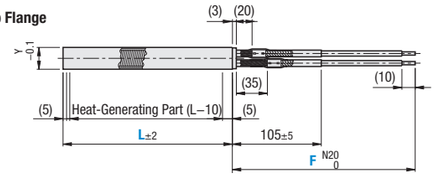
Cartridge Heaters

Shock Resistant with Internal Connection

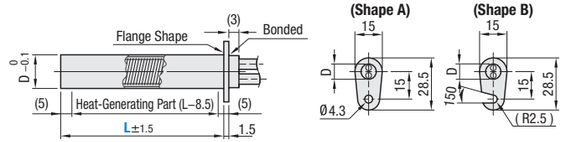
Cartridge Heaters – Shock Resistant with Internal Connection

RoHS 10

MCHZ No Flange



MCHZA Flange Shape A
MCHZB Flange Shape B



Terminal Selection

- **N** No Crimp Terminal
- **M** With Round Crimp Terminal
- **Y** With Y-Shaped Crimp Terminal

Material: Heater: 304 Stainless Steel Lead Wire: See below
Terminal: Copper (Tin Plating) Flange: Stainless Steel

ⓘ Maximum Operating Temperature: 600° C
ⓘ Maximum Operating Temperature means value at the sheath part. Please pay attention to Lead Wire Heat Resistance Temperature and be sure to put the lead wire out of the mounting hole.

Shock Resistant with Internal Connection

Part Number Type	D	L 1mm Increment	V (Voltage) Selection	W (Electrical Power) 10W Increment	F (Lead Wire Length) Lead Wire Type	F (Lead Wire Length) 10mm Increment	Terminal Selection	Electrical Power Density (W/cm²)
MCHZ MCHZA MCHZB	8	50–400	100	50–600	B G T M	100–1000	N M Y	2≤W/cm²≤15 ⓘ W/cm²=W/Dπ(L-10)/100*} *For Flanged Type (L-8.5) Calculate with the electrical power density of heat-generating part, not with the overall length.
			200	50–1200				
	10	50–600	100	50–600				
			200	50–1200				
	12		100	50–800				
			200	50–1600				
*D14 is for MCHZ only.	*14		100	50–800				
			200	100–1600				

ⓘ Not available between L401-L600 for D8. ⓘ D14 is only available with MCHZ

Lead Wire Type

Symbols	Selection	Heat Resistance Temperature	Features
B	Tin Plated Annealed Copper Fiber Glass Braided Wire	180°C	General Use
G	Silicon Rubber + Tin Plated Annealed Copper Wire	180°C	For chemical and water resistant items
T	Teflon + Nickel Plated Annealing Copper Wire	260°C	For chemical, water and weather resistant items
M	Mica Polyimide-Wound Silica + Nickel Coated Copper Wire	400°C	For heat resistant items

ⓘ Please refer to "Precautions for Use" in the Cartridge Heaters Overview on **P.3704**.

Type of Terminal

Symbols	Type of Terminal	Nominal Size of Screw
N	No Crimp Terminal	—
M	Crimp Terminal – Round Type	M4
Y	Crimp Terminal – Y-Shaped	M4

Part Number Example

Part Number	-	L	-	V	-	W	-	F Lead Wire		-	Terminal
								Lead Wire Type	Length		
MCHZ12	-	170	-	V200	-	W200	-	B	1000	-	M

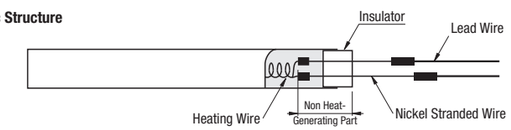
Feature of the Cartridge Heater – Stranded Wire

The wires are less prone to breakage.

– The cartridge heater (break resistant internal connection type) employs a connection with heat-generating wire and nickel stranded wire in the sheath and a connection with nickel stranded wire and lead wire outside the sheath.

– As the nickel pins are not exposed, the heater is more resistant against bending.

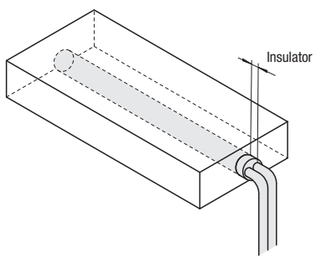
Basic Structure



Precautions for Use

ⓘ Do not let the heaters run idle in the atmosphere. If the heat generating part of the heater is operated out of the heated objects, the wire may break or ignite due to abnormal heating.
ⓘ Do not repeatedly bend the connection part between the nickel stranded wire and the lead wire. (Forcibly pulling on it could result in breakage.)
ⓘ Do not pull the connection part between the nickel stranded wire and the lead wire. (Forcibly pulling on it could result in breakage.)
ⓘ Keep the temperature around the lead wire exit at 130°C or less.
ⓘ Forcibly pulling on it could result in breakage.
ⓘ When bending the wire, be careful not to expose the stranded wire.
ⓘ Do not apply any load to the insulator.

Application Example



Cartridge Heaters

Lead Wire Protection with Knurled Flange

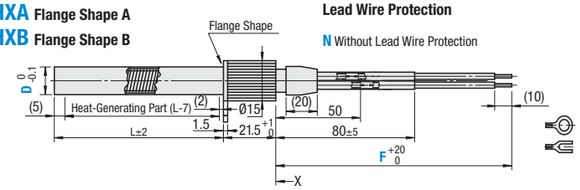
Cartridge Heaters – Lead Wire Protection with Knurled Flange

RoHS 10

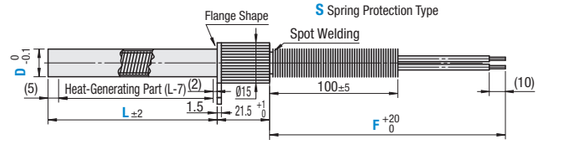
MCHXA Flange Shape A
MCHXB Flange Shape B

Lead Wire Protection

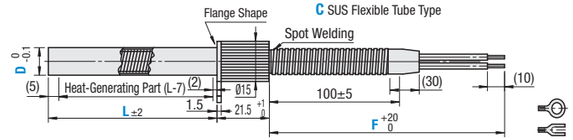
N Without Lead Wire Protection



S Spring Protection Type



C SUS Flexible Tube Type

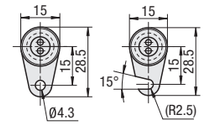


Terminal Selection

- **N** No Crimp Terminal
- **M** With Round Crimp Terminal
- **Y** With Crimp Spade

Material: Heater : 304 Stainless Steel
Knurling : 304 Stainless Steel
Lead Wire : See Below
Lead Wire Protection : See Below
Terminal : Copper (Tin Plating)
Flange : Stainless Steel

ⓘ Maximum Operating Temperature: 600°C



MCHXA Flange Shape A **MCHXB** Flange Shape B

Lead Wire Protection with Knurled Flange

Part Number Type	D	L 1mm Increment	V (Voltage) Selection	W (Electrical Power) 10 W Increment	F (Lead Wire Length) Lead Wire Type	F (Lead Wire Length) 10 mm Increment	Lead Wire Protection Selection	Terminal Selection	Electrical Power Density (W/cm²)
MCHXA MCHXB	8	50–400	100	50–600	B G T M	100–1000	N S C	N M Y	2≤W/cm²≤15 ⓘ W/cm²=W/{Dπ(L-7)/100} Calculate with the electrical power density of heat-generating part, not with the overall length.
			200	50–1200					
	10	50–600	100	50–600					
			200	50–1200					
	12		100	50–800					
			200	50–1600					

Lead Wire Type

Symbols	Lead Wire Type	Heat Resistance Temperature	Features
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M	Mica Polyimide-Wound Silica + Nickel Coated Copper Wire	400°C	For heat resistant items

Lead Wire Protection

Symbols	Lead Wire Protection	Materials	Attaching Portion
N	Without Lead Wire Protection	—	—
S	Spring Protection	Stainless Steel	Spring 100 mm
C	Stainless Steel Flexible Tube	Stainless Steel	Stainless Steel Flexible Tube 100 mm

ⓘ Please refer to "Precautions for Use" in the Cartridge Heaters Overview on **P.3704**.

Type of Terminal

Symbols	Type of Terminal	Nominal Size of Screw
N	No Crimp Terminal	—
M	Crimp Terminal – Round Type	M4
Y	Crimp Terminal – Y-Shaped	M4

Precautions for Use

ⓘ Do not let heater run exposed in the atmosphere. Operating the heater when heat-generating part is out of heated products, the wire may break or ignite due to abnormal heating.
ⓘ Keep the temperature around the knurled head at 180°C or below.
ⓘ Do not pull or twist the lead wire, the spring, or the stainless steel flexible tube.

Part Number Example

Part Number	-	L	-	V	-	W	-	F Lead Wire		-	Lead Wire Protection	-	Terminal
								Lead Wire Type	Length				
MCHXA10	-	170	-	V200	-	W200	-	B	1000	-	S	-	M

Application Example