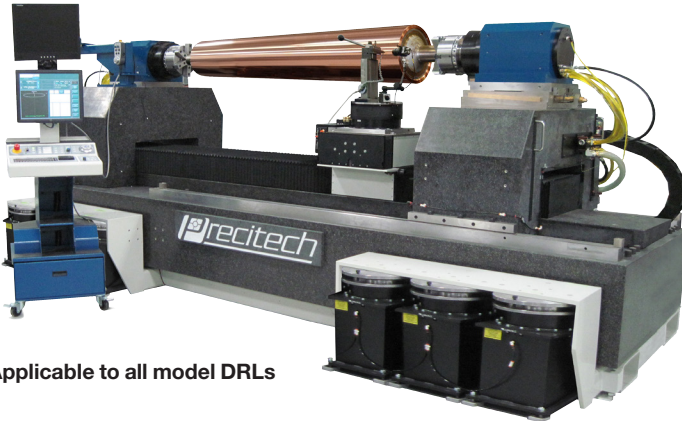


DRL2000/1600



Applicable to all model DRLs

Goal:

Demonstrate the capability to machine 45° helical grooves on a 1.4 meter drum with no visible seam between the first and last groove.

Process:

XZC diamond turning on a DRL1600 with a 90° included angle tool mounted at a 45° angle. Tight temperature control is used over the long cutting time to insure that there is no visible seam between the first and last groove.

Part Details:

- Material:** Copper-plated steel drum
- Length:** 1400 mm
- Diameter:** 270 mm
- Weight:** 350 kg
- Optical zones:** 1100 mm

Machine Details:

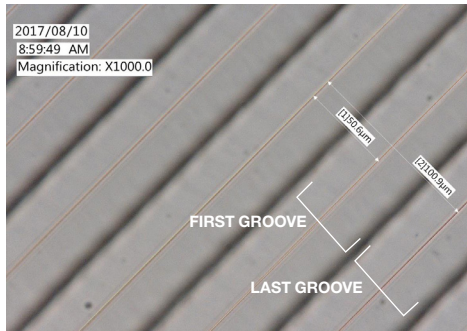
- Spindle type:** oil bearing
- Slide type:** oil bearing, water cooled, linear motor driven
- Temperature control:** Praecis® temperature control

Process Details:

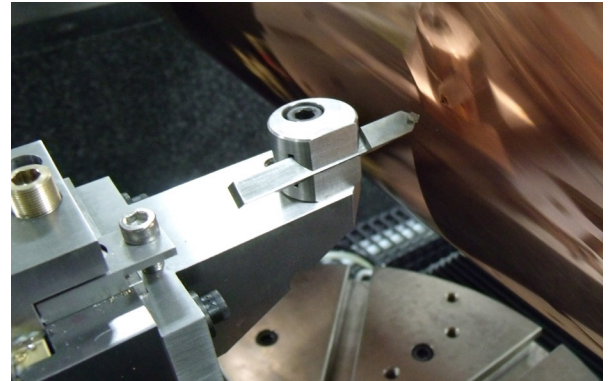
- Tool angle:** 90° included angle
- Spindle speed:** 12 rpm
- Z axis feed rate:** 10 m/min
- Pitch:** 50 µm
- Depth:** 25 µm, cut in one pass
- Machine time:** ~ 50 hrs

Results:

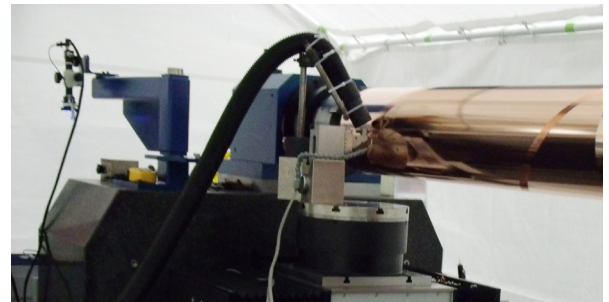
- Pitch variability:** < 0.5 µm
- No visible seam between first and last groove**



45° Tool setting



Cutting process



Inspection

