

 **ApexKonnnect™**

i-Fix®
POWERING SMILES
AK-SERIES

By **i-Fix®**

Simply **Cutting Edge Safety**
Contemporary **Quality Crafted Precision**



IMPLANT TECHNOLOGY

Surface Designed & Developed in

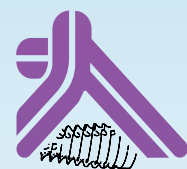
Sweden 

Nano Bio-Activated

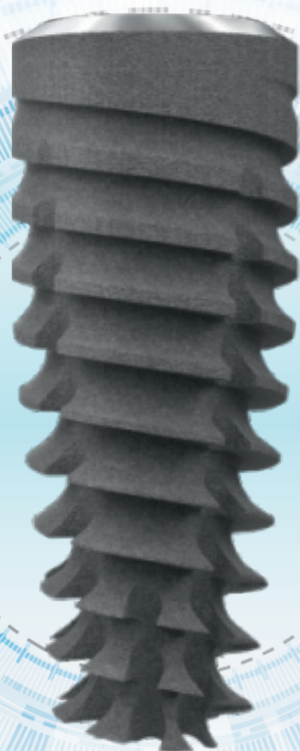
i-Fix[®]

— POWERING SMILES —

AK-SERIES



Apexkonnnect™



“Synergy of Excellence”

Best-in-Class Products

- Kamal Engineering group founded in 1973, is one of the industry leaders in the design and manufacture of specialty equipments for the Hydrocarbon Industry. The expertise in manufacturing complex products as per customers' specifications has led to a high acceptability of their products – the world over.



Our Philosophy

- World Class Quality
- Cutting Edge Research and Technology
- Compliance with International Regulatory Norms
- Environment Friendly Processes



We believe in

- Transparency
- Professional Ethics
- Safe and healthy work environment



- Kamal Medtech is an Environment Friendly Company



- Scientific Waste Disposal



- Commitment to Green Operations and Environment



- CSR activities as a good Corporate Citizen



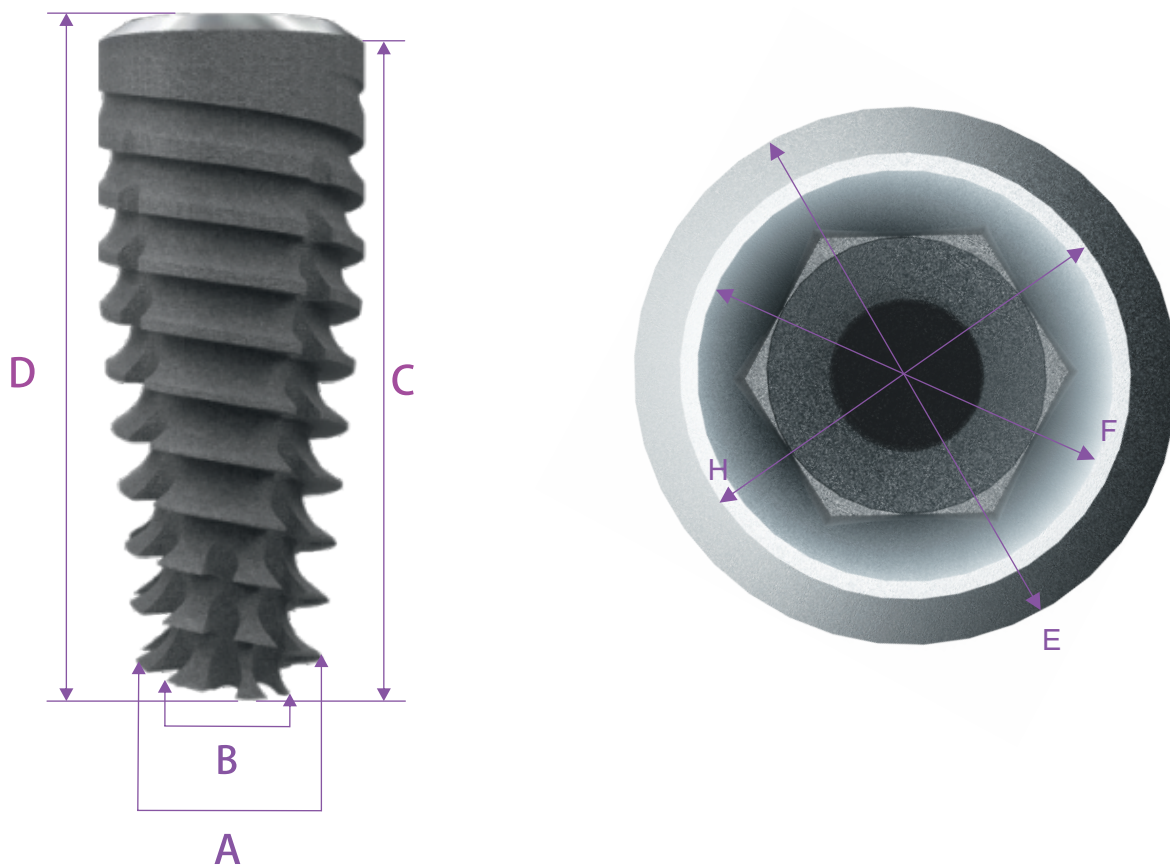
Ti Grade V ELI characteristics

The i-Fix Implant system components are made of the Biocompatible medical grade Grade V ELI/Grade 23 Titanium alloy. The specific Titanium alloy used by Kamal Medtech was chosen due to its superior properties including high strength to weight ratio, very high corrosion resistance, high modulus of elasticity and its excellent osseointegration capabilities.



Properties		Advantages
Tensile strength	860 Mpa minimum	Extremely high strength/weight ration
Elongation	10%	Improved ductility and fracture toughness under static and dynamic loads
Oxygen content	0.13% maximum	
Biocompatibility	Excellent	Direct structural and functional connection between bone and implant surface

Implant Specifications



Implant	Apical Major Diameter	Apical Minor Diameter	Threads Heights	Total Length	Implant Diameter	Abutment Interface
	A	B	C	D	E	F
3.50 x 9.00	2.65	1.45	7.9	9.00	3.50	3.00
3.50 x 11.00	2.65	1.45	9.9	11.00	3.50	3.00
3.50 x 13.00	2.65	1.45	11.9	13.00	3.50	3.00
4.20 x 9.00	2.80	1.65	7.9	9.00	4.20	3.00
4.20 x 11.00	2.80	1.65	9.9	11.00	4.20	3.00
4.20 x 13.00	2.80	1.65	11.9	13.00	4.20	3.00
5.0 x 9.00	3.00	1.70	7.9	9.00	5.00	3.00
5.0 x 11.00	3.00	1.70	9.9	11.00	5.00	3.00
5.0 x 13.00	3.00	1.70	11.9	13.00	5.00	3.00

Cutting Edge

PRODUCT QUALITY

“The confidence of beautiful teeth
...for a lifetime”

Surface Technology for Better Osseointegration

A progressive high-angle (HA) thread profile, engineered with varying thread geometries along its body. These tailored thread designs work in harmony to precisely cut through bone while simultaneously compressing surrounding bone tissue. This controlled cutting and compaction mechanism enhances bone-to-implant contact, resulting in optimized primary stability—particularly beneficial in low-

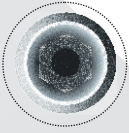
Bioactive Surface via Nano topography
Modification & Surface charge



The square threads reduce the shear stress at the crestal bone level

The concave apex, combined with active cutting elements and strategically placed flutes, facilitates the accumulation of host bone chips and fragments during insertion. This design effectively preserves autogenous bone and significantly enhancing osseointegration by increasing

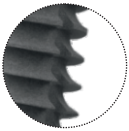
The implant's thread design is engineered to balance compressive and cutting forces, minimizing excessive stress concentration on the host bone during insertion. This ensures a controlled and atraumatic placement, preserving bone integrity and supporting long-term implant success.



Connection

For simplified assembly and confidence for component positioning.

- The implant system has the advantage of having one prosthetic platform for all diameters
- The implant abutment connection is an internal hex design which provides a rigid connection and stable biological seal
- Emerging bevel conical connection.
- Precise fit and meticulous tolerances
- Platform switching
- 12° Morse taper creates an optimal seal against bacterial endotoxin leakage, while maintaining excellent retention



Optimized Thread

- Progressive high-angle (HA) thread profile
- Improved Primary Stability
- Better Load Distribution
- Aggressive Bone Engagement
- Faster Insertion & Reduced Surgical Time
- Enhanced Performance in Immediate Implant Placement



Anatomical Tapered Design

For maximum bone volume around implant for improved soft tissue support

- Allows self-tapping properties
- Provides excellent primary stability
- Concave tip for collection of autogenous bone chips
- Minimal instrumentation- all implants can be placed using the same kit

**World class
dental restoration
solutions**

**Cutting edge
designs backed by
proven technology
and clinical evidence**

**Affordable
and Simple**



UPPSALA
UNIVERSITET



PSILOX
INNOVATION

Implant Surface



Alkali treatment introduces Na^+ ions at the nanoscale on titanium implant surfaces, leading to the formation of sodium titanate. Upon exposure to body fluid, this supports in-situ hydroxyapatite nucleation, promoting osseointegration. The initial surface exhibits a transient alkaline pH that may reduce bacterial adhesion

Design & Developed in
Sweden 
Nano Bio Activated

Implant Dimensions & Drilling Protocol

Size Table

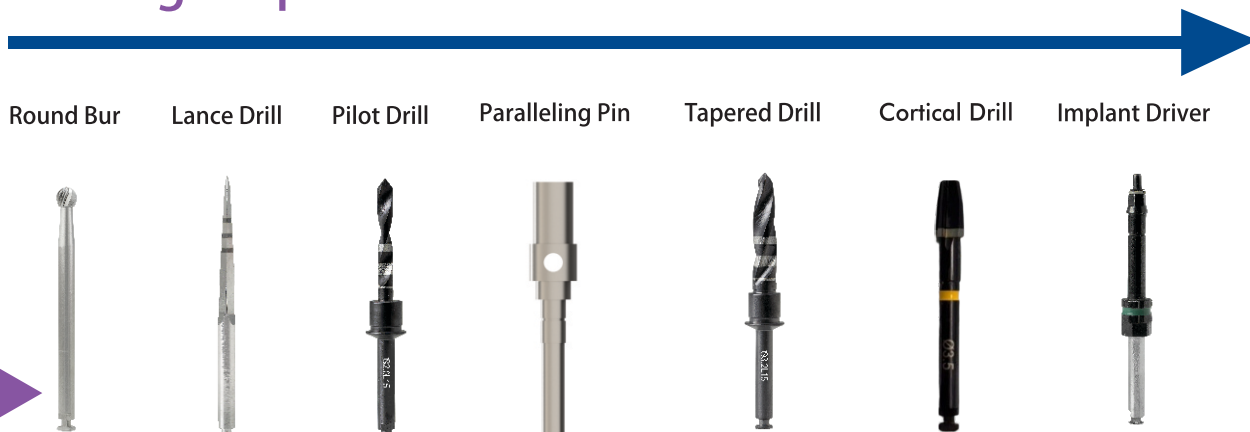
Diameter (mm)	Length (mm)		
	9	11	13
	3.5	4.2	5.0
	✓	✓	✓



Product Code:

Diameter \ Length	9 mm	11 mm	13 mm
3.5	AB350900	AB350110	AB350130
4.2	AB420900	AB420110	AB420130
5.0	AB500900	AB500110	AB500130

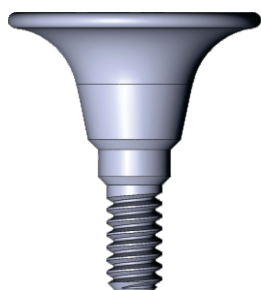
Drilling Sequence



Healing Abutment



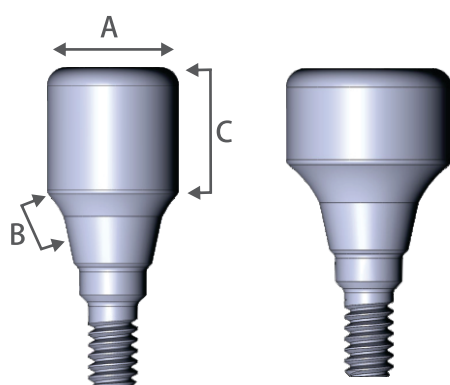
Healing Abutment Wide



Healing Abutment Wide	HAW01
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Healing Abutment

- Use hex driver
- Tightening torque: 5-8Ncm



4.15

5.2

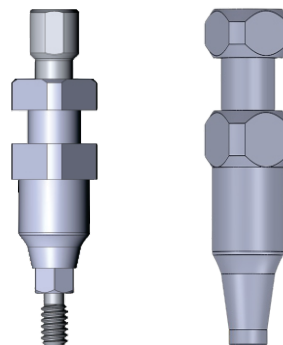
A = Abutment Diameter
B = Collar Height
C = Body Height/Length

Diameter	Collar	Length	Article code
4.15	1	2	HA4012
4.15	1	4	HA4014
4.15	2	3	HA4023
4.15	2	5	HA4025
4.15	2	6	HA4026
4.15	3	3	HA4033
4.15	3	5	HA4035
4.15	3	6	HA4036
5.2	1.5	3	HA5153
5.2	1.5	4	HA5154
5.2	2.5	3	HA5253
5.2	3.5	3	HA5353

Impression Copings

Open Tray Impression Coping:

- Custom tray is used for pick up impression taking.
- Use Hex driver
- Packing contents: Impression Coping + Guide Pin

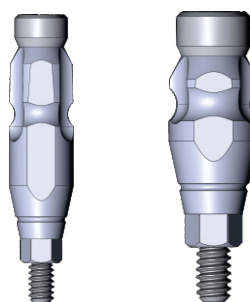


		4.15	5.2
Hex	1.0 mm	OTI4001	-
	1.5 mm	-	OTI5001
	2.0 mm	OTI4002	-
	2.5 mm		OTI5002
Non Hex	1.0 mm	OTINH4001	-

Guide Pin	GP2015
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Closed Tray Impression Coping:

- Use Hex driver
- Available as Long and Short.
- Packing contents: Impression Coping + Screw



Closed Tray Impression Coping - Long	CTIC-L
Closed Tray Impression Coping - Short	CTIC-S

Implant Analog

Implant Analog:

- Providing anchor point for fabricating implant prosthetics on working model

Height	Diameter	Item Code
12mm	4mm	IA01



Temporary Abutment:

- Available in Hex & Non-Hex
- Retentive grooves to engage acrylic temporary materials.
- For Single unit (Hex) and Multiple unit (Non-Hex) temporizations.
- For screw-retained single- and multiple-unit restorations



HEX



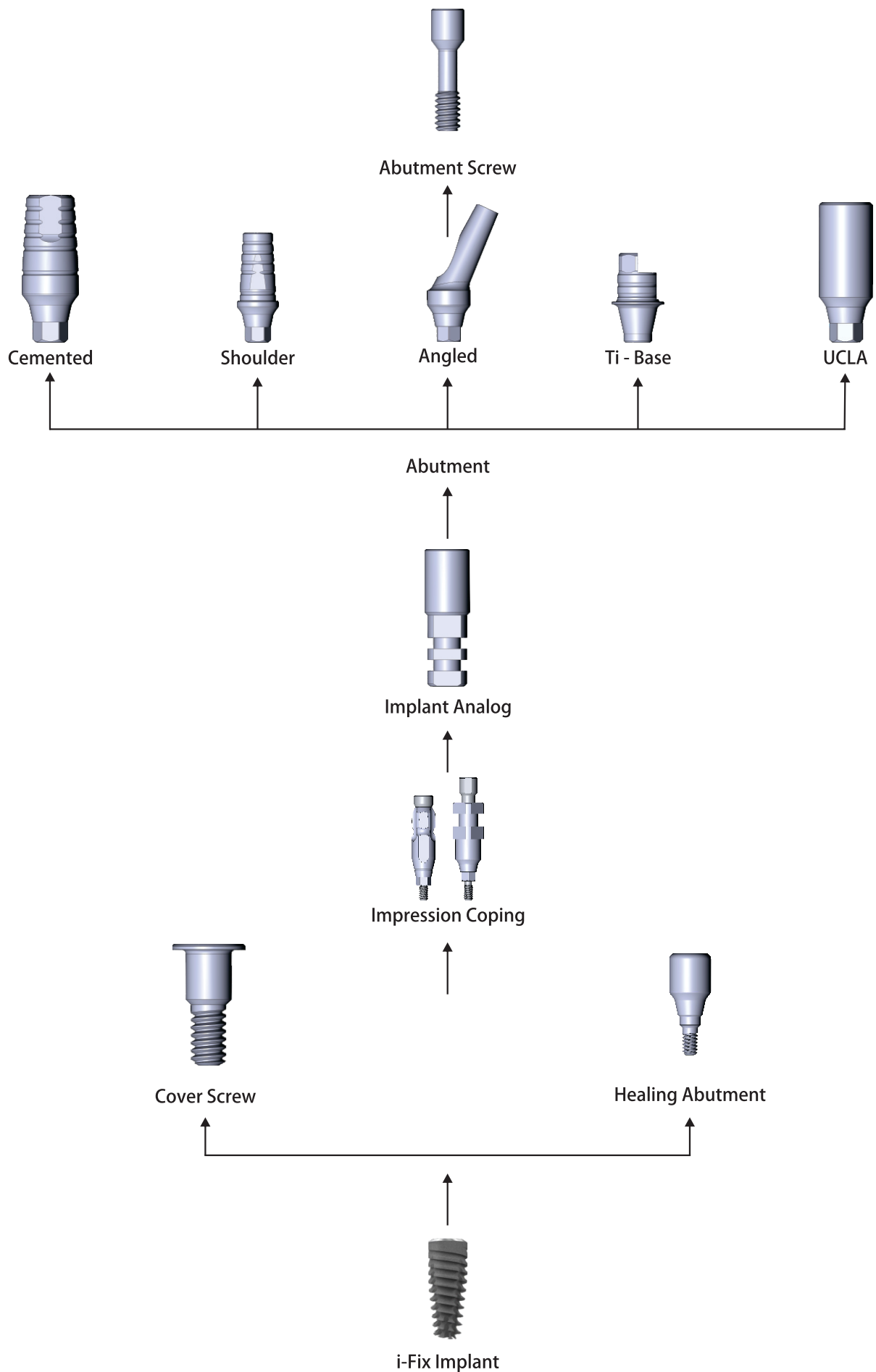
NON - HEX

Temporary Abutment Hex	TAH4001
Temporary Abutment Non-Hex	TANH4001

System Flowchart

Cement Retained Restorations: Cemented / Shoulder / Angled Abutment

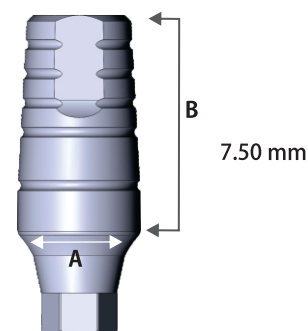
Screw Retained Restorations: UCLA Plastic Abutment / Ti-Base



Cement Retained Solutions

Cemented Abutment:

- Packaging unit: Abutment + Abutment screw
- Tightening Torque: 35Ncm
- Available in Single length and 2 diameters
- Margins, Collar Height & Length of the abutment can be defined by dental lab only
- Versatile features make this abutment indicated in multiple clinical scenario



Cemented Abutment 4.15	CA4001
Cemented Abutment 5.2	CA5001

A = Abutment Diameter (4.15 & 5.2)
B = Body Height (7.50 mm)

Shoulder Abutment:

- Packaging unit: Abutment+ Abutment screw
- Tightening Torque: 35Ncm
- Available in multiple collar heights and 2 diameters
- Available as Hex & Non Hex
- Versatile features make this abutment indicated in multiple clinical scenario



4.15 Hex



4.15 Non-Hex



5.2 Hex



5.2 Non-Hex

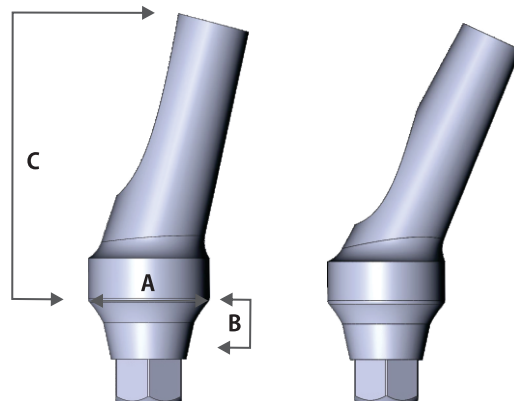
Product Description	Hex	Non-Hex
S Abutment 4.15 x1	SAH4001	SANH4001
S Abutment 4.15 x2	SAH4002	SANH4002
S Abutment 4.15 x3	SAH4003	SANH4003
S Abutment 5.2 x 1.5	SAH5001	SANH5001
S Abutment 5.2 x 2.5	SAH5002	SANH5002
S Abutment 5.2 x 3.5	SAH5003	SANH5003

Angulated Abutments & UCLA

Angulated Abutment:

- Used to modify the fixture's path and is mainly used for anterior teeth.
- Available in 15° and 25° Angled Abutment.
- Use Hex Driver.
- Packaging contents: Abutment + Abutment Screw.
- Total body height of abutment is 11mm.
- Tightening torque: 35Ncm

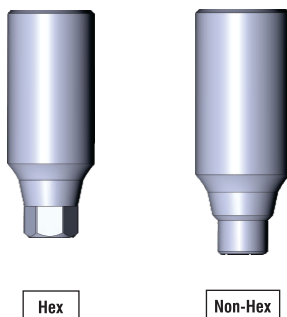
A = Abutment Diameter
B = Collar Height
C = Body Height (11mm)



Product Description	15°	25°
Angled Abutment 4.15 x 1	15A4001	25A4001
Angled Abutment 4.15 x 2	15A4002	25A4002
Angled Abutment 4.15 x 3	15A4003	25A4003
Angled Abutment 5.2 x 1.5	15A5001	
Angled Abutment 5.2 x 2.5	15A5002	

UCLA:

- The material for the abutment is plastic.
- After the customization, it is casted with dental alloy (Gold / non-precious metal alloy) to make prosthesis.
- Use Hex Driver
- Packing contents: Abutment + Abutment Screw
- Tightening torque: Tightening smoothly before casting, 35Ncm after casting



UCLA with Hex 4.15 x 1	UCH4001
UCLA with Hex 5.2 x 1.5	UCH5001
UCLA Nonhex 4.15 x 1	UCNH4001
UCLA Nonhex 5.2 x 1.5	UCNH5001
Abutment Screw	AS01

Overdenture Solution:

Ball Abutment:

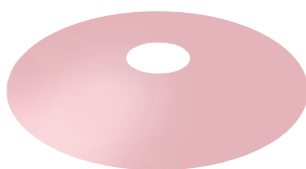
- Packing unit: Ball Abutment + Abutment Holder
- Ball Abutment Cap package contains: Ball Cap, Spacer and O Rings
- Tightening torque: 25Ncm



Product Description	Article Code
Ball Abutment 1mm Collar	BA01
Ball Abutment 3mm Collar	BA03
Ball Abutment 5mm Collar	BA05
Ball Abutment Housing Package	BAHP1
Ball Abutment Analog	BAA01
Ball Abutment Insertion Tool	BAIT01

Locator Abutment :

- Packaging consist of Locator abutment.
- Locator Abutment Housing Package: consist of Spacer, Metallic housing, Lab processing cap, Pink ,white& violet caps.



Pink (soft)0,9 kg



White (Standard)1,5 kg



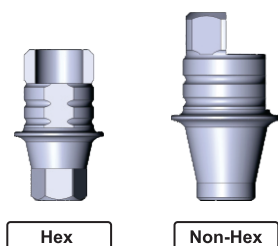
Violet (Strong)1,8 kg

Product Description	Article Code
Locator Abutment 0mm collar	LA00
Locator Abutment 2mm collar	LA02
Locator Abutment 4mm collar	LA04
Locator Abutment 6mm collar	LA06
Locator Abutment Housing Package	LAHP1
Locator Abutment Analog	LAA01

Customized Abutments

Ti Base Abutment:

- Titanium bonding base for the production of customized abutments made of zirconium dioxide for i-Fix Implants.
- CAD/CAM Zirconium dioxide superstructure bonded to titanium base.
- Available as Hex & Non-Hex for single & multiple
- Screw-retained single tooth restorations: CAD/CAM zirconium dioxide superstructure and directly veneered crown bonded to titanium base
- Cemented single/ bridge tooth restorations: CAD/CAM zirconium dioxide superstructure bonded to titanium base,with full-ceramic crown
- Packaging contents: abutment + screw + plastic sleeve
- Tightening Torque: 35 Ncm



Description	Article Code		
Ti Base abutment Hex	TBH4001	TBH4002	TBH4003
Ti Base abutment Non-Hex	TBNH4001	TBNH4002	TBNH4003

Pre-Milled Bar:

These are used to fabricate customized abutments | Available in 2 diameters 10 & 14mm
Intact internal connection

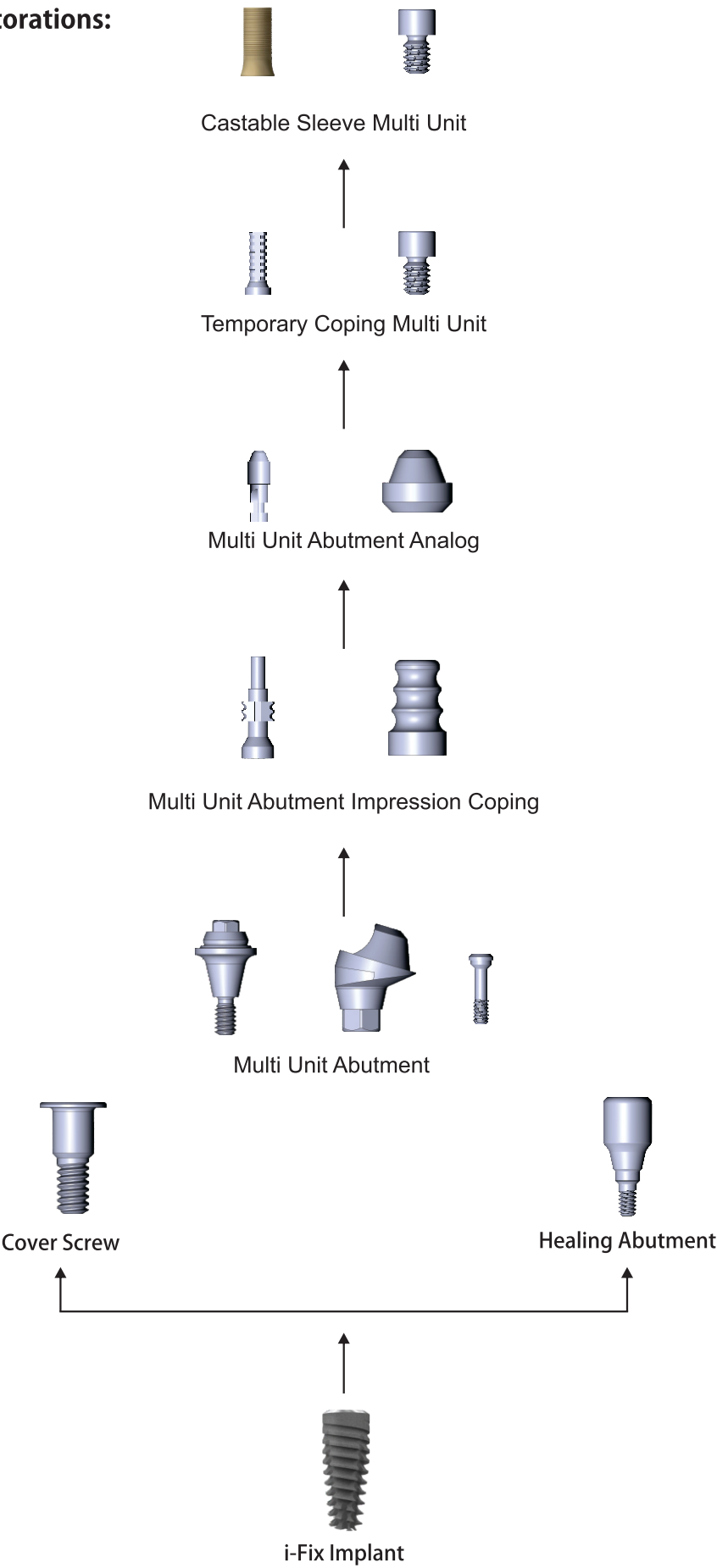


Pre-milled bar 10 mm	PM10
Pre-milled bar 14 mm	PM14

Full Arch Restorations

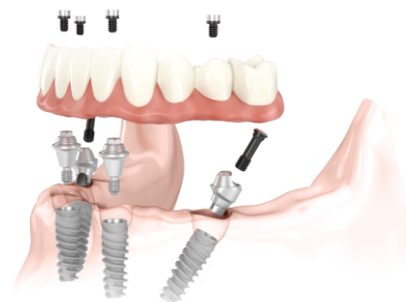
Screw- Retained Restorations:

Multi-Unit Abutment:



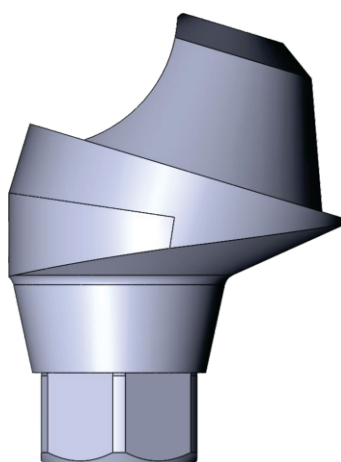
Multi Unit Abutment

For edentulous and partially edentulous solutions, particularly when using the clinically proven All-on-4 treatment concept



Available as straight and angled (17° and 30°) with a selection of collar heights.

Each Multi-unit Abutment is delivered with a pre-mounted holder for easy handling, which doubles as a guide for checking abutment orientation.



Short cone for limited interocclusal space

Wide shoulder for easy positioning of the prosthetic restoration for a secure passive fit.

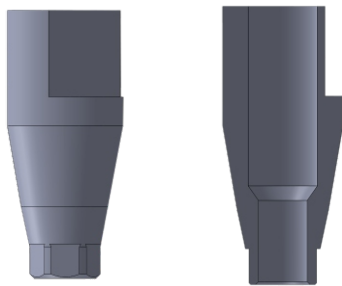
Description	Article Code	
Straight Multi-unit abutment 1.5mm collar	MUA15	
Straight Multi-unit abutment 3.5mm collar	MUA35	
17 Deg Multi-unit abutment 2.5mm collar	17MUA25	
17 Deg Multi-unit abutment 3.5mm collar	17MUA35	
30 Deg Multi-unit abutment 3.5mm collar	30MUA35	
30 Deg Multi-unit abutment 4.5mm collar	30MUA45	
Healing cap Multi-unit abutment	HCMUA	
Abutment screw Multi-unit	ASMUA	
Prosthetic screw Multi-unit	PSMUA	
Temporary Coping Multi-unit	TCMUA	
Open Tray Impression Coping Multi-unit	OTICMUA	
Closed Tray Impression Coping Multi-unit	CTICMUA	
Abutment Analog Multi-unit	AAMUA	
Castable Sleeve Multi-unit Plastic	CSPMUA	
Protection Analog Multi-unit	PAMUA	

Digital Solution

H-Scan body

- Use to take Digital Impressions & enables the digital workflow to be more efficient.
- PEEK MATERIAL Made

H-Scan Body



Article Code : HSBIFIX

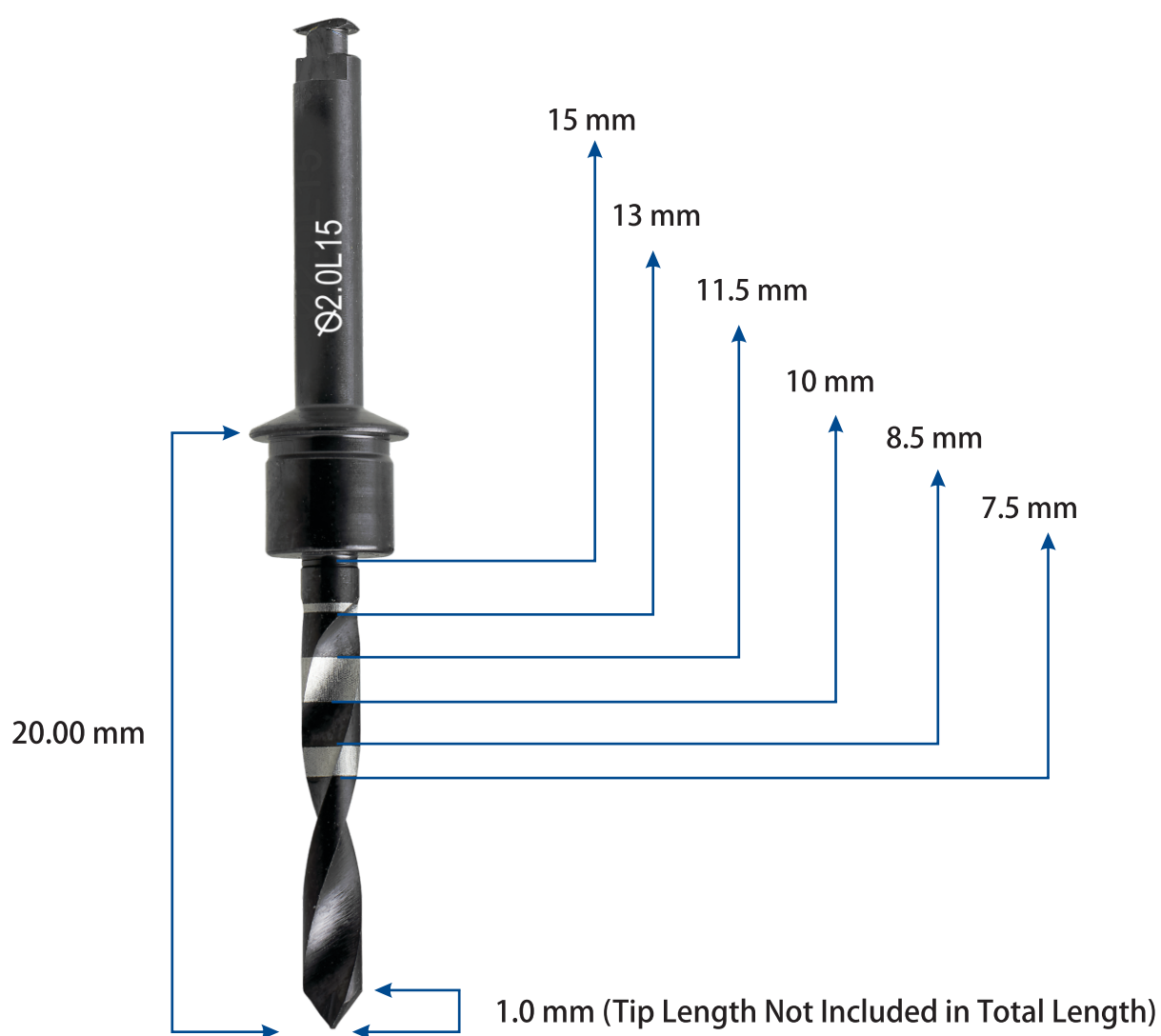
Digital Analog:

- Used in Digital workflow for designing an accurate model while designing or creating a CAD-CAM restoration.
- Accurate Connection for i-Fix platforms. Has anti-rotational feature optimised for 3D printing.
- Titanium Made



Article Code : DA01

Drill



Surgical Armamentarium: Surgical Kit

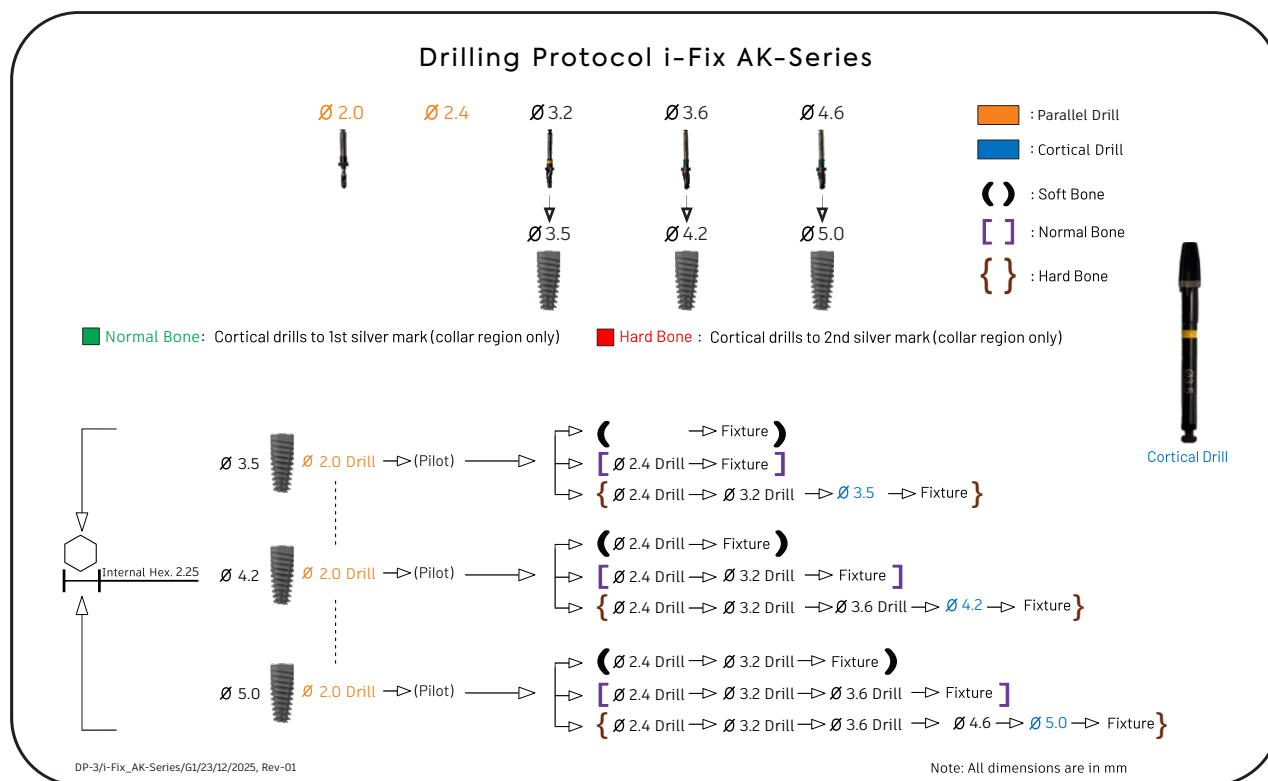
"Smart Surgical Kit"



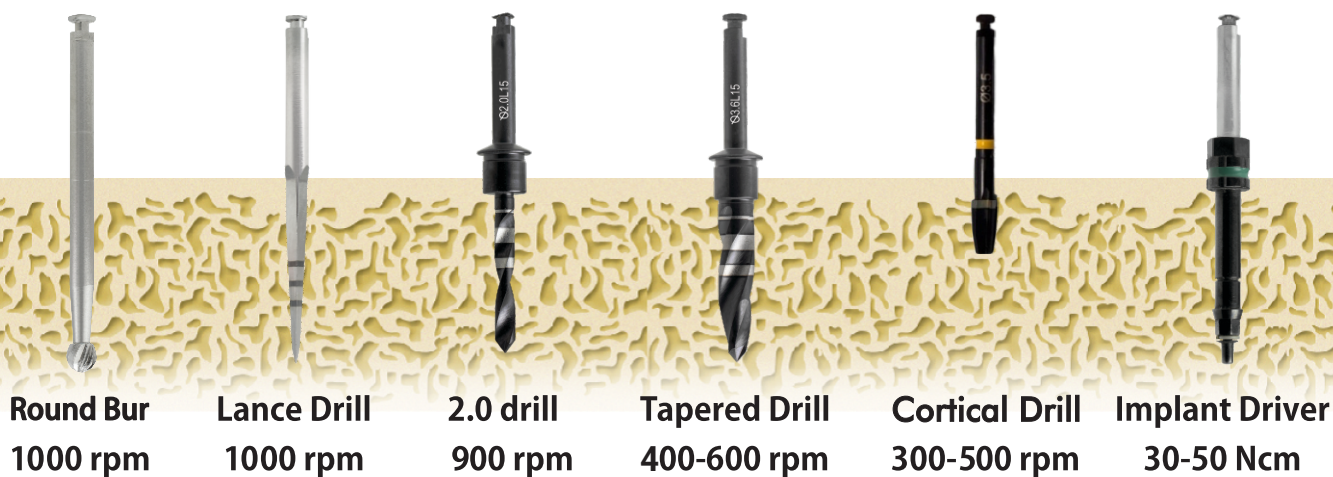
Surgical Kit Components & Article Code:

S.NO	Product Description	Article Code
1	iFix Master Surgical Kit Box	ABSK01
2	Lance Drill	LD01
3	Round Bur	RB01
4	Tapered Drill 2.0x15mm	SD20
5	Tapered Drill 2.4x15mm	SD24
6	Tapered Drill 3.2x15mm	SD32
7	Tapered Drill 3.6x15mm	SD36
8	Tapered Drill 4.6x15mm	SD46
9	Cortical Drill 3.5mm	CD35
10	Cortical Drill 4.2mm	CD42
11	Cortical Drill 5.0mm	CD50
12	Paralleling Pins	PP
13	Drill Extender	DE01
14	Hex Driver Short - Manual	HDS1
15	Implant Driver Short- Machine	IDSM1
16	Implant Driver Long- Machine	IDLM1
17	Implant Driver Short- Ratchet	IDS1R1
18	Implant Driver Long- Ratchet	IDLR1
19	Torque Wrench	TW01

Drill Sequence According to Bone Density



Drilling Sequence as per speed*



*WITH COPIOUS IRRIGATION

Cleaning and Sterilization – Protocol

Functional Testing, Maintenance: Make a visual inspection for cleanliness (with magnifying glasses) under adequate light. If necessary, perform reprocessing process again until the instruments are visibly clean.

Packaging: Place kit including drills in sterilization packets.

Sterilization: Sterilize the instruments by applying a fractionated pre-vacuum process (according to ISO 13060 / ISO17665) under consideration of the respective country requirements.

New Cycle

Heat up to a minimum sterilization temperature of 132°C-134°C / 269.6°F-273.2°F; maximum temperature 135°C/ 274°F.

Minimum Holding time: 3 min.

Drying time: minimum 10 min.

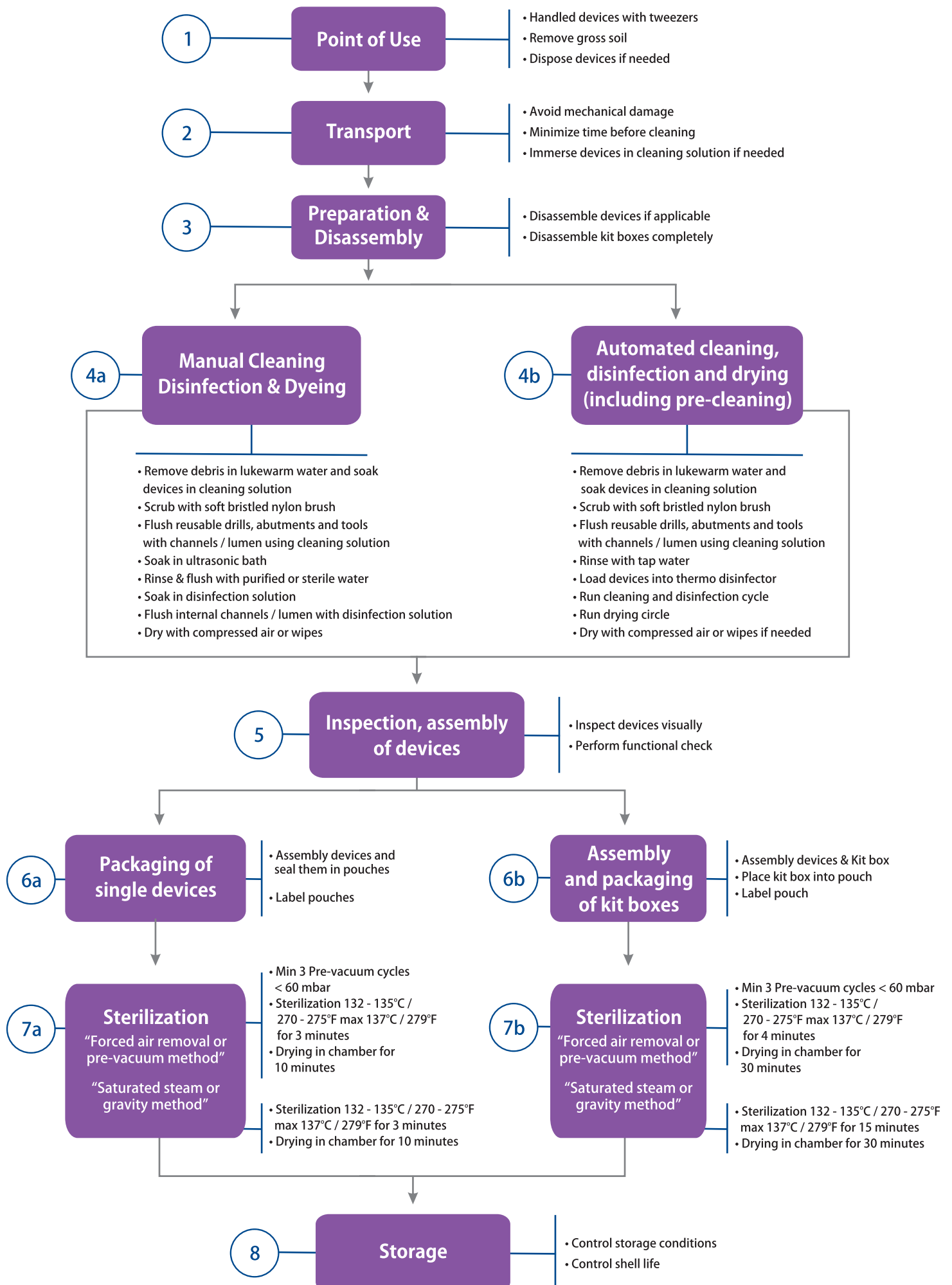
Storage

Store the sterilized instruments in a dry, clean and dust free environment at modest temperatures of 5°C to 40°C / 41°F – 104°F.

Pre-cleaning of instruments:

- Remove tissue residuals by immersing the used instrument in cold water (<40°C / 104°F). Do not use fixation agents or hot water (>40°C / 104°F) as this could influence your subsequent cleaning results. Instruments should be kept in a wet environment until the next step indicated below is initiated.
- Soak the instruments in 0.5% enzymatic cleaning solution (e.g enzymatic detergent with a pH level between 6-9) prepared with luke warm tap water for 5 minutes. Cleaning agents are available commercially. Please ask your supplier for details.
- Scrub the outer, and if applicable also inner side of the instruments with a suitable soft bristled nylon brush until all visible soil is removed.
- Rinse the outer, and if applicable inner, side of the instrument with tap water to remove all cleaning solution.

Workflow for Sterilization Protocol



Introduction to cleaning and sterilization of all surgical instruments

The high-quality stainless steel, used in the manufacturing of ApexKonnnect instruments, is distinguished by their passive surface alloys or the protective coating which forms on their surfaces. Considering the various handling procedures of physical, chemical or thermal nature, as they occur in the dental practice, standard stainless steel is not completely predictable in long-term performance. There is no known surface treatment available to counteract such surface alterations with long-term results. Experience has indicated, that surface corrosion of instruments could have been prevented to a large degree by proper handling and maintenance.

Please follow the general guidelines.

Important:

Instruments, specifically the pilot- and step drill, which indicate a surface alteration or reduced cutting ability, must definitely be replaced!

Original ApexKonnnect instrument materials :

- **DLC Stainless steel coated for :** Step drills, pilot drill, depth gauge, titanium forceps
 - **Stainless steel for :**
Ratchet, adapter to ratchet, ratchet handle and screw driver assortment including Implant drivers etc.
 - **DLC Stainless steel**
Case tray with separate compartments
 - High quality and Autoclavable Polycarbonate kit box Case, base and lid
- Avoidance of Corrosion and Damage
- Individual reasons, leading to corrosion and damage and their avoidance:

Corrosion

Blood, Pus and Secretions : • These residues of surgical procedures contain Chloride ions which will lead to surface corrosion, if allowed to remain or dry on the instrument surface.

- Therefore, do not allow these residues to dry, but immediately after use, disinfect, clean and dry thoroughly.

Salt solutions, Iodine, Water :

- Solutions containing Chloride- and iodine ions could perpetrate corrosion.
- Using distilled water generously rinse, to remove all residues.

Cleaning- and disinfectant solutions :

- Higher concentrations of such agents, and also acid or alkaline solutions could result in corrosion.
- It is advisable to use products with pH-rating ranging from 9.5 - 11.
- Soaking cycle and concentration must be observed (solutions should not be above 45° degrees Celsius).

Contact between instruments of different metal materials :

- Stainless steel instruments, which remain for longer periods of time in contact with instruments which have surface damage, will be affected by an electrolyte that could result in surface corrosion at the contact areas (rust). For example, steam, water, Ultrasonic- and cleaning solutions etc.
- Instruments manufactured of different materials should be treated separately. (Titanium instruments should be kept separately from stainless steel surgical instruments)

Mechanical : Steel wool, steel brushes.

- These must never be used for the cleaning of the surgical instruments.

Manual cleaning :

- Use only suitable nylon brushes, never metal brushes or steel wool.
- Automatic washers
- Instruments should be placed on the tray individually, in order to avoid contact damage.

Ultrasonic cleaning

- Instruments must be disinfected prior to being placed into the ultrasonic unit.
- Do not run unit longer than 5 minutes.
- The ultrasonic bath should only be charged to 50 %.

Check- and function test

- After each cleaning cycle, the instruments must be checked and examined for proper function.
- Damaged or non-functioning instruments must be replaced.

Sterilization

- The sterilization bags and related accessories must be applicable for the surgical instruments and the sterilizing procedure in a complementing manner.

Water :

Only demineralized or distilled water may be used in the autoclave.

Contaminations, such as oil, chemicals and cleaning agent residues on towels result in related instrument damage and reduced function of autoclaves.

Water must be regularly exchanged and the unit must be cleaned.

Cleaning of the surgical ratchet :

Cleaning

- The ratchet handle, ratchet and adapter are placed into a disinfectant solution after the surgery.
 - Rinse well using distilled water.
- Dry all parts using air hose.

• Function check

- Place one drop of oil (RM-Dental-oil) into each of the holes at the ratchet head and let it penetrate.
- Make several ratchet movements (Function test).
- Excess oil is removed using air hose.

Again, check the function.



Our Product, Values & Vision



Our Vision Statement

At Kamal Medtech, it is our passion to innovate and develop cutting edge healthcare solutions delivered With highest quality standard to our users globally through our commitment to excellence

- Ultramodern manufacturing facility
- Manufacturing facility and quality management system compliant with fifth schedule of MDR 2017 & ISO13485 Standard
- State-of-the-art clean rooms
- High-tech quality control laboratories
- Sophisticated production equipments
- Best in class technologies resulting into superior product quality



World class facility for Dental implants

Kamal Medtech has commissioned 50,000 Sq. ft state of the art manufacturing facility at IMT Faridabad, Haryana. the facility has been compliance as per International Standard ISO 13485. Kamal Medtech is a leading enterprise specialized in Research, Design, Development, Manufacturing & Supply of High End Medical Devices.

- Ultramodern manufacturing facility
- Manufacturing facility and quality management system compliant with fifth schedule of MDR 2017 & ISO 13485 Standard
- State-of-the-art clean rooms
- High-tech quality control laboratories
- Sophisticated production equipments
- Best in class technologies resulting into superior product quality



“i-Fix represents the ultimate solution in dental implantology for maximum functionality in all bone types.”

- We aim at Integrated extensive R&D, design, processing, manufacturing and a stringent quality management system to create high quality implants.
- The vision of Kamal Medtech is to manufacture niche precision engineered products with global quality standards and i-Fix implant system is the first step in this direction.



Advanced Machine & Material

- Most advanced state of the art CNC machines (Swiss Tornos)
- Foremost manufacturing technologies ensuring maximum precision
- Using high quality titanium alloys Grade 23 (Grade V ELI)

Clean Room & Packaging

- Best in-class clean room manufacturing & packaging facilities
- Advanced cleaning processes at par with global standards
- As per ISO: 13485 standard
- Specialized packaging ensuring long term sterility

"Everything should be made
as simple as possible but
not simpler" - Albert Einstein

A Better Tomorrow For All

In pursuit of Preservation of that priceless self, we have endeavoured through our commitment to Environmental Protection and Affordable Healthcare to achieve: "A better tomorrow for all". Kamal's dedicated 400+ workforce, through Amalgamation of Innovation and Technology, has enabled introduction of world class quality Products and Devices which have found ready acceptance and sustained support across a broad spectrum of users worldwide. Our Healthcare vertical is committed to your success with Best in Class Medical Devices and Services.

Made in India for the World.



Kamal Encon Industries Ltd.

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