Tube Furnace >>

Overview

Tube Furnace is a compact heating equipment widely used in so many fields like metallurgy, glass heat treatment, lithium battery, positive and negative electrolyte, abrasive tools and other industries. It is used to measure the structural state of materials at a certain temperature for small samples. It is generally used in colleges and universities, industrial and mining enterprises, research institutions, etc. Tube furnace also has the advantage of providing a vacuum and atmosphere working environment for heating easily with lower cost.

HRE Resistance Wire

N-Type Thermocouple

PID Temperature Control

Horizontal or Vertical Tube need?

SAFTHERM have horizontal and vertical tube furnace for choosing. Also we can do it according to your special request for both combined using.

The factors to select a suitable tube furnace :

What is the Operating temperature ?

> SAFTHERM tube furnace mainly with range of 1200°C, 1400°C, 1700°C and OEM 1800°C.
> When real operating lower than 1200°C, we generally use high grade HRE spiral wire coils as heating element.
> When real operating lower than 1400°C, we generally use high grade SIC (Silicon Carbide Heaters) heating element.
> When real operating lower than 1700°C, we generally use high grade MoSi2 (Molybdenum Disilicide Heaters) heating element.
> Continuous operating temp will be 100°C below the max temp design and right using will extend the furnace service life.
> Furnaces are designed to operate at high temperatures. Operation below temperatures of approximately 600 °C will be less accurate and continuous use at low temperatures may reduce the element life of some furnaces, ie MoSi2 heated furnaces.

Split type or Non-split type.

> For 1200°C tube furnaces, we generally do with Split type as standard with easily replace tube and also fast cooling.
> For the 1400°C tube furnaces, we generally do with Non-split type as standard, but also we can do split type.
> For the 1700°C tube furnaces, we generally do with Non-split type as standard, but also we can do vertical split type.

What is the outer diameter of the working tube ?

> For the working tube, we generally has quartz tube and alumina ceramic tube two types. Also some customer will use their own design specially steel tubes for specially using.
> Quartz tube used for temperature lower than 1200°C. The standard quartz tube OD : Φ25mm, Φ40mm, Φ50mm, Φ60mm, Φ80mm, Φ100mm, Φ120mm, Φ150mm or more larger size.
> Alumina Ceramic Tube generally used in temp over than 1200°C tube furnaces with standard size tube OD : Φ40mm, Φ60mm, Φ80mm, Φ100mm, For other alumina tube sizes, please check with us for confirm.

What is the heating zone length of the tube furnace ?

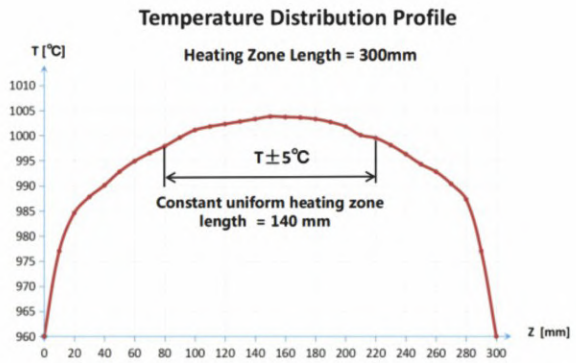
SAFTHERM manufacture different heating zones tube furnace.
Single Heating zone. Standard heating zone length : 300mm. OEM length is available.
Dual heating zones : Standard heating zone length : 300+300=600mm. OEM length is available.
Three heating zones: Standard heating zone length : 300+300+300=900mm. OEM length is available.
Multi-heating zones : different zones and different heating length.
More heating zones, the tube will have a much better central constant heating zone length.

STG-60-12

1200°C Single Zone Split Tube Furnace

Main Features

>Integrated compact structure with elegant design.
>Chamber Materials: Vacuum forming ceramic fiber, which has the advantage of no powder drops off with high temperature, and saving energy more than 50%.
>SHIMADEN (Japan) Microprocessor based self-tuning PID control provides optimum thermal.
>Long life N type thermocouple.
>CE compliant.
>Built-in RS485 port and USB adaptor as optional setting for computer control. It need to add extra fees.



01 Top Cover
02 Hydraulic Rod
03 Mechanical Vacuum Gauge
04 Gas Inlet
05 SS304 Sealing Flanges
06 Quartz Tube
07 Flange Support
08 Shimaden Temperature Controller
09 Zinc Alloy Handle
10 Ceramic Fiber Lining
11 HRE Resistance Wire
12 SS304 Safty Buckle
13 Sound-light Alarm
14 Operating Buttons

Technical Parameters

Model	STG-25-12	STG-40-12	STG-60-12	STG-80-12	STG-100-12	STG-120-12	OEM
Reactor Quartz Tube (OD)	Φ25mm	Φ40mm	Φ60mm	Φ80mm	Φ100mm	Φ120mm	Any size
Heating Zone Length (mm)	300mm	300mm	300mm	300mm	300mm	300mm	
Type	Benchtop						
Furnace Structure	Alumina Ceramic Chamber, Temperature control system, Heating element, Furnace shell ,Main Electric Parts and other relative accessories						
Max Temperature	1200˚C						
Continue Temp.	1100˚C						
Power Supply	220V/1.8KW	220V/1.8KW	220V/2.6KW	220V/2.6KW	220V/2.6KW	220V/4KW	
Heating Element	High quality alloy resistance wire (HRE)						
Chamber Material	High temperature 1500 Type polycrystal alumina ceramic fiber material						
Temp Precision	±1˚C						
Thermocouple	N type						
Temp Controller	SHIMADEN (Japan) brand intelligent microcomputer PID controller can program 4 groups 32 segments						
Electronic Parts	SCHNEIDER (France) electronics brand						
Heating Rate	≤ 25˚C/min (suggest 15˚C/min for longer life using of furnace)						
Safety Protection	Overheat and thermocouple-break alarm						
Certification	ISO9001 /CE/ SGS						
Furnace Shell	High quality cold-rolled steel sheets CNC processing						
Insulation	High quality thermal insulation material to ensure a good uniformity						
Accessories	One pair of high temperature gloves, one pcs of furnace hook, one catalog and operation manual						
Optional	Paperless recorder, Stainless steel exhaust chimney, Quartz /Alumina boat						

STG-80-14

1400°C Single Zone Non-Split Tube Furnace

Main Features

>Integrated compact Structure with elegant design.
>Chamber Materials: Vacuum forming ceramic fiber, which has the advantage of no powder drops off with high temperature, and saving energy more than 50%.
>SHIMADEN (Japan) Microprocessor based self-tuning PID control provides optimum thermal.
>Long life type S thermocouple.
>CE compliant.
>Built-in RS485 port and USB adaptor as optional setting for computer control. It need to add extra fees.

Sealing Flanges

Shimaden PID Temp

01 Carbon Steel Cover with Louver
02 Fire-resisting Stainless Steel Cover
03 Mechanical Vacuum Gauge
04 Gas Valve
05 Stainless Steel Flange
06 Shimaden PID Controller
07 Gas Inlet / Outlet Port
08 Flange Support
09 Sound-light Alarm
10 Operating Buttons

Technical Parameters

Model	STG-40-14	STG-60-14	STG-80-14	STG-100-14	OEM
Reactor Alumina Tube (OD)	Φ40mm	Φ60mm	Φ80mm	Φ100mm	Any size
Heating Zone Length (mm)	300mm	300mm	300mm	300mm	
Type	Benchtop				
Furnace structure	Alumina Ceramic Chamber, Temperature control system, Heating element, Furnace shell ,Main Electric Parts and other relative accessories				
Max temperature	1400℃				
Continue Temp.	1300℃				
Power Supply	220V/2KW	220V/3KW	220V/4KW	220V/5KW	
Heating Element	High quality Silicon Carbide Rod (SIC) heater				
Chamber Material	High temperature 1500 Type polycrystal alumina ceramic fiber material				
Temp Precision	±1℃				
Thermocouple	S type				
Temp controller	SHIMADEN (Japan) brand intelligent microcomputer PID controller can program 4 groups 32 segments				
Electronic Parts	SCHNEIDER (France) electronics brand				
Heating rate	25℃/min (suggest 15℃/min for longer life using of furnace)				
Safety protection	Overheat and thermocouple-break alarm				
Certification	ISO9001 /CE/ SGS				
Furnace shell	High quality cold-rolled steel sheets CNC processing				
Insulation	High quality thermal insulation material to ensure a good uniformity				
Accessories	One pair of high temperature gloves, one pcs of furnace hook, one catalog and operation manual				
Optional	Paperless recorder, Stainless steel exhaust chimney, Alumina boat				

STG-60-17

1700°C Single Zone Non-Split Tube Furnace

Main Features

>Integrated compact Structure with elegant design
>Chamber Materials: Vacuum forming ceramic fiber with advantage of no powder drops off in high temperature and energy saving.
>YUDIAN brand Microprocessor PID controller or any other brand as option Long life type B thermocouple.
>CE compliant.
>Built-in RS485 port and USB adaptor as optional setting for computer control. It need to add extra fees.

Alumina Ceramic Tube

Digital Vacuum Gauge（Optional）

01 Top Cover
02 Alumina Tube
03 Mechanical Vacuum Gauge
04 Gas Inlet
05 Gas Valve
06 SS304 Sealing Flanges
07 Amp&Volt Meters
08 Operating Buttons
09 Digital Vacuum Gauge (Optional)
10 Detection Cable (Optional)
11 KF Sealing Connector (Optional)
12 Gas Flow Meter (Optional)
13 Digital Temperature Controller
14 Digital Vacuum Gauge Panel (Optional)

Technical Parameters

Model	STG-40-17	STG-60-17	STG-80-17	OEM
Reactor AluminaTube (OD)	Φ40mm	Φ60mm	Φ80mm	Any size
Heating Zone Length (mm)	300mm	300mm	300mm	
Type	Benchtop			
Furnace Structure	Alumina Ceramic Chamber, Temperature control system, Heating element, Furnace shell ,Main Electric Parts and other relative accessories			
Max Temperature	1700˚C			
Continue Temp.	1600˚C			
Power Supply	220V/3KW	220V/4KW	220V/5KW	
Heating Element	High quality Molybdenum Disilicide (MoSi2) heater			
Chamber Material	High temperature 1800 Type polycrystal alumina ceramic fiber material			
Temp Precision	±1˚C			
Thermocouple	B type			
Temp Controller	Yudian 518P brand intelligent microcomputer PID controller can program 30 segments			
Electronic Parts	SCHNEIDER (France) electronics brand			
Heating Rate	15˚C/min (suggest 6-10˚C/min for longer life using of furnace)			
Safety Protection	Overheat and thermocouple-break alarm			
Certification	ISO9001 /CE/ SGS			
Furnace Shell	High quality cold-rolled steel sheets CNC processing			
Insulation	High quality thermal insulation material to ensure a good uniformity			
Accessories	One pair of high temperature gloves, one pcs of furnace hook, one catalog and operation manual			
Optional	Paperless recorder, Stainless steel exhaust chimney, Alumina boat			