2019

Motion Training System

TANO User guide

Foreword

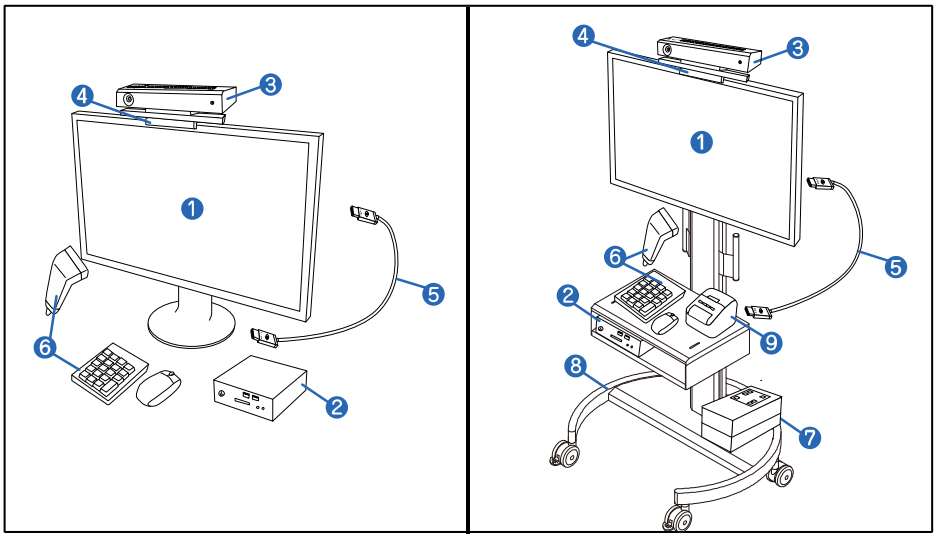
TANO® is a motion sensor technology developed for welfare, care and education facilities. It can be controlled just by standing before the sensor. The system helps to improve body movement and coordination function, allows to perform various measurements, voice exercises and brain activity training.

"Having fun will make you healthy faster!" is a TANO®`s motto.

TANO OPERATING ENVIRONMENT AND SPECIFICATIONS

Recommended computer	
OS	Windows 10 64 bit
CPU	COREi5
Screen output	HDMI OR DISPLAY PORT OUTPUT
USB TERMINAL	USB 3.0x1 or more / USB2.0x1 or more
Hard disk	SSD / HDD 128 GB of free space or more (SSD recommended)
Output screen resolution	16: 9 (1280x720 or 1920x1080 recommended)
Network	LAN or WAN (generally not needed during playing with TANO)
Sensor / external device	
Sensor recommended specs	Kinect® V2 (USB 3.0)
	Kinect® V1 (USB2.0) (limited for 2 persons / for indoor use only)
	General-purpose web-camera (depend on content)
Other optional devices	
Two-dimensional code reader	Recognized as USB keyboard input
Label printer	Only Brother QL 800 can be used
Printer	Standard printer connected on Windows

Connection image



① Monitor
② Desktop PC / Laptop type PC
③ Sensor
④ Mount
⑤ HDMI cable
⑥ Numeric pad/Two-dimensional code reader
⑦ Uninterruptible power supply device
⑧ Movable stand rack
⑨ Label printer

※ Device composition can be different depending on content of delivery.

Safety Notes

Caution !

・Please do not give unreasonable instructions or guidance for users.

・Please be careful not fall and also be careful about the surroundings.

・Please be careful enough not to harm people or objects around you during playing with TANO®.

・Be careful not to stumble if there are obstacles or cables around you.

・Please be aware of slippery floors, and use an exercise-friendly footwear.

・Don't put a luggage around the control system (PC) and keep it easy to exhaust heat.

・Do not touch the system terminal with wet hands or use in humid places.

・Do not install any other software or unmount or customize the system

Proper sensor installation

・Please stand at a distance of about 1.8m in the front of the sensor.

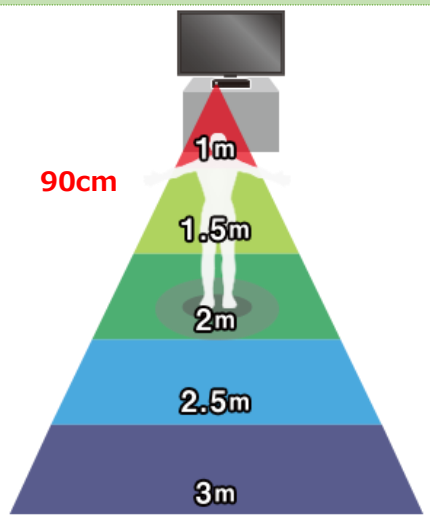
・Please set height of the stand horizontally at about 90 cm from the floor.

・Please do not put anything near the sensor.

・When install on the table, place it at the end of the table to avoid the influence on the sensor.

・In a large room, turn the sensor slightly downward.

・Don’t use any reflecting surfaces (metal, mirror etc.) in the front of the sensor or around the sensor as it may cause false recognition.



・If the ceiling is high, noise may influence the sensor detection.

・For the content using sound, problem may occur if the sensor catches sound of the TV speaker. If the TV speakers are close to the sensor, turn down the TV volume.

・At the exhibition hall, noise from the environment may be strong. Infrared rays and radio waves also may cause errors.

About skeletal tracking

・Combination of gray hair and thin eyebrows may cause some errors in skeletal recognition.

・If user is lower than 100 cm, the sensor may not be able to display skeleton tracking.

・If the recognition rate is low, please try to use TANO® in the environment with a wall behind the user.

Connections with external devices

External monitor or projector

・You can enjoy TANO® games by connecting to a large external monitor or projector.

・To connect with external monitor you need HDMI cable input.

・Sound will be played from the monitor or projector if you don`t have an external sound system.

Please note that the sound may not be played if the connection destination (external monitor / projector) does not have a sound output.

・If you use a projector, the screen brightness may be influenced by surround lighting.

・If you use a large external monitor, please be careful not to shake or drop down the monitor.

Mouse

All basic operations can be performed with the mouse.

Touch panel

If you use a touch panel, right click function can be performed by long press on the panel.

Some content may not have a “Return” function.

Keyboard

It is designed to be able to perform almost all operations with the numeric keypad.

Two-dimensional code reader

Using the "Content Menu" brochure allows you to operate all functions, menus and execute contents.
All content can be manipulated in one scan operation.

Label printer

An external label printer can be used for "CAREPIT"® and "Measurement" functions.

You can use only Brother QL800 label printer. Other label printers are not compatible.

Inkjet printer

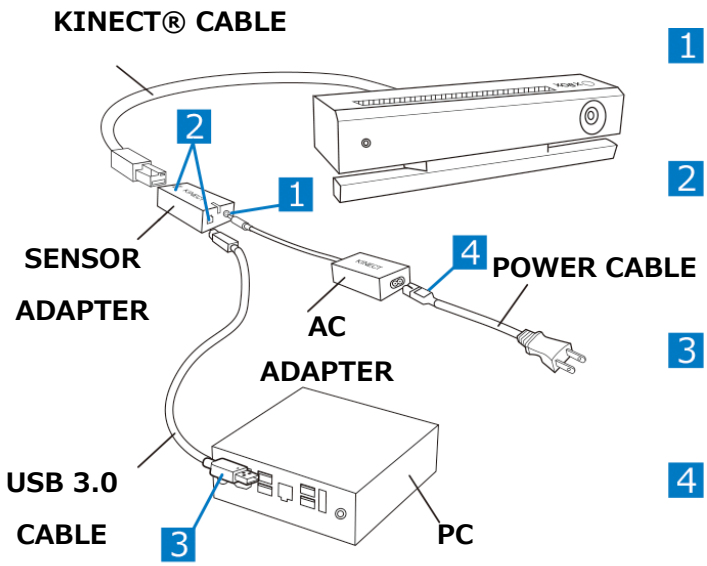
By inkjet printer you can print photos you took during playing TANO® games.

Printer settings can be configured according to the common Windows printer settings.

Uninterruptible power supply device

Using this kind of device, you can move the set within a facility for 5 minutes, without turning the power off.
You can also prevent your PC from unexpected shutdown in case of sudden power failure.

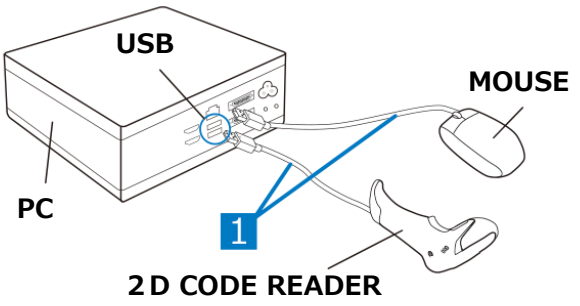
Connections - PC -



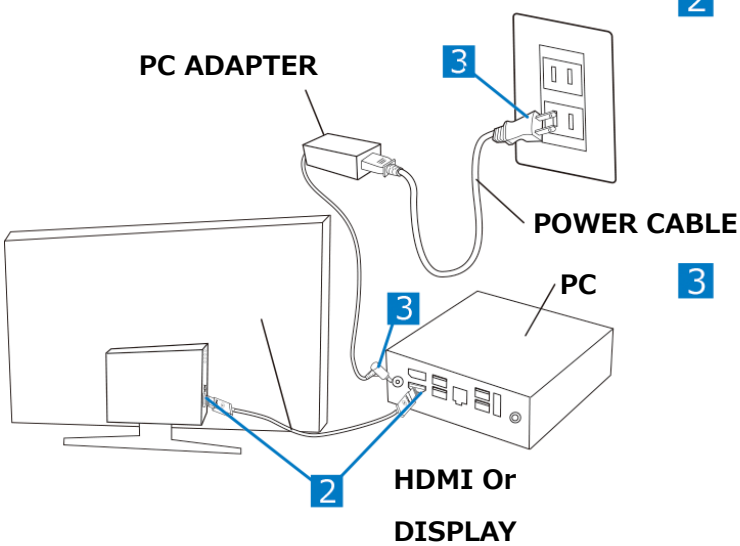
1. Connect the sensor adapter to the sensor AC adapter.
2. Connect the sensor adapter to the Kinect sensor body.
3. Connect the USB cable to the USB 3.0 socket on your PC.
4. Plug the power cord into the AC adapter.

About USB 3.0 port

USB 3.0 has a **blue plug** or the entrance marked with "SS".



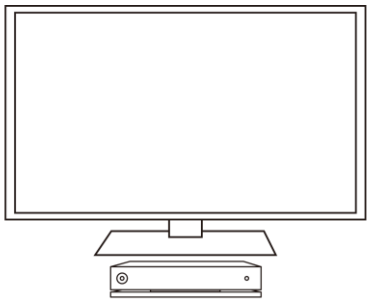
1. Connect mouse and 2D code reader to the PC.

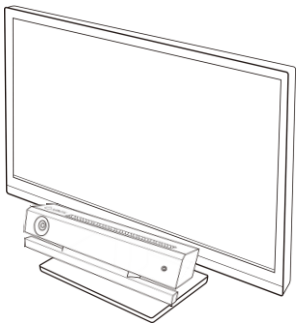


2. Connect the PC and LCD monitor with HDMI cable or DISPLAY cable.
3. Connect the PC power adapter with plug socket.

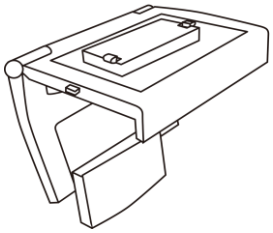
How to install the sensor

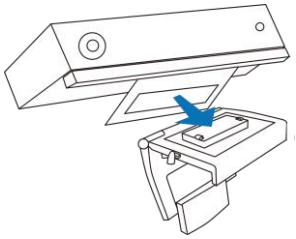
① Install in front of the monitor

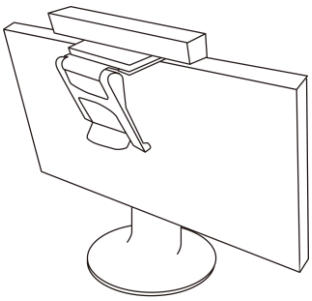




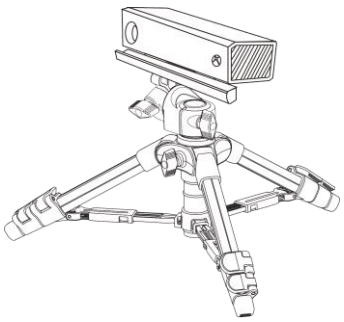
② Install on the top of the monitor using monitor mount

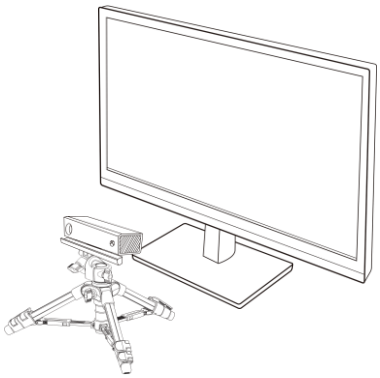






③ Use the camera's tripod





Use the suitable installation depending on height and size of the TV or monitor.

Mount and tripod are optional.

Connections checking

The sensor indicator

If sensor is not properly connected when you start TANO®, other devices (web camera etc.) will be prioritized. Please start TANO® after connection checking.

Is the screen displays correctly? Is the mouse working properly?

Turn on the PC power after connecting a monitor. If TANO® is set up to start automatically with PC launch, the screen size may be smaller and mouse cursor may not operate properly if a monitor is turned on after the PC launch. In that case, connect a monitor and restart TANO® application.
If the size of the text is not 100%, the mouse cursor may not move across the entire screen. The resolution more than 1920 or a 4K monitor may not be supported. Please use 1280x720 or 1920x1080 resolution options.

Do you hear the game sound?

You will hear the game sound from the PC if it has an internal speaker. You can adjust sound effects and BGM volume in the “Settings” menu.
If you use an external monitor connected via HDMI, the game sound will be played back from its speakers. In that case please check the volume settings of a display device.

Is it slow?

If the CPU is lower than COREi5 and the operation seems to be slow, perform the following settings.

- Set the performance of TANO® launcher (see page 19).
- Set the screen resolution to 1920x1080 or 1280x720.
- Change the USB 3.0 port
- Check the power supply and disperse it if the plug socket is overloaded.

Does TANO® recognizes people around?

Please avoid using any reflecting surfaces (metal, mirror etc.) around the sensor, or use the sensor in another direction.

Does TANO® recognizes voices and sounds?

TANO® may not respond correctly if there is sound noise around. Set the low level of sensitivity.
If the sensor is close to the TV speaker please turn down the TV volume.
When playing TANO® please use the language has been set for the game.

Can you print?

- After installing the label printer, check the settings of the label printer software.
- When you connect a printer, make sure it has been set as a standard printer.

Operation method

Select a genre from the top menu. Then select the game you wish to play. You can change settings within each game by pressing H.

Top menu (genre select)

Game

Setting screen

Selection by mouse

Left click	Decision
Right click	Return
Long press left click	DISPLAY setting menu
MOUSE wheel	Adjust sensor recognition distance (depend on content)

Keyboard (numeric pad)

Enter	Decision
0	Return
2 4 6 8	Directional movement (down, left, right, up)
9 Or H	Setting screen
5	Print
/	Reset
− +	Sensor distance
.	Skip
*	Pause
S	Take a snapshot
Esc	End content

Two-dimensional code reader (2D code reader)

You can operate TANO® in many ways by using 2D code reader. You even don't need a mouse or keyboard.

Scan	Scan content menu (from smartphone or brochure)
Create menu	Make your own menu by cutting out
Original content	Combine and execute original content
Personal ID	Create a personal program

Menu screen explanation

① Clock and date

Displays the date and time set on the PC.

② Number of contents

Displayed number of games depends on the selected language, sensor status and selected menu mode.

The displayed content may differ depending on the conditions. Content may not be displayed partially if:

- sensor, web-camera or microphone is not connected
- unsupported language is used, or content cannot be supported in this country
- it has been restricted by agreement conditions
- menu mode is set up as simple (you can select from 3 menu mode)
- default settings. When you start TANO® menu will be displayed in simple mode. If you start TANO® with 2D code reader, menu is not needed.

③ Content icons

Displays a description of selected game.

④ Version details

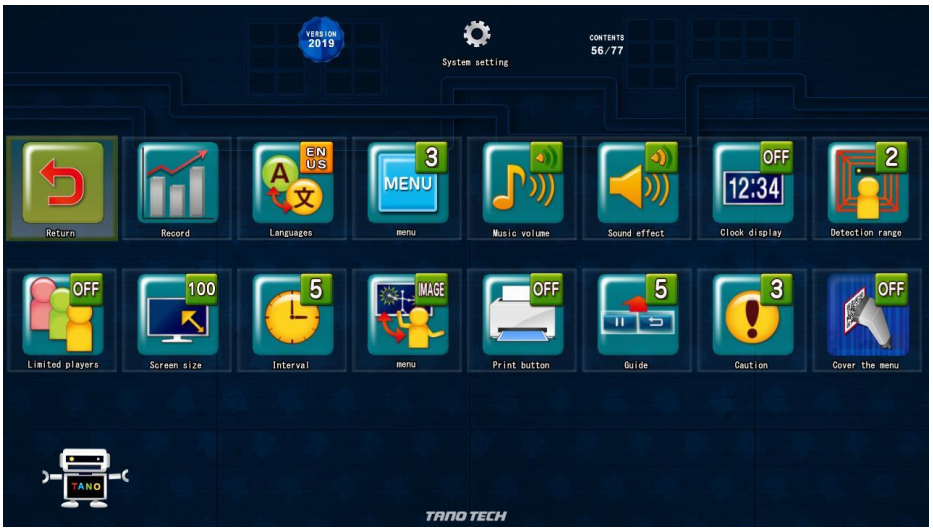
Displays the current version of TANO®, date of the latest update and the number of launched games.
The game will reset this number every 150 games done.

⑤ Sensor status

Displays the information about Kinect® sensor or web camera.

You can check the sensor connection.

Settings screen



※ The setting menu can be displayed in 3 steps. Some content is not be displayed depending on the language setting. Below you can see what points of menu will be added when you press the “Menu” button.

1	Language	Select the desired language.
1	Menu	Select the number of displayed menus.
1	Music volume	Adjust the volume of the music you hear during the game.
1	Sound effect	Adjust the volume of clicks and other sound effects during the game.
1	Clock	Unable / disable the display of clock at the top left of the screen.
1	Detection range	Set up how many meters from the sensor the playing person stands.
1	Number of players	Determine the maximum number of people that can be detected. (The upper limit varies depending on the sensor).
2	Screen size	Set up the size of monitor.
2	Interval	Set up the time until the next game.
2	Record	See the information about recently launched games.
2	Menu: icon / image	Switch thumbnails display mode in the game select menu.
3	Print	Enable / disable the printer connection.
3	Guide	Set to display / not to display the operation guidance.
3	Caution	Choose a mode to display caution notes when you start TANO: OFF, 3 seconds, 5 seconds.
3	Menu Cover	Displays the scan mode.

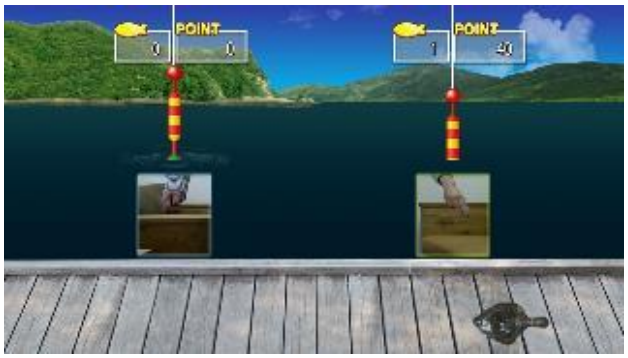
Content － Movement responding game－

This kind of games responds to body movements captured by the camera

You can play these games just by moving before web-camera or sensor.
These games can be played even without sensor.
Player can stand or sit close to the screen.

Walk

Simulator of walking beautiful places. Displayed content will progress responding to your moves.



Fishing

Fishing simulator. Four players can play this game simultaneously.

Home run

The game responds by moves of hands that makes the bat swing when the ball comes in the square frame.

Content – Voice games

These game works with microphone

You can play these games using volume, pitch and voice recognition with a microphone input.
Multiple players can participate in "Face Making" and "High&Low Penguin", but be aware that noisy locations may affect the sensor.

Face Making

Stop moving parts with the sound of your voice.

High&Low Penguin

Control the position of penguin on the screen with the pitch of your voice.

KITS

The flying images will disappear from the screen when you say their names.

Content — Skeleton recognition games —

Player can participate these games using the whole body. The sensor detects the skeleton structure of the person standing in the front of it and catches all movements.

Kinect® 1 can detect up to 2 players, and up to 6 people can be detected with Kinect V2®.

Sensors recognize even a sitting player, but errors may occur depend on the position of the sensor or clothes of a player.

Fireworks

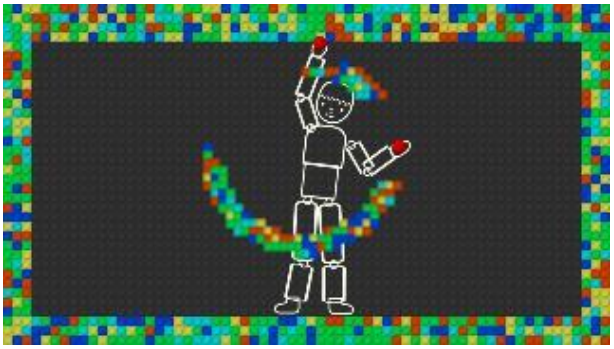
Burst up falling down fireworks touching them with the fire attached to parts of the body (it may be shoulders, knees or elbows).

Strike out

Act as you were throwing a ball to plates with numbers. Try to strike out all plates.

Triathlon

The screen changes with various exercises such as running, swimming, climbing, bending, stretching and flying.

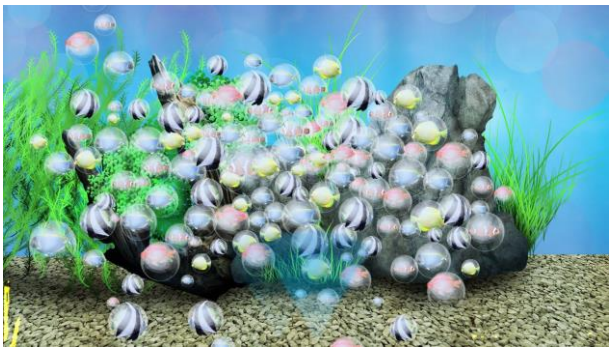


Follow

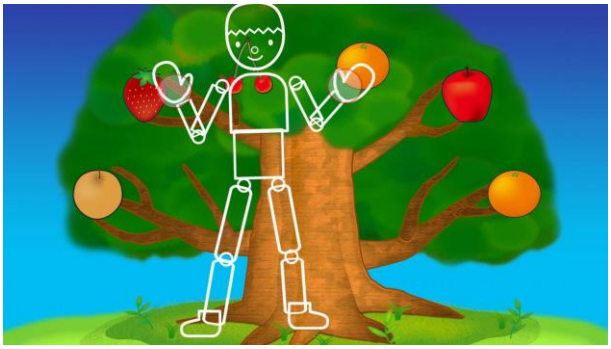
Use the hand to erase characters and symbols appearing on the screen.

Content - Other Games -

Here player can find games using function of the depth of the sensor, various moves of hands, recognition of face expressions etc.



Fluffy
Experience various games which may be familiar from your childhood, such as snow balls, soap bubbles and fluffs. Some content changes with speech recognition. These games can be used in a hospital room, waiting room or nursing room.



Fruit picking
Take fruits by open and closing your hands. Keep in mind that it is difficult to recognize your hand if they are not in the front of the sensor.

Wonder!

You can make a composite picture. Enjoy the magic using three-dimensional position technology.

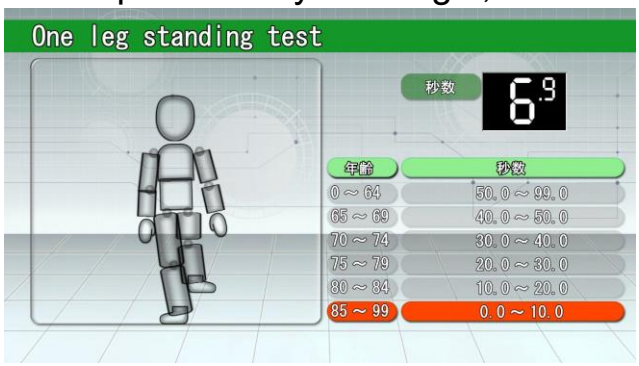
Smile checker

This game recognizes face counts repeating the smile. Let's have a lot of fun and spread your smiles on the screen.

Content - Measurements -

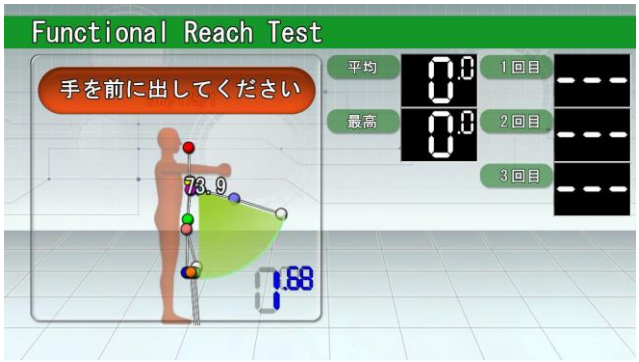
Beside games TANO® also can be used for various physical measurements.

If user performs system login, measurement data can be output to the PC.



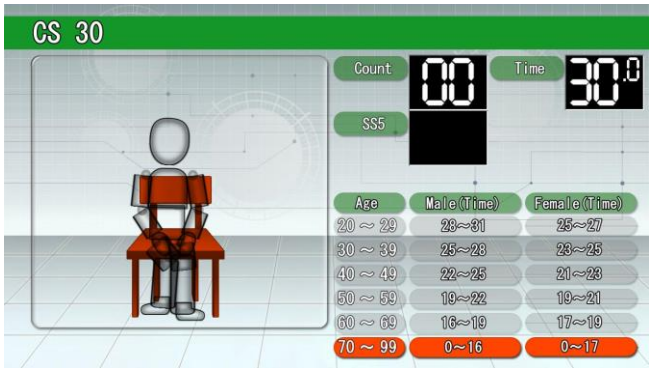
Foot measurement

Measures the time (seconds) user can stand with one leg raised.



Functional Reach Test

Measures the distance user can extend his arm forward as far as possible from straight-up position.



CS30

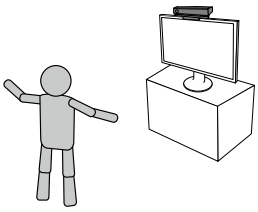
Stand up and sit down on a chair as many times as you can for 30 seconds.

Movement visualization

Move your hands around you. Displayed numbers and colors shows how far you can reach.

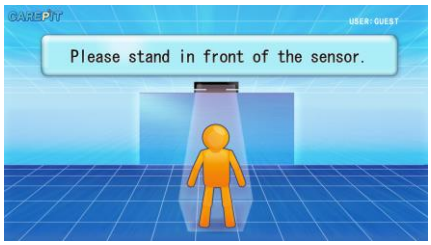
CAREPIT® - Preparations and settings -

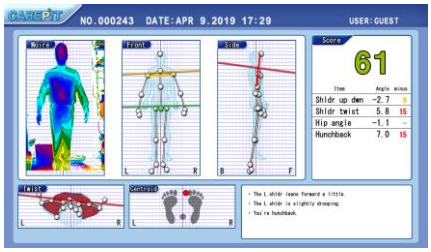
① Check the sensor position and angle



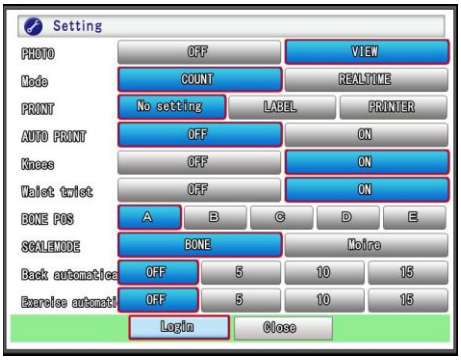
Set the height of the sensor from 90 cm to 110 cm from the floor.
Place a standing position mark around 160 cm from the sensor.
Make sure that the sensor is not leaning left or right, and directed straight to the standing position mark.

② Start CAREPIT®





③ Settings confirmation

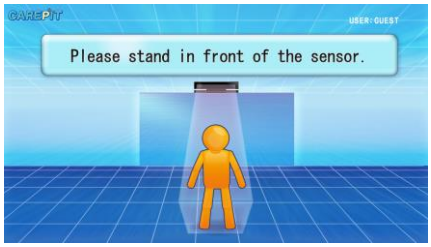


After launch "CAREPIT"®, press “H” on the keyboard or 9 on the numeric keypad to display the Settings screen.
Make desired settings and click "Close".

Photo	Display / not to display a photo from the camera.
Mode	Switch between the “Countdown” mode which displays the measurement result screen, and the “Real time” mode where the screen changes according to the actual movement.
PRINT	Choose from three options: No setting, LABEL and PRINTER.
AUTO PRINT	In “Countdown” mode automatic print of measurement results can be enabled or disabled. Be sure printer is connected if you choose ON. ※ You can print in OFF mode by using 2D-code reader.
Knees	Enable / disable skeleton recognition function below your knees. Choose OFF if it difficult for the sensor to recognize in case of long skirts etc.
Waist twisting	Enable / disable displaying a result for “Waist twisting”.
SCALE MODE	Specify whether to fit to the skeleton recognition or to Moire display.
Back automatically	Enable / disable auto return to measurement after getting a result (choose from OFF, 5, 10 or 15 seconds).
Auto start	After measurement the exercise game will be started according to result.

CAREPIT® - How to measure -

④ Adjust the position

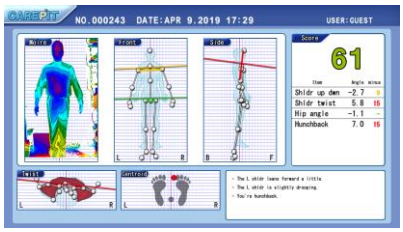


When the “Please stand in front of the sensor” title appears, stand before the sensor and follow instructions on the screen.

⑤ Measurement start

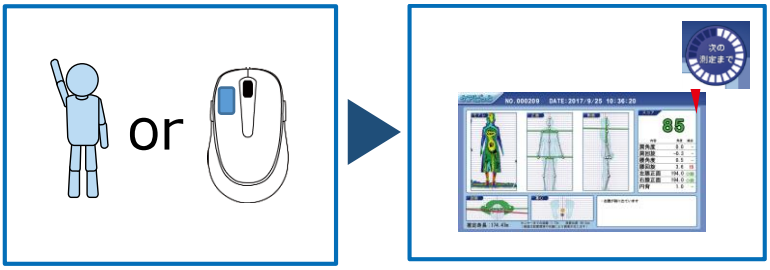
When you take the right position before the sensor, countdown will start. Please don’t move for 3 seconds.

⑥ Result screen



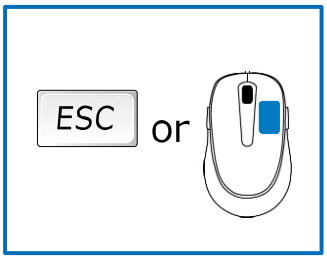
After 3 seconds the measurement result screen will appear. Please see the next page for the correct understanding.

⑦ To the next measurement



The counter will be displayed on the upper right of the monitor when the user raises one hand for 5 seconds or hold down the left button of the mouse, so the next measurement will be performed.

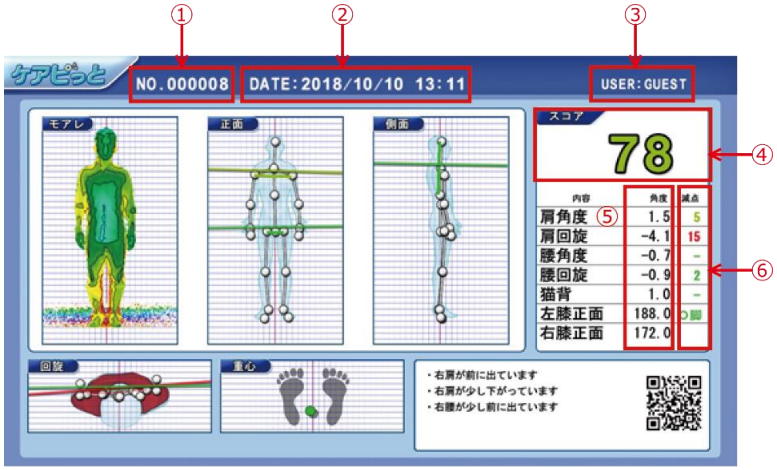
⑧ Ending operation



When you click the ESC key on the keyboard or the right button of the mouse, the CAREPIT® end screen will be displayed. Please select either "End Confirmation", "Power OFF" or "Restart".

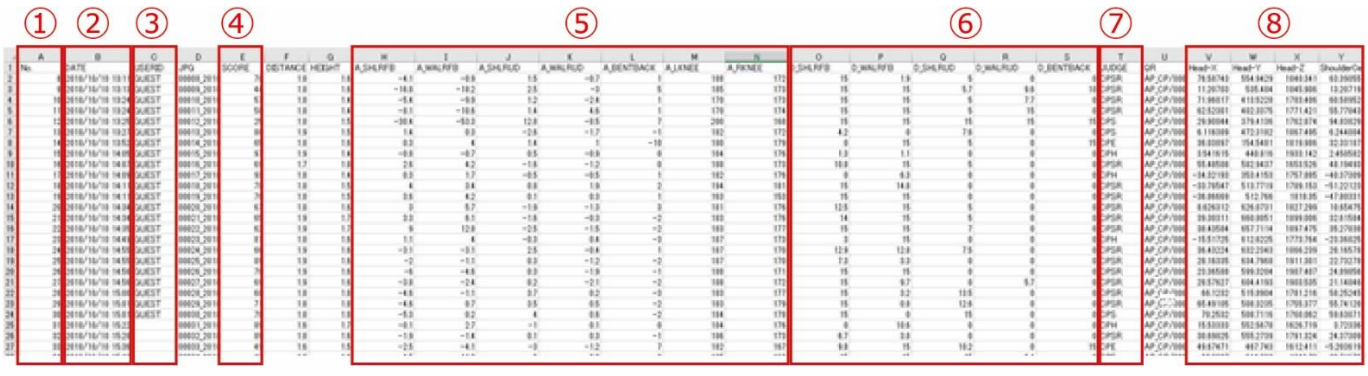
CAREPIT® — Screen explanation —

Measurement results



①	Number	Displays the number of the photo. Check the picture linked to the log.
②	Date	Compile data regarding events, etc., you can extract it based on date.
③	ID	Aggregate data individually by using this information.
④	Score	100 points is maximum.
⑤	Measured part Angle	Displays the angle of each measured part. A_SHLRFB: Shoulders twisting　A_WALRFB: Waist twisting A_SHLRUD: Shoulder angle　A_WALRUD:Waist angle　A_BENTBACK:Back distortion　A_LKNEE: Left knee front　A_RKNEE: Right knee front
⑥	Measured part Score	Displays how many points each measured part earned. D_SHLRFB: Shoulders twisting　D_WALRFB: Waist twisting D_SHLRUD: Shoulders angle　D_WALRUD: Waist angle D_BENTBACK：Back distortion
⑦	Measured part Result	Displays the lowest score result depending on each measured part. CPSR: Shoulders twisting　CPS: Shoulders angle　CPHR: Waist twisting CPH: Waist angle　CPE: Back distortion
⑧	Coordinate	X coordinate, Y coordinate, Z coordinate of each point.

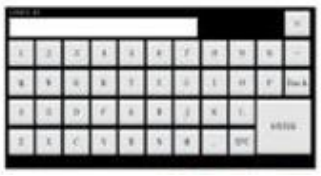
Documents ➡ You can check a log from TANO-CarePit folder.



Log in using ID

Enter your personal ID directly on the keyboard or scan a printed ID code.

Login by keyboard



Press F1 on keyboard. Virtual input keyboard will displayed.

Login to TANO® by entering the ID code.

Your login ID can be used in some games, so it is possible to extract data from external programs, analyze results and perform other operations.

Login by 2D code

Print in advance with a tool for creating the login ID code (see How to Create a two-dimensional code).
Login by scanning the two-dimensional code when you playing a TANO® game or operating in the menu.

How to check your login

Once you login your status will be displayed in the upper right part of the screen. Particularly it is impossible to manage who is exactly playing a content using a multiple skeletal recognition, login feature was designed only for one person.
In cases of other games it could be used to check playing time and in some other operations.

How to log off

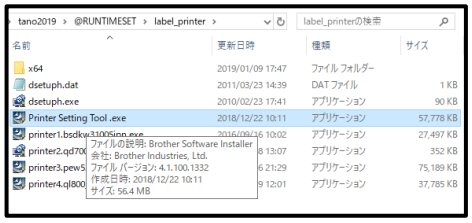
Scan the same login 2D code to log off.
You can also use the special logoff 2D code printed right here.

Log off 2D code

Setting up a label printer

The result which was received by TANO® content such as "CAREPIT"® and "Measurement" can be printed by label printers.
The only compatible label printer is Brother's label printer QL-800 according software specifications.

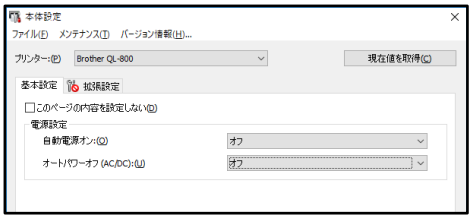
LABEL PRINTER SETUP Drivers setup



Set up drivers from **TANO2019** → **@RUNTEMESET** → **label_printer** or **Launcher** → **LABEL PRINTER SETUP.**
Check the latest drivers on manufacturer`s official home page.
TANO® also can support QL-700 but it is recommended to use QL-800. You can not print when Editor LITE is displayed (USB memory mode). In this case hold down the “EditorLITE ” button to turn it off.

Label printer power management

Label printers perform their own power management, so that some printers may not start up automatically even if the PC is started. If you want a label printer to turn on automatically, please follow the steps below.

①		Install Printer Setting Tool
②		Execute Printer Setting Tool
③		Select QL-800 printer, click Main Settings. Set as below. Auto Power - “ON” Auto Power - “OFF”

Troubleshooting ①

Q1. Displayed menu is not enough

- If sensor is not recognized, only web camera performing content will be displayed.
- The number of displayed content can differ depending on the type of sensor.
- Menu is set up to 1 in Settings section (beginners mode).
- Please see Q2 if menu is not enough even though sensor is connected.

Q2. Sensor`s indicator does not light

When sensor is connected to a PC, power adapter indicator will be white, but sensor indicator will not light until TANO® has not been started.

- If sensor indicator is off when the menu of TANO® is displayed, refer to manual and check contacts of each sensor connection.
- If sensor indicator blinks, see Q6.

Q3. The screen is strange / The mouse cursor does not move more than a certain level of screen

- If the screen size is strange when you start TANO®, there may be a problem with compatibility with the TV, resolution ratio and PC settings. Please check the following points.
- Is the screen resolution set to 1920x1080 (16:9)?
  The recommended screen resolution is 1280x720 or 1920x1080.
  If the size is not as recommended, TV screen may have margins or may be extended beyond.
  If screen is slightly out of place, you can fit it by using screen size setting tool (TANO setting).
- Is the size of the text 100%?
  If the size is not 100%, there may be mouse cursor restrictions.
- Partial influence by some old television
  Some old TVs do not always accept digital signals such as HDMI. In that case, you need to turn on the TV before the PC.
- If the input on the TV side is HDMI1, HDMI2, etc. be careful of the input connection.

Q4. Low performance speed

- Check if TV or monitor is not set to 4K etc. (Please see Q3 and set it as 1920x1080)
- Optimize PC performance setting from the launcher (TANO setting).
- Check if Windows Update or other software are not active.
- If sensor is placed on the table, install it on the front end.
- Check the sensor connection again.
- Confirm that the PC performance is more than 3000 in PassMark
- Install or update your PC graphics drivers

Troubleshooting ②

Q5. No sound

- Volume can be configurated on PC side, TV side and by using TANO settings. Please check each setting.
- Sound may not be played back at D-SUB input etc. or at some HDMI inputs.
- If there are no speakers on TV or monitor side, it will be switched to PC side.
- If you have a TV, PC, or external speakers (audio output function), you can switch using PC's playback settings.

Q6. Sensor blinks, does not light

- If sensor does not turned on at all, it may be due to drivers lack. Please consult your dealer.
- If you change the USB connection port and it became unstable, return connection to the one which was able to operate.
- If it became unstable after Windows Update, roll back the update and restore it.
- Confirm that there are no contact failures at each connection site.
- It may occur due to lack of power. Do not connect sensor`s power cable in the same multi-socket with devices which use strong electric power.

Q6. Two-dimensional code reader does not respond

- Check the connection port.
- Check the charge if you use wireless unit.
- Be aware that the input signal will be lost if you touch by mouse another program or another screen.
- After starting Notepad or a similar program scan with 2D-code reader and check whether characters can be input or not.

Q7. Can not print

- Check that a printer is configurated as standard printer.
- Perform test printing not during playing TANO®.
- A4 printing setting should be basic.

Q8. Sensor does not recognize people

See the section referring to the game using skeleton recognition the manual.

Q9. Sensor does not recognize voices or sounds

See the section referring to the game using voice or sound recognition.

Q10. Sensor does not recognize movement

See the section referring to the game using movement recognition.

Q11. Low performance speed, hard to execute TANO®

See the user guide section about Settings.

TANO