

# SOLUTIONS FOR SURGERY ROBOTS HIGH PRECISION, SUSTAINABILITY AND ERGONOMICS



**TENTE**

BETTER MOBILITY. BETTER LIFE.



# HOW CAN DOCTORS BE SUPPORTED WHILE ENSURING SAFETY OF TREATMENT AND CONSISTENCY FOR PATIENTS? BY USING SURGERY ROBOTS

In hospitals today there is a permanent process of transition. Hospital staff and patients are getting older, but there is hardly any new hospital staff coming in. That alone already causes a great deal of stress in hospitals. On top of that, doctors today are expected to perform their utmost. Surgeries are piling up and becoming more and more complex. In addition, doctors often suffer from surgical site effects and poor ergonomics. But how can doctors be supported without endangering the safety of patients? By means of surgery robots.

## STATUS QUO OF SURGERY ROBOTS IN THE MEDICAL FIELD

In the 1990s, the idea of using robots in the medical field emerged. This proposal to perform operations remotely came from field hospitals during previous wars. Unfortunately, this proposal could not be realised until now due to high data traffic. Over time, private companies adopted the idea and started programmes to develop systems for robotic surgery. However, the use of medical robots is still in its early stages and holds huge potential for the medical market.

## NECESSITY OF SURGERY ROBOTS

But what is it that makes surgery robots so indispensable? For one thing, compared to a doctor, a surgery robot does not get tired. It can stabilise trembling hands of the physician and supports the surgeon, who often has to stand for hours in a bad ergonomic position to perform surgery. Also, surgery robots can save a lot of time in certain procedures, such as a biopsy. All in all, surgery robots enable doctors to perform many complex procedures with more precision and more control while improving ergonomics.

## FURTHER OUTLOOK IN THE MEDICAL MARKET

The future will be unthinkable without surgery robots. They enable operations to be performed even more precisely, while relieving doctors, hospital staff and patients. But what would the future look like if surgery robots simply moved on their own because the castors were not locked correctly? Imagine what would happen if a heavy surgery robot ran over its own or a patient's vital wires? Unthinkable. This is where TENTE comes in with high precision solutions.

## OUR SOLUTIONS FOR YOU

Since 1923 TENTE is a reliable partner for OEM's in the healthcare industry. With a lot of experience and references in surgical applications, such as surgery tables and surgery microscopes, we understand the market needs of robotic systems used in the medical field. Our mobility solutions and our experience meet customer expectations. We have dedicated solutions which offer high precision, great usability and increased physical ergonomics. This is why we specialise in two key aspects of surgery robots: high precision and safety. We help you to meet your customer requirements. We offer you our service of testing the castors with our own resources in accordance with EN60601 and with the Rough Handling Test, so that you can install our castors below your medical robots without any concern.



Our high precision castor Integral twin torsion

### STABLE CASTORS FOR PATIENT SAFETY

Most robotical applications (e.g. robot assisted surgery systems or needle and biopsy robots) need a secured stand. Once positioned, there should not be any kind of movement from the running gear during the treatment and examination. TENTE has several options available which work perfect here and we offer precision and high torsional stiffness with different wheel diameter and different overall heights.

**We understand the importance of standstill castors for medical robots. This is why we recommend our Integral twin torsion castors which, when locked, do not allow any play and remain solid in position.**



Cable catcher with e.g. Integral twin

### CABLE CATCHERS FOR MAINTAINING EQUIPMENT

Another solution we offer for more usability involves cable catchers. We provide castors with cable catchers to ensure that staff do not accidentally run over fibre optic cables or important life-supporting cables. Cable catchers ensure the safety of the patient by keeping all cables and wires intact and by supporting long durability of the equipment.

***„There is a need for surgery robots and we are aware of it. Our many years of experience in high precision medical applications, we supply the global leading medical robotic companies today.“***

**Tanja Klugmann, Product Manager Healthcare**



## SOLUTIONS FOR SIDE CARTS AND OPERATOR MODULES FOR BETTER TRANSPORTATION

In many cases, robotical systems consist of different carts/trolleys. We offer a wide variety of ergonomic and solid castors suitable for applications which do not require very high torsional stiffness.

## SOLUTIONS FOR SIDE CARTS AND OPERATOR MODULES

Linea wheel diameter 125 mm combined brake offers great usability. The green pedal activates the directional lock and the red pedal activates the total lock. These castors offer great physical ergonomics by using four precision ball bearings.



## Our castors allow our customers almost unlimited possibilities to increase safety, design and sustainability while contributing to a flexible and customer-friendly service.

### LINEA FOR LESS UNINTENDED MOVEMENT

Our Linea twin wheel castor offers an ideal usability solution. Its uncompromising quality never fails to impress. It is also available in various sizes and has a reliable dead man's brake system which guarantees automated locking. When the user operates the locking lever, the castors can be set in motion. When the user releases the lever, the castors automatically come to an immediate standstill.



#### Automatic locking

The default position of the castors is locked. The springs of the brake system are unstressed in locked position. This leads to a durable, tension-free locking solution patented by TENTE.

## NOW IT IS UP TO YOU TO BRING SAFETY WITH HIGH TORSIONAL STIFFNESS AND HIGH PRECISION INTO YOUR FACILITY

Surgery robots simplify complex surgeries while increasing the ergonomics of the physician. Would you like to increase safety for your staff, your patients and your equipment with our castors and wheels? If so, please contact one of our experts and we will find the right solution for you. The safety of staff and patients is in your hands, and we are the right partner at your side.



### YOUR MEDICAL EXPERT

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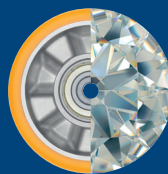
PRODUCTIVITY



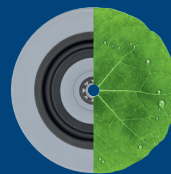
SAFETY



DESIGN



DURABILITY



ENVIRONMENT