

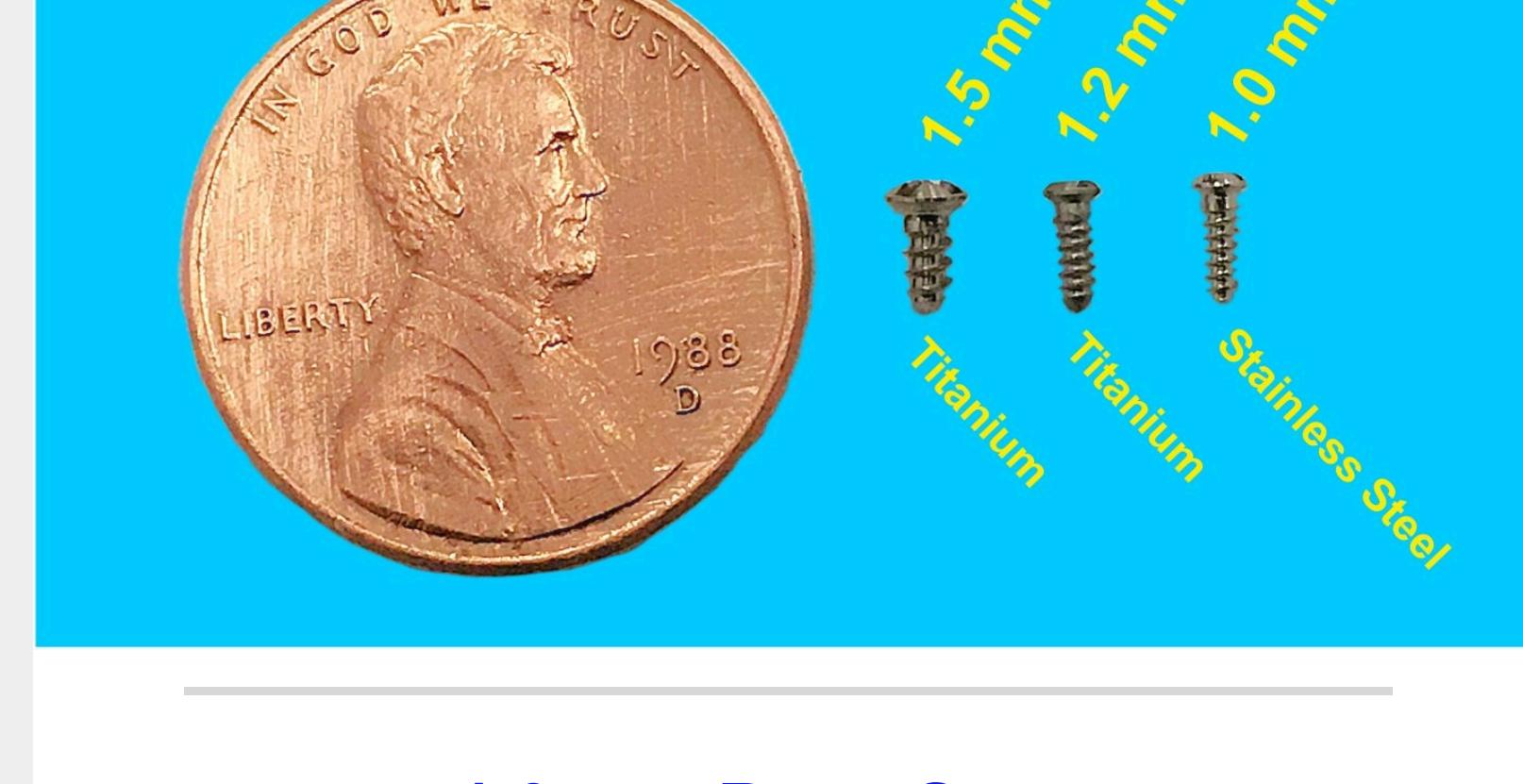


Thomas RECORDING Newsletter 8-2025

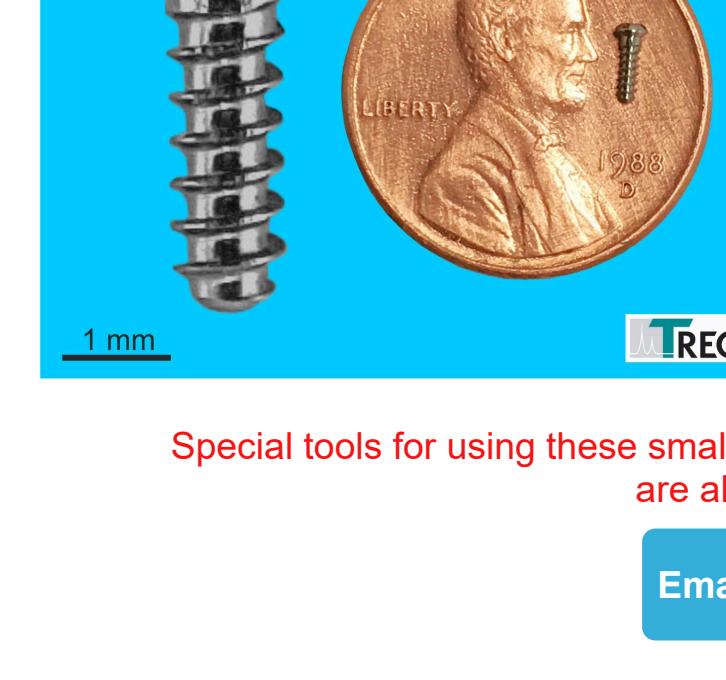
## Miniature Medical Grade Bone Screws

Diameters of 1.0 / 1.2 / 1.5 mm

There are multiple scientific, medical, and ethical reasons why only **medical-grade stainless steel or titanium screws** should be used for implant fixation in animals, and not regular metal screws from hardware or DIY stores.



### 1.0 mm Bone Screw Stainless Steel



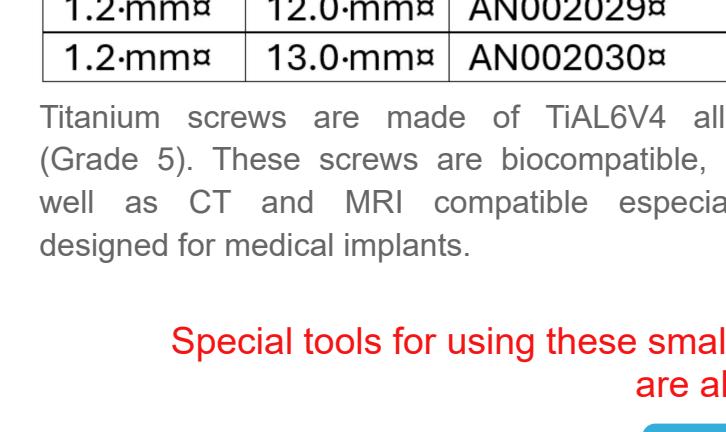
Diameter	Length	Article-Number
1.0-mm	4.0-mm	AN002021
1.0-mm	6.0-mm	AN002022
1.0-mm	8.0-mm	AN002023
1.0-mm	10.0-mm	AN002024

Stainless steel screws are made of the implant material 1.4441 which is the European standard designation for the high-purity austenitic stainless steel known internationally as 316LVM or AISI 316LVM, specially designed for medical implants and instruments.

Special tools for using these small screws, such as drills and screwdrivers, are also available.

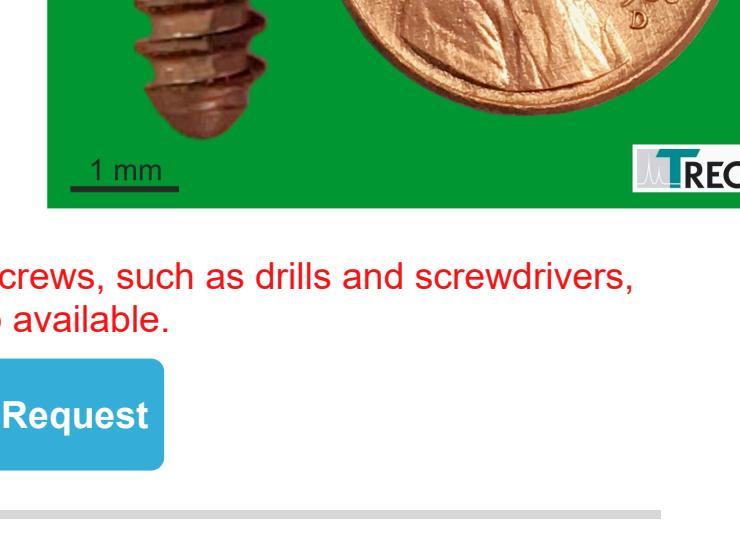
[Email Request](#)

### 1.2 mm Bone Screw Titanium



Diameter	Length	Article-Number
1.2-mm	4.0-mm	AN002025
1.2-mm	6.0-mm	AN002026
1.2-mm	8.0-mm	AN002027
1.2-mm	10.0-mm	AN002028
1.2-mm	12.0-mm	AN002029
1.2-mm	13.0-mm	AN002030

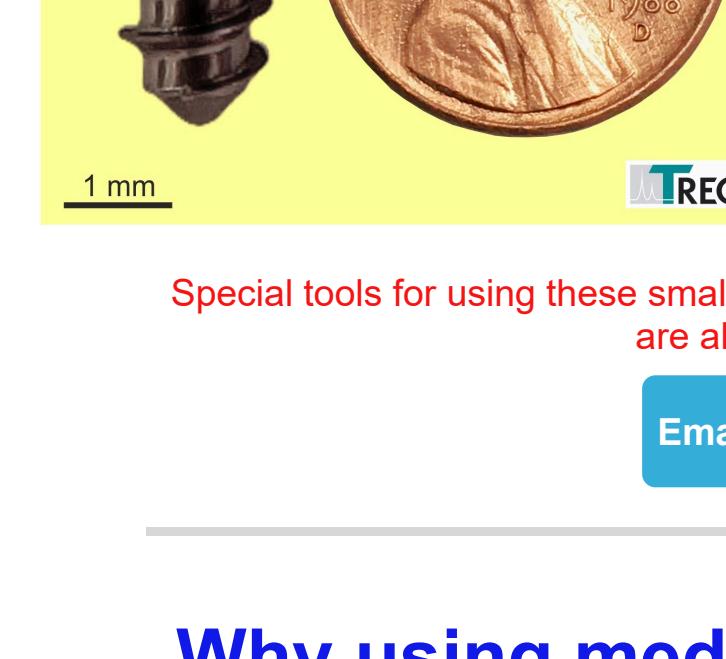
Titanium screws are made of TiAl6V4 alloy (Grade 5). These screws are biocompatible, as well as CT and MRI compatible especially designed for medical implants.



Special tools for using these small screws, such as drills and screwdrivers, are also available.

[Email Request](#)

### 1.5 mm Bone Screw Titanium



Diameter	Length	Article-Number
1.5-mm	4.0-mm	AN002031
1.5-mm	6.0-mm	AN002032
1.5-mm	8.0-mm	AN002033
1.5-mm	10.0-mm	AN002034
1.5-mm	12.0-mm	AN002035
1.5-mm	13.0-mm	AN002036

Titanium screws are made of TiAl6V4 alloy (Grade 5). These screws are biocompatible, as well as CT and MRI compatible especially designed for medical implants.

Special tools for using these small screws, such as drills and screwdrivers, are also available.

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## Why using medical grade screws?

### 1. Material Purity & Biocompatibility

Medical screws 😊 (e.g., made of titanium or surgical stainless steel (like 316L) are specifically developed and tested for contact with living tissue.

Commercial hardware screws may 😕:

- Contain toxic impurities (e.g., lead, cadmium, zinc, or high levels of nickel),
- Have residues of industrial oils, greases, or anti-corrosion coatings that can be inflammatory or toxic in the body,
- Corrode in vivo → releasing harmful metal ions or particles.

### 2. Avoiding Inflammation and Complications

- Using non-medical grade screws 😕 can lead to foreign body reactions, inflammation, rejection, or even systemic toxicity. This may result in pain, suffering, or premature death of the animal – which also violates animal welfare regulations.

### 3. Ethical and Legal Requirements

(Animal Welfare Act / Ethics Committees)

- In many countries (e.g., Germany, EU), all implanted materials must be **biocompatible** and **approved** – even in animal experiments.
- Using unapproved materials may be a violation of the Animal Welfare Act (e.g., §§ 7 & 8 TierSchG in Germany).
- Ethics committees and authorities will not approve projects that don't use medically suitable materials.

### 4. Scientific Reproducibility and Integrity

- Experiments using unsuitable screws may produce variable, unreliable, or artifact-prone data (e.g., due to inflammation or implant instability).
- Scientific publications and peer review processes require full transparency about materials – using non-certified components undermines scientific credibility.

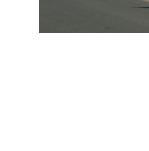
### 5. Mechanical Stability and Precision Fit

Commercial available hardware screws 😕

- are not designed for precise or long-term fixation in bone
- have inappropriate thread pitch, tip shape, or depth (→ poor bone anchoring).
- have the risk of micro-movements (→ chronic tissue irritation or implant failure).

Medical screws 😊 are designed and tested for long-term in vivo mechanical stability.

[Email Request](#)

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