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# FINESIA™ Technical Report No.1

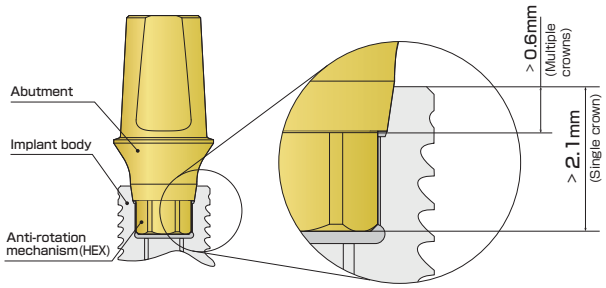
## Important points in the insertion of BL (Bone Level) Abutments

For details on the insertion of BL abutments, refer to the FINESIA BL Implant (Prosthesis) System Manual.

Abutment insertion accurately is indispensable matter for the stability of long term prognosis.
Refer to the following procedures and confirm that the abutment is accurately inserted in the implant.

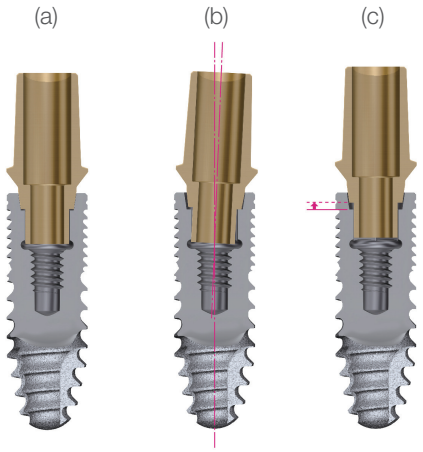
## ■ Basic Procedures for the insertion of Abutment and Tightening with Screw

1. Observe the tapered connection area of the abutment and confirm that the surface is free from damage by using micro scope. There is no problem in using ready-made abutments , however custom abutment with dental laboratory operation (abutments set up CAD/CAM crowns or abutment by cast on technique) may have foreign matter attached to their surfaces such as excess cement, casting alloy, In any case such an abutment cannot be used. Such abutments must be re-fabricated on the basis of appropriate instructions on dental techniques.
2. Insertion an abutment in the implant body, to rotate the abutment carefully, and confirm that the anti-rotation mechanism (HEX) provided to the tip of the abutment accurately fits to the implant. Accurately fitting to the implant, the abutment will not turn any more (Refer to Figures 1 and 2).
   After confirming that the abutment accurately fits the anti-rotation to the implant, Pre-tighten the abutment screw in oral.




**(Figure 1) Accurately state of abutment after placement**

At the final placement position, the distance from the top of the implant body to the tip of the anti-rotation mechanism of the abutment is 2.1 mm or more and the length of the tapered section in contact with the implant body is 0.6 mm or more.



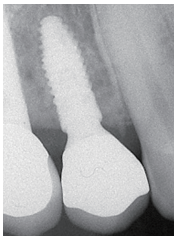

**(Figure 2) State of fitting between the implant body and abutment**

(a) State showing that the abutment accurately fits the implant body.
(b) State showing that the abutment is obliquely inserted into the implant body.
(c) State showing that the abutment is floating from the implant body.

3. Pre-tighten the screw

- Do not tighten the screw with the final torque at this stage yet.
- For Pre-tightening, use a HEXALOBULAR SCREWDRIVER SH and confirm that the screw is smoothly tightened.
- Abutment may not be fitting or the screw may not inserted straight when feeling friction or resistance when tightening the screw. In such a case, loosen the screw and check if the abutment is accurately inserted.

4. Take a dental X-ray image of the joint using the parallel technique to confirm that the abutment is accurately inserted on the implant body (Refer to Figures 3 to 5).



**(Figure 3) X-ray image showing that the abutment accurately fits to the implant body**

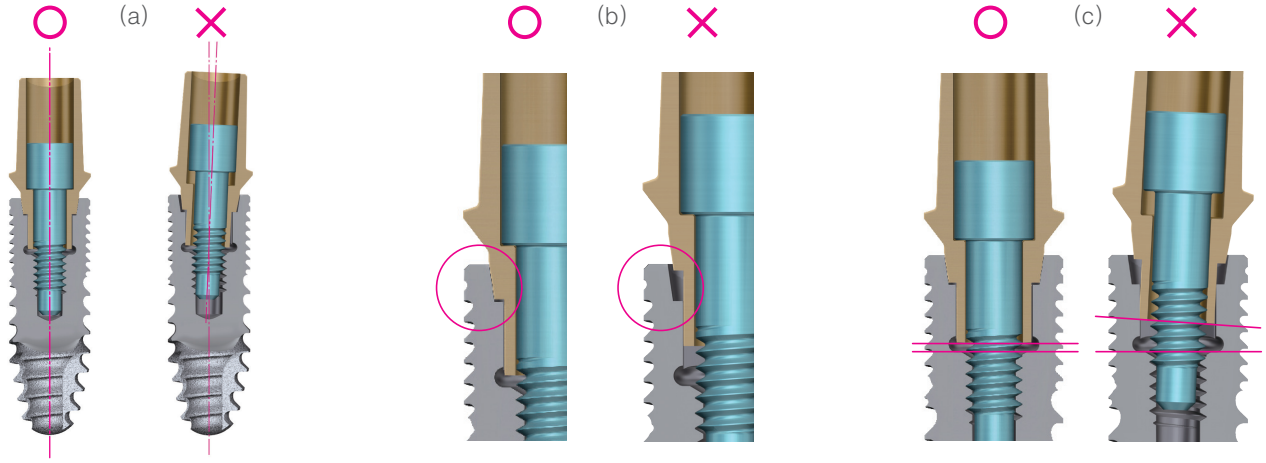
(Photograph provided by Dr. Miho Hayashi at Miho Hayashi Dental Office)



Cautions : Other than those in placing BL abutments are described in the manual. Be sure to conform the FINESIA BL Implant (Prosthesis) System Manual together with this Technical Report.

## ■ Check Points

(a) The long axis of the implant body must match that of the abutment.
(b) There must be no gap in the tapered area between the implant body and abutment.
(c) The bottom of the joint must be parallel.
(d) The peri-implant bone must not be interfering with the abutment.
(e) The soft tissue must not be jammed.

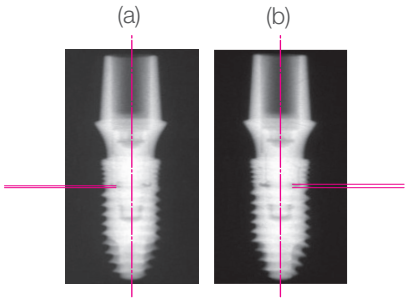



**(Figure 4) The state of fitting between the implant and abutment in X-ray image**

Confirm (a) matching of the long axis between the implant body and abutment, (b) presence of any gap in the tapered connection area, and (c) parallelism at the bottom of the joint.
Be careful not to interfere with the peri-implant bone or fastening soft tissue because this will result wrong fitting.

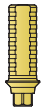
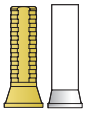
**(Figure 5) X-ray image samples showing the state of fitting between the implant body and abutment after temporary Pre-tightening**

(a) X-ray image showing accurate matching
(b) X-ray image showing a floating




## ■ Placing Implant and Abutment in the Mouth

As for BL abutments, the sterilization state, tightening method, tightening torque, and screwdrivers to be used for tightening are all set for each abutment. When placing a healing abutment or other abutments, confirm the tightening method, recommended tightening torque, etc. of each part before placing them on the implant body (Refer to Table 1).

| Product name | | HEALING ABUTMENT | CUSTOM HEALING ABUTMENT | TEMPORARY ABUTMENT | POST ABUTMENT | ANGLE ABUTMENT | PREPABLE ABUTMENT | CAST-ON ABUTMENT | TITANIUM-BASED ABUTMENT | SPLINT ABUTMENT (STRAIGHT) | SPLINT ABUTMENT (ANGLE) | SPLINT HEALING CAP | TEMPORARY/ GOLD CYLINDER | BALL ABUTMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product appearance | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sterilization | | Sterilized | Non-sterilized | Non-sterilized | Non-sterilized | Non-sterilized | Non-sterilized | Non-sterilized | Non-sterilized | Sterilized | Sterilized | Non-sterilized | Non-sterilized | Non-sterilized |
| Tightening method/ tightening torque (N・cm) | NP | Manual | Manual | 20 | 20 | 20 | 20 | 20 | 20 | — | — | — | — | — |
| | RP | | | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 20 | Manual | 20 | 30 |
| | WP | | | | | | | | | | | | | |
| Tightening screwdriver | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| | | HEXALOBULAR SCREWDRIVER SH | HEXALOBULAR SCREWDRIVER SH | HEXALOBULAR SCREWDRIVER CH | HEXALOBULAR SCREWDRIVER CH | HEXALOBULAR SCREWDRIVER CH | HEXALOBULAR SCREWDRIVER CH | HEXALOBULAR SCREWDRIVER CH | HEXALOBULAR SCREWDRIVER CH | DRIVER FOR SPLINT ABUTMENT | FLEX DRIVER CH | FLEX DRIVER CH + CH ADAPTER | FLEX DRIVER CH | DRIVER FOR BALL ABUTMENT |

(Table 1)

Before attaching non-sterilized products in the oral cavity, please sterilize them.

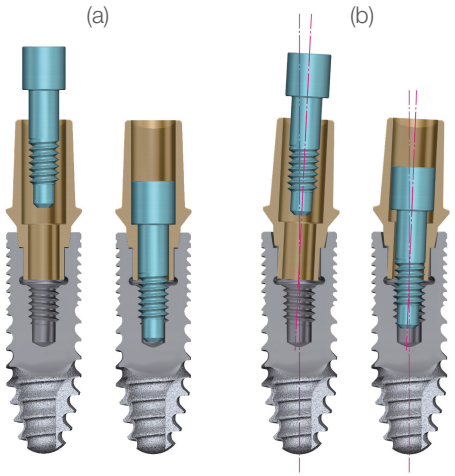
Cautions : Other than those in placing BL abutments are described in the manual. Be sure to conform the FINESIA BL Implant (Prosthesis) System Manual together with this Technical Report.

## ■ Notes in Tightening Screws

(a) It is very important to tighten the screw in a straight line along the long axis of the implant and abutment.
(b) If the screw is slanted, the abutment placement will result in not fitting. Furthermore, a torque load more than the required level will be applied to the screw and may result in cracking the screw.

**If a torque load more than the required level is applied to the screw during Pre-tightening, loosen the screw and confirm that the screw can be tightened smoothly (Refer to Figure 6).**

(Figure 6)



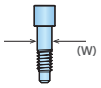
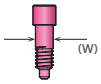
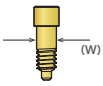

## ■ Attention

### Tightening screws for BL implant NP

M1.4 screws are used for BL implant NP (φ3.2mm/φ3.4mm)(Refer to Table 2) . The average fracture torque of this screw observed in a torsional strength test is 36.8 N · cm
(standard deviation: 2.28)(Refer to Figure 7).

Please note to the following points when tightening screws for NP.

(1) When tightening to the final toque, carefully tighten screws so that the torque does not exceed 20 N · cm.
(2) When tightening screws for NP, use a torque wrench that allows you to set the torque value or an IMPLANTOR™ (Surgical Motor) and slowly tighten the screw using the HEXALOBULAR SCREWDRIVER.
(3) If a patient moves during screw tightening, the tightening torque may increase in a moment. Take necessary precautions to prevent the patient's head from moving during treatment.

| | | Screw standard | Screw shaft diameter (W) |
|---|---|---|---|
| NP |  | M1.4 | 1.4mm |
| RP |  | M1.8 | 1.8mm |
| WP |  | M2.0 | 2.0mm |

(Table 2) Sizes of Screws for BL Implant NP



**(Figure 7) Torsional strength test of abutment screw (n=5)**

In a torsional strength test, abutment screws for RP did not crack even when an average cracking torque of 68.4 N · cm (SD: 0.894) was applied. However, screws for NP cracked when an average cracking torque of 36.8 N · cm (SD: 2.28) was applied.
More careful attention must be paid to the torque control of the screws for NP than that for RP during final tightening.

(Editorial supervision) Takashi Sawase DDS, Ph.D., Department of Applied Prosthodontics, Graduate School of Biomedical Sciences, Nagasaki University



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**KYOCERA Medical Corporation**

Head Office: 6 Takeda tobadono-cho, Fushimi-ku Kyoto Japan

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