

## **Radiant Gas Brooders**

Radiant brooders are designed so that the heat they give off is not by warming the air around them but by RADIATION. Radiation comes from a surface which is hot and has a specific surface which easily emits radiation of the right wavelength to warm the objects in the path of the radiation. The easiest way to describe this is to consider a crisp, cool but sunny day. If you stand in the shade with a thermometer in your hand, the thermometer will read the air temperature. If you took off your shirt, you would feel quite cold. Step out of the shade into the sun and you will suddenly feel quite warm, but the thermometer in your hand will still be measuring the air temperature. Now the difference in what we feel is caused by the radiant heat of the sun. Not the light of the sun, that's what we see, but the invisible infra-red part of the radiation we cannot see. Now this is what we do with the chickens, use a heater which gives off little visible light but lots of infra-red radiation the birds feel as heat. This is preferable in small brooding situations where we cannot have environment controlled sheds. If our sheds are really well insulated, and made airtight so we can exactly control the inwards and outwards air flow, then brooding with hot air is very useful. However if we have poorly insulated, or open sheds, radiant brooders allow us to have low air temperatures, and yet comfortable conditions for the birds.

### *Are all gas brooders radiant?*

No they are not. Many gas brooders are designed to be used in sheds with good insulation. They heat up the air in the shed, and then the thermostat, which operates on the air temperature turns them off. When the shed air temperature cools, the heater turns on again. These are air heaters. When we use these in sheds which are poorly insulated, the bird feels the combination of some radiant heat and some air temperature. When the heaters are on they feel both, when they are off they just have the air temperature. In uninsulated sheds the heaters need to be closer to the birds, and the effect is rather uncomfortable for the birds, too cold then the heater is off and too hot when it is on.

Radiant heaters are on all the time, providing an area where the combination of air temperature and radiation is comfortable for the birds. If the air temperature rises or falls, the birds migrate slightly, in and out to adjust their own environment so they are comfortable.

### *How to set up a radiant gas brooder*

Firstly hang the brooder at the recommended height for the size of the brooder. Take as an example an SBM size 6 brooder for about 600 chicks. Suspend the brooder at 1 to 1.2 metres above the floor. Set the regulator for about 5. In this range of heaters the regulator at 1 (minimum) has 50% of the heat output of 10 the highest setting. So 5 is about 75% of the capacity. Light the heater an hour before the chicks are placed, then leave the chicks for another half hour with minimum disturbance. Quietly return to the chicks and observe without disturbing them. If the chicks are quiet and formed basically into a ring shape around the heater you know the heat is about right. If they are filling the centre directly under the heater, lower the heater 100mm and again wait half hour. If there is a very large empty spot under the brooder it is too hot lift it up 100mm.

#### Beware

There is no substitute for observation. If the chicks are noisy anytime something is wrong, and if they form a wedge shape there is a draft somewhere on the pointy end of the wedge. The chicks will tell you if they are unhappy, and the ability to understand the chicks is called STOCKMANSHIP.

By setting up this way leaving the regulator on set level 5, then there is some reserve to turn the heat up if a cold night is forecast, or to turn the heat down if a warm day comes.

### [Gas Brooders](#)