AUTOMATED VACUUM BRAZING SYSTEM
VVBM 200

iew Induktive Erwärmungsanlagen GmbH
Novomaticstraße 16
A-2352 Gumpoldskirchen
+43 (0)2252 607 000-0
+43 (0)2252 607 000-22
office@iew.eu
www.iew.eu
Brazing is a thermal process for joining of equal and composite base materials. In this regard, the vacuum brazing process is the ideal brazing method for high-strength joints for hard-to-wet materials such as tungsten carbide, ceramic or diamond materials such as solid PCD, MKD, CVD, etc. Since no flammable gas or flux is used, it is a very clean and environmentally friendly process, which doesn’t harm the employees health.

Of course, the vacuum brazing process itself is a greater challenge than, for example, brazing with a gas flame, the process including the selection of the brazing filler metal applied must be selected individually for each material and carried out with different brazing parameters (ramp, holding time, cooling ramp, etc.).

By a vertical arrangement of the quartz glass as a vacuum chamber, we from iew have created the opportunity to use multiple levels of glass substrates to equip with tools or place long components standing inside the quartz glass. For optimal temperature distribution we have constructed a 4 zone vacuum chamber which can be controlled independently from one another to realize homogenous temperatures within the chamber.

The thermal distortion of the components to be brazed can be minimized as far as possible by means of the specifically adjustable temperature ramps, nevertheless, depending on the size of the component, it is urgently necessary to ensure an ideal temperature control. Once the optimum setting has been found for a group of components, the vacuum brazing process can be reproduced absolutely reliable.

Different products can also be processed within one brazing cycle, but it is important to ensure a similar component size, otherwise insufficient brazing results may occur.

Process execution and output quantity

Brazing cycle: min. 45 minutes per cycle depending on the component size
Round cutters: 30-80 pcs/cycle 360-969 pcs/shift 1080-2880 pcs/day
Cutting inserts: 80-200 pcs/cycle 960-2400 pcs/shift 2880-7200 pcs/day

Cleaning of workpieces with aceton or ultrasonic bath
Apply brazing paste or brazing foil
Place the cutting edges of the tool
Drying in oven (approx. 10-15 minutes)
Process time minimum of 45 minutes depending on the workpieces, general process time rather 2-3 hours

Technical data VVBM 200
Size: 1500 x 850 x 1800 mm
Weight: 450 kg
Work area up to: bis zu D 180 mm x L 350 mm
Mains supply: 3 x 400V/N + PE 40A 50Hz
Power consumption: max. 28 kW
Heating power: 24 kW
Compressed air connection: 3-6 bar
Vacuum chamber: D 188 mm x L 550 mm
Max. vacuum: 10-7 mbar
Max. temperature: approx. 1000°C
Cooling: Cooling water
Preparation time: ready for brazing within 5 minutes