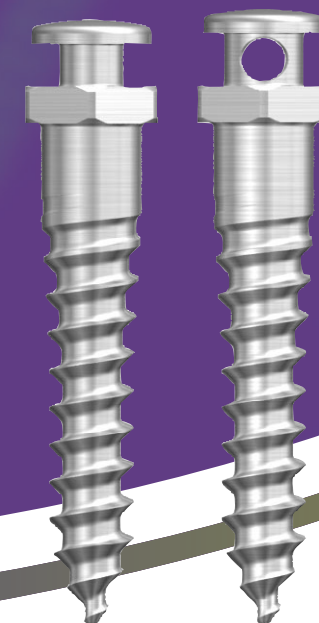


Edition 02 / 2012

Orthodontic Screw System



OSSTEM[®]
IMPLANT

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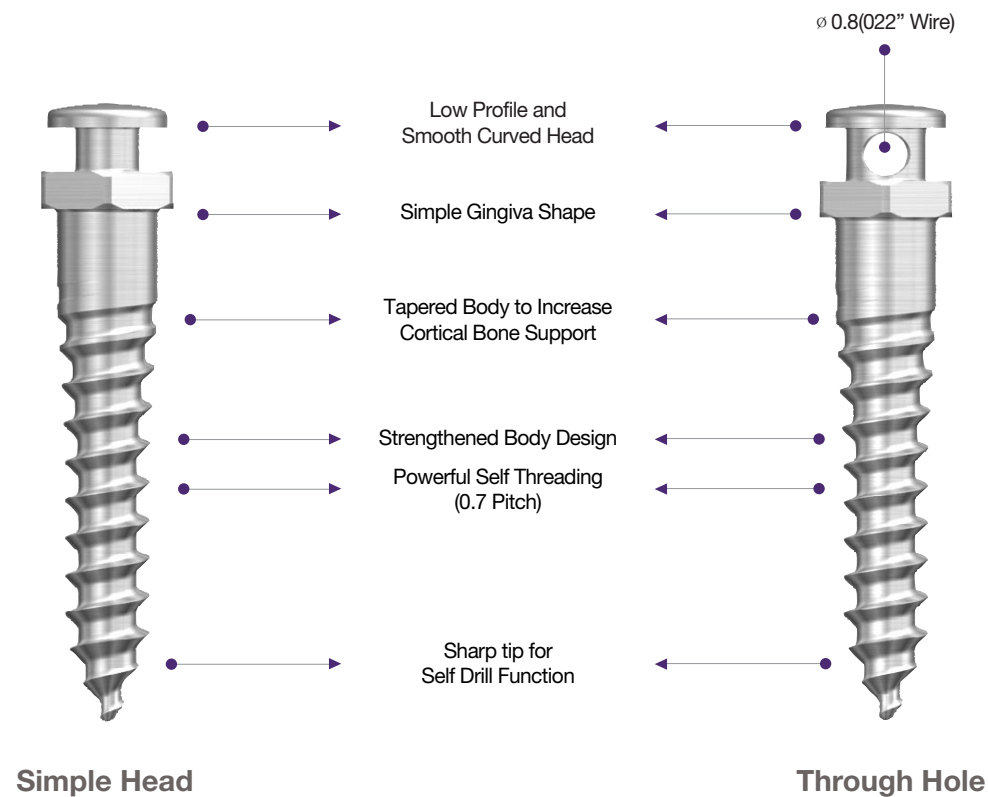
OSSTEM[®]
IMPLANT

● New Orthodontic Screw

Osstem Orthodontic Screw was developed by the R&D center of Osstem Implant to help your successful placement with its superior quality.

New Design Concept

- Good Initial Stability
- Good Self Drilling & Self Tapping
- Good Feeling of Screw Implantation
- Good Strength
- Small Head Size
- Simple Gingiva Shape



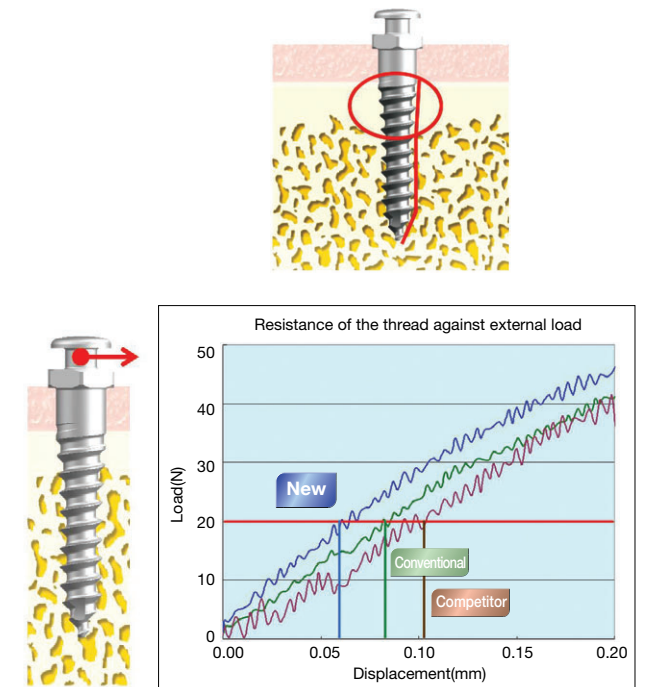
● New Design Quality Feature

Good Initial Stability

The initial stability of the orthodontic screw is mainly provided by the cortical bone. With this new product, the initial stability is effectively improved by increasing the taper Body. Therefore, sufficient final torque for placement and less possibility of displacement can be achieved when applied with orthodontic force.

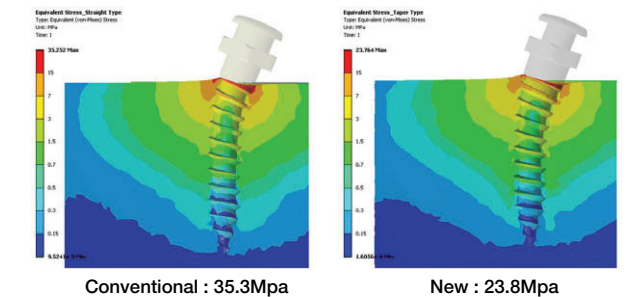
Resistance against Orthodontic Forces

To use orthodontic screws as a stable anchorage, the screw thread and bone must have sufficient resistance against orthodontic forces. The screw thread and body shape of the new product are designed to be highly rigid against orthodontic forces.



Stress Distribution

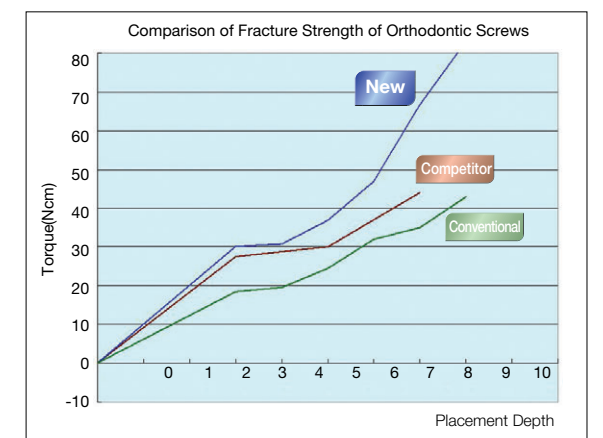
The body and thread of the new orthodontic screw are designed to facilitate stress distribution. Thus, long-term orthodontic force does not give excessive stress to the bone with the new orthodontic screw



Enhanced Body Strength

The fracture strength is improved by increasing the upper diameter. The strength is far superior to the conventional products to improve the safety of the placement.

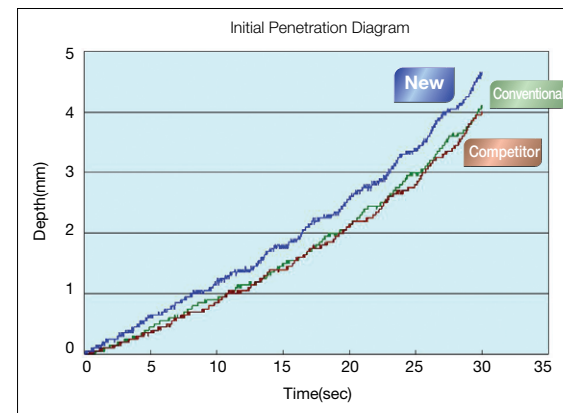
However, the $\phi 1.4$ diameter size has low body strength
So requires careful placement.



● New Design Quality Feature

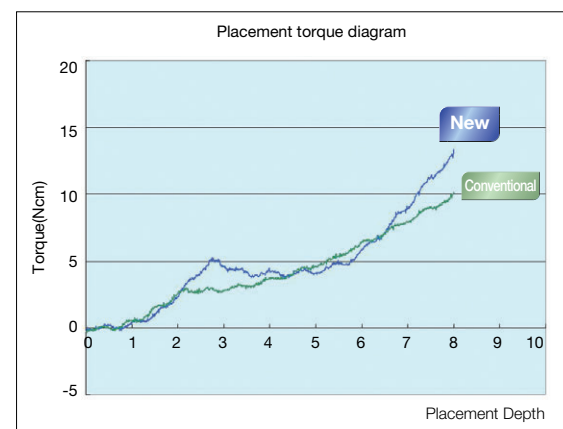
Excellent Self Drill & Self Tapping Function

There are many cases of placing orthodontic screws without drilling. The new design provides an excellent initial penetration performance with its sharp tip, and can be placed safely without drilling. However, when the bone is very hard, drilling is recommended to reduce bone trauma.



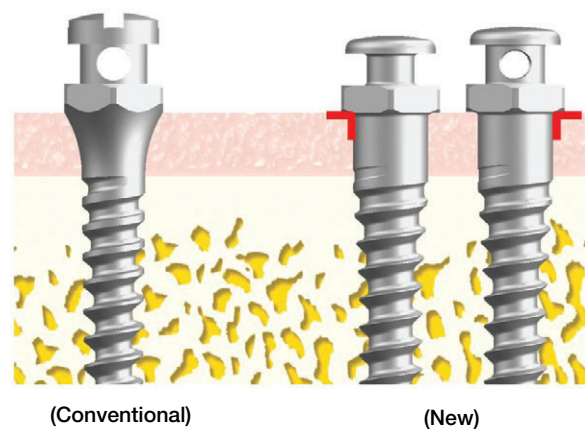
Placement Torque Increased in the Last Stage

The placement torque of the new design is constant in the first half of the placement and increases in the latter half. This enables reliable recognition of the completion of placement and provides an excellent initial stability.



Low Head and Smooth Curve Profile

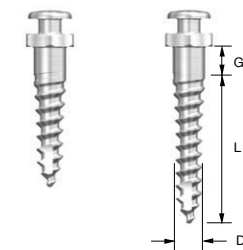
The head is designed to be lower than the conventional products to minimize the foreign body sense for the patients. The design is suitable for the application in narrow space such as anterior. The straight G/H shape reduces the sense of pressure on the gingiva.



● Orthodontic Screw SPEC

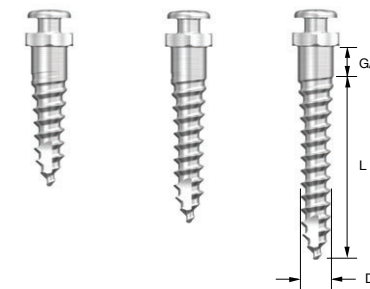
Orthodontic Screw (Simple Head)

ø 1.4



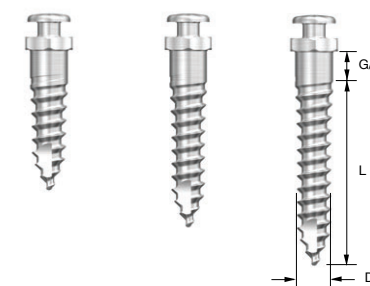
| D | ø 1.4 |
|---|----------|
| L | G/H |
| 6 | OSSH1406 |
| 8 | OSSH1408 |

ø 1.6



| D | ø 1.6 |
|----|----------|
| L | G/H |
| 6 | OSSH1606 |
| 8 | OSSH1608 |
| 10 | OSSH1610 |

ø 1.8



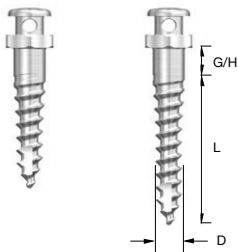
| D | ø 1.8 |
|----|----------|
| L | G/H |
| 6 | OSSH1806 |
| 8 | OSSH1808 |
| 10 | OSSH1810 |

- Machined Surface
- Material: Ti-6Al-4V

● Orthodontic Screw SPEC ↙

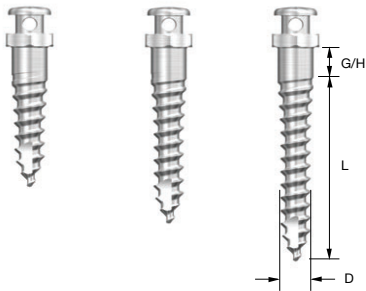
Orthodontic Screw (Through Hole)

ø 1.4



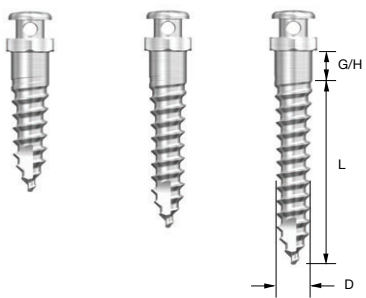
| D | | ø 1.4 |
|---|-----|----------|
| L | G/H | 1.5 |
| 6 | | OSTH1406 |
| 8 | | OSTH1408 |

ø 1.6



| D | | ø 1.6 |
|----|-----|----------|
| L | G/H | 1.5 |
| 6 | | OSTH1606 |
| 8 | | OSTH1608 |
| 10 | | OSTH1610 |

ø 1.8



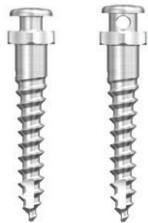
| D | | ø 1.8 |
|----|-----|----------|
| L | G/H | 1.5 |
| 6 | | OSTH1806 |
| 8 | | OSTH1808 |
| 10 | | OSTH1810 |

- Machined Surface
- Material: Ti-6Al-4V
- Through Hole Size : ø 0.8

● Orthodontic Screw SPEC ↙

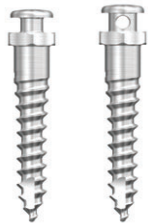
Application Case by Orthodontic Screw Diameter

ø 1.4



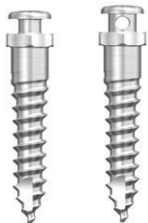
- When the approach is difficult due to the narrow space between the dental roots of the maxillary/mandibular anterior teeth
- ※ The ø 1.4 size has limited strength due to its small size.
- Pilot drill placement is recommended to prevent fracture.

ø 1.6



- Where sufficient space can be obtained
- When sufficient initial stability can be obtained from normal bone quality

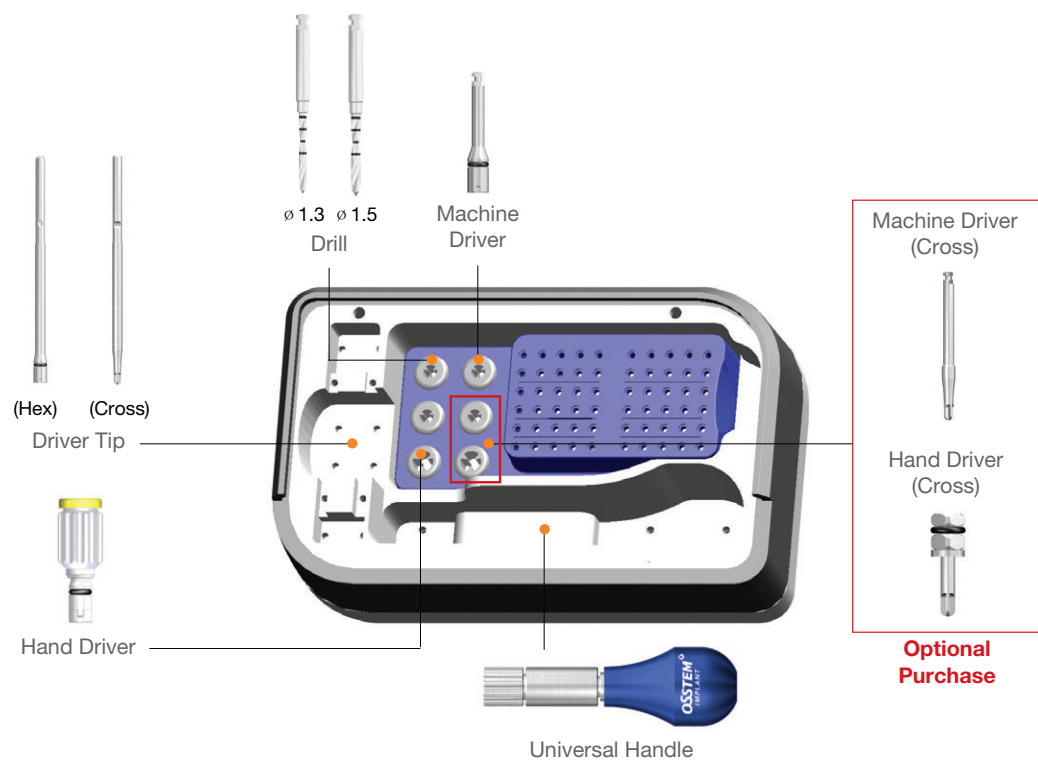
ø 1.8



- Where sufficient space can be obtained
- When high initial stability is required from soft bone quality

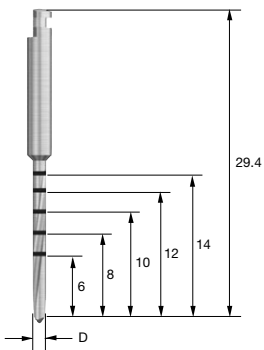
● Surgical Instrument

Surgical Instrument



● Surgical Instrument

Drill



| D | $\phi 1.3$ | $\phi 1.5$ |
|------|------------|------------|
| Code | OSODR130C | OSODR150C |

- Laser Marking: indicated with 6 / 8 / 10 / 12mm
- $\phi 1.3$ Drill - use for the placement of $\phi 1.4$ or $\phi 1.6$ screws
- $\phi 1.5$ Drill - use for the placement of $\phi 1.8$ screw
- Recommended drilling speed: 800rpm (high speed)
- It is recommended to remove some cortical bone by drilling before placement. If the cortical bone is very thick, the drilling depth should be the same as the length of the screw

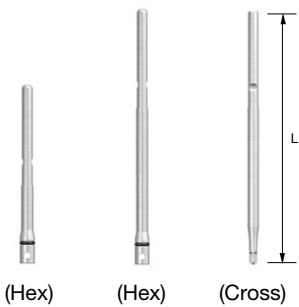
Universal Handle



| Code | OUH |
|------|-----|
|------|-----|

- Use by coupling with the driver tip. The middle part of the handle is anti-slip processed for easier placement

Driver Tip



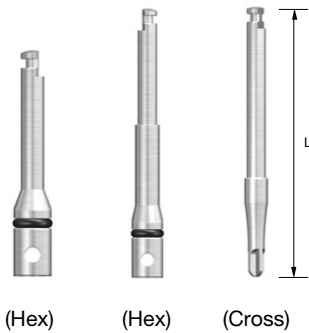
| Type | Hex | | Cross |
|------|-------|------|-------|
| | Short | Long | |
| L | 48 | 70 | 69 |
| Code | OSDTS | OSDT | OCDT |

- Use for the placement of orthodontic screws by coupling with the Universal Handle
- The set consists of Hex and Cross types. Use the Hex type for applying torque, and use Cross type for correcting the through hole path of the screw part

(Caution) Do not apply excessive torque with the cross type driver

● Surgical Instrument

Machine Driver



| Type | Hex | | Cross |
|------|-------|-------|-------|
| | Short | Long | |
| L | 23.4 | 33.4 | 26.4 |
| Code | OSMDA | OSMDB | OCMD |

- Use for the placement of orthodontic screws by connecting to an engine
- The set consists of Hex and Cross types. Use the Hex type for applying torque, and use Cross type for correcting the through hole path of the screw part

(Caution) Do not apply excessive torque with the cross type driver

Driver Handle



| Code | TIDHC |
|------|-------|
|------|-------|

- Use manual tightening of the screws coupled with the hand driver

● Surgical Instrument

Hand Driver



| Type | Hex | Cross |
|------|-------|-------|
| Code | OSTDA | OCHD |

- Use for the placement of orthodontic screws by connecting to the Driver Handle or Ratchet Wrench
- The set consists of Hex and Cross types. Use the Hex type for applying torque, and use Cross type for correcting the through hole path of the screw part

(Caution) Do not apply excessive torque with the cross type driver.

Driver Separator



| Code | OSST75 |
|------|--------|
|------|--------|

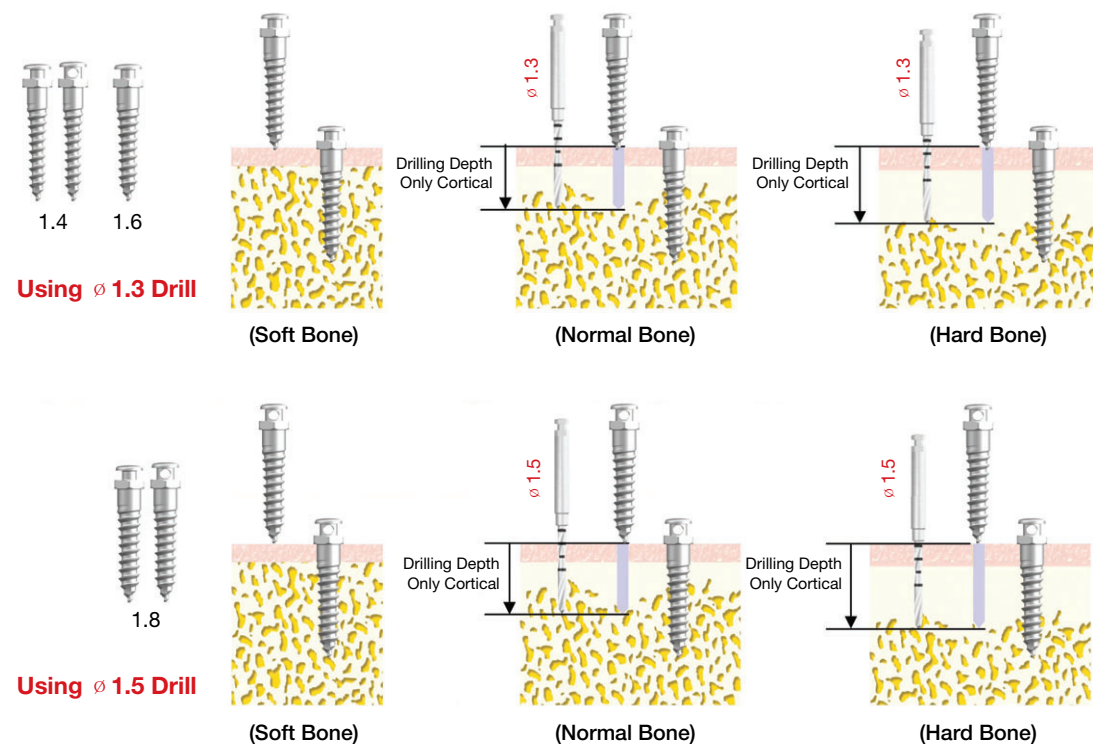
- If the driver is not removed after implantation of a screw, insert a separator in the hole at the front part and remove the screw with levering effect.

● Guide for Orthodontic Screw Placement

Please read and observe the following guide carefully for successful placement.

1. Drilling

- The design of this product does not require drilling before placement. However, if the bone is very hard, the excessive placement torque may lead to the failure of the orthodontic screw. In this case, initial drilling is recommended.
- The placement methods using drilling process of the products are shown below;
- Make sure to inject a saline solution during drilling to prevent overheating.
- The recommended drilling speed is 800rpm.

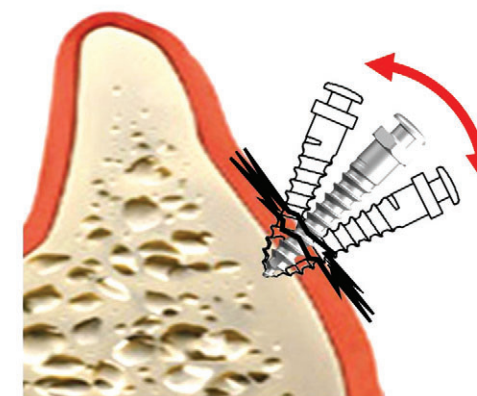


2. Orthodontic Screw Placement

- For manual placement, mount the Driver Tip on the Universal Handle, and connect the screw.
- Turn in the clockwise direction with force, at the initial placement speed of one revolution per five (5) seconds. When thread begins to be formed in the bone, apply a rotating force only for further placement.
- When using an Engine, mount the Machine Driver on the Hand Piece, and connect the screw. Place the orthodontic screw at the speed lower than 20rpm.
- Insert the screw until the driver tip touches the gingival tissue, and then remove the driver.

3. Cautions for Placement

- During the placement process, maintain the screw path aligned with the direction of insertion and take care not to shake the driver.
- If the path is deviated or the driver shakes during placement, wobbling may occur as shown below resulting in the fracture of the screw tip.
- If the insertion path is not correct, it is recommended to remove the screw, correct the path and place the screw again.



4. Connecting the Orthodontic Devices

- It is recommended to install the devices (wire, power chain, coil spring, etc.) for applying orthodontic force after one or two weeks from the screw placement to secure sufficient initial stability.

5. Removing the Screw

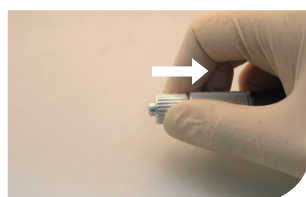
- To remove a screw, fix the driver in the hex head of the screw and turn in the opposite direction of placement slowly.
- It is safer to use a Hex Driver for the products formed with a Cross Slot. Using a Cross Driver may break the screw neck.

6. Using the Product

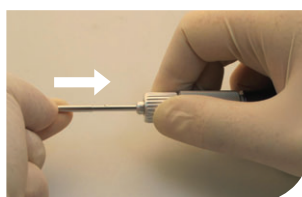
- The orthodontic screws are sterilized and can be placed directly after unpacking. To sterilize the product again, mount on the kit socket and sterilize in an autoclave at 132°C for 15 minutes.
- This product is a sterilized product for one time use only. Do not reuse this product.

● Coupling Universal Driver Tip with Orthodontic Screw

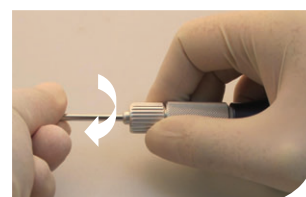
Mounting the Driver Tip on the Universal Handle



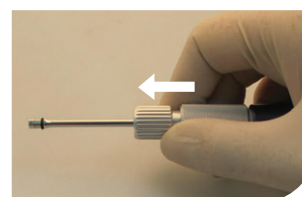
Hold the Universal Handle in the hand, pull the head part on which the Driver Tip is to be mounted.



Pulling the head, insert the Tip to the end.



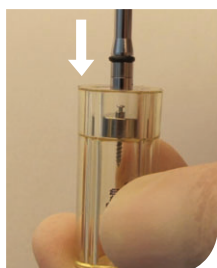
Releasing the head, turn the Tip slightly



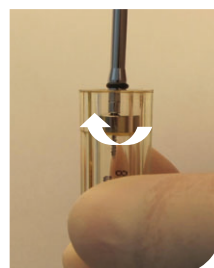
When the Tip is mounted fully, the head will give a click sound.

Coupling the Screw with Driver

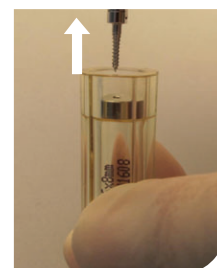
Coupling the Screw with Universal Driver



Lower the Driver vertically onto the screw head.

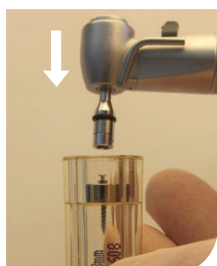


Turn the ample to the correct angle with fingers. At the correct angle, a click sound will indicate the coupling.

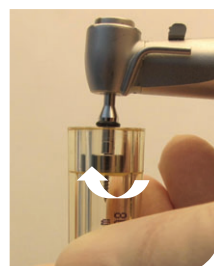


Slowly, lift it up vertically

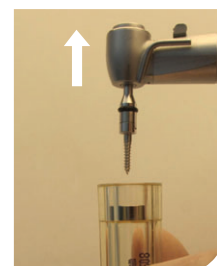
Coupling the Screw with Machine Driver



Lower the Driver vertically onto the screw head.



Turn the ample to the correct angle with fingers. At the correct angle, a click sound will indicate the coupling.

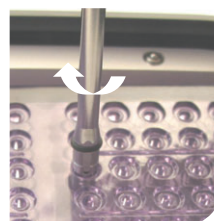


Slowly, lift it up vertically

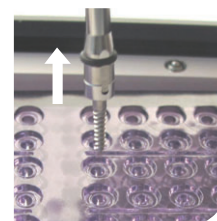
Coupling the Screw in the KIT



Lower the Driver vertically onto the screw head.

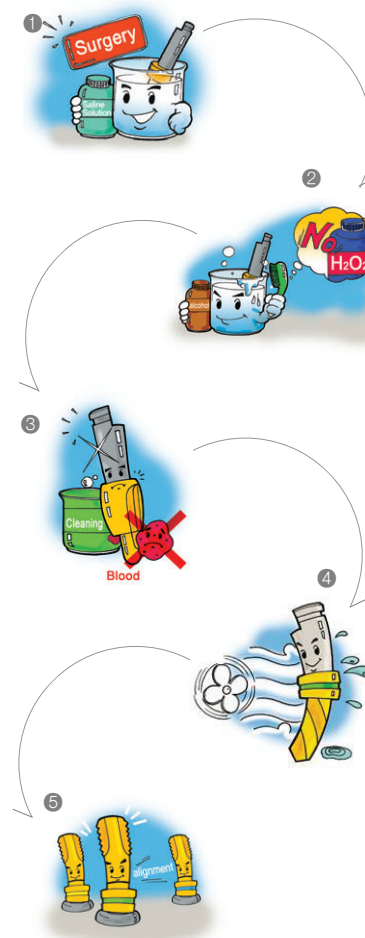


While pressing the Driver, turn it until it is coupled with a click sound.



Slowly, lift it up vertically

● Maintenance of the Ortho Kit



① During operation, keep used tools in saline solution or in distilled water.

② When the operation has been completed, soak all the used tools in alcohol for washing.



Washing with hydrogen peroxide is prohibited. Exposure to hydrogen peroxide may discolor the laser marking and TiN coating.

③ Wash blood stains and other foreign matter clean with distilled water or flowing water.

④ Remove the moisture with a dry cloth or a hot air blower.

⑤ Set the dried tools in the KIT case.
(Refer to the color coding for setting the tools in the kit case.)

⑥ After setting, sterilize the kit in an autoclave at 132℃ for 15 minutes and store room temperature.

Caution: After an operation, separate all the tools used in the operation immediately, and wash them before storage.
It is highly recommended to sterilize the Surgical KIT again before an operation (temperature: 132℃, time: 15 min)
The warranty period of the Surgical KIT is One Year after first opening the package, and the warranty cycles of the Drills and Drivers is 50 cycles.