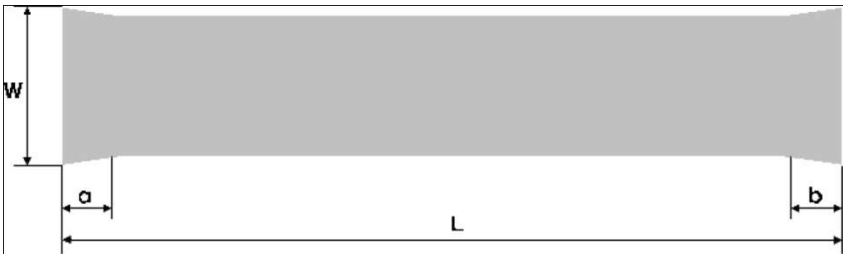
FLAT HEAT PIPE / MHP-1220A150A

General Specification

Item		Description
Part Number		MHP-1220A150A
Material of Container		Aluminium 1070
Wick Structure		Groove
Working Fluid		Acetone
Dimension	Thickness	1.2 mm
	Width	20.0 mm
	Length	150.0 mm
Weight		6 g (Unit Weight)
Qmax	Horizontal	5 W (at 50°C)
	Vertical	18 W (at 50°C)
Typical Thermal Resistance		<0.4°C / W (Average)
Operating Inclination, Ø		0 ~ 90°
Operating Temperature		-40 ~ 100°C

Dimensions

The dimensional attributes of this shall conform to the following figure.



Thickness (t)	Width (W)	Length (L)	Ineffective Length (a)	Ineffective Length (b)
1.2 ±0.05	20.0 ±0.50	150.0 ±0.50	1.50 ±0.50	1.50 ±0.50

Dimensions are in mm

[Material]

Container	Aluminium 1070
Working Fluid	Acetone
Surface Treatment	None

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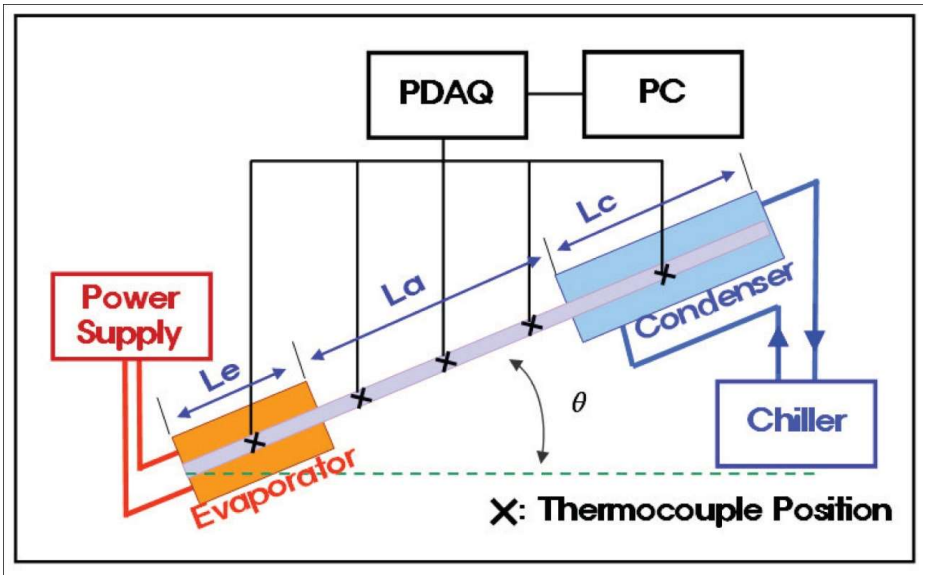
Performance

The experimental test bench is composed of support that assumes the inclination of MHP. The MHP is electrically heated at a section of length **(Le)**, and cooled at an opposite section of a length **(Lc)**. K type thermocouples are placed along the MHP to display the temperature variations. To obtain the operating temperature for a MHP, usually a length of **La** insulates a middle section of the tested MHP. Temperatures are measured through a data acquisition (YOKAGAQA DAQSTATION DX2000). Evaporator section has been made of heat block with cartridge heater. The condenser section has been made of water jacket in which cooling water circulates. A cooling bath is used to control the cooling fluid temperature.



Qmax Test Apparatus

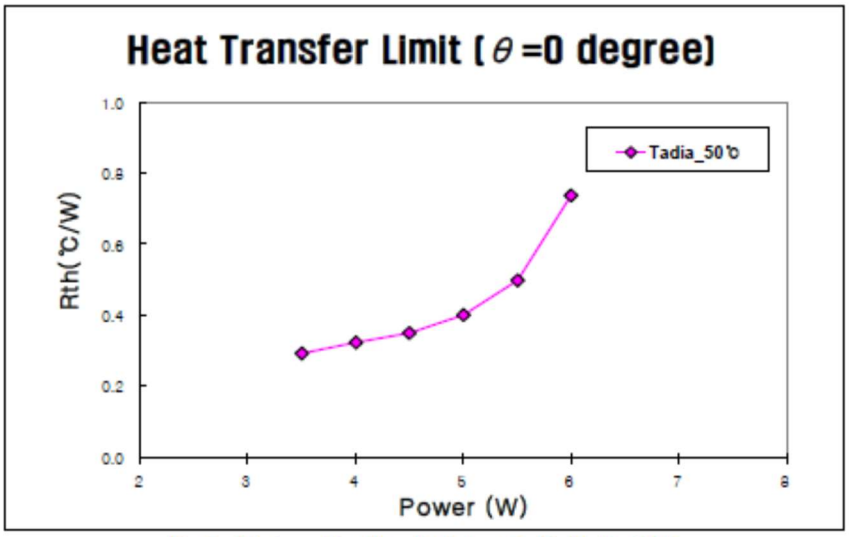


Fig. 3 Maximum Heat Transfer Rate at Θ=0°, Tadia=50℃
(Le=28mm, La=80mm, Lc=67mm)

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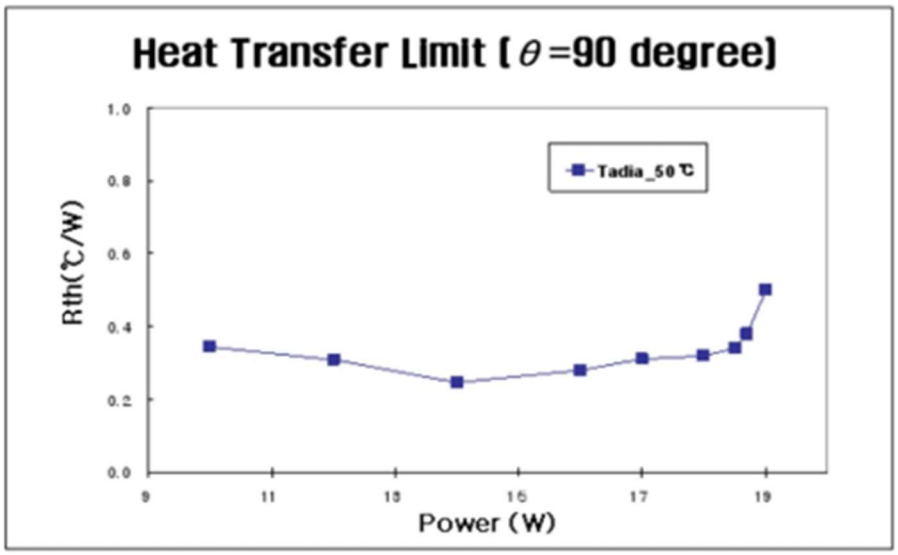
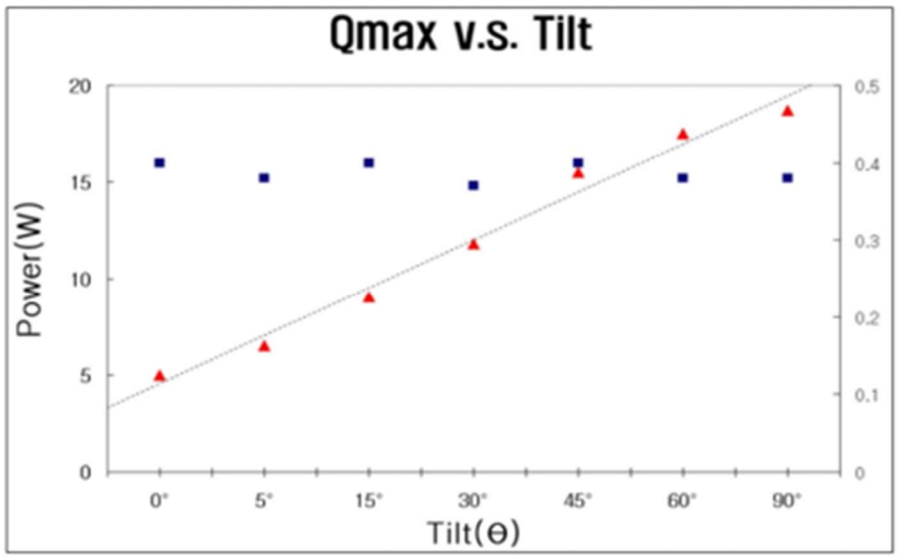
Test Data – MHP-1220A125A



Maximum Heat Transfer Rate at Θ=90°, Tadia=50℃
(Le=28mm, La=30mm, Lc=67mm)



Maximum Heat Transfer Rate vs. Inclination at Tadia=50℃
(Le=28mm, La=30mm, Lc=67mm)

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TEST DATA – MHP-1220A125A

High Temperature Leak Test

Every manufactured MHP is sealed with a mechanical pinch system. The mechanical pinch of container results in a cold weld seal. The average leak temperature is about 170°C.

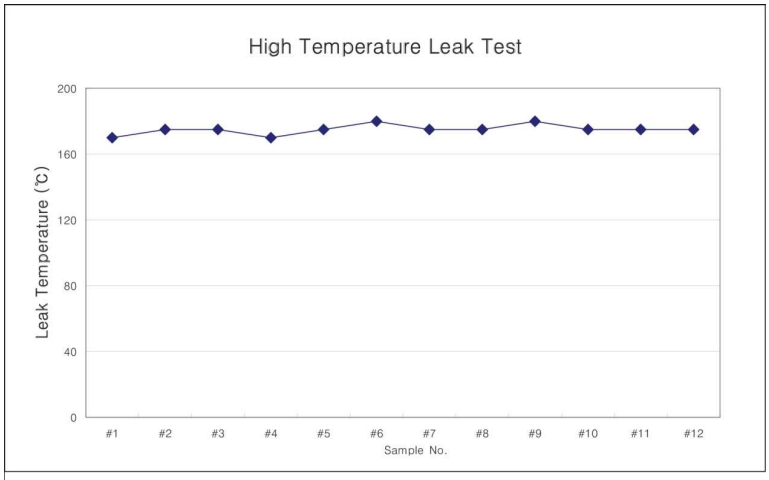

Fig. 6 Leak Test at High Temperature

Thermal Response Test

A thermal response test and vacuum leakage check are carried out to ensure its operation. The experimental test bench is schematically shown in Fig.6. Water bath temperature, **(Tw)** is set at 50°C and the temperature of other end, **Tt** is measured immediately after it is placed vertically into the water bath. The criterion for acceptance is 5°C (Tw – Tt).

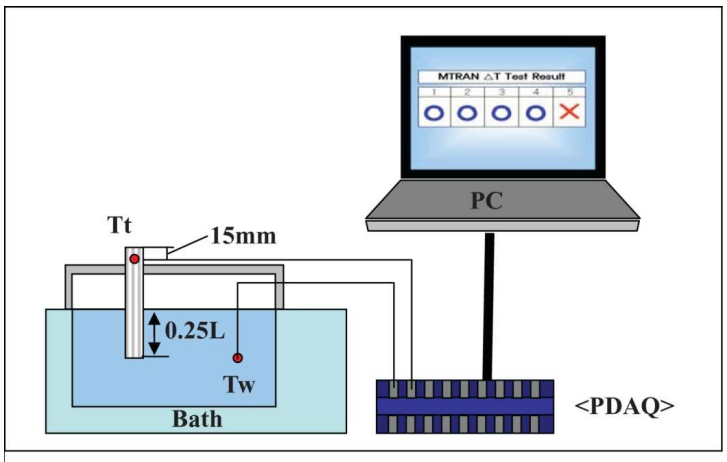

Fig. 7 Thermal Response Test Apparatus

ANNOTATION

All specifications shown herein are typical values and are not guaranteed. It is recommended to test in the application for suitability.

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