3.2 Starting Up and Shutting Down the System

This section explains how to start up and shut down the system. To start up the system, operations are required on the FDR D-EVO main unit and on the image processing unit.
To shut down the entire system, operations are required only on the image processing unit.

3.2.1 Starting Up the System

1 **Press the ON side of the main switch of the power supply unit, if its power status LED is not lit.**

2 **After confirming the following items, press the power switch for the image processing unit to start the initialization process.**

- All cables should be connected properly.
- No media should be inserted into the FDD.

If the control cabinet is included in the system, the control cabinet starts up automatically.

CAUTIONS

If the power status LED of the control cabinet does not come on after turning on the image processing unit, turn on the control cabinet.

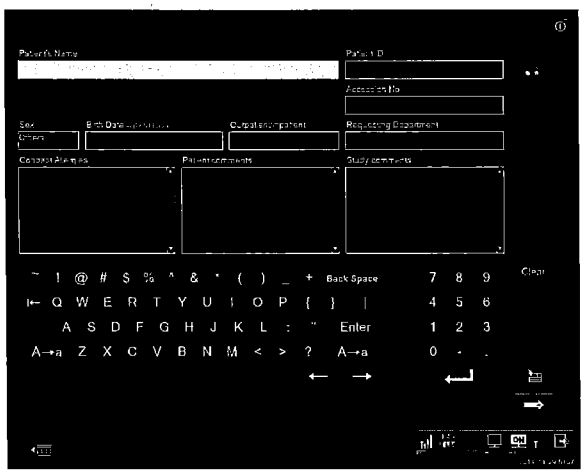
CAUTIONS

Do not press the ON side of the main switch of the power supply unit while pressing the optional remote switch. Otherwise, the settings may be initialized, and the system may be disabled.

3 **Turn on the radiographic examination stand.**

4 **The Patient Information Input Screen below appears following the opening screen on the image processing unit's monitor.**

Patient Information Input Screen



CAUTIONS

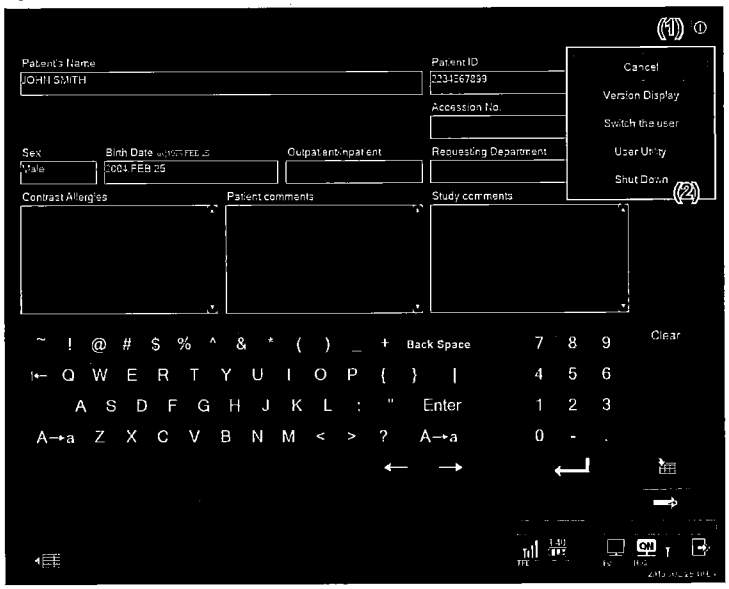
An error occurs if the system is started up immediately after shutdown.
To restart the system including the control cabinet, make sure that the power status LED of the control cabinet is off, and then press the power switch for the image processing unit.

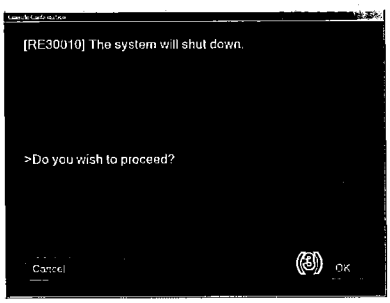
CAUTIONS

- **Do not connect/disconnect the connector when the message "Calibrating..." is displayed in the connected devices status after the system startup. Otherwise, the system does not start up normally, resulting in an error.**
- **may be displayed in the connected devices status while information on radio wave strength is being acquired from the flat panel sensor.**

3.2.2 Shutting Down the System

1 **Confirm that the equipment is not running. Touch the ⏻ button at the upper right of the image processing unit's display, and then the Shut Down button from the displayed menu. Touch the OK button in the displayed confirmation window.**
The image processing unit will shut down in a few minutes. If the control cabinet is included in the system, the control cabinet will also turn off automatically.





2 **Turn off the display as necessary.**

3 **Turn off the radiographic examination stand.**

Normally, it is not necessary to turn off the power supply unit.

CAUTIONS

If the control cabinet is included in the system, do not turn off the control cabinet with the main switch. Shutdown operation may not be performed normally.

CAUTIONS

When the system is shut down, image quality adjustment is performed for obtaining optimal diagnostic images.
Do not disconnect the connector until system shutdown when the flat panel sensor is used in wired communication mode.
Remove the battery pack after confirming system shutdown when the flat panel sensor is used in wireless communication mode.

3.3 Routine Operations

FDR D-EVO routine operations can be broadly divided into the following three steps.

Step 1 Entering the Patient Information (See page 3-13.)

Step 2 Selecting the Anatomical Region and Exposure/Study Menu (See page 3-14.)

Step 3 X-ray Exposure (See page 3-16.)

HINT

Operations that are actually performed on the FDR D-EVO are only those described in " Step 3 X-ray Exposure". Other operations are performed on the image processing unit.

For details, see "DR-ID 300CL Operation Manual".

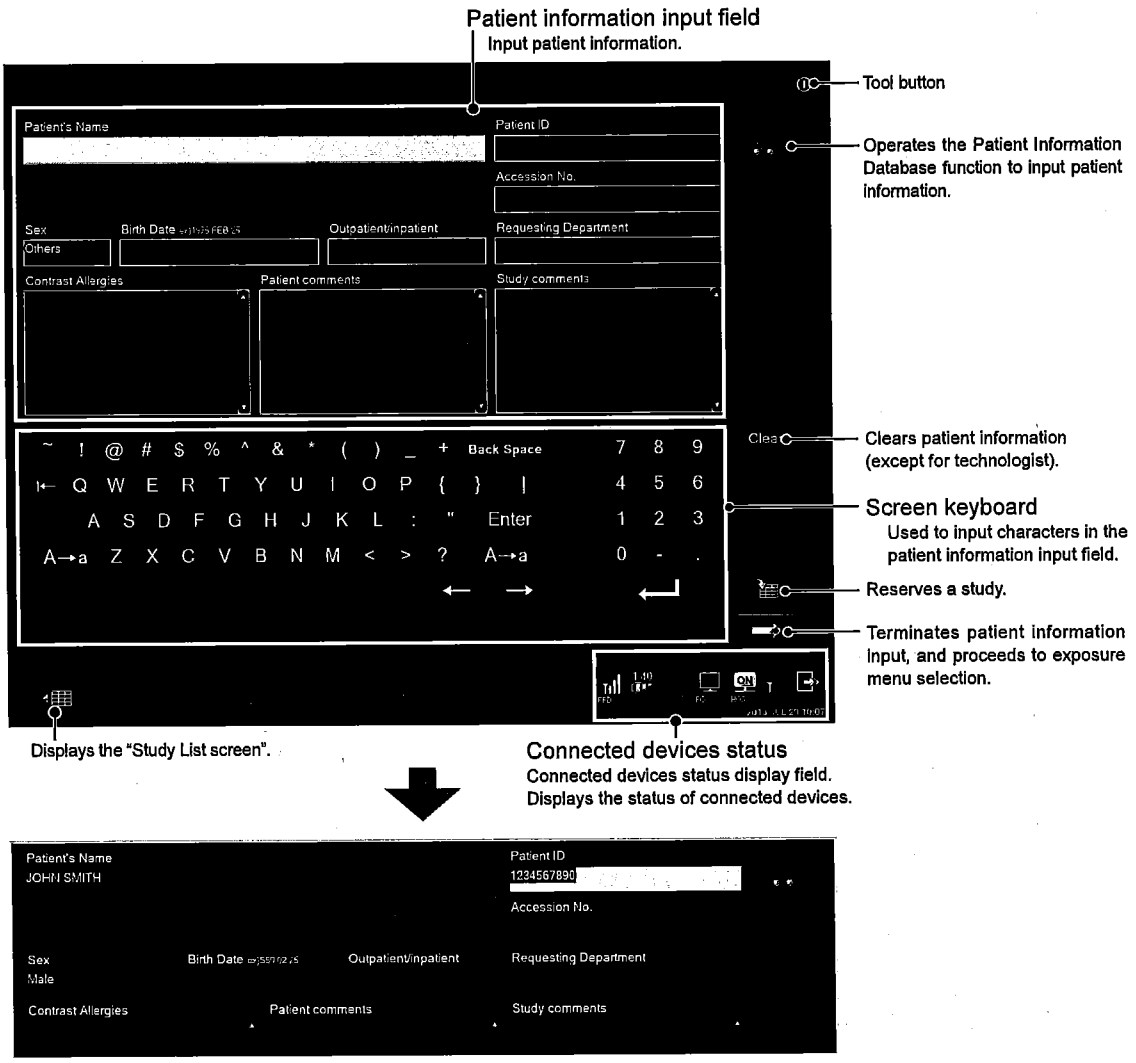
Step 1 Entering the Patient Information

1 The Patient Information Input Screen below is displayed on the image processing unit's display immediately after startup.
Enter patient information items appropriately, and then touch the ➡ button.

Not all the items of patient information need to be input.
Input any one of the items in order to proceed to the next operation.

When the optional card reader is provided, patient information can be input by reading from a magnetic card.

Observe the following when the message "Calibrating..." is displayed in the connected devices status.
- Do not subject the flat panel sensor to shock.
- Do not deliver radiation.
- Do not connect or disconnect the connector.



Patient information includes the following items.
Patient's Name / Sex / Birth Date / Outpatient/Inpatient / Patient ID / Accession No. / Requesting Department / Contrast Allergies / Patient comments / Study comments

HINT

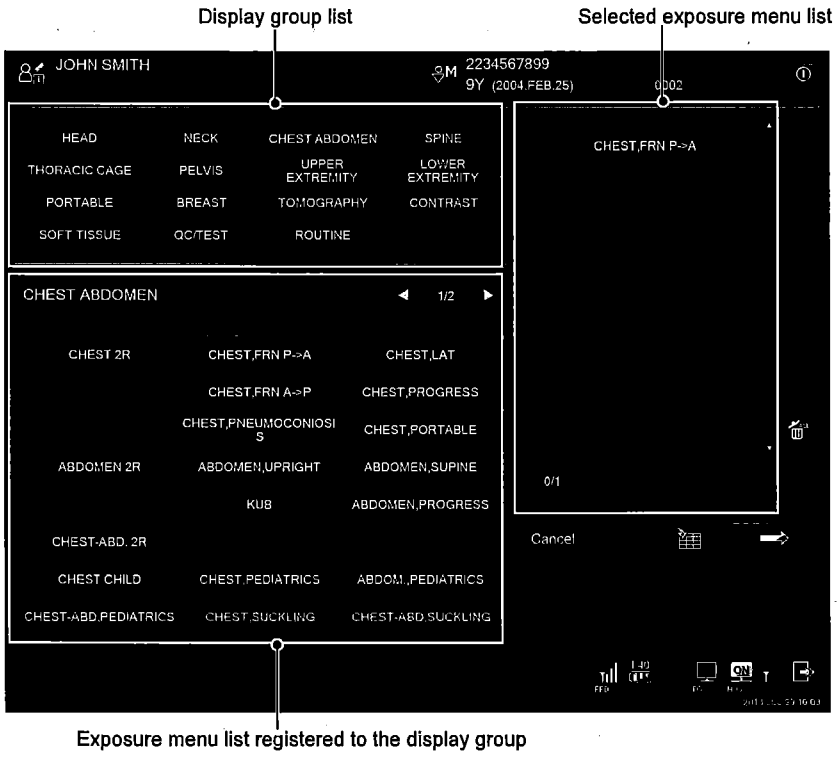
You can change patient information input items and their display order in the User Utility settings.

Step 2 Selecting the Anatomical Region and Exposure/Study Menu

1 The Exposure Menu Selection Screen is displayed.

Select an anatomical region from the display group list, and then select an exposure menu from the exposure menu list registered to the display group on the lower side. (More than one menu can be selected.)

The selected exposure menu(s) is displayed in the selected exposure menu list on the right side of the screen.



2 Touch ➡ after selecting exposure menu(s).

3 **The Study Screen is then displayed.**

Step 3 X-ray Exposure

When settings on the image processing unit have been completed, you can perform an exposure.

CAUTIONS

- **Make sure to identify a patient against the name or birth date and then have him (her) take a proper positioning for exposure.**
- **Make sure to confirm the exposure menu to be used and then have a patient take a proper positioning for exposure.**
- **When multiple panels are used, make sure that the READY status lamp on the flat panel sensor is lit in order to confirm that it is the correct one for the selected technique.**
- **Do not connect/disconnect the cable after starting exposure operations. Otherwise, it may not be possible to make an exposure or obtain a normal image.**

[1] Positioning the patient

Position the patient.

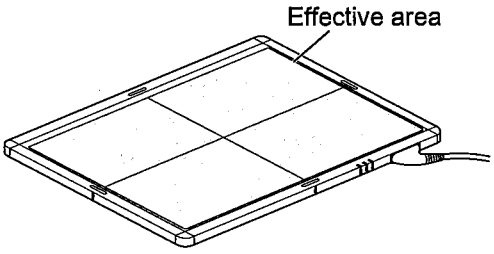
CAUTIONS

Exercise due care so that an intravenous line or drain tube put to a patient does not hook into the equipment.

For the exposure position of the upright-type/bed-type radiographic examination stand, see its Operation Manual.

When making an exposure directly using the flat panel sensor, set the exposure position by reference to the effective area.

For details on the effective area, see page A-7.



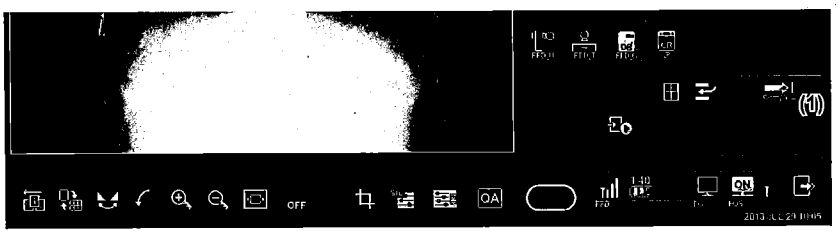
[2] X-ray exposure/Image displaying

Make an exposure after confirming that Shot Ready (exposure ready status indicator) is lit green in the connected devices status of the image processing unit. Even if the flat panel sensor is subjected to X-ray radiation when ShotReady is not green, X-ray radiation will be applied, however no image will be acquired.

Exposed images are transferred to the image processing unit.

Touch the button at the lower right to complete the study.

To prepare for exposures of the next patient, repeat **Step 1** through **Step 3**.



The registration of the next new patient should be processed after more than 2 seconds.

[3] Sleep mode

If a specified period of time has elapsed without registering an exposure menu when sleep mode is enabled, the flat panel sensor will enter sleep mode.
Once an exposure menu(s) is registered, sleep mode is disabled automatically.
Make sure that the READY status lamp is lit after registration.

When sleep mode is enabled, the flat panel sensor in wireless communication mode can go into hibernation. The operating time of the battery pack becomes longer, as the power consumption is reduced during hibernation. For details on the sleep mode setting, contact a FUJIFILM dealer.

Chapter 4 Troubleshooting

4.1 When a Message Appears on the Image Processing Unit

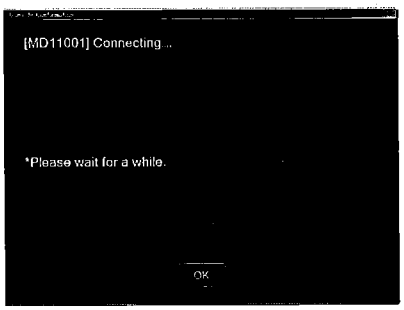
This section describes the warning dialog box and error messages.
If an error which cannot be handled or the same error recurs frequently, contact a FUJIFILM dealer.
If an error of unknown cause occurs, do not continue the operation and contact a FUJIFILM dealer.

[1] If a warning dialog box appears

If a communication error or an unexpected error has occurred, a warning dialog box pops up on the screen. In such a case, after checking error details and closing the box, take appropriate action immediately. Be sure not to continue the operation of the image processing unit without taking an appropriate action.
If any operation is performed while a warning dialog box is displayed, another screen may be displayed, hiding the dialog box behind. In this case, press the [Enter] key to close the hidden box.
If a warning dialog box containing an error code starting with "10" is displayed, take action as instructed in the dialog box, and select [OK]. Remove the battery pack from all the flat panel sensors. After making sure that the flat panel sensors are turned off, install the battery pack back in each flat panel sensor, and then restart the system.

[2] If a communication error occurs between the image processing unit and the connected DR system

The error message box MD11001 is displayed not only when the image processing unit starts up but also when a communication error occurs.



When the problem is not solved within a short time after the message box is displayed, perform the following procedure.

1 Select [OK] on the message box.

2 Check if the equipment connected with the image processing unit is turned on.

If any equipment is turned off, turn it on and wait for a while.

3 If the problem is not solved, shut down the image processing unit.

4 Make sure that the power status LED of the control cabinet is off, and then restart the image processing unit.

This step is not required if the control cabinet is not included in the system.

If the power status LED of the control cabinet does not turn off even after approximately 10 minutes have passed following the shutdown of the image processing unit, press and hold the main switch of the control cabinet.

When the image processing unit is restarted and the same error message box is displayed, contact a FUJIFILM dealer.

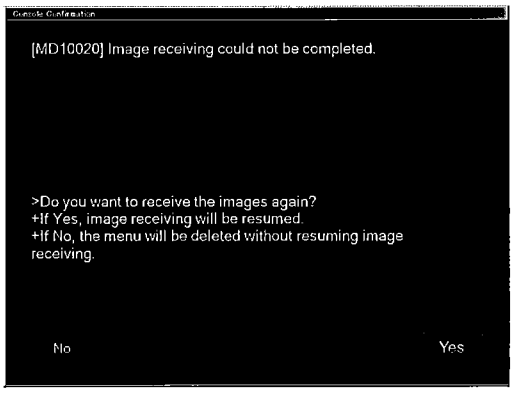
[3] If an exposed image cannot be acquired

Do not remove the battery pack from the flat panel sensor until an exposed image is acquired. If removed, the image data and the exposure menu data used for the exposure will be lost.

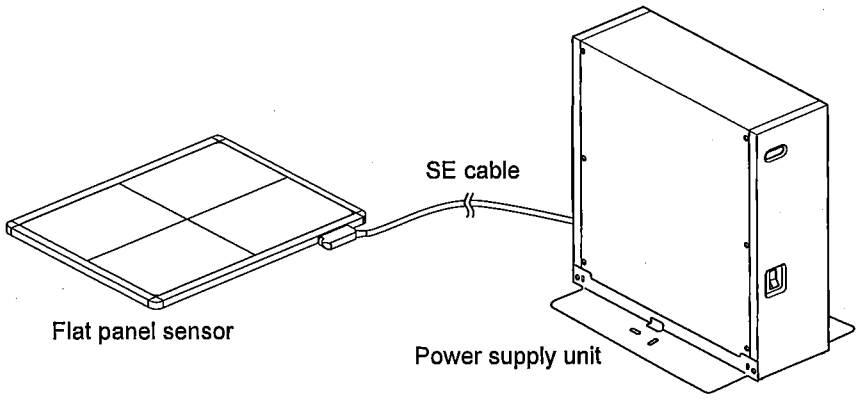
If an exposed image cannot be acquired, the following error message may be displayed.

1 If wireless communication is disconnected during image reading, the following message dialog is displayed.

<Error message of "MD10020">

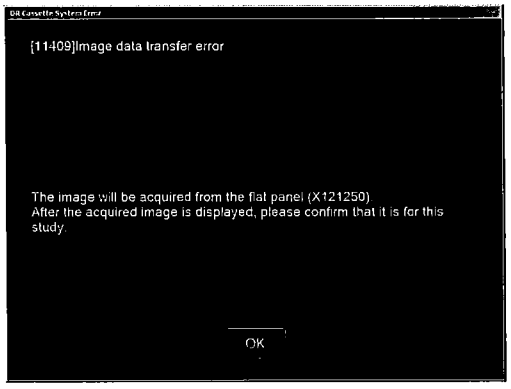


Connect the flat panel sensor and the power supply unit with the SE cable and then select "Yes". If you select "No", the image data and the exposure menu data used for the exposure will be lost.



2 If an exposure is made under a condition where wireless communication is unstable, the following message dialog may be displayed. Select "OK" to acquire the image and then check the acquired image.

<Error message of "11409">



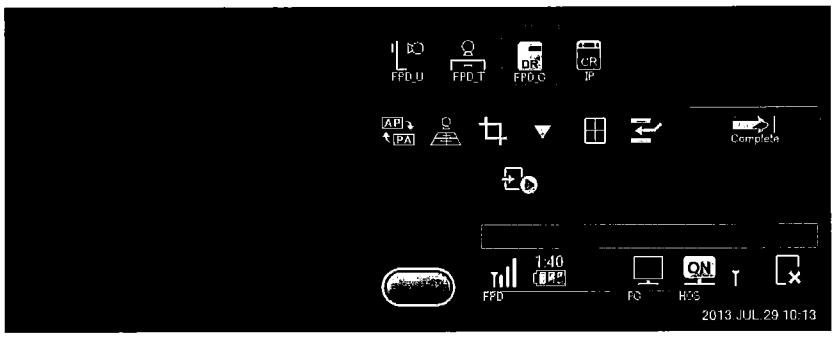
[4] If an error occurs on the image processing unit

If an error occurs on the image processing unit, an error message box is displayed on the screen. In such a case, check error details, and then take an appropriate action.

[5] If an error occurs on an output destination device

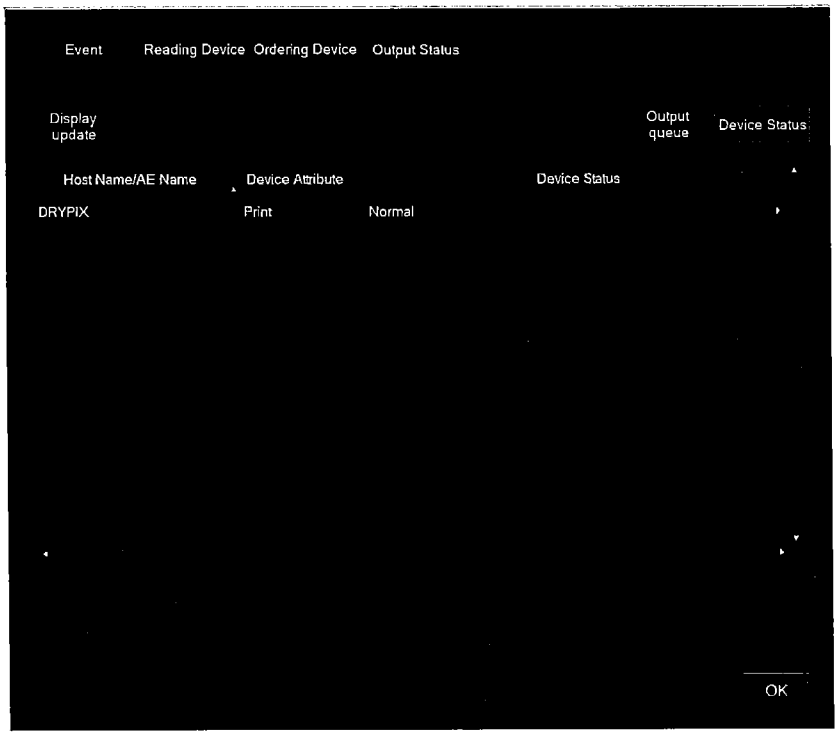
If an error occurs on an output destination device, is displayed in the connected devices status. In such a case, operate as follows.

Select .



The "Output Device Status window" is displayed.

Select OK after checking the connection status, and then take an appropriate action.



"Output Device Status window"

[6] If the dialog box containing the error message numbered 13048 appears

A severe shock may have been applied to the flat panel sensor. If the error message numbered 13048 appears, check if the flat panel sensor is damaged before continuing operation. Note that this error is recorded in the equipment.

4.2 How to Cope with an Error...

[1] When the system hangs up...

If an inappropriate processing is performed while this equipment is operating, the screen may freeze and the system may hang up (processing disabled). In that case, shut down the equipment forcibly according to the following procedure, and then restart it.

If the screen freezes and a hang-up occurs, remove the keyboard and mouse and reconnect them. If this operation does not solve the problem, restart the image processing unit.

1 Press the [Ctrl] + [Alt] + [Del] keys simultaneously.

2 "Windows Security" is displayed.

Select [Start Task Manager].

3 "Windows Task Manager" is displayed.

Select "ProcessManagerMain.exe" in the list in the "Processes" tab, and then click [End Process].

4 The message box is displayed.

Click [End Process] to terminate the image processing unit.
Depending on equipment status, an error message may not be displayed.

5 The desktop screen of the operating system is displayed.

Close the "Windows Task Manager window", and then select the [Start] button at the lower left of the screen. Select [Restart] from the displayed menu.

CAUTIONS

- **Make sure to shut down the system following the above procedures in case of a hang-up of the image processing unit. If the personal computer is turned off without shutdown, an error may occur on the computer.**
- **Note that forcible shutdown processing of the equipment is an emergency action. Do not use this action under normal situations.**

6 If the control cabinet is included in the system, press and hold the main switch of the control cabinet to turn it off.

7 Press the OFF side of the main switch of the power supply unit.

[2] When the image processing unit is turned off due to an electrical outage

When the image processing unit is turned off due to an electrical outage, etc., take the following actions according the condition when the power comes back on.

■ If the power comes back on soon after an electrical outage

Wait until the image processing unit restarts.
When the image processing unit has restarted, shut down the image processing unit by following the normal procedure.

❶ For details of system shutdown, see the "DR-ID 300CL Operation Manual".

To restart the image processing unit, follow the procedure for the system startup.

[3] If a hard disk of the image processing unit is damaged

If one of the hard disks is damaged, a window indicating so will appear. In such a case, press the F1 key and contact our official dealer.

[4] If a white image is displayed after an exposure

If a white image is displayed, a LAN communication error may have occurred.
Check if the LAN communication connectors are properly connected between the flat panel sensor and the power supply or and between the power supply unit and the control cabinet. Make an exposure again after confirmation.

[5] Precautions for operation when the device status is "Initializing" or "Changing FPD" in the image processing unit's "Output Device Status window"

When a flat panel sensor is added or replaced or when the battery of a flat panel sensor is replaced, "Initializing" or "Changing FPD" is displayed for all the flat panel sensors in the device status field of the image processing unit's "Output Device Status window". While either of the status messages is displayed, you cannot make an exposure. Wait until the message disappears.

Even if "Initializing" or "Changing FPD" is displayed for all the flat panel sensors, only those which are added or replaced or those whose battery is replaced will be initialized.

[6] If wireless communication with the flat panel sensor (DR-ID 601SE, DR-ID 602SE, DR-ID 611SE, DR-ID 612SE and DR-ID 613SE) is not possible

If the flat panel sensor is not recognized in a wireless communication mode, use the cable to connect the system in wired communication mode.

[7] If wireless communication is interrupted when using the flat panel sensor (DR-ID 601SE, DR-ID 602SE, DR-ID 611SE, DR-ID 612SE and DR-ID 613SE)

1 **If wireless communication is interrupted, an error message prompting reconnection is displayed after 30 seconds. Select "Yes" to reconnect.**

2 **If wireless connection is not established even after the selection is made, use the cable (wired connection) to transmit the image.**

3 **If wireless re-connection is not established, contact a FUJIFILM field service engineer.**

When wireless communication is interrupted, the image data is maintained in the flat panel sensor (DR-ID 601SE, DR-ID 602SE, DR-ID 611SE, DR-ID 612SE and DR-ID 613SE) until transmission is completed or power supply of flat panel sensor is turned off, so image data will not be lost.

Chapter 5 Daily Inspection and Maintenance

5.1 Daily User Inspection and Maintenance

During maintenance and inspection, strictly observe precautions contained in "Chapter 1 For Safe Operation" in this manual for you to use the FDR D-EVO under best conditions.

5.1.1 Daily Inspection (DR-ID 600)

Inspection Before Use

- Make sure that the equipment starts up normally.
- Make sure that the equipment communicates with connected devices normally.
- Make sure that the time displayed is correct.

See "3.2 Starting Up and Shutting Down the System" (page 3-10).

Inspection During Use

- Make sure that images are output normally.

See "3.3 Routine Operations" (page 3-12).

Inspection After Use

- Make sure that the power turns off normally by shutting down the equipment.

See "3.2 Starting Up and Shutting Down the System" (page 3-10).

Cleaning instructions

Use a neutral detergent or ethanol to clean the outer surfaces.

⚠ CAUTIONS

- **Do not use a solvent such as thinner or benzine, as it corrodes the outer surfaces.**
- **Make sure not to let water, detergent and ethanol get inside the equipment.**

5.1.2 Periodical Inspection

Inspection Every Three Months

Using a vacuum cleaner, remove any dirt or dust accumulated in each unit of the equipment once every three months. Clean then with a slightly moistened soft cloth and wipe off any moisture with a dry cloth.

See "2.2 Unit Names and the Functions" (page 2-3).

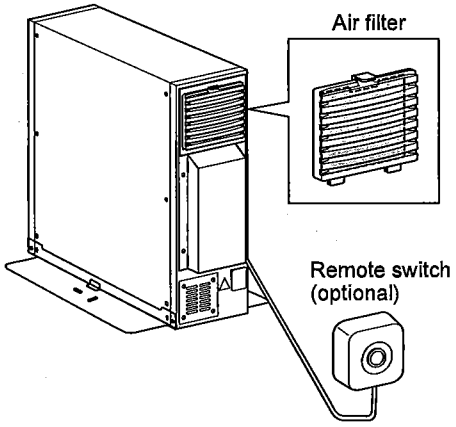
■ DR-ID 600

DR-ID 600PU

NO.	Unit	NO.	Unit	NO.	Unit
1	Flat panel sensor	2	Power supply unit	3	Power supply unit Air filter (1)
4	Remote switch (optional)				

Air filter
Clean the air filter on the rear of the power supply unit with a vacuum cleaner. Push down the lever at the top of the louver-and-filter assembly, and clean the air filter with a vacuum cleaner after detaching it from the assembly.

Remote switch (optional)
Clean the surface of the remote switch (optional) with a dry cloth, etc.



Be sure to turn off the equipment before cleaning the air filter or the remote switch (optional).

DR-ID 600MC

NO.	Unit	NO.	Unit
1	Control cabinet	2	Periphery of devices

Optional

NO.	Unit	NO.	Unit
1	Battery charger	2	Battery pack

Appendix A Specifications

A.1 Specifications

Specifications of the FDR D-EVO are shown below.

A.1.1 Processing Capacity (DR-ID 600)

■ Routine processing (when the two-image output format is used in standard mode)

(1) Exposure interval

The exposure interval of the FDR D-EVO is at least 8 seconds.
However, the interval varies depending on the region, the load to network communication, etc.

A.1.2 Image Output (DR-ID 600)

■ Standard processing

(1) Film output

Connection to the Imager makes it possible to obtain hard copies at the image reduction ratios and in the formats below.

• For standard pixel-density images (DR-ID 600SE, DR-ID 601SE, DR-ID 611SE and DR-ID 613SE)

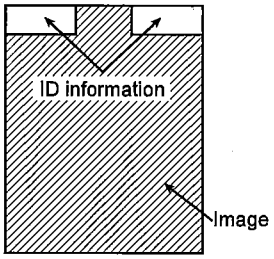
Output size	Reduction ratio	
	Two-image output	One-image output
14" × 17" (35 × 43cm)	61%	100%
14" × 14" (35 × 35cm)	61%	100%
10" ×12"	85%	100%
8" × 10"	100%	100%
18 × 43cm	100%	100%

• For standard pixel-density images (DR-ID 602SE and DR-ID 612SE)

Output size	Reduction ratio	
	Two-image output	One-image output
17" × 17" (43 × 43cm)	50%	82%
14" × 17" (35 × 43cm)	61%	100%
14" × 14" (35 × 35cm)	61%	100%
10" × 12"	85%	100%
8" × 10"	100%	100%
18 × 43cm	100%	100%

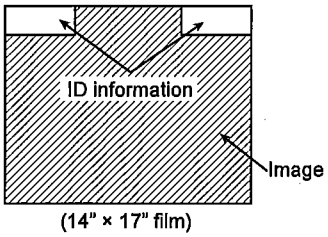
[Fig. A.1]

(a) 14" × 17"
one-image output



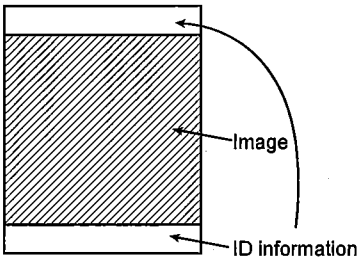
(14" × 17" film)

(b) 17" × 14"
one-image output



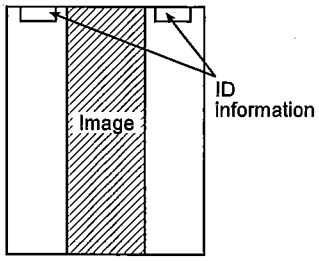
(14" × 17" film)

(c) 14" × 14"
one-image output



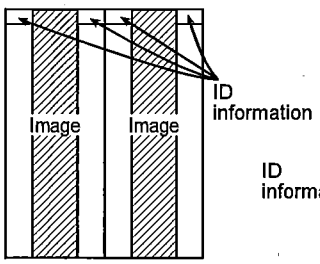
(14" × 17" film)

(d) 18 × 43cm
one-image output



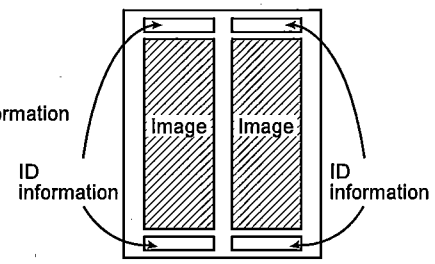
(14" × 17" film)

(e) 18 × 43cm
two-image output



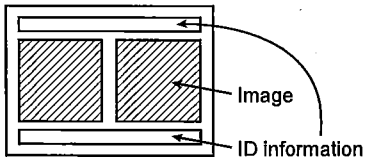
(26 × 36cm film)

(f) 18 × 43cm
two-image output



(26 × 36cm film)

(g) Two-image output



(26 × 36cm film)

For one-image output using 17" × 14", 14" × 17", 14" × 14" or 18 × 43cm, images are output on 14" × 17" film. In other cases, images are output on 26 × 36cm film.

Depending on the printer connected or image processing unit's software version, image outputs in the following formats are available.

- 100%-size output of 14" × 14" image on 14" × 14" film
- 100%-size output of 8" × 10" image on 8" × 10" film, as well as reduced image output on films of other sizes
- 100%-size output of 10" × 12" image on 10" × 12" film

A.1.3 Reduced Equivalent (DR-ID 600)

Peak reduced equivalent on the front panel of the flat panel sensor: 0.5 mmAl

A.1.4 Power Supply Conditions

■ DR-ID 600PU

Rated voltage: 100-240V ±10% ~
Input current : 1-0.42A
Frequency : 50-60Hz

■ DR-ID 600MC*

Rated voltage: 115/230V ~
Input current : 4.0/2.0A
Frequency : 50-60Hz
* Since the DR-ID 600MC is general-purpose electrical equipment, the electric rating above is an example.

■ AC adapter for cradle (optional)

Rated voltage: 100-240V ~
Input current : 1.62-0.72A
Frequency : 47-63Hz

A.1.5 Environmental Conditions

■ DR-ID 600PU

(1) Operating Conditions

Temperature : 15°C (15%RH) - 30°C (80%RH)
Humidity : 15%RH (15°C) - 80%RH (30°C) (no dew condensation)
Atmospheric pressure : 700hPa - 1060hPa

(2) Non-operating Conditions

(Environmental conditions under which power can be supplied)

Temperature : 5°C - 35°C
Humidity : 10%RH - 80%RH (no dew condensation)
Atmospheric pressure : 700hPa - 1060hPa

⚠ CAUTIONS

- **When the flat panel sensor is used in high temperature condition for long period of time, it may cause image artifacts and/or failure of the device.**
- **When using the DR-ID 613SE, if the temperature is 37°C and the humidity is 90% RH (no dew condensation), continuous use of 30 minutes or less is possible.**
  Using Manual Mode (energy saving mode) from the image processing unit when the temperature and humidity are the same allows up to 1 hour of continuous use.

■ DR-ID 600MC

(1) Operating Conditions

Temperature : 10°C - 35°C
Humidity : 20%RH - 80%RH (no dew condensation)
Atmospheric pressure : 700hPa - 1060hPa

(2) Non-operating Conditions

(Environmental conditions under which power can be supplied)

Temperature : -40°C - 65°C
Humidity : 5%RH - 95%RH (no dew condensation)
Atmospheric pressure : 700hPa - 1060hPa

■ AC adapter for cradle (optional)

(1) Operating Conditions

Temperature : 0°C - 50°C
Humidity : 0%RH - 95%RH (no dew condensation)

(2) Non-operating Conditions

(Environmental conditions under which power can be supplied)

Temperature : -40°C - 85°C
Humidity : 0%RH - 95%RH (no dew condensation)

■ AC adapter for the battery charger (optional)

(1) Operating Conditions

Temperature : 0°C - 40°C
Humidity : 10%RH - 85%RH (no dew condensation)

(2) Non-operating Conditions

(Environmental conditions under which power can be supplied)

Temperature : -25°C - 60°C
Humidity : 10%RH - 95%RH (no dew condensation)

⚠ CAUTIONS

Charge the battery pack in the operating environment.

A.2 External View and Weight

The external view and weight of the FDR D-EVO are shown below.

Specifications, dimensions and weight are subject to change for improvement without prior notice.

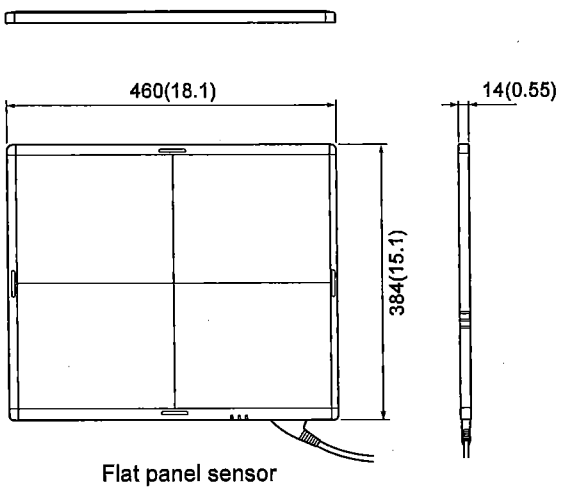
A.2.1 DR-ID 600

■ DR-ID 600PU

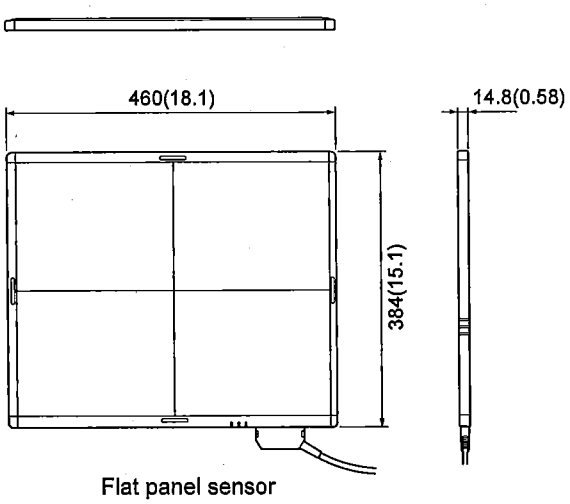
	Width (mm(in.))	Depth (mm(in.))	Height (mm(in.))	Weight (kg(lb))
Flat panel sensor (DR-ID 600SE)	460(18.1)	384(15.1)	14(0.55)	2.8(6.2)
Flat panel sensor (DR-ID 601SE)	460(18.1)	384(15.1)	14.8(0.58)	3.3(7.3)*
Flat panel sensor (DR-ID 601SE (for wired communication only))	460(18.1)	384(15.1)	14.8(0.58)	3.2(7.1)
Flat panel sensor (DR-ID 602SE)	460(18.1)	460(18.1)	15.4(0.61)	4.0(8.8)*
Flat panel sensor (DR-ID 602SE (for wired communication only))	460(18.1)	460(18.1)	15.4(0.61)	3.9(8.6)
Flat panel sensor (DR-ID 611SE)	460(18.1)	384(15.1)	15.5(0.61)	3.6(7.9)*
Flat panel sensor (DR-ID 611SE (for wired communication only))	460(18.1)	384(15.1)	15.5(0.61)	3.4(7.5)
Flat panel sensor (DR-ID 612SE)	460(18.1)	460(18.1)	15.4(0.61)	4.2(9.3)*
Flat panel sensor (DR-ID 612SE (for wired communication only))	460(18.1)	460(18.1)	15.4(0.61)	4.2(9.3)
Flat panel sensor (DR-ID 613SE)	328(12.9)	268(10.6)	15.7(0.62)	1.9(4.2)*
Flat panel sensor (DR-ID 613SE (for wired communication only))	328(12.9)	268(10.6)	15.7(0.62)	1.7(3.7)
Power supply unit	120(4.7) (240(9.4))	350(13.8) (385(15.2))	350(13.8)	7.8(17.2) or less

* The weight of the battery pack is included.

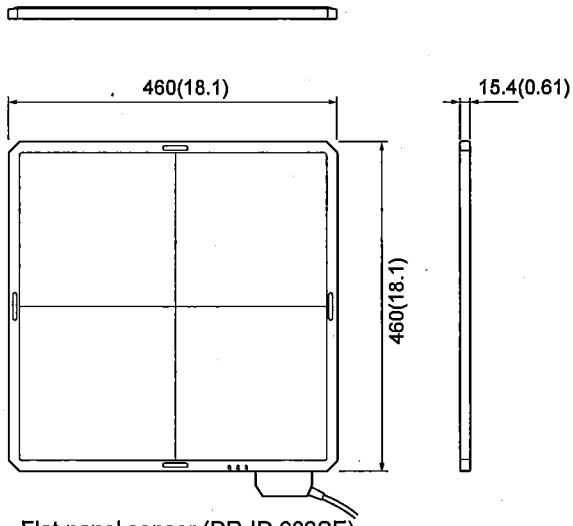
Unit: mm(in.)



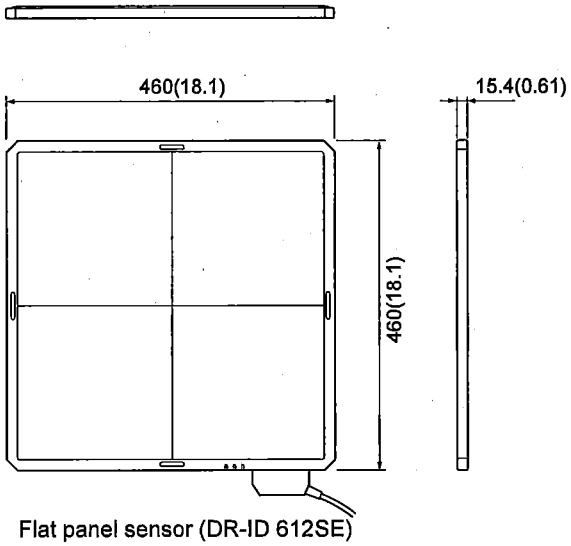
Flat panel sensor (DR-ID 600SE)



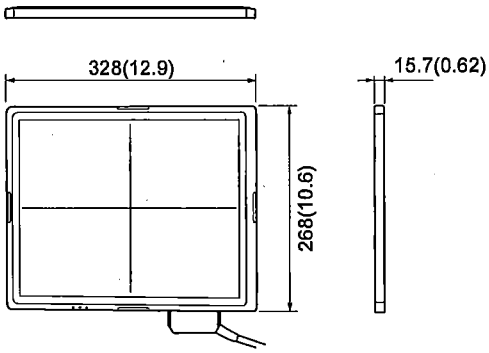
Flat panel sensor (DR-ID 601SE)



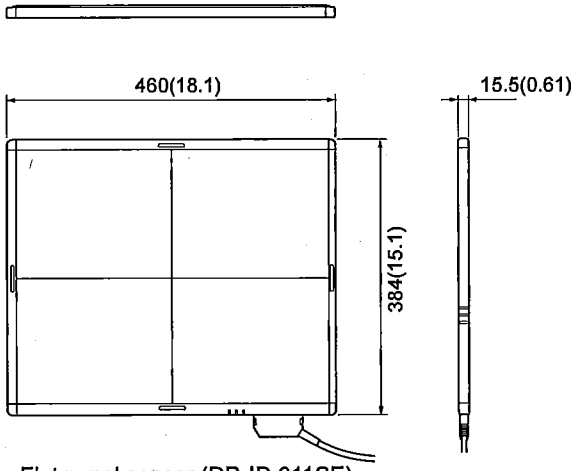
Flat panel sensor (DR-ID 602SE)



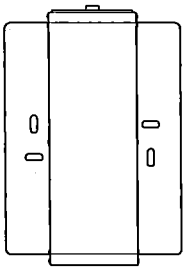
Flat panel sensor (DR-ID 612SE)

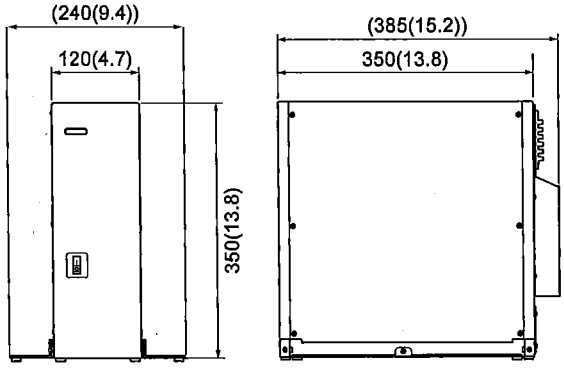


Flat panel sensor (DR-ID 613SE)



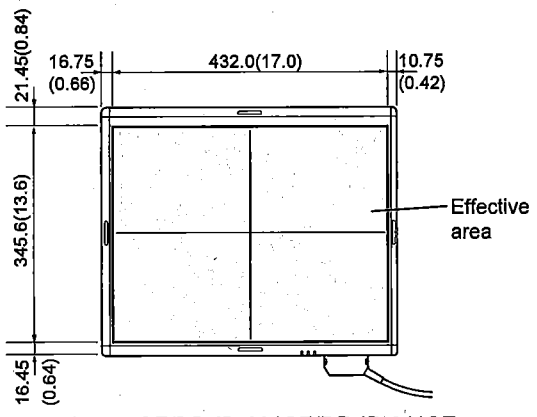
Flat panel sensor (DR-ID 611SE)



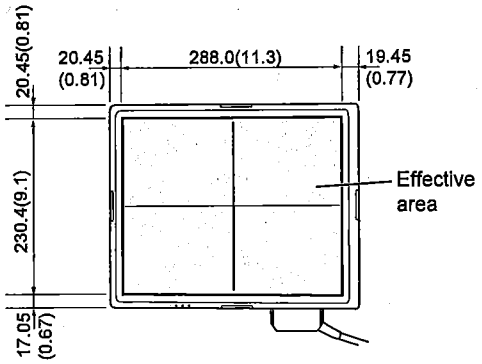


Power supply unit

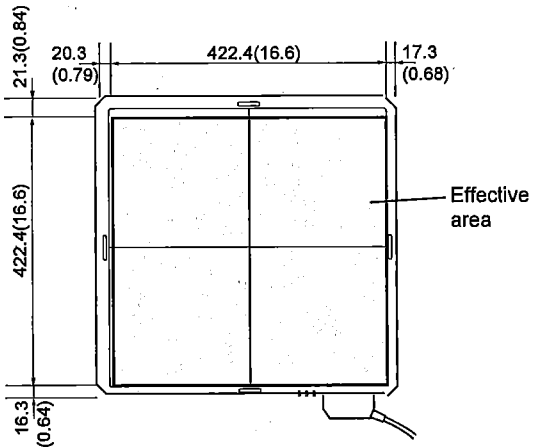
The effective area of the flat panel sensor is as shown in the figure below



DR-ID 600SE/DR-ID 601SE/DR-ID 611SE



DR-ID 613SE

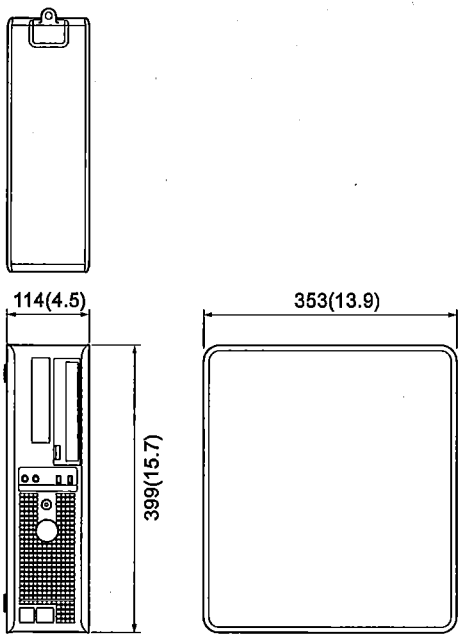


DR-ID 602SE/DR-ID 612SE

■ DR-ID 600MC

	Width (mm(in.))	Depth (mm(in.))	Height (mm(in.))	Weight (kg(lb))
Control cabinet	114(4.5)	353(13.9)	399(15.7)	8.3(18.3)

Unit: mm(in.)

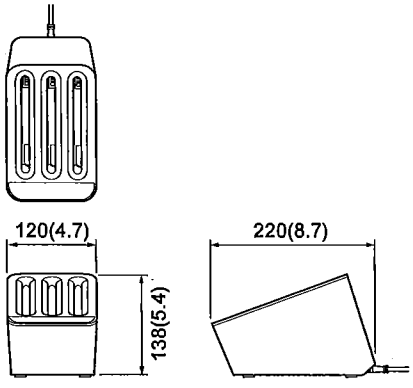


Control cabinet

■ Battery charger

	Width (mm(in.))	Depth (mm(in.))	Height (mm(in.))	Weight (kg(lb))
Battery charger	120(4.7)	220(8.7)	138(5.4)	1.3(2.9)

Unit: mm(in.)



Battery charger

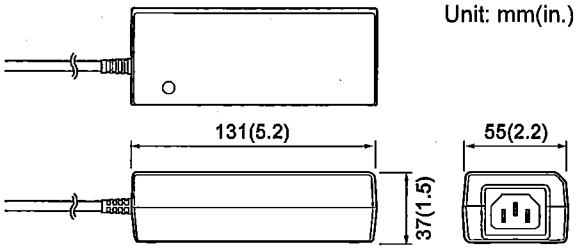
■ DR-ID 300CL

◑ For the external view and weight of the DR-ID 300CL, see the "DR-ID 300CL Operation Manual".

■ AC adapter for cradle

	Width (mm(in.))	Depth (mm(in.))	Height (mm(in.))	Length (m(ft))	Weight (kg(lb))
AC adapter	131(5.2)	55(2.2)	37(1.5)	Approx.1.5(4.9)	Approx.0.38(0.8)
SE cable for charging	-	-	-	Approx.3.0(9.8)	Approx.0.32(0.7)

Unit: mm(in.)



AC adapter for cradle

A.3 Characteristics

(1) Sensitometoric Response Characteristics and Dynamic Range
FDR D-EVO has a linear response against the exposure range where it can depict the clinical information.
DR-ID 601SE and DR-ID 602SE (GOS-based) cover a dynamic range of 0.088 - 88μGy at least at RQA5.
DR-ID 611SE and DR-ID 612SE (CsI-based) cover a dynamic range of 0.088 - 44μGy at least at RQA5.
DR-ID 613SE (CsI-based) covers a dynamic range of 0.088 - 79μGy at least at RQA5.

(2) Spatial Resolution Properties
A typical MTF value of DR-ID 601SE and DR-ID 602SE at 1cyc/mm, RQA5 is 0.75 (high sharpness mode) and 0.60 (standard sharpness mode).
A typical MTF value of DR-ID 611SE, DR-ID 612SE and DR-ID 613SE at 1cyc/mm, RQA5 is 0.80.
The level of uncertainty is estimated as less than ±10%

(3) DQE (Detective Quantum Efficiency)
Typical DQE value of DR-ID 601SE and DR-ID 602SE at 8.8μGy in 1cyc/mm is 0.29.
Typical DQE value of DR-ID 611SE and DR-ID 612SE at 8.8μGy in 1cyc/mm is 0.53.
Typical DQE value of DR-ID 613SE at 8.8μGy in 1cyc/mm is 0.54.
The level of uncertainty is estimated as less than ±10%

(4) Display
To deliver the detector characteristics above, it is recommended to use a monitor with the following specifications:

- Image matrix size (DR-ID 601SE, DR-ID 611SE) : Minimum 2304x2880 pixels
- Image matrix size (DR-ID 602SE, DR-ID 612SE) : Minimum 2816x2816 pixels
- Image matrix size (DR-ID 613SE) : Minimum 1536x1920 pixels
- Gray scale: Minimum 12 bit
- DICOM calibrated

(5) Image Quality Evaluation
Fujifilm typically conducts reader studies that compare new FDR D-EVO detector models to chosen marketed devices. These studies, involving an assessment of image quality by board-certified radiologists, have demonstrated that the images acquired using the FDR D-EVO detectors are deemed to be of diagnostic capability. Additionally, reader studies have concluded that, when used in conjunction with Fujifilm's recommended exposure conditions as a reference, both the GOS-based and CsI-based FDR D-EVO detectors can provide acceptable diagnostic capability and image quality at reasonably low dose levels typically used for pediatric use.

(6) Typical Patient Dose
As with any new product/application, Fujifilm provides applications training support to each customer to establish the dose levels that meet the image quality standards of the medical facility. As part of this training, we provide both recommended technique charts as well as guidance for optimizing AEC conditions for each detector type. When using any FDR D-EVO detector, typical patient dose levels should not exceed that of screen/film or Computed Radiography.

Appendix Z Precautions for Exposure

Z.1 Precautions for Exposure in AUTO MODE

In AUTO MODE, stable image output can be obtained by means of the following.
(1) Radiation field
(2) EDR image data analysis
(3) Detailed depiction of the cervical region
However, problems may arise due to differences in the multiple diaphragms or scattered rays of the X-ray equipment. For such problems, contact a FUJIFILM dealer and use other recording modes, such as SEMI-AUTO MODE or FIX MODE.

Z.1.1 Radiation Field

1 Do not set the radiation field extremely small. Be sure to subject one-third or more of the length of each side of the bucky of the DR system to X-ray exposure.

2 Make sure that none of the sides of the radiation field overlap with the contrast medium. Errors will result if they overlap.

Available for Each Anatomical Region/Method

	Plain	Contrast Medium	Tomography
Head	4	4	4
Neck	4	4	–
Chest	4	4 (1 for esophagus)	–
Abdomen	4	4 (1 for stomach and intestines)	–
Pelvis	4	4	–

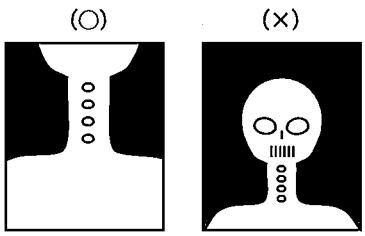
3 Notes on PRIEF

[PRIEF 4] Used, with some exceptions, for both plain and contrast medium exposure menus, from the head to the pelvis.
The diaphragm shape will be any convex polygon, including rectangles, circles, ellipses, tracks, etc.

[PRIEF 1] Used with esophagus, stomach and intestines contrast medium menus.

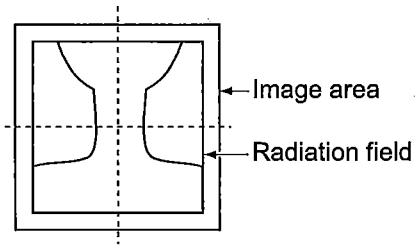
Z.1.2 Depiction of the Cervical Region

1 The radiation field must not include the whole head. Be sure to secure transparent portions on both sides of the neck.

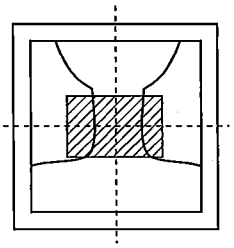


Use the "Head" menu to include the whole head in the radiation field.

2 For exposure of the pharynx or larynx, be sure that the neck comes to the center of the radiation field so that the frontal and lateral orientations can be recognized appropriately.



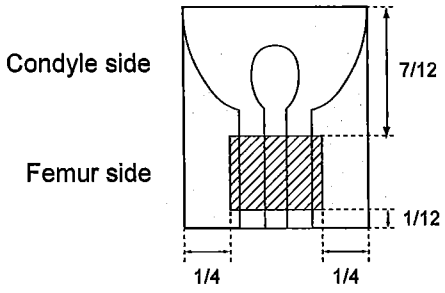
3 In pharynx and/or larynx exposure, do not use lead characters in the oblique line section.



Z.1.3 Depiction of the HIP JOINT AXL – 2 Menu

1 Make sure to position the region of interest within the slanted-line area shown below.
Do not collimate further inside.

2 Positioning should be done so that the condyle and the femur run along the longer edge. (Do not position them against the shorter edge.)



Z.1.4 EDR Image Data Analysis

1 Image unevenness due to grid misalignment, X-ray beam misalignment, or metal objects may cause EDR image data analysis problems resulting in unstable density on the image.

2 If the target includes such materials as gypsum, denture, etc., stable density may not be obtained, because such materials make it difficult to analyze EDR image data.
In such cases, use FIX MODE.

3 The EDR performs processing for the image area trimmed by the DR system.
When using lead characters or metals for measurement, place them inside the radiation field, and then make an exposure.

4 Precautions when using AUTO MODE.

Auto mode	Precautions
I	As this mode is available for extracting information on the skin, secure the positioning so that the direct X-rays are incident to an area other than the target.
II	No special precautions.
III	Be sure to use a Ba contrast medium.
IV	1 Be sure to secure the positioning so that the X-rays are incident to the area directly outside the target. 2 As the reading latitude is fixed, it is necessary to control the tube voltage according to the thickness of the target, as usual.
V	As the reading latitude is fixed, it is necessary to control the tube voltage according to the thickness of the target, as usual.
VI	No special precautions.
VII	No special precautions.

Z.2 Precautions for Exposure in SEMI-AUTO MODE

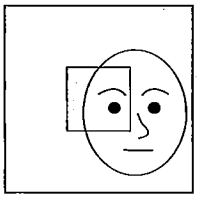
These precautions are common to Semi I, II, III and III(**).

1 Position the portion you need to display often in the center areas (10cm × 10cm(3.9 in. × 3.9 in.) (Semi I), 7cm × 7cm(2.8 in. × 2.8 in.) (Semi II), 5cm × 5cm(2.0 in. × 2.0 in.) (Semi III)) of the images trimmed by the DR system.

Position the portion you need to display often in each of the 5cm × 5cm(2.0 in. × 2.0 in.) center areas of the half-split images (both upper and lower halves and right and left halves) and quarter-split image trimmed by the DR system.

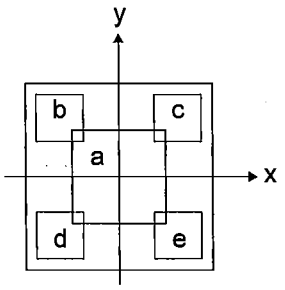
2 Never position anything other than the subject in the aforementioned areas. If anything other than the subject is positioned in such areas, the image density will become lower.

In addition, do not position any metals or artificial bones in such areas. The image density will become higher if such objects are positioned in these areas.



(×)

3 It is necessary to control tube voltage according to subject thickness, as usual.
The following precautions should be observed for Semi IV.



Area	Center Coordinate (x:y) cm(in.)	Size (cm(in.))
a	(0(0), 0(0))	10 × 10(3.9 × 3.9)
b	(-5(-2.0), 7(2.8))	6 × 6(2.4 × 2.4)
c	(5(2.0), 7(2.8))	6 × 6(2.4 × 2.4)
d	(-5(-2.0), -7(-2.8))	6 × 6(2.4 × 2.4)
e	(5(2.0), -7(-2.8))	6 × 6(2.4 × 2.4)

(1) Do not position transparent portions (areas other than the subject) in the aforementioned five areas.

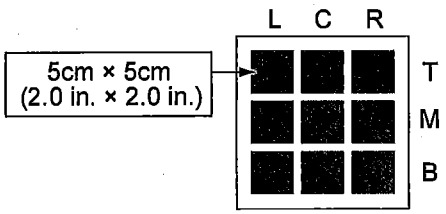
(2) It is necessary to control tube voltage according to subject thickness, as usual.

◐ For details of the menus preset in SEMI-AUTO MODE, see the "DR-ID 300CL Operation Manual" and "DR-ID 300CL Reference Guide (Image Processing Parameters)".

Z.3 Precautions for Exposure in SEMI-X MODE

The user will select one of the nine areas of the image trimmed by the DR system, on which SEMI-AUTO MODE applies. (See the illustration below.)

The same precautions as for SEMI-AUTO MODE apply.



Z.4 Precautions for Exposure in FIX MODE

As reading conditions are fixed, exposure conditions must be controlled in the same way as for conventional X-ray exposure.
The reading conditions (sensitivity and latitude) have been preset according to the relevant menu in FIX MODE. Select the exposure conditions which correspond to that menu accordingly.

Z.5 Precautions for the Automatic X-ray Detection Function

Z.5.1 Precautions for Making an Exposure

1 When Shot Ready (exposure ready status indicator) in the connected devices status display field of the image processing unit is not lit green, the flat panel sensor cannot detect X-rays automatically. Even if the indicator is not lit green, radiation can be delivered but an image will not be output. Make sure that the indicator is lit green before making an exposure.

2 Check the tube current of the X-ray equipment in advance, and set exposure conditions based on the tube current by referring to the table below. If the conditions are not met, X-rays cannot be detected automatically and an image may not be acquired.

<table>
<tr><th>Tube current</th><th>Tube voltage</th><th>Exposure time</th><th>SID</th><th>Radiation field</th></tr>
<tr><td>More than 40 mA</td><td>Set the tube voltage according to the anatomical region and body thickness.</td><td rowspan="3">More than 1 ms (*3,*4)</td><td>Set the SID according to the anatomical region.</td><td>Do not limit the radiation field to the bone region (*1) only.</td></tr>
<tr><td>More than 20 mA and less than 40 mA</td><td rowspan="2">Set the tube voltage to more than 50 kV according to the anatomical region and body thickness.</td><td colspan="2">Set the SID to 100 cm (39.4 in.) or less and do not limit the radiation field to the bone region (*1) only. Alternatively, set the SID according to the anatomical region and include the directly exposed area (*2).</td></tr>
<tr><td>More than 10 mA and less than 20 mA</td><td>100 cm (39.4 in.) or less</td><td>Include the directly exposed area (*2).</td></tr>
<tr><td>Less than 10 mA</td><td colspan="4">The automatic X-ray detection function cannot be used.</td></tr>
</table>

*1 When making an exposure, for example, for a finger or knee, set the radiation field to at least 6 cm × 10 cm (2.4 in. × 3.9 in.) for the former and at least 10 cm × 10 cm (3.9 in. × 3.9 in.) for the latter, so that the field is not limited to the bone region only.
*2 The areas of the flat panel sensor, which are directly exposed to X-rays that do not pass through the subject, must have a width of more than 3 cm (1.2 in.) from the subject.
*3 Depending on the X-ray equipment, the actual exposure time may differ from the set time. Before use, make sure that the flat panel sensor can detect X-rays automatically.
*4 This is applicable to the image processing unit V7.3 or later. If the version is 7.2 or earlier, set the exposure time to more than 5 ms.

3 As illustrated below, if the subject whose thinnest part is at least 40 cm (15.7 in.) in thickness covers the entire surface of the flat panel sensor, it cannot detect X-rays automatically and an image may not be acquired. In this case, make an exposure so that direct exposure area is included in the exposure region, or use the High Sensitivity Mode.
In case of using the High Sensitivity Mode, a white image might be obtained by a shock.

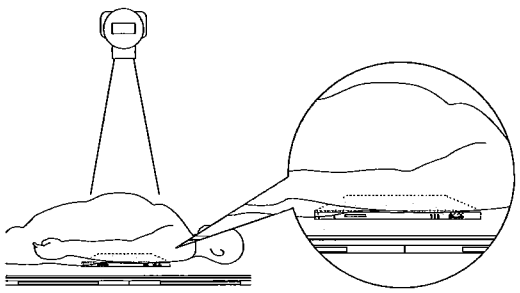


Figure of an exposure for the subject covering the entire surface of the flat panel sensor

4 When an exposure menu is registered and the system is ready for an exposure, the flat panel sensor enters X-ray detection mode. If an exposure is not made for a period of time while an exposure menu is registered, the operating time of the flat panel sensor's battery pack may be reduced to half. In addition, the battery pack cannot be charged with an exposure menu registered, even if the flat panel sensor has a wired connection. For these reasons, do not keep the system on standby, unless you make an exposure.

Z.5.2 Precautions Related to the X-ray Exposure Time

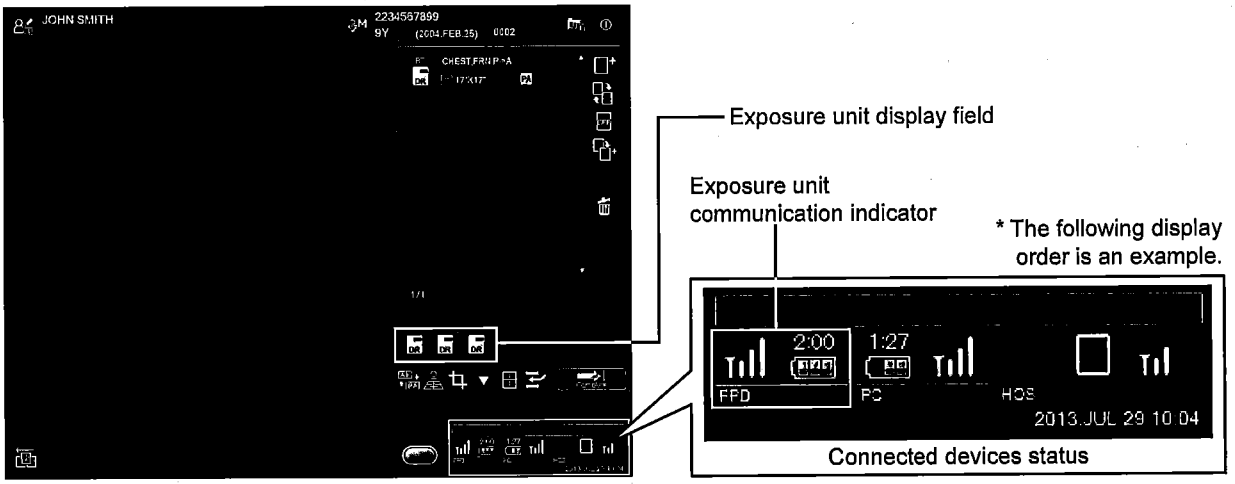
When delivering radiation, do not set the exposure time beyond the maximum limit specified for the flat panel sensor at the time of installation. Otherwise, vertical artifacts may appear in the image.

Z.6 Precautions for Use in Wireless Communication Mode

Care should be taken when the devices are used in wireless communication mode. Thoroughly read the following precautions in order to use the devices properly.

■ Icons Displayed on the Image Processing Unit

An icon indicating the status of wireless communication is displayed in the connected devices status at the lower right of the image processing unit display. Before an exposure is made, check the displayed icon to make sure that proper wireless communication is established.



Exposure unit communication indicator

The wireless communication status of the flat panel sensor assigned to the selector is displayed.

Details on the icons regarding wireless communication are as follows.

Icon	Description
, ,	Communication is established. The radio wave strength is displayed in three levels.
,	Wireless communication is not available. (Since the radio wave strength is weak, wireless communication cannot be used. In addition, exposures cannot be made.)
	Information on the radio wave strength is being received.

For details on other icons, see the "Console Advance (DR-ID 300CL) Reference Guide".

Z.7 Other Precautions

Z.7.1 Precautions for Exposure of a Subject in Relatively Large Contrast

1 Exposures using a contrast medium may cause artifacts around it.

2 When exposing a subject with any metal objects implanted, artifacts may appear around them.

3 For exposures with objects of large X-ray absorption, such as lead characters and metals for measurement, artifacts may appear around them. Place such objects outside a subject.

Z.7.2 Precautions for DR System

Generally, when performing a high sensitivity exposure shortly after an exposure that the flat panel sensor excessively receives direct X-ray, the output image may contain image lags of the previous exposure. This phenomenon rarely occurs and does not occur insofar as normal sensitivity exposures are performed.
Exposures at longer intervals can reduce occurrences of this phenomenon. Also observe precautions as follows.

- Continuous high sensitivity exposures to vertebral body part (chest/lumbar spine) should be performed at longer intervals than normal exposures.
- A high sensitivity exposure shortly after a high-dose exposure should be performed at sufficiently long interval.
- When performing high-dose exposures repeatedly, do not use collimation of the radiation field, lead characters or metals for measurement at the same position.

Z.7.3 Precautions for Assuring the Radiation Field

⚠ CAUTIONS

- **It is important to read the following before using the FDR D-EVO digital detector clinically.**
- **Do not make the radiation field larger than the size of the flat panel sensor. Especially when the high tube voltage is set, the radiation field size should not be larger than the subject unless necessary.**

The FDR D-EVO is a digital X-ray detector designed for use both within and outside of a standard radiographic bucky. Radiation field can be set up to 14" × 17" for the DR-ID 600SE/DR-ID 601SE/ DR-ID 611SE, 17" × 17" for the DR-ID 602SE/DR-ID 612SE and 24 cm × 30 cm for the DR-ID 613SE. The DR-ID 600SE/DR-ID 601SE/DR-ID 602SE/DR-ID 611SE/DR-ID 612SE/DR-ID 613SE may be used in any situation where a film cassette may be used. The collimator will open up to 14" × 17" for the DR-ID 600SE/DR-ID 601SE/DR-ID 611SE, 17" × 17" for the DR-ID 602SE/DR-ID 612SE and 24 cm × 30 cm for the DR-ID 613SE, when the FDR D-EVO cassette is inserted in the bucky tray of X-ray systems with positive beam limitation (PBL).
Follow the X-ray system manufacturer's instructions to assure the indicated field size matches and does not exceed the actual radiation field size for the available range of SIDs.

Z.7.4 Images Output When the X-ray Shot Switch is Operated Incorrectly

In case that you press the X-ray shot switch only momentarily after selecting exposure menus, sufficient X-ray dose may not be achieved. The output image contains image lags of the previous exposure occasionally.
If this happens, select exposure menus again, and then make an exposure.

Z.7.5 Precautions for Urgent Use

When you start a study before completion of the calibration at the time of startup, the operation will be in Urgent Use Mode. At this time, "Urgent use is possible" appears in the "Output Device Status window" of the image processing unit.

- There is no guarantee that the image taken in Urgent Use Mode can be used for diagnostic purposes. Vertical artifact could appear in the image, if the temperature difference is large from the previous shutdown of the system. Check the image quality before use.
- Move from the Study Screen to the Patient Information Input Screen immediately after exiting Urgent Use Mode, so that the calibration will start over automatically.

Z.7.6 Precautions Related to Continuous Operation

If you plan to continuously run the system for over 24 hours, perform post-operation check, and then restart the system.
Otherwise, calibration will not be performed normally, and image quality cannot be guaranteed as a result.

Z.7.7 Precautions Related to Grid

Depending on the type of the grid used, its stripes may appear in the image after making an exposure. To avoid such moire effects, sway the grid from side to side, or use the Grid Pattern Removal Processing Software in conjunction with the grid with 40 lines.

Z.7.8 Precautions for Connecting the DR-ID 320

When connecting the FDR D-EVO to the DR-ID 320 system, be sure to turn on the DR-ID 320RU.

Z.7.9 Precautions during Calibration

Observe the following when the READY status lamp on the flat panel sensor is blinking or when the message "Calibrating..." is displayed on the image processing unit.

- Do not subject the flat panel sensor to shock.
- Do not deliver radiation.
- Do not connect or disconnect the connector.

Z.7.10 Precautions for Exposing the Flat Panel Sensor to X-ray

When you expose the flat panel sensor to X-ray in General at any other time except during radiography, artifacts could appear in the image. If artifacts appeared in the image due to X-ray irradiation, perform a test X-ray radiography after waiting for more than 2 minutes and then restart exposure after confirming that the artifacts disappear.

Appendix O Use of Optional Items

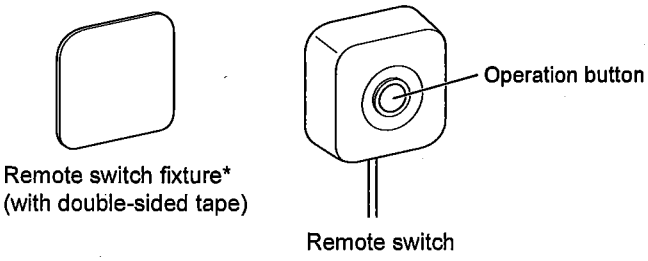
O.1 Optional Items

Name	Description
Remote switch	A switch cable used for temporarily disconnecting the power to the flat panel sensor in order to connect/disconnect its connector while the system is in operation. Up to two remote switches can be connected. Using this switch reduces the time required for normal insertion/removal procedure. The switch is exclusively for DR-ID 600SE. ◐ For the external view, see "O.2.1 Remote Switch" (page O-3).
Relay cable	A relay cable used for branching the cable for two remote switches, when each of them is attached to the upright-type and bed-type radiographic examination stands. The relay cable is exclusively for DR-ID 600SE. ◐ For the external view, see "O.2.2 Relay Cable" (page O-3).
SE storage case	A case used for carrying and storing the flat panel sensor. ◐ For the external view and precautions, see "O.3 Using the SE Storage Case" (page O-4).
DAP connector cable	A cable used for connecting a dose-area product (DAP) meter. ◐ For the external view and precautions, see "O.4 Using the DAP Connector Cable" (page O-6).
Retaining bracket for MP	A set of an anchor and a fixture, which is used for securing the power supply unit to the floor. ◐ For the external view, see "O.5 Using the Retaining Bracket for MP" (page O-7).
Connection cable for the flat panel sensor (power supply unit)	A cable that connects the flat panel sensor and the power supply unit. This cable is used for adding the second and subsequent flat panel sensors, changing over the connection between the flat panel sensors, and other usages.
Connection cable for X-ray equipment (9 cores)	A signal cable that connects the power supply unit and the X-ray equipment (Xcon). Two types are available. Cable length: 5m(16.4 ft) and 15m(49.2 ft)
Connection cable for X-ray equipment (3 cores)	A signal cable for high current application, which connects the power supply unit and the X-ray equipment (Xcon). Two types are available. Cable length: 5m(16.4 ft) and 15m(49.2 ft)
Communication cable for X-ray equipment and power supply unit (RS232C cable)	A communication cable that connects the power supply unit and the X-ray equipment (Xcon). This cable is used for setting the tube voltage and mAs via communication. Four types are available. Cable length: 5m(16.4 ft), 9 pins Cable length: 15m(49.2 ft), 9 pins Cable length: 5m(16.4 ft), 25 pins Cable length: 15m(49.2 ft), 25 pins
Relay unit for AC bucky	A relay unit consisting of the relay and terminal block for the AC bucky. Four types are available: For 100V, 120V, 200V, and 220V
Magnetic clamp for flat panel sensor cable	A clamp for fixing the SE cable to the radiographic examination stand, etc.
Cassette holder	A cassette holder attached to the flat panel sensor for improving the load bearing capacity of the flat panel sensor when making an exposure directly with it.
Battery pack	A battery pack for the flat panel sensor. ◐ For precautions, charging and installing/removing, see pages 1-7, 1-8, 3-8 and 3-9.
Battery charger	A battery charger for the battery pack. ◐ For precautions, external view and charging, see pages 1-7, 1-8, 2-4, 3-8 and 3-9.

Name	Description
Cradle	A device used, when the flat panel sensor is moved to other X-ray room, to establish communication between the flat panel sensor and the power supply unit in the new location. The device is also used to keep the sensor upright when storing. ◐ For the external view and precautions, see "O.6 Cradle" (page O-8).
AC adapter for cradle	Charge the flat panel sensor (DR-ID 601SE, DR-ID 602SE, DR-ID 611SE, DR-ID 612SE and DR-ID 613SE) by combining it with the separately sold cradle or Cradle for 24. ◐ For the external view and precautions, see "O.7 AC adapter for cradle" (page O-9).

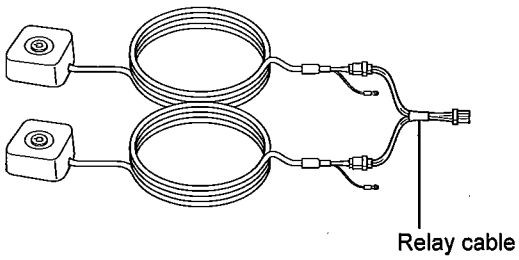
O.2 Using the Remote Switch

O.2.1 Remote Switch

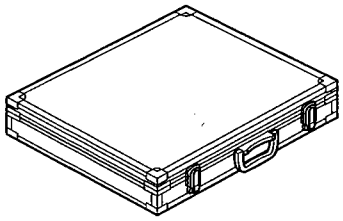


* This metal fixture is used when the remote switch cannot be attached to a wall, etc. with the magnet on the back. The remote switch fixture is attached to a wall, etc. with double-sided tape.

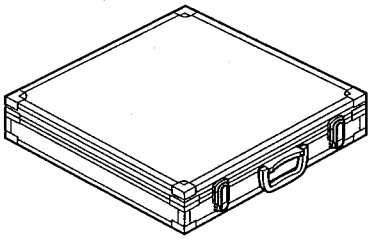
O.2.2 Relay Cable



O.3 Using the SE Storage Case



SE storage case for 35
(DR-ID 600SE/DR-ID 601SE/DR-ID 611SE)

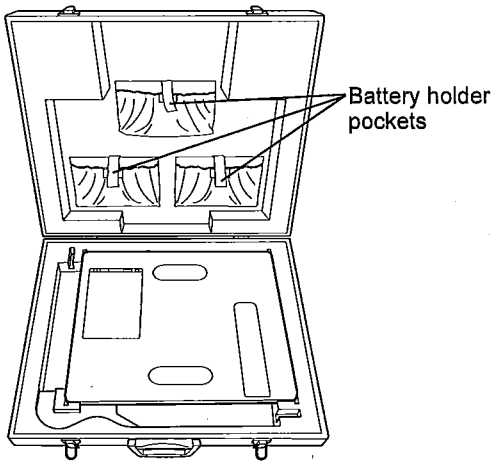


SE storage case for 43
(DR-ID 602SE/DR-ID 612SE)

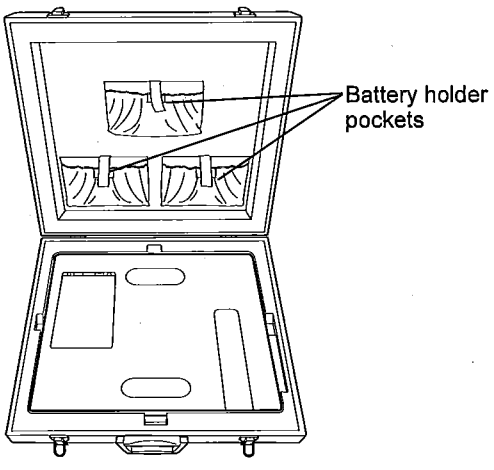
⚠ CAUTIONS

- **Do not store the SE storage case in a location with the following conditions.**
  - **Where the SE storage case is exposed to direct sunlight.**
  - **Where the temperature and humidity change dramatically.**
  - **Where there is excessive dust.**
  - **Where chemicals are stored.**
  - **Where the SE storage case may be exposed to water due to water leakage or ingress.**
- **Store the flat panel sensor and the cable properly in the SE storage case. Otherwise, they may be caught under the case lid and damaged.**
- **Do not connect the flat panel sensor to the connector while it is stored in the SE storage case.**
- **Do not store anything other than the flat panel sensor in the SE storage case.**
- **Carefully carry the SE storage case when the flat panel sensor is inside.**
- **The SE storage case and/or the flat panel sensor inside may be damaged if the case is subject to an impact.**
- **Do not open/close the SE storage case in a location where there is excessive dust or dirt.**
- **Do not put the SE storage case on an unstable place. If it falls or drops, personal injury may result.**
- **Be careful not to have your hand or an object caught when closing the SE storage case.**

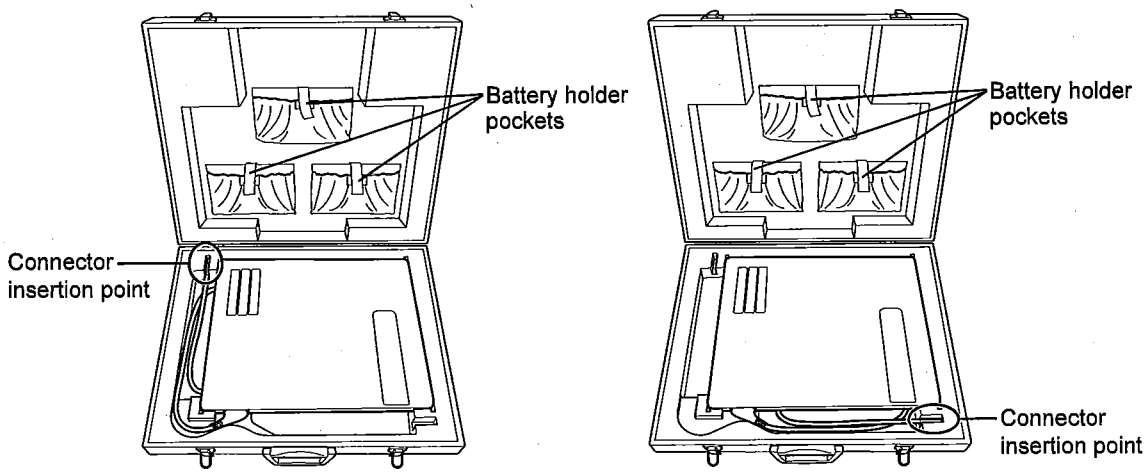
When storing the flat panel sensor in the SE storage case, place it with the exposure plane down. For details, see the illustrations below.



SE storage case for 35
(DR-ID 601SE/DR-ID 611SE)



SE storage case for 43
(DR-ID 602SE/DR-ID 612SE)



SE storage case for 35 (DR-ID 600SE)

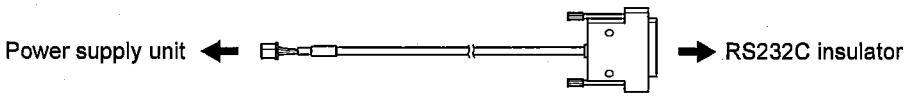
Note that the storage method varies depending on the direction of the flat panel sensor (DR-ID 600SE) cable. Set the flat panel sensor with attention to the cable direction, and insert the connector into the insertion point. Make sure that the cable is not placed under the flat panel sensor.

CAUTIONS

When the 8.5m(27.9 ft) SE cable (optional) is connected, the flat panel sensor (DR-ID 600SE) cannot be stored in the SE storage case.

O.4 Using the DAP Connector Cable

The DAP connector cable is used for connecting a dose-area product (DAP) meter*1 to the power supply unit.
This cable is connected to a dose-area product meter via an RS232C insulator*2.
To connect a DAP meter, contact a FUJIFILM dealer.



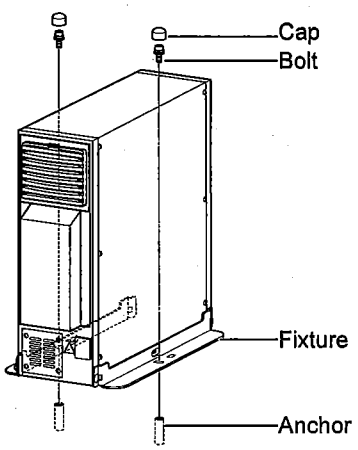
DAP connector cable

*1 A DAP meter of which FUJIFILM Corporation has confirmed the operational performance is VacuDAP Standard of VacuTec Meßtechnik GmbH.

*2 An RS232C insulator which FUJIFILM Corporation has experience in using is Model 88004 of Wiesemann & Theis GmbH.

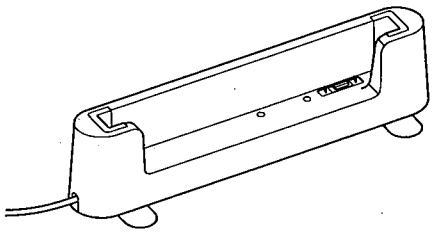
- Thoroughly read the operation manual of a DAP meter to use it correctly.
- Make sure that the initial value is "0" before starting measurements. If not, set it to "0" according to the operation manual for the DAP meter.

O.5 Using the Retaining Bracket for MP

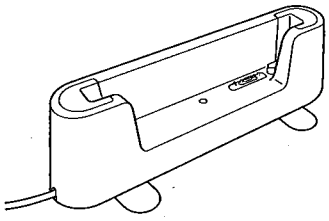


Contact a FUJIFILM dealer for installation of the Retaining bracket for MP.

O.6 Cradle



Cradle
(DR-ID 601SE/DR-ID 602SE/DR-ID 611SE/DR-ID 612SE)

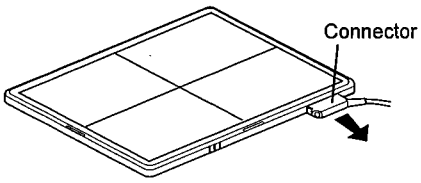


Cradle for 24
(DR-ID 613SE)

CAUTIONS

- **Handle the Cradle carefully. Do not hit or drop the Cradle or subject it to severe shock to avoid possible damage.**
- **If any damage such as cracking, chipping or peeling is found on the Cradle, use it after repair. Otherwise, personal injury may result. Consult a FUJIFILM dealer for repair.**
- **If excessive force is applied to the Cradle, it may be damaged. Also, do not apply excessive force to the flat panel sensor inserted in the Cradle.**
- **When carrying the Cradle, if you accidentally drop it, your foot may be injured.**
- **Do not make an exposure when the flat panel sensor is inserted in the Cradle.**
- **Do not pull the cable forcibly. Otherwise, the cable may be broken or the Cradle may be damaged.**
- **See "O.7 AC adapter for cradle" for information on how to use the AC adapter cradle.**

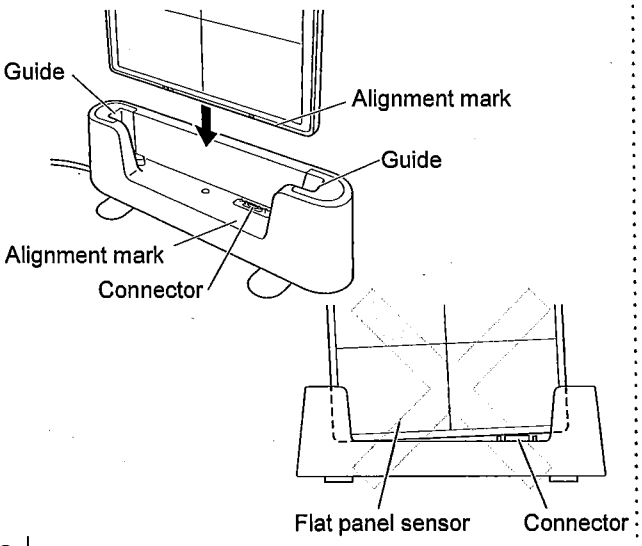
1 Remove the SE cable or the cover from the flat panel sensor.



For connection and disconnection of the SE cable of the flat panel sensor, see "3.1.3 Connecting/ Disconnecting the Flat Panel Sensor (DR-ID 601SE, DR-ID 602SE, DR-ID 611SE, DR-ID 612SE and DR-ID 613SE) Connector".

2 Insert the flat panel sensor.

Confirm the position of the connector, align the flat panel sensor with the Cradle, and then slowly insert the sensor straight all the way along the guides at both sides.

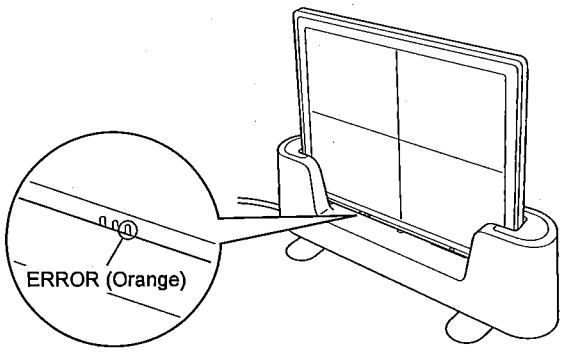


3 Check the status lamps of the flat panel sensor (when the SE cable is connected).

Make sure that the ERROR (Orange) status lamp changes as follows after inserting the flat panel sensor into the Cradle.

	Before insertion	After insertion
Wireless communication possible	Not lit	Turns off after turning on for about 1.0 second or below
Wireless communication not possible	Lit	Turns off

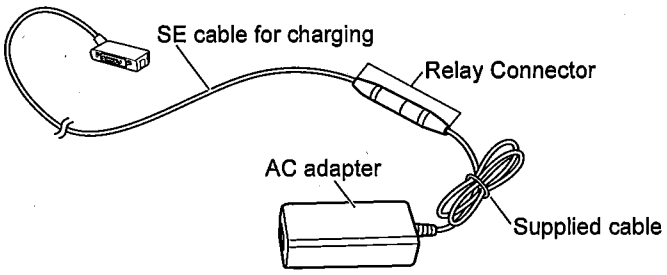
If the ERROR status lamp changes as above, communication between the flat panel sensor and the power supply unit is established normally.



4 Remove the flat panel sensor.

When performing an exposure, remove the flat panel sensor from the cradle.

O.7 AC adapter for cradle



AC adapter for cradle

CAUTIONS

- **Use a grounded hospital grade power cable with 3 pins. Ensure that the length of the cable is 3 m (9.8 ft) or less. Do not use a power distribution board. Instead, plug the cable directly into the power outlet. Not doing so may cause fire or electric shock.**
- **Never disassemble or modify the AC adapter for cradle or supplied cable. Doing so may cause a malfunction, damage, injury or electric shock.**
- **Do not allow the AC adapter for cradle or supplied cable to become wet, or allow dust or metallic parts to come inn contact with the terminals. Do not insert foreign objects into the terminal sections. Doing so may cause a malfunction or electric shock.**
- **Do not apply heavy loads or strong shocks to the AC adapter for cradle or supplied cable. Doing so may cause a malfunction, damage or injury.**
- **Do not pull the supplied cable with excessive force. Doing so may cause a malfunction, damage or injury.**
- **Do not use the AC adapter for cradle or supplied cable if they have become malfunctioned or damaged. Doing so may cause an injury or electric shock. If the AC adapter or supplied cable have become malfunctioned or damaged, contact our official dealer or FUJIFILM Representative.**
- **Do not place the AC adapter for cradle around (30 cm (11.8 in.) or less) a flat panel sensor that is being used for exposures. Doing so may introduce noise, and images may not be acquired properly, requiring exposure to be performed again.**
- **Do not use the AC adapter for cradle next to naked flames, or where flammable gas is stored or used. Doing so may cause an explosion.**
- **Use the AC adapter for cradle only to recharge the flat panel sensor. The adapter cannot be used to switch flat panel sensor communication signals or exposures.**
- **Use the power cable compliant with the safety standards of your country. (Example: UL/CSA standards for North America and CEE standards for Europe)**

1 **Insert the power cable into the power outlet.**

CAUTIONS

If the relay connector is not secured in place, insert it until it locks with a click.

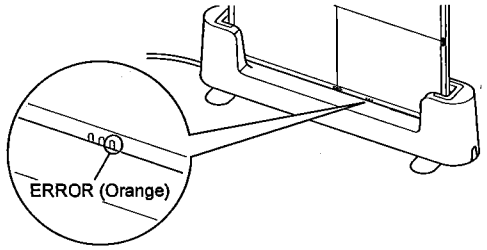
2 **After checking that the exposure menu has not been registered by the image processing unit, insert the flat panel sensor into the cradle (sold separately) or Cradle for 24 (sold separately).**

3 **Check the status lamp of the flat panel sensor.**

If the "ERROR (orange)" of the status lamp turns on, the flat panel sensor has been connected correctly. Full recharge will be completed in approximately 10 hours.

If the "ERROR (orange)" status lamp does not turn on, make sure of the following:

- The battery pack is not completely discharged.
- The flat panel sensor is correctly inserted into the Cradle.
- The power cable is connected to the power outlet.



4 **Remove the flat panel sensor from the cradle.**

Wireless communications will resume after several seconds.

CAUTIONS

- **Do not insert the flat panel sensor into the cradle (sold separately) with the exposure menu registered. Connecting in this state will not recharge the flat panel sensor. After making sure that the exposure menu has not been registered by the image processing unit, insert the flat panel sensor into the cradle.**
- **The flat panel sensor recharging time will differ depending on the remaining battery level or the surrounding environmental conditions.**
- **While recharging, "FPD can not be used" will be displayed in the "Image Reader Status window" of the image processing unit, however this is not a malfunction.**
- **The battery pack cannot be recharged with the AC adapter for cradle when it is fully discharged. Remove the battery pack and recharge it with the battery charger (optional).**

Maintenance and Inspection

1 Maintenance and Inspection Items Assigned to Specified Dealer

For periodical inspection of the equipment and necessary arrangements, consult our official dealer or local representative.

Periodical Maintenance

Make sure that the periodical maintenance and inspection assigned to our official dealer are performed as specified.

Maintenance and Inspection Items Assigned to Specified Dealer

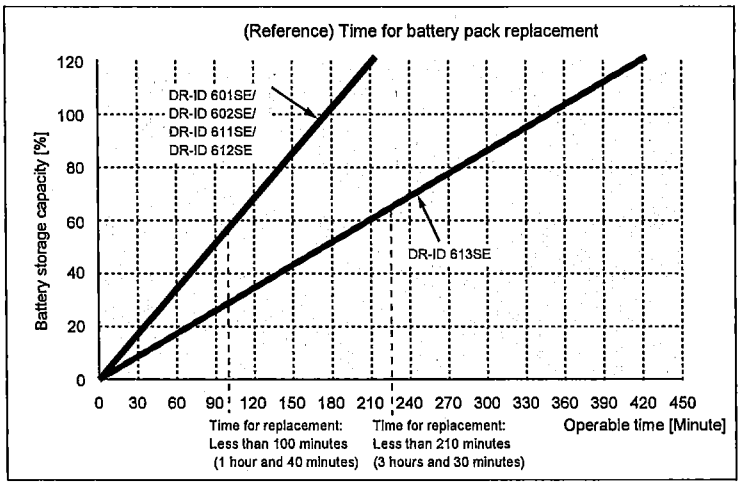
Periodical Maintenance and Inspection Items	Period
Checking of the image	Every year
Checking of the operation record by referring to the error log	Every year
Checking of the internal units	Every 2 years

Main Periodical Replacement Parts

Name of Periodical Replacement Parts	Period
Relay (optional)	Every 1.5 years (Number of exposures : 90,000)

* It is recommended that the battery pack be replaced, if the battery storage capacity becomes lower than 60%.
  The battery pack should be replaced when the operable time is less than the following.
  - DR-ID 601SE/DR-ID 602SE/DR-ID 611SE/DR-ID 612SE: 100 minutes (1 hour and 40 minutes)
  - DR-ID 613SE: 210 minutes (3 hours and 30 minutes)

  * Refer to the operable time displayed on the image processing unit when the battery pack is fully charged and no exposure menu is registered.
  * Depending on the usage environment, etc., the displayed time is slightly different from the actual operable time.



The cycles of periodical maintenance and inspection and of parts replacement differ depending on the usage and the daily operation time.
For details, contact us directly or our official dealer.

FUJIFILM

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