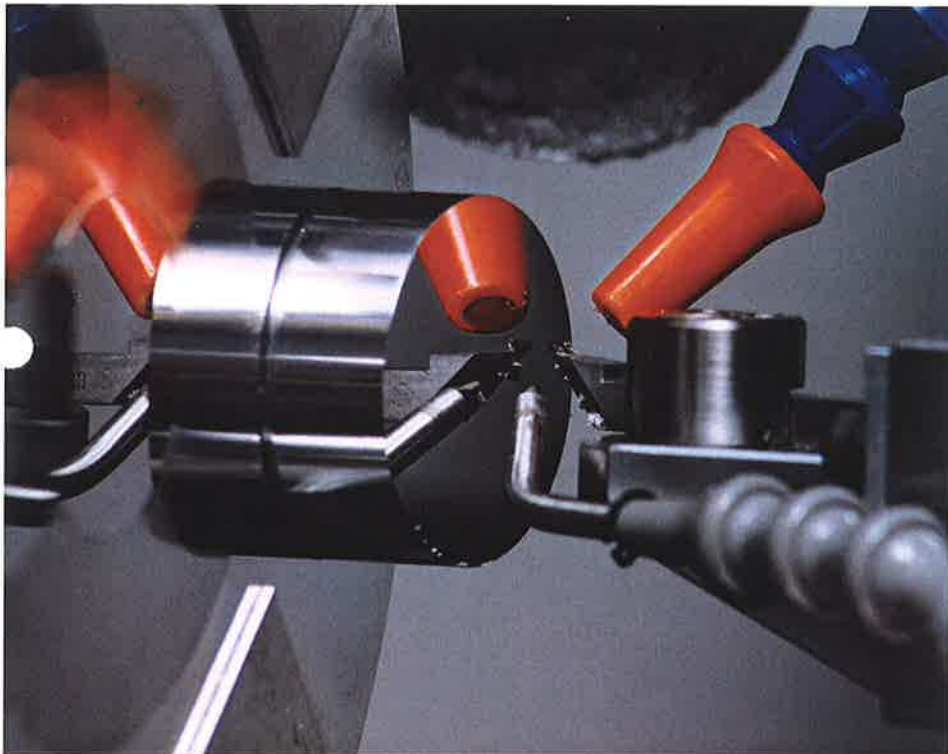




Optical workshop facilities

TNO: Diamond Turning

For sixty years knowledge of technical physics has been the strength of TNO. Knowledge that we make applicable in practice for our clients so that they can strengthen their competitive edge. Offering innovative and comprehensive solutions driven by market demand and technological developments. TNO is active in five core areas.



Interferometer, a Wyko Profilometer, a PerkinElmer Photospectrometer and a Spherometer. And since July 2001, TNO has expanded its optical laboratory with a Precitech Nanoform 350 diamond turning lathe.

Diamond turning lathe

This ultra precise accurate diamond turning lathe is able to machine both spherical and aspherical optical components into non-ferrous metals and crystals using diamonds. In addition, the grinder can grind spherical and aspherical components into glass and ceramics.

Specifications

- Maximum load (Air Bearing Spindle):
57 kg
- Maximum capacity air bearing spindle:
450 mm (18") diameter
optional 700 mm diameter
- Slide path length:
350 mm (14") X-axis
250 mm (10") Z-axis

In addition to the application of knowledge, TNO also manufactures and tests high-quality optical instrumentation used in space, science and semiconductor equipment. Our optical laboratory has at its disposal various instruments such as a Wyko Laser

Machine process

- 2-axis on-axis diamond turning
- 2-axis off-axis diamond turning
- 2-axis on-axis grinding
- flycutting (flat and cylindrical optics, polygons)
- grooving (for lattice, gratings, etc.)
- 3D freeform



Freeform measurement



Examples of diamond turned optics

Developments

- Slow Tool Servo for generating 3D freeform surface structures
- 3D on-machine metrology using Ultracomp
- Diffsys programming software



Freeform machining

Quality

TNO constantly monitors the quality of its internal and external performance. We have ISO 9001 certification. The scientific quality of our work is periodically audited by an international committee of experts.

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