

## Determining the Correct Abrasive Feed Rate

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The abrasive feed rate directly impacts the quality of the cut, the cutting speed, and the volume of abrasive used in waterjet cutting. Improper feed rates can result clogging in the mixing tube, overuse of abrasive, slow cutting, and poor edge quality.

### **MANY FACTORS IMPACT FEED RATE**

A variety of factors influence feed rate. The mesh size (grade) and type of abrasive are two of the biggest factors. For example, the extremely sharp edges of BARTON Adirondack HPX® cause it to flow a little slower than the same mesh size of HPA® alluvial garnet with its rounded edges. Other factors that affect abrasive feed rates include humidity changes and the condition of the abrasive feed hoses. Issues can also occur if the abrasive regulator is not grounded. Ungrounded abrasive regulators can build static in the feedline to the cutting head and slow or stop abrasive feed.

### **WHERE TO BEGIN**

The abrasive metering charts provided by OEMs are a great starting point to ensure the correct abrasive feed rate for a specific application. However, because actual feed rates will vary, it is good practice to physically measure the amount of abrasive being fed from the abrasive regulator. Most OEMs recommend performing this test weekly, and anytime there are operational changes such as a change to the abrasive mesh size or type, or other factor that is known to affect feed rate and cutting performance.

A simple abrasive feed rate test can be performed by following the steps outlined on the next page.

## A Step by Step Guide to Measuring Abrasive Feed Rate

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### **HOW TO TEST YOUR ABRASIVE FEED RATE**

Calibration of the abrasive feed rate is required to insure proper abrasive flow following the OEM's specified procedures. A simple abrasive feed rate test can be performed by following these steps:

1. Follow OEM specified instructions for calibrating abrasive feed.
2. Remove the abrasive feed line, or feed block, if so equipped, from the bottom of the abrasive regulator.
3. Using a stopwatch, or test function available in some OEM software, turn on the abrasive feed and run the abrasive for exactly one minute into a container (weigh the container prior to the feeding the material to get its tare weight).
4. Weigh the abrasive sample using an accurate scale and subtract the tare weight of the container to get the total weight of the material. This is your abrasive feed rate per minute.
5. Perform this test two or three times to ensure you're getting consistent weights.
6. Adjust metering disk size up or down to get to the desired feed rate (pounds per minute).
7. Repeat steps 3, 4, and 5 to once again ensure that the proper feed rate has been achieved.
8. Enter the exact feed rate into your software settings.

### **WHERE TO FIND HELP**

The operator's manual or OEM website is the best place to find information. If you have additional questions, please contact your Regional Sales Manager or our sales support team at 1-800-741-7756.