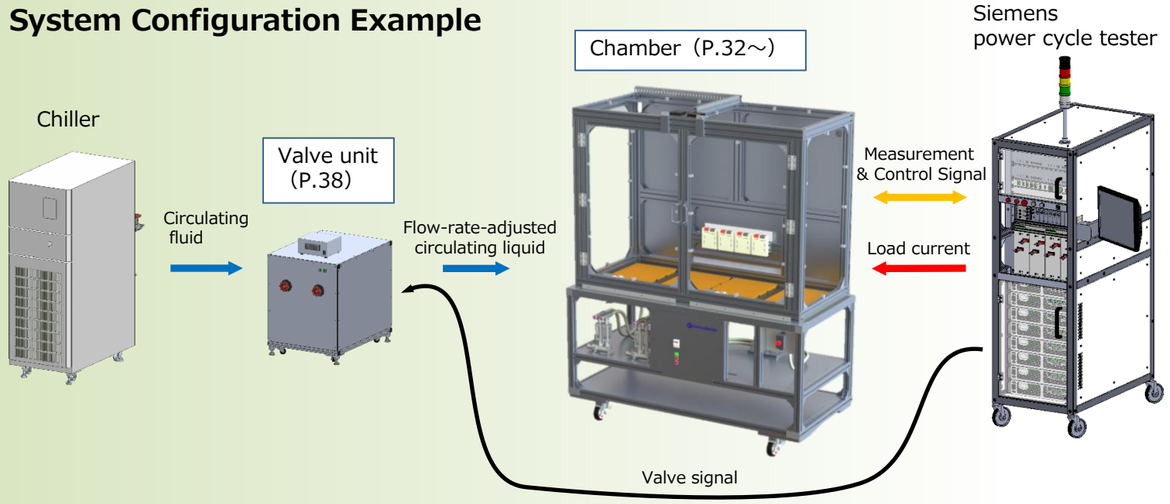
Peripheral devices for Siemens products

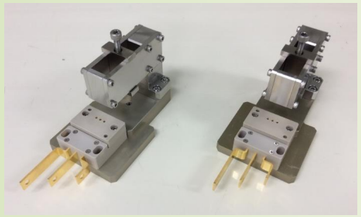
Peripheral equipment for power cycle test systems (PWT)

【Rack-mount type for PWT】

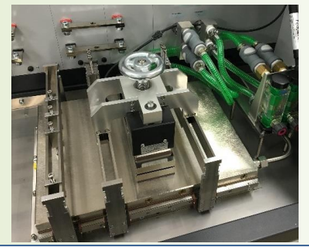
Siemens rack-mounted power cycle test equipment is not equipped for fixing or cooling samples. For this reason, peripheral equipment such as chambers for safe operation and chillers to supply cooling water is required. We offer a variety of peripheral equipment based on customer requirements and experience.

System Configuration Example





High current socket jig (P.39～)

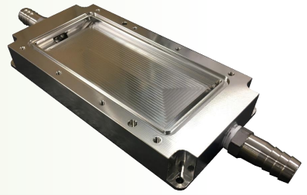


Double-sided cooling and pressure jig (P.42～)

Thermography table (P.48～)

Heat-resistant flexible cable (P.50～)

Torque management fixed jig (P.56～)

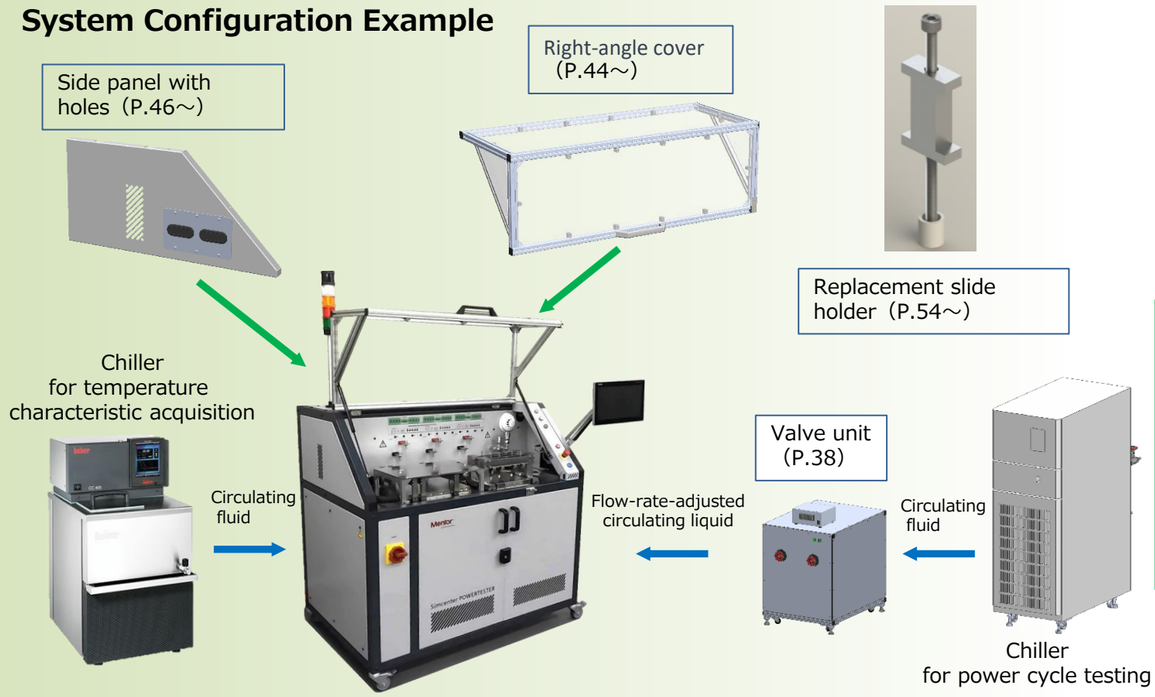


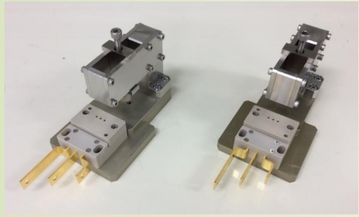
Cold plate for the direct cooling module (P.58)

【 For bureau-type PWT 】

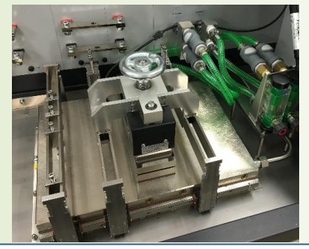
Siemens bureau-type (as we call them) power cycle test systems are equipped with a cold plate for fixing and cooling samples. However, making minor modifications and installing peripheral equipment can significantly improve usability. We offer a variety of peripheral devices based on customer requirements and actual performance.

System Configuration Example





High current socket jig (P.39～)



Double-sided cooling and pressure jig (P.42～)

Thermography table (P.48～)

Heat-resistant flexible cable (P.50～)

Torque management fixed jig (P.56～)

Cold plate for direct cooling modules (P.58)

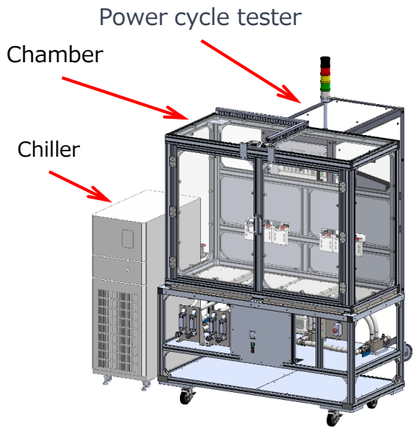
power cycle test systems (PWT)

Chamber for power cycle testing

Essential for cycle testing power devices (IGBT, MOSFET, etc.)

When conducting power cycle tests, in addition to maintenance of essential items such as fixing and cooling of DUTs and connection of current wiring and measurement signal lines, a high level of safety is required to protect operators from high currents and high temperatures.
The "chamber for power cycle testing" realizes these needs at a high level.
We offer a full range of services from safety and security to high-precision measurement.

System Configuration Example



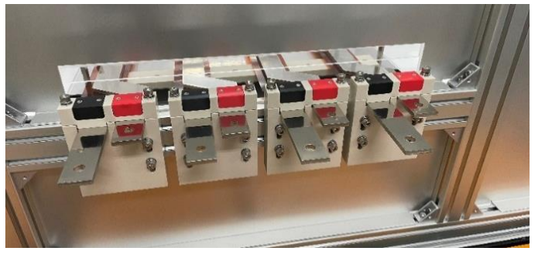
Smoke sensor (optional)

The smoke sensor installed at the upper part of the chamber is of the self-suction type, which can reliably detect the generation of smoke.

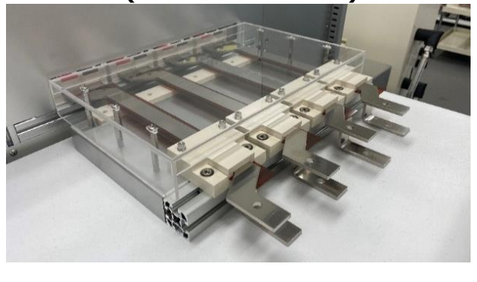
Parallel current wiring busbar

A busbar is laid out at the back of the chamber to which the current supplied by the power tester is connected. It has the same cross-sectional area as the output busbar of the power tester. The connections are designed to be easy to wire by eliminating height differences and shifting the ends back and forth.

Current parallel wiring busbar (in the chamber)



Current parallel wiring busbar (rear of chamber)



This is a view of the power tester connection side at the rear of the chamber. The connection to the power tester is made by parallel wiring, with thin polyimide sheets insulating the electrodes and maintaining just the right distance between them. This minimizes inductance and ensures highly accurate measurements.

Type: Standard Specification

Chamber for Power Cycle Testing (XL Type) : PWT-OC-XL

Standard Specification	
External dimensions	W1524 x D702 x H1900(mm)
Chamber inner dimensions	W1388 x D600 x H1030(mm)
Mass	250(kg)
Power supply	AC100V 50/60Hz 1A
Corresponding circulating fluid	Ethylene glycol solution
Corresponding circulating fluid temperature	25℃（room temperature）～80℃
Flow path branch	None
Flow meter	Analog type (Area-style flow meter)
Circulating liquid temperature sensor	None
Drain pan	Installed inside the equipment + drain valve for discharge
Leak detection	Light sensors are installed in drain pans in the equipment.
Fixation	Casters with lock
Interlock	None

List of options

◆ CT□ : Circulating fluid

0 (standard specification)	Ethylene glycol solution
1	Pure water
2	"Contrime" aqueous solution
3	Silicone oil
4	Fluorinated circulating fluid (e.g. Galden)

CT0（standard specification） : Ethylene glycol solution
Antifreeze and Long Life Coolant (LLC) are also included here.
It prevents corrosion of flow paths and the growth of bacteria and also prevents freezing at temperatures below 0°C.
It is generally used in concentrations of 30-50%.
It is not possible to mix brands as different manufacturers use different colors and formulations.
Concentrations below 80% are no longer hazardous under the Fire Service Act.
Even when diluted, it still contains environmentally hazardous substances, so proper treatment is required when disposing of it. (Our company can help you with this.)

CT1 : Pure water
It is water that is free from impurities.
Deionized water, DI water, and industrial pure water are included here.
If bacteria or algae get into the water, they can multiply at once.
Select this option even if you use tap water.
The impurities contained vary from region to region and can cause problems.

CT2 : "Contrime" aqueous solution
“Contrime” is a chemical that prevents the growth of bacteria and algae.
It is non-hazardous, contains no environmental toxins, and can be diluted and discharged into the sewage system.

CT3 : Silicone oil
With low viscosity, this liquid can be used in a wide range of temperatures from -40°C to 200°C.
It has low surface tension and leaks very easily, so care must be taken when connecting pipes and handling them.
It is classified as a hazardous material under the Fire Services Act.

CT4 : Fluorinated circulating fluid (e.g. Galden)
There are various options for boiling and freezing points, and different temperature ranges in which they can be used.
Generally, they have a heavy specific gravity and poor thermal properties and must be chosen carefully.
The number of chillers that can be used is also limited.

◆ CTR□ : Circulating fluid temperature range

0 (standard specification)	25℃（room temperature）～80℃
1	25℃（room temperature）～200℃
2	-40℃～120℃

CTR0（standard specification） : 25℃（RT）～80℃
If this range is used, no option selection is required.
CTR1 : 25℃（RT）～200℃
Select this option for use in this range.
The circulating fluid is silicone oil.
The pipework is insulated to prevent heat dissipation and hazards at high temperatures.
CTR2 : -40℃～120℃
Select this option for use in this range.
The circulating fluid is silicone oil or fluorinated circulating fluid (e.g. Galden).
Thorough insulation is provided to prevent condensation and freezing at low temperatures and to prevent heat dissipation and hazards at high temperatures.

◆ FD□ : Flow path branch

0～4	Specify the number of branches

FD0（standard specification）～4
The number of flow channel branches :
This is the number of branches when the circulating liquid from the chiller is fed through branches inside the chamber.
This number of branches allows the sample to be fed with the circulating fluid in parallel.

◆ FM□ : Flow meter

0 (standard specification)	Analog type (Area-style Flow meter)
1	Digital display
2	Touch panel display・Flow feedback control

Flowmeter specifications for checking the flow rate of each branched flow path.

FM0（standard specification） : Analog type (Area-style Flow meter)
This type of flowmeter visually checks the position of the floating weight in the gauge.
FM1 : Digital display
Displays flow rate values numerically.
FM2 : Touch panel display・ Flow feedback control
The flow rate is automatically controlled to the set flow rate.
Flow adjustment of the branched circulating liquid requires delicate operation of each valve but is performed automatically by feeding back the flow rate.
The system also follows pressure drop fluctuations during the test.

◆ FT□□□□ : Circulating liquid temperature sensor

(Multiple selections can be made at the same time.)

0 (standard specification)	None
A	Supply side before flow branching
B	Discharge side of flow path assembly
C	Each sample supply side after flow channel branch
D	Each sample discharge side before flow channel assembly

A temperature sensor can be installed in the circulating fluid flow path to log the circulating fluid temperature in a power cycle test system.
You can choose where in the flow path to install the sensor.

FT0（standard specification） : None
If not required, no option selection is necessary.
Option A : Supply side before flow branching
Install at one location before the circulating fluid supplied by the chiller is diverted.
Option B : Discharge side of flow path assembly
Installed at one location after the circulating fluid returning from the sample has been collected
Option C : Each sample supply side after flow channel branch
Installed in each flow path after the circulating fluid supplied by the chiller has been branched.
Option D : Each sample discharge side before flow channel assembly
Installed in each flow channel before the circulating fluid returning from the sample is collected.

List of options

◆ **LP□ :** Drain pan

0 (standard specification)	Installation inside equipment + optical leak sensor + drain hose (2 m)
1	0+Installation of leak pan under equipment & leak detection output

LP0 (standard specification)
A drain pan and optical leakage sensor are fitted inside the device, which shuts down the current output of the power cycle test rig and the chiller in the event of a leakage.
The circulating liquid caught by a leak is drained out through a hose.

LP1
A drain pan inside the equipment is provided as standard but select this option if facility regulations require a leakage pan under the equipment.
An optical leak sensor is installed in the leak pan under the equipment and shuts off the current output of the power cycle test rig and the chiller in the event of a leak.

◆ **FX□□ : Fixing**
(Multiple selections can be made at the same time.)

0 (standard specification)	Caster lock only
A	Fixing adjuster foot
B	Bracket for earthquake-proof anchor

This is how to fix the chamber.
FX0 (standard specification)
Secure with the locks provided by the casters.
Option A
Add adjuster feet to float casters.
Option B
Add brackets so it can be anchored to the floor.

◆ **IL□□□□□□□ : Interlock**
(Multiple selections can be made at the same time.)

A	Door open/close detection
B	Door lock
C	Manual door lock to prevent accidental opening and closing
D	Emergency stop button
E	Smoke detection
F	Indicator light (Patlite)

Various interlocks can be selected for safety.

Option A
Door open/close detection :
Detects door opening and closing and stops the current output of the power cycle test equipment when it opens.
Option B
Door lock :
Mechanically locks the door. Please consult us about the conditions for unlocking.
Option C
Manual door lock to prevent accidental opening and closing :
Manual locks to prevent accidental opening of doors.
Option D
Emergency stop button :
Located in the lower right corner of the chamber, it stops the power cycle test equipment and chiller when pressed.
Option E
Smoke detection :
A self-priming smoke sensor is installed at the top of the chamber to shut down the power cycle test equipment upon detection.
Option F
Indicator light (Patlite) :
Select this option when indicator lights are required by facility regulations, etc. Please consult us for the display color and condition.

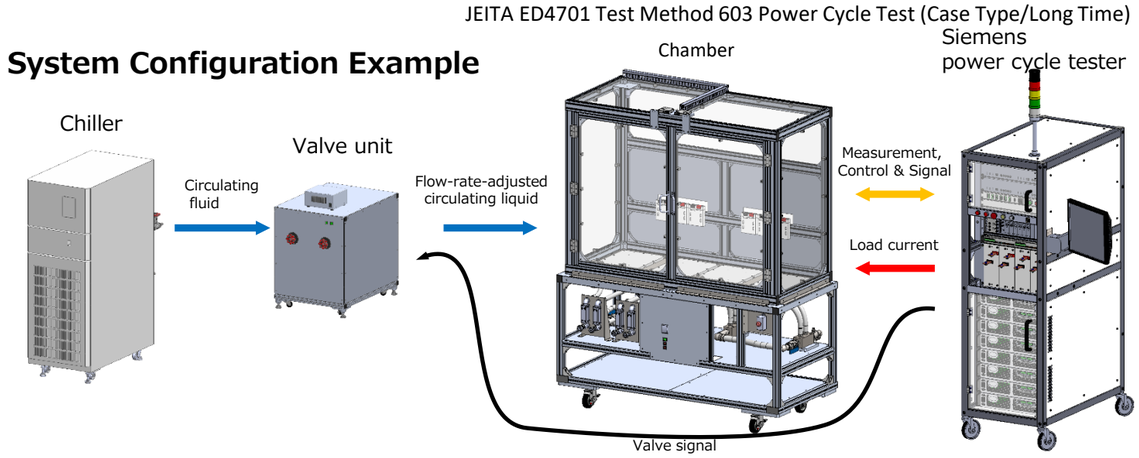
ΔTc For power cycle testing

Coolant flow switching valve unit
for efficient control of Tc

In the long power cycle test*, in which the temperature is varied up to the Tc of the package, it is effective to reduce the test time by reducing the cooling water flow rate of the cold plate during current loading to raise the Tc and increasing the flow rate during no-load to cool down. This valve unit can automatically perform such flow rate adjustments in conjunction with the power cycle tester.

JEITA ED4701 Test Method 603 Power Cycle Test (Case Type/Long Time)

System Configuration Example



High and low flow rates are set in advance by hand valves.
The valve signal from the power cycle tester is used to switch to each flow rate at the appropriate timing.

Type

K2114　Valve unit

Product Specifications

Basic Configuration Specifications	
Supported testers	power cycle tester
Flow path switching	Solenoid valve
Pipe diameter	1in
External dimensions	W450 x D750 x H900(mm)
Mass	70(kg)
Electrical power	AC100V 50/60Hz 0.2A

Q&A

Q : Why do I need a valve unit?
A : Among various power cycle tests, in long power cycle tests that vary up to Tc, it is effective to throttle the amount of cooling water under load to efficiently vary the Tc temperature. Adding a valve unit to the system makes such cooling water volume control possible.

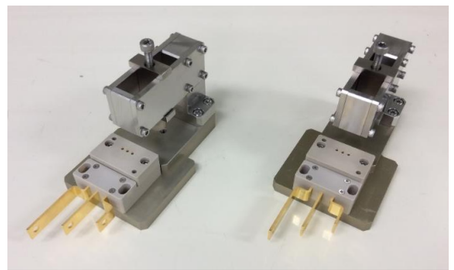
Q : Wouldn't the chiller be overloaded?
A : The piping inside the valve unit is bypassed to minimize the load on the chiller. This piping circuit is the same design as that originally built into the PWT. Even in the unlikely event of a problem with the valve unit or sample clogging, the bypass circuit ensures that the chiller will not be overloaded if it is installed by us.

Q : Will the increased flow resistance cause an insufficient flow rate?
A : The circuit design is the same as the original, but the piping is 25A thick, a standard that provides approximately eight times the flow area. It can also be used to deal with an insufficient flow rate in power cycle testers.

High current socket
Ensures reproducibility and safety even when measuring large currents of 200 A

While the TO220 and TO247 general-purpose packages are compact and easy to use in actual applications, their cooling and current line connections pose challenges when evaluating high currents.
A jig for quantitative, highly repeatable, and safe measurement greatly improves measurement productivity.

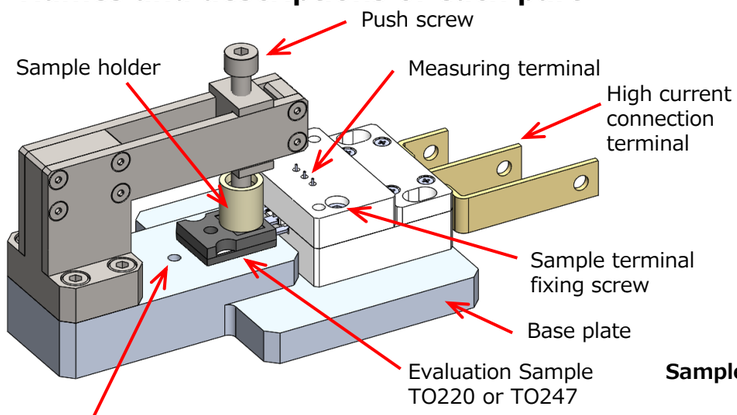
Appearance

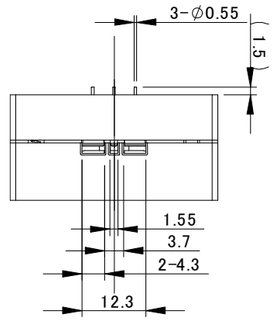


Feature

1. This socket fixture holds both TO220 and TO247 3-terminal packages and can connect a high current of 200A.
2. Samples are secured by screw fixation as usual or by pressing the molded surface from above. Since the entire socket is mounted on an insulated base plate, the sample can be temperature-controlled on a cold plate or in a thermostatic bath without changing the sample's fixation.
3. In the method of pressing the mold surface, the pressing load can be adjusted by controlling the torque to tighten the screw from 0 to 1500 N.

Names and descriptions of each part

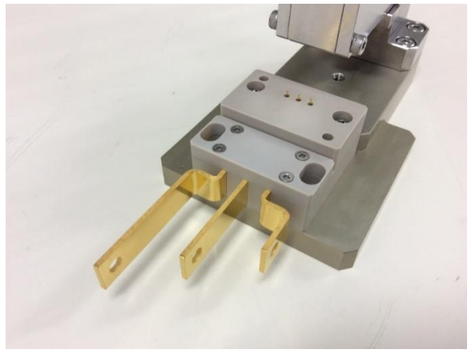




Sample Terminal Insertion Area Dimensions

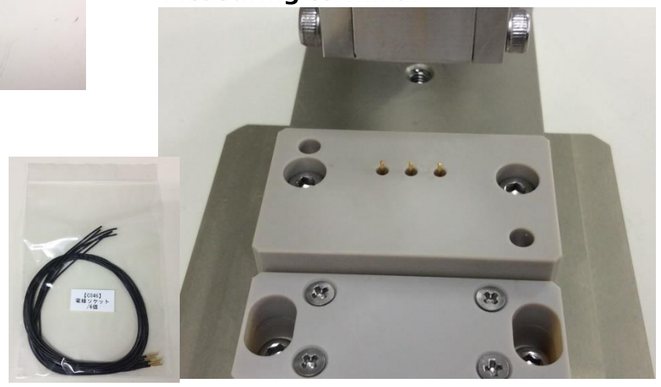
The sample leg is inserted into the socket and pressed against the high current terminal by tightening the fixing screw. The socket is dimensioned so that both TO220 and TO247 can be inserted.
The evaluation sample can be fixed with screws as usual or pressed against the molded surface from above with a jig. There is a screw hole near the sample for fixing a thermocouple so that temperature can be monitored.

High current terminal



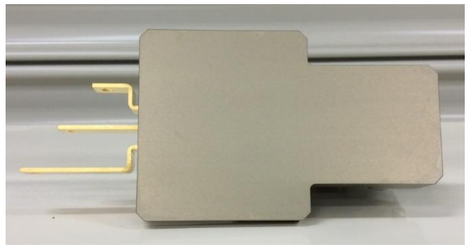
These terminals are large enough to carry 200A of current.
It is constructed to make seamless contact with the sample's terminals.
The high-current terminal supports the underside of the sample's terminals.

Measuring terminal



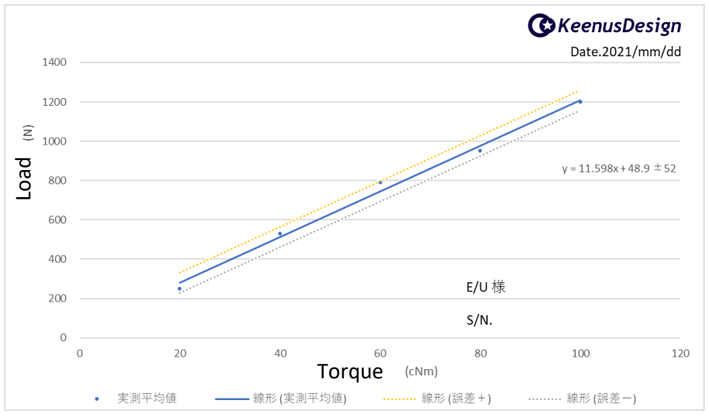
The measurement terminal is a probe pin that contacts the top of the sample's terminal.
A socket with attached lead wires can be inserted into the tip of the connecting terminal on the top of the socket for connection to measuring instruments.

Base plate



The base plate has a high precision surface finish on both sides and is insulated with a sufficiently thick hard anodized aluminum coating. The bottom surface where the cold plate contacts are completely flat.

Torque and load measurement data



This data is measured for each jig to determine how much load is applied to a sample in response to screw tightening. Please use this data for sample fixation management.

Product Specifications

Standard configuration specification	
Dimensions	W70 x D153.5 x H95mm
Mass	0.8kg
Maximum current	200A (Duty50% 8 sec.) 75A (Duty50% 60 sec.)
Heat resistance temperature	200℃
Maximum load	1500N

Model: Option List

HCSJ200-□-□

Base plate mounting hole	0	None
	1	Φ6 x2
Sample mounting hole	A	None
	B	For TO220
	C	For TO247

◆ **Sample mounting hole ：**
TO220 and TO247 can be fixed with screws, but the choice is whether to machine mounting screw holes in the base plate for this purpose.

Option 0
None :
The sample mounting surface is flat because screw holes are not machined.

Option 1
For TO220 :
Machining the screw holes in just the right position for mounting TO220.
If TO247 is to be installed, it will be placed on top of these holes.

Option 2
For TO247 :
Machining screw holes in just the right position for mounting TO247.
No interference when installing TO220.

◆ **Base plate mounting hole ：**
The base plate is intended to be installed on the CP with a pressing jig of the power cycle test equipment.
The mounting holes required for fixing using screws in other locations are machined into the base plate.

Option 0
None :
Since screw holes are not machined, the bottom of the base plate is flat.
A jig is required to press it onto CP, etc.

Option 1
Φ6 x2 :
Drilling holes at both ends of the base plate that can be secured with M5 size screws.

Q&A

Q : What kind of cables can be connected to the high-current terminals?
A : The Φ4.2mm hole allows mounting of round terminals with M4 screws. Our heat-resistant flexible cables are available in selectable thicknesses up to 5.5sq (AWG10).

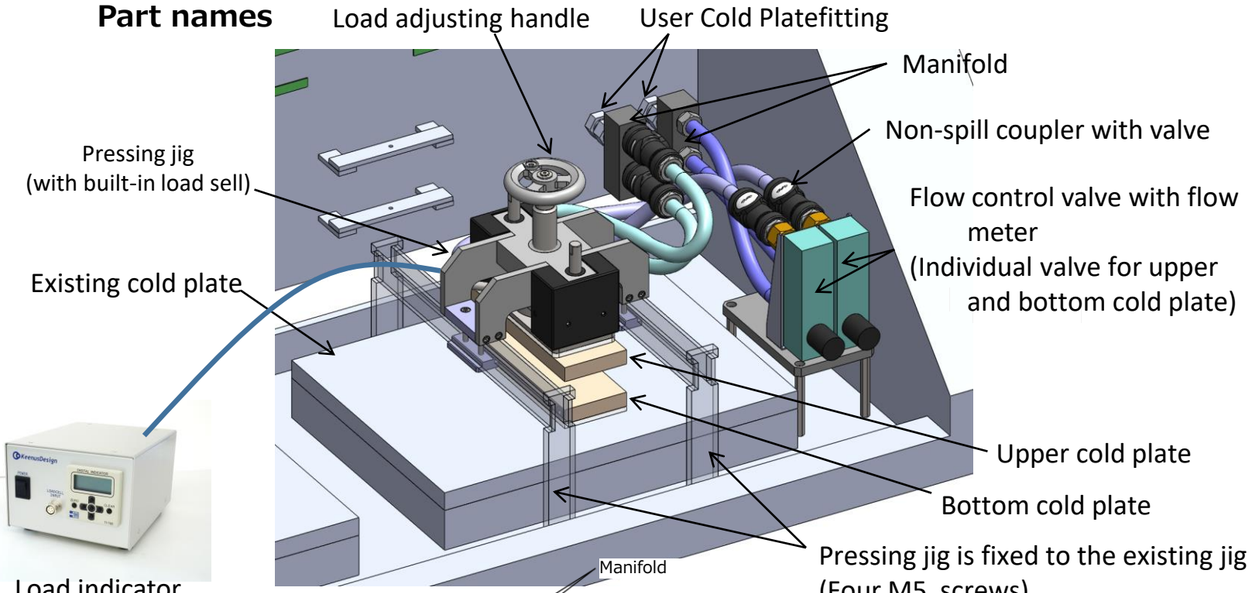
Q : Is hard anodized aluminum sufficient for insulation?
A : Insulation relying on anodized aluminum is prone to short circuits at corners. Conductivity tests are intensively conducted at the corners during shipment. If scratched, there is a high possibility of short-circuit, and therefore, sufficient care must be taken.

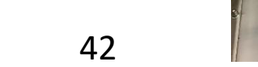
Double-sided cooled pressure jig for power cycle testing

Required for cycle testing of double-sided cooled power devices

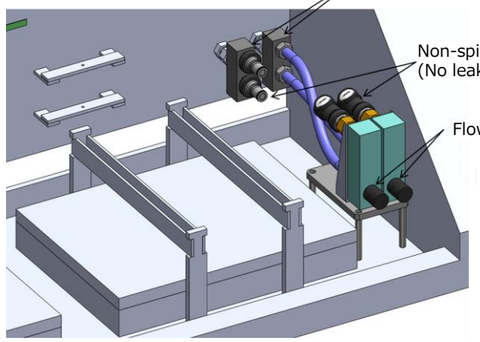
Power semiconductors with double-sided cooling structures are being introduced for automotive and other applications. When performing evaluations, the plates must be pressed against each other from both sides to provide cooling. The plates are mounted on the cold plate fixture built into the power cycle test equipment, and cooling water is supplied to the upper and lower plates separately.

Part names





Load indicator
(Placed outside of the chamber)



When the double-sided cooling and pressure fixture is not in use, it can be removed.
(The equipment shown on the left is permanently installed.)

Equipment mounting status

Product specification

Common specification		
Item	Standardized value	Conditions and Remarks
Display feed rate	1N	
Maximum sample height	30mm	＝Movable vertical stroke
CP width	200mm	
Electrical power	AC100V 50/60Hz	

Model: Option List

PDPT-PWT-□ N-W□ -□

Frow meter	0	Area-style Flow meter
	1	Digital display
	2	Touch panel display Flow feedback control
CP Width	50	50mm
	70	70mm
Load & Accuracy	0240	240N ±1N
	0400	400N ±1N
	0800	800N ±2N
	1500	1500N ±4N
	2500	2500N ±6N

Load & Accuracy :
Option 0240 ～ 2500
The maximum load value that can be applied is 2500N.
Since the accuracy varies depending on the range of the load sensor, select the required accuracy or range.

CP Width :
Option 50, 70
The width of the cold plate is available in two different widths.
Both lengths are 200 mm.
Please select according to the width of your sample.

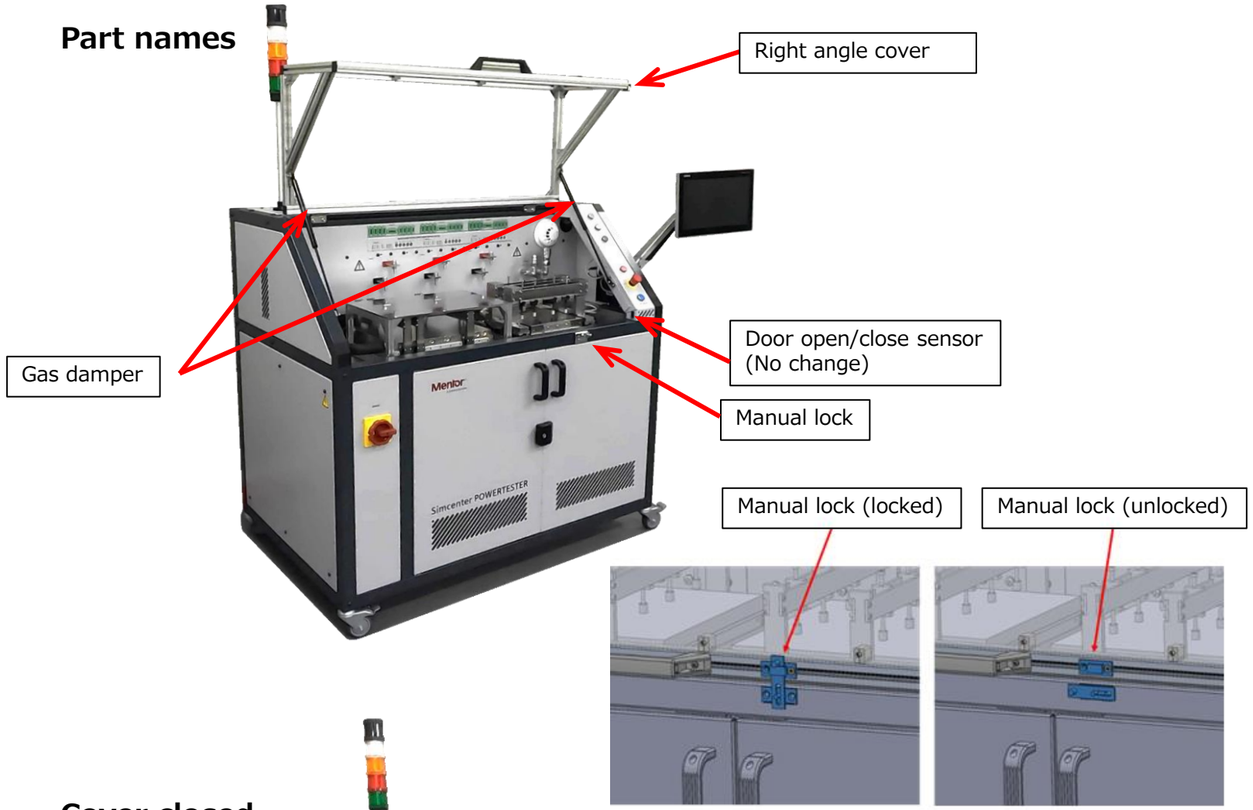
Frow meter :
Flowmeter specifications for checking the flow rate of each branched flow path.
Option 0
Analog type (Area-style Flow meter) :
This is a type of flowmeter that visually checks the position of the floating weight in the gauge.
Option 1
Digital display :
Displays flow rate values numerically.
Option 2
Touch panel display, Flow feedback control :
The flow rate is automatically controlled to the set flow rate.
Flow adjustment of branched circulating liquid requires delicate operation of each valve but is performed automatically by feeding back the flow rate.
The system also follows pressure drop fluctuations during the test.

Right angle cover

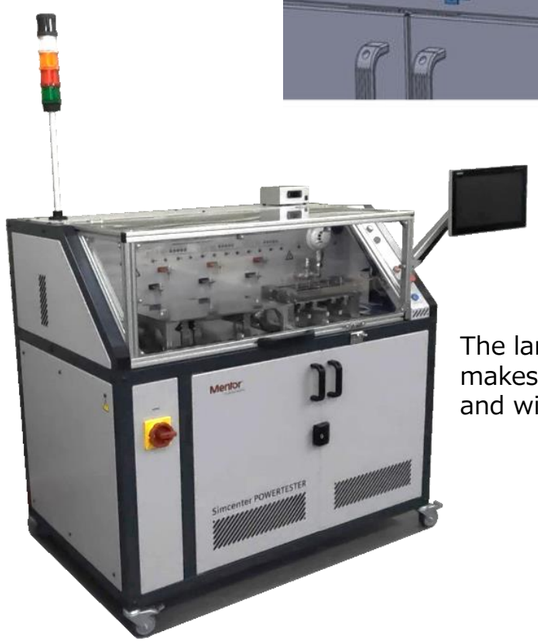
Significantly reduces sample height restrictions and improves workability during wiring

The standard cover of the power cycle test system is laid out at an angle, making it stylish and easy to see inside.
However, the space at height is narrow and it is a little difficult to keep wiring and thermography from hitting the cover.
Replacing this right-angle cover with a more spacious one will improve workability.

Part names



Cover closed



The large interior space makes it difficult for samples and wiring to hit the cover.

Product specification

External dimensions	(Standard) W1205 x D600 x H405 mm	Excluding power assist and door latch
Mass	11 kg	same as above
Usage environment	(standard) 15℃～35℃ (Under non-condensing conditions)	-
Replacement parts	・Cover (frame、panel、handle) ・2 gas dampers	Door open/close sensor unchanged
Option	・Door latch ・Manual lock	-

Model: Option List

PWT-RC-□-□

Manual lock	0	None
	1	With manual lock
latch	0	None
	1	With door latch

Latch :
It automatically locks when the door is fully opened. The cover cannot be closed without manually unlocking it. The operation of a cover that opens upwards is effective in locations where there is an obligation to install a lock.

Option 0
None :
This is the standard specification. If you do not need to lock the door with a door latch, this is the one for you.
Option 1
With door latch :
Select if locking is required when the door is fully opened.
Manual unlocking is required before closing.

Manual lock :
Opening the door stops the current output of the power cycle test equipment.
A manual lock prevents accidental opening of the door.

Option 0
None :
This is the standard specification.
If you do not need manual locking, this is the one for you.

Option 1
With door latch :
Manual unlocking is required before opening the door.

Q&A

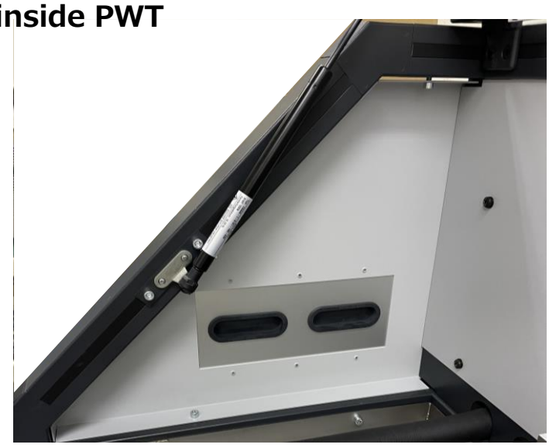
Q : What are the advantages of this cover?
A : By eliminating height restrictions, the user does not have to work to avoid samples and wiring hitting the cover. It also makes it possible to observe samples from directly above with thermography.
Q : Can I install the cover myself?
A : Detailed instructions are provided, and the customer can perform the installation work. However, at least two people are required to do the work. Of course, it is also possible to request us to do the installation work. We recommend that you ask us to do the installation for you.
Q : Will I receive support from Siemens or Mentor?
A : We guarantee the cover.
Replacing the cover will not affect support from Siemens or Mentor.

Side panel with holes

Sensor lines and piping for cooling water can be drawn in.

The Siemens Power Cycle Test Equipment is not intended to have wiring or piping drawn in from the outside. Replacing the side panels provides space for a cohesive amount of wiring and piping to pass through, allowing the cover to be securely closed for safe measurements.

View from inside PWT



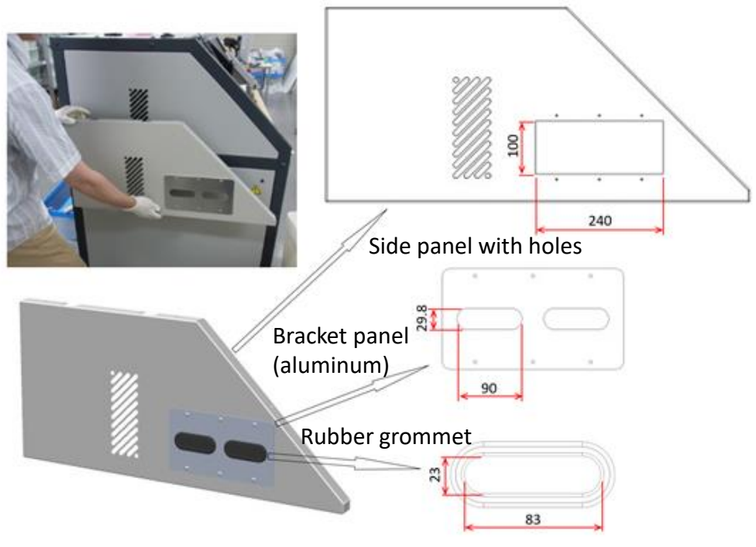
- Sensor lines
- Power lines
- Piping for cooling water

and other necessary items are generally large enough to pass through.

Feature

1. Replaces standard side panels and provides holes for wiring and plumbing to pass through inside the PWT device.
2. The holes are fitted with rubber grommets to minimize gaps for wiring, etc.

Dimensional drawing



Product specifications

External dimensions	（standard）W797 x D41.5 x H367 mm
Mass	3.6 kg
Panel section hole dimensions	W240 x H100 mm
Bracket Panel Hole Dimensions Rubber grommet t0.5 Membrane section	W90 x H29.8 mm （both ends R） W83 x H23 mm （both ends R）

Model: Option List

PWT-LP- □ -□

On-site installation	0	None（Installed by customer）
	1	On-site installation
hole modification	0	None
	C	Support for customization

hole modification :
This is about the holes drilled in the panel.

Option 0
None :
Standard specifications.
Option C
Support for customization :
If you need to change the dimensions of the hole, please select it and consult with us about the contents.

On-site installation :
On-site installation of panels by our company.

Option 0
None（Installed by customer）:
Customers are required to install the equipment by themselves according to the attached instructions.
Option 1
On-site installation :
Our engineers will perform the installation on site.

Q&A

Q : What are the benefits of this panel?
A : The sample installation area (working area) for the power cycle test has a cover and a safety design that prevents current output unless the cover is closed. However, since there are no holes for wiring to the outside, wiring for temperature sensors, etc. must pass through a small gap between the cover and the main unit. By replacing the cover with this panel, sufficient wiring space can be secured so that not only wiring for temperature sensors, etc. but also cooling water piping and other external devices required for the application can be connected to the sample.

Q : Can I install the panels myself?
A : Detailed instructions are provided, so the customer can perform the installation work. However, there will be some work involved, such as removing the rear panel and the valve handle to do so. Of course, it is also possible to have us perform the installation work. We recommend that you ask us to do so.

Q : Will I receive support from Siemens or Mentor?
A : We will warranty the panel. Replacing the cover will not affect support from Siemens or Mentor.

Thermography table

From rough positioning to fine adjustment, easy with a single lever

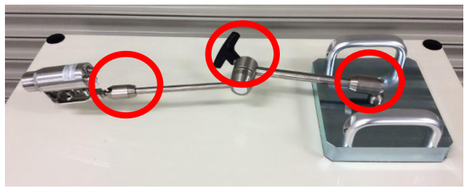
In the evaluation of electronic components, it is important to understand temperature changes in detail, and thermographic observation is a very efficient way to do so.
However, is it time-consuming to fix them in place?
With this thermography stand, everything from coarse positioning to delicate adjustment can be done in a matter of seconds.

Feature

1. This is a stand with an arm that allows the thermal imaging camera to be fixed in any desired position.
2. Images are checked by connecting a PC. The small size of the area near the camera allows samples inside the interlock cover to be observed in the immediate vicinity during operation.
3. Only one lever is needed to fix and release the three joints, allowing for quick fine-tuning.

Adjustment method (video also available)

The arm on which the thermal imaging camera is mounted has three joints, each of which can move freely. By turning a lever on the middle joint, all joints can be locked and released. The center of gravity is balanced to ensure stability even in large overhang positions such as the one shown



You can watch a video of the actual adjustment.

https://youtu.be/kY4RWZuGkvU

Thermography Table Siemens Power Cycle Test Equipment Options

Product specification

Standard Configuration Specifications	
Arm length	Approximate range of vertical observation of thermography from the center of the base plate Radius 430mm
Base plate dimensions	W200 x D170 x t30mm Handle Height 53mm
Mass	9.6 kg Thermography 0.2 kg
Ambient operating temperature	0℃～50℃

Model: Option List

TS- □ - □ - □

USB cable	0	1m
	1	3m
	2	5m
Thermography Calibration	0	None
	1	Calibration certificate issued
Thermography	0	Optris Xi400 standard angle of view
	1	Optris Xi400 Narrow angle of view
	2	Optris Xi400 Wide angle of view
	3	Optris Xi400 ultra-wide angle of view
	C	Otherwise

◆ **Thermography :**
Specifications of the thermal imaging camera to be installed.
You can choose from the Xi400 series from Optris Germany.

Option 0 ～ 3
Optris Xi400 :
Select the appropriate lens angle of view for observing the sample.

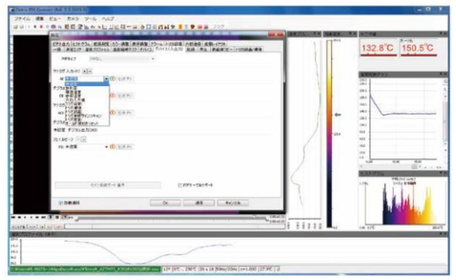
Option C
Otherwise :
Please get in touch with us if you would like to install thermography other than the Optris Xi400 or a model you already own.

◆ **Thermography Calibration :**
Whether or not a calibration certificate is issued for the thermal imaging camera to be installed.
Option 0
None :
A calibration certificate will not be issued.
Option 1
Calibration certificate issued :
Please select if a calibration certificate is required.

◆ **USB cable :**
Images from the Optris Xi400 series are observed, recorded, and processed with dedicated software by connecting a dedicated USB cable to a PC.

Option 0 ～ 2
1 ～ 5m :
Select a suitable length.

We use thermography that is suitable for observing electronic components.



The Xi400 series from Optris of Germany is used as the standard product. The high resolution of 382x288pix is suitable for observing electronic components.
Everything from image display and focus adjustment to the power supply can be done from a PC connected via USB.
The included software enables observation while analyzing the thermal image.
Other thermography systems than Optris are also available. Please contact us.

Heat-resistant flexible cable

The optimal cable can be selected from graphs of current values and rising temperatures.

Rated voltage: 600V or less Operating ambient temperature -60 to 200°C
Flexible, flexible fluoropolymer insulated wire rod with excellent heat, cold, water, oil, chemical, flame, and spatter resistance.

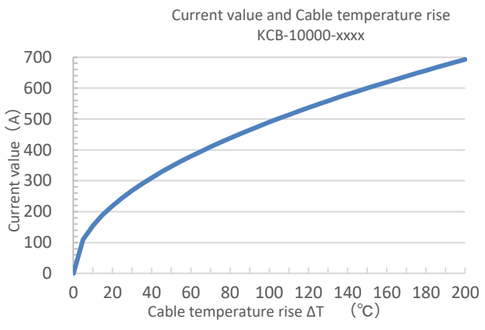
Product Specifications

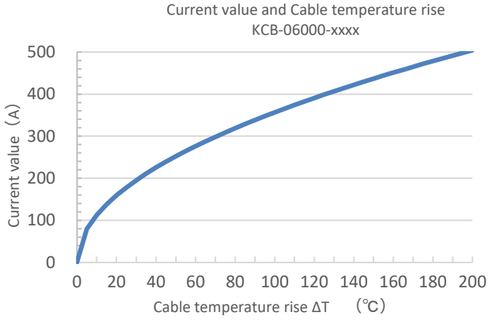
Item number	Size	Conductor		Coating thickness	Standard Finishing diameter	Electrical characteristics		
		Configuration	OD	Flexible fluoropolymer		Conductor resistance 20℃	Voltage test	Insulation Resistance 20℃
	SQ [mm^2]	wires/mm	mm	mm	mm	Over Ω/km	V/min	Over MΩ･km
KCB-00075-xxxx	0.75	30/0.18	1.1	0.5	2.2	25.8	AC1500	2500
KCB-00125-xxxx	1.25	50/0.18	1.5	0.55	2.6	15.5	AC1500	2000
KCB-00200-xxxx	2	37/0.26	1.8	0.6	3	9.91	AC1500	1500
KCB-00350-xxxx	3.5	45/0.32	2.5	0.6	3.7	5.38	AC1500	1500
KCB-00550-xxxx	5.5	35/0.45	3.1	0.7	4.5	3.5	AC1500	1500
KCB-00800-xxxx	8	50/0.45	3.7	0.7	5.1	2.45	AC1500	1500
KCB-01400-xxxx	14	88/0.45	4.9	0.7	6.7	1.39	AC1500	1500
KCB-02200-xxxx	22	7/20/0.45	7	0.8	9.2	0.857	AC1500	1000
KCB-03800-xxxx	38	7/34/0.45	9.1	0.9	12	0.505	AC1500	900
KCB-06000-xxxx	60	19/20/0.45	11.6	0.9	14.1	0.316	AC1500	700
KCB-10000-xxxx	100	19/34/0.45	15.2	1	17.8	0.186	AC1500	600

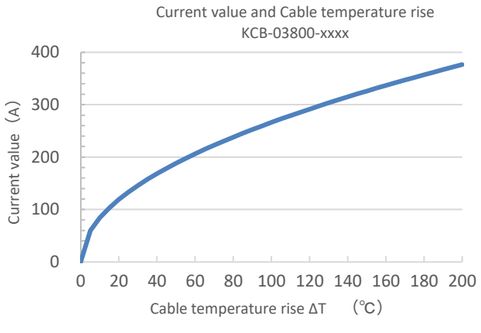
xxxx = length(mm) minimum length 0200(mm)

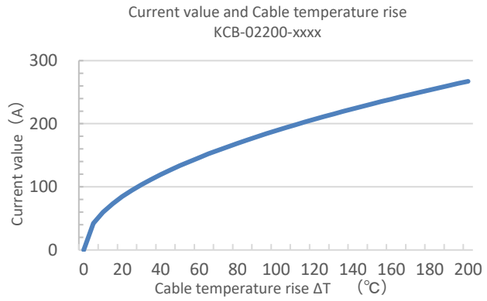
Delivered with round terminals crimped on both ends.

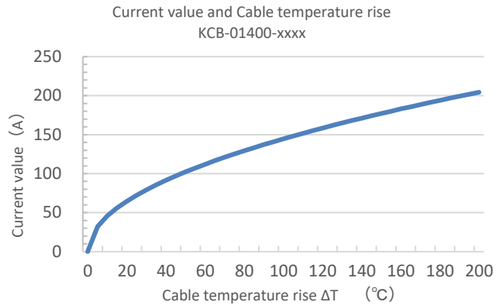
Even SQ100 bends and holds so far

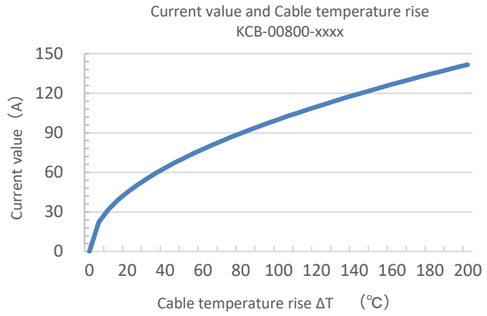


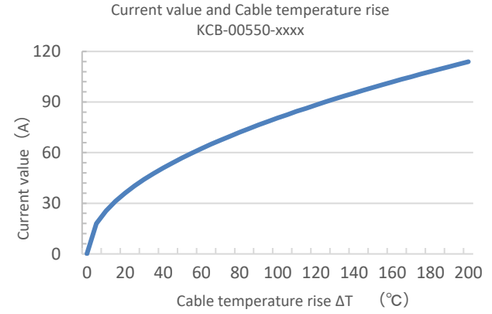


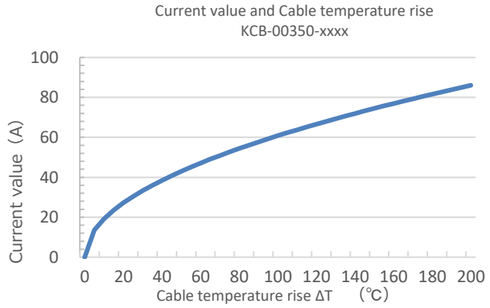


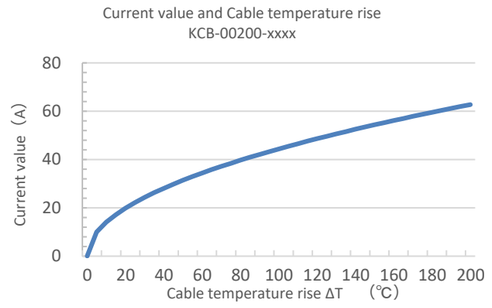


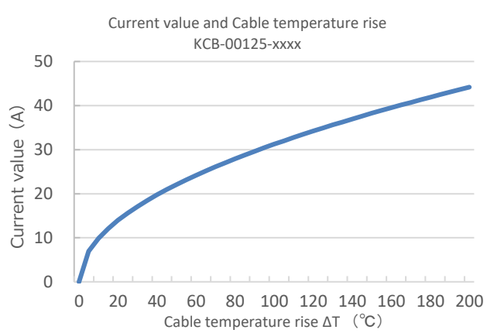


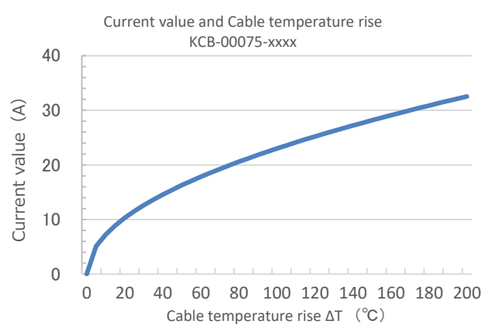












power cycle test systems (PWT)

Model: Option List

KCB- [ ] - [ ] - L - R

Crinmped terminal (screw diameter)	00075	3, 4, 5, 6, 8
	00125	3, 4, 5, 6, 8
	00200	3, 4, 5, 6, 8
	00350	4, 5, 6, 8, 10
	00550	4, 5, 6, 8, 10
	00800	5, 6, 8, 10
	01400	6S, 8S, 10
	02200	6S, 8S, 10
	03800	6S, 8S, 10S
	06000	6S, 8S, 10S
	10000	8S, 10S

Cable length	XXXX	0400(mm) or more, up to 2000

Series number (conductor thickness)	00075	0.75 mm^2
	00125	1.25 mm^2
	00200	2 mm^2
	00350	3.5 mm^2
	00550	5.5 mm^2
	00800	8 mm^2
	01400	14 mm^2
	02200	22 mm^2
	03800	38 mm^2
	06000	60 mm^2
	10000	100 mm^2

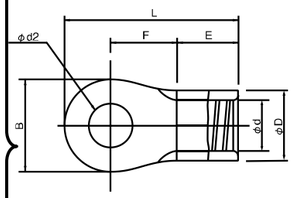
◆ **Series number (conductor thickness) :**
The thickness of the conductor can be selected.
Select a suitable thickness by referring to the current value and temperature rise graph on the previous page.
Option 00075 ～ 10000
0.75 mm^2 ～ 100 mm^2 :
The cross-sectional area of the conductor.

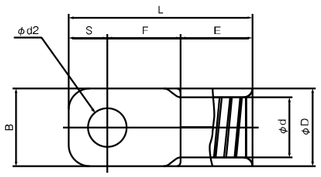
◆ **Cable length :**
Option 0400 ～ 2000
0400(mm) or more, up to 2000 :
Specify the required cable length.

◆ Crimped terminal (screw diameter)
You can specify the size of the terminals to be crimped on both ends of the cable.
The size that can be selected is determined by the thickness of the cable.
The number represents the nominal diameter of the screw, so select according to the screw to be used.
Both ends can be specified separately.
Refer to the next page for terminal dimensions.

Crimped terminal dimensions

Series	Hole nominal diameter	Φd2	B	L	F	E	ΦD	Φd	S
00075	3	3.2	5.5	12.0	4.7	4.5	3.5	1.7	
	4	4.3	8.0	15.6	7.1	4.5	3.4	1.7	
	5	5.3	8.0	15.6	7.1	4.5	3.4	1.7	
	6	6.4	12.0	20.2	9.7	4.5	3.4	1.7	
	8	8.4	12.0	20.2	9.7	4.5	3.4	1.7	
00125	3	3.2	5.5	12.0	4.7	4.5	3.5	1.7	
	4	4.3	8.0	15.6	7.1	4.5	3.4	1.7	
	5	5.3	8.0	15.6	7.1	4.5	3.4	1.7	
	6	6.4	12.0	20.2	9.7	4.5	3.4	1.7	
	8	8.4	12.0	20.2	9.7	4.5	3.4	1.7	
00200	3	3.2	6.5	12.7	4.9	4.5	4.2	2.3	
	4	4.3	8.5	16.5	7.7	4.5	4.2	2.3	
	5	5.3	9.5	17.0	7.7	4.5	4.2	2.3	
	6	6.4	12.0	21.5	11.0	4.5	4.2	2.3	
	8	8.4	12.0	21.5	11.0	4.5	4.2	2.3	
00350	4	4.3	9.5	19.5	8.2	6.5	5.6	3.4	
	5	5.3	9.5	19.5	8.2	6.5	5.6	3.4	
	6	6.4	12.0	23.0	10.5	6.5	5.6	3.4	
	8	8.4	15.0	28.0	14.0	6.5	5.6	3.4	
	10	10.5	15.0	28.0	14.0	6.5	5.6	3.4	
00550	4	4.3	9.5	19.5	8.2	6.5	5.6	3.4	
	5	5.3	9.5	19.5	8.2	6.5	5.6	3.4	
	6	6.4	12.0	23.0	10.5	6.5	5.6	3.4	
	8	8.4	15.0	28.0	14.0	6.5	5.6	3.4	
	10	10.5	15.0	28.0	14.0	6.5	5.6	3.4	
00800	5	5.3	12.0	23.5	9.1	8.4	7.1	4.5	
	6	6.4	12.0	23.5	9.1	8.4	7.1	4.5	
	8	8.4	15.0	29.5	13.6	8.4	7.1	4.5	
	10	10.5	15.0	29.5	13.6	8.4	7.1	4.5	
01400	6S	6.4	10.0	26.5	11.5	10.0	9.0	5.8	
	8S	8.4	12.0	27.5	11.5	10.0	9.0	5.8	
	10	10.5	16.0	32.5	14.5	10.0	9.0	5.8	
02200	6S	6.4	11.8	31.4	13.5	12.0	11.6	7.7	
	8S	8.4	11.8	31.4	13.5	12.0	11.6	7.7	
	10	10.5	17.5	36.3	15.5	12.0	11.6	7.7	
03800	6S	6.4	15.3	39.0	18.3	13.0	13.4	9.4	
	8S	8.4	15.3	39.0	18.3	13.0	13.4	9.4	
	10S	10.5	15.3	39.0	18.3	13.0	13.4	9.4	
06000	6S	6.4	16.0	49.5	20.0	18.5	15.6	11.4	11
	8S	8.4	16.0	49.5	20.0	18.5	15.6	11.4	11
	10S	10.5	16.0	49.5	20.0	18.5	15.6	11.4	11
10000	8S	8.4	22.0	53.0	22.0	19.0	22.5	16.4	12
	10S	10.5	22.0	53.0	22.0	19.0	22.5	16.4	12





Q&A Q: Why are your cables so flexible?
A: Because we have devised the thickness, number of conductors, and weaving method of the conductors, and also used flexible materials for the sheath material.

Q: Can I choose different crimping terminals at both ends?
A: Yes, it is possible. The terminals that can be selected are determined according to the thickness of the cable. Both ends can be selected individually from among them.

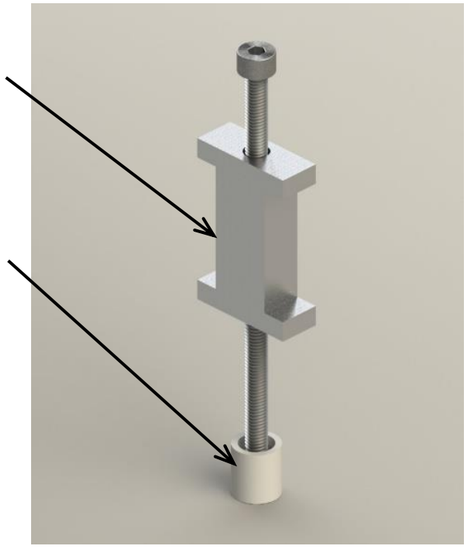
Replacement sliding holders

Improved material and surface treatment of genuine push-pieces to prevent seizure

These holders are replacement parts for the genuine Siemens 30x40 cold plate pressing jig. The genuine product tends to have trouble with the screws seizing to the holder body. Our frames are made of a material that does not hold, so the same problem will not occur after replacement.

These are all sliding holders

Part names



Feature

1. Since the screw is made of high-strength steel and the frame part is made of stainless steel, seizure will not occur.
2. The resin bushing at the tip is inlaid with heat-resistant high-strength resin. Since no adhesive is used, the sample is not subjected to excessive load and can be replaced if damaged.

Product specification

Standard Configuration Specifications	
Dimensions	W26 x D10 x H110mm
Mass	65g
Heat Resistance Temperature	200℃
Maximum torque	1.2Nm (120cNm) *At this torque, a pressing force of about 1500 N is generated. Since the load capacity of Siemens CP rails is 1500 N Please be careful when using multiple rails.

Model

K1609-06101　Replacement slide holder
K1609-03001　Resin bush

Q&A

Q: A genuine push holder was damaged.
A: There are two major types of breakage.
(1) The screw has stopped turning.
The screws are seized inside the block due to an unbalanced load, etc.
Our products prevent seizure by devising the material, treatment, and structure.

(2) The resin bushing at the end of the block is broken.
Since this is a part that is inevitably subject to load, it is easily damaged.
Our products can be purchased or replaced only with resin bushing.

Q: What is the difference from the genuine Siemens product?
A: The dimensions are the same. The materials and surface treatment of each part have been devised to prevent breakage and seizure. Incidentally, genuine Siemens products are not supplied as replacements.

Q: Can I replace it by myself?
A: If you have a hexagonal wrench, you can replace it relatively easily.

Torque management jig for power modules

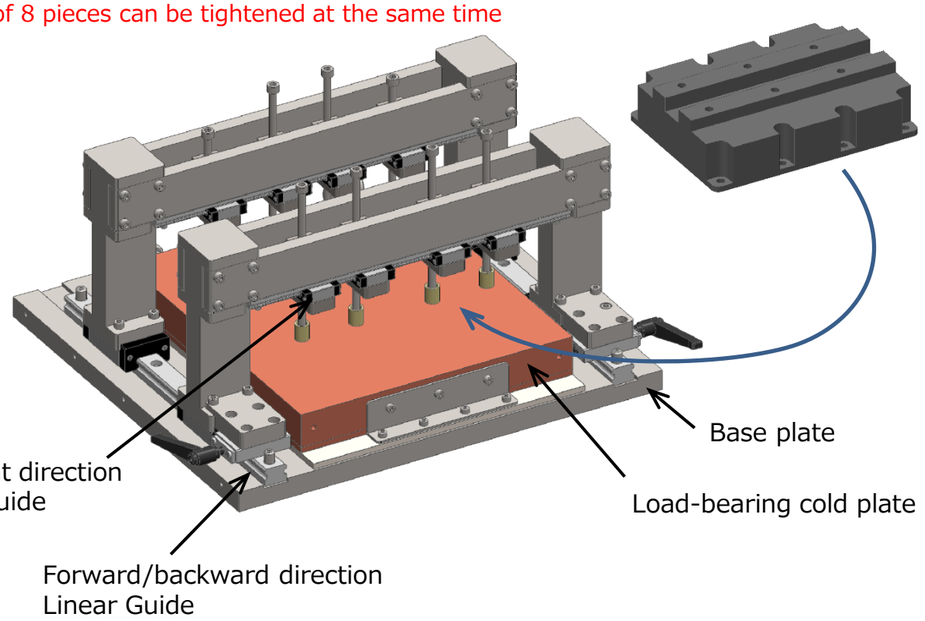
Controls the force applied to the module and improves measurement repeatability

This set includes a cold plate that can be used for large power modules and a jig to fix the module on the plate. By controlling the tightening torque, the pressing force on the module can be managed.

Part names

Tightening torque up to 4 Nm
A total of 8 pieces can be tightened at the same time

Support up to CM1000HG equivalent PKG



Feature

1. The load-bearing cold plate is capable of passing circulating fluid from room temperature to 200℃.
2. While the screws are made of stainless steel, the frame parts are made of quenched and plated alloy steel, so seizure will not occur.

The axial force per screw reaches 3300 N, or 26,400 N with 8 screws, for a safe and reliable use.

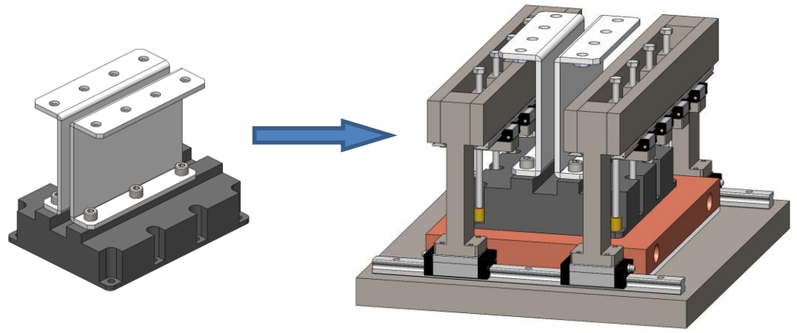
Product specification

Standard Configuration Specifications	
External dimensions	W390 x D360 x H196mm
Cold plate dimensions	W250 x D280 x t35mm
Cold plate material	Copper + Nickel plating
Mass	54kg
Heat Resistance Temperature	200℃
Maximum torque	4Nm

Model

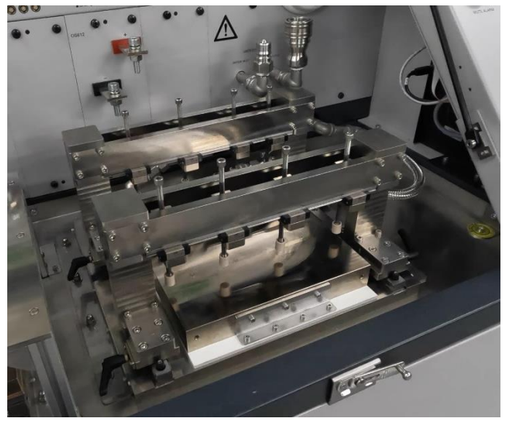
K1711-61101 Torque management cooling jig for power modules

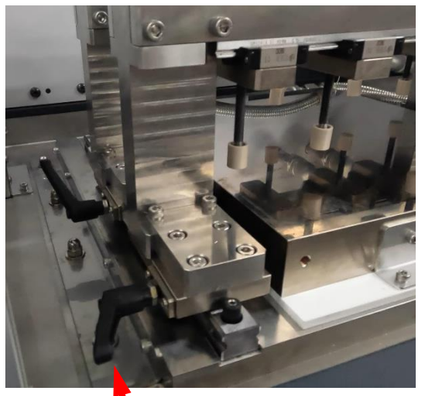
High-current connection busbars for each module are also available as an option.



Examples showing the use

Example of incorporation into a Siemens power cycle tester.





Front and rear can be locked in any position

Sample fixing surfaces are precisely controlled for surface roughness and flatness

power cycle test systems (PWT)

Cold Plate for Direct Cooling Module

Compliant with Infineon HybridPACK™ Drive* design guide

※https://www.infineon.com/dgdl/Infineon-HybridPACK_Drive-ApplicationNotes-v01_04-EN.pdf?fileId=5546d4625f2e26bc015f4de5822e13ec

Appearance

*We will ship with fittings and hoses assembled upon request.
*The barb fittings in the photo are examples.

Model

K2118　Cold Plate for Direct Cooling Module

Dimensions

HybridPACK™ Drive

Assembly Instructions for the HybridPACK™ Drive

Power Module Cooling System

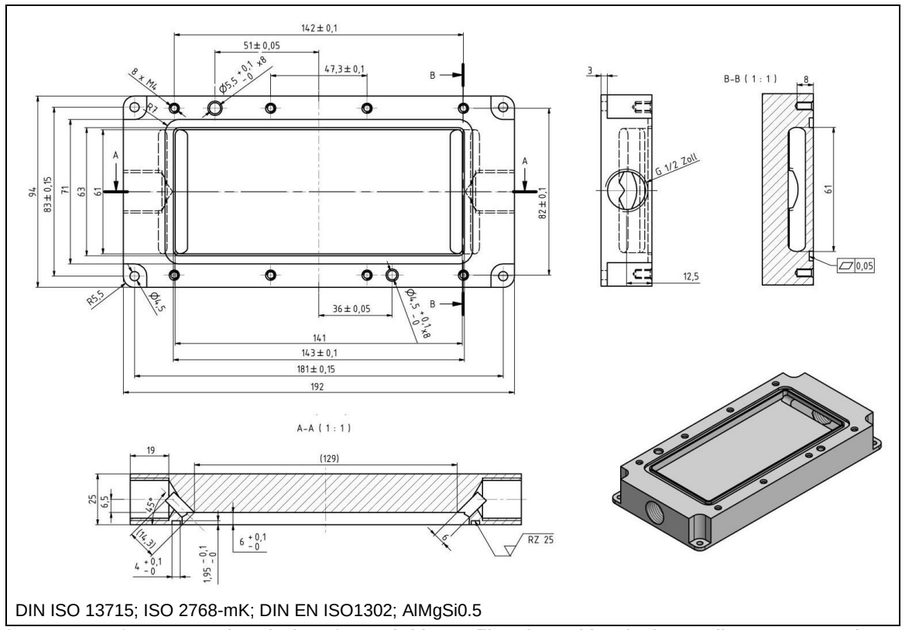
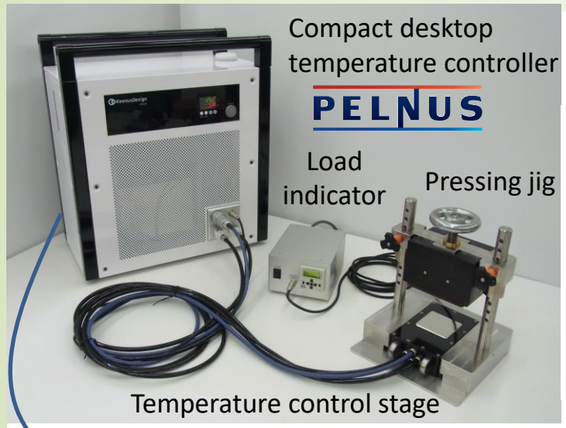
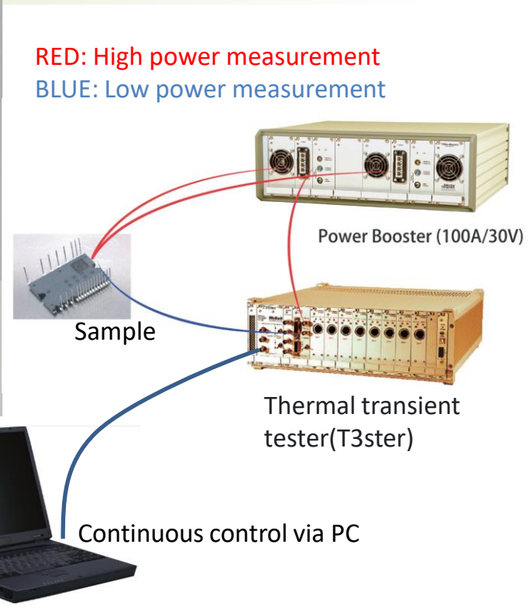


Figure 21 Reference cooler design for HybridPACK™ Drive with PinFin Cooling Structure (e.g. FS820R08A6P2B).

The guideline has two different flow channel depths, both of which can be accommodated.
The O-ring portion is compatible with a change in groove dimensions to one with better availability.

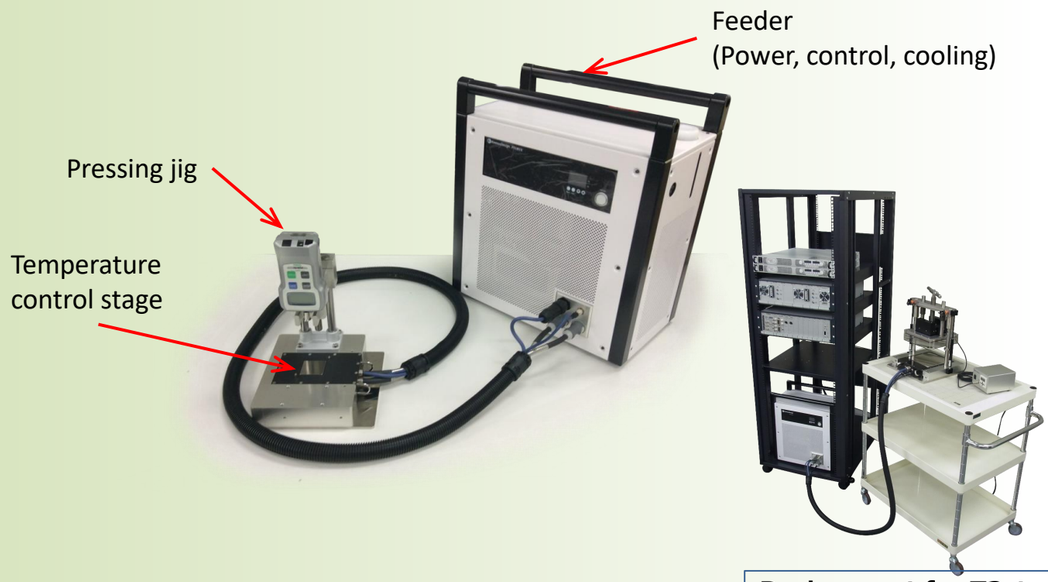
Thermal Characteristics Test, Measurement & Evaluation Peripherals for T3ster





Pressing jig for heater TEG chip (P.74~)

Desktop temperature controller PELNUS (P.60~)



Rack mount for T3ster (P.76)