



NEXTGEN MATERIAL TESTING

YOUR QUALITY TESTING CHOICE

Automatic Longitudinal Polisher System for Tensile Specimens – NG-AutoPol

Standards: [ASTM E8](#), [ASTM E466](#), [ASTM E606 / E606M](#), [EN 6072](#), [NADCAP](#)



ULTIMATE USER-
FRIENDLINESS



LEADING
DEPENDABILITY
AND RELIABILITY



STRICT COMPLIANCE
WITH INDUSTRY
STANDARDS



STOCKED
CONSUMABLES
AND SPARES



TRUSTED AFTER
SALES TECHNICAL
SUPPORT



LIFETIME PRODUCT
SUPPORT ADVANTAGE



Description

The [NG-AutoPol Automatic Longitudinal Polisher System](#) by NextGen Material Testing Inc. is engineered to minimize grinding stress and residual surface stress that often remain after initial machining operations such as turning or milling. This advanced machine delivers precise longitudinal polishing for both cylindrical and flat tensile specimens.

Designed with a compact footprint and fully automated operation, the NG-AutoPol combines accuracy, repeatability, and user-friendliness in one complete solution. Its intuitive touchscreen interface allows operators of all skill levels to configure polishing parameters quickly and confidently, without prior CNC experience.

The system provides a fully automated polishing process where motion, pressure, and contact are precisely controlled. This approach removes surface damage from machining and reduces residual stress, producing uniform samples ready for accurate tensile and fatigue testing.

Longitudinal Polisher Features

The NG-AutoPol system integrates multiple advanced functions that make it exceptionally efficient for preparing tensile and fatigue testing specimens. Here are some of its key highlights:

- **Automatic Longitudinal Polishing:** Provides consistent, repeatable surface results with controlled single-contact polishing.
- **Customizable Parameters:** Adjust rotation, force, speed, and polishing length directly from the touchscreen interface.
- **Multi-Grit Sandpaper Switching:** Automatically transitions between up to four sandpaper types within one polishing cycle.

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- **Integrated Cleaning System:** Keeps the sandpaper clean for longer service life and uniform performance.
- **Stable Mechanical Design:** Maintains polishing accuracy and uniform pressure across all sample types.
- **Process Memory Function:** Saves polishing configurations for identical repeat runs and standardized workflows.
- **Compact, Low-Maintenance Setup:** Space-efficient design ideal for busy laboratories with limited floor area.
- **Low-Stress Surface Finishing:** Uses precise pressure control and linear motion to minimize residual stress and preserve specimen integrity.
- **Multi-Geometry Compatibility:** Quickly adapts to cylindrical, flat, small, and large specimens with interchangeable fixtures.
- **NADCAP Compliance Option:** Available in [NADCAP-ready configuration](#) for certified aerospace and high-precision testing environments.

NG-AutoPol Model Configurations

The NG-AutoPol machine is available in several configurations to accommodate different sample geometries and laboratory requirements. Each model maintains full compliance with [EN 6072](#) and supports stress-free surface finishing for tensile and fatigue testing applications.

Model	Description
SCS – Standard Cylindrical Specimen	Designed for polishing cylindrical specimens of various diameters and lengths in full compliance with EN 6072.
ESCS – Extremely Small Cylindrical Specimen	Optimized for polishing micro-sized cylindrical specimens that require precise control and delicate surface finishing.
ELCS – Extremely Large Cylindrical Specimen	Engineered to handle oversized cylindrical samples while maintaining uniform polishing quality and stability.
FS – Flat Specimen	Developed for polishing flat tensile specimens, ensuring consistent longitudinal surface finish across the entire sample area.
C – Customized Configuration	Tailor-made solution available to meet specific laboratory or industrial polishing requirements.



System Configuration

The NG-AutoPol comes as a complete, ready-to-operate machine. Each unit includes:

- **NG-AutoPol main unit** — automatic longitudinal polishing system with integrated touchscreen control.
- **Interchangeable specimen fixtures** — compatible with cylindrical, extremely small or large, and flat specimen types.
- **Comprehensive sandpaper roll set** — multiple grit sizes for progressive surface finishing.
- **Operation and training package** — detailed user manual and step-by-step instructional videos for smooth setup and use.

Technical Specifications

The NG-AutoPol combines intelligent automation with precise mechanical control. Below are the key technical specifications that define its performance and flexibility:

- Suitable for cylindrical and flat specimens of various diameters and lengths.
- Fully automatic longitudinal polishing process for consistent surface finish.
- Controlled single-contact motion — each paper area interacts with the specimen only once to prevent over-polishing.
- Adjustable sandpaper force: 5 – 50 N.
- Adjustable linear speed: 10 – 100 mm/s, in 10 mm/s increments.
- Adjustable active polishing length: 5 – 280 mm.
- Compatible with multiple sandpaper grits (e.g., 200, 400, 600, 800).
- Automatic switching between up to four sandpaper grades in one cycle.
- All parameters controlled via touchscreen interface with process visualization.
- Optional data logging and calibration modes available for advanced testing workflows.

Global Testing Standards Compliance

To operate on a global scale, the NG-AutoPol system supports multiple industry standards. This means that your lab results are internationally recognized and comparable across testing facilities in North America, Europe, Asia, and beyond. Below are the standards that NG-AutoPol complies with:

- **ASTM E466 – Force-Controlled Constant Amplitude Axial Fatigue**

Defines the procedure for fatigue testing of metallic samples under a constant axial load amplitude, where strains remain mostly elastic. It is used to assess fatigue life under repeat loading.

- **ASTM E606 – Strain-Controlled Fatigue Testing**



Covers fatigue tests where the strain (rather than the stress) is controlled across cycles. It is used to study low-cycle fatigue and the plastic deformation that occurs during repeated loading.

- **EN 6072 – Metallic Materials – Constant Amplitude Fatigue Testing (S-N method)**

European standard equivalent for S-N fatigue data under constant amplitude loading, aligning specimen geometry and testing methods across labs.

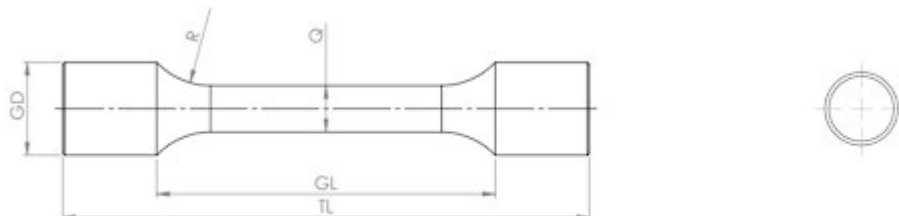
- **NADCAP (Materials Testing Accreditation)**

An accreditation program used in aerospace and related industries to validate that testing, preparation, and inspection processes meet rigorous quality and traceability standards. NG-AutoPol can be used in a NADCAP-ready configuration.

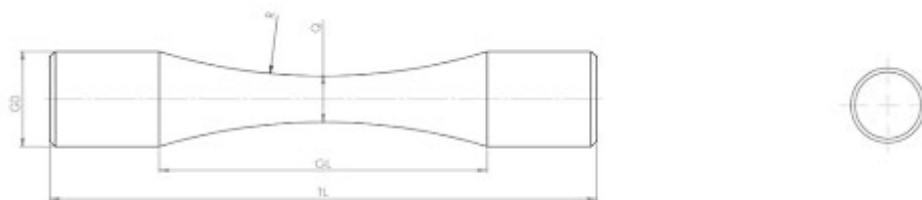
Specimen Compatibility

The NG-AutoPol achieves outstanding surface finish on both round and flat specimens, meeting the highest preparation standards. Below are the sample geometry references supported by the NG-AutoPol system:

Cylindrical Specimens



Standard Cylindrical Specimen

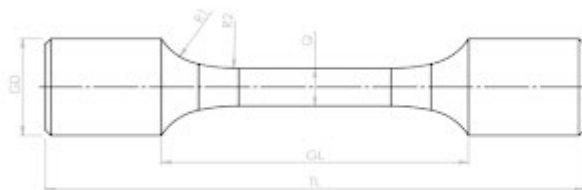


Continuous Radius Cylindrical Specimen



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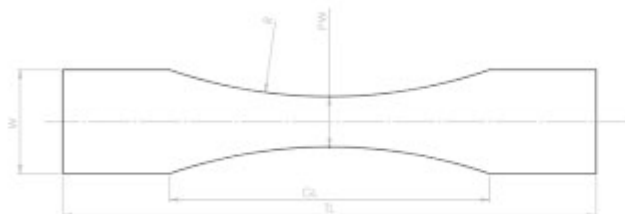


Double Radius Cylindrical Specimen

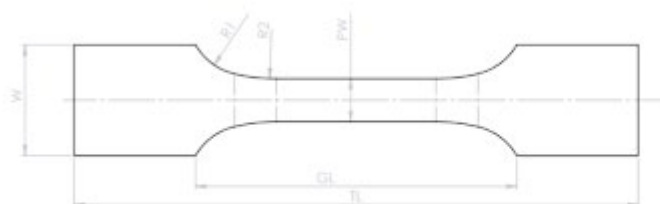
Flat Specimens



Standard Flat Specimen



Continuous Radius Flat Specimen



Double Radius Flat Specimen

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* Request a [formal quotation](#) or send an e-mail to sales@nextgentest.com for the most up-to-date pricing and applicable discounts and incentives.

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