

# CHECK THE "STARS" FOR SUPER ACCURACY

Used by leading product  
and plastic manufacturers.

**COMET STAR  
FIRST!**

**OPTIONAL  
TWO SPEED  
MOTOR**

**EXCLUSIVE  
FEATURE!**

**STAR EXTRAS  
AT NO  
EXTRA COST**

Heats faster with guaranteed even heat exposure. Superior heating consists of upper and lower banks of specially designed far infrared heaters mounted in a partially enclosed and well insulated oven to insure faster heating cycles. An oven enclosure is automatically operated, sealing off the sheet in the oven. By eliminating convection currents more uniform and correctly patterned heat is available. Upper and lower banks of heaters are independently and variable controlled with percentage input controllers. Guaranteed faster heating cycles and uniform heat exposure. This superior oven design has made the Star the most outstanding and most desired deep draw thermoforming machine since its appearance in 1956.

Platen speed electrically and selectively controlled for unlimited flexibility of platen movement is provided by the two speed motor. Option platen speed may be constant for the entire length of platen travel, or it may be varied. If the forming technique requires rapid advance for a portion of stroke and slow advance for the remainder, this may be selected from the control panel. Also available is rapid advance and rapid withdrawal or slow advance with slow withdrawal.

The Electric Platen Star is the ultimate in deep draw thermoforming equipment, featuring smooth, constant speed and uniform pressure which is provided by the electric motor driving the forming platens. Controlling material distribution during the forming techniques is simplified when operating with platens carrying the forming tools which do not yield or hesitate to the resistance produced by the plastic material to be drawn. Constant platen speed provides for greater accuracy in controlling air pressure or exhausting air from the mold. It maintains even height of the plastic billow thereby offering even material distribution of the formed part. Guided at four corners by gear racks and pinions, assuring proper positioning and maintains parallelism of molds and helpers during forming cycles. The electric platen provides for independent selection of platen movement with respect to individual starting and stopping position, thereby eliminating wasted travel time. Activation of platens and time of travel is always constant eliminating any variables in platen hesitation. Less labor time is required to adjust and position the limit switches of the platens to meet the requirements of the particular forming application.

Pilot lights on the control panel, indicate when air and vacuum are applied to the forming tools during the forming cycle in order to visually check for proper sequencing of timer duration, and selection of forming techniques.

The circuit also provides for such extras as the automatic operation of mechanical molds, and the firing of the vacuum bleed system to evacuate excessive air pressure from the mold during plug assist techniques and billow forming techniques, in order to prevent rupturing of the plastic.

- 110 Volt utility outlet at the forming station.
- **LOAD SUPPORT** used for the loading of pliable sheets of plastic into the clamp frame.
- Plug in timers for fast change over and ease of maintenance.
- Two adjustable pedestal type cooling fans.



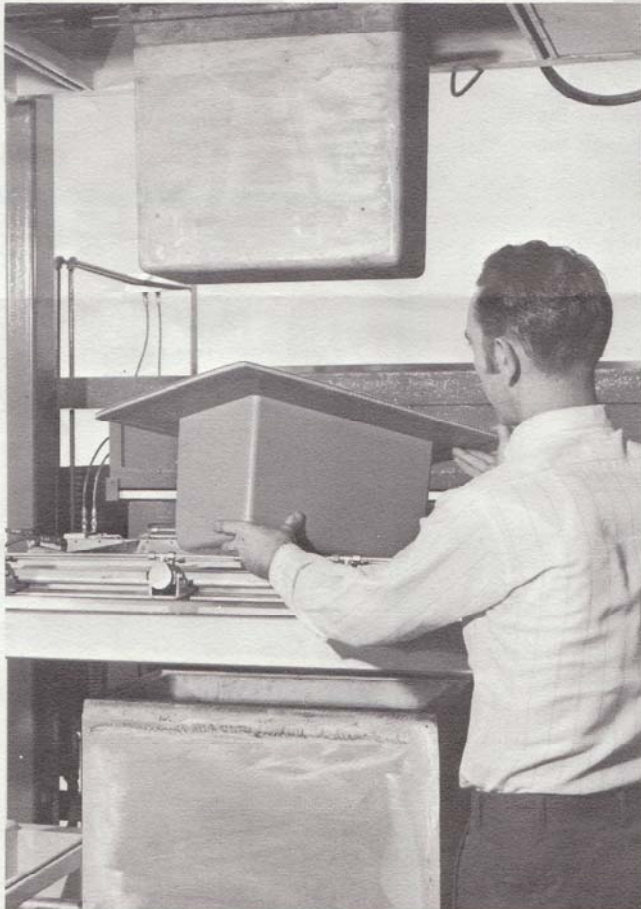
The



# Comet PLATEN

## for Fast Set-up of Forming Tools

Platen design features mold rails for orientation of molds during set-ups. Connection of a single pipe automatically provides air for billowing, vacuum for snap-back, vacuum for forming, air for pressure and air for eject. Giant forming machines will have more than one mold connection.



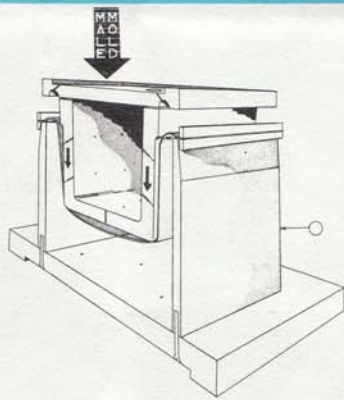
Royal-X material being formed

All-aluminum clamp frame prevents burn-out due to excessive heat build-up on steel type frames. This new frame actually cycles with the material and reduces shrinkage or warpage of formed parts. The profile design provides for excellent edge heating of the material.

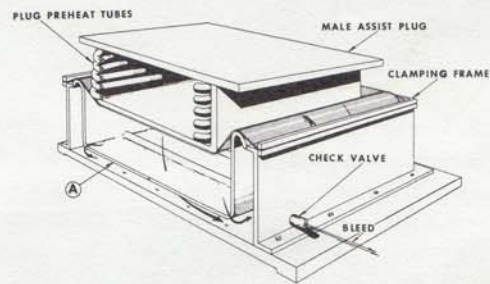
The Comet Star gives faster production per capita with complete versatility of all Thermoforming techniques through a completely engineered and proven machine.



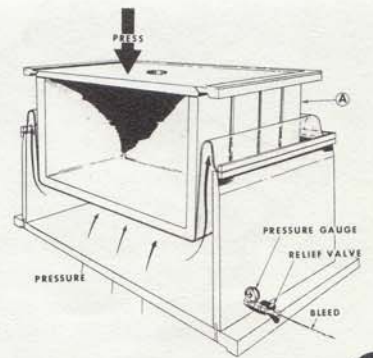
# KNOWN AROUND THE WORLD AS THE FINEST IN THERMOFORMING EQUIPMENT



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## 1. VACUUM SNAP BACK —

Reduces blank size by vacuum drawing the plastic into a box with vacuum. The male mold is then forced into the preform, sealing off on the top of the vacuum box. Vacuum is then reversed to the mold with air pressure assisting from the bottom. The pre-draw box is then separated from the mold exposing the plastic to the cooling fans.

## 2. PLUG ASSIST —

Prevents excessive thinning of material in deep draws into female molds. The upper platen carrying the plug is delayed until the mold is sealed off against the heated sheet of plastic. Vacuum on the lower platen is delayed until the plug mechanically pushes the plastic into the female mold. Vacuum is then applied through the mold as the plug is withdrawn.

## 3. BLOW-UP VACUUM REVERSE —

The technique is similar to plug assist with the exception that the forming mold may be male or female. The preform box seals against the heated sheet of plastic, air is introduced, forcing the plastic into a bubble or preform. The mold enters the box pulling the plastic down over a ring of air which is pressurized. Excess air pressure is bled off through relief valves. A seal is made between the mold and the box at which time vacuum is applied through the mold.

## 4. REVERSE DRAW —

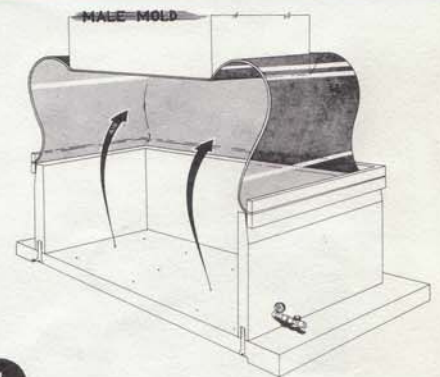
Reverse draw is preformed as blow-up vacuum reverse with the exception that the mold or plug is in contact with the bubble as it is blown. The plug then enters, carrying the plastic which has already been stretched, into the mold.

## 5. BILLOW FORMING —

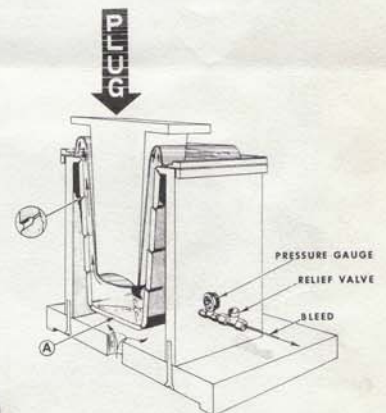
Used for deep draws with light gage and heavy gage materials. Material distribution is held constant throughout the walls. Pre-drawing of the plastic is accomplished by the column of air forming between the mold and helper as the male portion enters the female. The plastic never touches the edge of the mold. Male or female dies may be used.

## 6. MALE ASSIST PRESSURE FORMING —

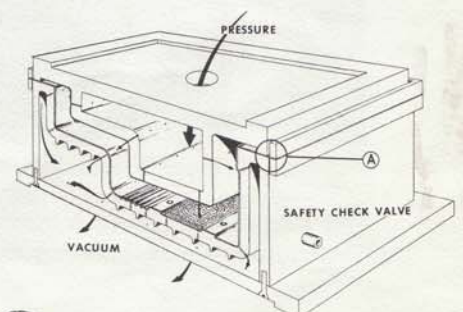
For reproduction of greater detail air pressure as well as vacuum is used to fabricate desired surface effects on the formed part. Male assist is used to control material distribution in the female mold.



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# THE STAR ELECTRIC PLATEN

**An Exclusive Feature**—not found on any other machine. Provides for smooth constant non-yielding platen speed to simplify the most difficult deep-draw thermoforming tasks.

Hercules brake and gear-box offer precision control of platen travel and mold locking powers.

Action Panel swings into position for set-ups and production start-ups.



## Programmed for 17 Forming Techniques

Grouping of selector switches locates the basic machine functions on the left side and the forming techniques on the right side.

Action Panel swings away and clears the area when the machine is released for production.

