



**ZEDEX<sup>®</sup>** in  
Tribological Polymer Solutions

# Medical Technology



**HIGH PERFORMANCE PLASTIC SOLUTIONS**

EN 1.0



**ZX**

**Material**  
**ZX-550**



## Description of the application

In hospital operating tables, the adjustment in the horizontal direction has to be guaranteed.

This is made possible thanks to a slideway of steel clad with plastic material.



## Load

The operating table is designed for patients up to 150 kg and the table plate has got a weight of 20 kg. On the table plate are anchored additionally equipments and tools.



## Problem

The material must be sterilisable in order to maintain sterile the operating room. The slideway must work without any kind of lubrication.



## Problem-solving

It is used a steel bar clad with **ZX-550**.



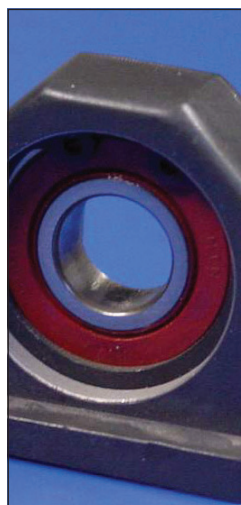
## Advantages

Thanks to low friction, good stick-slip behaviour and low creep, **ZX-550** is now used as a sliding guide for the patient support in operating tables. Because of the low wear the guide does not have to be readjusted. The material can be sterilized.

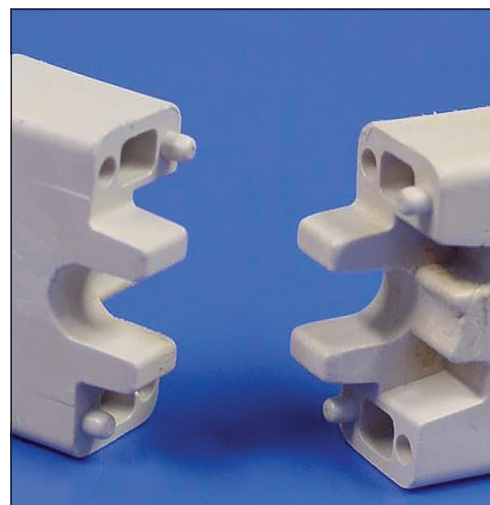
# ZEDEX® in Medical technology

## Slide guide for operating table

## Slide bush in film processing device



Before: Rolling Bearing



After: Slide Bearing made of **ZX-530**

## Bushing in artificial knee joints

Bearings made of **ZX-750V5T** (with less load **ZX-100K** is used) meet the extreme requirements of artificial knee joints.



**ZX-750V5T**



**ZX-100K**

The **ZX-100K** bearing is installed into the film processing unit of x-ray devices and it works as bearing of the shafts, that are used for the film transport. Advantages High wear resistance, lower coefficients of friction, significant price reducing.



## ZEDEX® in action



**Material**  
**ZX-530**



### Description of the application

Robot-assisted liver biopsy under clean room conditions: on a robotic arm, a 190 mm long biopsy needle is guided by means of a prismatic linear guide. After each operation, the device must be sterilized in an autoclave at 150 °C and then has to work again tactfully and accurately.



### Problem

The device must be sterilized at a temperature of 150 °C in an autoclave. It calls for high precision, sensitivity and as low as possible weight.



### Problem-solving

Now in usage are a linear guide with a prismatic cross-section, DKLFP 10 carriages, guide rails made of aluminium with hard-coated surface and sliding elements made from **ZX-530**.



### Working life

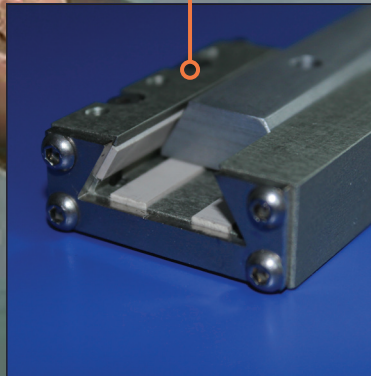
Through adjustability of the slide clearance and the low mechanical stress, an endless working life is expected.



### Advantages

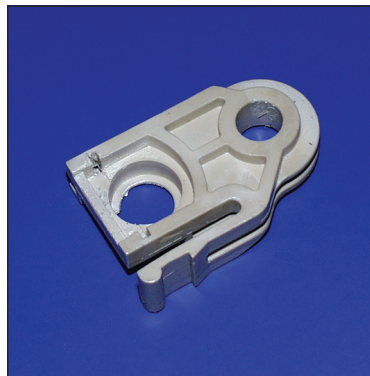
Maintenance free and low weight, sterilisable.

## Slide guide in operation robot



## Slide bush in mammography device

The so-called double bearing made of **ZX-530** is assembled into the film processing unit of mammography equipment and it works as bearing of the shafts used for the film transport. Previously were used plain bearing bushes made from PA11, PEEK or other special compounds.



**ZX-530**



## Orthopedic toe alignment splint

**ZX-324FDW2** – Sterilisable material, high strength, high elasticity, lower friction. The material is physiologically safe. The splint must be loaded with at least 25 N, with a maximum thickness of only 3 mm.

## ZEDEX® in action



**Material**  
**ZX-530LR6**



**Description of the application**  
The clips bearing made of **ZX-530LR6** are used in X-ray machines.



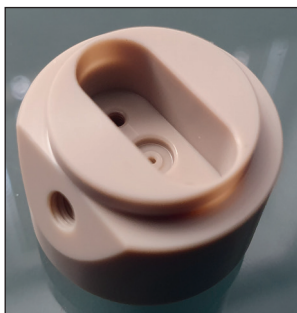
**Problem**  
"Ordinary" plastics can be electrostatically charged through friction. In a subsequent discharge the tensions can lead to the damaging of the sensitive X-ray machines. Therefore an electrical conductivity material was required. Additionally the material should also have good tribological properties.



**Problem-solving**  
**ZX-530LR6** fulfils also the requirement about the electrical conductivity. Tests made by the X-ray units manufacturer, have shown an surface resistivity of 70-160kΩ by a voltage of 100V.

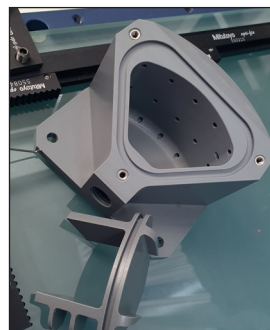


**Advantages**  
Electrically conductive, low friction and low wear.



### Spectral blood analyser

The current used material is **ZX-324**. The part is used as a standard feature in HPLC blood chromatography equipment. The blood flows through two angled threaded holes (6-40 UNF) and into the analysis chamber with sensors. The material **ZX-324** is physiologically safe and resists sterilisation processes. Lower prices due to faster processing due to the ductility of the material compared to common PEEK



### Blood analyser, transfusion

The current used material is **INKURID** (PVC basis). The part is used as a standard feature in blood testing equipment prior to transfusions. **INKURID** was chosen as the material meets the stringent requirements for artifacts with blood contact.



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