A next-generation suspension featuring improved shock resistance and resonance characteristics.

## Highly shock-resistant suspension for HDD (SUNKIWI)

Press

Welding

Special inline measurement

Production in cleanroom

Assembly

The parts are springs supporting magnetic heads of hard disk drives, and a height of 10 nanometers <sup>\*1</sup> or less from the high-speed rotating disk is constantly maintained. Furthermore, the magnetic sensor heads can be moved to a target data track at high speeds among data tracks that are tightly arranged with gaps of 0.1 micrometer <sup>\*2</sup> or less. In order to realize this level of functionality, large amounts of technology and know-how, including patented technology, have been applied. This includes die machining technology that can bend or draw thin plates with thicknesses of dozens of 10 microns in size, highly fine welding technology, as well as production line development that enables automated high-speed operation across all processes. Also, its newly designed weight balance mechanism is effective at preventing magnetic head jumping when shocks are applied.

- \*1: 1 nanometer = 1/1,000,000 millimeters For example, if the suspension were an airplane, it would be as if flying at a height of 0.6 millimeters above the ground at full speed.
- \*2: 1 micrometer (micron) = 1/1,000 millimeters In this case, the level of precision required is equivalent to hitting a ball to a target of 0.17 millimeters in diameter in the back wall hit in center field from the home plate at Tokyo Dome.

## **Product features**

- With its newly designed weight balance mechanism, magnetic head jumping can be prevented when shocks are applied
- Bending and cutting of micron thin plates is possible by using highly precise dies
- Highly fine welding technology by a high output laser oscillator
- High-speed automated inspection by using sensors and cameras, etc., and feedback to the production line
- Production in Class 1000 cleanrooms

## **Product applications**

Magnetic head supporting springs for hard disk drives used in mobile devices

