

Laser Micrometers for the Centerless Grinding Process

For the centerless grinding process Freedom Technologies offers a complete line of rugged laser micrometers and accessories. Our systems include basic monitoring, automatic grinder regulation, and statistical analysis.

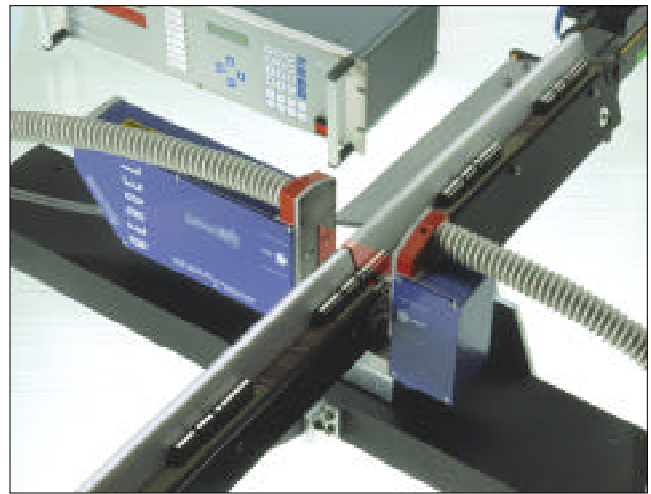
The Grindline series is a highly accurate and extremely flexible measurement system. It is designed specifically for measuring diameter of parts finished by through feed or plunge centerless grinders. A Grindline system provides 100% on line control and for real-time adjustment of the grinder.

The Grindline T Series - The T series is designed for through feed grinders where parts have a single diameter. Typical parts include pins, shock absorbers, steering racks or any parts having a single diameter. A Grindline T system includes a laser gauge head which connects to a separate electronic controller.

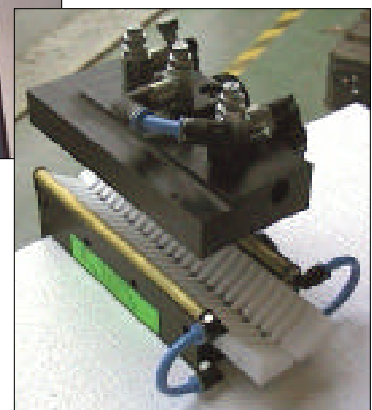
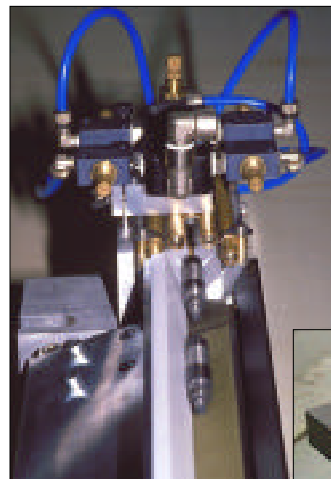
The Grindline P Series - The P series is designed for plunge type centerless grinders. Typical parts include components with multiple features (diameters). The laser gauge hardware for the P series is identical to the T series. The difference is only in the application software installed in the electronic controller.

The Application Software - All the application specific software is user installable in the controller. The Grindline series is ideal for the end user who is looking for a complete solution in a prepackaged system.

Parts Cleaning Fixture - A key component to a Grindline system is the parts cleaning fixture. Parts from a centerless grinder are very dirty. Unless they are cleaned properly, the system will not measure correctly. Years of development have gone into producing a fixture which is flexible for part size, yet uncompromising in cleaning capability.



A Grindline 40 P is illustrated above. It includes the ILS/ALS 40 laser gauge head, the CE 10 controller, a parts handling transportation system, and air windows to keep the optics clean.



The compressed air cleaning device is pictured above. It is installed just before the entrance to the motor driven parts handling transportation drive system.

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What are our Advantages?

- **Straightforward operation:** guided menus ensure maximum ease of usage, even for an untrained staff. Due to the pre-programmed application specific software in the Grindline series, operation is immediate right out of the box.
- **Very flexible:** the system enables gauging of a wide variety of diameters (up to 80mm (3.15")) and types of components without specific dedication to a single part.
- **Through-feed capability:** the laser principal enables inspection without having to stop or slow down the component being measured.
- **High precision:** a patented self calibration guarantees permanent gauge accuracy with no remastering required.
- **High accuracy:** better precision makes it possible to work close to the lower limit resulting in increased material savings.
- **Insensitive to ambient temperature changes:** the self calibration feature automatically compensates for any drift due to factory temperature changes.
- **High gauging speed:** getting an excellent repeatability in a short measurement time makes the on-line measurement consistent with high production rates.
- **Turn-key solution:** a wide range of accessories for cleaning and moving the parts assure overall system performance.
- **Longevity:** optical gauging avoids all wear and adjustment problems associated with touch probes thereby providing long life with out adjustment.

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What are the Benefits?

- **Zero defect production:** the 100% inspection allows out-of-tolerance parts to be detected and sorted avoiding any risk of rejects.
- **Reduction of scrap:** the real-time grinder regulation prevents machining of any out-of-tolerance parts.
- **Labor savings:** the unsupervised automatic control provides the operator with time for other tasks.
- **Quality certification:** the 100% inspection makes random sample checks redundant and allows the printing of detailed reports to prove product quality.

Our Performance

- **Measurement range:** measures the diameter from 0.1 to 78mm (0.004 to 3.07") using a single axis laser gauge.
- **Regulation:** performs automatic grinder regulation by keeping the product within tight tolerance limits.
- **Statistics:** detailed statistical reports are processed and printed for each job.

