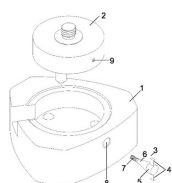
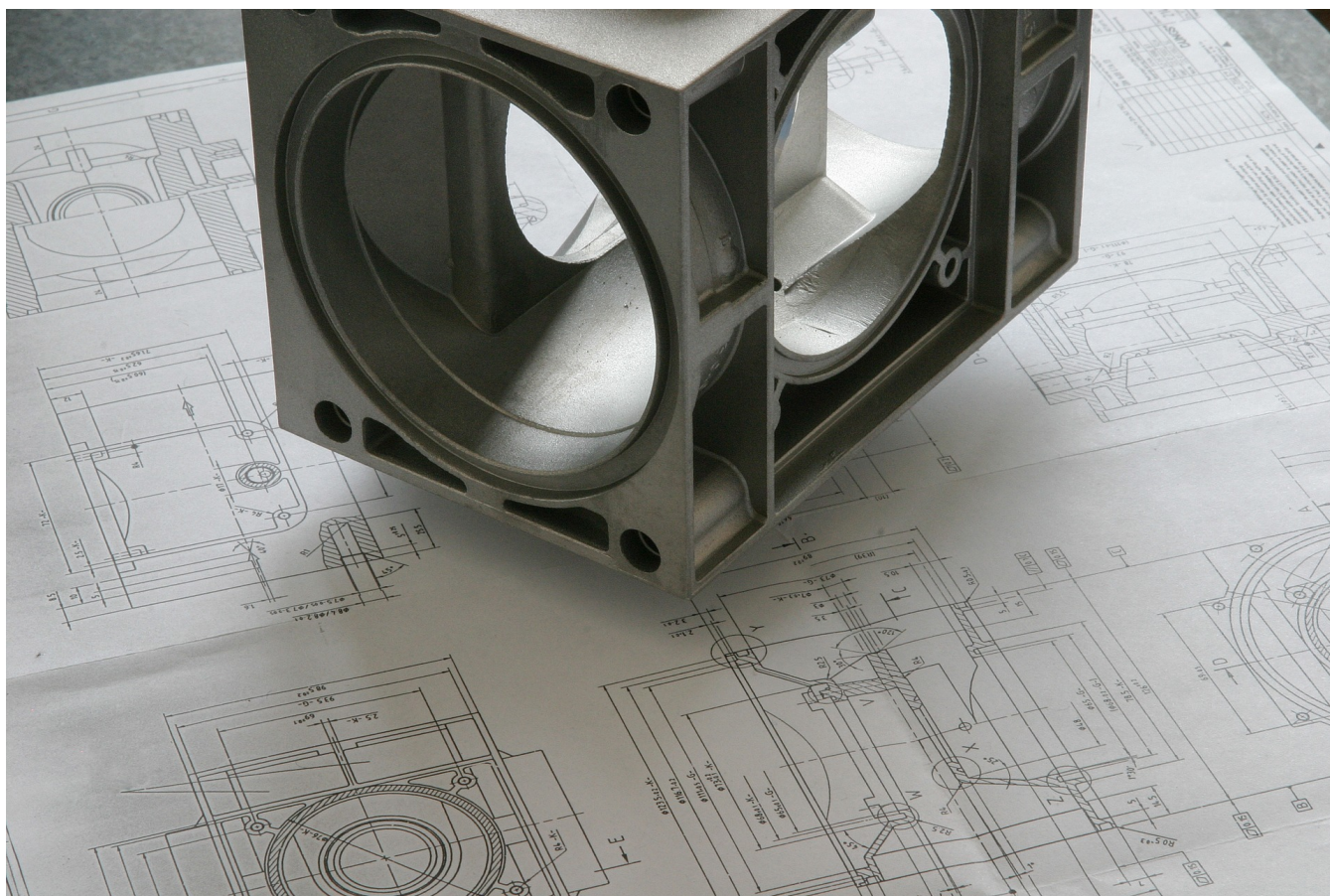


# SisBA. Avoiding involuntary movements of tribachs

This locking system prevents tribach movements of topographic tripods of motorized measurement equipment.



## Contact information

**Address:** ETS de Edificación, Av. Juan de Herrera, 6, 28040, Madrid

**Phone number:** 913367627

**Website:** [edificacion.upm.es](http://edificacion.upm.es)

**Email:** [amparo.verdu@upm.es](mailto:amparo.verdu@upm.es)

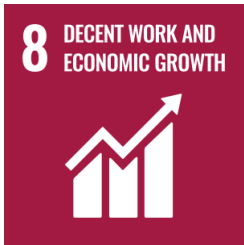
## Technological Offers type

Technological solutions

## Research and innovation areas

- Industry, Materials and Circular Economy

ODS



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## Where?

[Maritime and Ports Engineering Research Group](#)

Keywords: | [infrastructures](#)

## Brief description of the technology solution and the added value it provides

Researchers from the Technical University of Madrid have developed a non-rotating lock system for a modified tribrach. The system developed prevents movement of the topographic locking device regarding its stand-by position, as it is much more firmly held than with previous systems. The system avoids the device's rotation with respect to tribrach, integrating and establishing a single reference system during the whole observation period.

## Description of the technological base

The anti-rotation blocking system proposed in the present invention comprises a locking element which fixes its tribrach adapter. It consists of the following parts:

- A cylindrical neck with plates that increase the set pressure without additional tools, such as screwdrivers or any other wrench.
- The main body with a truncated cone configuration that allows exerting greater pressure on the tribrach. This truncated cone shape allows greater fixation than a cylindrical shape.
- And a cylindrical threaded portion, which will allow attachment to the tribrach adapter.

This locking system is firstly introduced in the tribrach and subsequently in the tribrach adapter. The first hole is frusto-conically shaped and the second is screw-shaped to be screwed in.

*“This invention prevents rotation of the tribrach adapter and the device, integrating them”*

## Market demands

- Measuring tools have evolved and many of them move independently, rotating around its rotation axis to perform measurements in all space directions.
- As with topographic devices such as tachometers, total stations, GPS receivers ..., terrestrial scanners rest on leveling platforms, the stability and immobility of which is extremely important in the measurement result.
- Although measuring tools have evolved, it has not been the same with fixation elements. These are not prepared to bear movements such as those scanners perform when measuring.

*“Globally, the demand for infrastructure requires 57 trillion by 2030”*

## Competitive advantages

- There is no other technology on the market that solves the problem of bearing the movements made with measuring scanners.
- The locking system is easily enforceable.
- It is an easy to set-up device.
- The invention prevents the equipment movements as a result of measurement.
- It impedes a change in the measurement origin of horizontal angles, thus losing no instrument coordinate system.

## Development stage

- Concept
- Research
- **Lab prototype**
- Industrial prototype
- Production

## **Contact**

### **Contacto SisBA**

Amparo Verdú Vázquez; Tomás Gil López; Fidel Carrasco Andrés

e: {amparo.verdu;tomas.gill; fidel.carrasco}@upm.es

### **Contacto UPM**

Área de Innovación, Comercialización y Creación de Empresas

Centro de Apoyo a la Innovación Tecnológica - UPM

e: innovacion.tecnologica@upm.es