



MoSi₂ Electric Heating Elements

Instruction Manual

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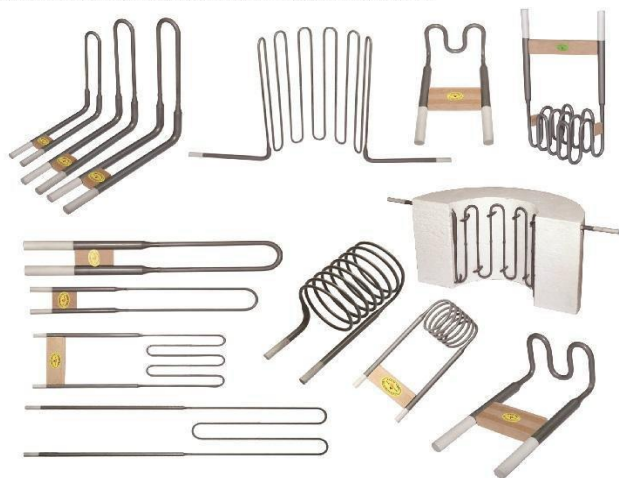
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I. Brief Introduction of MoSi2 material

The Molybdenum Disilicide was found in 1906. Under different conditions, the Silicon and Molybdenum can be formed Mo_3Si , Mo_5Si_3 and MoSi_2 . Among them, the MoSi_2 can form a thin and adhesive protective layer of quartz glass (SiO_2) on its surface to prevent further oxidation under high temperature. MoSi_2 has good high-temperature oxidation resistance and excellent electrical conductivity. With melting point of 2030°C and density of 6.3g/cm^3 and various good high-temperature performance, it is identified as a kind of ultra high-temperature structural material with great potentiality.

MoSi_2 is a kind of chemical compound of Silicon and Molybdenum. Because the radiuses of its two atoms are little different and the electro-negativity of the said atoms is relatively close, MoSi_2 has properties similar to metal and ceramic. At the low-temperature stage, the MoSi_2 material has higher strength but greater brittleness (similar to ceramic); when the temperature reaches above 1000°C , it also has the plasticity like metal.

The MoSi_2 was mainly applied as coating protection material that is resistant to high temperature and corrosion on metallic matrix surface at early stage. It was firstly used in coating of spare parts of gas turbines, combustion chambers of jet motors and guided missiles. At present, the MoSi_2 material is mostly used in high temperature electric heating elements, bubble pipes of glass tank furnace, thermocouple-protection tubes and high temperature resistance and oxidation resistance powder.



II. Introduction of MoSi2 Series Products

1. Classification of MoSi2 Electric Heating Elements

Type	Product serial No.	Judgment standard (Air environment)	Product features	Application range
Heating element	TC1700	Max Element temperature 1700°C	Compact and good element protective layer; Common MoSi_2 products apply to low temperature electric furnaces, especially special atmosphere electric furnaces;	Al_2O_3 , SiO_2 and other materials sintering
	TC1800	Max Element temperature 1800°C	Compact and good element protective layer; The product density and heat resistance improve greatly comparing with TC1700 products; Furnace temperature within 1650°C ;	High-purity materials (Al_2O_3 , SiO_2 , ZrO_2 , Y_2O_3 and ITO) sintering
	MR1800		Compact and good element protective layer; The high temperature strength is slightly higher than TC1800 products; Furnace temperature within 1700°C .	
	TC1850	Max Element temperature 1850°C	High compactness and purity; The temperature resistance degree improves and it can bear large surface load;	Dental materials (MgO , Y_2O_3 and ZrO_3) sintering
	TC1900	Max Element temperature 1850°C	High compactness and purity; Good high temperature strength; Very thin protective layer with good performance; Can bear large surface load;	High temperature electric furnaces having special requirements on high temperature strength and protective layer of electric heating elements

2. Introduction of Dedicated Heating Element

Product name	Main features	Application	Maximum operating temperature
Dedicated heating element for special atmosphere	1. The compact and complete element protective layer can well resist the corrosion of special atmosphere; 2. The protective layer has strong regeneration capacity under oxidation environment and high temperature conditions.	Electric furnaces under non-oxidizing atmosphere	Element temperature 1700°C

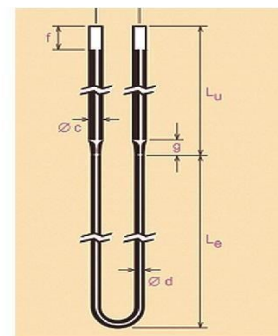
Dedicated heating element for dental furnace	1. The heating element has high purity, which can reduce the impurity content to the utmost extent; 2. The product has good high temperature strength, which can bear greater surface load under high temperature; 3. The product can adapt to electric furnaces with frequent use and fast temperature increasing and decreasing; 4. The protective layer of heating element is thin and compact, which can avoid it from falling off during using to a large extent.	Precise electric furnaces having higher requirement on heating elements such as electric furnaces for dentistry; Electric furnaces with fast temperature increasing and decreasing, frequent use and short sintering period	Element temperature: 1850°C (air environment)
Dedicated heating element for semiconductor	1. This product is precision machining with higher heating power and it can provide uniform thermal field for electric furnaces; 2. Corresponding shapes can be manufactured based on operating requirement of customers. This product can maintain a certain performance in use with long service life; 3. Comparing with the metal wire, it can bear greater surface load and rapid temperature increasing system (fast cooling and temperature increasing); 4. It can match with various dimensions of wafers from small size to large size, namely multi-application. 5. It can ensure the cleanness of relevant equipment if being used under high temperature.	Electric furnaces for semiconductor wafers; Cylinder-shaped electric furnaces;	Element temperature: 1700°C (air environment)
Dedicated heating element for ITO	1. It is specially designed for ITO electric furnaces and it can bear greater surface load; 2. The product has high purity and the impurity content is reduced to the utmost extent so as to ensure the cleanness of electric furnaces. 3. The junction state between the heating element protective layer and matrix surface is improved through special treatment so that the protective film is not easy to fall off when using the heating element; 4. The junction state between the heating element protective layer and element matrix surface is very good so that it is very suitable for high oxidizing gas atmosphere furnaces. 5. Good high temperature strength and low deformation probability.	ITO target material sintering electric furnaces	Element temperature: 1800°C (air environment)

3. Range of MoSi₂ Electric Heating Elements

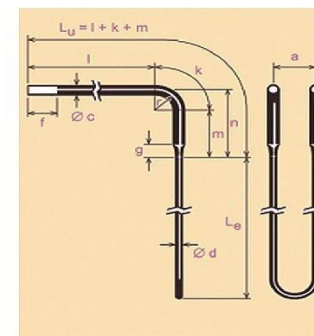
Product standard specifications		TC1700	1800		TC1850	TC1900
Hot Zone (Le) diameter-mm	Cold Zone (Lu) diameter-mm		TC1800	MR1800		
3	6	✓	✓	✓	✓	✓
4	9	✓	✓	✓	✓	✓
6	12	✓	✓	✓	✓	✓
9	18	✓	✓	✓	✓	×
12	24	✓	✓	×	×	×

● Note: the above types are products of standard types. We can negotiate if you need special diameters (such as hot zone (Le) diameter 5mm or 7mm) or special specifications (such as hot zone (Le) diameter 6mm or cold zone (Lu) diameter 9mm).

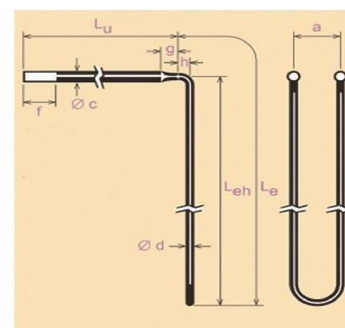
4. Dimension of MoSi₂ Electric Heating Elements



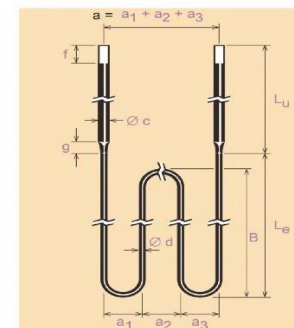
U-shape



Lu bent 90°



Le bent 90°



W-shape

Parameters of Processing Standards

Element specification	d-mm	C-mm	a-mm		g-mm	f-mm	h-mm	n-mm	
			Standard	Minimum				Standard	Minimum
3/6	3	6	25	12	15	30	10	40	35
4/9	4	9	25	15	20	30	10	50	45
6/12	6	12	50	25	25	45	15	90	70
9/18	9	18	60	35	32	75	20	135	110
12/24	12	24	80	50	40	100	35	/	/

5. Special-shape MoSi₂ Electric Heating Elements

The special-shape MoSi₂ electric heating elements can be customized according to user requirement. Our special-shape products have stable quality and good performance, and they are especially widely used in semiconductor wafer industry and unanimously prized by users.



6. Classification of Bubble Pipes

The bubbling tube of MoSi₂ material have thermal shock resistance, high temperature resistance and oxidation resistance. Therefore, they are not easy to be corroded in glass solutions and they do not contaminate glass solutions; therefore, they are the best choice for bubbling of glass tank furnace at clarification stage.



Our company can produce the following several models of bubbling tubes. Please provide technical parameters of special models for specific negotiation.

Hole diameter-mm	Outer diameter-mm	Quantity of inner hole: 1	
3	12	1	
1		4	
2		2	
3	14	1	
1		4	5
1	16	5	
5	10	1	
8	14	1	

● Note: Thermocouple-protection tubes can be processed by those with hole diameter above 5mm.

6. MoSi₂ Powder

The MoSi₂ powder is mainly used in high temperature resistance and oxidation resistance coating; it can also be compounded with other materials to improve performance.

Technical Parameters of MoSi₂ Powder

Power purity	Particle size		Principal phase	Second phase	Main impurity composition			
	D ₅₀	D ₉₀			Fe	Al	Ca	O
≥99%	<5.0 μm	<15 μm	MoSi ₂	Mo ₅ Si ₃	<0.1%	0.01%	0.011%	0.2%

III. Performances of MoSi₂ Electric Heating Elements

1. Physical properties of MoSi₂ Products

Product type	Density-g/cm ³	Bending strength under room temperature-MPa	Hardness-GPa	Compression strength-MPa	Water absorption-%	Thermal elongation-%
TC1700	5.8±0.1	450	11	>1500	≤0.2%	4
TC1800	6.0±0.1	500	12	>1500	≤0.2%	4
MR1800	5.9±0.1	420	11.5	>1500	≤0.2%	4
TC1850	6.6±0.1	460	11	>1500	≤0.2%	4
TC1900	7.0±0.1	360	10.5	>1500	≤0.2%	4

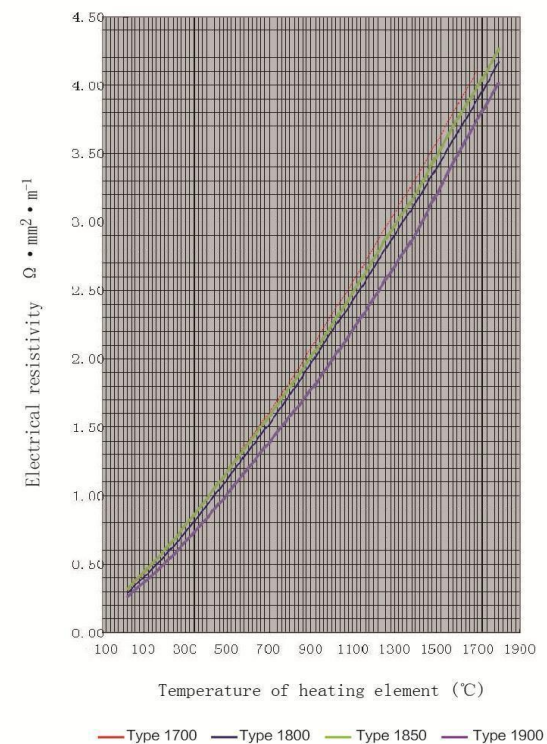
Variation Relation with Temperature of Electrical Resistivity of MoSi₂ Products

As a kind of metal ceramic resistor element, the electrical resistivity of the MoSi₂ heating element increases with temperature rising and has fixed value under relatively fixed temperature. Therefore, heating elements of the same specifications have different resistance values under different temperature. Thus, the electrical resistivity feature shall be fully considered in designing electric control parts of MoSi₂ heating elements.

Temperature Comparison Table of Electrical Resistivity of Heating Elements of Torch Brand

Temperature (°C)	Electrical resistivity of type 1700 ($\Omega \cdot \text{mm}^2/\text{m}$)	Electrical resistivity of type 1800 ($\Omega \cdot \text{mm}^2/\text{m}$)	Electrical resistivity of type 1850 ($\Omega \cdot \text{mm}^2/\text{m}$)	Electrical resistivity of type 1900 ($\Omega \cdot \text{mm}^2/\text{m}$)
20	0.306	0.286	0.321	0.263
100	0.448	0.398	0.447	0.366
200	0.622	0.550	0.605	0.506
300	0.816	0.724	0.789	0.666
400	1.020	0.907	0.980	0.835
500	1.224	1.102	1.179	1.015
600	1.418	1.306	1.384	1.203
700	1.632	1.509	1.584	1.393
800	1.846	1.714	1.800	1.584
900	2.071	1.918	2.014	1.774
1000	2.285	2.142	2.249	1.990
1100	2.499	2.366	2.484	2.212
1200	2.734	2.601	2.731	2.442
1300	2.968	2.836	2.978	2.680
1400	3.223	3.050	3.203	2.913
1500	3.488	3.315	3.481	3.202
1600	3.743	3.570	3.749	3.488
1700	4.029	3.805	3.995	3.759
1800		4.060	4.263	4.019

Variation Curve with Temperature of Electrical Resistivity



3. Maximum Recommended Element Temperature in Different Atmospheres

Atmosphere	Type 1700	Type 1800	Type 1850	Type 1900
Air	1700	1800	1830	1850
N ₂ Nitrogen	1600	1700	1700	1700
He Ar Ne Argon. Helium	1600	1700	1700	1700
H ₂ -80°C Dry Hydrogen (dew point)	1150	1150	1150	1150
H ₂ -20°C wet Hydrogen (dew point)	1450	1450	1450	1450
Mixed gas (e.g. 10%CO ₂ , 50%CO and 15%H ₂)	1600	1700	1700	1700
Mixed gas (e.g. 40%CO ₂ and 20%CO)	1400	1450	1450	1450
Cracked and partially burnt ammonia (8%H ₂)	1400	1450	1450	1450

IV. Precautions for Installation of MoSi₂ Electric Heating Elements

MoSi₂ Electric heating element is a kind of metal ceramic material, under room temperature, similar to ceramic and has great brittleness and relatively low impact resistance. So please be careful during transport and installation of the element to avoid damage. Under high temperature, it has a certain soft plasticity. Thus, when generally used for electric furnace, the u-shaped element is usually vertically suspended to the top of the furnace by a clamp. This kind of installation is to avoid mechanical stress adding to the Electric heating element otherwise may cause element fracture.

In selecting and installing MoSi₂ heating element, please pay attention to the following dimensions (Lc):

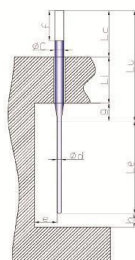


Figure 1. Installation diagram for common U-shape heating element in furnace

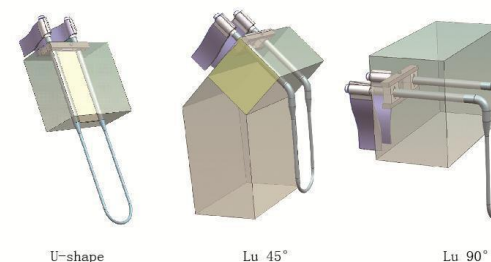
1. Furnace top size (Lc) of electric heating element cold zone

The furnace top part Lc of electric heating element cold zone is mainly used to install and fix the contact clamp and connecting aluminum braid of electric heating element, so data of this part varies from different electric heating elements, refer to the following data:

Element specifications	Φ 3/6	Φ 4/9	Φ 6/12	Φ 9/18	Φ 12/24
Furnace top size-Lc	50	50	75	125	150
Transition section length-g	15	20	25	32	40
Cold zone length-Lu	Lc+Li+g				

Note: In above table, Lc is the minimum value, It is suggested to lengthen it based on actual furnace conditions; Li stands for the top thickness;

Transition section (g) should be inserted inside the furnace, to avoid the case that heat can not emit and resulting in damage of the transition section.



2. The distance between the electric heating element hot zone and the furnace bottom (h)

When installing the electric heating element, the cold zone transition section (g) should enter inside the furnace. If the cone part remains in the furnace top, it may cause poor heat dissipation resulting in heat accumulation and overheating damage. It should also be noted that the heating element will have a certain thermal elongation under high temperature. Therefore, when installing, it is necessary to keep certain distance between the heating element and furnace bottom (h). Generally, the distance can be calculated as follows:

$h > L_e/20$ (when L_e is less than 200mm, $h = 10\text{mm}$).

3. The vertical installation distance of the electric heating element to the furnace wall (e)

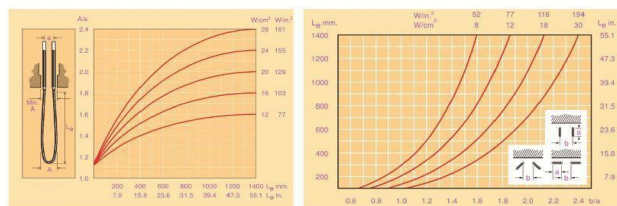
Working under high temperature, affected by electromagnetic force and other factors, there will be certain deformation on Electric heating element hot zone. If the heater is installed too close to the furnace wall, it may reach the furnace wall, causing reaction with the furnace wall materials or poor heat dissipation and overheating damage. So the electric heating element

installation location should be considered since furnace design stage, to make sure a reasonable distance between the electric heating element and furnace wall. Based on the hot zone length, refer to the following data:

Hot zone length-Le	>1000mm	300~1000mm	<300mm
Distance from hot zone to furnace wall-e	Min. 50mm	Le/20	Min. 15mm

4. Precautions for Installation and Distribution of electric Heating Elements

Under high temperature, the electric heating element will have plasticity. Generally, the working current is large, the electromagnetic force makes the hot zone hunch outwardly. Improper installation will make the adjacent two heating elements get together, or make the heating element reach the furnace wall. Therefore, please take this into consideration in designing the furnace and electric heating element. Please refer to the following graphs for specific solutions:



It can be seen from the above two graphs that the deformation of hot zone gets greater as the hot zone getting longer and the surface load getting higher. Thus when designing installation, we should set the furnace and Electric heating element according to the calculating methods in the graphs.

Therefore, we suggest the users reduce the load on the surface of the MoSi₂ heating elements in designing and using them, (according to actual conditions of the electric furnace, it is better to maximally allocate the Electric heating element and select greater diameter of the hot zone as possible at design stage.) The suggest surface load of Torch 1700 type products under 1300°C furnace temperature is below 13.5w/cm². The suggest surface load of Torch 1800 type products under 1600°C furnace temperature is below 11.5w/cm². And the suggest surface load of Troch 1850 type products under 1720°C furnace temperature is below 12 w/cm². If conditions permitting, lower surface load will significantly improve Electric heating element lifespan, reduce the temperature gap between Electric heating element and furnace, and better guarantee the uniformity of the thermal field of electric furnace.

5. The Electric Heating Element Contact Clamp and Aluminum braid Installation note

Pictures of the electric heating element Contact Clamp and Aluminum braid are shown in Figure 1:

The installation steps are shown in Figure 2:

Remove the packaging pitch plate of the electric heating element and adjust the size of the hole of the Contact Clamp to let the electric heating element cold zone go through.

Adjust the position of the electric heating element and the fixed contact clamp and tighten the fixing screws on the clamp (as shown in Fig. 3). The electric heating element is very brittle in cold state, pay attention not to twist the electric heating element and avoid brittle fracture. Spray aluminum parts should stay a little above the clamp to avoid extreme temperature on these parts causing low temperature oxidation and aluminum melts and erodes the cold zone.

Tighten screws of contact clamp. Otherwise, as the electric furnace temperature increases, the fixing screws may loosen as a result of thermal expansion and cause the heating element slides by gravity, the heat end distorts and even element fracture. So in initial installation, after electric furnace heating up, please tighten the screws again (If the heating cycle is short, please tighten again after cooling.)

Installation of Aluminum braid: Adjust the aluminum braid hole to make it slightly larger than the diameter of the terminal zone. Fix the aluminum braid to spray aluminum parts, and fasten the screws. Thermal expansion and contraction of aluminum braid or screws also happens to this part in use causing poor contact between aluminum braid and electric heating element and produces heat and even electric arc, which may lead to low-temperature oxidation or arc welding. So to avoid such problems, the fixing screws on the aluminum braid also have to be fastened again after the electric furnace starts.

The following picture shows the common methods to mount heating element on the top of refractory fiber furnace: to slot on top, add heat preservation module to the middle of heating element terminal zone, and then put the whole installed heating element into the furnace from the top.



Figure 1 Heating element Contact Clamp and Aluminum braid



Figure 2 Electric heating element and Contact Clamp



Figure 3 Tighten the fixing screws



Figure 4 Aluminum Braid installation

V. Precautions for Use of MoSi₂ Electric Heating Elements

MoSi₂ materials possess excellent high temperature oxidation resistance, conductivity, high temperature stability, convenient to use and control, and other excellent performance. However, due to some of its nature features, we must pay attention to its usage, or the MoSi₂ electric heating elements are easily damaged by improper use.

1. Low Temperature Oxidation Property of MoSi₂

MoSi₂ material has excellent high temperature oxidation resistance, but under lower temperature, especially 400–700 °C, there will be low temperature oxidation and pulverization, so we should avoid long-term use of the elements in 400–700 °C.

2. Resistance Property of MoSi₂ Electric Heating Elements

From the foregoing section 3.2, we have learnt that the electrical resistivity of MoSi₂ electric heating element increases with temperature increase. And the resistivity under high temperature is about 10 times lower than that under low temperature.

Compared with metal heating wire, the MoSi₂ heating element has much smaller electrical resistance and works with low voltage and high current, so in general conditions, a transformer is required. The problem is that the electrical resistance of a MoSi₂ heating element of a certain specification under low temperature is about 1/10 of that under high temperature. If we directly load a high voltage, the element current will become 10 times of that under high temperature. This will cause current shock to the electronic control part and the heating element. And this usually occurs to the electric furnace at the beginning of power transmission and heating-up. When the furnace temperature fails to keep up with the set temperature, the power regulator will make maximum power output, causing the low temperature and low electrical resistance heating element to load high voltage and make high current (The heating-up of the heating element requires a time range.). Generally, we design to control the element loading a voltage under low temperature of no exceeding 1/3 of its working voltage. Or if there is current-limiting function, we limit the current no exceeding of the specified element working current.

Here we give an example to show how to set the control parameters of the temperature control meter. For example, there is an electric furnace with 9pcs $\varnothing$ 6/12 heating element, which is divided into three groups and each group with three heating elements in star connection, single element's working parameters as: 10V–150A–1500W, 35V voltage and 180 A current outputted from the transformer is



loaded to the three heating elements, silicon controlled regulation (power regulator). Heating system and temperature control meter parameters are set as follows:

Heating System		Temperature Control Meter		Remarks
Heating time-min	Specified Temperature-°C	power Limiting -F	Maximum Output Voltage -V	
30	300	20~30%	7~10.5	Mainly to limit output voltage of the initial heating-up stage, avoid current shock, and if there is current limiting function, you may set the current not to exceed 150A.
60	1000	100%	35	
60	1500	100%	35	
.....				

In this way, it can effectively prevent current shocks at the initial heating-up stage. Especially when the heating element is used for a long time, its internal structure will change and become greater in brittleness. If the current shock is large, the heating element is very brittle to fracture. Be more careful for this setting.

The electrical resistivity of the MoSi₂ heating element does not change with the increase of using time, so that the old and the new elements can be used at the same time, which can greatly reduce the user's use cost.

3. High Temperature Softening Property of MoSi₂ Electric Heating Element

From the previous chapter, we have learnt that under low temperature the MoSi₂ material has higher intensity but higher brittleness (similar to ceramics). In high temperature above 1000 °C, it also has a metal-like soft plasticity. As MoSi₂ Electric heating elements are usually operating under higher temperatures, we should consider the impact of its soft plasticity, and avoid element damage by high temperature deformation.

For example, when using the element horizontally, the working temperature should be reduced accordingly, because as the temperature getting higher, the soft plasticity would become greater and the large deformation would occur to it. So not only the support of the plate but also heat dissipation of the element should be considered. For L-type elements, we have to consider deformation affected by gravity, which will cause the element touching the furnace wall and damaged. So please pay special attention in design and installation.

4. The protective film characteristic of MoSi₂ electrical heating element

The surface protective layer of MoSi₂ Electric heating element is a layer of SiO₂ glass layer, under high temperature, it can prevent the internal MoSi₂ matrix material from continuously oxidizing. This is the high temperature oxidation resistance feature of MoSi₂ material. However, due to the expansion coefficient difference between the SiO₂ surface glass layer and the MoSi₂ matrix material, the protective layer will peel off during the cooling or heating in an intermittent oxidation atmosphere furnace. This is also a nature feature of the MoSi₂ Electric heating element.

When used again in the oxidation atmosphere, the surface protective layer will be generated again; this is the self-healing function of protective layer.

VI. Electrical Data of MoSi₂ Electric Heating Elements

Heating Element Temperature:1500℃
Furnace temperature:1500℃
Heating Element Current:50A
Surface Loading:13.5W/cm²
Shank Distance:25mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1700 type ø 3 /6 U-shape working parameters

Heating Zone →		50	75	100	125	140	160	180	200	225	250	280	315	355	400	450	500	560
Cold Zone →	mm	198	264	329	395	434	487	539	591	657	723	801	894	998	1116	1248	1379	1536
	50	0.079	0.106	0.132	0.159	0.174	0.196	0.216	0.237	0.263	0.290	0.321	0.358	0.400	0.447	0.500	0.553	0.616
	4.0	5.3	6.6	7.9	8.7	9.8	10.8	11.9	13.2	14.5	16.1	17.9	20.0	22.4	25.0	27.7	30.8	
	75	210	276	341	407	446	499	551	603	669	735	813	906	1010	1129	1260	1391	1548
	4.2	5.5	6.9	8.2	9.0	10.0	11.1	12.1	13.4	14.8	16.3	18.2	20.3	22.7	25.3	27.9	31.1	
Cold Zone →	mm	223	289	354	420	459	512	564	616	682	748	826	919	1023	1142	1273	1404	1561
	100	0.090	0.116	0.141	0.168	0.184	0.205	0.227	0.247	0.274	0.300	0.331	0.368	0.411	0.458	0.511	0.564	0.626
	4.5	5.8	7.1	8.4	9.2	10.3	11.3	12.4	13.7	15.0	16.6	18.4	20.5	22.9	25.5	28.2	31.3	
	225	301	366	433	472	524	577	630	695	760	839	931	1037	1154	1286	1417	1574	
	125	0.094	0.120	0.146	0.174	0.189	0.210	0.232	0.252	0.279	0.305	0.336	0.374	0.416	0.464	0.516	0.570	0.631
Cold Zone →	4.7	6.0	7.4	8.7	9.5	10.5	11.6	12.6	13.9	15.3	16.8	18.7	20.8	23.2	25.8	28.4	31.6	
	mm	243	308	373	440	479	531	584	637	702	767	846	938	1044	1161	1293	1424	1581
	140	0.098	0.124	0.150	0.176	0.192	0.213	0.235	0.255	0.282	0.308	0.339	0.376	0.419	0.467	0.519	0.573	0.634
	4.9	6.2	7.5	8.8	9.6	10.7	11.7	12.8	14.1	15.4	17.0	18.8	20.9	23.3	25.9	28.6	31.7	
	mm	252	316	384	450	491	542	596	648	713	779	858	950	1056	1171	1304	1436	1592
Cold Zone →	160	0.102	0.128	0.154	0.180	0.196	0.217	0.239	0.260	0.286	0.312	0.344	0.381	0.423	0.471	0.523	0.576	0.638
	5.1	6.4	7.7	9.0	9.8	10.9	11.9	13.0	14.3	15.6	17.2	19.0	21.1	23.5	26.1	28.8	31.9	
	mm	263	329	395	460	500	552	606	658	723	789	868	960	1066	1181	1314	1446	1602
	180	0.106	0.132	0.159	0.184	0.200	0.221	0.243	0.263	0.290	0.316	0.367	0.394	0.427	0.474	0.527	0.580	0.643
	5.3	6.6	7.9	9.2	10.0	11.1	12.1	13.2	14.5	15.8	17.4	19.2	21.3	23.7	26.4	29.0	32.1	
Cold Zone →	mm	274	339	404	470	510	562	615	667	733	798	877	969	1074	1192	1323	1455	1612
	200	0.103	0.135	0.162	0.189	0.205	0.226	0.246	0.268	0.293	0.319	0.351	0.389	0.430	0.479	0.530	0.583	0.646
	5.5	6.8	8.1	9.4	10.2	11.3	12.3	13.4	14.7	16.0	17.6	19.4	21.6	23.9	26.6	29.2	32.3	

Heating Element Temperature: 1500℃
Furnace temperature:1500℃
Heating Element Current:75A
Surface Loading:13.5W/cm²
Shank Distance:25mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1700 type ø 4 /9 U-shape working parameters

Heating Zone →		50	75	100	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630
Cold Zone →	mm	242	325	408	491	542	608	675	741	824	907	1008	1124	1257	1407	1573	1739	1939	2172
	50	0.043	0.058	0.072	0.087	0.097	0.108	0.120	0.132	0.147	0.161	0.179	0.197	0.223	0.251	0.280	0.309	0.345	0.386
	3.2	4.4	5.5	6.5	7.2	8.1	9.0	9.9	11.0	12.1	13.4	15.0	16.7	18.8	21.0	23.2	25.9	29.0	
	75	254	337	421	504	554	621	687	754	837	920	1020	1133	1269	1419	1585	1751	1951	2184
	3.4	4.5	5.7	6.7	7.4	8.3	9.2	10.0	11.2	12.3	13.6	15.2	16.9	19.0	21.1	23.4	26.1	29.2	
Cold Zone →	mm	267	351	433	517	567	633	670	766	849	932	1032	1149	1282	1432	1598	1765	1949	2197
	100	0.047	0.062	0.077	0.092	0.101	0.113	0.124	0.137	0.151	0.166	0.184	0.205	0.228	0.255	0.280	0.314	0.350	0.391
	3.6	4.7	5.8	6.9	7.7	8.5	9.4	10.2	11.3	12.5	13.8	15.4	17.1	19.1	21.3	23.5	26.2	29.3	
	125	280	363	446	529	579	646	713	779	863	946	1045	1161	1295	1444	1611	1777	1977	2210
	3.7	4.9	5.9	7.1	7.7	8.7	9.5	10.4	11.5	12.6	13.9	15.5	17.3	19.3	21.5	23.7	26.4	29.5	
Cold Zone →	mm	287	370	453	537	587	653	720	787	870	953	1053	1169	1302	1452	1618	1784	1984	2217
	140	0.051	0.066	0.081	0.095	0.105	0.116	0.128	0.140	0.155	0.169	0.187	0.208	0.232	0.259	0.288	0.317	0.353	0.394
	3.8	5.0	6.0	7.2	7.8	8.8	9.6	10.5	11.6	12.7	14.0	15.6	17.4	19.4	21.6	23.8	26.5	29.6	
	160	298	381	464	547	597	663	730	797	880	963	1062	1179	1313	1462	1629	1795	1994	2227
	4.0	5.1	6.2	7.3	8.0	8.9	9.7	10.6	11.8	12.8	14.2	15.8	17.5	19.5	21.7	23.9	26.6	29.7	
Cold Zone →	mm	308	391	474	557	607	674	740	807	890	973	1073	1189	1323	1472	1638	1805	2005	2237
	180	0.055	0.069	0.084	0.099	0.108	0.120	0.132	0.144	0.159	0.174	0.191	0.212	0.236	0.262	0.292	0.321	0.357	0.398
	4.1	5.3	6.3	7.4	8.1	9.0	9.9	10.8	11.9	12.9	14.3	15.9	17.6	19.7	21.9	24.0	26.8	29.9	
	200	318	401	484	567	617	684	757	817	900	983	1083	1199	1332	1482	1648	1815	2015	2248
	4.3	5.4	6.4	7.6	8.3	9.2	10.0	10.9	12.0	13.1	14.5	16.0	17.8	19.8	22.0	24.2	26.9	30.0	

Heating Element Temperature:1500℃
Furnace temperature:1300℃
Heating Element Current:150A
Surface Loading:13.5W/cm²
Shank Distance:50mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1700 type ø 6/12U-shape working parameters

Heating Zone →													
mm ↓	mm	150	180	200	220	250	300	350	400	450	500	560	
	150	1100 0.049 7.4	1260 0.056 8.4	1370 0.061 9.2	1490 0.066 9.9	1650 0.074 11.0	1940 0.086 12.9	2220 0.099 14.8	2500 0.111 16.7	2780 0.124 18.5	3060 0.136 20.4	3400 0.151 22.7	
200	200	1140 0.051 7.6	1310 0.058 8.7	1420 0.063 9.5	1530 0.068 10.2	1700 0.076 11.3	1980 0.088 13.2	2260 0.101 15.1	2540 0.113 17.0	2820 0.126 18.8	3110 0.138 20.7	3440 0.153 23.0	
	250	1160 0.052 7.7	1330 0.059 8.9	1440 0.064 9.6	1550 0.069 10.4	1720 0.077 11.5	2000 0.089 13.4	2280 0.102 15.2	2570 0.114 17.1	2850 0.127 19.0	3130 0.139 20.9	3470 0.154 23.1	
280	280	1180 0.053 7.9	1350 0.060 9.0	1460 0.065 9.8	1580 0.070 10.5	1740 0.078 11.6	2030 0.090 13.5	2310 0.103 15.4	2590 0.115 17.3	2870 0.128 19.1	3150 0.140 21.0	3490 0.155 23.3	
	300	1200 0.054 8.0	1370 0.061 9.2	1490 0.066 9.9	1600 0.071 10.7	1770 0.079 11.8	2050 0.091 13.7	2330 0.104 15.5	2610 0.116 17.4	2890 0.129 19.3	3170 0.141 21.2	3510 0.156 23.4	
350	350	1230 0.055 8.2	1400 0.062 9.3	1510 0.067 10.1	1620 0.072 10.8	1790 0.080 11.9	2070 0.092 13.8	2350 0.105 15.7	2630 0.117 17.6	2910 0.130 19.4	3200 0.142 21.3	3530 0.157 23.6	
	400	1270 0.057 8.5	1440 0.064 9.6	1550 0.069 10.4	1670 0.074 11.1	1830 0.082 12.2	2120 0.094 14.1	2400 0.107 16.0	2680 0.119 17.9	2960 0.132 19.7	3240 0.144 21.6	3580 0.159 23.9	
450	450	1290 0.058 8.6	1460 0.065 9.8	1580 0.070 10.5	1690 0.075 11.3	1860 0.083 12.4	2140 0.095 14.3	2420 0.108 16.1	2700 0.120 18.0	2980 0.133 19.9	3260 0.145 21.8	3600 0.160 24.0	
	500	1340 0.060 8.9	1510 0.067 10.1	1620 0.072 10.8	1730 0.077 11.6	1900 0.085 12.7	2180 0.097 14.6	2460 0.110 16.4	2750 0.122 18.3	3030 0.135 20.2	3310 0.147 22.1	3650 0.162 24.3	
560	560	1360 0.061 9.1	1530 0.068 10.2	1640 0.073 11.0	1760 0.078 11.7	1930 0.086 12.8	2210 0.098 14.7	2490 0.111 16.6	2770 0.123 18.5	3050 0.136 20.3	3330 0.148 22.2	3670 0.163 24.5	
	650	1430 0.064 9.5	1600 0.071 10.7	1710 0.076 11.4	1820 0.081 12.2	1990 0.089 13.3	2270 0.101 15.2	2550 0.114 17.0	2840 0.126 18.9	3120 0.139 20.8	3400 0.151 22.7	3740 0.166 24.9	
700	700	1470 0.066 9.8	1640 0.073 11.0	1760 0.078 11.7	1870 0.083 12.5	2040 0.091 13.6	2320 0.103 15.5	2600 0.116 17.3	2880 0.128 19.2	3160 0.141 21.1	3440 0.153 23.0	3780 0.168 25.2	
	800	1540 0.069 10.3	1710 0.076 11.4	1820 0.081 12.2	1950 0.086 12.9	2100 0.094 14.0	2390 0.106 15.9	2670 0.119 17.8	2950 0.131 19.7	3230 0.144 21.5	3510 0.156 23.4	3850 0.171 25.7	

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

Heating Element Temperature:1500℃
Furnace temperature:1300℃
Heating Element Current:250A
Surface Loading:13.5W/cm²
Shank Distance:50mm

1700 type ø 9/18U-shape working parameters

Heating Zone →																			
mm ↓	mm	150	180	200	250	300	350	400	450	500	550	650	700	800	900	1000			
	150	1470 0.024 5.8	1690 0.027 6.7	1835 0.029 7.4	2210 0.035 8.8	2580 0.041 10.3	2855 0.047 11.8	3320 0.053 14.7	3395 0.059 16.3	4065 0.065 17.7	4440 0.071 19.7	5550 0.083 22.2	5800 0.089 25.2	6290 0.101 28.2	7035 0.113 31.1	7780 0.124 34.1			
250	250	1495 0.024 5.9	1715 0.027 6.8	1865 0.030 7.5	2240 0.036 8.9	2605 0.042 10.5	2980 0.048 11.9	3350 0.054 14.9	3725 0.060 16.4	4090 0.065 17.8	4465 0.071 20.8	5575 0.083 22.3	5820 0.089 25.3	6320 0.101 28.3	7065 0.113 31.2	7805 0.125 34.4			
	315	1530 0.024 6.2	1750 0.028 7.0	1895 0.030 7.6	2270 0.036 9.1	2640 0.042 10.6	3015 0.048 12.1	3380 0.054 13.5	3755 0.060 15.1	4125 0.066 16.5	4500 0.072 18.0	5610 0.084 21.0	5860 0.090 22.4	6355 0.102 25.4	7095 0.114 28.4	7840 0.125 31.4			
350	350	1560 0.025 6.5	1780 0.028 7.2	1935 0.031 7.9	2305 0.037 9.4	2680 0.043 10.9	3045 0.049 12.4	3420 0.055 13.9	3790 0.061 15.4	4165 0.067 16.9	4535 0.073 18.4	5650 0.085 21.3	5900 0.091 22.8	6390 0.102 25.8	7135 0.114 28.8	7875 0.126 31.8			
	400	1610 0.026 6.5	1830 0.029 7.4	1980 0.032 8.1	2355 0.038 9.5	2735 0.044 10.9	3105 0.050 12.4	3480 0.056 13.9	3860 0.062 15.4	4240 0.068 16.9	4620 0.074 18.4	5745 0.086 21.6	5995 0.092 23.0	6490 0.104 26.0	7235 0.116 28.9	7975 0.128 31.9			
450	450	1715 0.027 6.7	1935 0.030 7.6	2085 0.033 8.1	2460 0.039 9.7	2845 0.045 11.1	3220 0.051 12.7	3600 0.057 14.1	3985 0.063 15.6	4370 0.069 17.1	4755 0.075 18.6	5880 0.087 21.8	6130 0.093 23.2	6630 0.105 26.6	7375 0.117 29.6	8120 0.129 32.6			
	500	1775 0.028 7.1	1995 0.032 8.0	2145 0.034 8.6	2520 0.040 10.1	2905 0.046 11.6	3280 0.052 13.1	3660 0.058 14.5	4045 0.064 16.1	4430 0.070 17.5	4815 0.076 19.0	5940 0.088 21.9	6190 0.094 23.4	6690 0.106 26.4	7435 0.118 29.4	8180 0.130 32.3			
600	600	1815 0.029 7.3	2035 0.033 8.1	2190 0.035 8.8	2565 0.041 10.2	2950 0.047 11.8	3340 0.053 12.7	3730 0.059 14.2	4125 0.065 15.7	4520 0.071 17.2	4915 0.077 19.7	6040 0.089 22.1	6290 0.094 23.7	6790 0.106 26.6	7535 0.118 29.6	8280 0.130 32.6			
	650	1865 0.030 7.5	2085 0.033 8.4	2240 0.036 8.9	2605 0.042 10.5	2990 0.048 11.9	3380 0.054 13.4	3770 0.060 15.4	4165 0.066 16.9	4560 0.072 18.4	4955 0.078 19.9	6080 0.090 22.1	6330 0.095 23.8	6830 0.107 26.7	7575 0.119 29.7	8320 0.131 32.7			
700	700	1915 0.031 7.7	2135 0.034 8.6	2290 0.037 9.1	2656 0.044 10.7	3045 0.050 12.1	3440 0.056 13.6	3840 0.062 15.1	4240 0.068 16.6	4640 0.074 18.0	5040 0.080 19.5	6165 0.092 22.6	6415 0.097 24.0	6915 0.109 27.0	7660 0.121 29.2	8405 0.133 32.9			

Heating Element Temperature:1500℃
Furnace temperature:1300℃
Heating Element Current:370A
Surface Loading:13.5W/cm²
Shank Distance:8mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1700 type Ø 12/24U-shape working parameters

Cold Zone →														
mm	200	220	250	300	350	400	450	500	550	650	700	800	900	1000
250	2276	2462	2741	3206	3672	4137	4603	5068	5627	6465	6930	7861	8792	9723
	0.017	0.018	0.020	0.023	0.027	0.030	0.034	0.037	0.041	0.047	0.051	0.057	0.064	0.071
	6.15	6.65	7.41	8.67	9.92	11.18	12.44	13.70	15.21	17.47	18.73	21.25	23.76	26.28
280	2307	2493	2772	3238	3703	4169	4634	5100	5658	6496	6961	7892	8823	9754
	0.017	0.018	0.020	0.024	0.027	0.030	0.034	0.037	0.041	0.047	0.051	0.058	0.064	0.071
	6.23	6.74	7.49	8.75	10.01	11.27	12.52	13.78	15.29	17.56	18.81	21.33	23.85	26.36
315	2343	2529	2809	3274	3740	4205	4670	5136	5694	6532	6998	7929	8860	9791
	0.017	0.018	0.021	0.024	0.027	0.031	0.034	0.038	0.042	0.048	0.051	0.058	0.065	0.072
	6.33	6.84	7.59	8.85	10.11	11.36	12.62	13.88	15.39	17.65	18.91	21.43	23.94	26.46
350	2380	2566	2845	3311	3776	4241	4707	5172	5731	6569	7034	7965	8896	9827
	0.017	0.019	0.021	0.024	0.028	0.031	0.034	0.038	0.042	0.048	0.051	0.058	0.065	0.072
	6.43	6.93	7.69	8.95	10.21	11.46	12.72	13.98	15.49	17.75	19.01	21.53	24.04	26.56
400	2432	2618	2897	3363	3828	4293	4759	5224	5783	6621	7086	8017	8948	9879
	0.018	0.019	0.021	0.025	0.028	0.031	0.035	0.038	0.042	0.048	0.052	0.059	0.065	0.072
	6.57	7.08	7.83	9.09	10.35	11.60	12.86	14.12	15.63	17.89	19.15	21.67	24.18	26.70
450	2484	2670	2949	3415	3880	4345	4811	5276	5835	6673	7138	8069	9000	9931
	0.018	0.020	0.022	0.025	0.028	0.032	0.035	0.039	0.043	0.049	0.052	0.059	0.066	0.073
	6.71	7.22	7.97	9.23	10.49	11.74	13.00	14.26	15.77	18.03	19.29	21.81	24.32	26.84
500	2536	2722	3001	3467	3932	4398	4863	5328	5887	6725	7190	8121	9052	9983
	0.019	0.020	0.022	0.025	0.029	0.032	0.036	0.039	0.043	0.049	0.053	0.059	0.066	0.073
	6.85	7.36	8.11	9.37	10.63	11.89	13.14	14.40	15.91	18.18	19.43	21.95	24.47	26.98
550	2598	2784	3064	3529	3994	4460	4925	5391	5949	6787	7253	8184	9115	10045
	0.019	0.020	0.022	0.026	0.029	0.033	0.036	0.039	0.043	0.050	0.053	0.060	0.067	0.073
	7.02	7.53	8.28	9.54	10.80	12.05	13.31	14.57	16.08	18.34	19.60	22.12	24.63	27.15

Heating Element Temperature:1700℃
Furnace temperature:1600℃
Heating Element Current:47A
Surface Loading:11.5W/cm²
Shank Distance:25mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1800 type Ø 3/6U-shape working parameters

Cold Zone →															
mm	75	100	125	140	160	180	200	225	250	280	315	355	400	450	500
198	255	312	346	392	437	483	540	597	666	746	837	940	1054	1168	
50	0.089	0.115	0.141	0.157	0.177	0.198	0.219	0.245	0.270	0.301	0.338	0.379	0.426	0.477	0.529
40	4.2	5.4	6.6	7.4	8.3	9.3	10.3	11.5	12.7	14.2	15.9	17.8	20.0	22.4	24.9
75	204	262	319	353	399	444	490	547	604	673	753	844	947	1061	1175
	0.093	0.118	0.144	0.160	0.180	0.201	0.222	0.248	0.274	0.305	0.341	0.382	0.429	0.480	0.532
	4.4	5.6	6.8	7.5	8.5	9.5	10.4	11.6	12.9	14.3	16.0	18.0	20.1	22.6	25.0
100	268	325	360	405	451	497	554	611	679	759	851	954	1068	1182	1296
	0.096	0.121	0.147	0.163	0.184	0.204	0.225	0.251	0.277	0.308	0.344	0.385	0.432	0.483	0.535
	4.5	5.7	6.9	7.7	8.6	9.6	10.6	11.8	13.0	14.5	16.2	18.1	20.3	22.7	25.1
125	275	332	367	412	458	504	561	618	686	766	858	960	1075	1189	1303
	0.099	0.125	0.150	0.166	0.187	0.207	0.228	0.254	0.280	0.311	0.347	0.388	0.435	0.486	0.538
	4.6	5.9	7.1	7.8	8.8	9.7	10.7	11.9	13.1	14.6	16.3	18.2	20.4	22.9	25.3
140	275	332	367	412	458	504	561	618	686	766	858	960	1075	1189	1303
	0.101	0.125	0.150	0.166	0.187	0.207	0.228	0.254	0.280	0.311	0.347	0.388	0.435	0.486	0.538
	4.7	5.9	7.1	7.8	8.8	9.7	10.7	11.9	13.1	14.6	16.3	18.2	20.4	22.9	25.3
160	285	342	376	422	467	513	570	627	696	776	871	960	1075	1189	1303
	0.103	0.129	0.155	0.170	0.191	0.212	0.232	0.258	0.284	0.315	0.351	0.393	0.435	0.486	0.542
	4.8	6.1	7.3	8.0	9.0	9.9	10.9	12.1	13.3	14.8	16.5	18.4	20.4	22.9	25.5
180	290	347	381	427	473	519	576	633	701	781	873	975	1090	1204	1318
	0.105	0.131	0.157	0.173	0.193	0.214	0.235	0.261	0.286	0.317	0.354	0.395	0.442	0.493	0.545
	5.0	6.2	7.4	8.1	9.1	10.1	11.0	12.2	13.5	14.9	16.6	18.6	20.8	23.2	25.6
200	296	353	387	433	479	524	581	638	707	787	878	981	1096	1209	1323
	0.108	0.134	0.160	0.176	0.196	0.217	0.237	0.263	0.289	0.320	0.357	0.398	0.444	0.496	0.547
	5.1	6.3	7.5	8.2	9.2	10.2	11.1	12.4	13.6	15.0	16.7	18.7	20.9	23.3	25.7
225	309	366	401	446	492	538	595	652	720	800	892	994	1109	1223	1337
	0.110	0.140	0.166	0.182	0.202	0.223	0.243	0.269	0.295	0.326	0.363	0.404	0.450	0.502	0.554
	5.2	6.4	7.6	8.3	9.3	10.3	11.4	12.7	13.9	15.3	17.0	19.0	21.2	23.6	26.0
250	314	371	406	451	497	543	599	656	724	804	905	1008	1128	1236	1350
	0.112	0.142	0.168	0.184	0.204	0.225	0.245	0.271	0.301	0.332	0.368	0.410	0.456	0.508	0.560
	5.3	6.5	7.7	8.4	9.4	10.4	11.5	12.8	14.0	15.4	17.3	19.3	21.4	23.9	26.3
300	336	393	428	473	519	565	622	679	748	827	919	1022	1136	1250	1363
	0.120	0.146	0.172	0.187	0.208	0.229	0.250	0.271	0.301	0.332	0.368	0.410	0.456	0.508	0.560
	5.7	6.9	8.1	8.8	9.8	10.8	11.7	12.9	14.2	15.6	17.3	19.3	21.4	23.9	26.3
350	359	416	451	496	542	588	645	702	771	850	942	1045	1158	1271	1384
	0.126	0.152	0.178	0.194	0.214	0.235	0.256	0.282	0.307	0.338	0.375	0.416	0.462	0.514	0.566
	5.9	7.2	8.4	9.1	10.1	11.0	12.0	13.2	14.4	15.9	17.6	19.5	21.7	24.2	26.6

Heating Element Temperature: 1700 °C
Furnace temperature: 1600 °C
Heating Element Current: 70A
Surface Loading: 11.5W/cm²
Shank Distance: 25mm

Power: W
Element Resistance: (1500°C) : Ω
Working Voltage: V

1800 type Ø 4/9U-shape working parameters

1800 type Ø 4,9U-shape working parameters																	
Heating Zone →	mm	75	100	125	140	160	180	200	225	250	280	315	355	400	450	500	
50	248	321	393	437	495	553	611	683	756	843	944	1060	1191	1336	1481		
	0,051	0,065	0,080	0,089	0,101	0,113	0,125	0,139	0,154	0,172	0,193	0,216	0,243	0,267	0,302		
	3,5	4,6	5,6	6,2	7,1	7,9	8,7	9,8	10,8	12,0	13,5	15,1	17,0	19,1	21,2		
	255	328	400	444	502	560	618	690	763	850	951	1067	1198	1343	1488		
	0,052	0,067	0,082	0,091	0,102	0,114	0,126	0,141	0,156	0,173	0,194	0,218	0,244	0,274	0,304		
75	257	336	417	461	519	577	635	697	770	857	958	1074	1206	1349	1495		
	0,054	0,068	0,083	0,092	0,104	0,116	0,128	0,143	0,157	0,175	0,196	0,219	0,246	0,276	0,305		
	3,7	4,8	5,8	6,4	7,3	8,1	8,9	10,0	11,0	12,2	13,7	15,3	17,2	19,3	21,4		
	269	342	414	458	516	574	632	704	777	864	965	1081	1212	1357	1502		
	0,055	0,070	0,085	0,093	0,105	0,117	0,129	0,144	0,159	0,176	0,197	0,221	0,247	0,277	0,307		
125	298	379	459	503	561	619	677	740	813	900	1011	1123	1254	1399	1545		
	0,056	0,071	0,086	0,094	0,106	0,118	0,130	0,145	0,159	0,177	0,198	0,222	0,248	0,278	0,307		
	4,0	5,0	6,0	6,6	7,4	8,3	9,1	10,1	11,1	12,4	13,9	15,5	17,4	19,4	21,5		
	279	352	424	468	526	584	642	714	787	874	975	1091	1227	1372	1518		
	0,057	0,072	0,087	0,095	0,107	0,119	0,131	0,146	0,161	0,178	0,199	0,223	0,249	0,279	0,309		
160	410	510	611	677	77,5	83	92	102	112	125	139	156	175	195	216		
	285	357	430	473	531	589	647	720	792	879	981	1097	1227	1372	1518		
	0,058	0,073	0,088	0,097	0,108	0,120	0,132	0,147	0,162	0,179	0,200	0,224	0,251	0,280	0,310		
	4,1	5,1	6,1	6,8	7,7	8,4	9,2	10,3	11,3	12,6	14,0	15,7	17,5	19,6	21,7		
	290	363	435	479	537	595	653	725	798	885	986	1103	1233	1378	1523		
200	0,059	0,074	0,089	0,098	0,110	0,121	0,133	0,148	0,163	0,181	0,201	0,225	0,252	0,281	0,311		
	4,1	5,2	6,2	6,8	7,7	8,5	9,3	10,4	11,4	12,6	14,1	15,8	17,6	19,7	21,8		
	304	377	449	493	551	609	667	739	812	899	1017	1117	1247	1392	1537		
	0,062	0,077	0,092	0,101	0,112	0,124	0,136	0,151	0,166	0,183	0,204	0,228	0,257	0,284	0,314		
	4,3	5,4	6,4	7,0	7,9	8,7	9,5	10,6	11,6	12,8	14,3	16,0	17,8	19,9	22,0		
250	318	391	463	507	565	623	681	753	826	913	1015	1131	1261	1406	1551		
	0,065	0,080	0,095	0,103	0,115	0,127	0,139	0,154	0,169	0,186	0,207	0,231	0,257	0,287	0,317		
	4,5	5,6	6,7	7,2	8,1	8,9	9,7	10,8	11,8	13,0	14,5	16,2	18,0	20,1	22,2		
	318	391	463	507	565	623	681	753	826	913	1015	1131	1261	1406	1551		
	0,066	0,081	0,096	0,104	0,116	0,128	0,140	0,155	0,171	0,189	0,210	0,234	0,260	0,290	0,319		
350	432	505	577	621	679	737	795	867	940	1027	1114	1201	1298	1400	1505		
	0,068	0,083	0,097	0,106	0,118	0,130	0,142	0,157	0,171	0,189	0,210	0,234	0,260	0,290	0,319		
	4,7	5,8	6,8	7,4	8,3	9,1	9,9	11,0	12,0	13,2	14,7	16,4	18,2	20,3	22,4		
	432	505	577	621	679	737	795	867	940	1027	1114	1201	1298	1400	1505		
	0,069	0,084	0,098	0,107	0,119	0,131	0,143	0,158	0,172	0,190	0,211	0,235	0,261	0,291	0,320		

Heating Element Temperature: 1700°C
Furnace temperature: 1600°C
Heating Element Current: 130A
Surface Loading: 11.5W/cm²
Shank Distance: 50mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1800 type Ø 6/12U-shape working parameters

mm	140	160	180	200	225	250	280	315	355	400	450	500	560	630	720	815
125	0.046	0.051	0.057	0.062	0.069	0.076	0.084	0.094	0.103	0.117	0.131	0.145	0.162	0.181	0.206	0.232
140	0.046	0.052	0.057	0.063	0.070	0.076	0.085	0.094	0.105	0.118	0.132	0.145	0.162	0.181	0.206	0.232
160	0.047	0.053	0.058	0.064	0.071	0.078	0.087	0.096	0.107	0.120	0.133	0.147	0.164	0.183	0.209	0.236
180	0.048	0.053	0.059	0.064	0.071	0.078	0.087	0.096	0.107	0.120	0.133	0.147	0.164	0.183	0.209	0.236
200	0.048	0.053	0.059	0.064	0.071	0.078	0.087	0.096	0.107	0.120	0.133	0.147	0.164	0.183	0.209	0.236
225	0.049	0.054	0.060	0.065	0.072	0.079	0.087	0.097	0.109	0.121	0.135	0.149	0.165	0.185	0.210	0.236
250	0.049	0.054	0.060	0.065	0.072	0.079	0.087	0.097	0.109	0.121	0.135	0.149	0.165	0.185	0.210	0.236
280	0.051	0.056	0.061	0.067	0.074	0.081	0.089	0.098	0.110	0.123	0.137	0.151	0.168	0.187	0.214	0.240
315	0.051	0.057	0.062	0.068	0.075	0.082	0.090	0.100	0.112	0.124	0.138	0.152	0.169	0.188	0.213	0.239
355	0.053	0.058	0.063	0.069	0.076	0.083	0.091	0.101	0.114	0.126	0.140	0.153	0.170	0.189	0.214	0.240
400	0.054	0.060	0.065	0.071	0.078	0.084	0.092	0.102	0.113	0.126	0.139	0.152	0.169	0.188	0.213	0.239
450	0.056	0.061	0.067	0.072	0.079	0.086	0.094	0.104	0.116	0.128	0.141	0.155	0.172	0.191	0.216	0.242
500	0.057	0.063	0.068	0.074	0.081	0.088	0.096	0.106	0.118	0.130	0.143	0.157	0.173	0.192	0.217	0.243
560	0.058	0.064	0.069	0.075	0.082	0.089	0.097	0.107	0.119	0.131	0.144	0.158	0.174	0.193	0.218	0.244
630	0.059	0.065	0.070	0.076	0.083	0.090	0.098	0.108	0.120	0.132	0.145	0.159	0.175	0.194	0.219	0.245
720	0.061	0.067	0.072	0.078	0.085	0.092	0.100	0.110	0.122	0.134	0.146	0.160	0.176	0.195	0.220	0.246
815	0.062	0.068	0.073	0.079	0.086	0.093	0.101	0.111	0.123	0.135	0.147	0.161	0.177	0.196	0.221	0.247
900	0.063	0.069	0.074	0.080	0.087	0.094	0.102	0.112	0.124	0.136	0.148	0.162	0.178	0.197	0.222	0.248
1000	0.064	0.070	0.075	0.081	0.088	0.095	0.103	0.113	0.125	0.137	0.149	0.163	0.179	0.198	0.223	0.249
1120	0.065	0.071	0.076	0.082	0.089	0.096	0.104	0.114	0.126	0.138	0.150	0.164	0.180	0.199	0.224	0.250
1250	0.066	0.072	0.077	0.083	0.090	0.097	0.105	0.115	0.127	0.139	0.151	0.165	0.181	0.200	0.225	0.251
1400	0.067	0.073	0.078	0.084	0.091	0.098	0.106	0.116	0.128	0.140	0.152	0.166	0.182	0.201	0.226	0.252
1560	0.068	0.074	0.079	0.085	0.092	0.099	0.107	0.117	0.129	0.141	0.153	0.167	0.183	0.202	0.227	0.253

Heating Element Temperature:1700℃
Furnace temperature:1600℃
Heating Element Current:245A
Surface Loading:1.5W/cm²
Shank Distance:60mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1800 type ø 9/18U—shpae working parameters

Heating Zone →																				Cold Zone →																					
mm	160	180	200	225	250	280	315	355	400	450	500	550	600	650	700	750	800	850	900	1000	160	180	200	225	250	280	315	355	400	450	500	550	600	650	700	750	800	850	900	1000	
1407	1532	1696	1876	2056	2272	2524	2812	3136	3496	3856	4217	4577	4937	5297	5657	6017	6378	6738	7438		1407	1532	1696	1876	2056	2272	2524	2812	3136	3496	3856	4217	4577	4937	5297	5657	6017	6378	7438		
200	0.023	0.028	0.031	0.034	0.038	0.042	0.047	0.052	0.058	0.064	0.070	0.076	0.082	0.088	0.094	0.100	0.106	0.112	0.124		200	0.023	0.028	0.031	0.034	0.038	0.042	0.047	0.052	0.058	0.064	0.070	0.076	0.082	0.088	0.094	0.100	0.106	0.112	0.124	
300	0.035	0.042	0.046	0.050	0.055	0.060	0.065	0.070	0.076	0.081	0.087	0.092	0.098	0.103	0.108	0.113	0.118	0.123	0.130		300	0.035	0.042	0.046	0.050	0.055	0.060	0.065	0.070	0.076	0.081	0.087	0.092	0.098	0.103	0.108	0.113	0.118	0.123	0.130	
400	0.047	0.055	0.060	0.065	0.070	0.075	0.080	0.085	0.090	0.095	0.100	0.105	0.110	0.115	0.120	0.125	0.130	0.135	0.140		400	0.047	0.055	0.060	0.065	0.070	0.075	0.080	0.085	0.090	0.095	0.100	0.105	0.110	0.115	0.120	0.125	0.130	0.135	0.140	
500	0.059	0.068	0.074	0.080	0.086	0.092	0.098	0.104	0.110	0.116	0.122	0.128	0.134	0.140	0.146	0.152	0.158	0.164	0.170		500	0.059	0.068	0.074	0.080	0.086	0.092	0.098	0.104	0.110	0.116	0.122	0.128	0.134	0.140	0.146	0.152	0.158	0.164	0.170	0.176
600	0.071	0.081	0.088	0.095	0.102	0.110	0.117	0.125	0.132	0.140	0.148	0.156	0.164	0.172	0.180	0.188	0.196	0.204	0.212		600	0.071	0.081	0.088	0.095	0.102	0.110	0.117	0.125	0.132	0.140	0.148	0.156	0.164	0.172	0.180	0.188	0.196	0.204	0.212	0.220
700	0.083	0.094	0.102	0.110	0.118	0.126	0.134	0.142	0.150	0.158	0.166	0.174	0.182	0.190	0.198	0.206	0.214	0.222	0.230		700	0.083	0.094	0.102	0.110	0.118	0.126	0.134	0.142	0.150	0.158	0.166	0.174	0.182	0.190	0.198	0.206	0.214	0.222	0.230	0.238
800	0.095	0.107	0.116	0.125	0.134	0.143	0.152	0.161	0.170	0.179	0.188	0.197	0.206	0.215	0.224	0.233	0.242	0.251	0.260		800	0.095	0.107	0.116	0.125	0.134	0.143	0.152	0.161	0.170	0.179	0.188	0.197	0.206	0.215	0.224	0.233	0.242	0.251	0.260	0.269
900	0.107	0.120	0.129	0.139	0.149	0.159	0.169	0.179	0.189	0.199	0.209	0.219	0.229	0.239	0.249	0.259	0.269	0.279	0.289		900	0.107	0.120	0.129	0.139	0.149	0.159	0.169	0.179	0.189	0.199	0.209	0.219	0.229	0.239	0.249	0.259	0.269	0.279	0.289	0.299
1000	0.119	0.133	0.143	0.153	0.163	0.173	0.183	0.193	0.203	0.213	0.223	0.233	0.243	0.253	0.263	0.273	0.283	0.293	0.303		1000	0.119	0.133	0.143	0.153	0.163	0.173	0.183	0.193	0.203	0.213	0.223	0.233	0.243	0.253	0.263	0.273	0.283	0.293	0.303	0.313
1100	0.131	0.146	0.157	0.168	0.179	0.190	0.201	0.212	0.223	0.234	0.245	0.256	0.267	0.278	0.289	0.300	0.311	0.322	0.333		1100	0.131	0.146	0.157	0.168	0.179	0.190	0.201	0.212	0.223	0.234	0.245	0.256	0.267	0.278	0.289	0.300	0.311	0.322	0.333	0.343
1200	0.143	0.159	0.170	0.182	0.194	0.206	0.218	0.230	0.242	0.254	0.266	0.278	0.290	0.302	0.314	0.326	0.338	0.350	0.362		1200	0.143	0.159	0.170	0.182	0.194	0.206	0.218	0.230	0.242	0.254	0.266	0.278	0.290	0.302	0.314	0.326	0.338	0.350	0.362	0.374
1300	0.155	0.172	0.184	0.196	0.208	0.220	0.232	0.244	0.256	0.268	0.280	0.292	0.304	0.316	0.328	0.340	0.352	0.364	0.376		1300	0.155	0.172	0.184	0.196	0.208	0.220	0.232	0.244	0.256	0.268	0.280	0.292	0.304	0.316	0.328	0.340	0.352	0.364	0.376	0.388
1400	0.167	0.185	0.197	0.210	0.222	0.234	0.246	0.258	0.270	0.282	0.294	0.306	0.318	0.330	0.342	0.354	0.366	0.378	0.390		1400	0.167	0.185	0.197	0.210	0.222	0.234	0.246	0.258	0.270	0.282	0.294	0.306	0.318	0.330	0.342	0.354	0.366	0.378	0.390	0.402
1500	0.179	0.197	0.210	0.223	0.235	0.247	0.259	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403		1500	0.179	0.197	0.210	0.223	0.235	0.247	0.259	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415
1600	0.191	0.209	0.222	0.235	0.247	0.259	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415		1600	0.191	0.209	0.222	0.235	0.247	0.259	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427
1700	0.203	0.221	0.234	0.247	0.259	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427		1700	0.203	0.221	0.234	0.247	0.259	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439
1800	0.215	0.233	0.246	0.259	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439		1800	0.215	0.233	0.246	0.259	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451
1900	0.227	0.245	0.258	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451		1900	0.227	0.245	0.258	0.271	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463
2000	0.239	0.257	0.270	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463		2000	0.239	0.257	0.270	0.283	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475
2100	0.251	0.269	0.282	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475		2100	0.251	0.269	0.282	0.295	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487
2200	0.263	0.281	0.294	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487		2200	0.263	0.281	0.294	0.307	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499
2300	0.275	0.293	0.306	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499		2300	0.275	0.293	0.306	0.319	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511
2400	0.287	0.305	0.318	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511		2400	0.287	0.305	0.318	0.331	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511	0.523
2500	0.299	0.317	0.330	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511	0.523		2500	0.299	0.317	0.330	0.343	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511	0.523	0.535
2600	0.311	0.329	0.342	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511	0.523	0.535		2600	0.311	0.329	0.342	0.355	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511	0.523	0.535	0.547
2700	0.323	0.341	0.354	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511	0.523	0.535	0.547		2700	0.323	0.341	0.354	0.367	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511	0.523	0.535	0.547	0.559
2800	0.335	0.353	0.366	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511	0.523	0.535	0.547	0.559		2800	0.335	0.353	0.366	0.379	0.391	0.403	0.415	0.427	0.439	0.451	0.463	0.475	0.487	0.499	0.511	0.523	0.535	0.547	0.559	0.571
2900	0.347	0.365	0.378	0.391	0.403	0.415	0.427	0.439	0.4																																

Heating Element Temperature:1820°C
Furnace temperature:1720°C
Heating Element Current:16A
Surface Loading:12W/cm²
Shank Distance:25mm

Power:W
Element Resistance: (1500°C) : Ω
Working Voltage:V

1850 type ø 3/6U-shape working parameters

Heating Zone →

mm	90	100	125	140	160	180	200	225	250	280	315	355	400	450	500
25	235	258	316	351	397	443	490	548	606	675	756	849	954	1070	1186
50	0.1111	0.122	0.149	0.166	0.188	0.210	0.231	0.259	0.286	0.319	0.358	0.401	0.451	0.505	0.560
75	5.1	5.6	6.9	7.6	8.6	9.6	10.6	11.9	13.2	14.7	16.4	18.5	20.7	23.3	25.8
100	241	264	322	357	404	450	496	554	612	682	763	856	960	1076	1192
125	0.1114	0.125	0.152	0.169	0.191	0.213	0.235	0.262	0.289	0.322	0.361	0.404	0.454	0.509	0.563
150	5.2	5.7	7.0	7.8	8.8	9.8	10.8	12.0	13.3	14.8	16.6	18.6	20.9	23.4	25.9
180	248	271	339	384	440	486	503	561	619	688	770	862	967	1083	1199
200	0.1117	0.128	0.155	0.172	0.194	0.216	0.238	0.265	0.292	0.325	0.364	0.408	0.457	0.512	0.566
250	5.4	5.9	7.1	7.9	8.9	9.9	10.9	12.2	13.5	15.0	16.7	18.7	21.0	23.5	26.1
300	254	277	335	370	417	463	509	567	625	695	776	869	973	1089	1205
350	0.120	0.131	0.159	0.175	0.197	0.219	0.241	0.268	0.296	0.328	0.367	0.411	0.460	0.515	0.570
400	5.5	6.0	7.3	8.0	9.1	10.1	11.1	12.3	13.6	15.1	16.9	18.9	21.2	23.7	26.2
450	258	281	339	374	420	467	513	571	629	699	780	873	977	1093	1209
500	0.122	0.133	0.160	0.177	0.199	0.221	0.243	0.270	0.297	0.330	0.369	0.412	0.462	0.517	0.571
550	5.6	6.1	7.4	8.1	9.1	10.1	11.2	12.4	13.7	15.2	17.0	19.8	21.2	23.8	26.3
600	263	287	345	379	426	473	518	576	634	703	785	878	971	1089	1214
650	0.124	0.135	0.163	0.179	0.201	0.223	0.245	0.272	0.300	0.333	0.371	0.415	0.460	0.515	0.574
700	5.7	6.2	7.5	8.2	9.3	10.3	11.3	12.5	13.8	15.3	17.1	19.1	21.3	23.9	26.4
750	269	293	350	385	431	477	524	582	640	708	790	883	976	1083	1219
800	0.127	0.138	0.165	0.182	0.204	0.226	0.247	0.275	0.302	0.335	0.374	0.417	0.467	0.521	0.576
850	5.8	6.3	7.6	8.4	9.4	10.4	11.4	12.6	13.9	15.4	17.2	19.2	21.5	24.0	26.5
900	274	297	355	390	436	483	529	587	645	714	796	888	993	1109	1225
950	0.129	0.140	0.168	0.184	0.206	0.228	0.250	0.277	0.305	0.338	0.376	0.420	0.469	0.524	0.579
1000	6.0	6.5	7.7	8.5	9.5	10.5	11.5	12.8	14.0	15.5	17.3	19.3	21.6	24.1	26.6
1050	287	310	368	403	449	496	542	600	658	727	809	901	1004	1122	1238
1100	0.136	0.147	0.174	0.190	0.212	0.234	0.256	0.284	0.311	0.344	0.382	0.426	0.475	0.530	0.585
1150	6.2	6.7	8.0	8.8	9.8	10.8	11.8	13.0	14.3	15.8	17.6	19.6	21.9	24.4	26.9
1200	300	323	381	416	462	509	555	613	671	740	823	914	1019	1135	1251
1250	0.142	0.153	0.180	0.197	0.218	0.240	0.262	0.290	0.317	0.350	0.388	0.432	0.481	0.536	0.591
1300	6.5	7.0	8.3	9.0	10.0	11.1	12.1	13.3	14.6	16.1	17.9	19.9	22.1	24.7	27.2
1350	313	336	394	429	475	522	568	626	684	754	835	927	1032	1148	1264
1400	0.148	0.159	0.186	0.203	0.225	0.247	0.268	0.296	0.323	0.356	0.394	0.438	0.488	0.542	0.597
1450	6.8	7.3	8.6	9.3	10.3	11.3	12.3	13.6	14.9	16.4	18.1	20.2	22.4	25.0	27.5

Cold Zone →

Heating Element Temperature:1820°C
Furnace temperature:1720°C
Heating Element Current:16A
Surface Loading:12W/cm²
Shank Distance:25mm

Power:W
Element Resistance: (1500°C) : Ω
Working Voltage:V

1850 type ø 4/9U-shape working parameters

Heating Zone →

mm	90	100	125	140	160	180	200	225	250	280	315	355	400	450	500
25	299	329	403	448	508	567	627	701	776	865	970	1089	1223	1372	1521
50	0.063	0.069	0.085	0.094	0.107	0.119	0.132	0.147	0.163	0.182	0.204	0.229	0.257	0.288	0.319
75	4.3	4.8	5.8	6.5	7.4	8.2	9.1	10.2	11.2	12.5	14.1	15.8	17.7	19.9	22.0
100	306	336	410	455	514	574	634	708	783	872	976	1096	1230	1379	1528
125	0.064	0.070	0.086	0.096	0.108	0.121	0.133	0.149	0.164	0.183	0.205	0.230	0.258	0.290	0.321
150	4.4	4.9	5.9	6.6	7.5	8.3	9.2	10.3	11.3	12.6	14.2	15.9	17.8	20.0	22.1
180	313	342	417	462	521	581	640	715	789	879	983	1102	1237	1386	1535
200	0.066	0.072	0.088	0.097	0.109	0.122	0.135	0.150	0.166	0.185	0.207	0.232	0.260	0.291	0.322
225	4.5	5.0	6.0	6.7	7.6	8.4	9.3	10.4	11.4	12.7	14.2	16.0	17.9	20.1	22.2
250	319	349	424	468	528	588	647	722	796	886	990	1109	1243	1392	1541
275	0.067	0.073	0.089	0.098	0.111	0.123	0.136	0.152	0.167	0.186	0.208	0.233	0.261	0.292	0.324
300	4.6	5.1	6.1	6.8	7.7	8.5	9.4	10.5	11.5	12.8	14.3	16.1	18.0	20.2	22.3
325	323	353	428	473	532	592	651	726	800	890	994	1113	1247	1396	1545
350	0.068	0.074	0.090	0.099	0.112	0.124	0.137	0.152	0.168	0.187	0.209	0.234	0.262	0.293	0.325
375	4.7	5.1	6.2	6.8	7.7	8.6	9.4	10.5	11.6	12.9	14.4	16.1	18.1	20.2	22.4
400	329	359	433	478	538	597	657	731	806	895	1000	1119	1253	1402	1551
425	0.069	0.075	0.091	0.100	0.113	0.125	0.138	0.154	0.169	0.188	0.210	0.235	0.263	0.294	0.326
450	4.8	5.2	6.3	6.9	7.8	8.7	9.5	10.6	11.7	13.0	14.5	16.2	18.2	20.3	22.5
475	334	364	439	483	543	603	662	737	811	901	1005	1124	1258	1407	1556
500	0.070	0.076	0.092	0.102	0.114	0.127	0.139	0.155	0.170	0.189	0.211	0.236	0.264	0.296	0.327
525	4.8	5.3	6.4	7.0	7.9	8.7	9.6	10.7	11.8	13.1	14.6	16.3	18.2	20.4	22.6
550	340	370	444	489	548	608	668	742	817	906	1010	1130	1264	1413	1562
575	0.071	0.078	0.093	0.103	0.115	0.128	0.140	0.156	0.172	0.190	0.212	0.237	0.265	0.297	0.328
600	4.9	5.4	6.4	7.1	7.9	8.8	9.7	10.8	11.8	13.1	14.6	16.4	18.3	20.5	22.6
625	353	383	458	502	562	622	681	756	830	920	1024	1143	1277	1426	1575
650	0.074	0.080	0.096	0.106	0.118	0.131	0.143	0.159	0.174	0.193	0.215	0.240	0.268	0.300	0.331
675	5.1	5.6	6.6	7.3	8.1	9.0	9.9	11.0	12.0	13.3	14.8	16.6	18.5	20.7	22.8
700	367	397	471	516	576	635	695	769	844	933	1038	1157	1291	1440	1589
725	0.077	0.083	0.099	0.108	0.121	0.133	0.146	0.162	0.177	0.196	0.218	0.243	0.271	0.302	0.334
750	5.3	5.8	6.8	7.5	8.3	9.2	10.1	11.2	12.2	13.5	15.0	16.8	18.7	20.9	23.0
775	381	410	485	530	589	649	709	783	858	947	1051	1170	1305	1454	1603
800	0.080	0.086	0.102	0.111	0.124	0.136	0.149	0.163	0.180	0.199	0.221	0.246	0.274	0.305	0.337
825	5.5	5.9	7.0	7.7	8.5	9.4	10.3	11.3	12.4	13.7	15.2	17.0	18.9	21.1	23.2

Cold Zone →

Heating Element Temperature:1820℃
Furnace Temperature:1720℃
Heating Element Current:128A
Surface Loading:12W/cm²
Shank Distance:30mm

Power:W
Element Resistance: (1500℃) ; Ω
Working Voltage:V

1850 type ø 6/12U—shpae working parameters

Heating Zone →															Cold Zone →												
mm	125	160	180	200	225	255	280	315	355	400	450	500	560	630	720												
715	882	978	1074	1193	1337	1456	1624	1815	2031	2270	2509	2796	3131	3561													
125	0.044	0.054	0.060	0.066	0.073	0.082	0.089	0.099	0.111	0.124	0.139	0.153	0.171	0.191	0.217												
5.6	6.9	7.6	8.4	9.3	10.4	11.4	12.7	14.2	15.9	17.7	19.6	21.8	24.5	27.8													
722	890	986	1081	1201	1344	1464	1631	1823	2038	2277	2517	2804	3138	3569													
140	0.044	0.054	0.060	0.066	0.073	0.082	0.089	0.100	0.111	0.124	0.139	0.154	0.171	0.192	0.218												
5.6	7.0	7.7	8.4	9.4	10.5	11.4	12.7	14.2	15.9	17.8	19.7	21.9	24.5	27.9													
733	900	996	1091	1211	1355	1474	1642	1833	2048	2287	2527	2814	3149	3579													
160	0.045	0.055	0.061	0.067	0.074	0.083	0.090	0.100	0.112	0.125	0.140	0.154	0.172	0.192	0.218												
5.7	7.0	7.8	8.5	9.5	10.6	11.5	12.8	14.3	16.0	17.9	19.7	22.0	24.6	28.0													
743	910	1006	1101	1221	1365	1484	1652	1843	2058	2298	2537	2824	3159	3589													
180	0.045	0.056	0.061	0.067	0.075	0.083	0.091	0.101	0.112	0.126	0.140	0.155	0.172	0.193	0.219												
5.8	7.1	7.9	8.6	9.5	10.7	11.6	12.9	14.4	16.1	17.9	19.8	22.1	24.7	28.0													
753	920	1016	1112	1231	1375	1494	1662	1853	2068	2298	2547	2834	3169	3599													
200	0.046	0.056	0.062	0.068	0.075	0.084	0.091	0.101	0.113	0.126	0.141	0.155	0.173	0.193	0.220												
5.9	7.2	7.9	8.7	9.6	10.7	11.7	13.0	14.5	16.2	18.0	19.9	22.1	24.8	28.1													
765	933	1029	1124	1244	1387	1507	1674	1866	2081	2320	2559	2846	3181	3612													
225	0.047	0.057	0.063	0.069	0.076	0.085	0.092	0.102	0.114	0.127	0.142	0.156	0.174	0.194	0.220												
6.0	7.3	8.0	8.8	9.7	10.8	11.8	13.1	14.6	16.3	18.1	20.0	22.2	24.9	28.2													
778	945	1041	1137	1256	1400	1520	1687	1878	2094	2333	2572	2859	3194	3625													
250	0.047	0.058	0.064	0.069	0.077	0.085	0.093	0.103	0.115	0.128	0.142	0.157	0.175	0.195	0.221												
6.1	7.4	8.1	8.9	9.8	10.9	11.9	13.2	14.7	16.4	18.2	20.1	22.3	25.0	28.3													
793	961	1056	1152	1272	1415	1535	1702	1893	2109	2348	2587	2874	3209	3640													
280	0.048	0.059	0.064	0.070	0.078	0.086	0.094	0.104	0.119	0.133	0.148	0.163	0.181	0.200	0.222												
6.2	7.5	8.3	9.0	9.9	11.1	12.0	13.3	14.8	16.5	18.3	20.2	22.5	25.1	28.4													
811	978	1074	1170	1289	1433	1553	1720	1911	2126	2366	2605	2892	3227	3657													
315	0.049	0.060	0.066	0.071	0.079	0.087	0.095	0.105	0.117	0.130	0.144	0.159	0.177	0.197	0.223												
6.3	7.6	8.4	9.1	10.1	11.2	12.1	13.4	14.9	16.6	18.5	20.4	22.6	25.2	28.6													
831	998	1094	1190	1309	1453	1573	1740	1931	2147	2386	2625	2912	3247	3678													
355	0.051	0.061	0.067	0.073	0.080	0.089	0.096	0.106	0.118	0.131	0.146	0.160	0.178	0.198	0.224												
6.5	7.8	8.5	9.3	10.2	11.4	12.3	13.6	15.1	16.8	18.6	20.5	22.8	25.4	28.7													
854	1021	1117	1212	1332	1476	1595	1763	1954	2169	2409	2648	2935	3270	3700													
400	0.052	0.062	0.068	0.074	0.081	0.090	0.097	0.108	0.119	0.132	0.147	0.162	0.179	0.200	0.226												
6.7	8.0	8.7	9.5	10.4	11.5	12.5	13.8	15.3	16.9	18.8	20.7	22.9	25.5	28.9													

Heating Element Temperature:1820℃
Furnace Temperature:1720℃
Heating Element Current:241A
Surface Loading:12W/cm²
Shank Distance:30mm

Power:W
Element Resistance: (1500℃) ; Ω
Working Voltage:V

1850 type ø 9/18U shape working parameters

1850 type Ø 9/18 shape working parameters																
Heating Zone →																
mm	160	180	200	225	250	280	315	355	400	450	500	550	600	650	700	
1362	1582	1730	1914	2099	2321	2579	2875	3207	3577	3946	4315	4685	5054	5423		
200	0.023	0.027	0.030	0.033	0.036	0.040	0.044	0.049	0.055	0.062	0.068	0.074	0.081	0.087	0.093	
5.7	6.6	7.2	7.9	8.7	9.6	10.7	11.9	13.3	14.8	16.4	17.9	19.4	21.0	22.5		
1474	1622	1769	1954	2139	2360	2619	2915	3247	3616	3986	4355	4725	5094	5463		
250	0.025	0.028	0.030	0.034	0.037	0.041	0.045	0.050	0.056	0.062	0.069	0.075	0.081	0.088	0.094	
6.1	6.7	7.3	8.1	8.9	9.8	10.9	12.1	13.5	15.0	16.5	18.1	19.6	21.1	22.7		
1498	1646	1793	1978	2163	2384	2643	2939	3271	3640	4010	4379	4749	5118	5487		
280	0.026	0.028	0.031	0.034	0.037	0.041	0.046	0.051	0.056	0.063	0.069	0.075	0.082	0.088	0.094	
6.2	6.8	7.4	8.2	9.0	9.9	11.0	12.2	13.6	15.1	16.6	18.2	19.7	21.2	22.8		
1526	1674	1821	2006	2191	2412	2671	2966	3299	3668	4038	4407	4776	5146	5515		
315	0.026	0.029	0.031	0.035	0.038	0.042	0.046	0.051	0.057	0.063	0.070	0.076	0.082	0.089	0.095	
355	0.027	0.031	0.034	0.038	0.042	0.046	0.051	0.057	0.063	0.070	0.076	0.082	0.089	0.095		
400	0.027	0.029	0.032	0.035	0.038	0.042	0.047	0.052	0.057	0.064	0.070	0.076	0.083	0.089	0.096	
450	0.028	0.031	0.033	0.036	0.040	0.043	0.048	0.053	0.059	0.065	0.071	0.078	0.084	0.090	0.097	
500	0.029	0.034	0.037	0.041	0.045	0.049	0.054	0.059	0.066	0.072	0.078	0.085	0.091	0.098		
550	0.030	0.032	0.035	0.038	0.041	0.045	0.049	0.054	0.060	0.067	0.073	0.079	0.086	0.092	0.098	
600	0.030	0.033	0.035	0.038	0.042	0.045	0.050	0.055	0.061	0.067	0.073	0.080	0.086	0.093	0.099	
650	0.031	0.033	0.036	0.039	0.042	0.046	0.051	0.056	0.062	0.068	0.074	0.080	0.087	0.093	0.100	
700	0.031	0.034	0.037	0.040	0.044	0.048	0.053	0.058	0.064	0.070	0.076	0.082	0.089	0.095	0.102	
750	0.032	0.035	0.038	0.041	0.045	0.050	0.055	0.060	0.066	0.072	0.078	0.084	0.091	0.098	0.105	
800	0.032	0.036	0.039	0.043	0.047	0.052	0.057	0.062	0.068	0.074	0.080	0.086	0.093	0.100	0.107	
850	0.033	0.037	0.040	0.044	0.049	0.054	0.059	0.064	0.070	0.076	0.082	0.088	0.095	0.102	0.109	
900	0.033	0.038	0.041	0.045	0.050	0.055	0.060	0.065	0.071	0.077	0.083	0.090	0.096			
950	0.034	0.039	0.042	0.046	0.051	0.056	0.061	0.066	0.072	0.078	0.084	0.091	0.098			
1000	0.034	0.040	0.043	0.047	0.052	0.057	0.062	0.067	0.073	0.079	0.085	0.092	0.099			
1050	0.035	0.041	0.044	0.048	0.053	0.058	0.063	0.068	0.074	0.080	0.086	0.093	0.100			
1100	0.035	0.042	0.045	0.049	0.054	0.059	0.064	0.069	0.075	0.081	0.087	0.094	0.101			
1150	0.036	0.043	0.046	0.050	0.055	0.060	0.065	0.070	0.076	0.082	0.088	0.095	0.102			
1200	0.036	0.044	0.047	0.051	0.056	0.061	0.066	0.071	0.077	0.083	0.089	0.096	0.103			
1250	0.037	0.045	0.048	0.052	0.057	0.062	0.067	0.072	0.078	0.084	0.090	0.097	0.104			
1300	0.037	0.046	0.049	0.053	0.058	0.063	0.068	0.073	0.079	0.085	0.091	0.098	0.105			
1350	0.038	0.047	0.050	0.054	0.059	0.064	0.069	0.074	0.080	0.086	0.092	0.099	0.106			
1400	0.038	0.048	0.051	0.055	0.060	0.065	0.070	0.075	0.081	0.087	0.093	0.100	0.107			
1450	0.039	0.049	0.052	0.056	0.061	0.066	0.071	0.076	0.082	0.088	0.094	0.101	0.108			
1500	0.039	0.050	0.053	0.057	0.062	0.067	0.072	0.077	0.083	0.089	0.095	0.102	0.109			
1550	0.040	0.051	0.054	0.058	0.063	0.068	0.073	0.078	0.084	0.090	0.096	0.103	0.110			
1600	0.040	0.052	0.055	0.059	0.064	0.069	0.074	0.079	0.085	0.091	0.097	0.104	0.111			
1650	0.041	0.053	0.056	0.060	0.065	0.070	0.075	0.080	0.086	0.092	0.098	0.105	0.112			
1700	0.041	0.054	0.057	0.061	0.066	0.071	0.076	0.081	0.087	0.093	0.099	0.106	0.113			
1750	0.042	0.055	0.058	0.062	0.067	0.072	0.077	0.082	0.088	0.094	0.100	0.107	0.114			
1800	0.042	0.056	0.059	0.063	0.068	0.073	0.078	0.083	0.089	0.095	0.101	0.108	0.115			
1850	0.043	0.057	0.060	0.064	0.069	0.074	0.079	0.084	0.090	0.096	0.102	0.109	0.116			
1900	0.043	0.058	0.061	0.065	0.070	0.075	0.080	0.085	0.091	0.097	0.103	0.110	0.117			
1950	0.044	0.059	0.062	0.066	0.071	0.076	0.081	0.086	0.092	0.098	0.104	0.111	0.118			
2000	0.044	0.060	0.063	0.067	0.072	0.077	0.082	0.087	0.093	0.099	0.105	0.112	0.119			
2050	0.045	0.061	0.064	0.068	0.073	0.078	0.083	0.088	0.094	0.100	0.106	0.113	0.120			
2100	0.045	0.062	0.065	0.069	0.074	0.079	0.084	0.089	0.095	0.101	0.107	0.114	0.121			
2150	0.046	0.063	0.066	0.070	0.075	0.080	0.085	0.090	0.096	0.102	0.108	0.115	0.122			
2200	0.046	0.064	0.067	0.071	0.076	0.081	0.086	0.091	0.097	0.103	0.109	0.116	0.123			
2250	0.047	0.065	0.068	0.072	0.077	0.082	0.087	0.092	0.098	0.104	0.110	0.117	0.124			
2300	0.047	0.066	0.069	0.073	0.078	0.083	0.088	0.093	0.099	0.105	0.111	0.118	0.125			
2350	0.048	0.067	0.070	0.074	0.079	0.084	0.089	0.094	0.100	0.106	0.112	0.119	0.126			
2400	0.048	0.068	0.071	0.075	0.080	0.085	0.090	0.095	0.101	0.107	0.113	0.120	0.127			
2450	0.049	0.069	0.072	0.076	0.081	0.086	0.091	0.096	0.102	0.108	0.114	0.121	0.128			
2500	0.049	0.070	0.073	0.077	0.082	0.087	0.092	0.097	0.103	0.109	0.115	0.122	0.129			
2550	0.050	0.071	0.074	0.078	0.083	0.088	0.093	0.098	0.104	0.110	0.116	0.123	0.130			
2600	0.050	0.072	0.075	0.079	0.084	0.089	0.094	0.099	0.105	0.111	0.117	0.124	0.131			
2650	0.051	0.073	0.076	0.080	0.085	0.090	0.095	0.100	0.106	0.112	0.118	0.125	0.132			
2700	0.051	0.074	0.077	0.081	0.086	0.091	0.096	0.101	0.107	0.113	0.119	0.126	0.133			
2750	0.052	0.075	0.078	0.082	0.087	0.092	0.097	0.102	0.108	0.114	0.120	0.127	0.134			
2800	0.052	0.076	0.079	0.083	0.088	0.093	0.098	0.103	0.109	0.115	0.121	0.128	0.135			
2850	0.053	0.077	0.080	0.084	0.089	0.094	0.099	0.104	0.110	0.116	0.122	0.129	0.136			
2900	0.053	0.078	0.081	0.085	0.090	0.095	0.100	0.105	0.111	0.117	0.123	0.130	0.137			
2950	0.054	0.079	0.082	0.086	0.091	0.096	0.101	0.106	0.112	0.118	0.124	0.131	0.138			
3000	0.054	0.080	0.083	0.087	0.092	0.097	0.102	0.107	0.113	0.119	0.125	0.132	0.139			
3050	0.055	0.081	0.084	0.088	0.093	0.098	0.103	0.108	0.114	0.120	0.126	0.133	0.140			
3100	0.055	0.082	0.085	0.089	0.094	0.099	0.104	0.109	0.115	0.121	0.127	0.134	0.141			
3150	0.056	0.083	0.086	0.090	0.095	0.100	0.105	0.110	0.116	0.122	0.128	0.135	0.142			
3200	0.056	0.084	0.087	0.091	0.096	0.101	0.106	0.111	0.117	0.123	0.129	0.136	0.143			
3250	0.057	0.085	0.088	0.092	0.097	0.102	0.107	0.112	0.118	0.124	0.130	0.137	0.144			
3300	0.057	0.086	0.089	0.093	0.098	0.103	0.108	0.113	0.119	0.125	0.131	0.138	0.145			
3350	0.058	0.087	0.090	0.094	0.099	0.104	0.109	0.114	0.120	0.126	0.132	0.139	0.146			
3400	0.058	0.088	0.091	0.095	0.100	0.105	0.110	0.115	0.121	0.127	0.133	0.140	0.147			
3450	0.059	0.089	0.092	0.096	0.101	0.106	0.111	0.116	0.122	0.128	0.134	0.141	0.148			
3500	0.059	0.090	0.093	0.097	0.102	0.107	0.112	0.117	0.123	0.129	0.135	0.142	0.149			
3550	0.060	0.091	0.094	0.098	0.103	0.108	0.113	0.118	0.124	0.130	0.136	0.143	0.150			
3600	0.060	0.092	0.095	0.099	0.104	0.109	0.114	0.119	0.125	0.131	0.137	0.144	0.151			
3650	0.061	0.093	0.096	0.100	0.105	0.110	0.115	0.120	0.126	0.132	0.138	0.145	0.152			
3700	0.061	0.094	0.09													

Heating Element Temperature:1800℃
Furnace temperature:1750℃
Heating Element Current:45A
Surface Loading:9W/cm²
Shank Distance:25mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1900 type Ø 3/6U shape working parameters

Cold Zone →															1900 type Ø 3/6U shape working parameters														
Heating Zone →	mm	50	100	125	140	160	180	200	225	250	280	315	355	400															
	145	230	272	298	332	365	399	442	484	535	594	662	738																
	125	0.072	0.113	0.134	0.147	0.164	0.180	0.197	0.218	0.239	0.264	0.293	0.327	0.365															
	3.2	5.1	6.0	6.6	7.4	8.1	8.9	9.8	10.8	11.9	13.2	14.7	16.4																
	149	234	277	302	336	370	404	446	489	539	599	667	743																
	140	0.074	0.116	0.137	0.149	0.166	0.183	0.199	0.220	0.241	0.266	0.296	0.329	0.367															
	3.3	5.2	6.1	6.7	7.5	8.2	9.0	9.9	10.9	12.0	13.3	14.8	16.5																
	154	239	281	307	341	374	408	451	493	544	603	671	747																
	160	0.076	0.118	0.139	0.151	0.168	0.185	0.202	0.223	0.244	0.269	0.298	0.331	0.369															
	3.4	5.3	6.2	6.8	7.6	8.3	9.1	10.0	11.0	12.1	13.4	14.9	16.6																
	158	243	286	311	345	379	413	455	498	548	608	676	752																
	180	0.078	0.120	0.141	0.154	0.170	0.187	0.204	0.225	0.246	0.271	0.300	0.334	0.371															
	3.5	5.4	6.3	6.9	7.7	8.4	9.2	10.1	11.1	12.2	13.5	15.0	16.7																
	163	248	290	316	350	383	417	460	502	553	612	680	756																
	200	0.080	0.122	0.143	0.156	0.173	0.189	0.206	0.227	0.248	0.273	0.302	0.336	0.374															
	3.6	5.5	6.4	7.0	7.8	8.5	9.3	10.2	11.2	12.3	13.6	15.1	16.8																
	176	261	304	329	363	397	431	473	516	566	626	694	770																
	250	0.087	0.129	0.150	0.163	0.179	0.196	0.213	0.234	0.255	0.280	0.309	0.343	0.380															
	3.9	5.8	6.7	7.3	8.1	8.8	9.6	10.5	11.5	12.6	13.9	15.4	17.1																
	190	275	317	343	377	410	444	487	529	580	639	707	783																
	300	0.094	0.136	0.157	0.169	0.186	0.203	0.219	0.240	0.261	0.286	0.316	0.349	0.387															
	4.2	6.1	7.0	7.6	8.4	9.1	9.9	10.8	11.8	12.9	14.2	15.7	17.4																
	203	288	331	356	390	424	458	500	543	593	653	721	797																
	350	0.100	0.142	0.163	0.176	0.193	0.209	0.226	0.247	0.268	0.293	0.322	0.356	0.394															
	4.5	6.4	7.3	7.9	8.7	9.4	10.2	11.1	12.1	13.2	14.5	16.0	17.7																

Heating Element Temperature:1800℃
Furnace temperature:1780℃
Heating Element Current:72A
Surface Loading:10.5W/cm²
Shank Distance:25mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1900type Ø 4/9U shape working parameters

190type Ø 4/90 shape working parameters																
Heating Zone →	mm	50	100	125	140	160	180	200	225	250	280	315	355	400	450	500
Cold Zone →	213	345	411	440	503	556	609	675	741	820	912	1017	1136	1268	1400	
	125	0.041	0.067	0.079	0.087	0.097	0.107	0.117	0.130	0.143	0.158	0.176	0.196	0.219	0.245	0.270
	3.0	4.8	5.7	6.3	7.0	7.7	8.5	9.4	10.3	11.4	12.7	14.1	15.8	17.6	19.4	
	220	352	418	488	510	563	616	682	748	827	919	1025	1143	1275	1407	
	140	0.042	0.068	0.081	0.088	0.098	0.109	0.119	0.132	0.144	0.160	0.177	0.198	0.221	0.246	0.271
	3.1	4.9	5.8	6.4	7.1	7.8	8.6	9.5	10.4	11.5	12.8	14.2	15.9	17.7	19.5	
	228	359	425	465	518	570	623	689	755	834	926	1032	1151	1282	1414	
	160	0.044	0.069	0.082	0.090	0.100	0.110	0.120	0.133	0.146	0.161	0.179	0.199	0.222	0.247	0.273
	3.2	5.0	5.9	6.5	7.2	7.9	8.7	9.6	10.5	11.6	12.9	14.3	16.0	17.8	19.6	
	235	366	432	472	525	577	630	696	762	841	934	1039	1158	1290	1422	
180	0.045	0.071	0.083	0.091	0.101	0.111	0.122	0.134	0.147	0.162	0.180	0.200	0.223	0.249	0.274	
3.3	5.1	6.0	6.6	7.3	8.0	8.8	9.7	10.6	11.7	13.0	14.4	16.1	17.9	19.7		
242	374	440	479	532	585	637	703	769	848	941	1046	1165	1297	1429		
200	0.047	0.072	0.085	0.092	0.103	0.113	0.123	0.136	0.148	0.164	0.181	0.202	0.225	0.250	0.276	
3.4	5.2	6.1	6.7	7.4	8.1	8.9	9.8	10.7	11.8	13.1	14.5	16.2	18.0	19.8		
256	388	454	494	546	599	652	718	784	863	955	1061	1179	1311	1443		
250	0.047	0.072	0.084	0.091	0.101	0.111	0.121	0.133	0.145	0.160	0.177	0.196	0.218	0.243	0.267	
3.6	5.4	6.3	6.9	7.6	8.3	9.1	10.0	10.9	12.0	13.3	14.7	16.4	18.2	20.0		
271	402	468	508	561	613	666	732	798	877	970	1075	1194	1326	1458		
300	0.052	0.078	0.090	0.098	0.108	0.118	0.129	0.141	0.154	0.169	0.187	0.207	0.230	0.256	0.281	
3.8	5.6	6.5	7.1	7.8	8.5	9.3	10.2	11.1	12.2	13.5	14.9	16.6	18.4	20.2		
285	417	483	522	575	628	681	747	813	892	984	1089	1208	1340	1472		
350	0.055	0.080	0.093	0.101	0.111	0.121	0.131	0.144	0.157	0.172	0.190	0.210	0.233	0.258	0.284	
4.0	5.8	6.7	7.3	8.0	8.7	9.5	10.4	11.3	12.4	13.7	15.1	16.8	18.6	20.4		

Heating Element Temperature:1850℃
Furnace Temperature:1800℃
Heating Element Current:130A
Surface Loading:10.5W/cm²
Shank Distance:50mm

Power:W
Element Resistance: (1500℃) : Ω
Working Voltage:V

1900 type ø 6/12U shape working parameters

mm	125	160	180	200	225	255	280	315	355	400	450	500	560
674	808	888	967	1066	1184	1283	1422	1580	1758	1956	2154	2391	
140	0.040	0.048	0.053	0.057	0.063	0.070	0.076	0.084	0.093	0.104	0.116	0.131	0.141
232	6.2	6.8	7.4	8.2	9.2	10.2	11.2	12.3	13.5	15.0	16.6	18.4	
324	8.2	9.2	10.2	11.2	12.3	13.5	14.7	16.0	17.5	19.2	21.0	23.0	24.9
416	10.2	11.2	12.3	13.5	14.7	16.0	17.5	19.2	21.0	23.0	25.2	27.6	29.9
508	12.3	13.5	14.7	16.0	17.5	19.2	21.0	23.0	25.2	27.6	30.0	32.4	34.8
600	14.7	16.0	17.5	19.2	21.0	23.0	25.2	27.6	30.0	32.4	35.0	37.5	40.0
700	17.5	19.2	21.0	23.0	25.2	27.6	30.0	32.4	35.0	37.5	40.0	42.5	45.0
800	20.0	21.0	23.0	25.2	27.6	30.0	32.4	35.0	37.5	40.0	42.5	45.0	47.5
900	22.5	23.0	25.2	27.6	30.0	32.4	35.0	37.5	40.0	42.5	45.0	47.5	50.0
1000	25.2	25.2	27.6	30.0	32.4	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5
1100	27.6	27.6	30.0	32.4	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0
1200	30.0	30.0	32.4	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5
1300	32.4	32.4	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0
1400	35.0	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5
1500	37.5	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0
1600	40.0	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5
1700	42.5	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5	70.0
1800	45.0	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5	70.0	72.5
1900	47.5	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5	70.0	72.5	75.0
2000	50.0	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5	70.0	72.5	75.0	77.5
2200	55.0	55.0	57.5	60.0	62.5	65.0	67.5	70.0	72.5	75.0	77.5	80.0	82.5
2400	60.0	60.0	62.5	65.0	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5
2600	65.0	65.0	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5	90.0	92.5
2800	70.0	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5	90.0	92.5	95.0	97.5
3000	75.0	75.0	77.5	80.0	82.5	85.0	87.5	90.0	92.5	95.0	97.5	100.0	102.5
3200	80.0	80.0	82.5	85.0	87.5	90.0	92.5	95.0	97.5	100.0	102.5	105.0	107.5
3400	85.0	85.0	87.5	90.0	92.5	95.0	97.5	100.0	102.5	105.0	107.5	110.0	112.5
3600	90.0	90.0	92.5	95.0	97.5	100.0	102.5	105.0	107.5	110.0	112.5	115.0	117.5
3800	95.0	95.0	97.5	100.0	102.5	105.0	107.5	110.0	112.5	115.0	117.5	120.0	122.5
4000	100.0	100.0	102.5	105.0	107.5	110.0	112.5	115.0	117.5	120.0	122.5	125.0	127.5
4200	105.0	105.0	107.5	110.0	112.5	115.0	117.5	120.0	122.5	125.0	127.5	130.0	132.5
4400	110.0	110.0	112.5	115.0	117.5	120.0	122.5	125.0	127.5	130.0	132.5	135.0	137.5
4600	115.0	115.0	117.5	120.0	122.5	125.0	127.5	130.0	132.5	135.0	137.5	140.0	142.5
4800	120.0	120.0	122.5	125.0	127.5	130.0	132.5	135.0	137.5	140.0	142.5	145.0	147.5
5000	125.0	125.0	127.5	130.0	132.5	135.0	137.5	140.0	142.5	145.0	147.5	150.0	152.5

Cold Zone →

VII. Overview of MoSi₂ Electric Heating Element Fixture

The accessory for MoSi₂ electric heating element mainly includes fixing and conductive spare parts. The fixing spare parts are mainly contact clamp, the specification of which varies based on the electric heating element diameter, center distance and other parameters. Generally, we have standard size spare parts and any special requirement may depend on our further communications. Conductive spare parts are weaved aluminum braid, main function of which is to connect heating element and wires, the specific specifications can be selected as per user's requirement and the special specification ones can be customized.

1. Contact Clamp



2. Aluminum braid



3. Clamp ring and stainless steel clip

