The following procedures are basic, good, hatching and setting requirements for optimising the potential of Jamesway's Platinum machines.

EGG HANDLING BASICS

Store eggs small end down from the time of collection.

During transportation, keep the temperature as uniform as possible to prevent condensation, and avoid temperature shocks, especially during loading and unloading.

OBTAINING AND STORING THE EGGS

Bring eggs in cases and/or farm racks into the egg room through the dock entrance. Place the eggs in the store room until they are required for setting.

Egg rooms, including the HVAC system, should be cleaned and sanitized every day.

Note:

1. The egg store room should be designed to hold a one-week supply of eggs.
2. Recommended storage temperature for 1 to 6 days is between 65°F and 68°F (18°C to 20°C).
3. A relative humidity of 75 to 80 percent is required to avoid moisture loss.
4. Do not allow the eggs to be exposed to strong air currents, as excess moisture loss will occur even though the relative humidity remains high.
5. If eggs are to be stored longer than seven days, the temperature should be lowered, but not below 58°F (14°C). Relative humidity should remain at 75 to 80 percent.
6. Turning the eggs is also beneficial if eggs are held longer than seven (7) days.

Moving the farm rack.
Watch where you are going!

TRANSFERRING THE EGGS TO THE INCUBATOR RACKS

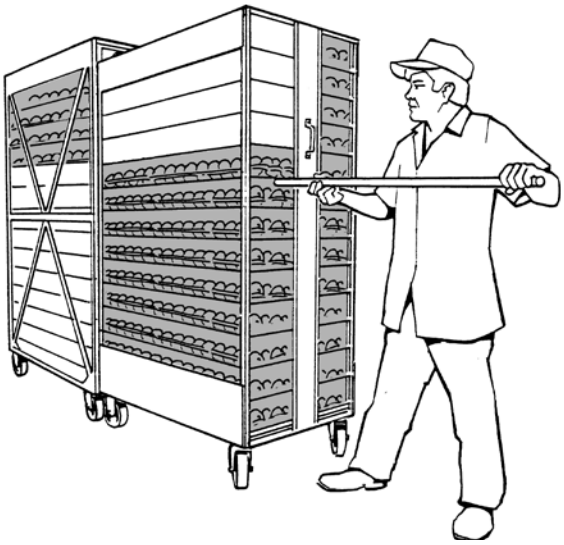
When the desired number of eggs to set has been determined, transfer the appropriate quantity of egg cases from the egg store room to the egg work room.

Bring Jamesway incubator racks from the wash room to the egg work room. (Prepare two to twelve racks depending on the size of the incubator.)

If farm racks were used, push the egg flats through into the incubator racks. For a fuller explanation, see Method 1: From Farm Rack to Incubator Rack on the following page.

If the eggs were collected on the farm in Jamesway system egg flats, remove the flats from the egg cases and place in the incubator rack. For a fuller explanation, see Method 2: Traying Up by Hand on the following page.

Remove egg cases. Take farm racks (and plastic filler flats) to the equipment wash room. Thoroughly clean and sanitize. Return clean plastic flats to the egg loading dock for return to the farm.



Transferring eggs from the farm rack to the incubator rack

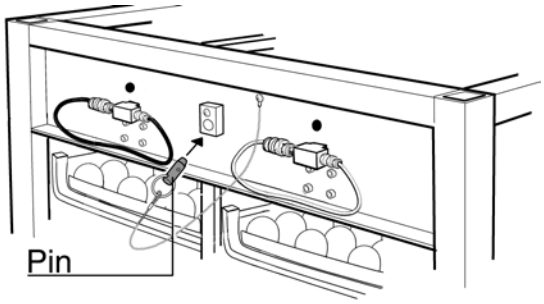
METHODS FOR LOADING EGGS INTO THE INCUBATOR RACK

Preparation

While the incubator is being preheated and monitored, prepare two to twelve incubator racks (depending on the capacity of the incubator) for the eggs. All racks should been thoroughly cleaned and sanitized beforehand.

At a testing station, connect rack air lines to check that the egg turn is functioning properly. A regulated air pressure of 50 to 60 psig (380 to 415 kPa) should be available.

The transfer of the eggs should take place in the egg room where the temperature should be between 65 and 68°F (18 and 20°C).



Note: Before moving the rack ensure the locking pin (if so equipped) is in place. This pin prevents the rack from turning if transported to and from the farm.

Method 1: From Farm Rack to Incubator Rack

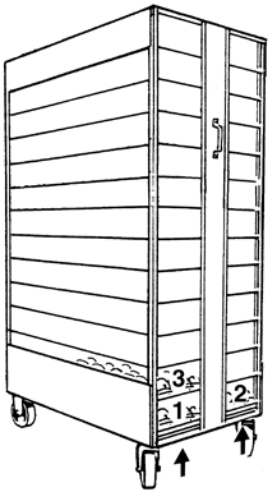
Farm racks are the most common method of transporting and storing eggs today.

Eggs are placed directly into plastic flats from the nest and loaded into the Farm rack, which is then transported to the hatchery.

Unload farm racks from the bottom to the top. Alternate tiers to maintain balance.

To transfer eggs from the Farm rack to the Incubator rack, roll both racks up against each other so that all the tiers are lined up.

In this position, slide one egg tray at a time from the Farm rack into the Incubator rack or, using a broom handle, push all egg flats in one tier, at one time, into the Incubator rack. Start at the top left corner and work down.



Unload farm racks from the bottom to the top. Alternate tiers to maintain balance.

Method 2: Traying Up by Hand

If eggs have been transported to the hatchery with egg trays in cartons, traying must be done by hand.

Place a metal transfer pallet on a table.

Place a case of eggs close to the table at a convenient height.

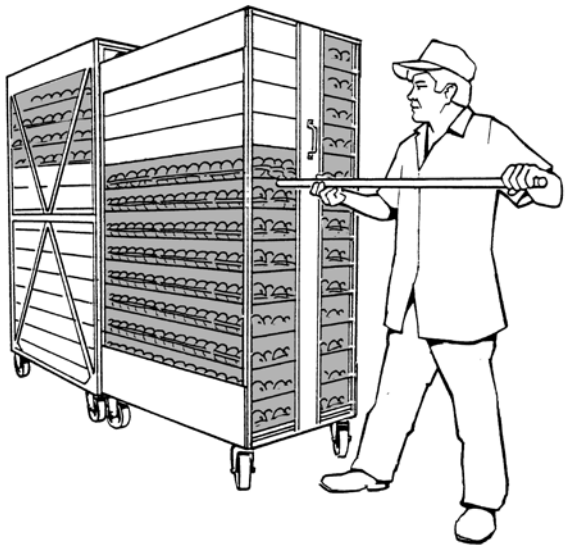
Lift the plastic flat from the carton by using the posts or finger holes of the flat.

After placing flats on the pallet, carefully remove the pallet from the table and slide into the incubator rack.

While the egg trays are held in position with a thumb, pull the pallet out of the rack.

Continue this process until the rack is fully loaded.

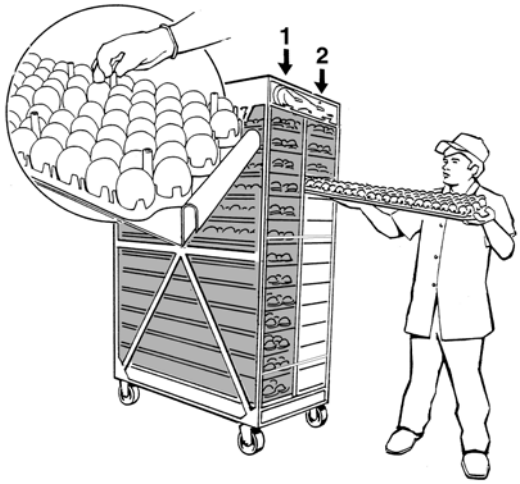
Start at the top left corner and work downwards.



Transferring eggs from the farm rack to the incubator rack

Method 3: Automated

A vacuum lift may be used to load eggs into the egg flats. Refer to equipment manufacturer's instructions for proper operation.



When traying by hand, start at the top and fill one column before filling the other.

LOADING A FULL SET

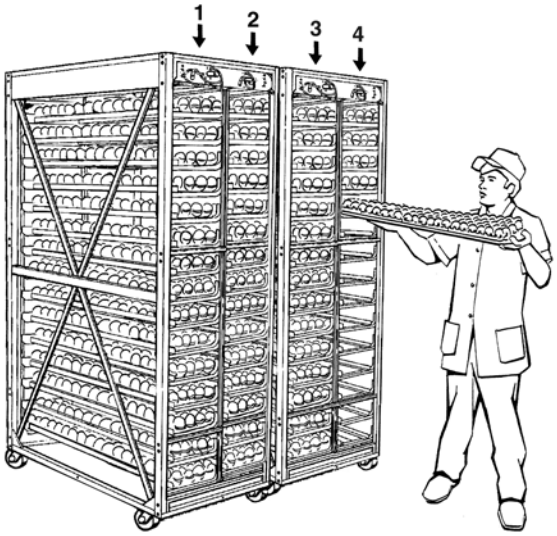
Place two to twelve racks side by side, depending on size of incubator.

Start with the first tray at the top left tier of the incubator rack.

Load eggs working downward until the first tier is full.

Continue loading eggs, starting with the top of the right tier. Work top to bottom.

After completing the second or right tier of the first rack, repeat the process to fill all racks as required.



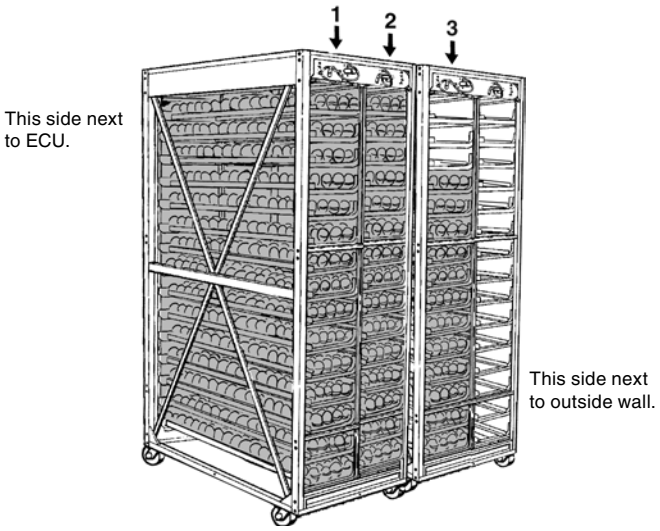
Fill one column at a time. Start at the top left tier and work downwards.

LOADING A PARTIAL SET

When partially setting a Platinum incubator, balance the load on either side as equally as possible. Full racks are to be placed adjacent to the ECU, empty racks against the wall. If possible avoid sets that are less than half the capacity of the machine.

Examples: A medium Platinum holds eight racks, four on either side of the ECU. Rack capacity is 5,040 eggs.

1. Set - 28,000 eggs: Nearly six racks could be filled. However, to balance the load, four racks are filled and the rest of the eggs are loaded into the remaining four racks (one column of approximately twelve trays each). Empty trays are located at the top.
2. Set - 26,000 eggs: Four racks full, four partially loaded racks. The partially loaded racks hold approximately eight or nine trays each, located in the lower section of one column only.



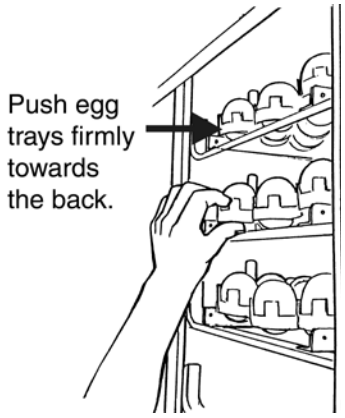
Loading for a partial set, as in example 1 - the rest of the eggs.

FINAL INSPECTION OF LOADED RACKS

After the racks have been loaded; check that all egg trays are properly positioned in the egg tray frames.

For proper egg turn, ensure that all egg flats are pushed towards the back.

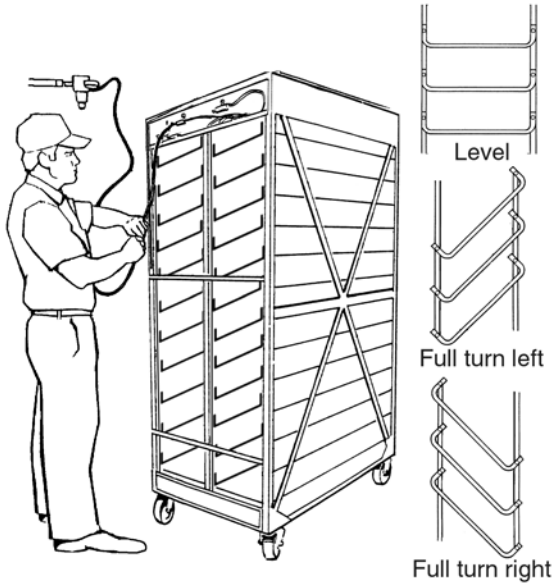
The egg flat must not protrude past the front frame rail. If it does the flat will get caught on the turning bar assembly resulting in broken eggs and damaged flats.



Check the position of all egg trays

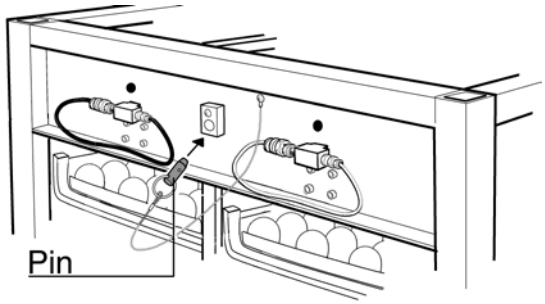
Test the racks for ease of turning before placing them in the incubator. Use the test pressure of 75 psig (520 kPa). If the rack turns easily at this pressure then there is less likelihood of turning problems in the machine.

Level the eggs before transporting them to the incubator. To level eggs, reverse the air line connection for a short duration, or level by hand.



Test for correct turning

If the rack is equipped with a turn lock pin, insert the pin to prevent racks from turning while they are being moved to the incubator.



Inserting the pin in the turn lock prevents accidental turning (All racks are not equipped with a pin.)

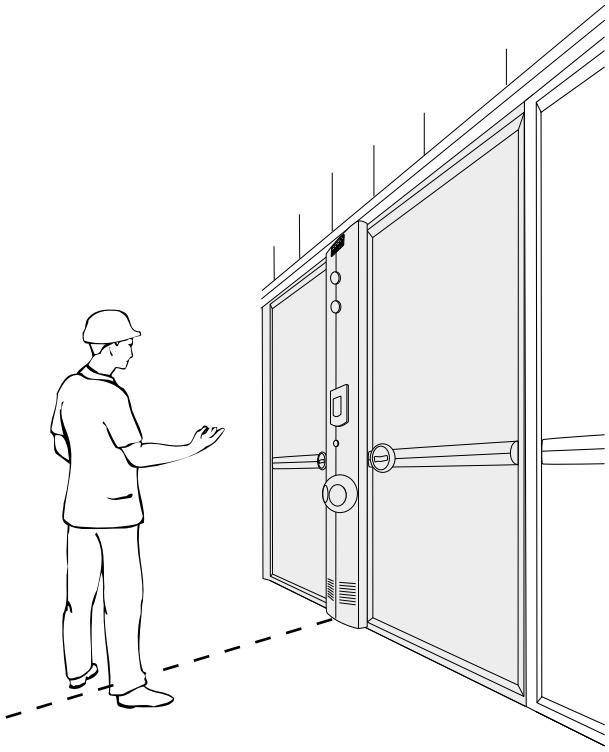
STARTUP

After every new installation of a Jamesway incubator or hatcher, a Jamesway technician will startup each machine to ensure it is functioning correctly. This Start Up procedure should also be followed if a machine has been idle for some time.

> **Note:** The technician should have operated and checked your equipment for correct function after completing the installation. If there is any doubt, turn to the maintenance section of this manual for component checks and procedures.

LEFT OR RIGHT HAND?

Many instructions in this manual refer to left and right. Therefore, all hatchery operators and workers must follow a common method of determining these designations. To determine the left-right orientation, stand in front of the machine and look into the cabinet. Your left is the machine's left. Your right is the machine's right.



Stand in front, facing the machine to determine left and right sides

PRE-START CHECK

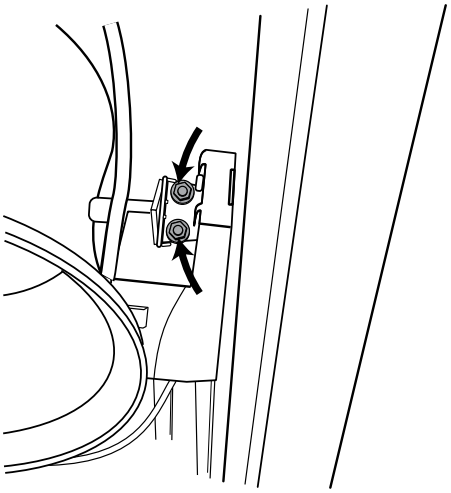
Open the Control box. Check the boards, ensuring the inside is free of debris, especially metal shavings.

Check the interior of the incubator. It should be clean and free of debris.

Only when all equipment has been thoroughly checked, cleaned and sanitized, is the incubator or hatcher ready for start up.

ZEROING DAMPERS AT STARTUP

It is essential that all dampers are set to zero before machine startup. Loosen the nuts as indicated in the diagram. On the Main screen, press the Damper button or its numerical value and set to zero. Align the plates so that they are completely closed. Tighten the nuts, but do not over tighten.



Loosen the nuts on the damper motor before aligning the plates and changing the value on the Main screen. (Intake damper motor shown.)

INITIAL START UP
FOR IDLE OR NEW MACHINES

Before using the machine for the first time, or after a period of prolonged inactivity, it is recommended to test the machine by carrying out the following checks.

Turn on the power to the machine and close the console.

The Main screen will appear on the Touch screen. Check the clock. The clock must be set before the machine can be programmed.

Access the Main screen and check to ensure the machine is functioning normally:

- Environment - check the actual temperature, humidity and carbon dioxide readings against a recommended device. The sensors may require calibration.
- Damper - position and operation.
- Check all other operating functions and settings.
- Alarms - check correct operation and settings.

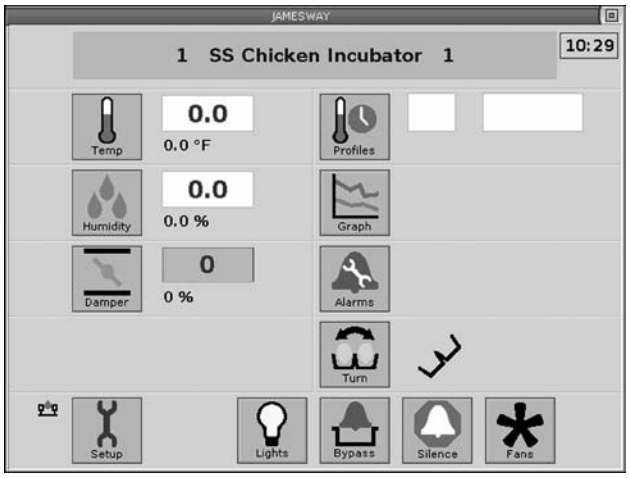
Run an Alarm Test. Press and hold down the Test button, on the Alarms screen. The alarm relay will return to normal operation when the button is released.

Make any changes to the setpoints by accessing the Main screen.

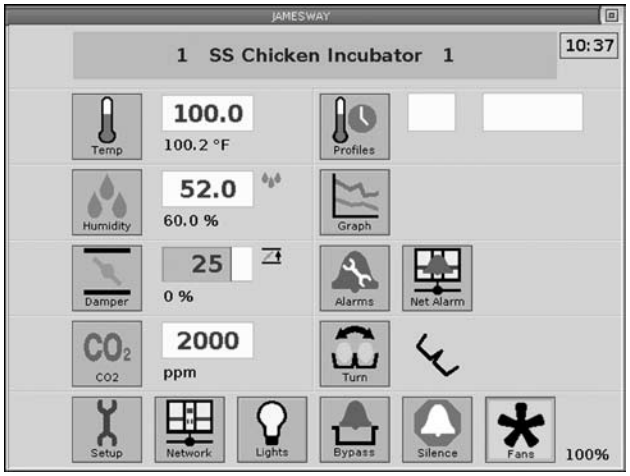
For new machines, access the Profiles screen and add new profiles as required. If the machine is on a network, profiles may be copied from other machines.

Note: Following the check, the machine should be left to operate at incubation temperature for a minimum of 24 hours before attempting to set eggs.

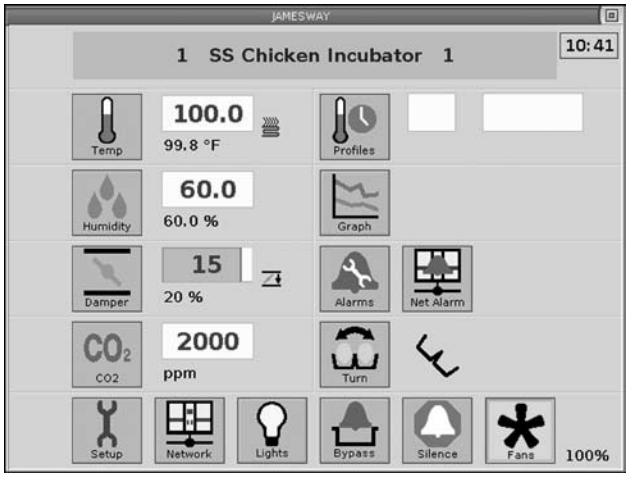
Warning: Ensure that all employees are clear of fans and egg turning prior to startup.



This screen shows communication alarm, etc. You cannot proceed and check if machine is functioning normally when a communication alarm is active. Temperature and humidity readings will not update on display.



This screen shows the humidity on when temperature has reached setpoint. The damper is closing.



The screen shows cooling on when temperature is above setpoint. The damper is opening.

SETTING PROCEDURES

Generally speaking, if eggs are set at a specific time, the pull time should be 21 days later, plus or minus four (4) to six (6) hours, depending on breed and age of flock.

PRE-START CHECK

Before loading the incubator, has all equipment been thoroughly checked, cleaned and sanitized?

Check the machine's identity and the profile. Is the correct machine selected? Is the profile correct for the type of eggs to be incubated?

Pull racks from either the front or the back. Watch where you are going!

LOADING RACKS INTO THE INCUBATOR

Open the doors.

Push the Fans button to off (if on).

Ensure the ECU (Environmental Control Unit) is correctly positioned.

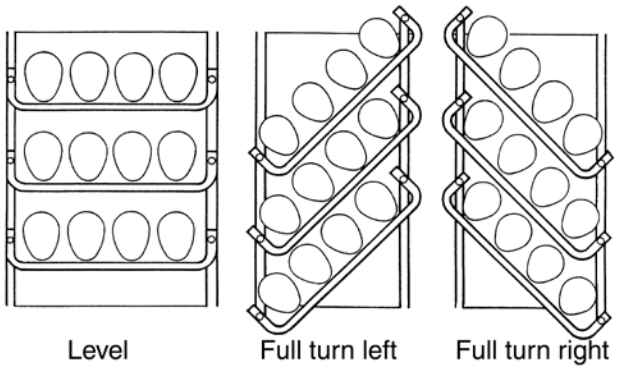
Push in racks, one by one, filling all positions on either side. Load the racks against the wall first.

Connect air lines. Ensure all lines are fastened securely. Connect air lines of racks nearest the wall to air lines hanging from the ceiling; match colours. Connect rack air lines of similar colour to those of adjoining racks. Air lines of racks adjacent to the ECU are connected to the air lines hanging from behind the console; match colours.

Press the Turn button on the Main screen to activate the air valve. The incubator racks will turn through 90 degrees. This is an additional check to see if all air lines have been correctly connected.

Warning: During air line hook up no alarm will sound. Ensure employees do not have fingers in the racks as the racks will turn, possibly causing injury.

Connecting air lines



Rack turns

SWITCHING ON THE INCUBATOR

After loading is complete, check that the protective covers have been removed from the humidity and carbon dioxide sensors.

On the Main screen, check that the startup temperature and humidity settings are correct.

Turn on the fans by depressing the Fans button on the Main screen. (A green button indicates that the fans are turned on.) Wait a few seconds for the fans to start up.

Visually ensure the motor-off switches are being held up by the air flow.

Check turning by pressing the Turn button. The icon to the right of the Turn button should indicate that the eggs are turning.

The Valve Turn icon, located to the far right of the Turn button, should be on (visible on screen) to turn the eggs left and off (not visible on screen) to turn the eggs right.

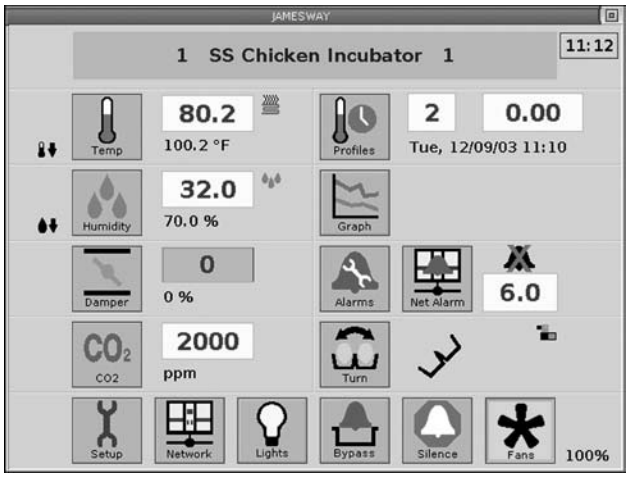
Once turning is complete, check the Main screen. The icon to the right of the Turn button should indicate that the eggs have made a complete turn, left to right or vice versa.

Press the turn button again to return racks to the original position.

Close the incubator doors.

Check the following to ensure that the machine is functioning normally:

- System Alarms - Low Temperature and Low Humidity - flashing.
- System Status - Damper position, heating, fan speed and absence of fan failure alarm.
- Temperature, humidity and carbon dioxide readouts.
- Temperature, humidity and carbon dioxide setpoints.
- Alarm lamp on the front of the console - flashing.



This is a typical startup screen after a machine has been loaded and incubation initiated. Alarm override is active, profile #2 is active, and both machine low temperature and low humidity alarms have not been cancelled.

Warning: During air line hook up no alarm will sound. Ensure employees do not have fingers in the racks as the racks will turn, possibly causing injury.

Note:

1. The left half of the incubator should be used as an indicator of whether or not turning is correct.
2. If the profiles in this manual are used, the High Humidity alarms should be disabled during the first 10 days. The machine will not generate a High Humidity alarm when the damper setpoint is zero.
3. Check calibration once the machine has come up to temperature and settled down. It is recommended that incubator calibration should be checked after every set with a thermometer verified for accuracy.
4. In the event of a **power outage** incubator doors must be opened to prevent overheating of eggs. If eggs in the incubator are at 14 days of incubation or older remove racks from cabinet.

If you should desire an alarm override, which is longer than the default period of six (6) hours, access the Alarm Override Setup screen.

Set the new time period – e.g., if a machine is programmed to take longer that six hours to achieve setpoint, override low temperature, low humidity, and high humidity by that amount of time.

When the machine has reached its temperature and humidity setpoints, ensure all alarms are active. (On the Alarm Delays screen check the status of all the alarms. They should have a Normal (audible) status.)

Test Alarm Relay. Press and hold down the Test button, on the Alarms screen. The alarm relay will return to normal operation when the button is released.

GUIDELINES FOR EGG SETTING AND TRANSFER PROCEDURES

A variety of setting and hatching methods can be used with success in the Platinum Single Stage machines, as long as some guidelines are followed.

It is important that eggs be grouped and identified from farm all the way through to the hatch process. Once the eggs are in the egg room, determine when they will be set into the incubator. Group the total set together, with each rack identified. Number each rack of eggs according to its location in the incubator. Record the location of each rack on a Set sheet.

At transfer time, the location and identity of the eggs must be maintained. Once transfer from the incubator has begun, complete the process into the hatcher without delay. Take care not to damage the eggs.

Remove one incubator rack at a time from the incubator. Locate the new position of the eggs in the hatcher. Transfer. When eggs are transferred into the hatcher racks their location and identity must be recorded for the chick processing.

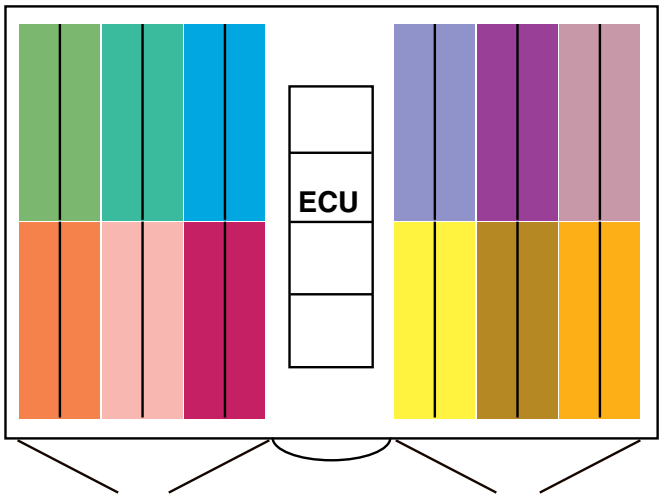
Note: It is extremely important that a balanced air flow in the incubator and hatchers be maintained while the transfer is in progress. Do not remove all the eggs first on one side of the incubator and then on the other side as this may cause air flow disruption and overheating.

REMINDER LIST FOR EGG TRANSFER

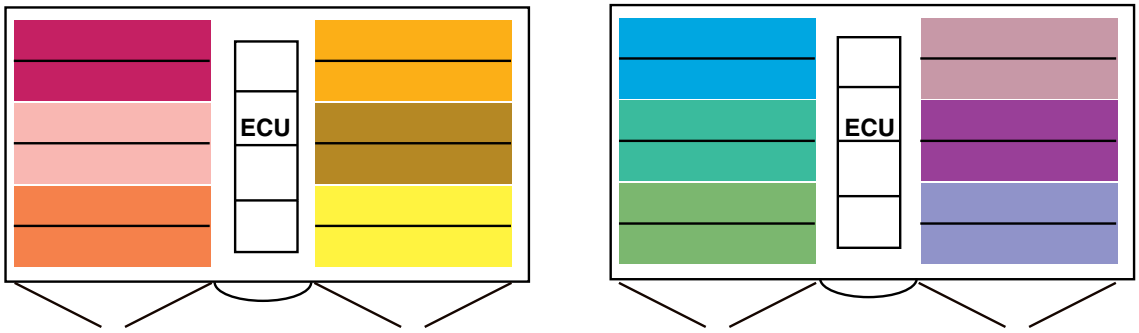
- During transfer, handle eggs with care.
- Do not remove racks without levelling eggs first.
- Do not remove all incubator racks from one side and then the other side.
- Do not slam or tilt baskets in the racks or dollies.
- Do not transfer eggs into wet hatcher baskets.
- Do not bang the basket down on the table during transfer.
- Do not flip eggs too quickly during transfer. Turn in a smooth gently rotating motion.
- Do not allow eggs to cool excessively during transfer.
- Once transfer has started, it must be completed for all of the racks.
- Ensure all racks or dollies are positioned properly in the hatchers.

TRANSFER POSITIONS FROM P60-P65

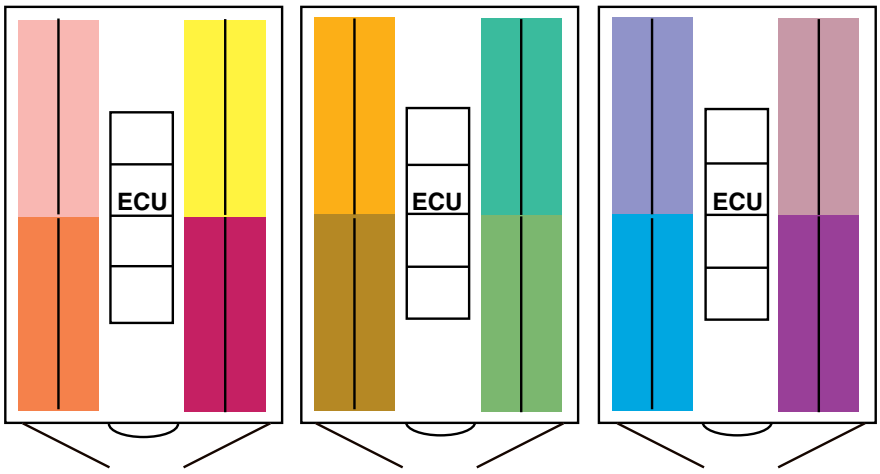
A P60-P65 Platinum Single-Stage Incubator



transfers to two (2) P30 Platinum Single-Stage Hatchers

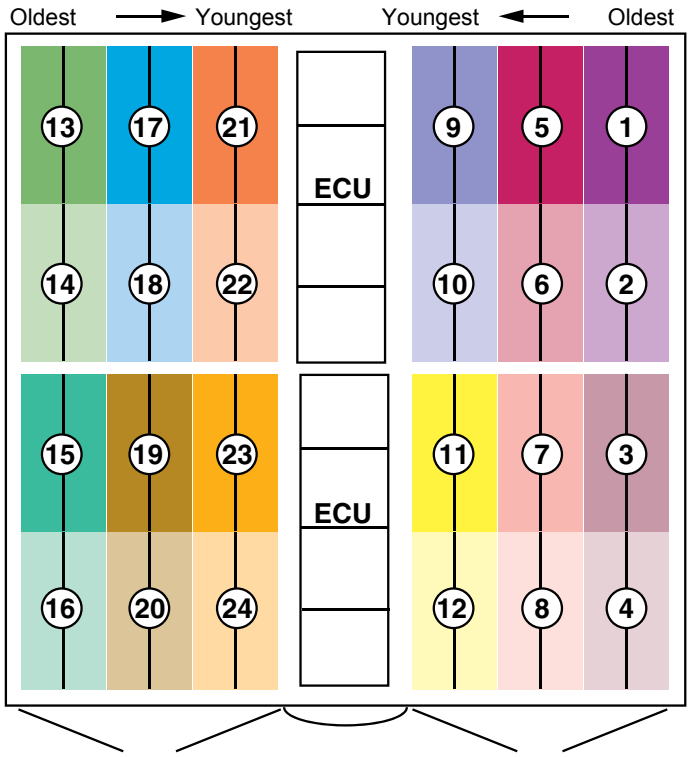


OR to three (3) P20 Platinum Single-Stage Hatchers



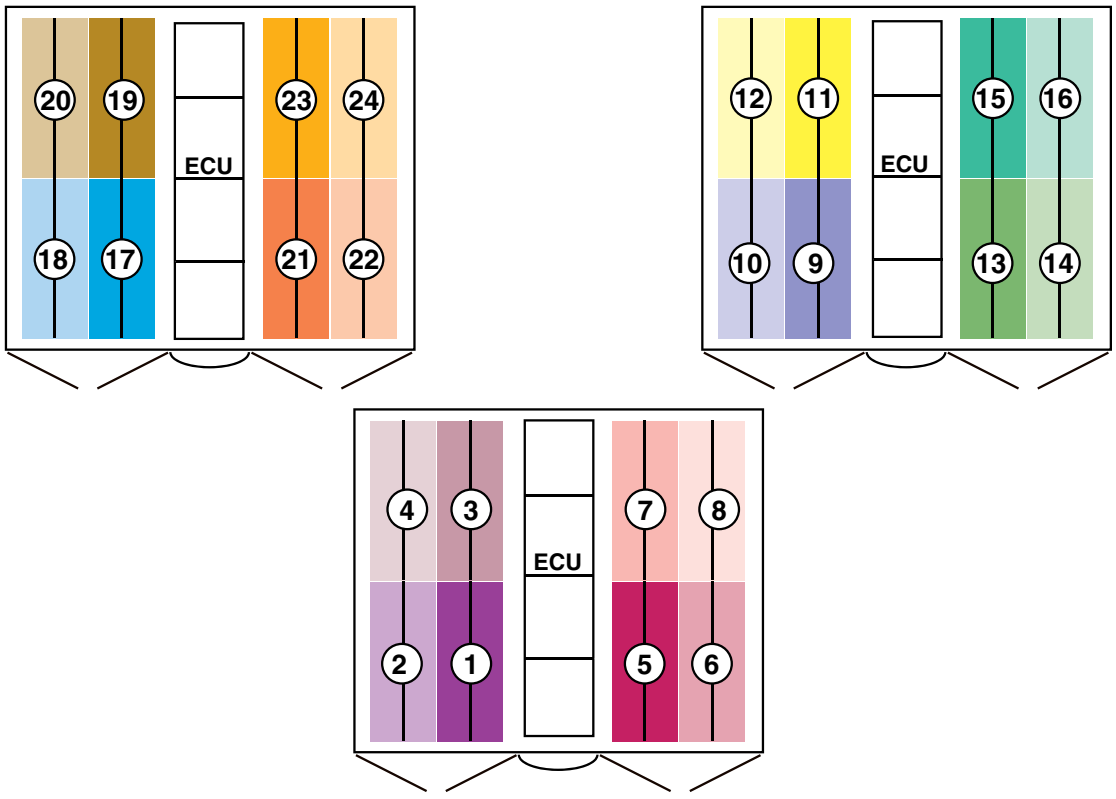
TRANSFER POSITIONS FROM P120-P130

WA P120-P130 Platinum Single-Stage Incubator



Note: Eggs and racks should be arranged so that the eggs from the oldest flocks are closer to the side walls and the eggs from the youngest flocks are nearer the ECU.

transfers to three(3) P40 Platinum Single-Stage Hatchers



TRANSFERRING EGGS FROM INCUBATOR RACKS TO HATCHER BASKETS

PRE-START CHECK

Before loading the hatcher, has all equipment been thoroughly checked, cleaned and sanitized?

On the Touch screen, check the machine's identity and the profile. Are they correct?

MANUAL METHOD

The manual method of transfer requires two people and must be completed within a reasonable length of time, so that eggs do not cool excessively.

Place a work table on front of the hatcher.

Place a bucket of warm water and disinfectant under or to the side of the work table. This is for discarded eggs.

Position an empty egg flat cabinet in the work area.

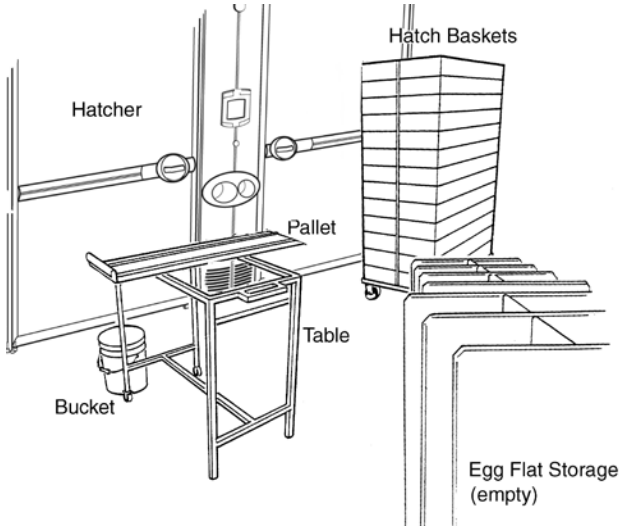
Remove a dolly with empty baskets from the hatcher.

Remove one (1) rack of eggs from the incubator. Move to the hatcher room and position it in front of the hatcher.

Person A stands between the incubator rack and work table, while Person B stands between the hatcher dolly and work table.

Person A slides the transfer pallet into the top right column and removes the eggs from the incubator rack. See the illustration for transfer pattern. Person A will then place the pallet with eggs on the work table.

At the same time, Person B removes a top plastic hatcher basket from the dolly and places the basket on the work table.

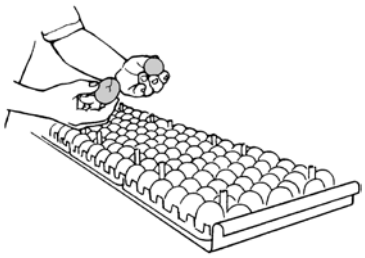


Typical Setup

*Method for removing eggs from incubator racks. Start at the **top right** hand column and move **downwards**. Remove all trays from the right column before proceeding to the left.*

Placing the pallet on the table

Inspect and pull cracked eggs.



Inspecting eggs for cracks

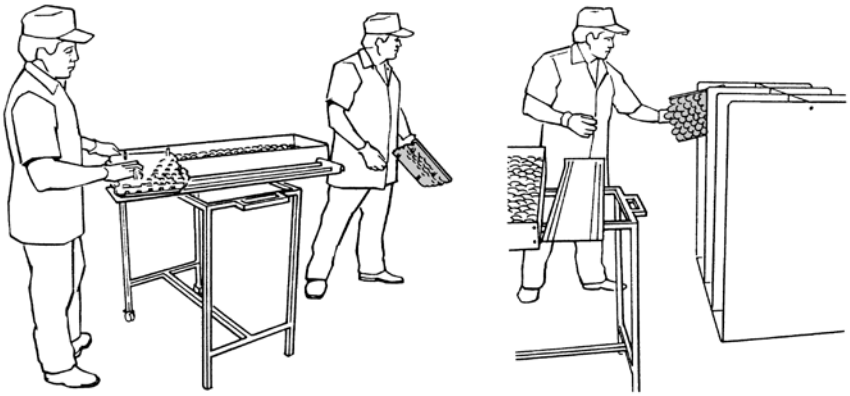
Person A and Person B will now place the hatcher basket over the flats and pallet. With one hand on the hatcher basket and the other under the pallet they turn the basket, eggs, and pallet upside down in a gentle, smooth rotating motion. Do not flip the eggs quickly as this will cause damage.

Place the basket over the flats and pallet

Once the eggs have been inverted, place the basket gently on the table. To avoid breakage, do not bang the basket on the table.

Turning the basket, eggs and transfer pallet

Person A removes the pallet while Person B removes the eggs flats and places them in the storage cabinet or cart.



Removing the flats and pallet

Person A picks up the hatcher basket filled with eggs and places it on the right hand side of an empty hatcher dolly. Do not slam the basket into the dolly as eggs will be damaged. Person A now takes another empty basket and places it on the table.

Continue removing the trays of eggs from the right column in a downward direction. (See illustration on page 69.) Continue placing hatcher baskets with eggs on right side of dolly. Stack one column at a time.

When all the eggs have been transferred, place the hatcher dolly into the hatcher and close the hatcher door.

Remove the empty incubator racks from the work area and return to the incubator for the next rack.

Place them in front of the hatcher, leaving as much work space as possible, allowing easy access to the hatcher door.

Repeat the process as described above until all eggs have been transferred.

*Hatcher baskets are first stacked on the **right** hand side. The **right** stack will contain all the eggs from the **right** column of the incubator rack. The **left** stack will contain all the eggs from the **left** column of the incubator rack.*

TO FINISH THE TRANSFER

After loading the last dolly into the hatcher check that the protective covers have been removed from the humidity and carbon dioxide sensors.

Turn on the ECU fans by depressing the Fans button on the Main Screen. (A green button indicates that the ECU fans are turned on.) Wait a few seconds for the fans to start up.

Visually ensure the motor-off switches are being held up by the air flow.

Close the hatcher doors.

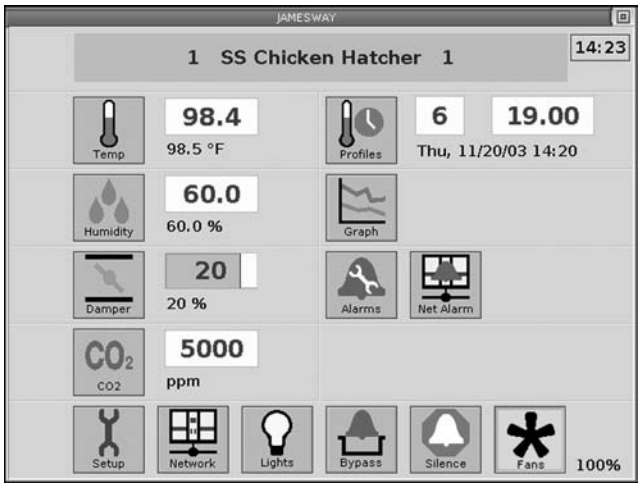
On the Main screen, check that the startup temperature and humidity settings are correct.

Check the following to ensure that the machine is functioning normally:

- System Alarms - Low Temp. and Low Humidity - flashing.
- System Status - Damper position, heating, fan speed and absence of fan failure alarm.
- Temperature, humidity and carbon dioxide readouts.
- Temperature, humidity and carbon dioxide setpoints.
- Alarm lamp on the front of the console - flashing.
- Silence alarm - alarm light should go out.

When the machine has reached its temperature and humidity setpoints, ensure all alarms are active. (On the Alarm Delays screen check the status of all the alarms. They should have a Normal (audible) status.)

Test Alarm Relay. Press and hold down the Test button, on the Alarms screen. The alarm relay will return to normal operation when the button is released.



Has the machine reached both temperature and humidity setpoints? If so, enable the alarm.

Note: Check hatcher calibration biweekly (every fourth hatch). Use a thermometer which has been verified for accuracy.

WASH AND SANITIZE

INCUBATOR RACKS

When the transfer is complete, the empty incubator racks must be cleaned and sanitized before reloading.

INCUBATORS

Wash and sanitize the machine after each transfer.

Protect humidity and carbon dioxide sensors with the covers provided.

The ECU can either be removed or left in place.

Lift the ECU fan motors into the vertical position.

Open the skirts on the ECU.

Scrub, by hand, obvious dirt such as residue from exploded eggs.

Using a power hose, thoroughly wash the entire machine and ECU.

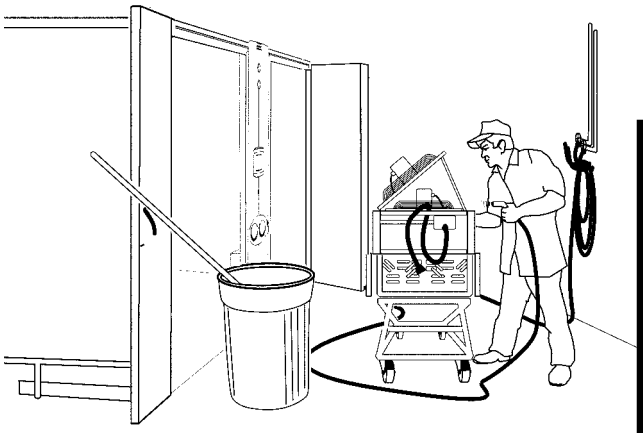
Rinse and sweep water from the machine.

Apply a disinfectant solution.

Close skirts.

Remove covers from sensors.

Allow the machine to dry completely before reloading.



Thoroughly wash the machine and its contents

Warning: Disconnect the machine from electrical supply before commencing clean-out.

Turn off the power.

HATCHING THE EGGS

During the time the eggs are in the hatcher, record the temperature and humidity twice daily.

Monitor the hatch twelve (12) hours prior to pull time. There should be no more than 50 to 60 percent of chicks hatched at this time. Ten percent of those chicks should be wet or just hatched.

To avoid excessive dehydration, remove the chicks from the hatcher Six (6) hours after hatching has been completed.

Note: In the event of a power outage hatcher doors must be opened to prevent overheating of chicks. Remove dollies from hatcher if necessary.

TAKING OFF THE HATCH

There are various methods used to pull the hatch, ranging from the traditional manual method to the semi automated and the fully automated.

Method 1: Manual

Turn off the alarms.

Turn off the ECU fans, open the door and take the dolly out from machine.

Close door and turn on the fans.

Place the dolly in front of the machine or move to take-off area.

Remove the lid from the top plastic basket. Remove the top basket from one column and place on the work table.

Transfer the chicks from the hatcher basket to the chick box.

When all the chicks have been removed from the plastic basket, put the basket with shells and unhatched eggs onto an empty dolly.

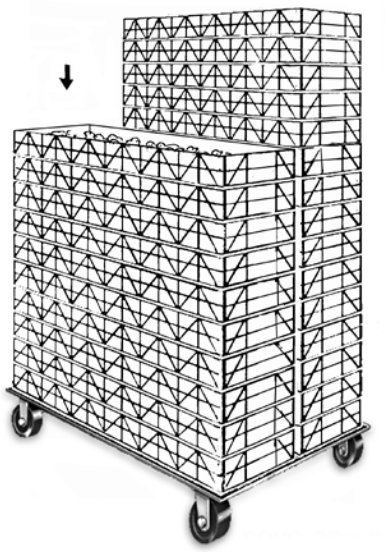
Continue in a downward direction. When all the chicks have been removed from the first column, go onto the second column. When all the chicks have been removed from the first dolly, remove another from the hatcher and repeat the process.

Turn off the hatcher after completing.

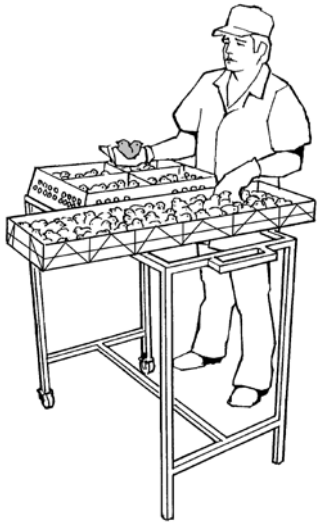
Method 2: Semi Automated and Fully Automated

Refer to manufacturer's instructions.

After the hatch is pulled, the chicks are processed, packed and transported to the grower. To avoid mortality, ventilation must be adequate and temperature and humidity must be controlled.



Destacking hatcher baskets



Carefully transfer chicks

WASH AND SANITIZE HATCHERS

Wash and sanitize the machine after each hatch is removed.

Protect humidity and carbon dioxide sensors with the covers provided.

The ECU can either be removed or left in place.

Lift the ECU fan motors into the vertical position.

Open the skirts on the ECU.

Scrub, by hand, obvious dirt such as residue from exploded eggs.

Using a power hose, thoroughly wash the entire machine and ECU.

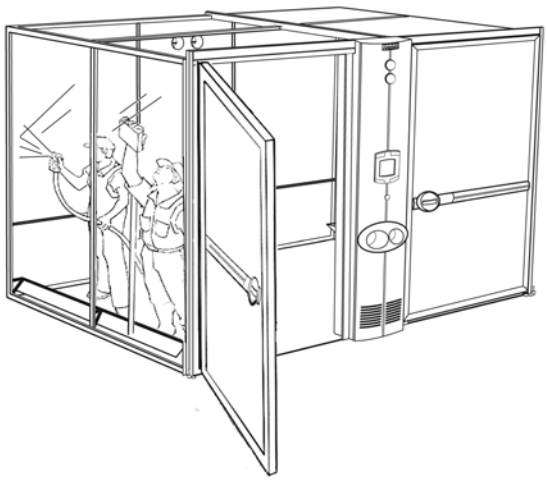
Rinse and sweep water from the machine.

Apply a disinfectant solution.

Close skirts.

Remove covers from sensors.

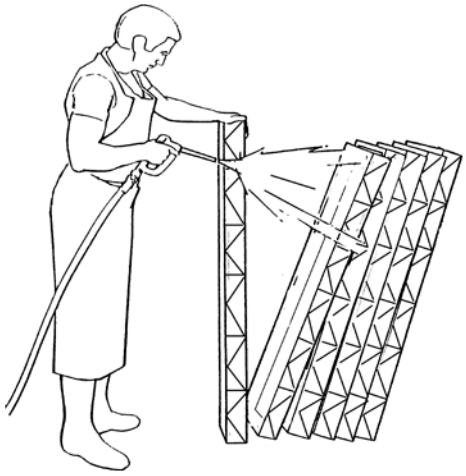
Allow machine to dry completely before reloading.



Scrub obvious dirt and residue by hand

Warning: Disconnect the machine from electrical supply before commencing clean-out.

Turn off power.



Hand washing baskets using a power hose - All baskets, transfer pallets, egg flats, dollies and racks must be thoroughly cleaned and disinfected after each use.