



Caution | Do not mark on the product and other components with pen nor leave printed materials contacted on surface.
Ink marks on the models cannot be removed.

MW56

Laparo Cube

Instruction Manual



Contents

- **1 . introduction** (P.1)
- **2 . before use**
 - 2-1 DOs and DON'Ts (P.2)
 - 2-2 Set Includes (P.3)
- **3 . Suture Skills Assessment**
 - 3-1 Setting (P.4-P.6)
 - 3-2 Suture (P.7-P.8)
 - 3-3 Skills Assessment (P.9 -P.11)
 - 3-4 Evaluation Criteria (P.12 -P.14)
 - 3-5 About Assessment (P.15 -P.17)
- **4 . Function**
 - 4-1 Operation Icons (P.18)
 - 4-2 Save Data (P.19)
 - 4-3 Export Saved Data (P.20-P.23)
 - 4-4 Change Evaluation Criteria (P.24-P.25)
 - 4-5 Change Evaluation Criteria from Exported Data (P.26-P.27)
 - 4-6 Change the Language (Japanese/English)(P.28)
 - 4-7 Change the Password (P.29)
 - 4-8 Hiding "Poor" Sign(P.30)
 - 4-9 Print Assessment Result(P.31)
- **5 . Q&A**
 - 5-1 How to Assess Sutures at a Later Time (P.32)
 - 5-2 How to Record Suture Video (P.33-P.34)
- **6 . Trouble Shooting**
 - 6-1 Different Image Displayed for Image Evaluation (P.35-P.37)
 - 6-2 Air Pressure Leakage Always Shows "0 kPa" (P.38)
 - 6-3 No Motor Noise During Leak Evaluation(P.38)
 - 6-4 Leak Evaluation Takes Too Long (P.38)
 - 6-5 Error Appears When Starting the Software(P.39)

1.Introduction

● Before use

Laparo Cube is designed to assess skills in laparoscopic intestinal suture.

● Features

Laparoscopic intestinal suture skills are assessed by 5 evaluation criteria, each criteria is assessed with a maximum of 5 points, for a total of 25 points.

1. Air pressure leakage (maximum of 5 points)
2. Full-thickness suture (maximum of 5 points)
3. Suture tension (maximum of 5 points)
4. Opening area (maximum of 5 points)
5. Completion time (maximum of 5 points) Total of 25 points

1. Air pressure leakage and 2. Full-thickness suture are used to determine successful procedure.

Evaluation criteria for 1. Air pressure leakage, 3. Suture tension, 5. Completion time can be adjusted. You can create your own evaluation criteria based on acquired data.

The evaluation data and video of performed suture can be saved for review and serve as resource for effective self-learning.

● Please a the Instruction carefully before use.

Do not use this simulator for any purpose other than training of healthcare professionals, and read this instructions carefully. We are not responsible for any damage caused by use that is not accepted by this instruction.

For questions regarding this simulator, please contact our distributor in your area or Kyoto Kagaku Co., Ltd. Our contact information can be found on the back cover of this manual.



To use this simulator, tools for endoscopic training such as a training box, monitor, needle holder, auxiliary forceps, etc. are required separately. (See P.6 for details)


DOs and DON'Ts
DOs

- **Operate the system under the designated circumstances**

Power input: AC100V~230V plus or minus 10%, 50Hz/60Hz
 Temperature range: between 0 degrees C and 40 degrees C (no congelation)

Relative humidity; between 0%to 80% (no condensation)

*Connecting to a power source outside of the designated range may lead to fire.

- **Safe disposition**

To avoid short circuits, do not run the simulator set above a power receptacle.

- **Use the authentic adapter and the cables included in the set.**

Use of different adapters or cables may lead to shock or fire. Also, do not use these components to other products.

- **Handle the power plug and cord observing following precautions**

1. Clean the head of the plug periodically.
 2. Plug in the plug to the outlet firmly to the end.
 3. Always hold the plug when unplugging. Do not pull the cable.
 4. Do not force to bend, twist the cable and avoid scratching or cutting on it.
 5. Unplug the power cord when the simulator is not in use.
 6. Remove any dust that has accumulated on the power plug and insert the plug completely into the power socket.
- Failing to follow the above precautions can result in damage in the plug and the cable, constituting risk of fire or shock.

- **When the electric parts get warm or produce smoke, immediately turn off the power and unplug from the power source**

Risk of fire. Contact your distributor or the manufacturer for repair.

- **Handle with care**

The materials for the models are special compositions of soft resin. Please handle them with utmost care at all times.
 Clean the manikin with water or mild detergent and coat with baby powder. Be careful not to apply water or detergent on the internal machinery.

- **Storage**

Store the simulator at room temperature, away from heat, moisture and direct sunlight.

Storage under the temperature above 50 degrees C may reduce the performance quality of the simulator.

Store the intestine sheets in the storage case provided to prevent the sheets from shrinking in size. Deformation of the sheets will cause errors in the evaluation. Over time plasticizer may appear on the surface; this does not affect performance of the system.

- **Follow the instructed shutting down procedures**

Shut down the computer first. Do not turn off the power or unplug the power cord without shutting down the program.
 Misuse may lead to damages.

DON'Ts

- **Do not disassemble or open electric or precision components**

Do not remove or alter cable connections in the inner machinery. Connection cables and their settings have been preset; changes to the set up may lead to malfunctions or damages to the simulator. Also, do not open up or disassemble the housing for electric parts or precision components.

Refrain from opening up any lids, caps or covers for such areas, and never run the system while any of such covers are open.

* Never disassembling the electric components, power plug and cable as it may create a risk of fire, shock or injury. Contact your distributor or the manufacturer for repair.

- **Never wipe the product and components with thinner or organic solvent**

- **Ink marks on the soft surface won't be removable**

Don't mark on the product and components with pen or leave any printed materials in contact with their surface.

- **Do not give shocks**

The electric components are precision instruments. Strong shocks or continuous vibration may cause breakages of its internal structure.

- **Do not run the system continuously over 2 hours**

Take at least 30 minutes shutdown, turning off the power, every 2 hours.

- **Do not wet the electric components**

Do not pour or spill water or liquid detergent over the electric components, power cable and power plug. Running the system while the electric components are wet may create a shock hazard or a risk of fire.

- **Do not handle the power plug with wet hands**

Risk of shock.

- **No fire**

Do not put the product close to a fire. It may lead to discoloration or deformation of the product as well as short circuit, creating a risk of fire.

- **Do not install other software onto the computer**

It may lead to system malfunctions.

- **Do not use the wireless LAN or Blue-tooth of the computer**

It may lead to system malfunctions.

Discoloration of the surface may occur after used after a long period of time. Discoloration does not affect the function of the simulator.

Set includes

Before your first use, ensure that you have all components listed below.



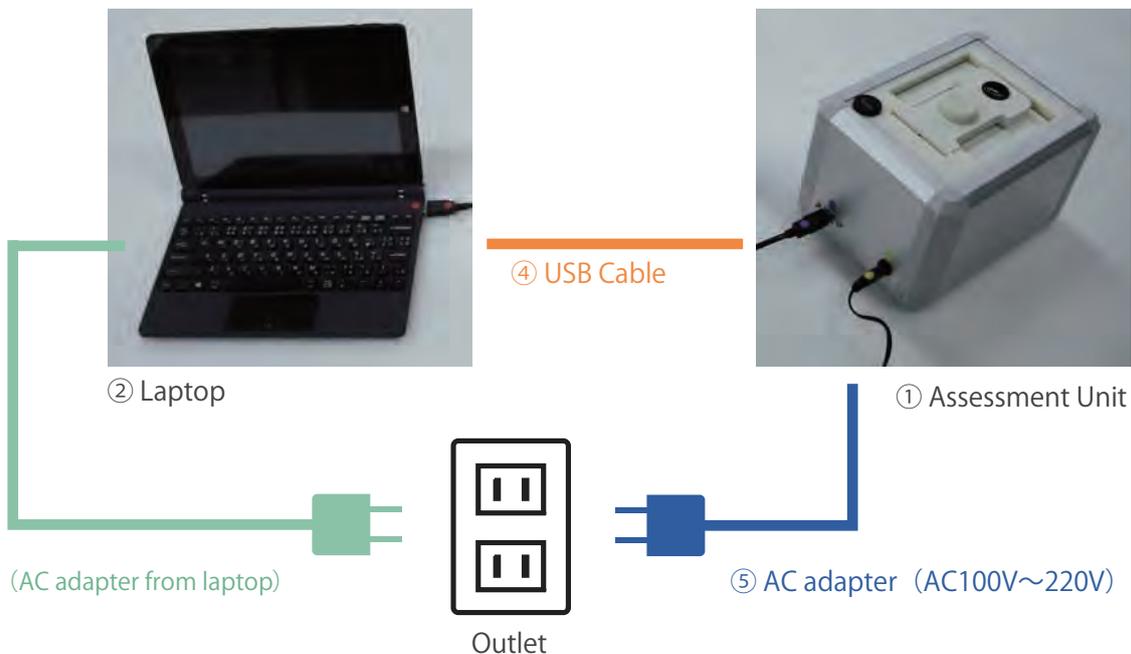
- ① Assessment Unit
- ② Laptop PC 
- ③ Suture Sheet Holder
- ④ USB Cable
- ⑤ AC Adapter
- ⑥ Suture Sheet (30 sheets)
- ⑦ Instruction Manual



Types of Laptop PC may vary depending on time of production, though it does not affect the operation of this simulator.

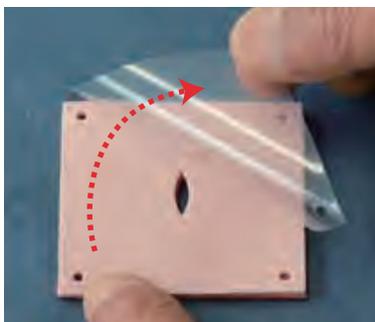
1 Connecting Laptop with Assessment Unit

Connect laptop and assessment unit as shown below.

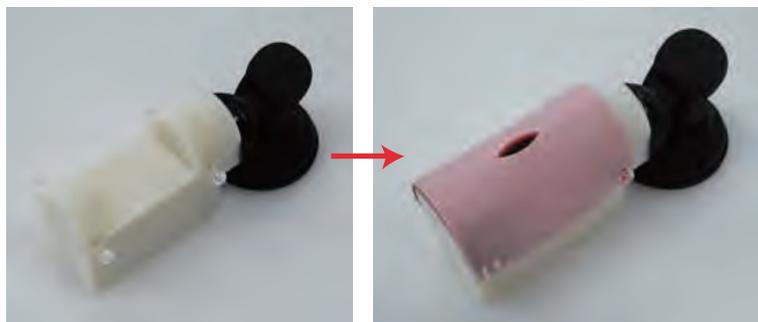


2 Preparation the suture sheets

Peel off the transparent protective film from the sheet.



Set the skin sheet to the holder.

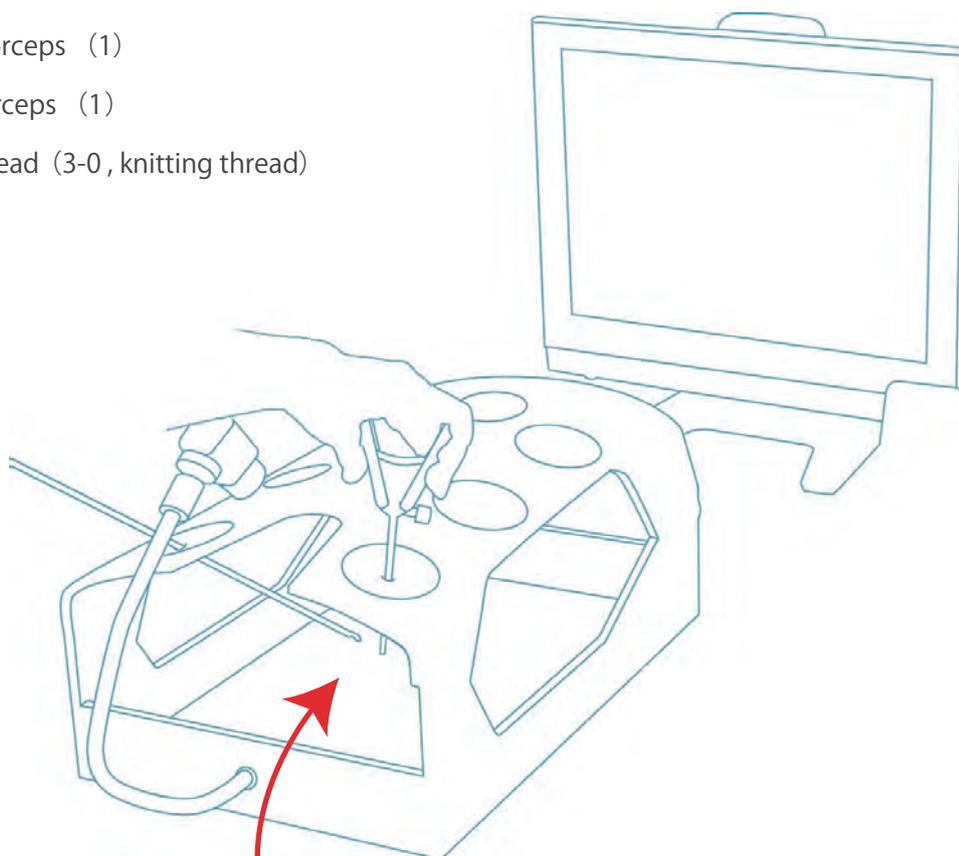


Remove the transparent protective film before using the intestine sheets. The intestine sheets cannot be reused once the protective film is removed. To avoid misuse, do not return "used" sheets to the storage box.

3 Tools to prepare

Prepare the following tools for endoscopic training.

- ① training box, camera (1)
- ② monitor (1)
- ③ needle holder (1)
- ④ auxiliary forceps (1)
- ⑤ scissors forceps (1)
- ⑥ needle thread (3-0, knitting thread)



Put the holder into the training box.

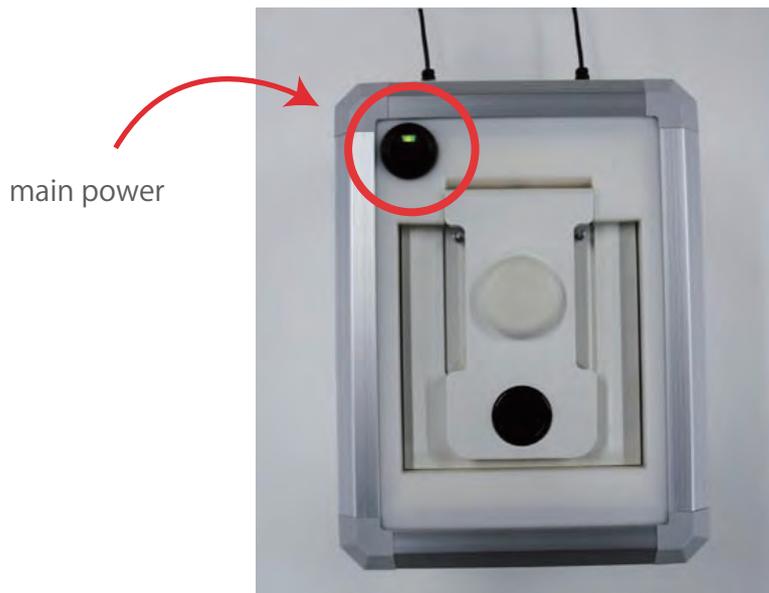
Push the lever in to anchor with the suction cup.



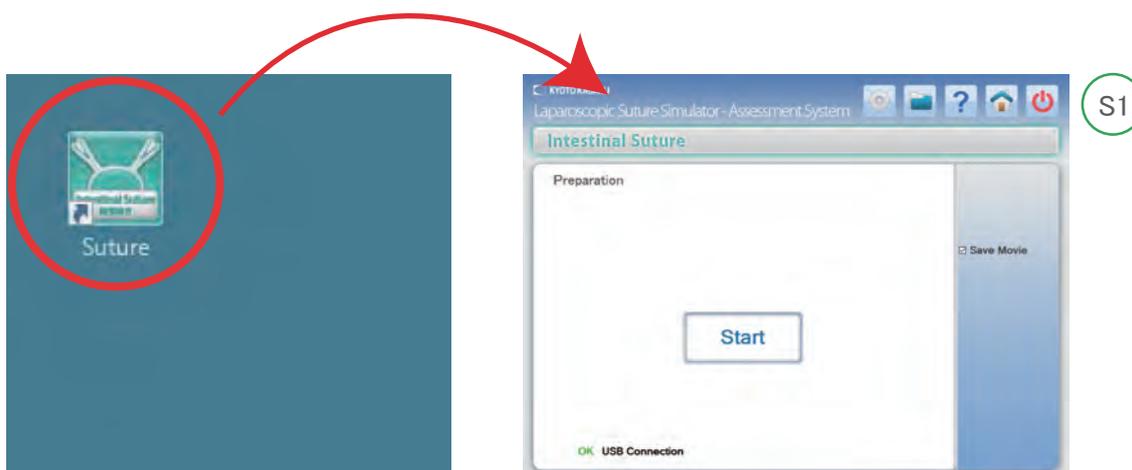
Use the holder on a smooth surface.

4 Starting up

After connecting the devices, turn on the main power of the assessment unit. The green LED lights up when the power is turned on.



Boot the laptop and doubleclick "Suture" shortcut on the desktop, to launch the evaluation software.



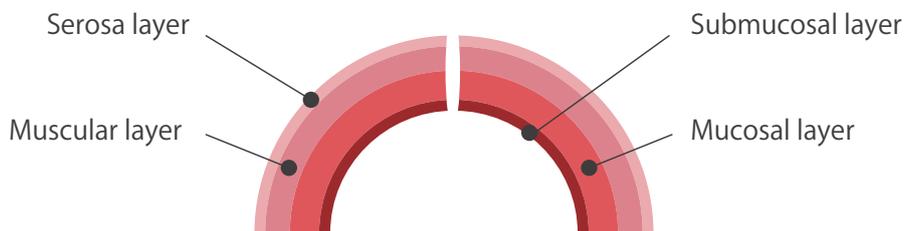
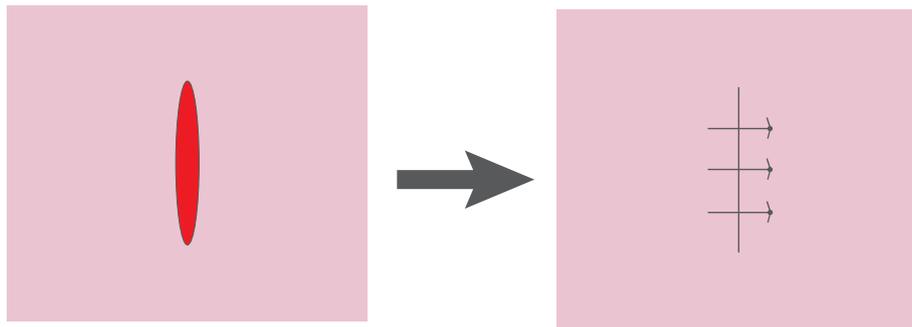
Be sure to turn on the power of the assessment unit before launching the software.

1 Suture Method

Suture the 4 layers with 3 (6) simple interrupted stitches.

Ligate 3 times for 1 stitch.

(* 3 stitches are set for assessment as initial state.)



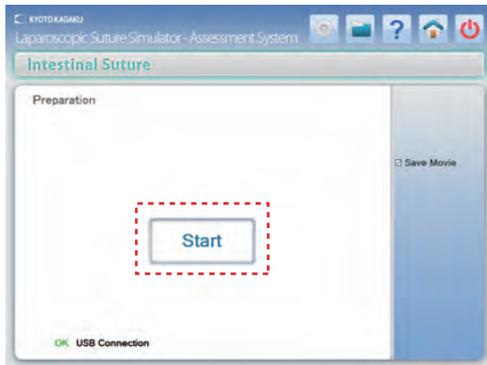
Suture skills are assessed by 5 evaluation criteria, each criteria is assessed with a maximum of 5 points, for a total of 25 points.

- | | |
|--|-----------------------|
| ① Air pressure leakage " leaks from the suture " | (maximum of 5 points) |
| ② Full-thickness suture " whether sutures made through all layers" | (maximum of 5 points) |
| ③ Suture tension "force applied to the skin" | (maximum of 5 points) |
| ④ Opening area " remaining open wound" | (maximum of 5 points) |
| ⑤ Completion time "completion within adequate time" | (maximum of 5 points) |
| | Total of 25 points |

1. Air pressure leakage and 2. Full -thickness suture are used to determine successful procedure.

2 Begin and end a training session

S1



To begin a training session, select the "Start". This will activate the timer. Perform the suture.



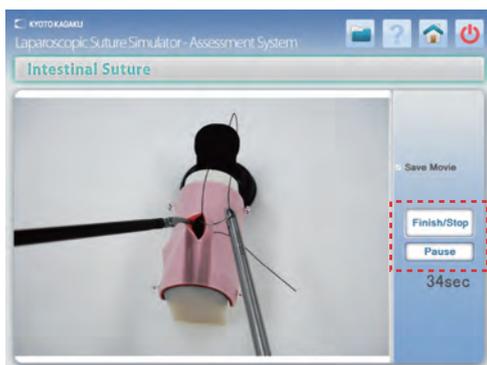
Verify that the USB connection is displayed as **OK**



When the USB connection indicator shows **NO**, the evaluation function cannot be used.

Verify the connections of cable (P. 4) and the main power (P. 6)

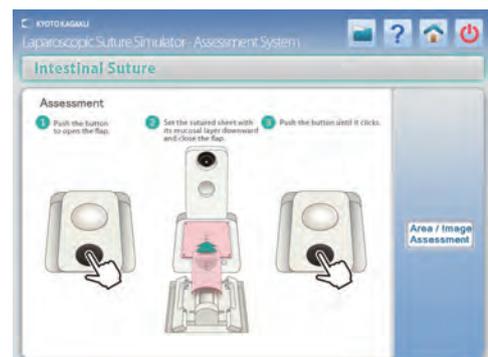
S2



The session can be paused and restarted by selecting "Pause" "Finish/Stop" buttons. Once all the suture completes, select "Finish/Stop". The timer will stop and evaluation screen will display.

evaluation screen

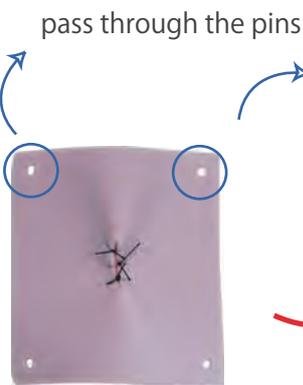
S3



To stop or restart a training session in midstream, select the Home icon  to return to the top page. No training data will be recorded.

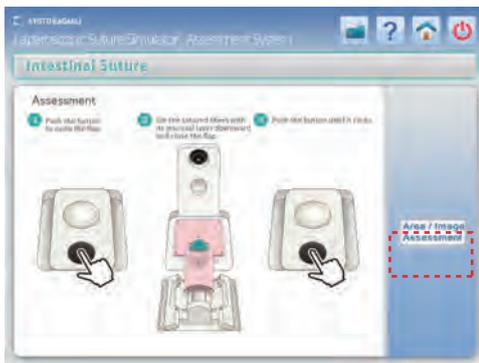
1 Skill assessment 1

After the suturing completed, move the suture sheet from the holder to the assessment unit. Pass the corner holes of the skin sheet through 2 pins at the top of the assessment unit.



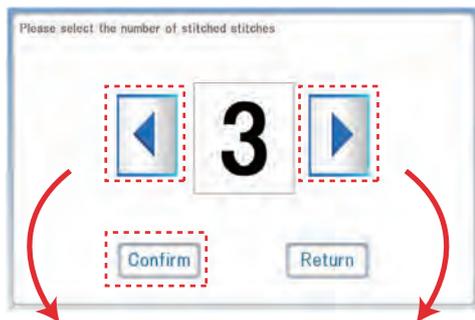
Close the lid of evaluation box and press the button until you hear a clicking sound. If the closure is incomplete, air may leak when measuring the leak pressure and the assessment results may be incorrect.

S3



After setting the sheet to the assessment unit, select the "Area / Image Assessment" button.

S4



Select the number of stitches (36 stitches) to evaluate. Then select the "Confirm" button.

(* 3 stitches are set as initial state s.)

Reduce the number of stitches

Increase the number of stitches

2 Skill assessment 2

S5

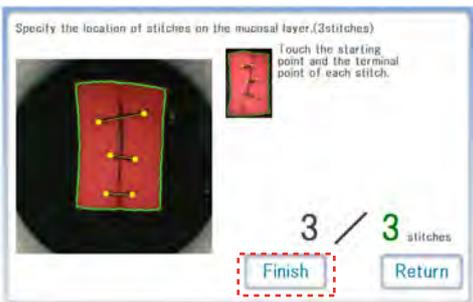


The screen will display the rear side view of the sutured intestine sheets. Select the ends of the thread on each suture.

When a suture is incomplete and the thread is not visible, move to the next suture.

When a stitch seen on the mucosal layer does not cross the wound, this stitch is incomplete as full layer suture. In that case, select the starting point and select "Skip".

S5



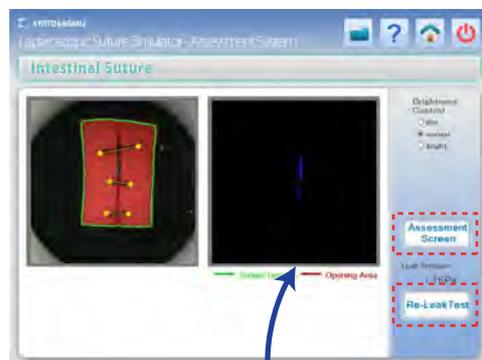
Select "Finish" when selections are done. Select "Return" to undo the selections.

Once all three threads have been selected and the "Finish" button has selected, the leak pressure screen will display.



leak pressure evaluation
(the measurement will take approximately 5 seconds)

S6



Once the measurement is complete, leak pressure and opening area will be shown.

Select "Assessment Screen" to display the assessment results.

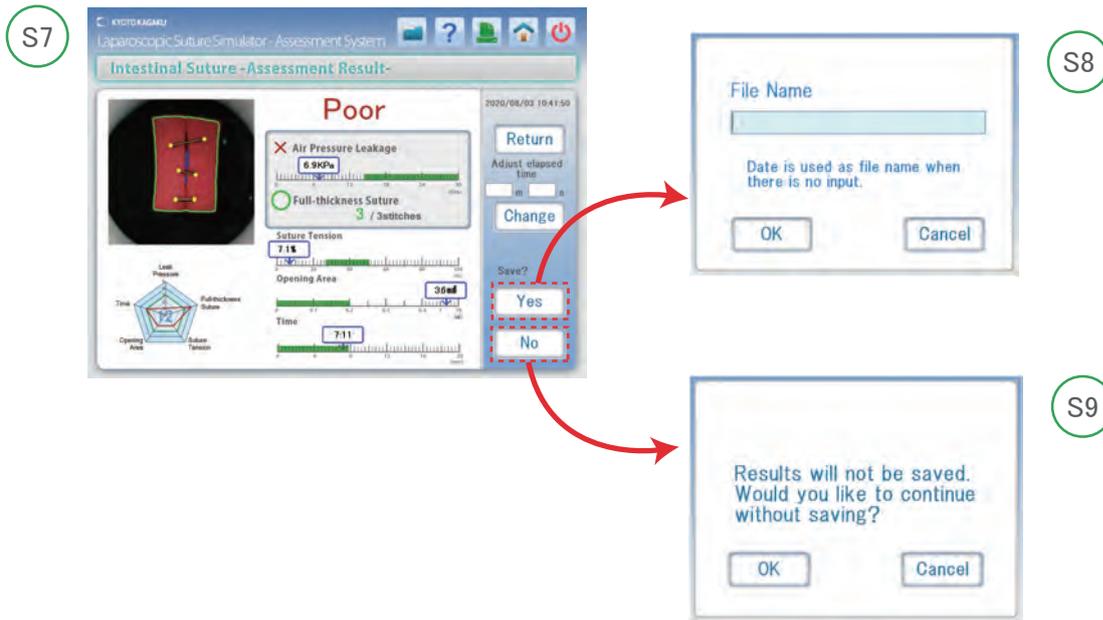
When the test needs to be repeated, in case such as air leakage from the gap of the lid, conduct a re-leak test.

Select "Re-Leak Test" to re test.

opening area
enclosed by blue line

3 Skill assessment 3

When the assessment result displayed, select "Yes" to save the results, or select "No" to discard the results.



Select "Yes" to save the assessment results. The file name input screen will appear. Input the file name.

Select "OK" to save the assessment results, then screen will display as S1

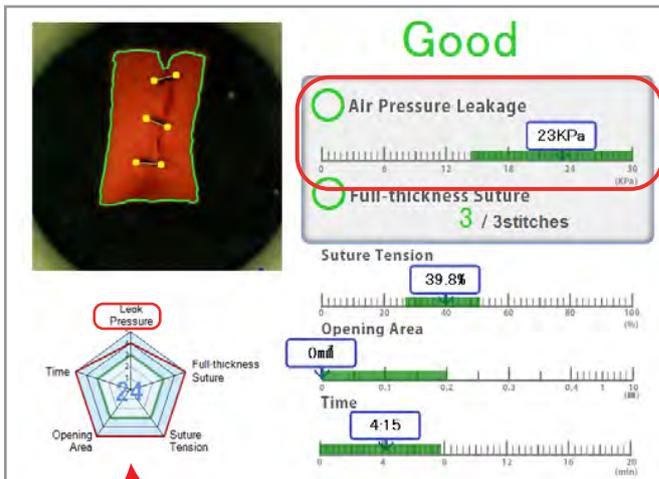
Select "No" to discard the results and display as S1

*(Select "Cancel" to see the previous page.)



Symbols such as ¥ / : * ? < > | cannot be used in the file name.

1 Air Pressure Leakage

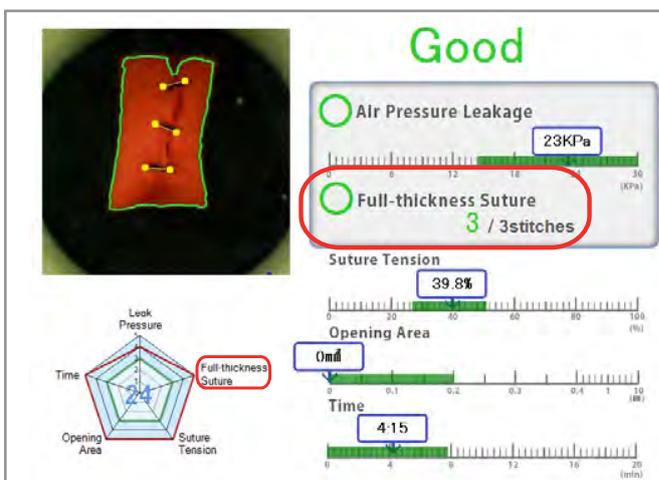


1. Air pressure leakage
Air pressure leakage from the sutured area can be checked by applying air pressure on the suture sheet.

acceptable range ██████████
14.5 kPa or more

radar chart
the total points appear in the middle
:full score is 25 points

2 Full-thickness

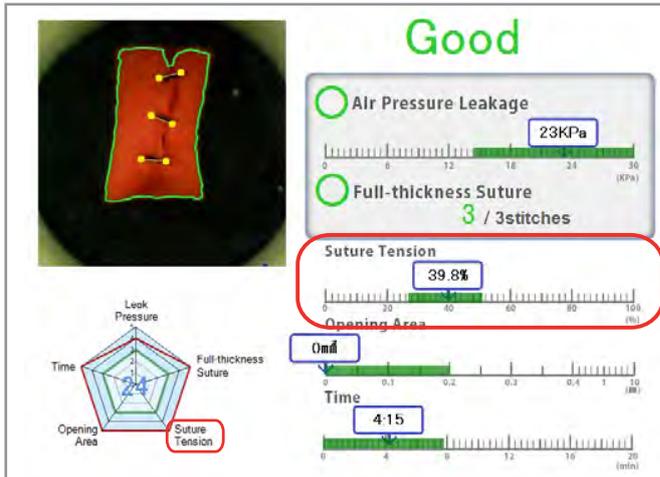


2. full-thickness suture
Number of stitches sutured all layers.

acceptable range ██████████
all stiches

The all stitches set for evaluation (3-6) are to be full layer sutures

3 Suture tension



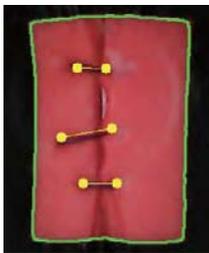
3. Suture tension

Automatically measured and evaluated based on the deformation of the suture sheet.

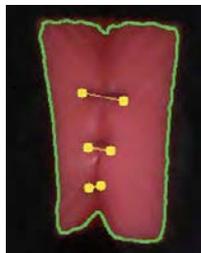
acceptable range

27 ~ 51 %

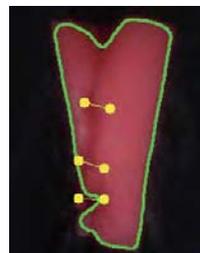
deformation degree



5 %



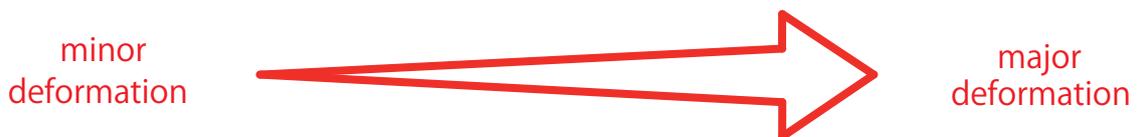
30 %



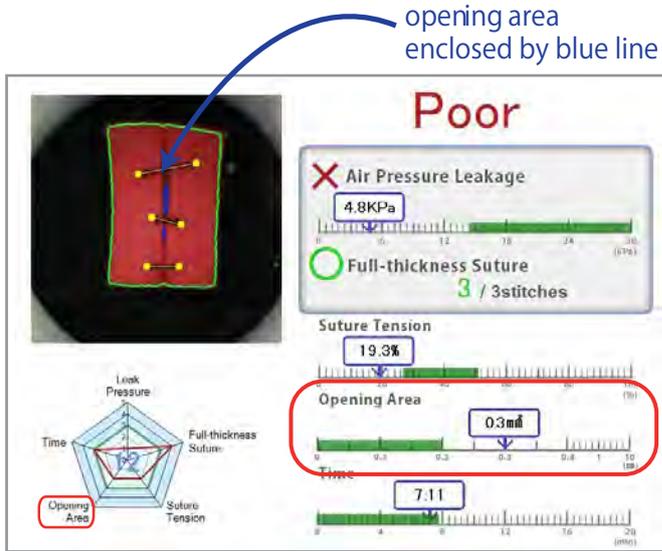
60 %



80 %



4 Opening area

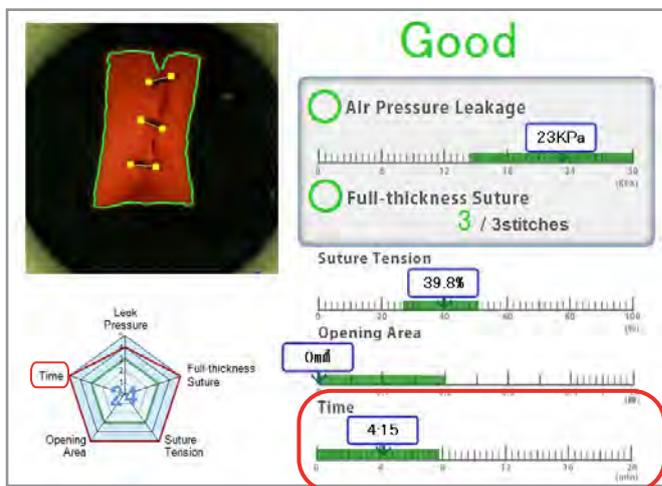


4. Opening area
Automatically measured and evaluated opening area while measuring air pressure leakage.

acceptable range ██████████

0.2 mm² or less

5 Completion time



5. Completion time
Measure the time took for suturing procedure.

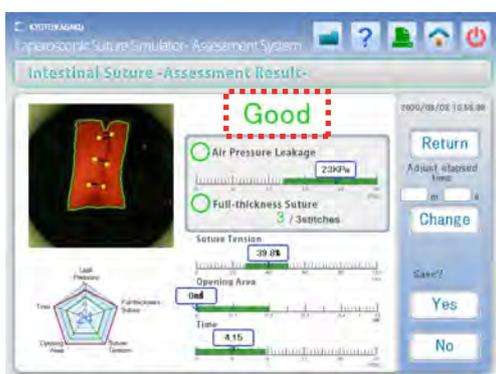
acceptable range ██████████

469 s (7min49s) or less

1 Good/ Poor grading

There are 5 evaluation criteria, "air leak pressure" and "full -thickness suture" are used to determine successful procedure.

If both of the 2 criteria are under **acceptable range**, then it appears "Good" Either or the 2 criteria is **out of acceptable range**, then it appears "Poor"



※ “Poor” sign can be hidden by changing the display setting. See P.30 for details.

1. Air pressure leakage
Is the wound sutured without a leak? (maximum of 5 points)
 2. Full-thickness suture
Is suture completed through muscular layer to mucosal layer? (maximum of 5 points)
 3. Suture tension
Is ligature appropriate for suture? (maximum of 5 points)
 4. Opening area
How much opening area is there in the mucosal layer? (maximum of 5 points)
 5. Completion time
How long does it take for suturing procedure? (maximum of 5 points)
- total of 25 points

Why Good/Poor grading with only 2 criteria?

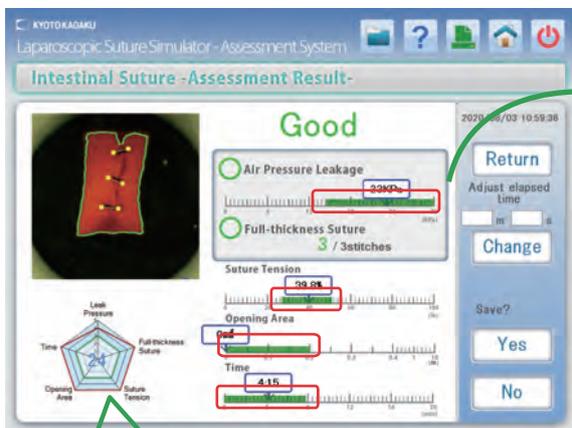
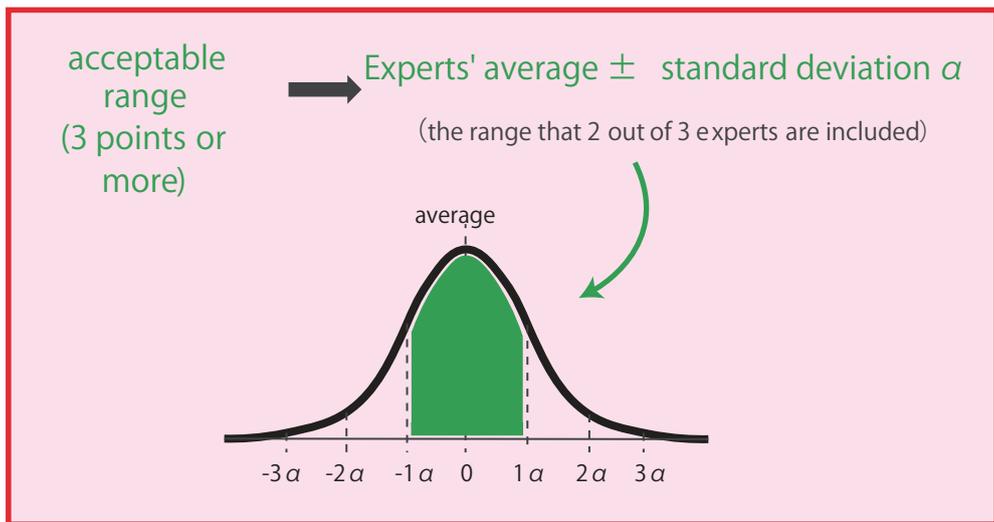
The concept of this simulator is to let trainers perform suture of all layers without leak.

2 Grounds of assessment 1

Data collected to create evaluation criteria

collecting data
 Expert (professionals who experienced over 500 cases) : 17
 Novice (beginners who experienced less than 15 cases) : 36

Analyzing the data of 17 experts, calculated the acceptable range (scored with 3 points or more) as passing grade



the green bar shows the acceptable range



1. Air pressure leakage
 3. Suture tension
 5. Completion time
- These 3 criteria can be adjusted.

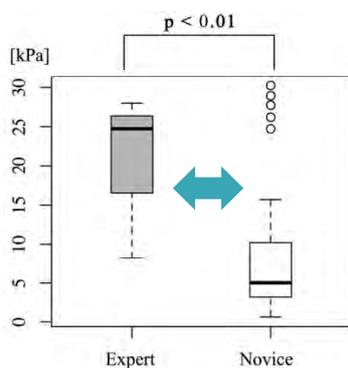
3 points or more is acceptable

3 Grounds of assessment 2

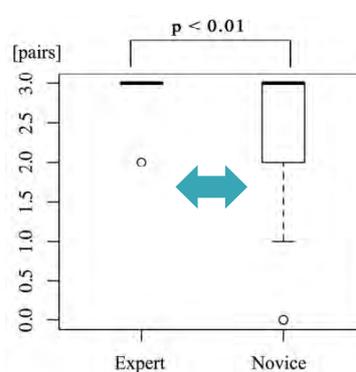
Comparison of Experts' data with Novices'
→ statistically significant difference found in all evaluation criteria

Based on Evidence Comparison of Expert and Novice

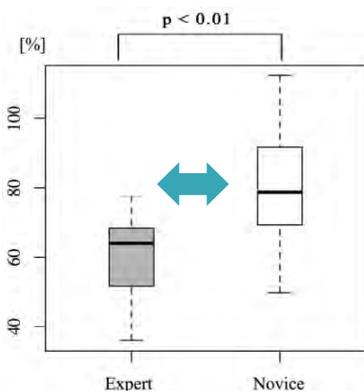
1. Air pressure leakage



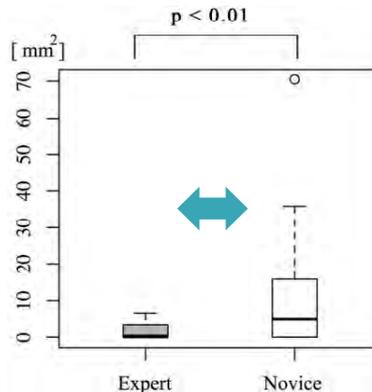
2. Full-thickness suture



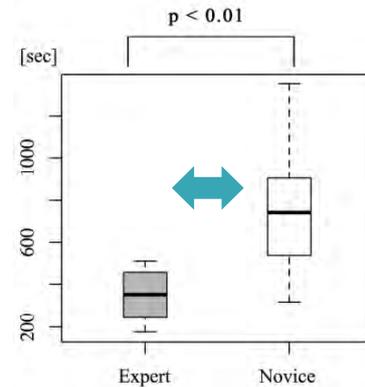
3. Suture tension



4. Opening area



5. Completion time



The paper information:

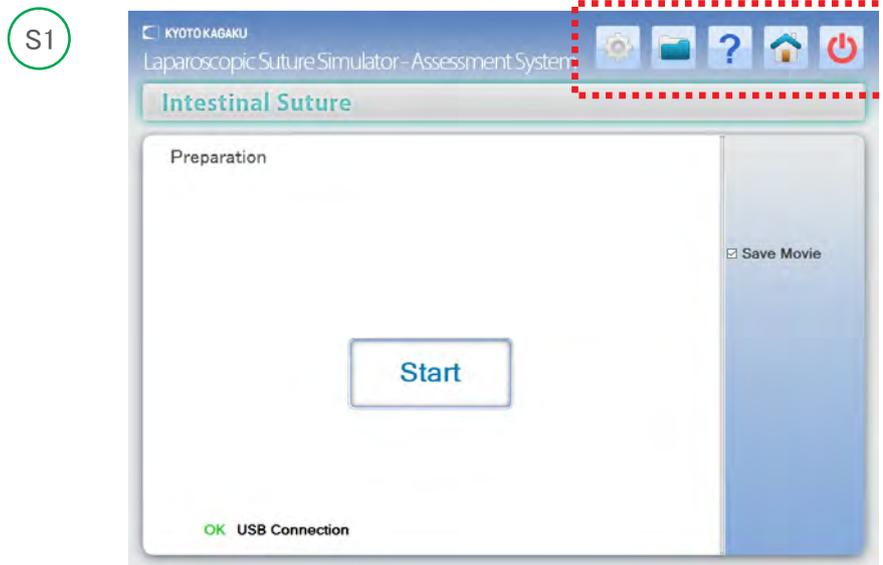
Uemura M et al . Surgical Endoscopy . 2014

PMID : 25005015

DOI : 10.1007/s00464-014-3681-9

<http://www.ncbi.nlm.nih.gov/pubmed/?term=10.1007%2Fs00464-014-3681-9>

1 Operation icons



Power icon:
Exits the simulator software and returns to the desktop screen.



Home icon:
Returns to screen S1



Help icon:
Displays the help menu



Setting icon:
Edits system settings



Record icon:
Review, delete, export recorded data

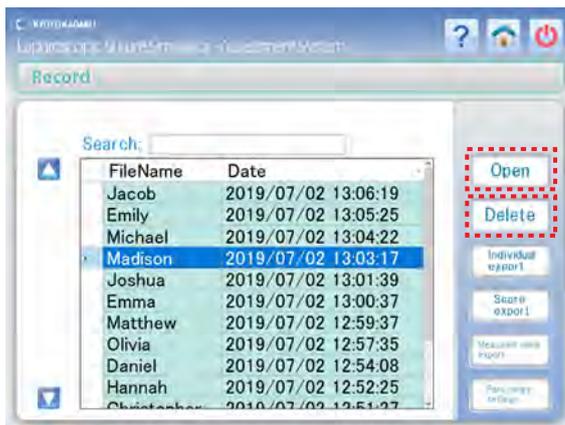


Print icon:
Print the displayed screen

1 Review/display recorded data



S10



Select "Record" Icon to see all the recorded data.

Select a saved data file and select "Open" to view the assessment results page.

When a data needs to be deleted, select the designated file and select the "Delete".

※ Multiple data can be deleted by using "Ctrl" and "Shift" on the keyboard.

S11



Select "Play" button to replay the saved video.

If there is no video saved for the file, the "Play" cannot be selected.

S12



S11 Select "Return" to return to the evaluation results page.

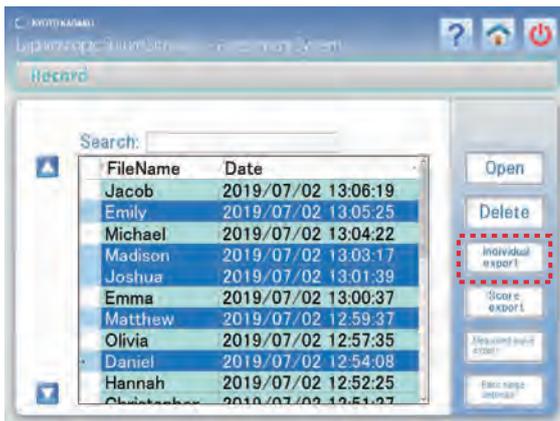
S10 Select "Close" to return to the file data page.

1 Export individual data



A USB memory needs to be prepared to export individual data.

S10



This function outputs each recorded data separately to each folder.

Select the data to output and select "Individual Export".



※ Multiple data can be deleted by using "Ctrl" and "Shift" on the keyboard.

S13



The USB memory insertion guide will appear.



Insert USB memory to the laptop.

S14



Once the export is complete, remove the USB memory following the message appears on the screen. This will complete the data export.

1 Export individual data



The selected data will be saved to each folder in the USB memory.

Emily -[2019_07_02]13_01_39

Madison -[2019_07_02]13_05_25

Joshua -[2019_07_02]12_54_08

Matthew -[2019_07_02]12_59_37

Daniel -[2019_07_02]13_03_17

Emily_Evaluate.png
OO_Evaluate.png

Emily_AllData.csv
OO_AllData.csv

Emily.avi
OO.avi

Emily_Contour.png
OO_Contour.png

Emily_Leak.csv
OO_Leak.csv

Emily_meta.txt
OO_meta.txt

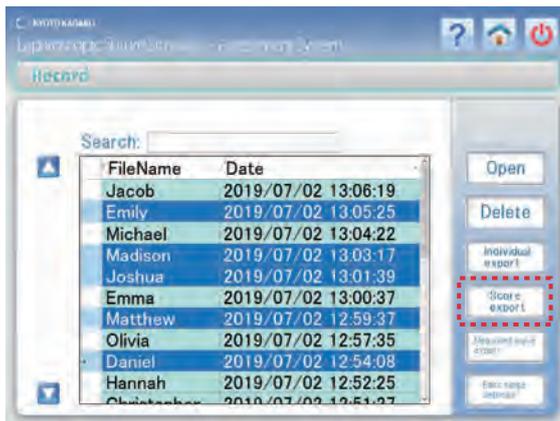
Emily_Wound.png
OO_Wound.png

Each folder contains 7 files.(6 files if the video was not saved)

2 Export evaluation scores

 **Caution** A USB memory needs to be prepared to export evaluation scores.

S10



This function outputs the evaluation scores (maximum 5 points) of selected recorded data to a CSV file.



※ Then, follow the same procedure as for "Export individual data". See P.21 for details.



The evaluation scores of selected data is exported to a single CSV file in the USB memory.

※ CSV file can be viewed with Excel.

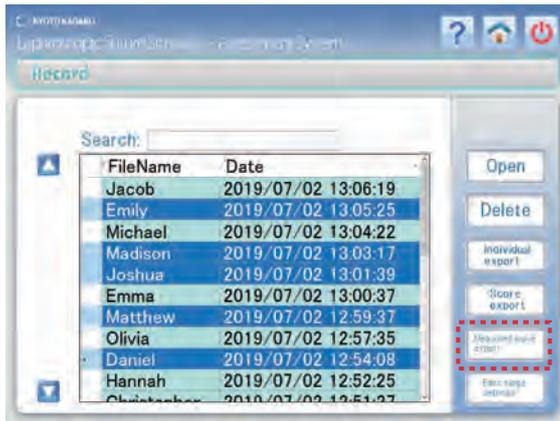
	A	B	C	D	E	F	G	H	I
1	Score								
2	FileName	Date	Time	Ligation	Opening	Needle	Leak	Total	
3	Daniel	2019/7/2	13:03	4	5	5	5	3	22
4	Matthew	2019/7/2	12:59	5	4	2	5	1	17
5	Joshua	2019/7/2	12:54	3	2	3	2	1	11
6	Madison	2019/7/2	13:05	2	4	2	5	1	14
7	Emily	2019/7/2	13:01	4	2	0	5	0	11
8									
9									
10									
11									

3 Export measured value



A USB memory needs to be prepared to measured value.

S10



This function outputs the measured value (e.g. s, kPa, mm³) of selected data to a CSV file.

Measured value export



※ Then, follow the same procedure as for "Export individual data". See P.21 for details.



The measured value of selected data is exported as a single CSV file in the USB memory.

※ CSV file can be viewed with Excel.

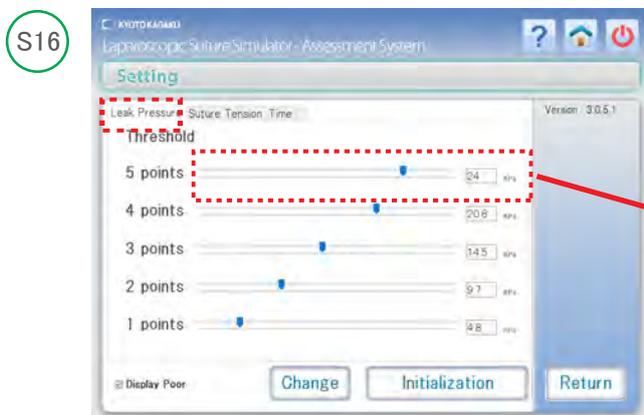
	A	B	C	D	E	F	G
1	Measured value						
2	FileName	Date	Time	Ligation	Opening	Needle	Leak
3	Daniel	2019/7/2	13:03	325	37.9	0	5 19.3
4	Matthew	2019/7/2	12:59	245	34.8	0.3	5 5.7
5	Joshua	2019/7/2	12:54	464	19.1	0.2	2 4.8
6	Madison	2019/7/2	13:05	535	35.6	0.3	5 5.7
7	Emily	2019/7/2	13:01	315	20.9	1.5	5 1.8
8							
9							

1 Change Evaluation Criteria



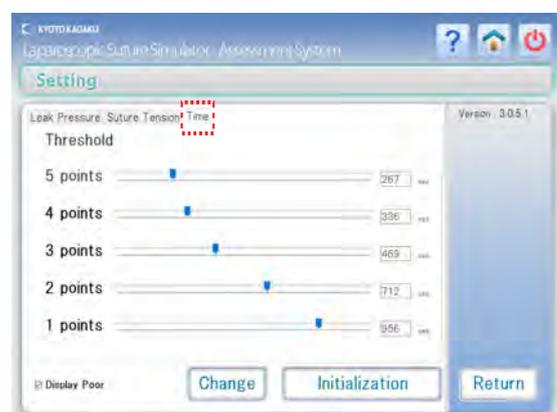
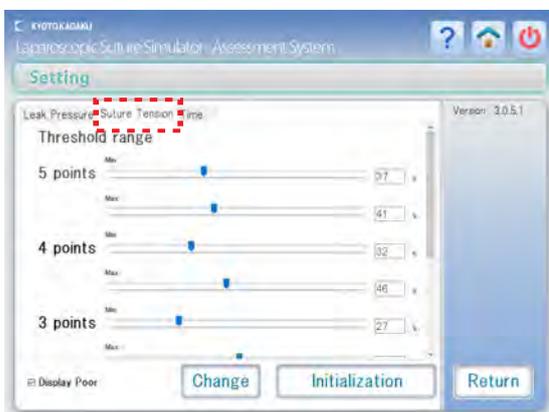
Select "Setting" icon, the screen will display a password entry screen for changing passwords.

Preset password : kyotokagaku



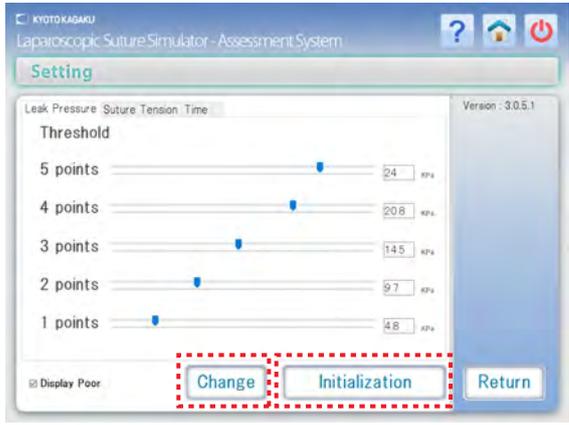
Criteria for **Leak pressure**, **Suture tension**, **Completion time** can be adjusted.
(Switch between each evaluation items by tabs)

Change the criteria value by moving the slide bar or directly entering a value.



1 Change Evaluation Criteria

S16



After changing the value, be sure to select "Change".
Changes are not saved until "Change" selected.

S17



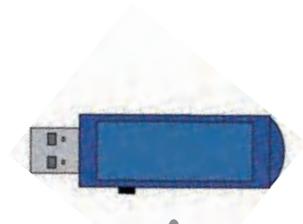
S15 Returned to the password entry screen.

To reset to the initial value, select "Initialization".
The initial values of "leak pressure", "suture tension", "completion time" are as follows.

Leak pressure initial value	Suture tension initial value	Completion time initial value
5 points 24.0 kPa	5 points 37 – 41 %	5 points 267 s (4 : 27)
4 points 20.8 kPa	4 points 32 – 46 %	4 points 336 s (5 : 36)
3 points 14.5 kPa	3 points 27 – 51 %	3 points 469 s (7 : 49)
2 points 9.7 kPa	2 points 18 – 67 %	2 points 712 s (11 : 52)
1 point 4.8 kPa	1 point 9 – 84 %	1 point 956 s (15 : 56)

1 Export data

To create evaluation criteria using exported data, first use the "export measured value" function to output data to a CSV file.



Use the "export measured value" function to export data in the USB memory beforehand.



file name
○○.csv

※File outputted by "export measured value" function can be edited by Excel. Also, the edited file can be used as a file for evaluation criteria.

	A	B	C	D	E	F	G
1	Measured value						
2	FileName	Date	Time	Ligation	Opening	Needle	Leak
3	Daniel	2019/7/2	13:03	325	37.9	0	5 19.3
4	Matthew	2019/7/2	12:59	245	34.8	0.3	5 5.7
5	Joshua	2019/7/2	12:54	464	19.1	0.2	2 4.8
6	Madison	2019/7/2	13:05	535	35.6	0.3	5 5.7
7	Emily	2019/7/2	13:01	315	20.9	1.5	5 1.8
8							
9							

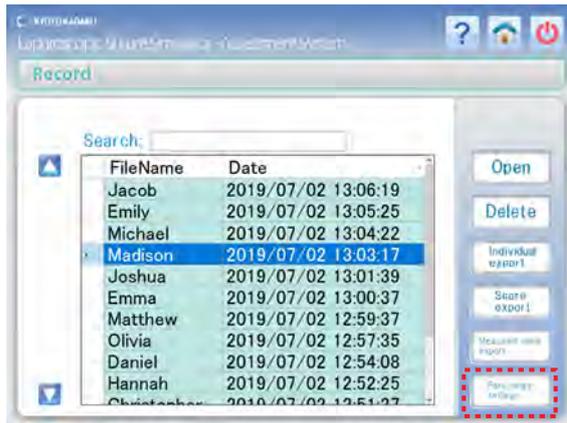


Be sure to save only the data used for evaluation criteria. If other data is included, the evaluation criteria will be incorrect.

2 Read exported data



S10



When data is ready, select "Pass range settings".



S18

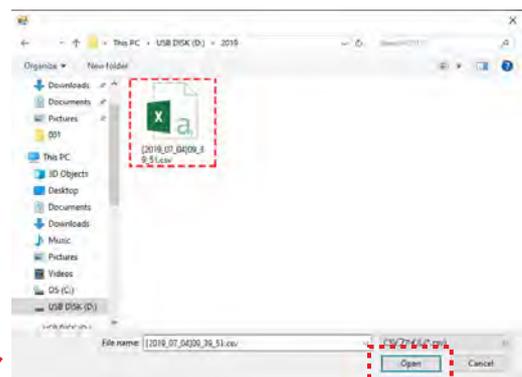


USB memory insertion guide will be displayed. Insert the USB memory prepared as P.27 to laptop.

S19

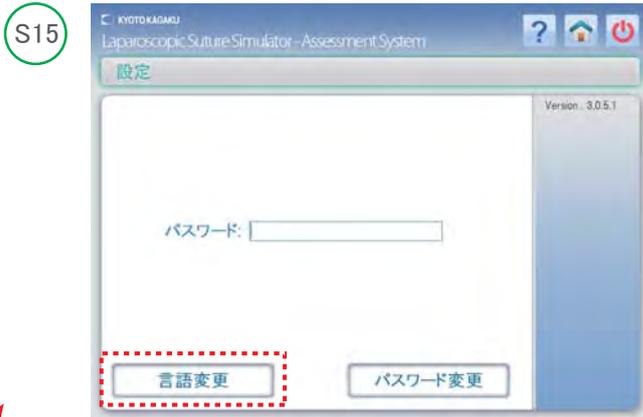


The software will automatically import the data, calculate the average value and standard deviation, then create evaluation criteria. When import completed, remove the USB memory from the laptop.

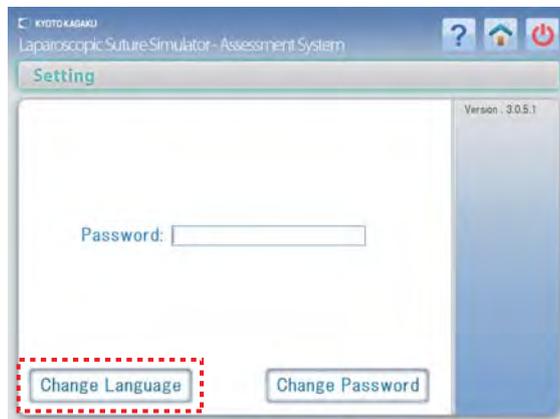


File selection screen will be displayed. Select the file for creating evaluation criteria, then select "Open".

1 Change the Language



Select "Setting" icon, the screen will display a password entry screen for password changing.



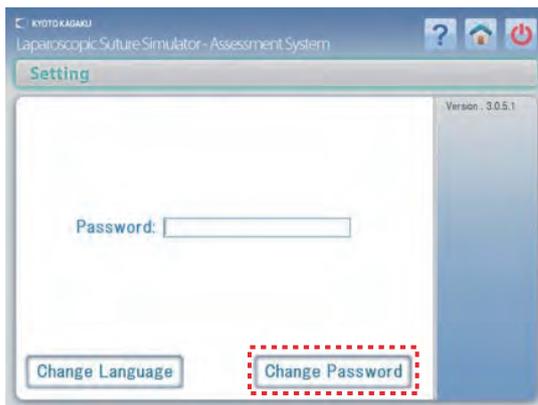
Select "言語変更", all screen settings will be changed from Japanese to English.

Select "Change language" again, all screen settings will be changed from English to Japanese.

1 Change passwords

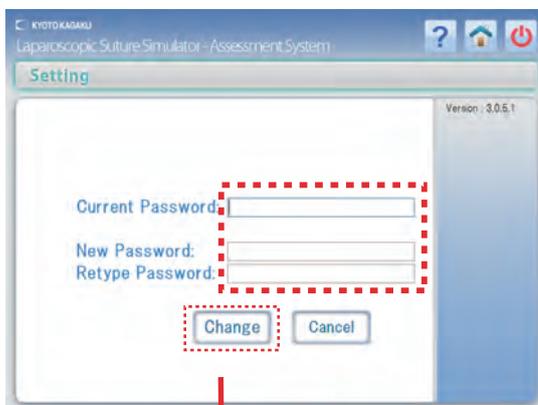


S15



Select "Setting" icon, the screen will display a password entry screen for password changing.

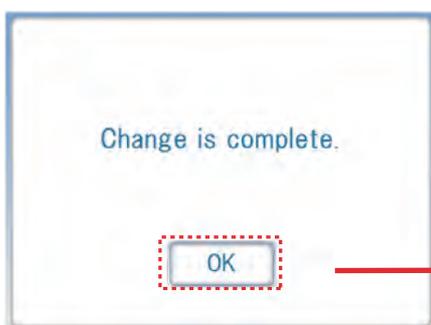
S20



Enter your present and new passwords and select Change.

Preset password : kyotokagaku

S17



S15 Return to password entry screen.



Keep the record of your changed password.
Please contact your distributor or KYOTO KAGAKU CO., LTD. in case you forget the password.
(Refer to the back cover for contact information)

1 Display "Poor" sign



Select "Setting" icon, the screen will display a password entry screen for password changing.

Preset password : kyotokagaku



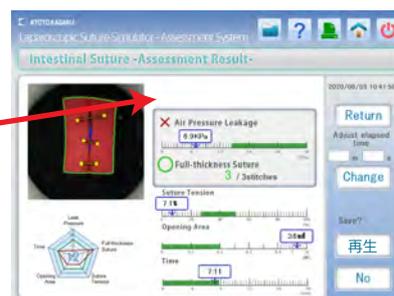
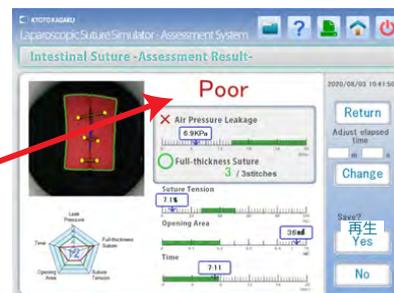
Enter the password.



When the check box of "Display Poor" is checked, "Poor" will be displayed on the evaluation screen when the evaluation criteria are not reached.



Uncheck the "Display Poor" checkbox to, "Poor" sign will not be displayed.



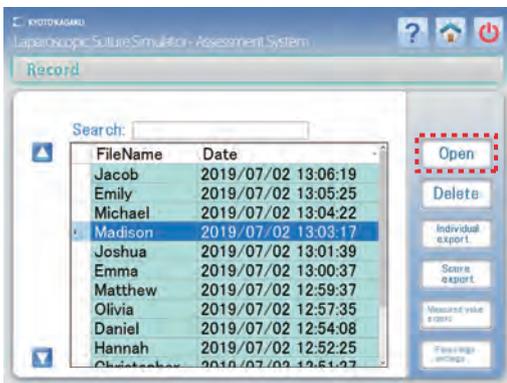
1 Print assessment results



A printer needs to be prepared to print assessment results.
Connect the printer to the laptop and install the driver for the printer.



S10



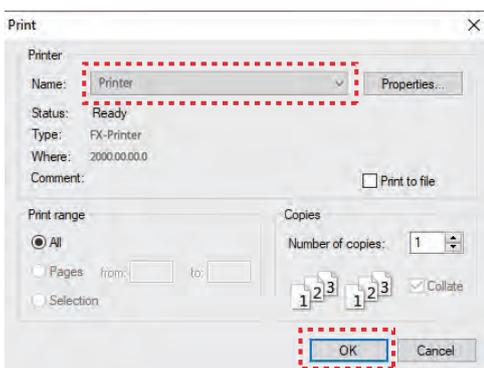
Select "Record" Icon to see all the recorded data.

Select the data to print.
Select "Display" to display the assessment results.

S11



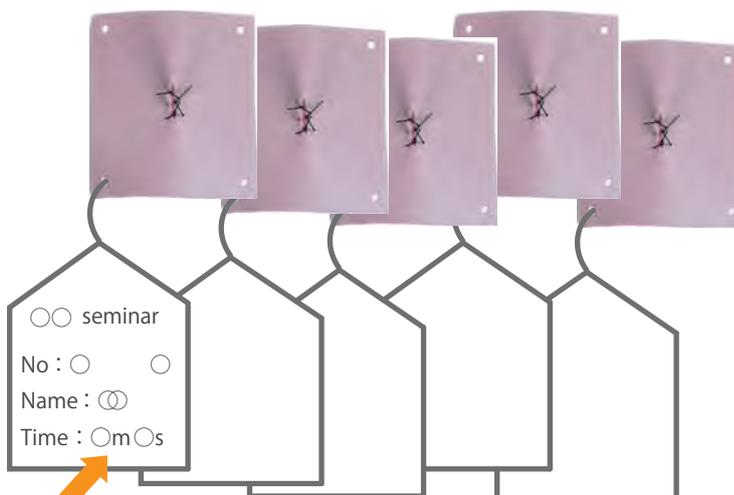
Select the "Print" icon.



Print dialog window will open, configure the print settings and select "OK" to print.

1 Do the assessment at a later time

How to assess the collectively, after multiple trainees training at seminars.

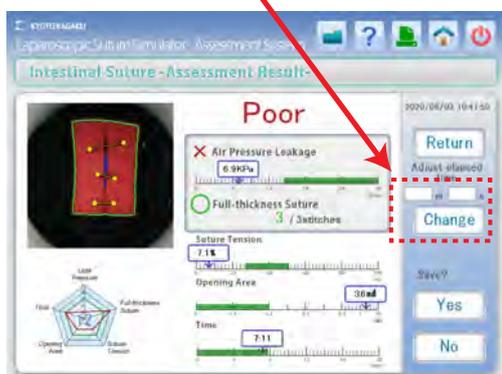


※ Be sure to measure the time for each suture procedure.

Proceed as P.10 -P.12.

Enter the time to "Change time" box, select "Change".

S7



After changing the time, evaluation value of "time" will be automatically changed.

1 Connection

Record suture video and save to laptop

To record the suture video, branch the camera output from the training box, which is usually connected to a monitor, convert it to a USB connection and connect it to the laptop.



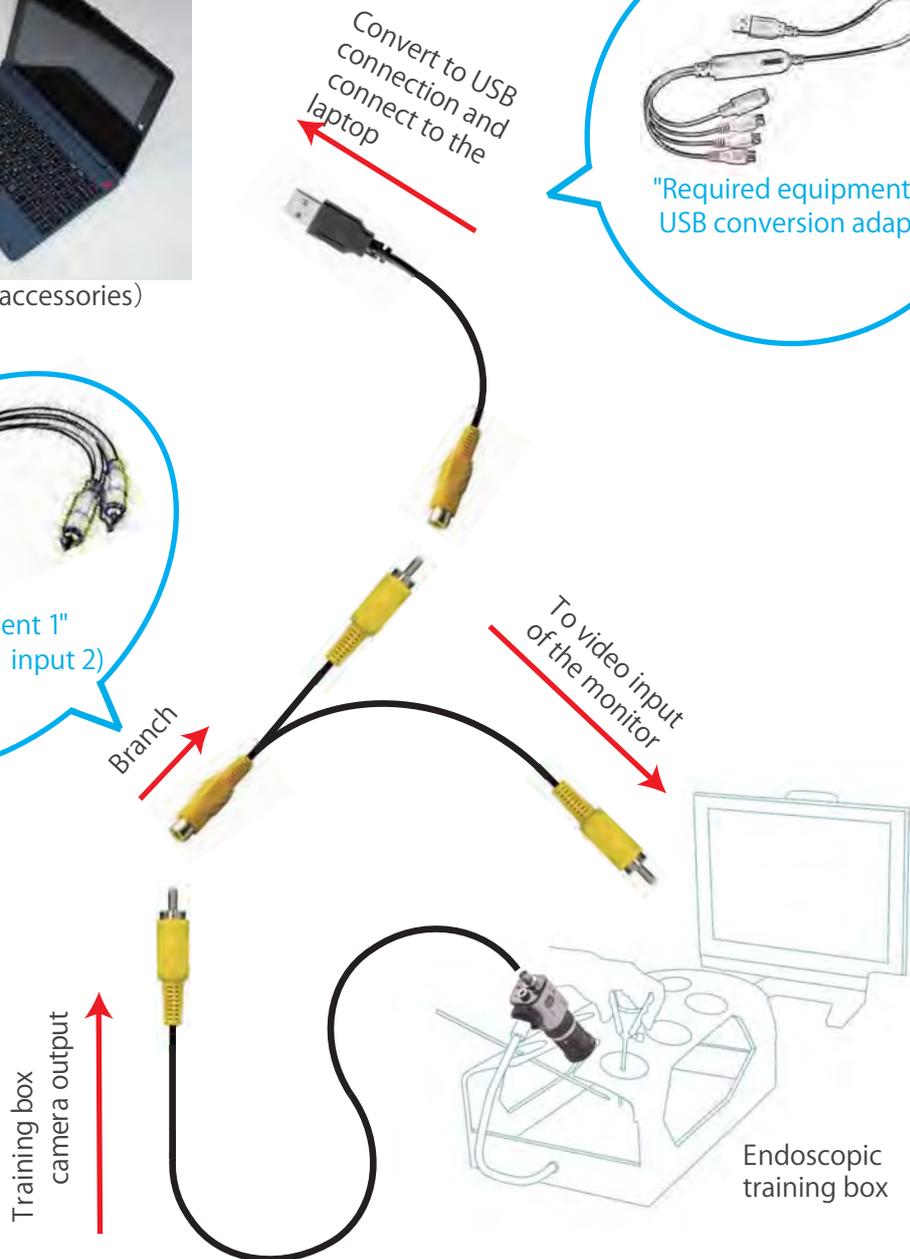
Laptop (accessories)



"Required equipment 1" distributor (vedio1 input 2)



"Required equipment 2" USB conversion adapter



2 Tools required for recording

To record video, following 2 items are required. (Not included in the set)
Please note that the required items differ depending on whether the camera output is analog or digital (HDMI .etc).

「required equipment 1」 distributor (video1 input 2)
branch the camera output from training box



Analog



Digital (HDMI .etc.)

「required equipment 2」 USB conversion adapter
convert video signal from camera to USB output



Analog

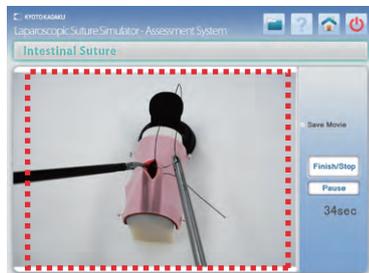


Digital (HDMI .etc.)

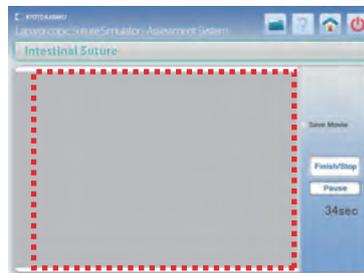
When the camera is connected to laptop, the video of the procedure is displayed on the soft screen as shown below.

Nothing will be displayed if the camera is not connected.

S2



camera connected



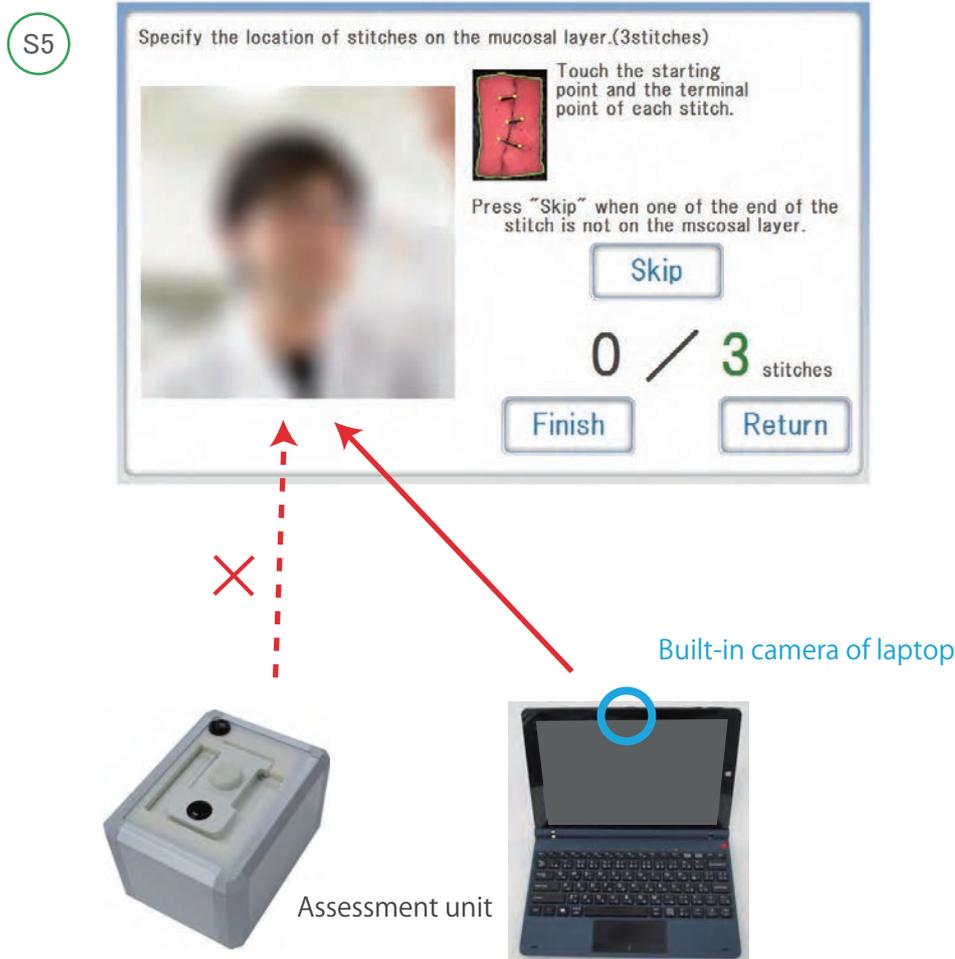
no camera connection



Please contact your distributor or KYOTO KAGAKU CO., LTD. if you have any questions regarding the purchase of required equipment or connection methods.

What to do when an image different from the suture sheet is recognized in the image evaluation

Cause: built-in camera of laptop has been selected instead of the camera in the assessment unit.



If the evaluation image is dark or completely black, the device may be defective. Please contact your distributor or KYOTO KAGAKU CO., LTD .

6.Trouble shooting

6-1 Different Image Displayed for Image Evaluation

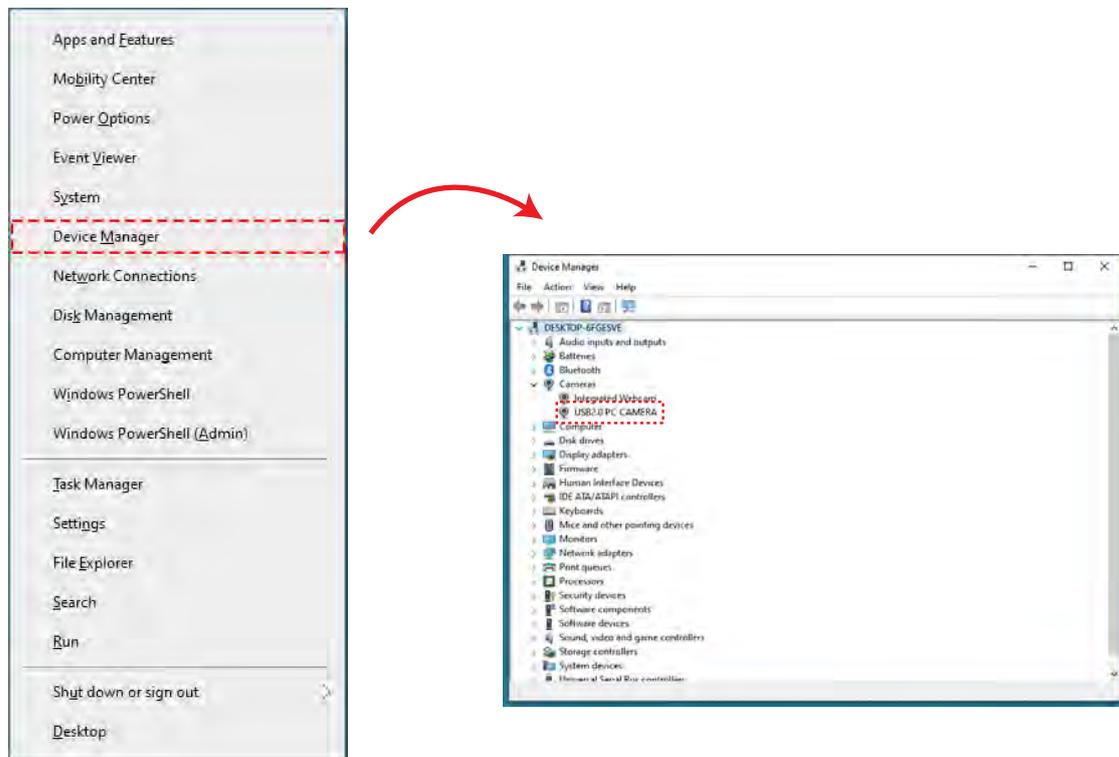
How to change camera selection

Follow the procedure below to change the selection of the camera.

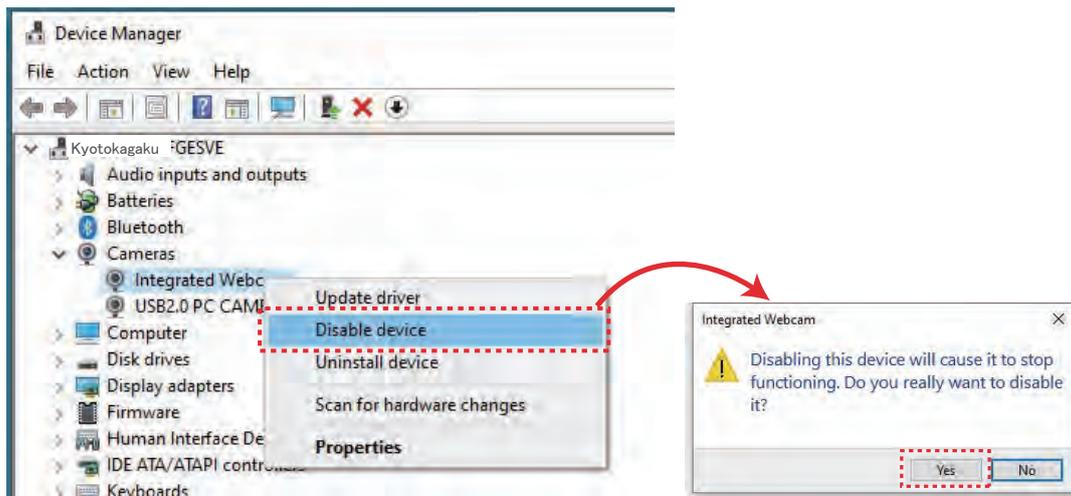
- 1 Close all running software.
2. While holding "  "key, press "X" key.



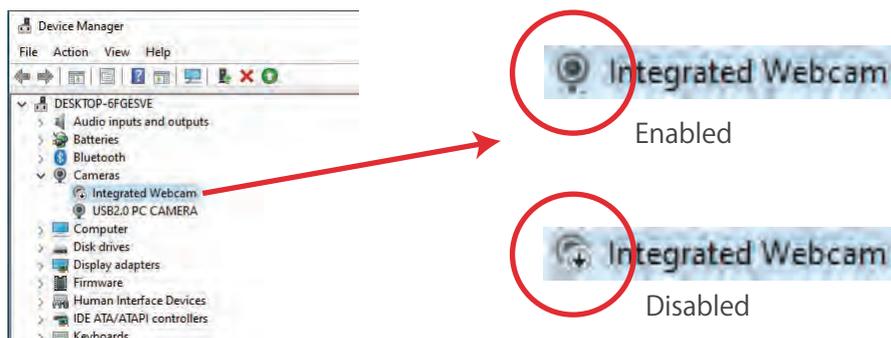
3. Below menu will be displayed. Select "Device Manager".



- Expand Imaging Devices and disable all devices except "USB 2.0 PC CAMERA". Right-click the device to be disabled, then select "Disable device". Confirmation of device deletion will be displayed. Select "Yes".



- Verify that the device is disabled.



- Restart the evaluation software.



Built-in camera of the laptop is disabled at the time of shipment. But if other software installed or Windows updated, the built-in camera may be enabled. Do not use wireless LAN or install any other software.

6.Trouble Shooting

6-2 Air Pressure Leakage Always Shows "0kPa" 6-3 No Motor Noise During Leak Evaluation 6-4 Leak Evaluation Takes Too Long

What to do if

- Air pressure leakage always shows "0 kPa"
- No motor noise during leak evaluation
- Leak evaluation takes too long

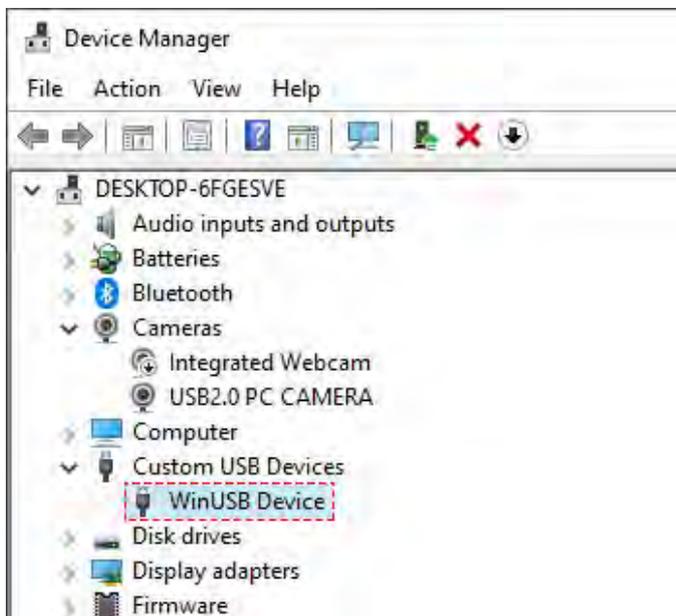
Cause: The assessment unit is not connected correctly to laptop

Follow the procedure below to check the connection between the assessment unit and laptop.

1. Verify the device connection. (P. 4)
2. Verify that the main power of the assessment unit is "ON". (P. 6)
3. Verify that the USB connection is displayed as "OK". (P. 8)
4. Start "Device Manager" and check if the assessment unit is recognized.

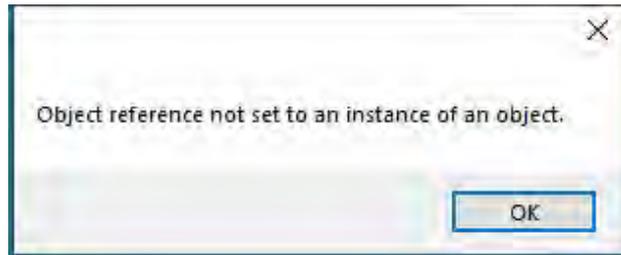
(See P. 37 for how to start "Device Manager".)

Expand "Custom USB Devices" in "Device Manager" and check if there is "WinUSB Device".



5. If there is no "WinUSB Device", you need to reinstall the device.
If the problem is still not solved, the device may be defective. Please contact your distributor or KYOTO KAGAKU CO., LTD.

What to do when the error message saying "The object reference is not set in the object instance" appears while starting the software



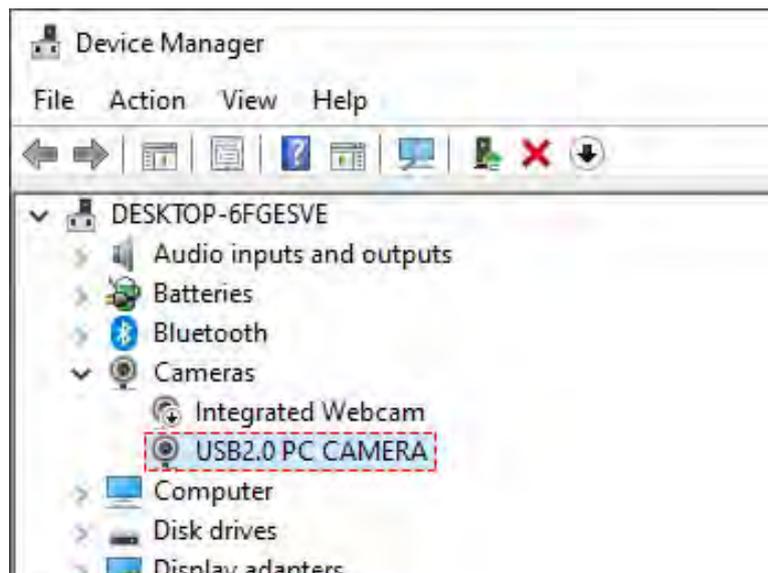
Cause: camera in the assessment unit is not connected correctly to laptop

Follow the procedure below to check the connection between camera in the assessment unit and the laptop

1. Verify the device connection. (P. 5) Also, restart the laptop and software.
2. Start "Device Manager" and check if the camera in the evaluation box is recognized.

(See P. 37 for how to start "Device Manager".)

Expand "Imaging Device" in "Device Manager" and check if there is "USB2.0 PC CAMERA".



3. If "USB 2.0 PC CAMERA" is still not found after reconnecting the device and restarting laptop, the device may be defective. Please contact your distributor or KYOTO KAGAKU CO., LTD.



Caution

Do not let ink from pens, newspapers, product manual or other sources contact the manikin. Ink marks on the manikin will be irremovable.

- For inquiries and service, please contact your distributor or KYOTO KAGAKU CO., LTD.

KYOTO KAGAKU co.,LTD

URL: <http://www.kyotokagaku.com> e-mail: rw-kyoto@kyotokagaku.co.jp

Worldwide Inquiries & Ordering

Kyotokagaku Head Office and Factories:

15 Kitanechoya-cho, Fushimi-ku, Kyoto, 612-8388, JAPAN

Tel: +81-75-605-2510 Fax: +81-75-605-2519

All American regions

KYOTOKAGAKU AMERICA INC.

3109 Lomita Boulevard, Torrance, CA 90505-5108, USA

Tel: 1-310-325-8860 Fax: 1-310-325-8867

The contents of the instruction manual are subject to change without prior notice.

No part of this instruction manual may be reproduced or transmitted in any form without permission from the manufacturer.

Please contact manufacturer for extra copies of this manual which may contain important updates and revisions.

Please contact manufacturer with any discrepancies, typos, or mistakes in this manual or product feedback. Your cooperation is greatly appreciated.