

# Rebuilt Thermco 5200 Horizontal Diffusion Furnace

## Dedicated to Innovation

At Semco, our goal is to rebuild furnaces that exceed the original equipment manufacturers performance and standards. With the surplus of used semiconductor equipment on the market, why spend large amounts of your budget on a new furnace when you can get custom configured used furnace at a fraction of the price.

Our proven expertise in building new and rebuilt furnace and our guarantee to supply excellent customer service, support, and spare parts, makes Semco one of the world leaders in Furnace Manufacturing.



### Benefits:

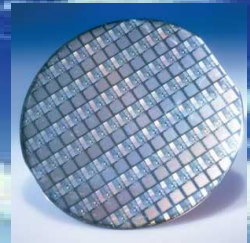
- New Elements
- New Spike and Profile TC's
- New Quartzware and SiC
- All Mechanical and Electrical Components tested & Guaranteed
- Configurations available for Atmospheric, Atmoscan, & LPCVD
- Power Options: 480V (3-Phase) 50/60Hz, or 380V (3-Phase) 50Hz
- Full Installation and Startup on-site by Trained FS Engineers
- Full Process Warranty available
- Left or Right Handed Models Available
- Factory Support for Consumables and Spare Parts



**SEMCO ENGINEERING-INC.**  
THERMAL EQUIPMENT FAB

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# Providing Experience & Knowledge to the Semiconductor Industry



Technical Data Sheet	
Model	THERMCO TMX 5200
Manufactured Date	September, 2008
Serial Number	08052
Orientation	Left Hand (Loader moves right to left) for Load Station, TMX Cabinet, and Main Frame. Right Hand Source Cabinet
Substrate	
Dimensions (mm)	150mm Round Semiconductor Wafers
Load Size	100 wafers
Furnace chamber	
Number of Process Tubes	4
Operating Temperature Range	400 - 1300°C
Temperature Stability	± 0.5°C
Max. Heating Rate	25°C/min
Number of Zones	3
Tube Diameter	225/235mm
Length Temperature Flat Zone	40.0 in (1016mm)
Wafer Loading System	Tube 1-3: Atmoscan with Trolley Tube 4: 2" SiC Paddle
Heating system	
Elements	MRL Helix II HC58
Thermocouple Type	Tube 1-3: Type-B. Tube 4: Type-R
Utilities	
Power	150 KVA
Phase, Voltage, Frequency	3-Phase, 380V, 50Hz
System Control & Software	
Computer Hardware	MUX Model Microvax 3100-10
Quartzware & SiC	
Atmoscan	Inner & Outer Qtz Tube Included
LPCVD	Outer Qtz Tube and SiC Paddle included

Configuration - Tube 1 & 2	
Process	Atmoscan Hydrox/POCL3 Diffusion
Atmoscan Purge	N2
Gas Inlets	N2, H2, O2, Lo-O2, N2 Carrier/POCL3
MFC Type	Celerity/Unit 8100 Analog
MFC Quantity	6
Torch	High Flow External
POCL3 Temp. Controller	Schumacher ATCS
Configuration - Tube 3	
Process	Atmoscan Oxidation Diffusion
Atmoscan Purge	N2
Gas Inlets	N2, H2, O2, Lo-O2, N2 Carrier/Trans-LC
MFC Type	Celerity/Unit 8100 Analog
MFC Quantity	6
Torch	High Flow External
Trans-LC Temp. Controller	Schumacher ATCS15TLC
Configuration - Tube 4	
Process	LPCVD In-Situ Doped POLY
Gas Injection	Front
Gas Inlets	N2, SiH4, SiH4/PH3
MFC Type	Celerity/Unit 8100 Analog
MFC Quantity	6
Vacuum Flange	Front (BOR on Rear) with water control
Pressure Control	MKS 653B with 651C controller (ISO-80)
Isolation	MKS Two-Stage Gate Valve
Pressure Indication	MKS Series 622A & 141AA Baratron
Pump Package	To be supplied by Customer
Warranty & delivery	
Warranty	6 Months
Time of Delivery	2 Months (AS-IS). Delivery may change if customer required configuration change

**SEMCO ENGINEERING** is a Global Supplier of equipment for the Solar and Semiconductor Industries.

We provide solutions through process development and long-term partnerships with our customers.



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