



Time is money, so make it count.

If you want to improve your machining processes, cycle time is a key factor to examine. After all, the longer it takes you to produce a part, the fewer parts you can produce in a given time. Our customer was experiencing lengthy cycle times while machining pumps from gray cast iron. The parts required three bored holes, each with a 12" (304.8 mm) depth and a 22" (558.8 mm) reach.

In order to free up machine time, the customer questioned if their process could be more efficient. The main objectives were to decrease the current cycle time and to maintain a 160 Ra finish, which was required to perform the burnishing process that followed.

The previous tooling ran at a slow 0.47 IPM (11.938 mm/min) and a paint-drying 84-minute cycle time to bore the three holes on each part. With our **Wohlhaupter 320 Boring Head** utilizing the **NOVI^{TECH} Vibration Dampened Module**, the customer increased to a more efficient 3.75 IPM (95.25 mm/min) and slashed the cycle time to 10.5 minutes (an 87% decrease). Along with the increased speed, the Wohlhaupter tooling also achieved a 155 Ra finish, accomplishing everything the customer needed.

The Wohlhaupter solution reduced the process cycle time by 74 minutes. Improvements in speed and cycle time can free up machine hours, which means more throughput and higher profit for your company. **Are you losing money on applications with substantially long cycle times?**



Product:	Wohlhaupter 320 Boring Head with NOVI ^{TECH}	Measure	Competitor Boring Head	320 Boring Head w/ NOVI ^{TECH}
Objectives:	(1) Decrease cycle time (2) Maintain 160 Ra hole finish	RPM	39	469
Industry:	Oil & gas/petrochemical	Speed Rate	56 SFM (17.069 M/min)	675 SFM (205.74 M/min)
Part:	Pump	Feed Rate	0.012 IPR (0.305 mm/rev)	0.008 IPR (0.203 mm/rev)
Material:	Gray cast iron	Penetration Rate	0.47 IPM (11.938 mm/min)	3.75 IPM (95.25 mm/min)
Hole Ø:	5.500" (139.7 mm)	Cycle Time (per hole)	27 min 54 sec	3 min 32 sec
Hole Depth:	12.000" (304.8 mm)	Hole Finish	160 Ra	155 Ra

▶ Boring head
320 series
Item No. 320008

▶ NOVI^{TECH}
Vibration dampened
intermediate module
Item No. 519005

▶ Master shank
Item No. 353024



*74 minute
cycle time reduction*

The Wohlhaupter 320 boring head with the NOVI^{TECH} vibration dampened module provided:

- ✓ Increased penetration rate
- ✓ Decreased cycle time
- ✓ Excellent finish in deep hole application