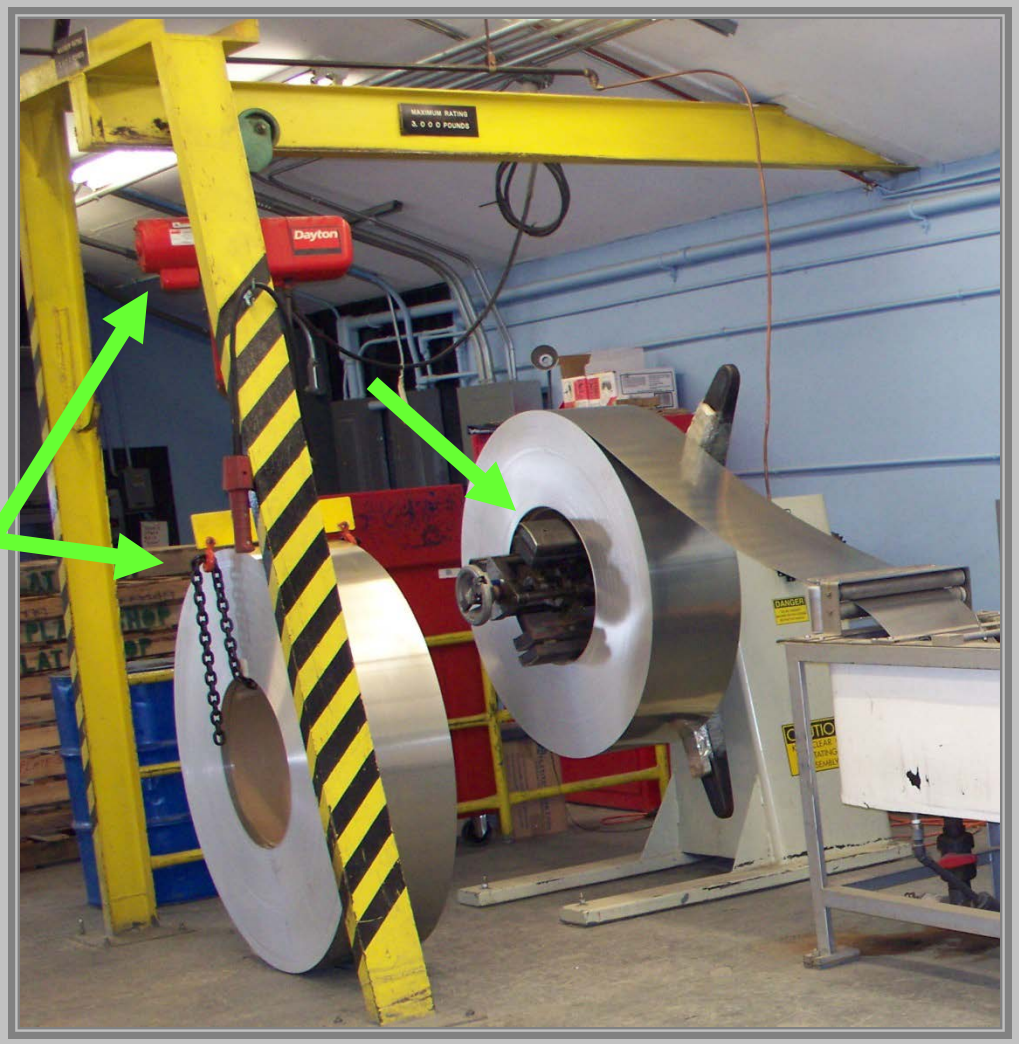
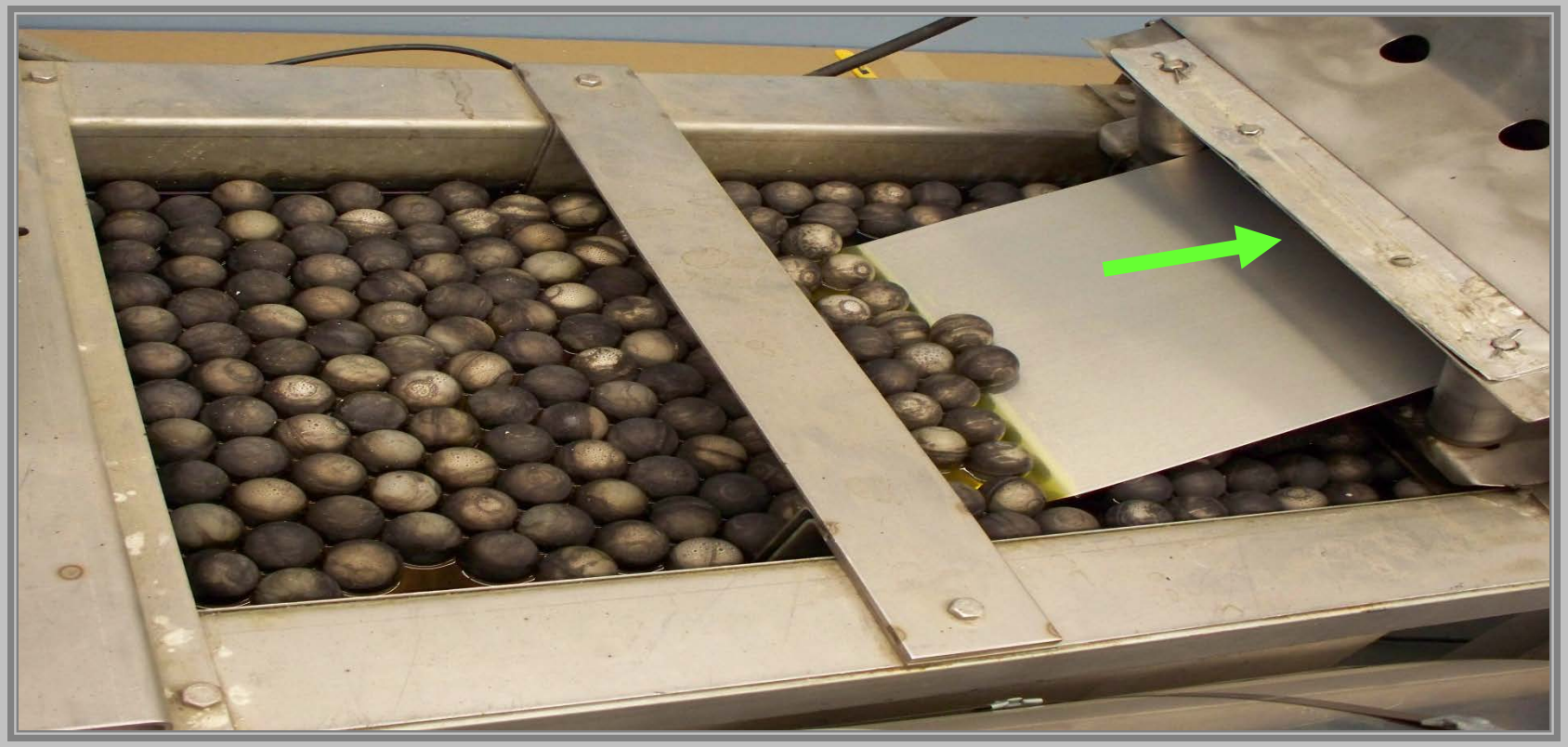
WELCOME
to the
Bureau of Motor Vehicles
Plate Shop

Upon entering the Plate Shop, rolls of aluminum are in view and standing upright ready for processing. Each roll of aluminum weighs between 1,200 and 2,200 lbs.



An electric hoist lifts a roll of aluminum so the roll can be placed on the Blanking Press spool. The roll is unrolled, washed, and dried in preparation for the 3M Scotchlite application, prior to the Blanking Press cutting the aluminum into plate size blanks. Thus the name, "Blanking Press".

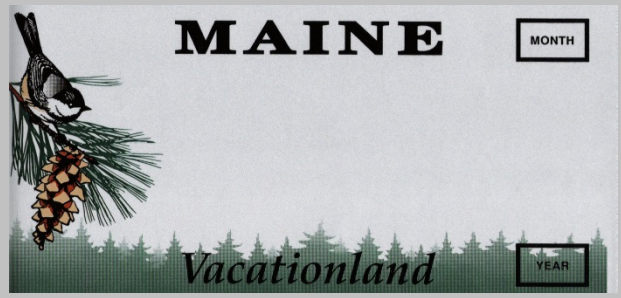
As the aluminum unrolls, it is submerged in a pre-heated (350 degree) tub of hot water. Hollow (ping-pong type) balls float on the surface of the water and assists with holding the metal under water to maintain the necessary heat and moisture to soften the aluminum. The aluminum exits through two rollers that compress the metal to remove the water as the metal is guided through the roller slot. An offset fan waves air over the top of the aluminum to assist with the drying process.



As the aluminum advances through the tub, it moves through steel rollers that press it flat and removes the dimples or any imperfections that couldn't be washed out.

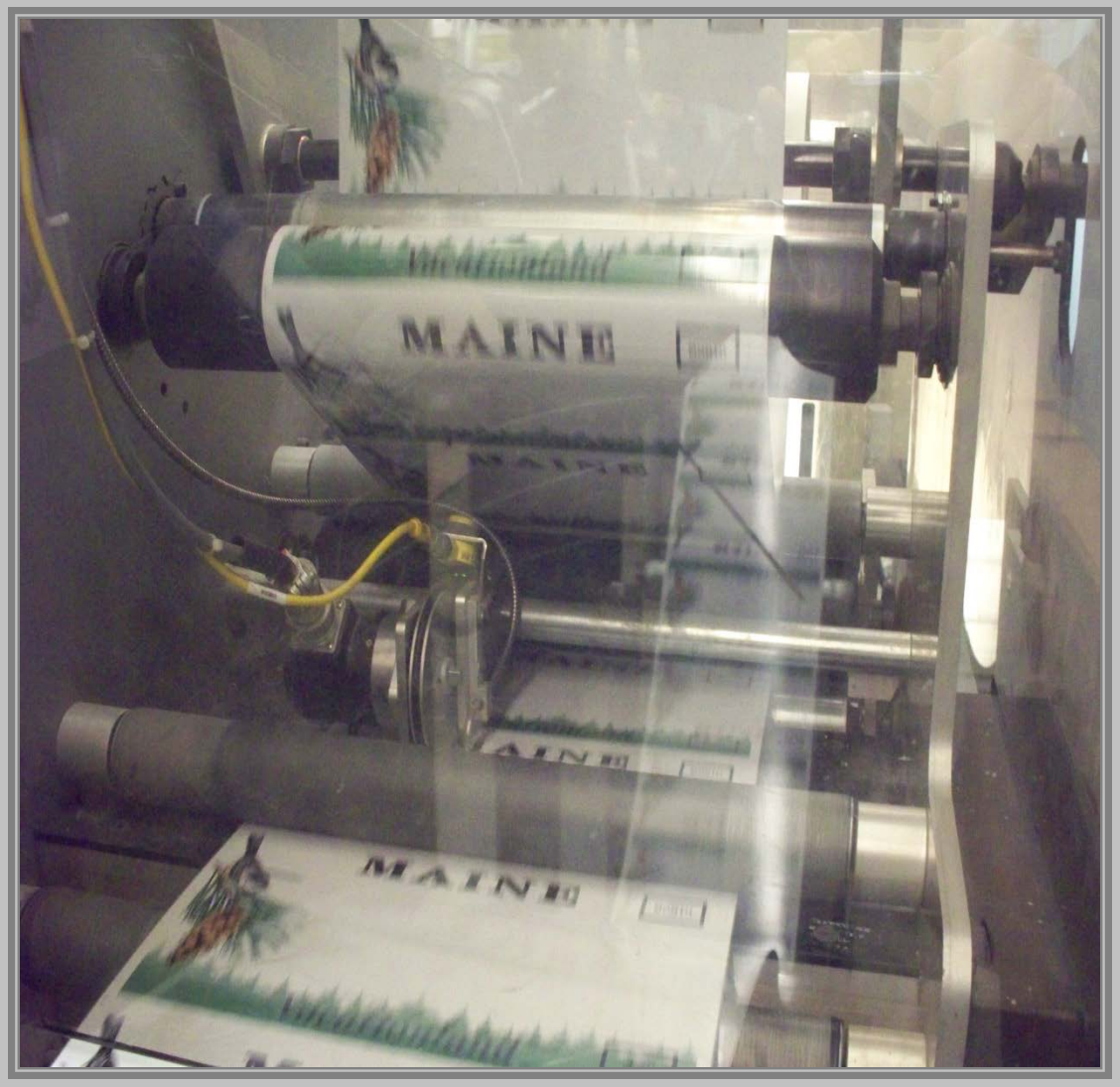
As the dried aluminum exits the hot water bath, the aluminum is still warm and now ready for the 3M Scotchlite to be applied.

When the Scotchlite arrives at the Plate Shop, the graphic design already has been imprinted onto the Scotchlite film.



Rolls of 3M Scotchlite are marked with the type of plate design that was produced by 3M, and placed on shelves behind the Blanking Press waiting their turn to be applied to the aluminum.

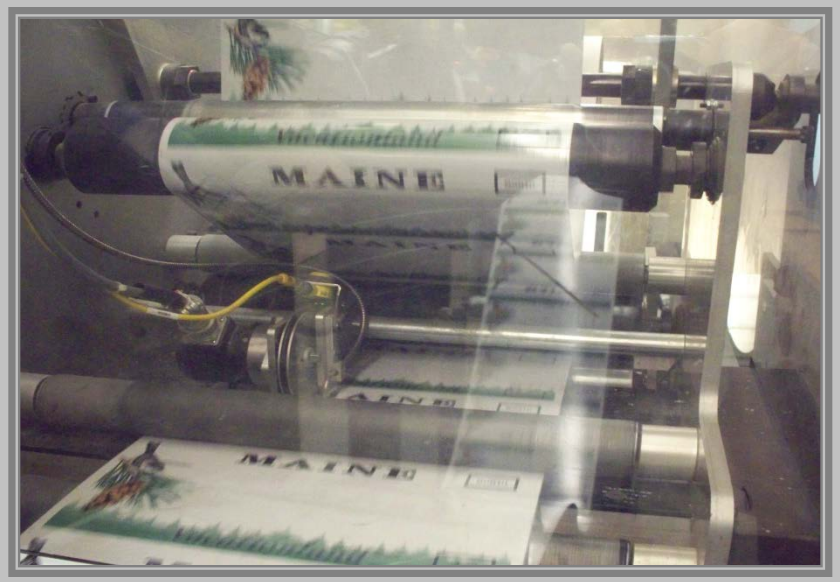
Each roll weighs between 60 to 65 lbs.



It takes approximately 15 minutes to set-up a roll of Scotchlite before each design can be adhered to the aluminum.

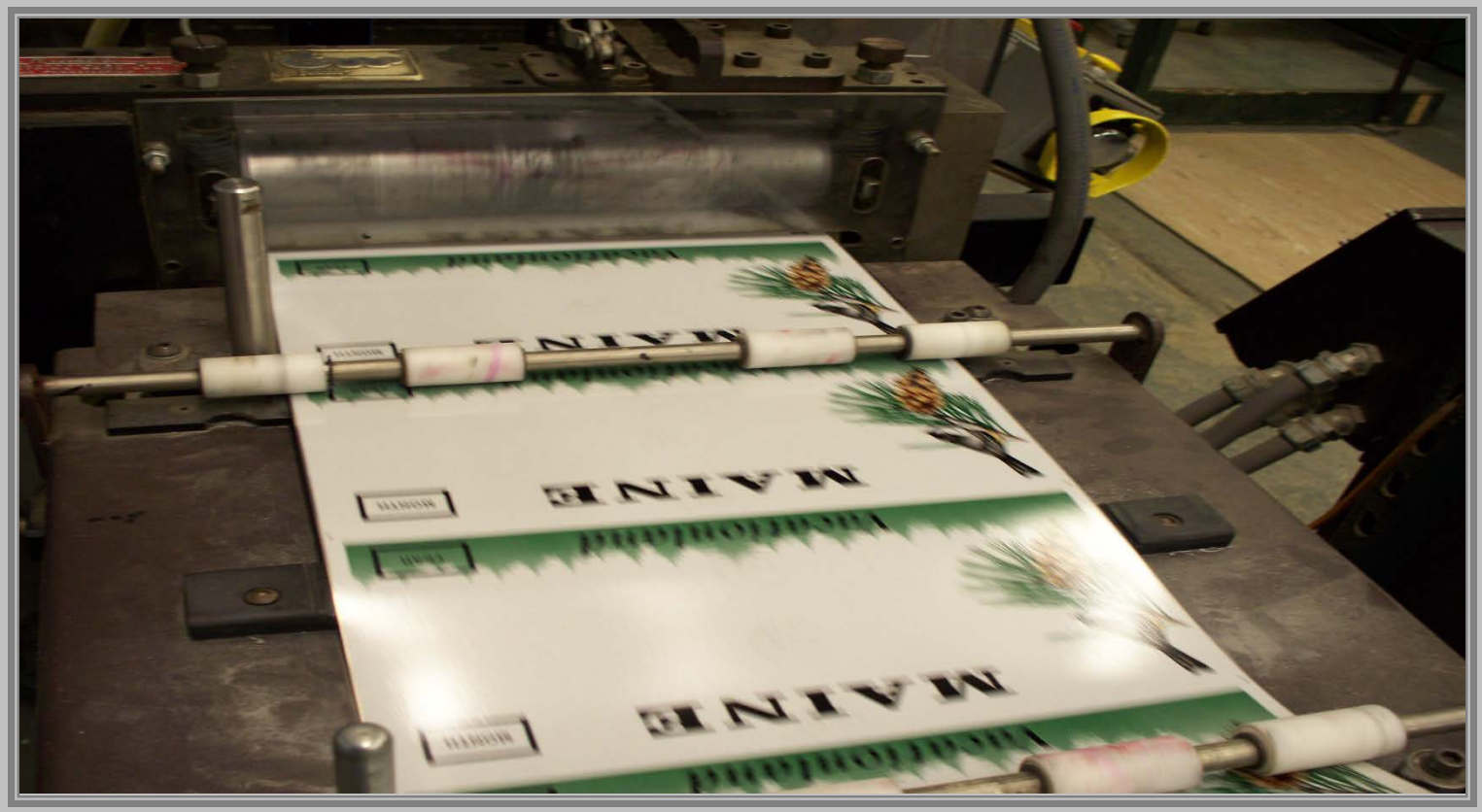
Each roll of Scotchlite must be aligned properly for the Blanking Press to cut the plate precisely without misaligning the graphic or text.

As the warm dry aluminum passes through the applicator, the sticky backed Scotchlite is perfectly aligned and compressed onto the aluminum.



The Passenger Plate design that depicts Maine's State bird, the Chickadee, is being applied to the aluminum and will continue on its way to be cut into license plate blanks.

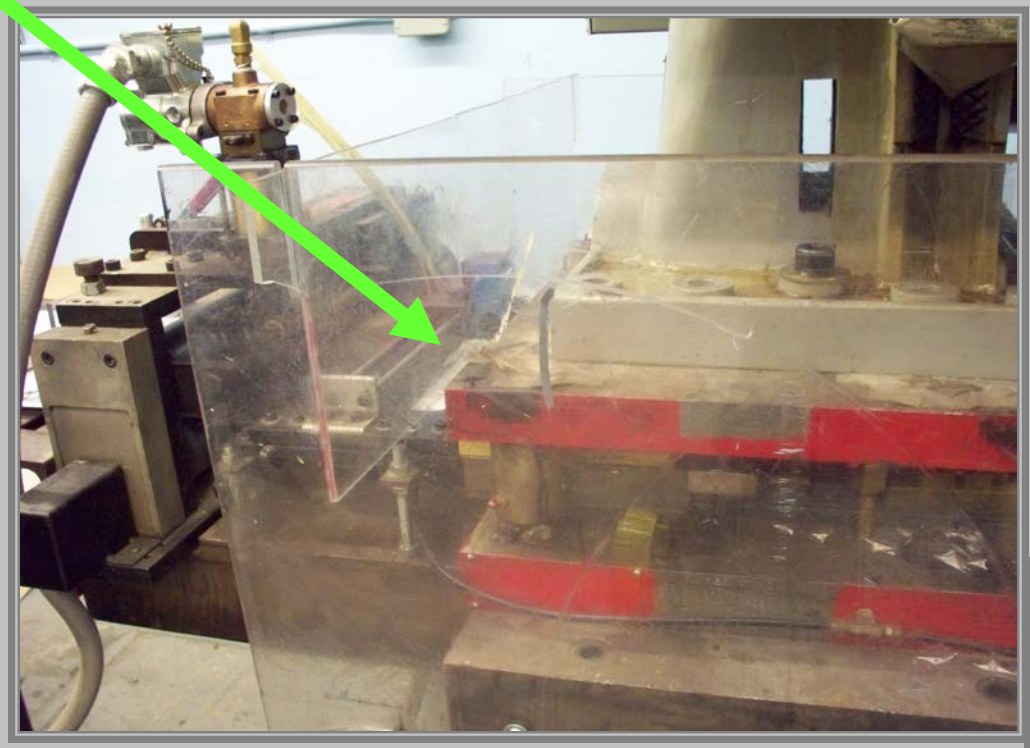
Once the 3M Scotchlite is applied, the roll of aluminum continues streaming on a course toward the blades of the Blanking Press where the corners are trimmed and four holes are punched to create these license plate blanks.



At this point, no rims, no letters or numbers are embossed, only the Scotchlite has been applied and the corners trimmed, and the holes punched.

Views of the aluminum advancing to the Blanking Press to be cut, now that the 3M Scotchlite has been applied.

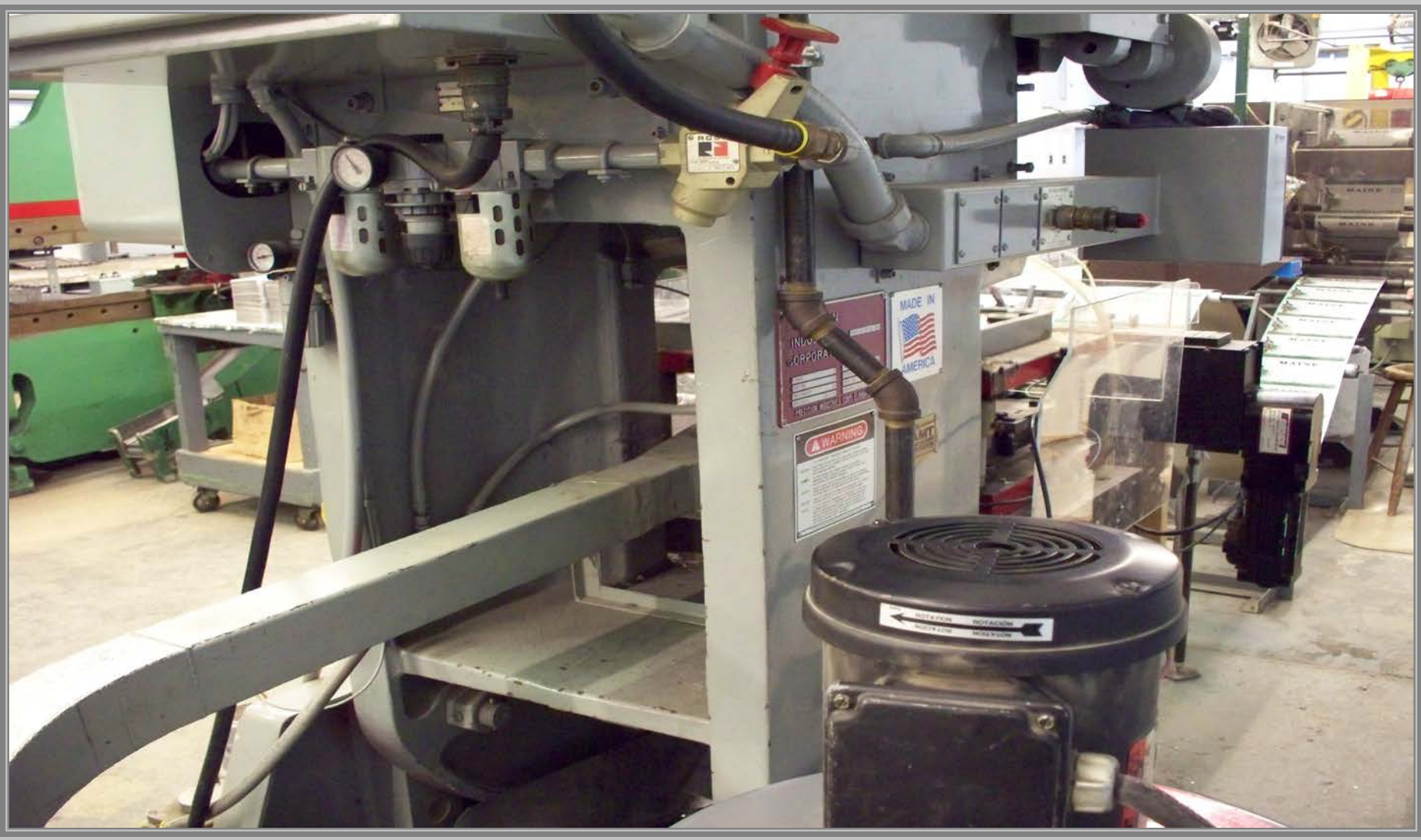
There's an older Blanking Press that dates back to 1952, but this newer hydraulic-driven machine was installed in 1987.



Guarded by heavy plastic walls, the aluminum enters the press that cuts it into license plate blanks, trims the corners and punches four holes. A large barrel and vacuum collect the metal cuttings.

Once the cut has been made, the individual plate is carried down a conveyor belt and slides into a tray where it's removed and placed in a stack to advance to the Embossing Press where the rims, letters and numbers are embossed.

A view of the vacuum that collects the metal trimmings (corners and punched holes).



The Blanking Press, near the vacuum, as the aluminum advances to be cut into blanks.

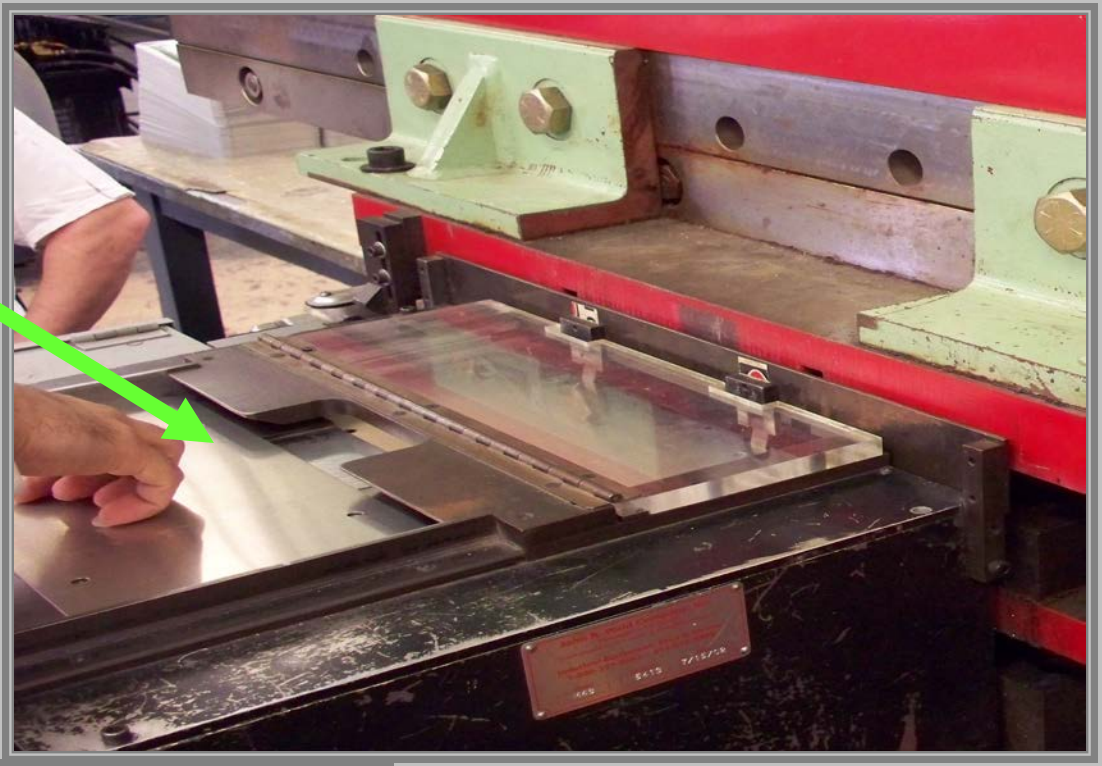
The newly trimmed plates are stacked face down and await their next journey through the Embossing Press.

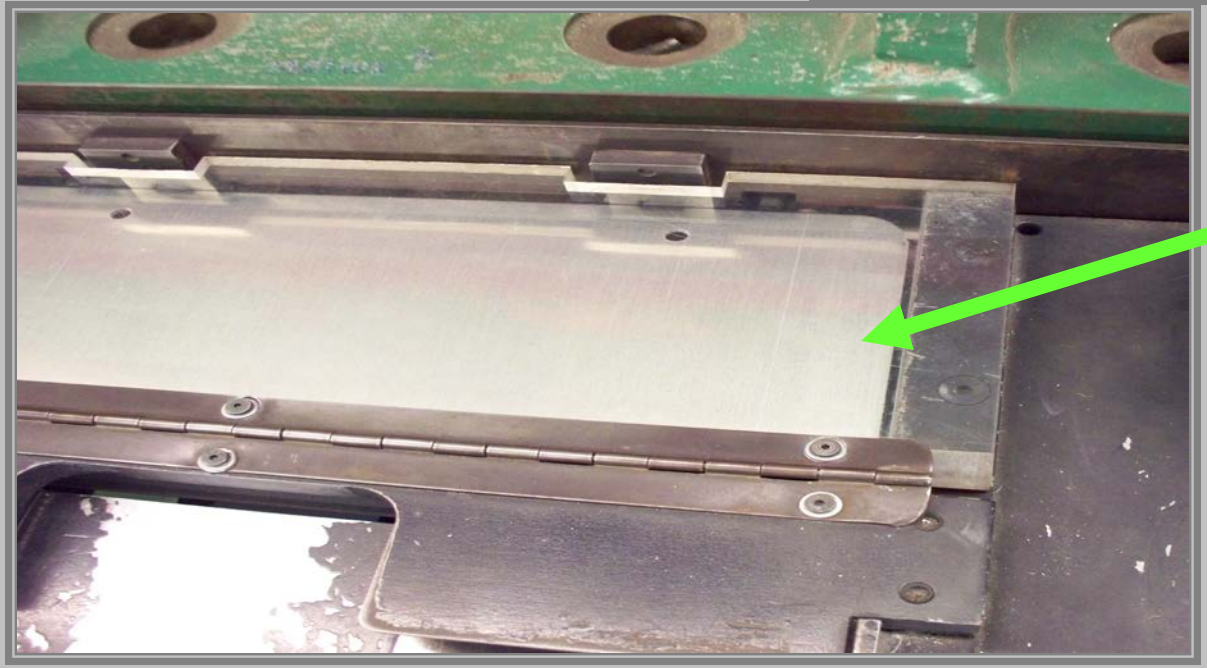
The Blanking Press cuts 90 blanks a minute.

Each roll of 3M Scotchlite creates 900 pairs of license plates or 1,800 (single) trailer or motorcycle plates.

The Embossing Press creates the rims, numbers, and letters onto the blank plates. It takes three people to operate the Embossing Press. One to feed the machine, one to operate the machine and dies, and one to catch the plates from the conveyor belt and stack them.

The operator inserts a blank into the metal guide from one side of the machine.

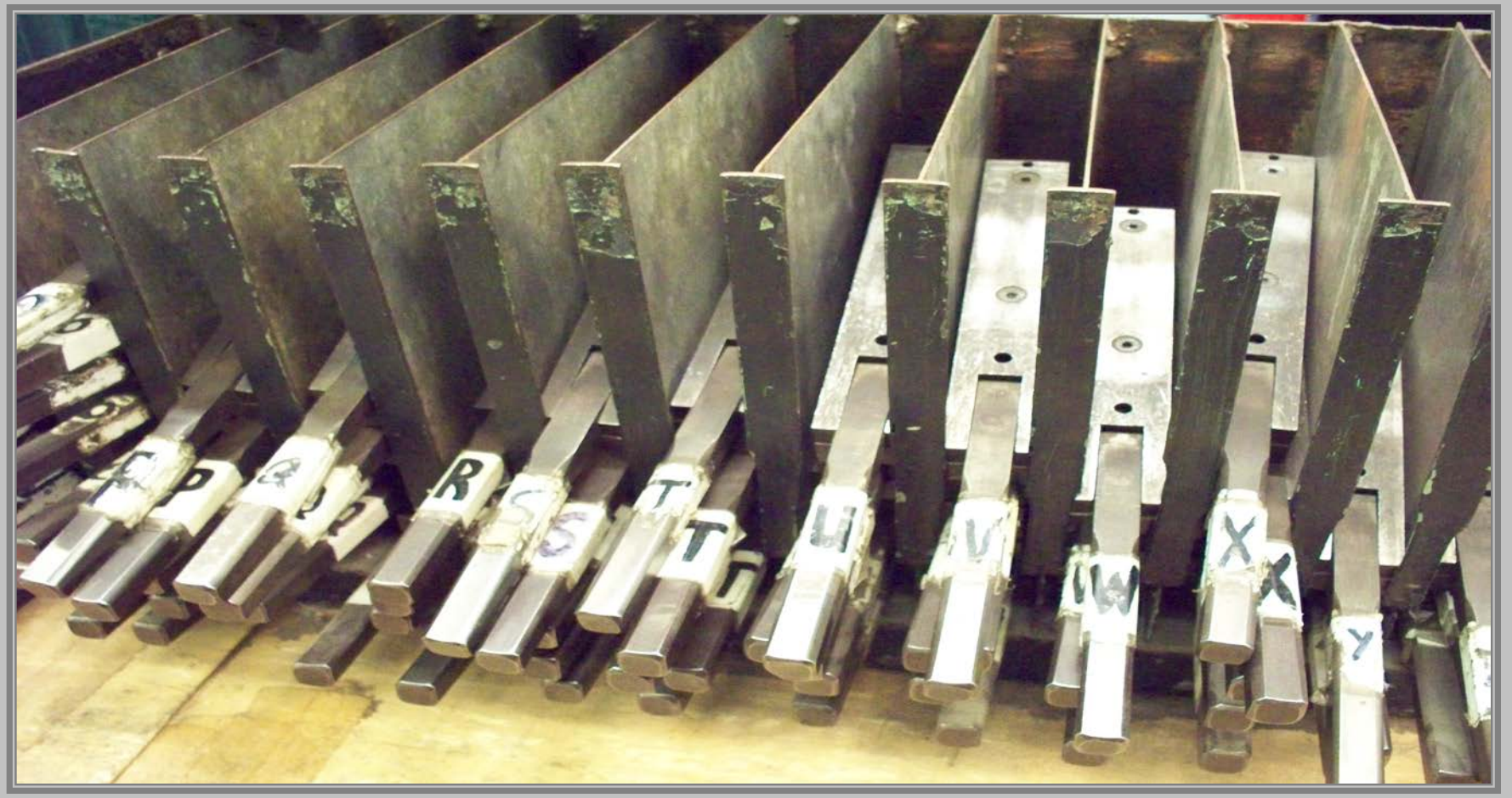




The blank will drop into a slot that positions it for the embossing, which takes place from other side of the Embossing Press.

On a shelf in front of the operator, the dies are set in numeric order as he creates the series of plate numbers. (Two blanks are embossed with the same die for each pair of license plates).

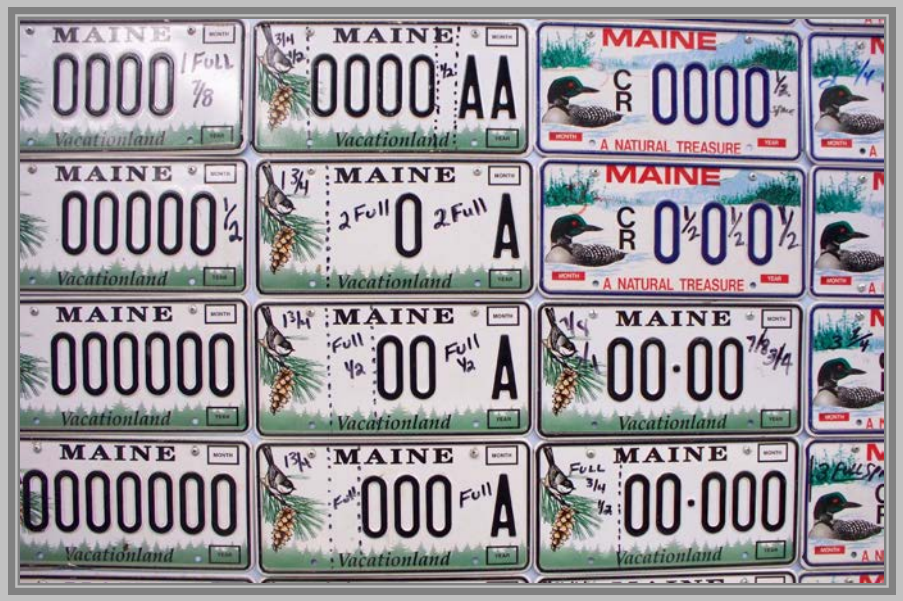
The blank has been set into position and ready for embossing. The operator inserts one hinged die for each character placeholder necessary to create a license plate. (Spaces included). He swaps dies between those waiting on the shelf to those inserted above the shelf in the Embossing Press.

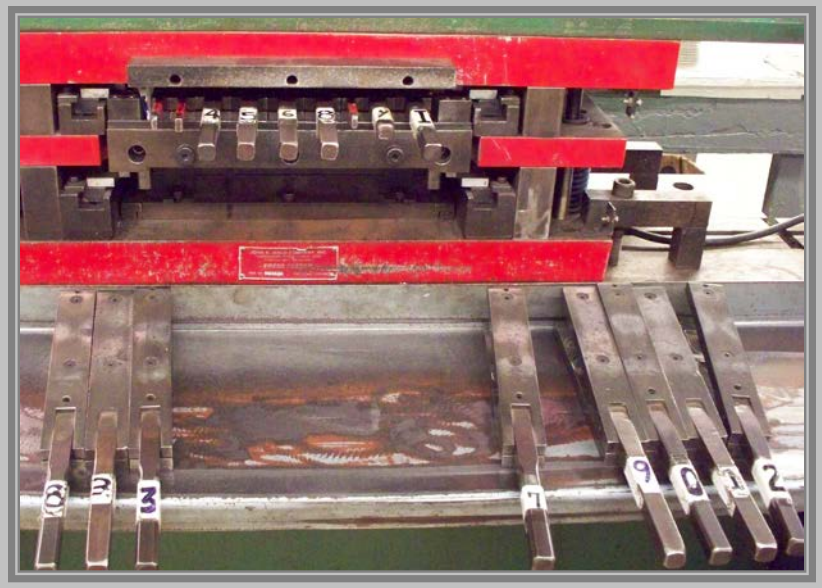


Each die is clearly marked so the operator can visibly identify the character without confusion. This process takes a great deal of concentration and coordination in conjunction with the operator feeding the blanks.

This die is the number "0". The embossing die resembles a giant clothes pin without the spring. It has a limited opening and is inserted in its place on the Embossing Press by the operator. When inserted into the Embossing Press, the blank sets inside this die, allowing the force of the machine to emboss the image into the blank.

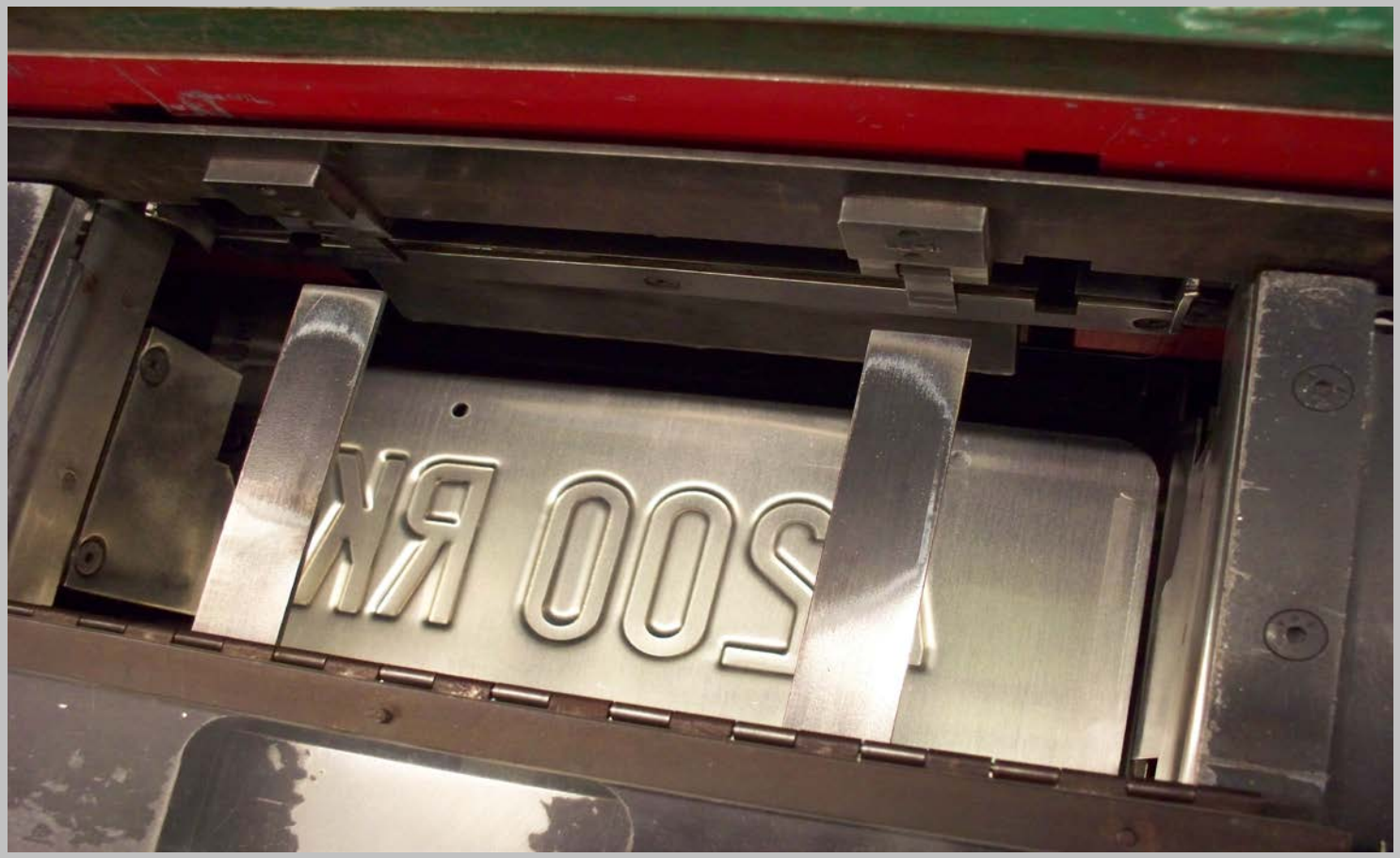
The operator who sets the dies for embossing, has a plate board as their guide for the letter and number placement and the spaces and hyphens for that plate type and design.





It's time for the operator to place both hands on the start buttons allowing the force of the machine to emboss the impression of the set dies into the license plate blank.

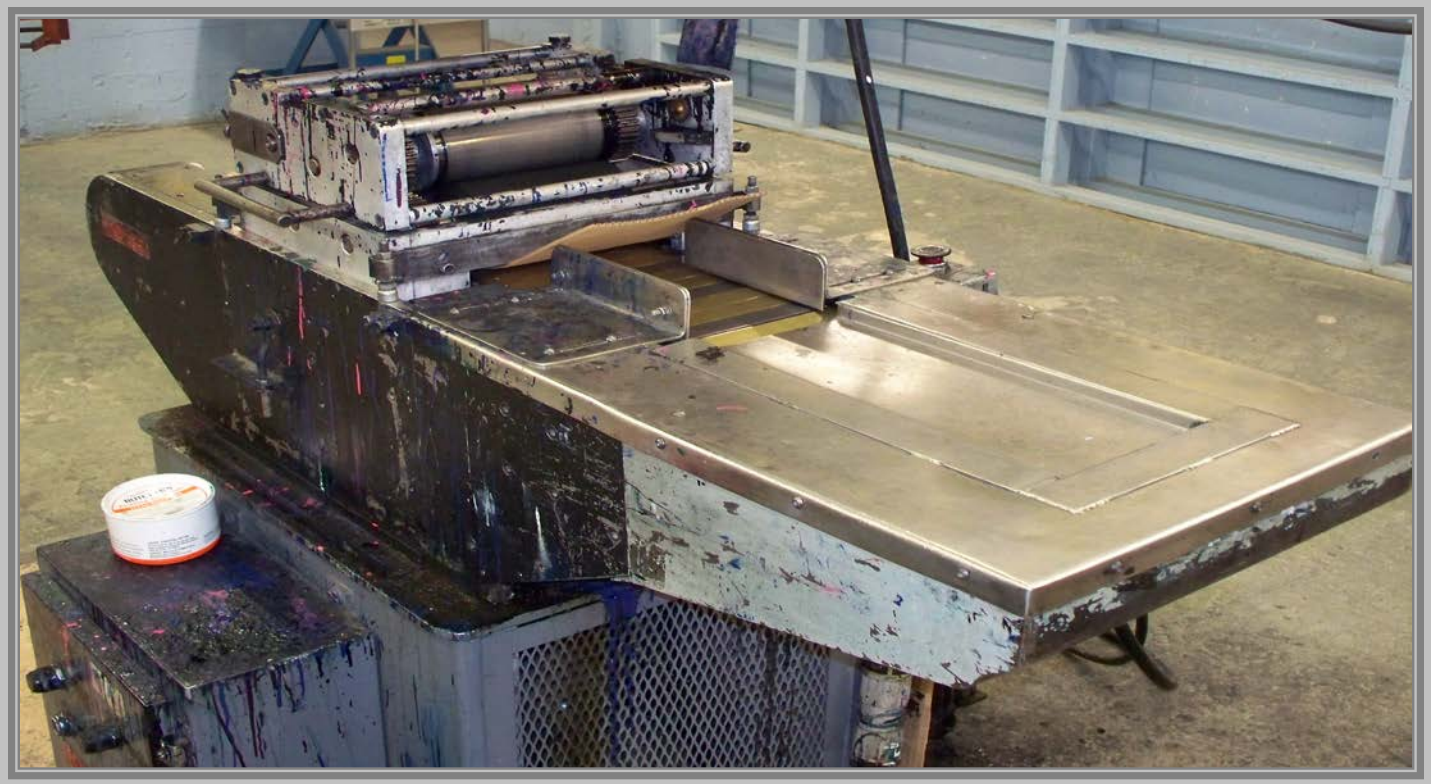
This process is repeated for each blank in conjunction with the operator changing the rotation of the die characters to maintain a numeric series of license plates.



The embossed plate is face down and has received the impression of the die set characters and a rim.

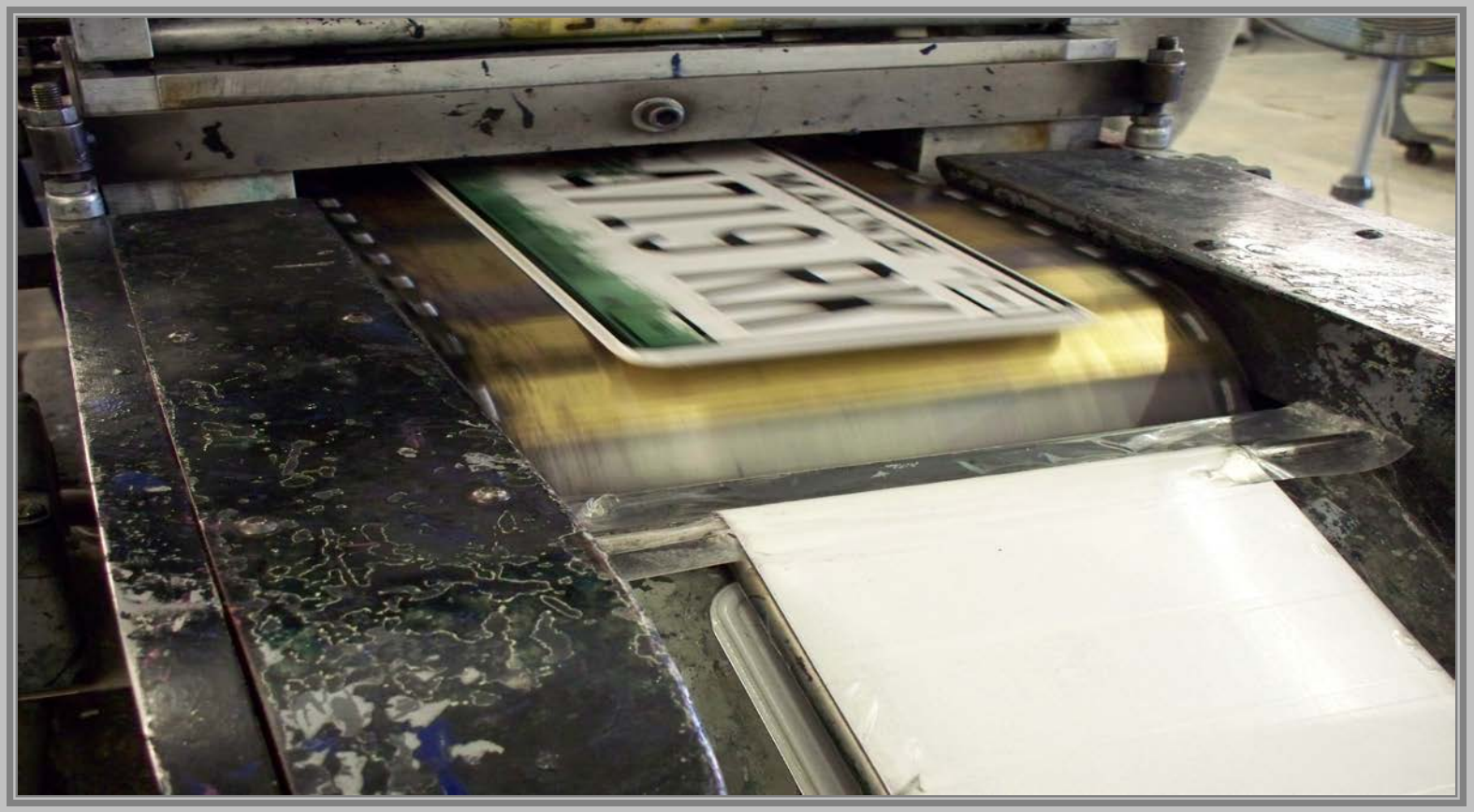
The third operator catches the embossed plate from the exit tray and stacks the plates, preparing them for inking.

These plates are stacked and ready to be inked.



The Inking Machine was installed during this decade and uses oil-based ink. Each plate is inserted manually. The automated rollers pass over the raised characters to add color to the embossed Scotchlite.

Each plate is individually placed in a slot that is belt driven through the inking machine and runs over the conveyor rollers.



The plate passes under the ink roller and over the conveyor rollers and exits into a tray. The operator removes the plate and places it in a drying rack.

The racks are hung from a revolving monorail system that is suspended from the ceiling.

The operator places 14 plates on each side of one rack.

Each rack is sent by this monorail system, into a 250 degree Fahrenheit bake oven for 45 minutes.

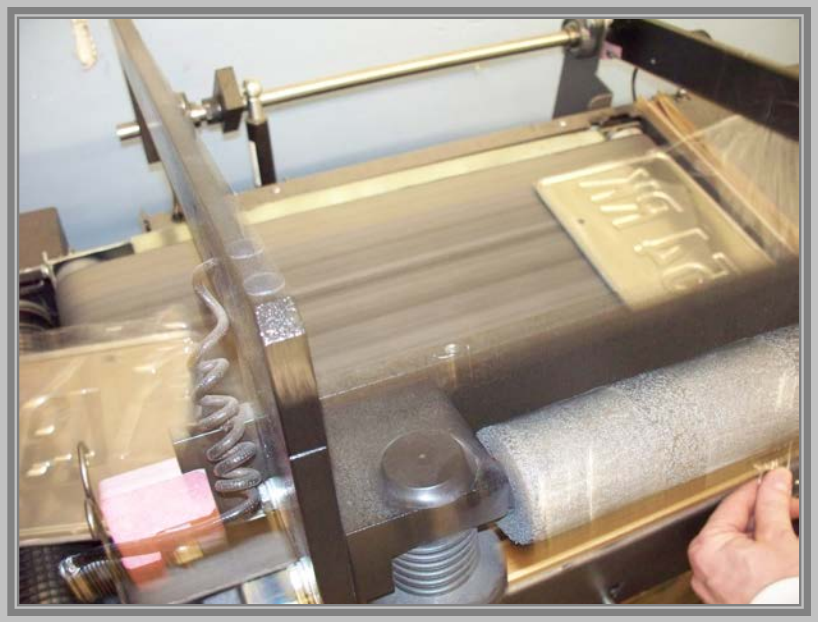
There are 60 racks suspended by this monorail system, allowing 1,680 plates to be baked in one production batch.

This monorail system has been overhauled twice since being installed in 1980.

Once the rack returns from the oven, each plate is removed, checked, shrink wrapped as pairs, and strapped into 50 plate bundles or 25 pairs. The bundles are stacked on a skid pallet. (Single plates, such as trailers and motorcycles, are not shrink-wrapped, just strapped in bundles and stacked on skid pallets).

The baked plates are checked for accuracy and imperfections.

Pairs of plates must be brought to the Sealing Machine before receiving strapping. Each pair is placed on a tray and cellophane is wrapped around them. The pair proceed into the Sealer that shrink wraps the plastic to the plates as the sealed wrapped pair exits from a conveyor belt, down a shoot, and ready for bundling.



Vanity and special order replacement plate (s) are also shrink wrapped, but they are packaged in individual envelopes and shipped to BMV for distribution.

Plates are re-checked for accuracy.

Then they are strapped in 50 plate bundles.

The bundles are stacked on skid pallets and wrapped for shipping to BMV.

A full skid pallet has 5,000 pairs or 10,000 plates stacked and ready for shipping and each full pallet weighs 2,500 pounds. (Four plates equal a pound).

The skid pallets are shrink wrapped and moved into the Warehouse for storage until shipped. There can be 100,000 processed plates stored in the Warehouse on any given day.


3M
3M

Rolls of aluminum also are stored in the Warehouse. Each roll of aluminum weighs between 1,200 and 2,200 lbs.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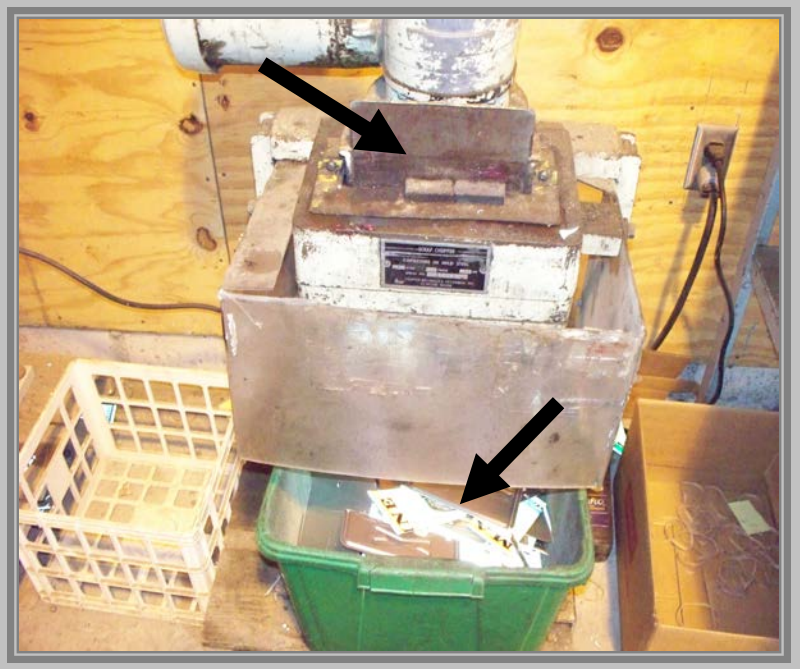
SHOP

State Police, municipalities, individuals, and the Bureau of Motor Vehicles turn-in old and/or demolished license plates by the box full for recycling. These plates are brought back to the Warehouse and shredded before recycling.



One person can shred a box of returned plates in less than 10 minutes, simply by feeding the top of the machine slot with a license plate so the machine teeth can shred them into 2, 3, or 4 pieces. The pieces drop into a bin, located under the shredding table. These shredded plates are then emptied into a dumpster for recycling along with the trimmings from the Blanking Press.

Approximately 600,000 to 700,000 individual plates are produced per year at the Plate Shop.

It took approximately one million sets of plates to complete the full re-issue from the old passenger Lobster plate design to the current passenger Chickadee plate design.

Thank you for touring
the Bureau of Motor Vehicles
Plate Shop.