

Air Sheathed Plug Heaters / Small Hot Air Generators

Air Sheathed Plug Heaters

MAHP Air Sheathed, 200V / Three-Phase

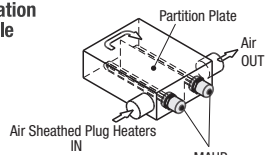
ⓘ Maximum Operating Temperature: 160°C

Material: Element: 316L Stainless Steel
Plug: CF-8M Stainless Steel Cast
Cap: CF-8 Stainless Steel Cast
Accessory: Gasket: Non Asbestos

Part Number Type	No.	L	W (Electrical Power)	V (Voltage)	Electrical Power Density (W/cm ²)
MAHP	1	230	1000	200	2.5
	2	400	2000		
	3	580	3000		
	4	760	4000		
	5	890	5000		

Be sure to refer to "cautions for use" stated in the heaters for air heating guide on P.3733.

Application Example



Part Number Example Part Number **MAHP3**

Small Hot Air Generators

MAHZA Standard

MAHZA Point Tapered

MAHZA Flat Tip

ⓘ Maximum Operating Temperature: 160°C

Material: Generator: Quartz Glass
Case: Stainless Steel

As heat generation increase, temperature monitoring holes will turn red in order of 1 to 5. The load reaches the limit when the 1st to 4th lights turn red and the 5th light remains black. Keep the color of the 5th hole unchanged when using.

Part Number Type	No.	V (Voltage)	W (Electrical Power)	Max. Flow (l/min)	Operating Gas Pressure (kgf/cm ² (MPa))	Maximum Operating Temp. (°C)
MAHZA MAHZA MAHZA	1	100	350	60	2(0.2)	800°C
	2	200	440			

Part Number Example Part Number **MAHZA1** ⓘ Compact sizes are available at misumiusa.com

Features

MISUMI's small hot air generators employ quartz glass which excels in heat-resistance on the body and ceramic processed special elements on the heat generator. Compact, safe, and clean hot air can be obtained.

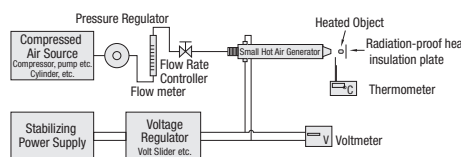
Usage

- Spot drying after workpiece cleaning
- Welding of resin products
- Soldering of electronic parts such as IC chips
- Cap Seal Shrinkage (Shrink Packaging)
- Cutting (heat cutting) of resin film etc.
- Shrinkage of Hollow Wrapping Tubes

Usage Procedure

- (1) Introduce compressed air before turning on small hot air generator.
- (2) Confirm the compressed air is flowing and apply a voltage to it.
- (3) Put the nozzle toward the object, and start heating.

*Temperature Adjusters (P.3772) and Temperature Controllers (P.3777) cannot be used.

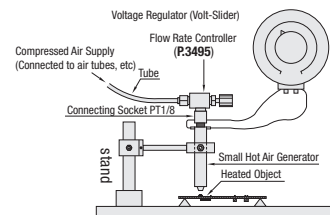


Applicable / Not Applicable Gases

The list below is for reference only. Not a guarantee of the product.

Gas	Applicable or Not	Cautions / Others
Air / Oxygen	Excellent	Avoid large amounts of oil mist or water.
Nitrogen / Argon	Good	All inert gases are applicable, but they will decrease the life span of the product.
Hydrogen	Acceptable	Igniting occurs if the gas is exposed in the air at temperature 600°C or more.
Water Vapor	Acceptable / Poor	Letting the heat generator wet will cause breakage.
Town Gas / LPG	Poor	After thermal decomposition, carbon adheres to a heat generator.

Application Example



Calculation of Hot Air Temperature

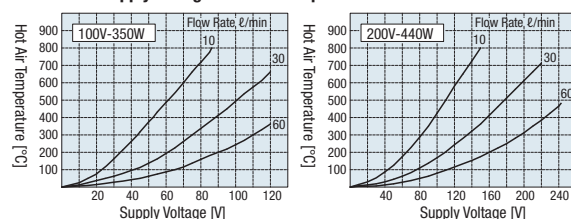
Use the following formula to estimate hot air temperature.

$$\text{Hot Air Temperature } [^{\circ}\text{C}] = \frac{50 \times \text{Power Consumption } [\text{W}]}{\text{Flow Rate of Compressed Air } [\text{l/min}]}$$

Power consumption should be smaller than W (electric power) of each type. The above formula is for reference. If hot air temperature is high while flow rate is small, heat efficiency may decrease.

Hot air temperature must be set lower than 800°C.

Flow Rate / Supply Voltage / Hot Air Temperature Characteristics



IMPORTANT CAUTIONS

- ⓘ Check the air blasting before applying a voltage. Do not use without air blasting.
- ⓘ After turning off the small hot air generator, please keep the compressed airflow for 3 min or more for the sake of safety. Then stop air blasting when the temperature of the hot air is lower than 50°C.
- ⓘ Quartz glass is used on the body. Do not apply an impact.
- ⓘ The body and case get high temperature during the operation. Do not touch them. It will cause burn injury.
- ⓘ Voltage and electric power should be set lower than the rated values.
- ⓘ Do not exceed max operating temperature (800°C).

Heat Resistant Duct Hoses for Hot Air Generating Units

Heat Resistant Duct Hoses for Hot Air Generating Units

ⓘ RoHS 10

Type	Application	Material		Operating Temp. Range (°C)	
		Main Body	Others		
HOCTD	For Free Plumbing	Low Particle Generation Type	Aluminum Polyester Cloth	Reinforcement Spiral: Zinc Plating	-20~130°C
HOTD	For Fixed Plumbing	Heat-Resistant Type	Special Coating Glass Cloth	Reinforcement Spiral: 304 Stainless Steel	-20~250°C
HOTDS		Heat-Resistant Type	Aluminum Glass Cloth	Reinforcement Spiral: Low Carbon Steel (Zinc Plating)	-20~180°C
HOTDH	For Fixed Plumbing	Heat-Resistant Type	304 Stainless Steel	Reinforcement Spiral: 304 Stainless Steel	30~450°C
HOTDK		Heat-Resistant Type	304 Stainless Steel	Reinforcement Spiral: 304 Stainless Steel	-600°C
HOTDA		Heat Retention Type	Aluminum	Reinforcement Spiral: Glass Fiber	-30~200°C

Part Number Type	No.	Hose Length 0.1 m Increment	Hose I.D. (Reference) (mm)	D	P	Allowable Pressure Range (MPa)	Allowable Decompression (Ambient Temp.) (kPa)	Reference Mass (g/m)	Allowable Bending Radius (mm)
HOCTD Low Particle Generation Type	50	0.5-5	51	54.5	20	0~0.007	-8.5	370	120
	75		76	80	20		-7	530	160
	100		102.5	106	23		-6.5	640	210
	125		127.5	131	23		-6.5	770	250
	150		152	155	23		-6	945	300
HOTD Heat Resistant Temperature 250°C Type	50	0.5-5	51	54.5	20	0~0.007	-8.5	360	110
	65		67	71.5	20		-8	480	140
	75		76	80	20		-7	525	160
	90		91	94.5	23		-6.5	545	190
	100		102.5	106	23		-6.5	635	210
HOTDS Heat Resistant Temperature 180°C Type	50	0.5-5	51	54.5	20	0~0.007	-8.5	405	110
HOTDH Heat Resistant Temperature 450°C Type	50	0.5-2	52.5	56	20	0~0.007	-10.5	365	170
	65		67	71.5	20		-10	460	210
	75		76	80	20		-10	525	240
	90		91.5	95	23		-9	570	290
	100		102.5	106	23		-8	635	320
HOTDK Heat Resistant Temperature 600°C Type	50	0.5-4	51.2	56.8	—	0~0.027	-27	220	75
	65		66.2	71.8	—		-27	280	98
	75		76.2	81.8	—		-27	320	113
	80		81.2	86.8	—		-27	340	120
	100		101.7	107.3	—		-27	420	200
HOTDA Heat Insulating Layer Coated Type	50	0.5-2	50.9	107	4.1	0.009	-9	470	200
	75		75.9	132	4.1	0.007	-7.2	590	300
	100		101.4	157	4.1	0.006	-6	720	400

Part Number Example Part Number **HOTDK50** - Hose Length **3.2**

Application of HOTDS (for Fixed Plumbing)

Elastic, and can be fixed at any angle or in any direction. (Do not stretch/release the hose repeatedly.)

Aluminum Glass Cloth Sheets are highly flame-resistant. (Flame Retardant Class 1-certificated)

Hoses have no tightness.

Application of HOTD (for Non-Fixed Plumbing)

Flexible and easy to store and transport.

Special Coating Glass Clothes used for the products are highly elastic and flame resistant. (Flame Retardant Class 1-certificated)

Hoses have no tightness.

Application of HOTDH (for Fixed Plumbing)

Though designed for fixed plumbing, it can form curved portions. (Do not stretch/release the hose repeatedly.)

Hoses have no tightness.

Application of HOTDA (for Fixed Plumbing)

Requires no heat retention after installation, and thus, shortens work period.

ⓘ Hose length refers to the length when the hose is stretched without tensile load. (The allowable pressure is the maximum design pressure. The allowable reduction pressure is the maximum negative pressure that can be applied to the hose under ambient temperature. Above range is for Hose Body only. Use data as reference.)

ⓘ Use two hose clamps for each installation location to secure the hose.