

# 7 Tips for Selecting an Industrial Burner

Industrial applications are becoming more complex and varied with time. This means that burners and related equipment are becoming more specialized, with more options on the market. Unfortunately, choosing the wrong burner can be a costly mistake.

Selecting the right burner for a particular application takes some experience and thought. These tips can come in handy when thinking through your application needs so that you will know what to shop for:

## **#1. Figure out how many BTUs you need for your application.**

When selecting a burner, make sure that any models you consider have adequate capacity for the specific process. Too little capacity can prevent the combustion system from reaching the required temperature, leading to downtime in production or botched processes. Too much capacity could mean overkill for an application, meaning you are paying for a burner but not using it to its fullest potential. And that's just money wasted.

## **#2. Check burner ratings.**

Once you know the BTUs needed for your application, you'll need to look at a burner's ratings, or burner capacity, of specific models. This will be represented as a range; it is the minimum and maximum BTUs/hour the burner is capable of while still keeping a stable flame and operating safely. Make sure the BTUs needed for your application fall safely in that range.

### **#3. Figure out the turndown you need for your application.**

Turndown is an indicator of a burner's ability to handle various load sizes. It is a ratio of the burner's maximum capacity to its minimum capacity. For example, a burner with a max capacity of 3 million BTU/hr and a min of 150,000 BTU/hr has a turndown of 20:1. The turndown for a burner must be equal to or larger than the turndown that is required for a particular application, or else problems can occur.

### **#4. Figure out flame geometry for your chamber.**

When selecting a burner, make sure it has the proper flame geometry to fit the specific chamber. For example, too long a flame can cause flame impingement on tubes, leading to tube heating and eventually rupture.

### **#5. Review other process details.**

Every process is different, so it is important to understand the details. For example, at what temperature will the burner need to operate? Will you need an indirect fire method? Do you need a pilot or a direct spark system? Sometimes an important detail will rule out many designs for you.

### **#6. Pay attention to mounting.**

One of the most obvious but often overlooked areas of proper burner operation and maintenance is mounting. Two common types of mounting include wall-mount and in-duct burners. Wall-mounted burners are easier to access, allowing for ease of maintenance; however, they tend to be impacted by cross velocities. In-duct burners are enclosed in the duct, which

means they are more difficult to access. But they are better suited to handle the cross-velocity issues associated with wall-mounted burners.

## **#7. Keep efficiency in mind.**

Burners use a lot of power, no doubt. How well the burner can channel its heat to your process, rather than producing waste heat, is important. Energy efficiency is better for the bottom line and, of course, is better for the environment too. This might need to be balanced against emissions requirements and area ratings, though.

Careful burner selection is critical for preventing downtime and its associated costs. Many of the considerations listed here can be found in product manuals or online—but not always. It will pay to get a sense of your applications' needs and then ask the appropriate questions of your sales reps.

If you have other tips for choosing a burner, we'd love for you to share them. As always, if you need technical assistance or just need someone to help walk you through the process, please feel free to contact us. Our reps and engineers will be glad to help.