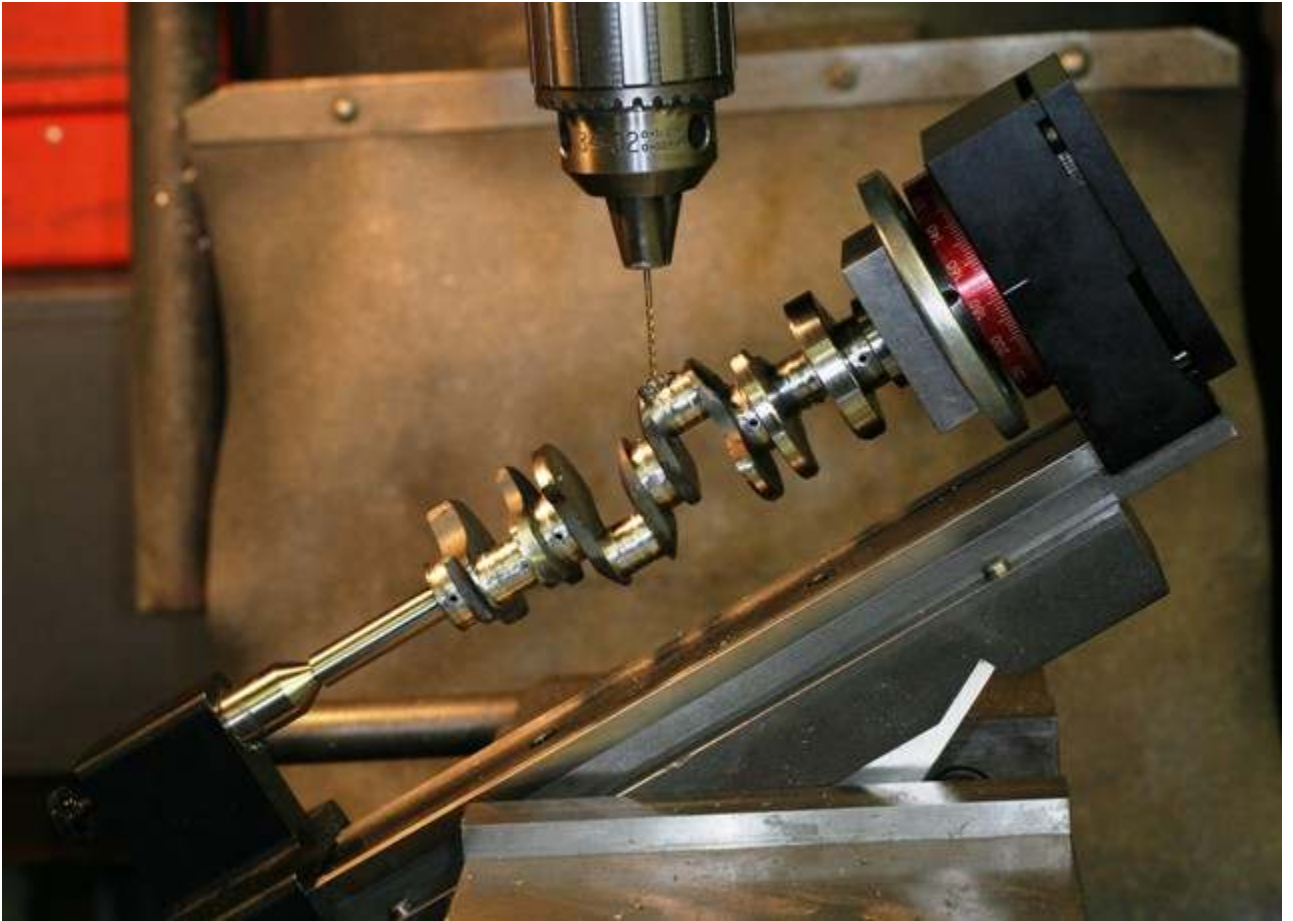


(17 Feb 2008)

Pic #1



Pic #2



Pic #3



SUCCESS!!! All of the oil holes have been drilled. Yahoo. I only used about 20 special drills and there were just 4 that were broken and need to be removed. Once again it is Sunday morning and I have just finish a very busy week. If you read last weeks installment, I noted that it took over 20 minutes to drill the 8 oil holes for the crank throws. After talking with the great people at Sherline Products, in particular Craig, I was able to purchase a model 8700 manual indexing fixture. This is a great item and comes complete with bed, tailstock, indexing head, and misc. other small parts. They also make a computer indexer but because of my need to tilt the entire setup, from left to right, I felt that the manual system would be the best for my application. Once received, about 4 hours was spent modifying my existing fixture. Picture #1 shows the completed jig. This modification took over 8 minutes off of the drilling time for each crankshaft. My only regrets is that I did not have it when I first started to drill the oil holes for the throws.

When I said there were some broken drills, well the only way they can be successfully removed is with an EDM (Electro Discharge Machining). No, they cannot be drilled out. Picture #2 shows the entire machine, whereas picture #3 roughly shows the small diameter copper electrode in process of removing the broken drill. Basically what happens, after being submersed in a special dielectric solution, the end of the copper electrode is brought very close to the top of the broken drill, the machine creates a high current arc and a small portion of the broken drill is almost vaporized. The dielectric solution is continually pumped through the center of the electrode, along with an external nozzle and removes any minute particles. Keep in mind, the

electrode is .063 OD and there are two channels inside the electrode. As the ram goes up and down, at a preset interval, the electrode continues to arc and slowly removes the broken drill.

After all this time my current customers will be happy to know that I am FINALLY starting the finish grinding process. This will be a rather slow and methodical process. Everything must be perfect. One mistake and all the previous work could be lost.