



+ High-quality materials
and precision for
optimal well-being.

Attachments
for prosthetic dentistry

4.2015 Edition

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Dear Customer,

In the area of attachments, Cendres+Métaux has been market leader in the premium segment for decades.

We continually develop our proven core competences in order to bring you innovative products of Swiss-made quality. We constantly monitor key markets, as we aim to set trends with our new products and maintain our role as pioneers now and in the future.

Our high-grade products are available in more than 30 countries through our worldwide distribution network. Our website (www.cmsa.ch/dental) provides comprehensive information about our products, their benefits and practical application.

We assure you of our expert and individual attention at all times and would be delighted to hear from you.

Best regards,



Doris Göser
Director of Dental Division
Member of the Executive Board



Notes

The Cendres+Métaux documentation as efficient work tool

Guidelines on order processing

This catalogue will help you select the appropriate product and contains guidelines on order processing.

Instructions for use

The complete, up-to-date technical data and instructions for use allowing correct product processing are available: online under www.cmsa.ch/dental, from your distributor or from the Cendres+Métaux customer service.

Internet

You can find comprehensive information about our products on our website: www.cmsa.ch/dental. A number of clinical cases and specialized publications are also available on the website.

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Copies and publications – including abstracts – only with written authorization of the publisher.

We reserve the right to adapt the following indications in the event of changes. Given the particularity of each market, the sales program may vary between countries.

Service

The people in charge of processing your orders have perfect product knowledge and the dental technicians answering your questions are highly qualified. In addition, the analyses we perform in case of technical problem, the counselling we offer and the richness of information we provide in print or online, enable you to **improve results and increase productivity**.

Warranty

Thanks to our extensive research, development and strict quality control, we guarantee perfect materials and products at delivery. Our dental products fulfill the requirements of the directive 93/42/EEC for medical devices and are therefore CE marked, in accordance with the law. The exact CE identification of the individual products is given on the packaging.

Terms of delivery

Our general terms of delivery are applicable in Switzerland and abroad. We reserve the right to change construction and production as well as to modify delivery and packaging. Prices are quoted on the valid price list or are available upon request.

We reserve the right to change prices at any time.

Return policy

The strict application of the directive 93/42/EEC for medical devices not only guarantees that you will always receive original products but also promotes safe use. The following measures must be taken into account: without justification for complaint, products removed from their original packaging will not be taken back but treated as scrap. Because of lack of traceability, dismantled parts cannot be taken back.

Selection of samples: All products, which cannot be required, must be returned to Cendres+Métaux immediately in intact and original packaging using the original packaging. Goods sent packaged in envelopes arrive damaged.

Liability

Since application, processing and use of our products are beyond our control; our liability is limited to material and production defects as well as imperfections related to faulty instructions for use. This type of damages will be reimbursed in the scope of our usual indemnifications.

Replacement parts

Replacement parts for attachments which are no longer listed in our current sales program can still be obtained for another ten years. Replacement parts are parts that are not permanently connected with the anchor tooth. You will find a complete list of the replacement parts in this catalogue and under www.cmsa.ch/dental.

Explanation of the symbols on labels and instructions leaflets

REF Article number

 Lot/batch number

Rx only Caution: Federal (USA) law restricts this product to sale by or on the order of a dentist or physician.

 Do not reuse

 Non-sterile

 Consult operating instructions



Keep away from sunlight



Manufacturer



Products which are temporary or permanently in the mouth, carry the CE mark and fulfill the requirements of the Medical Devices Directive 93/42/EEC.



Contains Nickel

Quality and environment policy at Cendres+Métaux

The Cendres+Métaux quality policy adheres to a TQM model for business excellence.

As a valued customer, you benefit from the carefully thought out systems that we have implemented.

Quality = Customer satisfaction

We are very aware that customer satisfaction is a key factor for the long term success of our company:

- Our products and services exceed customer expectations.
- We provide our customers with high quality support by qualified professionals.

Quality = Conformity

Compliance with legal requirements is of paramount importance in Cendres+Métaux

- All dental products comply with the basic requirements of the Medical Device Directive 93/42/EU and carry the CE marking.
- Our Refining division complies with the requirements of the Swiss Precious Metals Act, and pays strict attention to Money Laundering Act.

Quality = Operator protection and environment protection

We reduce the effects on the environment by optimising our use of energy and raw materials by:

- strictly respecting statutory emission control levels.
- Using environmentally friendly packaging.
- We minimize the risk of accidents and increase productivity by a high safety workplace.

Quality = Process control

Our systematic production processes, sense of personal responsibility of our staff and our high-tech manufacturing facility enables us to supply our customers with flawless products within a reliable and predictable time frame:

- Every manufacturing batch leaving our plant undergoes a thorough and individual inspection and according to our highly developed protocol.
- Our integral SAP R/3 software is the worldwide standard for production management.

Quality = Continuity

Our quality management system guarantees the stability of our quality policy.

- We are certified according to: ISO 9001, ISO 13485 and ISO 14001.
- Our laboratories are accredited according to ISO/IEC 17025.

Our company does not limit itself to respecting standards; we continuously strive for improvement for the benefit of our customers.

Quality = Fairness

We stand up for the perpetuation of proper business relationships and act according to high moral, ethic and social standards.

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+ Intracoronal, not adjustable	
Plasta	30
+ Intracoronal, adjustable	
Mc Collum	30
Pt-Snap	31
Biloc [®]	32
+ Extracoronaral, adjustable	
M-SG [®] Star 1	12–14
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+ Extracoronaral, hinged	
Mini-Dalbo [®]	26
Dalbo [®] -S	27
Roach Ball Joint	28
Tecnoroach	29
+ Extracoronaral, bolted	
Mini-SG [®] Latch	21–22

+ Slide attachments

M-SG® Star 1

Adjustable, extracoronary friction-retained slide attachment

Characteristics

- Guide grooves integrated in the attachment
- Can be activated by exchanging the plastic inserts
- Based on the patented Mini-SG® System

Processing advantages

- Significant saving in time of up to 40% (!) due to duplicating aid (supplied free of charge) and because fabrication of a customized milled bracing arm is no longer required
- Compact design with rounded edges:
 - saves time
 - optimizes the aesthetics
- Slimline dimensions allow placement with limited space availability
- Only a few instruments required for a reliable, quick technique

Clinical advantages

- The attachment principle is evidence-based clinically
- Extracoronary placement ensures minimal reduction of tooth structure during preparation
- Self-centring due to the design of the integrated bracing unit:
 - The patient can fit the restoration easily
- Attachment design protects the periodontal region and facilitates cleaning

Indications

- Dental and dental-gingival supported dentures:
 - Interdental insertion dentures
 - Rigid unilateral and bilateral free-end dentures
 - Dentures with one interdental saddle and one free-end situation/Insertion denture and free-end parts in combination

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral dentures without transverse bracing

Description of single parts and materials

Female parts

T = Pure titanium, can be permanently retained in the denture framework using the duplicating or adhesive technique. The integrated retention also provides the option of polymerization into the denture.
Y = Yelor (gold-coloured), can also be connected to the super-structure by soldering.
M = med. steel. Special alloy for medical use. The nickel alloy is highly corrosion-resistant.

⚠ Contains nickel.

Male parts

C = Ceramicor®, used for the cast-on technique
Y = Yelor, two versions of the male part, which can be connected to the abutment crown by soldering or laser welding depending on the design of the contact plate
K = Korak, made from burnout plastic, can be cast in the alloy of your choice provided that the alloy has a minimum 0.2% proof stress of 500N/mm².

Friction inserts

G = Galak, mouth-resistant plastic.

Description of the different versions

Versions with female parts in pure titanium (T)

M-SG® Star 1 TC: version «casting-on»:

Integration male part: casting-on.

Integration female part: adhesive technique or polymerized.

M-SG® Star 1 TY: version «laser welding»:

Integration male part: laser welding.

Integration female part: adhesive technique or polymerized.

M-SG® Star 1 TK: version «casting»:

Integration male part: casting.

Integration female part: adhesive technique or polymerized.

Versions with female parts in gold alloy (Y)

M-SG® Star 1 YY: version «soldering»:

Integration male part: soldering

Integration female part: adhesive technique, polymerized, soldering or laser welding.

Versions with female parts in med. steel (M)

M-SG® Star 1 MC: version «casting-on»:

Integration male part: casting-on

Integration female part: adhesive technique, polymerized, soldering or laser welding.

M-SG® Star 1 MY: version «soldering»:

Integration male part: soldering.

Integration female part: adhesive technique, polymerized, soldering or laser welding.

M-SG® Star 1 MK: version «casting»:

Integration male part: casting.

Integration female part: adhesive technique, polymerized, soldering or laser welding.

Limitation of use

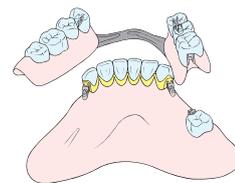
Unilateral dentures without transversal support

Requirement for correct technique

Simple parallelometer for correct alignment of the male parts

Additional information

The Mini-SG® F and Mini-SG® R friction inserts (G = Galak) are compatible, but the female part and male part are not compatible.



Male part with female part; illustration of the components



Female part



Male part



For casting-on



For laser welding



For soldering

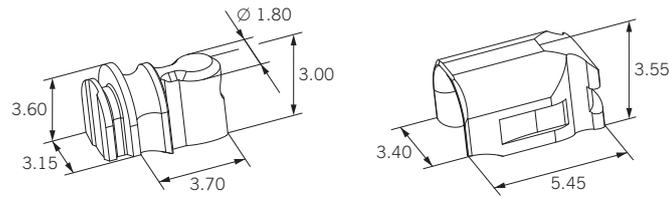


For casting



Insert with 4 different friction grades

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.



Versions with female parts in pure titanium (T)

1:1	Order No.	Complete parts	Description
	05000429 *	M-SG® Star 1 TC for casting-on	
	05000430 *	M-SG® Star 1 TY for laser welding	
	05000432 *	M-SG® Star 1 TK for casting	
1:1	Single parts		
	05000433 *	Female part T complete	For resin-bonding into a metal framework or polymerizing into the denture

Versions with female parts in gold alloy (Y)

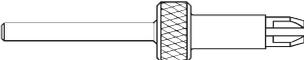
1:1	Order No.	Complete parts	Description
	05000431 *	M-SG® Star 1 YY for soldering	
1:1	Single parts		
	05000434 *	Female part Y complete	For resin-bonding, lasering or soldering into a metal framework or polymerizing into the denture

Versions with female parts in med. steel (M)

1:1	Order No.	Complete parts	Description
	05000671 *	M-SG® Star 1 MC for casting-on	
	05000672 *	M-SG® Star 1 MY for soldering	
	05000673 *	M-SG® Star 1 MK for casting	
1:1	Single parts		
	05000674 *	Female part M complete	For resin-bonding, lasering or soldering into a metal framework or polymerizing into the denture
	055 691	Friction inserts G Yellow	Delivery unit: package of five Smooth friction approx. 300g
	055 356	Red	Normal friction approx. 600g
	055 357	Green	Strong friction approx. 900g
	055 358	Blue	Extra-strong friction > 1200g

* Mounted with friction insert G red (055356), additionally included is a yellow (055691) and a red (055356) friction insert and the duplicating aid G (07000040).

M-SG® Star 1

1:1	Order No.	Single parts	Description	
	0500 0407	Male part C for casting-on		
	0500 0408	Male part Y for soldering		
	0500 0409	Male part Y for laser welding		
	0500 0410	Male part K burnout plastic		
1:1	Auxiliary parts			
	0700 0040	Duplicating aid G	For fabricating the adhesive box in the denture. The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking.	
	0700 0042	Transfer jig	For master model	
1:1	Auxiliary instruments			
	072 627	Special parallelometer insert	For easier mounting of the male part	
	0700 0056	Insert remover	For removing the plastic insert	
1:3		070 347	Tweezers	For insertion and removing of the plastic insert

Characteristics

- Guide grooves integrated in the attachment
- Screw-activated plastic inserts
- Based on the patented Mini-SG® System

Processing advantages

- Significant saving in time of up to 40% (!) due to duplicating aid (supplied free of charge) and because fabrication of a customized milled bracing arm is no longer required
- Compact design with rounded edges:
 - saves time
 - optimizes the aesthetics
- Slimline dimensions allow placement with limited space availability
- Only a few instruments are required for a reliable, quick technique

Clinical advantages

- The attachment principle is evidence-based clinically
- Extracoronal placement ensures minimal reduction of tooth structure during preparation
- Self-centring due to the design of the integrated bracing unit:
 - The patient can fit the restoration easily
- Attachment design protects the periodontal region and facilitates cleaning

Indications

- Dental and dental-gingival supported dentures:
- Interdental insertion dentures
 - Rigid unilateral and bilateral free-end dentures
 - Dentures with one interdental saddle and one free-end situation/ Insertion denture and free-end parts in combination

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral dentures without transverse bracing

Description of single parts and materials

Female part

T = Pure titanium, can be permanently retained in the denture framework using the duplicating or adhesive technique. The integrated retention also provides the option of polymerization into the denture.

Male part

3 male part designs in 3 different materials are tailored to the specific requirements of the particular technique:

C = Ceramicor® is used for the casting-on technique.

Y = Yelor can be connected to the abutment crown using the laser welding technique.

K = Korak is made from burnout plastic, can be cast in the alloy of your choice provided that the alloy has a minimum 2% proof stress of 500N/mm².

Friction insert G

G = Galak is an orally stable plastic. 2 versions are available depending on the amount of friction required. The friction insert is subject to wear and as a precaution should be replaced by a qualified person at the annual checkup.

Description of the different versions

M-SG® Star 2 TC: «For casting-on» version: The male part is connected to the abutment crown using the casting-on technique and the female part can be retained using the adhesive technique or polymerized into the denture.

M-SG® Star 2 TY: «For laser welding» version: The male part is connected to the abutment crown using the laser-welding technique and the female part can be retained using the adhesive technique or polymerized into the denture.

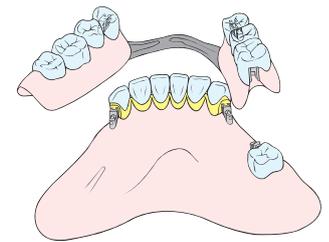
M-SG® Star 2 TK: «For casting» version: The burnout male part is used for fabricating the male part in the same alloy as the crown and the female part can be retained using the adhesive technique or polymerized into the denture.

Limitation of use

Unilateral dentures without transversal support

Requirement for correct technique

Simple parallelometer for correct alignment of the male parts



Male part with female part; illustration of the components



Female part



Friction insert



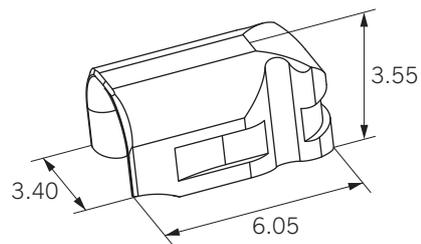
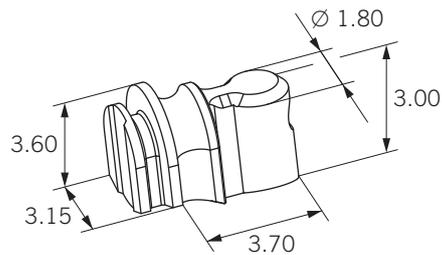
Activation screw



Male part

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.

M-SG® Star 2



1:1	Order No.	Complete parts	Description	
	05000411 *	M-SG® Star 2 TC for casting-on		
	05000412 *	M-SG® Star 2 TY for laser welding		
	05000413 *	M-SG® Star 2 TK for casting		
1:1	Single parts			
	05000414 *	Female part T complete	For resin-bonding into a metal framework or for processing into the denture resin	
	055775	Activating screw T	For fine adjustment of the friction strength	
	055774	Friction inserts G Orange	Delivery unit: package of five Range of friction strength: 100 – approx. 600g	
	055811	Violet	Range of friction strength: 500 – approx. 1000g	
	05000407	Male part C	For casting-on	
	05000409	Male part Y	For laser welding	
	05000410	Male part K	Burnout plastic	
1:1	Auxiliary parts			
	07000041	Duplicating aid G	For fabricating the adhesive box in the denture. The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking.	
	07000042	Transfer jig	Male part analogue for master model	
1:1	Auxiliary instruments			
	072627	Special parallelometer insert	For easier mounting of the male part	
1:2		072653	Screwdriver/activator	Multifunctional use. For screwing, unscrewing, activating and deactivating.
1:3		070347	Tweezers	For insertion and removing of the plastic insert

* Mounted with friction insert orange (055774), additionally included is an orange (055774) and a violet (055811) friction insert and the duplicating aid G (07000041).

Characteristics

- Friction-grip/retention-grip solution possible
- Can **easily** be adapted to the **different situations** in the mouth (transformable)
- **Guide grooves integrated** in the attachment
- Adjustable

Processing advantages

- **Time saving** as there is no need for a milled brace support
- Time saving because of **simple and safe processing**
- **Small dimensions** allow placement even in limited spaces.
- Simple **transformation** from a screw-retained version to a retention-grip, friction-grip, locked or even resilient solution
- **Several versions** of the Mini-SG® F, a solution for every budget!

Clinical advantages

- Easy and safe **adjustability**
- The **gentle click-in** of the denture into the retentive connection gives the patient a **secure feeling**.
- The extracoronal position allows preparation with **minimal loss of tooth substance**.
- The basal shape protects the gingiva and facilitates cleaning
- Made from absolutely innocuous materials: e.g. the female part is made of **pure titanium** which guarantees an excellent biocompatibility. The male part is in **Valor®**, a **palladium-free and copper-free** alloy. The friction inserts are made of mouth-resistant special plastic.

Indications

- Dental and dental-lingual supported dentures:
- Interdental insertion dentures
 - Rigid unilateral and bilateral free-end dentures
 - Dentures with one interdental saddle and one free-end situation / Insertion denture and free-end parts in combination
 - Restorations can be planned in advance

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral dentures without transverse bracing

Description of single parts and materials

Female part available in **pure titanium** or **Ceramicor®**. The female part can be resin-bonded into the metal framework thanks to the duplicating technique. Due to the provided retentions it can also be processed into denture resin. Additionally the female part in Ceramicor® can be connected with the suprastructure by means of casting-on with precious metal alloys.

The **male part** is available in **Valor®**, a **palladium- and copper-free** precious metal alloy or in Ceramicor® both suitable for casting-on or soldering.

The male part has a prefabricated groove for the insertion of the solder rod, this facilitates the soldering operation.

The male part made of burn-out plastic can be cast in the alloy of your choice provided it has a minimal 0.2% proof stress of 500 N/mm².

Mini-SG® F

Four sliding or friction inserts made of mouth-resistant plastic allow simple and safe adjustment of the friction.

Mini-SG® R

Two differently dimensioned **retention inserts** made of mouth-resistant plastic allow simple and safe adjustment of the soft retention. This ingenious retention principle securely fixes the denture and protects the male part against wear.

Description of the different versions

Mini-SG® F/R TV

The **BIOPLUS** version.

The perfect precision and stability of the two prefabricated parts made of Valor® and pure titanium, both free of toxic elements, guarantee very economical processing and innocuous behaviour in the mouth. The male part of Valor® is distinguishable by an indentation on the occlusal surface of the cylindrical part.

Mini-SG® F/R TC

The **STANDARD** version.

The perfect precision and stability of the two prefabricated parts made of Ceramicor® and pure titanium guarantee very economical processing. The palladium containing alloy Ceramicor® has proved its values for decades in the mouth of the patients.

Mini-SG® F/R TK

The **ECONOMIC** version.

The economic version with many advantages. By casting the male part in the alloy of your choice, provided it has a minimal 0.2% proof stress of 500 N/mm², and the use of the female part made of pure titanium perfect precision and stability is guaranteed.

Mini-SG® F/R CC/CK

The **CLASSIC** version.

The complement to the Mini-SG® F system. This allows the female part, made of Ceramicor®, to be connected directly to the suprastructure by casting-on with a precious metal alloy.

Limitation of use

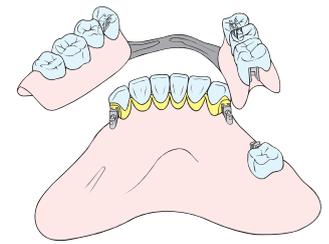
Unilateral dentures without transversal connection

Condition for correct processing

Simple parallelometer apparatus for placement of the male parts

Additional information

The male part is **compatibel** with all the available female parts of the Mini-SG® system.



Mini-SG® F



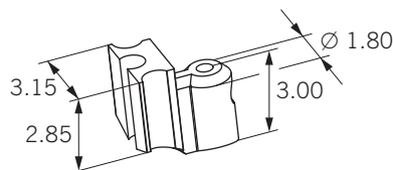
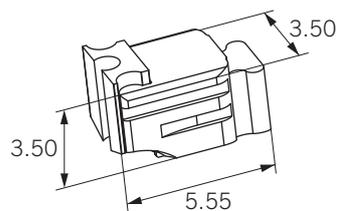
Mini-SG® R



Male part of the Mini-SG® system

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.

Mini-SG® F/R



1:1

Order No. ID-No.	Complete parts	Description
 055 534 * 23.10.2 TV	Mini-SG® F/R TV	
 055 543 * 23.10.2 TC	Mini-SG® F/R TC	
055 532 * 23.10.2 TK	Mini-SG® F/R TK	
055 675 * 23.10.2 CC	Mini-SG® F/R CC	
055 699 * 23.10.2 CK	Mini-SG® F/R CK	

1:1

Single parts

 055 531 *	Female part complete T	For resin-bonding into a metal framework or for processing into the denture resin.
 055 677 *	Female part complete C	Suitable for casting-on or soldering
 055 691	Friction inserts G Yellow	Delivery unit: package of five Smooth friction: approx. 300g
 055 356	Red	Normal friction: approx. 600g
 055 357	Green	Strong friction: approx. 900g
 055 358	Blue	Extra-strong friction: > 1200g
 055 718	Retention inserts G Orange	Delivery unit: package of five Normal friction 500–800g
 055 766	Violet	Strong friction > 800g
 055 517	Male part V	
 055 544	Male part C	
 055 529	Male part K	

1:1

Auxiliary parts

 072 600	Duplicating aid G	Delivered automatically when ordering the versions TV, TC and TK. The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking.
 072 616	System transfer jig	For master model

1:2

Auxiliary instruments

 070 567	Parallelometer insert	For mounting the male part
 072 627	Special parallelometer insert	For easier mounting of the male part
 072 483	Insert remover	For removing the plastic insert

1:3

 070 347	Tweezers	For insertion and removing of the plastic insert
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1:1

Tuning Female part

 055 925 **	Tuning Female part E	The Mini-SG® tuning female part E , which has a smaller inner diameter, enables greater friction to be attained using the existing friction inserts.
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* Mounted with a red friction insert (055356). Additionally included are a yellow (055691) and red (055356) friction insert as well as an orange (055718) and violet (055766) retention insert.

** Mounted with a yellow friction insert (055691), included are a red (055356), a green (055357) and a blue (055358) one.

Characteristics

- Friction-fit slide attachment
- **Screw-activated**
- **Convertible** as this system only uses **one male part**: Easily and cost-effectively adapted to changing conditions in the mouth.
- **Guide grooves integrated** in the attachment

Processing advantages

- Considerable savings in time and costs of up to 40%(!) during processing, due to the milled brace support and the (free) duplicating aid.
 - Its **minimal dimensions** enable this attachment to be used where space is limited.
 - **Easily converted** with parts of the same system to create a retentive, screw-retained, latch-type or articulated attachment
- Available in two top performance versions:**
- High grade precious metal alloy, cast-on male part
 - Burnout plastic male part for casting
- **Female part** for resin-bonding; reliable and long-lasting.

Clinical advantages

- **Low-maintenance** functional principle – **gentle, low-abrasion** friction in the plastic
- Patients consider friction in plastic extremely pleasant.
- The denture retention force can be adjusted **easily and progressively** as required.
- The plastic part is easily replaced in a matter of seconds.
- Two different sizes of friction insert widen the range of adjustments.
- Placed extracoronal for **minimally invasive** tooth preparation.
- The underside is designed to promote good oral hygiene and is **easily cleaned**.

Indications

- Dental and dental-gingival supported dentures:
- Interdental insertion dentures
 - Rigid unilateral and bilateral free-end dentures
 - Dentures with one interdental saddle and one free-end situation/ Insertion denture and free-end parts in combination

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral dentures without transverse bracing

Description of single parts and materials

The **female part** is made of **pure titanium** which is a top grade material. The female part can be resin-bonded into the metal framework thanks to the duplicating technique. The duplicating aid simplifies the procedures and perfects the joint between the female and removable denture. The female includes retainers for polymerizing it into the denture. The **pure titanium** activating screw in the underside of this attachment adjusts the friction very accurately and progressively.

The **male part** is made of **Valor®** which is a high grade, **palladium-free, copper-free precious metal alloy** for casting-on or soldering to precious metal alloys or, alternatively, of **Korak** for casting to meet specific needs. The precious metal male part has a prefabricated groove for inserting the solder rod to facilitate soldering (if required).

The male part is made of burnout plastic and can be cast with your alloy of choice provided that it has an 0.2% proof stress of at least 500 N/mm².

Two different sizes of friction insert made of plastic enable the friction to be adjusted easily and reliably. The insert is selected to achieve the desired basic friction – the orange friction insert is intended for restorations requiring only minimal force to release them, e.g. several abutment teeth, and the violet version is for restorations requiring a higher release force.

This brilliant functional principle retains the denture properly for the prevailing conditions, is reliable and safeguards the male part against wear.

Description of the different versions

Mini-SG® PLUS TV

The **BIOPLUS** version.

The prefabricated components are made of high grade dental materials to provide for perfect precision of fit and stability, extremely rational processing **without additional procedures** and are considered safe for use in patients' mouths.

Mini-SG® PLUS TK

The **BUDGET** version.

The cost-effective version with many advantages. Casting the male part with your alloy of choice, provided it has an 0.2% proof stress of at least 500 N/mm², and using the pure titanium female part provides for properly functioning, cost-effective restorations.

Limitation of use

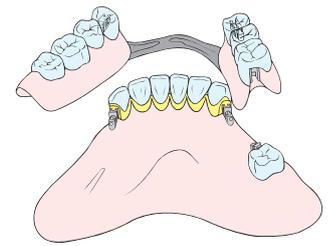
Unilateral dentures without transversal connection

Condition for correct processing

Simple parallelometer apparatus for placement of the male parts

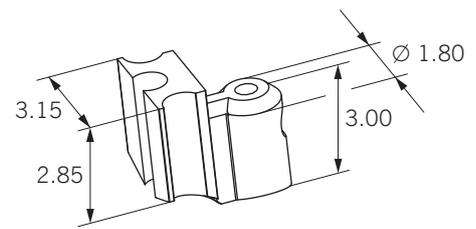
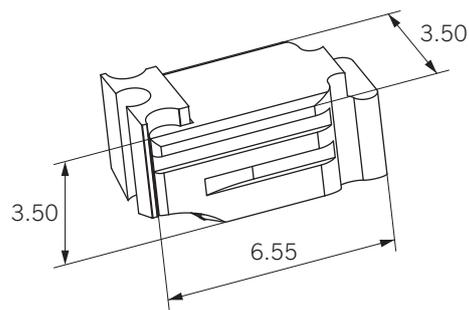
Additional information

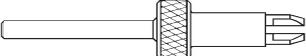
The male part is **compatible** with all the available female parts of the Mini-SG® system.



Male part of the Mini-SG® system

Mini-SG® PLUS



1:1	Order No. ID-No.	Complete parts	Description	
	055 802 * 23.12.2TV	Mini-SG® PLUS TV		
	055 804 * 23.12.2TK	Mini-SG® PLUS TK		
1:1	Single parts			
	055 807 *	Female part T		
	055 775	Activating screw T	For fine adjustment of the friction strength	
	055 774	Friction inserts G Orange	Delivery unit: package of five Range of friction strength: 100 – approx. 600g	
	055 811	Violet	Range of friction strength: 500 – approx. 1000g	
	055 517	Male part V		
	055 529	Male part K		
1:1	Auxiliary parts			
	072 649	Duplicating aid G	Delivered automatically when ordering the complete version and female part. The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking.	
	072 616	System transfer jig	For master model	
1:1	Auxiliary instruments			
	070 567	Parallelometer insert	For mounting the male part	
	072 627	Special parallelometer insert	For easier mounting of the male part	
1:2		072 653	Screwdriver/activator	Multifunctional use. For screwing, unscrewing, activating and deactivating.
1:3		070 347	Tweezers	For insertion and removing of the plastic insert

* Includes the housing T, the activating screw T (055 775), the orange (055 774) and violet friction insert (055 811) and the duplicating aid G (072 649).

Characteristics

- Press-fit latch: **Straightforward** and **reliable locking** – only requires **minimal maintenance**
- Excellent for **unilateral** and **bilateral** restorations
- Latch consists entirely of **palladium-free** and **copper-free** materials.
- Easily adapted to changing **oral conditions** (convertible due to the system male part)

Processing advantages

- **Small dimensions** allow placement in limited spaces.
- **Straightforward** and **ingenious** as the latch female part only has four parts!
- **Time-saving** because of **simple** and **safe processing**
- **Easily converted** within the system to produce a friction-fit, retentive, screw-retained or even a stress-broken restoration for the patient (system male part)
- Female part for **resin-bonding**; reliable and long-lasting

Clinical advantages

- Fitted and removed by **pressing on the** latch pin head and holding it in
- Restoration **fitted and removed** without friction or harming the **periodontium**
- Made of **safe materials**: The male part is made of **palladium-free** and **copper-free** Valor® precious metal alloy for casting-on. The entire housing is made of titanium.

Indications

Dental and dental-gingival supported removable dentures:

- Implant-supported restorations
- Unilateral and bilateral free-end dentures
- Interdental insertion dentures
- Dentures combining interdental and free-end situations
- Restorations can be planned in advance

Restorations **excluding** custom bracing units:

- Unilateral, tooth supported insertion dentures
- Bilateral tooth supported insertion dentures

Restorations **including** custom bracing units:

- Unilateral free-end dentures (up to 2 denture teeth loaded)
- Bilateral free-end dentures
- Bilateral combined fixed/removable dentures (free-end and interdental saddles)

Please note: Depending on the case, a custom bracing unit may be dispensed with under the following conditions:

- Patient does not suffer from bruxism
- Six-monthly recall appointments guaranteed
- Saddle extended to the maximum degree
- Minimum leverage
- Minimally resilient restoration
- Maximum tooth support and minimum gingival support for the denture

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- All applications not specifically listed as being indications – taking the comments into account.

Description of single parts and materials

Female part: All four parts of the latch housing are made of **pure titanium** and **Syntax titanium alloy**. These materials fulfill high quality standards to ensure that the latch functions reliably and long-term with only a minimum of maintenance. The only difference between the left and right versions is the location of the latch pin aperture. The use of a titanium alloy for the latch spring is **unique** for a latch mechanism: It required much labour-intensive developmental work!

The **male part** is made of **Valor®** high grade **palladium-free** and **copper-free** precious metal alloy. It is easily cast-on or soldered to frameworks made of all standard precious metal alloys.

How the Mini-SG® functions

The extremely small dimensions of the **Mini-SG®** press-fit latch are impressive.

It can be used where space is limited, without having to dispense with the advantages of a latch restoration. The patient simply presses the button and holds it in to insert or remove the restoration stress-free.

Converts within the Mini-SG® system

The Mini-SG® latch is **very easily and flexibly** converted to new oral conditions: Remove the outer section of the restoration, fit a friction-fit female part or duplicating aid and take an impression. Before casting the master model, fit the system transfer jig to act as a so-called male analogue. All conversions are **easily** completed on the model **as required for the specific case**.

Limitation of use

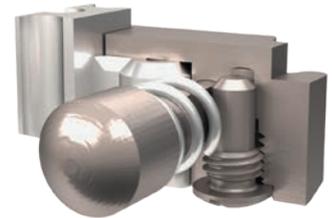
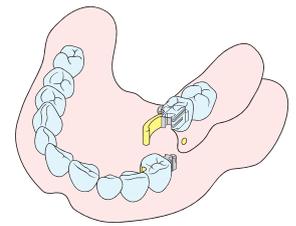
A bracing unit is recommended for most cases. The only exception being tooth-supported dentures (removable dentures). For further details, please refer to the instructions for use.

Conditions for correct processing

Simple parallelometer apparatus for positioning the male parts correctly for bilateral restorations
Milling machine for milling the bracing unit

Additional information

The system male part is **compatible** with all female parts in the Mini-SG® system.

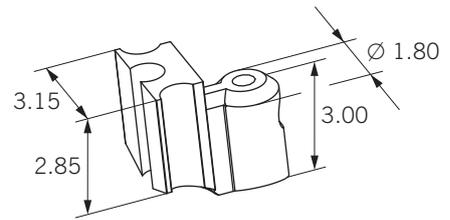
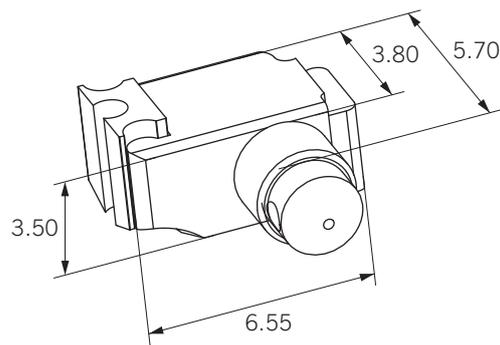


Mini-SG® latch, complete



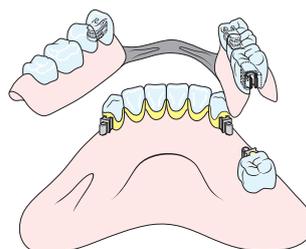
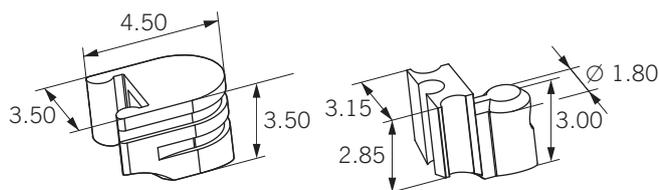
Male part of the Mini-SG® system

Mini-SG® Latch



1:1	Order No. ID-No.	Complete parts	Description
	055835* 133.11.2LTV	Mini-SG® Latch L TV	Left version
	055836* 133.11.2RTV	Mini-SG® Latch R TV	Right version
1:1 Single parts			
	055840*	Female part L, complete T	Left version
	055841*	Female part R, complete T	Right version
	055837	Latch pin T	
	055872	Extended latch pin T	Extension 3 mm, can be shortened individually
	055832	Latch spring S	
	055831	Locking screw T	Retains the latch pin
	055517	Male part V	Precious metal alloy for casting-on
1:1 Auxiliary parts			
	072655	Packing pin	Simplifies packing the dental resin around the latch pin. Supplied automatically with every order.
	072652	Duplicating aid G	For use with both versions (L + R). Supplied automatically with complete sets and the female part. The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking.
	072616	System transfer jig	Male part analogue for master model
1:1 Auxiliary instruments			
	070567	Parallelometer insert	For mounting of the male part
	072627	Special parallelometer insert	For easier mounting of the male part
1:2			
	072410	Screwdriver	For tightening and loosening the locking screw
1:3			
	070347	Tweezers	

* Comprises housing T, latch pin T (055837), latch spring S (055832) and locking screw T (055831), incl. duplicating aid G (072652) and packing pin (072655).



1:1	Order No. ID-No.	Complete parts	Description	
	055 365 *	23.06.2 DC	Mini-SG® DC	
	055 364 *	23.06.2 DK	Mini-SG® DK	
	055 919 *	23.06.2 XC	Mini-SG® XC	
	055 487 *	23.06.2 XK	Mini-SG® XK	
Delivery unit: package of two				
1:1	Single parts			
	055 371 *	Female part complete D	For processing	
	055 489 *	Female part complete X	For soldering or processing	
		Friction inserts G	Delivery unit: package of five	
	055 691	Yellow	Smooth friction: approx. 300g	
	055 356	Red	Normal friction: approx. 600g	
	055 357	Green	Strong friction: approx. 900g	
	055 358	Blue	Extra-strong friction: > 1200g	
	055 361	Male part C	Casting-on	
	055 529	Male part K	Burnout plastic	
1:1	Auxiliary parts			
	072 481	Transfer jig	Use with red friction insert (055 356)	
1:1	Auxiliary instruments			
	070 567	Parallelometer insert	For mounting the male part	
	072 483	Insert remover	For removing the plastic insert	
1:3		070 347	Tweezers	For insertion and removing of the plastic insert
1:1	Tuning Female part			
	055 925 **	Tuning Female part E	The Mini-SG® tuning female part E , which has a smaller inner diameter, enables greater friction to be attained using the existing friction inserts .	

Advantages:

Guide grooves integrated in the attachment

Easily adjustable thanks to the exchange of four different friction inserts

Indications

Dental and dental-gingival supported dentures:

- Interdental insertion dentures
- Rigid unilateral and bilateral free-end dentures
- Dentures with one interdental saddle and one free-end situation/Insertion denture and free-end parts in combination
- Restorations can be planned in advance

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral dentures without transverse bracing

* Mounted with red friction insert (055 356), additionally included is a green friction insert (055 357)

** Mounted with a yellow friction insert (055 691), included are a red (055 356), a green (055 357) and a blue (055 358) one.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

Slide Attachment SG®

Extracoronary, adjustable friction-grip attachment

Characteristics

- Guide grooves integrated in the attachment
- Screw-activated friction insert
- Low maintenance principle of function

Processing advantages

- Saves time as no milled brace support is required
- The simple and reliable processing techniques save time.
- Its minimal dimensions enable this attachment to be used where space is limited.
- Two versions are available as required:
 - Ceramicor® male part for casting-on with precious metal alloys
 - Burnout Korak male part for casting with the alloy of your choice
- The duplicating aid saves a great deal of time when fabricating the box required for the resin-bonding technique.

Clinical advantages

- Activated easily, reliably and progressively with a screw. The plastic section can be replaced.
- The abutment tooth does not require specific or even traumatizing preparation.
- Smoother friction with low abrasion between the plastic insert and metal male part
- Strong design of male part
- The underside is designed to promote good oral hygiene and is easily cleaned.

Indications

- Dental and dental-lingual supported dentures:
 - Interdental insertion dentures
 - Rigid unilateral and bilateral free-end dentures
 - Dentures with one interdental saddle and one free-end situation/Insertion denture and free-end parts in combination
 - Adhesive technique

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral free-end dentures without transverse support

Description of single parts and materials

The female part is made of Doral, which is a white precious metal alloy with high elasticity values. The OSV (high strength precious metal alloy) screw can be reduced as required and is used to adjust the friction progressively. This screw draws the two housing sides together to adjust the friction between the Galak insert (plastic resistant to oral conditions) and the male part. To allow for adequate flexibility, only the specially prepared rear section of the housing must be resin-bonded or polymerized into the cobalt chrome denture base. The duplicating aid simplifies these procedures and perfects the connection between the female part and removable denture.

The male part is made of Ceramicor® which is a non-oxidizing, copper-free, precious metal alloy for casting-on technique or Korak. Korak is a burnout plastic which permits the use of any alloy with an 0.2 % proof stress of at least 500 N/mm².

Fitting to a cobalt chrome denture: The occlusal stop on the male and the guiding grooves must be integrated into the design of the cobalt chrome denture base.

Description of the different versions

SG® DC

The top version: The perfect fit and strength of the prefabricated Doral and Ceramicor® components provide extremely rational processing.

SG® DK

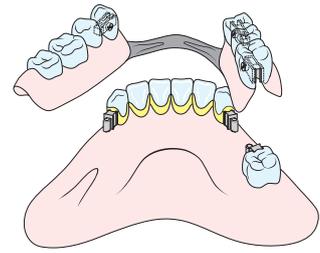
This is the cost-effective version with many advantages. Casting the Korak male with your alloy of choice, keeping to the minimum requirements, provides for good precision of fit and the corresponding strength. This version achieves its best results in resin-bonding dentistry.

Limitation of use

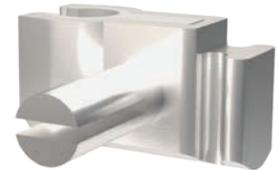
Unilateral dentures without transverse splinting

Conditions for correct processing

Simple parallelometer apparatus for placement of the male part



Slide Attachment SG®



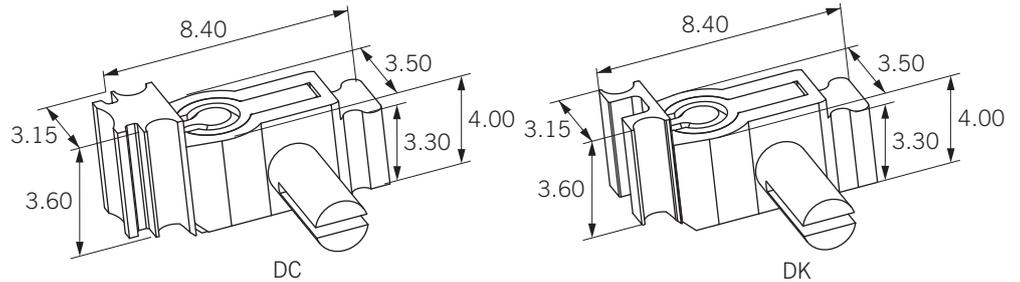
Female part



Male part

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.

Slide Attachment SG®

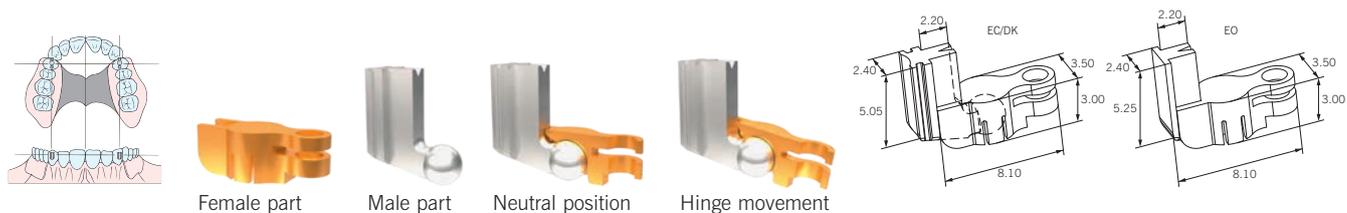


1:1	Order No. ID-No.	Complete parts	Description	
	052 157 * 23.06.5 DC	SG® DC		
	052 158 * 23.06.5 DK	SG® DK		
1:1	Single parts			
	052 159 *	Female part D complete		
	052 163	Friction insert G White	Delivery unit: package of five Normal friction Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.	
	05000057	Violet	Strong friction	
	052 161	Activating screw O	Used in the mouth	
	052 164	Mounting screw X	Facilitates polymerization. Is automatically supplied when ordering the complete parts	
	052 160	Male part C		
	052 162	Male part K		
1:1	Auxiliary parts			
	072 502	Duplicating aid G	Is automatically supplied when ordering the complete parts. The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking.	
	070 566	Transfer jig	For master model	
1:1	Auxiliary instruments			
	070 567	Parallelometer insert	For mounting the male part	
	072 627	Special parallelometer insert	For easier mounting of the male part	
	070 293	Screwdriver	For activating and deactivating the screw	
	070 221	Thomas spanner key	For screwdriver	
1:3		070 222	Attachment tweezers	Facilitates the separation and mounting of the attachment

* Housing D
Activating screw O
Mounting screw X
Friction insert white
Duplicating aid G

Mini-Dalbo®

Extracoronary, adjustable hinge attachment with rotation



1:2	Order No. ID-No.	Complete parts	Description
	050 702 83.01.2 EO	Mini-Dalbo® EO	
	050 701 83.01.2 EC	Mini-Dalbo® EC	
	051 659 83.01.2 DK	Mini-Dalbo® DK	
1:2		Single parts	
	050 697	Female part E	For polymerization (no soldering). Adjustable
	051 662	Female part D	For polymerization (no soldering). Adjustable
	050 961	Male part O	For soldering to all precious metal alloys
	050 960	Male part C	For soldering or casting-on with all precious metal alloys
	051 617	Male part K	Burnout plastic
1:2		Auxiliary part	
	070 176	Transfer jig	For the master model
1:2		Auxiliary instruments	
	070 146	Parallelometer insert	For mounting of the male part
1:3			
	070 222	Attachment tweezers	Facilitates the separation and mounting of the attachment

Indications

- Stress-broken unilateral and bilateral free-end dentures
- Short or long-span denture saddles with a transverse framework

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral dentures without transverse bracing
- Insertion dentures

Description of single parts and materials

Male part alloys:

C = Ceramicor® is a non-oxidizing, copper-free, precious metal alloy for the casting-on technique.

O = OSV is a high strength precious metal alloy for soldering. Must not be hardened.

K = Korak. Burnout plastic. Minimum proof stress (Rp 0.2%) required of the casting alloy: $\geq 500 \text{ N/mm}^2$.

Female part alloys:

E = Elitor® is a yellow precious metal alloy.

D = Doral is a white precious metal alloy.

Descriptions of the different versions

The **EC** is the top version of the Mini-Dalbo®. The male part can be attached to the abutment tooth by casting on, which saves time, or soldering.

The **EO** version of the Mini-Dalbo® can only be retained on the abutment tooth by soldering. As the male is made of high strength OSV, any above average loads encountered in the mouth can be compensated for.

The **DK** is the cost-effective version of the Mini-Dalbo®. As the Korak male part is cast, any crown alloy can be used. This also reduces the number of alloys used in the patient's mouth. The female part is made of the white alloy Doral and can easily be adjusted. Its dorsal retainer guarantees easy fixation of the female part to the removable denture by polymerizing.

Limitation of use

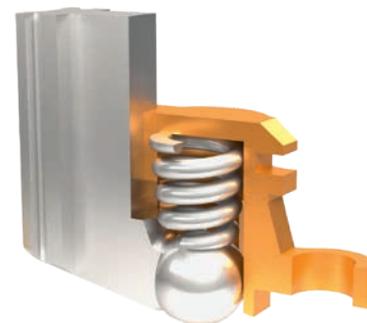
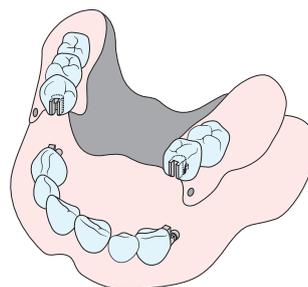
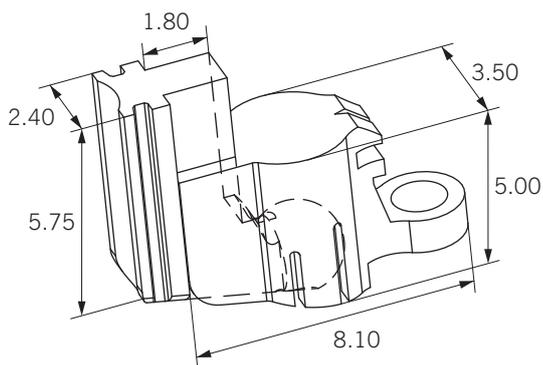
Unilateral dentures without transversal blocking

Removable dentures

Condition for correct processing

Simple parallelometer for positioning the male part correctly

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.



1:1	Order No. ID-No.	Complete parts	Description
	051 244 63.05.2 EC	Dalbo®-S EC	
	051 658 63.05.2 DK	Dalbo®-S DK	
1:1		Description	
	051 513	Female part E complete	For polymerization into metal framework
	051 660	Female part D complete	For polymerization into metal framework
	051 143	Spiral spring X	Return spring Delivery unit: package of five
	051 243	Male part C	
	051 616	Male part K	
1:1		Auxiliary parts	
	070 174	Transfer jig	For master model
	070 149	Steel pin	In place of the spiral spring when condensing and underlining
1:1		Auxiliary instruments	
	070 146	Parallelometer insert	For mounting of the male part
1:3			
	070 222	Attachment tweezers	Facilitates the separation and mounting of the attachment

Advantages:

Adjustable lamellae of female part
The shoulder stop protects the return spring against overload and fracture
Vertical translation limited to 0.4 mm

Indications

Stress-broken unilateral and bilateral free-end dentures

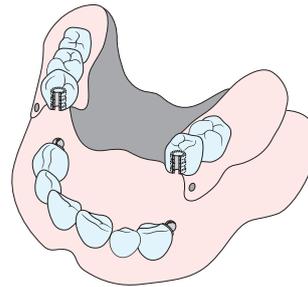
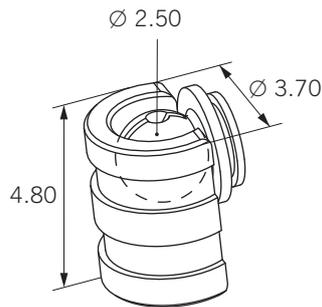
Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral dentures without transverse bracing
- Insertion dentures

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

Roach Ball Joint

Extracoronary, adjustable hinge ball joint with rotation
Roach



1:1	Order No. ID-No.	Complete parts	Description	
	050 637 83.02.5 CC	Roach Ball Joint CC		
1:1	Single parts			
	050 628	Male part C	For casting-on or soldering	
	050 627	Female part C	For polymerization into denture framework or for casting-on as transverse lock	
1:1	Auxiliary instruments			
	070 121	Parallelometer insert	For mounting of the female part	
	070 145	Parallelometer insert	For mounting of the male part	
	070 196	Aktivator	For male part. Orientate the activation slit and the bore always vertically to make activation possible	
1:3		070 222	Attachment tweezers	Facilitates the separation and mounting of the attachment

Advantages:

Suitable for hinged transverse locks
Female part can be gingivally shortened by **max. 1.2 mm**
Adjustable lamellae of the male part

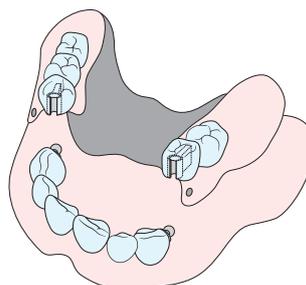
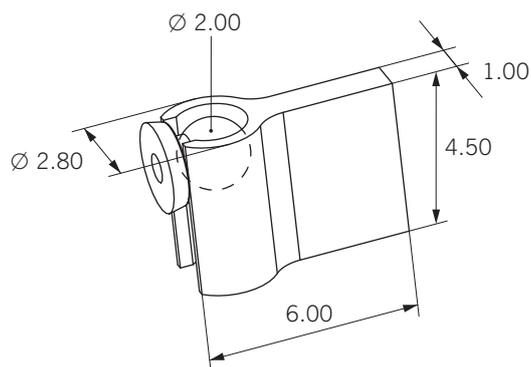
Indications

Stress-broken unilateral and bilateral free-end dentures
Short or long-span denture saddles with a transverse blocking
Transverse blocking

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral dentures without transverse bracing
- Insertion dentures

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.



1:1	Order No. ID-No.	Complete parts	Description
	055 411 83.42.3 EK	Tecnoroch EK	
1:1	Single parts		
	055 410	Female part E	For polymerization or for resin-bonding or soldering into metal framework
	055 409	Male part K	
1:1	Auxiliary instruments		
	072 507	Parallelometer insert	For mounting of the male part
1:2		072 505	Activator For female part

Advantages:

Small dimensions; female part can be shortened
Simple construction
Adjustable lamellae of female part
Suited for the resin-bonding technique

Indications

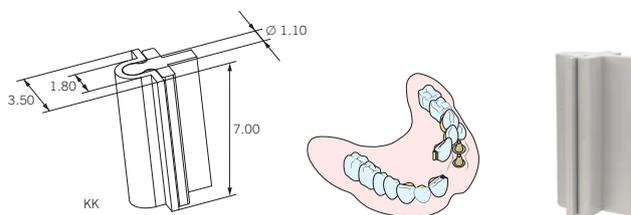
Articulated unilateral and bilateral free-end dentures
Short or long-span denture saddles with a transversally locked framework

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Unilateral free-end dentures without transversal locking

Plasta

Intracoronal, non-adjustable slide attachments, friction-grip



1:2	Order No. ID-No.	Complete parts	Description
	 051 487 21.01.5 KK	Plasta KK	Delivery unit: package of five
1:2		Single parts	
	 051 599	Male part K	
	 051 598	Female part K	
1:2		Auxiliary instruments	
	 070 111	Parallelometer insert	For female part
	 070 306	Calibration drill	Exclusively for calibration of the cast female part (Ø 1.1 mm)
	 070 221	Thomas spanner key	For calibration drill
	 080 479	Tapered drill	For female part opening

Advantage:

Can be individually shortened **down to 3.5 mm**

Indications

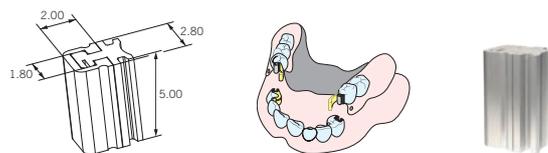
- Fixed bridges in the anterior region
- Compensation of non-parallelism of abutments as well as subdivision of bridges

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Removable dentures

McCollum

Intracoronal, adjustable slide attachment, friction-grip



1:2	Order No. ID-No.	Complete parts	Description	
	050 190 051 269 22.03.2 CC	McCollum L CC McCollum R CC	Left version Right version	
1:2		Single parts		
	 050 160	Male part L C	Adjustable. Left version	
	 051 408	Male part R C	Adjustable. Right version	
	 050 157	Female part C		
1:2		Auxiliary parts		
	 070 447	Transfer jig	For the master model	
	 070 450	Soldering aid	Allows easy soldering of the female part	
1:3		Auxiliary instruments		
	 070 115	Parallelometer insert	For mounting of the female part	
	 070 460	Screw activator	Allows safe spreading of the fine activation lamellae	
1:3		 070 222	Attachment tweezers	Facilitates the separation and mounting of the attachment

Advantage:

Can be individually shortened **down to 3.5 mm**

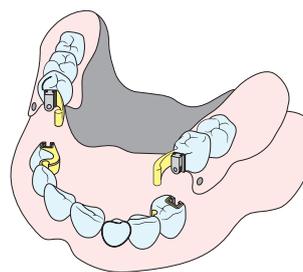
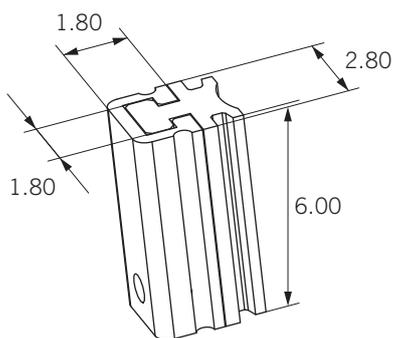
Indications

- Dentally and dentally-gingivally supported dentures:
- Insertion dentures
 - Rigid, uni- and bilateral free-end dentures
 - Dentures with one insertion and one free-end saddle

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Restorations without milled brace support
- Unilateral free-end dentures without transverse support

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.



1:1	Order No. ID-No.	Complete parts	Description	
	051 861 22.09.2 HC	Pt-Snap HC		
1:1	Single parts			
	051 863	Male part C		
	051 862	Female part H		
1:1	Auxiliary parts			
	070 496	Transfer jig	For master model	
1:1	Auxiliary instruments			
	070 495	Parallelometer insert	For mounting of the female part	
	070 497	Activator	Allows safe spreading of the fine activation lamellae	
1:3		070 222	Attachment tweezers	Facilitates the separation and mounting of the attachment

Advantages:

Can be individually shortened **down to 4 mm**

Female part H for casting-on with precious metal and non-precious metal alloys

Indications

Dentally and dentally-gingivally supported dentures:

- Insertion dentures
- Rigid unilateral and bilateral free-end dentures
- Dentures with one insertion and one free-end saddle

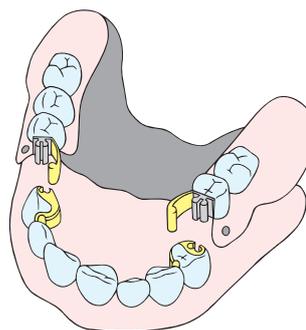
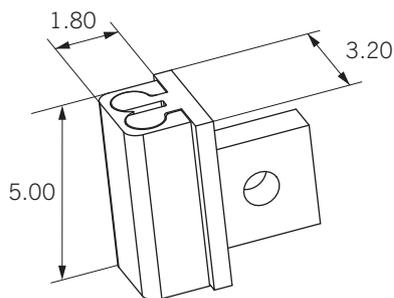
Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Restorations without milled brace support
- Unilateral free-end dentures without transverse support

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.

Biloc®

Intracoronal, adjustable attachment with friction-grip



1:1	Order No. ID No.	Complete parts	Description
	051 462 22.10.3 KD	Biloc® KD	
	051 481 22.10.3 KC	Biloc® KC	
1:1	Single parts		
	051 366	Male part C	For casting-on or soldering to the bracing arm, adjustable
	051 618	Male part D	For polymerization, adjustable
	051 619	Female part K	Female part for casting
1:1	Auxiliary instruments		
	070 340	Parallelometer insert	For the female part
	070 343	HM drill	For corrections
	070 111	Parallelometer insert	For centering the HM drill 070 306
	070 306	HM spiral drill	For calibration (speed approx. 5000 rpm) Only to be used together with the guiding pin
	070 344	Guiding pin	
	070 342	Activator	For spreading the lamellae of the male part
	070 341	Activator	For compressing the lamellae of the male part

Advantages:

Simple geometrical attachment design with parallel double cylinders
Adjustable by spreading or compressing the cylinders of the male part

Indications

Rigid, dentally-gingivally supported restorations:

- Insertion dentures
- Bilateral free-end dentures
- Insertion and unilateral free-end dentures in combination
- Unilateral free-end dentures with transversal connection

Contraindications

- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Restorations without milled brace support
- Unilateral free-end dentures without transverse support

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.

+ Spherical, retention-grip	
Dalbo®-PLUS	39–42
Dalbo®-Classic	43–44
Dalbo®-B	45
Profix	46
Pro-Snap	47
+ Cylindrical, friction-grip	
Dalbo®-Z	48
Mini-Gerber PLUS	52–53
Baer Cylindrical Anchor	55
+ Cylindrical, retention-grip	
CM LOC®	36–38
Eccentric	49
Gerber RZ	50–51
Mini-Gerber PLUS	52–53
Mini-Gerber	54

+ Anchors

CM LOC®

Supraradicular, cylindrical, retentive anchors, rigid

Characteristics

The CM LOC® is used for the following clinical situations:

CM LOC® Abutment:

Implant anchorage of hybrid-supported removable dental prostheses on implants.

CM LOC® CAD CAM Retention Element:

As an additional retaining element on CAD CAM milled dental bars.

CM LOC® male part E/C:

Removable hybrid-supported dental prostheses on root canal caps in combination with the specific CM LOC® female part system.

Mandible

CM LOC® Abutment/male part:

Anchorage of mandibular (MD) prosthesis on 2 or more implants/root canal caps.

Maxilla

CM LOC® Abutment/male part:

Anchorage of maxillary (MX) prosthesis on 4 or more implants/root canal caps.

CM LOC® CAD CAM Retention Element:

As an additional retaining element on CAD CAM milled dental bars.

Further information on the CM LOC® at www.cmloc.ch

Indications

Abutment:

Implant anchorage of hybrid-supported removable dental prostheses on implants.

Root canal caps:

Removable hybrid-supported dental prostheses on root canal caps in the maxilla and/or mandible in combination with the specific CM LOC® female part system.

Contraindications

- Implant divergences > 20°.
- Restoration of severely periodontally damaged abutment teeth (root canal cap).
- The CM LOC® Abutments are to be used exclusively with the specific implant systems listed in the web list.
- In patients with allergies to one or more elements of the attachment materials.
- Use on a single implant.
- Use on a single root canal cap.
- Not suitable if fixed connections are require.
- Existing clinical picture in the patient's mouth does not permit the correct use of the CM LOC®.
- Lacking cooperation of the patient with respect to follow-up / recall instructions.
- Patients with bruxism or other parafunctional habits.
- Unilateral free-end prosthesis without transversal support.
- If not indicated for implant immediate loading. For additional contraindications, please refer to the instructions for use from the implant manufacturer.
- Implant system is not approved for use. www.cmloc.ch
- For additional contraindications, please refer to the instructions for use from the implant manufacturer.

Description of single parts and materials

S = Syntax

- Abutment (male part)
- CAD CAM Retention Element (male part)
- Housing (female part)

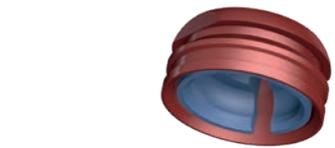
Pekkton®, E = Elitor®, C = Ceramicor®

- Retention inserts Pekkton®
- Retention inserts Elitor®
- Housing (female part)
- Male part Elitor®
- Male part Ceramicor®

Auxiliary instruments S, Pekkton®, X, Santoprene

- S = Syntax: TiAl6 V4 ELI (Grade 5), Ti > 89.478 %, Al 6.0 %, V 4.0 %
- Santoprene
- Pekkton®
- X = steel

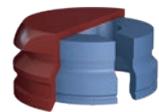
Detailed information on the materials and their classification is given in the specific material data sheets and the catalog. www.cmsa.ch/dental



Male part with female parts



Female part made of titanium



Female part made of Pekkton®



Retention inserts

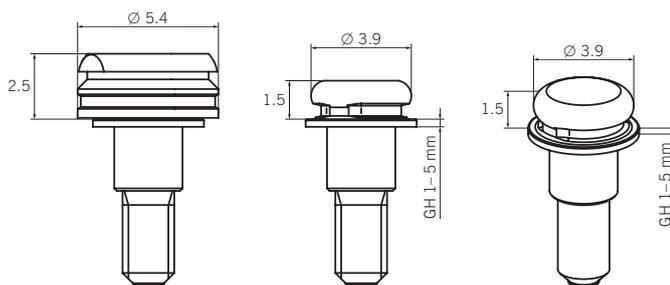


Male part made of Elitor®



Male part made of Ceramicor®

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.



	Order No.	Sets	Material	Content
	05001325	CM LOC® Basic Set Pekkton®	PS	2x female part housing Pekkton® 2x retention insert, extra-low 2x retention insert, low 2x retention insert, middle 2x Block-out Spacer 2x processing insert
	05001307	CM LOC® Basic Set Elitor®	TES	2x female part housing made of titanium 2x retention insert Elitor®, mounted 2x Block-out Spacer

Single parts

	see web	CM LOC® Abutment	T	1 p.
	05001304	CM LOC® CAD/CAM	T	1 p.
	05001606	CM LOC® male part Elitor® for laser welding	E	1 p.
	05001605	CM LOC® male part Ceramicor® for casting/soldering	C	1 p.
	05001306	CM LOC® female part housing Pekkton®	P	4 p.
	05001314	CM LOC® retention insert, extra-low	P	4 p.
	05001315	CM LOC® retention insert, low	P	4 p.
	05001316	CM LOC® retention insert, middle	P	4 p.
	05001317	CM LOC® retention insert, strong	P	4 p.
	05001318	CM LOC® female part made of titanium with retention insert made of Elitor®, mounted	TE	1 p.

Auxiliary parts

	05001328	CM LOC® Processing insert	P	4 p.
	07000201	CM LOC® Spacer	P	4 p.
	07000202	CM LOC® Block-out Spacer for the mounting of female parts	S	4 p.
	07000204	CM LOC® Analog for the preparation of the master model	T	4 p.
	07000213	CM LOC® Impression part	P	4 p.

	Order No.	Auxiliary instruments	Material	Content
	see web	CM LOC® Case Guide	T	1 p.
	07000205	CM LOC® Multi-Tool for insertion and removal of the retention inserts made of Pekkton®		1 p.
	07000206	CM LOC® Screw Driver for CM LOC® Abutment		1 p.
	07000211	CM LOC® Activator for retention insert made of Elitor®		1 p.
	07000217	CM LOC® Extractor for female part housing		1 p.
	07000219	Parallelometer	T	1 p.
	07000200	CM LOC® Instrument Set		with 3 instruments

Characteristics

- The lamellae retention insert is **screwed** into the housing to adjust it reliably and **long-term**.
- The retention can be **adjusted** to «low» or «high».
- Based on **the proven, well known** ball principle designed by Dr. Dalla Bona
- Perfect for **implant-supported restorations**

Processing advantages

- The precious metal alloy (Pd-Cu-free) male parts for casting-on **saves time**.
- The **female part exists in two versions** at identical height: The version **elliptic** features a reinforced elliptic retention cap, ensuring secure hold also at highest stress-loads.
- Diverging abutments can be **compensated: on rootcaps up to 8°–16°** depending on activation.
On implants up to 40° depending on the system.
- As the dimensions are identical to those of the Dalbo®-B, existing restorations can be upgraded perfectly.
- A special male part for the laser welding technique is available.

Clinical advantages

- The denture retention force can be adjusted **easily and pro-gressively** during the treatment to **suit the patient's individual requirements**.
- **Highly flexible:** the choice of three different sizes of lamellae retention inserts increases the range of friction. These can be exchanged easily, without having to go through the time consuming process of repolymerization.
- The female part **elliptic** increases the retentive force in the denture's body, ideal for direct (chairside) integration!
- **Safe for patients** as the materials are free of toxic elements

Indications

- Removable, rigidly or resiliently restorations supported on implants and root caps:
- Hybrid dentures
 - Unilateral free-end dentures locked transversally
 - Insertion/free-end dentures in combination

Contraindication

- Implant divergences of more than 20°/Implant (Total 40°).
- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- For additional contraindications, please refer to the instructions for use from the implant manufacturer.

Description of the concept

Due to its unique performance, the Dalbo®-PLUS basic and Dalbo®-PLUS elliptic can be considered an **exclusive product** for retaining hybrid dentures on natural teeth and implants. Screwing in the lamellae retention insert into the housing with the screwdriver/activator closes the four lamellae and adjusts the unit exactly. The special thread and full length slots in the lamellae retention insert compress and wedge it slightly while being screwed in to prevent inadvertent adjustment. The range of retentive forces varies between approx. 200 grams and 1.200 grams.

Male part

The **male part (V)** is made of **Valor®**, a **palladium- and copper-free**, precious metal alloy for casting-on. It can only be either cast-on or soldered to the root cap. Casting-on saves time and does not require joining materials.

The **special male part for the laser welding technique (E)** of Elitor® has been developed for this joining technology. The ingenious design of the base plate beneath the ball allows a safe and easy laser welding of this male part onto the root caps.

Female part

The **female part (TE)** exists in two versions. The **elliptic** version differs from the basic PLUS version in its enlarged elliptic-shaped retention cap for the fixation in the resin, without changing the popular minimal height of the female part. This version is indicated either for a direct (chairside) fixation or where an **extra high strength** connection with the denture is required.

Tuning female part system

The ball anchor is the most widely used anchoring method worldwide. Countless manufacturers compete in this particular market. The smallest variations in ball diameter, material, shape and tolerance factors can influence the friction range of an anchor.

Two special Tuning female parts with different inner diameters of the lamellae retention inserts allow the retention to be restored, no matter what system was used or if the male part is worn out.

Limitation of use

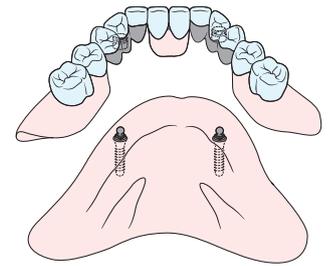
Unilateral dentures without transverse splinting

Condition for correct processing

Simple parallelometer apparatus for determining the best direction of insertion.

Please note

As the male parts, female parts and some auxiliary instruments are compatible with the Dalbo®-B and Dalbo®-Classic, they can be interchanged with each other.



Basic version



Male part Valor® (V)



Elliptic version



Standard lamellae retention insert



Korak (K) male part



Elitor® (E) laser male part

Dalbo®-PLUS

The Dalbo®-PLUS female part basic

is indicated for **integration in the laboratory**. It can either be directly polymerized or resin-bonded in the housing. The duplicating aid/spacer that comes with the product facilitates the manufacturing process of a box for bonding in the laboratory.

The Dalbo®-PLUS female part elliptic

is indicated for **direct (chairside) fixation**. Experiments have shown that resin quality is reduced by direct (chairside) integration and that under high stress-loads, the female part may get extracted from the denture. Our solution is an elliptically shaped female part which significantly increases the retentive force in the denture's body!

Retentive force in the denture's body:

A comparison of the Dalbo® female parts

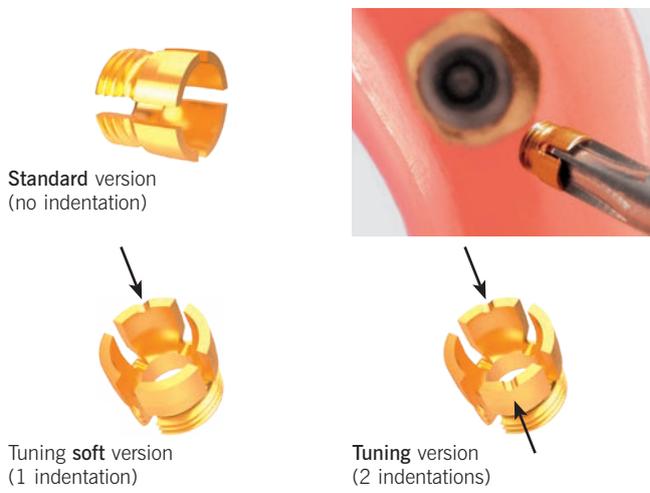
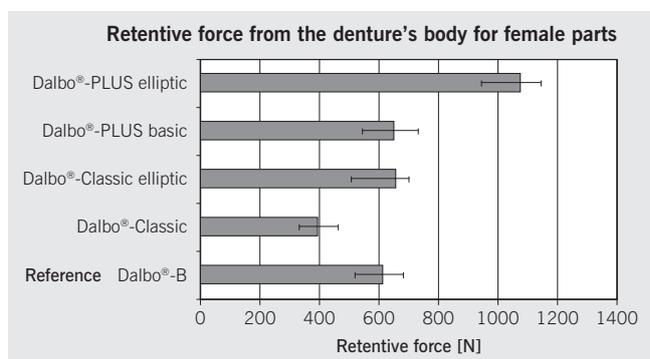
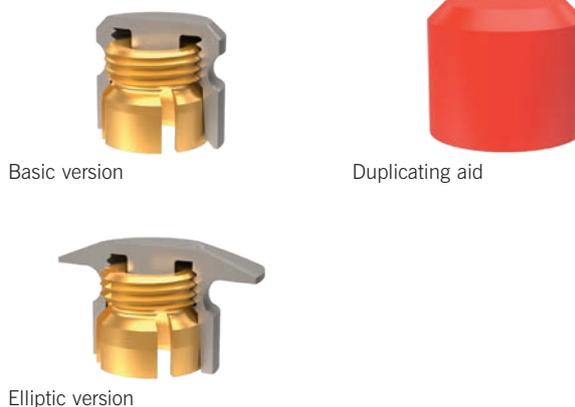
Under laboratory conditions, all female parts for ball anchors have a **sufficient retention** in the denture's body. What's remarkable is that in some cases the Dalbo®-PLUS female part elliptic displays values exceeding that of the mechanical properties of the resin.

The lamellae retention insert

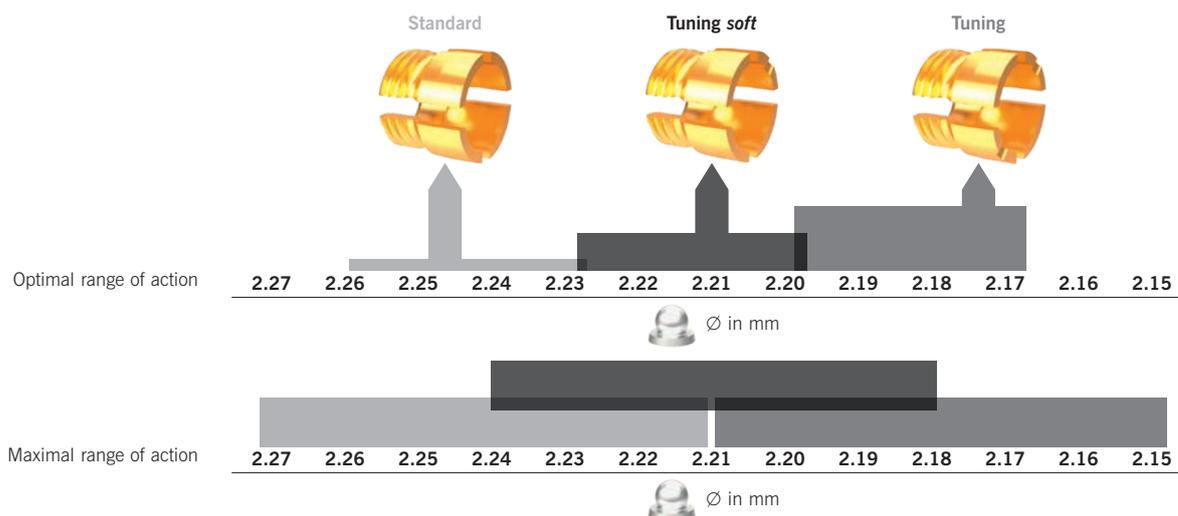
is the actual retentive element in the system. It is made of **Elitor®**, which is a yellow precious metal alloy with ideal mechanical properties for long-term, reliable functioning. The insertion is quick and simple. Just unscrew the insert from the housing with the special screwdriver/activator without extracting the female part from the denture's body.

The Tuning lamellae retention inserts

Two special tuning retention inserts with reduced inner diameter provide an extraordinarily wide range of friction and allow retention to be restored.



Choosing the right retention insert

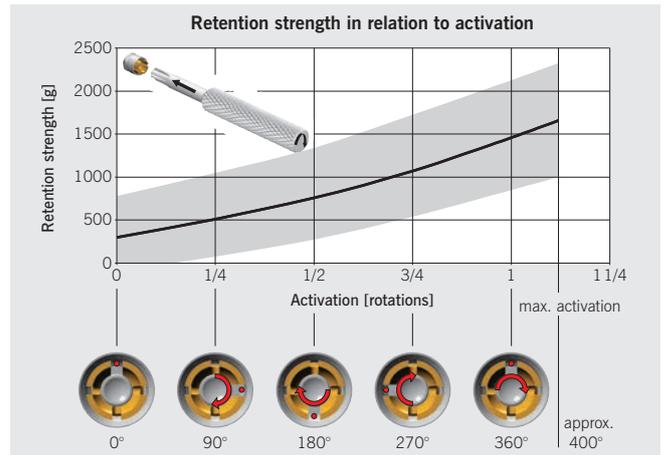


Adjusting the retentive force

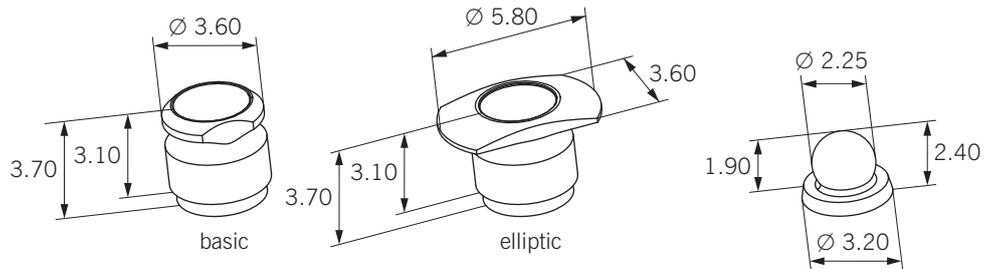
The integrated Dalbo®-PLUS can be identified by the titan-coloured edge of its gold yellow lamellae retention insert. It is activated by rotating the special screwdriver/activator (order no. 072 609) clockwise and deactivated by rotating it counter clockwise. The highest level of activation is obtained after one and a half clockwise rotations.

Activation: the «Zero Position» corresponds when the lamellae retention insert is flush with the opening of the housing. The retention strength increases by approx. 200g with each ¼ rotation (see diagram). If needed, the lamellae retention insert can be exchanged, or in case of advanced wear of the sphere, replaced with a tuning lamellae retention insert without removing the female part from the denture's body.

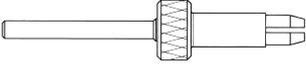
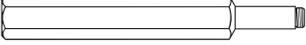
The gauge set facilitates the adjustment of the retentive force!
Adjustment in the denture can be measured with the **male part gauge**. The **female part gauge** comes with an original housing. The retentive force of the different lamellae retention inserts can be measured individually chairside.



Sales program



	Order No. ID No.	Complete parts	Description
1:1	055 750 43.04.8 TEV	Dalbo®-PLUS TEV basic	
	055 889 43.04.9 TEV	Dalbo®-PLUS TEV elliptic	
1:1	Single parts		
Standard	055 752	Female part TE basic complete	For polymerizing into the denture resin (not intended for soldering), adjustable. Delivery includes duplicating aid.
	055 890	Female part TE elliptic complete	For the direct (chairside) fixation into the denture, adjustable.
	055 643	Lamellae retention insert E	For screwing into the housing
Tuning soft	0500 0214	Tuning female part soft TE basic complete	For polymerizing into denture resin (not intended for soldering), adjustable. Delivery includes duplicating aid.
	0500 0215	Tuning female part soft TE elliptic complete	For the direct (chairside) fixation into the denture, adjustable.
	0500 0068	Tuning lamellae retention insert soft E	For screwing into the housing
Tuning	055 771	Tuning female part TE basic complete	For polymerizing into denture resin (not intended for soldering), adjustable. Delivery includes duplicating aid.
	055 891	Tuning female part TE elliptic complete	For the direct (chairside) fixation into the denture, adjustable.
	055 687	Tuning lamellae retention insert E	For screwing into the housing

1:1	Single parts		
	050 394	Spacer disc Z	Provides for vertical resilience if required. Do not use it in the mouth. Delivery unit: package of five
	055 647	Male part V	Can be cast-on or soldered to the root cap Cannot be laser-welded!
	055 921	Laser male part E	Special male part for the laser welding technique featuring thicker and larger base plate
1:1	Auxiliary parts		
	055 760	Female part housing basic	Without lamellae retention insert
	055 886	Female part housing elliptic	Without lamellae retention insert
	072 626	Duplicating aid / spacer G	Duplicating aid (not indicated for the female part elliptic). The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking.
	070 157	Transfer jig	For master model
1:1	Auxiliary instruments		
	072 637	Special parallelometer insert	For easier mounting of the male part
	072 609	Screwdriver/Activator	For screwing in and activating the lamellae retention insert
	072 639	Heating rod	For removal of the housing from the denture resin
	0700 0026	Gauge set	Includes: Male part gauge (0700 0027) Female part gauge (0700 0024) Lamellae retention insert (055 643) Tuning lamellae retention insert soft (0500 0068) Tuning lamellae retention insert (055 687) Screwdriver/Activator (072 609)
	0700 0027	Male part gauge	For testing the retentive force in the denture, outside of the patient's mouth
	0700 0024	Female part gauge	Does not include lamellae retention inserts For testing the retentive force in the patient's mouth and choosing the appropriate lamellae retention insert. We recommend securing instruments with a cord to prevent aspiration.
1:3	Auxiliary instruments		
	070 222	Attachment tweezers	
	010 903	Laser welding wire E	Filler material for the laser welding technique (∅ 0.40 mm, length 200 mm)

Characteristics

- **The original:**
The epitome of ball and socket units!
- The ball of the male part permits a certain amount of **freedom when placing** this anchor
- **Two types of female** are for different indications available
- Based on the Dalbo®-B anchor designed by Dr. Dalla Bona

Processing advantages

- The precious metal alloy male part for **casting-on saves time**
- Can be positioned on the root cap without the use of a parallelometer as **non-parallelism of up to 10° can be compensated** for easily.
- The female part **elliptic** features a reinforced elliptic retention cap which ensures a secure and highly durable connection in the resin of the removable denture.
- 2 versions:
Exclusive, made of Elitor® and Valor®.
Cost-effective, made of Elitor® and Korak
- Its small dimensions enable it to be placed where only limited space is available.
- Special male part for the laser welding technique

Clinical advantages

- **Decades** of practical experience, proven **one hundred thousand times**
- The patient feels confident as the denture fits **precisely, firmly and long-term**.
- **Can be adjusted to the patient's needs** during treatment
- The perfectly adjusted geometry of the lamellae simplifies activation and optimizes resistance to fatigue.
- The female part **elliptic** optimizes the **direct** (chair side) **integration** into the removable denture thanks to the enlarged retention cap
- Can be used rigid or resilient.

Indications

- Removable, rigidly or resiliently restorations supported on implants and root caps:
- Hybrid dentures
 - Unilateral free-end dentures locked transversally
 - Insertion/free-end dentures in combination

Contraindication

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- For additional contraindications, please refer to the instructions for use from the implant manufacturer.

Description of single parts and materials

V = Valor® is a palladium-free, copper-free, metal alloy for casting-on.

Cannot be laser-welded!

E = Elitor® is a high-grade precious metal alloy with especially adapted physical properties according to the different functions. In the female part the alloy ensures the longevity and secure function of the lamellae, in the laser male part the alloy allows a simple and secure manufacturing of a laser welding joint.

K = Korak is a burnout plastic for casting techniques.

Description of the different versions

The design of the **elliptic** female part differs from the «normal» Classic version in its enlarged elliptic-shaped retention cap for the fixation in resin, **without changing the popular minimal height of the female part**. This version is indicated either for a direct (chair side) fixation or where an **extra high** strength connection with the denture is required.

The exclusive version EV. The male part made of **Valor®** can **exclusively** be connected to the root caps by casting-on technique or by soldering. The casting-on technique saves time and avoids the use of additional joining materials. Both adjustable female parts consist of the precious metal alloy **Elitor®** and can be easily fixed into the dentures by polymerizing. The retention caps of both versions feature anti-rotation design for a secure connection in the resin.

The cost-effective version EK. When used correctly, the male part consisting of a special burnout plastic creates a high grade surface on the casting which is quickly polished. Both versions of the female parts are identical with the EV versions. These versions are very cost-effective.

The special male part for the laser welding technique (E) of **Elitor®** has been developed for this joining technology. The ingenious design of the base plate beneath the ball allows a safe and easy laser welding of this male part onto the root caps.

Limitation of use

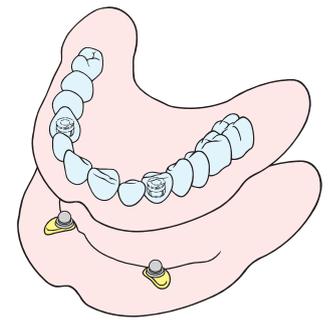
Unilateral dentures without transverse splinting

Condition for correct processing

Ideally, a simple parallelometer should be available for determining the best direction of insertion

Additional indications

As the male parts, female parts and some auxiliary instruments are compatible with the Dalbo®-B and Dalbo®-Classic, they can be interchanged with each other.

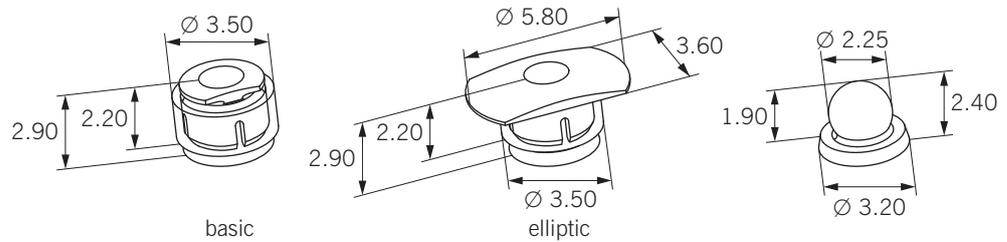


Dalbo® male part

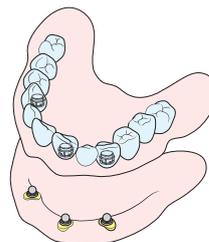
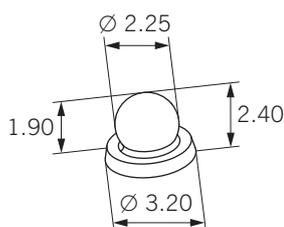
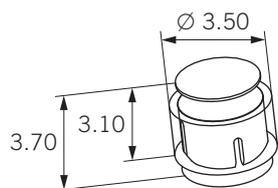


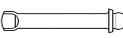
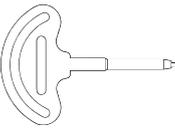
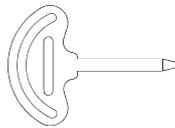
Dalbo® laser male part

Dalbo®-Classic



1:1	Order No. ID-No.	Complete parts	Description
	055 689 43.02.5 EV	Dalbo®-Classic EV basic	
	055 701 43.02.5 EK	Dalbo®-Classic EK basic	
	055 892 43.02.6 EV	Dalbo®-Classic EV elliptic	
	055 893 43.02.6 EK	Dalbo®-Classic EK elliptic	
1:1	Single parts		
	055 698	Female part E basic	For polymerizing into denture resin (not intended for soldering), adjustable. Delivery includes elastomeric ring (055 688) and spacer disc (050 394).
	055 887	Female part E elliptic	For the direct (chair side) fixation into the denture (not intended for soldering), adjustable. Delivery includes elastomeric ring (055 688) and spacer disc (050 394).
	055 688	Elastomeric ring	Delivery unit: package of five
	050 394	Spacer disc Z	Tin, provides for vertical resiliency. Only for lab use. Do not use it in the mouth. Delivery unit: package of five
	055 647	Male part V	Casting-on or soldering. Cannot be laser-welded!
	055 921	Laser male part E	Special male part for the laser welding technique featuring thicker and larger base plate
	055 330	Male part K	Burnout plastic
1:1	Auxiliary parts		
	072 625	Spacer G	Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
	070 157	Transfer jig	For master model
1:1	Auxiliary instruments		
	070 205	Instrument	For fitting the elastomeric ring
	072 637	Special parallelometer insert	For easier mounting of the male part
1:3	1:3		
	070 197	Activator	
	070 199	Deactivator	
	070 222	Attachment tweezers	Facilitates the separation and mounting of the anchor
	010 903	Laser welding wire E	Filler material for the laser welding technique (Ø 0.40mm, length 200 mm)



1:1	Order No. ID-No.	Complete parts	Description
	050 427	Dalbo®-B EE	
	43.02.8EE		
	055 331	Dalbo®-B EK	
	43.02.8EK		
1:1	Single parts		
	051 511	Female part E	For polymerizing into denture resin (not intended for soldering), adjustable. Delivery includes elastomeric ring (051 005) and spacer disc (050 394).
	051 005	Elastomeric ring	Delivery unit: package of five
	050 394	Spacer disc Z	Tin, provides for vertical resiliency. Only for lab use. Do not use it in the mouth. Delivery unit: package of five
	050 423	Male part E	For soldering onto cast root cap
	055 330	Male part K	Burnout plastic
1:1	Auxiliary parts		
	070 440	Spacer G	Can be used temporarily in place of the female part. Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
	070 157	Transfer jig	For the master model
1:1	Auxiliary instruments		
	070 131	Parallelometer insert	For positioning of the male parts
	070 205	Instrument	For fitting the elastomeric ring
1:3	Activator		
	070 197	Activator	
Deactivator			
	070 199	Deactivator	
	070 222	Attachment tweezers	Facilitates the separation and mounting of the anchor

Advantages:

First ball anchor, proven one hundred thousand times
Easy handling
Usable rigidly or resiliently

Indications

Removable, rigidly or resiliently restorations supported on implants and root caps:

- Hybrid dentures
- Unilateral free-end dentures locked transversally
- Insertion/free-end dentures in combination

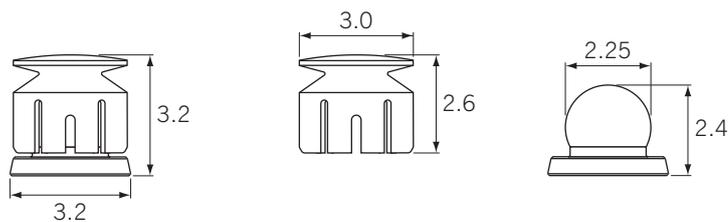
Contraindication

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- For additional contraindications, please refer to the instructions for use from the implant manufacturer.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

Profix

Supraradicular, resilient and retentive anchor



1:1	Order No.	Parts	Description	
	05050015	Profix EE	Complete	
	050423	Male part E	For soldering onto root caps.	
	05050018	Female part E	For polymerizing into denture resin. Not intended for soldering. Adjustable. Delivery includes elastic ring	
	05050016	Profix EK	Complete	
	055330	Male part K	Burn-out plastic	
	05050018	Female part E	For polymerizing into denture resin. Not intended for soldering. Adjustable. Delivery includes elastic ring	
	070131	Parallelometer insert	For mounting of the male part	
		070440	Spacer G	Protection cap. Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
		070157	Transfer jig	For master model
		055688	Elastomeric ring	Delivery unit: package of five
		050394	Spacer disc Z	Tin, provides for vertical resiliency. Do not use it in the mouth. Delivery unit: package of five
1:2		070197	Activator	
		070199	Deactivator	

Advantages:

Female part with 8 lamellae facilitating the activation
Easy handling
Usable rigidly or resiliently

Indications

Removable, rigidly or resiliently restorations supported on implants and root caps:

- Hybrid dentures
- Unilateral free-end dentures locked transversally
- Insertion/free-end dentures in combination

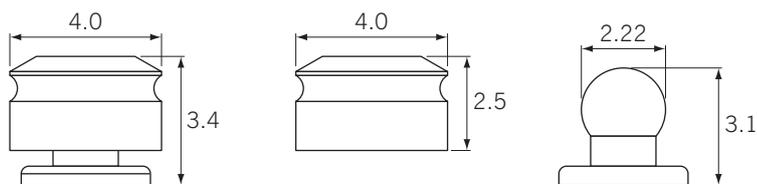
Contraindications

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

Pro-Snap

Supraradicular, resilient and retentive anchor



1:1	Order No.	Parts	Description
	05050033 05050037 05050060	Pro-Snap TC yellow Male part C Housing T yellow	Complete For soldering onto root caps. For polymerizing into denture resin
	05050034 05050037 05050061	Pro-Snap TC red Male part C Housing T red	Complete For soldering onto root caps. For polymerizing into denture resin
	05050035 05050037 05050062	Pro-Snap TC green Male part C Housing T green	Complete For soldering onto root caps. For polymerizing into denture resin
	05050036 05050038 05050060	Pro-Snap TK yellow Male part K Housing T yellow	Complete Burnout plastic For polymerizing into denture resin
	070 131	Parallelometer insert	For mounting of the male part
	07050004	Protection cap	
	07050005	Transfer jig	For master model
	07050006	Stabilizing Ring G	Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
	05050042 *	Retention insert G yellow	Retentive force soft
	05050043 *	Retention insert G red	Retentive force middle
	05050044 *	Retention insert G green	Retentive force strong * Delivery unit: package of six
	07050008	Seating tool	To insert the retention insert with stabilizing ring into housing

Advantages:

The retention force can easily be adjusted by changing the retention inserts.

3 force degrees: yellow soft, red middle and green strong

Indications

Removable, rigidly or resiliently restorations supported on implants and root caps:

- Hybrid dentures
- Unilateral free-end dentures locked transversally
- Insertion/free-end dentures in combination

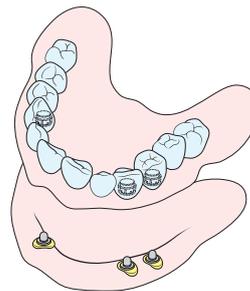
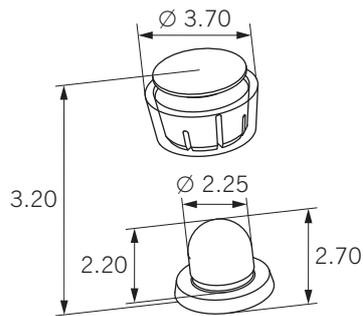
Contraindications

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

Dalbo®-Z

Supraradicular, cylindrical friction-grip anchor, adjustable
Dr. Dalla Bona



1:1	Order No. ID-No.	Complete parts	Description
	050398 41.02.80E	Dalbo®-Z OE	
1:1	Single parts		
	051507	Female part O	For polymerization (directly in the patient's mouth) (no soldering). Adjustable, incl. elastomeric ring (050273) and spacer disc (050394)
	050273	Elastomeric ring	Delivery unit: package of five
	050394	Spacer disc Z	Ensures the vertical resilience. Do not use it in the mouth. Delivery unit: package of five
	050272	Male part E	For soldering onto cast root cap
1:1	Auxiliary parts		
	070439	Spacer G	Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
	070157	Transfer jig	For the master model
1:1	Auxiliary instruments		
	070131	Parallelometer insert	For mounting of the male part
	070205	Instrument	For mounting the elastomeric ring
1:3	Activator		
	070197	Activator	
Deactivator			
	070199	Deactivator	
	070222	Attachment tweezers	Facilitates the separation and mounting of the anchor

Advantage:

Friction-grip, retention-grip, rigid or with resilience

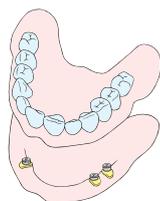
Indication

- Removable, friction-grip, rigidly or resiliently restorations supported on implants and devitalized roots.
- Resilient anchors as complementary elements of rigid anchors.

Contraindication

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.



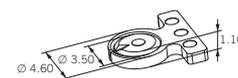
Eccentric complete anterior



Female part anterior



Male part



(1.7, with resilience)



Eccentric complete posterior



Female part posterior



Male part with resilience



(1.7, with resilience)

1:2	Order No. ID-No.	Complete parts	Description
	050 345 32.01.5 ELO	Eccentric ELO	Anterior
	051 277 32.01.6 ELO	Eccentric ELO	Posterior
	050 397 41.01.5 ELO	Eccentric ELO	Anterior With resilience
	051 278 41.01.6 ELO	Eccentric ELO	Posterior With resilience
1:2	Single parts		
	050 306	Female part EL anterior	For polymerization (no soldering)
	051 248	Female part EL posterior	For polymerization (no soldering)
	051 002	Male part 32.01 O with integrated solder (S.G. 750)	For free hand soldering onto the occlusal plane of the root cap without additional solder
	051 003	Male part 41.01 O with integrated solder (S.G. 750)	With resilience for free hand soldering onto the occlusal plane of the root cap without additional solder
	050 393	Spacer disc occlusal (41.01)	Tin, ensures vertical resilience. Mounted on the male part during polymerization. Is automatically supplied when ordering 050 397, 051 278, 050 306 and 051 248. Delivery unit: package of five
	050 392	Spacer disc gingival (41.01)	Tin, ensures vertical resilience. Mounted between male and female part during polymerization. Is automatically supplied when ordering 050 397, 051 278, 050 306 and 051 248. Delivery unit: package of five
1:2	Auxiliary parts		
	070 161	Transfer jig for 32.01	For the master model
	070 167	Transfer jig for 41.01	For the master model

Indications

Removable, retention-grip, rigidly or resiliently restorations supported on devitalized roots:

- Rigid hybrid dentures
- Rigid hybrid dentures combined with resilient Eccentric
- Insertion and free-end dentures in combination

Contraindications

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

Description of single parts and materials

The **female part** is made of the high quality material **Elasticor®**, which is a **palladium-free**, precious metal alloy with **high elasticity** values. This guarantees that the springy arms will function correctly for a long period without having to adjust the retentive force frequently.

The two types of retentions enable the female parts to be placed optimally in either the anterior or posterior regions. They are exclusively suitable for polymerization.

The **male part** is made of **OSV**, high strength precious metal alloy.

As the solder (750°C) is integrated into the male part, it can be soldered onto the root cap quickly, reliably and easily. Due to the composition of the material, no time-consuming hardening is required.

The **tin spacer disc**, only for lab use, provide for vertical resilience.

The occlusal washer is fitted on the male part before the resin polymerization. The gingival washer is fitted between the female and male part before polymerization. It must be removed once the restoration has been finished. Do not use it in the mouth.

Limitation of use

Unilateral free-end restorations **without** transversal blocking
Hybrid dentures fitted on **one** single root cap

Condition for correct processing

A simple parallelometer and milling machine for paralleling the surface of the root cap prior to soldering.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

Gerber RZ

Supraradicular cylindrical retention-grip anchor

Characteristics

- **The original** Design by Prof. A. Gerber
- Cylindrical, **retentive** anchorage principle
- **Prospective** planning option

Technical advantages

- **Multifunctional**, as it can be used in combination and can be changed for a Dalbo® stud attachment e.g. abutment loss
- The duplicating aid supplied facilitates CrCo fabrication and enables precise integration into the metal framework using the **adhesive technique**.
- Special auxiliary instruments facilitate handling

Clinical advantages

- Clinically **proven** for over 40 years
- Worn components can be easily **changed** if required (retention core of the male part and annular spring of the female part)
- Complete set of auxiliary instruments (e.g. heating rod facilitating removal of the housing from the denture acrylic)
- Robust design

Indication

Removable, retention-grip, rigidly restorations supported on devitalized tooth:

- Retention-grip constructions on periodontally damaged teeth
- Unilateral free-end dentures locked transversally
- Insertion/free-end dentures in combination
- Hybrid dentures

Contraindication

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

Description of individual components and materials

The **female part** consists of three components:

The **housing** is made of **Elitor®**, a high-grade, yellow precious metal alloy. The female part can be easily polymerised into the denture or resin-retained using the duplicating technique. Additional milled retention ensures reliable, rotationally secure positioning in the denture acrylic.

The **threaded ring** is made of **OSV**, a high-strength, white precious metal alloy. To prevent spontaneous loosening, we recommend using a thread locking material.

The **annular spring** is made from biologically tested, highly resilient, stainless spring steel.

The **male part** consists of two components:

The **base with threaded post and retention core** are made of **OSV**, a high-strength, white precious metal alloy. To prevent spontaneous loosening, we recommend using a thread locking material.

Contraindications

Unilateral dentures **without** transversal support.

Restorations on abutment teeth that are severely damaged periodontally. Hybrid dentures retained on only one root post and coping.

Requirements for correct positioning

Simple parallelometer for correctly aligning the male parts.

Gerber RZ tuning female part

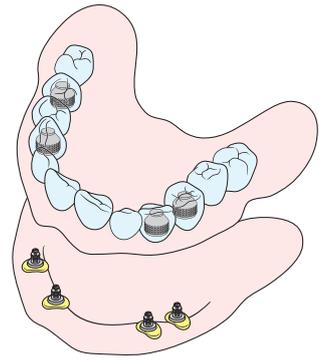
Clinical experience has shown that wear and tear of the male part can occur. Possible reasons for this are patient-induced micromovements, inadequate support for the denture, damage caused by the patient not wearing the restoration or normal wear due to long-term use.

The **Gerber RZ tuning female part** was developed to restore the retentive function of the denture.

Indications: Restoring the retentive function of dentures with inadequate retention on worn Gerber RZ Male Parts.

The Gerber RZ Tuning Female Part can be used on the threaded male part. It is simpler, however, to change the threaded retention core of the male part, as this costs less.

The tuning female part consists of a housing made of **pure titanium** and a lamellae retention insert made of **Elitor®**. The functional principle is similar to that of the Dalbo® PLUS stud anchor: the four lamellae are activated by threading the lamellae retention insert into the housing and this produces the required retention. Frictional retention is attained by the lamellae retention insert in the lower third of the retention core of the male part. **The retention of the tuning female part should be individually adjusted intraorally to suit the male part.**

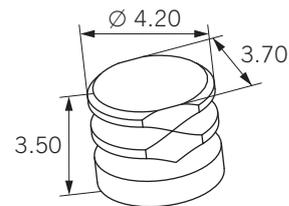
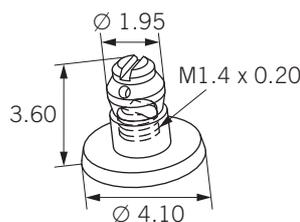
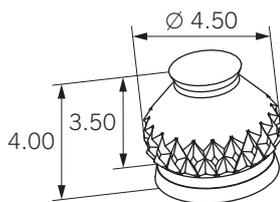


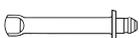
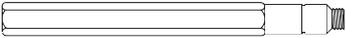
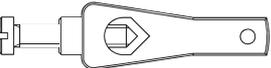
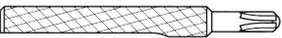
Gerber RZ
(Illustration of the components)



Tuning Female Part
(To restore the retentive function of worn Gerber RZ male parts)

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.



1:1	Gerber RZ	Order No. ID-No.	Complete parts	Description
		050347 32.02.5EO	Gerber RZ EO	
1:1			Single parts	
		051177	Female part E complete	For polymerization or resin-bonding into metal framework
		050315	Annular spring M	Delivery unit: package of five
		050314	Threaded bush O	
		051178	Male part O complete	For soldering onto cast root caps
		050313	Retention core O	Internal thread M 1.4x0.2
		050312	Base O with threaded post	For soldering onto cast root caps
1:1			Auxiliary parts	
		072489	Spacer Duplicating aid G	The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking. Is automatically supplied when ordering 050347 and 051177.
		070162	Transfer jig	For master model
		070191	Soldering core	Soldering aid or for protection during polishing
1:1			Auxiliary instruments	
		070133	Parallelometer insert	For male part
		070254	Screwdriver	For threaded bush
		070262	Screwdriver	For retention core
		070151	Heating rod	For removing the housing from the denture resin
		070365	Threading die	For re-tapping the base after soldering
		072384	Screw tap	For re-tapping the housing
		072476	Driving dog	For screw tap
1:1			Tuning female part	
		0500067	Female part TE complete	For polymerizing into acrylic or adhered into a metal framework (no duplicating aid)
		0500002	Tuning lamellae retention insert	For screwing into the tuning female part housing
		072609	Screwdriver / Activator	For screwing in and activating the lamellae retention insert

Mini-Gerber PLUS

Supraradicular retention- and friction-grip anchor

Characteristics

- Cylindrical anchor, which can be used as **friction-grip** or **retention-grip** anchor
- Advancement of the proven Mini-Gerber principle
- Female part made of **pure titanium**
- Male part **palladium- and copper-free**

Processing advantages

- Time saving thanks to a **male part which can be cast-on**
- Simplest resin-bonding mounting thanks to a duplicating aid
- **You determine the retention strength:** Simple turning of the threaded ring with the hexagon socket key increases the retention strength continuously
- Ideal dimensions due to innovative construction allow mounting in limited spaces
- Compatible with well-known Mini-Gerber

Clinical advantages:

- **Simple continuous activation** from **friction- to retention-grip**
- Individual adjustment, simple and directly at the chair
- Strong in spite of smallest dimensions
- High fatigue resistance

Indications

- Removable, friction or retention-grip, rigidly restorations supported on devitalized tooth:
- Friction or retention-grip constructions on periodontally damaged teeth
 - Unilateral free-end dentures locked transversally
 - Insertion/free-end dentures in combination
 - Hybrid dentures

Contraindications

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

Limitation of use

- Unilateral free-end dentures **without** transversal lock
- Retentive constructions on periodontally severely damaged teeth
- Hybrid dentures mounted on one single root canal post cap

Description of single parts and materials

The **materials:**

T = Pure titanium, first rate implant quality. The pure material for medical applications

V = Valor®, a **palladium- and copper-free**, precious metal alloy for casting-on

G = Galak, mouth-resistant plastic for the retention insert

The **female** part consists of three parts:

The **housing** is made of **pure titanium**. The female part can simply be processed into the denture. An additional retention prevents rotation and ensures a safe hold.

The **threaded ring** with hexagonal socket, also made of **pure titanium**, has a special thread. Therefore, independent loosening is not possible.

The **retention insert** gives secure, **friction-grip** or **retention-grip** hold of the denture on the residual dentition for years. On principle an exchange is not necessary, but can be simply and easily done.

Male parts

The **male part V** is made of **palladium- and copper-free, castable** precious metal alloy Valor®. It can be connected to the root cap either by casting or soldering. The **male part T** is made of **pure titanium**. It can be connected to an implant abutment or root cap made of titanium solely by laser welding.

Activation

The patent applied-for system is extremely simple and **unique**. It replaces the old steel spring principle. By simple turning of the threaded ring the hold of the denture can be continuously adjusted from **friction-grip to retention-grip**.

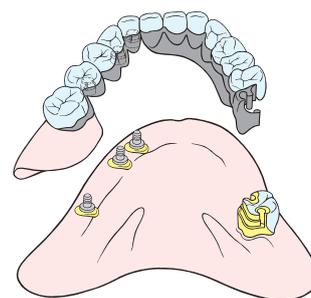
This system allows individual solutions. At all times an adjustment of the hold of the denture to the changing oral conditions is possible without financial expense.

Condition for correct processing

Simple parallelometer insert for placing the male parts

Additional information

The female part Mini-Gerber PLUS is compatible with the Mini-Gerber. Existing work can therefore be revalued and the comfort in the mouth can be improved.



Mini-Gerber PLUS
(Illustration of the components)

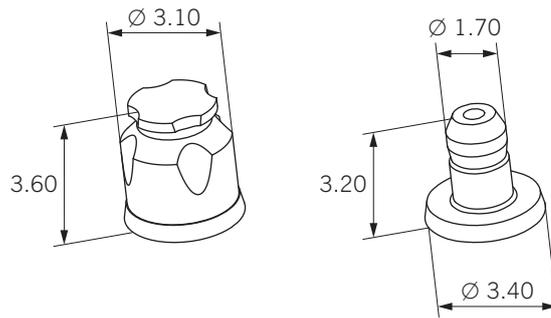


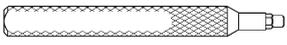
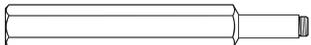
Female part



Male part

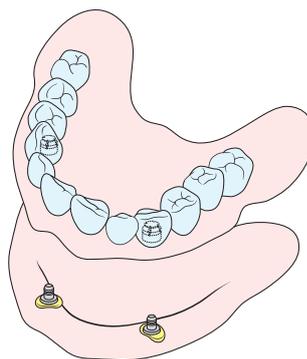
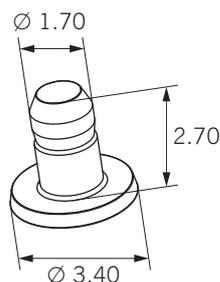
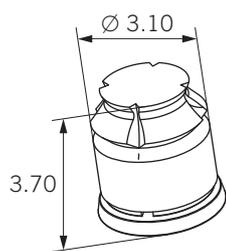
The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.



1:1	Order No. ID-No.	Complete parts	Description
	 055 646 32.14.4 TV	Mini-Gerber PLUS TV	
1:1	Single parts		
	 055 686	Female part T complete	Including one threaded ring T (055 507), one mounted and two additional retention inserts G (055 508) For resin-bonding into a metal framework or for processing into denture resin
	 055 508	Retention insert G	Delivery unit: package of five Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
	 055 507	Threaded ring T	Thread M 2.6x0.25
	 055 506	Male part V	Casting or soldering. Not suitable for laser welding!
	 055 744	Male part T	For laser welding onto root caps and implant abutments made of titanium
1:1	Auxiliary parts		
	 072 466	Duplicating aid, spacer G	Automatically supplied! The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking.
	 072 461	Transfer jig	For master model
	 055 759	Ring G	Delivery unit: package of 3 Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory. The thread created by screwing ring G into the housing increases the retention force. This procedure is recommended whenever threaded ring T loosens from the denture because it has lost its retention. Follow instructions for use attentively!
1:1	Auxiliary instruments		
	 072 460	Parallelometer insert	For mounting of the male part
	 072 597	Special socket key	For tightening the threaded ring, activation and deactivation of the retention insert
	 072 605	Heating rod	For removal of the housing from the denture resin
1:3	 070 222	Attachment tweezers	

Mini-Gerber

Supraradicular, cylindrical retention-grip anchor



1:1	Order No. ID-No.	Complete parts	Description	
	055 187 32.07.4 EO	Mini-Gerber EO		
1:1	Single parts			
	055 198	Female part E complete	For polymerization metal or resin-bonding into metal framework	
	055 191	Spring M	Delivery unit: package of five	
	055 190	Threaded ring O	MS thread M 2.5x0.35	
	055 189	Male part massive O	For soldering onto cast root caps	
1:1	Auxiliary parts			
	072 466	Spacer Duplicating aid G	The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking. Is automatically supplied when ordering 055 187 and 055 198.	
	072 461	Transfer jig	For master model	
1:1	Auxiliary instruments			
	072 460	Parallelometer insert	For mounting of the male part	
	072 462	Screwdriver	For threaded ring	
	072 465	Heating rod	For removing the housing from the denture resin	
1:3		070 222	Attachment tweezers	Facilitates the separation and mounting of the anchor

Advantages:

Small dimensions
Easy duplication and resin-bonding technique
Best suited for the anterior regions of the lower and upper jaw

Indication

Removable, retention-grip, rigidly restorations supported on devitalized tooth:

- Retention-grip constructions on periodontally damaged teeth
- Unilateral free-end dentures locked transversally
- Insertion/free-end dentures in combination
- Hybrid dentures

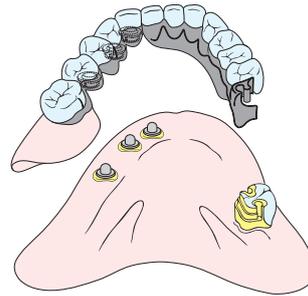
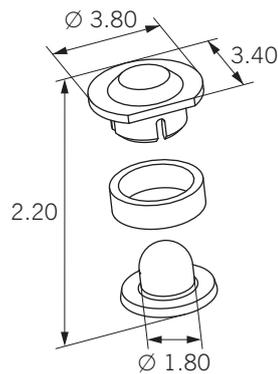
Contraindication

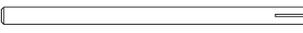
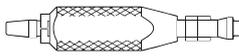
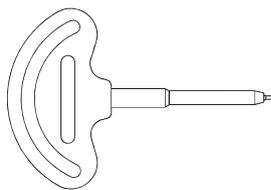
- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.

Baer Cylindrical Anchor

Supraradicular, rigid, cylindrical anchor, adjustable
Dr. Baer / Fäh



1:1	Order No. ID-No.	Complete parts	Description	
	050 301 31.06.2 EO	Baer Cylindrical Anchor EO		
1:1	Single parts			
	051 508	Female part E	For polymerization (no soldering)	
	050 287	Elastomeric ring	Delivery unit: package of five	
	050 286	Male part O	For soldering onto cast root caps	
1:1	Auxiliary parts			
	072 276	Spacer G	Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.	
	070 160	Transfer jig	For master model	
1:1	Auxiliary instruments			
	070 130	Parallelometer insert	For mounting of the male part	
	070 205	Instrument	For mounting of elastomeric ring	
1:2		070 480	Activator	
1:3		070 222	Attachment tweezers	Facilitates the separation and mounting of the anchor

Advantage:

Adjustable anchor for limited spaces

Indication

Removable, friction-grip, rigidly hybrid dentures supported on devitalized roots:
– As complementary element to other rigid anchors

Contraindication

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

+ Service-Sets	
Conversion male part	58
Conversion	
Dalbo®-male part	59
Dalbo®-ball and socket unit	60–61
Gerber RZ	62

+ Service-Sets

Conversion male part Service-Set

Case report: Male part conversion set
(Order No. 055391)

Christian E. Besimo, Prof. Dr. med. dent.
Aeskulap Klinik, Brunnen

Indication

The male part on the cap of a root canal post can not be used any further due to irreversible damage.

The present service set enables the conversion of the anchor to a Dalbo® ball anchor without removing the cap of the root canal post.

Important note

As repaired attachments are not as strong as the original versions, they are only considered temporary solutions. Excessive functional and, above all, parafunctional loading should be avoided. The prosthetic status must be re-evaluated.

Contraindication

- Unilateral prostheses without transversal support.
- Restoration of severely periodontally damaged abutment teeth.
- Hybrid prostheses, which are restored with a single root canal post cap.
- In patients with allergies to one or more elements of the attachment materials.
- Lacking cooperation of the patient with respect to follow-up/recall instructions.
- Patients with bruxism or other para-functional habits.
- Min. diameter of the worn anchor < 1.4 mm.
- Min. height of the worn anchor < 1.5 mm.
- Planning without an X-ray.

Oral situation

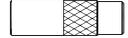
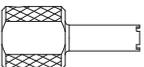
The male part of an anchor, with a diameter of at least 1.4 mm, fitted to a root cap unit can no longer be used as it has been damaged irreversibly or fractured. This service set enables the retainer to be converted to a Dalbo® ball and socket unit without removing the root cap.

Safety precautions

To prevent components of the set being swallowed or aspirated, or other injuries, various safety precautions must be taken, e.g. all auxiliary instruments must be attached to dental floss and a rubber dam must be placed where possible. Wear safety glasses for eye protection. It is essential to cool the area when drilling. As the drills must perform efficiently for this purpose, each drill must only be used once for repairing one root cap.

Male part conversion set comprising:

(Fig. 1, from left to right)

	Order No.	
	072 590	Concave cutter for pre-drilling (groove)
	072 494	Concave cutter (no groove)
	070 365	Threading tool MF 1.4 x 0.2
	070 547	Key
	052 089	Conversion male part with internal thread
	055 887	Dalbo®-Classic elliptic female part



Female part Dalbo®-Classic elliptic



Conversion male part



Fig. 1



Fig. 2



Fig. 3

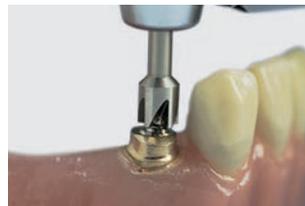


Fig. 4



Fig. 5



Fig. 6

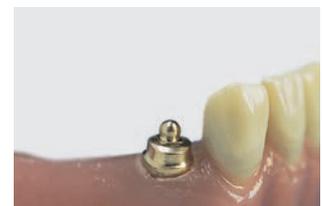


Fig. 7

Fitting the conversion male part (Fig. 6)

The spherical conversion male part (052089) is wound onto the new threaded post with the key (070547) supplied in the service set. Secure the conversion male part with cement or resin.

Conversion male part on root cap (Fig. 7)

Fitting the female part

Trim a large enough recess in the denture to accommodate the female part. Try the denture in and check that it fits correctly.

The Dalbo® socket is then polymerized into the denture with cold-curing resin, directly in the patient's mouth.

Irreversibly damaged anchor (Fig. 2)

Preparing the defective male part (Fig. 3).

A pre-drill (072590) should be used to round the edges of the worn male part.

Preparing the male part (Fig. 4)

The male part is then trimmed down to the top of the solder base with a concave cutter (072494). The first shiny, trimmed areas can be seen on the solder base.

Tapping the thread (Fig. 5)

The thread is tapped in the new male part **by hand**, using the threading tool (070365).

Recommendation:

Turn the threading tool ½ turn forwards and then ¼ turn backwards.

The products carry the CE Mark.
See packaging for details.

For further instructions, warnings and for precautions please refer to the instructions for use.

Conversion Dalbo®-male part Service-Set

Case report: Dalbo® anchor conversion male service set
(Order No. 054 758)

Christian E. Besimo, Prof. Dr. med. dent.
Aeskulap Klinik, Brunnen

Indication

The retention cylinder according to Gerber on the cap of a root canal post in the mouth is to be converted to a Dalbo® ball anchor. This measure may be indicated after tooth loss and a single remaining rigid prosthetic anchor.

Important note

As repaired attachments are not as strong as the original versions, they are only considered temporary solutions. Excessive functional and, above all, parafunctional loading should be avoided. The prosthetic status must be re-evaluated.

Contraindication

- Unilateral prostheses without transversal support.
- Restoration of severely periodontally damaged abutment teeth.
- Hybrid prostheses, which are restored with a single root canal post cap.
- In patients with allergies to one or more elements of the attachment materials.
- Lacking cooperation of the patient with respect to follow-up/recall instructions.
- Patients with bruxism or other para-functional habits.
- Planning without an X-ray.

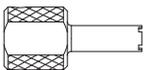
Oral situation (Fig. 1)

A Gerber retention unit fitted to a root cap in the mouth is to be converted to a Dalbo® ball and socket unit. This may be indicated where teeth have been lost and only one rigid denture anchor remains. This service set can only be used for retention units with screw-retained retention cores – recognized by their occlusal screw slots and lateral chimney.

Safety precautions

To prevent components of the set being swallowed or aspirated, or other injuries, various safety precautions must be taken, e.g. all auxiliary instruments must be attached to dental floss and a rubber dam must be placed where possible. Wear safety glasses for eye protection.

Dalbo®-B anchor conversion male service set comprising (Fig. 2)

	Order No.	
	070 547	Inserting device
	052 089	Conversion male part with internal thread
	051 511	Dalbo®-B female part

Removing the old anchor (Figs. 3 and 4)

The Gerber retention core is removed from the mouth with the inserting device (070 262). A heating rod (070 151) can be used for removing the housing from the denture. Neither of these auxiliary instruments are included in the service set.



Female part Dalbo®-B



Conversion male part



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6

Fitting the conversion male part (Figs. 5 and 6)

The spherical conversion male part (052 089) is wound onto the solder base of the Gerber retention unit with the special inserting device (070 547) included in the service set. The male part is fixed in place with cement or resin.

Fitting the female part

Trim a large enough recess in the denture to accommodate the female part. Try the denture in and check that it fits correctly. The female part is then polymerized into the denture with cold-curing resin, directly in the patient's mouth.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.

Dalbo®-ball and socket unit Service-Set

Case report - Dalbo® ball and socket unit service set
(Order No. 054 744)

Christian E. Besimo, Prof. Dr. med. dent.
Aeskulap Klinik, Brunnen

The Dalbo® ball and socket unit service set (054 744) can be used
– for defective anchor male parts
– for defective magnet anchors (primary magnets)*
The following case report deals with the repair of a defective anchor male part.

Indication

The Dalbo® ball anchor (054 744) included in the service set can be used for:

- defective anchor male parts (wear, fracture)
- defective magnet anchors (primary magnets)

Important note

As repaired attachments are not as strong as the original versions, they are only considered temporary solutions. Excessive functional and, above all, parafunctional loading should be avoided. The prosthetic status must be re-evaluated.

Contraindication

- Unilateral prostheses without transversal support.
- Restoration of severely periodontally damaged abutment teeth.
- Hybrid prostheses, which are restored with a single root canal post cap.
- In patients with allergies to one or more elements of the attachment materials.
- Lacking cooperation of the patient with respect to follow-up/recall instructions.
- Patients with bruxism or other para-functional habits.
- Planning without an X-ray.

Oral situation

A male part of an anchor fitted to a root cap unit can no longer be used as it has been damaged irreversibly or fractured. This service set enables the anchor to be converted to a Dalbo® ball and socket unit without removing the root cap. It is used instead of service set (055 391) in cases where a thread can no longer be cut in the remaining section of the damaged male part.

Safety precautions

To prevent components of the set being swallowed or aspirated, or other injuries, various safety precautions must be taken, e.g. all auxiliary instruments must be attached to dental floss and a rubber dam must be placed where possible. Wear safety glasses for eye protection. It is essential to cool the area when drilling. As the drills must perform efficiently for this purpose, each drill must only be used once for repairing one root cap.



Fig. 1

*The service set can only be used with magnet anchors which can be removed by grinding from the root canal cap. The root canal cap must have been made of a precious metal alloy. Please refer to the instructions for use.

Dalbo®-ball and socket unit Service-Set

Dalbo® service set comprising

(Fig. 1, from left to right)

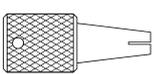
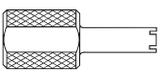
Order No.	
	080 798 Center drill \varnothing 1.00mm WS
	072 429 Drill \varnothing 1.15mm WS, 2 pieces
	070 499 Face cutting drill
	070 211 Thread tap M 1.4
	070 213 Tap holder
	070 498 Inserting device
	052 091 Male part with threaded post
	055 887 Dalbo®-Classic elliptic female part



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9

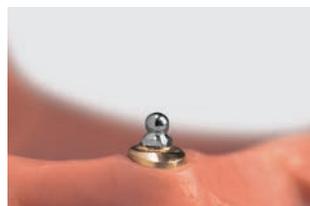


Fig. 10

Irreversibly damaged Dalbo® ball and socket unit (Fig. 2)

Preparing the root cap (Fig. 3)

The damaged male part must be trimmed down to the solder base. The solder base must not be trimmed off – this ensures adequate thickness for drilling the hole.

Use the 1.00 mm \varnothing center drill (080 798) to mark the centre of the solder base (Fig. 4)

Use the 1.15 mm \varnothing drill (072 429) to drill a 4.5 mm deep hole in the root cap, perpendicular to the solder base. Run the drill at low speed (4,000 r.p.m.), cool it and remove the turnings frequently (Fig. 5).

Use the face-cutting drill 070 499 to flatten the solder base and counter-sink it slightly (Fig. 6).

Check the depth of the hole manually with the drill \varnothing 1.15 mm (072 429).

Tapping the thread (Fig. 8)

The thread tap (070 211) and tap holder (070 213) are used for tapping the thread in the hole **by hand** for the replacement male part.

Recommendation:

Turn the thread tap $\frac{1}{2}$ turn clockwise and then $\frac{1}{4}$ turn counterclockwise.

Fitting the replacement male part (Fig. 9)

The replacement male part (052 091) is wound into the hole with the inserting device (070 498).

Please note:

The entire base of the male part must contact the root cap.

Replacement male part on root cap (Fig. 10)

Fitting the female part

Trim a large enough recess in the denture to accommodate the female part. Try the denture in and check that it fits correctly. The female part is then polymerized into the denture with cold-curing resin, directly in the patient's mouth.

Gerber RZ Service-Set

Case report: Gerber service set RZ
(Order No. 054 892)

Christian E. Besimo, Prof. Dr. med. dent.
Aeskulap Klinik, Brunnen

Indication

Due to damage of the threaded pin on the soldering base, the retention core of the Gerber retention cylinder can no longer be screw-retained on the cap of the root canal post.

Important note

As repaired attachments are not as strong as the original versions, they are only considered temporary solutions. Excessive functional and, above all, parafunctional loading should be avoided. The prosthetic status must be re-evaluated.

Contraindication

- Unilateral prostheses without transversal support.
- Restoration of severely periodontally damaged abutment teeth.
- Hybrid prostheses, which are restored with a single root canal post cap.
- In patients with allergies to one or more elements of the attachment materials.
- Lacking cooperation of the patient with respect to follow-up/recall instructions.
- Patients with bruxism or other para-functional habits.
- Planning without an X-ray.

Oral situation

The retention core of a Gerber retention unit can no longer be screwed onto the root cap tightly because the threaded post on the solder base has been damaged.

Safety precautions

To prevent components of the set being swallowed or aspirated, or other injuries, various safety precautions must be taken, e.g. all auxiliary instruments must be attached to dental floss and a rubber dam must be placed where possible. Wear safety glasses for eye protection.

Gerber-RZ service set comprising

(Fig. 1, from left to right)

	Order No.	
	070 458	Threading tool MF 1.20 x 0.20
	070 262	Key
	051 666	Repair core

The interior diameter of the threaded hole in the repair core of the service set is smaller than that of the retention core of the Gerber retention unit (Fig. 2). Therefore, once a new thread has been tapped the repair core can be wound onto the threaded post of the Gerber solder base.

Defective threaded post of a Gerber retention unit (Fig. 3)

Tapping the new thread (Fig. 4)

The new thread is tapped by hand with the threading tool (070458).

Recommendation:

Turn the threading tool ½ turn forwards and then ¼ turn backwards.

Post with new thread (Fig. 5)



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

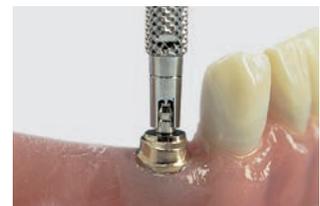


Fig. 6



Fig. 7

Fitting the repair core (Fig. 6)

The repair core (051 666) is then wound onto the new thread on the post with the key (070 262).

Secure the repair core with cement or resin.

Repair core on the root cap (Fig. 7)

Trim a large enough recess in the denture to accommodate the female part. Try the denture in and check that it fits correctly. The female part of the Gerber retention unit is then polymerized into the denture with cold-curing resin, directly in the patient's mouth.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.

- + **Rigid, friction-grip**
 - Dolder® System 70–75
- + **Rigid, retention-grip**
 - SFI-Bar® 4-Implant 66–69
 - Ackermann-Bar 78
 - MP-Clip 79
- + **Articulated, friction-grip**
 - Dolder® System 70–75
- + **Articulated, retention-grip**
 - SFI-Bar® 2-Implant 66–69
 - Round bar with rider 76–77
 - Ackermann-Bar 78
 - MP-Clip 79
- + **Resilient, retention-grip**
 - Ackermann-Bar 78

+ Bars

SFI-Bar®

Stress-free bar for removable implant-borne restorations (**S**tress**F**ree-**I**mplant **B**ar)

Features

- Tension free, excellent and stable fit of the bar on the implants
- Indicated for immediate loading
- Simply ingenious, thanks to the telescope-like connection and the individual shortening
- Possible to fit the SFI-Bar® directly in the mouth (without cutting work)

Technical advantages

- No time-consuming and technique-sensitive connecting procedures such as soldering, laserwelding, casting or scanning: saving in time and reduction in costs
- 2 new female part designs with many advantages:
 - Female part asymmetrical (E) in Elitor® (gold alloy): milled, increases stability, requires minimum space for integration into the restoration ensuring improved aesthetics, various activation options
 - Female part (T) in pure titanium: with replaceable retention inserts
- Compensates for transfer inaccuracies impression – model – mouth

Clinical advantages

- Safety for patients through the «snap-effect»
- SFI-Bar® 2-Implant and 4-Implant, upgradable to 3, 5 and 6 implants
- Compensation of implant divergences between 2 implants up to 30°

Indications

The SFI-Bar® is intended to be used with the implant manufacturer's implant to provide support for fixation of overdentures.

SFI-Bar® 2-Implant	SFI-Bar® 4-Implant
Lower jaw: Connecting 2 or 2x2 implants	Lower jaw: Connecting 4 implants
Upper jaw: Connecting 2x2 implants in the anterior/premolar region	Upper jaw: Connecting 4 implants in the anterior/premolar region

Immediate loading

The implants (min. 2) in the mandible can be fitted with the SFI-Bar® immediately after implantation, provided the following criteria are met:

- Implant manufacturers permit immediate loading in their system.
- No necessity for simultaneous guided bone regeneration; implants surrounded on all sides by local bone.
- Implant insertion torque min. 35Ncm.
- All parts are sterilised or disinfected.
- Pull-off strength during osseointegration < 20N.
- Please refer to instructions for use for the implant manufacturer for additional contraindications for immediate loading.

Note: The study report on immediate loading presented at the 2010 EAO Congress and the current list of the available implant systems are to find on our website www.sfi-bar.com.

Can be fitted directly in the mouth (Chairside):

SFI-Bar® 2-Implant in the lower jaw
SFI-Bar® for 2x2-Implant in the upper and lower jaw
SFI-Bar® 4-Implant in the lower jaw, provided the minimum implant distance is > 10mm and the patient is suitable for lengthy intraoral work. It is imperative to read and follow the handling instructions.

Contraindications

- Immediate loading SFI-Bar® in the upper jaw.
- Female part T with replaceable retention inserts G on SFI-Bar® 2-Implant.
- SFI-Bar® 4-Implant in the upper jaw, applied directly in the patient's mouth.
- Extension of the bar superstructure.
- Implant spans < 8 mm, > 26 mm.
- Implant divergences > 15°.
(Note: If the SFI-Bar® is not aligned with the same plane using the implant adapter, the possibility of compensation of implant divergences is reduced.)
- Use without authorization of the relevant implant manufacturer (list on www.sfi-bar.com).
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unilateral dentures without transverse support.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.
- Please refer to instructions for use for the implant manufacturer for additional contraindications for immediate loading.

Description of the components and materials

Two new, ingenious female part designs with patent pending! The milled female part asymmetrical E in Elitor® is manufactured from a high-quality, tough, yellow precious metal alloy. The asymmetrical design of the retention for the denture acrylic allows customized, space-saving placement on the bar male part that is perfect for the aesthetics. A maximum of 12x3.5mm long retention inserts can be placed on the female part T in pure titanium. Guide grooves every 3.5mm allow the female part to be easily shortened and customized. Three levels of retention are available that can be used in different sections of the female part to allow highly flexible regulation of the denture retention.



SFI-Bar® female part asymmetrical E requires minimum space for integration!



SFI-Bar® female part T with replaceable retention inserts G



SFI-Bar® 2-Implant



SFI-Bar® 4-Implant

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.

Description of the different versions

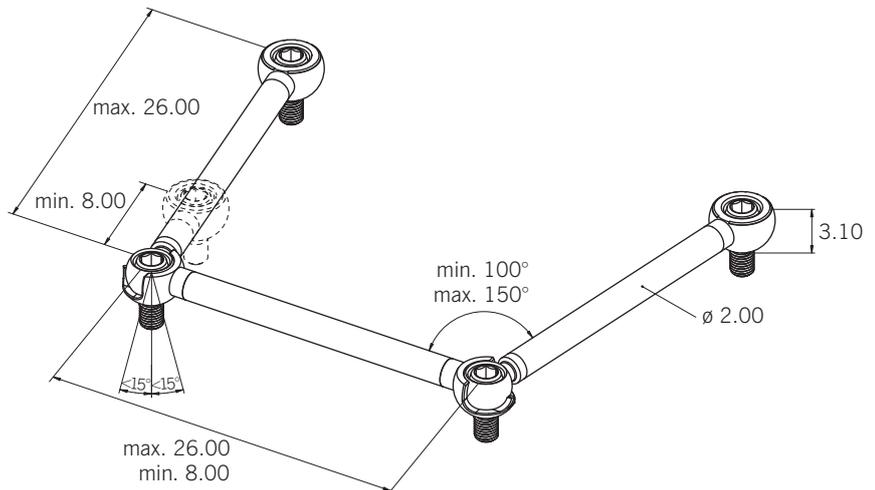
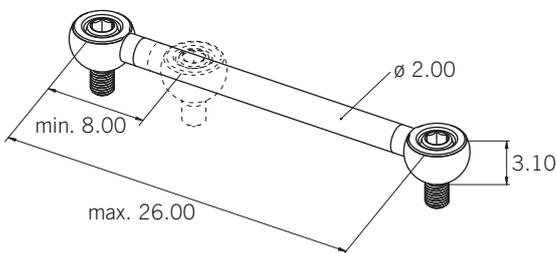
The SFI-Bar® 2-Implant and 4-Implant are the standard versions. These can be upgraded with the SFI-Bar® Add-on Kit (Order No. 05000668) to solutions for 3, 5 and 6 implants. The Implant span may range from a minimum of 8mm (tube bar length 2mm) to a maximum of 26mm (tube

bar length 20mm). It can be taken intraorally or on the model with the tube bar gauge (Order No. 07000053). This instrument can also be used as a holder when shortening the tube bar – ingeniously simple!

SFI-Bar® 2-Implant with tube bar that can be shortened as required

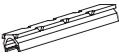
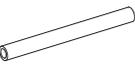
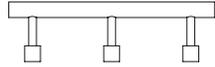
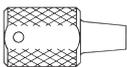


SFI-Bar® 4 implant with tube bar that can be shortened as required

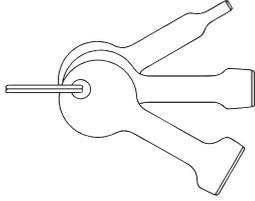
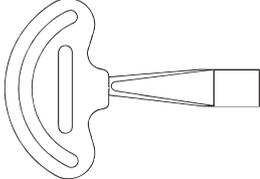
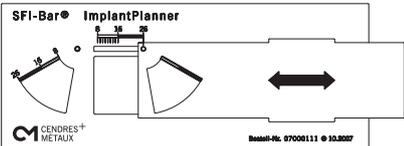


1:1

	Order No.	Complete parts	Description
	0500 0337	2-Implant	Including: 2 large ball joints (05000383) 2 fixation screws (05000386) 1 tube bar (05000382) Without implant adapter!
	0500 0338	4-Implant	Including: 2 large ball joints (05000383) 2 small ball joints (05000384) 2 half-shell balls (05000385) 4 fixation screws (05000386) 3 tube bars (05000382) Without implant adapter!
	0500 0668	Add-on Kit	Upgrade-Set, including: 1 small ball joint (05000384) 1 half shell ball (05000385) 1 fixation screw (05000386) 1 tube bar (05000382)
	0500 0337 + 0500 0668		For 3 Implants
	0500 0338 + 0500 0668		For 5 Implants
	0500 0338 + 2 x 0500 0668		For 6 Implants

1:1	Order No.	Single parts	Description
	0500 0344	Female part asymmetrical E L30	For polymerization into denture resin
	0500 0358 *	Female part T complete L47.5	For polymerization into denture resin
	0500 0387	Female part housing T L47.5	Without retention inserts! For polymerization into denture resin
		Retention inserts G	Delivery unit: package of 6
	0500 0388	Yellow	Smooth friction
	0500 0389	Red	Normal friction
	0500 0390	Green	Strong friction
	0500 0382	Tube bar S L20	Can be individually shortened to a maximum of 2 mm.
	0500 0386	Fixation screw S	For fixation of the large ball joint on the implant adapter. For fixation of the small ball joint with the half shell ball on the implant adapter.
	0500 0383	Large ball joint S	For SFI-Bar® 2-Implant and SFI-Bar® 4-Implant
	0500 0384	Small ball joint S	For SFI-Bar® 4-Implant, application combined with half shell ball (0500 0385)
	0500 0385	Half shell ball S	For SFI-Bar® 4-Implant, application combined with small ball joint (0500 0384)
		Implant adapter S	Up-to-date information on available implant systems, the corresponding lengths and torques can be found under www.sfi-bar.com .
1:1	Auxiliary parts		
	052 082	Spacer	Tin, ensures vertical resilience. Mount between female part and bar during polymerization.
	0700 0107	Transfer jig L26	For master model
1:1	Auxiliary instruments		
	0700 0106	Tube bar gauge	For determining the exact length of the tube bar in the mouth. Can be used as a bracket while cutting.
	0700 0100	Gauge aid	Replacement part for tube bar gauge
	0700 0114	Screwdriver	For implantat adapter
	0700 0115	Hex key	For fixation screw
	070221	Thomas spanner key	For screwdriver and hex key
	0700 0036	Insert positioner	For insertion of the retention inserts

* Including 6 retention inserts G yellow (05000388) and red (05000389).

1:2	Order No.	Auxiliary instruments	Description
	070 198	Activator set	For female parts Elitor®
	070 201	Desactivator macro	For female parts Elitor®
			
1:3			
 	070 347	Tweezers	For removing of the retention inserts
	0700 0111	ImplantPlanner	For approximate planning of implant positions
  	0700 0108	Instrument set	Including: 0700 0114 Screwdriver 0700 0115 Hex key 070 221 Thomas spanner key 0700 0107 Transfer jig L26 0700 0106 Tube bar gauge 0700 0100 Gauge aid 0700 0036 Insert positioner 0700 0111 ImplantPlanner 070 347 Tweezers 070 198 Activator set 070 201 Desactivator macro Sample Premium Disc No. 1, 3 pieces
	0700 0109	Torque wrench set	Including: Torque wrench (available in the set only) 0700 0095 Tube lubricant 0700 0098 Dismantle tool
	0800 0101	Premium Disc No. 1	Package of 50 pieces

Dolder® System

Adjustable bar attachment and resilient bar for removable prosthetics

Characteristics

- The **original** designed by **Prof. Dr E. Dolder**
- Proven on the basis of many years' **clinical experience**
- **The standard** for implant supported bar restorations
- Extremely reliable stabilizing and splinting effect

Processing advantages

- **Large range** of materials and designs allows **greater flexibility with implant restorations!**
- **Time-saving** and **reliable** pre-fabricated male parts in gold or pure titanium, which are connected to the primary unit by soldering or laser welding
- Good value male parts in high quality plastic
- Choice of two sizes **micro + macro**
- **Maximum friction surfaces** by customized adjustment of the lengths

Clinical advantages

- A recess in the milled female parts makes for a perfect fit and guarantees durable functioning. As a result, there is a noticeable slight snap action with the resilient bar.
- **2 concepts for adjustment** (for the micro bar attachment):
 - gold or titanium female part infinitely adjustable
 - titanium female part with replaceable friction inserts in 3 levels
- Bar-retained restoration enables safe **immediate loading of implants**. Please observe the implant manufacturer's instructions for use.
- **Splints** and stabilizes weak abutment teeth
- **Wide range of materials** for the male parts
- Maximum, **long-lasting friction** due to optimally coordinated materials of the prefabricated parts

Indication

- Removable dentures
 - Implant-supported dentures
 - Coverdentures
- Dolder® Bar Attachment**
Tooth- and tooth/gingival supported dentures (with preferably 3 or more abutments available):
 - Interdental (insertion) dentures,
 - Partial dentures
- Dolder® Resilient Bar**
Tooth/gingival supported resilient dentures (placed primarily in upper and lower anterior regions):

Contraindication

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

Description of the Dolder® system

Bar-retained, removable restorations are among the most tried and tested forms of prosthetic treatment both experimentally and clinically and their relevance has increased due to advances in **implantology**. The Dolder® system, which includes the **Dolder® bar attachment** and the **Dolder® resilient bar**, is based on the successful Dolder® design and now includes new components to cater for market demands.

Materials

Dolder® male parts:

E = Elitor®, warm straightened, high-grade, tough, yellow precious metal alloy. After soldering/laser welding the work must be hardened to attain the best mechanical properties.

T = Pure titanium

K = Korak, plastic for the casting technique that burns out.

Dolder® female parts:

E = Elitor®, warm straightened, high-grade, tough, yellow precious metal alloy.

D = Doral

T = Pure titanium

G = Galak, for friction inserts, orally stable plastic.

Two plastic retention concepts

«**Asymmetrical**»: **Vertical positioning of retention**. This new, ingenious and patent-protected asymmetrical design allows more space for the tongue.

«**Standard**»: **Horizontal positioning of retention**. This is the well-tried design and is used primarily where there is little space available occlusally.

Setting the retention force

Female part with adjustable lamella

The retention force can be individually and accurately set using the Dolder® activator or deactivator. **The posterior lamella, which is subjected to greater loading, is activated. The anterior lamella acts as a guide surface.**

Female part «comfort» with replaceable friction inserts G

In the female part design, which has a patent pending, there is sufficient space for a maximum of 12x3.5mm long friction inserts. Guide grooves every 3.5mm allow the female part to be easily reduced and customized. 3 levels of friction are available, which can be placed in different sections of the female part, allowing highly flexible adjustment of the denture retention.

Limitation of use

Unilateral dentures without a transversal connector
Use of the bar attachment titanium female part with plastic inserts on the resilient bar. This can lead to increased wear and tear because of the amount of free play.



Bar attachment on 4 implants

Female parts «**Asymmetrical**»:



Execution in Elitor® (E)



Execution in pure titanium (T)

Female parts «**Standard**»:



Execution in Elitor® (E)



Execution in Doral (D)



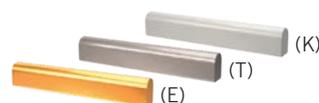
Execution in pure titanium (T)

Female parts «**Comfort**»:

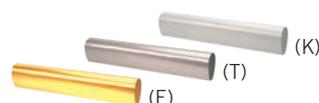


Bar attachment female part in pure titanium (T) with replaceable friction inserts Galak (G) (only for **micro** execution)

Available male parts:
Bar attachment:



Resilient bar:



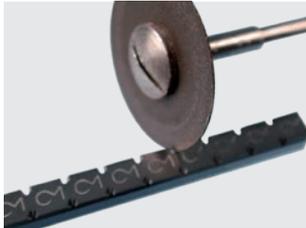
The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

Condition for correct processing

Simple parallelometer apparatus for placement of the male part
The resilient bar can be placed without using a parallelometer depending on the oral situation.

Additional information

When there is the option of using either size, i.e. **micro** or **macro**, the larger version should be used if there is adequate space.



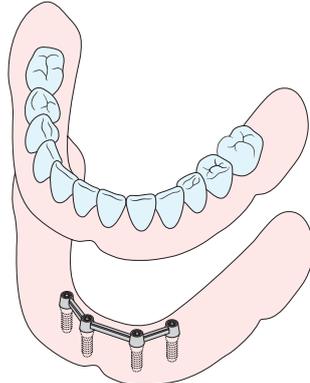
Reducing the female part



Friction inserts



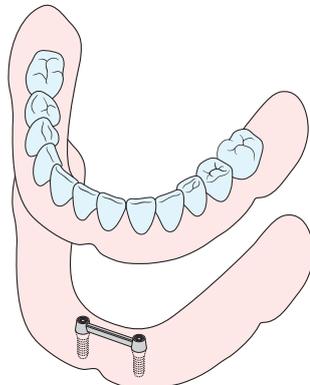
Micro female part in titanium with replaceable friction inserts



Example of use bar attachment



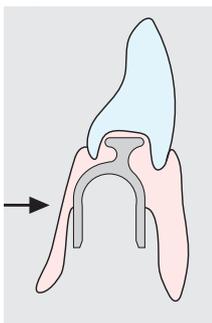
Fig. 1
A patent-protected recess in the milled female parts makes for a perfect fit, prevents spring effects when strongly activated and guarantees durable functioning. As a result, there is a noticeable slight snap action with the resilient bar.



Example of use resilient bar

Space-saving in any situation!

«Asymmetrical»



«Standard»

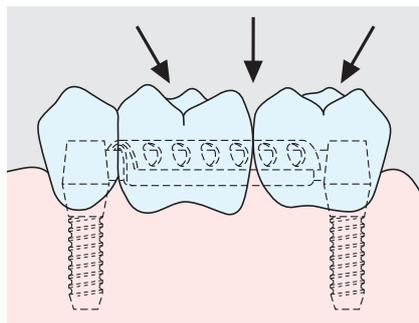


Fig. 2
The asymmetrical female part retention allows more space for the tongue. The «Standard» design optimizes shaping of the occlusion. The two concepts can be combined.

Dolder® bar attachment

Combinations

Implants, tooth-borne and tooth-tissue-borne restorations

Examples:

- Implant-borne restorations (immediate loading)
- Bounded saddle dentures, partial dentures and overdentures especially with very weak abutment teeth

Combinations chart:

		Male parts		
				
Female parts		micro + macro	micro + macro	micro + macro
		micro + macro		
	micro + macro			
	micro + macro			
	micro + macro			
	micro + macro			
	micro			

Legend:  ideal combination  recommended  not recommended

Dolder® resilient bar

Initial situation: The more advanced tooth loss is and with no possibility of increasing the number of abutments with implants, the more valuable each tooth becomes as a retentive unit for the denture. To relieve the stress on the canines, the teeth most likely to survive, the retentive mechanism is transferred from the tooth to the egg-shaped bar connector with three paths of movement (vertical translation, sagittal and anterior rotation). In many cases tooth loss can be delayed for years if the periodontal conditions are optimal.

Combinations

Tooth-tissue-borne resilient bar dentures

Used primarily in the anterior region of the mandible and in rare cases in the maxilla

Examples:

- Implant-borne restorations
- Overdentures
- With a residual dentition

Combinations chart:

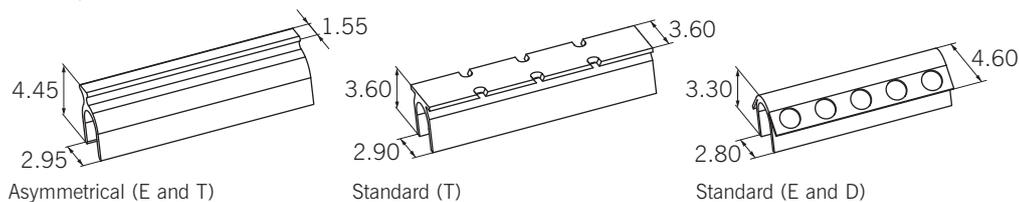
		Male parts		
				
Female parts		micro + macro	micro + macro	micro + macro
		micro + macro		
	micro + macro			
	micro + macro			
	micro + macro			
	micro + macro			

Legend:  ideal combination  recommended

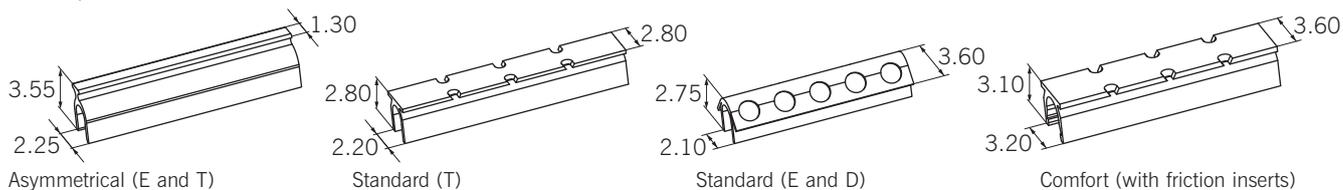
Dolder® System

Bar attachment

Female part macro

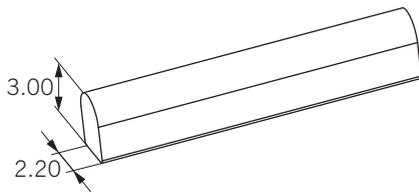


Female part micro

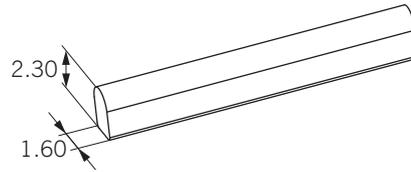


1:1	Female part	Order No.		Material	Lengths (mm)	Description
		macro	micro			
		054 747	054 746	E	L25	Standard For polymerization into denture resin or metal framework (no soldering). Adjustable
		052 046	052 043	E	L50	
		0500 1125	0500 1201	D	L50	
		0500 0683	0500 0682	E	L30	Asymmetrical For polymerization into denture resin or metal framework (no soldering). Adjustable
		0500 0681	0500 0680	T	L47.5	Standard For polymerization into denture resin or metal framework (no soldering). Adjustable
		0500 0685	0500 0684	T	L30	Asymmetrical For polymerization into denture resin or metal framework (no soldering). Adjustable
			0500 0366	T	L 47.5	Comfort with friction inserts 6 friction inserts yellow (0500 0394) and red (0500 0395) are included
			0500 0394	G	L 3.5	Friction inserts. Delivery unit: package of six Yellow: Smooth friction
			0500 0395	G	L 3.5	Red: Normal friction
			0500 0396	G	L 3.5	Green: Strong friction

Bar attachment Male part macro



Male part micro



Profile



1:1	Male part	Order No.		Material	Lengths (mm)	Description
		macro	micro			
		055 743	0500 0288	E	L25	For soldering and laser welding to cast root caps or between crowns, bridges, implants or screw-retained attachments
		052 053	0500 0289	E	L50	
		052 054	0500 0290	E	L200	
		0500 0570	0500 0284	T	L50	For laser welding to retaining cores in titanium
		0500 0571	0500 0285	T	L200	
		0500 0559	0500 0266	K	L75	Performed part. Delivery unit: package of two
		0100 0081		Wire T for laser welding		Pure titanium wire Ø 0.40 mm round, roll of 2 m

1:3		Order No.	Auxiliary instruments	Description
		070 143	Parallelometer insert micro	
		070 144	Parallelometer insert macro	
		0700 0034	Insert-positioner micro	For insertion of inserts

1:3		Order No.	Auxiliary instruments	Description
		070 347	Tweezers	For extraxtion of inserts

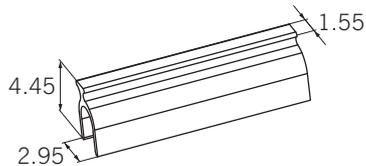
1:3		Order No.	Auxiliary parts	Description
		070 171	Transfer jig micro L50	
		070 173	Transfer jig macro L50	

1:3		Order No.	Auxiliary instruments	Description
		070 198	Activator set	For female parts E
		070 200	Desactivator micro	For female parts E
		070 201	Desactivator macro	

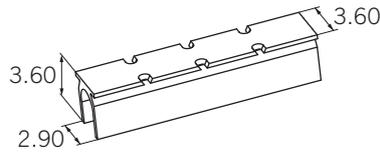
Dolder® System

Resilient bar

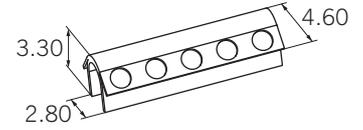
Female part **macro**



Asymmetrical (E and T)

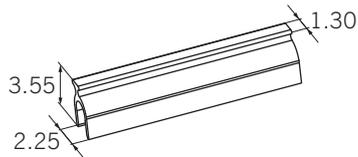


Standard (T)

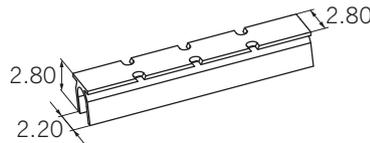


Standard (E and D)

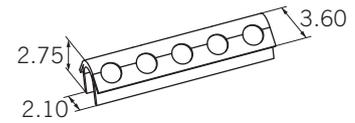
Female part **micro**



Asymmetrical (E and T)



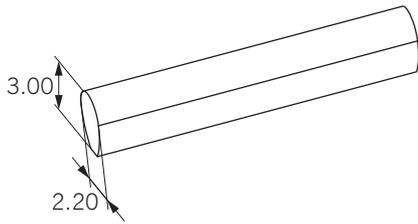
Standard (T)



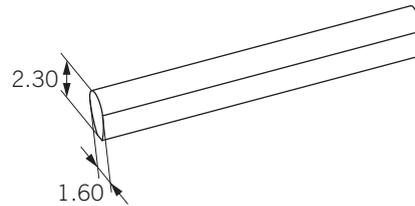
Standard (E and D)

1:1	Female part	Order No.		Material	Lengths (mm)	Description
		macro	micro			
		054 747	054 746	E	L25	Standard For polymerization into denture resin or metal framework (no soldering). Adjustable
		052 046	052 043	E	L50	
		0500 1125	0500 1201	D	L50	
		0500 0683	0500 0682	E	L30	Asymmetrical For polymerization into denture resin or metal framework (no soldering). Adjustable
		0500 0681	0500 0680	T	L47.5	
		0500 0685	0500 0684	T	L30	Asymmetrical For polymerization into denture resin or metal framework (no soldering). Adjustable

Resilient bar
Male part macro

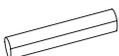
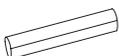
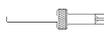
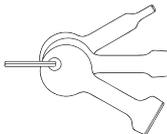
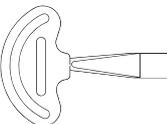


Male part micro



Profile



		Order No.		Material	Lengths	Description
1:1	Male part	macro	micro		(mm)	
		054 748 052 061 052 062	054 749 052 057 052 058	E E E	L25 L50 L200	For soldering and laser welding to cast root caps or between crowns, bridges, implants or screw-retained attachments
		05000574 05000575	05000572 05000573	T T	L50 L200	For laser welding to retaining cores in titanium
		05000563	05000561	K	L75	Performed part. Delivery unit: package of two
		01000081		Wire T for laser welding		Pure titanium wire Ø 0.40mm round, roll of 2 m
1:3		Order No.	Auxiliary parts	Description		
		052 080 052 081	Spacer micro 50x0.75 mm macro 50x1.05 mm	Brass, ensures vertical resilience. Mount between female part and bar during polymerization. Is automatically supplied when ordering the bar		
		070 171 070 173	Transfer jig micro L50 Transfer jig macro L50			
1:3			Auxiliary instruments			
		072 515 072 517	Parallelometer insert micro Parallelometer insert macro			
1:3		070 198	Activator set	For female parts E		
		070 200 070 201	Desactivator micro Desactivator macro	For female parts E		
						

Round bar with rider

Retention-grip, round-section bar with adjustable rider

Characteristics

- Round-section bar
- Can be adapted to suit conditions prevailing in the mouth
- Simple, proven system

Processing advantages

- **Saves space**, as the length and position of the bar are easily and reliably adapted to the conditions in the mouth
- **Time saving and reliable**, as the bar is prefabricated and attached to the implant caps and abutment tooth by soldering or laser welding
- Various lengths of bar available
- Two versions of bar rider:
 - Female part E, length 3.5 mm
 - Female part E L50, length 50 mm, can be cutted individually.
- **Low-cost**, burnout plastic male part

Clinical advantages

- **Splints and stabilizes** weak abutment teeth
- Retains more reliably the denture on the bar
- The bar rider is easily activated.
- The cross-section of the bar facilitates oral hygiene for the patient.

Indications

Tooth and tooth/gingival supported dentures
Implant-supported dentures, partial dentures and coverdentures, especially in cases of severe partial edentulousness, partial dentures and coverdentures on extremely weak abutment teeth

Contraindication

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

Description of single parts and materials

P3 = Protor® 3. The bar is made of this conventional casting alloy, which has been proven for decades. As the bar should be adapted to fit, it is supplied soft-annealed. The bar should be adapted to the master model without damaging the cross-section. After soldering/laser welding, the restoration should be tempered according to the separate instructions for use to attain the best mechanical properties.

K = Korak is a burnout plastic for casting techniques.

E = Elitor®. The rider is made of this yellow precious metal alloy – its properties ensure that the lamellae function and retain the denture long-term.

Description of the female part versions (riders)

Female part E (length 3.5 mm) with retainers for the retention in the resin denture. The female part must not be retreated (exception: unique bending of the retainers with caution).

Female part E L50 (length 50 mm) with retainers formed like a swallow tail. It can be cut individually to the length of the bar.

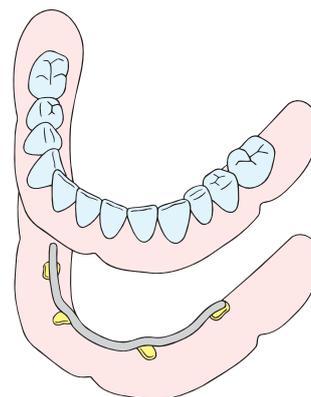
If necessary, the activator set can be used to adjust easily the desired retentive force. The female parts can only be polymerized into place.

Limitation of use

Unilateral restorations without transversal blocking

Please note

A **spacer** is supplied with every bar. It provides for vertical resilience where required. It is fitted between the female part and bar, prior to polymerizing the denture.



Round bar with rider



Female part E (rider)



New: Female part E L50 (rider)



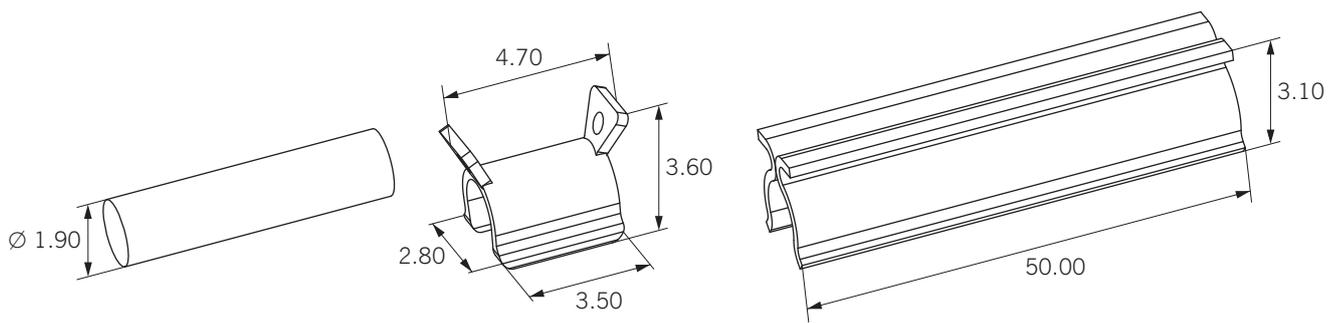
Male part P3

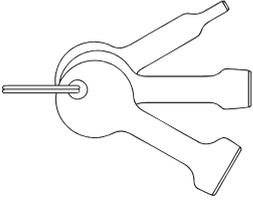


Male part K

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

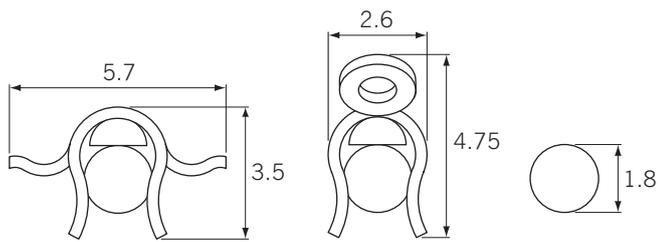
Round bar with rider



1:1	Order No.	Single parts	Description
	050 527 055 801	Female part E	Adjustable rider Delivery unit: package of five
	05000679	Female part E L50	Adjustable rider, can be cutted individually.
	052 082 052 084 052 085	50 x 0.60 mm 100 x 0.60 mm 200 x 0.60 mm	Spacer Tin Assures the vertical translation of the denture. Mounted between female part and bar during polymerization. Is automatically supplied when ordering the bar
	052 030 052 029 052 028	50 mm 100 mm 200 mm	Male part P3 Round bar for soldering
	055 881	75 mm	Male part K Burnout plastic Delivery unit: package of two
Auxiliary part			
1:1		072 293	Transfer jig For master model
Auxiliary instruments			
1:2		070 198	Activating set

Ackermann-Bar

Retention-grip, round-section bar with rider



1:1	Order No.	Parts	Description
 △	05050010	Ackermann-Bar A female part E	Adjustable rider
 △	05050011	Ackermann-Bar B female part E	Adjustable rider
△	052080	Spacer	Brass. Assures the vertical translation of the denture. Mounted between female part and bar during polymerization. Is automatically supplied when ordering the bar.
○	05050013	Male part P3 L200	Round bar for soldering
○	05050014	Male part P3 L60	Round bar for soldering

Advantages:

Round-section bar can be adapted to suit conditions prevailing in the mouth

2 rider concepts for space saving mounting

Bar diameter 1.8mm

Indications

Tooth and tooth/gingival supported dentures

Implant-supported dentures, partial dentures and coverdentures, especially in cases of severe partial edentulousness, partial dentures and coverdentures on extremely weak abutment teeth.

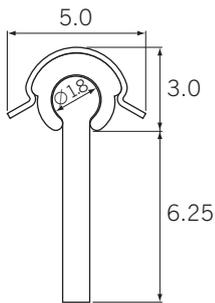
Contraindication

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

MP-Clip

Round-section bar for retentive and rigid restorations



1:1	Order No.	Parts	Description
	200004370	MP-Clip – complete set XK yellow	Content:
	200004360	Male part K L50	2 pieces
	200004366	Retention insert G yellow	6 pieces
	200004366	Spacer with sleeve X	6 pieces
	200004369	Insert positioner	1 piece
	200004371	MP-Clip – complete set XK white	Content:
	200004361	Male part K L50	2 pieces
	200004366	Retention insert G white*	6 pieces
	200004366	Spacer with sleeve X	6 pieces
	200004369	Insert positioner	1 piece
	200004372	MP-Clip – complete set XK red	Content:
	200004362	Male part K L50	2 pieces
	200004362	Retention insert G red	6 pieces
	200004366	Spacer with sleeve X	6 pieces
	200004369	Insert positioner	1 piece
	200004363	Retention insert G yellow	Delivery unit: package of 50
		200004364	Retention insert G white*
	200004365	Retention insert G red	package of 50
	200004366	Spacer with sleeve X	package of 6
	200004367	Spacer with sleeve X	package of 50
	200004368	Male part K L50	package of 6

* Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.

Advantages:

Economical alternative to prefabricated metal bars
The retention force can easily be adjusted by exchanging the retention inserts.
Bar diameter 1.8 mm

Indications

Tooth and tooth/gingival supported dentures
Implant-supported dentures, partial dentures and coverdentures, especially in cases of severe partial edentulousness, partial dentures and coverdentures on extremely weak abutment teeth.

Contraindication

- Unilateral dentures without transverse support.
- Restoration of abutment teeth with severe periodontal damage.
- Hybrid dentures which are fitted with a single root cap.
- Where patients have an existing allergy to one or more elements of the attachment materials.
- Unwillingness of the patient to correctly follow the aftercare/recall instructions.
- Patients with bruxism or further uncontrolled para-functional habits.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

+ Transverse, locking screws	
Pin screw	
with hex socket	82–83
Ipsoclip® SE	84–85
+ Transverse, retention elements	
Ipsoclip® RE	84–85
Ipsoclip® posterior	84–85
Ipsoclip® anterior	84–85
Mini-Presso-Matic	86
+ Vertical, locking screws	
Cap screw	
with hex socket	82–83

**+ Screws and
retention elements**

CM-hex screw system

Vertical and transverse locking screw

Characteristics

- A unique system: **1 hex key** for screws with different diameters and lengths
- Screws and countersunk collars made of high strength, clinically tested **precious alloys**
- Compatible with our existing vertical and transverse locking screws

Processing advantages

- The lengths of the screw heads can easily be **adapted** to the **oral condition** because a visual check is possible (cannot be shortened beyond the hex profile grip!)
- One single hex key for 5 different screws
- The sleeve of the vertical locking screw can either be **resinbonded, cast-on** or **soldered** to the inner coping
- **Time-saving**, thanks to the high precision auxiliary instruments simplifying processing
- **High flexibility**, as the thread can be tapped individually as needed

Clinical advantages

- 1 small and handy **hex key fits all screws**. This allows **easy access** in the patient's mouth
- The gold screws fit the thread and reduce the risk of self-loosening
- Material clinically proven for over 30 years
- Reliable and robust design

Indications

Cap screw: Vertical screw-retention of crowns and bridges in implantology and in the conventional technique, e.g. bridge sections or operator-removable restorations.

Pin screw: Transversal screw-retention of crowns and bridges in implantology and in the conventional technique, e.g. bridge sections or operator-removable restorations.

Contraindication

- No angled load on the screw.
- No vertical screw retention (stud screw).
- Restoration of severely periodontally damaged abutment teeth.
- In patients with allergies to one or more elements of the attachment materials.
- Lacking cooperation of the patient with respect to follow-up/recall instructions.
- Patients with bruxism or other para-functional habits.

Description of single parts and materials

The **cap screw** is made of **OSV**, a high strength precious metal alloy. This screw is available in thread diameters 1.2 and 1.4 mm, each in two lengths.

The head of the screw can be shortened as needed, as long as the hex profile grip is maintained.

The **countersunk collar** is made of **Ceramicor®**, a non-oxidizing, copper-free, precious metal alloy, for casting-on and is cast-on or soldered to the outer coping. The conical cap screw perfectly fits the countersunk collar, efficiently distributes the forces and creates a hygienic seal on the occlusal surface.

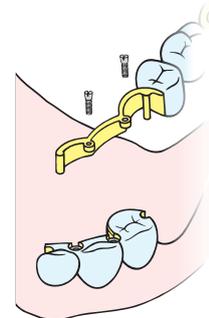
The **sleeve** is also made of **Ceramicor®** and can be resin-bonded, cast-on or soldered to the inner coping. The fixation screw holds the sleeve in place during casting and reduces the risk of molten alloy flowing into it. The **pin screw** has a thread diameter of 1.6 mm and is made of **OSV**, a high strength precious metal alloy. Its length of 3.0 mm can be shortened to a minimum of 2.0 mm. When shortening screw heads, sufficient hex profile depth must be maintained to ensure proper retention of the screw on the hex key. The pin screw should be integrated transversely into the outer coping of the restoration. A small hole should be drilled in the inner coping into which the rounded tip of the screw fits to create the operator-removable restoration.

Additional information

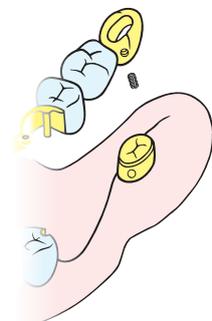
Always use the largest and longest screw possible for the space available.



Hex profile



Cap screw

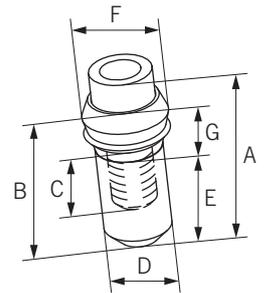


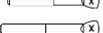
Pin screw

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.

CM-hex screw system

Cap screw		A	B	C	D	E	F	G
Order No.	Thread	Total length screw/tube length	Shortened screw length	Thread length	Sleeve \varnothing	Sleeve length	Counter-sunk collar	Counter-sunk collar
1:1		mm	mm	mm	mm	mm	mm	mm
 05000120 145.12.2.C0	M1.2	5.20	4.20	1.40	1.80	2.80	2.30	1.50
 05000121 145.12.5.C0	M1.2	7.20	6.20	3.40	1.80	4.80	2.30	1.50
 05000122 145.14.2.C0	M1.4	6.20	5.20	1.80	2.00	3.40	2.70	1.90
 05000123 145.14.5.C0	M1.4	8.10	7.10	3.80	2.00	5.40	2.70	1.90



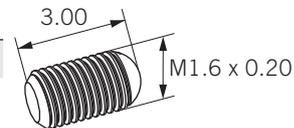
1:1	Order No.	Single parts	Dimensions	Description
	05000163	Screw O	M1.2	For fixing primary and secondary part in the mouth
	05000164		M1.2	
	05000165		M1.4	
	05000166		M1.4	
	072439	Mounting screw X	M1.2	Is automatically supplied when ordering the complete screw. Makes wax modelling easier
	072440		M1.4	
	051882	Countersunk collar C	M1.2	For casting-on in the secondary part
	051885		M1.4	
	055312	Sleeve C	M1.2	For casting-on, soldering or resin-bonding into the primary part
	055313		M1.2	
	055314		M1.4	
	055315		M1.4	

Pin screw

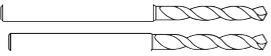
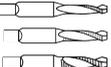
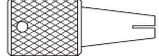
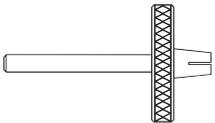


05000167

Thread MF



Cap and pin screw Auxiliary instruments

Order No.	Description	Dimensions	Function
 07000008	Hex key		For cap and pin screw
 080376	Centering bur	1.00	For cap and pin screw
 072432	Spiral drills	\varnothing 1.85	For cap screw: Spiral drill to position the sleeve for resin-bonding, casting-on or soldering
 072433		\varnothing 2.05	
 070395		1.40	For pin screw: For drilling the secondary crown
 070210	Screw taps	M1.2	For tapping the thread of the cap screw
 070211		M1.4	
 070470		MF 1.6 x 0.2	
 070213	Screw tap holder		Standard For cap and pin screw
 070214	Screw tap holder		For tapping the thread on the parallelometer For cap and pin screw
 080378	Centering bur	1.40	For centering the retention on the primary crown

Characteristics

- Horizontal screw and retention elements
- Prospective planning possible (SE/RE)
- Integration into the secondary parts of individually milled restorations

Processing advantages

- All movable parts (spiral spring, retention bolt) can be easily exchanged.
- Easily accessible because all the parts are located in the removable section of the restoration
- The retentive force can be adjusted individually to the mouth situation by extending the spiral spring.
- The housings of the SE and RE versions are identical.

Clinical advantages

- Can be fitted later on into an existing restoration.
- Conversion from a screw-retained restoration into a removable one is possible (or vice versa).
- The soft, spring-supported snap-system gives a secure feeling to the patient.

Indications

- Retentive or screw retained element for mounting into secondary parts of milled work.
- Telescope crowns
 - Individually milled bar sleeves
 - Individual slide attachments
 - Implant-supported restorations

Contraindication

- For wall thicknesses of primary components thinner than 0.8mm.
- For conically milled primary components.
- Restoration of severely periodontally damaged abutment teeth.
- In patients with allergies to one or more elements of the attachment materials.
- Lacking cooperation of the patient with respect to follow-up/recall instructions.
- Patients with bruxism or other para-functional habits.

⚠ The following items contain nickel.
050754 Spiral spring X
Auxiliary instruments may contain nickel.

Description of single parts and materials

All housings are made of the precious metal alloy **Ceramicor®**. This non-oxidizing, copper-free alloy is suitable for casting-on with all precious metal alloys. The housings can be incorporated into the restoration by soldering or casting-on.
The **screw bolts** and **bayonet locks** are made of **OSV**, a white, precious metal alloy with high strength.

Description of the different versions

Ipsoclip® SE (fig. 1) and **Ipsoclip® RE** (fig. 2)

SE means **S**crew-retained **E**lement, **RE** means **R**etention **E**lement. They are part of a system for prospective planning. The housing is fitted in the posterior region and can alternatively hold a screw bolt for screw-retained works or a retention bolt and a spiral spring for removable, retentive restorations.

Ipsoclip® posterior (fig. 3).

The housing is fitted in the **posterior** region. The retention bolt and the spiral spring are held in the housing by a bayonet lock. By removing the bayonet lock, an easy access to the retention parts is possible. All these parts can be easily exchanged, if required.

Ipsoclip® anterior (fig. 4).

The housing is fitted in the **anterior** region. This version has the advantage that the retention mechanism is integrated into the restoration. Therefore, the tongue region should not be irritated. Also in this case a bayonet lock ensures an easy access to the exchangeable parts.

Conditions for correct processing

The primary part must have in the functional area of the Ipsoclip® a thickness of at least 0.8mm. Therefore it can be warranted, that there is enough space to manufacture the bore which serves to receive the retention bolt.

The **Ipsoclip® SE** must be fitted into the restoration in a manner which allows easy access in the mouth.

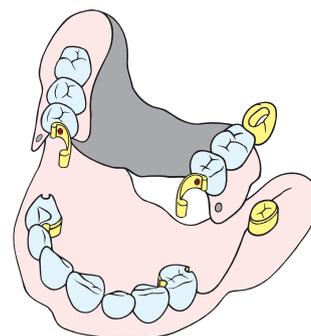


Fig. 1



Fig. 2

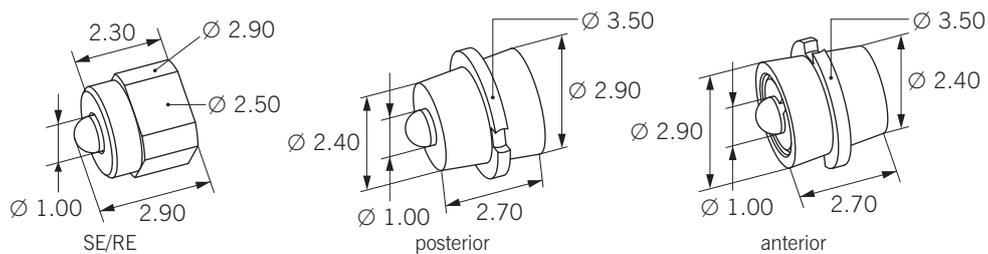


Fig. 3



Fig. 4

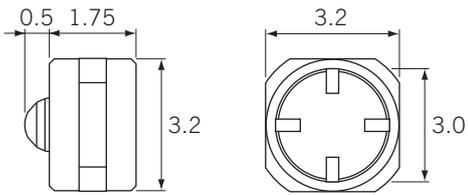
The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.



1:1	Order No. ID-No.	Complete parts	Description/-Materials
	051 650 102.01.1C	Ipsoclip® SE C	Fig. 1
	051 645 102.02.1C	Ipsoclip® RE C	Fig. 2
	050 763 102.02.2C	Ipsoclip® C	Posterior lock. Fig. 3
	050 765 102.03.2C	Ipsoclip® C	Anterior lock. Fig. 4
Ipsoclip® SE		Single parts	
	051 646	Female part C Housing	
	051 847	Male part O Screw bolt	
Ipsoclip® RE			
	051 646	Female part C Housing	
	051 769	Retention bolt A	
	051 649	Spiral spring X	
	051 647	Cap screw O	
Ipsoclip® posterior			
	050 751	Female part C Housing	
	051 620	Retention bolt A	
	050 754	Spiral spring X	
	050 752	Bayonet lock O	
Ipsoclip® anterior			
	050 757	Bayonet lock O	
	051 620	Retention bolt A	
	050 754	Spiral spring X	
	051 240	Buffer disk in plastic	
	050 756	Female part C Housing	
1:1		Auxiliary parts	
	051 893	Retention bolt A	Extended version for posterior and anterior lock
1:1		Auxiliary instruments	
	070 503	Auxiliary screw for modelling	For housing 051 646
	080 798	Centering drill (Ø 1 mm)	For retention bolt on the primary anchor
	070 323	Key	For Ipsoclip® posterior and anterior with Bayonet lock
	070 286	Screw driver	For Ipsoclip® RE and SE with cap screw
	070 507	Thread tap	For re-tapping after casting 051 646
	070 213	Thread tap holder	For thread tap

Mini-Presso-Matic

Screw and retention element



1:1	Order No.	Parts
	05050045	Mini-Presso-Matic C
	05050046	Housing C
	05050047	Retention bolt A
	05050048	Cap screw O
	05050054	Spiral spring X
	05050049	Screw bolt O
	07050012	Auxiliary screw for modelling
	07050013	Screw driver
	07050014	Thread tap M 2.3x0.25

Advantages:

Small, robust retainer
Prospective planning possible by exchanging cap screw and screw bolt

Indications

Retentive or screw retained element for mounting into secondary parts of milled work.

- Telescope crowns
- Individually milled bar sleeves
- Individual slide attachments
- Implant-supported restorations

Contraindication

- For wall thicknesses of primary components thinner than 0.8 mm.
- For conically milled primary components.
- Restoration of severely periodontally damaged abutment teeth.
- In patients with allergies to one or more elements of the attachment materials.
- Lacking cooperation of the patient with respect to follow-up/recall instructions.
- Patients with bruxism or other para-functional habits.

The following items contain nickel.
05050054 Spiral spring X
Auxiliary instruments may contain nickel.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.

+ Root canal posts, conical	
Mooser adhesive head (precious metal alloy)	94–95
Mooser retention head (precious metal alloy)	94–95
+ Root canal posts, cylindro-conical	
CM adhesive head (precious metal alloy)	90–92
CM adhesive head (precious metal alloy, cement flow-off grooves)	90–92
CM retention head (precious metal alloy)	90–92
CM sliced head (zirconia)	90–92
MP-Post	93
+ Root canal posts, conical (temporary)	
Mooser flat head (Ti)	94–95
+ Root canal posts, cylindro-conical (temporary)	
CM flat head (Ti)	90–92
+ Root canal anchors, for direct reconstructions	
Rotex®	96–97
Rotex®-RD	98–99
Pirec	100
+ Root canal anchors, retentive elements	
Dalbo®-Rotex®	101–103

**+ Root canal posts
and root canal anchors**

CM root canal posts

Root canal posts with cylindro-conical shape

Characteristics

- 1 system for all indications, likewise for aesthetical reconstructions
- Cylindro-conical profile
- Root canal post made of either metal or zirconia
- High quality, materials
- The endodontical part of the metallic root canal posts receives a special sandblasting treatment

Processing advantages

- Identical system for both metal and zirconia root canal posts
- 4 different head shapes are available
- The dimensions are the result of clinical experience
- The zirconia root canal posts are 100 % proof tested
- The precious metal root canal posts are made of cold worked alloy with excellent mechanical properties. They are intended for casting-on
- Optimally adjusted and standardized instruments for the root canal preparation
- Narrow manufacturing tolerances

Clinical advantages

- High security due to biologically tested material and clinical experience of many years
- Highly aesthetic restorations with root canal posts made of zirconia

Indication

Ceramicor® and titanium posts

- Root canal post caps for partial and hybrid dentures,
- post crowns,
- cast abutments,
- temporary work (30 days).

Zirconia ceramic posts

Stabilizing devital abutment teeth with virtually intact clinical crowns prior to prosthodontic treatment.

Restoring devital abutment teeth with partially destroyed clinical crowns and building them up directly with resins.

Range of indications

Maxilla: Teeth 4 to 4

Mandible: Canines

Mandible: Anterior region, but with limitations: Only possible where the root canal post can be placed without risking lateral perforation.

Contraindications

Ceramicor® and titanium posts

If a snug fit root canal preparation is not possible in the case of a very large root canal.

Periodontitis, severe gum disease, poor oral hygiene, caries and marginal inter-occlusal space.

Otherwise, based on today's scientific knowledge, there are no restrictions on indication for precious metal posts after successful endodontic treatment. The titanium root posts are only suitable for temporary work due to the geometry of the post head.

In patients with allergies to one or more elements of the materials.

Periodontitis, severe gum disease, poor oral hygiene, caries and marginal inter-occlusal space.

In patients with allergies to one or more elements of the attachment materials. Lacking cooperation of the patient with respect to follow-up/recall instructions.

Patients with bruxism or other parafunctional habits.

Zirconia ceramic posts

Deep bite / overbite

In patients with allergies to one or more elements of the attachment materials.

- Lacking cooperation of the patient with respect to follow-up/recall instructions.

- Patients with bruxism or other parafunctional habits.

- Periodontitis, severe gum disease, poor oral hygiene, caries and marginal inter-occlusal space.

Limitation of use

Ceramicor® is not suited for casting-on with non-precious alloys.

Titanium and zirconia root canal posts cannot be cast-on.

The root posts made of Ceramicor® are not suited for veneering with ceramics because the CTE of the alloy is very low. Therefore, care has to be taken during modelling that the root canal posts are covered with wax or the cast alloy.

Description of single parts and materials

The CM root canal posts are available in three different materials:

Ceramicor®: Non-oxidizing, copper-free precious metal alloy for casting-on with all precious metal alloys.

Pure titanium: Titanium root canal posts are intended for temporary work and cannot be cast-on.

Zirconia: The zirconia root canal posts are made of

$ZrO_2 (+ HfO_2) Y_2O_3 Al_2O_3$.

They are indicated for direct restorations with composite materials and can in no case be cast-on.



CM root post with adhesive head



CM root post with retention head



CM root post with flat head



CM root canal posts made of zirconia with sliced head

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.

CM root canal posts

Description of the different versions

The **metal** CM root canal posts are available in six sizes with three different head shapes.

Adhesive head: The adhesive head is the ideal solution for elastic impression materials. Due to the special head geometry, the impression remains undamaged even with non-parallel abutments. The post can be repositioned in the impression with slight finger pressure. The root posts with adhesive head are available with or without cement flow-off grooves.

Retention head: The retention head by Prof. Wirz is especially conceived for cores which are directly modelled in the mouth and subsequently cast.

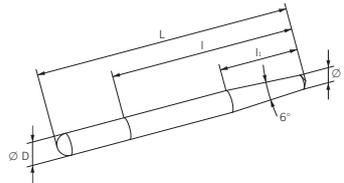
Flat head: The flat head is reserved for titanium root posts for temporary

works. All the root posts **made of metal** are treated with a special sandblasting process. Together with the precise preparation this results in a micro-denticulation in combination with the cement. Thus, the hold of the post in the root canal is assured.

The **zirconia** root canal posts are available in two sizes but with identical head shapes.

Root canal instruments

For the root canal preparation a root canal drill and a reamer are available for each size. The instruments are standardized and colour coded.

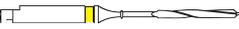
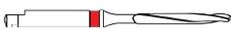
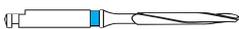
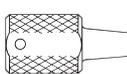
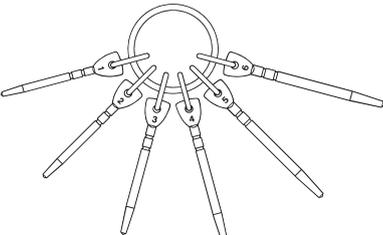
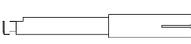


	Order No.		d = Ø Point	D = Ø Point	l1 = Length of cone	l = Functional length	L = Total length	Indications
1:1	Ceramicor®	Size	mm	mm	mm	mm	mm	
	051 103	1	0.80	1.20	4.25	9.00	14.00	Root posts with adhesive head made of precious metal alloy: For impression-taking with elastic impression materials. Root caps, post crowns and cast post cores.
	051 105	2	0.90	1.30	4.25	10.00	15.00	
	051 107	3	0.90	1.40	5.20	12.00	17.00	
	051 109	4	1.00	1.50	5.25	13.00	18.00	
	051 111	5	1.00	1.60	6.20	14.50	19.50	
	051 113	6	1.10	1.70	6.25	15.50	20.50	
	051 066	1	0.80	1.20	4.25	9.00	14.00	
	051 069	2	0.90	1.30	4.25	10.00	15.00	
	051 072	3	0.90	1.40	5.20	12.00	17.00	
	051 075	4	1.00	1.50	5.25	13.00	18.00	
	051 078	5	1.00	1.60	6.20	14.50	19.50	
	051 081	6	1.10	1.70	6.25	15.50	20.50	
	051 715	1	0.80	1.20	4.25	9.00	12.00	Root posts with retention-head made of precious metal alloy: For post cores which are directly modelled in the mouth with resin and subsequently cast.
	051 716	2	0.90	1.30	4.25	10.00	13.00	
	051 717	3	0.90	1.40	5.20	12.00	15.00	
	051 718	4	1.00	1.50	5.25	13.00	16.00	
	051 719	5	1.00	1.60	6.20	14.50	17.50	
	051 720	6	1.10	1.70	6.25	15.50	18.50	
1:1	Zirconia							
	055 864	3 ●	0.85	1.40	5.00	–	17.00	Root canal posts made of zirconia for direct reconstructions
	055 867	6 ●	1.05	1.70	5.95	–	20.50	
1:1	Titanium							
	051 304	1	0.80	1.20	4.25	9.00	14.00	Root posts with flat head made of pure titanium: For temporary work; auxiliary post for direct cores of multi-rooted teeth.
	051 305	2	0.90	1.30	4.25	10.00	15.00	
	051 306	3	0.90	1.40	5.20	12.00	17.00	
	051 307	4	1.00	1.50	5.25	13.00	18.00	
	051 308	5	1.00	1.60	6.20	14.50	20.50	
	051 309	6	1.10	1.70	6.25	15.50	21.50	

Delivery unit: package of five

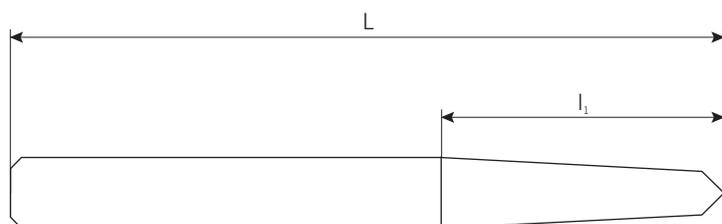
Delivery unit: package of ten

CM root canal posts

1:1	Order No.	Auxiliary instruments	Use	Suitable for
	072 326	Root canal drill	Mechanically	Post size 1
	072 321	Root canal drill	Mechanically	Post size 2
	072 327	Root canal drill	Mechanically	Post size 3
	072 328	Root canal drill	Mechanically	Post size 4
	072 329	Root canal drill	Mechanically	Post size 5
	072 330	Root canal drill	Mechanically	Post size 6
	070 243	Reamer	Manually*	Post size 1
	070 244	Reamer	Manually*	Post size 2
	070 245	Reamer	Manually*	Post size 3
	070 246	Reamer	Manually*	Post size 4
	070 247	Reamer	Manually*	Post size 5
	070 248	Reamer	Manually*	Post size 6
	070 221	Thomas spanner key	For reamer	Reamer size 1 – 6
	070 481	Post gauge	Control of the sinking depth and snug fit of the post	Post size 1 – 6
	072 414	Coupling piece	For the extension of the instruments	R.A. handpiece and Thomas spanner key

* Manual calibration of the root canal with the Thomas spanner key

Accessories	Description
08000003	Endobox Empty, for CM posts, without posts or instruments



Retentive design	Order No.	Parts	Size	L = total length	l ₁ = conus length	Description	
	● 200004305	MP-Post Retentive K yellow	1	14 mm	5.0 mm	Delivery unit: package of 50	
	● 200004314	MP-Post Retentive K red	2	15 mm	5.5 mm		
	● 200004323	MP-Post Retentive K blue	3	16 mm	6.9 mm		
	● 200004332	MP-Post Retentive K green	4	17 mm	8.8 mm		
	● 200004338	MP-Post Retentive K black	5	19 mm	9.8 mm		
	● 200004301	MP-Post X yellow	1	13 mm	5.2 mm	Delivery unit: package of 20	
	● 200004310	MP-Post X red	2	16 mm	5.7 mm		
	● 200004319	MP-Post X blue	3	17 mm	7.1 mm		
	● 200004328	MP-Post X green	4	18 mm	9.0 mm		
	Standard design 	● 200004302	MP-Post Standard K yellow	1	14 mm	5.0 mm	Delivery unit: package of 50
● 200004311		MP-Post Standard K red	2	16 mm	5.6 mm		
● 200004320		MP-Post Standard K blue	3	17 mm	7.0 mm		
● 200004329		MP-Post Standard K green	4	18 mm	8.9 mm		
● 200004335		MP-Post Standard K black	5	20 mm	9.9 mm		
		200004441	MP root canal drill yellow	1			Use mechanically Delivery unit: 1 piece
		200004447	red	2			
		200004451	blue	3			
		200004455	green	4			
		200004459	black	5			
	200004436	MP root canal drill				Delivery unit: 1 piece	
	200004442	MP auxiliary drill				Delivery unit: 1 piece	
	200004443	MP plastic handgrip				Delivery unit: 1 piece	

Advantages:

Economical alternative to prefabricated precious metal posts
One step, mechanical preparation of the root canal

Indication

Root caps for partial and hybrid dentures, post crowns, cast cores and temporary work (Root canal posts X = steel max. 30 days).

Contraindication

If a snug fit root canal preparation is not possible in the case of a very large root canal.
Periodontitis, severe gum disease, poor oral hygiene, caries and marginal inter-occlusal space.
Steel posts, definitive work.

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.

Root canal posts Mooser

Root posts with conical shape

Characteristics

- High value materials: made of a copper-free precious metal alloy or in pure titanium
- Surface treated by a special sandblasting process
- Slightly conical shape

Processing advantages

- Two different materials to choose from
- Three post heads with different forms and functions
- The dimensions are based on values gained from clinical experience
- The precious metal posts are manufactured from a coldworked alloy with excellent mechanical properties and suitable for casting-on
- Optimally adjusted and standardized instruments for the root canal preparation
- Narrow manufacturing tolerances

Clinical advantages

- Precious metal posts made of a copper-free alloy
- Root posts for temporary works made of pure titanium
- High standard precision
- Many years of clinical experience

Indication

- Root canal post caps for partial and hybrid dentures,
- post crowns,
- cast abutments,
- temporary work (30 day).

Contraindication

If a snug fit root canal preparation is not possible in the case of a very large root canal. Periodontitis, severe gum disease, poor oral hygiene, caries and marginal inter-occlusal space. Otherwise, based on today's scientific knowledge, there are no restrictions on indication for precious metal posts after successful endodontic treatment. The titanium root posts are only suitable for temporary work due to the geometry of the post head. In patients with allergies to one or more elements of the attachment materials. Lacking cooperation of the patient with respect to follow-up/recall instructions. Patients with bruxism or other parafunctional habits.

Limitation of use

Ceramicor® is not suited for casting-on with non-precious alloys. Titanium is not suited for casting-on. The root posts made of Ceramicor® are not suited for veneering with ceramics because the CTE of the alloy is very low. Therefore, care has to be taken during modelling that the root canal posts are covered with wax or the cast alloy.

Description of the single parts and materials

The root posts are available in two different materials:
Ceramicor®: Non-oxidizing, copper-free precious metal alloy for casting-on with all precious metal alloys.
Pure titanium: The titanium posts are intended for temporary works. They are not suitable for casting-on.
All the root posts are manufactured from cold-worked materials, therefore they have excellent mechanical properties.

Description of the different versions

The root posts Mooser are available in four sizes and with three different post heads:

Adhesive head: The adhesive head is the ideal solution for elastic impression materials. Due to the special head geometry, the impression remains undamaged even with non-parallel abutments. The post can be repositioned in the impression with slight finger pressure.
Retention head: The retention head by Prof. Wirz is especially conceived for cores, which are directly modelled in the mouth and subsequently cast.
Flat head: The flat head is reserved for titanium root posts for temporary works. All the root posts are treated with a special sandblasting process. Together with the precise preparation this results in a micro-denticulation in combination with the cement. Thus the hold of the post in the root canal is assured.

Root canal instruments

For the root canal preparation a root canal drill, a pilot reamer and a reamer are available for each size. The instruments are standardized and colour coded.



Mooser root post with adhesive head



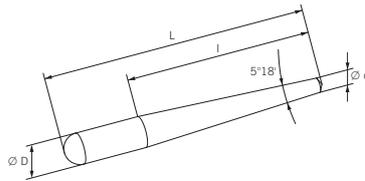
Mooser root post with retention head



Mooser root post with flat head

The products carry the CE Mark. See packaging for details. For further instructions, warnings and for precautions please refer to the instructions for use.

Root canal posts Mooser



	Order No.	Size	d = ∅ Point mm	D = ∅ Point mm	l = Length of cone mm	L = Total length mm	Indications
1:1	Ceramicor®						
	051 028	1	0.80	1.50	7.90	12.30	Root posts with adhesive head made of precious metal alloy: For impression-taking with elastic impression materials. Root caps, post crowns and cast post cores.
	051 031	2	0.80	1.70	10.00	14.50	
	051 034	3	1.00	2.00	11.20	15.50	
	051 037	4	1.00	2.20	13.30	17.70	
	051 763	1	0.80	1.50	7.90	11.80	Root posts with retention-head made of precious metal alloy: For post cores which are directly modelled in the mouth with resin and subsequently cast.
	051 764	2	0.80	1.70	10.00	14.00	
	051 765	3	1.00	2.00	11.20	15.00	
	051 766	4	1.00	2.20	13.30	17.20	

Delivery unit: package of five

1:1	Titanium	Order No.	Size	d = ∅ Point mm	D = ∅ Point mm	l = Length of cone mm	L = Total length mm	Indications
	051 060	1	0.80	1.50	7.90	13.00	Root posts with flat head made of pure titanium: For temporary works; auxiliary post for direct cores of multi-rooted teeth.	
	051 097	2	0.80	1.70	10.00	15.00		
	051 062	3	1.00	2.00	11.20	16.00		
	051 063	4	1.00	2.20	13.30	18.00		

Delivery unit: package of ten

1:1	Order No.	Auxiliary instruments	Use	Suitable for
	072 310	Root canal drill	Mechanically	Post size 1
	072 311	Root canal drill	Mechanically	Post size 2
	072 312	Root canal drill	Mechanically	Post size 3
	072 313	Root canal drill	Mechanically	Post size 4
	072 314	Pilot reamer	Mechanically	Post size 1
	072 315	Pilot reamer	Mechanically	Post size 2
	072 316	Pilot reamer	Mechanically	Post size 3
	072 317	Pilot reamer	Mechanically	Post size 4
	070 287	Reamer	Manually*	Post size 1
	072 318	Reamer	Manually*	Post size 2
	070 288	Reamer	Manually*	Post size 3
	072 319	Reamer	Manually*	Post size 4
	070 221	Thomas spanner key	For reamer	Post size 1–4
	070 483	Post gauge	Control of the sinking depth and snug fit of the post	Reamer size 1–4
	072 414	Coupling piece	For the extension of the instruments	R.A. handpiece and Thomas spanner key

* Manual calibration of the root canal by means of the Thomas spanner key

Accessories	Description
08000003	Endobox Empty, for Mooser posts, without posts or instruments

Characteristics

- High corrosion resistant material:
in pure titanium
- Self-cutting thread
- Slightly conical shape
- Cement flow-off grooves
- Rounded post end

Processing advantages

- The core can be built up in one session
- The endodontical part is identical for both versions. For that reason only a limited number of instruments is needed for root canal preparation
- For cutting the thread, only 2–3 turns are necessary
- Narrow manufacturing tolerances

Clinical advantages

- Many years of clinical experience
- Pure titanium is highly corrosion resistant
- The precise contact support of the retention head ensures an optimal distribution of the masticatory forces, as well as a hermetic closure to the root canal.
The retention head geometry guarantees a stressfree support for the restoration material
- The cement flow-off grooves enable tension-free cementing

Indication

- Direct cores
- Larger fillings with amalgam or composite

Contraindication

If a snug fit root canal preparation is not possible in the case of a very large root canal.
In the case of very thin-walled and/or brittle roots.
Periodontitis, severe gum disease, poor oral hygiene, caries and marginal inter-occlusal space.

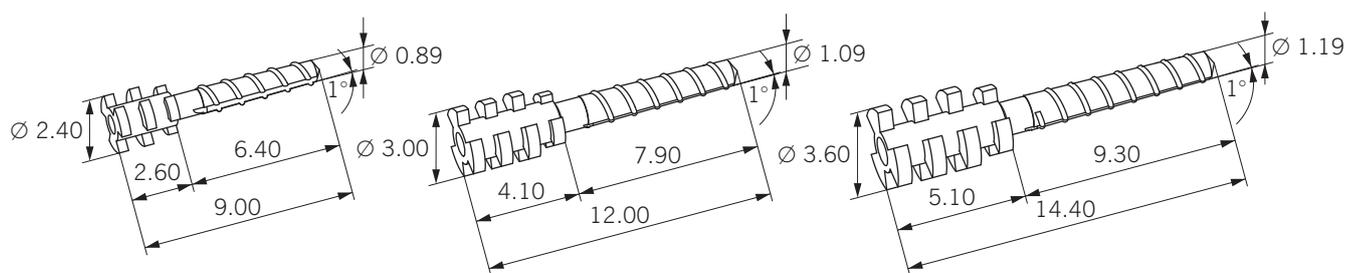
Description of single parts and materials

The root canal anchors are made of **pure titanium** (grade 4, standard ASTM F 67).
The root canal anchors are available in two versions and in three sizes: **Rotex®** with wide retention wings.
The endodontical part is provided with a self-cutting thread, a rounded post end, cement flow-off grooves and possesses a slight conicity. These properties enable a nearly tension-free incorporation of the root canal anchor. The endodontical part is identical for both versions. The special geometry of the Rotex® retention head ensures good hold of the restoration material, even in the case of limited spaces. With multirooted teeth, the Rotex® can be combined with the Rotex® root canal anchor.

Root canal instruments

The instruments are standardized and provided with a depth mark or a depth stop. All instruments are colour coded. Therefore, mistakes can be avoided.





1:1	Order No. ID-No.	Size	Colour	For
	051 289* 15.01.1 T	Rotex® T 1		
	051 290* 15.01.2 T	Rotex® T 2		
	051 291* 15.01.3 T	Rotex® T 3		

1:1	Auxiliary instruments			
	070 380	Root canal drill	White	Anchor size 1
	070 381	Root canal drill	Yellow	Anchor size 2
	070 382	Root canal drill	Red	Anchor size 3
	070 295	Face cutting drill	White	Anchor size 1
	070 296	Face cutting drill	Yellow	Anchor size 2
	070 297	Face cutting drill	Red	Anchor size 3
	070 298	Root canal reamer	White	Anchor size 1
	070 299	Root canal reamer	Yellow	Anchor size 2
	070 300	Root canal reamer	Red	Anchor size 3
	070 301	Spanner key	White	Anchor size 1
	070 302	Spanner key	Yellow	Anchor size 2
	070 303	Spanner key	Red	Anchor size 3
	070 221	Thomas spanner key for manual use of the root canal reamer		Root canal reamer size 1-3
	072 414	Coupling for the extension of instruments		R.A. handpiece and Thomas spanner key

* Delivery unit: package of five

Basic set / small set Order No. 051497		Basic set / big set Order No. 051496	
5 Rotex® anchors	051 289	1 root canal reamer	070 298
5 Rotex® anchors	051 290	1 root canal reamer	070 299
5 Rotex® anchors	051 291	1 root canal reamer	070 300
1 root canal drill	070 380	1 spanner key	070 301
1 root canal drill	070 381	1 spanner key	070 302
1 root canal drill	070 382	1 spanner key	070 303
1 face cutting drill	070 295	1 Thomas spanner key	070 221
1 face cutting drill	070 296		
1 face cutting drill	070 297		
10 Rotex® anchors	051 289	1 root canal reamer	070 298
10 Rotex® anchors	051 290	1 root canal reamer	070 299
10 Rotex® anchors	051 291	1 root canal reamer	070 300
1 root canal drill	070 380	1 spanner key	070 301
1 root canal drill	070 381	1 spanner key	070 302
1 root canal drill	070 382	1 spanner key	070 303
1 face cutting drill	070 295	1 Thomas spanner key	070 221
1 face cutting drill	070 296		
1 face cutting drill	070 297		

Order No.	Accessories	Description
08000002	Endobox	Empty, for Rotex® root canal anchors, without anchors or instruments

Rotex®-RD

Root canal anchors with retention head and self-cutting thread

Characteristics

- High corrosion resistant material: in pure titanium
- Self-cutting thread
- Slightly conical shape
- Cement flow-off grooves
- Rounded post end

Processing advantages

- The core can be built up in one session
- The endodontical part is identical for both versions. For that reason only a limited number of instruments is needed for root canal preparation
- For cutting the thread, only 2–3 turns are necessary
- Narrow manufacturing tolerances

Clinical advantages

- Many years of clinical experience
- Pure titanium is highly corrosion resistant
- The precise contact support of the retention head ensures an optimal distribution of the masticatory forces, as well as a hermetic closure to the root canal.
The retention head geometry guarantees a stressfree support for the restoration material
- The cement flow-off grooves enable tension-free cementing

Indication

- Direct cores
- Larger fillings with amalgam or composite

Contraindication

If a snug fit root canal preparation is not possible in the case of a very large root canal.
In the case of very thin-walled and/or brittle roots.
Periodontitis, severe gum disease, poor oral hygiene, caries and marginal inter-occlusal space.

Description of single parts and materials

The root canal anchors are made of **pure titanium** (grade 4, standard ASTM F 67).
The root canal anchors are available in two versions and in three sizes: **Rotex®-RD** with reduced retention head diameter.
The endodontical part is provided with a self-cutting thread, a rounded post end, cement flow-off grooves and possesses a slight conicity. These properties enable a nearly tension-free incorporation of the root canal anchor. The endodontical part is identical for both versions. The special geometry of the Rotex®-RD retention head ensures good hold of the restoration material, even in the case of limited spaces. With multirooted teeth, the Rotex®-RD can be combined with the Rotex® root canal anchor.

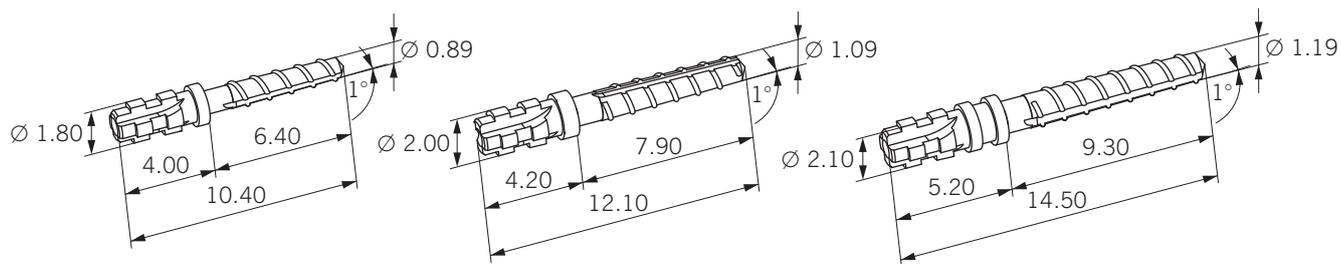
Root canal instruments

The instruments are standardized and provided with a depth mark or a depth stop. All instruments are colour coded. Therefore, mistakes can be avoided.



Rotex®-RD

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings and for precautions please refer to the instructions for use.



1:1	Order No. ID-No.	Size	Colour	For
	055 195* 15.02.1 T	1		
	055 196* 15.02.2 T	2		
	055 197* 15.02.3 T	3		

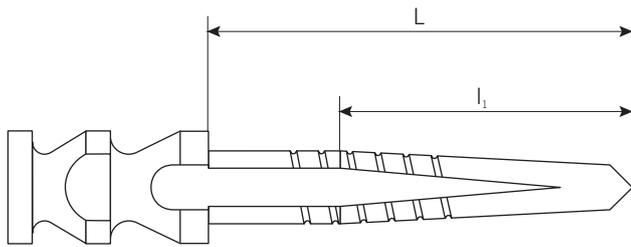
1:1	Auxiliary instruments			
	070 380	Root canal drill	White	Anchor size 1
	070 381	Root canal drill	Yellow	Anchor size 2
	070 382	Root canal drill	Red	Anchor size 3
	072 470	Face cutting drill	White	Anchor size 1
	072 471	Face cutting drill	Yellow	Anchor size 2
	072 472	Face cutting drill	Red	Anchor size 3
	070 298	Root canal reamer	White	Anchor size 1
	070 299	Root canal reamer	Yellow	Anchor size 2
	070 300	Root canal reamer	Red	Anchor size 3
	072 459	Spanner key		Anchor size 1 – 3
	070 221	Thomas spanner key for manual use of the root canal reamer		Root canal reamer size 1 – 3
	072 414	Coupling for the extension of instruments		R.A. handpiece and Thomas spanner key

* Delivery unit: package of five

Basic set / small set Order No. 055 236		Basic set / big set Order No. 055 235	
5 Rotex®-RD anchors 055 195	1 root canal reamer 070 298	10 Rotex®-RD anchors 055 195	1 root canal reamer 070 298
5 Rotex®-RD anchors 055 196	1 root canal reamer 070 299	10 Rotex®-RD anchors 055 196	1 root canal reamer 070 299
5 Rotex®-RD anchors 055 197	1 root canal reamer 070 300	10 Rotex®-RD anchors 055 197	1 root canal reamer 070 300
1 root canal drill 070 380	1 spanner key 072 459	1 root canal drill 070 380	1 spanner key 072 459
1 root canal drill 070 381	1 Thomas spanner key 070 221	1 root canal drill 070 381	1 Thomas spanner key 070 221
1 root canal drill 070 382		1 root canal drill 070 382	
1 face cutting drill 072 470		1 face cutting drill 072 470	
1 face cutting drill 072 471		1 face cutting drill 072 471	
1 face cutting drill 072 472		1 face cutting drill 072 472	
Order No.	Accessories	Description	
08000002	Endobox	Empty, for Rotex®-RD root canal anchors, without anchors or instruments	

Pirec

Root canal anchor



	Order No.	Parts	Size	L = total length	l ₁ = conus length	Description
	● 200004299	Pirec T yellow	1	7.5 mm	5.2 mm	Delivery unit: package of 12
	● 200004308	Pirec T red	2	8.5 mm	5.7 mm	
	● 200004317	Pirec T blue	3	9.5 mm	7.1 mm	
	● 200004326	Pirec T green	4	10.5 mm	9.0 mm	
	200004446	Pirec / Endo-Snap root canal drill yellow	1			Use mechanically
	200004450	red	2			
	200004454	blue	3			
	200004458	green	4			
	200004435	Pirec spanner key				
	200004436	MP root canal drill				
	200004442	MP auxiliary drill				
	200004443	MP Plastic handgrip				

Advantages:

The core can be built up in one session
No threading needed
The cement flow-off grooves enable tension-free cementing

Indication

- Direct abutments
- Larger fillings with amalgam or composite

Contraindication

If a snug fit root canal preparation is not possible in the case of a very large root canal.
In the case of very thin-walled and/or brittle roots.
Periodontitis, severe gum disease, poor oral hygiene, caries and marginal inter-occlusal space.

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and for precautions please refer to the
instructions for use.

Characteristics

- High corrosion resistant materials: in pure titanium
- Two versions
- Slightly conical shape
- Rounded post end
- Cement flow-off grooves

Processing advantages

- The endodontical part is identical for both versions
- Limited number of instruments for the root canal preparation
- Processing of a root cap is not necessary
- For cutting the thread, only 2–3 turns are necessary
- High mechanical strength
- Optimally adjusted and standardized instruments for the root canal preparation

Clinical advantages

- The construction is based on the proven Rotex®-root canal anchor system
- Many years of clinical experience
- Cost saving solution for roots with an uncertain prognostic
- The cement flow-off grooves enable tension-free cementing

Indication

Temporary fixation of partial and hybride dentures.

Contraindication

If a snug fit root canal preparation is not possible in the case of a very large root canal.

In the case of very thin-walled and/or brittle roots.

Periodontitis, severe gum disease, poor oral hygiene, caries and marginal inter-occlusal space.

In the case of a favorable long term prognosis of the teeth to be treated.

Otherwise, based on today's scientific knowledge, there are no restrictions on indication after successful endodontic treatment.

Description of single parts and materials

The Dalbo®-Rotex® is based on the proven Rotex®-root canal anchor system. It was further developed by Prof. Dr. med. dent. Th. Brunner, Zurich, and Dr. med. dent. H. Dalla Bona, Bienne. Possible problems arising from non-parallelism are solved by the ball anchor. The direction of insertion of the denture can therefore diverge from the anchor axis by max. 6° with Dr. Dalla Bona's version and by max. 18° with Prof. Brunner's version.

The Dalbo®-Rotex® anchors are made of pure titanium (grade 4, standard ASTM F 67).

The female part is available in two different materials:

Plastic (Galak)

Precious metal alloy (Elitor®).

Description of the different versions

The Dalbo®-Rotex® system comprises two different versions with two sizes each (identical with the Rotex®-root canal anchors size 1 and 2). The endodontical part is provided with a self-cutting thread, a rounded post end, cement flow-off grooves and possesses a slight conicity.

These properties enable a nearly tension-free incorporation of the Dalbo®-Rotex®-anchor. The endodontical part and the diameter of the sphere are identical for both versions. The female part in precious metal is adjustable. With the plastic version, the retention is guaranteed by the elasticity of the double walled female part.

Root canal instruments

The instruments are standardized and provided with a depth mark or a depth stop. All instruments are colour coded, in order to avoid mistakes.

Additional information

The female parts of the new Dalbo®-Classic und Dalbo®-PLUS will also fit onto the male part of the Dalbo®-Rotex® by Dr. Dalla Bona/Prof. Brunner.

Bibliography

Dalla Bona, H.: Der Dalbo®-Rotex®-Anker zur Verankerung von Teil- und Vollprothesen. (Wie wird die Wurzelbasis nach der Zementierung der Wurzelschraube optimal kariesprophylaktisch versiegelt?) Quintessenz, 38, 1254 (1987)

Meyer, Th.: Temporäre Prothesenfixation. (Die Erhaltung von Zahnwurzeln zur temporären Fixation von partiellen und hybriden Prothesen.) Schweiz. Zahnmed. 97, 786 (1987).



Female part E



Female part G

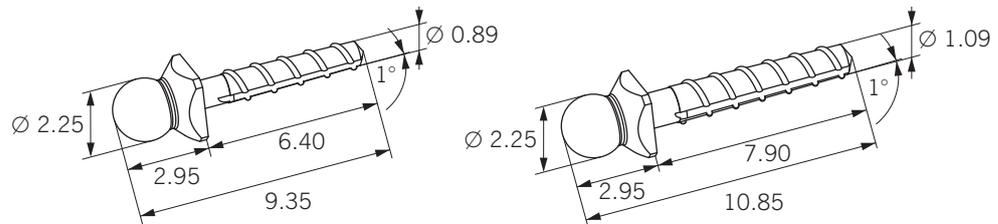


Dalbo®-Rotex®
by Dr. Dalla Bona



Dalbo®-Rotex®
by Prof. Brunner

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.



1:1	Order No. ID-No.	Complete parts	Materials / Description
	051 864*** 15.41.1 GT	Dalbo®-Rotex® GT	Size 1
	051 865*** 15.41.2 GT	Dalbo®-Rotex® GT	Size 2

1:1	Single parts		
	051 868***	Female part G	Galak; mouth resistant plastic Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
	051 511	Female part E	Elitor®; precious metal alloy with high elasticity
	051 869***	Male part (size 1)	Pure titanium (grade 4) 0.2 % proof stress (Rp 0.2 %) > 700 N/mm ²
	051 870***	Male part (size 2)	

1:1	Auxiliary instruments		Colour	For
	070 380	Root canal drill	White	Anchor size 1
	070 381	Root canal drill	Yellow	Anchor size 2
	070 499	Face cutting drill	White	Anchor size 1
	072 474	Face cutting drill	Yellow	Anchor size 2
	070 298	Root canal reamer	White	Anchor size 1
	070 299	Root canal reamer	Yellow	Anchor size 2
	070 498	Spanner key for spherical head		Anchor size 1 and 2
	070 221	Thomas-spanner key for root canal reamer*		Root canal reamer size 1 and 2
	072 414	Coupling piece for the extension of the instruments		R.A. handpiece and Thomas spanner key
	070 205	Instrument for mounting the PVC medical ring		051 511
	070 197	Activator for female part in precious metal		051 511
	070 199	Deactivator for female part in precious metal		051 511

		Auxiliary parts	For
	070 440	Spacer** (Galak). Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.	Anchor size 1 and 2
	070 511	Transfer jig for model-making	Female part: 051 868, 051 511

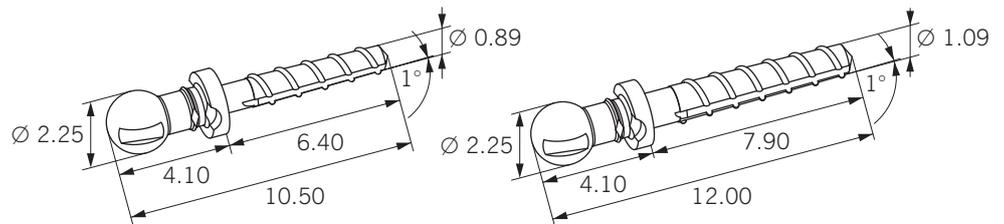
* For the manual final calibration of the root canal with the root canal reamer.

** For use instead of the female part during impression-taking and as provisional during the polymerisation of the denture.

*** Delivery unit: package of five

Basic set Order No. 052 111			Basic set Order No. 051 904				
5 Dalbo®-Rotex®	051 864	1 Thomas-spanner key	070 221	2 Dalbo®-Rotex®	051 864	1 Root canal reamer	070 298
5 Dalbo®-Rotex®	051 865	1 Spanner key	070 498	2 Dalbo®-Rotex®	051 865	1 Root canal reamer	070 299
1 Root canal drill	070 380	10 Spacers	070 440	2 Dalbo®-Rotex®	051 866	1 Thomas-spanner key	070 221
1 Root canal drill	070 381	2 Transfer jigs	070 511	1 Root canal drill	070 380	1 Spanner key	070 498
1 Face cutting drill	070 499			1 Root canal drill	070 381	1 Spanner key	070 500
1 Face cutting drill	072 474			1 Face cutting drill	070 499	8 Spacers	070 440
1 Root canal reamer	070 298			1 Face cutting drill	072 474	2 Transfer jigs	070 511
1 Root canal reamer	070 299			1 Face cutting drill	070 295	2 Transfer jigs	070 512
				1 Face cutting drill	072 473		

Order No.	Accessories	Description
08000001	Endobox	Empty, for Dalbo®-Rotex® root canal anchors, without anchors or instruments



1:1	Order No. ID-No.	Complete parts	Materials / Description
	051 866*** 15.42.1 GT	Dalbo®-Rotex® GT	Size 1
	051 867*** 15.42.2 GT	Dalbo®-Rotex® GT	Size 2

1:1	Single parts		
	051 868***	Female part G	Galak; mouth resistant plastic Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
	051 511	Female part E	Elitor®; precious metal alloy with high elasticity
	051 871***	Male part (size 1)	Pure titanium (grade 4)
	051 872***	Male part (size 2)	0.2% proof stress (Rp 0.2%) > 700 N/mm ²

1:1	Auxiliary instruments		Colour	For
	070 380	Root canal drill	White	Anchor size 1
	070 381	Root canal drill	Yellow	Anchor size 2
	070 295	Face cutting drill	White	Anchor size 1
	072 473	Face cutting drill	Yellow	Anchor size 2
	070 298	Root canal reamer	White	Anchor size 1
	070 299	Root canal reamer	Yellow	Anchor size 2
	070 500	Spanner key for spherical head		Anchor size 1 and 2
	070 221	Thomas-spanner key for root canal reamer*		Root canal reamer size 1 and 2
	072 414	Coupling piece for the extension of the instruments		R.A. handpiece and Thomas spanner key
	070 205	Instrument for mounting the PVC medical ring		051 511
	070 197	Activator for female part in precious metal		051 511
	070 199	Deactivator for female part in precious metal		051 511

Auxiliary parts		For
	070 440	Spacer** (Galak). Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
	070 512	Transfer jig for model-making

* For the manual final calibration of the root canal with the root canal reamer.

** For use instead of the female part during impression-taking and as provisional during the polymerisation of the denture.

*** Delivery unit: package of five

Basic set Order No. 052 110			Basic set Order No. 051 904				
5 Dalbo®-Rotex®	051 866	1 Thomas-spanner key	070 221	2 Dalbo®-Rotex®	051 864	1 Root canal reamer	070 298
5 Dalbo®-Rotex®	051 867	1 Spanner key	070 500	2 Dalbo®-Rotex®	051 865	1 Root canal reamer	070 299
1 Root canal drill	070 380	10 Spacers	070 440	2 Dalbo®-Rotex®	051 866	1 Thomas-spanner key	070 221
1 Root canal drill	070 381	2 Transfer jigs	070 512	1 Root canal drill	070 380	1 Spanner key	070 498
1 Face cutting drill	070 295			1 Root canal drill	070 381	1 Spanner key	070 500
1 Face cutting drill	072 473			1 Face cutting drill	070 499	8 Spacers	070 440
1 Root canal reamer	070 298			1 Face cutting drill	072 474	2 Transfer jigs	070 511
1 Root canal reamer	070 299			1 Face cutting drill	070 295	2 Transfer jigs	070 512
				1 Face cutting drill	072 473		

Order No.	Accessories	Description
08000001	Endobox	Empty, for Dalbo®-Rotex® root canal anchors, without anchors or instruments

Replacement parts

Delivered until	Order No.	Biaggi
31.12.2017		
	050 420	Split ring spring O 1.90
	051 208	Female complete
	050 395	Spacer disc Delivery unit: package of five
	051 371	Split ring spring O 1.85
	051 372	Split ring spring O 1.80
	070 252	Socket key
	070 168	Transfer jig

Delivered until	Order No.	Eccentric® Rothermann
31.12.2017		
	050 339	Anchor plate
	050 831	Screw O
	050 340	Washer 24 Kt

Delivered until	Order No.	Cap screw
31.12.2019		
	054 600	Screw O M 1
	051 880	Screw O M 1
	051 879	Countersunk collar C
	054 922	Mounting screw X
	072 443	Mouth screw driver 1.50x0.30 mm for M 1
	072 444	Mouth screw driver 1.70x0.30 mm for M 1.2
	072 445	Mouth screw driver 2.10x0.30 mm for M 1.4

Delivered until	Order No.	Combi-Snap®
31.12.2019		
	055 234	Male part C complete
	052 020	Male part C (available until stock runs out, alternative male part complete)
	052 022	Occlusal screw O with spreader
	052 023	Locking screw O
	070 521	Transfer jig
	070 522	Deactivator/activator
	070 520	Screwdriver: blade inset/tongue-end sleeve
	070 209	Screw tap

Delivered until	Order No.	Conod
31.12.2019		
	050 265	Female part C
	070 492	Duplicating aid, spacer G
	070 156	Transfer jig

Delivered until	Order No.	Flécher
31.12.2019		
	051 874	Female part C
	051 876	Occlusal screw O
	051 877	Mounting screw X
	070 506	Transfer jig
	070 508	Screw driver
	070 209	Screw tap

Delivered until	Order No.	Interlock Ceccato
31.12.2019		
	051 678	Male part K

Delivered until	Order No.	Pin screw
31.12.2019		
	052 013	Pin screw O \varnothing 1.40
	072 441	Buccal and laboratory screwdrivers 1.05x0.30 mm for \varnothing 1.40
	072 442	Buccal and laboratory screwdrivers 1.25x0.30 mm for \varnothing 1.60

Delivered until	Order No.	Schubiger SB
31.12.2019		
	050 372	Female part C / Sleeve with shoulder
	050 373	Cap nut O with shoulder
	070 304	Guiding pin
	070 164	Transfer jig
	070 138	Parallelometer insert
	070 249	Screwdriver

Delivered until	Order No.	Stabilizer CM
31.12.2019		
	051 601	Male part K (package of 5)

Delivered until	Order No.	Supra-Fix
30.06.2021		
	200004583	Screw bolt

Delivered until	Order No.	Supra-Fix
31.12.2021		
	200004486	Screwdriver (contra angle)

Delivered until	Order No.	Mini-Clic® / Microfix
31.12.2020		
	052 155	Tuning female part O
	070 325	Transfer jig

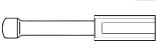
Delivered until	Order No.	Mini-Clic® / Microfix
30.09.2023		
	052 039	Elastomeric ring Mouth-resistant plastic Delivery unit: package of five

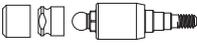
Delivered until	Order No.	MetaFix
31.12.2021		
	200004584	Screw plug S
	200004486	Screwdriver hex screw

Delivered until	Order No.	Presso-Matic
31.12.2021		
	200004579	Retention bolt A*
	200004580	Screw plug O*
	200004482	Elastic buffer
	200004491	Mouth screwdriver

The products carry the CE Mark.
See packaging for details.
For further instructions, warnings
and for precautions please refer to the
instructions for use.

Replacement parts

Delivered until	Order No.	
30.09.2023		Beyley
	050 123	Male part C
	070 112	Parallelometer insert
30.09.2023		CM-Box®
	055 317	Activating screw O
	054 753	Male part D
	072 305	Duplicating aid G
	072 423	Modelling aid K
	072 401	Transfer jig
	072 512	Parallelometer insert
	072 410	Screwdriver/Activator
30.09.2023		Conex®-System
	051 169	Female part C friction-grip complete
	051 170	Female part C retention-grip complete
	051 505	Female part C friction-grip complete
	051 506	Female part C retention-grip complete
	050 212	Friction-grip cone O adjustable
	051 016	Friction-grip cone O adjustable
	050 214	Retention-grip cone O adjustable
	051 018	Retention-grip cone O adjustable
	050 256	Mounting screw X
	050 255	Occlusal screw O
	050 253	Female part C
	050 254	Cone O with antirotation cam
	070 155	Transfer jig
	070 383	Transfer jig
	072 499	Duplicating aid G
	072 498	Duplicating aid G
	070 129	Parallelometer insert for male part
	070 485	Parallelometer insert for male part
	070 319	Activator/Deactivator
	070 259	Activator/Deactivator
	070 260	Socket key for cones
	070 204	Extractor for cone
30.09.2023		Cylindrical Slide Attachment
	050 117	Male part C
	070 110	Parallelometer insert

Delivered until	Order No.	
30.09.2023		Dalbo® Certain®
	0500 0449	Dalbo® Certain® Abutment Ø 4.1mm, H2
	0500 0451	Dalbo® Certain® Abutment Ø 4.1mm, H4
	0500 0452	Dalbo® Certain® Abutment Ø 4.1mm, H6
30.09.2023		Mini-SG® Hinge
	055 848	Female part T
	055 847	Female part D
	055 799	Hinge inserts G orange Delivery unit: package of five
	055 800	Hinge inserts G violet Delivery unit: package of five
30.09.2023		Mini-SG® V
	055 651	Female part V complete
	055 519	Locking screw T
	055 676	Sealing lid V
	055 648	Fixation screw X
	072 604	Special screwdriver
	072 610	Reamer
30.09.2023		Plastic-Roach
	051 997	Female part D complete
	051 999	Friction insert G white
	0500 0058	Friction insert G green and blue Delivery unit: package of five
	070 515	Transfer and processing jig
	070 514	Parallelometer insert
	080 363	Parallelometer insert (surveying rod)
30.09.2023		Stepped Eccenter
	052 035	Stepped Eccenter OO
	052 036	Female part O including elastomeric ring
	052 039	Elastomeric ring Delivery unit: package of five
	070 527	Spacer G
	070 524	Transfer jig
	070 137	Parallelometer insert
	070 528	Activator/Deactivator
	070 205	Instrument

Subject to change.
The current list is available online on www.cmsa.ch/dental.

Alloys and materials for attachments and endodontic products

Symbol	Name	Physical properties									Melting range	Mechanical properties CTE (25–500°C)	Hardness HV5 as delivered	0.2% Proof stress (Rp 0.2%)	Thermal treatment				
		Colour	Composition												Self-hardening	Partially self-hardening	Heat treatment after lasering or blazing	Cannot be thermally treated	
			Au %	Pt %	Pd %	Ag %	Cu %	Ir %	Other										
A	Alpa	White	35.00	1.00	10.50	41.00	12.00		In 0.50	880–960 °C	–	(cold-worked 80 %) >230	> 680 Mpa	✓		✓			
C	Ceramicor®	White	60.00	19.00	20.00				1.00	1400–1490 °C	11.9x10 ⁻⁶ K ⁻¹	(cold-worked 15–75 %) >215	> 650 Mpa		✓				
D	Doral	Bright grey	15.00		22.00	49.30	13.70			930–1015 °C	–	(cold-worked 35–65 %) >230	> 600 Mpa	✓		✓			
E	Elitor®	Yellow	68.60	2.45	3.95	11.85	10.60	0.05	Zn 2.50	880–940 °C	–	(cold-worked 30–70 %) >240	> 710 Mpa	✓		✓			
												(warm straightened) >250	> 630 Mpa						
EL	Elasticor®	Bright yellow	61.00	13.50		16.50	9.00			950–1050 °C	–	(cold-worked 25–50 %) >250	> 700 Mpa					✓	
H	HMA 20	White		80.00					20.00	1820–1850 °C	8.9x10 ⁻⁶ K ⁻¹	(cold-worked 50 %) >300	> 920 Mpa	✓					
O	OSV	White	60.00	10.50	6.50	7.00	14.00		Zn 2.00	960–1065 °C	–	(cold-worked 35–50 %) >275	> 850 Mpa	✓					
P3	Protor®	Yellow	68.60	2.45	3.95	11.85	10.60	0.05	Zn 2.50	880–940 °C	–	(annealed) 175	410 Mpa	✓		✓			
V	Valor®	White	10.00	89.00					1.00	1660–1710 °C	9.2x10 ⁻⁶ K ⁻¹	(cold-worked 35–70 %) >240	> 720 Mpa	✓					
Y	Yelor	Pale yellow	75.10		18.85	1.00	0.50	0.05	Sn 2.00 In 2.00 Zn 0.50	1120–1250 °C	14.0x10 ⁻⁶ K ⁻¹	(cold-worked 20–60 %) >220	> 630 Mpa	✓		✓			
	Ancrofil	Yellow	63.00	14.00	14.00	9.00				935–1065 °C	–	(annealed/hardened) 190/290	450/700 N/mm ²			✓			
	Novostil	White	60.00	24.00	15.00				1.00	1400–1460 °C	–	(hardened) 250	800 N/mm ²		✓				

Symbol	Name	Physical properties				Melting range	Mechanical properties
		Colour	Composition				
G	Galak	Various colours	Mouth-resistant plastics Cendres+ Métaux uses various plastics in the attachments as finished parts for polymerization such as glide inserts or auxiliary parts.				
P	Pektkton®	Various colours	Mouth-resistant high-performance polymer Cendres+ Métaux uses this polymer in the attachments as finished parts for polymerization such as glide inserts or auxiliary parts.				
K	Korak	Various colours	Burn-out plastic Cendres+ Métaux uses different plastic brands for its Korak attachments.				
	Santoprene	White	Mouth-resistant plastic Cendres+ Métaux uses various plastics in the attachments for polymerization.				
	Elastomeric ring		Mouth-resistant plastic				
T	Pure Titanium	Grey	Titanium materials according to the standards ASTM F67 (Grade 1 to 4) or ASTM B 348 Grade 1-4 and 36 or ISO 5832-2.			1610 °C	
S	Syntax	Grey	Titanium materials according to the standards ASTM F136 or ASTM B 348 Grade 5 ELI or Grade 23.			1750 °C	Hardness HV5 > 330 0.2% Proof stress (Rp 0.2%) > 795 Mpa
M	Med. steel	White	Material 1.4435 according to the standards DIN 17440 or AISI 316L.				
X	Steel	White	Various materials including: – 1.3243: HSS: high speed steel – 1.3343: HSS: high speed steel according to the standard ISO 4957 – 1.4021: stainless steel (Chronifer®-M-4021) – 1.4034: stainless steel according to the standards AISI 420 or DIN X46Cr13 – 1.4197: stainless steel according to the standard ASTM F-899 Type 420F mod – 1.4305: austenitic stainless steel according to ASTM F-899 Type 303 or DIN EN 10088-3 or ISO 7153-1 – 1.4310: spring steel according to ISO 6931-1 – Sandvik 4C27A or stainless steel according to ASTM F-899 Type 420F				
Z	Zirconia	White	Yttria stabilized zirconia for root posts according to standard ISO 13356. Hardness HV5				Hardness HV5 1200 Compressive strength 2000 Mpa Flexural strength 1200 Gpa Young's Modulus 200 Gpa

Manufacturer data sheets can be requested from Cendres+ Métaux.

Alloys and materials for attachments and endodontic products

Chemical-biological properties		Information on use										Technical hints
Corrosion	Biological test no cytotoxic potential no allergic sensitization	Connexion possibilities										
		Primary part				Secondary part						
		Casting-on	Soldering	Laser welding	Phaser welding	Casting-on	Soldering	Laser welding	Resin-bonding	Polymerization		
1.98 µg/cm ² x 7 d	✓		✓	✓	✓		✓	✓	✓	✓	✓	Heat treatment after lasering or brazing: Annealing: 700 °C 10 min – quench in H ₂ O Hardening: 400 °C 15 min – slow cooling Pickling: in a warm solution of 10 vol. % sulfuric acid (H ₂ SO ₄) Do not pickle with nitric acid (HNO ₃) or hydrochloric acid (HCl)
No ion release detected	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Non-oxdizing alloy Casting-on only with precious alloys Soldering with precious and non-precious alloys
1.07 µg/cm ² x 7 d	✓		✓	✓	✓		✓	✓	✓	✓	✓	Heat treatment after lasering or brazing: Annealing: 800 °C 10 min – quench in H ₂ O Hardening: 400 °C 15 min – slow cooling Pickling: in a warm solution of 10 vol. % sulfuric acid (H ₂ SO ₄) Do not pickle with nitric acid (HNO ₃) or hydrochloric acid (HCl)
3.1 µg/cm ² x 7 d	✓		✓	✓	✓		✓	✓	✓	✓	✓	Heat treatment after lasering or brazing: Annealing: 700 °C 10 min – quench in H ₂ O Hardening: 400 °C 15 min – slow cooling Pickling: in a warm solution of 10 vol. % sulfuric acid (H ₂ SO ₄) Do not pickle with nitric acid (HNO ₃) or hydrochloric acid (HCl)
0.20 µg/cm ² x 7 d	✓								✓	✓		Alloy with high elasticity
No ion release detected	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Non-oxdizing alloy Casting-on and soldering with precious and non-precious alloys
1.3 µg/cm ² x 7 d	✓		✓	✓			✓		✓	✓	✓	No heat treatment after lasering or brazing: Pickling: in a warm solution of 10 vol. % sulfuric acid (H ₂ SO ₄) Do not pickle with nitric acid (HNO ₃) or hydrochloric acid (HCl)
5.2 µg/cm ² x 7 d	✓		✓	✓	✓		✓	✓	✓	✓	✓	Heat treatment after lasering or brazing: Annealing: 700 °C 10 min – quench in H ₂ O Hardening: 400 °C 15 min – slow cooling Pickling: in a warm solution of 10 vol. % sulfuric acid (H ₂ SO ₄) Do not pickle with nitric acid (HNO ₃) or hydrochloric acid (HCl)
No ion release detected	✓	✓	✓			✓	✓		✓	✓	✓	Non-oxdizing alloy Not appropriate for Laser/Phaser welding Casting-on only with precious alloys Soldering with precious and non-precious alloys
1.2 µg/cm ² x 7 d	✓		✓	✓	✓		✓	✓	✓	✓	✓	Heat treatment after lasering or brazing: Annealing: 900 °C 10 min – quench in H ₂ O Hardening: 550 °C 15 min – slow cooling Pickling: in a warm solution of 10 vol. % sulfuric acid (H ₂ SO ₄) Do not pickle with nitric acid (HNO ₃) or hydrochloric acid (HCl)
	✓		✓	✓	✓		✓	✓	✓	✓	✓	
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Non-oxdizing alloy Casting-on only with precious alloys Soldering with precious and non-precious alloys

Information on use	Connexion possibilities	Technical hints
		Not appropriate for casting-on The duplication aid must not be used instead of the female part as a temporary replacement and also must not be placed in the mouth for impression-taking. Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
		Plastic attachment elements for casting with precious metal or non-precious metal alloys The casting alloy must have a 0.2% Proof stress of > 500N/mm ²
		Prevents penetration of resin, guarantees the movement of the lamellae, and facilitates activation
For resin-bonding and polymerization		Not appropriate for casting-on, soldering, laser welding and phaser welding (Exception: laser welding of Dolder® male parts in T)
For resin-bonding and polymerization		Not appropriate for casting-on, soldering, laser welding and phaser welding
For resin-bonding, polymerization and soldering		Not appropriate for casting-on, laser welding, and phaser welding ⚠ Contains nickel
For resin-bonding and polymerization		Not appropriate for casting-on, soldering, laser welding and phaser welding ⚠ Contains nickel
For resin-bonding		Shortening with cooling only Ceramic posts can only be fixed with adhesive cement Zinc-phosphate and glas-ionomer cements are counterindicated

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