

Joemars TR100 Drill Time and Wear Testing

The below test results were done to give an estimate of worst case scenario drilling times and wear when drilling into a solid block. Testing was done using hot rolled steel with a 2, 4, and 6mm electrode. Driller Z depth was set to drill 15mm and stop. Part was submerged under 1 inch of water with no additional flow. As you will see in the 4mm tap burning test on the bottom, drilling times and wear are significantly better when burning on a tap or end mill where flushing conditions are better. Adding water flow over the work piece and changing setting can also increase cutting performance from the base line tests shown.

2.0mm Z-axis set to 15mm (.590"), Solid steel block, submerged
Finished Hole Depth: .240" Wear: 60%
Time: 4 min 41 sec Settings: Low, 6s Arc timer

4.0mm Z-axis set to 15mm (.590"), Solid steel block, submerged
Finished Hole Depth: .335" Wear: 43%
Time: 9 min 06 sec Settings: Med, 6s Arc timer

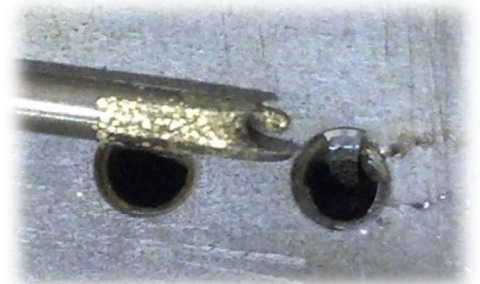
6.0mm Z-axis set to 15mm (.590"), Solid steel block, submerged
Finished Hole Depth: .375" Wear: 36%
Time: 16 min 23 sec Settings: High, 6s Arc timer



Tap Test

4.0mm Z-axis set to 15mm (.590"), Hardened steel 1/4-20 tap, submerged
Finished Hole Depth: .435" Wear: 26%
Time: 4 min 40 sec Settings: Med, 6s Arc timer

As you can see in the above test when compared to drilling into a solid block the drill time and wear were nearly cut in half when drilling on a tap. The increased flushing through the flutes of the tap greatly increase cutting performance on all sizes of electrodes.



Note: Marks on right side of the hole where caused by breaking off the taps manually. Not by the drilling process.