

GENERAL DESCRIPTION

COMET Model C64S is an automatic Single Station Thermoformer with motor driven upper and lower platens. Custom designed upper and lower ovens provide excellent heat retention and energy efficiency. The exclusive PLC controller provides ten (10) completely automatic forming techniques, including Vacuum Form Bottom, Vacuum Form Top, Plug Assist Bottom, Plug Assist Top, Snap Back From Bottom, Snap Back From Top, Billow Cavity Mold Bottom, Billow Cavity Mold Top, Billow Male Mold Bottom and Billow Male Mold Top.

Maximum Mold Size	72" x 48"
Maximum Clamp Frame Opening	74" x 50"

GENERAL CONSTRUCTION

Machine is fabricated from heavy duty, 3" x 5" carbon steel, structural tubing.

ELECTRIC INDEX

Machine is equipped with an electric index employing a variable speed electric motor. The electric drive provides a faster more accurate index minimizing sheet cooling between stations. Also has proven to minimize adjustments and reduces the amount of maintenance. Precisely programmed acceleration and deceleration segments virtually eliminate machine vibration and shaking.

QUICK CHANGE CLAMP FRAME

Air operated, utilizing MAAC's proprietary aluminum clamp system delivering 25% more clamping power than other brands. High temperature air cylinders are mounted on 12" centers reducing material needed for clamping to a maximum of 1/2". This system allows for a significant savings in material cost by reducing overall sheet size. The machine will be fitted with four (4) clamp frames arranged for top loading.

MOTORIZED PLATENS

Each platen is actuated by one (1) "direct drive" variable speed electric motor. The gear brake motor is a fail-safe device, when power is off/brake is on. Platen is guided by two (2) 3" diameter gear racks. Machine is equipped with linear transducers to establish and control platen positioning. Platen positioning and speeds will be set and stored for future recall via the machine's PLC controller.

Platen Stroke	32" Top & 27" Bottom
Daylight	6" Top & 6" Bottom
Sheet Line from floor	46"

CONTROL CONSOLE – PLC

The swing arm control console contains a 10.4" Allen Bradley PanelView Plus 7 color touch screen and push buttons necessary for clamp frame control; early indexing, sheet release, and emergency stop functions.

An Allen Bradley CompactLogix 5370 series programmable logic controller is provided for sequencing control of the machine. The HMI features unlimited file recipe storage and zone control with individual compensation for the lower and upper ovens.

Following are just a few of the advanced features:

- 10 Preprogrammed Forming Techniques
- Unlimited Storage of Job Files
- Platen Jog/Demold Function
- Quick Access Feature to Timer & Oven Settings While in Auto
- Integrated Internet Modem—Remote Programming/Support
- Multilevel Security Access with Passwords
- Diagnostic and Monitoring System

The exclusive COMET system provides Ten (10) Preprogrammed Forming Techniques. After selecting a forming technique, you need only enter timer values that control heating, cooling, platen delay, platen return and air eject.

C-Flex and TimeFlex programmable software allows you to create your own forming sequence or a variation of one of the preprogrammed techniques. With C-Flex and TimeFlex you can create totally original forming techniques based on your own proprietary methods.

Machine controller is equipped with an internet modem for remote support and troubleshooting.

HEATING

Comet's computer command oven designs are custom engineered for every size and model. The Comet system offers industry leading cycle times and the latest standards in energy efficiency.

The machine is equipped with quartz top and quartz bottom ovens (2 ½" x 10" elements).

Upper and lower ovens are PLC controlled with Forty-Six (46) independent zones:

- Twenty-Three (23) zones upper

- Twenty-Three (23) zones lower

MAAC's special quartz oven program provides two (2), time controllable, global heat level steps. Global heat level step #1 is provided for "Blast" which allows the selected oven profile to fire at 100% for a controllable amount of time. Global heat level step #2 is provided for using a predetermined zone profile for a controllable amount of time. MAAC's special quartz oven program has proven to decrease heating times by up to 33%.

Ovens are programmable for "Instant On" during the heating cycle and "Instant Off" during the forming cycle. This feature reduces energy consumption by nearly 50%.

Bottom oven is fitted with a protective safety screen that can be used for shading.

Machine is equipped with fully insulated oven walls with a pneumatically controlled insulated oven door, timed into machine sequence.

Oven switching will be controlled with solid state relays.

VACUUM SYSTEM

Machine is equipped with one 405-gallon carbon steel vacuum tank.

The vacuum tank is equipped with safety valves and drain plugs.

All vacuum valves are 2" piston types, air pilot actuated.

Vacuum system is equipped with:

Three (3) vacuum valves
Two (2) air valves

VALVES

All automatic and manual valves machine mounted. Hoses, plumbing and gauges included. Regulator and flow control ball valves for superior control of both vacuum and air for excellent repeatability.

COOLING FANS

Machine is equipped with twenty-inch (20") high output fans with guards. Each fan is equipped with a 1/4 horsepower motor and has an air flow capacity of 4,500 cubic feet per minute.

2 – Fans Form Station – Adjustable for top or bottom use and are wired into the machine sequence for cooling of the material. Fans can be set for automatic cooling at the end of the form cycle.

GUARDING

Expanded metal side guarding is provided in the form station. Guarding is bolt on for ease of maintenance. Access holes are incorporated for vacuum and water lines. Pictographic printed safety and warning signs.

ELECTRICAL

Primary power requirement is 480 Volts, 3 Phase, 60 Hertz

Current draw at full load is 173 Amps at 480 Volts, 3 Phase, 60 Hertz. Machine is equipped with a 225 Amp fused disconnect.

Secondary control power is 24 Volts, 1 Phase, 60 Hertz

MAAC provides a single source safety disconnect and a 24 Volt DC power supply, requiring only one electrical power feed to the machine. The interlocked circuit breaker is mounted in a NEMA 12 enclosure.

The main electrical enclosure is equipped with an air conditioner to keep all electrical components within operating temperatures.

DIMENSIONS

Length: 171" Width: 155" Height: 115"

AIR REQUIREMENTS

Compressed air at eighty (80) PSI: machine consumption is approximately one (1) to four (4) cubic feet per cycle. However, total consumption will vary depending upon size of mold, depth of draw and cycle time of machine.

NOTE: Dimensions and electrical information given are approximate and may vary slightly due to improvements or variations without notice. Upon placing order, specifications and prints will be forwarded for your approval.

PRODUCT SUITABILITY

Many states and localities have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While MAAC attempts to assure that its machinery comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the machinery is installed or used. Before purchase and use of the machinery, please review the product application, and national and local codes and regulations, and be sure that the machinery, installation, and use will comply with them.

PAINTING

MAAC Grey, for machine frame and non-moving parts

Safety Orange, for moving parts

Black, for expanded metal guarding

QUOTATION OPTIONS
(Included in Base Price)

OPTION

QTY UNIT COST EXT. COST

Adjustable Clampframe

1

The newest version of our extruded aluminum clamp frame gives new meaning to "quick change". These frames eliminate the need for storing and replacing different short frames for every sheet width. The system will handle sheet sizes from the machines maximum down to 6" by 4" in 1/4" increments delivering 25% more clamping power than other brands.

The SERIES 2000 frames accomplish what every thermoformer wants, the ability to vary the length of the clamp frames without having to add or remove clamp frame sections from the machine.

Advantages of the SERIES 2000 Frames:

1. Standard MAAC clamp frame components, cylinders and extrusion can be interchanged with our standard clamp frames.
2. The sheet is gripped on a single plane, there is no offset at corners.
3. Position of clamp frames can be noted and easily returned to the exact position the next time the product is run.
4. No tools are required for any part of the adjustment.
5. Large airflow passages insure quick even operation of the cylinders.
6. Clamp frame changes accomplished in 5 minutes or less, per station.

Absolute Encoder Index

1

The electric index will be upgraded from our standard "time based" index to our "absolute encoder" controlled index. This option reduces index times by 1-2 seconds and provides positioning accuracy within +/- .005".

QUOTATION OPTIONS
(Included in Base Price)

OPTION

QTY UNIT COST EXT. COST

Infrared Eye (Oven)

1

One (1) infrared heat sensor is located in the upper oven to display sheet temperature for monitoring purposes and/or indexing from a temperature set point.

Oven will be designed to accept multiple locations of the infrared eye placement.

Safety-Sag Eye

1

Oven is equipped with a safety sag eye. In safety mode, eye activates the emergency stop sequence when the sagging sheet enters the beam. In sag mode, eye will trigger indexing function when the sagging sheet enters the beam.

Air & Vacuum Memory Positioning Valves

1

Machine will be equipped with manual memory positioning air and vacuum valves. Memory positioning valves can be adjusted to 13 positions, on a 0 thru 6 scale with ½ scale positioning (ex: 5½). Memory positioning provides maximum consistency, and quick repeatability for each job set up.

L-Style Rail Quick Mold Change

2

Each platen will be equipped with an L-style "quick secure & release" clamping system. This system is step less and adjustable horizontally by sliding the clamping arms up to the various size molds or mold bases. Each platen will be fitted with eight (8). 18" rails and four (4) clamping arms.

The bottom platen is fitted with two (2) locating cones for self-centering and repeatable positioning of molds via forklift. Locating cones are mounted to steel pads, and will be positioned in the most effective location for your applications.