KOKEN

Virtual Reality Vaginal Exam Model II

LM-095N

Instruction Manual

Thank you for purchasing the Virtual Reality Vaginal Exam Model II.
Please read this instruction manual carefully to ensure correct use of the product, and store it in a safe place for easy access.

Manufacturer:
KOKEN CO., LTD.
1-4-14 Koraku, Bunkyo-ku, Tokyo 112-0004 JAPAN
www.kokenmpc.co.jp

©2015-2023 KOKEN CO.,LTD. C-1-1018-1-01-05

Handling and Safety Precautions

These precautions should be strictly observed in order to ensure safe, long-term use of the product.

The following precautions should be observed particularly strictly:

1. This model is made of a special material with a feel similar to that of the human body. Please handle it with the same care that you would exercise when working with a human body. Pulling it with excessive force or subjecting it to a strong impact, for example if dropped, could cause damage to the model.

2. The material of the vulva for vaginal exam II has a distinct odor. This odor is not harmful to the human body and does not indicate poor quality. The distinct odor fades with time. There may also be a smell of baby powder remaining on the product, as baby powder is applied during fabrication.

3. Use glycerin to lubricate. Be sure to apply a sufficient amount of lubricant (glycerin) to the model before practicing. Koken is not responsible for deterioration or damage to the model occurring from use of lubricants other than glycerin. When the glycerin provided runs out, use commercially available glycerin.

4. Placing objects directly on top of the model or placing the model on uneven surfaces may cause deformation.

5. Do not use rubbing alcohol, thinners, or benzin or other organic solvents on the model, as doing so may cause damage.

6. Do not use oil-based inks, pencil, chalk, or paints on the model, as they will soak into the model and cannot be removed.

7. If the surface becomes increasingly sticky or after washing the model with water after practicing, apply baby powder all over the vulva for vaginal exam II to reduce friction

8. The vulva for vaginal exam II may become deformed due to aging. Check the shape of the model about 3 years after purchase. If it is deformed to the extent that function is affected, consider replacing the vulva for vaginal exam II.

9. Air bubbles or impressions in the vulva for vaginal exam II that may remain from during fabrication do not affect the strength of the material, as the material used is tear-resistant.

10. Dropping the model or trakSTAR, or subjecting them to strong impact, could cause damage.

11. Be careful not to excessively bend or twist the finger sensor cables, and avoid stepping on them. Such actions could cause the cables to break. Cables cannot be repaired once they have broken.

12. When connecting the finger sensors to the trakSTAR, and when disconnecting them, be sure to hold the main body of the connector. Attaching or removing the connector by pulling on the cables themselves could cause the cables to break.

13. Attaching the finger sensors with long fingernails could damage the finger sacks.

14. Be sure to apply baby powder to the inside of the gloves before attaching the finger sensors and putting on the gloves.

15. Wear disposable gloves when practicing.

16. The gloves provided are made of natural rubber. In rare cases, natural rubber may cause allergic reactions. Please read the cautions printed on the glove packaging before use.

17. The model itself is not lubricated, so before practicing vaginal examinations, be sure to apply a sufficient amount of glycerine to both the model and to the trainee's gloved fingers.

18. The Virtual Reality Vaginal Exam Model may react to magnetic fields, causing the model to malfunction. When using the Virtual Reality Vaginal Exam Model, keep computers and objects that generate magnetic fields at least 1 m away from the base that secures the main body.

19. Persons within a 1-meter radius of the model, including the trainee, should remove any metallic objects (rings, necklaces, cellular telephones, etc.) about their person before starting to practice. Metallic objects may cause malfunction.

20. To prevent malfunction of the Virtual Reality Vaginal Exam Model, be sure to place the base that secures the main body on the upper level of the plastic wagon provided as an accessory, and place the trakSTAR on the lower level.

21. Before practicing, check to make sure that the stoppers on the casters of the plastic wagon have been set in the ON (locked) position.

22. The model and images displayed on the computer do not match perfectly. The images simply allow an instructor to recognize the general area being palpated by the trainee during the Vaginal examination being practiced on the model.

23. When not in use, the model should be stored in a location where it is not exposed to direct sunlight or ultraviolet rays. Using the model in a high-temperature environment can cause deformation, discoloration, and breakdowns.

Handling and Safety Precautions

These precautions should be strictly observed in order to ensure safe, long-term use of the product.

Caring for the model after use

1. The vulva for vaginal exam II can be removed from the main body by unscrewing the exclusive screws. Wipe off dirt using a material such as a moist cloth or gauze with water or a neutral solvent diluted with water. Sufficiently wipe off the water to prevent the metal parts from rusting. If the metal parts become rusted to the extent that function is affected, consider replacing them. After wiping off the dirt, apply baby powder all over the model. (Do not clean the model with rubbing alcohol, thinners, or benzin or other organic solvents.)
2. Oil may leak from the vulva for vaginal exam II. Wipe off oil using a material such as a moist cloth or gauze with water or a neutral solvent diluted with water.
3. The dilated uterus models and fetal head model can simply be washed with water. After washing with water, sufficiently wipe off the water with a soft cloth, such as dry gauze.
4. To clean the main body, wash the interior with water, leaving the exclusive screws installed to keep water from getting inside the main body. (If the exclusive screws are not installed, water may get inside the main body through the screw holes.)
5. To clean the finger sensors, disconnect them from the trakSTAR and use a neutral detergent diluted with water to remove any dirt. Wipe off stubborn dirt with a material such as gauze dipped in disinfecting ethanol. Do not use solvents such as thinners or benzin. Clean only the finger sack part of the finger sensor.
6. Storing the models for an extended time in high- or low-temperature environments may cause deformation. Exposure to direct sunlight or ultraviolet rays may also cause the material to deteriorate, deform, or discolor. Store the model in an environment at 0-50℃ , in a location where it will not be exposed to direct sunlight or ultraviolet rays.

1. The contents of this instruction manual are subject to change without notice.
2. This instruction manual may not be reproduced in part or in its entirety without permission.
3. Please contact the manufacturer in the event that any errors or omissions are found in the contents of this instruction manual.
4. This product should be used only as described in this instruction manual. In particular, the product should not be used in any way that contravenes the precautions noted in the instruction manual.

Table of Contents

Before Use

1. Outline and Features 5
2. Names of Parts and Configuration Diagram 6
3. Installing and Uninstalling the Application on the Computer 8
   1) System Requirements 8
   2) Setting up the Virtual Reality Vaginal Exam Model 8
   3) Installing the Application 12
   4) Installing the Application (other methods) 23
   5) Uninstalling the Application 23

How to Use

4. Setting Up and Exiting the Virtual Reality Vaginal Exam Model 24
   1) Setting up the Virtual Reality Vaginal Exam Model 24
   2) Launching the Application Menu 24
   3) Launching Applications 24
   4) Exit 24
5. Fetal Head Rotation 3D Graphics Operation 25
   1) Launching the Fetal Head Rotation 3D Graphics Application 25
   2) Animation Operation 25
   3) Viewpoint Operation 26
6. Setting Up the Virtual Vaginal Exam 28
7. Handling of the Virtual Reality Vaginal Exam Model 30
   1) Applying Lubricant 30
   2) Setting the Uterus dilation model in Place 30
8. Basic Operation of the Virtual Vaginal Exam 33
   1) Launching the Virtual Vaginal Exam 33
   2) Explanation of Menus 33
   3) Operation of Functions 35
   (1) Adjusting the displayed image 35
   (2) Changing the viewpoint 39
   (3) Measurement 41
9. Detailed Configuration of the Virtual Vaginal Exam 44
   1) Operation Environment Setup 44
   2) Adjusting the Position of the Model 48

Other

10. Model Configuration Chart 53
11. Specifications 54

1. Outline and Features

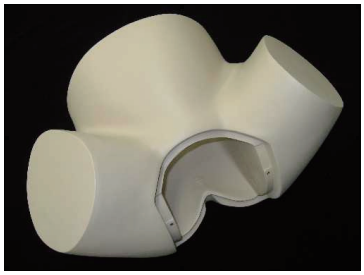
Outline

The Virtual Reality Vaginal Exam Model makes it possible to see images of the actual movements of the fingers inside the vagina when practicing vaginal examinations, something that has not previously been possible. Instructors can now show trainees specifically how the two fingers should be moved when performing an examination, and can check that the trainee is moving their fingers properly.

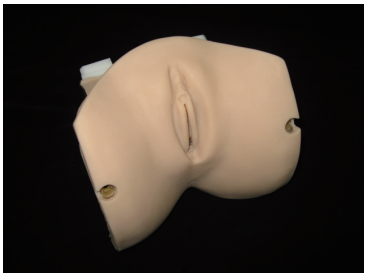
Features

1. Sensors attached to the fingers make it possible to measurement and display distances between the two fingers and the distance moved by the fingers.
2. A line connecting the ischial spines (zero station) can be displayed.
3. The material used for the model closely approximates that of real tissue. The cervix and other structures can be checked under highly realistic conditions.
4. The images are three-dimensional and can be freely moved on the computer, enabling checking from any direction.
5. Bishop scores from the late stage of pregnancy to the beginning of labor (cervical dilation, effacement, consistency and position) can be confirmed.
6. Three models with varying degrees of uterus opening dilation are provided, along with models of the fetal head. These can be interchanged and the degree of engagement can be adjusted, making it possible to gauge the progression of labor by means of vaginal examination.
7. The fetal head models can be used to gauge rotation of the fetal head by varying positions of the sagittal sutures and posterior fontanel.
8. Rotation of the fetus at the time of delivery can be checked by means of three-dimensional animation.

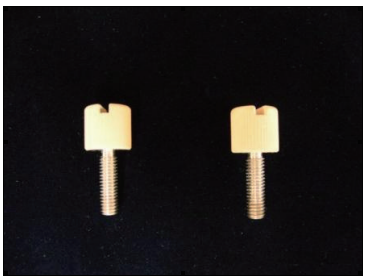
2. Names of Parts and Configuration Diagram



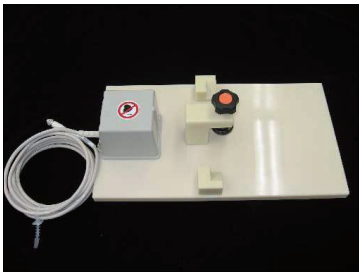
Main body



Vulva for vaginal exam II

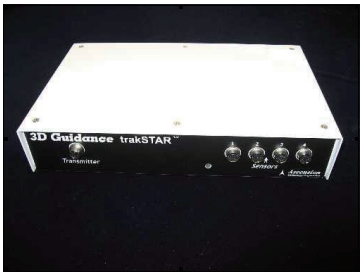


Exclusive screws



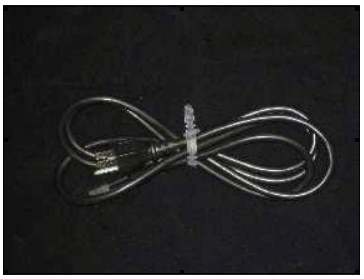
Base for securing main body

Finger sensors
(for index finger and second finger)



trakSTAR

USB cable

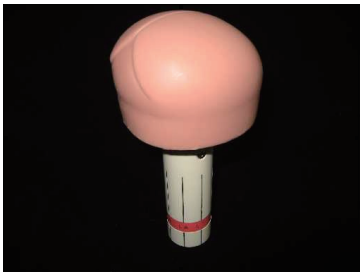


Power cable

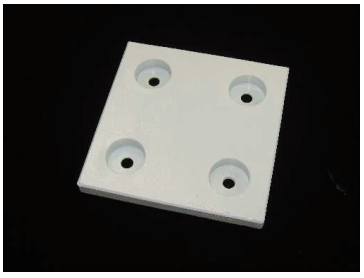
1~2 cm uterus dilation model

3~4 cm uterus dilation model

8~9 cm uterus dilation model



Fetal head model



Base for uterus dilation model

Baby powder

Glycerine

Gloves

Product key

Product CD

Plastic wagon

Cloth cover

*Finger sensors are available in three finger sizes: S, M and L. The S, M and L finger sack sizes are equivalent to surgical glove sizes 6, 7 and 8.

* trakSTAR is a trademark of Ascension Technology Corporation.

3. Installing and Uninstalling the Application on the Computer

1) System Requirements

Please ensure that the computer to be used meets the following requirements.

■ Computer specifications

- Operating system: Windows 8 (32/64-bit version)/Windows 8.1 (32/64-bit version)/Windows 10 (64-bit version)

  * Also runs on Windows XP (Service Pack 2 or newer version), Vista (32-bit version), 7 (32/64-bit version), but please note that operating system support has ended.
- CPU: Pentium 4 (at least 1 GHz recommended) or newer processer
- Memory: 512 MB (at least 1 GB recommended)
- Graphics card: Desktop: GeForce 4 or higher recommended

  Note: GMA X3100 (Intel GL960, GM965, etc.) or higher recommended
- USB ports: 2 ports (these are used to connect the trakSTAR and product key when operating the model)

  *Three USB ports are required if the computer does not have an internal CD drive and an external CD drive is connected via USB.

  The .NET Framework 3.5 program (or newer version) is required when using this software. The.NET Framework 3.5 can be installed during installation of this software. (In this case, an Internet connection will be required. See note on p. 12 (4))

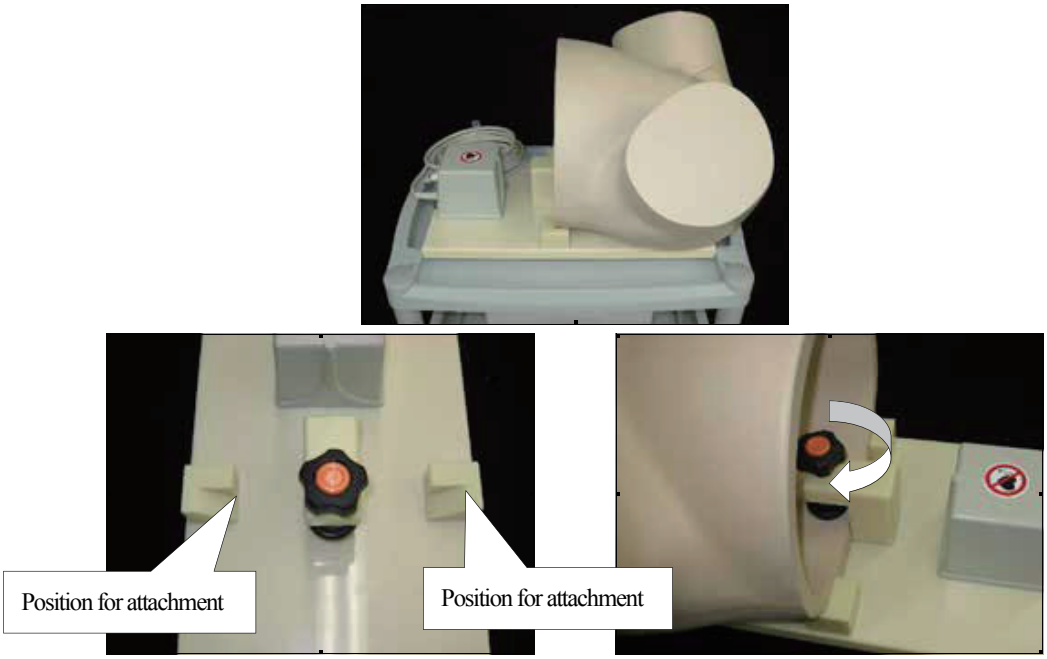
2) Setting up the Virtual Reality Vaginal Exam Model

*Dropping the model or trakSTAR, or subjecting them to strong impact, could cause damage. Handle these items with caution.

*Before installing the software, be sure to connect the model as shown below.

(1) Referring to the instruction manual that comes packaged with the product, assemble the plastic wagon.

(2) Place the base for securing the main body on the upper level of the plastic wagon, and secure the main body in place. Set the sides of the main body against the reference positions for attaching to the base, and turn the knob to fix it in place.

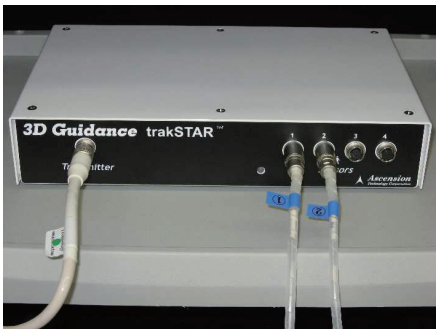


(3) Set the trakSTAR on the lower level of the plastic wagon, and insert the cable coming from the main body base into the terminal labeled "Transmitter" on the trakSTAR.

(4) Connect the finger sensors to “Sensors” 1 and 2 on the trakSTAR.

*Be careful not to excessively bend or twist the finger sensor cables, and avoid stepping on them. Such actions could cause the cables to break.

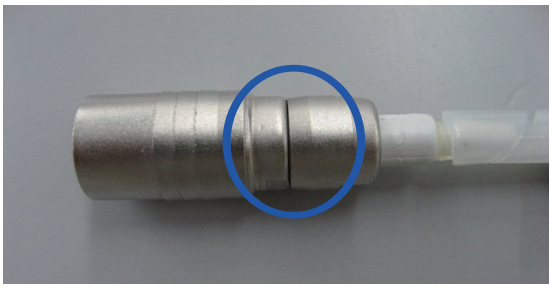
*Connect the finger sensor for the index finger to terminal 1, and the finger sensor for the second finger to terminal 2.

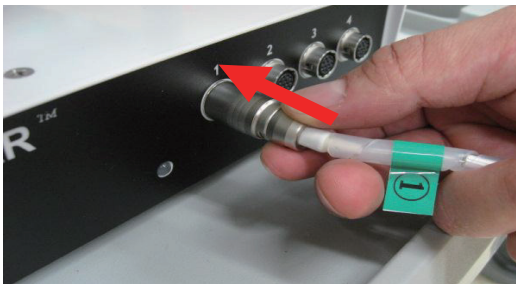


*Follow the outlines below when connecting and disconnecting the finger sensors.

< Connecting >

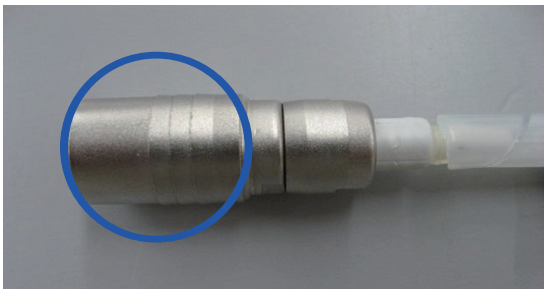
Hold the part of the connector circled in blue in the figure below, and connect it to the trakSTAR.

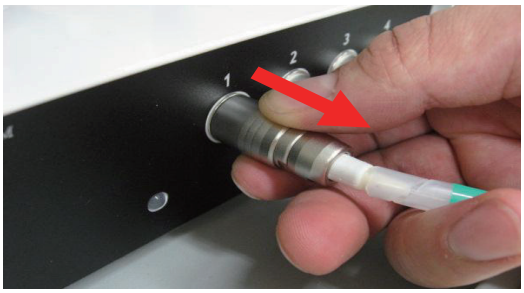




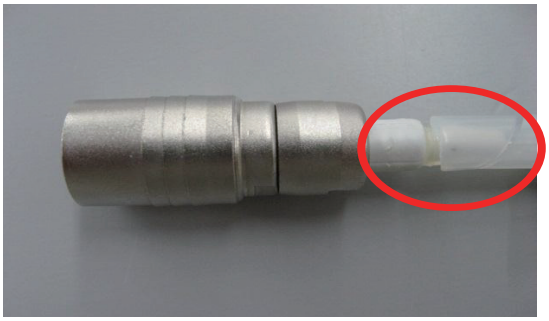
< Disconnecting >

Hold the part of the connector circled in blue in the figure below, and disconnect it from the trakSTAR.





*When connecting the finger sensors to the trakSTAR, and when disconnecting them, be sure to hold the main body of the connector. Attaching or removing the connector by pulling on the cable could cause the cable to break.



(5) Connect the USB cable to the computer. The USB cable connects to the terminal labeled “USB” at the back of the trakSTAR.

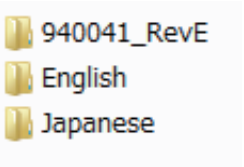
*The Virtual Reality Vaginal Exam Model will not function if the USB cable is inserted into any location other than the USB port on the computer to which the cable was connected at the time of installation. Decide in advance, which USB port is to be used for connecting the USB cable before starting installation.

(6) Connect the power cable to the back of the trakSTAR, and plug the cable into an electrical outlet. Do not turn on the power at this point.

3) Installing the application

(1) After connecting the model, turn the computer on and insert the product CD into the computer.

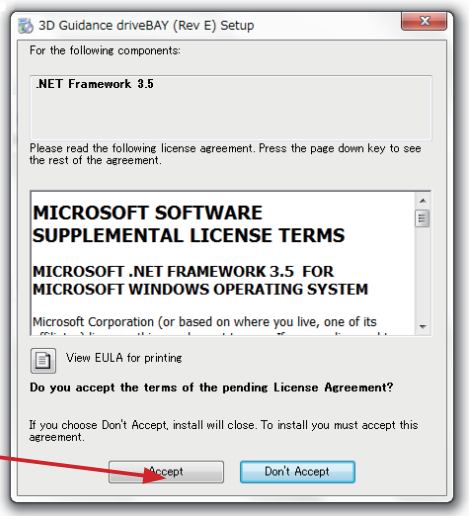
(2) When the product CD is opened, the screen shown in the figure below is displayed. Double-click on [940041 __ RevE].



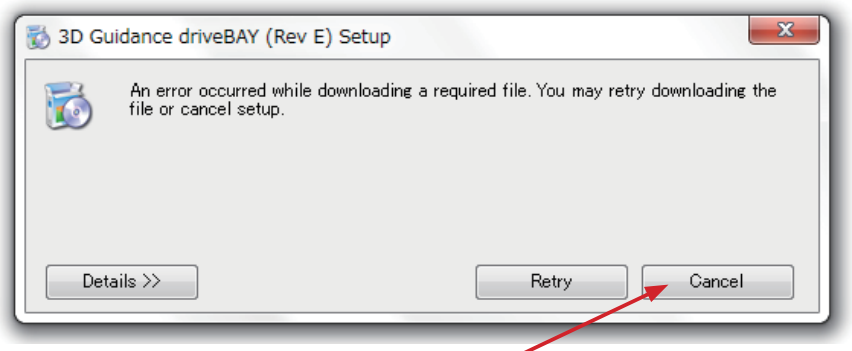
(3) Double-click on [Setup.exe] to run.

(4) The following screen appears. Click [Accept]. (Depending on your computer Setup, the figure below may be skipped and Screen (5) may appear, in which case, proceed with installation from Step (5) below.)

Click here

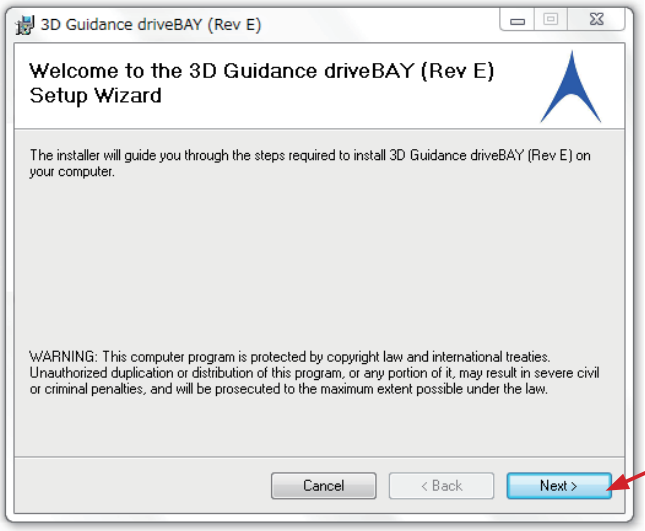


*If .NET Framework is not installed, click [Accept] while connected to the Internet to have it install automatically. If the computer is not connected to the Internet, the message shown below will appear on the screen. In this case, connect the computer to the Internet and click [Retry].



Click here

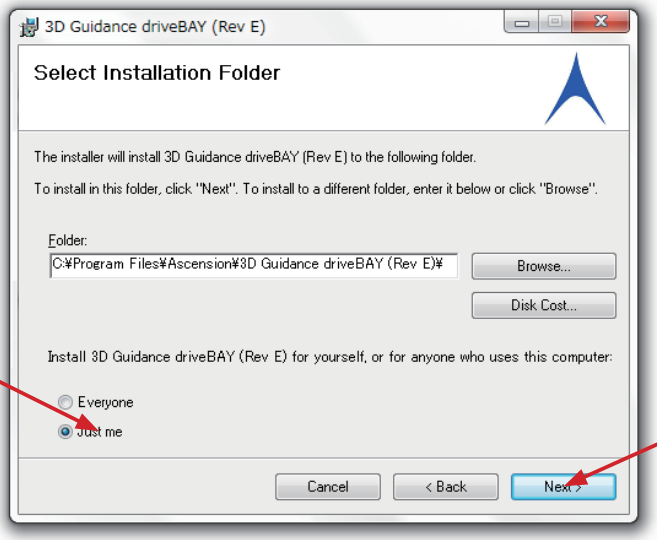
(5) The following screen appears. Click [Next].



Click here

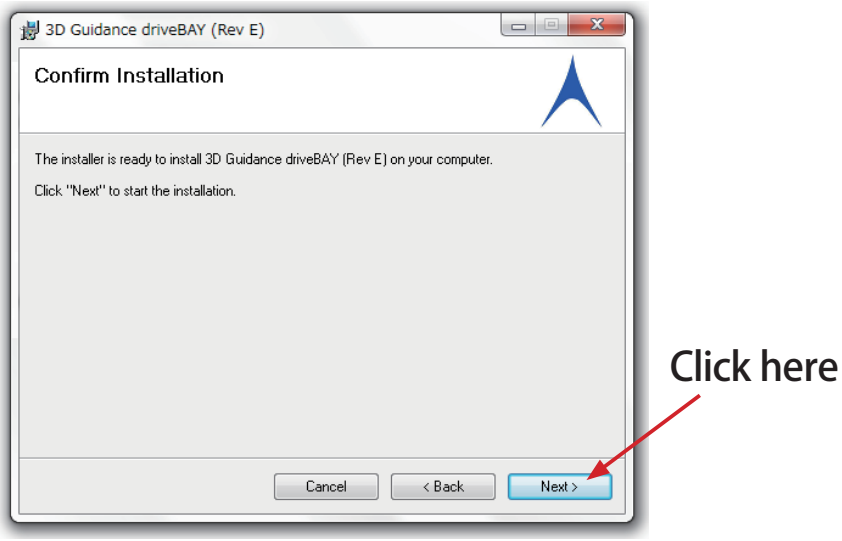
(6) Select “Just me” and click [Next].

Select “Just me”

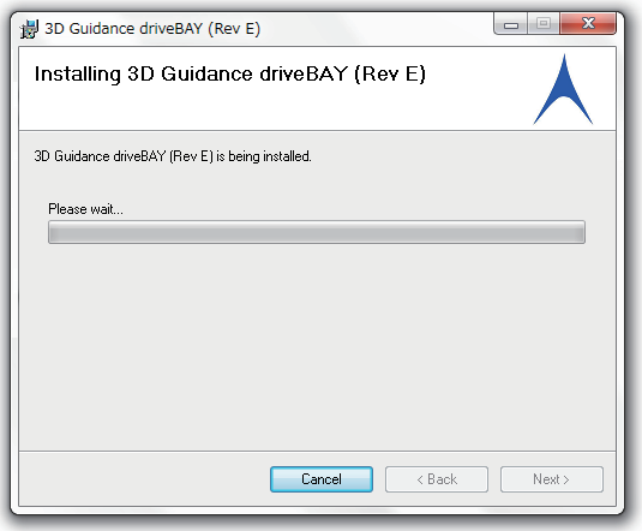


Click here

(7) The following screen appears. Click [Next].

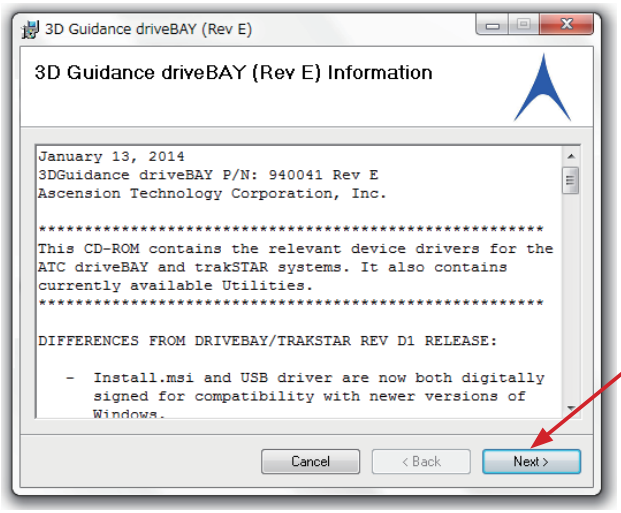


(8) The Installation screen appears, and installation commences.

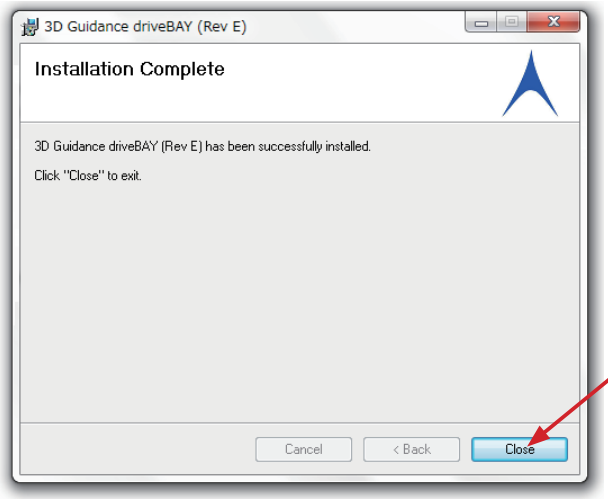


(9) When message appears on the screen whether you wish to install or not, please click [Install].

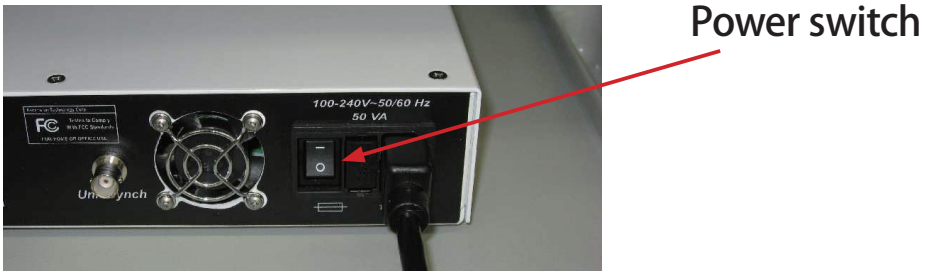
(10) The following screen appears. Click [Next].



(11) The following screen appears. Click [Close].



(12) Turn on the power to the trakSTAR.

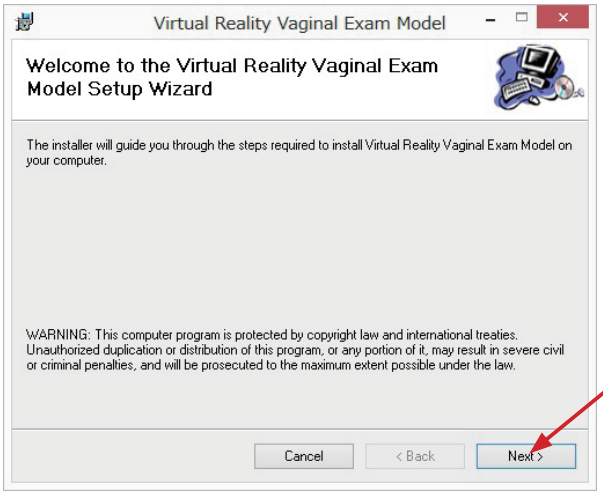


(13) Please insert the product key to USB port on the computer.

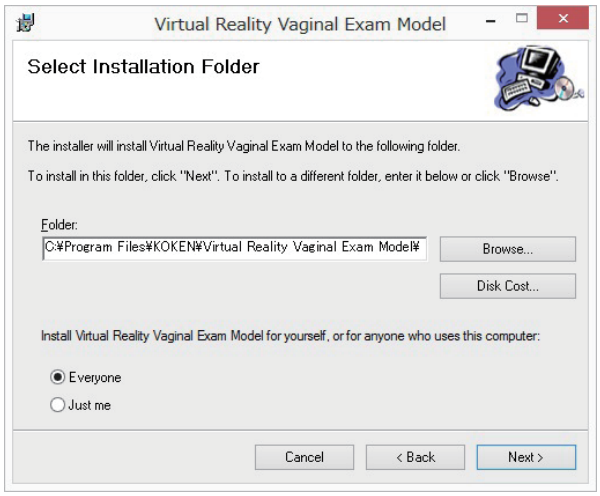
(14) When the product CD folder is opened, the folders shown in the figure below will appear on the screen. Double-click on [English] or [Japanese] to select the language to be displayed when operating the Virtual Reality Vaginal Exam Model.

(15) When the language is selected, the following screen appears. Double-click on [Setup.msi] to run.

(16) When Setup.msi is run, the Virtual Reality Vaginal Exam Model installer launches. Click on [Next].



(17) The folder selection screen will appear.



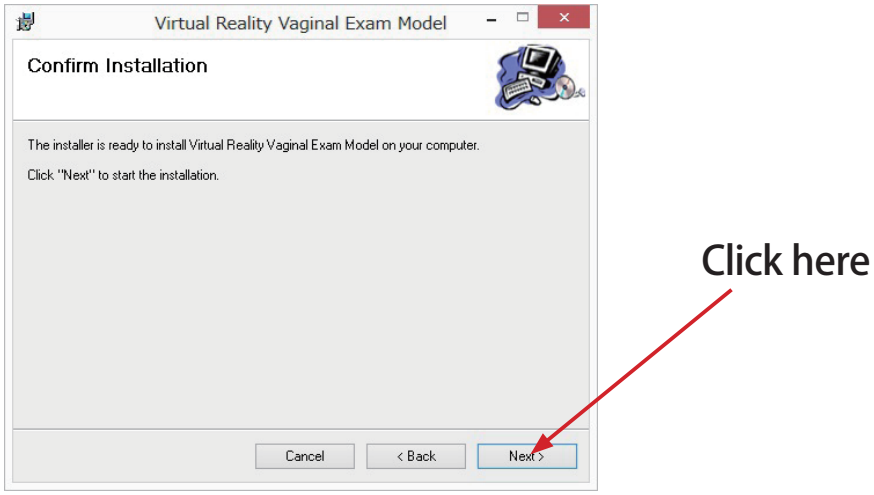
○ [Folder] edit box

Specify the installation destination. Write a new installation destination to change the installation folder.

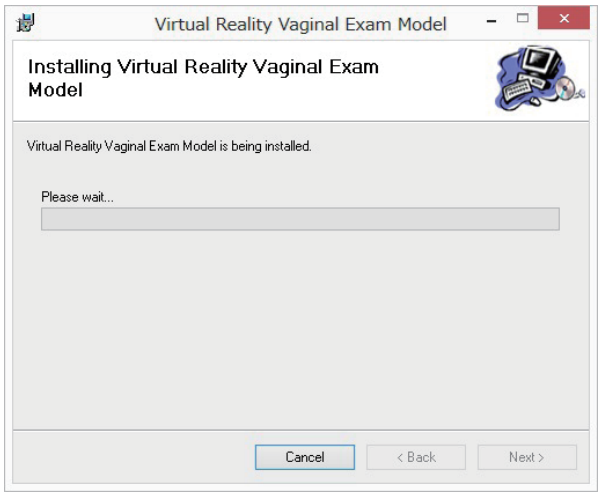
○ Change user radio button

Select whether to allow only the user performing the installation or all users who uses the computer to use the Virtual Reality Vaginal Exam launch shortcut created during installation.

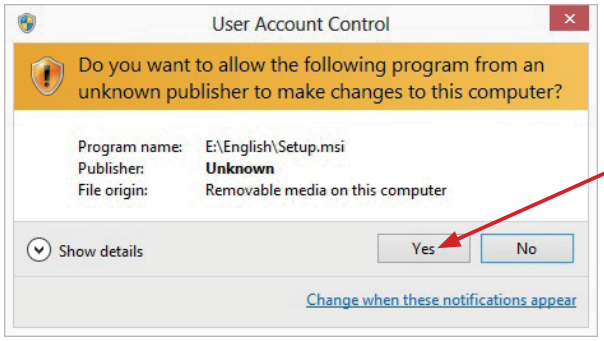
(18) Click [Next] to move to the Confirm Installation screen. Click on [Next].



(19) The Installation screen appears, and installation commences.

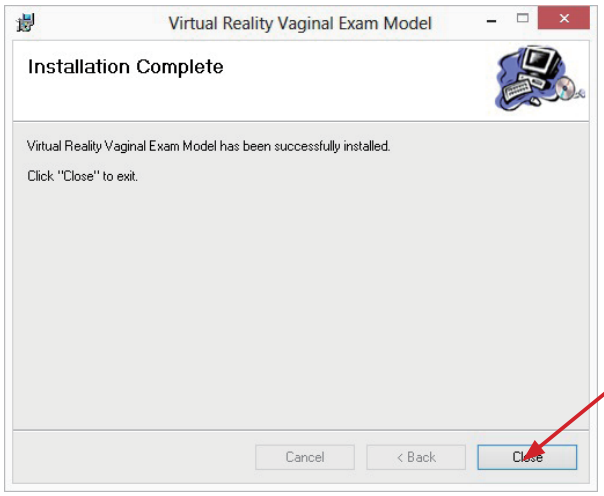


(20) A User Account Control confirmation dialog box will appear during installation (immediately after installation starts). Click [Yes] to return to the Installation screen and restart installation.



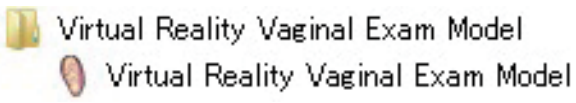
Click here

(21) After completing installation, the Installation Complete screen appears. Click the [Close] button to close the screen and complete installation.

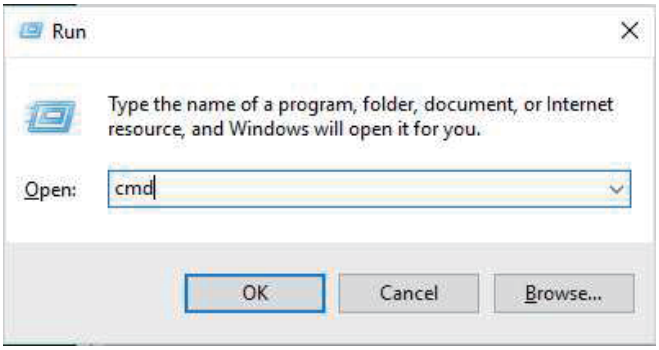


Click here

(22) When installation ends, shortcuts are created on the Start Menu and on the Desktop.

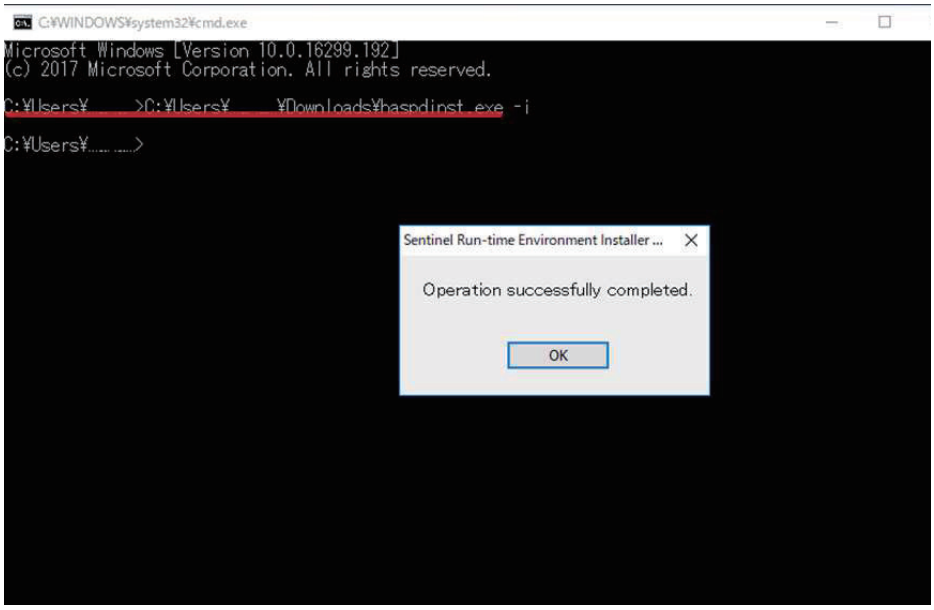


(23) To install the driver of the product key, enter “Windows key + R”. When the following screen appears, enter “cmd”.



(24) After the product CD is opened, haspdinst.exe file appears.

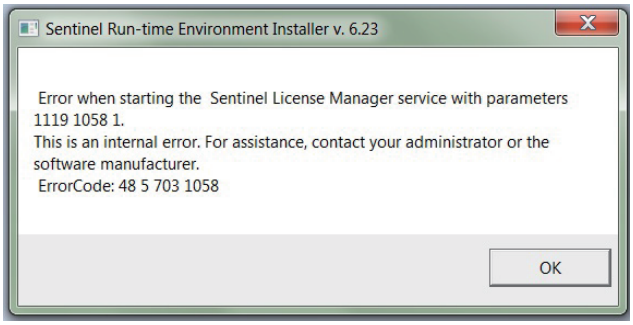
Drag and drop the haspdinst.exe file to the CMD screen so that a password is automatically entered as shown in the underlined part in the figure below. Enter “ -i” behind the password and press the Enter key to run the installation. After completing the installation, a dialogue box indicating that the operation has been completed successfully is displayed as shown in the figure below.

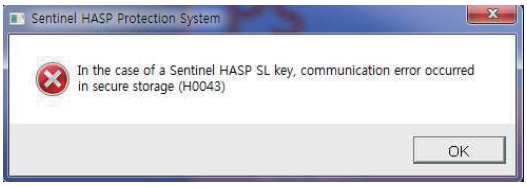


*If you do not insert a space before “-i”, the installation is not run. The message “Operation successfully completed” is not displayed and the following screen appears instead.

*If you enter “-i” and press the Enter key, a PC restart instruction may appear. In this case, restart the PC and install again from step 1.

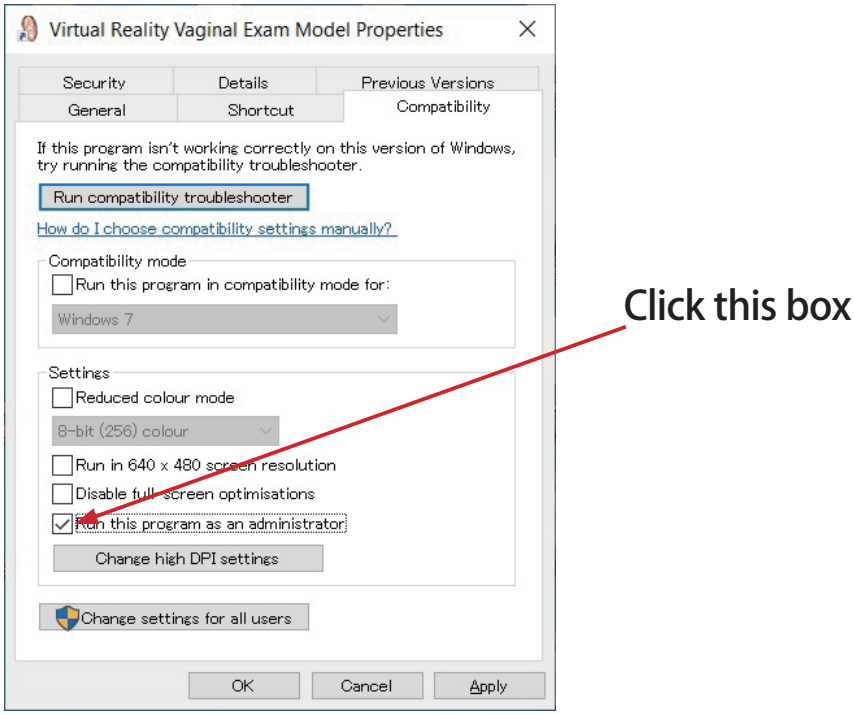
If an error occurs during the installation as shown in the figure below, uninstall the installed driver and try again. (See p. 21, “Deleting the driver”)





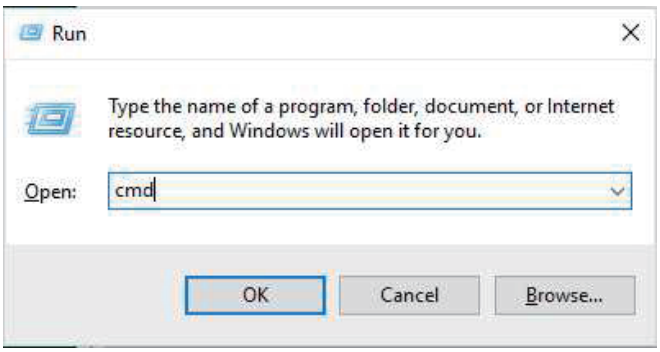
(25) After completing the installation, right-click the shortcut icon created on the desktop, and then select properties.

(26) Check the “Run this program as administrator” box.

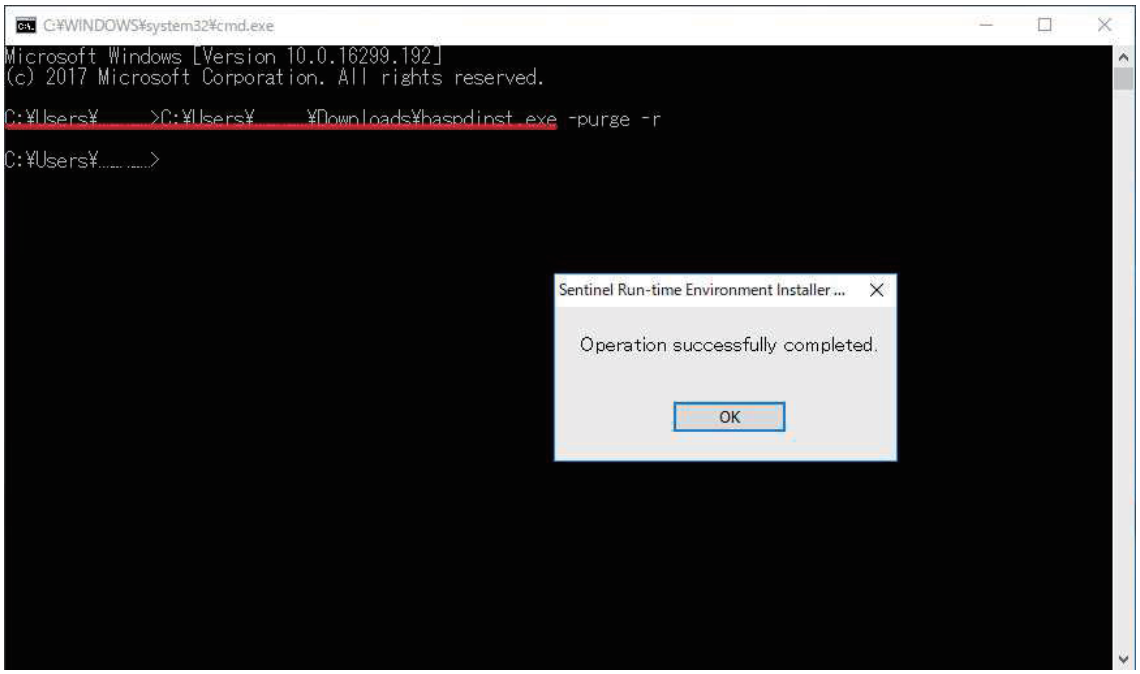


Deleting the driver

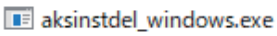
(1) To delete the driver, enter “Windows key + R”. When the following screen appears, enter “cmd”.



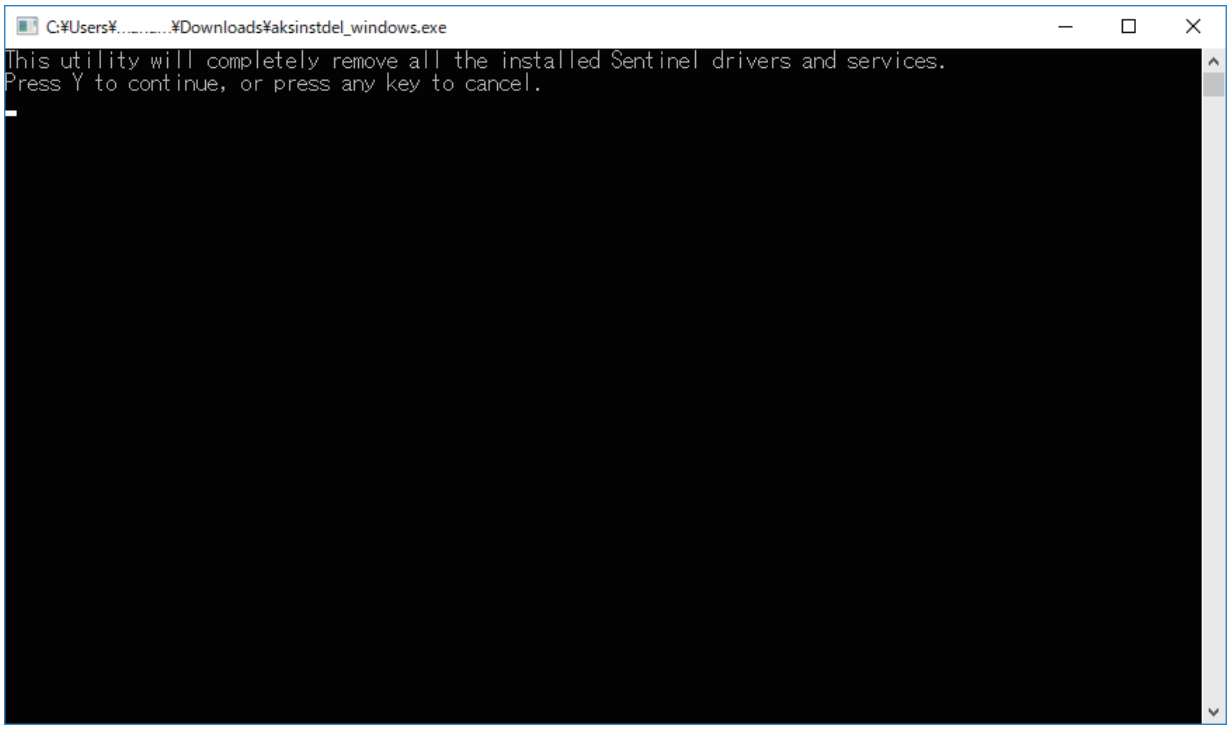
(2) Drag and drop the haspdinst.exe file to the CMD screen so that a password is automatically entered as shown in the underlined part in the figure below. Enter “ -purge -r” behind the password and press the Enter key to delete the driver. After the deletion is complete, a dialogue box indicating that the operation has been completed successfully is displayed as shown in the figure below.



(3) Double-click on “aksinstdel_windows.exe” of the driver deletion tool included in the product CD.



(4) When the screen shown in the figure below appears, click “Y”.

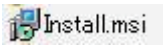


(5) After the driver has been deleted, install the driver again.

4) Installing the application (other methods)

※ Install the application using this procedure if installation using the procedure described in Section (3) “Installing the application” on p. 12 is unsuccessful.

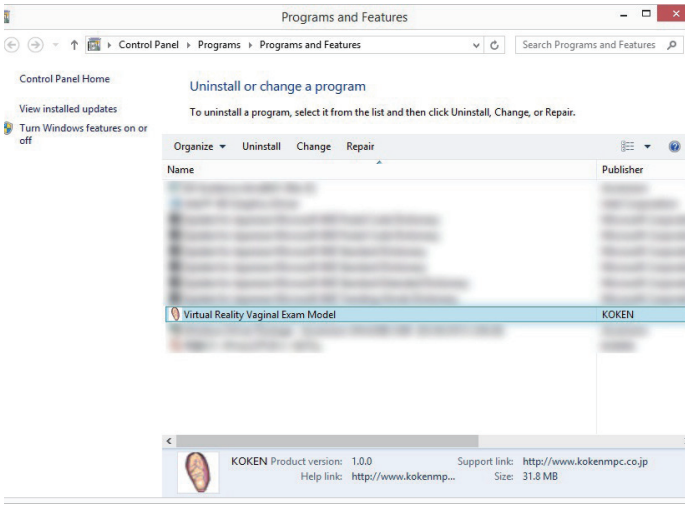
(1) Open the product CD, and double-click on [940041 __ RevE].

(2) Double-click on “Install.msi”. 

(3) The same screen as shown in Section 3)-(7) “Installing the application” on (p. 14) will appear. Click [Next] to run installation from step (5) (p. 13).

5) Uninstalling the application

(1) Display the [Programs and Functions] screen from [Uninstall the program] on the Control Panel.



(2) Select “Virtual Reality Vaginal Exam Model” from the list of installed programs, and uninstall the program.

(3) Delete [3D Guidance driveBAY(Rev E)] in the same way.

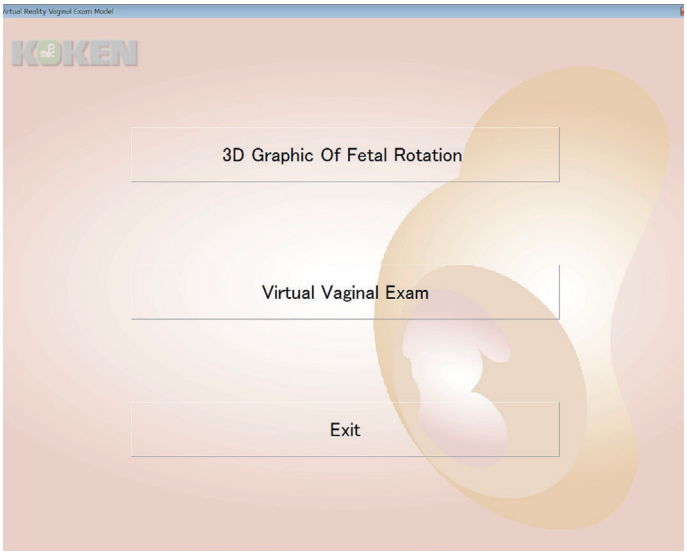
4. Setting Up and Exiting the Virtual Reality Vaginal Exam Model

1) Setting up the Virtual Reality Vaginal Exam Model

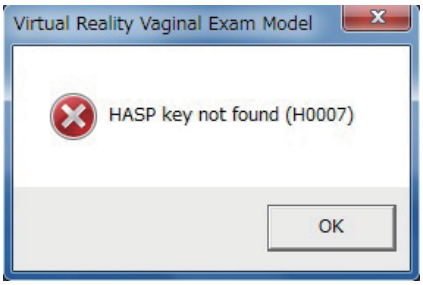
Connect the base for securing the main body, the main body, the trakSTAR, finger sensors, computer, and product key according to the instructions in Section 2 on p. 8, "Setting up the Virtual Reality Vaginal Exam Model," and turn the computer on.

2) Launching the application menu

Launch the Virtual Reality Vaginal Exam Model menu from the Start menu or the desktop shortcut.



* The product key must be connected to a USB port for the application to launch. If it is not connected, the following dialog box will appear, and the application will fail to launch.



3) Launching applications

Follow the instructions starting on p. 21 or p. 29 to launch the "Fetal Head Rotation 3D Graphics" or "Virtual Vaginal Exam" applications.

4) Exit

(1) Exit the "Fetal Head Rotation 3D Graphics" or "Virtual Vaginal Exam" application and return to the Menu screen. (It may take a short time for the Menu screen to appear.)

(2) Click the [Exit] button on the Menu screen to exit the program.

(3) Turn off the computer and trakSTAR

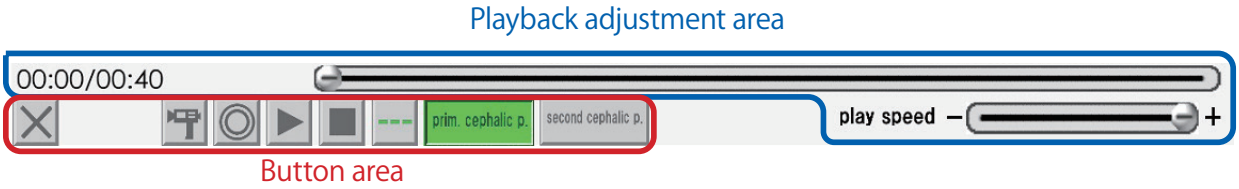
5. Fetal Head Rotation 3D Graphics Operation

1) Launching the Fetal Head Rotation 3D Graphics application

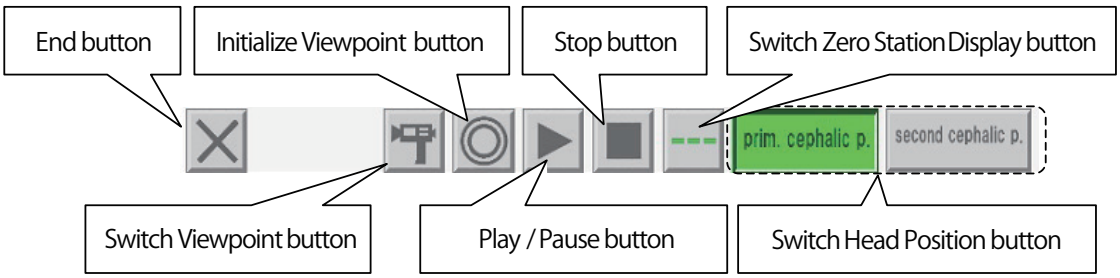
After launching the menu by following the instructions on p. 20, click the [Fetal Head Rotation 3D Graphics] button to launch the Fetal Head Rotation 3D Graphics application.

2) Animation operation

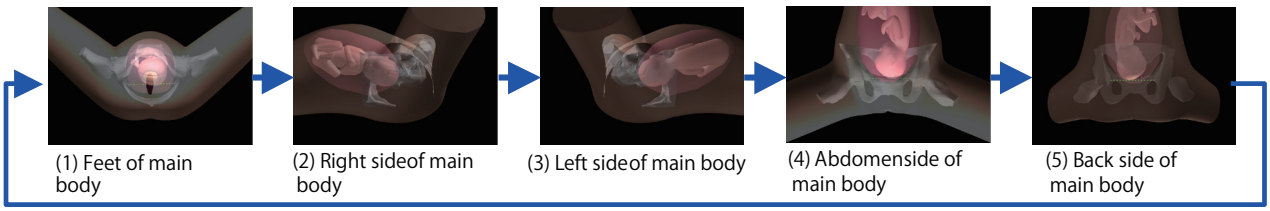
Animation operations are performed using the menu at the bottom of the screen. We will divide our explanation into two general areas: the button area; and the playback adjustment area.



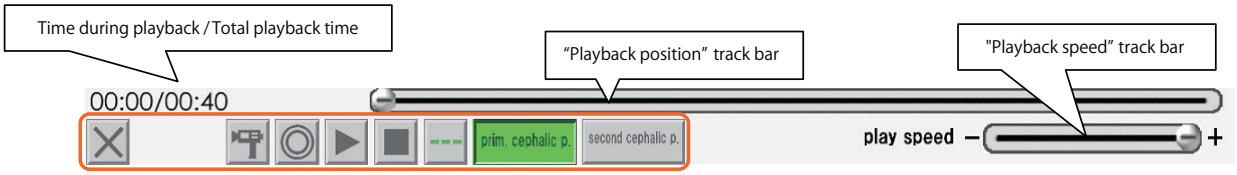
(1) Button area



End button	This closes the fetal head rotation 3D graphics application and returns the user to the menu.
Switch Viewpoint button	Each time this button is pressed, the user is switched through five fixed points of view, in sequential order: (1) View from the feet of the main body →(2) View from the right side of the main body →(3) View from the left side of the main body →(4) View from the abdomen of the main body →(5) View from the back of the main body → Back to (1)
Initialize Viewpoint button	Each time this is pressed, the view returns to the fixed viewpoint (1) (from the feet of the main body).
Play / Pause button	Pressing this when ▶ is displayed starts playback. The button changes to ⏸ during playback, and pressing the button again pauses playback.
Stop button	This stops playback.
Switch 0 Station Display button	This turns the 0 Station display on and off.
Switch Head Position button	This switches between the No. 1 head position and the No. 2 head position, but only when animation is stopped. There is no effect if this button is pressed while the animation is playing or paused.



(2) Playback adjustment area

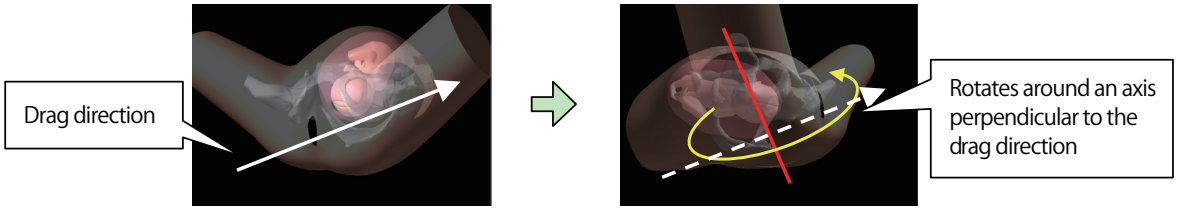


Time during playback / Total playback time	This shows the total playback time of the animation, and the time during playback.
"Playback position" track bar	The current playback time is indicated by the position of the , with the left end of the track bar representing the start of the animation, and the right end representing the end of the animation. The current playback time can be changed by dragging the with the left mouse button.
"Playback speed" track bar	The current playback speed is indicated by the position of the , with the left end of the track bar representing slow playback at approximately one-tenth of normal speed, and the right end representing normal playback speed. The current playback speed can be changed by dragging the with the left mouse button.

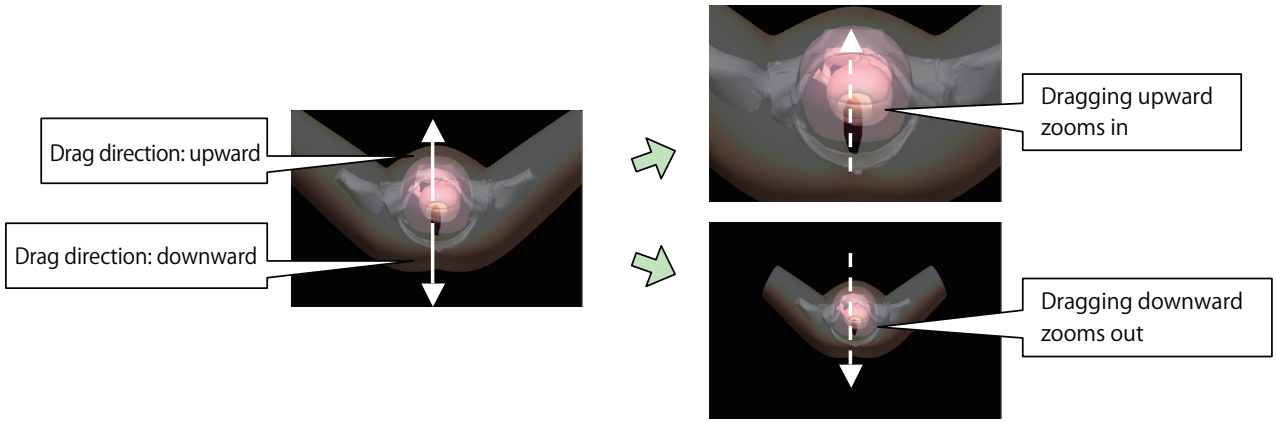
3) Viewpoint operation

The viewpoint can be changed using mouse dragging and key presses in combination. Dragging with the left mouse button rotates the view, while dragging with the right mouse button zooms in and out. Dragging with the left mouse button while holding down the [SHIFT] key results in parallel movement.

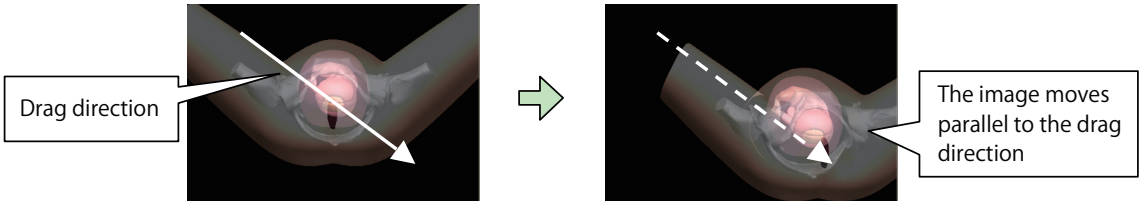
(1) Dragging with the left mouse button: Rotation



(2) The view rotates perpendicular to the drag direction.



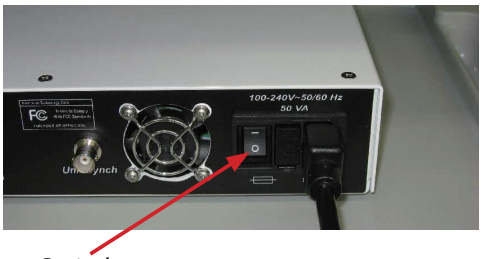
(3) Dragging with the left mouse button while holding down the [SHIFT] key: Parallel movement



6. Setting Up the Virtual Vaginal Exam

(1) To set up the Virtual Reality Vaginal Exam Model, connect the base for securing the main body, the main body, trakSTAR, finger sensors, computer, and product key according to the instructions in Section 2 on p. 8, "Setting up the Virtual Reality Vaginal Exam Model."

(2) Turn on the power to the trakSTAR.



Switch

When the power is turned on, the lamp lights orange. After a short time, the lamp begins to blink green.

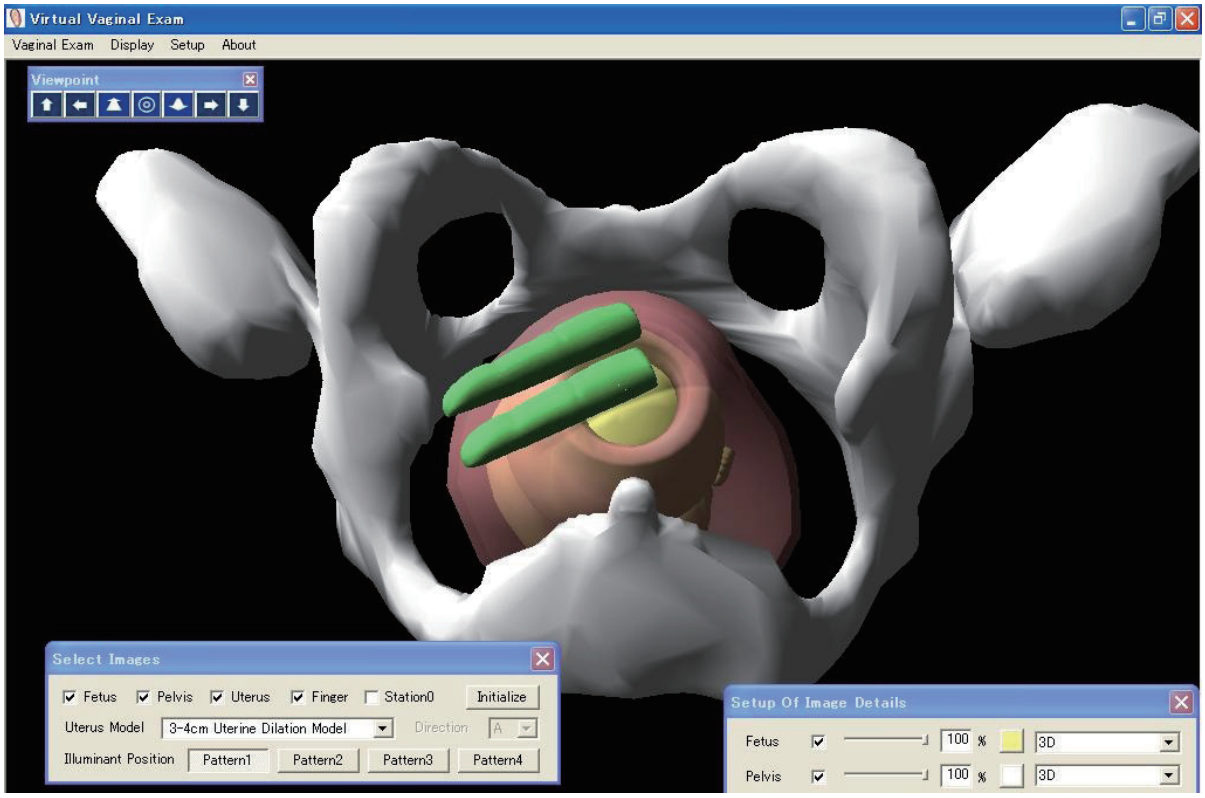
(3) Attach the finger sacks of the sensors to the fingers, ensuring that the sensor parts are over the fingernails. After the finger sacks are in place, apply baby powder to the sacks.

Sensor parts

(4) After the finger sacks are in place, put on the glove. Make sure to apply a sufficient amount of baby powder inside the glove before putting it on.

* These gloves are made with natural rubber. Natural rubber may cause allergic reactions. Please read the cautions printed on the glove packaging before use.

(5) When the Virtual Vaginal Exam application is launched, the finger sensors are displayed in green on the computer screen as shown below. The fingers on the screen move in accordance with the actual movement of the finger sensors. See Section 1 on p. 29 “Launching the Virtual Vaginal Exam” for instructions on launching the Virtual Vaginal Exam application.



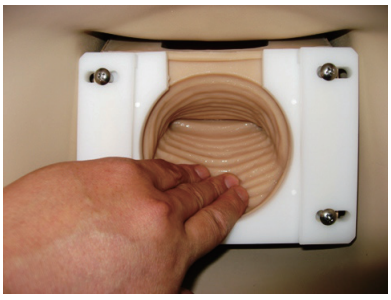
7. Handling of the Virtual Reality Vaginal Exam Model

*This model is made of a special silicone rubber with a feel similar to that of the human body. Please handle it with the same care that you would exercise when working with a human body.

1) Applying lubricant

Using a finger, apply a generous amount of glycerin to the vaginal walls and vaginal cavity of the vulva for vaginal exam II, and to the uterus opening of the uterus dilation model that will be inserted.

Vaginal walls



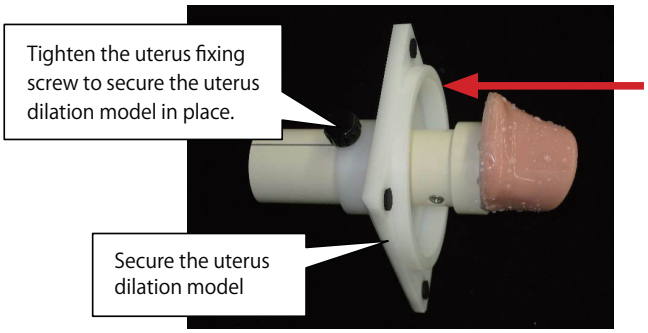
Vaginal cavity

Uterus dilation model

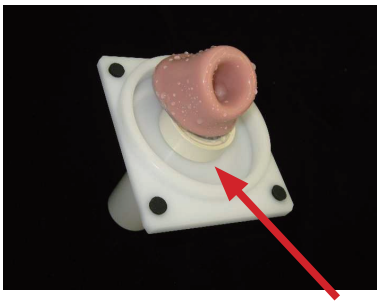
2) Setting the uterus dilation model in place

Set the uterus dilation model on the plate that secures it in place, and tighten the uterus fixing screw to secure the uterus dilation model in place.

(1) Setting the 1~2 cm and 3~4 cm uterus dilation models in place.



Insert the uterus dilation model from the direction indicated by the arrow, until the uterus dilation model comes in contact with the plate that secures it in place.



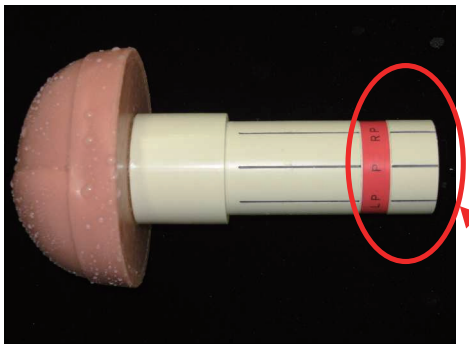
Insert the uterus dilation model until it comes in contact with the plate that secures it in place.

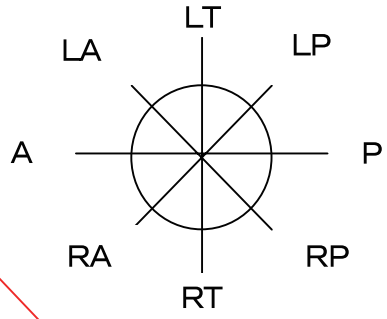
Align the line on the uterus dilation model with the plate that secures the model, to secure it in place.

*Before removing the uterus dilation model from the uterus dilation model fixing plate, ensure that the uterus fixing screw is loosened.

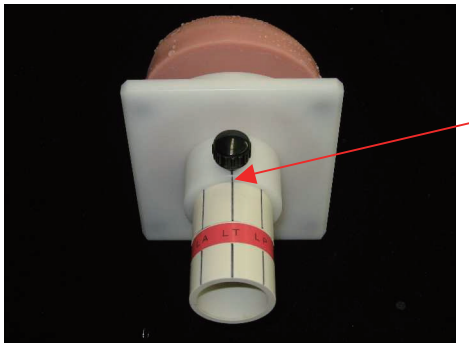
(2) Setting the 8~9 cm uterus dilation model and fetal head model in place

These models are set in place in the same way as the 1~2 cm and 3~4 cm uterus dilation models, but have to be aligned with the orientation indicators in the bony birth canal.





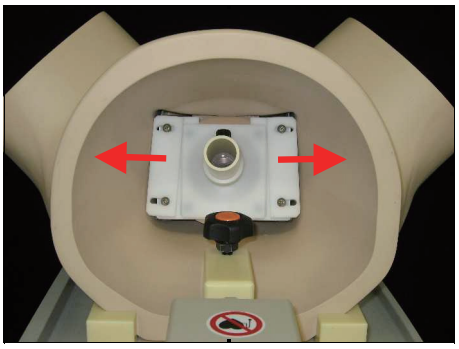
Orientation indicators in the bony birth canal

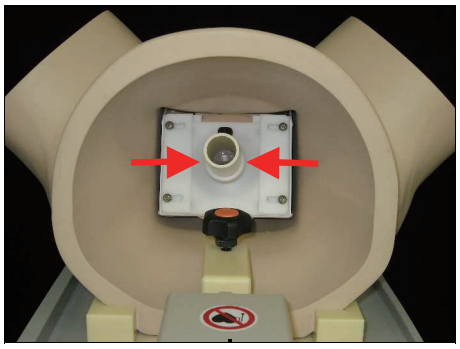


Line up the line on the plate securing the uterus dilation model with the orientation indicator line inside the bony birth canal to determine the position at which the uterus will be set.

(3) Installing the vulva for vaginal exam II

Open the doors on both sides of the vulva for vaginal exam II, and set in place the plate that has the uterus dilation model secured to it. After setting it in place, close the doors to secure the plate in place.





*The Virtual Reality Vaginal Exam Model may react to magnetic fields, causing the model to malfunction. When using the Virtual Reality Vaginal Exam Model, keep computers and objects that generate magnetic fields at least 1 meter away from the base that secures the main body.

*Persons within a 1-meter radius of the model, including the trainee, should remove any metallic objects (rings, necklaces, cellular telephones, etc.) about their person before starting to practice. Metallic objects may cause malfunction.

*To prevent malfunction of the Virtual Reality Vaginal Exam Model, be sure to place the base that secures the main body on the upper level of the plastic wagon provided as an accessory, and place the trakSTAR on the lower level.

*Before practicing, check to make sure that the stoppers on the casters of the plastic wagon have been set in the ON (locked) position.

*When not in use, the model should be stored in a location where it is not exposed to direct sunlight or ultraviolet rays. Using the model in a high-temperature environment can cause deformation, discoloration, and breakdowns.

8. Basic Operation of the Virtual Vaginal Exam

1) Launching the Virtual Vaginal Exam

Check that the trakSTAR is turned on, and launch the Virtual Vaginal Exam by clicking the [Virtual Vaginal Exam] button from the menu launched following the instructions on p. 20.

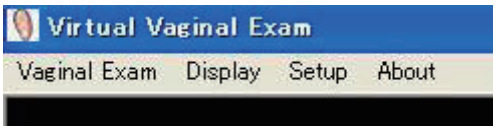
When the "Virtual Vaginal Exam" application is started, the trakSTAR lamp, which was blinking green, lights orange for a short time and then starts blinking green again. After that, the light changes to a steady green display, indicating that the application can now be used.

When the "Virtual Vaginal Exam" application first starts, the lamp lights orange, then changes to blinking green, and then green.

*When the examination training session is over, exit the "Virtual Vaginal Exam" application on the computer before turning off the trakSTAR power.

2) Explanation of menus

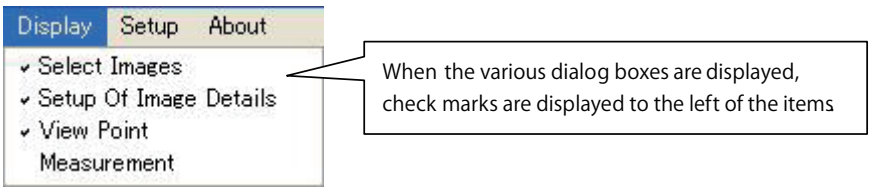
There are four items on the menu bar: Vaginal Examination; Display; Setup; and About. The functions of each of these are shown below.



◯ Vaginal Examination

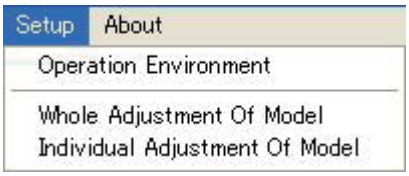
Exit	This exits the Virtual Vaginal Exam application.

◯ Display



Select Images	This turns the Select Images dialog box display on and off. The Select Images dialog box is used when changing the display of the fetus, pelvis and other elements. For detailed information, see Section 8 -3) -(1) -(a), " Select Images," on p. 31.
Setup Of Image Details	This turns the Setup Of Image Details dialog box display on and off. The Setup Of Image Details dialog box is used when making changes to detailed aspects of the display, such as the transparency or color of the fetus, pelvis or other elements. For detailed information, see Section 8-3) -(1) -(b), "Setup Of Image Details," on p. 33.
Viewpoint	This turns the Viewpoint dialog box display on and off. The Viewpoint dialog box is used when changing the viewpoint. For detailed information, see Section 8 -3) -(2), " Changing the viewpoint," on p. 35.
Measurement	This turns the Measurement di alog box display on and off. The Measurement dialog box is used when carrying out distance measurements. For detailed information, see Section 8 -3) -(3), " Measurement, "on p. 37.

○ Setup



Operation Environment	This turns the Operation Environment d ialog box display on and off. The Operation Environment dialog box is used when configuring various settings, such as the position and color of the light source, the amount of viewpoint movement, and sensor -related parameters. For detailed information, see Section 9 -1), "Operation Environment settings, " on p. 40.
Whole Adjustment Of Model	This turns the Whole Adjustment Of Model dialog box display on and off. The Whole Adjustment Of Model dialog box is used when adjusting the position of the overall model. For detailed information, see Section 9 -2) -(1), "Whole Adjustment Of Model," on p. 44.
Individual Adjustment Of Model	This turns the Individual Adjustment Of Model dialog box display on and off. The Individual Adjustment Of Model dialog box is used when adjusting the position of an individual model. For detailed information, see Section 9 -2) -(2), "Individual Adjustment Of Model," on p. 46.

○ About

Version Information	This displays a dialog box showing information about the application and the version.

3) Operation of functions

This section explains how to adjust the displayed image, change viewpoints, and measurement the distance between two points.

（1） Adjusting the displayed image

There are two ways to change the display status of the model: simple Setup, for which the Select Images dialog box is used; and detailed Setup, for which the Setup Of Image Details dialog box is used.

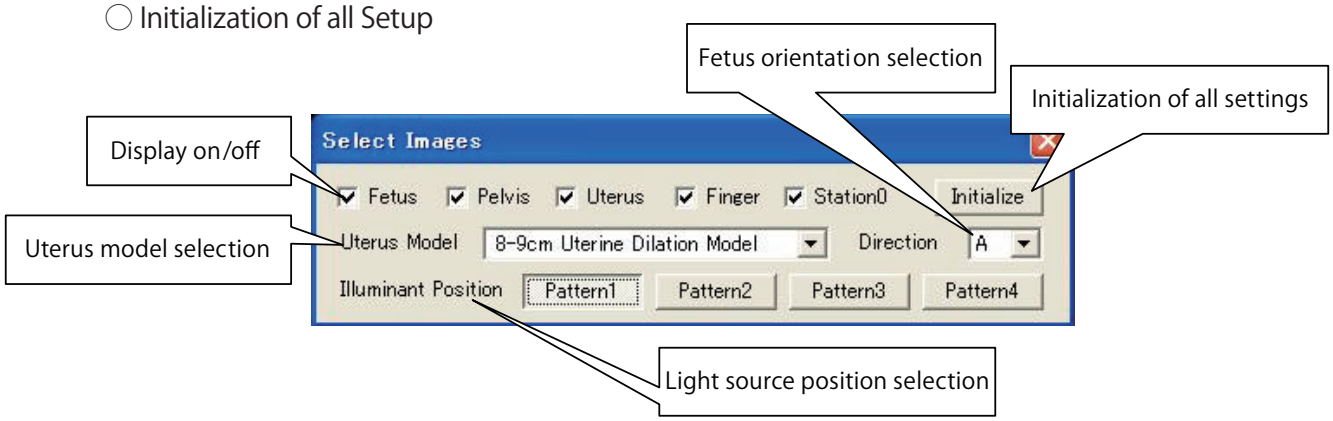
Simple Setup such as turning displays on or off are done using the Select Images dialog box, while more detailed Setup such as specifying the transparency of the model and the color in which the model is displayed are adjusted using the Setup Of Image Details dialog box.

(a) Select Images

Selecting “Display” and then "Select Images” on the menu displays the Select Images dialog box. This can be used to make simple adjustments to the display status of the model.

The following parameters can be adjusted.

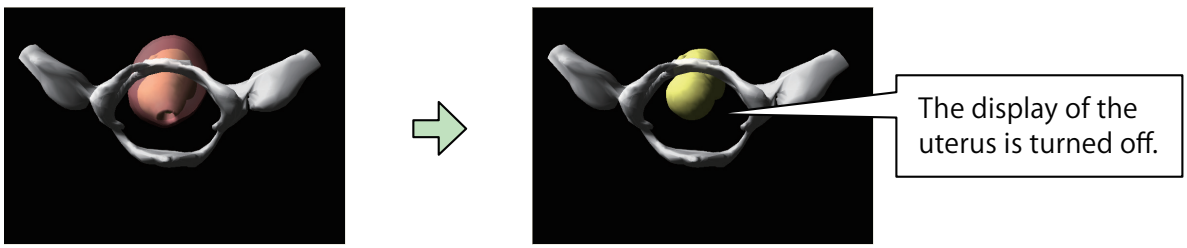
◯ Display on/off for each model
◯ Uterus model selection
◯ Fetus orientation selection
◯ Light source position selection
◯ Initialization of all Setup



◯ Display on/off for each model

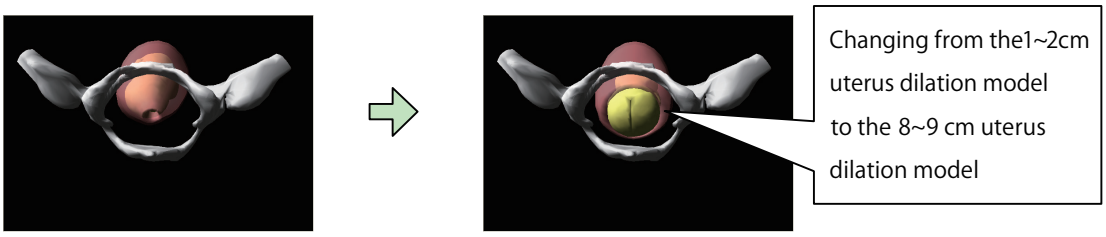
This turns the model display on and off for individual models. When the menu item is checked, the display is on, and when the menu item is unchecked, the display is off.

This item applies to the fetus, pelvis, uterus and finger models, and can also be used to turn the 0 Station display on and off.



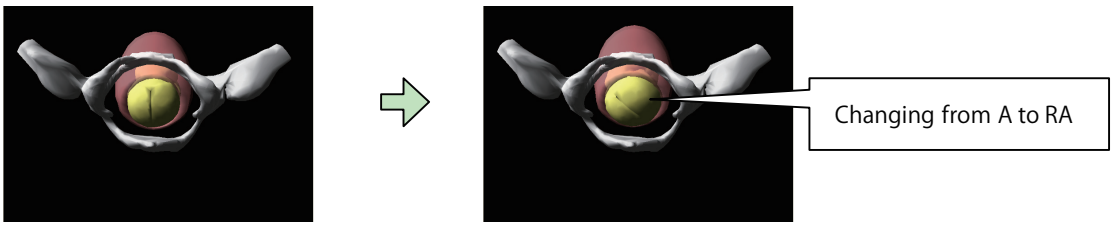
◯ Uterus model selection

This is used to select the uterus model used. Four models are available for selection: the 1~2 cm uterus dilation model; the 3~4 cm uterus dilation model; the 8~9 cm uterus dilation model; and the fetal head model. If the 8~9 cm uterus dilation model or the fetal head model is selected, orientation of the fetus can also be selected.



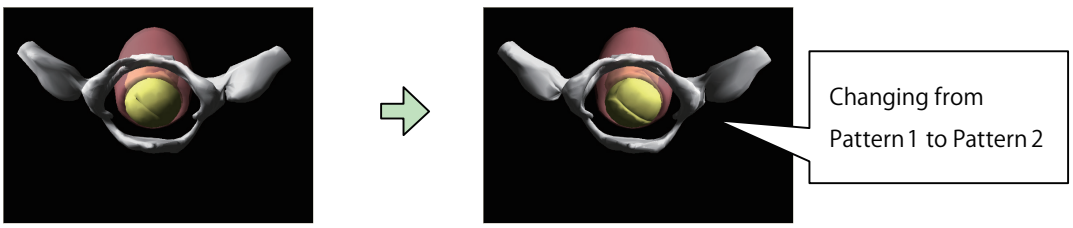
◯ Fetus orientation setting

There are eight orientations that can be selected for the fetus: A; RA; RT; RP; P; LP; LT; and LA. This feature is only available if the 8~9 cm uterus dilation model or the fetal head model has been selected.

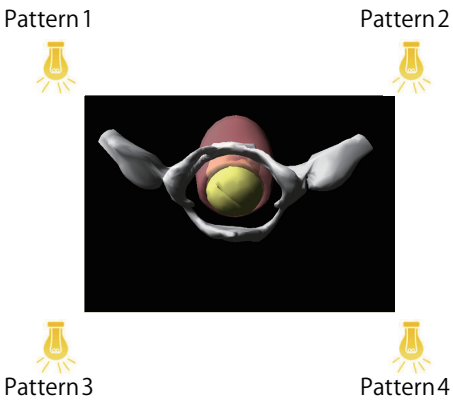


◯ Light source position selection

The light source position can be selected from among four preset positions.



The light source positions, Pattern 1 through Pattern 4, are as indicated below.



Pattern 1	Right foot, abdomen side
Pattern 2	Left foot, abdomen side
Pattern 3	Right foot, back side
Pattern 4	Left foot, back side

◯ Initialization of all Setup

This initializes all of the Setup for the “Select Images”, “Setup Of Image Details”, "Viewpoint", "Operation Environment", "Whole Adjustment Of Model" and "Individual Adjustment Of Model” dialog boxes, returning them to the state in which the product was shipped. When the [Initialization of All Setup] button is clicked, a final confirmation dialog box is displayed. Click [Yes] to proceed with initialization, or [No] to cancel.

(b) Setup Of Image Details

The "Setup Of Image Details" dialog box is displayed by selecting “Display” and then “Setup Of Image Details” from the menu. This dialog box can be used to adjust the display status of the model.

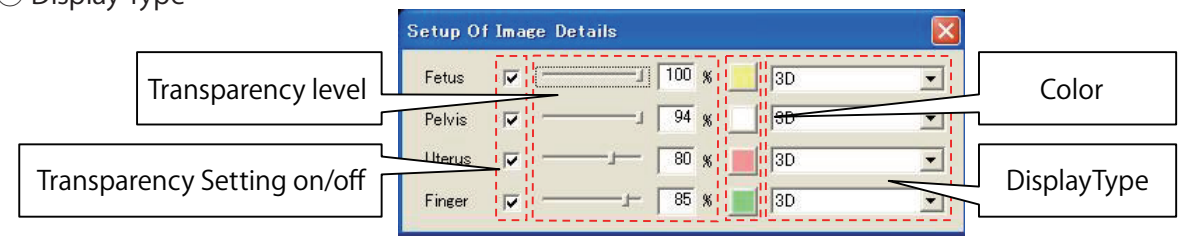
The following items can be adjusted:

◯ Transparency Setting on/off

◯ Transparency level

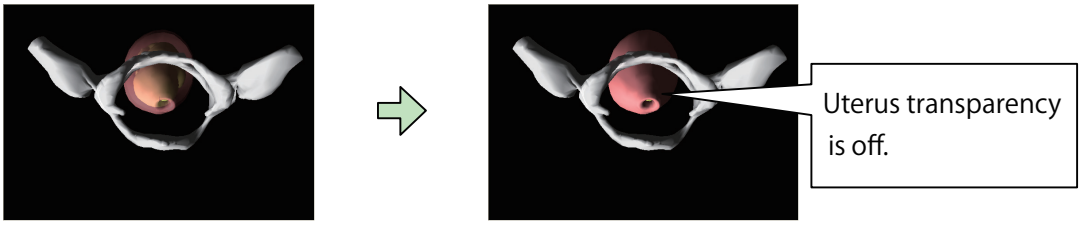
◯ Color

◯ Display Type



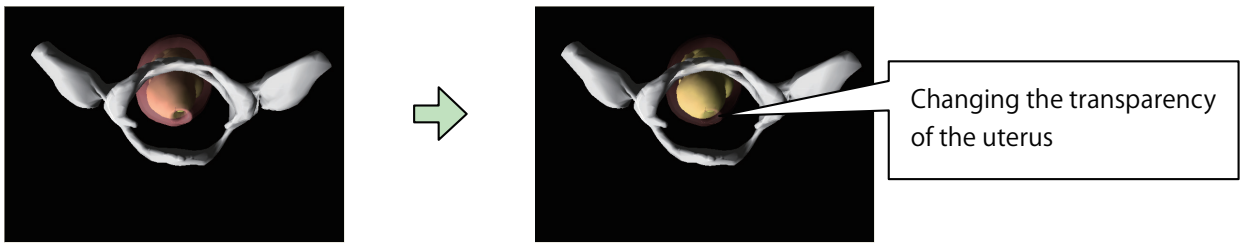
◯ Transparency Setting on/off

This is used to select whether the model is displayed in a transparent display. If this item is checked, the model is displayed at the transparency level set in the corresponding Setup. If this item is unchecked, the transparency function is disabled and the model is displayed in a non-transparent display. Setting the transparency level to 100% has the same effect as not putting a check mark by this item.



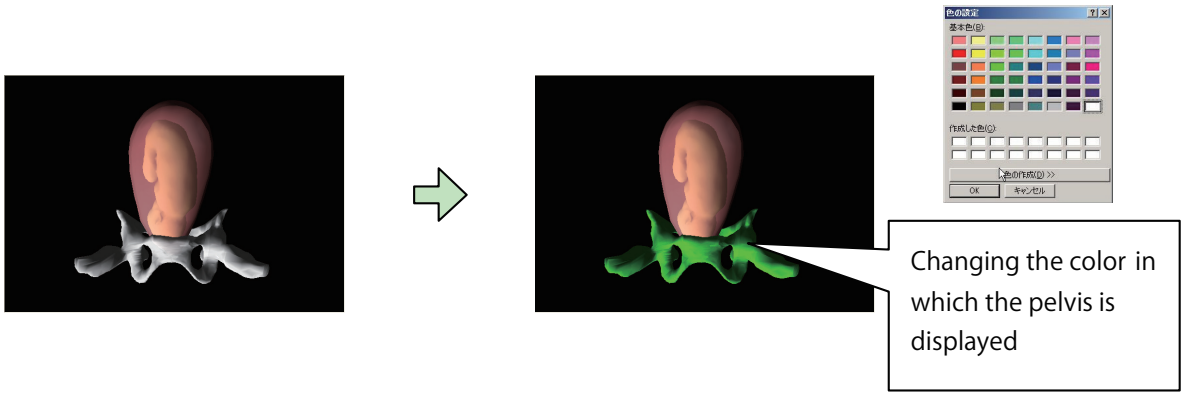
◯ Transparency level

This sets the degree of transparency for the model display. The smaller the value, the more transparent the display.



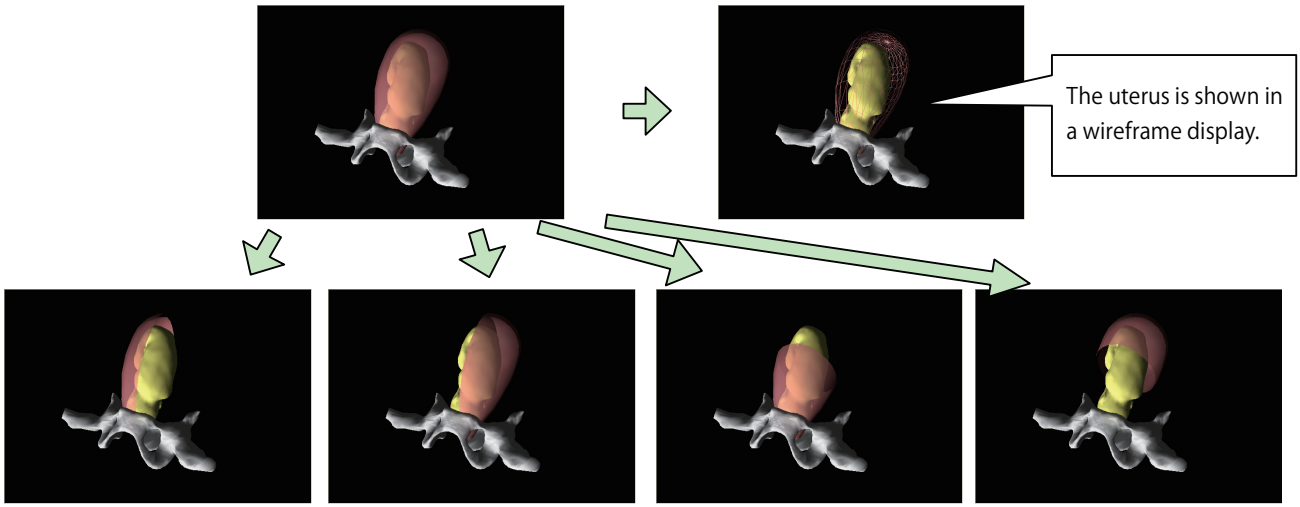
◯ Color

The color in which the model is displayed is set using the "Color Setting" dialog box.



◯ Display Type

This is used to set the type of display used for the model. The model can be shown in a wireframe display (using lines), or as a cross-section (4 types: left, right, front, back).



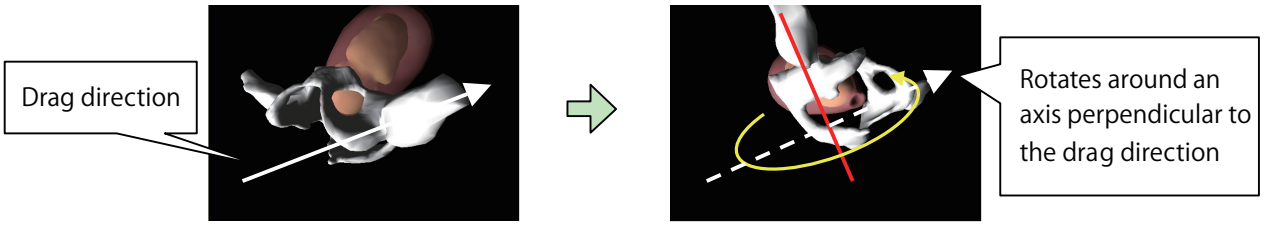
(2) Changing the viewpoint

The orientation, size, and position of the displayed model can be varied using the mouse or other controls to make it easier to view.

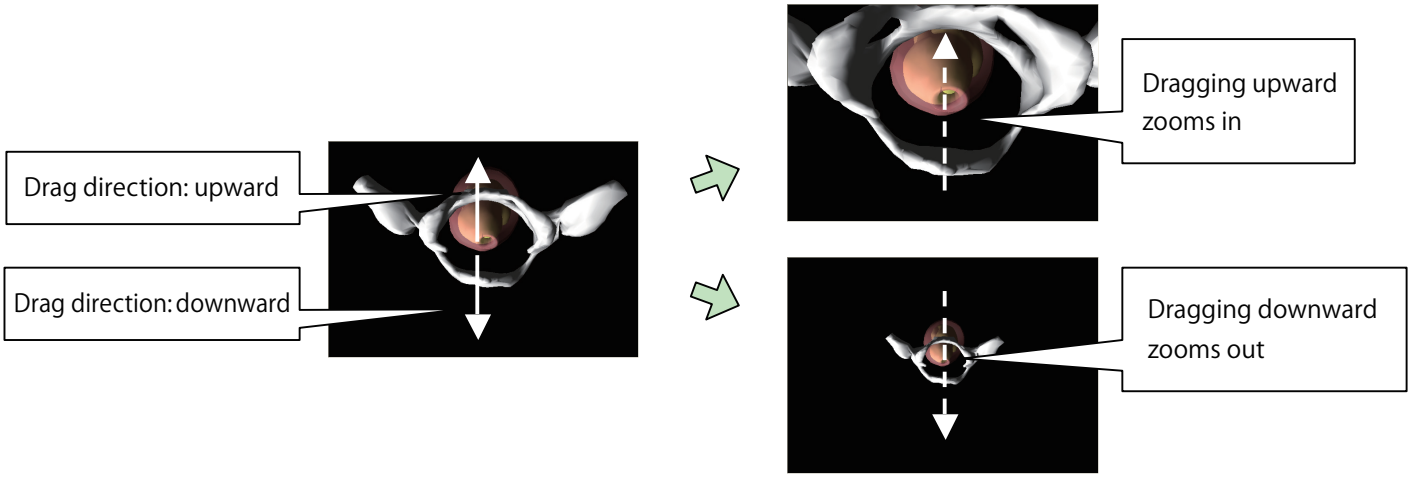
(a) Mouse operation

To look at the model from a different viewpoint, the mouse is dragged on the screen. The left mouse button is used to rotate the image, while the right mouse button is used to zoom in or zoom out. Dragging with the left mouse button while holding down the [SHIFT] key results in parallel movement.

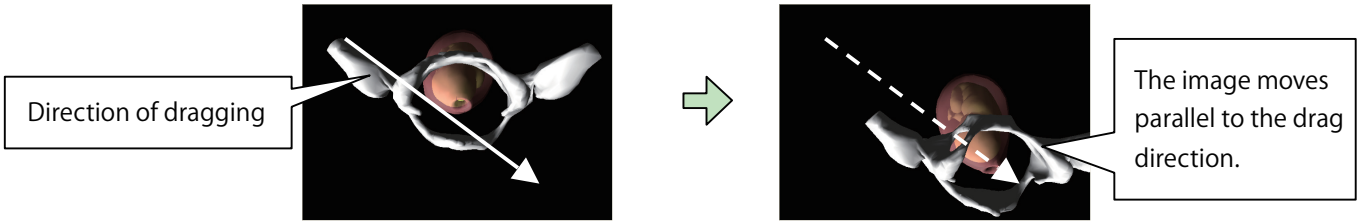
○ Dragging with the left mouse button: Rotation



○ Dragging with the right mouse button: zoom in / zoom out

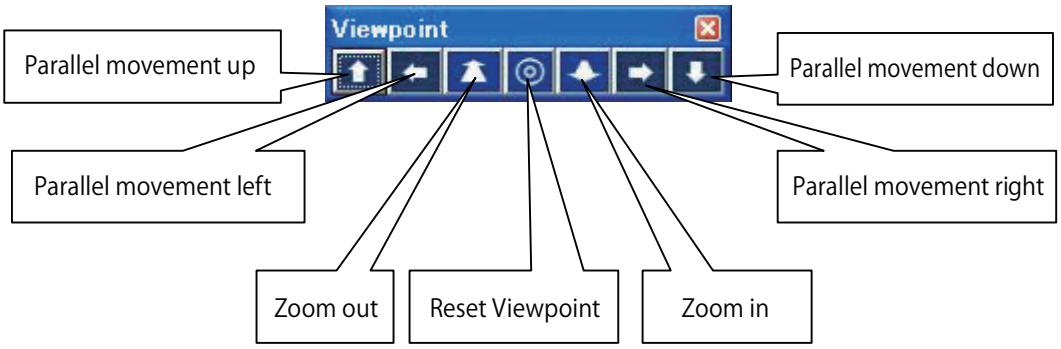


○ Dragging with the left mouse button while holding down the [SHIFT] key: Parallel movement



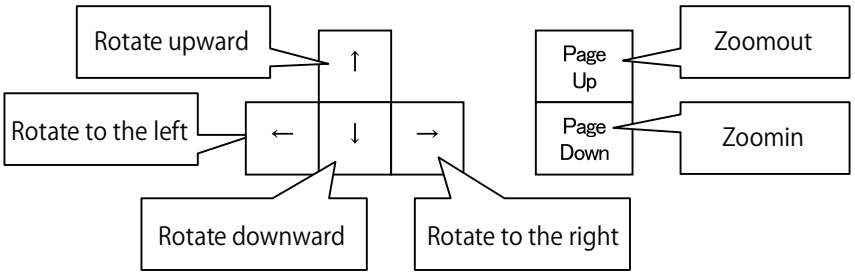
(b) Viewpoint dialog box

The Viewpoint dialog box is used for parallel movement of the viewpoint, and for zooming in and out. The [Reset Viewpoint] button is used to return to the initial viewpoint. There is no item in the Viewpoint dialog box for rotating the viewpoint, so this should be done using the mouse.



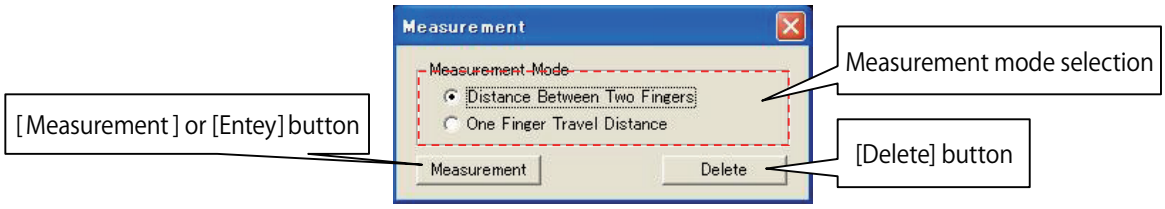
(c) Key operation

Key operation can be used to rotate the viewpoint, and to zoom in and out. This is used when the operator's dominant hand is occupied, making it difficult to use the mouse. The viewpoint cannot be moved parallel using the keys, so the image should be adjusted in advance so that the portion of primary interest is in the center of the display.



(3) Measurement

Distance measurement is carried out using the "Measurement" dialog box, which is displayed by selecting “Display” and then "Measurement" from the menu. With this function, two measurement points are registered, and the distance between them is displayed in centimeter units, to a precision of one decimal place (1 millimeter).



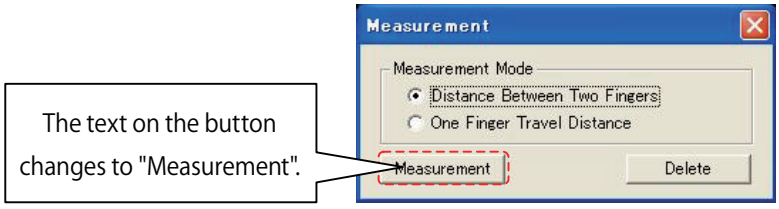
The following two different methods are used to register measurement points, depending on the mode selected.

◯ Between two fingers

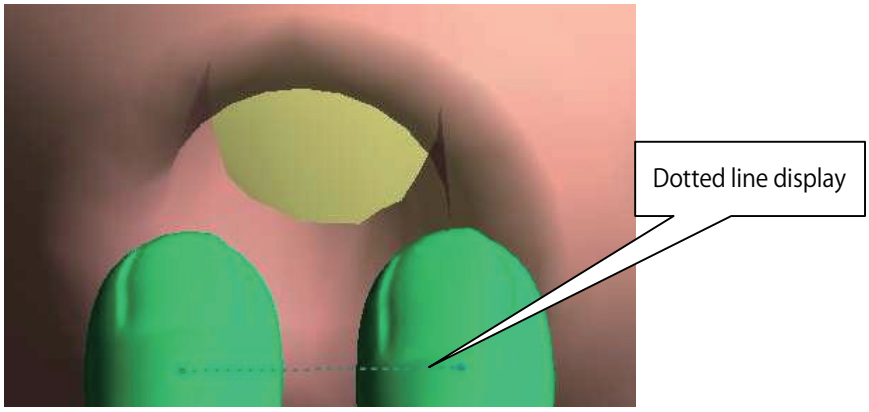
◯ Single-finger movement distance

(a) Measuring between two fingers

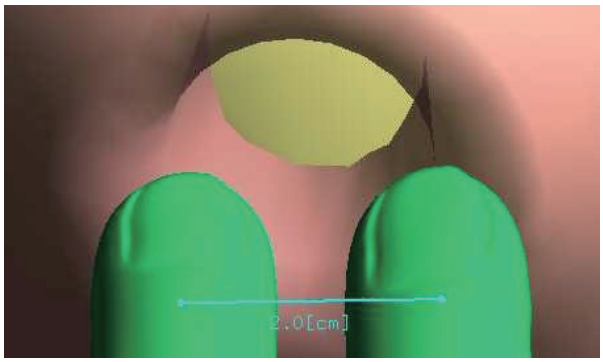
This function measurements the distance between the two fingers to which the sensors are attached. Positions of the fingers at the point at which measurement is carried out are used as the measurement points. When “Between two fingers” is selected as the measurement mode, the text on the [Measurement] button in the "Measurement" dialog box reads "Measurement”.



Move your fingers to the site you want to measurement. While the fingers are moving, temporary measurement points are displayed at the tips of the two fingers, and a dotted line is displayed between the measurement points.



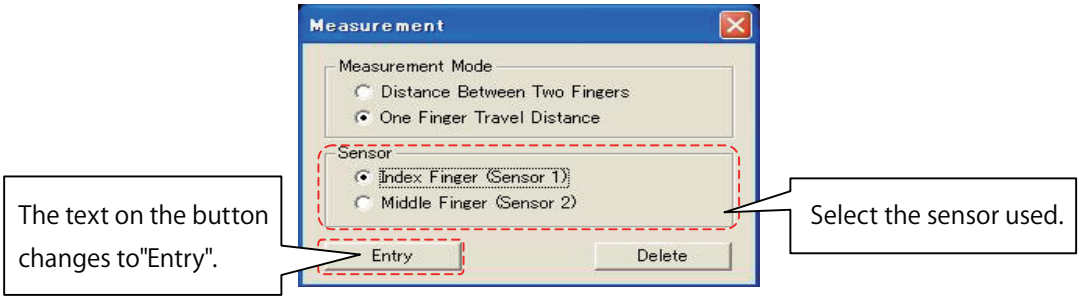
Clicking on the [Measurement] button (or pressing the M key on the keyboard) registers the positions of the two fingers at that point in time as the measurement points. The registered measurement points are displayed in a different color from the temporary measurement points, and a solid line is displayed between the measurement points. The distance between the two points is displayed in centimeter units, to one decimal place.



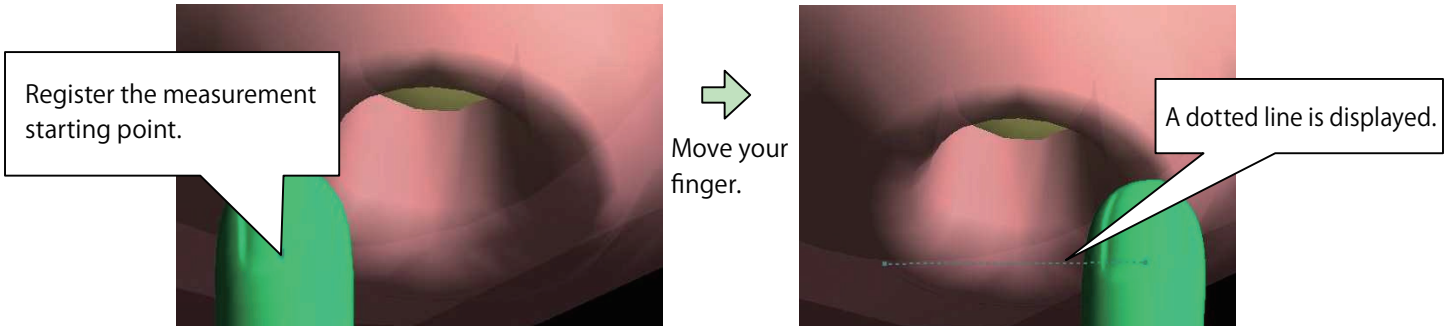
(b) Single-finger movement distance

This measurements the distance moved by either of the two fingers to which the sensors are attached. The starting and ending points are registered as the measurement points.

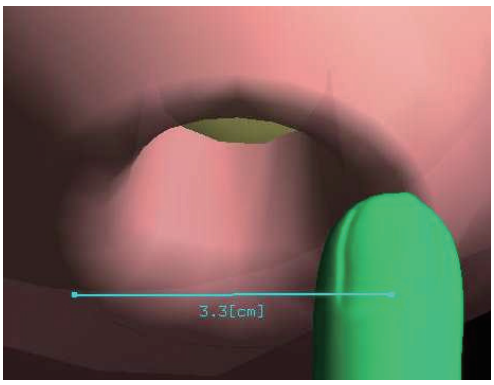
When “Single-finger movement distance” is selected as the measurement mode, the text on the [Measurement] button in the "Measurement" dialog box reads "Entry". Buttons are displayed for selecting the finger to be used for measurement.



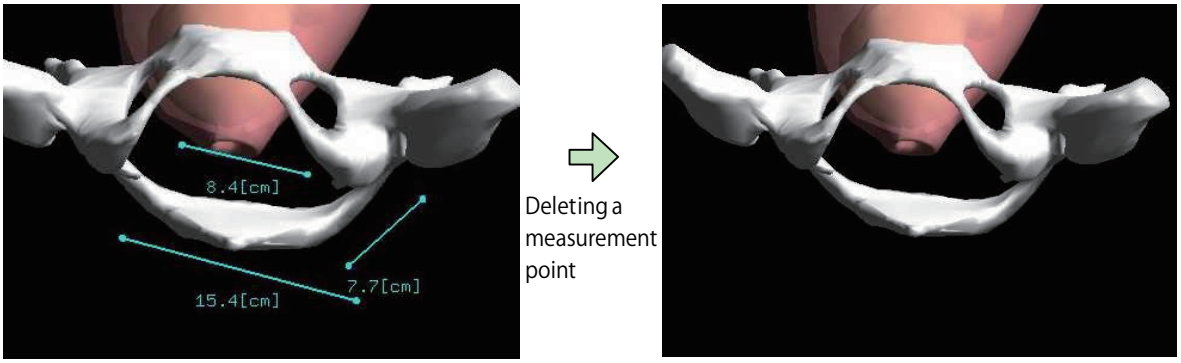
Move the finger with the sensor selected for use to the starting point of the location that you want to measurement. Clicking on the [Entry] button (or pressing the M key on the keyboard) registers the measurement point. At this point, the text on the [Entry] button changes to [Measurement]. Next, move your finger to register the ending point. A dotted line is displayed between the starting point and your finger.



Clicking on the [Measurement] button (or pressing the M key on the keyboard) after moving your finger to the ending point registers the ending point and displays the distance between the starting and ending points.



Each time a measurement is made, the result is displayed on the screen as a cumulative display. The [Delete] button can be used to delete results.



9. Detailed Configuration of the Virtual Vaginal Exam

If required, the Operation Environment can be configured and the model display position adjusted.

1) Operation Environment Setup

To configure the operation Environment for the application, select "Setup" and then "Operation Environment" from the menu, and use the "Operation Environment Setup" dialog box that is displayed.

The updated Setup are reflected when the [Apply] button is clicked. To close the dialog box at the same time that the updated Setup are applied, click the [OK] button.

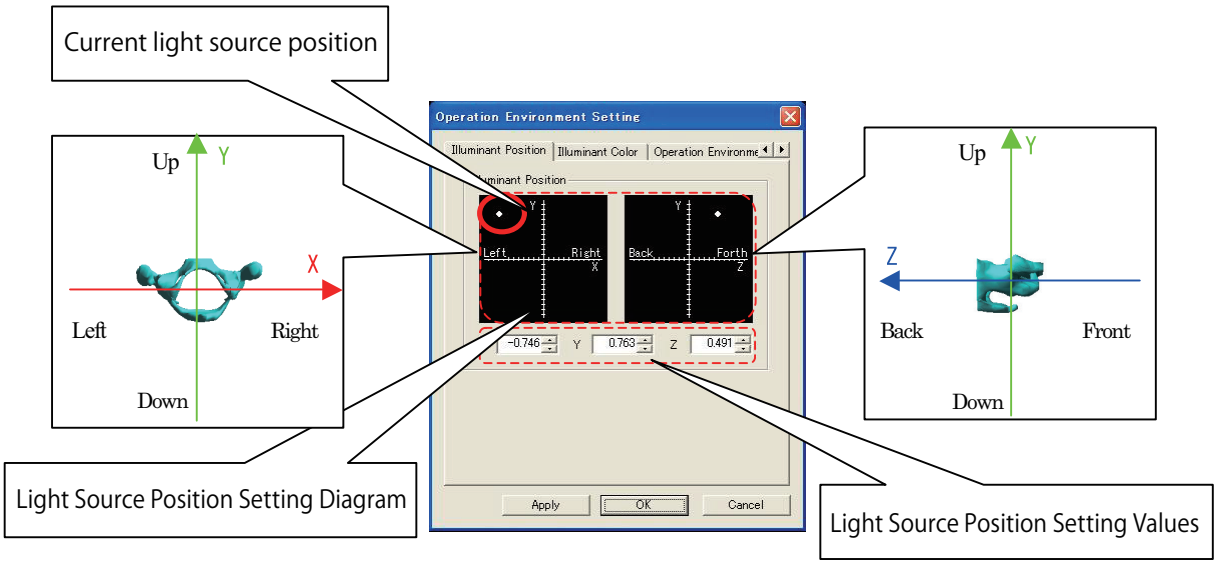
If the dialog box is closed using the [Cancel] button or the [X] button before the updated Setup are applied, the Setup will be returned to their previous values.

(1) Light source position

This is used to set the position of the light source.

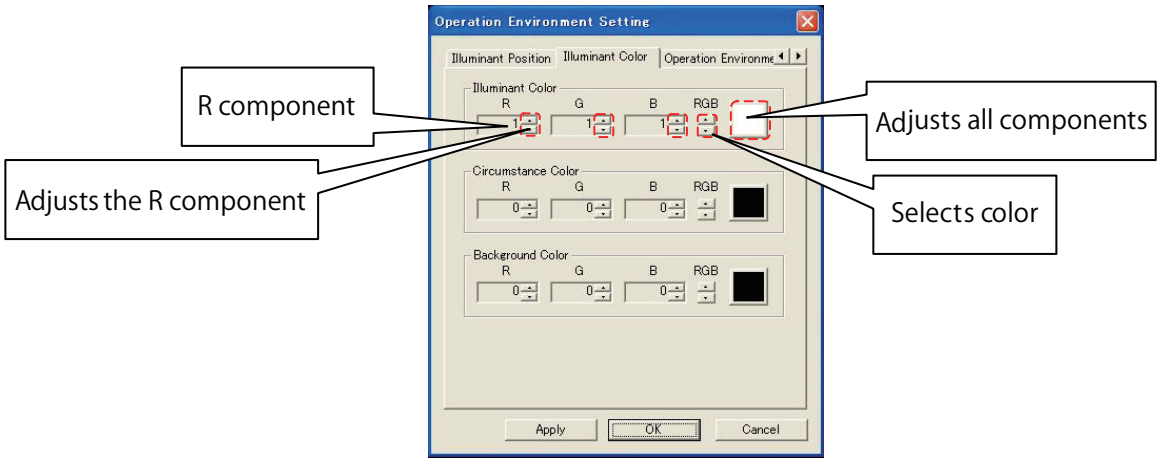
In the notations on the Setup window, “Left” and “Right” correspond to the X axis direction, while “Up” and “Down” correspond to the Y axis direction, and “Forward” and “Backward” correspond to the Z axis direction. The initial viewpoint is on the + side of the Z axis (the “front” of the setting screen).

Enter the position by either clicking on "Light Source Position Setting Diagram”, or by entering the values in “Light Source Position Setting Values”. A value may be entered within a range of -1 to 1.



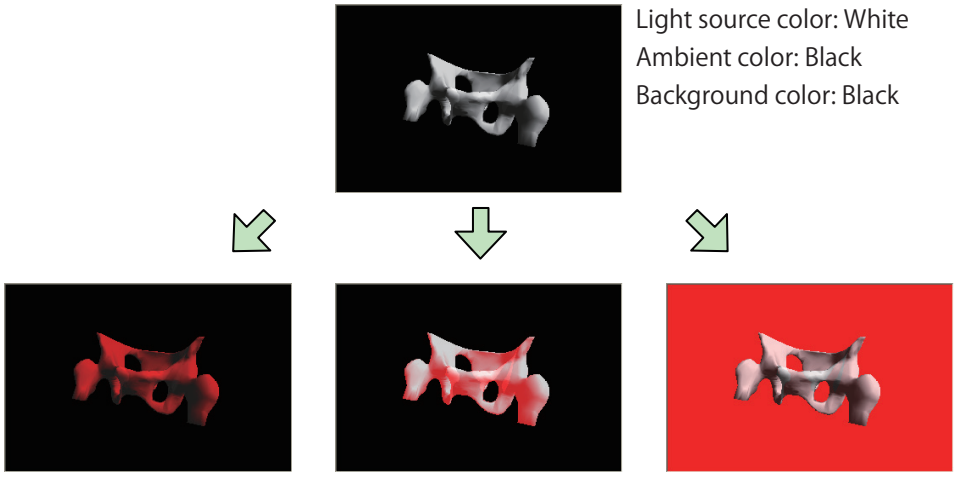
(2) Light source color

The color of the light source is set using the three primary colors: the red component (R); the green component (G); and the blue component (B). Values can be either increased or decreased using the spin buttons next to the component displays, or the color can be selected directly by clicking on [Select Color] to display the "Color Setup" dialog box. The "Adjust All Components" spin button can be used to increase or decrease R, G and B values all at the same time.



The following presents an overview of the light source color, ambient color and background color.

- Light source color: This is the color of the light source itself. Parts which become brighter when the light strikes the model are affected.
- Ambient color: Parts which become shadowed when the light strikes the model are affected.
- Background color: This is the color of the background.



(3) Operation Environment

Configuring operations and displays

"Travel Amount" is used to set the Travel Amount when the viewpoint is operated using the mouse, keyboard or the "Viewpoint" dialog box. The larger the value that is set,

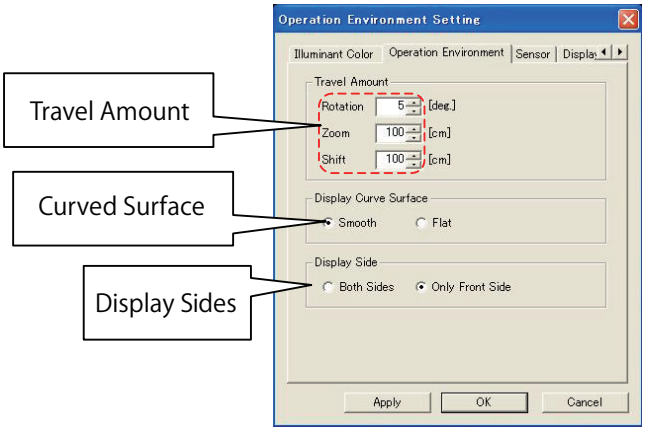
the greater the amount of change in the viewpoint for the same operation (the distance that the mouse is dragged, the number of presses of a key on the keyboard or the number of times the button is clicked in the dialog box).

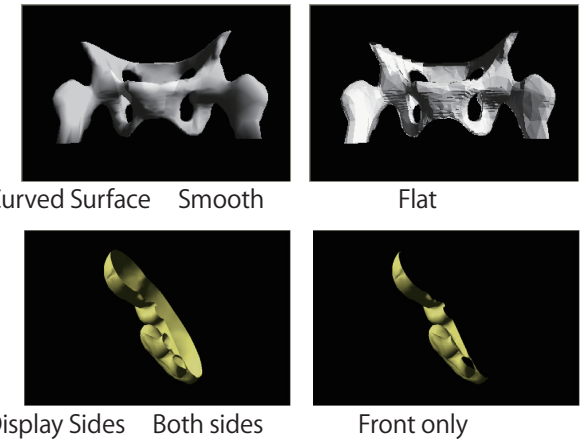
"Curved Surface" is used to specify whether the surface of the model is displayed smoothly.

If "Smooth" is selected, the surface is displayed as a smooth surface.

"Display Sides" is used to specify whether the surface of the model surface is shown on both sides.

This is used if it is difficult to see the model when displayed as a cross-section.





(4) Sensors

Configuring the sensors.

"Operation Mode" is used to set the number of sensors to be used.

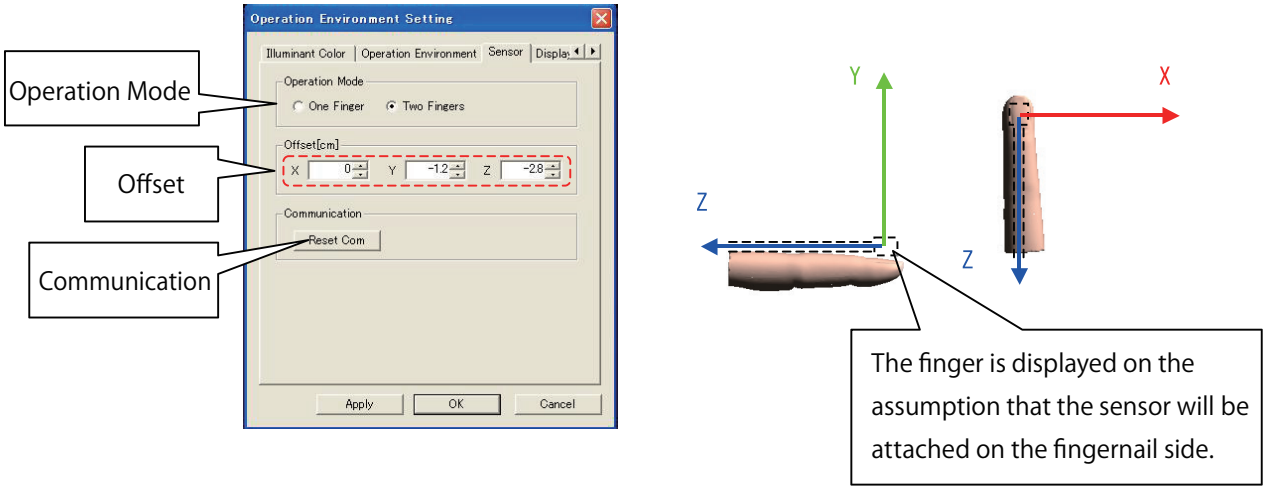
"Offset" (*1) is used to adjust position of the finger or fingers displayed on the screen. When the X, Y and Z parameters of "Offset" are 0, the sensor is at the reference position. Entering numeric values for X, Y and Z and moving the reference point to the ball of the finger (the part that does the palpation) enables fine adjustment of offset between the display and fingertip (*2).

This is also used for fine adjustment if there is an offset compared with the display caused by factors such as the way that the fingertip sensor is attached to the finger.

The direction of the fingertip is the negative (-) direction of the Z axis, and is set in millimeter units.

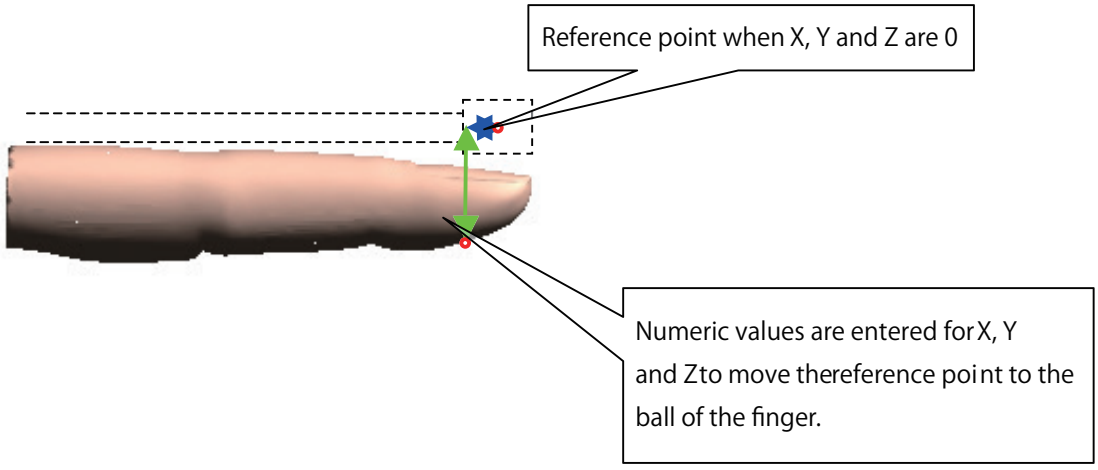
"Communication" is used to set the number of the COM port to which the sensor is connected.

If this setting has been changed, the sensor has to be reset using "Reset Communication".



*1. "Offset" refers to the position of a certain data element expressed as a difference (distance) from a reference point. With this model, the sensor part of the finger sack serves as the data position.

*2. Entering numeric values for X, Y and Z to move the reference point to the ball of the finger (the part that does the palpation) enables fine adjustment of offset between the display and fingertip.

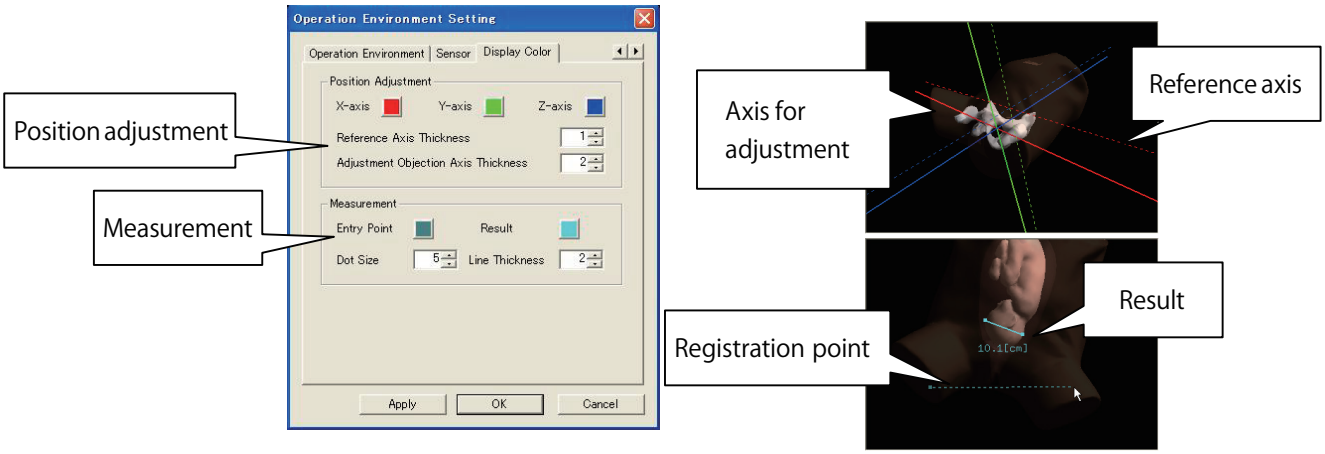


(5) Display Color

This is used to set display colors and sizes for items other than the model (axes, measurement points, etc.).

"Adjust Position" is used to adjust the color and thickness of the axes displayed when the model position is adjusted. The reference axes are the axes displayed at the reference position (0, 0, 0) using dotted lines. The axis for adjustment is the axis displayed in the center of the model using a solid line. This is the axis that is going to be adjusted.

"Measurement" is used to set the color of dots that are displayed during measurement, as well as the thickness of line segments. Registration points are points that are registered during the measurement.



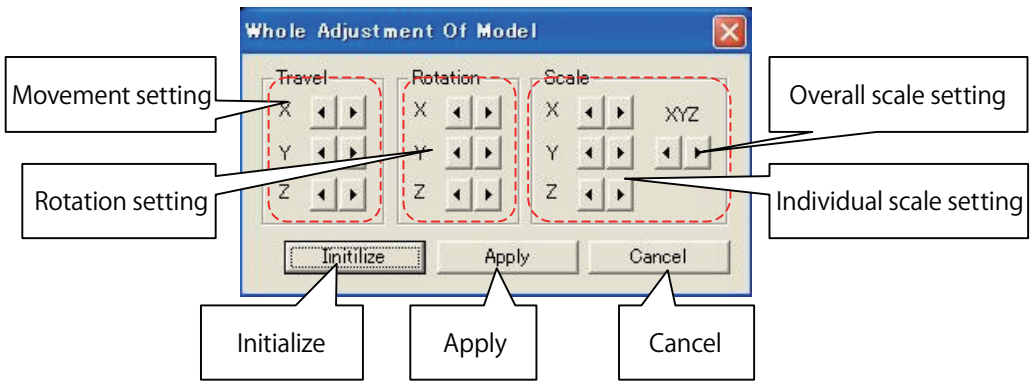
2) Adjusting the position of the model

Model position adjustment is a function that allows fine adjustment of the position of the overall model, or of individual positions. There are two adjustment methods: with "Whole Adjustment Of Model", the position of the model as a whole is set altogether; while with "Individual Adjustment Of Model", individual positions of the model are set.

(1) Whole Adjustment Of Model

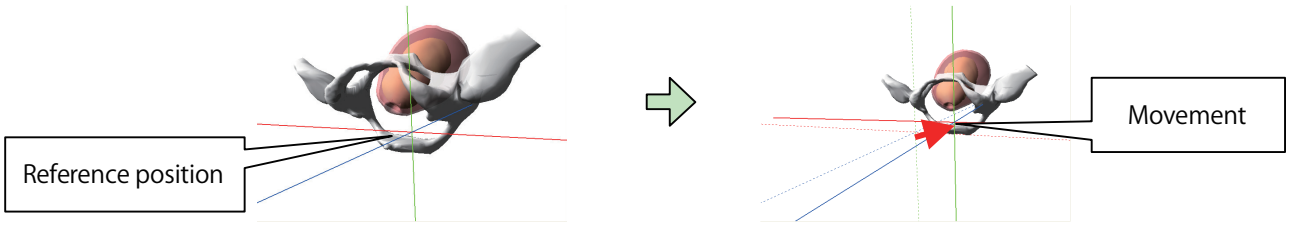
The overall position of the model is adjusted altogether using the "Whole Adjustment Of Model" dialog box, which is displayed by selecting "Setup" and then "Whole Adjustment Of Model" from the menu.

"Model Position" is the general term used for the distance moved from the reference position, the angle rotated, and the enlargement or reduction scale. "Reference position" refers to the initial position of the model, right after the application has been started and before any adjustment has been carried out.



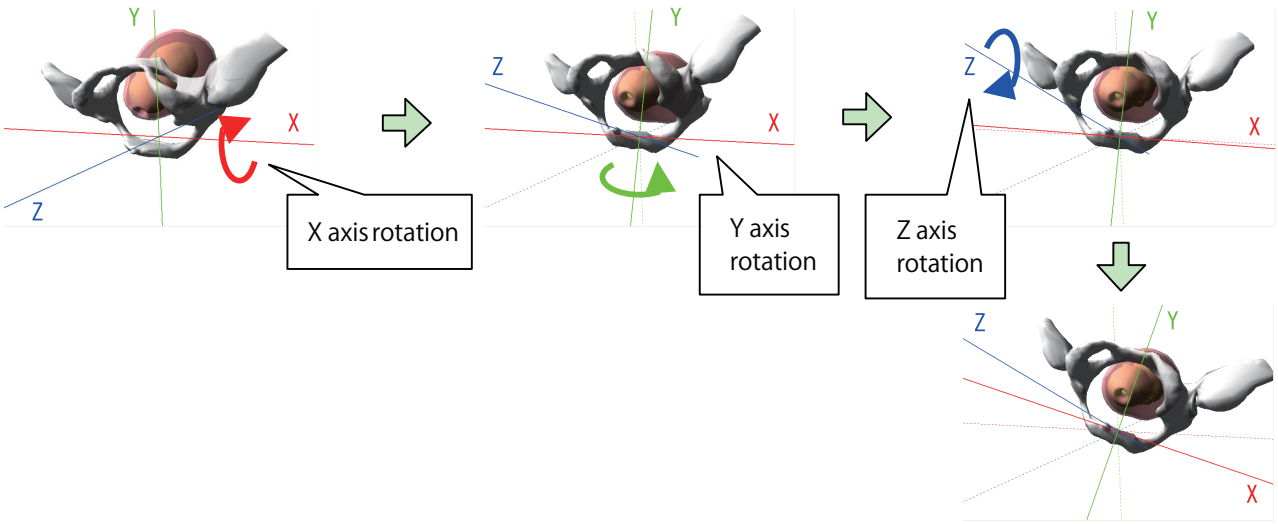
◯ Movement setting

This moves the model as a whole from the reference position. The movement distance can be specified for each of the X, Y and Z axis directions.



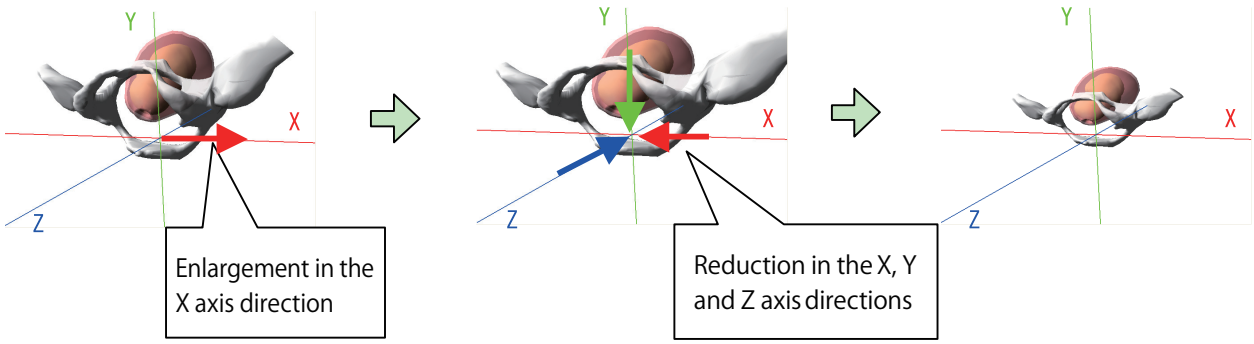
◯ Rotation setting

This rotates the model as a whole, assuming the coordinate axes of the reference position are in the center of the overall model. The angle can be specified individually around the X, Y and Z axis, and the result will be rotated in the sequence of X axis → Y axis → Z axis.



◯ Scale setting

This enlarges or reduces the size of the overall model. Setup can be specified individually for the X, Y and Z axis directions, or the scale can be set for the model as a whole.



○ Initialization

Clicking on the [Initialize] button resets all the Setup entered for the Whole Adjustment Of Model, including movement, rotation and scale, and returns to the reference position.

○ Apply

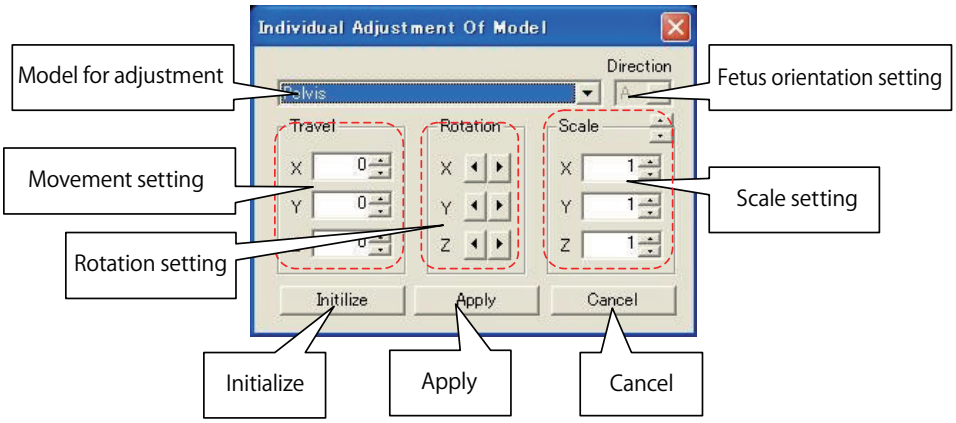
The [Apply] button is used to reflect the results after adjustments are made. If the [X] button is clicked to close the dialog box without first clicking the [Apply] button, values will return to the values used prior to adjustment. This has the same effect as clicking the [Cancel] button.

○ Cancel

This returns the model to the state just after the "Whole Adjustment Of Model" dialog box was displayed, and ends the adjustment. If the [Apply] button was clicked during the adjustment and the updated model position was displayed, it returns to that state.

(2) Individual Adjustment Of Model

Individual model positions are adjusted using the "Individual Adjustment Of Model" dialog box, which is displayed by selecting "Setup" and then "Individual Adjustment Of Model" from the menu.



○ Model for adjustment

The model for which the position is to be adjusted is selected using the “Model for Adjustment” pull-down menu. If the fetus 8~9 cm uterus dilation model and fetal head model are selected, or the uterus 8~9 cm uterus dilation model and fetal head model are selected, the “Fetus Orientation Setting” pull-down menu is enabled, and orientation of the fetus can be selected. The positions in each direction of the fetus 8~9 cm uterus dilation model and fetal head model, and of the uterus 8~9 cm uterus dilation model and the fetal head model can be specified.

If the model to be adjusted is not displayed, the following Setup need to be entered in the "Select Images” dialog box in order to display the model.

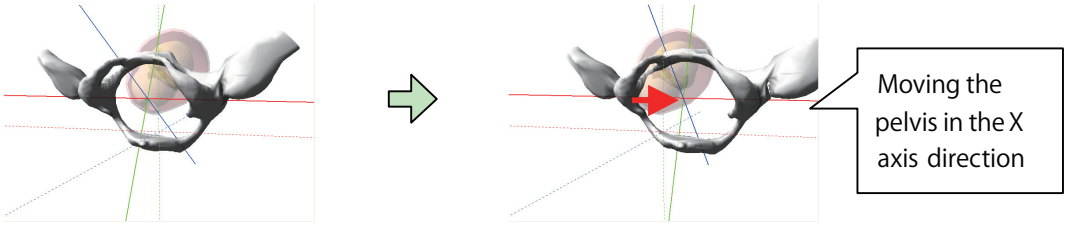
- Display on/off in the "Select Images" dialog box: This must be set to "On” for all models.
- Match Uterus Model: This is used if adjusting the uterus.
- Match Orientation: This is used if adjusting the 8~9 cm uterus dilation model of the fetus or uterus, or the fetal head model.

◯ Fetus orientation setting

Fetus orientation is selected from among A, RA, RT, RP, P, LP, LT and LA, using the "Orientation" pull-down menu. The orientation can be selected only if the fetus 8~9 cm uterus dilation model and the fetal head model have been selected as the model targeted for adjustment, or if the uterus 8~9 cm uterus dilation model and the fetal head model have been selected as the model for adjustment.

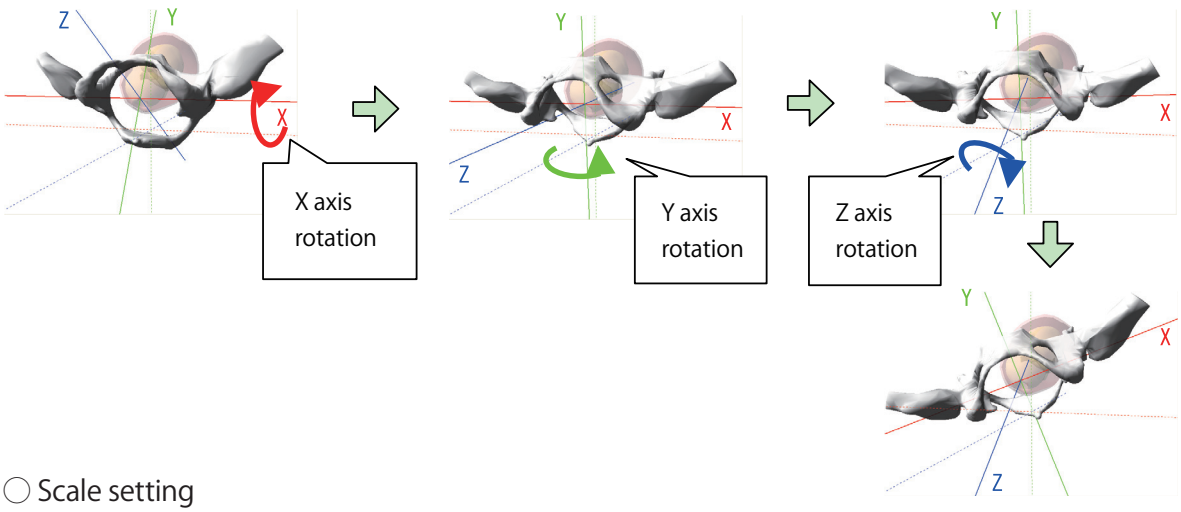
◯ Movement setting

This moves models separately from the reference position. The movement distance can be specified for each of the X, Y and Z axis directions.



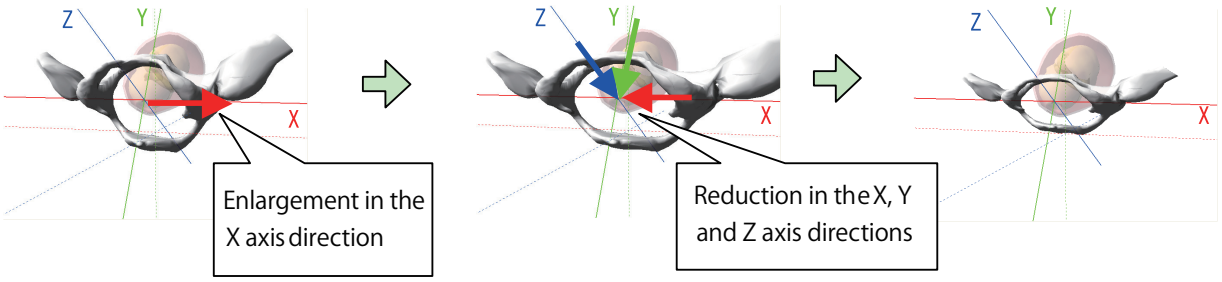
◯ Rotation setting

This rotates the model, assuming the coordinate axes of the reference position are in the center of the model. The angle can be specified individually around the X, Y and Z axis, and the result will be rotated in the sequence of X axis → Y axis → Z axis.



◯ Scale setting

This enlarges or reduces the size of the overall model. Setup can be specified individually for the X, Y and Z axis directions, or the scale can be set for the model as a whole.



◯ Initialization

Clicking on the [Initialize] button resets all of the Setup entered for the model for adjustment, including movement, rotation and scale, and returns to the reference position.

◯ Apply

The [Apply] button is used to reflect the results after adjustments are made. If the [X] button is clicked to close the dialog box without first clicking the [Apply] button, values will return to those values used prior to adjustment. This has the same effect as clicking the [Cancel] button.

◯ Cancel

This returns the model to its state just after the "Individual Adjustment Of Model" dialog box was displayed, and ends the adjustment. If the [Apply] button was clicked during the adjustment and the updated model position was displayed, it returns to that state.

10. Model Configuration Chart

Item	Quantity
Main body	1
Vulva for vaginal exam II	1
Exclusive screws	2
Base for securing main body	1
Finger sensor for index finger (*)	1
Finger sensor for second finger (*)	1
trakSTAR	1
USB cable	1
Power cable	1
1~2 cm uterus dilation model	1
3~4 cm uterus dilation model	1
8~9 cm uterus dilation model	1
Fetal head model	1
Base for uterus dilation model	1
Baby powder	1
Glycerine	1
Gloves	3
Product key	1
Product CD	1
Plastic wagon	1
Cloth cover	1
Instruction manual (this manual)	1

* Finger sensors are available in three sizes: S; M; and L. Finger sacks will be provided in the size specified when purchasing the Virtual Reality Vaginal Exam Model II.

11. Specifications

Item	Vertical	Horizontal	Height	Weight
Main body	Approx. 51 cm	Approx. 28 cm	Approx. 31 cm	Approx. 2.5 kg
Vulva for vaginal exam Ⅱ	Approx. 19 cm	Approx. 17 cm	Approx. 15 cm	Approx. 2 kg
Base for securing main body	Approx. 24 cm	Approx. 44 cm	Approx. 5 cm	Approx. 5 kg
trakSTAR	Approx.19 cm	Approx. 29 cm	Approx. 7 cm	Approx. 1.3 kg
Plastic wagon	Approx. 56 cm	Approx. 39 cm	Approx. 82 cm	Approx. 8 kg

Item	Power supply	Operable temperature range	Usage environment
trakSTAR	100 to 240 V, 50/60 Hz	5 to 40 ℃	Magnetic objects or stray magnetic fields within the operable range of the product may adversely affect efficiency.