HatchTech
INCUBATION TECHNOLOGY

GB

Brochure

HatchBrood

Brooding Control

HatchBrood

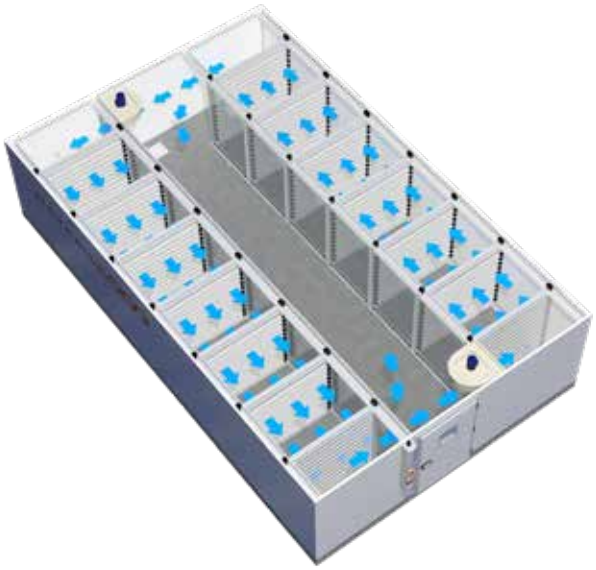
Brooding Control

In traditional broiler houses, it is difficult to uniformly control the crucial environmental variables, such as air, floor temperatures, air velocity and relative humidity levels. Because chicks are not able to control their body temperature during the first crucial days of life (the brooding period), the environment in the house dictates the chick's body temperature. As a result, some chicks have a delayed start, flock uniformity varies, mortality increases, and feed efficiency and growth rates are not uniform. High energy costs make the brooding period even more difficult to manage.

HatchBrood is designed to uniformly provide the optimal environment for all chicks during the first days of life (the brooding period).

After hatch, the day-old chicks are placed in a HatchBrood unit. Each unit can hold up to 39,600 chickens. In a HatchBrood unit, environmental variables, such as air temperature, air velocity, humidity and CO_2, are uniformly controlled. The chicks have optimal access to fresh water, feed and fresh air. Chicks with an optimal body temperature immediately start to eat and drink, which ensures that they have an optimal start.

By eliminating areas with poor environmental conditions, HatchBrood prevents the occurrence of non-starter chicks. After four days, the chicks can be transported to the farm for the remainder of their production cycle.



Laminar Airflow for Uniform Body Temperatures

- HatchBrood is equipped with patented perforated radiators.
- A directly-driven fan forces the air through the perforated radiators.
- The perforations in the radiators create a uniform laminar airflow of 0.3 m/s.

Due to the uniform airflow and temperature control, the body temperature of each chick will be maintained within the optimum range (104-105 °F).

Optimum and Uniform Chick Quality

- The chicks in each HatchBrood unit are divided over 12 sections. Each section has a temperature sensor to monitor the actual air temperature.
- The HatchBrood Controller uses the temperature information from each section to adjust the temperature of the water as it flows through the radiators.
- As air passes over the radiator, it is cooled or heated, accordingly, until the air temperature set point is reached.
- By controlling the temperature in all 12 sections and moving the air at a uniform velocity, HatchBrood ensures optimum and uniform chick body temperatures of 104-105 °F.

The end result is that the chicks will uniformly develop crucial organ systems and begin growth. This ensures that the chicks have uniform and optimum field performance potential.

Cradles™
The CradlesTM are designed to hold 50 chicks each. The chicks have uniform access to fresh water, feed, fresh air and light. Each CradleTM has a surface area of 4000 cm^2, a generous 80 cm^2 per chick.

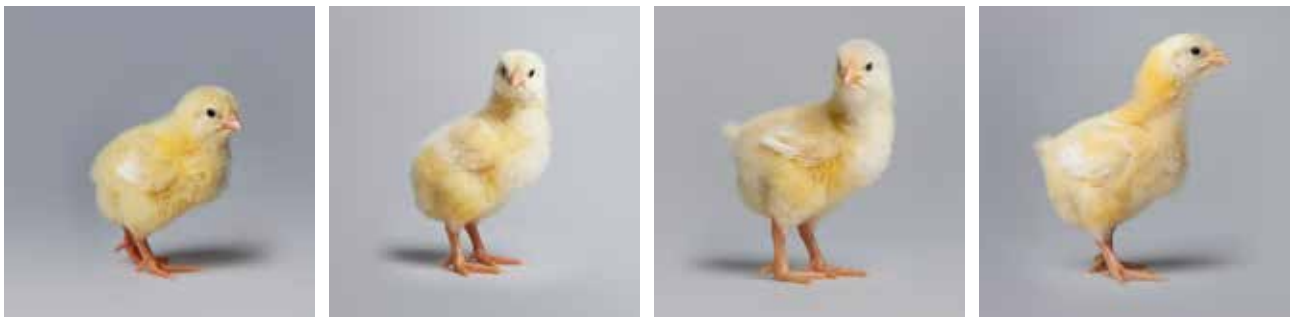
Fresh Water
HatchBrood radiators are equipped with drinking troughs that continuously supply fresh flowing water. The chicks have access to fresh water within 0.5 m. There is 9.2 mm of drinking trough space per chick.

Feed
The CradlesTM contain feed troughs on two sides. The feed troughs hold enough feed for four days. The feed can be placed in the troughs manually or via an automatic feed dosing system. The distance between the chick and the feed is never more than 0.25 m, and there is 25.2 mm of feed space per chick.

Fresh Air
Fresh air enters the HatchBrood unit via a unique ventilation system installed above the unit's ceiling. This ventilation system is connected with each individual radiator. The fresh air enters the unit via inlet nozzles that are integrated into the radiator. The inlet nozzles function on overpressure. This ensures that dirty air will never return into the fresh air supply.

There are 84 inlet nozzles on each radiator. This means that the chicks are never further than 0.5 m from a fresh air supply point. The amount of fresh air supplied is based on the actual CO_2 and humidity levels.

Light
The HatchBrood unit is equipped with LED-light. LED-light is highly energy efficient and durable. LED-lights do not produce heat and therefore do not influence the air temperature. The light intensity is uniform, and thus there are no dark CradlesTM. The lighting system is programmed to have light periods (eating and drinking) and dark periods (for sleeping, good digestion and development).



HatchBrood

Ultimate Brooding Control

HatchBrood was developed to control the environment during the first four days of a chick's life, the brooding period. HatchBrood ensures optimum body temperatures and a continuous supply of fresh water, air, feed and light. The chicks are guaranteed a good start!

Improved Field Performance

During this early brooding period, the immune system, thermoregulatory system, and gastrointestinal tract are still developing. In ideal brooding conditions, these systems develop properly. Chicks that are ideally brooded in this early period will have improved field performance:

- Improved uniformity of the flock: There are no "non-starter" chicks because the environment is uniform.
- Higher average body weights at four days in chicks from all breeder flock ages.
- Improved performance in chicks from young flocks. Chicks from young breeder flocks (in HatchBrood) have a higher 4 day average daily gain than chicks from prime and old flocks in traditional brooding.
- Mortality caused by brooding problems in the first 4 days is decreased.
- The chicks have optimal thermoregulatory development and there are no non starter chicks to support. This means that there are lower heating costs in the brood and growout house.
- With yield breeds, the increased length of the intestinal villi is responsible for the growth rate improvements. For maximum growth of the villi, the body temperature of the chick must be 104-105 °F, 40-40.6 °C. There must be immediate access to food and water. Since HatchBrood is designed to meet these requirements, HatchBrood chicks have the potential for maximum growth and feed efficiency.

With HatchBrood, the conditions in the first 4 days of brooding are consistent which improves the predictability of final field results.

Lower Energy Usage

Special attention was paid to efficient energy consumption during the engineering and development of HatchBrood. HatchBrood is equipped with special features that substantially lower energy consumption during the brooding period:

- The HatchBrood system does not require long preheating times to warm the floor as in conventional poultry houses. HatchBrood can be heated in only three hours.
- In the HatchBrood system, the volume of air that must be heated is much less than in conventional poultry houses.
- HatchBrood is constructed with high quality insulating 60 mm Polyurethane panels with a 2.91 m^2 K/W R-value.
- The energy recovery system captures and re-uses the heat that is produced by the chickens.
- Heating costs are near zero during the actual brooding period.
- HatchBrood is equipped with LED-lights, which use up to 75% less energy than a traditional light bulb system.

Lower Costs

- In areas with hot summers or cold winters, the investment of a HatchBrood system will be lower than a broiler house. The footprint of a HatchBrood system (39,600 d.o.c.) is 84 m^2. This is significantly less than the footprint of a 39,600 d.o.c. traditional poultry house.
- Decreased energy costs;
  - Very little heat is needed for preheating.
  - During operation, the cubic meters of air that must be conditioned is decreased.
  - HatchBrood is equipped with a energy recovery system.
- Generally one more flock per year can be placed in the HatchBrood unit than in a traditional broiler house. This lowers the cost for housing per chick in your total operation.

HatchBrood: Self-Contained, Easy Installation Option

HatchBrood can be ordered as a fully self-contained system. If you chose this option, the heating, cooling, and electric requirements will be calculated based on your specific situation. HatchBrood will be delivered with factory installed cooling, heating and ventilation systems. HatchBrood will be fully operational when connected to your water and electricity supply. With two simple connections, your HatchBrood simple and worry free installation is complete.

Lower CO_2 Emission in Poultry Production

As a supplier of poultry equipment, we have a responsibility to provide the industry with innovations that maximise our customers' profits. It is also the responsibility of the poultry industry as a whole to develop sustainable poultry production processes. This means not only reducing costs and maximising productivity, but also focusing on bird health, animal welfare and environmental concerns. HatchBrood is designed to minimise energy usage during brooding. HatchBrood lowers CO_2 emission and makes a positive contribution to sustainable poultry farming. HatchBrood will substantially lower your annual brooding energy bill and reduce the impact on the environment with lower CO_2 emissions.

Specifications

Capacity:	39600 chicks
Dimensions (l x w x h):	11920 x 7370 x 2640 mm
	39.1 x 24.2 x 8.7 ft
Cradle™	
Capacity:	50 chicks
Dimensions (l x w x h):	727 x 790 x 190/170 mm
	2.39 x 2.6 x 0.62/0.56 ft
Floor space	
Total:	644 x 618 mm: 0.4 m^2
	2.1 x 2.03 ft: 4.26 ft^2
Per chick:	80 cm^2, 0.085 ft^2
Drinking water space	*Open trough*
Per Cradle™:	21 openings, 22 mm, 0.87 inch
Per chick:	9.2 mm, 0.36 inch
Feed space	*Feed troughs integrated into Cradle™*
Per Cradle™:	1260 mm, 49.6 inches
Per chick:	25.2 mm, 0.99 inch
Trolley	
Number of trolleys:	36 Total, 3 per section
Chicks per trolley:	1100
Dimensions (l x w x h):	1454 x 790 x 2083 mm
	4.8 x 2.6 x 6.8 ft
Sensors	• Temperature
	• CO_2
	• Relative Humidity
	• Pressure

HatchTech B.V.
Innovatielaan 3
NL-6745 XW
De Klomp
The Netherlands

E info@hatchtech.com
T +31 (0)318 512511

www.hatchtech.com

HatchTech
INCUBATION TECHNOLOGY

20_021_HAT 018