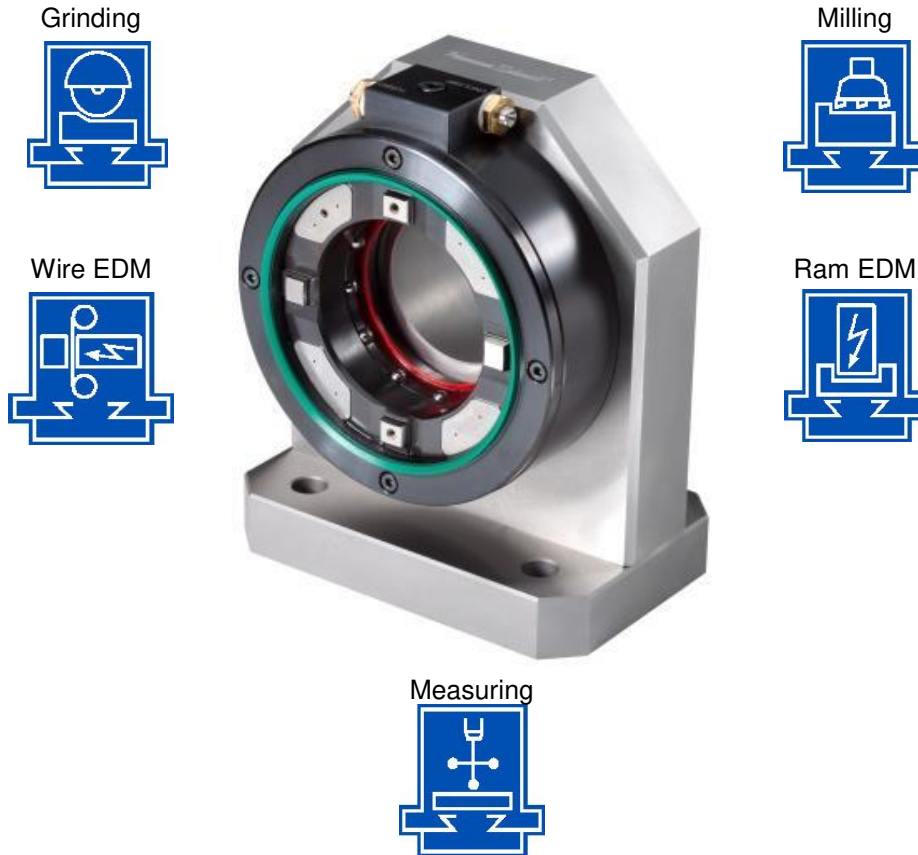


# SQUARETech

## High Precision 90° Indexing



### Accuracy

Total indexing error is less than 2 arc seconds, creating a true 90 deg index. As an example grinding four sides of an 8" by 8" block will result in a block which is **Square & Parallel less than 0.0001" TIR.**

### Repeatability

Use of System 3R Matrix system ensures repeatability to the sub-micron level.

### Speed

Index time is minimized. Pneumatically activated release allows for quick access to the workpiece pallet for index to take place. Part to part time is minimized by palletizing workpieces.

### Efficiency

No cleaning between index or pallet change. Air blast is used to clean reference surfaces during the clamping - unclamping process.

### Automation Ready

System allows manual use by an operator. By utilizing the same fixture and robotic loading, the system allows for continuous part processing.

## Commentary on real results of SquareTech from Peter Schmidt

The SquareTech system was used to surface grind 80 pieces of fully annealed 1018, initially rough milled square within 0.001". Workpiece size was 8"x8"x1 ¼". The goal was to be able to have a resultant accuracy of 0.0001" square and parallel. Surface grinder was a two year old Okamoto ACC1224EXB. Measurement results are considered accurate within +/- 0.000010" (ten millionths).

All four sides of the blocks were ground on the fixture. These measurements are total squareness and parallelism of all 4 sides. Results are summarized as follows.

Maximum Value	0.000060"
Average Value	0.000030"
Median Value	0.000025"

The average is ½ of the maximum value, with the mean value falling below the average, which shows that the majority of the measurements were toward the lower values.

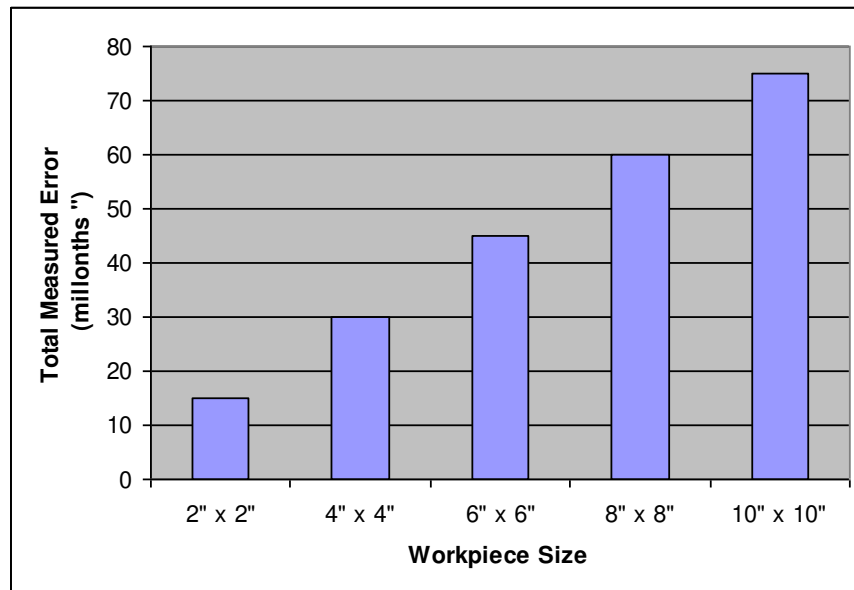
Another way of looking at this is as follows:

85% of the parts were within 0.000050"  
35% of the parts were within 0.000025"

This shows the accuracy of the system in a production environment. Remember we are measuring processed parts, so we are also dealing with the errors in grinding; we are not just indexing and measuring

The above errors result in a total indexing accuracy below 2 arc-seconds.

An easier way to look at it is linear error based on part size.



Peter Schmidt is available to answer questions regarding your project at: [pschmidt@hschmidt.com](mailto:pschmidt@hschmidt.com)