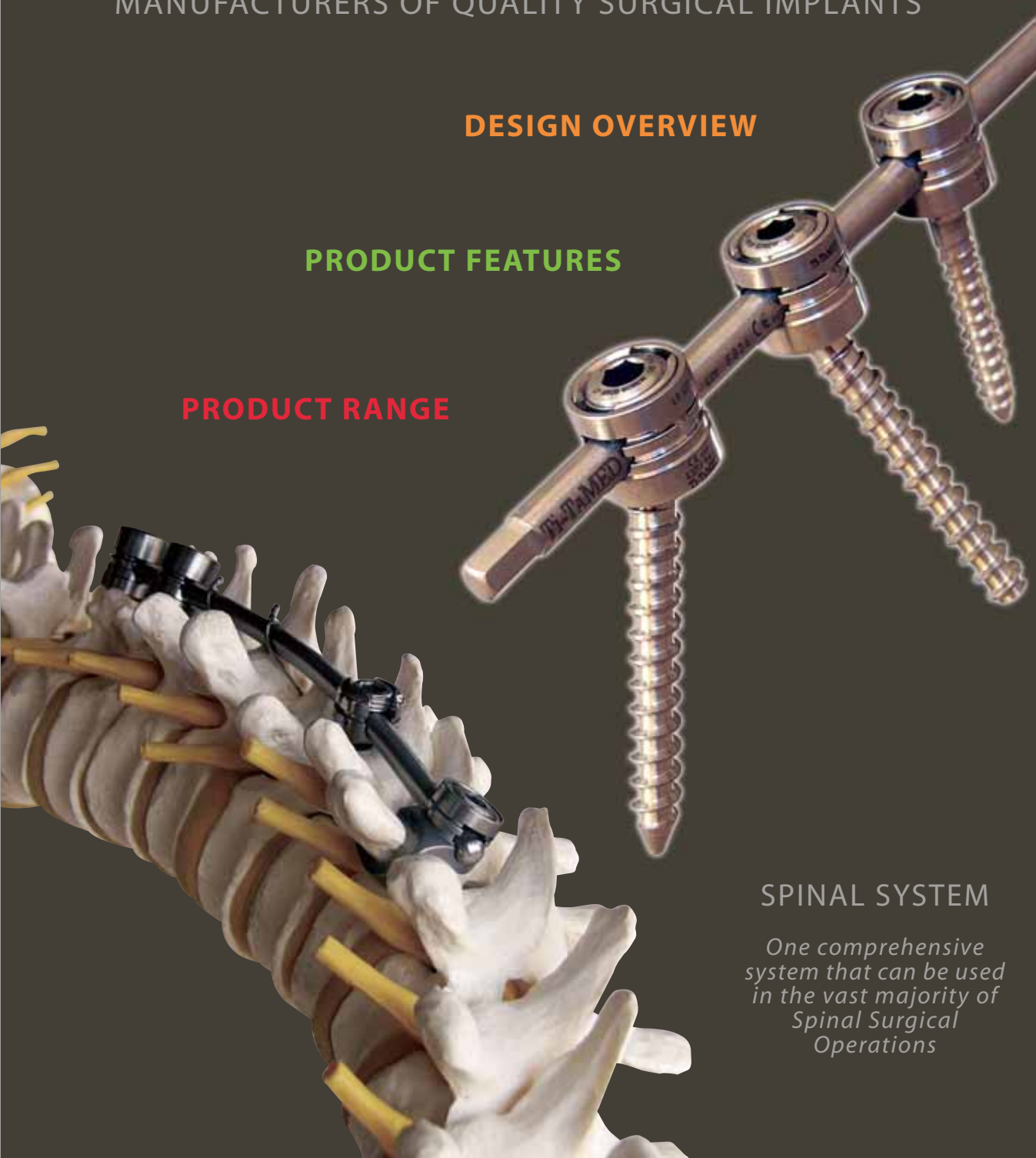
Ti-TaMED (PTY) Ltd

MANUFACTURERS OF QUALITY SURGICAL IMPLANTS

DESIGN OVERVIEW

PRODUCT FEATURES

PRODUCT RANGE



SPINAL SYSTEM

One comprehensive system that can be used in the vast majority of Spinal Surgical Operations

DESIGN OVERVIEW

- **"EASY TO USE"** - *This is the feedback from current users - both surgeons and theatre sisters*

- **STANDARD PROFILE CAP**
- **LOW PROFILE CAP (GRUBSCREW + RING)**

Note: The caps are interchangeable

Hex socket and ring Provides a high degree of protection against stripping and prevents screwhead from splaying open. Surgeon's preference to use either standard or low profile cap.

- **TOP LOADING**

Allows for easier rod insertion, and easier removal when instrumentation is encased in bone.

- **BUTTRESS THREAD**

Greater contact surface area on thread, therefore reduced tendency to loosen. Minimal tendency for head to splay open.

- **ROUND SCREW HEAD**

For removal - screws merely need to be screwed out of their sockets.

- **UNIAXIAL ARTICULATING MOBILE/LOCKING HEAD**

(Locally & Internationally patented)

This facilitates ease of use. If adjacent screws are not parallel, the rod does not need to be contoured as much as with rigid screws. When used in scoliosis correction, these screws offer translation correction.

- **POLYAXIAL ARTICULATING HEAD**

When doing multi-level fusions, heads may allow for a little less contouring of the rod.

- **TITANIUM**

All implants are made from the highest grade medical titanium. *(ASTM Specifications)*

- **TOOLING**

Our tooling is userfriendly - reliable - balanced - ergonomically designed. Size is optimized to reduce additional soft tissue damage.

- **EASY REMOVAL OF UNIAXIAL AND RIGID SCREWS**

An Allen key (4.5mm) and a flat screwdriver/paddle/cob is all that is required to remove the uniaxial and rigid screws. For the Polyaxial screws, a special removal tool is required.

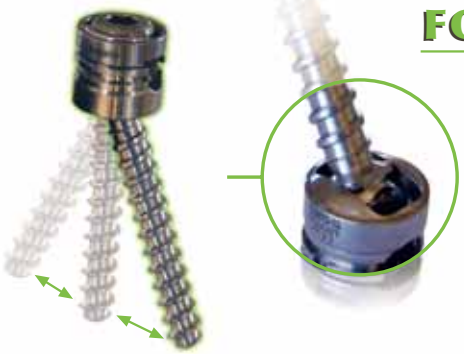
- **PARALLEL THREAD**

- The outside/major diameter is constant, i.e. parallel in all screw types.
- **Mobile, Locking and Polyaxial Screws,** use the same thread profile: the inner core/minor diameter is parallel from the tip to approximately 20mm from the head - thereafter it increases towards the head . This optimizes the strength at the screw-head junction, without compromising grip at the bone-metal interface.
- **Rigid Screws** similarly have the inner core/minor diameter parallel from the tip to approximately 20mm from the head - thereafter it increases towards the head, reaching full outside diameter approximately 3mm from the top of the shank, maximizing strength at the screw-head junction.

PRODUCT FEATURES

One comprehensive system that can be used in the vast majority of Spinal Surgical operations

FOUR SCREW TYPES



Uniaxial Mobile Screw

Screw remains permanently mobile in a uniaxial plane when screw cap is tightened

Exceptionally low breakage rate and very secure when fixation extends to 3 or more vertebra. For use in **stable** single or multilevel fixation in Degenerative Disc Disease; Anterior or Posterior correction of Scoliosis and Kyphosis; Fractures, Tumours and Tuberculosis. **Available in Pointed or Flat tips for Anterior Scoliosis.**

Uniaxial Locking Screw

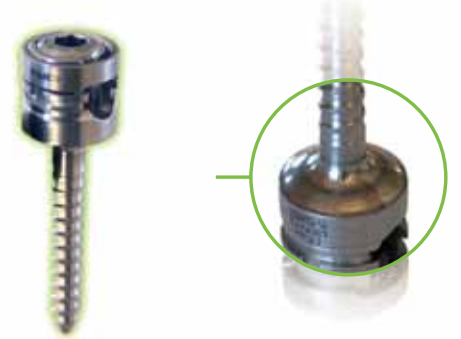
Screw locks when screw shank and screw head are tightened by the cap.

For use in single level **unstable** situations - especially Spondylolisthesis. Can be used as an alternative to Mobile Screws according to surgeon's preference.

locally + internationally patented

Polyaxial Screw

May be used for multi-level fusions where the heads of the screws may allow for less rod bending.



Rigid Screw

For use in screw fracture constructs; Tumours, Tuberculosis and Spondylolisthesis.

Standard Titanium Range - Di

Uniaxial Mobile Scr

4.5 mm Ø (25mm to 45 m
6 mm Ø (25 mm to 50 m
7 mm Ø (25 mm to 50 m
8 mm Ø (40 mm to 55 m

Available in Pointed or Fla

Uniaxial Locking Scr

5 mm Ø (35 mm to 45 mm
6 mm Ø (35 mm to 50 mm
7 mm Ø (35 mm to 50 mm
8 mm Ø (40 mm to 55 mm

Special Sizes: 25 mm and

Polyaxial Screws

5 mm Ø (35mm to 45 mm
6 mm Ø (35 mm to 50 mm
7 mm Ø (35 mm to 50 mm

Rigid Screws

5 mm Ø (35 mm to 45 mm
6 mm Ø (35 mm to 50 mm
7 mm Ø (35 mm to 50 mm
8 mm Ø (40 mm to 55 mm

Special Sizes: 25 mm and

Note: Special sizes on re

PRODUCT RANGE

Choose the ideal screw type for the pathology:
Degenerative Disc Disease | Spondylolisthesis | Kyphosis | Fractures | Tumours | Tuberculosis | Anterior scoliosis | Posterior scoliosis

mensions / Sizes:

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m; 70mm on request)

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t tips for Anterior Scoliosis

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lengths)

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30 mm on request

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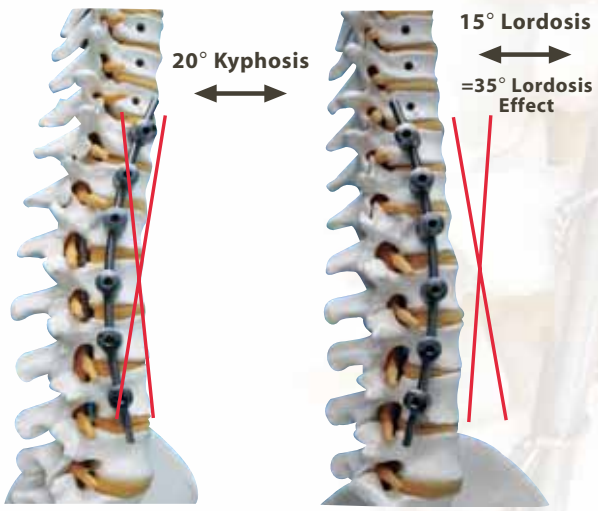
The difference between Uniaxial and Polyaxial Screws used in a Scoliosis pathology.

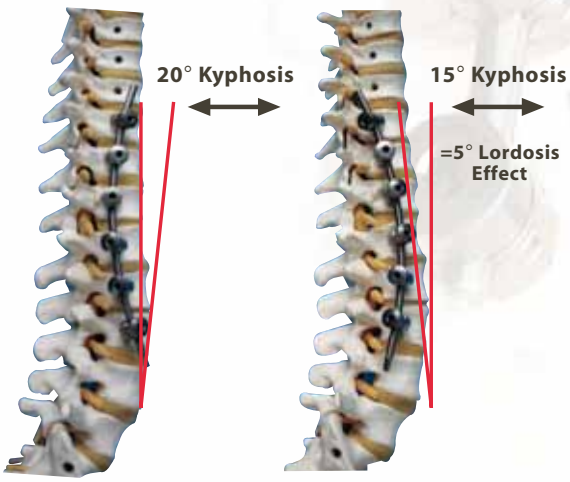
Uniaxial screws have a distinct lordosing effect on the lumbar spine when the rod is rotated posteriorly, because the screw heads continue to face directly laterally irrespective of the rod position.

When rotating the rod within ***Polyaxial screws,*** the screw heads merely flip to and fro without any corrective lordosing effect on the lumbar spine (see screw head positions on the illustrations below, before and after rotation). **The use of Uniaxial screws is strongly recommended in this situation.**

Uniaxial Screws



Polyaxial Screws



Supplementary Implants

Straight Pedicle Hook

Laminar Offset Hook

Cross Connector

Fracture Reduction Device

Titanium Wire (1mm ø)

Range of Titanium Rods

Paediatric Screws and Hooks

Tools.

One set of Ti-TaMED tools complements the entire range of implants.

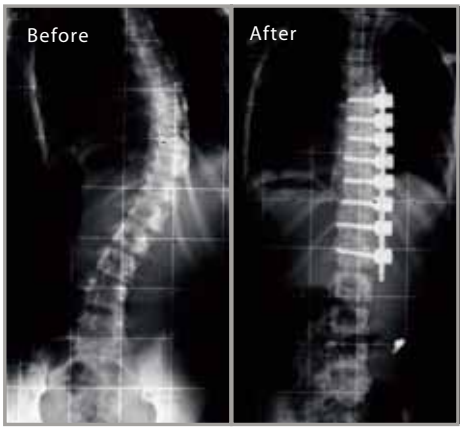
Approximator

Insert tool

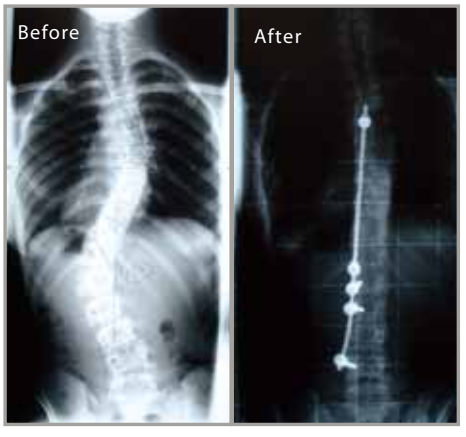
Case Studies

The first deformity correction surgery using the Ti-TaMED system was done in Cape Town, South Africa in 1998. For anterior thoraco - lumbar and lumbar surgery a single rod and uniaxial screws are used. Rotation of the rod within the uniaxial screws simultaneously corrects the scoliosis, lordosis and rotation without excessive bone-metal interface stress. Posterior correction may be achieved with a combination of pedicle screws, hooks and sublaminar wires using single or double rod constructs.

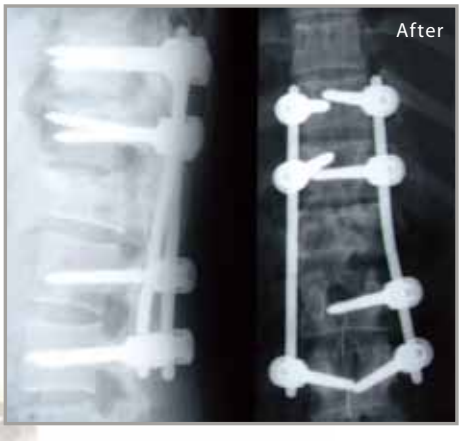
ANTERIOR SCOLIOSIS



POSTERIOR SCOLIOSIS



FRACTURE



SPONDYLOLISTHESIS

QUALITY MANAGEMENT SYSTEM
Certified by Lloyds
against ISO 9001, ISO 13485
and Annex II of Directive
93/42/EEC

CE 0088

Ti-TaMED was founded in 1996 with the aim of designing and manufacturing a superior quality South African spinal implant system which is comprehensive, affordable and user friendly to both surgeons and theatre sisters.

When designing and manufacturing our tools, we at Ti-TaMED focus on quality, reliability, simplicity, balance and ergonomics. This is achieved by interacting with surgeons, and responding to their feedback. Ongoing research and development has resulted in a range of new implants and tools which form a comprehensive and dynamic spinal system that covers a broad range of applications, and where most of the tools are compatible with most of the implants.

The Ti-TaMED system is unique in that it facilitates the optimal correction in anterior and posterior scoliosis surgery.

Ongoing research and development is a priority at Ti-TaMED, and all our implants are thoroughly tested according to international Medical Device Directives.

Our implants are manufactured from the highest quality medical grade titanium in our factory in Cape Town, South Africa, according to ISO standards, and bear the CE mark. We pride ourselves on our reliability, expertise, service, support and user friendly instructions.

Scientific References:

- du Toit, Vlok (The Radiological Outcome of Lumbar Spinal Fusion using a South African Developed Dynamic Spinal Fixation System. South African Medical Journal 2002;10:821-825) also demonstrated that Dynamic Screws produce low instrument failure rates and high fusion rates.
- Scifert et al. (Stability analysis of an enhanced load sharing posterior fixation device and its equivalent conventional device in a calf spine model. Spine 1999;24:2206- 2213) showed that a Dynamic device is equal to a Rigid device in its ability to achieve spinal stability, but that the dynamic device may enhance load sharing without sacrificing construct stability.
- Von Strempel et al.(Dynamic versus Rigid Implants. In: Gunzburg R, Szpalski M, eds. Lumbar Spinal Stenosis. Lippincott Williams and Wilkins, Philadelphia 2000;31:275-285) demonstrate a lower instrument failure rate with Dynamic Screws as compared with Rigid Screws whilst achieving the same degree of stability and fusion in the degenerate spine.

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54 Auckland Street · Paarden Eiland · 7405
PO Box 232 · Paarden Eiland · 7420
Cape Town · South Africa

Tel: +27 (0)21 510 8382
Fax: +27 (0)21 510 0745

on call cell: 083 255 2122

email: titamed@mweb.co.za
www.ti-tamed.com