

# 08 | Special - shaped circlip

## 01. Definition and characteristics

Special-shaped circlips are customized circlips with unique shapes, sizes, or functions. They have irregular contours and complex angles to suit specific applications, offering good elasticity and reliable fixation.



Spring expansion ring

## 02. Classification and application

Special-shaped circlips can be classified according to various factors such as their shape, purpose or material. Common special-shaped circlips include C-shaped circlips, E-shaped circlips and various specially designed circlips, such as serpentine circlips, annular circlips, etc. These circlips are widely used in mechanical engineering, automobile manufacturing, electronic equipment and other fields to fix shafts, bearings, gears and other parts to prevent them from axial movement or falling off.

Special-shaped circlip

## 03. Materials and manufacturing

The manufacturing materials of special-shaped circlips are usually high-strength and corrosion-resistant materials such as stainless steel, carbon steel or alloy steel. These materials ensure that the circlips maintain their elasticity and fixing effect during long-term use. During the manufacturing process, precision machining or forming techniques such as stamping, rolling, bending, etc. are usually used to ensure that the shape and size of the circlips meet the design requirements.

## 04. Installation and removal

Special circlip pliers are usually required for installation and removal of special-shaped circlips. When installing, clamp the circlip opening, compress it and put it into the slot; when removing, open the circlip opening and take it out.

## 05. Maintenance and Inspection

Special-shaped retaining rings are customized mechanical parts widely used in mechanical engineering. To ensure their reliability and safety, they need to be regularly checked for integrity, elasticity and fixing effect. If problems such as cracks, deformation or looseness are found, they should be replaced in time to avoid safety hazards.

## 06. Precautions

This product is similar to the flattened wire retaining ring, but due to the special installation environment, it cannot be assembled using press-fit or circlip pliers. It is necessary to make two spring tips at the open end to help the circlip assembly, and set the same notch on the counterpart so that the spring tip can be positioned at the notch to prevent the circlip from rotating.

## Dust cover retaining ring



Dust cover retaining ring

## 01. Introduction

The dust cover circlip is a special-shaped multi-layer spiral retaining ring used to fix the rubber dust cover to ensure that it fits tightly with the counterpart to achieve a sealing effect. The raised spring tip can prevent the circlip from expanding and causing damage to the dust cover.

## Lock pin



Lock pin

## 01. Introduction

A cotter pin is a mechanical part, commonly known as a spring pin or a safety pin. To avoid damaging the hole wall, lubricating oil can be added to the pin hole. High-quality steel or rigid materials with good elasticity are usually used to make cotter pins.

## 02. Material

High-quality steel, rigid material with good elasticity.

## 03. Specification range

The nominal specifications of the split pins are 0.6~20mm.

## 04. Characteristic

The angle between the inner planes of the two legs of the split pin should meet the specifications. There should be no burrs, irregularities and harmful defects on the surface. Each leg should be able to withstand repeated bending without breaking or cracking in the bent part.

## 05. Application

Application: Anti-loosening of threaded connection. After tightening the nut, insert the split pin into the nut slot and the hole at the end of the bolt, and pull the end of the split pin apart to prevent the relative rotation of the nut and the bolt. The split pin can also be used on some pins for connection according to its shape design. The straight part is inserted into the hole at the end of the pin, and the arc curved part is closely matched with the pin, so as to achieve the fixing function of the split pin.