



THINK PARTS



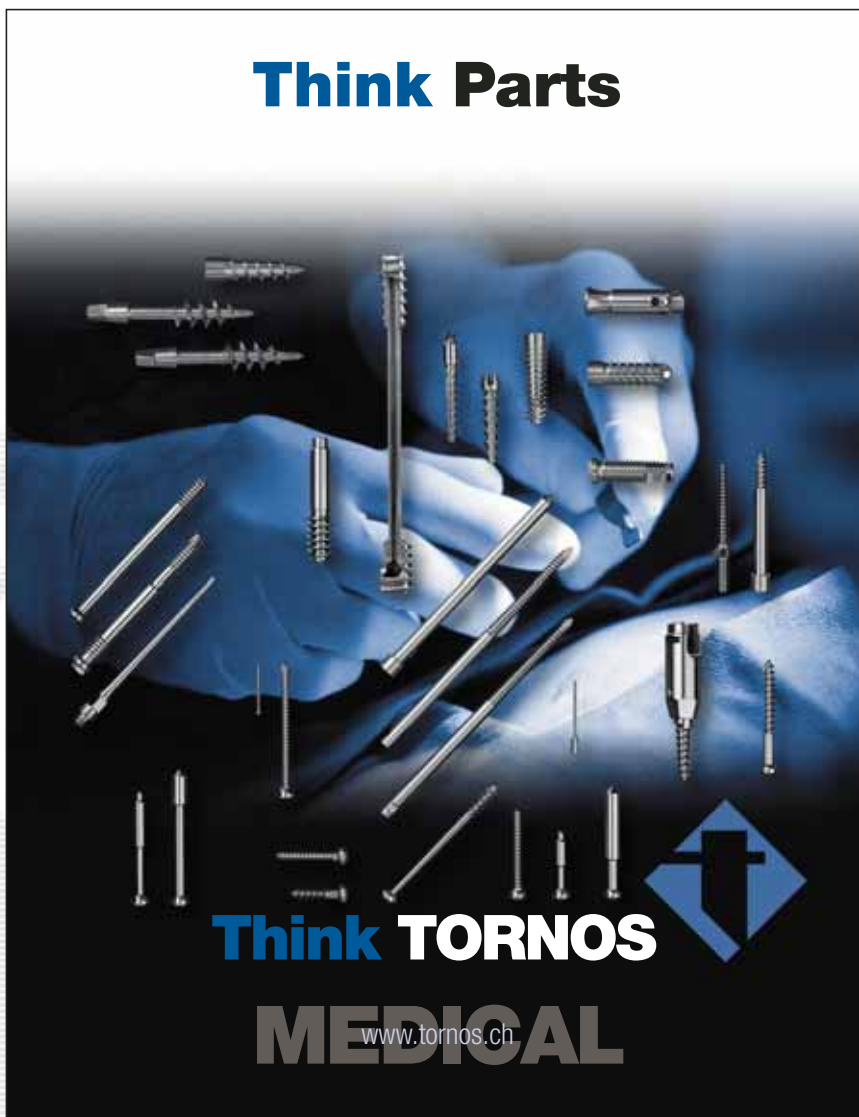
TORNOS
HAVE BEEN PROVIDING
ESTABLISHED SOLUTIONS TO
THE MEDICAL INDUSTRY FOR
MORE THAN 20 YEARS.



THINK PARTS



Think Parts

A central image showing a pair of hands in blue surgical gloves holding various surgical instruments, including drills and screws. The background is dark blue with a subtle pattern of white lines. The instruments are arranged in a way that suggests they are being used in a surgical procedure.

Think TORNOS

MEDICAL

www.tornos.ch

Mechanical applications in the human body!



Just like a car or machine, the human body benefits from the technological progress of small-parts turning. In the medical sector, advances in genetic engineering, biology and biochemistry tend to obscure another more mechanical sector, where precision and stringent requirements in terms of safety and stability are essential and the results very definitive.

During an implant operation or when repairing a broken limb, the movements and tools deployed by the specialist – whether he is a dentist or orthopaedic surgeon – are very similar to those used

by mechanical engineers: screw driver, clamp, drill and, of course, the tooling, which is very similar.

Research applied in all areas of small parts turning directly benefits medicine but, despite similar appearance, the demands made on surgical screws (bone screws, maxillary-facial screws, implants etc.) and on bio-implants, are clearly much greater for the human body than for a good many other applications.

Tornos has come up with specialist, tried and tested solutions in this very demanding field.

We would like to help you discover a little more.

If you would like further information, please do not hesitate to contact your normal Tornos agent.



Technology at the service of the human body

WE REACH
THE SOLUTIONS
THAT ENABLE YOU
TO MEET YOUR
EXPECTATIONS.

If it is your aim to develop successfully very precise and complex components to be implanted in the human body, then a company such as yours will permanently have to face the challenges involving its know-how and technological competence, in order to develop and offer new products ready to meet the ever increasing challenges of innovation.

The excellence of your engineering facilities, coupled with your experience, passion and desire to go beyond all limits, are vital for the ever-growing develop-

ment of medical technology to the benefit of human well-being and the quality of life.

Indisputably, this is the core of your success.

You could decide to work within several fields, for example:

- Orthopaedics
- Setting bone fractures
- Joint replacement
- Implants (dental, spinal column)
- Bone surgery in general





All your developments have to undergo a strict validation procedure at all manufacturing and industrialisation levels, irrespective of the proposed degree of incorporation of the final product. Without doubt, this process means that numerous parameters and their implications have to be taken into account.

| Parameter | Implication |
|---------------------|-------------------------------------|
| Product quality | Clinical evaluations and acceptance |
| Manufacturing costs | price competitiveness |
| Time | initial marketing launch |
| Leadership | market share |

For this process, you have to think of the parts and numerous requirements that have to be met.



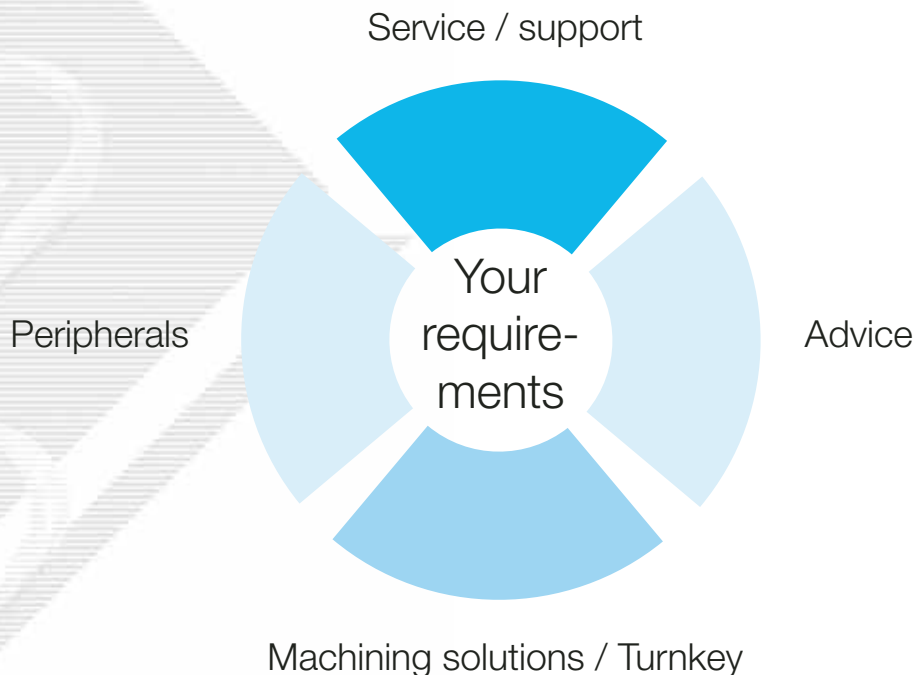
Our technology at your service

YOUR REQUIREMENTS
ARE OUR CHALLENGE!
OUR EXPERIENCE
IN PROVIDING
MEDICAL SOLUTIONS
IS OUR STRENGTH,
WHICH WE ARE
PUTTING AT
YOUR SERVICE!

- Tornos has been developing products that have been marketed throughout the world by thousands of people for more than 120 years. The company's reputation speaks for itself.
- The experience gained over the last 20 years in the medical and dental sector now means that we can offer high-performance machining solutions for your parts.
- We are acknowledged as the current leader in this sector, because we have concentrated our development ideas (kinematic, equipment, peripherals etc...) and used our capacities in various industrial sectors, including the medical sector.
- Because we listen to what our clients require, we can design, manufacture

and distribute a vast array of different types of products that meet the highly specific requirements of high precision and complex parts.

- Consequently, we design products that are dedicated to solutions that can be perfectly matched to suit any targeted market sector.
- We offer different kinematic systems for the high performance production machines based on the dimensions of your parts and their type.
- The hundreds of "medical" lathes supplied throughout the world execute very small dimensioned parts for our clients. These parts are machined from bars ranging from 1 mm diameter up to medium size dimensions from bars with a diameter of 32 mm.



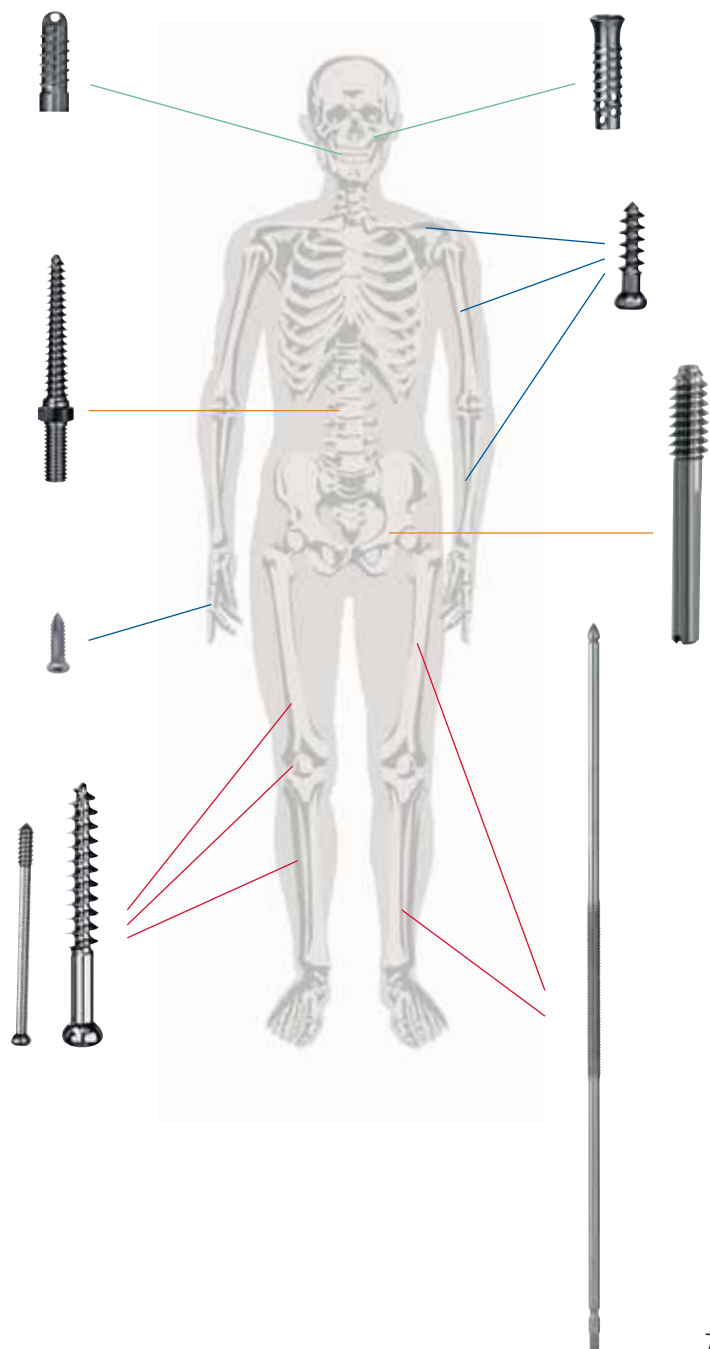
Numerous different types of parts

You produce very demanding products and Tornos will come up with tried and tested solutions to cover a very broad spectrum of parts.

For example:

- Dental implants, anchorages, fixing tooling
- Maxillary-facial screws, micro screws
- Bone screws (spongiosa, corticalis, malleolar, navicular, cannulated, etc...)
- Transfixing pins
- Implantology for the spinal column
- Hip screws
- Nails
- Pacemakers
- Tooling, millers, bore bits, reamers

We will be pleased to help you find the best solution to suit your production processes.



DECO concept

With more than several thousand lathes supplied around the world to more than one thousand clients, the DECO concept, which was launched in 1996, no longer needs to prove itself with respect to feasibility, precision or productivity. Based on a new numeric control concept, coupled with programming software for a PC (Windows based), Tornos is providing a system, which is still unrivalled. As true pioneers in terms of improving productivity, programming facilities and versatility of use, coupled with user-friendliness, we can now provide our know-how to benefit you.

Some of the strong points of the system:

- Ideal solution for the production of just-in-time parts
- Kinematics of the lathes centered around feasibility for highly sophisticated parts and high outputs (simultaneous operations and operations in hidden time)
- System for pre-setting fixed and rotating tools, in order to optimise settings during starting up and to shorten actual setting times.
- Processes and equipment for specific machining operations, in order to achieve quality requirements (surface finish) and accuracy (dimensional and geometric), such as:
 - Machining threads by external and internal thread whirling
 - High-speed milling for micro-machining by contouring special shapes
 - High-pressure drilling units, 120 / 350 bar
- Specific milling units for inclined implants
- Programming and pre-setting in hidden time
- "Macro client" programming assistance software, based on your requirements when machining special and complex shapes.
- Transmission of programs via PCM CIA card, Ethernet network.
- Parameterised programming (part families)
- Tool life management, rigid tapping function, etc...

and much more...

Permanent support









Tornos will make its specialists available to you before, during and even after the sale and provision of services, such as

training or support, taking account of the very demanding requirements of the medical sector.

Please do not hesitate to get in touch with them.

Implants / Dental components

1:1

| | | |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
|  <p>Titanium 110 sec.</p> |  <p>Inox 316L 140 sec.</p> |  <p>Inox 316L 120 sec.</p> |
|  <p>Titanium 130 sec.</p> |  <p>Inox 316L 145 sec.</p> |  <p>Titanium 105 sec.</p> |
|  <p>Inox 316L 140 sec.</p> |  <p>Inox 316L 55 sec.</p> |  <p>Titanium 360 sec.</p> |
|  <p>Titanium 280 sec.</p> |  <p>Inox 316L 80 sec.</p> |  <p>Titanium 186 sec.</p> |

Implants

1:1



Titanium
250 sec.



Titanium
98 sec.



Titanium
95 sec.



Titanium
125 sec.



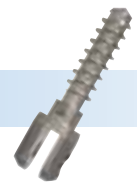
Titanium
115 sec.

Screws

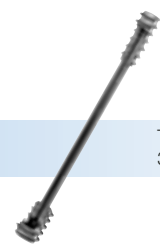
1:1



Inox 316L
125 sec.



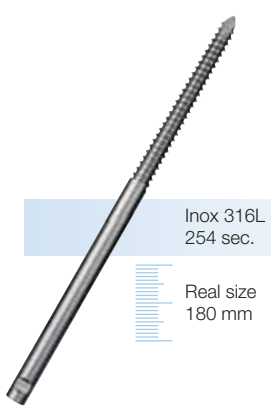
Titanium
145 sec.



Titanium
320 sec.



Titanium
206 sec.



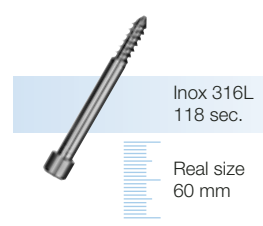
Inox 316L
254 sec.

Real size
180 mm



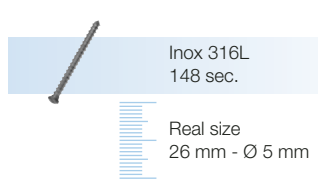
Inox 316L
170 sec.

Real size
100 mm - Ø 8 mm



Inox 316L
118 sec.

Real size
60 mm



Inox 316L
148 sec.

Real size
26 mm - Ø 5 mm



Titanium
306 sec.

Real size
80 mm



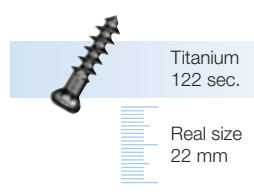
Titanium
375 sec.

Real size
90 mm



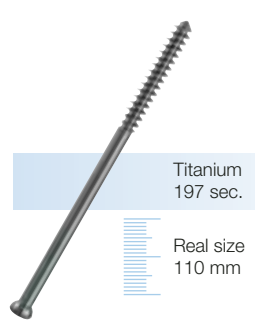
Inox 316L
115 sec.

Real size
80 mm



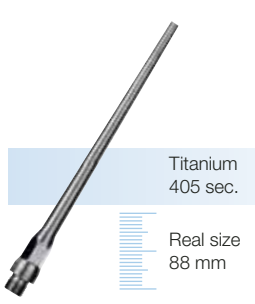
Titanium
122 sec.

Real size
22 mm



Titanium
197 sec.

Real size
110 mm



Titanium
405 sec.

Real size
88 mm

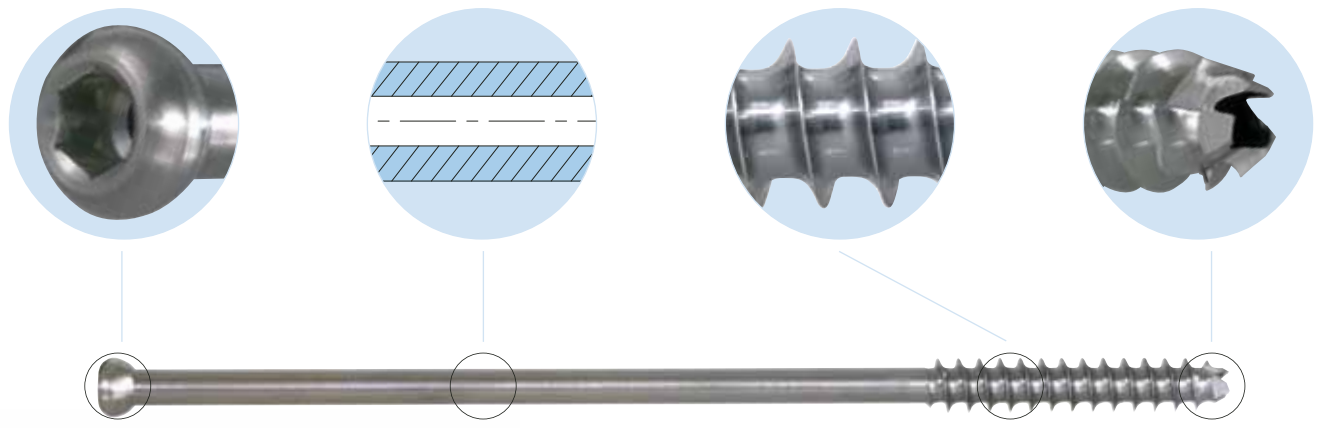


Inox 316L
307 sec.

Real size
70 mm - Ø 8 mm

Cannulated screw

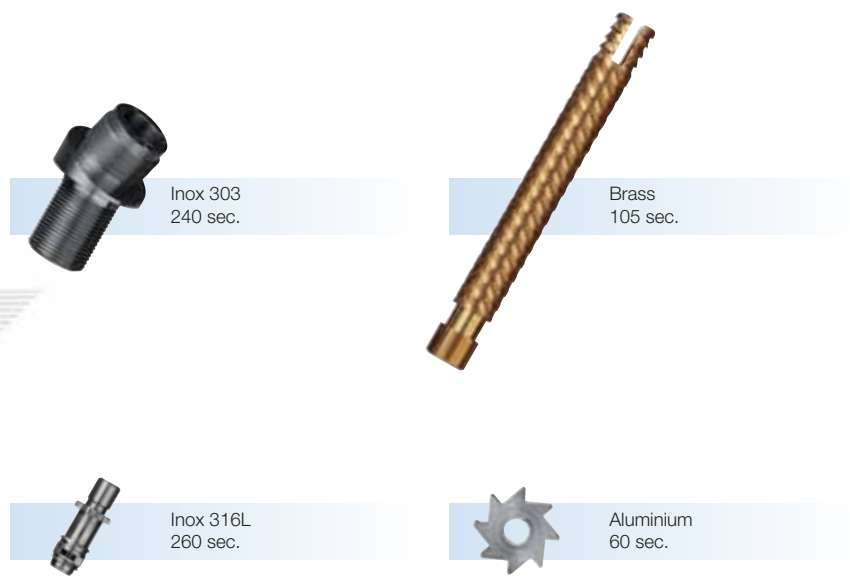
1:1



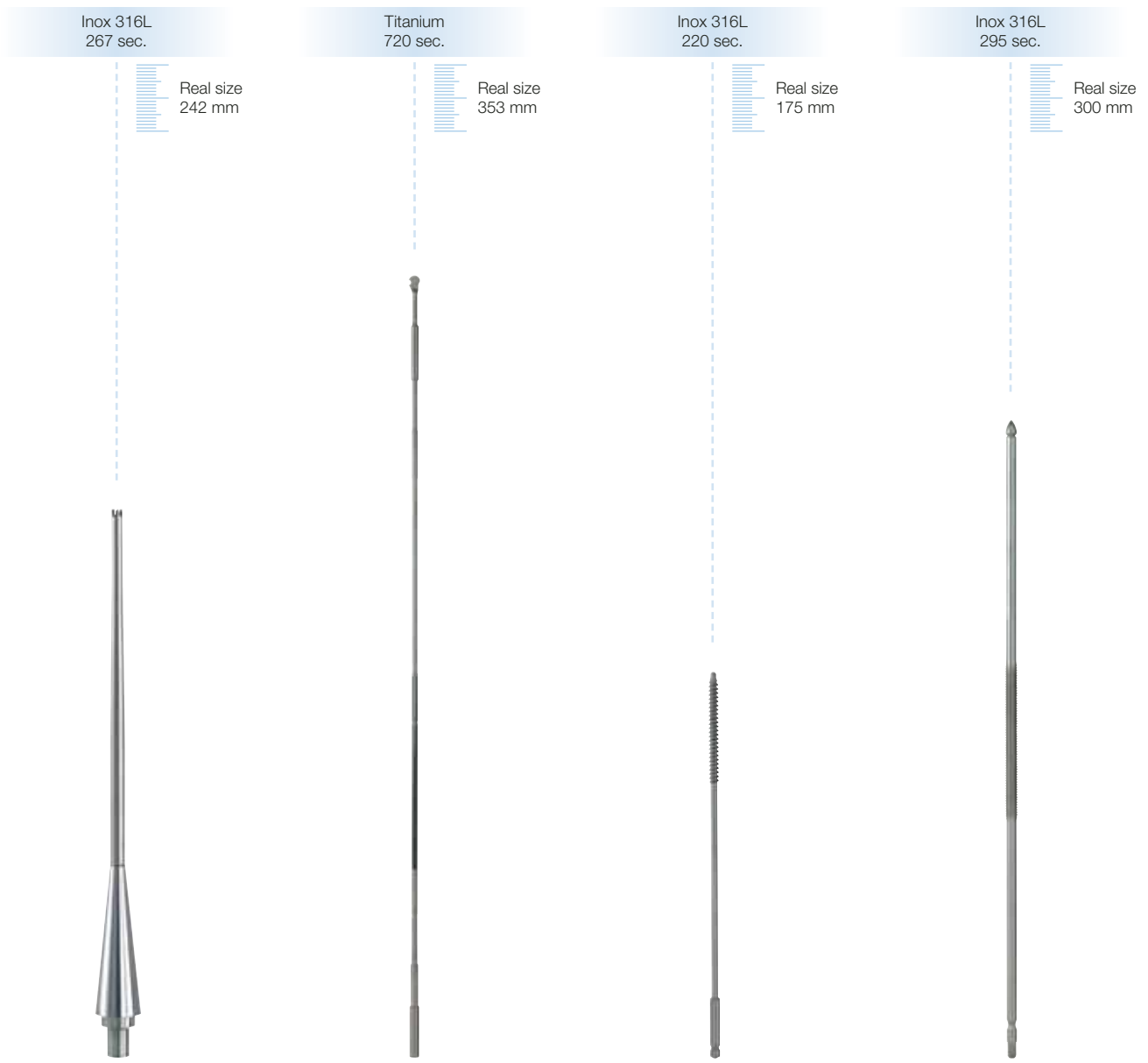
Titanium
390 sec.

Equipment

1:1



Long parts



TORNOS

Your solution provider

Conforms to the European CE/CEM Safety Standards

This document is based on information available at the time of this publication. While efforts have been made to be accurate, the information contained herein does not purport to cover all details or variations in hardware and software, nor to provide for every possible contingency in connection with installation, operation and maintenance.

TORNOS S.A. assumes no obligation of notice to holders of this document with respect to changes subsequently made.

TORNOS S.A. makes no representation or warranty, expressed, implied, or statutory with respect to, and assumes no responsibility for the accuracy, completeness, sufficiency or usefulness of the information contained herein. No warranties of merchantability nor fitness for purpose shall apply.

✓ *The car industry*



✓ *Medical technology*



✓ *Watch industry*



✓ *Electronic and Connector industries*



✓ *High precision*



Think Parts
Think TORNOS



THINK PARTS



TORNOS S.A.
CH-2740 MOUTIER / SUISSE
Rue Industrielle 111
Tél. 032 494 44 44
Fax 032 494 49 03
E-mail: contact@tornos.ch
www.tornos.ch

TORNOS-TECHNOLOGIES
DEUTSCHLAND
Karlsruher Str. 38
D-75179 PFORZHEIM
Tel. 07231 / 910 70
Fax 07231 / 910 750
E-mail: contact@tornos.de

TORNOS TECHNOLOGIES
FRANCE
Boîte postale 330
ST-PIERRE EN FAUCIGNY
F74807 LA ROCHE
S / FORON CEDEX
Tél. 04 50 038 333
Fax 04 50 038 907
E-mail: contact@tornos.fr

TORNOS TECHNOLOGIES UK Ltd
Tornos House
Whitwick Business Park
Coalville
Leicestershire
LE67 4JQ
Tel. 01530 513100
Fax 01530 814212
E-mail: sales@tornos.co.uk

TORNOS TECHNOLOGIES
IBERICA
Pol. Ind. El Congost
Avda. St Julia, 206 Nave 8
E-08400 GRANOLLERS
Tel. (34) 93 846 59 43
Fax (34) 93 849 66 00

TORNOS TECHNOLOGIES
ITALIA SRL
Via Einstein, 24
I-20090 ASSAGO / MI
Tel. 02 45 77 17 01
Fax 02 45 70 16 48
E-mail: contact@tornos.it

TORNOS TECHNOLOGIES
US CORPORATION
70 Pocono Road
P.O. Box 325
BROOKFIELD CT 06804 / USA
Tel. (203) 775-4319
Fax (203) 775-4281
E-mail: contact@tornosusa.com