



TECHNICAL SPECIFICATION MM SERIES OF - MIDMATIC VACUUM FORMING MACHINE

Ridat MM Series of Vacuum Forming Machines are fully automatic permitting uninterrupted production with minimum operator supervision. The machines are fully programmed to ensure consistent, repeatable results.

Each process stage has individual time and duration controls. Heaters are zoned.

The machine is PLC controlled and accommodates simple pre-set programming.

MACHINE CONSISTING OF:

The machine frame is of mild steel welded construction designed to provide a solid and rigid chassis. It is in two sections where in the forming section the mould table is housed in an airtight box with easy access from the top for tool changes. The second section is the index and sheet separation section.

The machine is fully guarded and conforms to current European safety legislation. The machine is CE marked and a Certificate of Conformity will be provided as part of the standard documentation

Heating system comprises of horizontally moving heater box powered by a cushioned pneumatic cylinder with high temperature seals. Heater movement is timed and controlled via PLC.

Ceramic infrared heating elements are fitted as standard. Up to 14 zones are provided for balanced heat and controlled via the HMI operator panel.

A heat reflector is fitted below the heater in the in the “park” position.

Material clamping utilizes hinged moving clamp frame powered by pneumatic cylinders

Drape (mould) table is lifted by a cylinder. It is stabilised and balanced by a pair of guide rods to assure smooth and easy movement.

Vacuum System comprises of electrically driven reciprocating vacuum pump fitted, with a 3-phase motor, and is coupled to an integral vacuum reservoir in the machine base frame. A vacuum gauge is fitted as standard.

Sheet Sag can be controlled automatically by using the bubble facility to release small amounts of air within the sealed mould chamber to cushion the sagging material. The time for the bursts of air and its frequency is adjustable via the controller. The drape forming tank is airtight.

Product cooling is achieved by electrically driven high Velocity turbo fans and optionally with water cooled bolster.

Material index is carried out by a set of rollers powered by a stepper motor. The length of index can be readily changed via HMI operator panel.



Pneumatic System incorporates proprietary brand control valves with ISO standard cylinders.

All movements have variable speed controls. The main solenoid and pilot operated spool valves are located at places easily accessible for maintenance.

Process Controller consists of a microprocessor PLC fitted with digital and analogue I/O, with sophisticated software developed by Ridat. The HMI operator panel gives the operator the ability to display and control each individual function of the machine. Full manual and automatic operation are possible allowing both prototyping and full production. Once a tool set-up has been created it can be stored in the onboard memory.

Guarding/Safety

The front door is fitted with electrical safety inter-lock. Heater Box will automatically return to park position at the end of the pre-set period or in the event of an emergency. The guard controls fail-safe safety circuits, which “freeze” or cancel dangerous functions if the guard is interfered with during the machine's operating cycle.

Fixed side and rear guards complete the arrangement and the whole system conforms to Machinery Directive, Low Voltage Directive and Electromagnetic Compatibility Directive. The machine will be CE marked in accordance with current European legislation and a Certificate of Conformity will be provided as part of the standard documentation.

Proprietary components are sourced from companies of global repute. These include Moeller and Siemens for *control switchgear* and PLC, Festo and SMC for *pneumatics*. Becker for *vacuum pumps*

Optional feature:

Reducing Frame Plug Assistance Pyrometer
Water cooled bolster and Ridat model RCI re-circulator

Brief Technical Specifications*

Model		2420MM	3020MM	3624MM	4030MM
Forming (max)	in mm	24 x 20 600 x 500	30 x 20 750 x 500	36 x 24 900 x 600	40 x 30 1000 x 750
Depth	mm	200	200	200	200
Air Usage (litres /cycle Extra if plug used)		8.5	8.5	9.5	9.5
Power Usage	Kw	6.2	8.6	13.5	16.6
Floor Area	cm	335 x 195	335 x 195	360 x 240	360 x 240
Height	cm	252	252	252	252
Weight	kgs	720	720	780	780

*The above figures should be taken as typical example only; complete specifications supplied on request
Standard power supplies are 415V 50Hz 3 phase (with E & N). Clean water free air at 5.4atm (80psi).