

Combi Chamber Furnaces up to 1400 °C for Debinding and Sintering in one Process



N 200/HDB



N 650/HDBS



Injection of preheated air through perforated ceramic tubes

N 200/DB - N 1000/14DB

The combi chamber furnaces N 200/DB - N 1000/14DB are specially developed for debinding and sintering in one process. The furnaces have a fresh air supply providing for dilution of the exhaust gases produced during debinding, for safe prevention of an inflammable atmosphere in the furnace chamber. The standard version of the furnaces includes debinding package I, with fresh air injected at room temperature in the furnace and with a factory pre-set volume flow with respect to the organic volume to be vaporized. In addition, the furnaces have an exhaust gas fan that is also factory pre-set and provides for a safe underpressure in the furnace. This system prevents exhaust gases from escaping into the production area. The passive safety package immediately intervenes when the underpressure in the furnace chamber drops. This system is recommended for reproducible processes in which the load does not change.

If the furnace is to be used flexibly with changing loads, we recommend debinding package II. The furnace then includes fresh air preheating with variable fan speed and injection of the warm fresh air through air distribution tubes. The exhaust gas fan also operates at variable speed. The PLC control system automatically adjusts the underpressure in the furnace chamber.

- Tmax 1280 °C, 1340 °C or 1400 °C
- Five-sided heating from all four sides and from the floor for a good temperature uniformity
- Heating elements mounted on support tubes provide for free radiation and long service life of the heating wire
- Bottom heating protected by SiC tiles on the table to provide a level stacking surface
- Multi-layer insulation consisting of lightweight refractory bricks backed by special insulation
- Self-supporting and long-life ceiling construction, with bricks laid in arched construction
- Motor-driven exhaust air flap on the furnace roof



Pressure and flow rate displayed as part of debinding package II



Production system consisting of five combi chamber furnaces N 300/HDB with debinding package II with catalytic afterburning

- Debinding package I with passive safety package and monitoring of the underpressure in the furnace chamber, exhaust gas fan, fresh air fan, preset underpressure in the furnace chamber, controlled by Nabertherm controller P 300 see page 6
- Over-temperature limiter with manual reset for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the furnace and load

Additional equipment

- Multi-zone control adapted to the particular furnace model for optimizing the temperature uniformity
- Commissioning of the furnace with test firing and temperature uniformity measurement (also with load) for the purpose of process optimization see page 23
- Debinding package II with passive safety concept see page 7
- Exhaust air and exhaust gas tubing
- Thermal or catalytic exhaust cleaning systems see page 41
- Process documentation and control with Controltherm MV software package, NTLog and NTGraph for the basic furnace or Nabertherm Control Center (NCC) for monitoring, documentation and control see page 83



N 697/HDS with debinding package II for debinding and sintering of standing filter products

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Electrical connection*	Weight in kg
		w	d	h		W	D	H		
N 200/DB	1280	430	530	720	140	760	1045	1690	3-phase	370
N 300/DB	1280	420	700	780	230	810	1215	1750	3-phase	410
N 450/DB	1280	470	750	1000	350	1010	1440	1815	3-phase	815
N 650/DB	1280	650	850	1100	610	1600	1750	2650	3-phase	1350
N 1000/DB	1280	750	1000	1250	940	1900	2250	2400	3-phase	2100
N 200/HDB	1340	430	530	720	140	760	1045	1690	3-phase	420
N 300/HDB	1340	420	700	780	230	810	1215	1750	3-phase	500
N 450/HDB	1340	470	750	1000	350	1010	1440	1815	3-phase	1040
N 650/HDB	1340	650	850	1100	610	1600	1750	2650	3-phase	1550
N 1000/HDB	1340	750	1000	1250	940	1900	2250	2400	3-phase	2500
N 200/14DB	1400	430	530	720	140	760	1045	1690	3-phase	450
N 300/14DB	1400	420	700	780	230	810	1215	1750	3-phase	550
N 450/14DB	1400	470	750	1000	350	1010	1440	1815	3-phase	1320
N 650/14DB	1400	650	850	1100	610	1600	1750	2650	3-phase	1750
N 1000/14DB	1400	750	1000	1250	940	1900	2250	2400	3-phase	2700

*Please see page 80 for more information about supply voltage