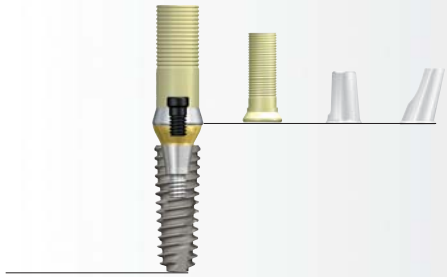
TS

Convertible Abutment

- **Indication**
  - Single/bridge/full arch restorations
  - All position
  - Bridge case with a wrong path
  - Framework for bar overdenture
  - Screw/Combi retained restoration

- **Feature & benefit**
  - Path compensation up to 60°. (based on two fixtures)
  - Advanced convenience from four prosthesis options, Combi/Angled/Gold/Plastic.
  - Abutment connection using carrier
  - Margin esthetic effect from gold coloring.

- **Material**
  - Convertible abutment : Ti-6Al-4V
  - Combi/Angled cylinder :Ti CP-Gr3
  - GoldCast cylinder : Au-Pt alloy + POM
  - Plastic cylinder : POM
  - Cylinder Screw : Ti-6Al-4V
- **Surface**
  - Abutment & cylinder : TiN coating
  - Screw : WCC coating
- **Tightening torque**
  - Abutment : 30Ncm
  - Cylinder Screw : 20Ncm



Product list for prosthetic procedure

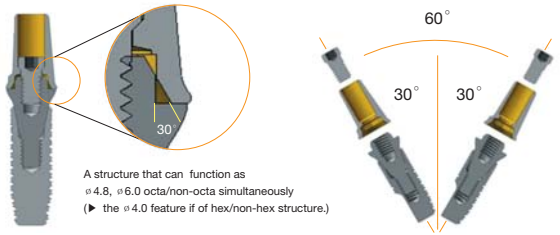
Product list		
Abutment		
Impression coping	Transfer Type	Pick-up Type
		
Lab analog		
Cylinder		
Cylinder screw		
Polishing protector		
Driver		
Torque wrench		

• The Convertible abutment is a 3-piece composed of abutment + cylinder + cylinder screw.
You must prepare an exclusive impression coping and lab analog that is possible to take an abutment level impression since the impression is taken through transforming the internal connection structure to an external one.

Note for prosthetic process

TS Convertible abutment connection

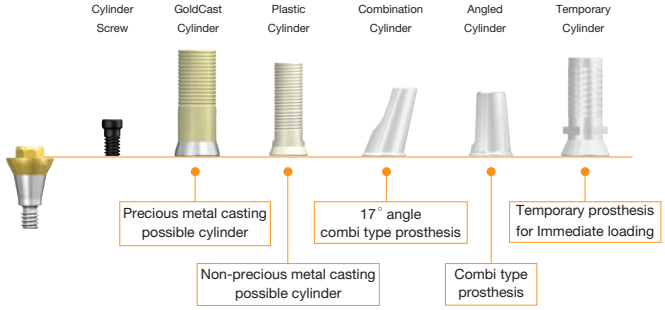
• The Convertible abutment can be useful in path compensation for bridge prostheses.
When fabricating a screw type prothesis/combi type prosthesis with a hole on the occlusal surface a non-hexed type 2-piece abutment such as Transfer/GoldCast abutment can compensate the path up to 22°. Using a Convertible abutment enables path compensation up to 60° in case of long Bridge and a large amount of path deviation.



Convertible abutment-cylinder connection

TS Convertible cylinder

• The TS & GS Convertible abutment comes with a temporary cylinder and four types of final prosthesis fabrication cylinders according to the prosthesis type as shown below. A functional prosthesis may be easily fabricated by selecting an appropriate cylinder for usage purposes.



Step1 Healing abutment separation

Components & tools

1.2 Hex hand driver

Cover screw

Healing abutment

Prosthetic procedure

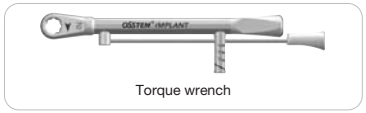
Separate the Healing abutment using a 1.2 Hex hand driver

Healing abutment verification

Gently separate the
Healing abutment manually

Step2 Abutment selection

Convertible abutments & tools



Torque wrench

Convertible abutment

Prosthetic procedure

Select an appropriate abutment considering the prosthesis and oral environment of the patient.
Connect the abutment to the fixture using a carrier and exactly connect with 30 Ncm force with a O-ring driver for ø 4.0 and Octa driver for ø 4.8/ø 6.0. Always take an x-ray to verify the exactness of the connection.

Abutment connection using carrier

Tightening with exclusive driver

Connected Convertible abutment

Step3 Impression

Convertible pick-up impression coping

Convertible pick-up impression coping

Convertible lab analog

Prosthetic procedure

Prepare a custom open tray and a Convertible pick-up impression coping of identical diameter with the abutment that has been used. Follow conventional methods but the diameter of the Convertible lab analog must be identical to the abutment.

Impression coping connection

Impression

Lab analog connection

Step4 Protect cap connection and fabrication of temporary prosthesis

Convertible protect caps & temporary cylinders

Convertible protect cap

Convertible temporary cylinder

Prosthetic procedure

Connect the protect cap after impression taking before the prosthesis is completed or fabricate a temporary prosthesis using a temporary cylinder.

Protect cap connection

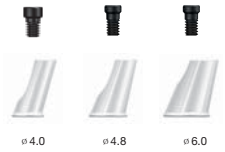
Temporary prosthesis fabrication

Step5 Working model fabrication & cylinder modification

Convertible cylinders

1.2 Hex hand driver

Combination cylinder



Angled cylinder

Prosthetic procedure

Make a working model following conventional methods from the impression body and verify the path using a pick-up impression guide pin. Select a cylinder and do milling according to path adjustment need.
Be cautious since the selection of an appropriate cylinder lessens milling time and reduction amount.


Path verification using guide pin


Cylinder connection


Cylinder milling

Step6 Wax-up ~ prosthesis completion

When milling is finished go through the conventional steps of wax-up to casting and porcelain build-up while maintaining a screw hole. The internal indexing region is short; hence the need to make a transfer jig for use as a guide in intra-oral abutment connection.


Wax-up


Spruing


Casting


Build-up


Completed prosthesis


Fabrication of transfer jig

Step7 Prosthesis setting

Tools

Short Long
1.2 hex torque driver

Torque wrench

Prosthetic procedure

Connect the abutment intra-orally under the same condition as the model using a transfer jig.
Connect manually and cement the prosthesis. Loosen the cylinder screw and remove the excessive cement. Then finally tighten the cylinder screw with 20 Ncm force and block-out the screw hole.

Cylinder

Cementation

Abutment screw tightening

Hole block-out

Step1 Healing abutment separation

Components & tools

Short Long
1.2 Hex hand driver

Mini Reg.
Cover screw

ø 4.0 ø 4.5 ø 4.0 ø 5.0 ø 6.0 ø 7.0
Mini Reg.
Healing abutment

Prosthetic procedure

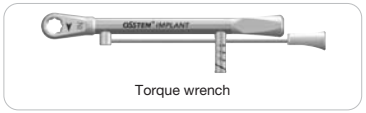
Remove the Healing abutment using a 1.2 Hex hand driver.

Healing abutment verification

Gently separate the
Healing abutment manually.

Step2 Abutment selection and connection

Convertible abutments & tools



Convertible abutment

Prosthetic procedure

Select an abutment considering the prosthesis and oral environment of the patient. Connect the abutment to the fixture using a carrier. Use a O-ring driver for Ø 4.0 and Octa driver for Ø 4.8/Ø 6.0 to connect with 30 Ncm torque.
Always take an x-ray to check the exactness of the connection.

Abutment connection using a carrier.

Tightening with exclusive driver

Step3 Impression

Convertible transfer impression coping

Prosthetic procedure

Prepare a Convertible transfer impression coping of the same diameter as the abutment that has been used. Follow conventional steps but use a Convertible lab analog of the same diameter as the abutment that has been used.

Impression coping connection

Impression

Coping repositioning

Step4 Protect cap connection and temporary prosthesis fabrication

Convertible protect caps & temporary cylinders

Convertible protect cap

Convertible temporary cylinder

Prosthetic procedure

Connect the protect cap before the prosthesis is finished after impression taking or make a temporary prosthesis using a temporary cylinder.


Protect cap connection

Step5 Working model fabrication & cylinder modification

Convertible cylinders

1.2 Hex hand driver

GoldCast cylinder

Plastic cylinder

Prosthetic procedure

Fabricate a working model from the impression following the conventional way and connect the abutment. Reduce the plastic area considering prosthesis fabrication space and path. Use a Goldcast cylinder for a prosthesis made of precious alloy and a plastic cylinder for a prosthesis of non-precious allow although the fit is interior.


Working model fabrication


Cylinder connection


Cylinder modification

Step6 Wax-up ~ prosthesis completion

Do wax-up while maintaining a screw hole on the abutment after finishing height alteration and customizing. It is convenient to use a guide pin from the pick-up impression coping. Cast using a method suitable for precious alloy gold crown/PFG. We prohibit the casting with non-precious alloy since abutment damage may occur.

Wax-up

Casting

Completed prosthesis

Step7 Prosthesis setting

Tools

Short Long

1.2 hex torque driver

Torque wrench

Prosthetic procedure

Check the prosthesis and tighten the final prosthesis with a torque of 20 Ncm. Fill the screw hole on the occlusal surface with cotton. Finally, block-out with resin.

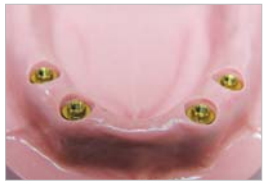
Prosthesis setting

Abutment screw tightening

Hole block-out

Overdenture metal frame fabrication using a Plastic cylinder

The Convertible abutment system is suitable to use for fabrication a bar type overdenture frame.
It is possible to make a highly precise gold bar frame using a GoldCast cylinder and an economical bar frame of non-precious metal using a plastic cylinder.



Abutment connection

Impression

Lab analog connection

Plastic cylinder connection on working model.

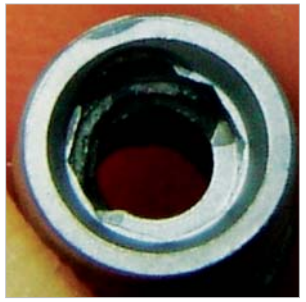
Resin frame fabrication

Casting & milling

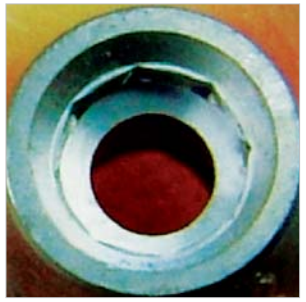
Completed bar frame

What happens when casting non-precious metal to a Gold abutment/cylinder?

GoldCast abutment and GoldCast cylinder products made of gold alloy are casting abutments exclusive for precious alloy of dental use. Since the melting point of gold abutment and non-precious metal is similar, casting with non-precious metal will cause damage and deformation to the abutment or cylinder during casting, so the use of non-precious metal is prohibited.



Casted with non-precious alloy metal



Casted with precious alloy metal

Alloy	Melting range (°C)
GS GoldCast abutment/cylinder	1400~1450
Dental Ni-Cr alloy	1200~1400
Dental Gold alloy	950~1150