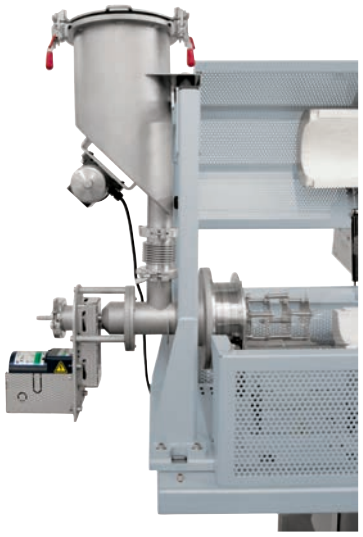
Rotary Tube Furnaces for Processes with Continuous Movement up to 1300 °C

The rotary tube furnaces of the RSRC series are particularly suitable for processes in which continuously running batch material is heated short-time. These rotary furnaces can be used very flexibly for various purposes. The rotary tube furnace is slightly inclined and brought to the target temperature. The material is then fed continuously at the top of the pipe. It passes through the heated zone of the tube and falls out of the pipe at the lower end. The time of the heat treatment depends on the angle of inclination, the speed of rotation and the length of the working tube, as well as from the flow properties of the batch material. Equipped with the optionally available closed feeding system, the rotary tube furnace can also be used for processes in a defined atmosphere or in a vacuum. Depending on the process, batch and required maximum temperature, work tubes made of different materials are used.

Rotary tube furnace RSRC 120750/13

Standard Equipment

- Tmax 1100 °C
  - Working tube made of quartz glass open at both sides
  - Thermocouple type N
- Tmax 1300 °C
  - Open ceramic tube C 530
  - Thermocouple type S
- Heating elements on support tubes provide for free radiation see page 38
- Adjustable drive of approx. 0.5-20 rpm
- Digital display unit for the tilting angle of the rotary tube furnace
- Split-type furnace housing (opening temperature < 180 °C) provide for easy tube change
- Compact system, rotary tube furnace positioned on a base frame with
  - Manual spindle drive with crank to set the tilting angle
  - Switchgear and controls integrated
  - Castors
- Controller with touch operation B500 (5 prgrams with each 4 segments), alternative controllers see page 84



Vibration unit at the charging funnel for improved powder supply

Additional Equipment

- Charge control with temperature measurement in the working tube see page 38
- Three-zone control for optimization of temperature uniformity see page 38
- Alternative work tubes for different process requirements see page 32
- Quartz glass batch reactors (Tmax 1100 °C)
- Higher temperatures up to 1500 °C available on request
- Vibrating channel on the rotary tube for convenient material supply, suitable for processes in air
- Powder discharge tube for easy material discharge, suitable for processes in air
- Feeding system for the continuous delivery of 5 liters of material under a defined atmosphere or vacuum, consisting of:
  - Stainless steel funnel incl. electric vibration unit to optimize the material feeding into the working tube
  - Electrically driven screw-conveyor at the inlet of the working tube with 10, 20 or 40 mm pitch and adjustable speed between 0.25 and 20 rpm
  - Collecting bottle made of laboratory glass at the outlet of the working tube
- Gas supply package 26 for operation under non-flammable process gases (only in connection with the feeding system) see page 34
- Gas supply package 4 for hydrogen applications (only in connection with feeding system) see page 36
- Vacuum package for evacuating the working pipe, depending on the pump used up to 10^{-2} mbar see page 37

Rotary tube furnace RSRC 80/500/11 with feeding system and gas supply system 26 for processes under protective gas

Model	Tmax[1]	Outer dimensions[2] in mm			Max. outer tube Ø	Heated length	Length constant Temperature[1] +/– 5 K in mm		Tube length	Connected load[3]	Electrical	Weight in
	in °C	W	D	H	in mm	in mm	single zoned	three zoned	in mm	in kW	connection*	kg
RSRC 80/500/11	1100	1770	1050	1310	80	500	170	250	1540	6.7	3-phase	305
RSRC 80/750/11	1100	2020	1050	1360	80	750	250	375	1790	10.8	3-phase	340
RSRC 120/500/11	1100	1770	1050	1310	110	500	170	250	1540	6.7	3-phase	305
RSRC 120/750/11	1100	2020	1050	1360	110	750	250	375	1790	10.8	3-phase	340
RSRC 120/1000/11	1100	2270	1050	1360	110	1000	330	500	2040	13.9	3-phase	350
RSRC 80/500/13	1300	1770	1050	1310	80	500	170	250	1540	6.7	3-phase	305
RSRC 80/750/13	1300	2020	1050	1360	80	750	250	375	1790	12.2	3-phase	340
RSRC 120/500/13	1300	1770	1050	1310	110	500	170	250	1540	6.7	3-phase	305
RSRC 120/750/13	1300	2020	1050	1360	110	750	250	375	1790	12.2	3-phase	340
RSRC 120/1000/13	1300	2270	1050	1360	110	1000	330	500	2040	13.9	3-phase	350

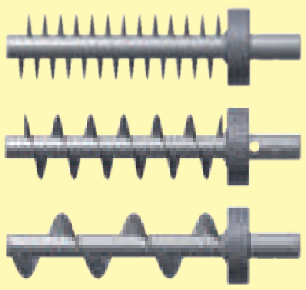
[1]Values outside the tube. Difference to temperature inside the tube up to + 50 K

*Please see page 84 for more information about supply voltage

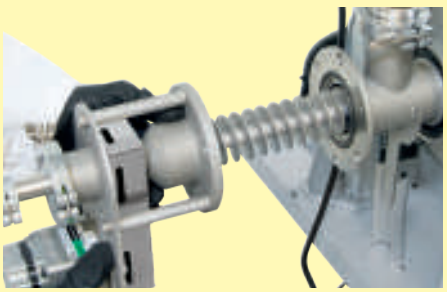
[2]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.

[3]The connected load refers to the standard furnace and may increase for a furnace with additional equipment. For furnaces with connection options for multi-range voltages, the connected load applies to the highest permissible connected voltage.

Vibrating channel on the rotary tube for convenient material feeding



Screw-conveyors with different pitches



Screw-conveyor with variable speed