

Cylindrical Grinding
Plunge / Traverse Grind

Part: Transmission Shaft - 5 diameters and 2 faces - small diameter 1.67" x 0.9" wide - largest diameter 2.5" x 10+" wide. 5 plunges 2 faces and traverse grind.

Part Tolerances: Roundness ± 0.0002 " at 1.67 Cpk

Material: Hardened Steel

Hardness: 58 - 62 Rc

Stock Removal: 0.014" per diameter and 0.010" on faces

Wheel Specification: 24" x 1.7" x 10" Wheel Type 1A1R Vitrified CBN

Process (Before)

Conventional Al_2O_3 Wheel

Wheel Speed: 6,500 S.F.P.M.

Work Speed: 65

Pieces per dress: 1

In-Feed per dress: 0.0007

In-Feed rate: 0.030" per minute (Rough)

Coolant: Water Soluble Oil

Total Cycle Time: 7 minutes

Process (After):

Vitrified CBN

Wheel Speed: 12,000 S.F.P.M.

Work Speed: 100

Pieces per dress: 100

In-Feed per dress: 0.00005 with 5 passes

In-Feed rate: 0.060" per minute rough

Coolant: Oil

Total Cycle Time: 2 minutes

Savings / Advantages: The old process using conventional wheels utilized two angle head machines - New process can use one machine and still produce twice as many parts as two conventional machines. Process has been running for 10+ years.