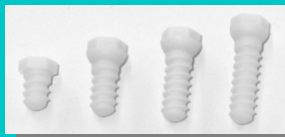
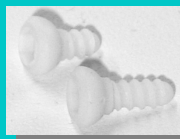


Ordering Information



SA-screw

4,5mm length Article number: SA-45
6,0mm length Article number: SA-06
8,0mm length Article number: SA-08
10,0mm length Article number: SA-10



SI-screw

4,0mm length Article number: SI-04
6,0mm length Article number: SI-06



Screw Driver

SA-screw tools

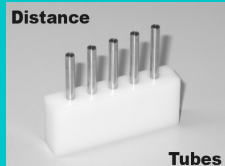
Special Tap, Article number: Tap-SA
Twist drill, Article number: Twist Drill-SA
Screw Driver, Article nr: ScrewDriver-SA
Distance Tubes, Article nr: DistTubeSet-SA



Wrench



Drill



Distance

Tubes

SI-screw tools

Special Tap, Article number: Tap-SI
Twist drill, Article number: Twist Drill-SI
Screw Driver, Article nr: ScrewDriver-SI
Distance Tubes, Article nr: DistTubeSet-SI



Sterilization Tray

Sterilization Tray, Article nr: SterTray

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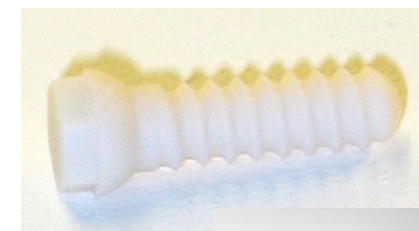
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Thomas RECORDING GmbH
Scientific Resources

CERAMIC SCREWS

PRODUCT
INFORMATION



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CERAMIC SCREWS

Instructions for use



ATTENTION! The products described in this manual are for RESEARCH PURPOSES ONLY and not intended for human use!

1. Introduction

These instructions refer to the ceramic screws and ceramic screw tools made by Thomas RECORDING GmbH, Winchester Strasse 8, D-35394 Giessen, GERMANY.

Compliance with all requirements and special information contained in these instructions is essential, otherwise the product must not be introduced or employed in research applications.

2. Indications

This product is collectively referred to under the product designation „ceramic screw“ or „ceramic screw tools“ and may consist of an individual screw or a range of screws for use with reusable instruments (tools) and other accessories required for ceramic screw applications.

3. Product description

For MRI applications care must be taken to limit the amount of magnetically susceptible metal inside the MRI scanner. Particularly, if any screws are included for implant fixation, the use of ceramic material will limit the distortion caused to the MRI scan. Therefore it is recommended to fix implants with ceramic screws. Thomas RECORDING offers a set of 6 different ceramic screws made of zirconium oxide. These screws were developed and firstly used by Prof. Dr. Nikos Logothetis at the Max Planck Institute for Biological Cybernetics in Tuebingen, Germany [1]. The ceramic screws were tested on MR quality control phantoms and were found to have no effects on the homogeneity of the B0 field of the magnet [1]. In addition the



Figure 1: Ceramic screw type SI04 and SI06

material was chosen to be tissue compatible and are surface roughened to optimize the bone and skin implant interface [1]. Thomas RECORDING is proud to be the worldwide sole distributor of these high quality ceramic screws. Our ceramic screws are used by leading neuroscientists all over the world. Thomas RECORDING offers also a range of high quality tools especially designed for ceramic screw applications (see figure 3). All tools are made of stainless steel. It is possible to sterilize the tools before use. If you have a special application that would require special tools, please do not hesitate to contact us. It is one of our strengths to adapt products to the requirements of our customers.



Figure 2: Ceramic screw type from left to right: SA45, SA06, SA08 and SA10



Figure 3: Ceramic screw tools in a sterilization tray

4. Sterilization

The product is not expressly specified as sterile, the product is supplied non sterile!

Thomas RECORDING also offers sterile ceramic screws. Please feel free to ask for this product.



ATTENTION! The product (screws and tools) is delivered non-sterile! STERILE products are labeled as such!

All non-sterile products can be sterilized as follows:

Ceramic screws: steam sterilization (autoclaving) at 120° celsius for 20 minutes,

Tools: steam sterilization (autoclaving) 120°C celsius for 20 minutes.

5. Use of original products

Ceramic screws and ceramic screw tools are designed and produced to be used together. No part of the system should be replaced with a different manufacturer's product, even if the product appears to be visually (and potentially

dimensionally) comparable or identical to the original product. The use of products from other manufacturers along with Thomas RECORDING's products can involve incalculable risks and /or contamination of the material and misalignments of screws to instruments, thereby endangering the animal, user or third parties.

6. Handling information

When the product is classified as „system“ within the meaning of a product range, the product range normally contains two components: ceramic screws and tools (instruments for ceramic screws)

The **ceramic screws** may look like self tapping screws but they are NOT self tapping!



ATTENTION! The use of a special tap (part of the ceramic screw tool box) before ceramic screw insertion is highly recommended !

The **twist drill** is provided with a depth stop distance tube to prevent accidental penetration beyond the targeted bone.



ATTENTION! The use of the depth stop distance tube for the twist drill is highly recommended to prevent accidental penetration beyond the targeted bone. Please make sure that the distance tube with the correct required length is fixed to the drill! The distance tube set is part of the ceramic screw tool box !

7. Sources of Information

Sources of information concerning this product include applicable product catalogs, technical specifications, instructions from product advisers, publications and information on the Thomas RECORDING website.

8. Literature

- [1] Logothetis N., Guggenberger H., Peled S., Pauls J. **Functional imaging of the monkey brain** Nature neuroscience, vol. 2 no. 6, June 1999
- [2] Scherberger H., Fineman I., Musallam S., Dubowitz D.J., Bernheim K.A., Pesaran B., Corneil B., Gilliken B., Anderson A.R. **Magnetic resonance image-guided implantation of chronic recording electrodes in macaque intraparietal sulcus** Journal of Neuroscience Methods 130 (2003) 1-8