

e-news

ChickMaster

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ChickMaster Says Thanks . . . and Gives Thanks

We always like to look back on the year that is coming to a close to reflect on many of the important events that will carry us into the future. This past year certainly had many successes and challenges, but we are thankful to all our customers for your continued support and confidence in our organization as many new projects were completed. We have spent our efforts in 2016 working to strengthen our organization with a new focus and energy. This includes adding many new talented people who are eager to learn about the industry.

There is a lot of commitment and enthusiasm within our two facilities in Medina, Ohio and Bridgwater, England as we get closer to 2017. We have also been busy working on new products to further enhance the value of the equipment we offer to those that invest in ChickMaster incubation and ventilation systems. We

approach 2017 with quite a backlog of orders for new Avida setters & hatchers, as well as CC3 and Aria systems to maintain a *Hatchery in Harmony*. We are all very excited and energized for the New Year as we know we will be busy with new projects and expansions all over the world.

At this time of year, we also like to reflect on the value of our relationships with customers that have spanned many years from one generation to the next. I have been involved with this business and industry for more than 36 years and it is always a pleasure to continue meeting new people and building new relationships as the industry evolves to meet the needs of our customers and their individual markets.

As a company, we also like to give back to many organizations that ask for our support. The following is a list of some of the organizations we have given financial support to in 2016

Feeding Medina County
Society of Handicapped of Medina
Medina County Poultry Committee
Medina Rotary Club
Medina High School Band
Alabama Poultry & Egg Association
Georgia Poultry Federation
John Herman Hickman Foundation
Kentucky Poultry Federation
Midwest Poultry Consortium
National Turkey Federation
The Poultry Federation
TAPA Scholarship Fund

We want to thank you for your trust and confidence in ChickMaster and look forward to building relationships even stronger in 2017, and for many years to come. From all of us at ChickMaster, we wish you a happy holiday season and a fantastic New Year!

Robert Holzer - President, ChickMaster



Embryonic Development of the Chick

Dr. Michael J. Wineland, Professor, Poultry Science

The following article is the third and final of a series based on a recent presentation by Dr. Wineland at the ChickMaster Avida Academy.

Around day 13-14 the embryo is starting to enter the plateau stage of oxygen consumption. The gas exchange between the embryo and its environment in the incubator occurs through the pores of the eggshell where the number of pores can vary between individual hens and even breeds will demonstrate differences in their average number which can result in differences for gas exchange. Up to the plateau of oxygen consumption, gas exchange was relatively good depending upon the incubator environment. Once the embryo enters this plateau stage the oxygen becomes restricted as the shell properties (pore number, diameter or pore length) become the limiting factor. During this time and especially during the final days prior to hatch, the yolk reserves become an important energy source.



Picture of a late stage embryo moving to hatching position

Energy needs are critical, but oxygen is needed in order to metabolize the fatty acids in the yolk to produce glucose (energy). When inadequate amounts of energy are available from the yolk lipids, the embryo's need for additional energy will have to come from sources that do not require oxygen. One of those sources can be the limited glycogen reserves that the embryo produced during incubation. When the embryo has insufficient oxygen available it has the capabilities to say "I want to live" and redirects more blood flow to the heart and brain at the expense of the yolk sac, other organs, and the muscle mass. It is important to realize that all of

the muscle fibers that the embryo will have are there at the time it hatches. Thus if inadequate energy is available from the yolk or glycogen stores then the embryo has the ability to take muscle protein, break it down, and using certain glucogenic amino acids will produce glucose as an energy source without the need for oxygen. Embryos having to utilize energy produced from protein will never achieve their genetic potential because of the reduction of muscle fibers.

The temperature that the embryo experiences during incubation is what drives the rate of development.

Too high a temperature during the first part of incubation can create a larger embryo entering the plateau stage of oxygen consumption which will require more oxygen earlier and cause it to enter the plateau stage of oxygen consumption even earlier. This can cause additional stress for the embryo, which is why proper ventilation of the incubator and the hatchery hallways is essential.

Residual yolk that is present prior to hatching is being retracted into the abdomen and the navel is supposed to be completely closed by the time the hatchling hatches. The typical hatching position is head tucked under the right wing. Malpositions such as the head under the left wing or with the head orientated in the small end of the egg, creates conditions in which there is additional stress during the attempt to hatch. Once they poke their beak up into the air cell (internal pip) they will rest for a short period of time before they break the shell (external pip). Once the embryo has internally pipped the blood flow through the CAM (chorio-allantoic membrane) will gradually reduce and the blood becomes internalized in the embryo so as not to cause hemorrhaging during the hatching process. Additionally, the fluids in the embryo's lungs are evacuated so that air can enter the lungs. Using their legs to help them move in the shell they will move counterclockwise in the shell, breaking the shell with the pipping tooth on the tip of their beak and hatch. During the hatching process you will notice a rise in humidity that is largely the result of allantoic fluid that was left at the time the shell was broken.

We hope that this series of articles provide you with a better understanding of the developmental process so as to allow you to make knowledgeable adjustments to the incubation process.

Remember how you manage your incubators will influence how the embryo utilizes the nutrients that the hen placed into the egg.

George's Updates with the New GeMeric 3 Control

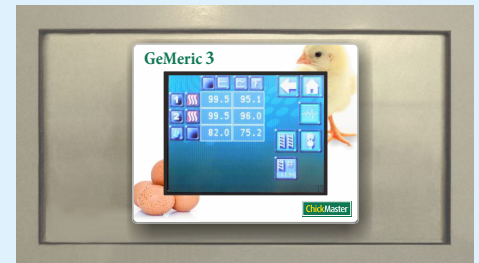
The ChickMaster Classic has been around for a long time. There are many in operation that look like new, but technology has certainly improved for many of the setter and hatcher functions. Improved two-zone cooling, more even exhaust and higher efficiency fans are a few of the improvements on newer equipment and upgrades available for older setters built prior to the year 2000. The new **GeMeric 3** is the next generation of control upgrades with many improvements over its predecessors. One of the main features is that it is designed to be installed inside the existing control cabinet.

The Springdale, Arkansas hatchery of George's has recently installed a few of the new GeMeric 3 controllers on a setter that had the original mercury thermostat-based control from when it was first installed. They immediately saw a more stable setter that is resulting in an improved hatch, better chick quality, and less cycling and energy consumption. In the hatchers they can now run a step program for improved control of the final stage of incubation. The touch screen navigation makes it easy to operate.

There are a few other locations about to use the GeMeric 3. As word spreads about the next generation of control upgrades for one and two-zone setters and hatchers, this may be an upgrade that is right for your hatchery.



Doug Archer of George's with the GeMeric 3



CM Parts Corner: Belts for Avida Setters and Hatchers

A worn belt affects fan performance that results in lower hatch performance in Avida setters and hatchers. To work properly, a drive belt must be under proper tension. As a belt ages it tends to stretch, resulting in a loss of belt tension which will affect the RPM of the fan. If the actual fan RPM goes below set point, it will be noticeable on the control screen and may even set off an alarm. A belt tension gauge can be used to reset proper belt tension, but this is a first sign that the belt needs attention and may need to be replaced soon.

At this point, a visual inspection of the belt can confirm that it may need to be replaced. Look for cuts, cracks, fraying or any other visible signs of wear. Usually these are fairly easy to see and are a clear sign that the belt needs to be replaced.

Replacing the belt with ChickMaster genuine replacement parts is the best way to keep your Avida hatchers and setters working properly to keep your Hatchery in Harmony.

404D-60-4419 Belt tension gauge

631D-60-4556 Belt for original Avida setter and 192 hatcher

631D-58-4556 Symphony setter and hatcher



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