

**Creep-Feed (Surface Grinding)  
Maximizer**

**Part:** Vanes - 2" Long x 0.124" with 0.200" radius - 6 vanes per fixture

**Part Tolerances:** Flattness  $\pm 0.0003$ "

**Material:** Tool Steel

**Hardness:** 58 - 62 Rc

**Stock Removal:** 0.018" to 0.022"

**Wheel Specification:** 16" x 3" x 5" (1.5" flat and 1.5" with 6 radii)

**Process (Before)  
Conventional  $Al_2O_3$  Wheel**

**Wheel Speed:** 6,300 S.F.P.M.

**Work traverse Speed:** Not recorded

**Pieces per dress:** 5 dresses per load

**In-Feed per dress:** 0.0007 with 2 passes

**In-Feed rate:** Rough and finish pass

**Coolant:** Water Soluble Oil

**Total Cycle Time:** 7 minutes 30 seconds

**Process (After):  
Vitrified CBN**

**Wheel Speed:** 6,300 S.F.P.M.

**Work traverse Speed:** Ranged from 18" to 50" per minute

**Pieces per dress:** 20 loads per dress

**In-Feed per dress:** 0.00005 with 2 passes

**In-Feed rate:** One pass full depth

**Coolant:** Water Soluble Oil

**Total Cycle Time:** 2 minutes 52 seconds

**Savings / Advantages:** Nearly 3 times productivity over conventional  $Al_2O_3$  wheels and much better process control (Cpk)