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Self-Adjusting (SA)
Magnetic Attachment

Manual for Clinical Applications
Version 1

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1. Outline

(1) Feature

This magnetic attachment has the sliding up to 0.4mm and tilting mechanism up to 8 degree with the magnetic assembly and POM housing. (Fig.1,2) They can adjust the difference in the compressibility between mucosa and abutment tooth with periodontal membrane or implant.

a) The sliding and tilting mechanism allows the vertical and rotational movement due to the denture base settlement to the mucosa.

b) The magnetic assembly can be installed into the denture base during the laboratory process.

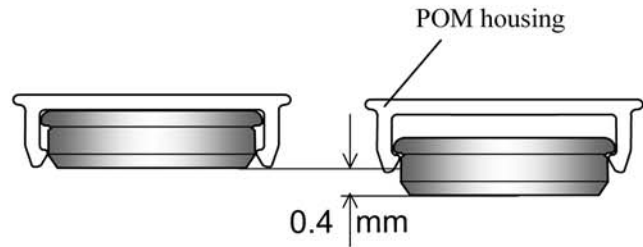


Fig 1. Sliding mechanism of the magnetic assembly



Fig 2. Tilting mechanism of the magnetic assembly

(2) Structure

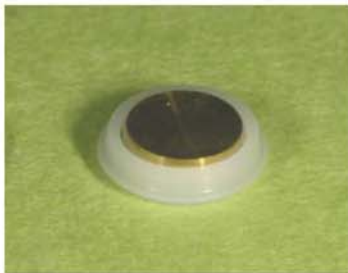
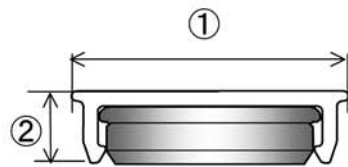


Fig.3 Appearance



type	①	②
S type	Φ4.7	1.4
L type	Φ5.2	1.6

Fig.4 Specification (Types and dimensions)

(3) Special accessory components for laboratory procedure

The SA magnetic assembly can be installed on the working model.

Three components are available for maintaining the sliding and tilting features .(Fig.5)

- ① Plastic dummy : Maintaining the space for magnetic assembly in the denture base
- ② Washer type spacer : Maintaining the space for vertical and rotational denture base movements
- ③ Metal spacer : Maintaining the space of 0.4 mm vertical movements



①Plastic dummy



②Washer type spacer



③Metal spacer

Fig.5 Accessory components

2-1. Application steps (with denture fabrication with natural abutment)

Chair side

Laboratory procedure

(1) Abutment tooth preparation

As for abutment tooth preparation, the space for the post part should be prepared in the center of the root with the large bevel to allow the keeper surface close to the root surface as possible.

(2) Root coping fabrication (direct method•indirect method)

The root coping with keeper and post can be fabricated with the composite resin material either direct (in office) or indirect (in laboratory) method. The coping can be cemented to the root with the dual cure type resin cement.

(3) Impression

The impression for denture is performed using conventional individual tray.

(4) Fabrication of denture *1)

The magnetic assembly is tentatively fixed on the model while the denture is fabricated.

It is possible to install the magnetic assembly into denture base in the laboratory.

*1)The procedure of the magnetic assembly installation is different depend upon the denture base processing method.

2-2. Application steps (with denture fabrication with implant abutment)

Chair side

(1) Abutment selection

Proper size and height of abutment ring with the keeper screw is chosen for the each implant.

(2) Keeper fixation

Selected keeper should be fixed to the implant with the calibrated torque wrench or driver.

(3) Impression

The impression for denture is performed using conventional individual tray.

Laboratory procedure

(4) Fabrication of denture ^{*1)}

The magnetic assembly is tentatively fixed on the model while the denture is fabricated.

It is possible to install the magnetic assembly into denture base in the laboratory.

^{*1)}The procedure of the magnetic assembly installation is different depend upon the denture base processing method.

3-1. Laboratory Procedure (with Heat-curing process)

(1) Preparation of the model

① The working model is created.

② The washer type spacer is closely attached to the side surface of the root. The dummy is fixed to the top surface of the root coping using the instant adhesive material.

Undercut area between the dummy and the coping should be blockout with the model repair material. (Fig.6)

When the heat-curing resin is used for denture base, the gypsum dummy is chosen while the plastic dummy is for the auto-polymerizing resin.

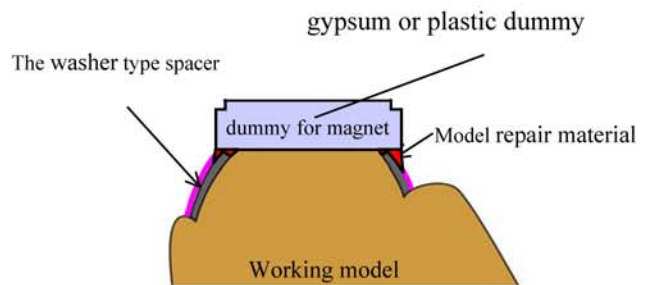


Fig.6 The washer type spacer and the dummy on the model

(2) Fabrication of denture

① Tooth arrangement

The registration of interocclusal relation and the arrangement of artificial teeth are performed according to conventional procedure.

② Wax denture investment and polymerization

Wax denture investment with the plaster and polymerization are performed by heat-curing method.

③ Removal of the plastic dummy

After finishing the denture base, the plastic dummy is eliminated (Fig.7). Be sure not to enlarge the space for the magnetic assembly (especially a the top aspect).

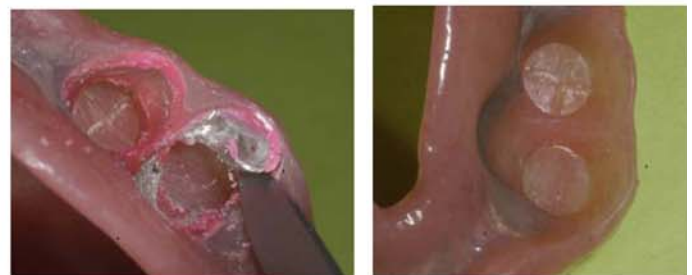


Fig.7 Removal of the plastic dummy

④ Removal of the washer type spacer

The washer type spacer is also eliminated from the denture base by instrument such as a wax carver.(Fig.8)

The space of cementing the magnetic assembly is maintained.



(a) Elimination (b) After elimination

Fig.8 Elimination of the washer type spacer

(3) Cementing of the magnetic assembly

① Preparation of the magnetic assembly

The metal spacer is attached to the attractive surface of the magnetic assembly and sealed with wax. (Fig.9)

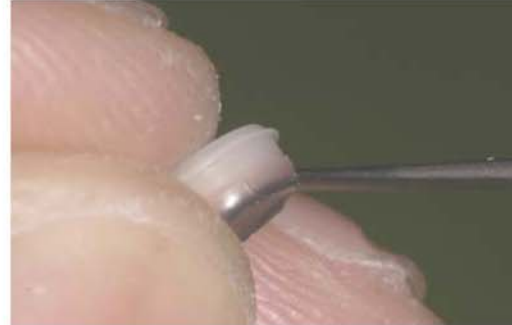
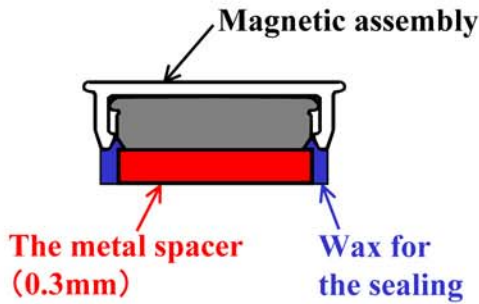


Fig.9 Preparation of the magnetic assembly

② Cementing of the magnetic assembly

Sealing the space between the magnet and POM housing with wax. Prepare a spillway to the polished surface of the denture.

After checking the cementing space for the magnetic attachment, the resin primer is applied to the space.

The magnetic assembly is temporarily installed with a small amount of cyanoacrylate cement. Auto-polymerizing resin is applied to the space between denture base and magnetic attachment(Fig.10).

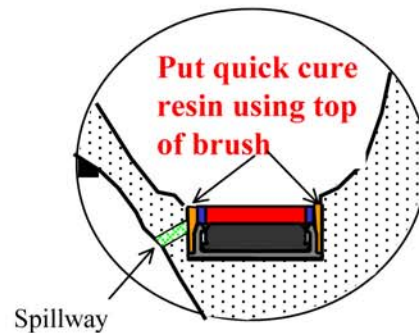


Fig.10 Cementing of the magnetic attachment



(a) put cyanoacrylate



(b)temporally install of magnetic attachment



(c) Put quick cure resin using top of brush

Pic.11 Cementing of the magnetic assembly procedure

③ Removal of the washer type spacer

After finishing the denture base, remove wax by the steamer and wash there. Then, the metal spacer is removed by the instrument such as a wax carver.

④ Polishing, finishing

After polishing, the denture is finished. Then, confirm moving of the magnetic assembly(Fig.12).



(a)Contraction



(b)Stretch

Fig.12 confirm of movement

3-2. Laboratory Procedure (with Auto-polymerizing process)

(1) Preparation of the model

- ① The working model is created.
 - ② The magnetic assembly with the metal spacer is attached to the top surface of the abutment on the model using model glue.
- Undercut area around abutment should be blockout with wax. (Fig.13)

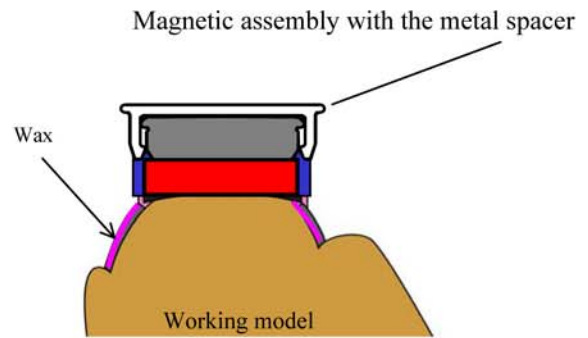


Fig.13 The washer type spacer and the magnetic assembly on the model

(2) Fabrication of denture

① Tooth arrangement

The registration of interocclusal relation and the arrangement of artificial teeth are performed according to conventional procedure.

② Wax denture investment and polymerization

Wax denture investment with the plaster and polymerization are performed by heat-curing method.

③ Removal of the metal spacer

After finishing the denture base, remove wax by the steamer and wash there. Then, the metal spacer is removed by the instrument such as a wax carver.

④ Polishing, finishing

After polishing, the denture is finished. Then, confirm moving of the magnetic assembly (Fig.14).



(a) Contraction

(b) Stretch

Fig.14 confirm of movement