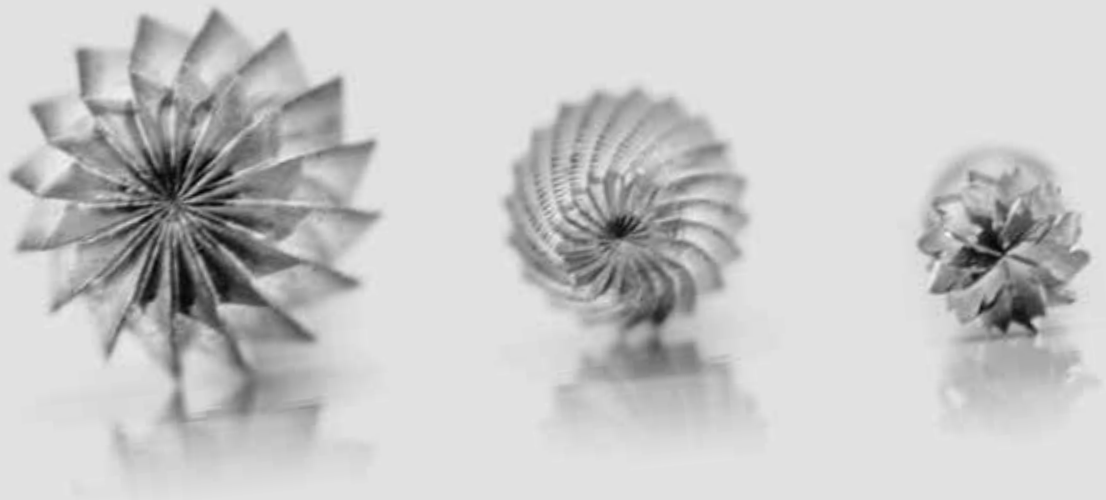
B.O.P.T. TECHNIQUE

Dr. Ignazio Loi



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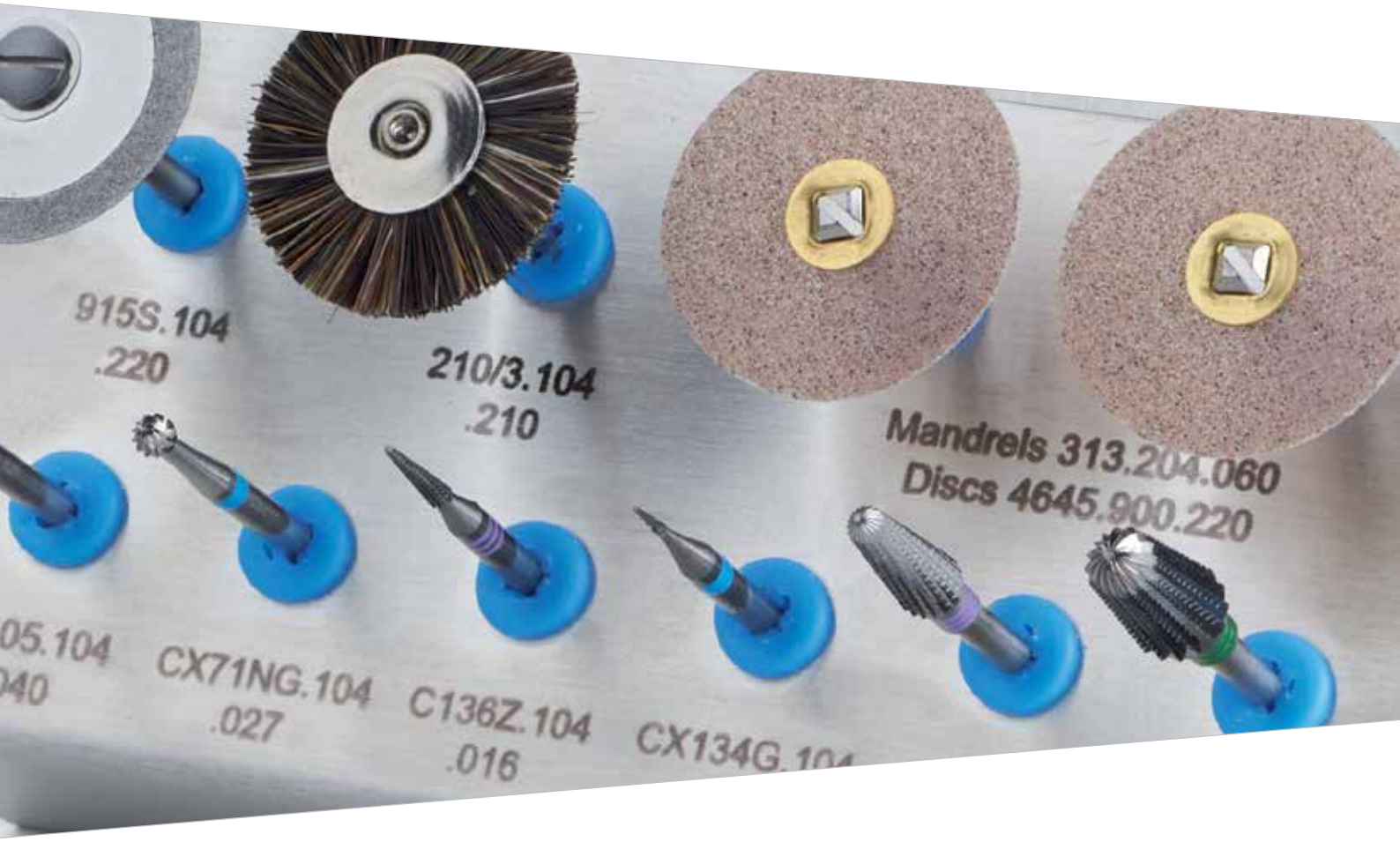

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Preparation Drills

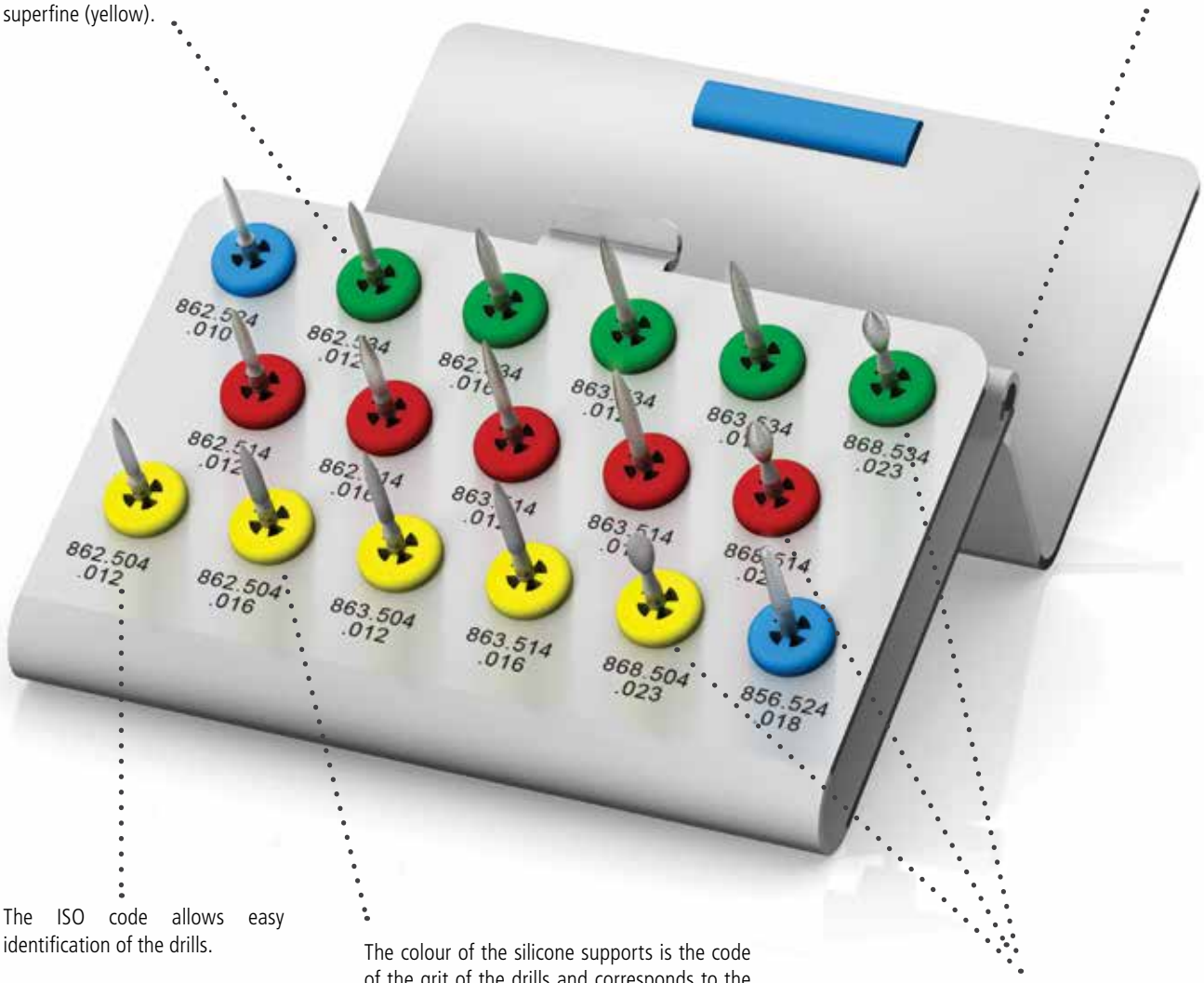
B.O.P.T. Technique (Biologically Oriented Preparation Technique) by dr. Ignazio Loi

Diamond drills for the biologically oriented vertical preparation of theet.

The B.O.P.T. Technique consists of the vertical preparation of the tooth to allow soft tissues to adapt to the desired prosthetic contours.
This prosthetic protocol is known as B.O.P.T. or Biologically Oriented Preparation Technique, indicating that it is the tissues themselves that adapt naturally to the preparation and the restoration.
The technique, supported by Dr. Loi's long clinical experience, has demonstrated medium- and long-term stability of the tissues.
This selection of diamond drills allows the performance of all the clinical steps for the preparation of teeth, from mesiodistal separation of adjacent teeth to preparation of all profiles, according to the B.O.P.T. Technique.
The assortment includes 17 diamond drills with different shapes and grits, the morphology of which allows them to work without making grooves indentations or unevenesses that would prevent the correct and natural adaptation of the mucosa. The different grits allow gradual polishing of the tooth so as to obtain an optimum surface finish.
Together with the assortment of drills a practical stainless steel holder is supplied, which is sterilisable and autoclavable and allows the instruments to be ergonomically organised.

The drills of the same shape are arranged diagonally in the 3 grits, coarse (green), fine (red) and superfine (yellow).

Once opened, the cover determines the angle of the base of the case, allowing the best ergonomic working position.



The ISO code allows easy identification of the drills.

The colour of the silicone supports is the code of the grit of the drills and corresponds to the coloured ring on the drill shank.

The three different grits in which the preparation drills are available allow perfect smoothing of the tooth so as to guarantee an improved seal after cementing of the crown.

Key to the diamond grit

ring colour	silicone support colour	type	grit in µ
Green	Green	coarse	125
-	Blue	medium	105
Red	Red	fine	40
Yellow	Yellow	superfine	20

Assortment of drills

Images reference codes and descriptions of the products are listed below:

	description	ISO code	ISO Ø	grit	ring colour code
 **FG862/010C**	Flame drill	862.524.010	010	medium	no ring
 **FG862G/012C**	Flame drill	862.534.012	012	coarse	green
 **FG862M/012C**	Flame drill	862.514.012	012	fine	red
 **FG862FC/012C**	Flame drill	862.504.012	012	superfine	yellow
 **FG862G/016C**	Flame drill	862.534.016	016	coarse	green
 **FG862M/016C**	Flame drill	862.514.016	016	fine	red
 **FG862FC/016C**	Flame drill	862.504.016	016	superfine	yellow

	description	ISO code	ISO Ø	grit	ring colour code
 10.00 **FG863G/012C**	Flame drill	863.534.012	012	coarse	green
 10.00 **FG863M/012C**	Flame drill	863.514.012	012	fine	red
 10.00 **FG863FC/012C**	Flame drill	863.504.012	012	superfine	yellow
 10.00 **FG863G/016C**	Flame drill	863.534.016	016	coarse	green
 10.00 **FG863M/016C**	Flame drill	863.514.016	016	fine	red
 10.00 **FG863FC/016C**	Flame drill	863.504.016	016	superfine	yellow

Assortment of drills

	description	ISO code	ISO Ø	grit	ring colour code
 5.00 **FG868G/023C**	Football drill	868.534.023	023	coarse	green
 5.00 **FG868M/023C**	Football drill	868.514.023	023	fine	red
 5.00 **FG868FC/023C**	Football drill	868.504.023	023	superfine	yellow
 8.00 **FG856/018C**	Tapered drill	856.524.018	018	medium	no ring

	descripción
 **4999**	Stainless steel drill holder

Code **Z4999** refers to complete assortment of one drill of each type and the stainless steel drill holder.

Sequence of use: front teeth

Photos by kind permission of Dr. Ignazio Loi

Before and after

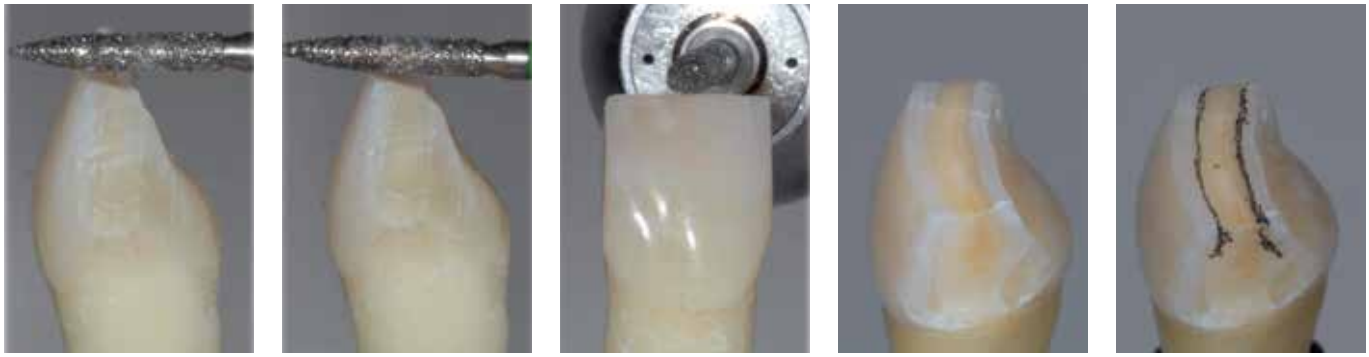
Phase 1

Mesiodistal separation with coarse grit thin flame drill FG862/010C (first three pictures) and mesiodistal preparation with 012 flame drill FG862G/012C (last two pictures).

Phase 2

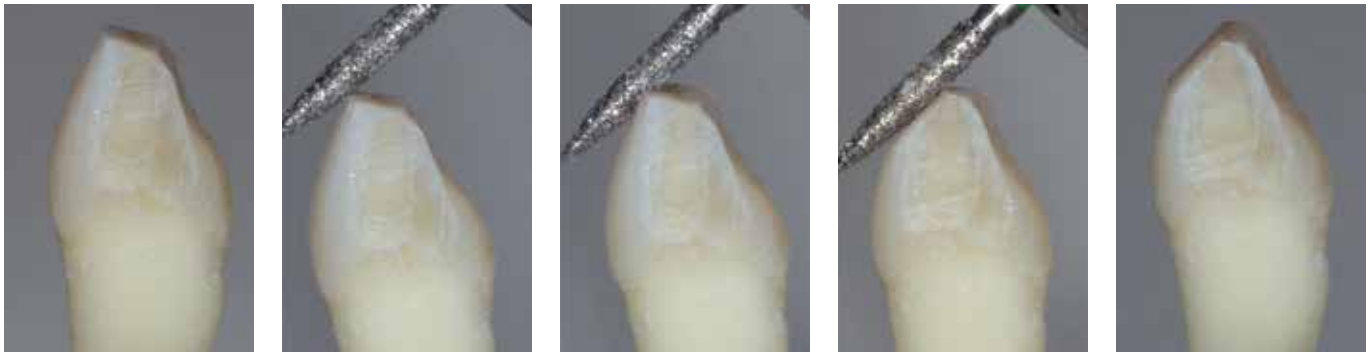
Incisal reduction of about 2 mm with coarse grit flame drill (FG862C/016C) until the border line between enamel and dentin is clearly seen.

Use protocol



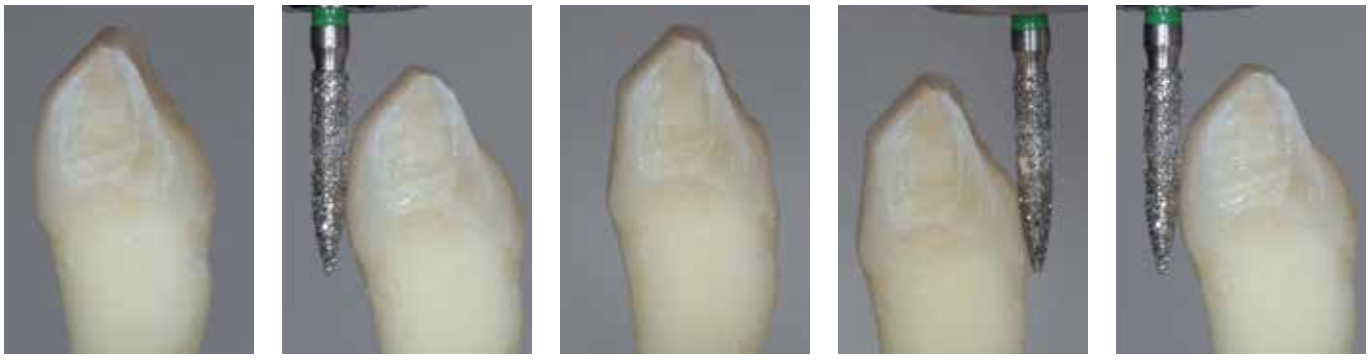
Phase 3

45° inclined vestibular preparation from the incisal edge with the drill FG862G/016C, until the enamel-dentin border line previously exposed is reached.



Phase 4

Vestibular and palatal supragingival axial reduction with the coarse grit drill FG862G/012C or with the drill FG862G/016C. The preparation is kept supragingival to avoid touching the gum. After reduction of the tooth circumference, proceed to phase 5.



Phase 5

Intrasulcular preparation. The drills are shape so as not to leave grooves, indentations or unevenesses that would interfere with the correct adaptation of soft tissues. The drill FG862C/012C is used as a probe, first entering the sulcus with an oblique and not a vertical inclination. This enables the drill to work with its body and not with its tip. In fact the tip could create grooves unevenesses, causing irregularities on the axial walls. Once the tool is entered obliquely, gradually verticalise the drill to align the preparation with the axial plane.









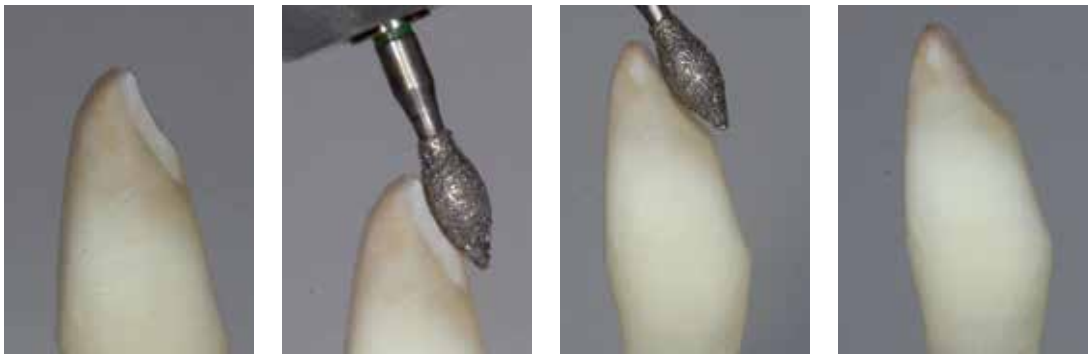




Use protocol

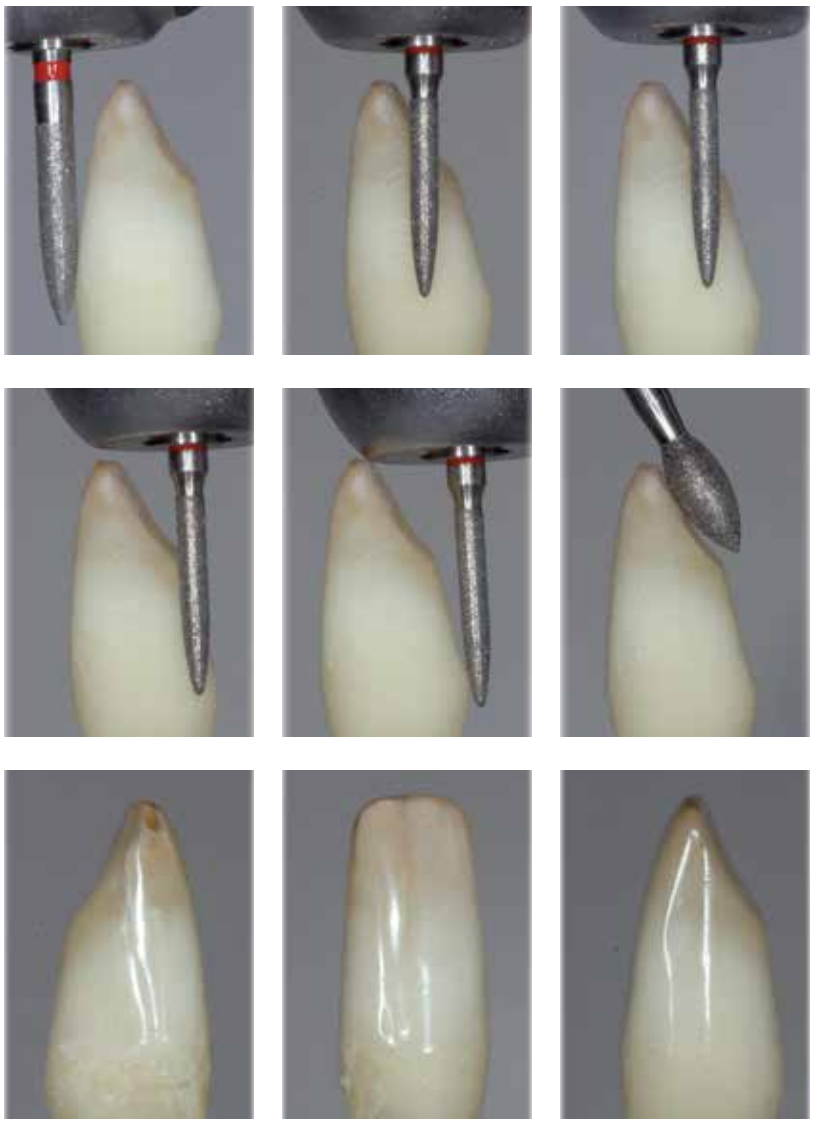
Phase 6

Palatal reduction with the drill FG868C/023C.



Phase 7

Tooth preparation is finished with the red ring coded drills and then if necessary with the yellow ring coded drills. The surface is polished as much as possible in the cervical area where the crown margin will be positioned.



Sequence of use: molars

Photos by kind permission of Dr. Ignazio Loi

Before and after

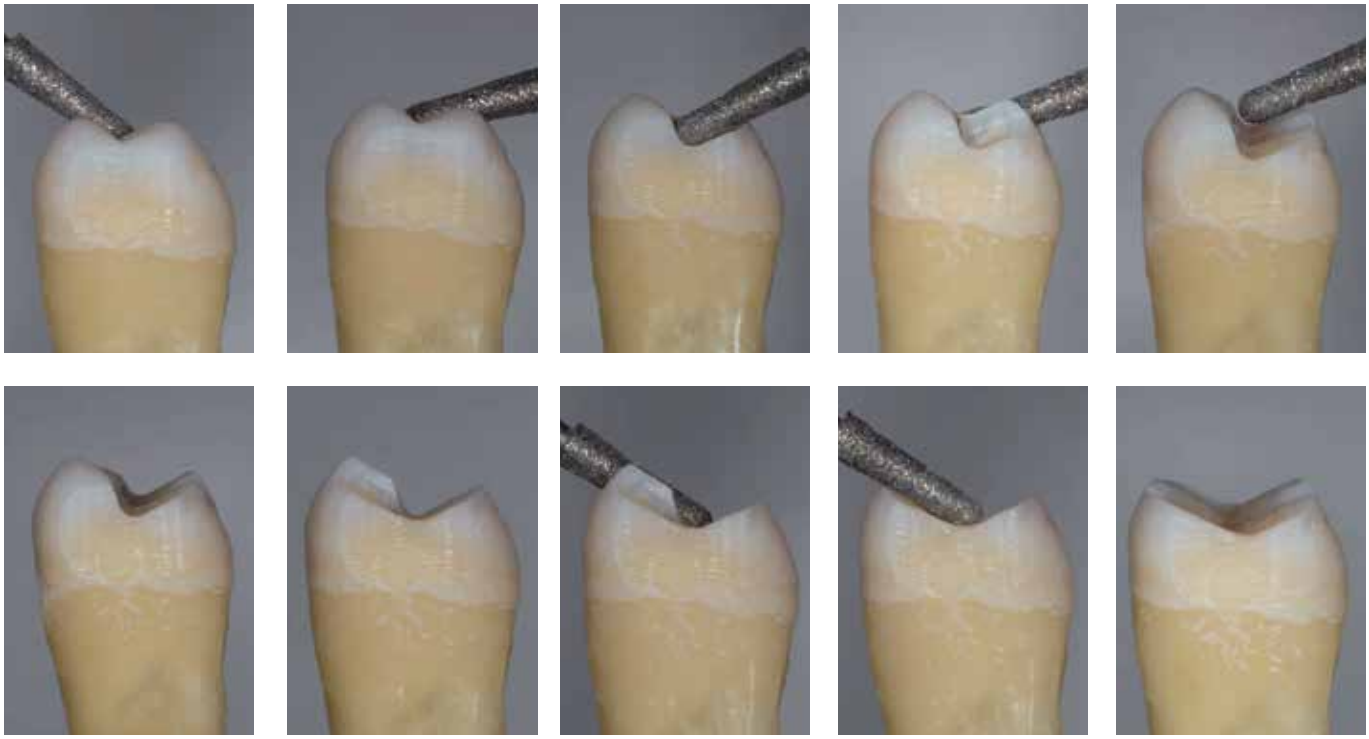
Phase 1

Mesiodistal separation with coarse grit thin flame drill FG862/010C (first three pictures) and mesiodistal preparation with 012 drill FG862G/012C (last two pictures).

Use protocol

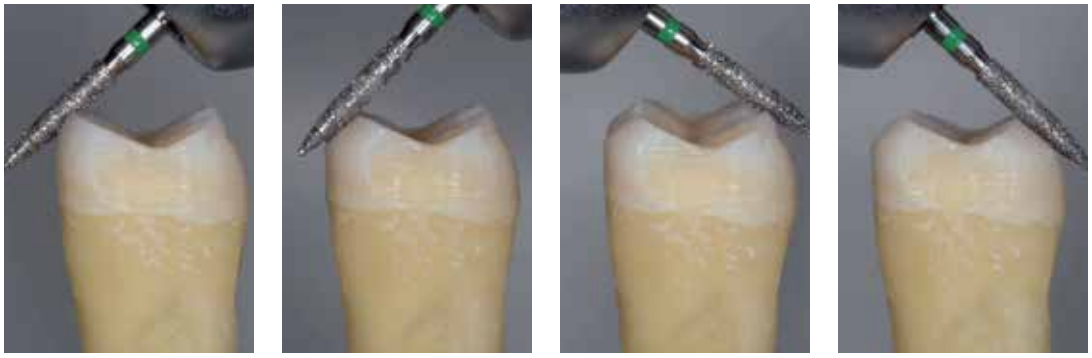
Phase 2

Unlike front teeth, in molars the occlusal surface is prepared aligning the tapered drill FG856/018 to the angle of the cusps.



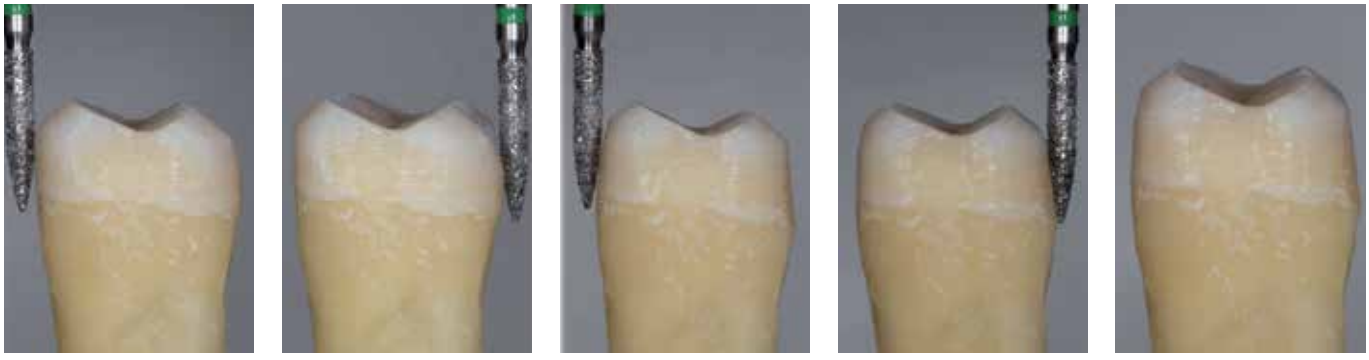
Phase 3

45° inclined vestibular and lingual preparation from the incisal edge the drill FG862G/016C until the enamel-dentin border is reached.



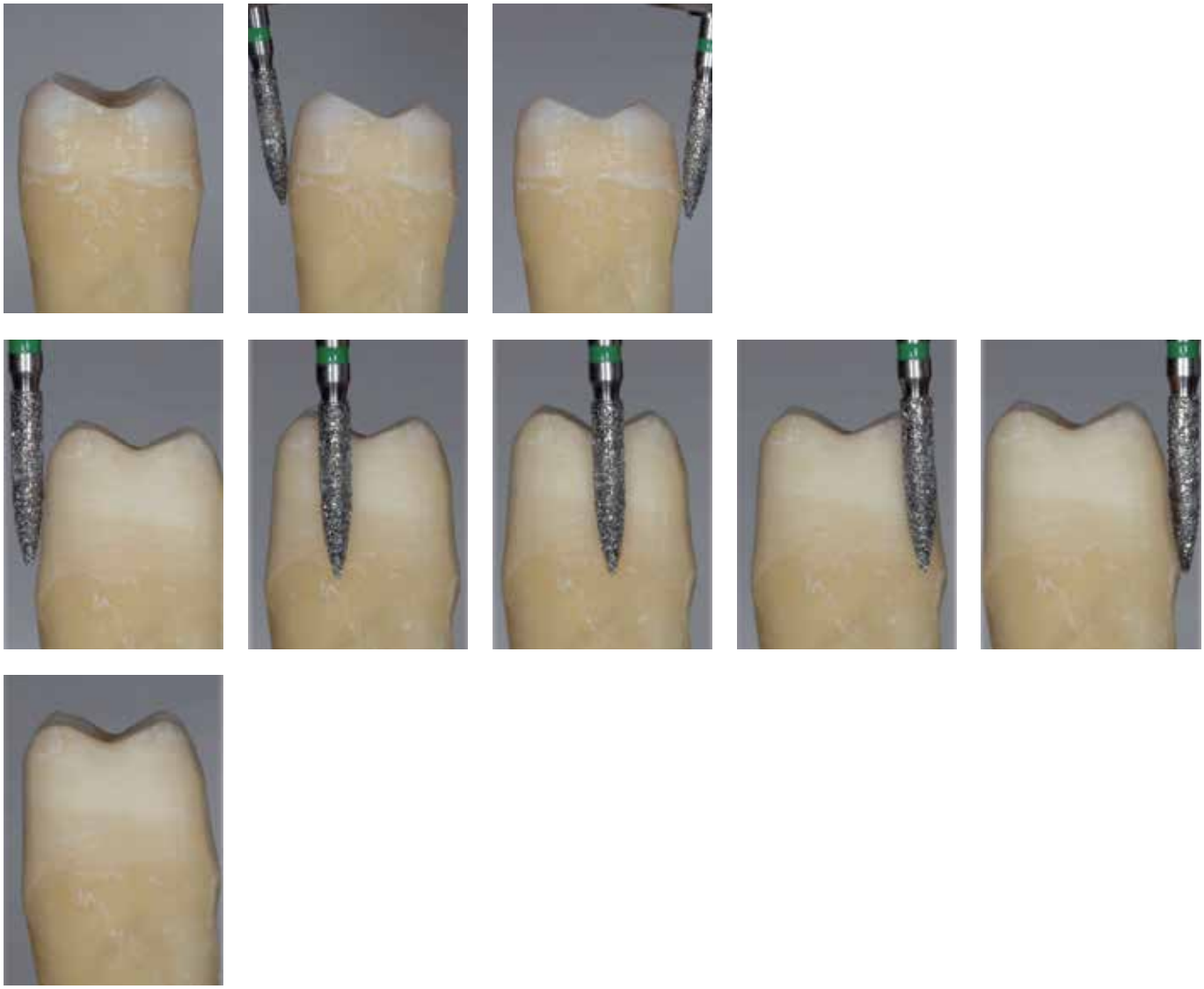
Phase 4

Vestibular and palatal supragingival axial reduction with the coarse grit drill FG862G/012C or with the drill FG862G/016C. The preparation is kept supragingival to avoid touching the gum. After reduction of the tooth circumference, proceed to phase 5.



Phase 5

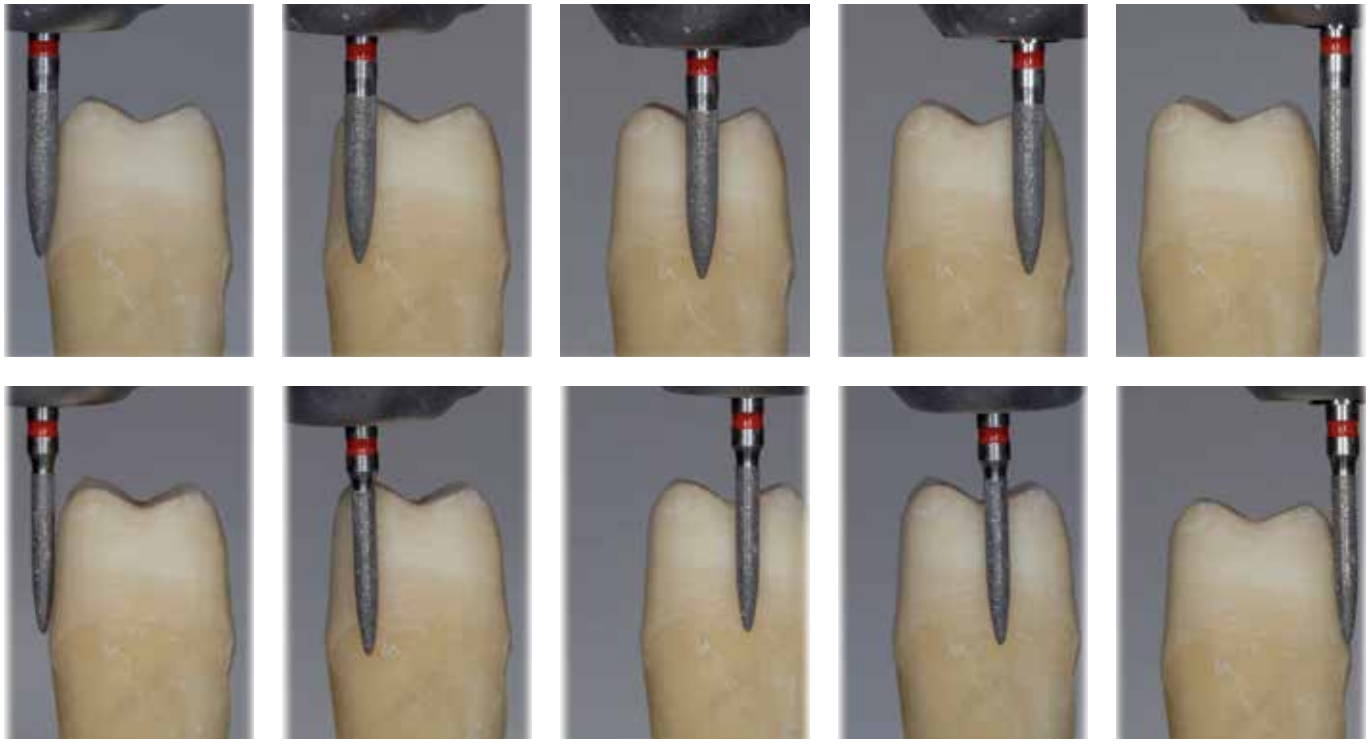
Intrasulcular preparation. The drill FG862C/012C or FG862C/016C is used as a probe, first entering the sulcus with an oblique inclination. Once the tool is entered obliquely, gradually verticalise the drill to align the preparation with the axial plane using the drill FG862G/012 for the interproximal walls or FG862G/016 in the vestibular areas, if a greater reduction of the volumes is necessary.



Use protocol

Phase 6

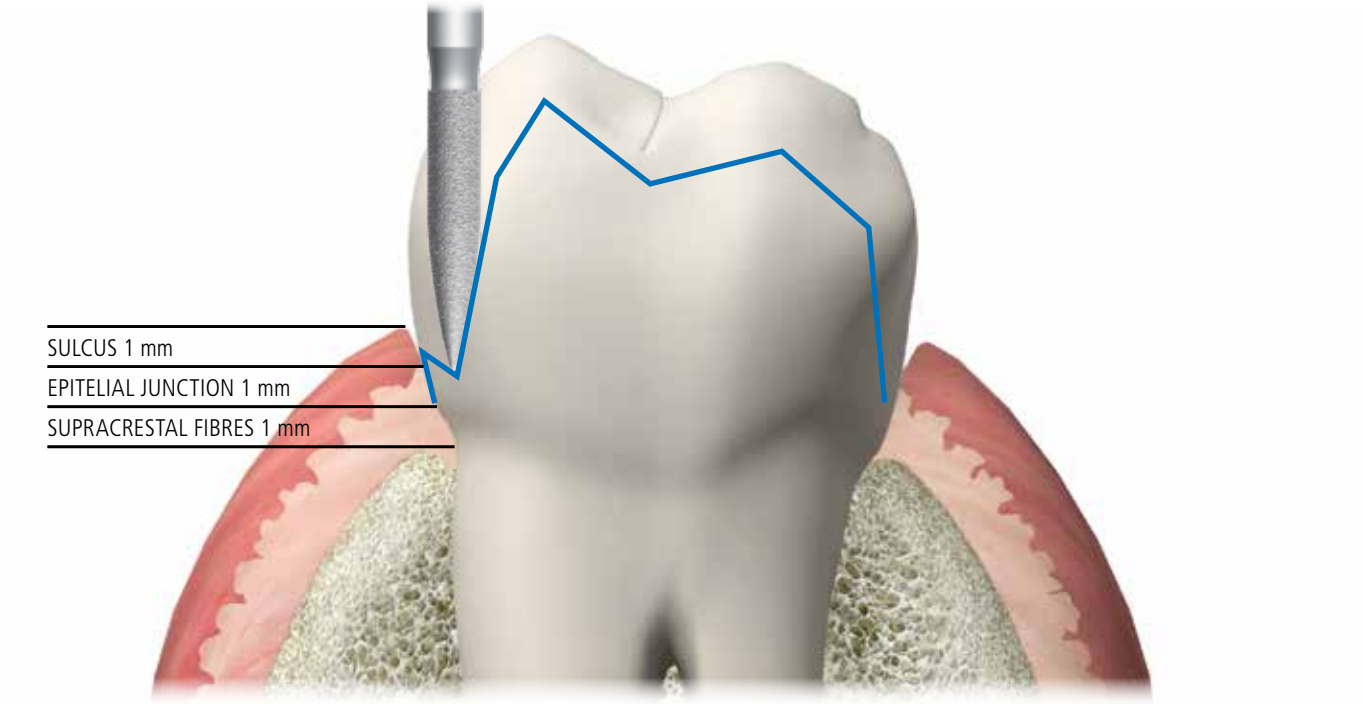
Tooth preparation is finished with the red ring coded drills and then if necessary with the yellow ring coded drills. The surface is polished in the cervical area where the crown margin will be positioned.



Finished tooth

Errors to be avoided

You must avoid creating groovers or indentations with the tip of the drills, so phase 5 must be performed with great care and as explained by the protocol.



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1. Loi I., Di Felice A.; Biologically oriented preparation technique (B.O.P.T.): a new approach for prosthetic restoration of periodontically healty teeth; European Journal of Aestethic Dentistry 8(2013), 1, 10-23 (disponibile anche in italiano nella versione italiana della stessa rivista, pagine 8-21).
2. Canullo L. Cocchetto R., Loi I.; Periimplant tissue remodelling: scientific background and clinical implications. Chapter 8: Abutment Morphology and Peri-Implant soft tissues. Milan, Italy, Quintessence Editions, 2012.
3. Loi I.; Protesi su denti naturali nei settori di rilevanza estetica: descrizione tecnica B.O.P.T.; Case series report; Dental Cadmos 2008:76(10):51- 59.

Preparation and Finishing Drills for Temporary Bridges

Tecnica B.O.P.T. (Biologically Oriented Preparation Technique)

Drills for the preparation and finishing of temporary restorations according to the B.O.P.T. Technique.

The B.O.P.T. Technique consists of the vertical preparation of the tooth to allow soft tissues to adapt to the prosthetic contours.
The prosthetic protocol is known as B.O.P.T. or Biologically Oriented Preparation Technique, indicating that it is the tissues themselves that adapt naturally to the preparation and the restoration. This selection of rotary instruments allows preparation and finishing of temporary resin restorations for feather edge preparated teeth according to the B.O.P.T. technique.

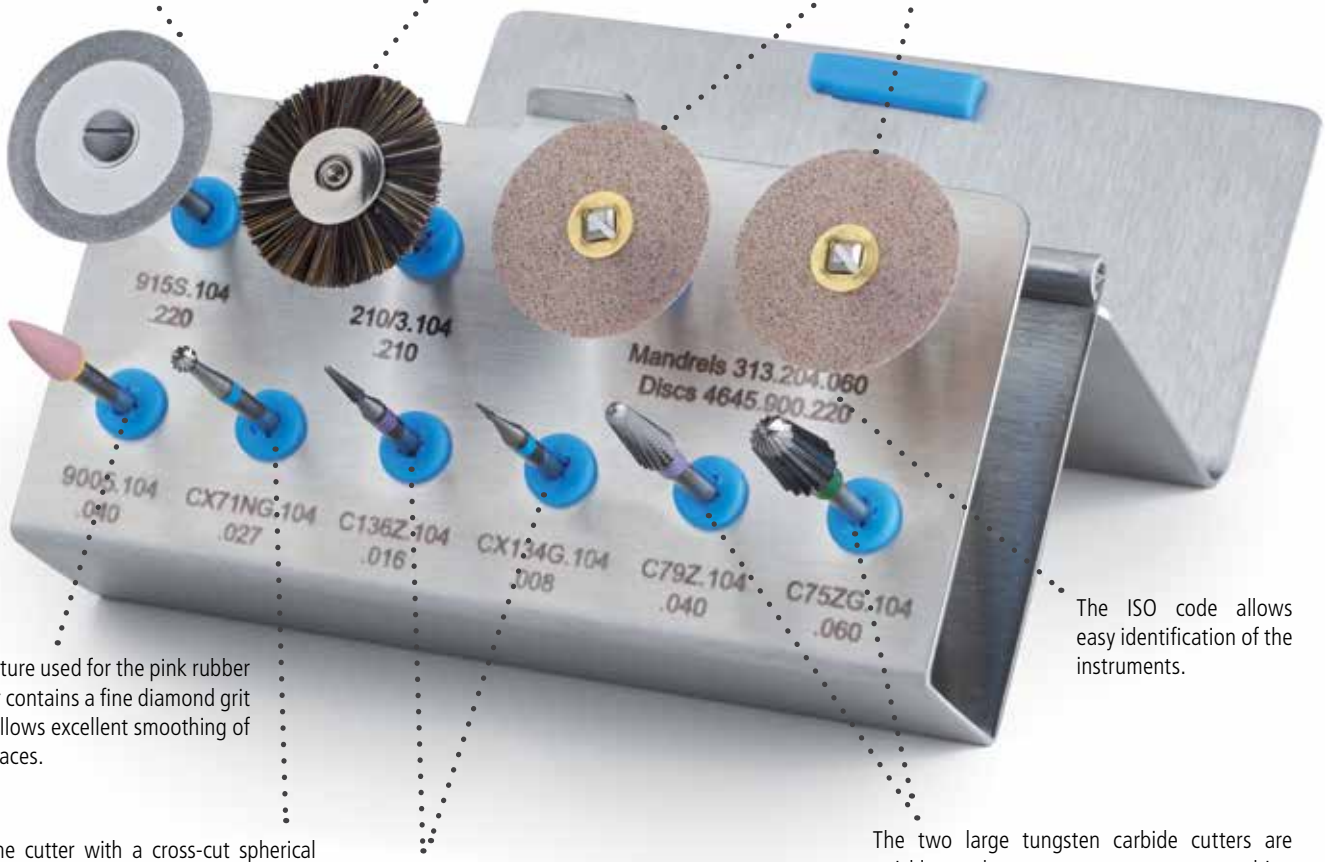
The assortment includes:
- five tungsten carbide cutters with different shapes and cuts
- a diamond disc with superfine grit
- a boar bristle brush
- two steel mandrels
- one hundred disposable Moore discs in medium grit corundum
- a rubber polishier with in-built diamond grit

Together with the assortment of drills a handy instrument holder is supplied which is sterilisable and autoclavable and allows the instruments to be ergonomically organised.

Both working sides of the diamond discare diamond bonded, to facilitate in and out from the inter-proximal areas of the temporary elements.

The boar bristles brush must be used with suitable polishing pastes.

The two steel mandrels are already preassembled with one corundum Moore abrasive disc each, for temporary elements pre-polishing.



The ISO code allows easy identification of the instruments.

The mixture used for the pink rubber polisher contains a fine diamond grit which allows excellent smoothing of the surfaces.

The cutter with a cross-cut spherical head is used for removing internal interferences from the temporary elements before relining and to decrease friction on the relined prosthesis.

The two tungsten carbide cutters with a small head allow easy modelling of the surfaces of the temporary elements, even in very small details, thanks to their reduced working dimensions.

The two large tungsten carbide cutters are quickly used to remove any excess resulting from the relining of the resin

Key to the ISO codes

ISO codes are so called "self explanatary" codes. In the example below, we explain the keys of these codes, to help identifying and recognizing the instruments.
E.g.: CX71NG.104.027

CX71NG **first part of code:** **instrument morphology**	**104** **second part of code:** **international numbering identifying the shank**	**027** **third part of code:** **international numbering identifying the diameter**
C = the material (Tungsten carbide) **X** = the presence of a cross-cut **71N** = internationally used abbreviation, in this case, for the round shape **G** = large cut or: **Z** = superfine spiral cut **ZG** = simple toothing with transverse cut	**104** = shank for straight handpiece (also indicated as **HP** = Handpiece) or: **204** = shank for contra-angle (also indicated as **CA** = Contra-Angle) **900** = unmounted instrument	e.g.: **027** = 2.7 mm The measurement is taken at the widest point of the working part

Assortment of drills

Images, reference codes and description of the products are listed below.

	description	ISO code	ISO Ø	assortment quantity	minimum quantity in spare pack
 2.70 **CX71NG/027HP**	Tungsten carbide round cutter, large cross cut, blue ring	CX71NG.104.027	027	1	1
 8.00 **C136Z/016HP**	Tungsten carbide tapered cutter, superfine spiral cut, triple violet ring	C136Z.104.016	016	1	1
 4.00 **CX134G/008**	Tungsten carbide tapered cutter, large cross cut, blue ring	CX134G.104.008	008	1	1
 13.50 **C79Z/040HP**	Tungsten carbide tapered cutter with round tip, superfine spiral cut, triple violet ring	C79Z.104.040	040	1	1
 12.00 **C75ZG/060HP**	Tungsten carbide tapered cutter with round tip, simple toothing with transverse cut, triple green ring	C75ZG.104.060	060	1	1
 0.17 **915S/220HP**	Diamond disc, superfine grit, yellow ring	915S.104.220	220	1	1

The height of the working part is expressed in millimetres.

	description	ISO code	ISO Ø	assortment quantity	minimum quantity in spare pack
 **210.3**	Boar bristle brush	210/3.104.210	210	1	20
 **313/060CA**	Steel mandrel, Snap-On type for contra-angle	313.204.060	060	2	1
 **4645**	Moore corundum medium grit abrasive discs with Snap-On connection	4645.900.220	220	100	100
 14.00 **9005HP**	Flame-shaped diamond rubber polisher, Cerashine, yellow ring	9005.104.040	040	1	1
 **4555**	Stainless steel drill holder	4555		1	

Code **Z4555** refers to a complete assortment of one of each tungsten carbide cutters, a diamond disc, a boar bristle brush, a Cerashine rubber polisher, two mandrels, 100 Moore abrasive discs and a steel drill holder.
All the items are available individually in spare packs, in the minimum quantity listed in the table.

Sequence of use: full arch

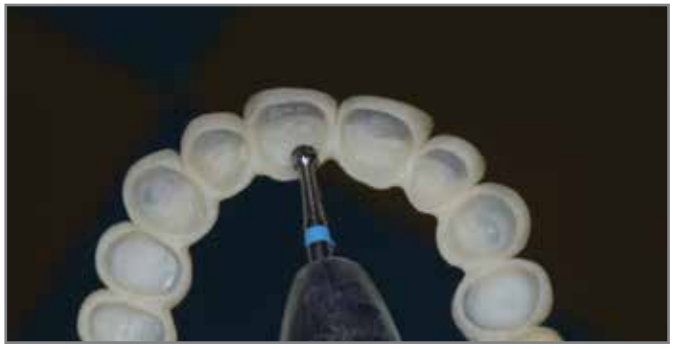
Photos by kind permission of Dr. Ignazio Loi

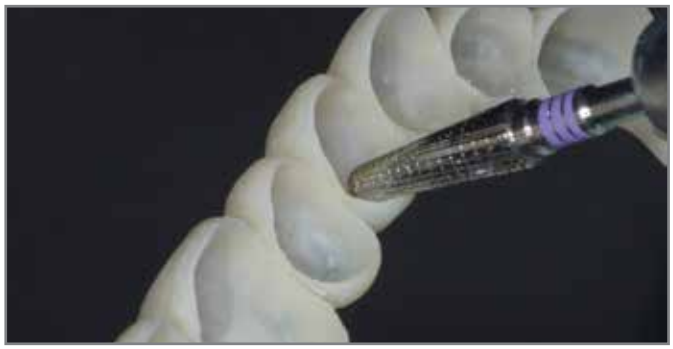
Phase 1

Case of rehabilitation of a full upper arch. After preparation of teeth according to the B.O.P.T. technique, resin temporary prosthesis which has been previously made by the dental technician on a cast model, is tried in the mounth.

Phase 2

All the interferences are removed from the internal of the temporary bridge using first a spherical head drill with large cross cut (CX71NG/027HP) and then the tapered drill with round tip, superfine spiral cut, identified by a triple violet ring (C79Z/040HP). This drill is also useful to shape ovoid pontics sustaining soft tissues in edentulous areas. At the end of this step, the temporary bridge will easily fit the natural posts.

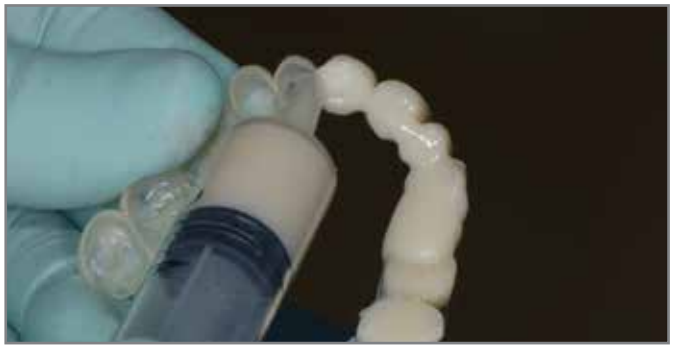




Use protocol

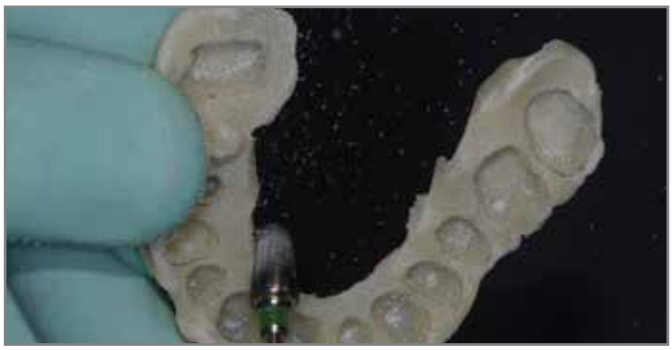
Phase 3

With the relining it is possible to define the sulcus and the surrounding tissues. In this phase the margin of the temporary structured is thickened before defining the margin line and the shape of the emergence profile from the sulcus shape on which the tissues will adapt.




Phase 4

With the tapered drill with round head and simple toothing with transverse cut, identified by the triple green ring (C75ZG/060HP) the reduction on the relined temporary post are simple and fast.

Phase 5

Reduction and shaping of the temporary structure is further carried on using the tapered drill with round tip, triple green ring and fine cut (C79Z/040HP). Then, using the tapered lancet shape drill with superfine spiral cut, triple violet ring (C136Z/016HP) the interdental areas can be defined.

Phase 6

Using the tapered fine point drill with large cross cut, with blue ring (CX134G/008), the interdental spaces can be outlined, and they are further finished with the Moore abrasive discs (4645 to be fitted on the snap-on mandrel for contra-angle 313/060CA). These are used also to define the finishing line and the emergence profile.
The superfine grit diamond disc, yellow ring (915S/220HP), allows the precise definition of the gingival embrasures and of the interdental lines.





Phase 7

After the forms have been defined, all the margins in contact with the soft tissues must be polished. The first part of the polishing operation is carried out with the Cerashine flame-shaped diamond rubber polishing head with yellow ring (9005HP), whose particular shape and flexibility make it reach all the areas and leave the surface uniform. Last, a boar bristle brush (210.3) is used to complete polishing, giving the temporary structure a very aesthetic appearance. The brush can be used with or without abrasive paste, depending on the characteristics of the resin used.

Use protocol

Phase 8

The described procedure enable to obtain excellent results in a short time as regards adaptation of tissue to new morphologies and aesthetic appearance of the patient.

Case at dismissal

Case after one week

Case after six weeks

Occlusal view and detail of the sulcus

Initial case

Follow up at 3 weeks

Lateral view of the follow up at 3 weeks

Notes

D-DEN-BOPT3-E

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The diamond drills which aredescribed in this catalogue are Medical Devices, they are certified with the CE 0476 mark (Class IIA) in compliance with European Medical Device Directive No. 93/42 and European Directive No. 2007/47.
The drill holder REF 4999 that is described in this catalogue is a Medical Devices, it is certified with the CE mark (Class I) in compliance with European Medical Device Directive No. 93/42 and European Directive No. 2007/47.
All these medical devices are manufactured by Sweden & Martina and conform to the UNI EN ISO 9001:2008 / UNI EN 13485:2012 standards.