility to define a specific workspot as the worklist provider ("server") for other workspots ("clients") as in PCR classic.

The available "DICOM RIS node" template for PCR Eleva is:

Node Type	Description	Remark	Reboot
RIS_Node	a DICOM RIS node	for an FTP/ASCII-RIS, select "FTP-RIS" in WLM and use separate FSF procedure "FTP-RIS"	No

Configure the RIS node as follows:

- If not already done, start the FSF as described under 0
- Select **FSF: Configuration → Network → External nodes, RIS, PACS, … → External DICOM nodes**
- Add a DICOM RIS node by using the RIS_Node template.
- Select **FSF: Configuration → Network → RIS, PACS, external nodes … → WLM** and select the proper RIS node from the list of configured DICOM nodes
- Set **Value of StudyDescription (0008,1030)** to “RequestedProcedureDescription from RIS”
- **Patient identifiying attributes:** per default, no item is selected. Check proper operation of the worklist WITHOUT any of these additional settings first. Select further patient identifying attributes ONLY if they are really required to create additional worklist entries (contact RIS admin).
- Define the broad query settings. If larger amounts of data are handled via the RIS, the initial broadquery may take extensive time. In this case configure the following parameters:
  - Broad query SPS startdate: “today”
  - Broad query modality: “CR” (Computed Radiography)
- Press [**Apply**], then [**Ok**].
- Activate these procedure settings now.
- Initiate a manual RIS query via **UI: Patient List**  and check the result.
- If everything works fine, set the time interval for the background broad query.

4.2.18.1.2 FTP RIS node

For ASCII RIS file transfer via FTP, a user account named <**ftpris**> is already prepared on the workspot/ console PC. This account provides the basic directory path for the RIS files. The destination folder for the ASCII RIS files is **\data\ris\input** .
The password for FTP access to the workspot PC is <**:ris256ftp.**>

- Select **FSF: Configuration → Network → RIS, PACS, external nodes … → WLM** and set the WLM network node name to “FTP-RIS”.
- Select **FSF: Configuration → Network → RIS, PACS, external nodes … → FTP-** RIS and set up the FTP/ASCII RIS as described on the help page of the FSF.
- Press [**Apply**], then [**Ok**].
- Activate these procedure settings now.
- Your settings will become effective after a **restart** of the PCR Eleva application SW.

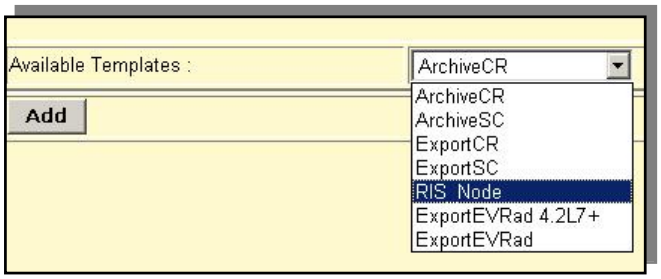
4.2.18.2 Configuring a MPPS node

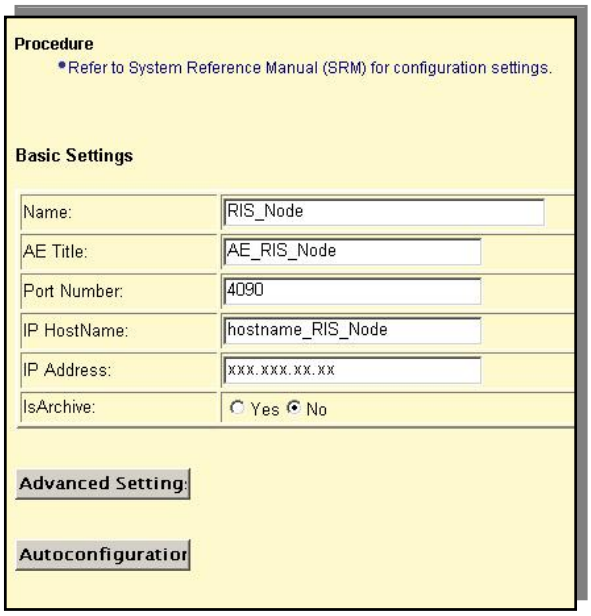
- This chapter can be skipped if an ASCII/FTP – RIS is used -

It is quite common that the MPPS node is identical with the RIS node. In this case skip the following step.

4.2.18.2.1 Defining a separate node for MPPS

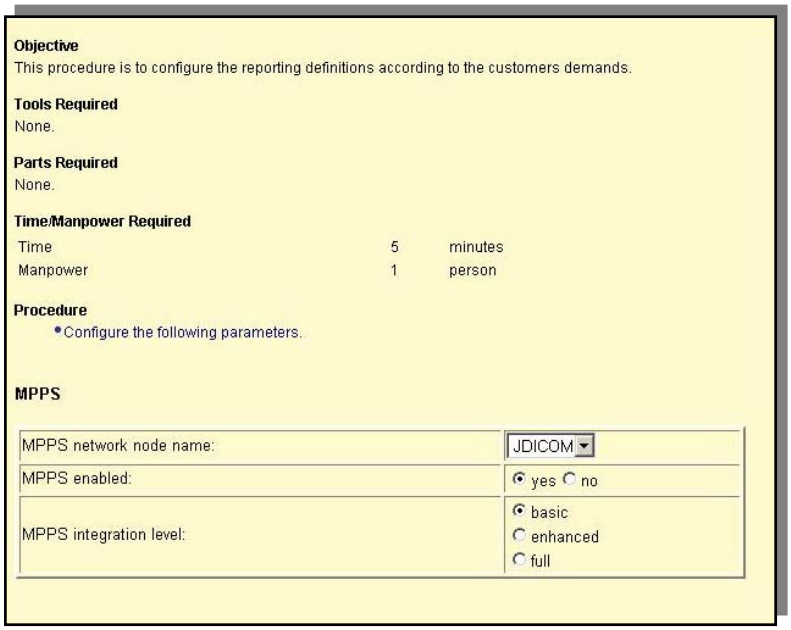
- If not already done, start the FSF as described under 0
- Select **FSF: Configuration → Network → External nodes, RIS, PACS, … → External DICOM nodes**
- Add an MPPS node by using the RIS_Node template.





4.2.18.2.2 Configuring MPPS

- Select **FSF: Configuration → Network → RIS, PACS, external nodes … → MPPS** and select the MPPS network node name from the list of configured DICOM nodes.
- Set MPPS enabled to “yes”.
- Define the MPPS integration level.
- Press [**Apply**], then [**Ok**].
- Activate these procedure settings now.



4.2.18.3 Configuring a DICOM export node

4.2.18.3.1 How to determine the node type

Set up the node(s) by using the “DICOM export node” templates. The following descriptions may support the selection of either a CR (Computed Radiography) or an SC (Secondary Capture) template. If you are not able to determine the node type, set up a separate node with a clear name for each possibility. Remember: you are the only one to configure the nodes; the advanced user or the application specialist usually cannot do this. If you have not prepared everything properly, they will not be able to do the full export destination mapping or an adequate manual export etc. .

The predefined DICOM export templates have the following characteristics:

Node Type	Description	Bit depth	Annotat.	Shutters	Processing
ArchiveCR	a full PACS incl. StorageCommit for CR images	12 bit default, 10 bit possible(1)	DICOM overlay	DICOM overlay default, burn in possible(1)	Burnt-in
ArchiveSC	a full PACS incl. StorageCommit for SC images	12 bit default, 10 bit possible(1)	Burnt-in	Burnt-in	Burnt-in
ExportCR	a „simple“ export node for CR images; e.g. a Viewing Station	12 bit default, 10 bit possible(1)	DICOM overlay	DICOM overlay default, burn in possible(1)	Burnt-in
ExportSC	a „simple“ export node for SC images; e.g. a Viewing Station	12 bit default, 10 bit possible(1)	Burnt-in	Burnt-in	Burnt-in
ExportEVRad(4)	an EV export node for CR images	12 bit default, 10 bit possible(1)	DICOM overlay	DICOM overlay default, burn in possible(1)	Burnt-in
ExportEVRad 4.2L7+	an EV export node for CR images(2)	12 bit fixed	Not burnt-in, moveable	Not burnt-in, moveable(3)	Not burnt-in(2)

(1) can be set via **UI: System → Quality assurance → Export**

(2) raw image export works properly for UNIQUE images;
UM and DRR images already contain an inherent EDR preprocessing

(3) only rectangular shutters, not polygonal

(4) ≤ Level 6 (L6)

For a proper display of shutters and annotations, PCR Eleva has customization items to adapt the export format. Try to find out which situation is present:

Question : ***Can the external node render annotations stored in DICOM attributes ?***

If the answer is: "Yes": Choose a **CR** DICOM node template via FSF.
>> doctor can remove annotations during viewing

Question : *Can PACS render black shutters stored in DICOM overlay ?*

If the answer is "Yes" :
Choose "overlay" in **UI: System → Quality assurance → Export**
>> doctor can remove shutter on PACS

If the answer is "No" :
Choose "burn in" **UI: System → Quality assurance → Export**

if the answer is "No": Choose an **SC** DICOM node template via FSF.
>> shutters and annotations are burned into the pixel data
***SC** contains pixel size attributes etc. that are not allowed in "Pure DICOM", but useful. You can configure them OFF.*

4.2.18.3.2 Setting up the export nodes

Configure the export node as follows:

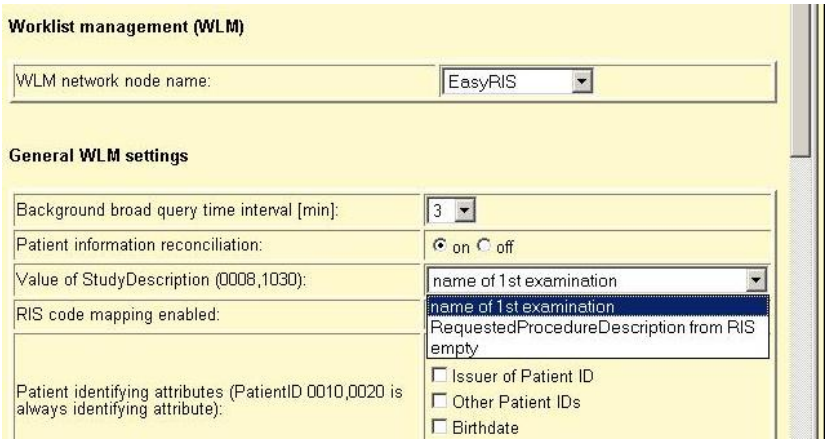
- If not already done, start the FSF as described under 0
- Select **FSF: Configuration → Network → RIS, PACS, external nodes … → External DICOM nodes**
- Set up the node(s) by using the “DICOM export node” templates. For an archive node, consider the following:

1. Make sure that the archive node really supports **Storage Commit**.
   If not (or unclear), set the parameter IsArchive to “No” !
2. If two or more nodes have the **same AE Title**, the archive node with Storage Commit has to be configured with Default AE = "Yes". Configure the other DICOM nodes with Default AE = "No".

- Press [**Apply**], then [**Ok**].
- Activate these procedure settings now.
- Your settings will become effective after a **restart** of the PCR Eleva application SW.
- Check your configuration settings as described under 4.2.19
- Map the default export destination via **UI: System → Settings → Export destinations**
- If required and useful (EVA must be prepared for that), map additional export destinations via **UI: System → Settings → Export destinations**

4.2.18.3.3 Specific tips for EasyVision RAD

In order to display the examination name within the patient list of EVRAD, program the [Value of StudyDescription (0800, 1030)] to "name of 1st examination". This is done via **FSF: Configuration → Network → RIS, PACS, external nodes … → Worklist management (WLM)**



4.2.18.4 Configuring a DICOM printer

Configure the DICOM Printer as follows:

- If not already done, start the FSF as described under 0
- Select **FSF: Configuration → Network → Print → DICOM printer**
- Set up the printer(s) by using the appropriate "DICOM Printer templates".
- If setting up a printer which supports several:
    - resolutions (Low/High)
    - bit numbers (8/12)
    - media types (clear/blue base)

  configure only those settings which should really be used. Unconfigure all the others!
- If you want to have the ability to print in Standard (Low) and in High resolution Alternatively, better configure the same printer two times. Use meaningful names (e.g. "Kodak xxx High" and "Kodak xxx Std" and configure only the suitable print media for each of the two printers (e.g. configure media type "8x10 H" for the "Kodak xxx High" printer and "8x10 L" for the "Kodak xxx Standard".

  The same counts for 8bit or 12 bit printing.

  TIP: In the field, it occurred that the **printout** was **too small** regarding the film size – this happened when configuring the Kodak 8900 Std. Selecting the Kodak 8900 HiRes setting instead led to a full sized image.
- Press [**Apply**], then [**Ok**].
- Activate these procedure settings now.
- Your settings will become effective after a **restart** of the PCR Eleva application SW.
- Check your configuration settings as described under 4.2.19

All functionality in **UI: Print** will be completely available after a patient with images is selected.

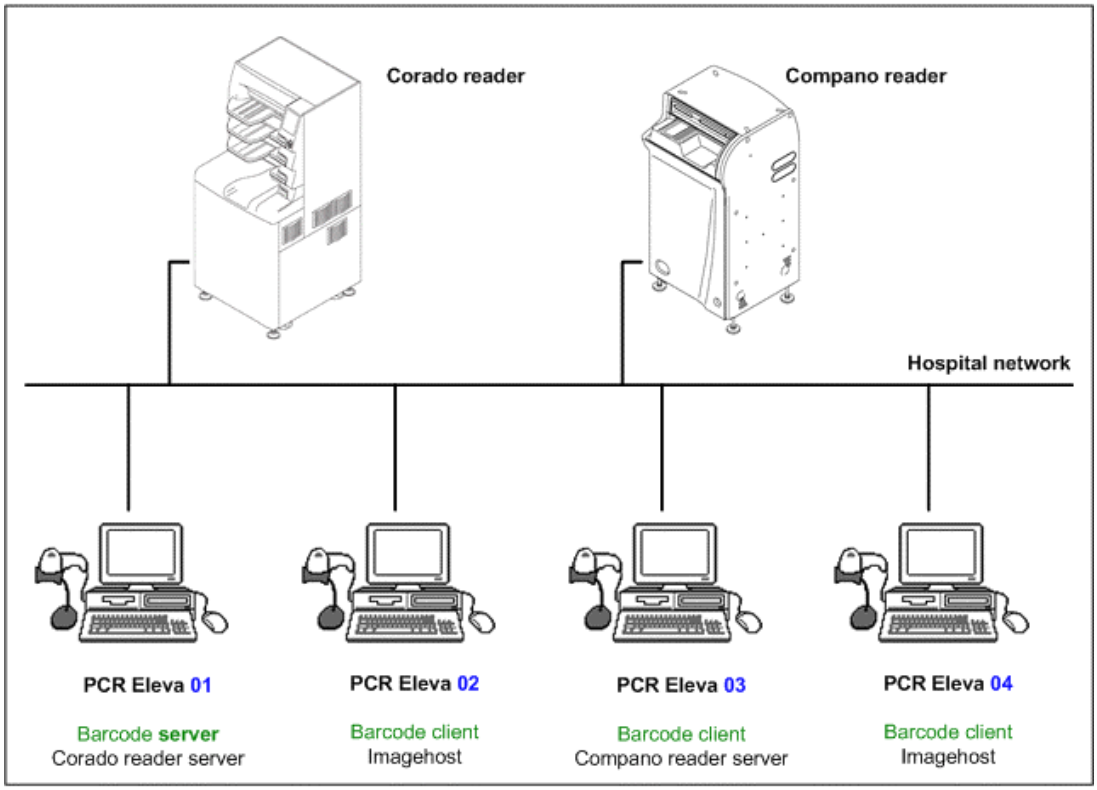
- Map the default print destination via **UI: System → Settings → Print destinations**
- If required and useful (EVA must be prepared for that), map additional print destinations via **UI: System → Settings → Print destinations**

4.2.19 CHECKING YOUR CONFIGURATION SETTINGS

- Create a patient manually and schedule an examination.
- Read in an image plate (blank or exposed).
- Add annotations, shutters, rotate the image.
- Export or print your test image.
- Review the image.

4.2.20 DEFINING THE STATUS OF IMAGE PLATE LINKING

In each cluster, one dedicated server for image plate linking must be defined ("**barcode server**"). Images will appear on that terminal where the barcode has been linked. The barcode server handles this association information. Full functionality of the cluster is therefore only possible if the barcode server is running.



- Select **FSF: Configuration → Network → Image plate linking**

- Define the **Terminal status**:
  - SERVER: This workspot PC shall be used as the barcode server in this cluster or in case of a standalone system together with one reader.
  - SYNCHRONOUS_CLIENT: This workspot PC shall be used as a barcode client.
- If 'SYNCHRONOUS_CLIENT' is selected, enter the IP address of this clusters´ barcode server
- Press [**Apply**], then [**Ok**].
- You can either activate these procedure settings now or you may activate all modified settings at once before you leave the FSF. *The general activation of modified settings is done via **FSF: General functions → Activate changes***

  Your settings will become effective after a **restart** of the PCR Eleva application SW.

4.2.21 CONFIGURING AN AUDIT TRAIL/HIPAA SYSLOG SERVER

- Configure an audit trail server via **FSF: Configuration → Network → RIS, PACS, external nodes … → Audit trail / HIPAA syslog server**

4.2.22 ACTIVATING THE VIRUS GUARD

With PCR Eleva R 1.0.0, the McAfee® VirusScan® Release 8.0.0 software is provided with each PCR Eleva Operating System. The scanner is automatically installed during the "ghost"-image installation process of the OS. It is preconfigured to application needs. It runs and scans during normal operation.

There is no need to install SW from a McAfee® CD which may be part of the delivery!

Per default, the scanner is disabled.

- If the customer requires it, activate the virus guard via **FSF: Configuration → Local workspot PC → Virus guard**

The activation becomes effective after a reboot.

4.2.23 CONNECTING AN EASYVISION RAD

The EasyVision RAD (EVRad) is a temporary option used for stitching images and recording on CD.

That's why it isn't fully integrated here and the specific service manuals have to be used.

Of course, existing EVRad units can be used with PCR Eleva. They have to be configured as external DICOM nodes (see 4.2.18.3 Configuring a DICOM export node).

- Make sure that the SW Level 7 is installed on the EVRad in order to have the full functionality available.
- In the configuration tool of the EVRad, define all PCR Eleva workspot(s) that shall send images to the EVRad as DICOM nodes.

4.2.24 MAPPING FIELD SERVICE CONFIGURATIONS TO EPX SETTINGS

Precondition:
An Examination Programming database (EPX db) is activated via the EVA tool. This can either be the factory db with default settings or a customized db with customer specific settings (also refer to 4.2.28).

In order to match your basic FSF configurations to the settings prepared in the EPX db, you have to perform a mapping. This mapping assigns the **real devices** configured via FSF to the **abstract devices** handled in the EVA tool.
This is done via
UI: System → Settings → Export destinations
and
UI: System → Settings → Print destinations

4.2.25 CALIBRATION OF PRINTER, MONITOR AND EXPORT FILTER

A detailed description is available in chapter **5. Adjustments**

4.2.26 CUSTOMIZING THE APPLICATION

All the settings that can be done via the UI of the PCR Eleva application SW like modified annotations, adapted print and export settings (autoexport, print-on-reject, autocomplete, …), the local user language etc. are called **customizations**.
Although theses customizations are not fully in the scope of service activities, they should be finished before a comprehensive final backup is performed as described in the following chapter. The backup mechanism handles the customizations, too.

For detailed information on the possible customization items please refer to the user manual and the application manual.

4.2.27 FINAL DATA BACKUP

The following data can be backed up:

- all configurations done in the FSF
- all customizations done in the UI
- all calibration data

- Insert an external device (floppy, USB flash drive) for backup.
- Backup is done via **FSF: General Functions → Backup system settings**.
- Keep the backup data in a safe place.

NOTE

Backup/restore of EPX settings is handled separately via the EVA tool! Refer to 4.2.28

NOTE

A backup of the patient db incl. patient images is not possible!

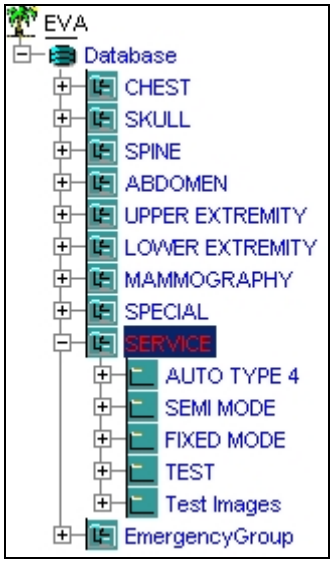
4.2.28 CUSTOMIZING THE EPX SYSTEM DATABASE

All examination programmings related to RIS codes, image detection, image processing, print presets and export presets are part of the EPX system database which can be accessed via the EVA tool (see **UI: System → Settings → EVA**). A default factory EPX system db is part of the PCR Eleva application SW.
For further information use the online help of the EVA tool and the information that is provided on the application manual CD.

- If necessary, perform the RIS code mapping.
- If necessary, import the anatomic database of an existing USIT ("anatomy.bak") and the image processing presets of an existing EVRad ("preset.dat").
- All further customizations of the EVA database should be done in close cooperation with the clinical user and the application specialist.
- Perform/check the customizations of the export and print presets.

CAUTION

Whatever modification you apply to the EPX system db, make sure that
1. the region called "Service" stays part of the system db
2. the examination called "Test Images" remains unchanged!
Else you may not be able to load the testimages or to perform adjustments and tests with adequate settings.



- Finally, perform a backup of the system database:
  - Insert an external device (floppy, USB flash drive) for backup.
  - Select the system database in the EVA menu tree.
  - Backup the system database via **EVA: File → Backup system db …** This will create a file called "EPXdb_Backup.epx" on the target drive.

4.2.29 FINAL ADVICE TO THE CUSTOMER

Please inform the customer about these two points:

1. Uncoordinated shut down of the PCR Eleva application (switching OFF the PC while the application SW is still running) may lead to severe problems later on.

Always shut down the application via **UI: System - General - Session [Restart] or [Exit]**
Else you may risk that the system hangs up during initial start up. This must not happen immediately, but becomes more probable with each uncoordinated switch OFF.

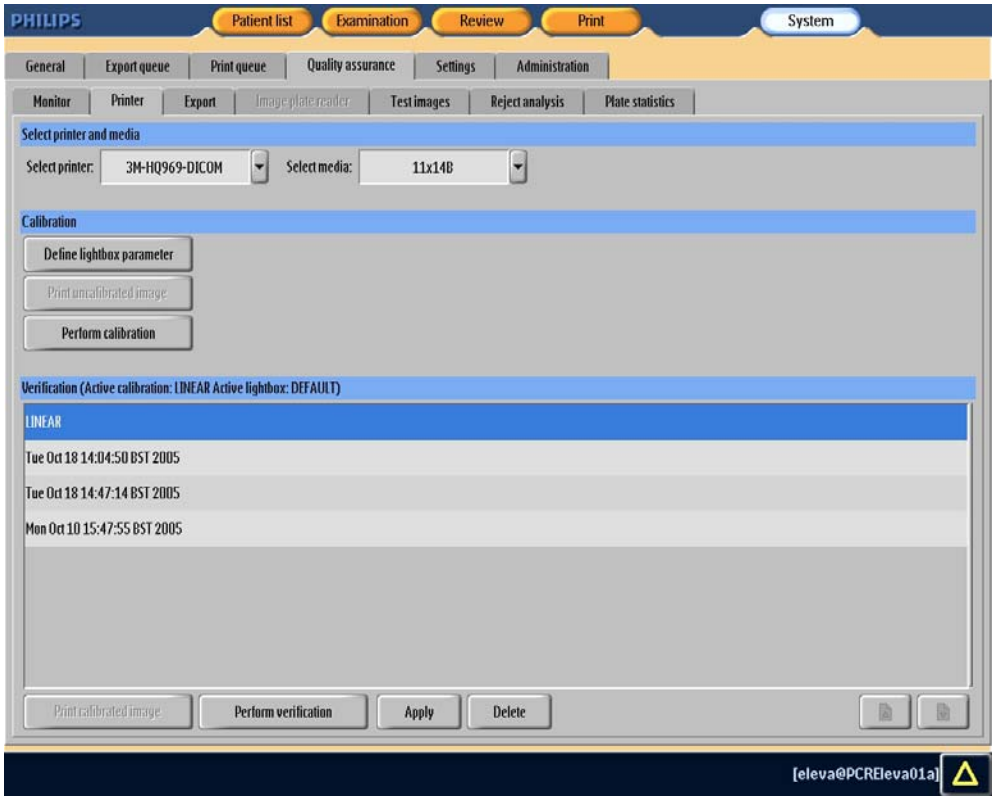
2. A **UI: System - General - Session [Restart]** of the workspot PC should be initiated on a regular base (after several days, at least once per week). Best would be once a day.

5 ADJUSTMENTS

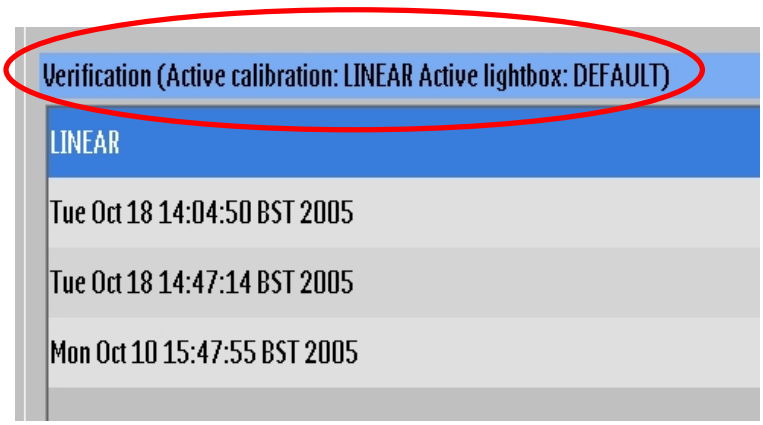
5.1 PRINTER CALIBRATION

UI: System → Quality assurance → Printer

You have to perform the calibration for each configured printer and each configured media type. The result of the calibration will be a **L**ook **U**p **T**able (LUT) or calibration curve. You can have several LUTs for a single printer – media combination (see below) and you are able to define specific parameters for the lightbox that is usually used for reviewing the printed images.



In the example shown, 4 different LUTs are available for the selected printer and media. Currently, the LINEAR LUT is applied (Active calibration: LINEAR) and the standard lightbox is used (Active lightbox: DEFAULT).



5.1.1 DEFINE ADDITIONAL LIGHT BOX

The luminance of the light box where the X-ray images are reviewed has an important influence on the perception of the relevant structures within the image. Another influence is the ambient light level. Therefore it is possible to correct for these influence. Usually, the system calculates the printer calibration LUT for a default lightbox with a maximum luminance of 2000 cd/m^2 and an ambient light level of 10 cd/m^2.
In case the local conditions differ, it is possible to compensate for that. Measure the actual values and define an additional lightbox.

5.1.1.1 Required equipment

Luminance measurements (in [Cd/m^2]) can either be performed with:

Spot meter: the measuring device is positioned at certain distance from the monitor screen (e.g. when using the Minolta LS 110)

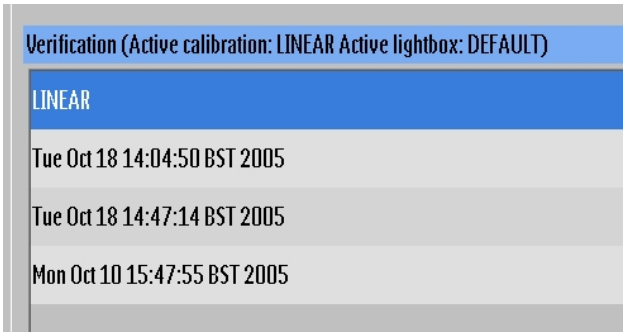
Luminance meter: the measuring device is positioned directly on the surface of the monitor screen (e.g. when using the Gossen MAVOLUX). If the measurement is performed in Lux, the unit Cd/m^2 can be calculated as follows: y [Cd/m^2] = x [Lux] * ??

5.1.1.2 Measurement

- Select **UI: System → Quality assurance → Printer** [**Define lightbox parameter**]
- Overwrite the name “StandardLightbox” and enter the ambient and the maximum luminance.
  The luminance values for the additional lightbox are determined as follows:
  Ambient luminance: switch the light box OFF. Measure the light intensity with a spot meter pointing to the center of the light box.
  Lightbox luminance: switch the light box ON. Measure the light intensity with a spot meter pointing to the center of the light box.

5.1.2 PERFORM CALIBRATION

- Load the set of test images via **UI: System → Quality assurance → Test images**
- Go to **UI: System → Quality assurance → Printer**
- Select the printer and the media type for which the calibration shall be done.
- **Make sure that the LINEAR LUT is applied!**
  - If necessary, select the blue line with text "LINEAR" and press [**Apply**].



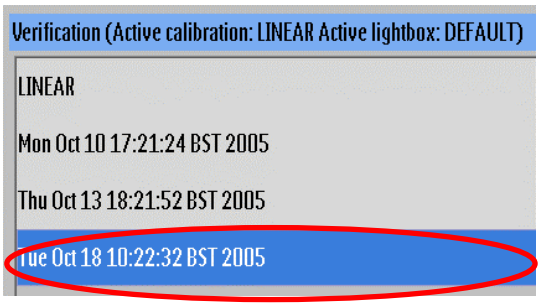
Before you print out the **unprocessed test image**, you must always select the **LINEAR** LUT first!

- Go to [**Patient list**] and select the patient "Test, Images".
- Go to [**Print**] task area, select the proper printer and the media type.
- Select "Test Images, PrinterCalibration".
- Print the image (maybe on a 2x2 format?)

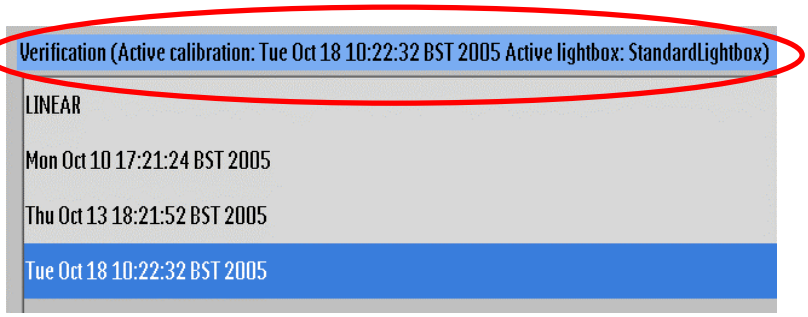
NOTE

The image will be printed as an unprocessed image (processing = NONE)

- Measure the gray values on the printed image.
- Go to **UI: System → Quality assurance → Printer**
- Press [**Perform calibration**].
- Enter the 16 gray values (take care, the table starts with the darkest value on top).
- If the values are within limits, activate the calibration:
  - Under **Verification**, select the line with latest date and time and press [**Apply**].

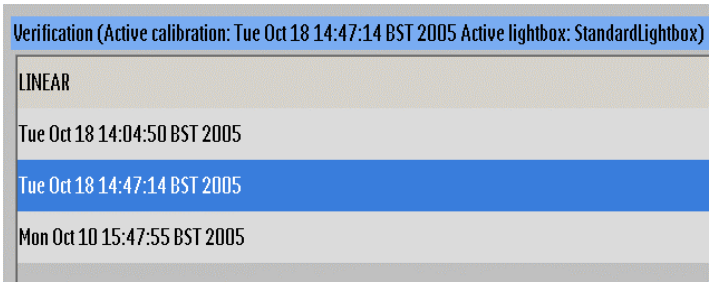


- The header row now shows the new set of values as “Active calibration” .



5.1.3 VERIFICATION OF THE PRINTER CALIBRATION

- If necessary, load the set of test images via **UI: System → Quality assurance → Test images**
- Go to **UI: System → Quality assurance → Printer**
- Select the printer and the media type for which the verification shall be done.
- Select the LUT to be verified:
  - Select the blue line with date and time that represent the LUT to be verified and press [**Apply**].



- Go to [**Patient list**] and select the patient “Test, Images”.
- Go to [**Print**] task area and select the proper printer and the media type.
- Select “Test Images, PrinterCalibration”.
- Print the image (maybe on a 2x2 format?)
- Measure the gray values on the printed image.
- Go to **UI: System → Quality assurance → Printer**
- Press [**Define lightbox parameters**]. Select the lightbox for which this calibration shall be valid. For the introduction of an additional lightbox refer to 5.1.1 Define additional light box.
- Press [**Perform verification**].
- Enter the 16 gray values (take care, the table starts with the darkest value on top).
- Compare your results. If required, repeat the calibration.

5.2 MONITOR CALIBRATION

UI: System → Quality assurance → Monitor
This feature allows a dedicated calibration of the individual monitor connected. If not required otherwise (e.g. from customer side or by the local regulations), you may use the default curves that are delivered with the system for each monitor type:
DEFAULT 17" LCD color
DEFAULT 17" LCD touch (Philips)
DEFAULT 17" LCD touch (elo)

The default curves will already allow image viewing in adequate quality.
If a dedicated monitor calibration is required, proceed as follows.

5.2.1 REQUIRED EQUIPMENT

Luminance measurements (in [Cd/m^2]) can either be performed with:

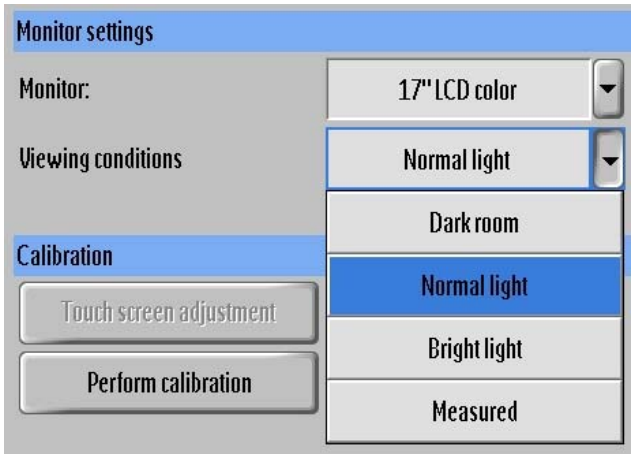
Spot meter: the measuring device is positioned at certain distance from the monitor screen (e.g. the Minolta LS 110)

Luminance meter: the measuring device is positioned directly on the surface of the monitor screen (e.g. the Gossen MAVOLUX)

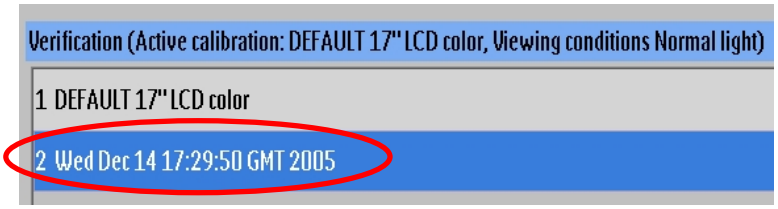
5.2.2 PERFORM CALIBRATION

- Select the monitor type.
- Determine the viewing conditions:

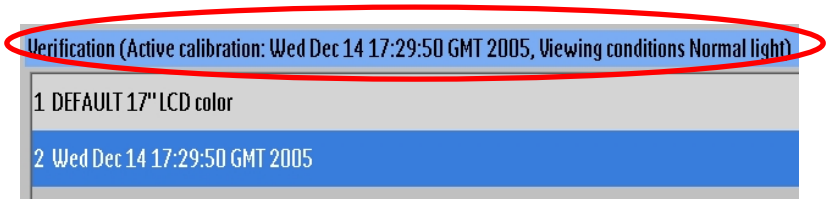
  The term "Measured" must be chosen if a **spot meter** is used (luminance measurement at a certain distance from the monitor screen). The ambient light level is already part of the measured value.
  One of the terms "Dark room", "Normal light", "Bright light" must be chosen if a **luminance meter** is used (luminance measurement with the measuring device positioned directly on the surface of the monitor screen). The ambient light level is not part of the measured value. It has to be taken into consideration separately as one of these three typical conditions.



- Press [**Perform calibration**].
- 18 monitor test images with increasing pixel values appear in the center of the screen. Measure each gray value with a light meter and enter the measured values.
- Activate the calibration:
  - Under **Verification**, select the line with latest date and time and press [**Apply**].



- The header row now shows the new set of values as “Active calibration”



5.2.3 VERIFICATION OF THE MONITOR CALIBRATION

Enter minimum and maximum luminance.

- Press [**Perform calibration**].
- Enter minimum and maximum luminance.
- 18 monitor test images with increasing pixel values appear in the center of the screen. Measure each gray value with a light meter and compare the measured with the expected result.

Better do not change the selected viewing conditions later!

5.3 EXPORT CALIBRATION

UI: System → Quality assurance → Export
This feature introduces a correction curve in case of larger deviations between the appearance of images from PCR Eleva and comparable images from other modalities on the monitor(s) of the export destinations (mainly the PACS).
Background: The PCR Eleva sends its images according to the DICOM Gray Scale Display Function (GSDF) when the **LINEAR** export filter is selected. Other modalities may not be able to export in accordance with the DICOM standard. Especially if the other modalities do not allow an individual adjustment of their export LUT, use this possibility to "calibrate" the exported image.

In reality this feature allows to apply a non-DICOM conform LUT in order to match the image impression in the export destinations (mainly the PACS).

NOTE

Keep in mind that this function currently works for all export destinations simultaneously!

5.3.1 REQUIRED EQUIPMENT

Luminance measurements (in [Cd/m^2]) can either be performed with:

Spot meter: the measuring device is positioned at certain distance from the monitor screen (e.g. the Minolta LS 110)

Luminance meter: the measuring device is positioned directly on the surface of the monitor screen (e.g. the Gossen MAVOLUX)

5.3.2 PERFORM CALIBRATION

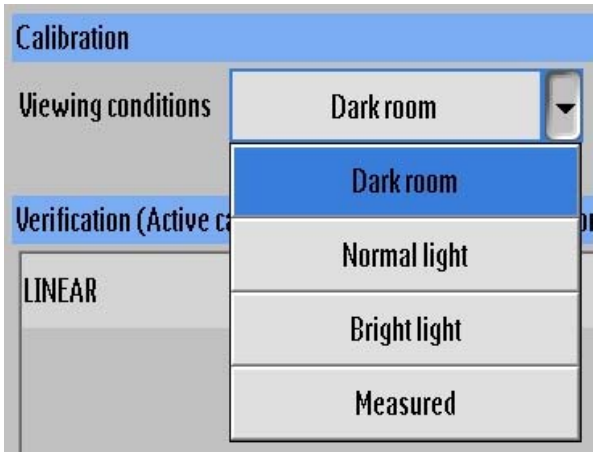
- Load the set of test images via **UI: System → Quality assurance → Test images**
- Go to **UI: System → Quality assurance → Export**
- Check that the LINEAR LUT is applied:
  - If necessary, select the blue line with text "LINEAR" and press [**Apply**].

Before you export the **unprocessed test image**, you must always select the **LINEAR** LUT first!

- Go to [**Patient list**] and select the patient "Test, Images".
- Go to [**Review**] task area and select "Test Images, ExportFilter"
- Export the image to the required destination (e.g. the PACS).
- Go to the location of the export destination.
- Display the exported image on the diagnostic monitor(s).
- Set up the normal viewing conditions for diagnosis of medical images.
- If you are going to a use light meter for measuring directly on the surface of the monitor, judge the viewing conditions (Is it "a dark room", "normal light", "bright light" ?).
- Measure the 16 gray values with a light meter. If more than one monitor is commonly used for diagnosis, measure on all monitors and calculate the average for each gray value.
- Go to **UI: System → Quality assurance → Export**
- Press [**Perform calibration**].

- Determine the viewing conditions:

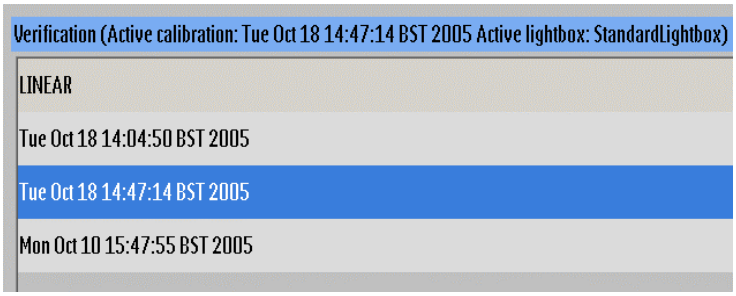
  The term “Measured” must be chosen if a **spot meter** is used (luminance measurement at a certain distance from the monitor screen). The ambient light level is already part of the measured value.
  One of the terms “Dark room”, “Normal light”, “Bright light” must be chosen if a **luminance meter** is used (luminance measurement with the measuring device positioned directly on the surface of the monitor screen). The ambient light level is not part of the measured value. It has to be taken into consideration separately as one of these three typical conditions.



- Enter the 16 gray values (take care, the table starts with the darkest value on top).
- Under Verification, select the line with latest date and time and press [**Apply**].
- The header row now shows the new set of values as “Active calibration”

5.3.3 VERIFICATION OF THE EXPORT FILTER

- If necessary, load the set of test images via **UI: System → Quality assurance → Test images**
- Go to **UI: System → Quality assurance → Export**
- Select the LUT to be verified:
  - Select the blue line with date and time that represent the LUT to be verified and press [**Apply**].



- Go to [**Patient list**] and select the patient “Test, Images”.
- Go to [**Review**] task area and select “Test Images, ExportFilter” (for Rel 1.0.0, use the PrinterCalibration image).
- Export the image to the required destination (e.g. the PACS).
- Go to the location of the export destination.
- Display the exported image on the diagnostic monitor(s).
- Measure the 16 gray values with a light meter. If more than one monitor is usually used for diagnosis, measure on all monitors and calculate the average for each gray value.
- Go to **UI: System → Quality assurance → Export**
- Press [**Perform verification**].
- Enter the 16 gray values (take care, the table starts with the darkest value on top).
- Compare your results with the target values. If required, repeat the calibration.

Better do not change the selected viewing conditions later!

6 PERFORMANCE CHECKS

6.1 READER ADJUSTMENT CHECK

1. Have on the hand the largest standard IP to be used. Perform a **primary erasure** for this IP.
   For details on the primary erasure procedure, see instructions for use.

2. Expose the IP to approx. 1 mR of radiation.
   Note, however, that the following conditions are used as a guide for standard IP setup.

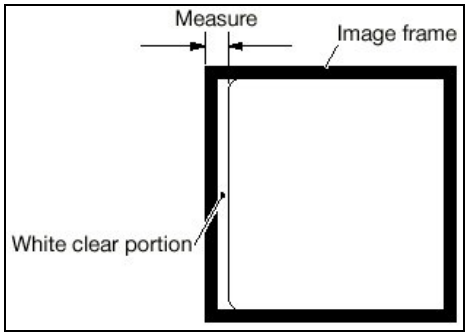
Distance :	1.8 m
Voltage :	80 kV
mAs :	0.50 mAs

3. Schedule a test patient and select **Sensitivity** from **Test** at the exposure menu.

4. Insert the cassette into the Reader. The image is read and transferred to the Workspot.

5. Check that there is no IP jam. The IP should be free from any scratch or damage after reading.

6. Check that the white clear portion of the resulting output film does not exceed 2 mm in width (when a 100% image output is generated).



7. Check that the output film and the image displayed on the monitor are both free from peculiar irregularities. There should be no offensive noise.
   If any abnormality is encountered, see chapter “Troubleshooting ” of the Reader Service Manual.

8. Check the S value. It should show approx. 200

6.2 FUNCTIONAL TEST

- Check that image quality on workspot PC monitor, EasyVision monitor (option) and other devices (archive, viewing station...) match each other.
- Check that the film annotations are properly printed out onto the film. Also, check for blurred, chipped, or otherwise abnormal character printings.
- Check the functionality of
  - RIS connection
  - Export
  - Print

6.3 ACCEPTANCE TEST

Follow the local regulations on acceptance testing.

7 HANDOVER PREPARATION

7.1 CLEANING THE EQUIPMENT

Clean the monitors and the computers with a dry cloth. Clean the covers of the Reader with a moistened cloth.

- End -