

"KEJETHERM"

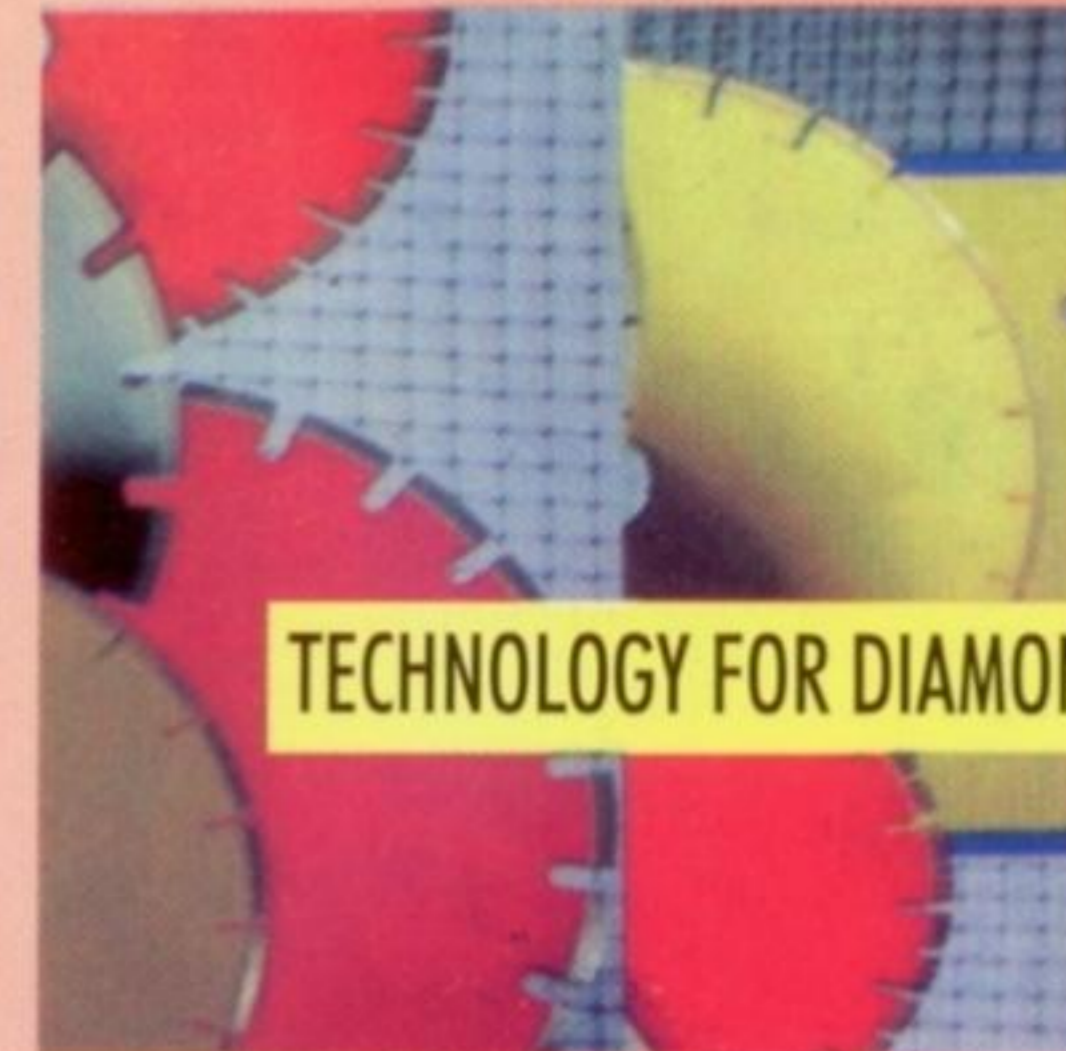
HOT SINTERING PRESS

3 PHASE DC BALANCED LOAD WITH
HIGHER POWER FACTOR.



TECHNOLOGY FOR DIAMOND TOOLS

VACUUM OR CONTROLLED ATMOSPHERE

KEJETHERM*KEJE-THE
INNOVATIVE
PEOPLE***TECHNOLOGY FOR DIAMOND TOOLS****TECHINICAL DATA**

MODEL	TSN - V- 50DC	TSN - V- 75DC	TSN - V- 120DC
Electrical Power (KVA)	50	75	120
Supply Voltage(A.C.) 50Hz (other voltage on request)	3 x 415V	3 x 415V	3 x 415V
Current Rating (Amps)	70A	104A	167A
Temp. Regulating and reading range	Thermocouple 20 - 1200°C Pyroscope 300 -1400°C	Thermocouple 20 - 1200°C Pyroscope 300 -1400°C	Thermocouple 20 -1200°C Pyroscope 300 -1400°C
Hydraulic Pressing Kgs. Force range	100 - 20,000	150 - 30,000	200 - 40, 000
Area of pressing Body dia. in mm	150	200	250
Sintering Surface Area	50 cm ²	75 cm ²	120 cm ²
Adjustable sintering time		As per set profile	
Adjustable Cooling time		As per set profile	
Cooling Water Required @ 2.1 kg/ Cm ² (Lit/ min)	30	40	60
Temp. controller	Profile PID controller		
No. of pressure levels	Infinite through profile PID controller		
Stroke (mm)	150	150	200
Net Weight (kg)	2000 kgs.	3500 kgs.	5000 kgs.
Dimension in mm	900 x 1800 x 1400.	1000 x 2000 x 1500.	1000 x 2500 x 1500.

**KEJE THERMOWELD
EQUIPMENTS PVT. LTD.**

HOT SINTERING PRESS

3 PHASE DC BALANCED LOAD WITH HIGHER POWER FACTOR
Range : 50KVA to 120 KVA

APPLICATION

Sintering presses for single piece and volume production of diamond tools like dressing tools, hollow drills, honing tools, saw segments and bit segments etc.

ADVANTAGES

- Controlled atmosphere Vacuum / inert gas.
- Temperature control by thermocouple or optionally pyroscope.
- Simple programming by standard operating panel.
- PC connection for on - line programming and statistic data acquisition.
- Automatic recognition and change of sintering programmes.
- Compaction system with guide bars.
- Selection of different Sintering programmes, possible with programmable controller.

SALIENT FEATURES

- Rugged design and robust construction, welded frame duly stress relieved.
- The entire cycle is automatic except for the loading and unloading job.
- Consistent product quality.
- State of art electronic power control.
- High- current transformer with water cooled secondary.
- Integrated hydraulic power pack system.
- Least maintenance cost.
- Precise temperature control.
- Import substitute machine.
- Vacuum pump for vacuum / inert gas to prevent the access of oxygen so it reduces the oxidation and consumption of the graphite moulds to a minimum.

TYPICAL SINTERING PROCESS

Sintering process changes as per the composition of sintering material as well as the end result required. One of the typical sintering processes can be of the following nature.

- Mould is kept on lower graphite electrode duly filled in with requisite composite powder or cold compacting segments / wire saws.
- Initiation of cycle brings upper graphite assembly to move down and get clamped with lower graphite assembly at the lower pressure preset level.
- Heat cycle gets ON. The temperature rises as per planned profile so also the pressure profile. This is achieved through PID controller with dual closed loop circuitry. One can choose as many segments, soakings and profiles. It has a 20 programme memory.
- At this stage compressed air is sucked in the chamber and gets mixed with smoke generated by heating of the diamond mixture put in the mould. It goes on for the predetermined time or temperature. After the preset time/temperature vacuum valve initiates throwing all the smoke and air from the chamber to atmosphere creating preset vacuum. This is achieved through vacuum pump mounted in the lower compartment. After preset time / temperature, Nitrogen / Argon etc. is brought in the chamber by operating a valve from the storage of these gases in cylinders. Thus heating / sintering takes place in the controlled atmosphere.
- Pressure varies as preset profile controlled through PID.
- After end of the heat / soaking cycle, cooling time starts ofcourse under preset pressure and controlled atmosphere.
- End of this cycle brings upper graphite assembly back to original position to take the mould/ sintered components out and the press is ready to take on the next charge.

OUR OTHER PRODUCTS FOR DIAMOND TOOLS INDUSTRIES :

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Cold Compacting Press : Model : TCP, Range - 20 to 120 Tons.

Application - This is used to compact mixed powder including diamond grits in dies/ plungers to get segment/wire saws to be Hot Sintered thereafter.

Mixing Machine : Model : TMMA, Standard Range: 1 H.P.

Application : Various powders and diamond grits are put in stainless steel cans and rotated co-axially for uniform amalgamation.

Weighing Machines : Model :TWM-125 & TWM-3000, Range : 125 Grams to 3 kgs.

Application - TWM - 125 is to weigh mix powders and diamond grits in the accuracy of 0.01 Gram. Diamond grit can be weighed in carats directly. The bigger weighing machine TWM-3000 is required to measure various ingredients/powders in large proportions.

Cooling Tower : Model TCT-22, Standard Range : 22.5 Kcal/Hr. to 1Lac Kcal/Hr.

Application - Required for cooling Copper Electrodes, Transformer Secondary, Thyristor stack, Hydraulic Oil etc.

Hardness Tester : Model : TRAS, Standard Range : BHN/RAC

Application - It is required to check the hardness of segments, wire saws and other components after Hot Sintering Process.

Dies and Moulds :

Standard Range : From Size 350mm to 2200mm for circular saws and wire saws.

Dies : Manufactured from die steel duly hardened and tempered for cold compacting press.

Moulds : Manufactured from best imported graphite blocks duly machined and ground to the required size

**FOR DETAILED PROJECT REPORT ON
MANUFACTURING
DIAMOND TOOLS PLEASE WRITE TO US :**

Manufactured & Marketed by :

**KEJE THERMOWELD
EQUIPMENTS PVT. LTD.**

T-105, Bhosari, MIDC, Pune - 411 026 INDIA.

Phone : +91 - 020 - 27120943, 27122213

Fax : +91 - 020 - 27120867

Email : kjtherm@vsnl.com Website : www.kjtherm.com