



## ABIS Precision Accessories Range

### Miniature Bearings and Small Assemblies

ABIS precision accessories are engineered to support high-performance mechanical assemblies where accuracy, repeatability, and long-term reliability are essential. Designed for use in high-tolerance environments, these components ensure consistent system performance under dynamic loads and demanding operating conditions.

Manufactured from high-grade stainless steel and produced to tight dimensional tolerances, the ABIS range delivers excellent corrosion resistance, high tensile strength, and extended service life. Precision machining and controlled finishing processes ensure consistent geometry, surface quality, and reliable fit within mating components.

The range is designed to fulfil critical functional requirements including secure axial retention, controlled preload generation, accurate component alignment, and tolerance compensation. By maintaining correct load distribution and minimising axial play, ABIS accessories help reduce vibration, limit wear, and improve overall system stability and efficiency.

ABIS accessories are widely utilised in precision-critical applications such as defence systems, valve and flow control assemblies, medical and dental devices, instrumentation, and robotics—where consistent performance, dimensional accuracy, and reliability are non-negotiable.

### Additional solutions include:

- Preloading systems for larger bearing arrangements, enabling controlled axial force and improved bearing performance
- Precision miniature and small bearings available across a range of performance specifications and cost requirements
- Mechanical fastener locking solutions designed to prevent loosening under vibration and dynamic loading

For further technical information, please contact **01202 339559** or **info@iecltd.co.uk**

## Bore / Retaining Rings

**Bore / Retaining Rings** are precision-engineered fastening components designed to **secure bearings and other mechanical components onto shafts or inside housings**. These rings fit into a machined groove to provide a reliable shoulder that prevents axial movement of components.

Retaining rings offer a compact and efficient solution for maintaining component position while allowing for easy installation and removal.

### Also Known As

- Snap Rings / Circlips / Retaining Clips / Internal Snap Rings / Internal Circlips

### Material

- Stainless Steel

The stainless steel construction provides:

- Excellent corrosion resistance
- Long service life
- High strength and durability

### Size Range

Specification / Range

- Shaft Size 3 mm – 10 mm
- Bore Size 4 mm – 19 mm

### Key Benefits

Secure Component Retention

- Keeps bearings and other components firmly positioned on shafts or within housings.

Accurate Positioning

- Ensures precise placement of mechanical parts within an assembly.

Improved Rigidity

- Provides structural stability to assemblies by preventing axial movement.

Easy Assembly & Disassembly

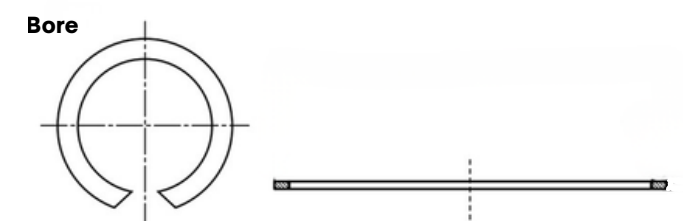
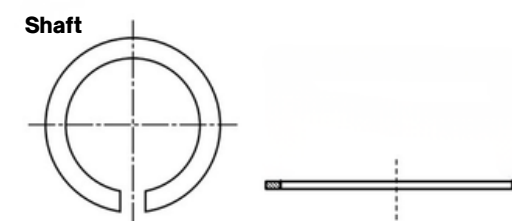
- Designed for quick installation and removal using standard tools, simplifying maintenance and servicing.

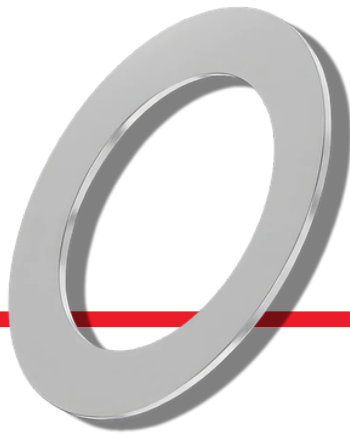
### Applications

Abis retaining rings are widely used in precision mechanical systems, including:

- Defence equipment
- Medical and dental devices
- Precision measurement instruments
- Pumps
- Robotics systems
- Drone gearboxes

They are ideal for applications requiring secure component retention in compact assemblies.





## Wave Washers

**Wave Washers** are precision-engineered **spring washers designed to provide controlled preload in bearing assemblies**. Their wave-shaped design creates a spring force that maintains consistent load between components, eliminating axial play and improving system stability.

Also Known As

- Wave Washers / Spring Washers / Wavy Washers

### Material

- Stainless Steel

The stainless steel construction ensures:

- Corrosion resistance
- Long service life
- High reliability in demanding environments

### Size Range

Specification / Range

- Smallest Size 1.60 × 2.90 mm
- Largest Size 16.20 × 18.55 mm

### Key Benefits

Secure Component Retention

- Keeps bearings and other components firmly positioned on shafts or within housings.

Accurate Positioning

- Ensures precise placement of mechanical parts within an assembly.

Improved Rigidity

- Provides structural stability to assemblies by preventing axial movement.

Easy Assembly & Disassembly

### Applications

Abis retaining rings are widely used in precision mechanical systems, including:

- Defence equipment
- Medical and dental devices
- Precision measurement instruments
- Pumps
- Robotics systems
- Drone gearboxes

They are ideal for applications requiring secure component retention in compact assemblies.



## Shim Washers

A **Shim Washer** is a **thin precision washer used to adjust spacing, alignment, and tolerance between mechanical components**. They are commonly used in assemblies where precise positioning of parts such as bearings, shafts, or gears is required.

Shim washers help fine-tune clearances to ensure optimal mechanical performance.

Also known as:

- Shims / Shim Washers / Precision Shims

### Material

- Stainless Steel

The stainless steel construction ensures:

- Corrosion resistance
- High durability
- Reliable performance in precision applications

### Size Range

Specification / Range

- Smallest Size 1.55 × 2.90 mm
- Largest Size 16.20 × 18.55 mm

### Key Benefits

Precise Spacing Adjustment

- Allows accurate control of gaps between components to achieve the required mechanical alignment.

Improved Alignment

- Ensures correct positioning of shafts, bearings, and gears, helping systems run smoothly and efficiently.

Tolerance Compensation

- Compensates for manufacturing variations and dimensional tolerances within assemblies.

Enhanced Performance

- Maintains optimal clearances, reducing friction, wear, and potential mechanical failure.

Easy Assembly & Adjustment

- Simplifies installation and allows quick fine-tuning of component positioning during assembly or maintenance.

Compact and Reliable Solution

- Provides precise adjustment without the need for redesigning parts or using more complex mechanisms.

### Applications

Shim washers are widely used in precision mechanical systems, including:

- Defence equipment
- Medical and dental devices
- Precision measurement instruments
- Pumps
- Robotics systems
- Drone gearboxes

They are particularly useful where precise alignment, spacing adjustment, and tolerance control are required.

