

## DRZ Magic Drill



**Material**  
A514T1 Steel

**Part Type**  
Elbow

**Application**  
Drilling

**Machine Type**  
Milltronics

**Kyocera Holder**  
S125DRZ1938581215G  
EDP: [THD89193](#)

**Kyocera Insert**  
ZCMT150408 PR1230  
EDP: [TKC09475](#)

**Existing Product**  
1.5000" Dia. Endmill

### Goal

The manufacturer sought to optimize their milling operations to combat high production costs and lengthy processing times. Using a conventional multi-tool setup, they were experiencing extended machining cycle times and limited tool endurance. The primary objective was to find an alternative tooling solution capable of streamlining the operation, extending tool longevity, and significantly reducing the overall cost per part.

### Strategy

The previous setup was limited by long machining times and frequent tool changes during the roughing operation. Kyocera engineers recommended the DRZ Magic Drill system with the PR1230 grade, designed for stable, high-efficiency drilling with improved heat management and chip evacuation in steel applications. The coolant-through drill design allowed the operation to run without pecking while maintaining consistent performance.

### Result

The implementation of the DRZ Magic Drill delivered a 2900% increase in tool life, a 99% reduction in machining cycle time, and a 99% reduction in total cost per part. The new approach also significantly reduced tool running and machine charge costs. The customer saved more than \$17,000 annually.

Total Cost Savings  
**\$17,160**

Tool Life (pcs/edge)  
**↑ 2900%**

Tool Running Cost  
**↓ 99%**

Total Cost Per Part  
**↓ 99%**

| Tools                            | Cutting Dia.<br>(Dc) | Cutting Speed<br>Vc (sfm) | Cutting Feed<br>Vf (ipm) | Axial Depth<br>(Ap) | Coolant          |
|----------------------------------|----------------------|---------------------------|--------------------------|---------------------|------------------|
| <b>Kyocera (DRZ Magic Drill)</b> | 1.9380"              | 431                       | 2.55                     | 5.0000"             | Internal coolant |
| Competitor (3-Flute)             | 1.5000"              | 196                       | 7.99                     | 5.0000"             | External coolant |

Tool Life (pcs/edge)  
**↑ 2900%**

Tool Running Cost  
**↓ 99%**

Total Cost Per Part  
**↓ 99%**

