

Tele-Magnetic Abutments

Product Safety Information

Magnetic Fields

ABraCadabra's Telemagnetic Housings have a magnetic field which is static as the Earth's magnetic field. It is not comparable to the electromagnetic field of a mobile phone or high voltage power lines.

ABraCadabra's system features 3 kinds of magnets:

- **Standard magnet** – housing height 4.8mm, surface magnetic field up to 246 mT, retention strength 5 N.
- **Extended magnet** – housing height 5.8mm, surface magnetic field up to 300 mT, retention strength 6.5 N.
- **High magnet** – housing height 6.8mm, surface magnetic field up to 350 mT, retention strength 8 N.

At 5mm from the surface, the static magnetic fields are as follows:

- Standard magnet – 74.7 mT
- Extended magnet – 103.2 mT
- High magnet – 129.5 mT

The above surface magnetic fields are significantly lower than 400 mT (WHO exposure limit) at 5 mm from the surface.

At 15cm from the surface, the static magnetic fields are as follows:

- Standard magnet – 0.171 mT
- Extended magnet – 0.255 mT
- High magnet – 0.337 mT

There is no evidence in the current literature that static magnetic fields occurring near the surface with such magnetic flux density can be locally damaging in humans. There are no clinical references for the small static magnetic fields of Abracadabra's magnets being harmful to humans.

General Safety Instructions

- **Special precautions must be made when using magnets.**
- **Please note the information provided by the implant manufacturer!**
- In individual cases, an immediate restoration is only possible with sufficient primary stability of the implant if the implant manufacturer offers the possibility of an immediate restoration and the distribution of the prosthetic retaining elements is suitable to avoid implant overload.
- Depending on the static distribution and type of prosthetic retaining elements, it is preferable that the restoration would be combined mucosa- and implant-supported (over-denture).
- Close cooperation between the surgeon, prosthodontist, anaplastologist, and dental laboratory is essential for successful implant treatment. It is strongly recommended to only use the Abracadabra system with compatible instruments and prosthetic components.
- The use of instruments and prosthetic components that are not intended for use in combination with the Abracadabra Telemagnetic system may lead to mechanical failure of components, tissue damage or unsatisfactory aesthetic results.
- If you are using a new component/treatment method for the first time, you can avoid possible complications by working with colleagues experienced in this field. Abracadabra offers detailed consultation for this purpose.

- Loose keepers may lead to thread breakage and / or damage to the abutment base. Patients should immediately see their dentist, so that the keepers can be tightened again. Care must be taken that the basal side of the prosthesis is funnel shaped around the magnetic housing.
- Observe torque of 15-20 Ncm when placing the magnetic keeper! Too low or too high a torque can have a negative effect on the long-term stability of the connection.
- When using the products intraorally, it is generally important to ensure that they cannot be swallowed or aspirated.
- If the magnet's casing is damaged (perforation), the affected parts must be replaced immediately. The non-mouth-resistant magnetic alloy can be released in case of damage and lead to a loss of magnetic force and further destruction of the titanium casing due to corrosion. The magnets and keepers must never be ground.
- Magnetic cores are resistant to continuous temperatures up to 140°C and must not be soldered or lasered in. When soldering, the magnetic force is irreversibly lost due to the high heat. Laser welding can perforate the titanium shell.
- The individual parts are optimally adapted to the specific implants they were designed for. Therefore, only use Abracadabra's original parts and instruments. The keepers are part of an overall concept and may only be used with the associated Abracadabra original parts and instruments in accordance with Abracadabra instructions and recommendations. Otherwise, any liability is excluded.

MRI Safety Information

- The strong magnetic field in MRI (Magnetic Resonance Imaging) scans can destroy the denture magnet. **Remove the denture before MRI inspection.**
- **It is unnecessary to remove the keeper from the abutment, as the keeper does not contain an active magnet.**
- Should one choose to remove the keepers as well, with aseptic storage, it is possible to rescrew the keepers again on the same patient without processing.

Pacemaker and Other Magnetic Devices - Safety Information

- Keep the magnetic denture at at least 1 cm distance to magnetic data storages and electronic devices!
- **Cardiac pacemakers are not affected by Abracadabra's magnets in regular use,** because the magnetic flux at the average distance of a pacemaker from the mouth is negligible.