



Bidirectional repeatability

$\pm 0.3 \mu\text{m}$



Dynamics

Acceleration 0.5 g



Total stroke

50 mm

TBS

Linear axes

 For semiconductor applications

The TBS linear axis by ETEL offers unparalleled precision and performance, making it the ideal solution for high accuracy applications across diverse industries.

The TBS is a high-precision linear axis with 1 Degree Of Freedom, utilizing a mechanical bearing-based indirect drive system. This design provides exceptional accuracy and precision within its category. Controlled by a high-performance, low-cogging servomotor and featuring a dual encoder feedback control scheme, the TBS axis ensures excellent performance. The axis leverages advanced HEIDENHAIN Corporate Group encoder technologies and features unmatched mechanical characteristics for both macro and micro motion over the entire stroke.

INDIRECT DRIVE SYSTEM

Featuring a high-precision ballscrew, the indirect drive system ensures smooth and accurate motion control, contributing to the axis's exceptional performance.

DUAL ENCODER FEEDBACK

The implementation of dual encoder feedback enhances control accuracy and simplifies commissioning, ensuring optimal performance from the outset.

Specific design features such as thermal decoupling of heat sources, high stiffness, and a micrometric hard stop enhance process stability and safety. The TBS is particularly suited for semiconductor applications, including Wafer Process Control, Overlay Metrology, Critical Dimension, and Thin Film Metrology, as well as photonics. It also meets the demands of other industries requiring high precision, cleanliness, stability, and accuracy.

Z-TRACKING FOR HIGHER PROCESS PERFORMANCE

When both the TBS and the motion system are controlled by ETEL electronics, system accuracy is significantly improved. Through proper mapping, static motion errors are compensated, keeping the process tool within $\pm 1 \mu\text{m}$ of the target distance and enabling faster focus and higher throughput, especially in wafer inspection systems.

ISO2 CLEANROOM COMPATIBILITY

The implementation of dual encoder feedback enhances control accuracy and ensures optimal performance at tool-point.

- > **Total stroke: 50 mm**
- > **Indirect drive – high precision ballscrew**
- > **Cleanroom compatibility: ISO2 (ISO1 optional)**
- > **Maximum payload: 45 kg**
- > **Dual encoder feedback**
- > **Option available such as micrometric hard stop**