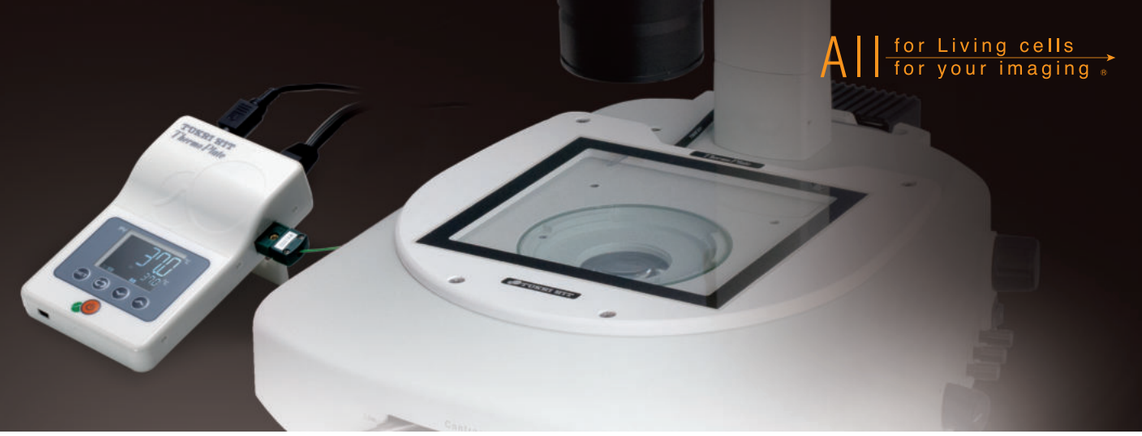
Glass/Metal Heater for microscope

ThermoPlate®

Persues high-end “User-Friendliness”

Ensure more accurate and more reliable thermal control of
the specimens during the observation under a microscope.
Wide product range supports Biotechnology Science and Industry.



All for Living cells for your imaging®

TPi SERIES
New Intelligent ThermoPlate

More downsizing and weight saving of cotroller compared to TP/TPX series.
Multi-function system supports temperature management in various fields such as biological science.

Features

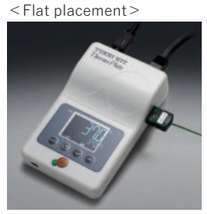
Compact Controller

Miniaturizes the controller to be as small as a smart-phone
It is very useful for space saving in the clean bench.

Controller dimensions：W85×D135×H30 (mm)
Size：232 (cm^3)　＊82% decreased
Weight：170 (g)　＊62% decreased

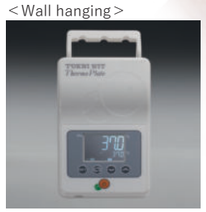
In addition to flat placement (left), stand upright (center) and wall hanging (right) are available with attached mounting hook depending on the location of use. The mounting hook is thin but durable design with a load capacity of 2 kg.

＜Flat placement＞



＜Stand upright＞

＜Wall hanging＞

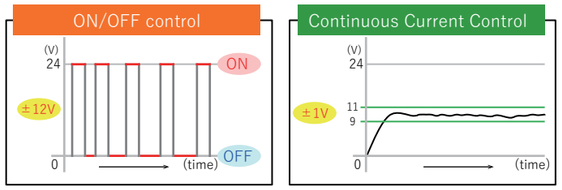


Simple temp. measurement

Attached sterilized sensor can measure the actual temperature and correct the plate suface temperature.
Enable to monitor and log the data of temperature which the sensor measures.

Continuous Current Control

In addition to PID control, Continuous Current Control minimizes the focus drift generated by thermal expansion and it also prevents light intensity change compared to the conventional ON/OFF control.



10 year free-repair service for glass breakage

Applied strengthen glass or hard glass for the glass heater and with 10 year free-repair service for glass breakage.[*1]
No more glass breakage and no more stopping your experiment.

*1. Depending on the model

10year warranty
Stress-Free from glass breakage

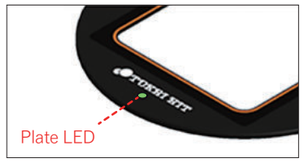
One-touch calibration

Easy calibration to set the suitable PID value on your usage environment is available with just one-touch.

＊Tokai Hit's ThermoPlate is calibrated with the controller and the plate as a set to make the center of the plate temp. to be at 37.0°C when the room temp. is 25°C prior to the shipping.

Plate LED Indicator

Plate LED Indicator visualizes the plate condition without looking at the controller.
Green LED lights up when the glass heater is ready.



Statement of LED	Condition of the plate
Lights up	The plate surface temp. is stable at the setting temp..
Blinks slowly (1.0 sec. period)	Running Calibration.
Blinks fast (0.2 sec. period)	An error occurred.

＊Plate LED is attached to some major models.

Reference movie：ICSI

Glass Heater Line-up

Tokai Hit's Glass Heaters

Temp. setting range：Ambient - 60°C (* Depenging on the model)

Original clear glass heater maintains stable temperature.
Supports the needs in different various fields such as Time-Lapse in low magnification and/or IVF field.

Inverted
Microscope： **IX83/73/81/71/51/70/50, IMT2**
Applicable stage：Cross stage with 110 mm round opening

Model **TPi-110RX** (10) LED
Glass thickness：0.5 (mm)
Plate dimension：ϕ110 (mm)
Heating area：W70×D70 (mm)

Inverted
Microscope： **IX83/73/81/71/51/70/50, IMT2**
Applicable stage：Cross stage with 110 mm round opening

Model **TPi-110R13**
Glass thickness：1.3 (mm)
Plate dimension：ϕ110 (mm)
Heating area：W70×D70 (mm)
＊Ideal for relief contrast observation with a glass bottom dish

Inverted
Microscope： **IX83/73**
Applicable stage：XY manual (IX3-SVR)/motorized (IX3-SSU) stage

Model **TPi-IX3X** (10) LED
Glass thickness：0.5 (mm)
Plate dimensions：W189.5×D155.5 (mm)
Heating area：W174×D127 (mm)

Inverted
Microscope： **IX83/73**
Applicable stage：XY manual (IX3-SVR)/motorized (IX3-SSU) stage

Model **TPi-IX3-13**
Glass thickness：1.3 (mm)
Plate dimensions：W189.5×D155.5 (mm)
Heating area：W155×D130 (mm)
＊Ideal for relief contrast observation with a glass bottom dish

Inverted
Microscope： **IX series**
Applicable stage：XY motorized stage with 160×110 mm opening

Model **TPi-SQX** (10) LED
Glass thickness：0.5 (mm)
Plate dimensions：W160×D110 (mm)
Heating area：W128×D84 (mm)

Inverted
Microscope： **IX series**
Applicable stage：Prior XY motorized stage H117 series

Model **TPi-SQPX** (10)
Glass thickness：0.5 (mm)
Plate dimensions：W160×D110 (mm)
Heating area：W128×D84 (mm)

Inverted
Microscope： **CKX41/31, CK40/30/2**
Applicable stage：XY mechanical stage

Model **TPi-CKX** (10)
Glass thickness：0.5 (mm)
Plate dimensions：W127×D85 (mm)
Heating area：W103×D63 (mm)

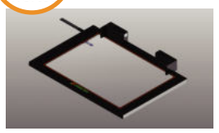
Inverted
Microscope： **CKX41/31, CK40/30/2**
Applicable stage：XY mechanical stage

Model **TPi-CKTS**
Glass thickness：0.5 (mm)
Plate dimensions：W150×D117 (mm)
Heating area：W131×D95 (mm)

Upright
Microscope： **BX, BH2, CX40, CH40/30**
Applicable stage：XY mechanical stage

Model **TPi-SX** (10) LED
Glass thickness：0.5 (mm)
Plate dimensions：W142×D115 (mm)
Heating area：W128×D95 (mm)

Inverted
Microscope： **CKX53X**
Applicable stage：XY mechanical stage



Model **TPi-CKX53X** (10)
Glass thickness：0.5 (mm)
Plate dimensions：W190×D138 (mm)
Heating area：W174×D127 (mm)

Stereo
UNIVERSAL
For various types of illumination bases

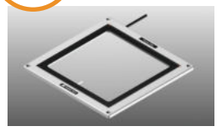
Model **TPi-UNIX** (10) LED
Glass thickness：1.5 (mm)
Plate dimensions：W435×D220 (mm)
Heating area：W400×D175 (mm)
Leg adjustment：75 - 100 (mm)
＊Temp. setting：Ambient - 50°C

Stereo
Microscope： **SZX16/10**
Applicable illumination base：SZX2-ILLB/ILLD/ILLK/ILLT/ILLTQ/ILLTS

Model **TPi-SZX2X** (10) LED
Glass thickness：1.0 (mm)
Plate dimensions：W238×D227 (mm)
Heating area：W162×D152 (mm)

(10) With 10 year free-repair service for glass breakage. LED With Plate LED Indicator.

Stereo
Microscope： **MVX10, SZX12/9/7**
Applicable illumination base：SZX-ILLK/ILLB2/ILLD2



Model **TPi-SZX1**
Glass thickness：1.0 (mm)
Plate dimensions：W205×D205 (mm)
Heating area：W170×D170 (mm)

Stereo
Microscope： **SZX7, SZ61**
Applicable illumination base：SZ2-ST + SZ2-ILA

Model **TPi-SZ2**
Glass thickness：1.0 (mm)
Plate dimensions：W278×D175 (mm)
Heating area：W230×D146 (mm)

Stereo
Large Glass Type
For various types of illumination bases

Model **TPi-W**
Glass thickness：1.5 (mm)
Plate dimensions：W230×D180 (mm)
Heating area：W180×D140 (mm)

Model **TPi-WL**
Glass thickness：1.5 (mm)
Plate dimensions：W310×D220 (mm)
Heating area：W250×D170 (mm)

Stereo
Microscope： **SZ60/40/11**
For illumination bases of SZ60/40/11

Model **TPi-OZX** (10)
Glass thickness：1.0 (mm)
Plate dimensions：W180×D230 (mm)
Heating area：W162×D152 (mm)

Metal Heater Line-up

For oil/water immersion objective and high-magnification objective imaging

Temp. setting range：Ambient - 60°C

Focus drift is caused by thermal expansion from the ordinary ON/OFF regulation.
Tokai Hit is applying Continuous Current Control regulation as standard to minimize focus drift.

Inverted
Microscope： **IX83/73/81/71/51/70/50, IMT2**
Applicable stage：Cross stage with 110 mm round opening

Model **TPi-110RH26**
Plate dimension：ϕ110 (mm)
With a hole (ϕ26 mm)

Inverted
Microscope： **IX83/73**
Applicable stage：XY manual (IX3-SVR)/motorized (IX3-SSU) stage

Model **TPi-IX3H26**
Plate dimensions：W189.5×D155.5 (mm)
With a hole (ϕ26 mm)

Inverted
Microscope： **IX series**
Applicable stage：XY motorized stage with 160×110 mm opening

Model **TPi-SQH26**
Plate dimensions：W160×D110 (mm)
With a hole (ϕ26 mm)

Inverted
Microscope： **IX series**
Applicable stage：Prior XY motorized stage H117 series

Model **TPi-SQH26P**
Plate dimensions：W160×D110 (mm)
With a hole (ϕ26 mm)

Options

Lens Heater
Model **TPiE-LH**
Temp. setting range：Ambient - 45°C
Prevents heat loss from the sample especially when using oil/water immersion objective and high-magnification objective.

Tube Heater
Model **TPiE-TH**
Temp. setting range：Ambient - 50°C
A compact barrel-type heater. Simply wrap the media tubing for heating the media before inserting it to Chamber Unit.

Hot Plate
Model **TPiE-SP/SPE**
Temp. setting range：Ambient - 45°C
Light-weight and thin aluminum thermal plate.
TPiE-SP ：W482×D282 (mm)
TPiE-SPE：W282×D232 (mm)

2-channel controller （Option）

TPiD SERIES

2 plates can be controlled by TPiD controller.
Every combination is possible.

Ex 1 ：Glass (for inverted) + Glass (for stereo)

Model **TPiD-110RX-SZX2X**

Ex 2：Glass (for stereo) + Glass (for stereo)

Model **TPiD-UNIX-UNIX**

Ex 3：Metal (for inverted) + Lens Heater

Model **TPiD-110RH26-LH**

Ex 4：Glass (for inverted) + Hot Plate

Model **TPiD-110RX-SP**

Entire Surface Heating Plate

Temp. control before/after observation

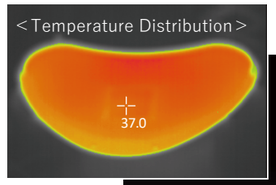
Temp. setting range：Ambient - 50°C

Since the entire surface of the plate is heated, it can manage the temp. of the sample under observation as well as the sample before/after observation. It is very useful when dealing with many samples.

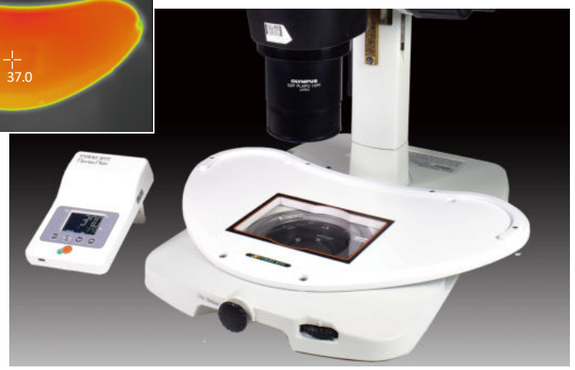
Microscope : **SZX16/10**
Illumination base : SZX2-ILLB/ILLD/ILLK/ILLT/ILLTQ/ILLTS

Model **TPiD-SZX2DX** (10) LED

Glass thickness：0.5 (mm)
Plate dimensions：W357×D243 (mm)
Heating area：＜Glass part＞ W128×D95 (mm)



Enables to keep the vessels warm before and after observation.



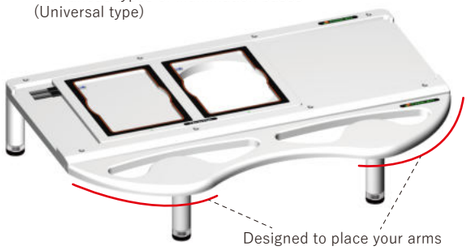
ThermoPlate for Vitrification warming

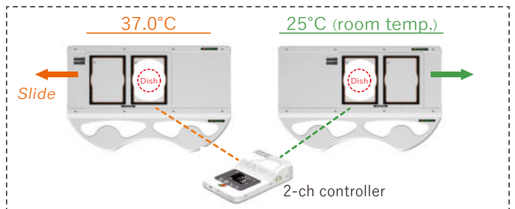
For thawing process of frozen embryo

Temp. setting range：Ambient - 60°C

Model **TPiD-VITX** (10) LED

For various types of illumination bases (Universal type)





Base dimensions：W435×D280 (mm)
Plate dimensions：W230×D148 (mm)
Heating area：W95×D128 (mm) ×2
Glass thickness：0.5 (mm)
Leg adjustment：75 - 100 (mm)

Cooling/Heating Plate * Cooling/Heating Plate is not compliance with CE

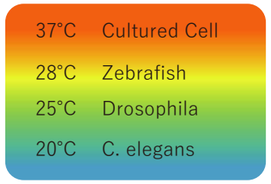
TP SERIES

Best for observing yeast, plants, marine samples, cultured cell, C. elegans and/or Planarian, etc.

Temp. setting range (Plate surface)：4 - 60°C

With electronic cooling element (Peltier module) and original control system, it allows responsive cooling and heating regulation.

* The plate may build the condensation at the bottom when the setting value (SV) of the controller set below 15.0°C (depending on the lab temperature).
The system may not be suitable for
- Long-term imaging
- Rooms with high humidity



Usually, it is difficult to control the temperature around room temperature because of the small temperature difference between the room temperature and the sample temperature. However, Tokai Hit Cooling/Heating Plate has both cooling and heating functions and can control the temperature around the room temperature accurately without any change-over switch.

It also can be used for controlling activation of the common samples which normally cultured at 37.0 degree C by lowering the temperature or observe expressions of samples at each temperature.

Inverted

Microscope : **IX83/73/81/71/51/70/50, IMT2**
Applicable stage : Cross stage with 110 mm round opening

＜With Chiller Unit＞

Model **TP-CH110RBF-C**

Plate dimension：ϕ110 (mm)
With a hole (ϕ20mm)
＊Bottom flat type

Inverted

＜With Chiller Unit＞

Model **TP-CH110R-C**

Plate dimension：ϕ110 (mm)
With a hole (ϕ20mm)
＊Surface flat type

Inverted

Microscope : **IX series**
Applicable stage : XY motorized stage with 160×110 mm opening

＜With Chiller Unit＞

Model **TP-CHSQ-C**

Plate dimensions：W160×D110 (mm)
With a hole (ϕ20mm)

Upright

Microscope : **BX series**
Applicable stage : XY mechanical stage

＜With Chiller Unit＞

Model **TP-CHS-C**

Plate dimensions：W110×D110 (mm)
With a hole (ϕ20mm)