HIOSSEN IS3™ ISQ

Rev. 2018/07/09

MARKETING DEPT.

PM

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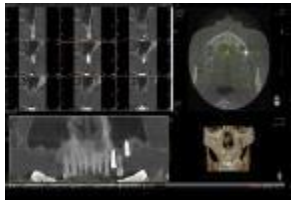


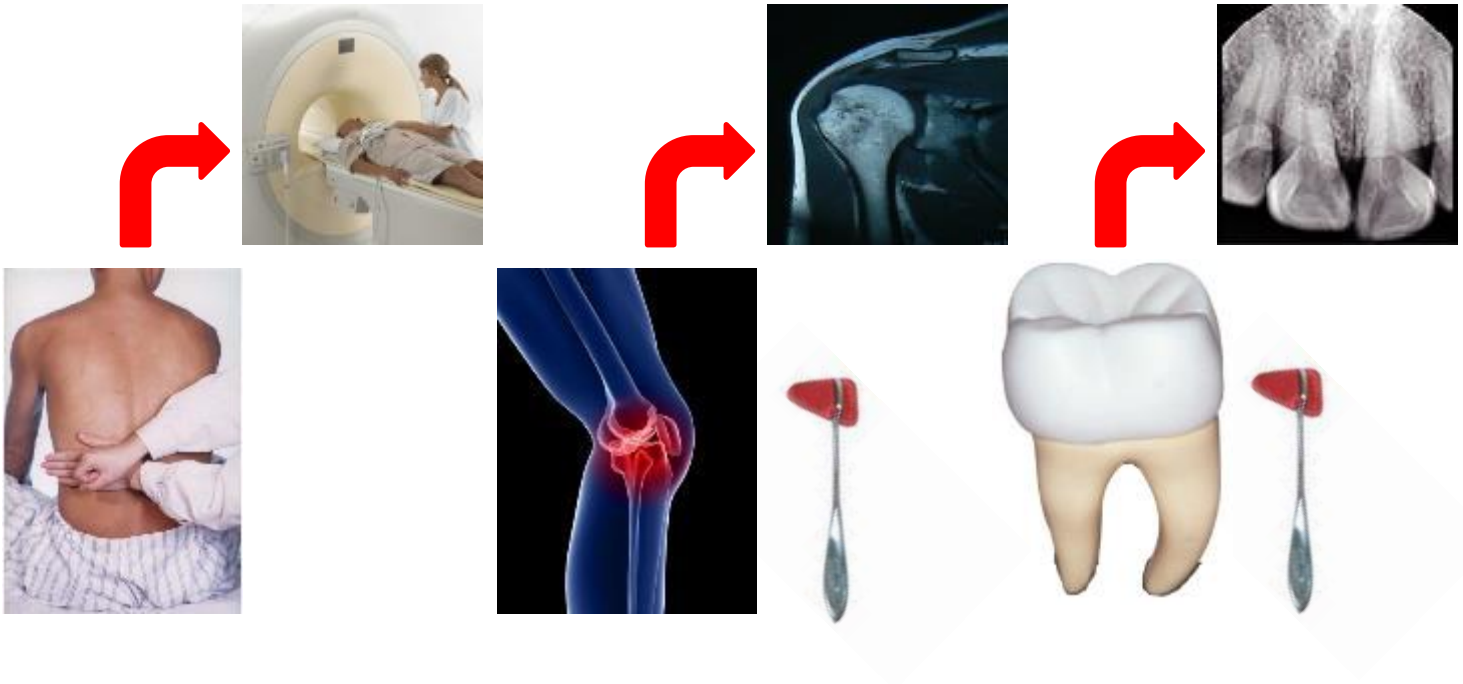
Magnetic Resonance Measuring Device - ISQ

Interproximal dental caries

Introduction

Percussion

" The method of tapping the patient's body to check for abnormalities "



Percussion

"Percussion" is used as a method to diagnosis the abnormality of a knee, internal organs or teeth, but a more specialized method should be used for accurate diagnosis.

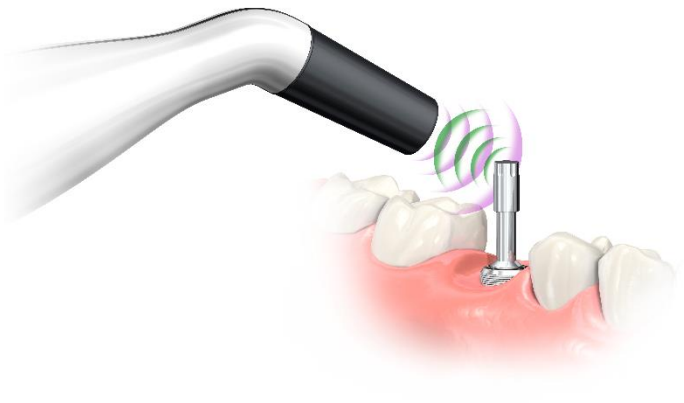
Introduction

ISQ ; Implant Stability Quotient

HIOSSEN IS3

Introduction

ISQ Measurement methodology

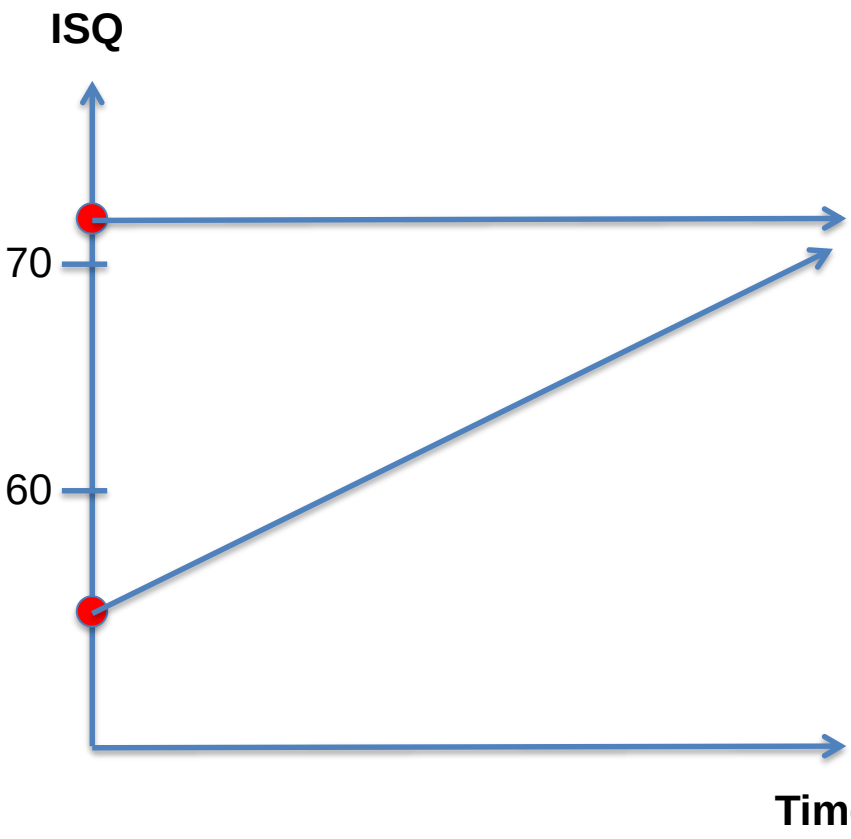


The technique is Resonance Frequency Analysis (RFA) and the measurement unit is Implant Stability Quotient (ISQ).

The MulTipeg™ is excited by magnetic pulses and vibrates through the stiffness in the contact area between the bone and the implant surface.

Introduction

High ISQ Value = Reduce Risk / Reduce Healing time



Values in the range of 75 ISQ means the implant is already so stable that osseointegration cannot add stability. The proof of osseointegration is the lack of a drop in ISQ.

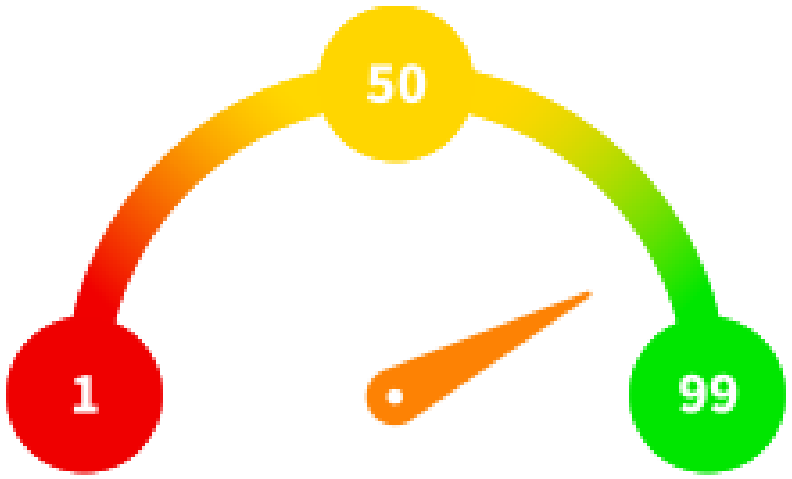
If the implant has a low initial ISQ, let's say 55, osseointegration will add stability over time.

ISQ correlates to micro mobility.

Introduction

The ISQ-scale 1-99 ISQ

It seems that ISQ-values above 70 can withstand normal forces in the mouth.



Values above 70 ISQ indicates a very stable implant with low micro mobility . Typically used for one-stage and immediate loading.

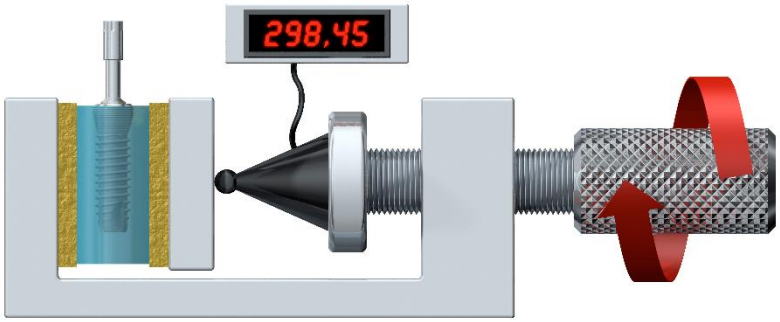
A second measurement, before the final restoration is recommended to verify osseointegration.

Introduction

How the stability is varied

Each implant is moulded into plaster and then placed into plastic cylinders with only the top of the implant showing.

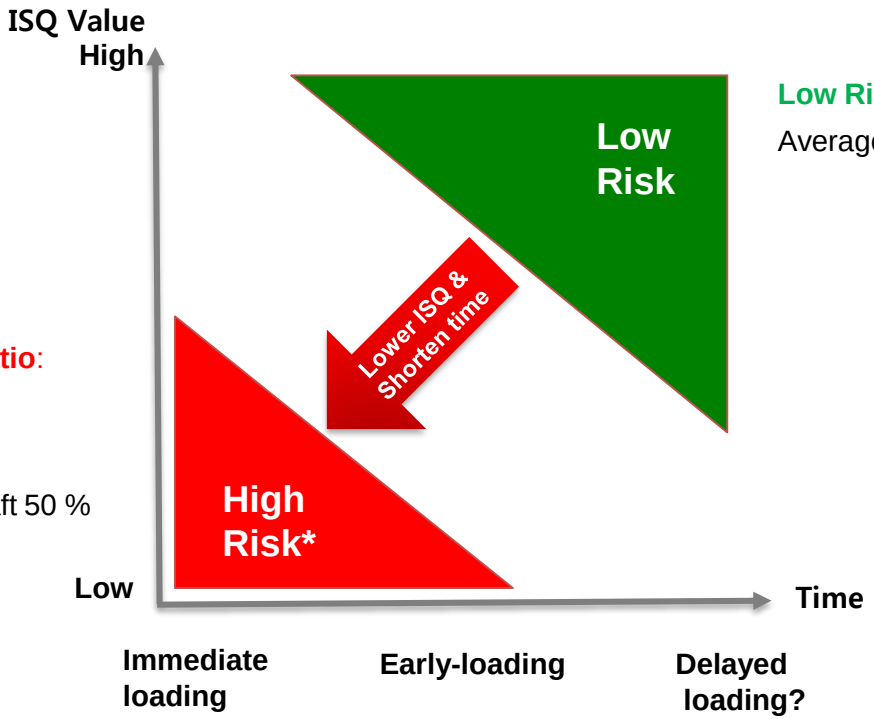
The cylinders are mounted into a device that can vary the stability through the whole ISQ-scale in a consistent, predictable, repeatable way.



II. IS3 Special Feature

1. Treatment Guidance & Predictability

Assists clinicians in the treatment of patients with risk factors



Low Risk Area

Average success ratio 95~98%

High Risk Area* Low Sucess Ratio:

- Bruxism 71,7 &
- Diabetes 71,4 %
- Immediate loading 77.5%
- Iliac crest block+GBR +sinus graft 50 %
- Surgeons <5 years experience had 5 failures

**Ref) Loma linda. Immediate loading, JOI, Vol. XXXVIII, Special Issue no. One/2012*

2. Ease of use & Objective, non-invasive operation

By mounting a MulTipeg™ the measurement is made in a second.

Just aim for the magnet on top of the MulTipeg™ (as shown below)

Non-invasive, objective, accurate and repeatable.

IS3 Special Feature

3. Reusalble MulTipeg™ with various implant brand platform

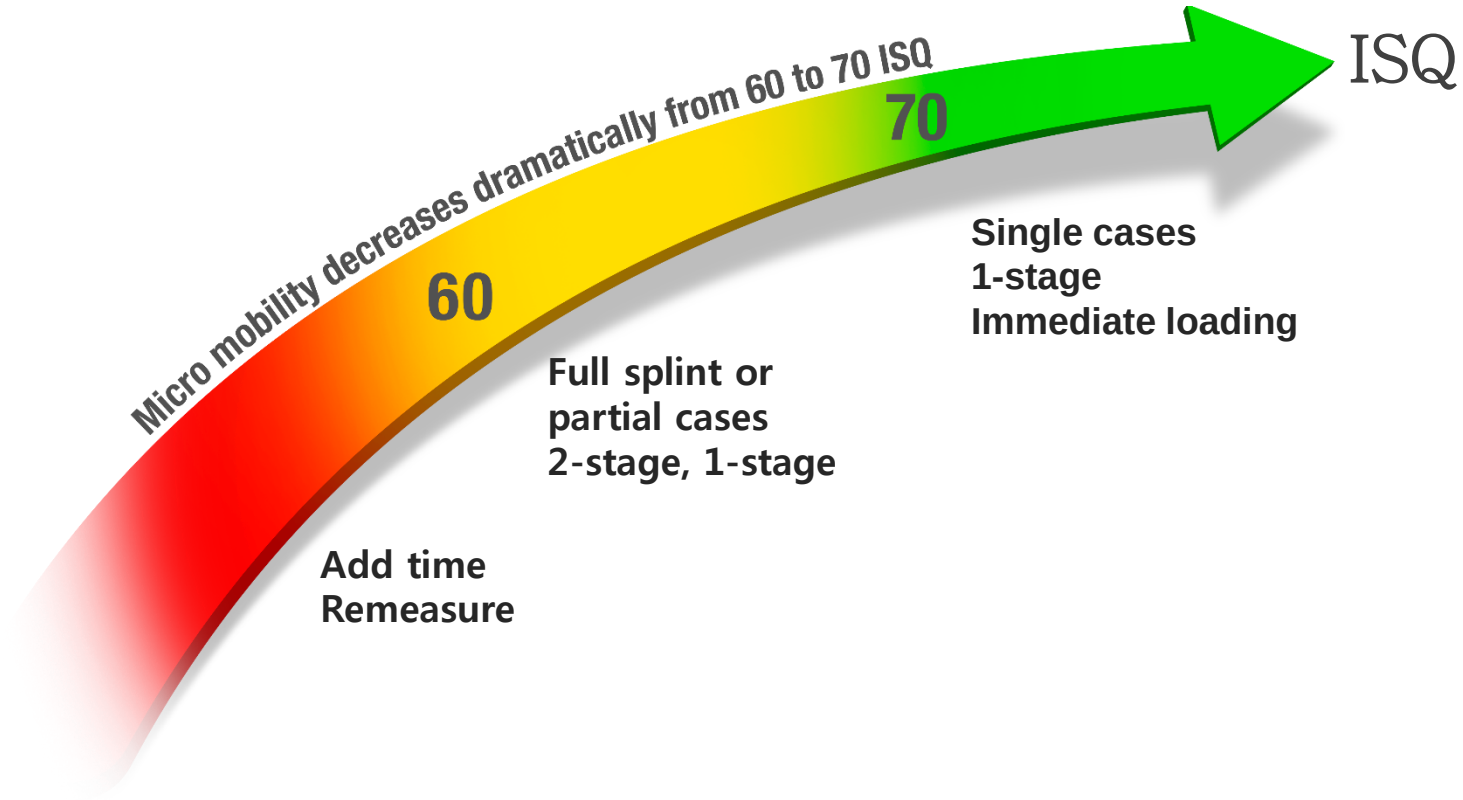
Determines optimal loading protocol

- Tissue friendly, durable titanium
- Sealed magnet
- Autoclavable app. 20 times
- Laser marked with type number
- Optimal platform fit
- ISQ Standard Calibrated™

IS3 Special Feature

4. Optimized Patient Care

Determines optimal loading protocol



5. High Accuracy measurement results

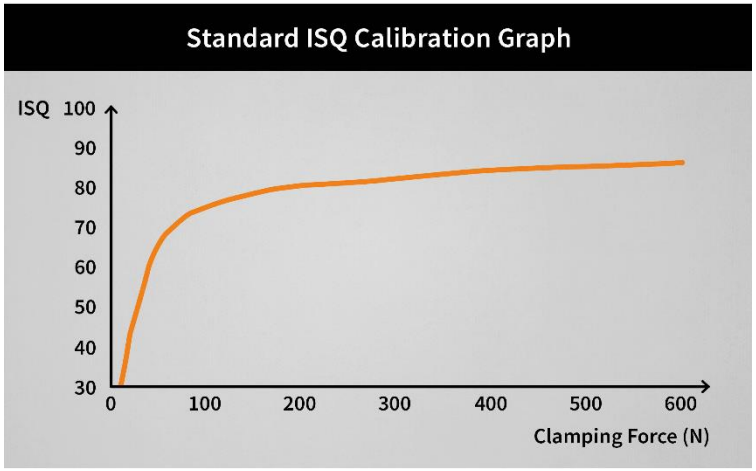
ISQ Standard Calibrated™ (ISC)

-Optimal physical fit

Any misfit in the platform connection will be exposed by comparing against ISC.

-Minimum variance

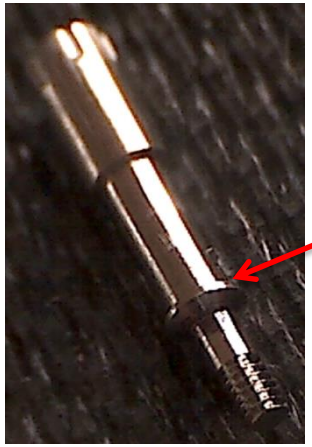
By elaborating the physical dimensions of the MulTipeg™ it is possible to minimize the variance against the ISC.



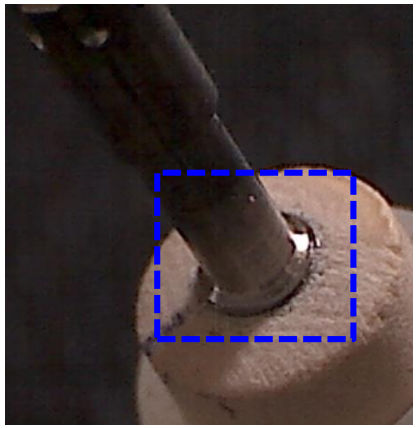
Empirical RFA data, mainly from Smartpegs type 1 and 4, was used to create an ISQ Standard Calibration graph as a test reference for MulTipeg™.

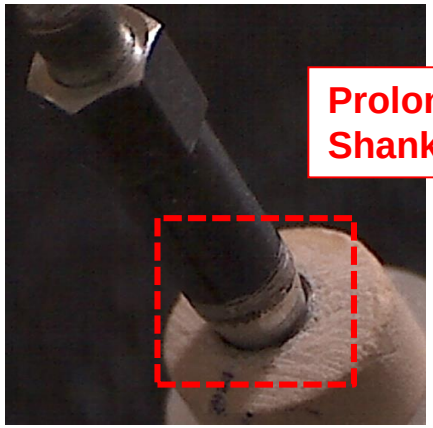
5. High Accuracy measurement results

MulTipeg™ (Type #74) **VS** **Smartpeg (Type #50)**



This ”border” is supposed to fit on the top of the implant platform





Prolonged Shank + gap

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6. Scienfically verified

More than 700 articles on the subject have been published in peer-reviewed papers since 1996.

**Resonance Frequency Analysis for Implant Stability Measurements, INTEGRATION DIAGNOSTICS UPDATE 2015;1:1-11*

III. IS3 Practical Use

IS3 Practical Use

1) Package Components (Purchase Includes)

IS3™ Unit

*Recommended initial battery charging time : 3 hours

*2Years manufacturer warranty

MulTipeg™ Driver

*Guaranteed for at least 100 autoclave cycle

MulTipeg™

*ET Standard connection included

*More option
Refer to the assortment to find the compatible implant platform

Main adapter & insert

*Compatibility with worldwide power sockets

IS3 Practical Use

2) Measurement

STEP 1

Select the correct MulTipeg™ for the implant being measured.

STEP 2

Attach the MulTipeg™ using the driver included. **Hand tighten (6~8Ncm).**

STEP 3

Turn on the instrument and hold the tip of the instrument close to the top of the MulTipeg™.

STEP 4

The instrument emits a beeping sound when it starts measuring and another sound when the ISQ value is presented on the display a second later.

IS3 Practical Use

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3) Cleaning

- **IS3™ Unit**

  The unit is cleaned with a wet cloth. Any disinfectants can be used.

- **MulTipeg™ and MulTipeg™ Driver**

  It should be cleaned with water or detergent using a light brush. For use in environments requiring sterility, the MulTipeg™ and driver should be autoclaved before use according to below instructions.

  At least 3 minutes at 134°C (273°F)

4) Troubleshooting

- **Difficult to achieve a measurement**

Monitor closely – should not touch soft tissue

- **Noise warning (audible & visible on the display)**

An electric device close to the unit is causing the warning.
Try to isolate and remove the source.

- **Unit turns off suddenly**

- Automatically turn off after 1min of inactivity
- Battery level is too low.

- **Error code (if malfunctioning, these codes are shown on the display)**

E1 Hardware error. Malfunctioning electronics
E2 Noise error. Shown if constant electromagnetic noise is present
E3 Pulse power error. Malfunctioning magnetic pulse generation

IS3 Practical Use

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5) Indications

1) Right after implantation
2) 2nd surgery
3) Every 3weeks to 1month during osseointegration
4) When prosthesis prepared
5) Final prosthesis applied

***** By monitoring repeatedly of the patient's ISQ value, optimal loading timing can be determined. If the ISQ value is 70 or higher, it can be considered as prosthetic loading time.

IS3 Practical Use

6) MulTipeg™ Assortment (*Provide separate file attached on Going Hiossen)

MulTipeg assortment

	No	Type
ADIN		
Touareg-S	55034	26
Touareg Closefit UNP 2.75	55059	51
AIRES		
3.3	55049	41
Alpha-Bio		
Regular Platform	55034	26
Conical Platform	55065	57
Anker		
SB II Narrow	55023	14
SB III 3.5	55023	14
SB III 4.0-5.0	55020	10
Ankylos		
C/X	55025	16
Anthogyr		
Axiom, all	55065	57
Argon		
K3pro Rapid 3.0 - 3.5	55026	17
K3pro Rapid 4.0 - 6.0	55031	23
K3pro Rapid Platf 3mm Short	55044	36
Astra Tech		
Osseospeed EV 3.0	55058	50
Osseospeed EV 3.6	55046	38
Osseospeed EV 4.2	55057	49
Osseospeed EV 4.8	55055	47
Osseospeed EV 5.4	55048	40
Osseospeed TX 3.0 S	55064	56
Osseospeed TX 3.5-4.0 S	55046	38
Osseospeed TX 4.5-5.0 S	55017	7
Avinent		
External, Coral & Ocean 3.5	55038	30
External, Coral & Ocean 4.1	55011	1
External, Coral 5.1	55013	3
Internal, Coral & Ocean 3.5, 4.1	55051	43
Conical, Ocean 3.5	55066	58
Conical, Ocean 4.1	55004	18
BEGO		
Semados Mini	55012	2
Semados S / RI 3.25-5.5	55034	26
Semados RS / RSX 3.0	55082	74
Semados RS / RSX 3.75-5.5	55034	26
Semados SC / SCX 3.25-5.5	55034	26
BioHorizons		
Laser-Lok 3.0	55034	26
Internal Laser-Lok 3.5 Platform	55049	41
Internal Laser-Lok 4.5 Platform	55051	43
Internal Laser-Lok 5.7 Platform	55051	43
External 4.0 Platform	55011	1
Biomet/3i		
Certain internal Purple	55036	28
Certain internal Purple Platform 3.4	55066	58
Certain internal Blue, Yellow, Green	55066	58
Bionnovation		
Biomorse	55023	14
Biotech Dental		
Kontact, Kontact-S 3.6 - 4.8	55045	37

	No	Type
BluSkyBio		
Internal Hex, Platform 4.5	55051	43
One Stage, Regular & Wide	55014	4
Bredent		
SKY	55025	16
copaSKY	55027	19
mini2SKY	55033	25
fast & fixed Abutment	55083	75
BTI		
Interna Universal	55051	43
Interna Wide	55051	43
BTK		
External Hex EN	55038	30
External Hex ER	55011	1
External Hex EW	55011	1
Internal Hex IR	55049	41
Internal Hex IM	55051	43
Internal Hex IW	55051	43
Hexagonal Morse Taper KR	55081	73
Hexagonal Morse Taper KW	55056	48
Octagonal Morse Taper SR	55014	4
Camlog		
Screw-Line, Root-Line 3.3	55036	28
Screw-Line, Root-Line 3.8, 4.3	55031	23
Screw-Line, Root-Line 5.0, 6.0	55032	24
iSy	55065	57
Conelog		
Screw-Line 3.3	55066	58
Screw-Line 3.8, 4.3	55066	58
Screw-Line 5.0	55075	67
Dentack		
Internal Hex	55056	48
Dentegris		
3.3	55034	26
3.75	55057	49
4.5-5.5	55049	41
C-Tech		
EL	55067	59
Dentium		
Superline	55037	29
NR Line	55066	58
Simple Line II GH 1.6	55014	4
DEVA		
Bone Level 3.5	55064	56
Bone Level 4.5	55051	43
DIO		
SM Submerged 3.8	55049	41
SM Submerged 5.0	55020	10
Easy Implant		
Ocean	55046	38
Lilas	55037	29
Edierre		
3-lobe	55021	11
4-lobe	55025	16
Global D		
In-Kone 4.0-5.0	55024	15

	No	Type
gmi		
avantgard RP 3.75-4.25	55066	58
avantgard WP 4.75-5.75	55075	67
frontier RP,WP	55051	43
phoenix NP 3.3	55038	30
phoenix Std 3.3 - Wide 5.0	55011	1
Hahn		
Tapered 3.0	55058	50
Tapered 3.5	55046	38
Tapered 4.3	55046	38
Tapered 5.0	55037	29
Tapered 7.0	55048	40
Hiossen		
ET System	55037	29
ET 3.2	55047	39
ET mini	55015	5
ET mini	55015	5
IDI Evolution		
Standard Implant 3.75-4.0	55004	18
Implance		
Tissue level	55014	4
Bone level Regular	55037	29
Bone level 3.3	55065	57
Implant Direct		
Legacy 2&3&4 3.0/3.2	55012	2
Legacy 2&3&4 3.5/3.7 - 5.7/7.0	55051	43
Implant Swiss		
Tissue level	55014	4
Bone level Regular	55037	29
Bone level 3.3	55065	57
Implantvision		
Internal Hex 3.7-5.7	55034	26
Intra-lock		
Intrahex 3.4 - 4.5	55051	43
Gold & Blue 3.4 - 6.0	55051	43
InDex 3.4 - 3.75	55015	5
InDex 4.0 - 4.3	55020	10
J Dental Care		
JDEvolution 3.7-6.0	55067	59
Keystone		
Prima / Genesis Narrow	55049	41
Prima / Genesis Regular	55067	59
Prima / Genesis Wide	55041	33
Restore Narrow	55079	71
Restore Regular	55011	1
Restore Wide	55013	3
Klockner		
VEGA Micro 3.0	55074	66
VEGA Narrow 3.5	55065	57
VEGA Regular 4.0, 4.5	55034	26
KL Narrow 3.3	55012	2
KL Regular 3.7, 4.2	55011	1
KL Wide 4.7	55013	3
SK2	55038	30
Essential Cone	55067	59
S3M 3.1	55079	71

	No	Type
Konmet		
Classic 4.0, 4.8	55014	4
Cylindrical 3.5-4.0	55065	57
Cylindrical 4.5-5.5	55057	49
Short Cylindrical 5.0-6.0	55078	70
Conical 4.4/3.4	55065	57
Conical 4.8/3.8, 5.5/4.5	55057	49
Lasak		
BioniQ QR	55066	58
BioniQ QN	55021	11
Leader		
Internal Hex, 3.3 - 5.5 mm	55034	26
Cono-In	55067	59
Maxillent		
iRaise	55049	41
Medentika		
Microcone NI	55021	11
Microcone RI	55081	73
Quattrocone RI	55081	73
Megagen		
Anyridge	55051	43
MIS		
Conical connection Narrow (C1, V3)	55081	73
Conical connection Standard (C1, V3	55067	59
Conical connection Wide (C1)	55041	33
Seven and M4 Narrow	55027	19
Seven and M4 Standard	55049	41
Seven Wide 5.0	55051	43
Neo Biotech		
IS II 4.0	55020	10
IS III 4.0	55020	10
Neodent		
Drive CM	55025	16
Titamax WS Cortical	55056	48
Neoss		
Diameter 3.5-5.5	55004	18
Diameter 3.25	55027	19
Access Abutment	55060	52
Nobel Biocare		
Brånemark System Ext hex RP	55011	1
Brånemark System Ext hex NP	55012	2
Brånemark System Ext hex WP	55013	3
Replace Select Tri-lobe NP	55022	12
Replace Select Tri-lobe RP, WP	55010	13
Replace Select Tri-lobe 6.0	55032	24
Nobel Active 3.0	55058	50
Nobel Active Narrow	55046	38
Nobel Active Regular	55037	29
Nobel Active Wide 5.5	55048	40
MUA NP & RP	55080	72

	No	Type
NucleOss		
Tpure Bone Level	55074	66
T6 Bonel Level	55004	18
OCO Biomedical		
Engage 3.25	55027	19
Engage 4.0-6.0	55051	43
ERI 3.25	55069	61
ERI 4.0-5.0	55014	4
TSI 3.25	55068	60
TSI 4.0-5.0	55011	1
Osstem		
US Regular	55011	1
US Mini	55012	2
US Wide	55013	3
US Wide PS	55011	1
SS Regular, Wide	55028	20
TS Regular, Reg Short, Diam 6 & 7	55037	29
TS Mini 3.5	55015	5
TS Mini 3.0	55047	39
Paltop		
Standard 3.75-5.0	55034	26
Narrow	55027	19
PCA Conical	55066	58
Phibo		
Aurea EVO NP	55027	19
Aurea EVO RP, WP	55051	43
TSA S3	55074	66
TSA S4, S5	55034	26
TSH S3, S4, S5	55011	1
Prodent Italia		
Prime, Twinner: Orange Platform 3.	55027	19
Prime, Twinner: Fuchsia Platform 3	55051	43
Prime, Twinner: Green Platform 4.0	55051	43
Prime, Twinner: Yellow Platform 4.5	55020	10
Prime: Blue Platform 5.0	55020	10
Resista		
WIS 3.0-5.0	55049	41
Schutz Dental		
Impla cylindrical	55052	44
SIC		
Ace 3.4 - 5.0	55052	44
Vantage 4.2-5.2	55054	46
Southern Implants		
Tri-Nex 4.3-5.0	55010	13
Tri-Nex 3.5	55022	12
External Hex	55011	1
MAX Ext Hex	55011	1
Co-Axis Ext Hex	55011	1
Piccolo Ext Hex	55050	42
IT-Connection	55014	4
Deep Conical 3.0	55064	56
Deep Conical 3.5-4.0	55046	38

	No	Type
Spiral Tech		
ESi, all	55051	43
Ultimate	55051	43
Straumann		
Tissue level Synocta	55014	4
Tissue level NNC	55076	68
Bone level / BLT NC	55061	53
Bone level / BLT RC	55062	54
Bone Level /BLT SC	55064	56
Sweden & Martina		
Syra, Syra SP 3.9-5.0	55011	1
Outlink² 3.75, 4.10, 5.0	55011	1
Shelta 3.8-5.0	55025	16
Premium Straight & SP 3.3-3.8	55025	16
Kohno Straight & SP 3.3-3.8	55025	16
Premium Straight & SP 4.25-6.0	55004	18
Kohno Straight & SP 4.25-6.0	55004	18
Prama 3.8 - 5.0	55079	71
Tag Dental		
Axis	55051	43
massif	55051	43
Thommen		
SPI 3.5	55021	11
SPI 4.0	55065	57
SPI 4.5-6.0	55066	58
TRI Dental implants		
Tissue level Octa	55014	4
Tri-Vent, all	55034	26
Narrow	55025	16
Xive		
S-Plus 3.0	55030	22
S-Plus 3.4	55061	53
S-Plus 3.8-5.5	55062	54
TG Plus 3.4-4.5	55018	8
Zimmer		
Screw-Vent, Tapered Screw-Vent 3.7	55049	41
Screw-Vent, Tapered Screw-Vent 4.7	55051	43
Zuga		
All	55027	19

IV. COMPETITOR COMPARISON

1. Competitor comparison

	HIOSSEN IS3	OSSTELL ISQ	
Image			
Design	Portable pen type	Probe with Docking station	Light, Mobility
Probe Material	PEEK	Stainless steel	Biocompatible material
Measurement Technique	Resonance Frequency Analysis	Resonance Frequency Analysis	-
Peg part	Reusable(up to 20times)	Single use	More saving, Durability

The End.