CURING OVENS

MATOVEN

DESIGNED FOR *MAXIMUM* **EFFICIENCY**

proton MASCHINENBAU GMBH

DESIGNED TO ACHIEVE HIGH EFFICIENCY AT LOW OPERATING COSTS AS A RESULT OF ENGINEERING STUDIES AND YEARS OF EXPERIENCE.

MANUFACTURED IN ACCORDANCE WITH EUROPEAN STANDARDS ON SAFETY, ISOLATION AND AUTOMATION.

POWERFUL, ECONOMICAL, DURABLE!

Electrostatic Powder Coating Curing Ovens for Manual Systems

These curing ovens are designed for use in manual powder coating systems and are ideal for small to medium-capacity operations.

Featuring a modular construction, the ovens are easy to assemble and disassemble, ensuring flexible installation and maintenance.

While insulated floor panels ensure effective thermal retention, the integrated wheel entry channels—adjustable at desired intervals—allow easy loading and unloading of parts.

The system operates with a top-blowing, bottom-suction air circulation method. Specially engineered air ducts ensure uniform temperature distribution throughout the oven for consistent curing results.

Compatible with bar transfer systems for enhanced workflow integration.

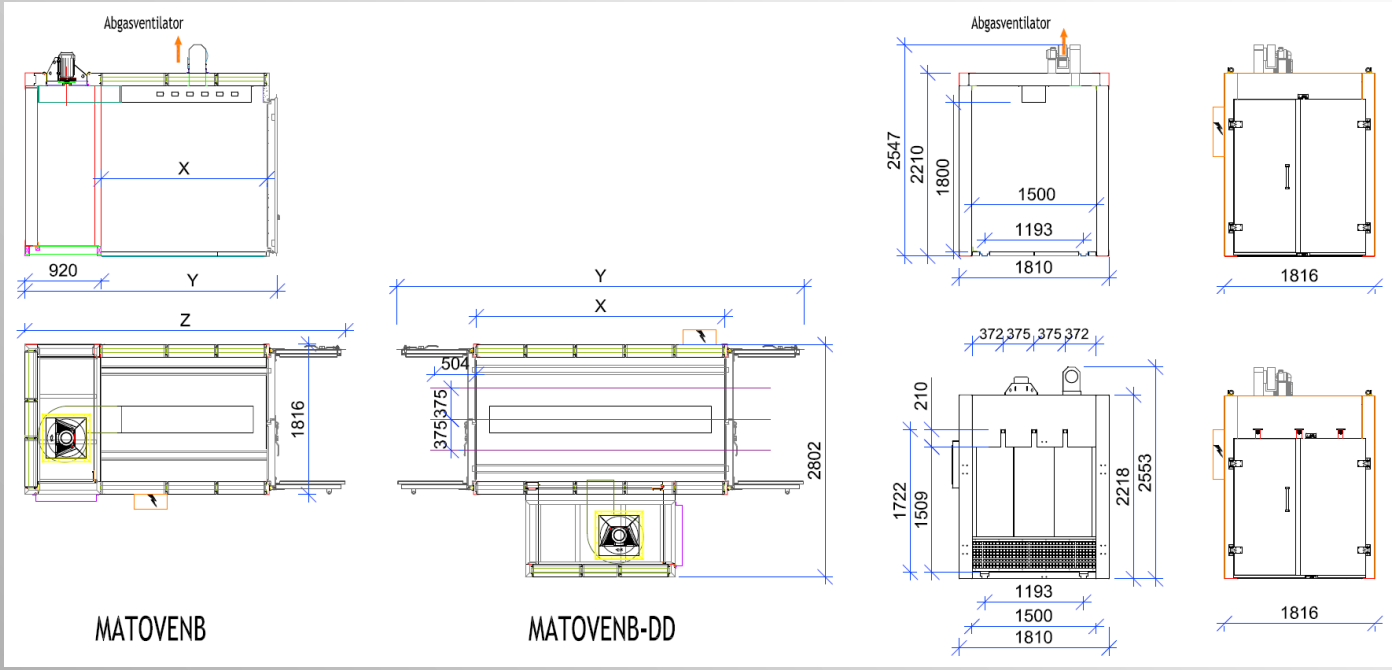
MODEL	INSIDE-OUT DIM (MM)		ELECTRIC KW-BURNER POWER KCAL/H	CIRCULATION FAN KW/H	EXHAUST FAN KW/H	TOTAL ELECTRIC KW/H ELECTRIC OVEN	TOTAL ELECTRIC KW/H BURNER OVEN
	INTERIOR	EXTERIOR					
	W X L X H	W X L X H					
MATOVENB-101010	1500*1300*1900	1000*1000*1000	12	1 * 0,75	0,53	14	
MATOVENB-101610	1500*1300*2100	1000*1000*1600	18	1 * 0,75	0,53	19,5	
MATOVENB-101620	1300*3000*2100	1000*2000*1600	24	1 * 1,5	0,53	26	3
MATOVENB-151824	1800*3400*2300	1500*2400*1800	36 - 99.000	1 * 1,5	0,53	38	3
MATOVENB-151830	1800*4000*2300	1500*3000*1800	42 - 99.000	1 * 1,5	0,53	45	3
MATOVENB-151842	1800*5200*2300	1500*4200*1800	48 - 150.500	2 * 1,5	0,53	52	4
MATOVENB-151848	1800*5800*2300	1500*4800*1800	60 - 150.500	2 * 1,5	0,75	64	4
MATOVENB-151860	1800*7000*2300	1500*6000*1800	96 - 189.200	2 * 3	0,75	104	8
MATOVENB-151872	1800*8200*2300	1500*7200*1800	120 - 189.200	2 * 3	0,75	128	8

CURING OVENS
MATOVEN

DESIGNED FOR *MAXIMUM* **EFFICIENCY**

proton MASCHINENBAU GMBH

DIMENSIONS



MATOVENB				MATOVENB - DD		
	X	Y	Z		X	Y
MATOVENB-151820	2000	3050	3880	MATOVENB-151820-DD		
MATOVENB-151824	2400	3450	4280	MATOVENB-151824-DD	2400	4313
MATOVENB-151830	3000	4050	4880	MATOVENB-151830-DD	3000	4913
MATOVENB-151842	4200	5250	6080	MATOVENB-151842-DD	4200	6113
MATOVENB-151848	4800	5850	6680	MATOVENB-151848-DD	4800	6713
MATOVENB-151860	6000	7050	7880	MATOVENB-151860-DD	6000	7913
MATOVENB-151872	7200	8250	9080	MATOVENB-151872-DD	7200	9113

*** We are capable of manufacturing according to specific requirements, including custom dimensions, precise temperature settings, and specialized control systems.**

CURING OVENS

MATOVEN

DESIGNED FOR *MAXIMUM* **EFFICIENCY**

proton MASCHINENBAU GMBH

Operating Principle

This oven is designed for curing parts coated with powder paint. During the curing process, the powder paint polymerizes at approximately 200 °C (depending on the type of powder used), forming a durable film on the surface of the metal.

Temperature regulation is controlled by the oven's control unit, which receives signals from an internal temperature sensor. A digital temperature sensor is integrated into the control system for precise monitoring.

Oven Body

The body of the polymerization oven is constructed from vertically mounted, interlocking, heat-insulated panels that are sealed with heat-resistant adhesive. Conveyor clearances can be left at the door channels upon request. As an option, the oven can be manufactured with double swing doors for added convenience.

Color Options

You can choose between the Yellow-White or Anthracite-White color combinations for our machines.

Construction and Insulation

The panels are installed in a vertical position on a base plate, serving both as structural reinforcement and to separate the oven floor from the facility floor. The oven floor is constructed from an 80 mm thick panel fully filled with rock wool for optimal insulation.
The thermal insulation of the oven body consists of layered materials: 50 mm thick rock wool and 100 mm thick heat-resistant glass wool. This combination ensures high thermal resistance and excellent heat retention, allowing the oven to maintain stable internal temperatures over extended periods.

The inner surfaces of the insulated panels, along with all internal air ducts, are made from 1.2 mm galvanized steel. This facilitates easy cleaning and enhances heat reflection within the oven chamber. The outer surfaces of the panels are also made from 1.2 mm sheet metal, powder-coated in the company's standard color combinations for a professional finish.

An automatic exhaust fan is installed at the top of the oven ceiling. This fan is designed to expel byproducts generated during the curing process and to prevent smoke accumulation within the oven.

CURING OVENS
MATOVEN

DESIGNED FOR
MAXIMUM
EFFICIENCY

proton
MASCHINENBAU GMBH

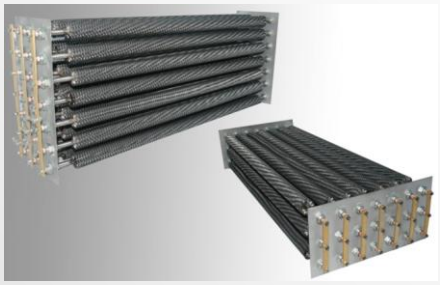
Heat Exchanger

In ovens with double doors, the heating unit is mounted on the side wall, while in single-door ovens, it is positioned at the rear. The internal structure and materials of the heat exchanger are engineered to allow the oven temperature to reach up to 230 °C, ensuring that temperature deviations within the chamber stay within permissible limits.

Together with the circulation fans and the integrated ducting system, the heat exchanger provides efficient heating, hot air delivery, and uniform temperature distribution throughout the polymerization oven.

Heating is achieved via finned stainless steel spiral tubes in electrical ovens, designed for reliable and consistent thermal efficiency.

In burner-heated ovens, a stainless steel heat exchanger is used to ensure long-lasting performance and resistance to high temperatures.



Process Control and Display Functions

The control system of the polymerization oven provides full visibility and management of the curing process through the following features:

- Adjustment mode for the temperature controller
- Programming mode for custom temperature profiles
- Real-time display of the actual oven temperature
- Display of the set process temperature
- Countdown timer activation once the target temperature is reached (useful during dwell periods)
- Error monitoring and diagnostics
- Automatic saving of all previously programmed parameters, even after power-off and restart

Exhaust Fan

The exhaust fan is responsible for extracting the gases generated during the powder polymerization process inside the oven.

Depending on operational needs, the fan can either run continuously after a specified time or be automatically activated at intervals. The operating mode can be configured via the main control panel.

Circulation Fans

Air circulation within the oven is maintained by four high-efficiency circulation fans, each equipped with an insulated chassis. These fans commonly utilize wing-type air propellers, ensuring consistent airflow throughout the chamber.

Digital Fully-Electronic Temperature Controller

The temperature inside the polymerization oven is precisely controlled by a digital, fully-electronic regulator. This system allows the operator to set the required technological parameters based on the specific characteristics of the powder coating being used. It automatically activates and deactivates the heating elements as needed.

Thanks to this intelligent control system, the oven maintains a stable temperature profile with minimal fluctuations, ensuring even and uniform heat distribution throughout the curing process.

CURING OVENS
MATOVEN

DESIGNED FOR *MAXIMUM* **EFFICIENCY**

proton MASCHINENBAU GMBH

Safe Working
Thanks to the safety thermostat against overheating, you will not encounter adverse situations, it protects your machine and your workplace.

Paddle box (optional)
In order to minimize the effect of heating the hall when the oven door is opened, above the doors is mounted hood for outflow heat to a specific location.

Automatic chimney smoke exhaust

A chimney can be programmed to open a few minutes before the end of the firing, in order to empty the chamber from the smoke.
It can be remotely controlled from the panel, you do not need to do this mechanically as in most construction.

The doors which automatically snap

To open them just pull the door. The lock has adjustable door pressure to close them - only need to push the door. The lock automatically will catch the door to shut them well

Automatic Stop & Cooling
Digitally enter the curing temperature and curing time, just press Start. When the oven process is finished, it sounds the warning horn, automatically stops and cools itself automatically.

PID Heating Control (optional)
PID is a system in which, by adjusting the voltage at the setpoint temperature, the heating power that is currently needed is selected - minimizing the effect of temperature fluctuations.

CURING OVENS
MATOVEN

DESIGNED FOR
MAXIMUM
EFFICIENCY

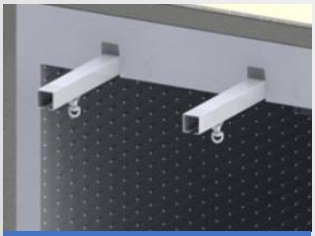
proton
MASCHINENBAU GMBH

Easy Loading

Thanks to the wheel channels at the same level with the ground, you can easily push the trolley into the oven. You can choose the most suitable loading system for loading the workpieces in the furnace.

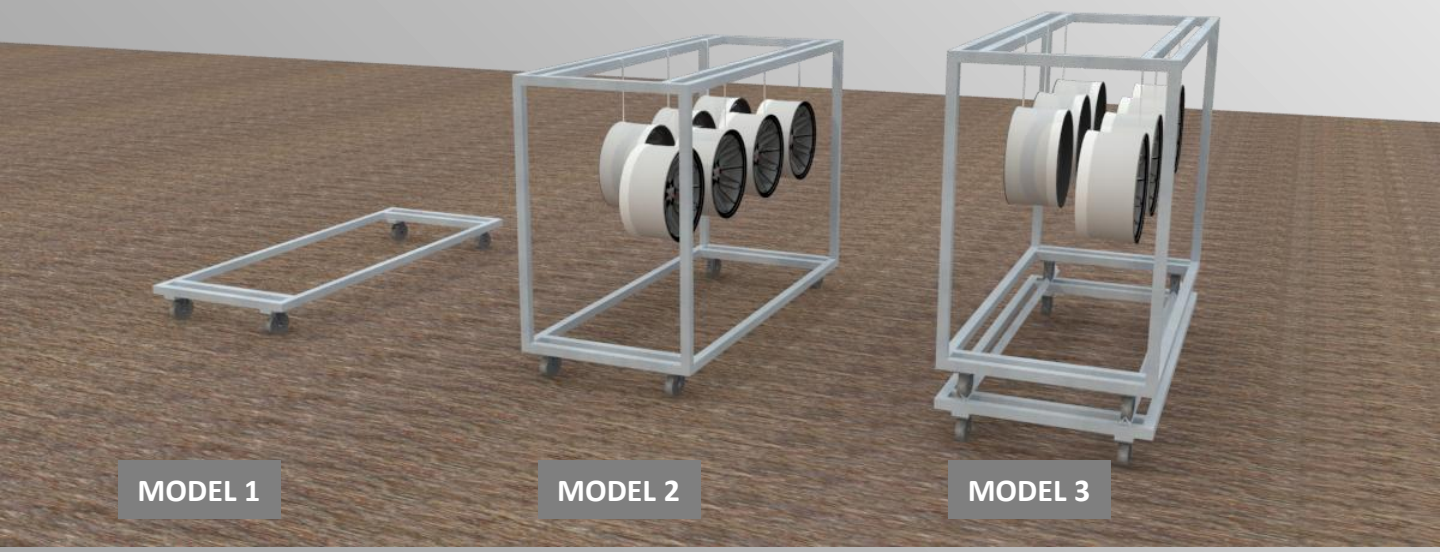
Lower carts

Rails in the floor



Upper tracks

Work piece transport trolley on the floor



CURING OVENS

MATOVEN

DESIGNED FOR
MAXIMUM
EFFICIENCY

proton
MASCHINENBAU GMBH

proton
MASCHINENBAU GMBH


Anhaltstraße 30,
14943 Luckenwalde / Deutschland


+ 49 (0)33 71/ 62 31 841


+49 (0) 176 70 3991 37


info@elboy-proton.de


www.elboy-proton.de

CE