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

Attachments
for prosthetic dentistry

5.2014 Digital Edition

CENDRES+ MÉTAUX

Dental

Products on Implants

+ Anchors

Dalbo®-PLUS

Supraradicular, retentive, resilient anchor

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 progressively** 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

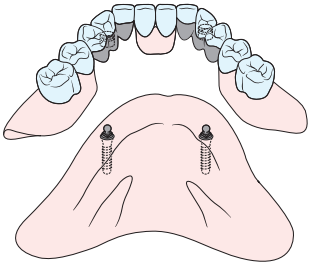
Unilateral dentures without transverse splinting

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

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

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.

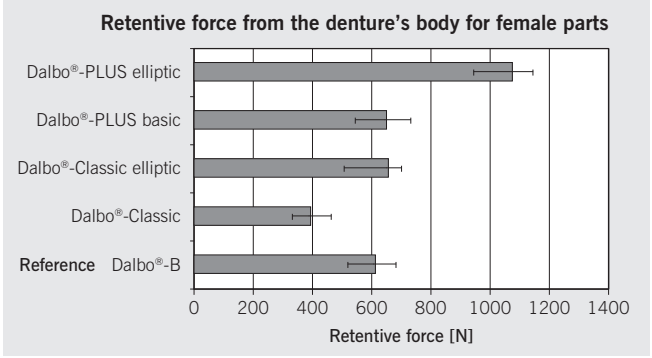
The Tuning lamellae retention inserts

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

Basic version

Duplicating aid

Elliptic version

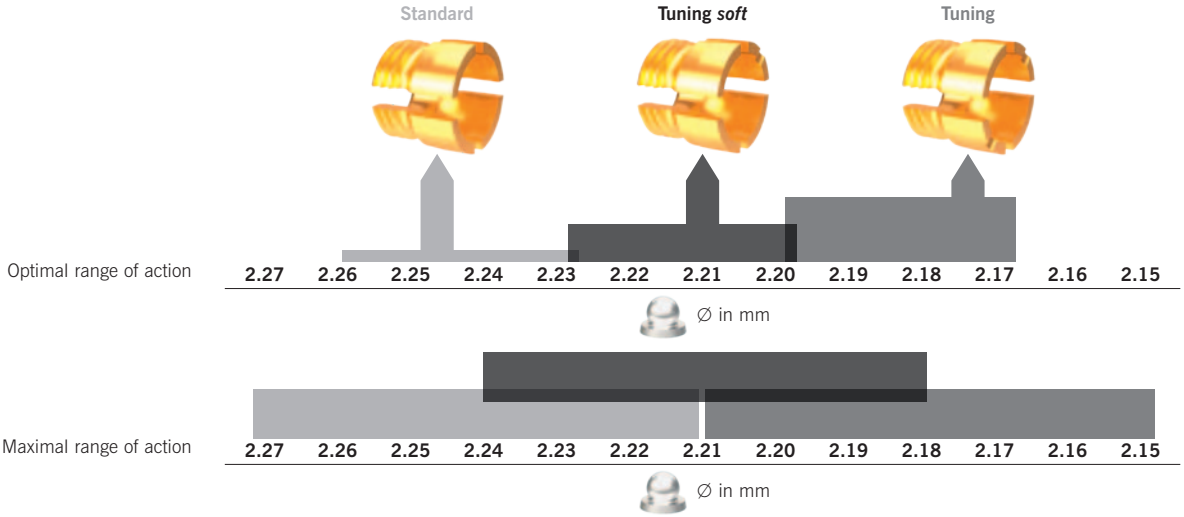


Standard version
(no indentation)

Tuning **soft** version
(1 indentation)

Tuning version
(2 indentations)

Choosing the right retention insert



Dalbo®-PLUS

Male parts

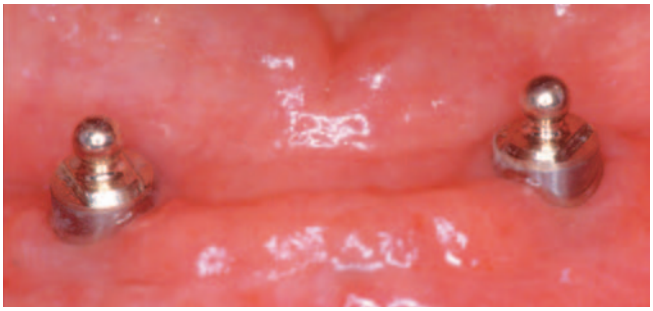
for the root cap therapy, depending on application, two different materials are available. The male part (V) made of Valor®, can be either soldered or directly cast-on to the root cap which saves time. A growing trend is to join the Male part to the root cap by means of laser. A male part especially designed for safe laser welding is available.

Dalbo® Valor® (V) male part

Dalbo® Elitor® (E) laser male part

Ball abutments on implants

It would be hard to imagine the field of implantology without ball anchor systems. They are cost effective, easy to clean for the patient and they usually have a long lifespan. A great number of patients found their quality of life significantly improved by this type of therapy.
The 2.25 mm diameter ball anchor introduced by Cendres+Métaux over 40 years ago has become a benchmark. Several implant systems e.g. Straumann, Nobel Biocare, Camlog, Thommen Medical, Astra Tech, 3i and many more are compatible with our Dalbo® ball anchor system. We recommend the female part with elliptical shape for direct (chairside) integration.

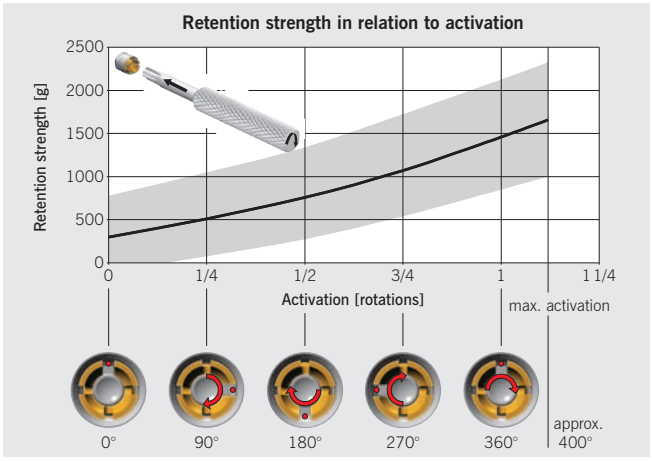


Treatment carried out by:
Christophe Rignon-Bret (DCD, MS, PhD, Associate Professor),
Jean-Marie Rignon-Bret (DCD, DSO, DEO, Professor, Head of Prosthetic Department).
René Descartes University, Paris 5, France

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. 072609) clockwise and deactivated by rotating it counter clockwise. The highest level of activation is obtained after one and a half clockwise rotations.

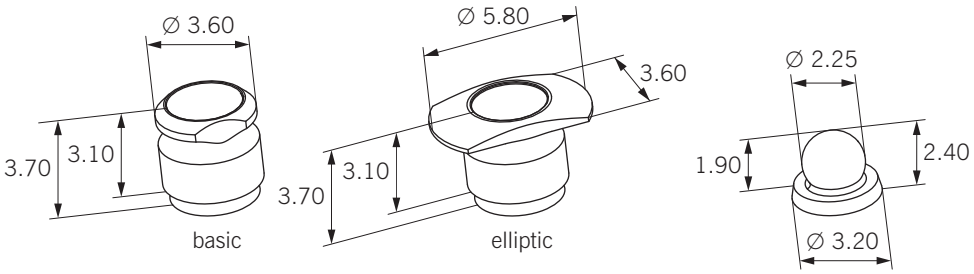
Activation: the «Zero Position» corresponds when the lamellae retention insert is flush with the opening of the housing. The retention strength increases by approx. 200 g with each ¼ rotation (see diagram).
If needed, the lamellae retention insert can be exchanged, or in case of advanced wear of the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



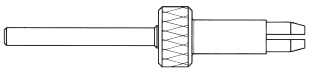
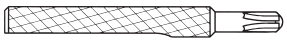
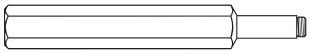
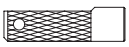
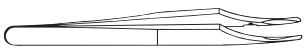
NEW:

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



1:1	Order No. ID No.	Complete parts	Description
	055750 43.04.8 TEV	Dalbo®-PLUS TEV basic	
	055889 43.04.9 TEV	Dalbo®-PLUS TEV elliptic	
1:1		**Single parts**	
Standard	055752	Female part TE basic complete	For polymerizing into the denture resin (not intended for soldering), adjustable. Delivery includes duplicating aid.
	055890	Female part TE elliptic complete	For the direct (chairside) fixation into the denture, adjustable.
	055643	Lamellae retention insert E	For screwing into the housing

1:1			**Single parts**	
Tuning soft		05000214	Tuning female part soft TE basic complete	For polymerizing into denture resin (not intended for soldering), adjustable. Delivery includes duplicating aid.
		05000215	Tuning female part soft TE elliptic complete	For the direct (chairside) fixation into the denture, adjustable.
		05000068	Tuning lamellae retention insert soft E	For screwing into the housing
Tuning		055771	Tuning female part TE basic complete	For polymerizing into denture resin (not intended for soldering), adjustable. Delivery includes duplicating aid.
		055891	Tuning female part TE elliptic complete	For the direct (chairside) fixation into the denture, adjustable.
		055687	Tuning lamellae retention insert E	For screwing into the housing
		050394	Spacer disc Z	Provides for vertical resilience if required. Do not use it in the mouth.
		055647	Male part V	Can be cast-on or soldered to the root cap Cannot be laser-welded!
		055921	Laser male part E	Special male part for the laser welding technique featuring thicker and larger base plate
1:1			**Auxiliary parts**	
		055760	Female part housing basic	Without lamellae retention insert
		055886	Female part housing elliptic	Without lamellae retention insert
		072626	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.
		070157	Transfer jig	For master model
1:1			**Auxiliary instruments**	
		072637	Special parallelometer insert	For easier mounting of the male part
		072609	Screwdriver/Activator	For screwing in and activating the lamellae retention insert
		072639	Heating rod	For removal of the housing from the denture resin
		07000026	Gauge set	Includes: Male part gauge (07000027) Female part gauge (07000024) Lamellae retention insert (055643) Tuning lamellae retention insert **soft** (05000068) Tuning lamellae retention insert (055687) Screwdriver/Activator (072609)
		07000027	Male part gauge	For testing the retentive force in the denture, outside of the patient's mouth
		07000024	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				
		070222	Attachment tweezers	
		010903	Laser welding wire E	Filler material for the laser welding technique (Ø 0.40 mm, length 200 mm)

Materials: T = Pure titanium
E = Elitor® Yellow precious metal alloy.

Dalbo®-PLUS female part and Dalbo® Certain® Abutment

Abutment for the Dalbo®-PLUS on the Osseotite® Certain® Platform

Characteristics

– The most used overdenture attachment based on the proven, well known ball principle designed by Dr. Dalla Bona.

– Easily exchangeable lamellae retention inserts.

Processing advantages

– Individually adjustable retention in seconds.

– Compensation of implant divergence up to 35°.

Clinical advantages

– The denture retention force can be adjusted easily and progressively during the treatment to suit the patient's individual requirements.

Indications

Removable, rigid or resilient retained restorations supported on implants **placed as parallel as possible** and fully incorporated in the bone (essential to follow the instructions for BIOMET 3i™): Hybrid dentures, transverse splinted unilateral free-end dentures as well as insertion/free-end dentures.

Contraindication

– Implant divergences of more than 15°
– 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

Licensed for the following types of implant system BIOMET 3i™ with internal connection:
– Certain® PREVAIL™ 4.1 mm (D) (Order No. IIOS4585, IIOS4510, IIOS4511, IIOS4513 and IIOS4515).
– OSSEOTITE® Certain® 4.1 mm (D) (Order No. IOSS485, IOSS410, IOSS411, IOSS413, IOSS415, IOSS418, IOSS420, IFOS485, IFOS410, IFOS411, IFOS413 and IFOS415).
– OSSEOTITE® NT Certain® 4.1 mm (D) (Order No. INT485, INT410, INT411, INT413, INT415, IFNT485, IFNT410, IFNT411, IFNT413 and IFNT415).

Real compensation of implant divergence

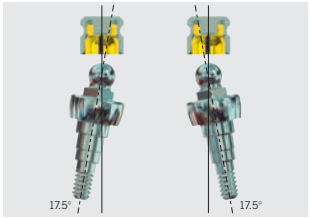
Diverging implants/abutments can be compensated up to 35° (activated Dalbo®-PLUS). Thanks to the gold lamellae retention insert, durable denture retention[1] is ensured.

[1] (Ludwig K.; Kern M.; Hartfill H.: Analysis of the wear of ball attachments with 50'000 fitting-withdrawal cycles in a water bath and eccentric end loading. Quintessenz Journal of Dental Technology, 02/2006).

Limitation of use

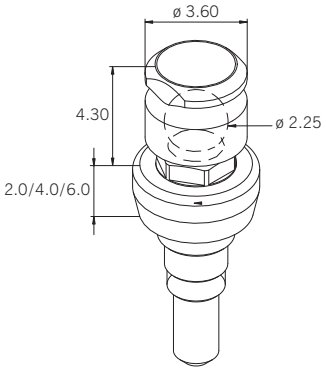
Partial dentures without transverse bracing
Implant divergences of more than 17.5°

Abutment with mounted Dalbo®-PLUS female

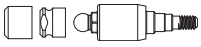


Compensation of divergences up to 35°

Sales program

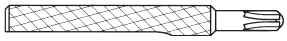
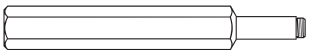
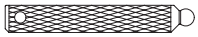


1:1

	Order No. ID No.	Complete parts Consisting of: Dalbo®-PLUS female part and Dalbo® Certain® Abutment	Description
	0500 0449	Dalbo® Certain® Abutment Ø 4.1 mm, height 2 mm complete	Incl. mounted lamellea retention insert Standard E, and duplicating aid G.
	0500 0451	Dalbo® Certain® Abutment Ø 4.1 mm, height 4 mm complete	Incl. mounted lamellea retention insert Standard E, and duplicating aid G.
	0500 0452	Dalbo® Certain® Abutment Ø 4.1 mm, height 6 mm complete	Incl. mounted lamellea retention insert Standard E, and duplicating aid G.

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®-PLUS female part and Dalbo® Certain® Abutment

1:1			
		Single parts	
	055643	Lamellae retention E	Standard. For screwing into the housing.
	0500 0068	Tuning lamellae retention insert soft E	Tuning Soft. For screwing into the housing.
	055687	Tuning lamellae retention insert E	Tuning. For screwing into the housing.
	050394	Spacer disc Z	Assures vertical resilience if required. In order to compensate the denture drop **two** spacer discs are needed! Do not use it in the mouth.
1:1		**Auxiliary parts**	
	072626	Duplicating aid / spacer G	Duplicating aid. The duplication aid must not be used instead of the femalecpart as a temporary replacement and also must not be placed in the mouth for impression-taking.
1:1		**Auxiliary instruments**	
	072609	Screwdriver / Activator	For screwing in and activating the lamellae retention insert.
	072639	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.
		Available from BIOMET 3i™:	
	PADO1	O-Ring/Dal-Ro screwdriver	
	RAOR1	O-Ring/Dal-Ro driver tip for torque ratchet	
	RTI2035K	Torque ratchet	
	DRLAU	Dal-Ro Laboratory analogue	For indirect method
	IIIC41	Pick-Up impression coping 4.1 mm	
	PHD02N	Hex screwdriver 17 mm	
	IILA20	Certain® Implant Lab Analogue 4.1 mm	

Dalbo®-Classic

Supraradicular, resilient and retentive anchor

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

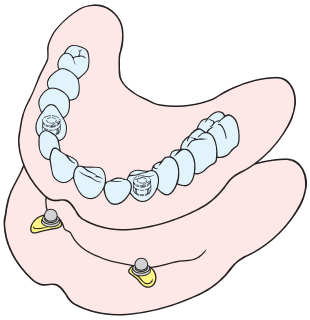
Unilateral dentures without transverse splinting

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.



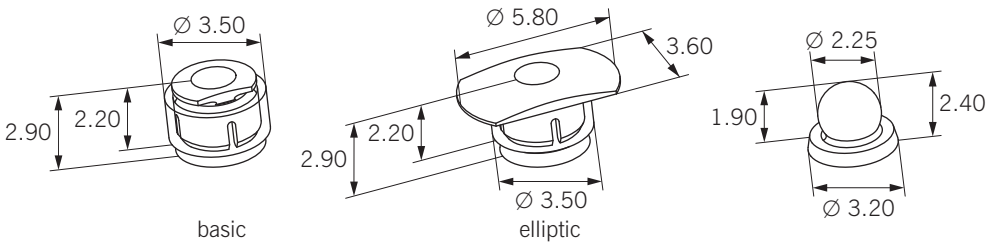
Dalbo®-Classic basic

Dalbo®-Classic elliptic

Dalbo® male part

Dalbo® laser 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.

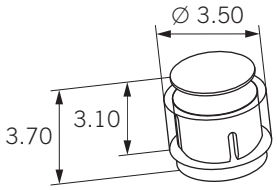


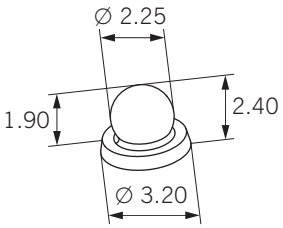
1:1	Order No. ID-No.	Complete parts	Description
	055689 43.02.5 EV **055701** 43.02.5 EK	Dalbo®-Classic EV basic Dalbo®-Classic EK basic	
	055892 43.02.6 EV **055893** 43.02.6 EK	Dalbo®-Classic EV elliptic Dalbo®-Classic EK elliptic	
1:1		**Single parts**	
	055698	Female part E basic	For polymerizing into denture resin (not intended for soldering), adjustable. Delivery includes elastomeric ring (055688) and spacer disc (050394).
	055887	Female part E elliptic	For the direct (chair side) fixation into the denture (not intended for soldering), adjustable. Delivery includes elastomeric ring (055688) and spacer disc (050394).
	055688	Elastomeric ring	
	050394	Spacer disc Z	Tin, provides for vertical resiliency. Only for lab use. Do not use it in the mouth.
	055647	Male part V	Casting-on or soldering. Cannot be laser-welded!
	055921	Laser male part E	Special male part for the laser welding technique featuring thicker and larger base plate
	055330	Male part K	
1:1		**Auxiliary parts**	
	072625	Spacer G	Here the spacers generally replace the anchor female parts during resin-polymerization in the dental laboratory.
	070157	Transfer jig	For master model
1:1		**Auxiliary instruments**	
	070205	Instrument	For fitting the elastomeric ring
	072637	Special parallelometer insert	For easier mounting of the male part
1:3			
	070197	Activator	
	070199	Deactivator	
	070222	Attachment tweezers	Facilitates the separation and mounting of the anchor
	010903	Laser welding wire E	Filler material for the laser welding technique (Ø 0.40 mm, length 200 mm)

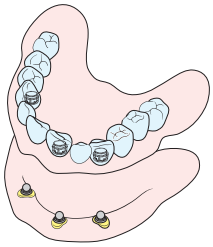
Materials: E = Elitor® Yellow precious metal alloy.
V = Valor® Non-oxidizing, palladium-free, copper-free, precious metal alloy for casting-on. Cannot be laser-welded!

Dalbo®-B

Supraradicular, resilient and retentive anchor
Dr. Dalla Bona







1:1	Order No. ID-No.	Complete parts	Description
	050427 43.02.8EE **055331** 43.02.8EK	Dalbo®-B EE Dalbo®-B EK	
1:1		**Single parts**	
	051511	Female part E	For polymerizing into denture resin (not intended for soldering), adjustable. Delivery includes elastomeric ring (051005) and spacer disc (050394).
	051005	Elastomeric ring	
	050394	Spacer disc Z	Tin, provides for vertical resiliency. Only for lab use. Do not use it in the mouth.
	050423	Male part E	For soldering onto cast root cap
	055330	Male part K	
1:1		**Auxiliary parts**	
	070440	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.
	070157	Transfer jig	For the master model
1:1		**Auxiliary instruments**	
	070131	Parallelometer insert	For positioning of the male parts
	070205	Instrument	For fitting the elastomeric ring
1:3			
	070197	Activator	
	070199	Deactivator	
	070222	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.

+ Bars

SFI-Bar®

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

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 2 x 2 implants **Upper jaw:** Connecting 2 x 2 implants in the anterior/premolar region	**Lower jaw:** Connecting 4 implants **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. 35 Ncm.
– All parts are sterilised or disinfected.
– Pull-off strength during osseointegration < 20 N.
– 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):

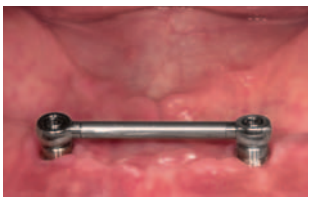
SFI-Bar® 2-Implant in the lower jaw
SFI-Bar® for 2 x 2-Implant in the upper and lower jaw
SFI-Bar® 4-Implant in the lower jaw, provided the minimum implant distance is > 10 mm and the patient is suitable for lengthy intraoral work. It is imperative to read and follow the handling instructions.

Contraindications

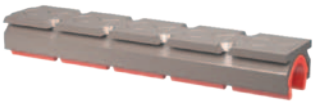
– Immediate loading SFI-Bar® in the upper jaw.
– Female part T with replaceable retention inserts G on SFI-Bar® 2-Implant.
– SFI-Bar® 4-Implant in the upper jaw, applied directly in the patient's mouth.
– Extension of the bar superstructure.
– Implant spans < 8 mm, > 26 mm.
– Implant divergences > 15°.
  (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

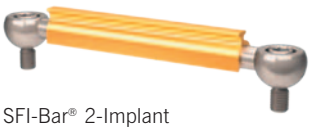
Two new, ingenious female part designs with patent pending! The **milled female part asymmetrical E in Elitor®** is manufactured from a **high-quality, tough,** yellow precious metal alloy. The **asymmetrical** design of the retention for the denture acrylic allows customized, **space-saving** placement on the bar male part that is **perfect for the aesthetics.**
A maximum of 12 x 3.5 mm long retention inserts can be placed on the female part T in **pure titanium.** Guide grooves every 3.5 mm 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

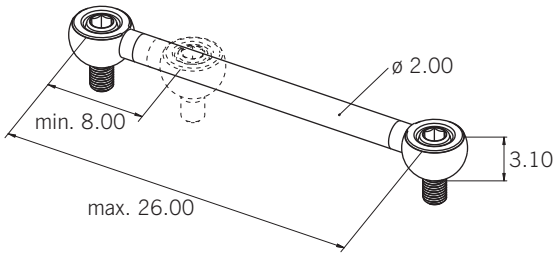
SFI-Bar® 4-Implant

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

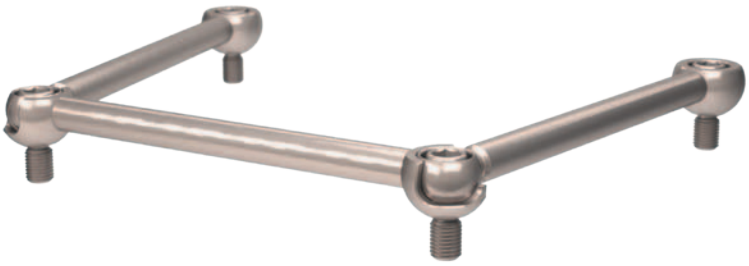
Description of the different versions

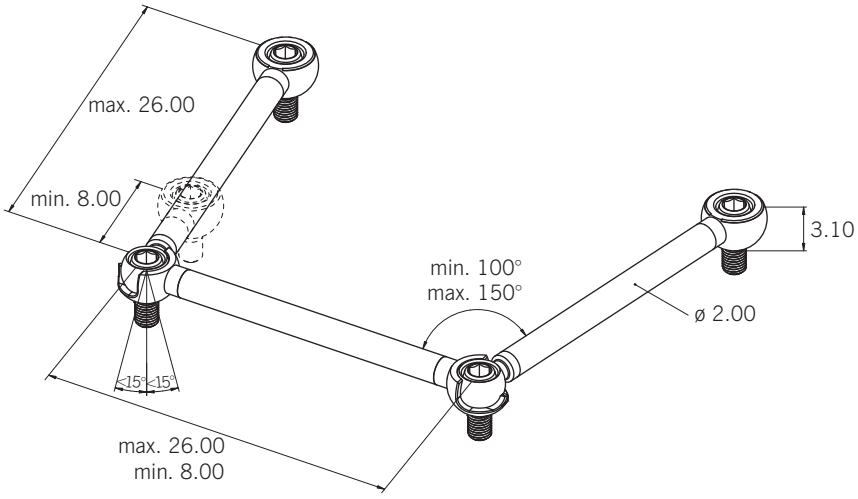
The SFI-Bar® 2-Implant and 4-Implant are the standard versions. These can be upgraded with the SFI-Bar® Add-on Kit (Order No. 0500 0668) to solutions for 3, 5 and 6 implants. The Implant span may range from a minimum of 8 mm (tube bar length 2 mm) to a maximum of 26 mm (tube bar length 20 mm). It can be taken intraorally or on the model with the tube bar gauge (Order No. 0700 0053). This instrument can also be used as a holder when shortening the tube bar – ingeniously simple!

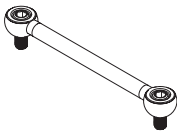
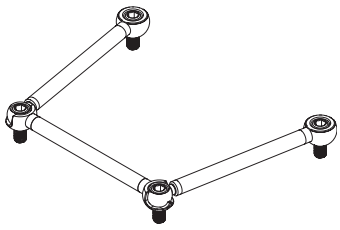
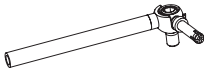
SFI-Bar® **2-Implant** with tube bar that can be shortened as required



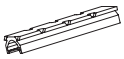
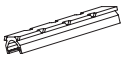
SFI-Bar® **4 implant** with tube bar that can be shortened as required

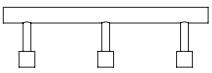


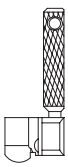
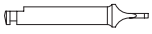
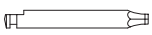
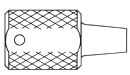


1:1	Order No.	Complete parts	Description
	0500 0337	2-Implant	Including: 2 large ball joints (0500 0383) 2 fixation screws (0500 0386) 1 tube bar (0500 0382) Without implant adapter!
	0500 0338	4-Implant	Including: 2 large ball joints (0500 0383) 2 small ball joints (0500 0384) 2 half-shell balls (0500 0385) 4 fixation screws (0500 0386) 3 tube bars (0500 0382) Without implant adapter!
	0500 0668	Add-on Kit	Upgrade-Set, including: 1 small ball joint (0500 0384) 1 half shell ball (0500 0385) 1 fixation screw (0500 0386) 1 tube bar (0500 0382)
	0500 0337 + 0500 0668 0500 0338 + 0500 0668 0500 0338 + 2 x 0500 0668		For 3 Implants For 5 Implants For 6 Implants

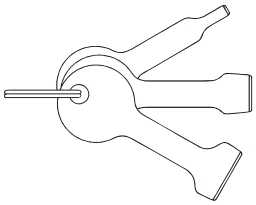
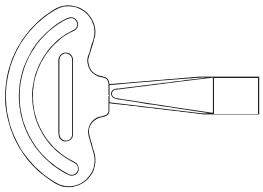
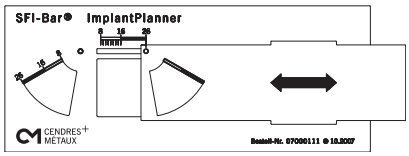
SFI-Bar®

1:1	Order No.	Single parts	Description
	05000344	Female part asymmetrical E L30	For polymerization into denture resin
	05000358*	Female part T complete L47.5	For polymerization into denture resin
	05000387	Female part housing T L47.5	Without retention inserts! For polymerization into denture resin
		Retention inserts G	**Delivery unit:** package of 6
	05000388	Yellow	Smooth friction
	05000389	Red	Normal friction
	05000390	Green	Strong friction
	05000382	Tube bar S L20	Can be individually shortened to a maximum of 2 mm.
	05000386	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.
	05000383	Large ball joint S	For SFI-Bar® 2-Implant and SFI-Bar® 4-Implant
	05000384	Small ball joint S	For SFI-Bar® 4-Implant, application combined with half shell ball (05000385)
	05000385	Half shell ball S	For SFI-Bar® 4-Implant, application combined with small ball joint (05000384)
		Implant adapter S	Up-to-date information on available implant systems, the corresponding lenghts and torques can be found under www.sfi-bar.com.

1:1		**Auxiliary parts**	
	052082	Spacer	Tin, ensures vertical resilience. Mount between female part and bar during polymerization.
	07000107	Transfer jig L26	For master model

1:1		**Auxiliary instruments**	
	07000106	Tube bar gauge	For determining the exact length of the tube bar in the mouth. Can be used as a bracket while cutting.
	07000100	Gauge aid	Replacement part for tube bar gauge
	07000114	Screwdriver	For implantat adapter
	07000115	Hex key	For fixation screw
	070221	Thomas spanner key	For screwdriver and hex key
	07000036	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
	070198	Activator set	For female parts Elitor®
	070201	Desactivator macro	For female parts Elitor®
1:3			
	070347	Tweezers	For removing of the retention inserts
	07000111	ImplantPlanner	For approximate planning of implant positions
	07000108	Instrument set	Including: 07000114 Screwdriver 07000115 Hex key 070221 Thomas spanner key 07000107 Transfer jig L26 07000106 Tube bar gauge 07000100 Gauge aid 07000036 Insert positioner 07000111 ImplantPlanner 070347 Tweezers 070198 Activator set 070201 Desactivator macro Sample Premium Disc No. 1, 3 pieces
	07000109	Torque wrench set	Including: Torque wrench (available in the set only) 07000095 Tube lubricant 07000098 Dismantle tool
	08000101	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** prefabricated 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

– Allergies or hypersensitivity to the chemical constituents of the materials used. See section «Materials used».
– 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 12 x 3.5 mm long friction inserts. Guide grooves every 3.5 mm 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)

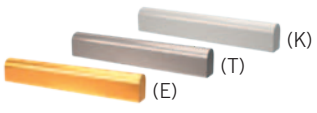
Execution in Doral (D)

Execution in pure titanium (T)

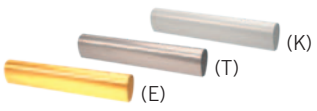
Female parts **«Comfort»:**

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

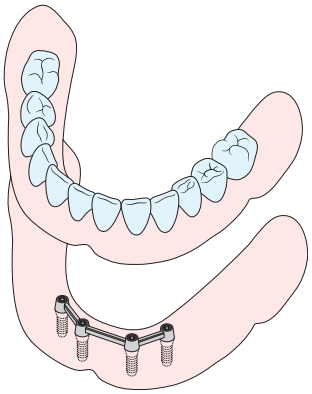
When there is the option of using either size, i.e. **micro** or **macro,** the larger version should be used if there is adequate space.

Reducing the female part

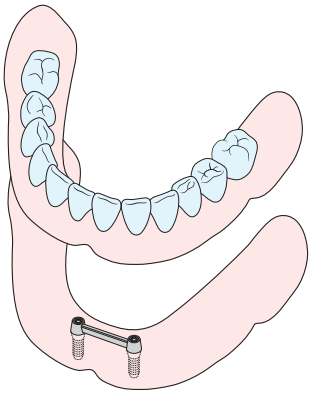
Friction inserts

Micro female part in titanium with replaceable friction inserts

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 bar attachment



Example of use resilient bar

Space-saving in any situation!

«Asymmetrical» «Standard»

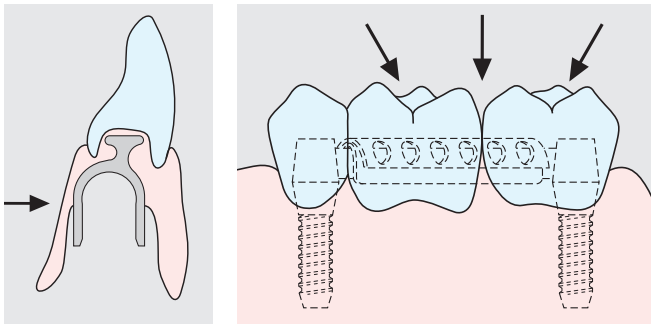


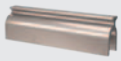
Fig. 2
The asymmetrical female part retention allows more space for the tongue. The «Standard» design optimizes shaping of the occlusion. The two concepts can be combined.

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:

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

Legend: ideal combination recommended not recommended

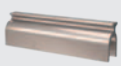
Dolder® resilient bar

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

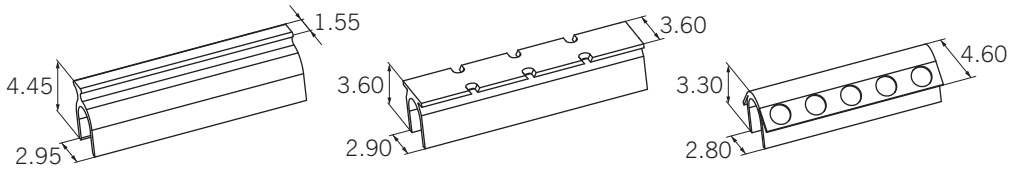
Combinations chart:

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

Legend: ideal combination recommended

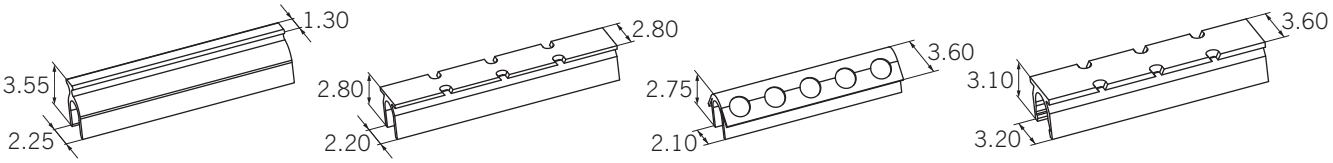
Dolder® System

Bar attachment
Female part **macro**

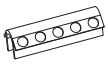
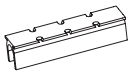
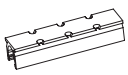


Asymmetrical (E and T) | Standard (T) | Standard (E and D)

Female part **micro**

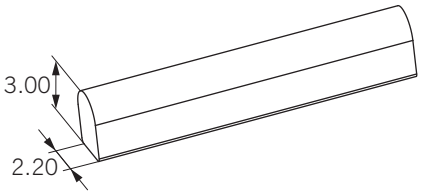


Asymmetrical (E and T) | Standard (T) | Standard (E and D) | Comfort (with friction inserts)

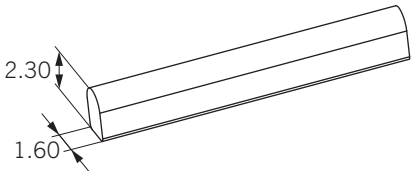
1:1	Female part	Order No. macro	Order No. micro	Material	Lengths (mm)	Description
		054747 052046 0500 1125	054746 052043 0500 1201	E E D	L25 L50 L50	**Standard** For polymerization into denture resin or metal framework (no soldering). Adjustable
		0500 0683	0500 0682	E	L30	**Asymmetrical** For polymerization 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
						Friction inserts. **Delivery unit:** package of six
			0500 0394	G	L 3.5	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**

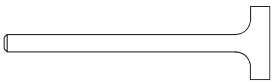
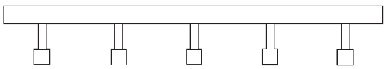
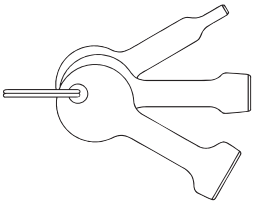
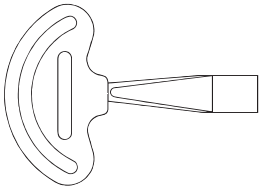


Male part **micro**



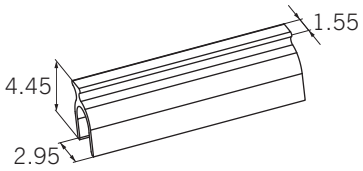
Profile

1:1	Male part	Order No. macro	Order No. micro	Material	Lengths (mm)	Description
		055743 052053 052054	05000288 05000289 05000290	E E E	L25 L50 L200	For soldering and laser welding to cast root caps or between crowns, bridges, implants or screw-retained attachments
		05000570 05000571	05000284 05000285	T T	L50 L200	For laser welding to retaining cores in titanium
		05000559	05000266	K	L75	Performed part. **Delivery unit:** package of two
		01000081		Wire T for laser welding		Pure titanium wire ∅ 0.40 mm round, roll of 2 m

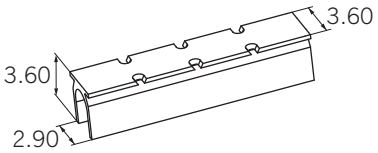
1:1	Order No.	Auxiliary instruments	Description
	070143	Parallelometer insert micro	
	070144	Parallelometer insert macro	
	07000034	Insert-positioner micro	For insertion of inserts
1:3			
	070347	Tweezers	For extraxtion of inserts
1:1		**Auxiliary parts**	
	070171 070173	Transfer jig micro L50 Transfer jig macro L50	
1:2		**Auxiliary instruments**	
	070198	Activator set	For female parts E
	070200 070201	Desactivator micro Desactivator macro	For female parts E

Dolder® System

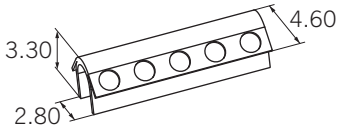
Resilient bar
Female part **macro**



Asymmetrical (E and T)

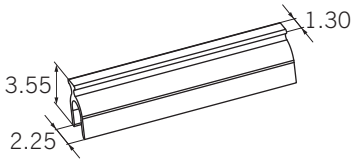


Standard (T)

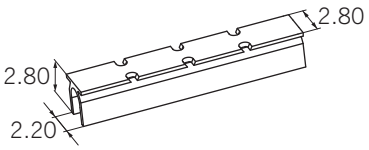


Standard (E and D)

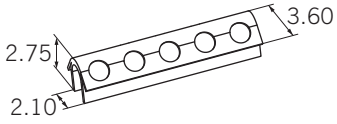
Female part **micro**



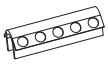
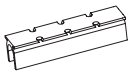
Asymmetrical (E and T)



Standard (T)

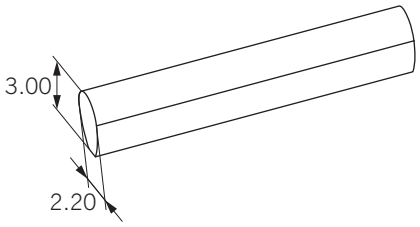


Standard (E and D)

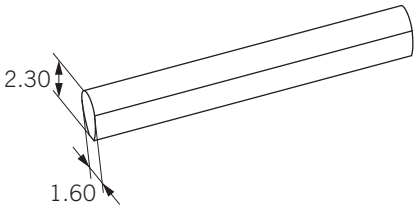
1:1	Female part	Order No. macro	Order No. micro	Material	Lengths (mm)	Description
		054747 052046 0500 1125	054746 052043 0500 1201	E E D	L25 L50 L50	**Standard** For polymerization into denture resin or metal framework (no soldering). Adjustable
		0500 0683	0500 0682	E	L30	**Asymmetrical** For polymerization 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

Resilient bar

Male part **macro**

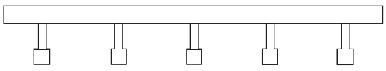


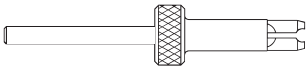
Male part **micro**



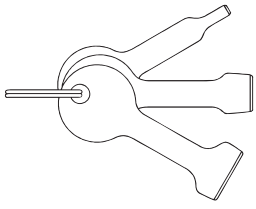
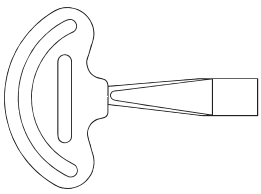
Profile

1:1	Male part	Order No. macro	Order No. micro	Material	Lengths (mm)	Description
		054748 052061 052062	054749 052057 052058	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 ∅ 0.40 mm round, roll of 2 m

1:1	Order No.	Auxiliary parts	Description
	052080 052081	Spacer micro 50 x 0.75 mm macro 50 x 1.05 mm	Brass, ensures vertical resilience. Mount between female part and bar during polymerization Is automatically supplied when ordering the bar
	070171 070173	Transfer jig micro L50 Transfer jig macro L50	

1:1		Auxiliary instruments	
	072515 072517	Parallelometer insert micro Parallelometer insert macro	

1:2

	070198	Activator set	For female parts E
	070200 070201	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

– Allergies or hypersensitivity to the chemical constituents of the materials used. See section «Materials used».
– 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)

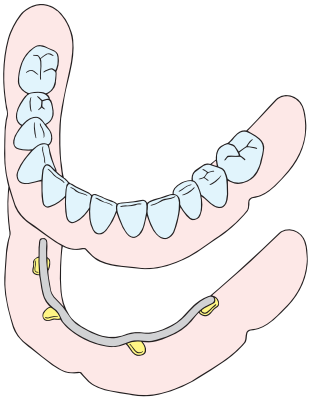
Female part E (length 3.5 mm) with retainers for the retention in the resin denture. The female part must not be retreated (exception: unique bending of the retainers with caution).
Female part E L50 (length 50 mm) with retainers formed like a swallow tail. It can be cut individually to the length of 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.

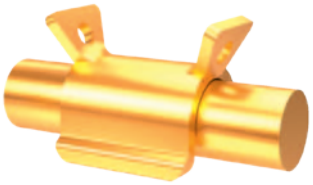
Limitation of use

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.

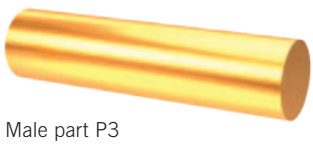




Round bar with rider

Female part E (rider)

New: Female part E L50 (rider)

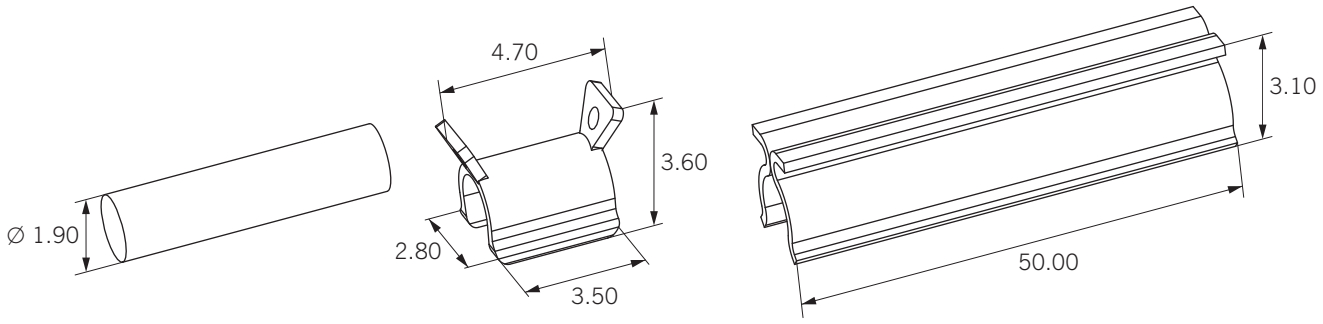


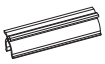
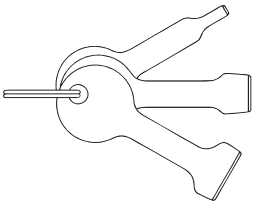
Male part P3

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.

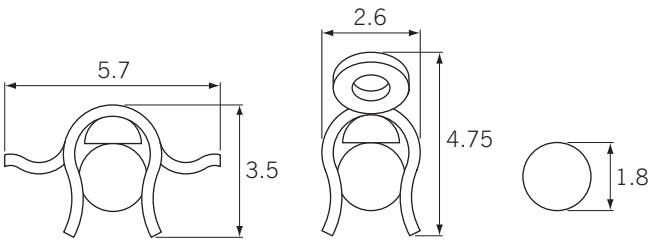
Round bar with rider



1:1	Order No.		Single parts	Description
	050527 055801		Female part E	Adjustable rider **Delivery unit:** package of five
	0500679		Female part E L50	Adjustable rider, can be cutted individually.
	052082 052084 052085	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
	052030 052029 052028	50 mm 100 mm 200 mm	Male part P3	Round bar for soldering
	055881	75 mm	Male part K	Burnout plastic **Delivery unit:** package of two
1:1			**Auxiliary part**	
	072293		Transfer jig	For master model
1:2			**Auxiliary instruments**	
	070198		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 1.8 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
– Allergies or hypersensitivity to the chemical constituents of the materials used. See section «Materials used».
– 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.