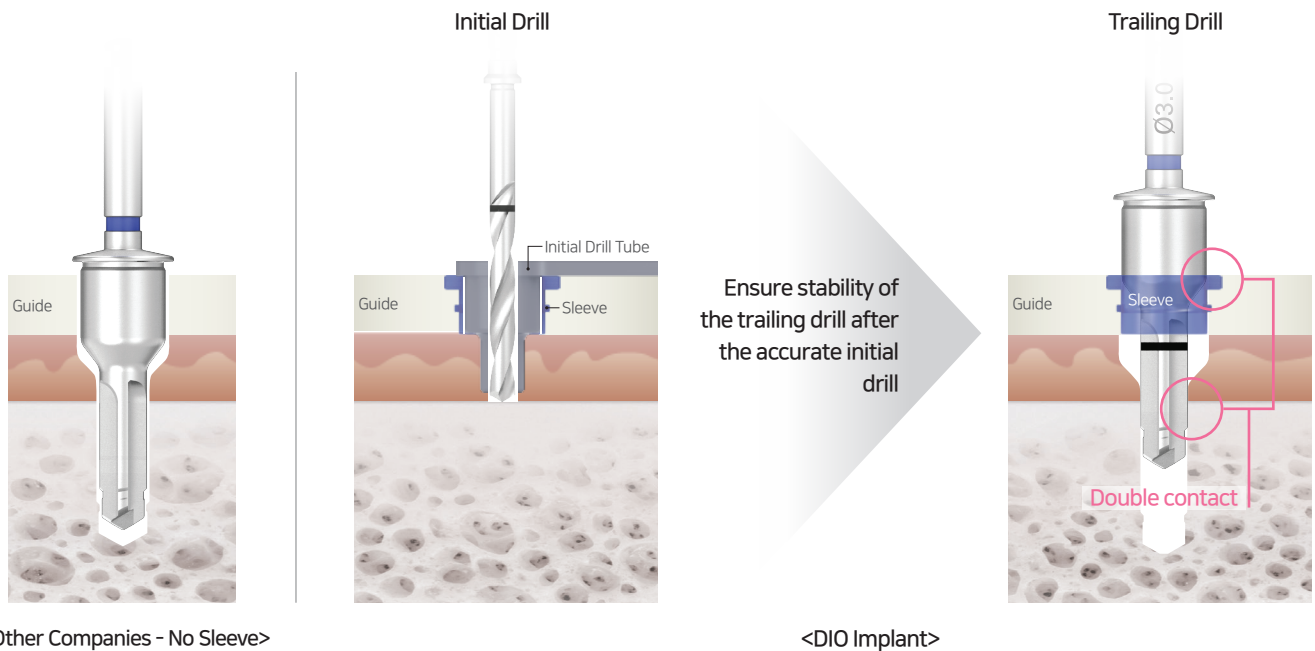


# Utility of Guide Sleeve

## 1 Degree of Precision

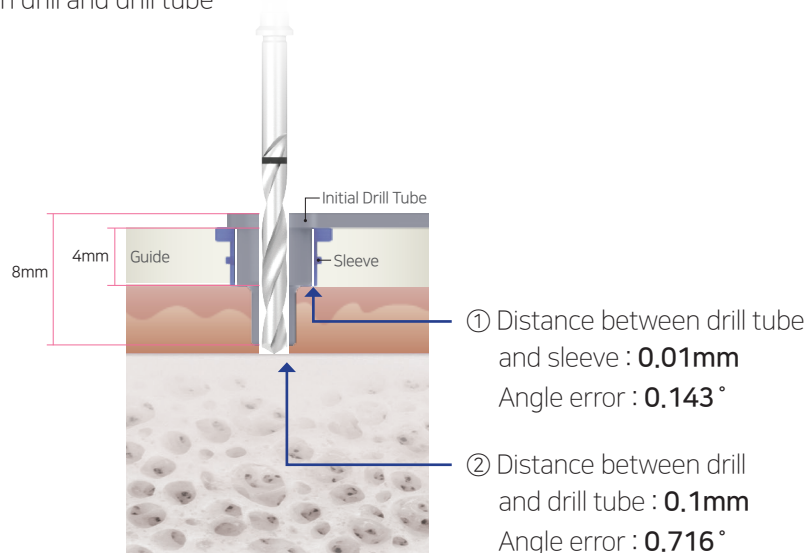
The accuracy of the initial drill determines the accuracy of the procedure.

- 1) Drill tube to increase accuracy
- 2) Increase precision of initial drill and maintain precision through double contact of the trailing drill

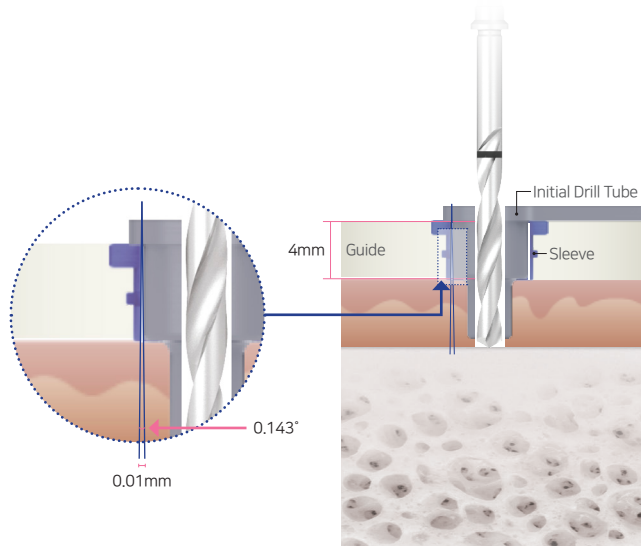


### Possible error (angle) when applying sleeve - DIO Implant

- ① Error due to tolerance between drill tube and sleeve
- ② Error due to tolerance between drill and drill tube

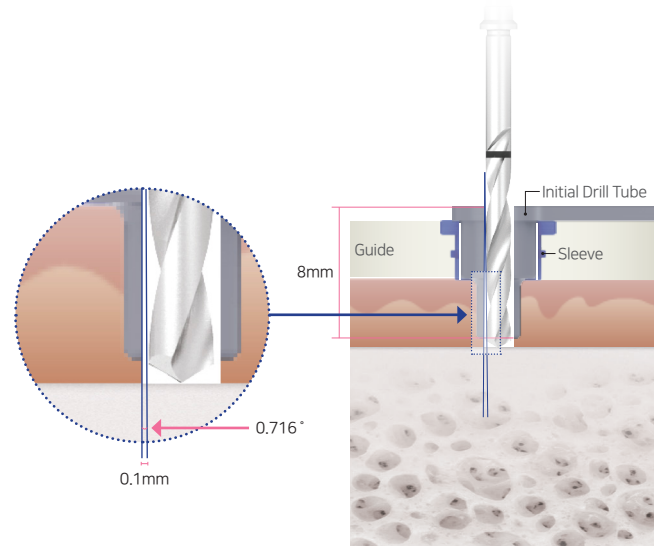


① Error due to tolerance between drill tube and sleeve



Distance between drill tube and sleeve : **0.01mm**  
Angle error : **0.143°**

② Error due to tolerance between drill and drill tube

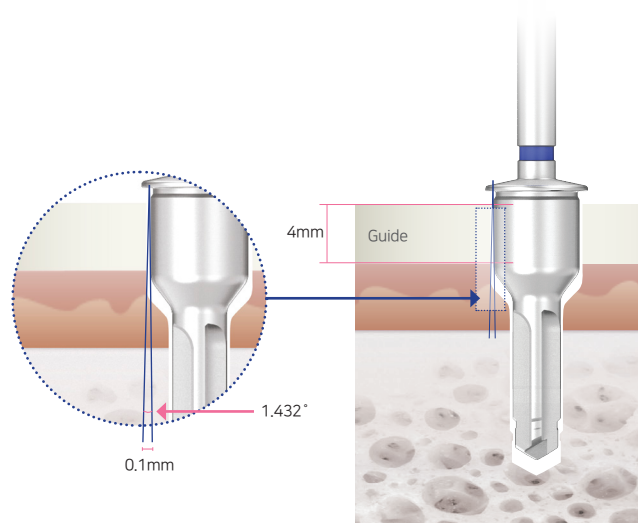


Distance between drill and drill tube : **0.1mm**  
Angle error : **0.716°**

Max ① + ② ➔  $0.143 + 0.716 = 0.859^\circ$

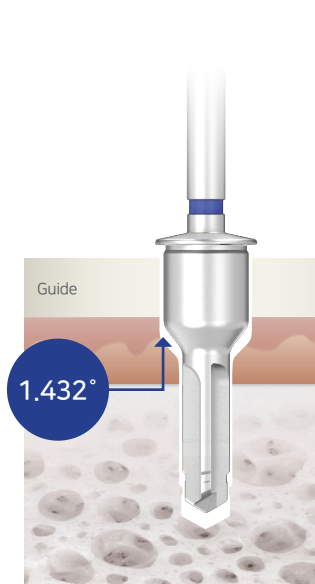
Possible error (angle) when not using sleeve - Other companies

Error due to tolerance between drill and guide



Distance between drill and guide : **0.1mm**  
Angle error : **1.432°**

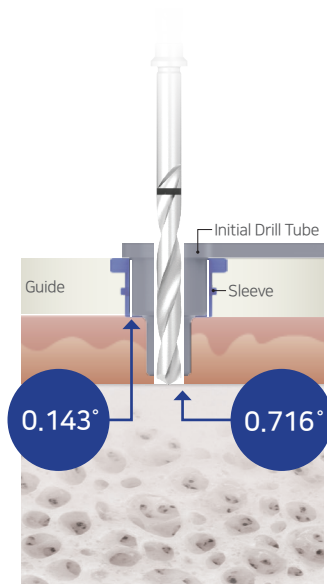
# Final result (comparison)



Error due to tolerance between drill and guide



Final comparison according to sleeve application



Possible error (angle) when applying sleeve



1.432°

**Standard**  
Drill tube 8mm

Max  $0.143 + 0.716 = 0.859^\circ$   
Min  $0.716 - 0.143 = 0.573^\circ$

**Narrow**  
Drill tube 11mm

Max  $0.143 + 0.521 = 0.664^\circ$   
Min  $0.521 - 0.143 = 0.378^\circ$

**PRECISION !**

## 2 Ensuring precision when the gums are high

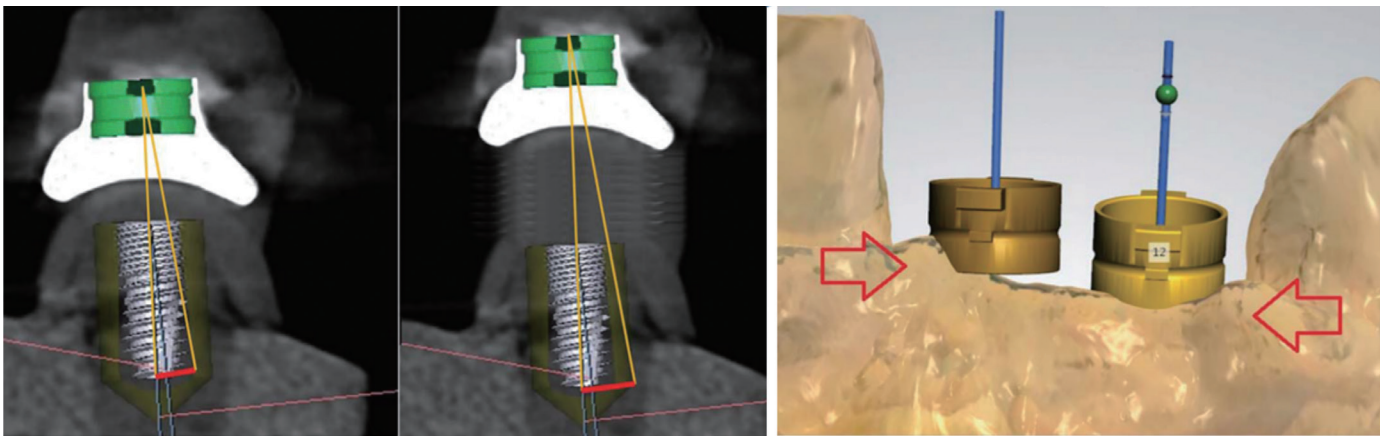
### When the sleeve is not applied

Guide thickness should be made low, and even if the guide thickness is secured, the distance from the bone level becomes farther away, so the precision decreases

### When the sleeve is applied

Guide thickness (sleeve thickness) can be secured because it can be positioned about 1 ~ 1.5mm below the upper part of the gum when the gums are high

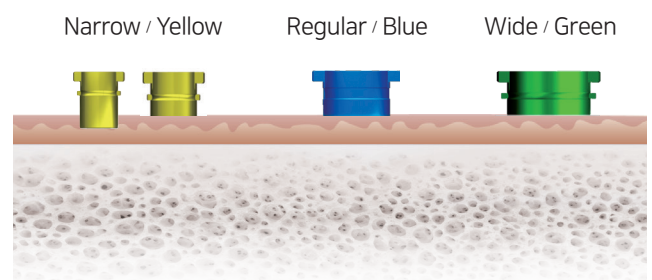
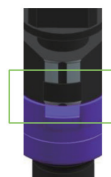
The distance to bone level is short so precision can be secured



## 3 Color Recognition / Convenience and Precision of Prosthesis Setting

- 1) Easy to classify into sleeve sizes by color coating  
(Narrow / Y, Regular / B, Wide / G)
- 2) Hex direction protrusion is marked on both sides at the top of the sleeve  
Easy to set Hex direction

The side of Hex matches  
Depth matches



## 4 Guide Chip Prevention

### When there is no sleeve

Guide chip may occur due to split guide during drilling

### When there is sleeve

Sleeve of titanium material significantly reduces splitting phenomenon during drilling