X-Ray Machine Operation Manual

Model: ZMX-7200

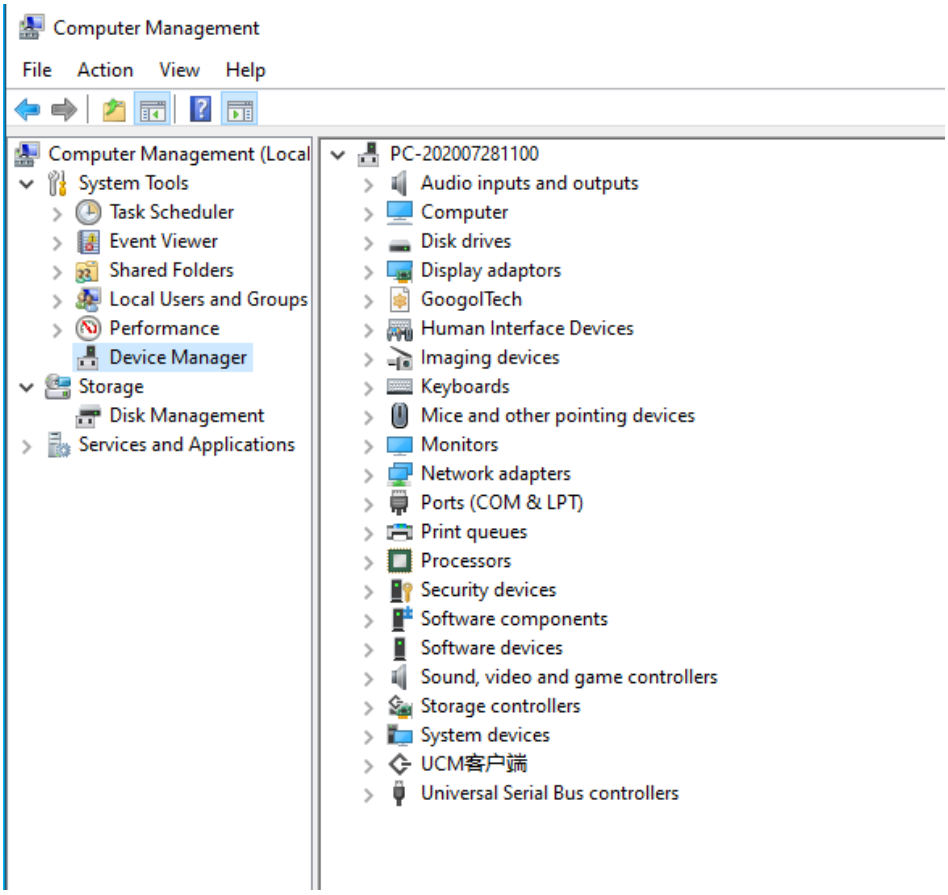
Content

1. Runtime Plugin Installation

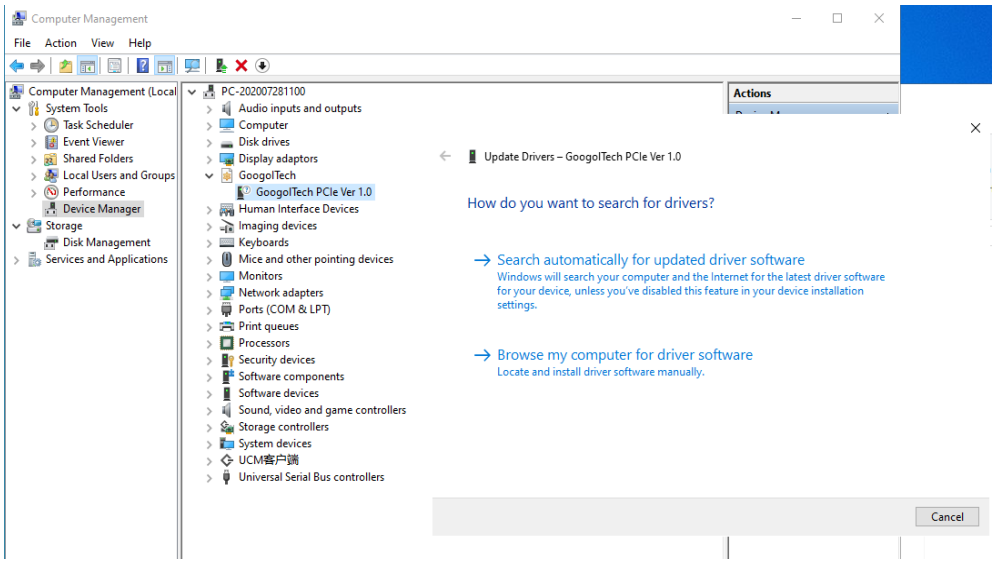
In order to run the X-ray operating software on the windows platform, VCredist_x86.exe and Dotnetfox.Exe plug-ins need to be installed; C:\\...

1.2.1 Motion control card driver installation

Right-click from the computer desktop, then click “Manage”



“Device Manager” ⇨ “Googol Tech”



Then please click “Browse my computer” and choose “GST driver” to finish it.

GTS-800 motion control card: Double click to run C:\\GTS800\ REG_Win_VISTA32.bat.

GTS-400 motion control card: Double click to run C:\\GTS400\ REG_Win_VISTA32.bat.

1.2.2 X-Ray software installation

First, ensure that the software operating environment configuration program is installed correctly.

Secondly, install the relevant runtime library and the relevant hardware drivers.

Finally click the software application to enter the installation interface, and follow the prompts to complete the installation.

1.2.3 System backup

Before the machine leaves the factory, our company will back up the computer system and store it in Disk E. The directory is used to store system image files.

If there is an unsolvable system problem, “ghost software” can be used to reset the system. Generally, we will store the original application, related matching, driver software and related third-party software on the D drive.

1.3 Software interface description

Hot key:

X-Axis (the image moves left and right):	
Move to the left:	A key
Move to the right:	F key

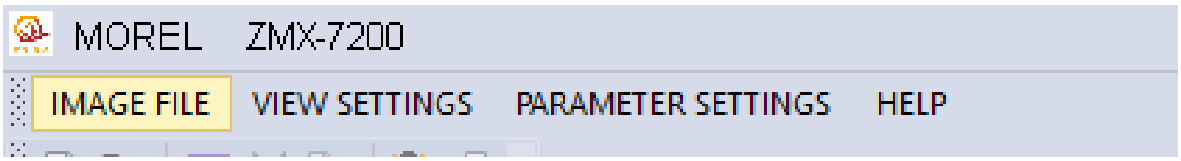
Y-Axis (the image moves forward and backward):	
Move up:	W key
Move down:	X key

FPD-Axis (FPD axis moves up and down):	
Downward magnification become smaller	Q key
Upward magnification become larger	E key

X-Ray Tube-Axis (the light tube axis moves up and down):	
Downward magnification become smaller	C key
Upward magnification become larger	Z key

1.3.1 Menu bar description

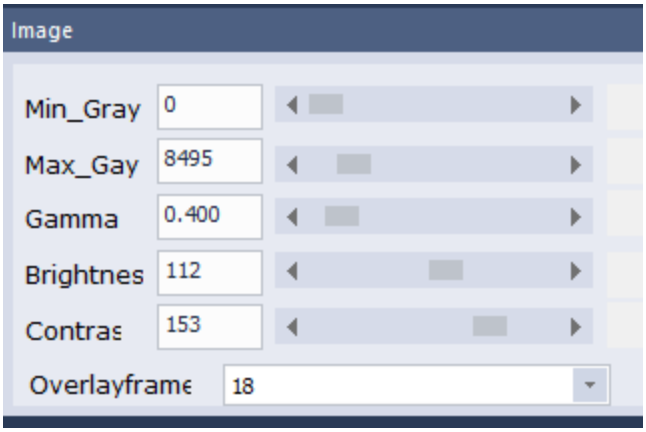
The menu bar includes “Image file”, “Views Settings”, “Parameter Settings”, “Help”, etc.



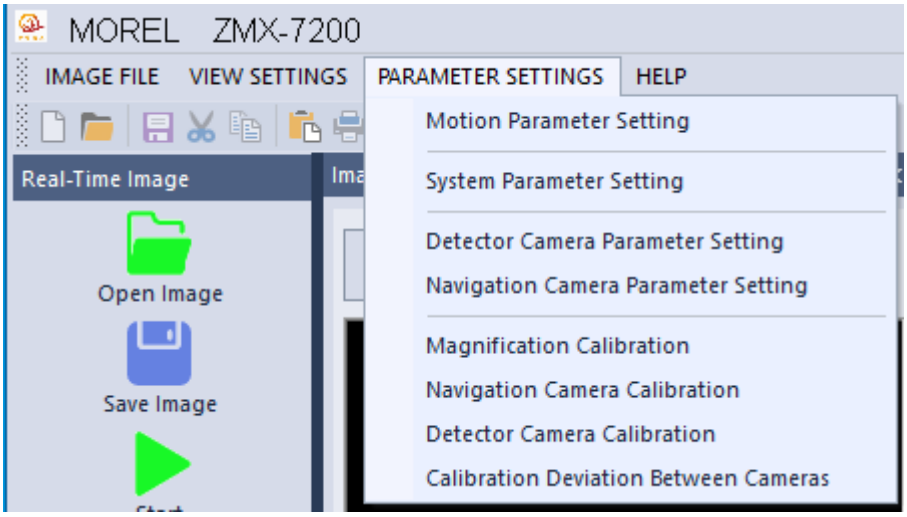
- Image file: The Image file menu includes four options: open the saved image; save the image; the history of the opened image and exit.

- Views Settings: Views Settings include toolbars (tool bars include: application toolbar, image toolbar, camera control bar, measurement toolbar, report save), status bar, control layout, lock layout, zoom in, zoom out, and original size.

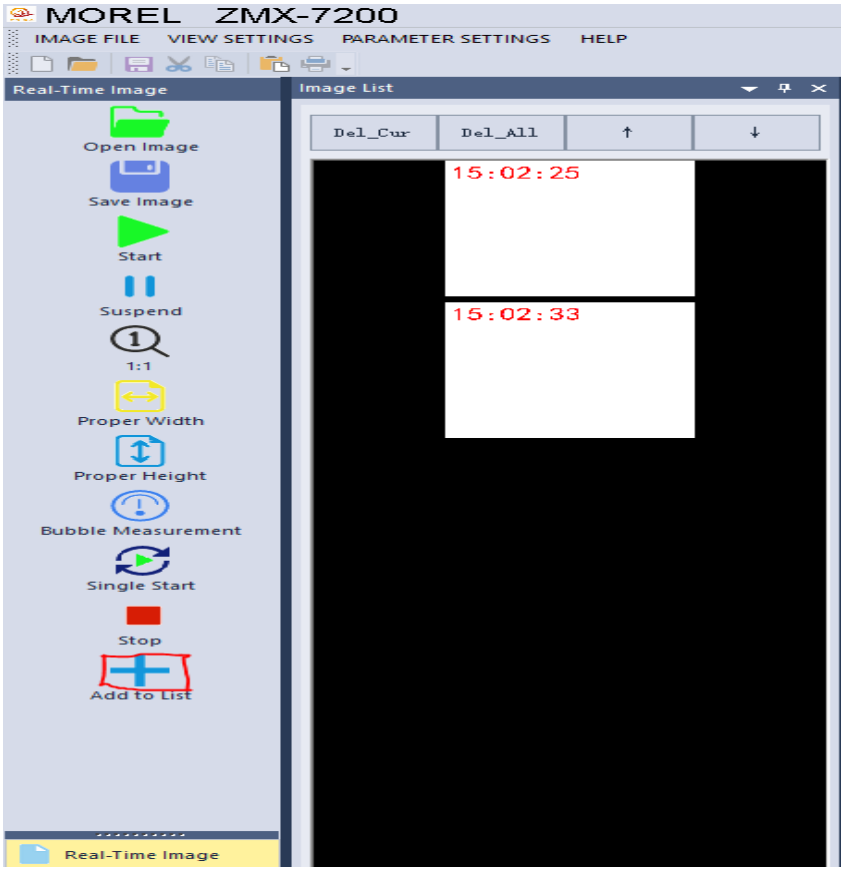
- Image items: View items include image brightness increase, brightness decrease, smoothness, median filter and superimposed frames。



- Setting items: The setting items include main camera settings, AOI camera settings, navigation camera settings, magnification correction, system settings, automatic startup program settings, and password items.



1.3.2 Toolbar (shortcut menu) description



- **Application Tool Bar**

 **Open a saved image or file**

 **Save the image**

Select an area

Original size

 **Magnify**

 **Minify**

 **Enlarge the view**

 **Manual move**

 **Show measurement toolbar**

 **Show report page**

 **Real-time mode**

 **Non-real-time mode (pause)**

1.3.3 Measurement Toolbar

The measurement toolbar will only be displayed in non-real-time mode.

Distance: the distance between a straight line and two points.

Angle: the angle of the two lines.

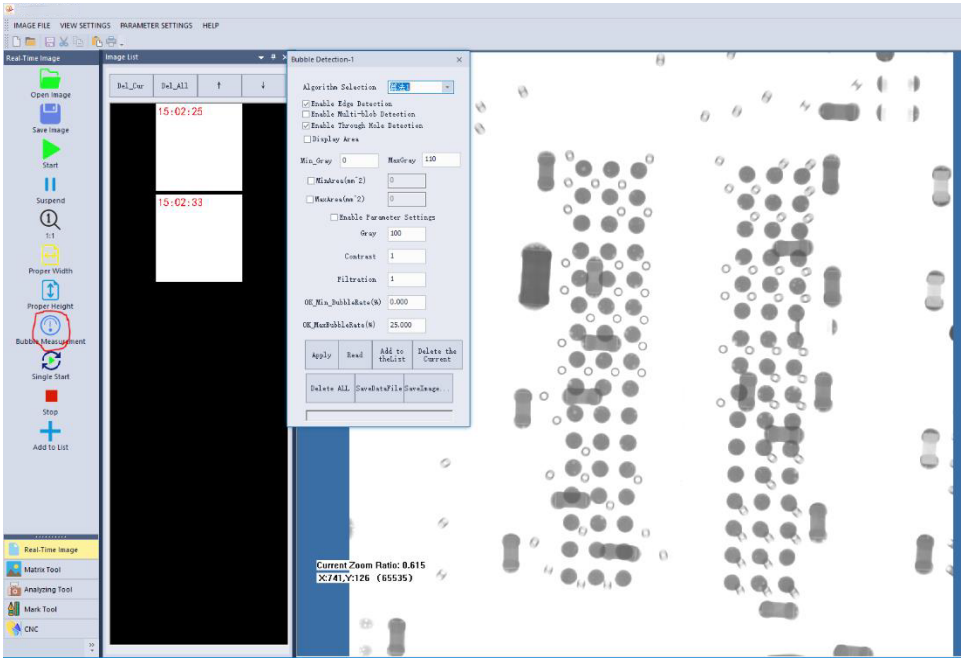
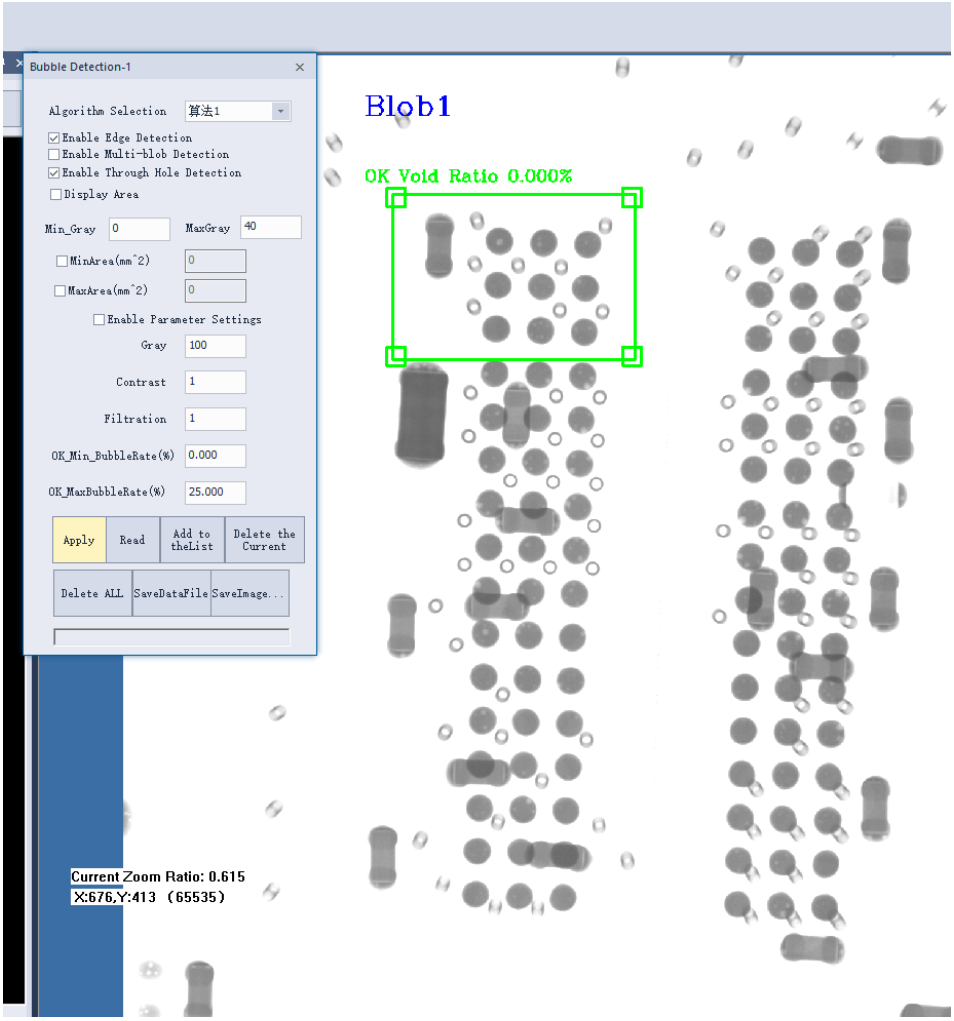
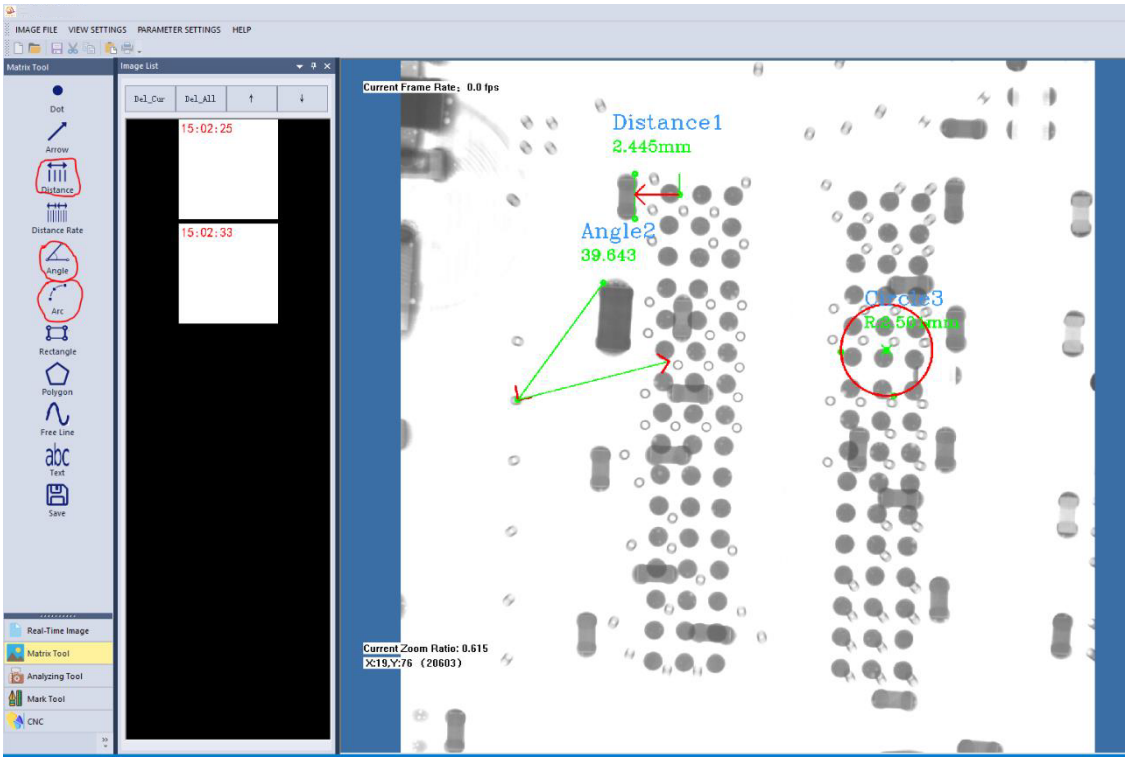


IMAGE FILE
VIEW SETTINGS
PARAMETER SETTINGS
HELP
Real-Time Image
Image List
Bubble Detection-1
Open Image
Save Image
Start
Suspend
1:1
Proper Width
Proper Height
Bubble Measurement
Single Start
Stop
Add to List
Real-Time Image
Matrix Tool
Analyzing Tool
Mark Tool
CNC
Algorithm Selection
Enable Edge Detection
Enable Multi-blob Detection
Enable Through Hole Detection
Display Area
Min_Gray
MaxGray
Enable Parameter Settings
Gray
Contrast
Filtration
Apply
Read
Add to theList
Delete the Current
Delete ALL
SaveDataFile
SaveImage...
Current Zoom Ratio: 0.615
X:741,Y:126 (65535)


Bubble Detection-1
Algorithm Selection
算法1
Enable Edge Detection
Enable Multi-blob Detection
Enable Through Hole Detection
Display Area
Min_Gray
0
MaxGray
40
MinArea(mm^2)
MaxArea(mm^2)
Enable Parameter Settings
Gray
100
Contrast
1
Filtration
1
OK_Min_BubbleRate(%)
0.000
OK_MaxBubbleRate(%)
25.000
Apply
Read
Add to theList
Delete the Current
Delete ALL
SaveDataFile
SaveImage...
Blob1
OK Void Ratio 0.000%
Current Zoom Ratio: 0.615
X:676,Y:413 (65535)



1.3.4 Control Bar & Navigation Area

- X-Ray Control

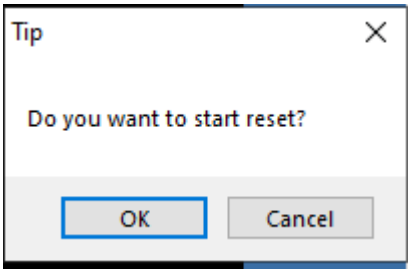
  X-RAY detection 5 mode operation, Z axis, Y axis, T axis, Z1 axis, Z2 axis。

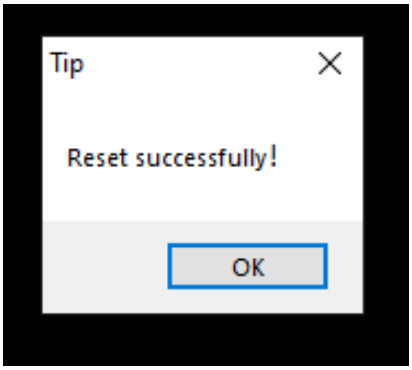
- **Navigation window**

Emergency stop button: stop movement immediately. In the process of motion or CNC automatic testing, if you need to stop immediately, you can click this button to stop the equipment.

Reset button: return to original state button: return to the original X, Y, X axis, camera return to the initial position.

Clear data and Delete the last button: both clear the measured data on the picture.





2. Machine parts description

Part 1: The machine working reminder light, red means working, green means standby, and yellow means the safety door is not closed.

Part 2: Computer monitor.

Part 3: The working process can be observed through the safety door.

Part 4: Emergency stop. The key switch controls the power of the machine.

Part 5: mouse, keyboard

Part 6: Computer host and machine circuit.

Part 7: Total power of the machine (single-phase 220V 10A 1500W).

3. Precautions and Conditions

Operation precautions

1. The focus of the CCD lens cannot be adjusted at will.
2. The working voltage is generally between 60KV and 90KV, the current is used in the range of 0.08mA, and the voltage generally does not exceed 90KV.
3. To avoid the X-ray tube from being impacted by other objects, so the light tube part cannot be touched.
4. When lead glass is damaged, it cannot be replaced with ordinary glass, please contact the manufacturer.
5. There is 90KV high voltage inside the machine, and the grounding wire must be firmly connected.
6. When stopping detection, please put the machine in OFF state.
7. Please notify the manufacturer in time when the current and voltage cannot be adjusted.
8. The total rate of the machine is 1500W, single-phase 220V and Current 10A.

Grounding Wire Conditions:

There is a 90KV high voltage inside the X-Ray machine, and all the high voltage loop current flows into the earth, so there must be a good independent grounding wire. After the machine is newly installed or moved, it must be connected to the ground wire before it can be used.

When connected with the earth, the resistance is not more than 4 ohms.

The ground connection must be greater than or equal to 2.5mm.

The ground connection must be led out from the grounding copper bar of the power distribution line, and there must be no branch connection in the middle.

The ground wire must be yellow and green double colors.

Thank you very much for purchasing our X-ray products. Before the equipment be installed, the following requirements are imposed on the use environment of the equipment.
Ground requirements: The foundation on which the equipment is placed must be firm, preferably a reinforced concrete structure, and the ground must be able to withstand a pressure of 800-1000 kg/m2. The ground should be level and easy to clean.

The indoor temperature where the equipment is installed should be kept between 0°C and 35°C. The relative humidity in the room should be controlled between 40% and 60%. It must be pointed out that the damage caused by high humidity to the equipment is very huge, it will make the optical system of the equipment damp, the mechanical parts rust, and the circuit board short circuit.

There should be space around the equipment for heat dissipation and maintenance. In general, the surrounding space should not be less than 800mm.
It must be emphasized that the equipment wire must be well grounded, otherwise the parts are easily damaged.

The equipment has high requirements for air cleanliness, and serious dust or corrosive substances will affect the clarity of the optical system and the accuracy of mechanical transmission.