AQB Implant System Instructions for Use





Product Information Basic Procedures Thank you for purchasing the AQB implant and AQB implant tools. To ensure the safe use of the products, please read this Instruction for Use and fully understand the meanings of the warning signs, warning symbols, and handling precautions before use.

- The AQB implant must be used solely for the dental treatment in humans.
- The AQB implant tools must be used only for the placement of the AQB implant.
- To correctly use the product, read this AQB Implant System Instructions for Use in addition to the package insert before use.
- After reading this document, keep it in a place where you can always refer to and make sure not to lose it.

Warning Signs and Their Risk Levels

a) Risk level

1

Make sure to read the sentences shown with the following signs.

Warning sign

Warning



Improper handling of the product without following this sign can cause a serious health hazard to the patient.

Risk level

Improper handling of the product without following this sign can cause a health hazard (e.g., injury) to the patient.

b) Warning symbols

Symbol	Title	Description
	General	Unspecific general caution or warning
\bigcirc	General	Unspecific general prohibition
	General	Unspecific general obligation

Precautions for Use

AQB implant

Warning



2

Implant treatment is not indicated in some patients. Carefully perform a preoperative examination to determine whether your patient is indicated for the treatment. Avoid placing an implant in the patients who:

- 1. have acute suppuration at or around the implantation site
- 2. have systemic disease of bone
- 3. have serious heart, blood, gastric or hepatic disease
- 4. lack bone mass in the implantation site
- 5. have no room for placing the upper structure, or
- 6. are determined as inappropriate by the doctor.
- Implants are sterile medical devices. Do not open their package before use. Do not use an implant once used in an oral cavity or dropped accidentally. It can cause infection.

Always give careful attention to the condition of the patient and make sure there are no abnormalities during surgery.



Store the AQB implants organized by their model number. Bad organization can lead to the use of incorrect model.





Do not subject the implant to excessive shocks. It may damage the device.



 Keep in dry place, avoiding direct sunlight, high temperature and humidity.
 Sterile package may be damaged.



Keep the product out of reach of children. Accidental ingestion may occur.

AQB implant tools



When using a combination of tools (drill, reamer, fixer, etc.), check that their fitting part is not too tight or loose. Improper fitting can interfere with surgery.



Aluminum is used in some parts of the tools. Use a cleaning solution that is rust-proof and not corrosive to aluminum. If not, damage to the tools may occur.



Keep the tools in clean and dry place. They may be contaminated or damaged.



• Keep the tools separately from other tools. Misuse of other tools may occur.



Keep the tools out of reach of children. Accidental ingestion may occur.

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AQB Implant System Product Information

1 Features and Types of the AQB Implant

One-piece implan

<u>T-type one-piece implant</u>

Fwo-piece implant

The AQB (Advanced Quick Bonding) Implant System consists of one-piece, T-type one-piece, and two-piece dental implants, all of which are coated with hydroxyapatite (HA) on titanium surface. The base material is pure titanium, a material highly recognized for its mechanical strength and biological safety and stability. In addition, HA $[Ca_{10}(PO_4)_6(OH)_2]$ has been demonstrated to have a high compatibility with body tissue. It promotes the formation of new bone or directly combines to bone.

The AQB Implant is an excellent dental implant that is safe, stable and effective with the combination of the superior properties of the two materials.

Features of the AQB Implant



 Our high biocompatibility process provides pure titanium with firm bonding with the gingival tissue. Its surface oxidized layer is thickened so that phosphorous and calcium penetrate into the surface of oxidized titanium layer and achieve high biocompatibility.

 Biocompatibility between HA coating layer and bone

> • Our high biocompatibility process for bonding with gingiva converts plasma sprayed calcium phosphate layer into recrystallized HA. Bone is formed quickly around the HA coated surface.

- Simple one-piece implant for one-step operation
 Simple one-piece (spiral cylinder) dental implant for
 - one-step operation reduces patient inconvenience.

Integral structure with high strength

• Seamless one-piece structure is stronger than two-piece implant. Screw will not loosen and thus longer stability is offered.

Abutment tapered by 6°

 Abutment is tapered by 6° on each side, making the maximum diameter approximately 0.4 mm wider than that of general one-piece implant. This implant is appropriate for cases where the implant may be erroneously placed into the maxillary sinus or where sinus lift or socket lift procedure is indicated.

Transitionally formed abutment screw

• The abutment screw is formed transitionally so that the diameter around the coating boundary part does not become too narrow, like that of one-piece type implant.

• Unique interlocking contour (SOL contour)

- Differently from general hexagonal or octagonal contours for two-piece implants, this implant has a unique interlocking contour, configured only with curved surfaces. Since there is no edge, the lateral pressure is received by a large plane to effectively distribute stress.
- Compatible with both one- and two-step operations
 - One- and two-step operations are possible using the healing cap and the healing abutment. This type of implant can also be indicated for cases such as multiple tooth defects or GBR.

Types of the AQB Implant

One-piece implant

2

The AQB one-piece implant has a total 33 combinations of thickness (diameter), covered length (within bone), and abutment length.

Appearance and part names	Legend for root size	Model number					
Appearance and part names	Legend for foot size	3mm	4mm	5mm			
Outer diameter	Image: Constraint of the state of	3SS 3SM 3SL 3MS 3MM 3ML 3LS 3LM 3LL 3Y9 3Y11	466 468 4SS 4SM 4SL 4MS 4MM 4ML 4LS 4LM 4LL	566 568 5SS 5SM 5SL 5MS 5MM 5ML 5LS 5LM 5LL			

* The above model numbers include special (made-to-order) models. Refer to the Price List for more information.

T-type one-piece implant

The AQB T-type one-piece implant has a total of 33 combinations of thickness (diameter), covered length (within bone), and abutment length.

Appearance and part names	Logond for root size	Model number					
Appearance and part names	Legend for foot size	3mm	4mm	5mm			
Outer diameter Abutment Covered part	T4 M A Outer diameter T3:3.4mm T4:4.4mm T5:5.4mm Covered part 6 : 6 mm S : 8 mm M : 10 mm L : 12 mm W : 14 mm Abutment 6 : 6 mm S : 7 mm S : 7 mm B : 8 mm L : 11 mm 9 : 9 mm L : 11 mm Width of * is 0 mm for abutment S.	T3SS T3SM T3SL T3MS T3MM T3ML T3LS T3LM T3LL T3Y9 T3Y11	T46S T468 T4SS T4SM T4SL T4MS T4MM T4ML T4LS T4LM T4LL	T56S T5SS T5SM T5SL T5MS T5MS T5ML T5LS T5LM T5LL			

* The above model numbers include special (made-to-order) models. Refer to the Price List for more information.

Two-piece implant

The AQB two-piece implant fixture has a total of 12 combinations of thickness (diameter) and overall length (within bone). Abutments are available in 28 types including straight, angular, and overdenture.

Fixtures for two-piece implant



Straight abutment for two-piece implant



Straight abutment W for two-piece implant

Appearance	Legend for abutment size	Model number	Accessories
	WM	Straight abutment WS	
Gingival length Abutment screw	Gingival length WS:1mm	Straight abutment WM	Abutment screw
	WM : 2 mm WL : 3 mm	Straight abutment WL	

Angular abutment for two-piece implant



Angular abutment W for two-piece implant



Healing abutment for two-piece implant



Multi abutment for two-piece implant



OD abutment base for two-piece implant



3 Other Special Parts for the AQB Two-piece Implant

In addition to the above, we have the AQB pickup coping, AQB implant analog, AQB coping screw, and OD abutment as the special parts for the dental laboratory work and overdenture for the AQB two-piece implant.

AQB pickup coping

Used during impression taking with the multi abutment.



Medical device notification number: 11B1X10027060402

AQB implant analog

Appearance	Legend for model number	Model number	Quantity per unit
Outer diameter	4	φ4	1
	Outer diameter ϕ 4 : 4 mm ϕ 5 : 5 mm	φ5	1

Product name: AQB implant analog Medical device notification number: 11B1X1002706041

AQB coping screw

Used during open tray impression taking with multi abutment and the AQB pickup coping.



Product name: AQB coping screw Medical device notification number: 11B1X10027060405

OD abutment (bur	n-out pattern)		Used with	n the OD abutment I
Appear	ance	Legend for abutment type	Model number	Quantity per unit
•	0		А	3
OD abutment A	OD abutment B	Model number A B	В	3

ase

Product name: OD abutment

Medical device notification number: 13B1X00205060403 11B1X10027060403

2 Types and Purposes of AQB Implant Tools

1

Types of AQB Implant Tools

• Tool set

Product name	Туре	Manufacturer	Approval/ notification#
AQB round bar	-		
	S		21900BZX00404000
AQB guide dhii	L	Dentech	
	S	Corporation	
AQB direction checker	М		13B2X00094000072
	L		
	¢2.5S		
	φ2.5L		
AOB spiral drill	¢3.5S		21900BZX00404000
	φ3.5L		
	¢4.5S		
	φ4.5L		
AOB counter drill	φ3.5		2190087200404000
	φ4.5	Dentech	2130002/00404000
	φ2.75	Corporation	
AQB endmill reamer	φ3.75		13B2X00094000065
	φ4.75		
AQB reamer extension	-		13B2X00094000075
AQB finger driver	S		13B2X00094000073
···	L		13B2X00094000072
AQB free wrench	-		13B2X00094000070
AQB free wrench adapter	-		13B2X00094000074
	for $\phi 3$	AQB • ABI Implant Co.,Ltd.	11B1X10027080901
AQB alarm gauge	for $\phi 4$		
	for $\phi 5$		
	φ2.9		
AQB reamer	φ3.9		13B2X00094000066
	<i>\$</i> 4.9		
	for $\phi 3$		
AQB circular knife	for $\phi 4$		21900BZX00404000
	for $\phi 5$	Dentech	
	for $\phi 3$	Corporation	
AQB fixer	for $\phi 4$		13B2X00094000067
	for $\phi 5$		
AQB fixer support	-		13B2X00094000068
AQB fixer joint	-		13B2X00094000069
AQB fixer extension	-		13B2X00094000076
Toolbox (sterilization case)	-	-	-
X-ray guide	-	-	-
Tool guide (for Ø3, Ø4, Ø5)	-	-	-

• Tool for T-type one-piece implant

Product name	Туре	Manufacturer	Approval/ notification#
AQB T-fixer	for $\phi 3$	Dentech Corporation	13B2X00094000067
	for $\phi 4$		
	for $\phi 5$		
AQB counter boa drill	for $\phi 3$		
	for $\phi 4$		21900BZX00404000
	for $\phi 5$		

• Parts for two-Piece implant

Product name	Туре	Manufacturer	Approval/ notification#
Abutmentscrew	-	AQB • ABI Implant Co.,Ltd.	20500BZZ01172000

• Tools for Two-piece Implant

Product name	Туре	Manufacturer	Approval/ notification#
Hex driver bit(%1)	3.0S		
	φ2.35S		
	φ2.35L	Dentech	21000P7V00404000
AOB hono profilor	4	Corporation	21900BZA00404000
AQB bone promer	5		
AQB bone profiler guide	-		
SOL driver bit	3.0S	AQB • ABI Implant Co.,Ltd.	11B1X10027060404
Torque control	-	The Yoshida Dental Mfg. Co., Ltd.	13B1X00133Z00028
HEX driver Mini	-	Dentech Corporation	13B2X00094000126
AOD Custom Dattorn	4	AQB • ABI	1101210007000001
AQB Custom Pattern	5	Implant Co.,Ltd.	TIBIX 10027000031
Abutment replica(%2)		Advance Co., Ltd.	13B1X00205000030
(21 types× 3 pieces)	-	AQB • ABI Implant Co.,Ltd.	11B1X10027000030

(%1)For finger driver: ϕ 3.0S. For torque control ϕ 2.35S, ϕ 2.35L. (%2)Replica single item(5 pieces of each size)

Optional tools

Product name	Туре	Manufacturer	Approval/ notification#
	φ2.75		21900BZX00404000
	φ3.75	 φ3.75 φ4.75 φ2.75L Dentech 	
AQB reaming drill	φ4.75		
	φ2.75L		
	φ3.75L	Corporation	
	φ4.75L		
Surgical Bar	164RF/ 018		13B2X00094000120

Micromotor

Product name	Туре	Manufacturer	Approval/ notification#
Surgic Pro2 (with light)	LED		303ALBZX00014000
Surgic Pro2(no light)	No LED	Nakanishi Inc.	303ALBZX00014000
Irrigation Tube	10		09B1X10001000009

2 Purposes and Overview of the AQB Implant Tools



AQB counter drill

φ3.5/φ4.5

Appearance and dimensions	Purpose and usage
Guide part \rightarrow ϕ 3.5 ϕ 4.5	 Use depending on the condition of bone when enlarging the insertion hole with the spiral drill. Ø3.5: Use between the spiral drill Ø2.5 and the spiral drill Ø3.5. Ø4.5: Use between the spiral drill Ø3.5 and the spiral drill Ø4.5. Insert the guide part into the insertion hole and drill the cortical bone. Use with the low speed of 400 to 800 rpm.

AQB endmill reamer

$\phi 2.75 / \phi 3.75 / \phi 4.75$

Appearance and dimensions	Purpose and usage
(mm) 14 12 10 14 12 10	 Finish the basal and axial planes of the insertion hole. For this purpose, the tip is equipped with a drill blade. The marking grooves on the drill blade indicate hole depths from the tip, 6, 8, 10, 12, 14 mm with the Ø2.75 drill and 6, 8, 10, 12 mm with the Ø3.75 and Ø4.75 drills. Choose the appropriate size according to the implant diameter. Implant diameter Ø3 Ø2.75 Ø4 Ø3.75 Ø5 Ø4.75

AQB reamer extension



AQB finger driver	S/L
Appearance and dimensions	Purpose and usage
s L	 Use to hold and rotate an endmill reamer or other reamer. Connect to the fixer via the fixer joint to use in implant placement. Insert a reamer or other until their shaft reaches to the rotation stop pin inside of the shaft hole. Use the short shaft (S) or long shaft (L) depending on the condition of the mouth (distance from the opposing tooth, interference from adjacent teeth, etc.).

AQB free wrench



AQB free wrench adapter



AQB alarm gauge

For $\phi 3/\phi 4/\phi 5$

Appearance and dimensions	Purpose and usage
For φ 3 For φ 4 For φ 5	 Insert the hole formed by the endmill reamer to check the inner diameter and depth of the insertion hole. The marking grooves on the gauge indicate the hole depths from the tip, 10, 12, 14 mm with the gauge for Ø3 and 10, 12 mm with the gauges for Ø4 and Ø5. To avoid accidental ingestion, put a thread through the safety hole on the end.

AQB reamer

 $\phi 2.9/\phi 3.9/\phi 4.9$

Appearance and dimensions	Purpose and usage		
(mm) 14 12 10 ϕ 2.9 ϕ 3.9 ϕ 4.9	 Finish the axial sides of the insertion hole. The marking grooves on the reamer blade indicate hole depths from the tip, 6, 8, 10, 12, 14 mm with the Ø2.9 reamer and 6, 8, 10, 12 mm with the Ø3.9 and Ø4.9 reamers. Choose the appropriate size according to the implant diameter. Implant diameter \$\overline{\phi_3}\$ \$\overline{\phi_2.9}\$ \$\overline{\phi_4}\$ \$\overline{\phi_3.9}\$ \$\overline{\phi_2.9}\$ \$\overline{\phi_4}\$ \$\overline{\phi_3.9}\$ \$\overline{\phi_4.9}\$ 		



AQBIIXEI	For $\phi 3/\phi 4/\phi 5$
Appearance and dimensions	Purpose and usage
Gear part \rightarrow 3 Size mark \rightarrow 3 Silicone rubber \rightarrow 7 For ϕ 3 For ϕ 4 For ϕ 5	 Use to hold and place the implant into the jawbone. Connect to the finger driver via the fixer joint or connect to the free wrench. Choose the fixer appropriate for the diameter of the implant to be placed. Align the fixer and the implant as shown in the left figure when connecting them. The silicone rubber ring is attached to prevent implant drop.
AQB fixer support	
Appearance and dimensions	Purpose and usage
Appearance and dimensions	 Purpose and usage When using a free wrench, apply and hold the guide pin to the hole on the upper surface of the gear part of the fixer to prevent the tool and the implant from wobbling.
Appearance and dimensions	 Purpose and usage When using a free wrench, apply and hold the guide pin to the hole on the upper surface of the gear part of the fixer to prevent the tool and the implant from wobbling.
Appearance and dimensions	• When using a free wrench, apply and hold the guide pin to the hole on the upper surface of the gear part of the fixer to prevent the tool and the implant from wobbling.

Appearance and dimensions	Purpose and usage
Connect to the finger driver Connect to the fixer	 Use to connect the finger driver and the fixer when the fixer used by hand.

AQB fixer extension

Appearance and dimensions	Purpose and usage
Connect to the free wrench	 Connect to the upper part of the fixer when the free wrench comes in contact with the residual teeth and interferes the implant placement. When connected to the fixer, the height becomes 8 mm higher.

Toolbox (sterilization case)

Appearance and dimensions	Purpose and usage
	 Use to sterilize tools set into it. The toolbox can be sterilized in an autoclave with the lid closed. Capable of sterilization at up to 135°C and drying at up to 140°C. * Other sterilization methods, such as chemiclave or EOG sterilization are not supported.

X-ray guide

Appearance and dimensions	Purpose and usage	
	 Use to assist the selection of implant based on the x-ray images taken during preoperative examination. The written magnifications are x1.0 (same size) and x1.2 based on the implant size. 	

Tool guide



For $\phi 3/\phi 4/\phi 5$

	QB fixer for T-type implant For $\phi 3/\phi 4/\phi 5$			
olan	Appearance and dimensions	Purpose and usage		
 Tools for T-type one-piece imp 	$\begin{array}{c} \text{Gear part} \rightarrow & \text{T3} \\ \text{Size mark} \rightarrow & \text{T3} \\ \text{Silicone rubber} \rightarrow & \text{T3} \\ \text{ring} & \text{T4} \\ \text{For } & \text{T5} \\ \text{For } & $	 Use to hold and place the implant into the jawbone. Connect to the finger driver via the fixer joint or connect to the free wrench. Choose the fixer appropriate for the diameter of the implant to be placed. Align the fixer and the implant as shown in the left figure when connecting them. The silicone rubber ring is attached to prevent implant drop. 		

	Hex driver bit	river bit $\phi 2.355/\phi 2.35L/\phi 3.05$	
	Appearance and dimensions	Purpose and usage	
Tools for two-piece implan	φ2.35S φ2.35L φ 3.0S	 Use to connect and fix the fixture, healing cap, and abutments. Insert the tip of the hex driver bit into the hexagonal hole of the healing cap, healing abutment, or screw to connect to the fixture. Connect the Ø2.35S and L bits to the torque control. Connect the Ø3S bit to the finger driver, or to the free wrench via the free wrench adapter. Use the S or L bit depending on the condition of the mouth (distance from the opposing tooth, interference from adjacent teeth, etc.). 	

AQB bone profiler guide AQB bone profiler		Guide/4/5
	Appearance and dimensions	Purpose and usage
or two-piece implant ■	Guide 4 5	 Use to form cortical bone according to the bone condition when connecting the healing abutment or other to the fixture. Connect the fixture to the bone profiler guide with the hex driver bit. Connect the bone profiler to the finger driver or to the free wrench via the free wrench adapter. Insert the bone profiler along with the bone profiler guide to form bone. Use the bone profiler appropriate for the fixture diameter of the implant placed.
ols †	SQL driver bit	
ŏ	Appearance and dimensions	Purpose and usage
		 Use to place the fixture into the jawbone. Connect to the finger driver or the free wrench via the free wrench adapter.

AQB reaming drill

φ 2.75 / φ 3.75 / φ 4.75



3 Tool Setting

Set the tools in the toolbox according to the position instructions shown in the figure below. Put the special tools for T-type one-piece and two-piece implants in the area marked by \square and combination tools in the area marked by \square .



4 Cleaning and Storage of the AQB Implant Tools

In this chapter, we introduce the use of Z-1 Eco cleaning solution (YDM Corporation) for cleaning the AQB implant tools as an example. If other solutions are to be used, avoid the use of super acid water or similar solution which may cause rust. Use cleaning solutions that have rust-proof effect to aluminum and follow their instructions for use. When using ultrasonic cleaning equipment, take care not to let drills come in contact with each other to avoid adverse influence on their blades.

In case there are two surgeries in the same day, take enough time between the first and the second cases.





Start from sterilization when the tools are used next time.

AQB Implant System

Basic Procedures

1 Patient Examination and Treatment Planning

Implant surgery is determined after systemic examination, oral cavity examination, X-ray examination, and study model analysis. In general, the degree of surgical invasion by implant surgery is almost the same as that of extraction of a fully impacted wisdom tooth. The analysis of examination data to decide whether implant surgery can conduct or not, therefore, should be performed with similar considerable care to the extraction case. To achieve a long-term stability of implant including the upper structure, please be careful in performing preoperative examinations.

Treatment Planning

Successful treatment with the AQB implant is possible only when secure treatment is provided to those patients suitable for it. In order to address the patient needs, it is essential to plan a better functionality, better esthetics, and more natural restoration.

Moreover, some cases may require GBR or sinus lift procedures in combination with the AQB implant placement surgery.

A complete and detailed treatment planning is achieved by comprehensive diagnosis based on medical interview, general findings, pantomogram, X-ray, and CT scans, and simulation of final prosthesis using a jaw model.



Preoperative Preparation

For correct and safe placement of the AQB implant, it is necessary to prepare surgical instruments and the AQB implants by the day before surgery. If surgical instruments or AQB implants are prepared on the day of the surgery, there will be an increased risk that it is unable to make sterilization of tools or impossible to conduct the surgery itself due to reasons such as delay of delivery. Check the surgical instruments for any damage or malfunctioning by the day before surgery. Surgical instruments may cause unexpected trouble during surgery, depending on the conditions of prior use or storage. Backup implants, drills, and surgical instruments will able you to respond to such an unexpected trouble. We recommend that you prepare a check sheet to make sure there are necessary surgical instruments, implants, and backups. On the day of the surgery, check the roles of staff, prepare patient information (e.g., pantomogram, dental and medical record, and jaw model). On the day before surgery, sterilize surgical instruments prepared. As for roles of staff, have a meeting and reconfirm the assignments of each staff (e.g. who will work in the clean area and the dirty area and how to communicate with each other). Make necessary arrangements so that the patient information are surely managed by the personnel in the dirty area and can be referred when requested by the surgeon. The AQB implant tools must be autoclaved and other instruments must be sterilized in accordance with their respective instructions for use.

1

1 Patient Management

When an implant surgery was determined for a patient, treatment in the oral cavity other than that of the implant surgery must be completed. During and after a certain period after the surgery, you must thoroughly manage and comprehend the general condition of the patient and be able to stop treatment at any time. Especially, it is necessary that scaling is completely finished and complete tooth brushing instructions are given to the patient in order to achieve the best possible cleanliness in their oral cavity.

2 Surgical Instruments

Refer to the books on general surgery and dental surgery for surgical instruments necessary for the AQB implant placement (other than the AQB implant tools).

3 Disinfection and Sterilization

Implant placement is a surgery that involves invasive procedures. To avoid the risk of infection, take extreme caution in sterilization and disinfection of tools, equipment, the hands, and the surgical field.

AQB implant

The AQB implant is sold as sterilized. Handle the product with care, following the given precautions for use. Take out the product from the sterilized package immediately prior to the implant placement.

Surgical tools

Handle the AQB implant tools with care, following the given instructions for use. Tools must be fully cleaned with the cleaning solution safe to the skin and the mucous membranes. Spread them out on a clean cloth to dry, and sterilize in an autoclave in accordance with the instructions. (The tools are capable of sterilization at up to 135°C and drying at up to 140°C.) *Other sterilization methods, such as chemiclave or EOG sterilization are not supported. For the disinfection and sterilization of surgical instruments, refer to the books on general surgery and dental surgery.

•Hands, surgical field, etc

For the disinfection of the hands and surgical field, refer to the books on general surgery and dental surgery.

4 Staff Education

To ensure smooth and effective treatment and operation, educate your staff about the following items in advance according to your needs.

- What is an implant treatment?
- Importance of aftercare and tooth brushing instructions to the patient
- Preoperative preparation and cleaning of surgical instruments and the AQB implant tools
- Flow of the surgery and assignment of assistants
- Significance and importance of disinfection and sterilization
- How to deal with the patients who undergo surgery

3 Basic Implant Techniques

The techniques described in this chapter are basic techniques. It is your responsibility to decide what technique is appropriate for the patient depending on their condition. Since tools are consumables, it is recommended that you prepare backup tools to avoid troubles during surgery.

1 Operation Flow

The techniques for the AQB implant are roughly divided into four types: one-piece, T-type one-piece, twopiece and one-step, and two-piece and two-step. The following figure shows the flow of each technique. All techniques use the same procedures before the preparation of the implant insertion hole, and the AQB implant common tools are used. The one-piece and T-type one-piece implant require no special treatment after the implant placement (after the operation day). Impression can be taken by a general method and the procedural difficulty is almost the same level as crown placement.



Respective procedures are described step by step from the next page. Take note that the procedures may be different depending on the implant technique you choose. To eliminate mistakes, we printed tags that indicate the techniques that the procedures are applied to on the upper part of each page. Also, each step is shown with the indices of the four techniques.

Perform the procedures written in the pages and steps appropriate for your technique.



Step	1	Anesthesia	One-piece	T-type one-piece	Two-piece one-step	Two-piece two-step
Descrip	tion	Anesthetize the implant site. Use local infiltration, conduction, or other anesthesia on the implant site. Nitrous-oxide anesthesia or intravenous sedation may also be used as required.				
Step	2	Incision and peeling of alveolar ridge mucosa at the implant site	One-piece	T-type one-piece	Two-piece one-step	Two-piece two-step
Descript	tion ure	 Incise and peel the gingival mucoperiosteal flap at the implant site and expose the alveolar bone surface. Make a mesiodistal incision on the alveolar crest region of the ridge mucosa of the implant site. 				
		 Add a longitudinal incision to the mesial end, and to the distal end, if necessary. Make a buccolingual peeling of the gingival mucoperiosteal flap. Expose the alveolar bone surface. 		2	R	
	• Ex • Cl ar	xpose enough amount of alveolar bone surface. heck that there is enough bone width to place n implant.				
Step	3	Marking of drilling hole	One-piece	T-type one-piece	Two-piece one-step	Two-piece two-step
Descrip	tion	 Mark the center of the implant site. Place a dent to ensure stable the first drilling. 		Tools use AQB roun 	d d bar	
Procedu	ure	 Expose enough amount of the alveolar bone surface. Irrigate with saline. Rotate and apply the AQB round bar to the center of the implant site to create a dent. 			-	

- Perform the procedure irrigating with sufficient saline.
 The dept should be deep to the extent that the
- The dent should be deep to the extent that the AQB guide drill blade does not slip.
- The rotation speed shall be 400-800 rpm.
- If the alveolar ridge is sharply pointed, consider performing alveolar ridge augmentation.

AQB Implant System Basic Procedures Basic Procedures

otep 4	Drilling of a pilot hole	One-piece	T-type one-piece	Two-piece one-step	Two-piece two-step
Description	Drill a pilot hole suitable for the position and direction of the implant.	l	Tools use	ed	
Procedure	 Apply the tip of the AQB guide drill to the dent made by the AQB round bar and place the AQB guide drill in the position in line with the implant direction. Irrigate with saline. Rotate the AQB guide drill and drill a hole as deep as the implant insertion depth. 				
	Perform the procedure irrigating with sufficient saline. Use of a surgical stent created on the study nodel before surgery will help to achieve more correct drilling. Use the L size drill when drilling is difficult with the S size drill, because it is too short and the contra nead comes in contact with adjacent teeth. The rotation speed of the drill shall be 400-800 pm.				
Step 5	Check of drilling direction	One-piece	T-type one-piece	Two-piece one-step	Two-piece two-step
escription	 Check the position, direction and distance from the adjacent teeth. When multiple implants are to be placed, check that the holes are parallel and are placed in proper distance. Insert the narrow part of the shaft of the AQB direction checker into the pilot hole bored by the AQB guide drill. Check the hole position, direction, and distance from the adjacent teeth. When multiple implants are to be placed, also check that the holes are parallel and are placed in proper distance. 		Tools use • AQB dire	ed ction check	er
	f the position or direction of the hole is not correct or holes are not parallel, take extra care o prepare an ideal hole. The AQB direction checker S, M, and L have he shaft width of 7, 9, and 11 mm, respectively, which corresponds to the abutment length S, M, and L of the AQB implant. If possible, have the batient bite down for the rough assessment of he clearance. Depending on the shape of the bone, the vertical dimension of the bone crest may become lower			R	

Two-piece one-step Two-piece two-step T-type one-piece Step Expansion drilling of insertion hole 6 **One-piece** Expand (gradually) the insertion hole using Description Tools used the AQB spiral drill and the counter drill. · Irrigate with saline. AQB auide drill Procedure AQB counter drill Rotate the AQB spiral drill and gradually expand the hole in line with the direction of the pilot hole bored by the AQB guide drill. Spiral drill diameter (mm) Implant diameter (mm) φ3 $\phi 2.5$ φ4 $\phi 2.5 \rightarrow \phi 3.5 \rightarrow \phi 3.5$ **φ2.5 ▶φ3.5 ▶φ3.5 ▶φ4.5 ▶φ4.5** φ5 Counter drill diameter (mm) Perform the procedure irrigating with sufficient saline. Expand the hole until the diameter is 0.5 mm narrower than that of the implant. • Continue drilling until the marking groove on the drill indicating the target depth becomes invisible. Based on the shape of the bone, bore the hole approximately 0.5 to 1.0 mm deeper than that of the total length of the implant (fixture), S (8mm), M (10 mm), or L (12 mm). · Based on the condition of the bone, use the counter drill for the expansion of the Ø2.5-3.5 or Ø3.5-4.5 hole. The rotation speed shall be 400-800 rpm. T-type one-piece Two-piece one-step Two-piece Step Preparation of insertion hole **One-piece** two-step Description Expand and prepare the insertion hole. Tools used · Expand and prepare the basal and axial planes of Procedure AQB finger driver the insertion hole with the AQB endmill reamer. AQB endmill reamer AQB reamer extension Endmill reamer diameter (mm) Implant diameter (mm) • AQB free wrench adapter φ3 $\phi 2.75$ AQB free wrench AQB fixer support φ4 $\phi 3.75$ φ5 ¢4.75 • Drill and prepare the insertion hole until the marking groove of the

- Drill and prepare the insertion hole until the marking groove of the target depth on the AQB endmill reamer is completely hidden buccolingually.
- Perform the procedure while irrigating and cleaning the insertion hole with saline.
- Take extra care not to incline the shaft of the AQB endmill reamer.
- The AQB endmill reamer is capable of drilling a hole to a certain depth as well as expanding it with the blade on the tip.
- If the AQB finger driver interferes with the adjacent teeth, it is possible to extend the tool length using the AQB reamer extension.
- If the operation of the AQB finger driver by hand is difficult, it is possible to use the AQB free wrench by connecting it to the AQB free wrench adapter.
- It is possible to use the reaming drill (option) that can be connected to the implant engine instead of the AQB endmill reamer. In this case, rotate the drill at the speed of 400-800 rpm and be very careful of over-drilling.
- Take care not to cause accidental ingestion by the patient.







Step 8	Check of insertion hole depth and diameter	One-piece T-type Two-piece Two-piece two-step
Description Procedure	 Check the depth and diameter of the insertion hole. Thoroughly clean the inside of the insertion hole bored by the AQB endmill reamer with saline, and completely remove bone fragments generated by drilling. Insert the AQB alarm gauge into the insertion hole and check the diameter and depth. If the depth is not enough, drill deeper with the AQB endmill reamer, or if necessary, with the AQB spiral drill. 	Tools used • AQB alarm gauge
<u>.</u>	The ideal depth of the insertion hole is the depth that the hydroxyapatite-covered part of the implant is fully (mesiodistally, especially buccolingually) hidden in the alveolar bone. If the AQB alarm gauge inserted wobble or is loose in the hole, it may make the insertion hole too large when the AQB reamer is used in the next procedure. In this case, it is sometimes safer not to finish the insertion hole with the AQB reamer and simply place the implant. Consider placing the implant in this step, in particular, in case of a maxillary implant, or when the bone mass is insufficient even if it is a mandibular,. Take care not to cause accidental ingestion by the patient.	
Step 9	Finishing of insertion hole	One-piece T-type Two-piece Two-piece one-step two-step
Description	Prepare the insertion hole to the final implantation diameter with the AQB reamer	Tools used

Procedure

· Expand and prepare the axial planes of the insertion hole with the AQB reamer.

Implant diameter (mm) Reamer diameter (mm)

φ3	φ2.9
ϕ 4	φ 3.9
ϕ 5	φ4.9

- · The ideal diameter for the final hole is 0.10 mm smaller than that of the implant.
- Take extra care not to incline the shaft of the • AQB reamer.
- · In the case of soft and low-density bone, it is sometimes safer not to use the AQB reamer, since it may expand the hole diameter.
- If the AQB finger driver interferes with the adjacent teeth, it is possible to extend the tool length using the AQB reamer extension.
- If the operation of the AQB finger driver by hand is difficult, it is possible to use the AQB free wrench by connecting it to the AQB free wrench adapter.

- AQB finger driver
- AQB reamer
- AQB reamer extension
- · AQB free wrench adapter
- AQB free wrench
- · AQB fixer support



Step 10 Excision of the gingival mucoperiosteal flap One-piece T-type one-piece one-step

Description

Excise the gingival mucoperiosteal flap in a circular arc that matches the curve of the cervical region of the implant using a small surgical knife or gingival punch.

- Procedure
- Put the gingival mucoperiosteal flap peeled and reversed back to the original position and place a temporary suture in the mesiodistal direction of the insertion hole (to eliminate looseness in the gingiva).
- Excise the gingival mucoperiosteal flap located immediately above the insertion hole using a small surgical knife or gingival punch.



Step 11-1 Placement of the AQB one-piece implant One-piece

There are two techniques, one is using the AQB finger driver and the other is using the AQB free wrench.



Place the one-piece implant into the insertion hole.

- Procedure
- Irrigate and clean the insertion hole with saline.
- The AQB implant is attached with a silicone cap. Put the implant using this silicone cap into the oral cavity and insert into the insertion hole.

a. When using the AQB finger driver

Fit the AQB finger driver connected to the AQB fixer joint and the AQB fixer to the implant in the oral cavity. Slowly turn it right and screw to place the implant.

- Tools used
- AQB finger driver
- AQB fixer joint
- AQB fixer



b. When using the AQB free wrench

Fit the AQB free wrench connected to the AQB fixer to the implant in the oral cavity. Apply the AQB fixer support or a finger to the hole of the fixer. Slowly turn the AQB free wrench right and screw to place the implant. If the free wrench comes in contact with the residual tooth and interferes the implant placement, connect the fixer extension to the upper part of the fixer (the height is increased by 8 mm).

- Insert the implant until the hydroxyapatitecovered part is fully buried in the bone.
- After placement, check that the implant does not wobble.



- If the implant once removed from the insertion hole due to lack of hole diameter, etc. is to be placed again, keep it wet in sterile saline and thoroughly clean the blood and other body fluids before inserting it again.
- It is also possible to put the implant into the insertion hole with tweezers made of materials other than metal. Similarly, it is possible to put the implant to the insertion hole with the AQB fixer attached.
- When connecting the implant and the fixer, follow the instructions on Page 35 (if not followed, the fixer may be damaged).

Tools used

- AQB fixer support
- AQB free wrench
- AQB fixer
- AQB fixer extension





Basic Procedures

Step 11-2 Placement of the AQB T-type one-piece implant T-type one-piece implant

There are two techniques, one is using the AQB finger driver and the other is using the AQB free wrench.



Place the T-type one-piece implant into the insertion hole.

Procedure

- Irrigate and clean the insertion hole with saline.
- The AQB implant is attached with a silicone cap. Put the implant using this silicone cap into the oral cavity and insert into the insertion hole.
- a. When using the AQB finger driver

Fit the AQB finger driver connected to the AQB fixer joint and the AQB T-type fixer to the implant in the oral cavity. Slowly turn it right and screw it to place the implant.



- AQB finger driver
- AQB fixer joint
- AQB T-type fixer



b. When using the AQB free wrench

Fit the AQB free wrench connected to the AQB T-type fixer to the implant in the oral cavity. Apply the AQB fixer support or a finger to the hole of the fixer. Slowly turn the AQB free wrench right to place the implant.

- Make sure to use the special fixer (the AQB T-type fixer) for the placement of the T-type one-piece implant.
- Insert the implant until the hydroxyapatite-covered part is fully buried in the bone.
- After placement, check that the implant does not wobble.



- If the implant once removed from the insertion hole due to lack of hole diameter, etc. is to be placed again, keep it wet in sterile saline and thoroughly clean the blood and other body fluids before inserting it again.
- It is also possible to put the implant into the insertion hole with tweezers made of materials other than metal.
- When connecting the implant and the fixer, follow the instructions on Page 35 (if not followed, the fixer may be damaged).
- If the free wrench comes in contact with the residual tooth and interferes the implant placement, connect the fixer extension to the upper part of the fixer (the height is increased by 8 mm).

Tools used

- · AQB fixer support
- AQB free wrench
- AQB T-type fixerAQB fixer
- extension





Step 11-3 Precautions in using fixer

One-piece T-type

The fixer to be used for implant placement is different depending on the types of the AQB implant, one-piece or T-type one-piece. Make sure to use the fixer appropriate for the implant type used. If the incorrect type of fixer is used, both the implant and the fixer may be damaged.

In addition, the fixer must be inserted in the correct direction. Make sure that the fixer is fully inserted in the correct direction.

If the fixer and the implant are not in the correct direction or used with an insecure connection, the implant and the fixer may be jammed with the fixer difficult to be removed and both may be damaged.

Identification of fixer

The fixers for one-piece implant are indicated with a number representing the implant diameter. The fixers for T-type one-piece implant have a letter "T" before the implant diameter and marking lines for identification.



Fixer insertion direction







The correct insertion direction. Insert the implant in a way that the notched part (silicone rubber part) of the implant can be seen in the fixer window.



Even if the insertion direction is correct, it may cause a jam when torque is applied with the implant tip being in contact with the wall of the fixer window. Feeling that the implant is inserted to the end can be achieved in this case, so care must be taken.

Step 11-4 Insertion of the AQB two-piece implant

There are two techniques, one is using the AQB finger driver and the other is using the AQB free wrench.



Insert the two-piece implant into the insertion hole.

Procedure

Irrigate and clean the insertion hole with saline.

Fit the AQB finger driver connected to the SOL

driver bit to the implant in the oral cavity. Slowly turn it right and screw it to insert the implant.

- The implant is attached with a silicone cap. Put the implant using this silicone cap into the oral cavity and inset into the insertion hole.
- a. When using the AQB finger driver

Tools used

- AQB finger driver
- SOL driver bit



b. When using the AQB free wrench

Fit the AQB free wrench connected to the SOL driver bit and the AQB free wrench adapter to the implant in the oral cavity. Apply the AQB fixer support or a finger to the hole of the fixer. Slowly turn the AQB free wrench right to insert the implant.

SOL driver bit
AQB free wrench
SOL free wrench

Tools used

- adapter
- AQB fixer support





• Insert the implant until the implant body's joint part is aligned with the bone margin and the hydroxyapatite-covered part is fully buried in the bone.

driver bit and the implant.

 Match the direction of the SOL driver bit and the implant and make sure to insert as far as they go.
 If the driver bit and the implant are in an incorrect direction or used with an insecure connection, the SOL driver bit and the implant may be jammed.
 The SOL driver bit may be caught and be difficult to take off resulting in damage to both the SOL

- If the implant once removed from the insertion hole due to lack of hole diameter, etc. is to be placed again, keep it wet in sterile saline and thoroughly clean the blood and other body fluids before inserting it again.
- It is also possible to put the implant into the insertion hole with tweezers made of materials other than metal.
- Adjust the direction so that the indentation faces the front.

Two-piece
one-stepTwo-piece
two-step

Step 12-1 Placement of healing abutment

Description

Procedure

Place a healing abutment to the inserted two-piece implant.

- Irrigate and clean the screw part (SOL part) with saline.
- Hold the healing abutment with the fingers and slowly screw it into the implant body.
- When it is screwed to some extent, use the AQB finger driver connected to the hex driver bit and screw tightly. The ideal torque shall be 10 N/cm.
- Choose the healing abutment of appropriate length according to the patient's gingival thickness (SS: 0.5 mm, S: 2.5 mm, M: 3.5 mm, and L: 4.5 mm).
- When the healing abutment is tighten with too strong force, a problem such as the fixture turning with the tightening force and detachment becoming impossible. Be careful of over-tightening.
- Take care not to cause accidental ingestion by the patient.
- * Other methods can also be used, such as using torque control.

Step 12-2 Placement of healing cap

Description

Procedure

Place a healing cap to the inserted two-piece implant.

- Irrigate and clean the screw part (SOL part) with saline.
- The healing cap is enclosed within the silicone cap. Insert the hex driver bit connected to the AQB finger driver in the hexagonal hole and carefully take it out from the cap. At this time, the healing cap is connected to the driver.
- Carry the healing cap held with the hex driver bit into the oral cavity and carefully screw it down. The ideal torque shall be 10 N/cm.
- The healing cap is a very small component. Take care not to cause accidental ingestion.
- When the healing cap is tighten with too strong force, a problem such as the fixture turning with the tightening force and detachment becoming impossible. Be careful of over-tightening.



- When the cap cannot be taken out from the silicone cap, drop the healing cap in the clean field and connect it to the hex driver with the fingers.
- Take care not to cause accidental ingestion by the patient.
- * Other methods can also be used, such as using torque control.

Tools used

- AQB finger driver
- Healing abutment

Two-piece

one-step

Hex driver bit



Two-piece two-step

Tools used

- AQB finger driver
- Healing cap
- Hex driver bit





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Step 14 Postoperative management

T-type Two-piece one-piece one-step

One-piece

Two-piece two-step

The AQB implant is a bone-bonding implant. Therefore, it is very important to manage the implant condition for about 3 months from the implantation surgery to the bonding of the implant body to the jawbone.

Basically, instruct the patient not to chew anything using the surgical site and not to apply unnecessary stimulation to it with the tongue or fingers.

Suture removal and tooth brushing

Sutures should usually be removed 7 to 10 days after surgery, but the timing varies depending on the condition of the surgical site. The brushing of the surgical site should be started after the suture removal. Cleaning before the suture removal should be oral rinse and other cleaning method after tooth extraction. Also, it is necessary to give complete instructions to the patient not to develop inflammation of the gingiva or oral mucosa around the implant site due to insufficient cleaning.

Temporary fixation (temporary crown)

The AQB implant placed in an ideal surgery requires no special fixation apparatus. However, in cases where the occlusal stress is large and will seriously interfere with the stability of the implant body, a fixation apparatus may be used to secure the stability of it. If there is a denture that had been used before surgery, it may be possible to process and attach it to the implant body to secure the stability of it. If there is no such old apparatus, similar apparatus becomes necessary to be created. In either case, it is important that stress is not applied to the implant body.

This is the end of the basic procedures for one-piece, T-type one-piece, and two-piece one-step implant placement.

Thorough postoperative patient management is required until osseointegration is achieved. For the information on impression taking, refer to the description starting from Page 43. The following pages describe the operation procedures for two-piece two-step implant placement. When choosing the two-piece two-step implant technique, perform the procedures in Steps 15-19 (Pages 40-42) after confirmation of osseointegration and proceed to the impression taking procedure.

Step 15 Start of secondary operation and gingival fenestration

Description

Check the position of the implant inserted in the primary operation and expose the healing cap.

Procedure

- Check the position of the healing cap by palpation and X-ray imaging, and make a mesiodistal incision on the alveolar crest region of the ridge mucosa.
 - Add a longitudinal incision to the mesial end, and to the distal end, if necessary.
 - Peel the gingival mucoperiosteal flap buccolingually.
 - Expose the healing cap and the alveolar bone surface around it.
- Make sure that sufficient osseointegration has been achieved. If not, stopping the procedure and waiting until sufficient osseointegration is achieved may be necessary.
- During incision, take care not to touch the healing cap with the surgical knife.

Step 16 Excision of the gingival mucoperiosteal flap

Description

Procedure

Excise the gingival mucoperiosteal flap in a circular arc that matches the curve of the cervical region of the implant using a small surgical knife or gingival punch.

- Put the gingival mucoperiosteal flap peeled and reversed back to the original position and place a temporary suture in the mesiodistal direction of the insertion hole (to eliminate looseness in the gingiva).
 - Excise the gingival mucoperiosteal flap located immediately above the insertion hole using a small surgical knife or gingival punch.



Two-piece

two-step

Two-piece

two-step

Step 17 Removal of healing cap

Description

Remove the healing cap.

Procedure Insert the hex driver bit connected to the AQB finger driver in the hexagonal hole and carefully take it out from the fixture.

- The healing cap is a very small component. Take care not to cause accidental ingestion.
- · In some cases where very advanced osseointegration extends beyond the healing cap margin to the upper area. In that case, use a drill or other tool and carefully remove the excess
- bone bonded to the healing cap.
- The healing cap is designed for one time use. Since the hexagonal part may become loose, do not reuse the healing cap.
- Take care not to cause accidental ingestion by the patient.

Tools used

AQB finger driver

Two-piece two-step

Two-piece

two-step

Hex driver bit



Step 18 Placement of healing abutment

Description

Place a healing abutment to the two-piece implant.

Procedure

- Irrigate and clean the screw part (SOL part) with saline.
- · Hold the healing abutment with the fingers and slowly screw it into the implant body.
- When it is screwed to some extent, use the AQB finger driver connected to the hex driver bit and screw tightly. The ideal torque shall be 10 N/cm.
- · Choose the healing abutment of appropriate length according to the patient's gingival thickness (SS: 0.5 mm, S: 2.5 mm, M: 3.5 mm, and L: 4.5 mm).
- When the healing abutment is tighten with too strong force, a problem such as the fixture turning with the tightening force and detachment becoming impossible. Be careful of over-tightening.
- Take care not to cause accidental ingestion by the patient.

Tools used

- AQB finger driver
- · Healing abutment
- Hex driver bit



Step 19 Suture

Description

Return the peeled gingival mucoperiosteal flap back to the original position and close with sutures.

Procedure

• Close the incisions tightly around the healing abutment with standard sutures.



Two-piece two-step

This is the end of the secondary operation of the two-piece two-step implant. Take the same cautions for postoperative management as those after the primary operation (Step 14, Page 39). Approximately one week after suture removal, check the healing condition of the gingiva and proceed to impression taking.

Basic Impression Taking Procedures 4

In the cases of one-piece, T-type one-piece, and two-piece one-step implant, impression taking should be performed after strong osseointegration is achieved between the implant and bone (usually 1-3 months after surgery). In the cases of two-piece two-step implant, impression should be taken approximately 2 weeks after the secondary operation.

-type

Step 1 Impression taking of one-piece implant One-piece one-piece

The impression taking procedure of one-piece and T-type one piece implants is the same as that of natural teeth. No special technique is necessary.

Use agar-alginate combined impression or rubber impression materials. If a personal tray is used with rubber impression materials, create one with a space for the second impression. If a stock tray is used, choose one with the size that the implant does not come in contact with its inner surface, place a spacer to the dentition and take the first impression and then take the second impression.

Gingival retraction is not necessary unless the margin is placed subgingivally. The difference between natural teeth row and implants is the diameter. The narrowest implants have a diameter of 3 mm, which is subject to bubbles during gypsum injection. This tendency is especially true with rubber impression materials. Also, care must be taken when removing the working model from the impression as it may damage the abutment.

Impression taking of two-piece implant Step 1

Two-piece one-step Two-piece two-step

For two-piece implants, impression taking and preparation procedure of working model using the multi abutment and the AQB pickup coping are required. Use a somewhat hard silicone rubber material for impression taking. Basically, a personal tray should be prepared for impression taking.

Two-piece one-step Two-piece Removal of healing abutment Step two-step Remove the healing abutment and check the **Tools used** Description condition of the gingiva. AQB finger driver Hex driver bit Procedure Carefully remove the healing abutment using the hex driver bit connected to the AQB finger driver. When the healing abutment and the gingival epithelium are adhered, bleeding might occur during the procedure.

Step 3 Placement of the multi abutment 5

· Be careful not to pinch the gingiva between the

 If the distance between the adjacent teeth is narrow and the use of the multi abutment 5 is difficult, the multi abutment 4 can be used. In that case, use the pickup coping 4.

• If necessary, check the placement condition of the

multi abutment and the fixture.

multi abutment with dental X-ray.



Place the multi abutment 5 to prepare for translation.

- Procedure
- Prepare the multi abutment 5 and place it to the fixture in the oral cavity carefully.
- Fix the multi abutment 5 to the fixture using the hex driver bit connected to the AQB finger driver.
- Tools used
- AQB finger driver

Fwo-piece one-step Two-piece two-step

Hex driver bit



Step 4 Placement of the pickup coping 5

Description

Place the AQB pickup coping 5 to the multi abutment 5.

Procedure

- Place the AQB pickup coping 5 to the multi abutment 5 in the oral cavity carefully. Make sure you feel a click.
- The AQB pickup coping 5 and the multi abutment must be completely connected to produce an accurate working model. Careful placement is required.
 - Take care not to cause accidental ingestion by the patient.



Tools used

- AQB finger driver
- Hex driver bit



Step 5 Impression taking

Description

Procedure

Take an impression of the oral cavity using a somewhat hard silicone rubber material.

- Inject the impression material with a syringe around the implant and adjacent teeth, being careful not to create bubbles.
- Place the impression material on the personal tray, being careful not to create bubbles.
- Put the personal tray into the oral cavity and take an impression in a standard technique.
- Support the personal tray so that it won't move until the impression material is completely hardened.
- Once the impression material has hardened, carefully remove the tray and check that the AQB pickup coping 5 is embedded in the impression material.
- Check that the AQB pickup coping is embedded and steadily fixed in the impression material.
- After impression taking, check that there is no mobility of the multi abutment 5. If there is a mobility, repeat the impression taking.





Remove the multi abutment 5 and place the healing abutment again.

- Procedure
- Carefully remove the multi abutment 5.
 Place the healing abutment again, which was removed in the prior procedure.



• Take care not to cause accidental ingestion by the patient.

Tools used

- AQB finger driver
- Hex driver bit



This is the end of the impression taking of the two-piece two-step implant. Have the patient wait for the completion of the upper structure.

45

Two-piece one-step

Two-piece

two-step



Two-piece one-step

Two-piece

two-step

5 Placement of Upper Structure

An upper structure is cemented to the AQB implant for both one-piece and two-piece. Before the cementation, the fitness of the upper structure and the implant must be checked. Occlusal adjustment should be performed by light tapping. Leave the contact lighter than that of the other residual teeth so that the contact on strong biting becomes equivalent to that of other residual teeth. Adjust thoroughly especially during eccentric movements so that no interference occurs. It may take 6-9 months until the chewing cycle is stabilized, and thus the occlusion should be checked frequently.

Step 1 Placement of upper structure of one-piece implant One-piece one-piece

Description

After checking the fitness of the upper structure, bond it with cement.

Procedure

- To investigate the fitness of the completed upper structure, gently place it on the abutment and check that it can be inserted to the predefined position.
- If no problem was found, temporarily bond the upper structure with a very small amount of temporary cement or other temporary bonding material. Leave it for approximately one week.
- Recall the patient and perform complete bonding if no functional problem has occurred.
- If excessive stress on the implant body due to abnormal occlusion or ill-fitting is found, consider performing occlusion adjustment or remanufacturing of the upper structure.





Two-piece

one-step

Two-piece

two-step

Step 1 Placement of upper structure of two-piece implant

Description

Remove the healing abutment and check the condition of the gingiva.

Procedure

- Carefully remove the healing abutment using the hex driver bit.
- When the healing abutment and the gingival epithelium are adhered, bleeding might occur during the procedure.
- Take care not to cause accidental ingestion by the patient.

Tools used

- AQB finger driver
- Hex driver bit



Step 2 Placement of abutment

Description

Place the abutment and completely fix with an abutment screw.

- Procedure
- Irrigate and clean the screw part (SOL part) with saline.
- Put the abutment for the upper structure in the oral cavity and place on the fixture.
- Turn the abutment screw with the hex driver bit until it is completely tighten. At this time, torque shall be 25 N•cm.
- Make sure that there is no foreign matter between the abutment and the fixture.
- · If necessary, check the placement condition of the abutment with dental X-ray.
- Make sure that the direction of the abutment is correct. By manufacturing an abutment transfer die on the model, accurate positioning of the

Tools used

AQB finger driver

Two-piece

one-step

Two-piece

two-step

Two-piece two-step

Two-piece one-step

Hex driver bit



Step 3 Placement of upper structure

abutment becomes possible.

Description

Place the upper structure on the abutment.

Procedure

- To investigate the fitness of the completed upper structure, gently place it on the abutment and check that it can be inserted to the predefined position.
- Inject a silicone impression material mixed with antibiotics into the access hole of the abutment using a syringe to seal the hole to prevent cement from flowing in.
- · When the fitness was checked and no problem was found, temporarily bond the upper structure with a very small amount of temporary cement or other temporary cementation material. Leave it for approximately one week.
- Recall the patient and perform complete cementation if no functional problem has occurred.

Completely remove the excessive cement during temporary and final cementation.

· If excessive stress on the implant body due to abnormal occlusion or ill-fitting is found, consider performing occlusion adjustment or remanufacturing of the upper structure.





6 Aftercare

An upper structure is cemented to the AQB implant for both one-piece and two-piece. Before the cementation, the fitness of the upper structure and the implant must be checked. Occlusal adjustment should be performed by light tapping. Leave the contact lighter than that of the other residual teeth so that the contact on strong biting becomes equivalent to that of other residual teeth. Adjust thoroughly especially during eccentric movements so that no interference occurs. It may take 6-9 months until the chewing cycle is stabilized, and thus the occlusion should be checked frequently.

1 Check Points and Recall Timing

It is essential to inform the patient the importance of aftercare for the implant and make sure that they visit your office on your request.

It is necessary to recall the patient after 1 week, 1 month, 3 months, and 6 months after the upper structure placement to follow up. At follow-up, take orthopantomograph, dental X-ray, oral cavity pictures according to need and carefully check for bone resorption, gingival redness, swelling, and recession, pus discharge, pain, bleeding, plaque, pocket depth, mobility of the implant, and any other abnormal findings. After that, recall interval can be 6 months if no abnormalities are observed. The oral cavity examination at recall should include not only the condition of the implant area, but also the condition of the entire teeth , periodontium, and occlusion in the oral cavity. During the examination, compare the current condition with those immediately after surgery and placement of prosthesis.

2 Plaque Control

After the placement of prosthesis, more plaque tends to accumulate around the implant than before its placement. Therefore, the basic element of aftercare is plaque control. It is necessary to fully and thoroughly educate and instruct the patient about the importance of plaque control from before surgery. The method of plaque control is basically the same as that for natural teeth, but it is important to particularly clean the implant and the upper structure. For complete plaque control, it is necessary to provide instructions that fit the individual condition of the patient, such as how to use an interdental brush or dental floss in addition to usual toothbrush. When it becomes necessary to remove dental calculus during the aftercare period, do not use an ultrasonic scaler.

3 Postoperative Problems and Their Remedies

In principle, bone-bonding implants such as the AQB implant do not move. If there is tenderness or mobility of the AQB implant 1-2 months after its placement, it is possible that the ossification around the implant has not progressed enough for some reason and osseointegration between the implant and the bone has not been achieved. In such a case, place a temporary prosthesis and wait for 1-2 months more to determine whether the final prosthesis can be placed or there is a need of implant body removal and replacement operation. When there is no sign of improvement, it is not acceptable to unnecessarily prolong the follow-up period, for it may have an adverse influence on the subsequent treatment. It is considered that follow-up should end by 6 months after the implant placement.

To avoid trouble with patients after surgery, you need to provide sufficient explanation to them in advance (informed consent). It is important that you explain the benefits and detriments of the AQB implant and then choose the implant as a last therapy. Thorough explanation is especially necessary for patients who have excessive hope for the implant treatment.

4 Problems Concerning Upper Structure

Common problems of upper structures include detachment of the structure, exfoliation of the facing material or fracture, and fracture of metal frame.

The causes of detachment include insufficient retention due to lack of surface area of the abutment,

incomplete fitting of the upper structure, too large cusp angle, inadequate occlusion, and defective cementation. Preoperative examination and adjustment after implant placement are important to eliminate all of the above causes of detachment. It is also effective to use a provisional restoration prior to the placement of final prosthesis.

Also, the exfoliation of the facing material is often caused by an inappropriate design of metal frame. It is necessary to design a frame that efficiently distributes stress.

References (all in Japanese)

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Clinical Management Form

1. Patient rec	cord [Case No. :]
Patient name			Date of birth		
Sex	M/F Age		Record No.		
CC					
Diagnosis					
Systemic	Past histo	ory			
illness	Present illn	ess			
First visit date				Consent	Written / Oral

2. Implant record

Insertion date		Condition	Good / Normal / Bad
Sito			
Site			
Root type Lot No.			
Findings at insertion			
Temporary prosthesis	Yes / No []

3. Upper structure

Placement date			Luting age	ent		
Type Attachment Form						
Opposing tooth	1. Natural	2. Plate denture	3. Crown bridge	4. Implant	5. Missing	6. Others
Findings at placement						

4. Fol	low-up
--------	--------

D/M/Y	Findings (course, cause, outcome, etc.)

5. Attending dentist

Institution	Dentist	

(* In the case of serious problems or adverse reactions, immediately report to AQB • ABI IMPLANTCo.,Ltd.)

AQB · ABI IMPLANT Co,.Ltd. Tel. +81-3- 5839-2541 Fax. +81-3- 3862-1264 8F 1-4-6,Higashinihonbashi, Chuo-ku, Tokyo 103-0004 Japan

AQB Implant Preoperative Preparation Check Sheet

Operation date and time:	I	Patient name:		
/EMO				
Day before or	peration			
	he weed.			
Backup implant body size to				
	y 5120.			
AQB implant tool set				
 Round bar (×1) Spiral drill (×6) Reamer extension (×1) Free wrench adapter (× Circuiar knife(×3) Fixer joint (×1) X-ray guide (×1) 	 □ Guide drill (×2) □ Counter drill (×2 □ Finger driver (× □ Alarm gauge (× □ Fixer (×3) □ Fixer extension □ Tool guide (×3) 	 □ Direction 2) 2) 3) □ Free wre □ Reamer □ Fixer sup □ Toolbox 	n checker (×3) reamer (×3) ench (×1) (×3) oport (×1)	
T_type/two_niece/ontic	nal tools			
 T-type fixer (×) Bone profiler guide Reaming drill (×) 	□ Hex driver bit () □ SOL driver bit	×) □ Bone pro □ Torque c	□ Bone profiler (×)□ Torque control	
Micromotor				
Micromotor operation ch	neck 🛛 Atta	ched tube (sets)		
Other instruments				
 Knife holder Curette tweezers Tweezers without hook Mallet Bone crusher Mosquito forceps Knife (#) Sterile cloth Scrub suit (×) 	 Mucosal elevator Bone file Tweezers with hook Suction Syringe Aluminum foil Knife (#) Sterile fenestrated drape Gloves () 	 Periosteum elevator Bone-crushing forceps Suture removal scissors Mouth retractor (L) Mirror Saline Knife (#) Gauze Headpiece () 	 Curette Needle forceps Chisel Mouth retractor (S Tray Suture () Knife (#) Cotton ball Mask () 	

On operation day

Sterilization of surgical instruments (responsible person:)	Check of roles
Pantomograph	□ X-ray	□ Jaw model		

Reports on Adverse Reactions and Filling of the Clinical Management Form

Immediately notification to the Ministry of Health, Labour and Welfare (MHLW) is required if the patient using the AQB implant develops serious problems or adverse reactions associated with the AQB implant or has a risk of developing them.*1 If such a case occurs, please notify your sales representative or our AQB Business Unit immediately.

*1 It is required to notify adverse reactions to pharmaceuticals and medical devices to the Minister of Health, Labour and Welfare. Manufacturers/distributors are required to make a report to the Pharmaceuticals and Medical Devices Agency (PMDA) in accordance with the provisions of Article 77-4-2, Paragraph 1 and Article 77-4-5, Paragraph 3 of the Pharmaceutical Law. Also, supervisors of pharmacies, hospitals, clinics, and veterinary clinics, or physicians, dentists, pharmacists, veterinarians, or other medical professionals are required to make a report to MHLW (Safety Division, Pharmaceutical and Food Safety Bureau) under the provisions of Article 77-4-2, Paragraph 2 of the Pharmaceutical Law. MHLW transfers the reported information, in principle, to the manufacturer/distributor of the pharmaceutical or medical device in question through the medium of PMDA. The manufacturer/distributor who receives such information usually performs further investigation at the reporter's institution.

In this investigation in details, not to mention the actual implants and pantomographs, their root types and lot numbers become important for searching the cause and traceability.

Therefore, the package of the AQB implant is attached with a (double-layered) label indicating the root type and lot number. Please remove one layer and attach it to the medical record or our Clinical Management Form (Page 50) we provide.

Thank you for your understanding and cooperation.

Manufacturer/distributor:	AQB · ABI IMPLANT Co,.Ltd.
	8F 1-4-6,Higashinihonbashi Chuo-ku, Tokyo 103-0004 Japan
Generic name:	Dental endosseous implant
Product name:	AQB implant
Approval number:	20500BZZ01172000
Medical device type:	Specially controlled medical device Single use device

(The trade names and notification numbers of special components of the AQB two-piece implant are shown on Pages 11 and 12. For the product names, manufacturers, approval numbers and notification numbers of the AQB implant tools and so on, refer to Page 13.)



Contact for product information AQB • ABI IMPLANT Co,.Ltd. 8F 1-4-6,Higashinihonbashi , Chuo-ku, Tokyo 103-0004 Japan Tel: +81-3-5839-2541 Fax: +81-3862-1264