We have a long experience of supplying the industry with our advanced **adjusting locking nuts and rings**.

The **SFERO** nuts and rings are used in a great many industrial domains

- Transmissions
- Machine-tool
- Textile machinery
- Printing industry
- Conditioning
- Special machinery
- Automotive industry
- Engine/turbine manufacturing
- Onshore and offshore industry
- Transportation
- Aeronauticals
- Marine equipment
- Nuclear industry
- Agriculture and Food industry
- Civil and military engineering
- Precision optical attachments

The **SFERO** locking nuts and rings offer in one single part the advantages of nut/counternut locking systems.

The **SFERO** locking nuts rings are re-usable without loss of precision.

Easy to secure through precise locking preventing any axial displacement on the shaft or spindle.

Applications

The SFERO threaded **spring nuts and rings** are used whenever **precision mechanisms** require a precision **clamping** as well as a **powerful** and **safe locking**:

- Power transmission and motion technology
- Adjusting and clamping all types of bearings
- Mount/release of ball bearings
- Elimination of back lash
- Securing mechanical safety devices
- Templating spring-mounted measuring systems
- Safety nuts for use in high-temperature applications
- Periodical mounting and dismounting of adjusting locking/unlocking nuts and rings
- Assemblies subjected to vibrations
- Cyclic uneven rotation
- High and very high rotation spindle/shaft assemblies
- Frequent clockwise and counter-clockwise reversing rotation systems
- Reduction of inertias through the use of selected materials (Titanium alloys and Aluminium alloys).

SPRING NUTS AND RINGS

SFERO's latest range of spring nuts and rings comprises 6 different models of adjusting locking/unlocking devices featuring the same securing technique through a threaded locking spring.

CLAMPING	Radial	Axial
STANDARD	LR	LF
BALANCED	LRE	LFE
HEAVY-DUTY	LRP	

SPRING RING

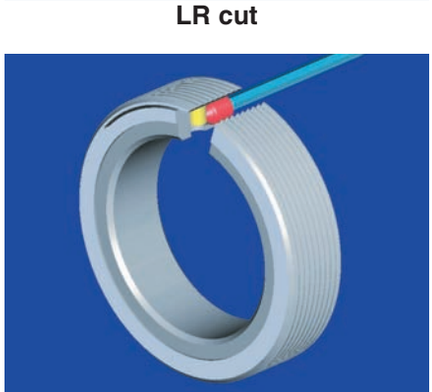
CLAMPING	Axial
STANDARD	LX

Clamping system

- The **threaded bore** of the SFERO nuts and outside threading of the SFERO rings is partially wired EDM to form a **clamping spring**. When tightening the Hc grub screws **clamping** is applied with a **very strong pressure onto the threaded spring** which meshes perfectly into the **corresponding threads** of the shaft or spindle.
- The **contacted threaded surface** of **the spring pressing onto the threaded surface of the shaft/spindle**, amplifies the clamping power, ensuring thereby a highly efficient clamping and **making any unlocking hazard or loss of grip almost impossible**.

LR cut

LFE cut



LX cut

Upon request we can provide **mated threaded assemblies** with **fine-ground matching threads** both on the nut and corresponding shaft/spindle.

Nuts and rings in **Titanium alloys**, **Stainless steels**, for the agricultural and food industries, the nuclear industry, the petro-chemical industry are also available as well as right-hand or left-hand threads.

The main characteristics of the SFERO adjusting locking/unlocking nuts and rings are explained in the following pages.

Advantages of the SFERO nuts

- **A precise and powerful locking of bearings in axial positioning after assembly.**
- **A higher unlocking torque when compared to other locking techniques.**
- Time-saving through a more **simple technical design** and construction of **shaft-bodies** and assemblies.
- No key slot required as for lockingwashers. Thus **saving thread deburring** operation.
- **No use of locking washers**, Thus preventing seal damage.
- **Clamping and locking** the adjusting nut without **any loss of axial precision**.
- **Easy mount and release** re-usable many times **without loss of precision**.
- Recommended use under severe conditions (**High-temperature, vibrations**, etc…).

Remarks about unlocking torques

- **Numerous parameters influence the unlocking torque:**
  - **Precision of the screw-nut assembly**
  - **Clamping strength applied to the Hc grub screws** (applying pressure onto the threaded spring)
  - Nature of materials and corresponding **surface quality** various heat treatments and coatings
  - Environment (temperature, vibrations, atmospheric conditions, etc…)
  - Overall toughness of the assembly.
- **The locking torque and axial loading values** on this catalogue are given for static assemblies.
  They are indicative and do not involve the manufacturers responsability.

Mounting the nuts and rings

- **The mounting** occurs by driving the spring nuts and rings clockwise with standard spanner wrench (Din 1810) adapting onto the **peripheral notches (b x h)** of the nuts.
- The mounting can also easily be achieved thanks to the **pin-key holes** on the front-side of the nuts with the adequate key.
- Once in the correct position on the shaft/sprindle the blocking can be simply secured by **turning the Hc grub screws** located either on the outside diameter or on the front side of the nuts.
- For nuts showing two locking springs or additional clamping screws (LRE - LFE - LRP) it is recommended to activate these screws **alternatively and progressively** so as to ensure an efficient locking.
- The use of a **torque wrench** is recommended so as to achieve a safe clamping of the Hc grub screw with the required value.
  However, using **HEX male keys** is also highly efficient.
- **Very easy release of the nut through simple unlocking of the Hc grub screws.**