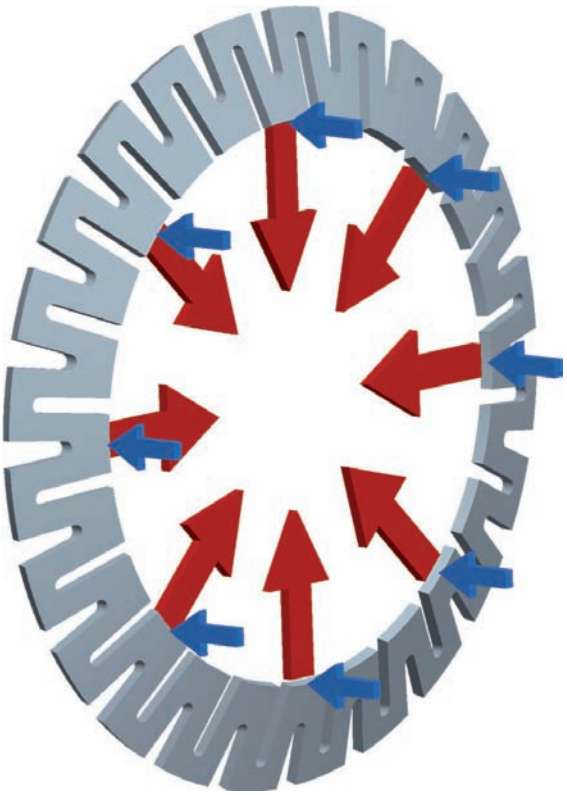
# Design and Function of Star Discs

The RINGSPANN Star Disc is a flat conical ring made of special hardened spring steel. The characteristic slot pattern, alternating from the outside to the inside edge, gives the Star Discs its very high elasticity. The outer circumference of the Star Disc is supported in the bore of the hub to be connected. The axial actuating force applied to the inner circumference of the Star Disc causes an elastic change in the conical angle and thus reduces the inner circumference of the Star Disc (see figure 56-1). A particular advantage of this configuration is that the axial actuating force is converted virtually without friction loss into a much higher radial force. This facilitates simple actuating devices, such as clamping with the aid of a central clamping screw or a manually adjusted knurled nut, for example.

Depending upon the torque required, Star Discs are used singly or in multiple arrangements as disc packs, generally consisting of a maximum of 16 discs. This arrangement provides for space-saving, clamping connections.

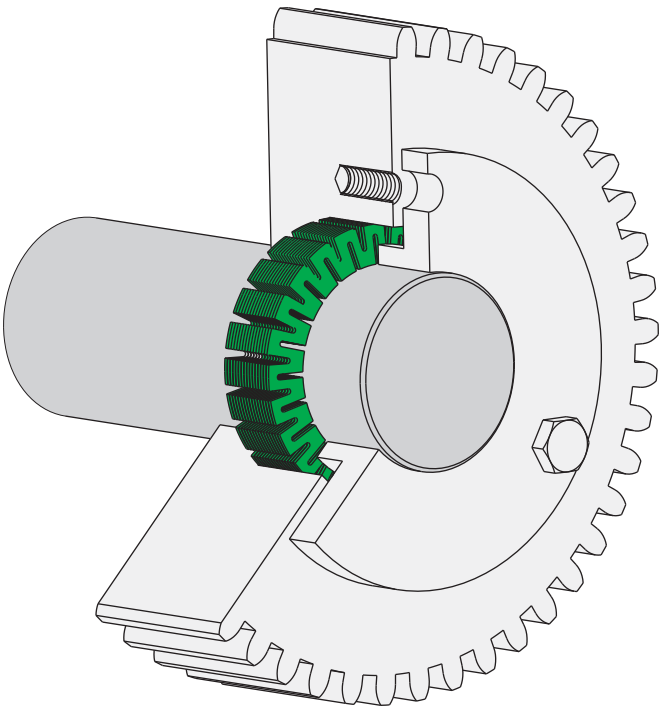
Clamping connections with Star Discs are easy to release even after frequent clamping. This makes the Star Disc the ideal clamping element, e.g. in adjustment devices.



56-1

## Features

- For frequent clamping and release
- Short axial width
- Adjustable to the required torque by multiple arrangements in the form of disc packs
- Low actuating force required, thus ideal for manual actuation

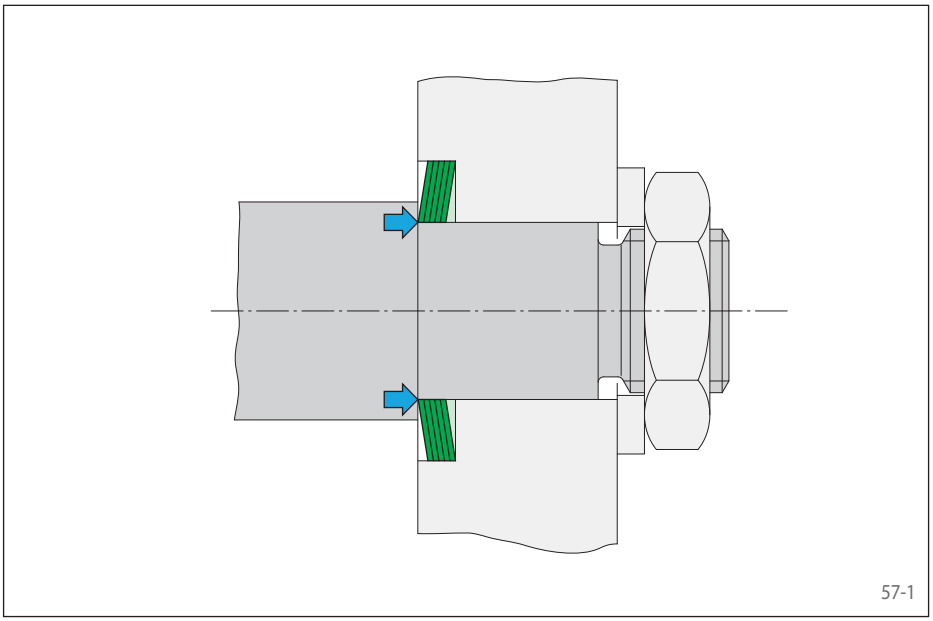


56-2

# Clamping with star discs

## Clamping connection at the shaft end

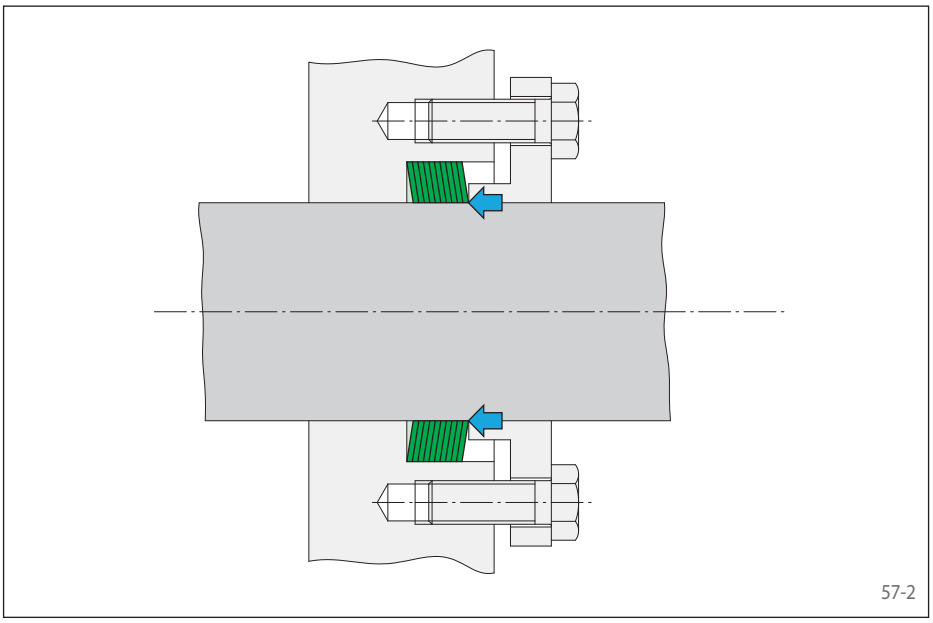
Figure 57-1 shows a clamping connection with a disc pack that consists of five Star Discs. The preload force of the clamping nut is transmitted to the disc pack by the opposite shaft shoulder.



57-1

## Clamping connection on a continuous shaft

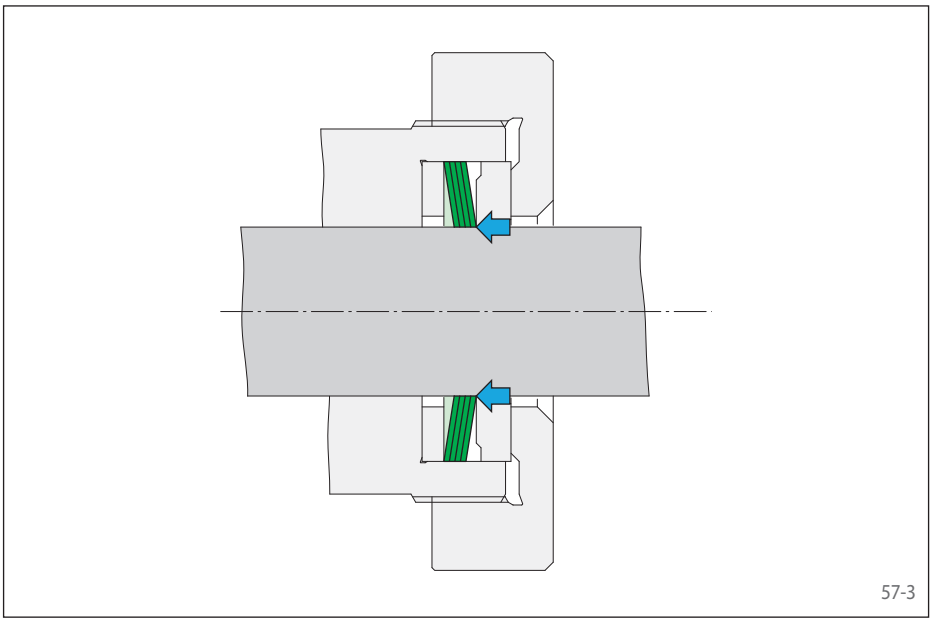
Figure 57-2 shows a clamping connection with a disc pack consisting of ten Star Discs. The preload force of the screws acts on the disc set through a clamping flange.



57-2

## Clamping connection with a threaded ring

Figure 57-3 shows a clamping connection with a disc pack consisting of four Star Discs and a manually adjusted threaded ring. Between the disc pack and the threaded ring, there is a pressure disc. It transmits the axial actuation force to the disc pack inner diameter and thereby prevents the disc pack from turning as well when the threaded ring is tightened.



57-3