



## Overlooked Topics and Oven Performance

Important Direct Gas Fired oven topics often overlooked by bakers:

### **Coloraider Maintenance –**

Direct gas fired oven heating systems utilize lateral heat multi-zone burners, individual zone temperature controllers and 360° adjustable air agitation tubes with control dampers (trade name "Coloraiders") for total control of the baking process. With the Coloraiders there are two aspects that are too frequently overlooked or ignored: directional alignment and packing. Coloraider alignment is critical as Coloraiders are used to create turbulence in the air flow to maintain temperature consistency and balance throughout the oven which is necessary for meeting product quality standards. We regularly see Coloraiders adjusted so they all point in the direction of the flow of the product which eliminates the turbulence (balance) and creates a wind tunnel effect which is counter to the design purpose of the Coloraiders. This will have a significant impact on the quality of the bake.

The Coloraider tube packing should be checked on a regular basis as part of your preventative maintenance plan. Damaged or missing packing will allow undesired heat to escape from the tube into the oven at that point, causing a "hot spot". Also, the packing aids in preventing the Coloraider tubes from rotating out of their desired position.

### **Air/Gas Mixer Orifice Cleaning –**

Seemingly minor contamination of the air/gas mixer orifices at each burner will have a significant impact on the capacity of the burner. For example, a build-up of as little as 0.010" can reduce burner capacity by 10%-15%. If the build-up in the orifice is greater an even greater drop in capacity can be expected. Apply this to the total number of burners in the oven and the impact can be dramatic. So don't forget to include inspecting and cleaning your air/gas mixers into your normal maintenance routine. This can help maintain quality, avoid costly scrap and increased bake times and reduce energy usage.

---

#### **Banner-Day**

1840 N. Michigan Avenue - Saginaw, MI 48602  
www.banner-day.com • Toll Free: 877-837-0584 • Fax: 989-755-1309

### **Blower Filters –**

Here again maintaining a regular cleaning schedule is important but often forgotten. First be aware of the style of filter used on your blower, replaceable or reusable. Replaceable filters should be regularly inspected and replaced to avoid allowing dust build up that can impair the performance of the oven. In the case of the reusable filters, they need to be cleaned thoroughly. Many filters, especially the screen mesh type, are designed to be lightly coated with oil and reinstalled. The coating with oil is important as it is this oil film that traps the fine flour dust from the air flow. Flour dust is the main component in the air/gas mixer contamination.

### **Use of Outside Air –**

Be aware of where your combustion air is coming from - inside or outside the building. If your combustion air supply is from inside the building, then keeping all of your filters, air/gas mixers, etc. clean becomes even more important because of the flour dust in the air inside the bakery. Our experience has been that outside air is almost ALWAYS cleaner and is much preferred as a source of combustion air.

### **Observation Port Windows –**

The observation ports on each burner head are small, typically only 1" in diameter. If one is left open, it may not seem important. However, as more and more are left open, it is like having a big hole in the side of your oven. Each observation port has an area less than 1 square inch. But, on a typical oven with 100 burners, if all of them are left open, now you have a "hole" of nearly 80 square inches. That's a square nearly 10" on a side. You wouldn't even think of baking with one of your observation windows removed, would you? Once again a seemingly small thing can have a significant impact on oven performance.

### **Zero Governors –**

The venting requirements for these devices are frequently misunderstood. While codes require that regulators be vented to an approved location (outside), there is an exception for Zero Governors. Zero Governors are only required to have a vent limiting device installed. Typically, Zero Governors are factory supplied with the vent limiting device pre-installed. Venting Zero Governors should be avoided as outside air flow can severely affect the performance of the zero governors, which will in turn reduce the performance of the burners and eventually the performance of the oven. Checking your Zero Governors should be included as part of your regular inspections and during your annual OSHA inspection.

If we haven't covered a topic that is of interest to you, please e-mail us at [info@banner-day.com](mailto:info@banner-day.com) with your topic/question and we will consider it for a future newsletter.

Copyright© Banner-Day. All rights reserved.