



Techtips is a collection of useful ideas, techniques, and procedures designed to further EDM knowledge.

Benchmark Tests

One of the most important, yet most often overlooked procedures when bringing a new EDM on line is the Machine Benchmark Test. The Machine Benchmark Test is the test cut performed by the OEM technician on a new machine to assure that machine cutting performance matches the manufacturer's specifications. Often, it is a standard test, such as a rough and multiple skim cuts, with .010" wire in a 2" D-2 test block. However, the Benchmark Test might well be a specific test cut that was the criteria for the purchase of that machine, for a specific type of work that is now being replicated on-site prior to machine acceptance. Whatever the case, it is very important that one of your operators or technically competent supervisors witness the test, verify that the test results are acceptable (roughing and finishing cut times, finish, straightness, size), document all of the test parameters and results, **and save the program, test block, test spool of wire, test piece, and documentation for future reference.** (Please note that due to the shelf life of some wires, the test spool of wire may have to be replaced with equivalent wire in a year or two.)

If, in the future, you have reason to suspect that the machine's performance has deteriorated, you can re-run the Benchmark Test to either confirm or eliminate the machine as the cause of the sub-par performance. Please note that for the Benchmark Test to be valid, all of the machine's consumables (guides, pre-guides, power feeds, flush cups, belts, jet nozzles, etc) need to be either inspected or replaced, and that all machine preventative maintenance needs to be up-to-date.

It has been my experience that the machine's performance will often "magically" be restored once worn consumables are replaced, and the preventative maintenance is brought up-to-date, so it might be wise to re-run the suspect job prior to running the Benchmark Test.

If the machine performance matches the original Benchmark results, you can concentrate your investigation on other factors such as wire used, workpiece composition, or setup.

If the machine performance has deteriorated significantly from the original Benchmark results, you can now call for

OEM service with the confidence that you won't be billed for an unnecessary, expensive service call. Be sure to share both the original and most recent Benchmark Test results with the OEM technician when he arrives.

Obviously, after the completion of any service work on the machine, you should insist that the service technician perform the Benchmark Test under your supervision, to assure that the repairs have returned the machine to acceptable performance. Document and save this and all subsequent Benchmark Test results.

EDM Today would like to thank Roger Kern, Chief Technical Officer for Kern/Global EDM Supplies and Kern Machinery Sales, for providing us with this important Tech Tip. Roger is a Tool & Diemaker and a Mechanical Engineer with 40 years of job shop Tool, Die, Mold, and EDM experience.

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