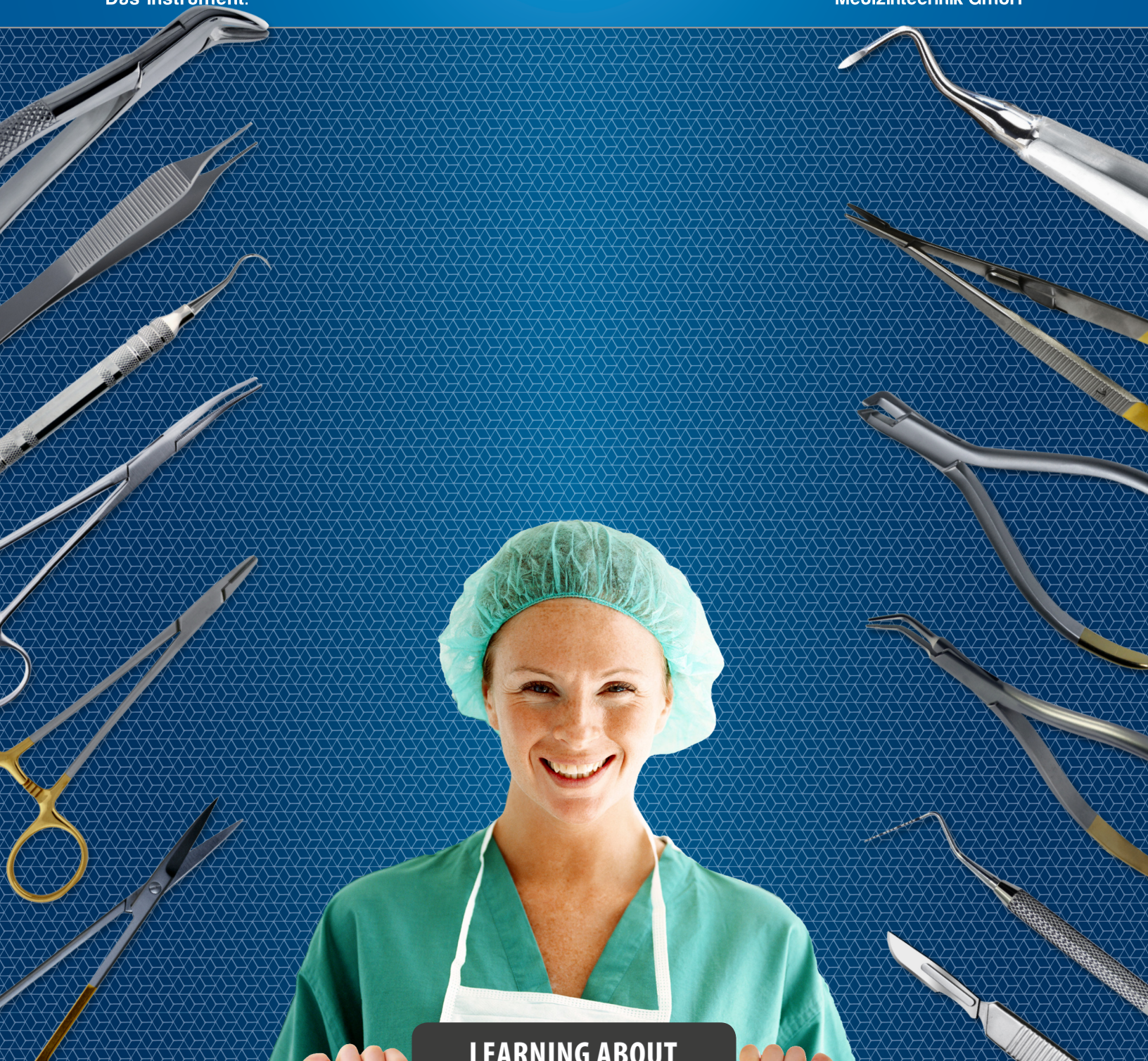
Das Instrument.

BMT
Medizintechnik GmbH



LEARNING ABOUT

DENTAL INSTRUMENTS

BMT
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Instructions of use: The instruments are supplied in NON STERILE condition. Clean and Sterilize before first use and each subsequent use. Remove eventual deposits of organic residue and other corrosive substances by using specifically adapted products, in the concentrations and times indicated by the manufacturer. It is necessary to implement periodical verification of the perfect operation of the sterilization apparatus, autoclave and other system used by the customer.
Time and temperature standards for Autoclave (Steam Sterilization) and Chemiclave: 15 min. 132ºC (270ºF) / 5 min. 135ºC (275ºF) . Instruments must be cleaned, bagged individually or bagged/ wrapped in a tray setup, and then sterilized. A chemical/autoclave indicator device should be included in the wrapping. Hinged instruments must be processed open and unlocked. Do not combine different metals (chrome, stainless, titanium, etc.). Instrument sterilization cannot substitute cleaning. TC instruments (Tungsten carbide) should never be exposed to chemical substances. Do not use ultrasonic cleaning for TC instruments, sharp and delicate instruments. Cutting instruments must be kept sharp (sharpening stones improves shelf life). Check scissors and cutting instruments for proper alignment and sharpness (latex glove test, teflon testing stick). Lubricate hinged instruments (prevents rust, corrosion and still joints). A correctly maintained instrument can have a life cycle of 5 years. Non-Conformity to these fundamental rules can damage the instrument beyond repair and will cancel any BMT product guarantee with respect to repair or refund claims. The warranty does not cover general maintenance (ex: sharpening, spring/screw/Tungsten-Carbide insert replacement). BMT instruments are subjet to Directive 93/42/CEE and therefore are to be sold according to the applicable regional norms. For more information visit our website.

Learning about Dental Instruments

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Instruments & Materials

Surgical instrument definition
A surgical instrument is a specially designed tool or device for performing specific actions of carrying out desired effects during a surgery or operation, such as modifying biological tissue, or to provide access or viewing it. Along time, many different kinds of surgical instruments and tools have been invented, some of them of a more general character, others designed for a specific type of surgery. Accordingly, the nomenclature of surgical instruments follows certain patterns, such as a description of the action it performs *(ex: scalpel, hemostat)*, the name of its inventors *(ex: the Kocher forceps),* or a compound scientific name related to the kind of surgery *(ex: tracheotome)*.

Ti Titanium

Titanium (Ti)
It is a chemical element with symbol Ti and atomic number 22. It is a lustrous transition metal with a silver color, low density, and high strength. Titanium is resistant to corrosion in sea water, aqua regia, and chlorine.

The two most useful properties of the metal are corrosion resistance and strength-to-density ratio, the highest of any metallic element. In its unalloyed condition, titanium is as strong as some steels, but less dense.

Titanium can be alloyed with iron, aluminium, vanadium, and molybdenum, among other elements, to produce strong, lightweight alloys for aerospace, military, industrial process, automotive, medical prostheses, orthopedic implants, dental and endodontic instruments and files, dental implants and other applications.

Because titanium is biocompatible (non-toxic and not rejected by the body), it has many medical uses, including surgical instruments and implants.

Definitions from:
- *Wells, MP, Bradley, M. Surgical Instruments - A Pocket Guide*
- *Wikipedia.com*
- *AISI = American Iron & Steel Institute*

Stainless steel (inox)
Stainless steels may be classified into 3 main types: ferritic, austenitic (316) and martensitic (440-420).

Surgical stainless steel is an informal term which refers to certain grades of stainless steel that are used in biomedical applications.

The most common "surgical steels" are austenitic 316 stainless and martensitic 440 and 420 stainless steels. There is no formal definition on what constitutes a "surgical stainless steel", so product manufacturers and distributors apply the term to refer to any grade of corrosion resistant steel.

inox Stainless Steel

316 stainless steel, also referred to as marine grade stainless steel, is a chromium, nickel, molybdenum alloy of steel that exhibits relatively good strength and corrosion resistance.

Martensitic stainless steels can be high- or low-carbon steels built around the Type 410 composition of iron, 12% chromium, and up to 1.2% carbon. They are usually tempered and hardened. Tempered martensite gives steel good hardness and high toughness; used largely for medical tools (scalpels, razors and internal clamps). Untempered martensite is low in toughness and therefore brittle.

440 and 420 stainless steels, known also by the name "Cutlery Stainless Steel", are high carbon steels alloyed with chromium. They have very good corrosion resistance compared to other cutlery steels, but their corrosion resistance is inferior to 316 stainless. Biomedical cutting instruments are often made from 440 or 420 stainless due to its high hardness coupled with acceptable corrosion resistance. This type of stainless steel may be slightly magnetic.

BMT manufactures surgical instruments from martensitic stainless steels (AISI1 421, 440, 440C2)* which is the highest quality surgical steel available. 440C is a 400 series stainless steel, and is the highest carbon content from 400 stainless steel series. It is usually heat treated to reach hardness of 58–60 HRC. It is used to make blades and cutting instruments. 440C can be oil quenched to achieve maximum hardness.

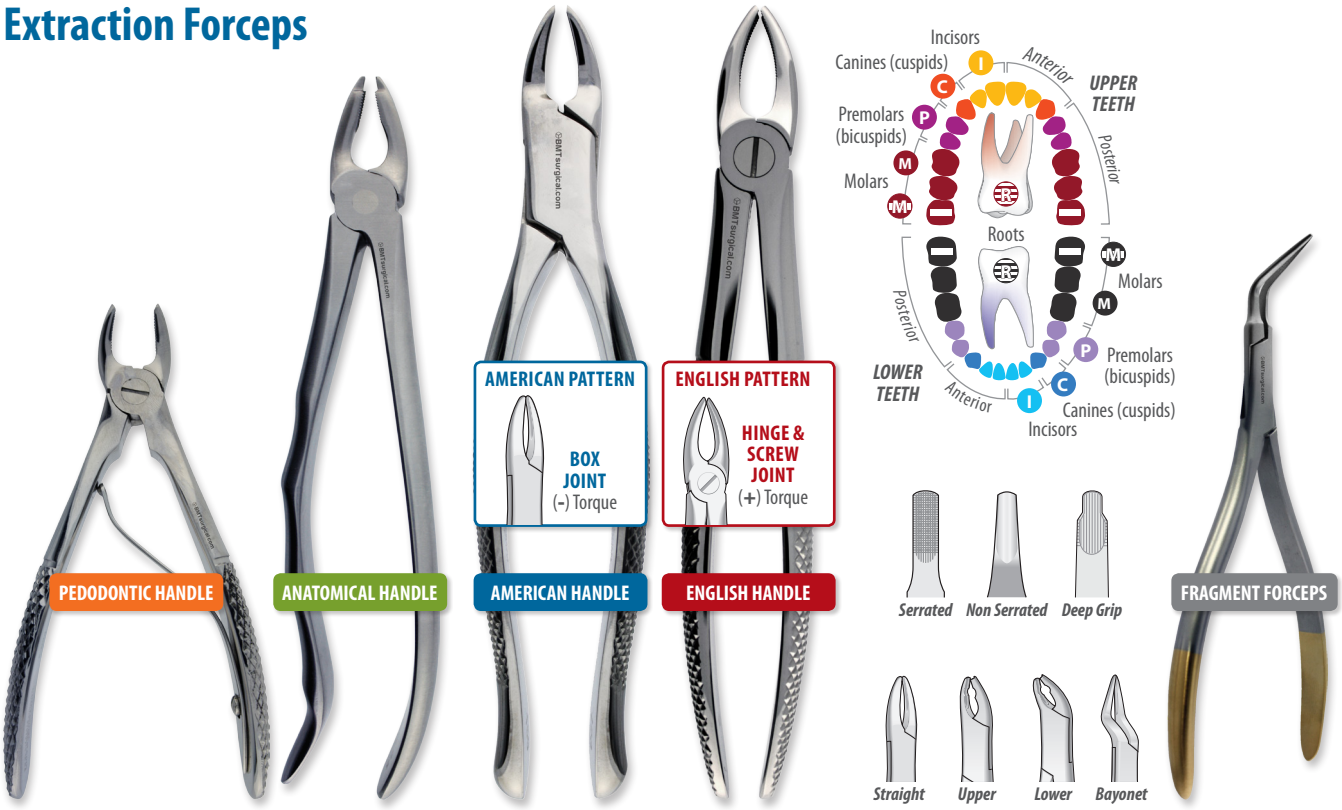
Tungsten carbide (TC)
Often called carbide, it is an inorganic chemical compound containing equal parts of tungsten and carbon atoms. In its most basic form, it is a fine gray powder, but it can be pressed and formed into shapes. Tungsten carbide is approximately three times stiffer than steel, with a Young's modulus of approximately 550 GPa, and is much denser than steel or titanium. It is comparable with corundum (α-Al2O3 or sapphire) in hardness and can only be polished and finished with abrasives of superior hardness such as silicon carbide, cubic boron nitride and diamond amongst others, in the form of powder, wheels and compounds.

TC Tungsten Carbide

Some instruments are manufactured with tungsten carbide tips (needle holders, pliers, cutters, scissors, forceps, etc.). As a rule, performing the same type of work, a tungsten carbide instrument will last up to five times longer. For instance, the cutting edges of a pair of scissors, even when used to cut the toughest tissue, will outlast the regular stainless steel pair of scissors by 5 times.

BMT is one of the few companies manufacturing tungsten needle drivers where the inserted tip is fused during the manufacturing stage using silver gold alloy. Gold being an optimum heat conductor allows the stainless steel body of the instrument to fuse with the tungsten carbide tip creating an alloy that cannot be separated. Other companies use an adhesive to attach the tip. Over time through usage and sterilization these tips snap off making the instrument totally useless. Compare the extra initial cost for these instruments with the length of useful wear and you have a very cost effective solution to your instrument requirements.

Extraction Forceps



Dental Extraction Forceps

The dental forceps are the most widely used instrument in the extraction of teeth. The use of this instrument makes it possible for the operator to grasp the root portion of a tooth and to luxate the latter from its socket by exerting pressure upon it.

The forceps have blades and handles united by a hinge joint. The larger the ratio between the length of the handles and the length of the blades the greater is the force which can be exerted upon the root. The length of the handle must be such that the forceps fits the operator hand. Greater the distance between the hinge joint and operator's hand, the greater is the movement of the forceps within the hand. Thus, greater energy may be dissipated to the tooth.

Beaks

The beaks are designed to adapt to the anatomical shape of the tooth/root it is supposed to grasp. Should adapt to the size of the roots: smaller roots vs. larger. What a forceps gains in universality it loses in specific adaptation. The lower the tooth is grasped the less chance of fracture. Better adapted, easier extraction.

All beaks are serrated, which offers additional grasp when extracting teeth. Available in 3 shapes :

- Conical Shape to wrap (single root)
- Bifurcated Shape to enter concavity (2 roots)
- Trifurcated Shape to enter concavity (3 roots)

Handles

Handles are designed so that the instrument can be grasped to deliver adequate leverage and pressure to the beaks. Available in 4 kinds :

- English /American / Anatomical (Profile) / Pedo

American & English Pattern

There are 2 major types of dental forceps:

- American pattern
- English pattern

Although these forceps have distinct features, one of the distinguishable differences between the two is screw which holds two forceps together.

"American pattern" dental forceps are the ones which doesn't have a visible screw in them, while "English pattern" dental forceps are the ones which contains a prominent screw towards their side which holds two prongs together. The American pattern have less leverage than the English pattern and that is why there tends to be more crown fractures with the English style forceps.

Pedodontic Forceps | Serie PEB-XX)

regular extraction forceps, but mainly for primary teeth. Children's teeth are anatomically smaller than adults. Smaller beaks are necessary to grasp the tooth. BMT carries one of the largest selections for this type of instrument. All have serrated beaks for a better grip on the tooth surface. They are small enough to be almost completely concealed in the dentist's hand. They do not have to hide it from the patient, which can sometimes traumatize the child.

Anatomical Forceps | Serie I-XX (inf.) / S-XX (sup.)

These instruments are used for the extraction of teeth, and are designed stressing ergonomics for comfort. The shape of the smooth handle allows for a better grip for torque and increased tactile feel.

Deep Grip

The design of the S-34, S-35, I-36 and AM-451, have a "lip" or extended thinner beak: this allows the clinician to insert the instrument sub-gingival. This is important because standard forceps do not compensate for the stress that occurs at the gingival level when attempting tooth extraction. With these stress forces, there is a possibility of breaking off at the crown causing trauma to the patient. When the "lip" of the forceps is inserted, forces for extraction are placed along the full surface of the tooth allowing a cleaner extraction of the full tooth without trauma.

Root Fragment Forceps | Endo Forceps

This instrument is very versatile (for pins, posts, silver points and broken endo file instruments). It should become part of all surgical and operative kits. Used for removing fragmented tooth, silver points, broken endodontic files, and deeply secured posts which can be difficult to extract. The size of the tip makes it an excellent placement and retrieval instrument for standard and micro procedures. The fine serration and cylindrical grasp are the main reasons for the success of this procedure.

Elevators

Root Elevators
The use of any dental elevator is mainly to separate the periodontal ligament from the tooth. This ligament is made of very hard collegenetous type tissue that holds the tooth in place. This requires a lot of pressure to break. Often, one will hear an actual snap, when the elevator is inserted between the surfaces and separation is complete. It is also used for removing pieces or fragments of embedded tooth that can be difficult to extract. These instruments need to be durable and strong to perform this function.

All BMT elevators feature lightweight design and seamless one-piece manufacture for easy cleaning and sterilization (other companies use a two-piece construction). It allows all forces to be distributed along the whole of the instrument. This is the best deterrent to stress breakage.

Handle Types:

- Large
- Small *(Ideal for doctors who have small hands)*
- Anatomical *(ergonomic / optimum sensitivity)*
- T-Bar

Work principles of the elevator

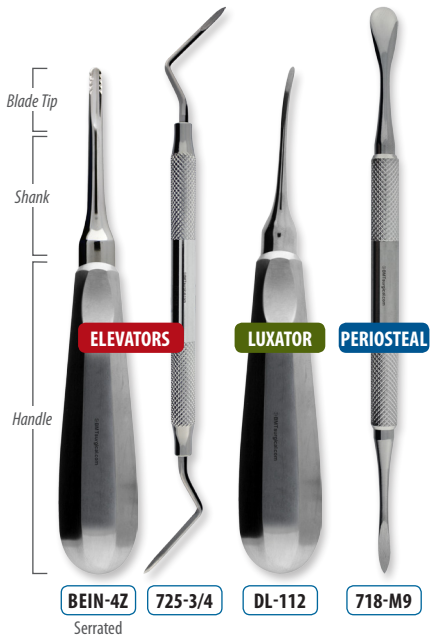
- Lever action
- Wedge action / Displacement (Inclined Plane)
- Wheel & Axle action

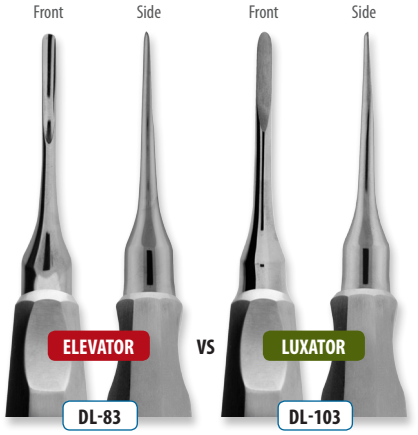
Straight/gouge type elevators | DL-35, 36, 37, 38
Used for lever and wedge action. Primarily used on Maxilla - upper central or lateral cuspid or bicuspid has fractured at gingival line.

Serrated straight elevators | BEIN-2Z / BEIN-4Z
An elevators' main function is to separate the tooth from the periodontal ligament. This ligament is a strong cartilage type tissue. When separating it, slipping can occur. This particular instrument has a serrated tip that helps control the slipping.

Triangular type elevators | Cryer, DL-27, 28, 32, 33
Used for Lever, Wedge and Wheel & Axle action. Straight elevator with triangular blade. Working tip is angulated with one convex and onother flat surface (right and left). Used wthe a broken root remains in socket and adjacent socket is empty.

Pick Type elevators | Apical, Crane, Cogswell
Used for Lever action to remove roots from socket. Heavy (Crane) and delicate (Root tip pick) versions. Hole drilled 3 mm deep into the root, pick is inserted into the hole, root is elevated using buccal plate as fulcrum. Also used to pick tease small root tips from socket.





Periosteal Elevators | Molt, Prichard, Mead, Freer
Flap reflection instrument used to retract gingival and loosening of soft tissue attachment from teeth. Ideal to reflect the mucosa and periosteum from the underlying bone after an incision (minimize tissue trauma). The pointed end is used to work in interdental papilla regions and for finding the cleavage in the periosteal (lifting the soft tissue flap directing it towards the bone). The broader flat end with cutting edges allows a delicate detachment of the periosteal from the bone.

Elevators VS Luxating Elevators
What is the difference?
Both are designed to aid in the extraction of teeth, however, there are significant differences. Traditional straight elevators are used to loosen tooth from periodontal ligament before extraction and to separate and lift tooth from socket. Luxating elevators are use to cut periodontal ligaments and to rock tooth back and forth before extraction.

If you compare an elevator and a luxating elevator from the side (view pic), you can see they are different. Luxating elevators are thinner than traditional elevators, and because of this, they are sharper. Elevators are thicker with a slightly bowed shoulder on the back side and are less sharp.

Because luxating elevators are thinner and sharper, they are better able to fit in tight apical spaces and are more efficient at cutting the periodontal ligament. They are designed to be used in a circular cutting motion to separate the tooth from the surrounding bone and periodontal ligament. Luxators should not be used in a prying motion like traditional elevators, nor should you try and apply torque to a tooth root with a luxating elevator. When you use a luxator as a wedge against a tooth to facilitate the breakdown of the periodontal ligament, the luxating elevator must be deeply seated in the periodontal ligament space. We often describe luxators as being a very technique sensitive instrument as they are not very forgiving and will chip and/or break if used incorrectly.

Elevators are still extremely popular and useful instruments. This is true in situations where more force and/or more torque is needed to extract a tooth. Although elevators aren't as sharp as luxating elevators, they are stronger and more durable because the tips are thicker. Many practitioners use elevators to fatigue and tear the periodontal ligament rather than to cut it like you would with a sharp luxator. For these reasons, elevators tend to be a better choice for those less experienced in recommended extraction techniques.

Surgical Scissors

A scissor is a sharp instrument composed of two opposing cutting blades held together by a central pin, on which the blades pivot. Surgical scissors are the most widely recognized and most widely used type of scissors in all disciplines of dentistry, medical, and veterinarian surgical procedures. In dentistry they are used for cutting tissue and suture string in surgical procedures. They are used for cutting retraction cord in restorative procedures. The versatility of these scissors is endless.

The "rule of thumb" for the difference between straight and curved blades is mainly based on preference. Almost all types of scissors have the option of straight or curved blades. Straight blades give the truest cut, but the curved blades allow for continuous cutting along a curved plane. Scissors blades are available in various configurations like: blunt-blunt, blunt-sharp, and sharp-sharp.

Surgical scissors are usually made of very hard stainless steel for ongoing toughness. The hardness of this material allows the manufacturers to create sharper edges, which allows for easier and smoother cuts and keeps the scissors sharp for longer. All BMT scissors are made from top-quality German steel. It is important to know that practitioners are often interested in purchasing scissors which are not German-made, because the pricing is much cheaper. Although the price is much cheaper, they are sacrificing the quality by choosing a scissor that doesn't cut as well as our standard scissor and won't last as long. BMT offers a large variety of scissors, ranging from the quality steel scissor, to the best quality/performance/durability available in the surgical fields.

There are 2 types of scissors used in surgeries:

- Ring scissors look much like standard utility scissors with two finger loops.
- Spring forceps are small scissors used mostly in eye surgery or microsurgery. The handles end in flat springs connected with a pivot joint. The cutting action is achieved by pressing the handles together. As the pressure is released, the spring action opens the jaws.

Sterilization

Sterilize open, as they should not be active when exposed to heat from a sterilizer.

Scissors variations

inox *Stainless Steel*

Regular stainless steel scissors with a classic blade shape, are the most-frequently-used in the dental & surgical practice. They are made from martensitic stainless steels (AISI 421, 440, 440C2) which is the highest quality surgical steel available. Although by choosing a TC, SC or diamond-dusted blade, you will multiply the durability by 5 to 15 times.

TC *Tungsten Carbide*

TC increase performance and longevity. Last up to 5 times longer than stainless steel blades. Resistant to wear and corrosion. Tungsten Carbide for cutting parts: need less sharpening and better for cutting cartilage or for many repeated cuts.

SC *Super-Cut*

Extremely sharp rasor edge. Atraumatic. Specially designed cutting edges. One regular edge and one sharp-knife edge. SC Scissors have better cut and need less sharpening. They can last more than 15 times longer than a stainless steel blade. SC has one bevel honed blade, similar to a razor blade ,while the other blade can be serrated or regular depending on the scissor style (a Goldman-Fox is usually always serrated, and Iris scissor usually isn't). This design allows for a smooth, clean cut and the blade keeps a sharp edge longer than other scissor designs. SC scissors are available in a variety of patterns including Mayo, Metzenbaum, and micro-dissecting. BMT also offers SC scissors with a Tungsten Carbide insert. The carbide insert will allow the blade to stay sharper a lot longer. The sharpest scissor that will keep its edge the longest is a SC scissor with carbide insert. For example, the FM-306, 307, 308, which are mainly used in plastic surgery. In dental surgery practice, it is recommended to choose either SC or TC. Super-Cut scissors are available either Serrated or Non-serrated , depending on the scissor style.

Serrated

Serrations (Z) are micro or fine notches found on the instrument surface. Serrated scissors blades grasp to prevent tissue or suture from slipping. The serrated scissors are not identified by the handle color-coding system, which only identifies SC or TC tips. Usually, Goldman-Fox, La Grange and Dean are serrated and Iris, Metzenbaum, Mayo are Non-serrated. Others are available Serrated & Non-serrated (Kelly, Locklin).

W *Wellenschliff*

The teeth of a wavy (serrated) edge allows greater pressure to be exerted on the object being cut. Wavecut prevents tissue from slipping out during the cutting process.

H *Hard Metal*

Durable carbide cutting edges inserts.

Stainless Steel vs Super-Cut (SC) **Scissors**

For many uses in surgical practice, it is common to use a stainless steel scissor with a classic blade shape, although by choosing Super-Cut you will multiply the durability by over 10 times. Many doctors don't realize that they have never worked with a high-quality scissor before. It is important to demonstrate the quality of the cut and handling of the BMT scissors and they may choose to invest in a better quality scissor.

Straight blades VS Curved blades

The "rule of thumb" for the difference between straight and curved blades is mainly based on preference. Almost all types of scissors have the option of straight or curved blades. Straight blades give the truest cut, but the curved blades allow for continuous cutting along a curved plane.

Sharp-tipped blades VS Blunt blades

Sharp tips are preferable for more delicate work. Blunt scissors are ideal for dissection work. In dentistry, it is usual to always use sharp/pointed scissors.

The scissor glove test

- Take a latex glove, place it on a flat surface.
- Place the scissors in open position with the glove between the two blades.
- Without touching the glove with your hand, and holding the scissor as still as possible, cut the glove in one slow movement.
- When the scissors are closed, pull the scissor back.
- With a sharp and good quality scissor, the glove will be perfectly cut and with a very high end scissor, the glove will not even move.
- If any section of the blade isn't cutting perfectly, the glove will catch on the scissor.

What to consider when choosing a scissor

- Which scissor the doctor is used to using?
- Grasping technique.
- Scissors intended for specific cuts VS general use.
- Interest in investing in a long-lasting high-quality scissor VS lower quality requiring frequent sharpening or replacement.
- The final choice of the scissor model is often a matter of personal preference. It can be very interesting to inform the doctor about the utility of having scissors adapted to specific uses and procedures. By good knowledge of the different options the doctor has (ergonomics, handle & tip shape, serrated, non-serrated, TC, SC) he/she will be able to make a choice which best suits his/her personal preference and needs.

Needle Holders (Drivers)

A needle holder, also referred to as needle driver, is a surgical instrument, similar to a hemostat, used by doctors and surgeons to hold a suturing needle for closing wounds during suturing and surgical procedures. The parts of a simple needle holder are the jaws, the joint and the handles. Most needle holders also have a clamp mechanism that locks the needle in place, allowing the user to maneuver the needle through various tissues. It is essential to maintain a firm grip on the needle when, the jaws are often textured with a cross-hatching serration on the inside and are short compared to the handles (increasing the applied force following the principle of a lever). The surface texture of the interior of the jaws is what determines the needle size which can be used. The cross-hatching serration can be more or less fine, or flat.

The hemostat, by contrast, has parallel grooves on the face of the beaks, thereby decreasing the control over the needle. Therefore, the hemostat should not be used for suturing.

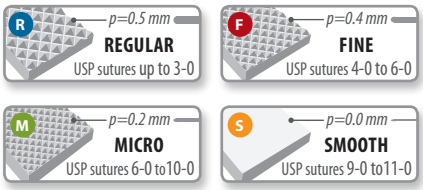
TC Tungsten Carbide

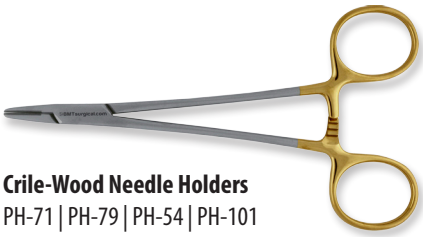
Needle Holders with tungsten carbide inserts
Needle Holders, to be efficient, must have tungsten carbide tips. This is important because standard needle drivers without "TC" are functional but they cannot guarantee spinning or disengaging of the suture needle from the beaks of the instrument. This occurs when the suture needle is in contact with bone or hard tissue.
TC hold the needle better, no rotation as it is harder than the needle. Also, these TC tips can be replaced if they wear out, a fact that many doctors do not know (Sterilize open, non-active).

BMT is one of the few companies in manufacturing tungsten needle drivers where the inserted tip is fused during the manufacturing stage using real gold foil. Gold being an optimum heat conductor allows the stainless steel body of the instrument to fuse with the tungsten carbide tip creating an alloy that cannot be separated. Other companies use an adhesive to attach the tip. Over time through usage and sterilization these tips snap off making the instrument totally useless.

BMT has modified all needle drivers. The joint area has been tapered inward where the handle and the joint meet. This stops all snags of the suture string in the needle drivers' joint.

The various needle sizes
It is essential to use a Needle Holder which is appropriate for the size of the needle. Proper use will ensure reliable needle grip and longer working life of instrument. Failure to follow the specifications below will result in damage to the instrument.

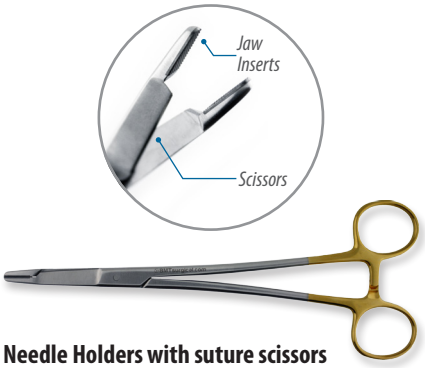




Crile-Wood Needle Holders
PH-71 | PH-79 | PH-54 | PH-101
Needle drivers are essential for suturing a wound or surgical site that has been exposed. Sizes vary; however, the Crile-Wood is popular because of its standard size and slim design. The PH-71 is manufactured with tungsten carbide inserts. This is important because standard needle drivers without "TC" are functional but they cannot guarantee spinning or disengaging of the suture needle from the beaks of the instrument. This occurs when the suture needle is in contact with bone or hard tissue. BMT manufactures tungsten needle drivers where the inserted tip is fused during the manufacturing stage using real gold foil. Gold being an optimum heat conductor allows the stainless steel body of the instrument to fuse with the tungsten carbide tip creating an alloy that cannot be separated.
BMT has modified all needle drivers. The joint area has been tapered inward where the handle and the joint meet. This stops all snags of the suture string in the needle drivers' joint.

Titanium Needle Holders
FD-574T | FD-575T | with scissors: FD-587T | FD-588T
These needle drivers are constructed of titanium alloy, which offers several advantages:

- Completely resistant to corrosion from nitric acid, chloride, saltwater, and industrial and organic chemicals.
- Lightweight & strong with the tensile strength of carbon steel.
- More flexible and 40% lighter than stainless steel.
- When heated or cooled, the dimensions change less than half of what stainless steel alloys will, making titanium surgical instruments much more durable even with autoclaving.
- Temperature resistant up to 430°C.
- Stain-free. 100% anti-magnetic.



Needle Holders with suture scissors
Olsen- Hegar | BM-01 | BM-02 | BM-03
A combination instrument constructed as a needle holder, instead half of each blade nearest to the pivot is shaped like a regular scissor blade. Used for driving the needle and cutting the suture without changing instruments.

Castroviejo Needle Holders (Microsurgery)
FD-18 | FD-22 | FD-25 | FD-730 | FD-731
Available in TC or Non-TC, straight or curved, medium or long. Spring grip or non spring grip needle holders for delicate suturing. The size of a suture needle and the thickness of tissue must be taken into consideration when suturing. Many microsurgical procedures need a fine instrument.
Useful where extreme tissue care is mandatory, such as in perio suturing and muco-gingvial suturing. This is a well-recognized instrument to periodontists and endodontists alike.

Driver Ligature Twister (Orthodontics)
Mathieu | PO-79 | PO-80
Primarily a needle driver because of the cross-hatching serration on the beaks. Some do come in a hemostat style because of the horizontal only serration. Orthodontists have adopted this instrument into their discipline because it is the perfect instrument for grasping and twisting the tight ligature wire that is necessary to their procedures. To operate the instrument one must grasp it in their hand and lock and unlock the locking mechanism. There are no finger loops, which sometimes become uncomfortable to the user. Tungsten carbide versions are available.

Periodontal Instruments

Periodontics

Also known as Periodontology is the specialty of dentistry that studies supporting structures of teeth, as well as diseases and conditions that affect them. The supporting tissues (periodontium) include the gingiva (gums), cementum, alveolar bone, and the periodontal ligament.

Periodontal diseases

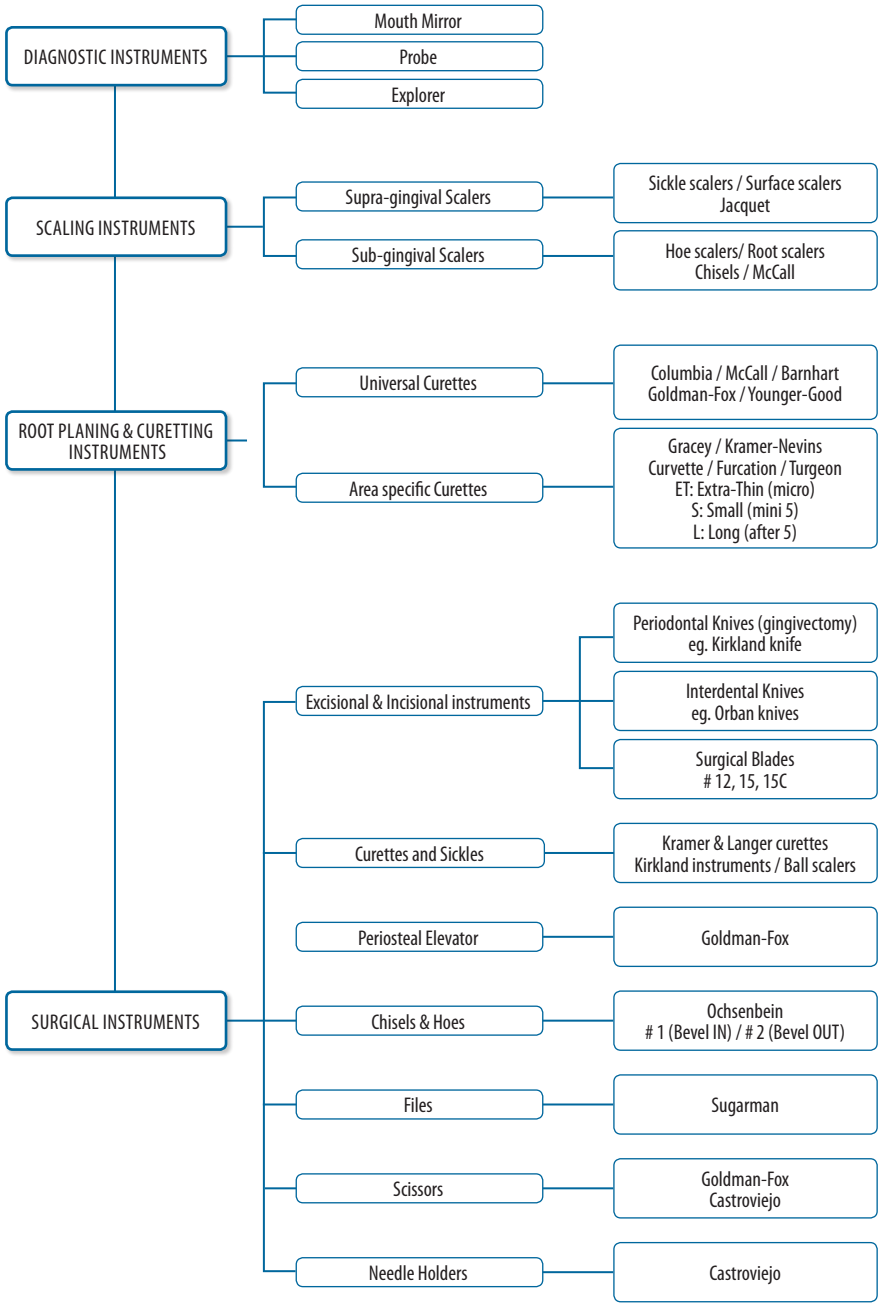
Periodontal diseases take on many different forms but are usually a result of a coalescence of bacterial plaque biofilm accumulation of the red complex bacteria (e.g. P. gingivalis, T.forsythia, and T.denticola) of the gingiva and teeth, combined with host immuno-inflammatory mechanisms and other risk factors which lead to destruction of the supporting bone around natural teeth. Untreated, these diseases lead to alveolar bone loss and tooth loss. Today, these continue to be one of the leading causes of tooth loss in adults.

Classification of periodontal diseases

- Gingivitis
- Chronic periodontitis
- Aggressive periodontitis
- Periodontitis as a manifestation of systemic disease
- Necrotizing ulcerative gingivitis/periodontitis
- Abscesses of the periodontium
- Combined periodontic-endodontic lesions

Periodontitis

Periodontitis, also known as gum disease and pyorrhea, is a set of inflammatory diseases affecting the tissues surrounding the teeth. Periodontitis is caused by microorganisms that adhere to and grow on the tooth's surfaces, along with an over-aggressive immune response against these microorganisms. It involves progressive loss of the alveolar bone around the teeth, and if left untreated, can lead to the loosening and subsequent loss of teeth.



Peri-Implantitis

Periodontology also involves the placement and maintenance of dental implants, including the treatment of peri-implantitis which is inflammatory bone loss around dental implants.

Periodontal Surgery

A gingival graft, also called gum graft or periodontal plastic surgery, is a generic name for any of a number of periodontal surgical procedures in which the gum tissue is grafted. The aim may be to cover exposed root surfaces or merely to augment the band of keratinized tissue.

Symptoms and Diagnosis of Tooth Decay

Primary diagnosis involves inspection of all visible tooth surfaces using a good light source, dental mirror, explorer and probe. X-rays may show dental caries before it is otherwise visible (between the teeth). Large areas of dental caries are often apparent to the naked eye, but smaller lesions can be difficult to identify. Visual and tactile inspection along with radiographs are used to diagnose pit and fissure caries. Early, uncavitated caries is often diagnosed by blowing air across the suspect surface, which removes moisture and changes the optical properties of the unmineralized enamel.

Scaling and root planing

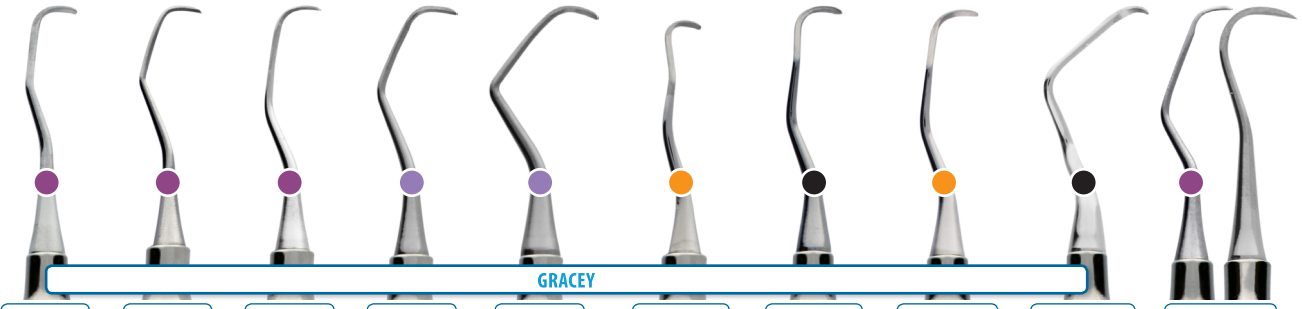
Also known as conventional periodontal therapy, non-surgical periodontal therapy, or deep cleaning, is a procedure involving removal of dental plaque and calculus (scaling or debridement) and then smoothing, or planing, of the (exposed) surfaces of the roots, removing cementum or dentine that is impregnated with calculus, toxins, or microorganisms, the etiologic agents that cause inflammation. This helps to establish a periodontium that is in remission of periodontal disease. Periodontal scalers and periodontal curettes are some of the tools involved.

MOST POPULAR INSTRUMENTS

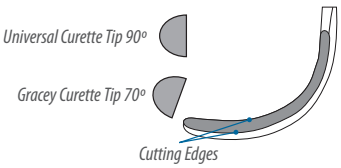
Gracey Curettes: Designed for dental hygiene. Maintains long sharp edges. Balanced and ergonomic for great tactile working ability. Extra light hollow handle for optimum comfort (feather weight / round Ø 9 mm). The Gracey curette has a blade that is laterally offset by 70º relative to the shank. It has a lower cutting edge and an upper non-cutting edge. Because only one side of each blade can cut, the Gracey curettes are site-specific, and a posterior instrument used to clean mesial surfaces of teeth will not work on distal surfaces, and vice versa. Gracey blades used for mesial surfaces of anterior teeth from the facial are only suitable for the distal surfaces of the same teeth when access is performed from the lingual. # 1/2, 3/4, 5/6 are used on the anterior sextants of teeth. # 7/8 and 9/10 are used on the buccal and lingual portions of posterior teeth. # 11/12 and 15/16 are used on the mesial portions of posterior teeth. # 13/14 and 17/18 are used on the distal portions of posterior teeth.

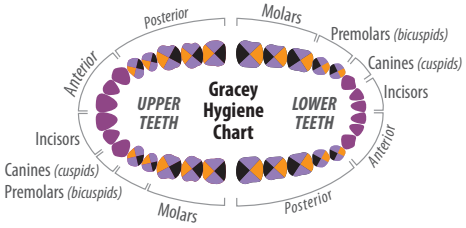
Elite

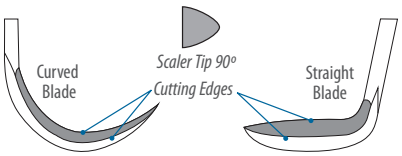
inox Stainless Steel



USG-1/2	USG-3/4	USG-5/6	USG-7/8	USG-9/10	USG-11/12	USG-13/14	USG-15/16	USG-17/18S	USS-H5/L5
Curette #1/2	Curette #3/4	Curette #5/6	Curette #7/8	Curette #9/10	Curette #11/12	Curette #13/14	Curette #15/16	Curette #17/18	Scaler/Curette #H5/L5







Anterior: 1/2, 3/4, 5/6 · Bucal Lingual Surfaces: 7/8, 9/10 · Mesial Surfaces Premolars, Molars: 11/12, 15/16 · Distal Surfaces Premolars, Molars: 13/14, 17/18

Titanium Curettes & Scalers: Specifically designed to remove plaque, calculus, and cement, without scratching titanium alloy implant components. Long lasting solid titanium tip. Gold coloured handle for easy identification purposes so they won't be mixed up with standard stainless instruments. Balanced and ergonomic for great tactile working ability. Extra light hollow handle for optimum comfort (feather weight / round Ø 9 mm).

Elite

Ti Titanium

T-USG-1/2	T-USG-5/6	T-USG-7/8	T-USG-11/12	T-USG-13/14	T-USS-YG7/8	T-USS-B5/6	T-USC-4RL	T-USS-204S	T-USS-G6/7
Curette # 1/2 170 mm	Curette # 5/6 170 mm	Curette # 7/8 170 mm	Curette # 11/12 170 mm	Curette # 13/14 170 mm	Curette # YG7/8 170 mm	Curette # 5/6 170 mm	Curette # 4RL 175 mm	Scaler # 204S 170 mm	Scaler # G6/G7 165mm

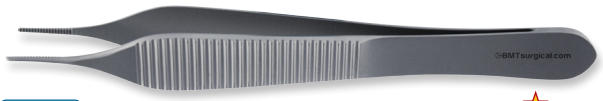
⚠ **Solid Titanium**. These instruments should be sharpened after regular use with Ceramic or Arkansas stone. Do not sterilize with non titanium instruments.

Pliers : Also known as forceps or tweezers, they are used for picking up objects too small to be easily handled with the human hands.

BD-01 **Dressing Forceps** | College # 17 | Serrated | 160 mm
Serrated utility pliers most commonly used for cotton pickup & placement.
(Available **BD-03** / College # 18 / Serrated - Loking / 160 mm)

COLLEGE **Dressing Forceps** | College | Serrated | 150 mm
Serrated utility pliers most commonly used for cotton pickup and placement.
(Available **COLLEGE-S** / College / Serrated - Loking / 150 mm)

BD-30 **Tissue Forceps** | Adson | 1x2 Teeth | 120 mm
Anatomical forceps with small teeth (1x2) at the end of the jaws. Designed for gently hold and reflect tissue flaps during surgery (atraumatic). Also useful for holding the suture needle.



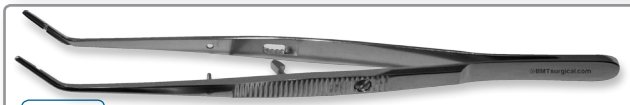
BD-31 **Tissue Forceps** | Adson | Serrated | 120 mm
Straight anatomical forceps with serrations on each side of the jaw. Designed for handling tissues with minimal trauma during surgery.

BD-45 **Tissue Forceps** | Semken | Serrated | 130 mm
Curved anatomical forceps with serrations on each side of the jaw. Designed for handling tissues with minimal trauma during surgery. Lightweight narrow handle.
(Available **BD-44** / Semken / Straight / Serrated)

BD-47 **Tissue Forceps** | Semken | Curved | 1x2 Teeth | 130 mm
Curved anatomical forceps with small teeth (1x2) at the end of each blade. Designed for handling tissues with minimal trauma during surgery. Lightweight narrow handle.
(Available **BD-46** / Semken / Straight / 1x2 Teeth)

BD-158 **Suture Forceps** | Angled Ø 1.6 mm | 160 mm
Suture pliers with a "pass through" hole at the tip, allowing you to stabilize soft tissue flaps in order to pass the suture needle through soft tissue or to hold a flap while cutting it or attempting to retrieve a soft tissue graft.

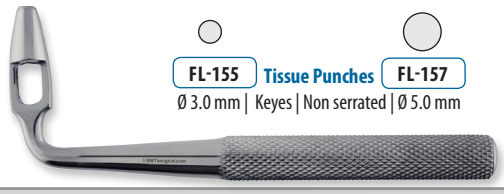
DA-07 **Suture Forceps** | Corn | Serrated | 130 mm
The Corn suture pliers is a suturing forceps with a "pass through" hole at the tip, allowing you to stabilize soft tissue flaps in order to pass the suture needle through soft tissue or to hold a flap while cutting it or attempting to retrieve a soft tissue graft.



DA-05 **Endo Forceps** | Locking System | 150 mm
Similar to regular cotton forceps except for locking mechanism to secure material on the working end of the forceps (pliers). Used to grasp and lock material for transfer into and out of oral cavity. Could also be used on restorative tray setups.

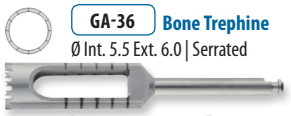
DA-11 **Endo Forceps** | Locking System | 155 mm
Similar to regular cotton forceps except for locking mechanism to secure material on the working end of the forceps (pliers). Used to grasp and lock material for transfer into and out of oral cavity. Could also be used on restorative tray setups.

Bone / Tissue Trephine Burs & Punches: A saw designed to remove small quantities of tissue or bone in a circular movement during surgical procedures for grafting. You will thus have an excellent supply of filling material for small autogenous implants.



FL-155 **Tissue Punches** **FL-157**
Ø 3.0 mm | Keyes | Non serrated | Ø 5.0 mm
90 mm

GA-66 **Tissue Trephine**
Ø Int. 5.5 Ext. 6.0 | Non serrated
15 mm
17 mm
32 mm



GA-36 **Bone Trephine**
Ø Int. 5.5 Ext. 6.0 | Serrated
19 mm
17 mm
36 mm

Bone Mill: Used for easy and fast grinding of autologous cortical bone material. Particle size depends upon rotation and pressure. Slower rotation and more pressure on the cap leads to bigger bone particles. Minimized bone loss. Bone chips can immediately be used for bone augmentation and reconstruction of bone defect. Existing crusher not only gives anxiety-provoking noises from the hitting sounds occurring when crushing bones but also reduces the volume of the bones. In addition, existing bone mills result in a lot of bone loss due to the large size of the shaft. The Bone Mill consist of a stainless steel body, a golden lid and a handle. It is small enough to be completely grasped by hand and compact with simple system, which minimized bone loss as well is very easy to use, maintain and wash.

GM-02

Size	Small
Dimensions (mm)	Ø 30 x 44 mm
Volume	1 cc.
Mill hole (mm)	Ø 0.65
Particle (microns)	650 µ

Surgical Curettes : Used to remove soft tissue from bony defects. Also for the elevation and removal of root tips and incisors when bone preservation is of utmost importance.

M0-2 Molt # 2 | Ø 2.0 mm | 145 mm

(Available **M0-10** / Molt # 2/4 / Double-ended)

M0-4 Molt # 4 | Ø 4.0 mm | 145 mm

Double-ended surgical curette is a periapical surgical or bone curette. It has a mirror image ends. The terminal shank is angled at 50° and has a 20 mm reach. The spoon shaped blades have an elongated radius.

720-85Z Lucas # 85 | Serrated | 180 mm (Available **720-86Z** / Lucas # 86 / Serrated)

720-87 Lucas # 87 | 180 mm (Available **720-85, 86, 88** / Lucas # 85, 86, 88)

Sinus Lift Curettes : Used to separate/reflect the Schneiderian membrane from the maxillary bone and to elevate the membrane. For curettage, cyst removal and tooth socket debridement.

M0-10 Molt # 2/4 | Ø 2.0 /4.0 mm | Sharp | 155 mm

A straight surgical curette is a periapical surgical or bone curette. It is an instrument used to remove soft tissue from bony defects. The active part of this instrument is a spoon like tip with sharp edges. (Available **SL-1** | Sharp | 180 mm)

EN-M1 # 1 | Blunt | 160 mm

(Available Blunt: **EN-M2**, **EN-M3**, **EN-M6**, **EN-M6**, **EN-M7** | Sharp: **EN-M4**)

Taso Kit (Sinus Lift Surgery) : Designed by Dr. Tassos Irinakis, consists of 9 distinct sequentially numbered instruments that allow the clinician to perform any direct sinus augmentation surgery. All steps of the procedure are taken into account from raising the fl ap to the tricky step of placing the membrane over the osseous lateral window prior to suturing. This well thought-out set of instruments allows the clinician to comfortably operate in the various sinuses regardless of location, anatomic variations or level of diffi culty. It also establishes a comfortable routine that was never present before.

TASO-1 Blunt | 170 mm

Used to initiate membrane elevation off the lateral osseous walls. It requires careful subtle handling and is used for the first 2-3mm of membrane elevation.

TASO-2 Sharp | 165 mm

TASO-3 Sharp | 175 mm

Used to do the bulk of the membrane elevation off the lateral wall of the sinus. Also for lifting the membrane off the base of the sinus cavity, however, only for narrow sinus cavities.

TASO-4 Sharp | 170 mm

Used when the septum is identified, and in close proximity with the membrane (very difficult to address) to manage this complication effectively and bypass this intra-surgical challenge.

TASO-5 Sharp | 170 mm

Complement of TASO-2 in the larger and wider sinus cavities, where the membrane is being lifted without much difficulty. Also for membrane lateral wall, sinus cavity base and anterior wall.

TASO-6 Sharp | 175 mm

Used in lifting the membrane off the medial and anterior antrum walls in small and moderately sized sinus cavities. Also to carry and place the bone graft particles into the sinus.

TASO-7 Blunt | Sharp | 170 mm

Designed to be commonly used in the larger sized sinus cavities for membrane elevation off the base of the antrum and the medial wall.

TASO-8 Bone Condenser | 170 mm

For careful bone particle placement within the sinus cavity and assure that the particles have indeed been placed and secured in all the right spots without allowing for "voids" or "gaps".

Membrane Forceps: As part of the TASO KIT, is used to securely place the final membrane and securely position the flap over the membrane without "moving" it downwards and thus exposing the grafted sinus to the inner aspect of the elevated flap.

TASO-9 Tickness 0.6 mm | Thin and lightly serrated surface | 150 mm

Bone Mixing Bowls: Stainless steel solid capacious receptacles used to deposit the harvested bone chips as well as autogenous supplemental bone fill or heterogenous material and to mix these materials either with physiologic saline or with the patient's blood.

SS-65 Ø 35x35 mm| depth 15 mm

CS-01 Ø 40 | 15cc | 0.5oz

CS-02 Ø 60 | 75cc | 2.5oz

CS-03 Ø 80 | 225cc | 7.5oz

CS-04 Ø 100 | 325cc | 11oz

Bone Files: Used to remove or smooth rough edges of bone post extraction and prior to implant placement, in a push-pull action. Features a curved working end combined with a straight working end. Cross cut file increases efficiency by cuting in all directions. Autogenous bone for grafting is easily harvested from the file.

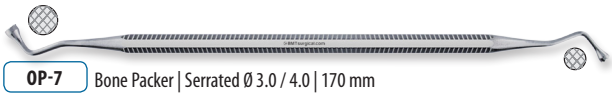
DO-4C Miller # 12A | 170 mm (Available **DO-1** / Howard # 67 | **DO-4** / Howard # 12)

718-212S Sugarman # 1S/2S | 170 mm (Available **718-214S** / Sugarman # 3S/4S)

Bone Grafting Placement Instruments: Includes bone grafting packers and applicator for mixing and placement of bone augmentation/graft material.

OP-6 Bone Packer | Non-serrated Ø 2.0 - Spoon: 11 x 5.5 mm | 175 mm
Excellent in difficult access sites. Condenser with depth markings.

USB-P2 Bone Packer | Non-serrated Ø 3.2 / 3.8 | 170 mm
Condenser with depth markings: 3-5-8-10-13 mm (Available **USB-P2Z** / serrated Ø 3.2 / 3.8)

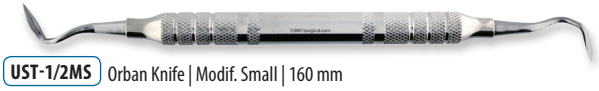


OP-7 Bone Packer | Serrated Ø 3.0 / 4.0 | 170 mm

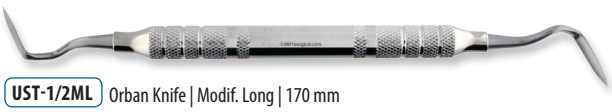
IM-15 Applicator | 180 mm

Tunneling Kit: For perio gum grafting tunneling technique. Used for preparing dissected and full flaps in recession coverage procedures or ridge build-ups in periodontology and implant dentistry.

Orban knives are used for sharp dissection in pouch and tunnel procedures. The cutting edge ends 5mm from the shank allowing for lateral dissection without harming sulcular margin. The flat side of the instrument enables close approximation to the periosteum for supra-periosteal dissection.



UST-1/2MS Orban Knife | Modif. Small | 160 mm



UST-1/2ML Orban Knife | Modif. Long | 170 mm

UST-MP **Micro Periosteal Elevator** | 180 mm
Used for blunt tissue reflection in pouch and tunneling procedures. The three-sided instrument (the curved end may be used with the curve down or up) enables sub-periosteal elevation of bound-down tissue reducing the risk for perforation.

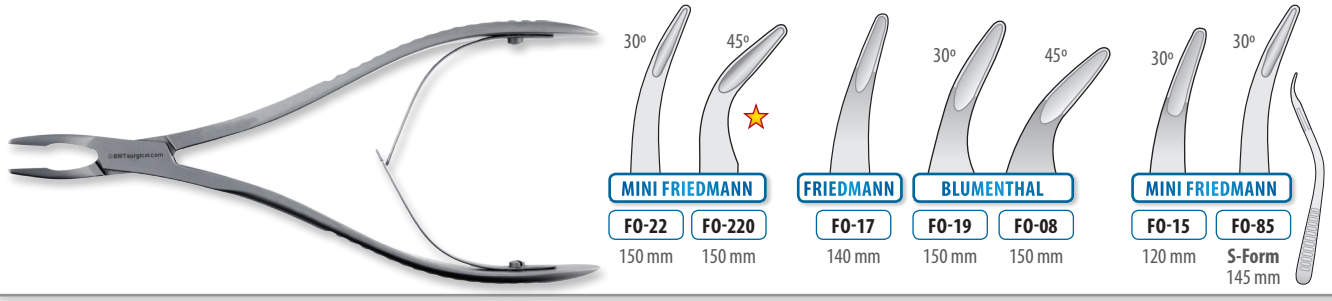
UST-MPA **Micro-Anterior Periosteal Elevator** | 180 mm
1/3 narrower than UST-MP. For blunt reflection and tunneling procedures in the anterior region or where the tissue is very thin.

UST-KPA Modif. Orban Knife | End-Cutting Intrasulcular Knife | Minnesota University | 140 mm

Perio knife, used for the initial intrasulcular incisions and also as a universal posterior periotome for separating the periodontal ligament. The thin narrow blade with dull sides provides for incisions from the base of the sulcus to the alveolar crest without harming the sulcular walls.

Bone Expansion Osteotomes: Bone Spreading Technique (BST) for ridge horizontal augmentation with immediate implant placement for treating the maxilla with deficient alveolar bone width.

Bone Rongeurs: «« Rongeur »» is a French word that means rodent or gnawer. A rongeur forceps is a strongly constructed instrument with a sharp-edged, scoop-shaped tip, used for cutting and contouring bone. It has strong sharp beaks that are squeezed together by the handles. The beaks allow harvesting of bone edentulous sites for autogenous bone grafting. This forceps have a spring between the handles so that when hand pressure is released, the instrument will open. This feature allows the surgeon to make repeated cuts of bone without making special efforts to reopen the instrument. The major design used is one that provides for both side cutting and end cutting. The blades are smaller that the traditional rongeur with small narrow concave beaks towards the inside permitting the bits of bone to be contained as it is removed. In oral maxillofacial surgery is used to remove bony fragments or soft tissue. Also it is used in neurosurgery, podiatric surgery, and orthopedic surgery to expose areas for operation. A rongeur can be used to open a window in bone, often in the skull. It is also used in hand surgery to cut traumatic amputated bone to allow skin to be closed over the defect.



Root Elevators: Universal extraction elevators are used to luxate and remove teeth. In impacted areas when the use of a forceps is not possible due to abnormal position. Extensively decayed teeth, very often when there is no crown. To remove roots, loosen teeth, and intra-radicular bone. Routinely the clinician places the elevator between a tooth and bone, and turns the elevator on its long axis to dislodge or luxate the tooth or the root. Lightweight grip handle with thumb rest for even transfer of hand pressure. Seamless one-piece manufacture for easy cleaning and sterilization

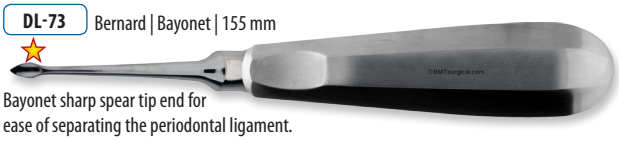
DL-34 # 301 | Straight | 155 mm
(Available **DL-34S** / small handle / 130 mm)

DL-48 Seldin | # 304W **DL-49** Seldin | # 34S
Straight | 155 mm (Available **DL-48S** and **DL-49S** / small handle / 130 mm)

DL-38 # 77R | Concave - Serrated | 155 mm

The tip end has a sharp edge
for separating the periodontal ligament. It increases stability when engaging ther tooth. Concave for the contour of the tooth and root. Offset stem for universal anterior and posterior.

DL-73 Bernard | Bayonet | 155 mm



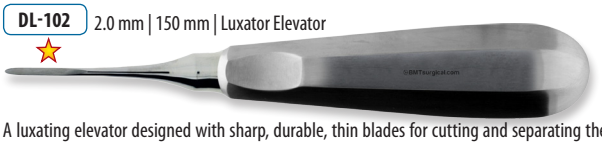
Bayonet sharp spear tip end for
ease of separating the periodontal ligament.
Concave for contour of the tooth and root.

H-2 Heidbrink | Right | 140 mm

Used to remove
apical root fragments.
(Available Small handle130 mm **H-2S** |**H-3S**)

H-3 Heidbrink | Left | 140 mm

DL-102 2.0 mm | 150 mm | Luxator Elevator



A luxating elevator designed with sharp, durable, thin blades for cutting and separating the periodontal ligaments. It reduce trauma during extractions as they are used in a rocking, luxating motion, compared to a standard elevator that pries and lifts. Luxating teeth before extraction can minimize the incidence of broken roots and teeth, especially in the esthetic zone. The large custom grip handle has a thumb rest for even transfer of hand pressure. The DL-102 and DL-112 have a 2.0mm length edge and are both considered universal luxating elevators. (Available in 2.0, 3.0, 4.0 and 5.0 mm widths, both straight and curved)

BEIN-2Z 3.0 mm | 155 mm | Serrated

Sharp serrated teeth at the tip of the elevator end for maximum torque when removing challenging teeth and roots. When the use of a forceps is not possible due to abnormal position. Extensively decayed teeth, very often when there is no crown. Large custom grip handle with thumb rest for even transfer of hand pressure. Routinely the clinician places the elevator between a tooth and bone, and turns the elevator on its long axis to dislodge or luxate the tooth or the tooth root. (Available **BEIN-4Z** / 4.0 mm / 155 mm / Serrated)

Proximator Elevators: All-in-one Hybrid straight Luxator/Elevator/Periotome Separate the periodonal ligament, luxate teeth, and extract teeth. Less invasive extracxtion that with a traditional elevator. To remove roots, loosen teeth, and intra-radicular bone. Solid stainless steel European style grip handle for thumb rest and even transfer of hand pressure. Commonly used for severing the periodontal ligament creating the necessary space along the mesio and distal plane for tooth and root extraction. Provides the surgeon with precision and accuracy, due to the rigid, sharp, and thinly honed ends, preserving tissue structures and eliminate bone fracturing. The custom pencil grip handle allows the even power transfer of hand pressure for easy extraction.

MIR-21 Small angle OUT | 160 mm

MIR-23 Small angle IN | 160 mm (Available **MIR-20** / Large angle IN)

MIR-22 # 301 | Straight | 160 mm
Concave end with sharp edge at the tip. Very similar to the # 301 elevator.

MIR-25 Bernard | Bayonet | 155 mm
Small sharp bayonet/spear tip. Very similar to the Bernard elevator.

Periosteal Elevators (Raspatories): It is the classic instrument for flap reflection. Most commonly used to reflect the mucosa and periosteum from the underlying bone after an incision (minimize tissue trauma). It has a pointed end and a broader flat end with cutting edges. Usually the pointed end is used to working in interdental papilla regions and for finding the cleavage in the periosteal (lifting the soft tissue flap directing it towards the bone). The broader end allows a delicate detachment of the periosteal from the bone.

718-M9 Molt # 9 | 170 mm

M0-8 Molt # 8 | 180 mm

718-PR3 Prichard # 3 | 170 mm

FREER Freer | Sharp and Blunt | 180 mm

MEAD Mead | 165 mm

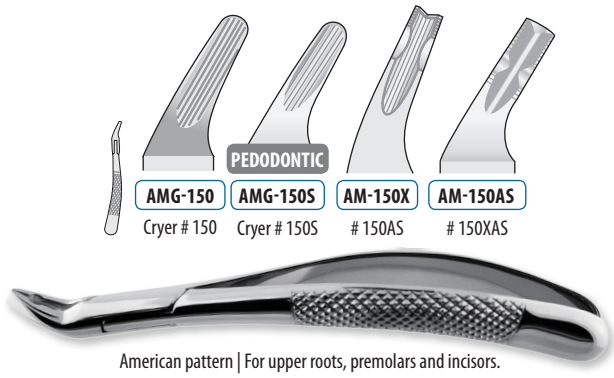
MIR-08 Surgical Woodson | Sharp and Blunt | Periosteal Elevator and Periotome

Root Fragment Forceps: Commonly used for removing fragmented tooth, silver points, broken endodontic files, foreign object removal and deeply secured posts which can be difficult to extract. The size of the tip makes it an excellent placement and retrieval instrument for standard and micro procedures. The fine serration and cylindrical grasp are the main reasons for the success of these procedures.

DA-10 Diamond dusted | 130 mm
30° angled forceps with superior diamond grip. (Available **DA-01** / Non-diamond)

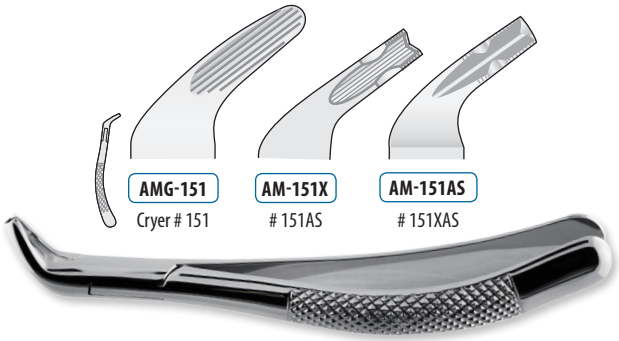
S-400 # 400 (300) | 165 mm
45° angled forceps for upper roots.

Extraction Forceps: A hand instrument used for grasping teeth during their removal from the socket. Most such forceps are designed for the extraction of a particular tooth in the maxilla or mandible.



AMG-150 Cryer # 150 | **AMG-150S** Cryer # 150S | **AM-150X** # 150AS | **AM-150AS** # 150XAS

American pattern | For upper roots, premolars and incisors.
Universal Forceps used for extracting teeth from the alveolar bone.



AMG-151 Cryer # 151 | **AM-151X** # 151AS | **AM-151AS** # 151XAS

American pattern | For lower roots, premolars and incisors.
Universal Forceps used for extracting teeth from the alveolar bone.

S-35 Deep Grip # 35

English pattern - Anatomical handle | For upper premolars and incisors.
Used to grasp the tooth as apically as possible to prevent root breakage.

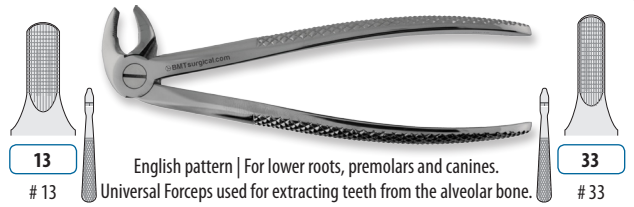
AM-451 Deep Grip # 451

English pattern | For lower roots, premolars and incisors.
Used to grasp the tooth as apically as possible to prevent root breakage.

17 Right # 17

English pattern | For upper molars.
Universal Forceps used for extracting teeth from the alveolar bone.

18 Left # 18

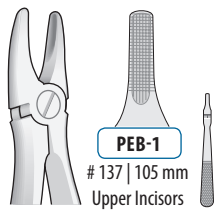


13 # 13

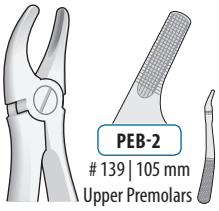
English pattern | For lower roots, premolars and canines.
Universal Forceps used for extracting teeth from the alveolar bone.

33 # 33

Pedodontic Extraction Forceps: An extraction forceps, but for children's primary teeth (anatomically smaller than adults). Smaller beaks are necessary to grasp the tooth. All have serrated beaks for a better grip on the tooth surface. They are small enough to be almost completely concealed in the dentist's hand. They do not have to hide it from the patient, which can sometimes traumatize the child.

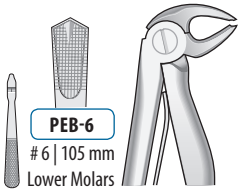


PEB-1 # 137 | 105 mm
Upper Incisors

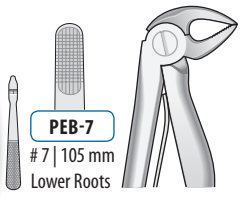


PEB-2 # 139 | 105 mm
Upper Premolars

PEB-3 # 3 | 105 mm
Upper Molars



PEB-6 # 6 | 105 mm
Lower Molars



PEB-7 # 7 | 105 mm
Lower Roots

Periotomes: Periotomes are very thin elevators that can be used to sever the periodontal ligament attachment of teeth; other uses include atraumatic extractions, especially in the esthetic zone. After the periodontal ligament is cut and the tooth is removed, the underlying bone structure remains intact, providing the necessary foundation for an implant supported replacement tooth. Highest grade steel for the sharpest and longest lasting cutting edge for the 3 blades: Straight (narrow-universal anterior), Angled (narrow vertical blade-anterior interproximal) and Set (mesial and distal posterior).

MC-11 # 1 | 160 mm

MC-12 # 2 | 160 mm

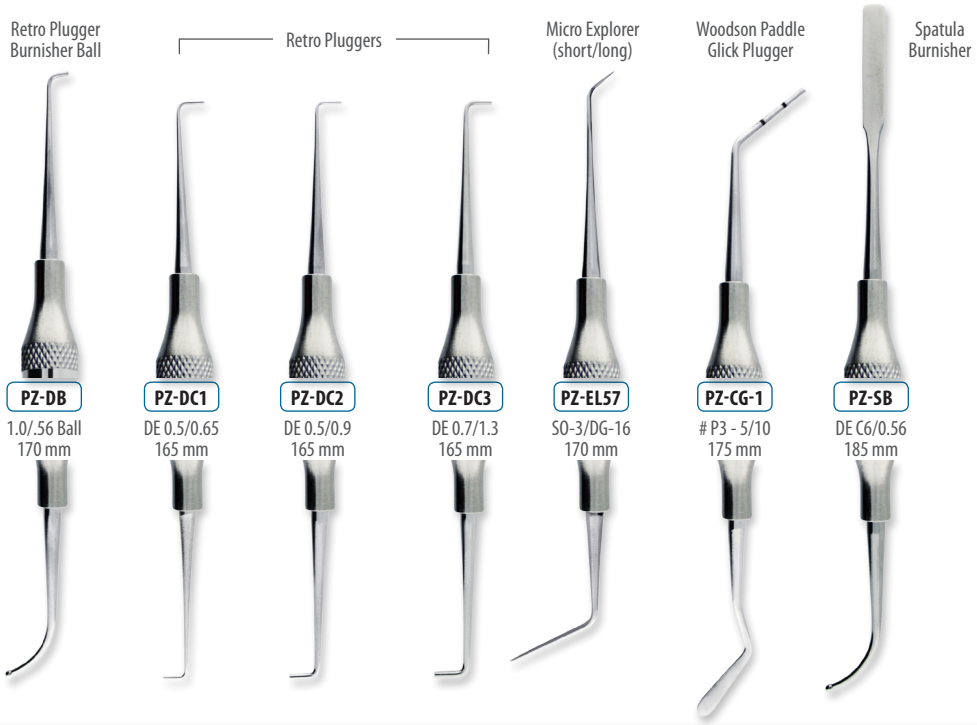
MC-13 # 3 | 160 mm

Each periotome is a one-single-piece.

MC-70 **Periotome Set** | 1 Handle (**MA-9**) + 3 Blades(**L-71**, **L-72**, **L-73**) | 175 mm

The periotome interchangeable blades are designed for carefully detaching the periodontal ligament to facilitate the removal of teeth with minimal damage to the surrounding alveolar bone.

Endodontic Instruments: For a variety of procedures including endo therapy (commonly known as "Root canal therapy"), endo retreatment, surgery, treating cracked teeth, and treating dental trauma. If the dental pulp (containing nerves, arterioles, venules, lymphatic tissue, and fibrous tissue) becomes diseased or injured, endodontic treatment is required to save the tooth.



PZ-DB 1.0/.56 Ball 170 mm

PZ-DC1 DE 0.5/0.65 165 mm

PZ-DC2 DE 0.5/0.9 165 mm

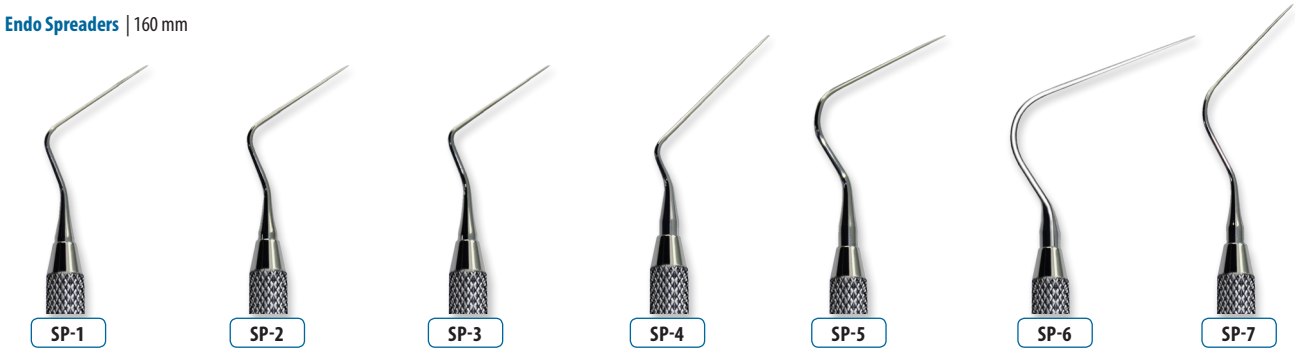
PZ-DC3 DE 0.7/1.3 165 mm

PZ-EL57 SO-3/DG-16 170 mm

PZ-CG-1 # P3 - 5/10 175 mm

PZ-SB DE C6/0.56 185 mm

Endo Spreaders | 160 mm



SP-1 # 1S 155 mm

SP-2 # 2S 155 mm

SP-3 # D11 155 mm

SP-4 # MA57 160 mm

SP-5 # 0 160 mm

SP-6 # 00 160 mm

SP-7 # 3 165 mm

Endo Probes | Luks | 160 mm

PL-1 Ø 0.6 # 1

PL-2 Ø 0.7 # 2

PL-3 Ø 0.9 # 3

PL-4 Ø 1.1 # 4

Endo Probes | 160 mm | Marked: 5-10-15-20 mm

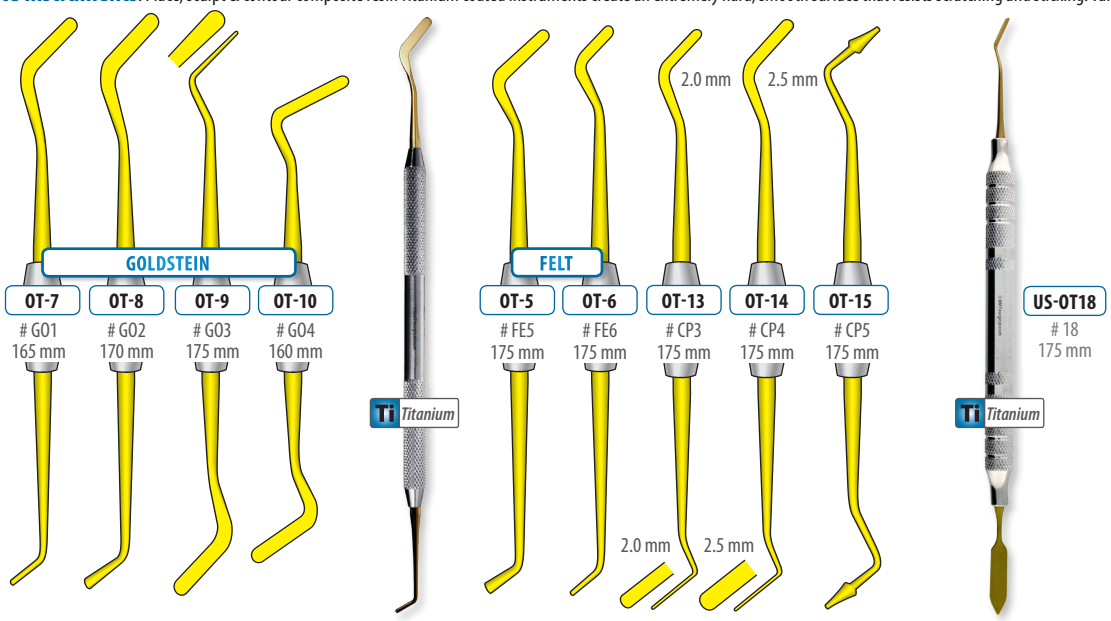
PZ-1 Ø 0.6 # 1

PZ-2 Ø 0.7 # 2

PZ-3 Ø 0.9 # 3

PZ-4 Ø 1.1 # 4

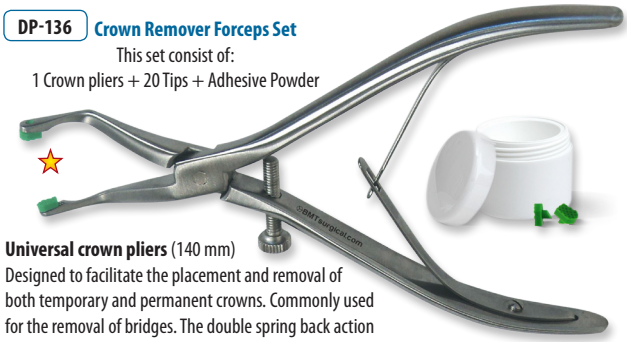
Composite Instruments: Place, sculpt & contour composite resin Titanium coated instruments create an extremely hard, smooth surface that resists scratching and sticking. Variety of shapes / sizes.



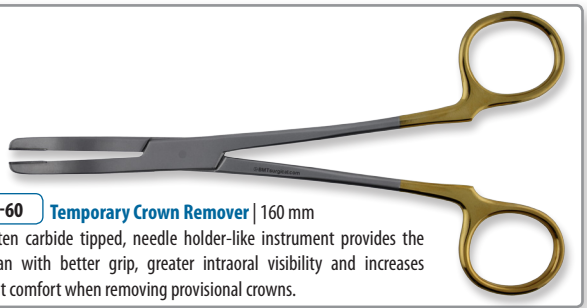
Crown Removal Kit: Designed for removing ceramic-metal restorations that resist easy removal from the teeth during the fitting procedure and after temporary or final cementation.

DP-136 **Crown Remover Forceps Set**

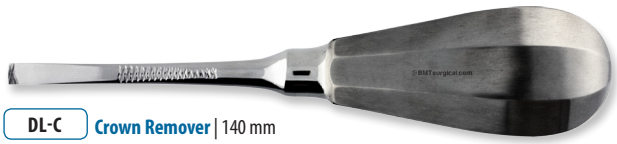
This set consist of:
1 Crown pliers + 20 Tips + Adhesive Powder



Universal crown pliers (140 mm)
Designed to facilitate the placement and removal of both temporary and permanent crowns. Commonly used for the removal of bridges. The double spring back action along with the hook-lock mechanism allows for a smooth grasping motion. Will prevent any unwanted pressures to the crown avoiding potential damages. The adjustable stopper allows to adjust the grasping tips to the width of the crown and locking into place.
20 Polymer plastic replacement tips + Adhesive Powder (Replacement DP-137)
To safely grip temporary ceramic crowns without scratching the surface. A better grip of the crown if the tips are coated with the adhesive powder which is dampened by saliva.



PH-60 **Temporary Crown Remover** | 160 mm
Tungsten carbide tipped, needle holder-like instrument provides the clinician with better grip, greater intraoral visibility and increases patient comfort when removing provisional crowns.



DL-C **Crown Remover** | 140 mm
For permanent removal of crowns by breaking the seal between tooth and crown after sectioning with a bur.

Rubber Dam Instruments: A dental dam or rubber dam («« Kofferdam »» from German), is a thin, 6-inch (150 mm) square sheet, usually latex or nitrile, used in dentistry to isolate the operative site (one or more teeth) from the rest of the mouth. It is used mainly in endodontic, fixed prosthodontic (crowns, bridges) and general restorative treatments. Its purpose is both to prevent saliva interfering with the dental work (e.g. contamination of oral micro-organisms during root canal therapy, or to keep filling materials such as composite dry during placement and curing), and to prevent instruments and materials from being inhaled, swallowed or damaging the mouth.

DF-12
Ivory | 170 mm

DF-00
Ivory | 160 mm

DF-32
Adults | 95x115 mm

DR-78
Miller | 155 mm

DF-02
Ainsworth | 160 mm

DF-07
Tofflemire | Universal

Probe: A long, slender instrument for exploring wounds, body cavities, passages, or periodontal pockets.

SO-4 # 9 | Solid handle | 155 mm

SO-20 # 11/12ODU | Solid handle | 165 mm

Periodontal Probes: A Perforation-Implant Depth Probe is used to measure pocket depths around a tooth in order to establish the state of health of the periodontium. Its large round tip is particularly suited for assessing the condition of the base after surgical preparations without damaging the mandibular nerve or the sinus membrane. It is usually long, thin, and blunted at the end. The calibrated periodontal probes are marked in millimeter increments and used to evaluate the health of the periodontal tissues (making intraoral measurements).

SM-12 # CP-12 | Thin solid handle | 155 mm
Used to measure horizontal and vertical pocket depth of multirooted teeth in furcation areas.
Coloured millimeter markings: 3-6-9-12 mm.

SM-15 # UNC-CP-15 | Thin solid handle | 155 mm
University of North Carolina. Used for making intraoral measurements.
Coloured millimeter markings: 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15 mm.

SM-21 Who | Thin solid handle | 155 mm
Coloured millimeter markings: 3.5-5.5-8.5-11.5 mm.

707-GFW Goldman-Fox-Williams | Flat-Rounded | Thin solid handle | 165 mm
Coloured millimeter markings: 1-2-3-5-7-8-9-10 mm.

Explorer / Probe (Expro): A double-ended instrument with an explorer on one end and a probe on the other. Excellent for dental examinations, charting and implant surgery. The Explorer tip (sharp pointed) is used to investigate natural or restored tooth surfaces to detect caries, calculus, other defects, or dental deposits, which, because of its arc, allows easier access to back teeth. The Probe is used for exploring wounds, body cavities, passages, or periodontal pockets. The periodontal Probe tip is used for making intraoral measurements.

707-2315 # CP-15UNC/23W | Hollow handle | 170 mm
Shepards hook explorer / University of North Carolina periodontal probe # 23 - 15 mm.
Measures: 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15 mm). (Available **EX-15** / thin solid handle)

707-23D1 # 23/17 | Hollow handle | 170 mm
Shepards hook explorer / Probe # 23/17
(Available **707-23D2** / # 23/17A / hollow handle | **EX-13** / # 23/17 / thin solid handle)

707-23W Williams # 23W | Hollow handle | 165 mm
Measures: 1-2-3-5-7-8-9-10 mm). (Available **SO-1** / Explorer # 23 / one end-thin solid handle)

707-6D1 # 5/6 | Hollow handle | 185 mm
Endo explorer # DG16 (Available **707-6D2** / # 16/17 / hollow handle)

Periodontal Chisels: Double-ended perio chisel are used to remove subgingival calculus and altered cementum. Features right and left offset cutting edge.

718-107 Rhodes Backaction # 36/37 | 170 mm

OSB-4 Ochsenbein # 1/2 | 170 mm

Surgical Scissors: They are surgical instruments usually used for cutting. They include bandage scissors, dissecting scissors, operating scissors, stitch scissors, tenotomy scissors, plastic surgery scissors, Iris scissors, Metzenbaum scissors, Mayo scissors, etc. Surgical scissors are usually made of very hard stainless steel for ongoing toughness. The hardness of this material allows the manufacturers to create sharper edges, which allows for easier and smoother cuts and keeps the scissors sharp for longer. Scissors blades are available in various configurations like: curved, straight, blunt-blunt, blunt-sharp, and sharp-sharp. There are 2 types of scissors used in surgeries:

- Ring scissors look much like standard utility scissors with two finger loops.
- Spring forceps are small scissors used mostly in eye surgery or microsurgery. The handles end in flat springs connected with a pivot joint. The cutting action is achieved by pressing the handles together. As the pressure is released, the spring action opens the jaws.

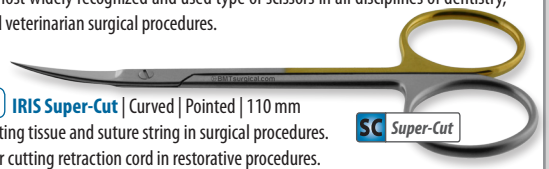
There are differents variations of scissors: with Serrations (Z), with Tungsten Carbide inserts, Super-Cut, Wellenschliff, Hard Metal, etc.

inox *Stainless Steel* Made from martensitic stainless steels (AISI 421, 440, 440C2) which is the highest quality surgical steel available.

SC *Super-Cut* Extremely sharp rasor edge. Atraumatic. Specially designed cutting edges. One regular edge and one sharp-knife edge. Better cut and need less sharpening.

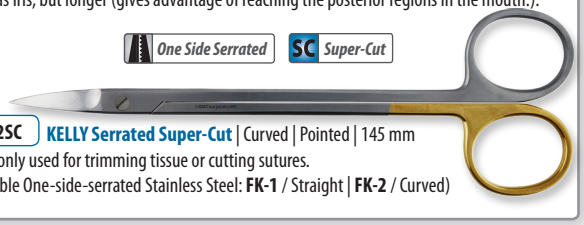
W *Wellenschliff* Wavecut prevents tissue from slipping out during the cutting process. H *Hard Metal* Durable carbide cutting edges inserts.

Iris are the most widely recognized and used type of scissors in all disciplines of dentistry, medical, and veterinarian surgical procedures.



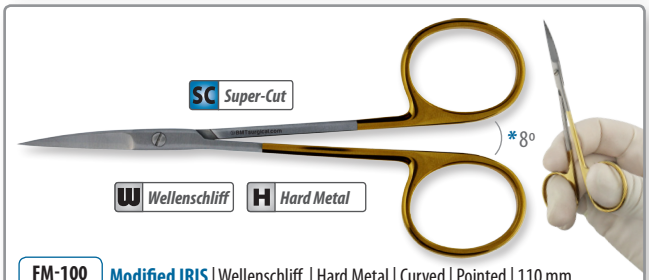
FG-2SC **IRIS Super-Cut** | Curved | Pointed | 110 mm
Used for cutting tissue and suture string in surgical procedures.
Also used for cutting retraction cord in restorative procedures.
(Available Super-Cut Straight: **FG-1SC** and Stainless Steel: **FG-1** / Straight | **FG-2** / Curved)

Same as Iris, but longer (gives advantage of reaching the posterior regions in the mouth.).



FK-2SC **KELLY Serrated Super-Cut** | Curved | Pointed | 145 mm
Commonly used for trimming tissue or cutting sutures.
(Available One-side-serrated Stainless Steel: **FK-1** / Straight | **FK-2** / Curved)

FG-2SCZ **IRIS Serrated Super-Cut** | Curved | Pointed | 110 mm
Commonly used for pre/post operative suture removal. Cutting-edges are sharp and serrated.
(Available **1SCZ** / Serrated / Super-Cut / Straight)



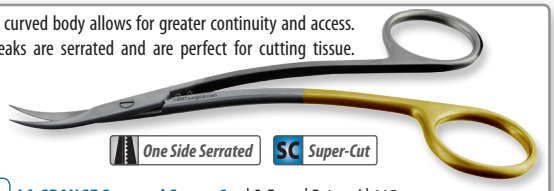
FM-100 **Modified IRIS** | Wellenschliff | Hard Metal | Curved | Pointed | 110 mm
Offset close position (*8°): Prevents surgical gloves are trapped between the handle's ring.
Better control and precision on cutting-action.

GFC-SC **GOLDMAN-FOX Serrated Super-Cut** | Curved | Pointed | 135 mm
Used to trim gingival tissue, but may also be used in plastic surgery and rectal procedures. They have curved, beveled blades, one of which is serrated, that taper into sharp, fine tips. The serrations provide a firm grip on tissue and the tapered blades make small, precise cuts in small surgical areas. (Available **GFC** / Stainless Steel / Curved | **GFR-SC** / Super-Cut / Straight)

GFS-SC **GOLDMAN-FOX Serrated Super-Cut** | S-Form | Pointed | 135 mm
Commonly used for pre/post operative suture removal. Cutting-edges are straight, sharp and serrated. The double curved body allows for greater continuity and access.
(Available **GFS** / Stainless Steel / S-Form / Pointed)

FM-2SC **METZENBAUM Super-Cut** | Curved | Blunt | 145 mm
Most commonly used for dissecting and cutting tissue. These scissors are not recommended for cutting sutures, drains, or heavy tissue. This product is curved with smooth, blunt tips .
(Stainless Steel Curved-Blunt Available: **FM-2** / 145 mm | **FM-48** / Baby 115 mm)

The double curved body allows for greater continuity and access.
The fine beaks are serrated and are perfect for cutting tissue.



LG-1SC **LA GRANGE Serrated Super-Cut** | S-Form | Pointed | 115 mm
Commonly used for removing excess gingival tissue. Slightly upward curved blades providing the ease of use and access. Cutting-edges are sharp and serrated. (Available **LG-1** / Stainless Steel)

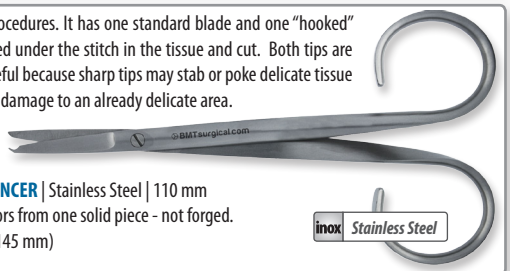
FD-12 **NOYES Serrated** | Stainless Steel | Curved | Pointed | 120 mm
"Noyes Iris Multipurpose Scissors". Fine & sharp scissors ideal for detailed dissection of fine tissue; dental, ophthalmic and dermatologic procedures; and for trimming tissue from nerves.

DEAN **DEAN Serrated** | Stainless Steel | Pointed | 110 mm
Used for blunt dissection in oral surgery procedure. Long shanks and short jaws with serrations to firmly grasp slippery tissue. It is angled with serrated blades (sharp/sharp tips).

These scissors have short, stout jaws, useful for cutting a heavier variety of metals and semi-precious metals. Matrix bands are used when a tooth is being isolated for a procedure and these scissors will cut the proper length.

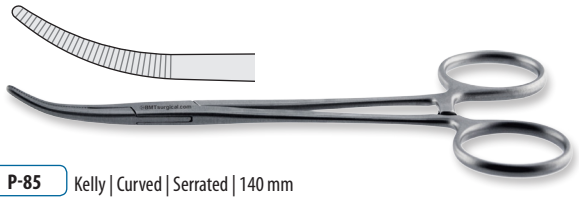
DP-92 **BEEBE** | Stainless Steel | Curved | Pointed | 110 mm
Also used to cut the metal of the base of crowns that are not fitting properly.
(Available **DP-91** / Straight / Pointed - Also available scissorswith blunt blades)

Used for suture procedures. It has one standard blade and one "hooked" blade to be inserted under the stitch in the tissue and cut. Both tips are blunted. This is useful because sharp tips may stab or poke delicate tissue causing trauma or damage to an already delicate area.

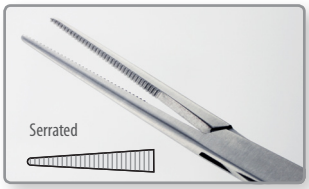


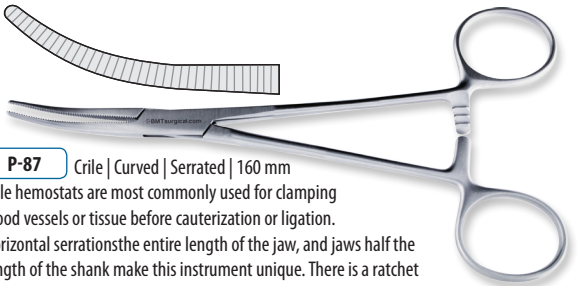
SC-1 **SPENCER** | Stainless Steel | 110 mm
Handcrafted scissors from one solid piece - not forged.
(Available **SC-2** / 145 mm)

Hemostatic Forceps: A hemostat (also called a hemostatic clamp, arterial forceps, or pean) is a surgical tool used in many surgical procedures to control bleeding. For this reason, it is common in the initial phases of surgery for initial incision to be lined with hemostats which close blood vessels awaiting ligation. Hemostats belong to a group of instruments that pivot (similar to scissors, and including needle holders, tissue holders and various clamps) where the structure of the tip determines the function.

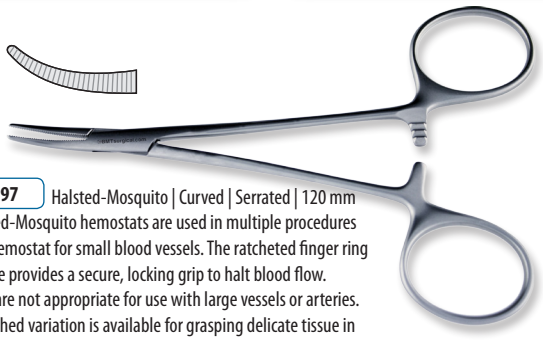


P-85 Kelly | Curved | Serrated | 140 mm
Kelly hemostats are primarily used for clamping large blood vessels or manipulating heavy tissue. They may also be used for soft tissue dissection. They are available curved or straight with a ratcheted finger ring handle. The jaws of Kelly Forceps are 1/3 the length of the shanks and serrations are 1/2 the length of the jaws. (Available **P-84** / Straight / Serrated / 140 mm)



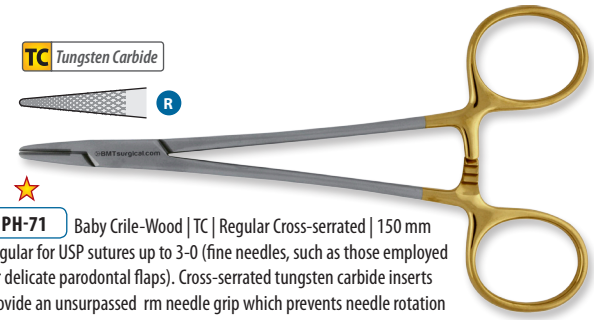


P-87 Crile | Curved | Serrated | 160 mm
Crile hemostats are most commonly used for clamping blood vessels or tissue before cauterization or ligation. Horizontal serrationsthe entire length of the jaw, and jaws half the length of the shank make this instrument unique. There is a ratchet locking mechanism for a tight, secure hold on vessels. Also be used for soft tissue dissection typically no deeper than 6-8 inch or Laparotomy. (Available **P-86** / Straight / Serrated)



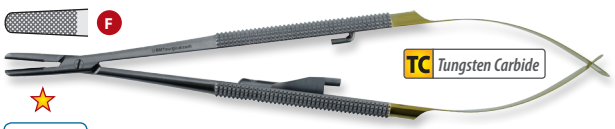
P-97 Halsted-Mosquito | Curved | Serrated | 120 mm
Halsted-Mosquito hemostats are used in multiple procedures as a hemostat for small blood vessels. The ratcheted finger ring handle provides a secure, locking grip to halt blood flow. They are not appropriate for use with large vessels or arteries. A toothed variation is available for grasping delicate tissue in skin grafting, biopsies, or ophthalmologic procedures. Mosquito forceps are known for their fine tips, and short, fully serrated jaws. They are available curved or straight. The standard length for this instrument is 5 inches, although BMT does offer some with a length of 5-1/2 inches. Halsted Mosquito Forceps are very similar to Hartmann-Mosquito forceps, however, the Hartmann style is finer and more delicate.
(Available **P-96** / Straight / Serrated / 120 mm | **P-98** / Straight / Serrated / 1x2 Teeth / 120 mm)

Needle Holders: Similar to a hemostat, used to hold a suturing needle for closing wounds during suturing and surgical procedures. The beak of the needle holder is shorter and stronger than the beak of the hemostat, and the jaws are typically milled so that the needle does not slip. The face of the beak of the needle holder is cross-serrated to allow for a positive grasp of the suture needle. Serrations on TC instruments are designed to stay sharp for a significantly longer period of time than standard instruments. The hemostat, by contrast, has parallel grooves on the face of the beaks, thereby decreasing the control over the needle. Therefore, the hemostat should not be used for suturing.

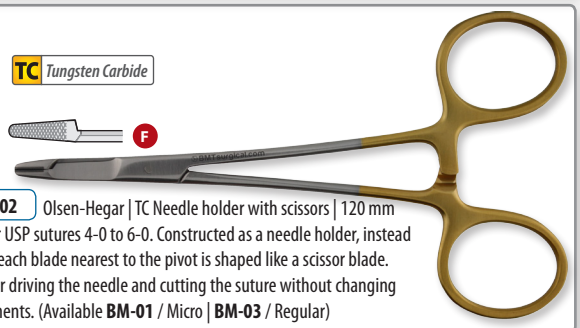


PH-71 Baby Crile-Wood | TC | Regular Cross-serrated | 150 mm
Regular for USP sutures up to 3-0 (fine needles, such as those employed for delicate parodontal flaps). Cross-serrated tungsten carbide inserts provide an unsurpassed rm needle grip which prevents needle rotation and suture slippage. Thumb ring handle with locking device, stout beak used to hold and to guide suture needles during suturing of tissues. For intraoral placement of sutures, a 6-inch needle holder is usually recommended. The needle should be held approximately two-thirds of the distance between the tip and the end of the needle. This technique allows enough of the needle to be exposed to the tissue while allowing the needle holder to grasp the needle in its strongest portion to prevent bending of the needle. (Available **PH-54** / TC / Fine / 150 mm)

FD-22 Castroviejo | TC | Fine Cross-serrated | 140 mm
Fine for USP sutures 4-0 to 6-0. Also known as Jacobson-Castroviejo Needle Holder. Curved with micro-profile. Spring handle with lock for precise control. (Available **FD-18** / standard)



FD-730 Castroviejo | TC | Fine Cross-serrated | Thick Jaw | 150 mm
Fine for USP sutures 4-0 to 6-0. Round short handle. Spring handle with lock for precise control on intricate procedures. Ideal for mucogingival techniques. (Available **FD-731** / long handle 170 mm)



BM-02 Olsen-Hegar | TC Needle holder with scissors | 120 mm
Fine for USP sutures 4-0 to 6-0. Constructed as a needle holder, instead half of each blade nearest to the pivot is shaped like a scissor blade. Used for driving the needle and cutting the suture without changing instruments. (Available **BM-01** / Micro | **BM-03** / Regular)

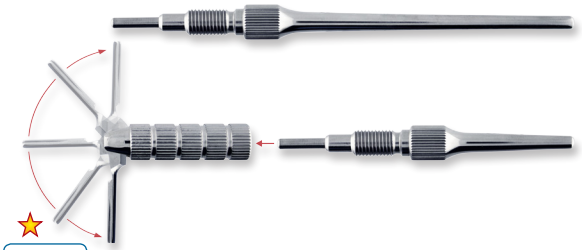
PO-82 Mathieu | TC | Fine Cross-serrated | 140 mm
Fine for USP sutures 4-0 to 6-0. TC inserts to insure firm holding of needles. Single spring instrument with a plier handle grip that curves inward at the bottom and features a ratchet locking mechanism at the base of the handles that can be easily squeezed to be locked and unlocked. This needle holder is used when more refined suturing is required. (Available Stainless Steel: **PO-79** / Fine / 140 mm | **PO-80** / Regular / 140 mm)

Scalpels: A scalpel, or lancet, is used for surgery and anatomical dissection. It consist of two parts: a handle (reusable) and a extremely sharp blade (disposable) .

MA-B1 # 5 | 145 mm ★
The preferred handle in implant surgery. Used to cut soft tissue and incise localized abscesses. The round handle provides ease of use and maneuverability for precise control when rotating angle of incision. The tip of the handle is prepared to receive a variety of differently shaped scalpel blades. (Available blades # 12, 12D, 15, 15C / box of 100)

MA-B3M # 3M | Graduated | 125 mm
Bard Parker style scalpel handle (flat) with metric ruler used for cutting gingival tissue and making surgical incisions. Variety of scalpel blades. (Available **MA-B3** / # 3 / Non graduated)

BB-46 Micro | 135 mm ★
Surgical scalpel handle collet style for micro blades. Commonly used for mucco-gingaval tissue grafting. (Available **S-6900** / box of 6 micro blades)



MA-20 1 Adjusting Rotating Blade + 2 Handles (Long 130 mm & Short 85 mm)
Adjustable # 5 scaple blade handle. Rotates 180º for a pre-set blade angle. Simply rotating and locking in the desired position for ease of surgical use. Used to cut soft tissue and incise localized abscesses. The round handles provide ease of use and maneuverability for precise control when rotating angle of incision. Prepared to receive a variety of differently shaped scalpel blades. (Available blades # 12, 12D, 15, 15C / box of 100)

MA-11 Micro | 135 mm
Surgical scalpel handle (similar shape to periotome handle MA-9) for micro blades. Commonly used for mucco-gingaval tissue grafting. (Available **S-6900** / box of 6 micro blades)

Mouth Mirrors: Three of its most important functions are allowing indirect vision by the dentist, reflecting light onto desired surfaces, and retraction of soft tissues.

RH-15A **Double Sided Rhodium Mirror** | Cone Socket | # 5 - Ø 24 mm
Rhodium coating mirror to resist scratching. (Available Simple-Stem **RH-14** / # 4)

MA-7A **Hollow Handle** | Cone Socket | 135 mm ★
Ergonomic and lightweigh European style single-ended stainless steel mirror handle. (Available Simple-Stem **MA-7**)

Single Sided Rhodium Mirrors

RH-4A # 4 - Ø 22 mm | Cone Socket

RH-5A # 5 - Ø 24 mm | Cone Socket ★
(Available Simple-Stem **RH-4** / **RH-5**)

Stainless Steel Micro Mirrors

MM-D3 # 4 - Ø 3 mm | Simple-Stem

MM-D5 # 5 - Ø 5 mm | Simple-Stem

MA-2A **Solid Handle** | # 2 | Cone Socket | 125 mm
Solid single-ended stainless steel mirror handle. (Available Simple-Stem **MA-2**)

Anesthetic Syringes: It consists of a breech-loading syringe fitted with a sealed cartridge containing anesthetic solution | Stainless steel | 1.8 ml | 140 mm

SD-8W **Aspirating Syringe** | Imperial Thread (NA)
Aspirating mechanism feature a blunt harpoon rod. Thumb ring.

SD-8NA **Aspirating & Self-Aspirating Syringe** | Imperial Thread (NA)
Aspirating mechanism feature a blunt harpoon rod. Self-Aspirating mechanism allows to aspirate by means of counter pressure. Silicone covered thumb ring.

Mouth & Tongue Retractor: Used to hold mucoperiosteal flaps, cheeks, lips and tongue away from the surgical area. Ideal for oral and ENT procedures. The 5" University of Minnesota Implant Cheek Retractor is used to retract the cheek and the mucoperiosteal flap simultaneously while the end of the retractor is to engage the bone for stability. Before the flap is created, the retractor is held loosely in the cheek, and once the flap is reflected, the retractor is placed on the bone and is then used to retract the flap.

OM-55 Minnesota University | 140 mm ★

Mouth Gag: Used to prop mouth open during extraction procedures and reduce TMJ trauma for sedated patients. Ideal for oral and ENT procedures. It is a Finger ring instrument that features a Tru-Grip cam ratchet locking system. The blades are 1 inch long and 1/2 inch wide. Also features cushions on the blades for the comfort of the patient.

OM-40 Molt-Doyen-Collin
Medium-Adult | 115 mm

(Available **DL-41** / Large-Adult | **DL-42** / Small-Child)

Cleaning, Maintenance & Sterilization of surgical instruments

SHARPEN - LUBRICATE

India # 6 100 x 45 mm
Medium grit 4 x 1.8 in

Arkansas # 6A
Fine texture

DB-3 DB-6A

Wedge Stones

They combine flat surfaces with rounded edges to manually sharpen internal parts (straight and curved edges) of curettes and scalers.

Arkansas: for routine sharpening and finishing.

India: for sharpening of excessively dull instruments or those requiring recontouring.

DB-4

Rectangular Stone

A flat and rectangular stone used to sharpen all cutting parts of surgical instruments.

Necessary in routine sharpening and finishing of edge and toe of an instrument.

Arkansas # 299
Ø 8 x 90 mm
Ø 0.3 x 3.5 in

Arkansas # 4
100 x 25 x 12 mm
4 x 1 x 0.5 in

DB-299

Conical Stone

A cone-shaped and cylindrical stone used to manually sharpen internal parts of curettes, scalers, gouges, rongeurs, etc. (in areas that otherwise cannot be reached).

Arkansas # 8
100 x 50 x 13 mm
4 x 2 x 0.5 in

DB-96

Flat Stone

A flat and rectangular stone used to sharpen all cutting parts of scissors, osteotomes, curettes, etc. (whenever necessary).

***Arkansas**: a natural stone extracted from the Arkansas mountains.*
***India**: a synthetic stone quarried from the finest Ozark novaculite -silicon quartz- deposits.*

Oil
30 cc
1 fl oz

DB-0L

Lubricating and Sharpening Oil

A non-coloured oil, which is an indispensable complement for lubricating and manual sharpening of surgical instruments. To activate the abrasive properties of Arkansas or India stones and to reduce the possibility of overheating the instruments during sharpening. It should be applied on all hinges or all other parts which are subject to movement or friction. Its use facilitates elimination of any residue present within the instrument hinges. Used to ensure perfect function and fluid movement of all surgical instruments.
Must ALWAYS be used during all sharpening operations.

Ceramic
76 x 25 x 6 mm
3 x 1 x 1/4 in

DB-71

Ceramic Stone

Ceramic stones are valued for their durability and the very keen edge they give in the finer grits. Will never pit or groove. Used for routine sharpening procedures.
Autoclave safe.

***Ceramic**: use only dry. (Do not use with oil, water or lubricants)*

RINSE AND CLEAN

CLEANLACT | Detergent Milk

Special milk for surgical instruments. Anticorrosive, bacteriostatic and lubricating action on all surgical instruments. Extends your instrument's lifetime. It guarantees perfect maintenance by eliminating eventual stains, halos and browning due to sterilization, disinfection and washing with tap water.
Must be applied periodically, diluted or concentrated. *(see special instructions on packaging)*

DB-1L
1000 cc
34 oz

Brushes | *Autoclavable*

Special brushes to clean surgical instruments.

Used to remove eventual residue, organic or not, from all surgical instruments, in particular in angled, hinged and knurled parts, without damaging instrument surface.

Must be applied every time, for regular cleaning of all instrumentation and in the event that an instrument is exposed for an extended period to air before being immersed in the cleaning solution.

DB-12 175 mm 7 in
DB-11 155 mm 6 in

Special Rubber for metal

50 x 40 x 20 mm / 2 x 1.6 x 0.8 in

An abrasive eraser specially designed for surgical instruments to remove stains, halos or persistent burnishing from all surgical instruments without damaging the instrument surface.

Necessary when routine cleaning does not remove all stains.

DB-08 Coarse
DB-07 Fine

TESTING

DB-15

Teflon Testing Stick

Ø 8 x 100 mm / Ø 0.3 x 3.5 in

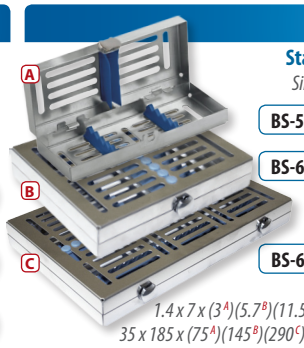
A hard plastic stick used to test the blade of an instrument to determine the sharpness of an instrument.
Must be used ALWAYS. If the blade of the instrument runs smoothly over the plastic stick, then it is blunt. A sharp instrument will grab into the stick and removes small fragments of the plastic.

CODING

Silicone Code Rings

DB-941
120 Items

STERILIZATION



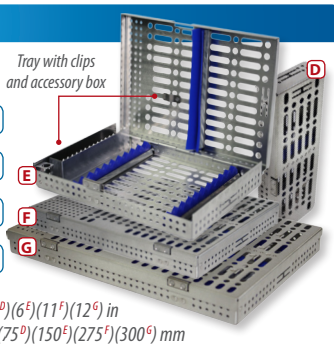
Stainless Steel Cassettes

Silicone racks - Autoclavable

BS-59[A]	5 instruments	BS-905[D]
BS-60[B]	10 instruments	BS-910[E]
	15 instruments	BS-915[F]
BS-61[C]	20 instruments	BS-920[G]

1.4 x 7 x (3[A])(5.7[B])(11.5[C]) in
35 x 185 x (75[A])(145[B])(290[C]) mm

Tray with clips and accessory box



1.2 x 8 x (3[D])(6[E])(11[F])(12[G]) in
30 x 200 x (75[D])(150[E])(275[F])(300[G]) mm

Cassettes BS-9XX: available only in North America

Increasing phone sales

Smile (It will show in your voice).
If your tone of voice is flat and lacks any sense of enthusiasm, how do you expect the other person to ever show interest in speak with you? Too many times people who answer many phone calls each day get into a habit of answering quickly, resulting in their words slurring together, making it hard for the other party to hear who they're talking to.

Develop a professional greeting.
Don't just say hello. Begin with Mr., Mrs. Ms. or Dr. as in "Good morning, Mr. X."

Be focused.
Don't be distracted by email or other items popping up on your computer while you're making a call. Because you can't see them, it's easy to become distracted and miss a key point.

Sales is not about selling.
It's about enabling the customer to benefit from what you are providing. Do not forget to mention limited promotions and prices.

Get their attention in 15 seconds or less.
That's how long you have before your customer realizes that this is just another lousy sales call and stops listening to you.

Trust your company.
Believe in what you're selling and the benefits that the prospect will receive from your products and services.

Know your client.
Always have the person's name, position and the name of their company on a piece of paper in front of you as you call. Last thing you want to do is to accidently forget who you're calling just as they answer.

Listen between the lines.
Always listen without interruption. The more they say to you, the more they become involved in considering the purchase. Clients will often tell you what you need to know, though sometimes the information comes in answers to other questions (feedback). Find a way to keep them talking and pay attention.

Speak your client's language.
Don't get lost in your internal company speak. Your clients should not be expected to know your jargon. Ask questions in their language.

If you don't ask questions don't blame the client
for not supplying answers.

90% of dissatisfied clients with the customer service will not come call back or buy again and **they will share their unpleasant experience** to at least nine other people.

YES, YOU CAN...!
Believe in yourself and your professionalism.

Inspire happy feelings about your product.
Use an anecdote about your customers and how your product improved their lives.

Use descriptive words when you're talking.
Remember, the other person can't see you, so it means the picture you paint has to come with the words you say and how you say it.

Ask "direct" questions.
Seems obvious I know and you may not get all the answers you want, but you'll likely get some. Before anything else ask your clients directly. Prepare a list of questions you typically ask for all kind of instruments and make sure to ask them.

Ask "indirect" questions.
A client might not know the specific name or code of an instrument, but they might be able to describe the function of the instrument. Look for ways to rephrase questions or ask a completely different question that might still reveal the answer you seek.

Do not hang up.
Never be the first person to hang-up the telephone. Always allow the other person to disconnect first. You never know when the other person might just share with you one more important piece of information.

Other products & instruments.
When you conclude a phone call with a customer, always suggestive sell one more specific item. Many customers are unaware that BMT instruments are offered by your company.

Be in touch.
In addition to the telephone, use email, fax and mail as additional ways to stay in touch with customers. With every communication, be sure to include one more piece of information regarding another item/service the customer would benefit from buying. After-sales follow-up is a great way to build customer loyalty and get people talking about your company and products.

Voice mail messages. When you're leaving a voice mail message make sure you state your name, company name and phone number slowly and clearly twice! If you can't say the reason of your call briefly, don't say it at all. Voice mail is not "story time." A long message is an invitation to skip the message (optimal message: between 8 and 14 seconds). Also assume your voice mail messages will never be returned. Call back later.

Questions and tips

Tissue Forceps

- Adson, Semken, Perry, Gerald or other?
- Stainless steel, titanium or TC?
- Tip: serrated, non-serrated or toothed?
- Straight or curved? Length?
- Delicate forceps?

Dressing Forceps

- College, Meriam or other?
- Stainless steel or titanium?
- Tip: serrated or non-serrated?
- Length?
- With locking system?

Membrane & Suture Forceps

- Flat tip or ring tip?
- Length? Diameter?
- Forceps for suture: Corn or other?
- Forceps for membrane:
  Taso, Kühne, Lembo, Desmarres or other?
- Articulating paper forceps?

Extraction Forceps

- Which tooth? Upper or lower?
- For adults or children?
- Which beak: straight, angled or bayonet?
- Serrated or non-serrated?
- Deep grip?
- Which pattern: English or American?
- Which of the 4 handles?
  English, American, Anatomical or Pedodontic?

Elevators

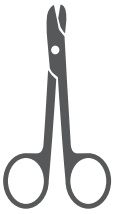
- Used for preparing tooth for extraction.
- Seamless: one-piece manufacture. Easy to clean.
- 440 Stainless steel. Lightweight.
- Straight, curved or bayonet?
- Serrated or non-serrated?
- Diameter (Ø)?
- Length? Small handle?

Anesthetic Syringes

- North America? Imperial tip (mostly) - NA.
- Europe? Metric tip.
- Aspirating, self aspirating or both?
- Ring handle? Winged? Silicone covered?
- With harpoon?
- For intraligamentary anesthesia:
  gun, pen style or micro-dosage wheel?

Surgical Scissors

- Stainless steel, Tungsten Carbide, Super-Cut?
- Almost all scissor are available in TC and/or SC?
- Serrated or Non-serrated?
- Size? Length? Straight or Curved?
- Ring scissors or spring forceps?
- Doctors usually know which one they want (for tissue, suture, microsurgery?).

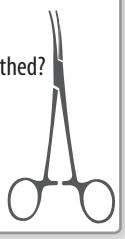


Needle Holders

- Castroviejo style or ring handle?
- Length?
- Tungsten-carbide inserts (TC)?
- Regular: USP sutures up to 3-0
- Fine: USP sutures up to 4-0 to 6-0
- Micro: USP sutures up to 6-0 to 10-0
- Smooth: USP sutures up to 9-0 to 11-0
- Needle holder with scissors?

Hemostatic Forceps

- Kelly, Crile, Halsted, Mosquito or other?
- Straight or curved?
- Length?
- Tip: serrated, non-serrated or toothed?
- Tissue grasping forceps?
- Towel clamps?
- Sponge and dressing forceps?



Curettes & Scalers

- Which tooth? Upper or lower?
- Stainless steel or titanium?
- What kind of scaler?
- 2 IN 1: scaler tip and curette tip?
- What kind of curette?
- Elite line, Herminway, Lucas?
- Universal curette or Gracey curette (hygiene)?
- Extra-Thin/micro, Small/mini 5 or Long-after 5

Explorers & Probes

- What kind of explorer or probe?
- Simple or double-ended?
- Regular probe?
- Periodontal probe? (millimeter markings)
- Expro 2 IN 1: explorer tip and probe tip?
- Which model?
- Solid or hollow handle?

Mirrors & Handles

- Simple side or both sides Rhodium-coated?
- Plan or concave with enlarging effect?
- Diameter and size?
- North America? Cone socket (mostly) - NA.
- Europe? Simple stem.
- Micro mirrors for endodontics?
- Which kind of handle? Solid or hollow?
- Stainless steel, chromium or aluminium?

Scalpel Handles & Blades

- Stainless steel or disposable scalpels?
- Regular TRINON blades: box of 100 and 10
- Micro-blades: box of 10 and 6
- Which kind of handle? Regular or micro?
- Straight or angled? Graduated (mm)?
- For double blade?
- For rotating blade?

Orthodontic Pliers

- For soft, hard wire or both?
- Tungsten-carbide inserts (TC)?
- Universal pliers?
- Wire bending pliers? Hammer head?
- Begg-type light wire bending pliers?
- Loop and arch forming pliers?
- Need a bonding bracket forceps?
- Bands & brackets removing pliers?

Ortho Ligature-Distal Cutters

- For soft, hard wire or both?
- Tungsten-carbide inserts (TC)?
- Mini ligature cutter?
- Distal cutter w/wire holding device?
- Long handle?

Conversion of Units

Temperature / Celsius / Fahrenheit

°C	-18	-10	**0**	10	20	30	40	50	60	70	80	90	**100**	110	120	130	140	150	200	250	300	350
°F	0	14	**32**	50	68	86	104	122	140	158	176	194	**212**	230	248	266	284	302	392	482	572	662

Length / International System (SI) / English system (Imperial)

SI	SI	Imperial
1 mm	-	0.0394 in
1 cm	10 mm	0.3937 in
1 m	1000 mm	1.0936 yd
Imperial	**Imperial**	**SI**
1 in	-	2.540 cm
1 ft	12 in	30.48 cm
1 yd	3 ft	91.440 cm

in (frac.)	in (decimal)	mm
1/64	0.0156	0.3969
1/32	0.0313	0.7938
1/16	0.0625	1.5875
1/8	0.1250	3.1750
3/16	0.1875	4.7625
1/4	0.2500	6.3500
5/16	0.3125	7.9375
3/8	0.3750	9.5250
7/16	0.4375	11.1125
1/2	0.5000	12.7000
9/16	0.5625	14.2875
5/8	0.6250	15.8750
11/16	0.6875	17.4625
3/4	0.7500	19.0500
13/16	0.8125	20.6375
7/8	0.8750	22.2250
15/16	0.9375	23.8125
1	1.0000	25.4000

in	cm
1	2.54
2	5.08
3	7.62
4	10.16
5	12.7
6	15.24
7	17.78
8	20.32
9	22.86
10	25.40
11	27.94
12	30.48
13	33.02
14	35.56
15	38.10
16	40.64
17	43.18

mm	in
1	0.0394
2	0.0787
3	0.1181
4	0.1575
5	0.1969
6	0.2362
7	0.2756
8	0.3150
9	0.3543
10	0.3937
11	0.4331
12	0.4724
13	0.5118
14	0.5512
15	0.5906
16	0.6299
17	0.0669

in	mm
0.001	0.0254
0.002	0.0508
0.003	0.0762
0.004	0.1016
0.005	0.1270
0.006	0.1524
0.007	0.1778
0.008	0.2032
0.009	0.2286
0.010	0.2540
0.011	0.2794
0.012	0.3048
0.013	0.3302
0.014	0.3556
0.015	0.3810
0.016	0.4064
0.017	0.4318
0.018	0.4572
0.019	0.4826
0.020	0.5080
0.021	0.5334
0.022	0.5588
0.023	0.5842
0.024	0.6069
0.025	0.6350
0.026	0.6604
0.027	0.6858
0.028	0.7112
0.029	0.7366
0.030	0.7620
0.031	0.7874
0.032	0.8128
0.033	0.8382
0.034	0.8636
0.035	0.8890
0.036	0.9144
0.037	0.9398
0.038	0.9652
0.039	0.9906
0.0394	1.0000

French Gauge System

Charrière	Ø mm	Ø in
1	0.33	0.012
2	0.67	0.028
3	1.00	0.039
4	1.33	0.051
5	1.67	0.067
6	2.00	0.079
7	2.33	0.091
8	2.67	0.106
9	3.00	0.118
10	3.33	0.130
11	3.67	0.146
12	4.00	0.157
13	4.33	0.169
14	4.67	0.185
15	5.00	0.197
16	5.33	0.209
17	5.67	0.224
18	6.00	0.236
19	6.33	0.248
20	6.67	0.264
21	7.00	0.276
22	7.33	0.287
23	7.67	0.303
24	8.00	0.315
25	8.33	0.327
26	8.67	0.343
27	9.00	0.354
28	9.33	0.366
29	9.67	0.382
30	10.00	0.394
31	10.33	0.406
32	10.67	0.421
33	11.00	0.433
34	11.33	0.445
35	11.67	0.461
36	12.00	0.472
37	12.33	0.484
38	12.67	0.500
39	13.00	0.512
40	13.33	0.524

Volume / Milliliters / Fluid Ounces / Cubic Centimeters

mL	US oz	US oz	UK oz	UK oz	cc (cm³)
1.0	1/32	0.033814	0.035195	1/32	1.0
29.574	1	1.0	1 3/64	1.0409	29.574

American Wire Gauge

AWG	Ø mm	Ø in
0000 (4/0)	11.684	0.4600
000 (3/0)	10.404	0.4096
00 (2/0)	9.266	0.3648
0 (1/0)	8.252	0.3249
1	7.348	0.2893
2	6.544	0.2576
3	5.827	0.2294
4	5.189	0.2043
5	4.621	0.1819
6	4.115	0.1620
7	3.665	0.1443
8	3.264	0.1285
9	2.906	0.1144
10	2.588	0.1019
11	2.305	0.0907
12	2.053	0.0808
13	1.828	0.0720
14	1.628	0.0641
15	1.45	0.0571
16	1.291	0.0508
17	1.15	0.0453
18	1.024	0.0403
19	0.912	0.0359
20	0.812	0.0320
21	0.723	0.0285
22	0.644	0.0253
23	0.573	0.0226
24	0.511	0.0201
25	0.455	0.0179
26	0.405	0.0159
27	0.361	0.0142
28	0.321	0.0126
29	0.286	0.0113
30	0.255	0.0100
31	0.227	0.0089
32	0.202	0.0080
33	0.18	0.0071
34	0.16	0.0063
35	0.143	0.0056
36	0.127	0.0050
37	0.113	0.0044
38	0.101	0.0039
39	0.089	0.0035
40	0.079	0.0031
41	0.071	0.0028
42	0.064	0.0025

Standard Wire Gauge

SWG	Ø mm	Ø in
7/0	0.500	12.700
6/0	0.464	11.786
5/0	0.432	10.973
4/0	0.400	10.160
3/0	0.372	9.449
2/0	0.348	8.839
0	0.324	8.230
1	0.300	7.620
2	0.276	7.010
3	0.252	6.401
4	0.232	5.893
5	0.212	5.385
6	0.192	4.877
7	0.176	4.470
8	0.160	4.064
9	0.144	3.658
10	0.128	3.251
11	0.116	2.946
12	0.104	2.642
13	0.092	2.337
14	0.080	2.032
15	0.072	1.829
16	0.064	1.626
17	0.056	1.422
18	0.048	1.219
19	0.040	1.016
20	0.036	0.914
21	0.032	0.813
22	0.028	0.711
23	0.024	0.610
24	0.022	0.559
25	0.020	0.508
26	0.018	0.457
27	0.016	0.417
28	0.015	0.376
29	0.014	0.345
30	0.012	0.315
31	0.012	0.295
32	0.011	0.274
33	0.010	0.254
34	0.009	0.234
35	0.008	0.213
36	0.008	0.193
37	0.007	0.173
38	0.006	0.152
39	0.005	0.132

BMT Medizintechnik GmbH

BMT | Instruments chirurgicaux

Our Mission

Establish a global presence as a leading designer and manufacturer of high quality handheld surgical instruments in the Dental, Plastic Surgery, General Surgery, Specialties and Veterinary fields. Our goal will be achieved by offering excellent products and services; and by our commitment to exceed customer expectations.

About Us

BMT Medizintechnik GmbH (located in Tuttlingen, Germany) designs, manufactures and markets a complete product portfolio of over 10 000 surgical instruments. Our brand has gained recognition in the European marketplace as a high quality premier brand and, in recent years, has made its mark in the North American marketplace where it is recognized for its exceptional quality.

What makes us different? **Outstanding Quality!**

BMT manufactures surgical instruments from martensitic stainless steels (AISI1 421, 440, 440C2) which is the highest quality surgical steel available. Our brand is built on outstanding product quality and service plus a warranty against manufacturing defects!

Industry Participation

As a leading global manufacturer of surgical instruments, BMT has major distributors located throughout Europe, North and South America, the Middle East and Asia offering our products to the medical practitioners.

BMT maintains its leadership in innovation by working closely with its distributors and surgical practitioners to develop new products.

BMT is also in the forefront of product education by offering and participating in seminars and other educational events on proper instrument selection, usage and care.

BMT continues to establish itself as a premier surgical instrument company by attending and supporting leading conferences throughout the world.

Product and Quality Standards

BMT Medizintechnik GmbH products are registered and comply with European Conformity (CE), EN ISO 13485 International Standards, American FDA Standards (U.S. Food and Drug Administration), as well as the standards and regulations in other countries. For more information visit our website.

Dental
Dental Surgery
General Dentistry
Implantology
Orthodontics
Endodontics
Periodontics
Bone Regeneration
Oral and Maxillofacial Surgery

General Surgery and Specialties
General Surgery
Arthroscopy
Gynecology
Microsurgery
Ophthalmology
ENT | Otolaryngology
Traumatology | Orthopaedics
Podiatry | Pedicure | Esthetics

Plastic Surgery
Reconstructive Surgery
Cosmetic Surgery
Blepharoplasty
Breast Surgery
Rhinoplasty
Liposuction
Rhytidectomy | Facelift
Oral and Maxillofacial Surgery

Veterinary
General Surgery
Dental Surgery
Dermatology
Ophthalmology
ENT | Otolaryngology
Traumatology | Orthopaedics
Birds | Canine | Feline | Bovine | Equine
Reptile | Exotics | Zoo and wildlife

Alphanumeric Codes

CODE	pp.	ID
13	15	.
17	15	
18	15	
33	15	
707-2315	18	
707-23D1	18	
707-23W	18	WILLIAMS
707-6D1	18	
707-GFW	18	GOLDMAN-WILLIAMS
718-107	18	RHODES
718-212S	13	SUGARMAN
718-M9	14	MOLT
718-PR3	14	PRICHARD
720-85Z	12	
720-87	12	
AM-150AS	15	
AM-150X	15	
AM-151AS	15	
AM-151X	15	
AM-451	15	
AMG-150	15	CRYER
AMG-150S	15	CRYER
AMG-151	15	CRYER
BB-46	21	
BD-01	11	COLLEGE
BD-158	11	
BD-30	11	ADSON
BD-31	11	ADSON
BD-45	11	SEMKEN
BD-47	11	SEMKEN
BEIN-2Z	14	BEIN
BM-02	20	OLSEN-HEGAR
BS-59	22	
BS-60	22	
BS-61	22	
BS-905	22	
BS-910	22	
BS-915	22	
BS-920	22	
COLLEGE	11	COLLEGE
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CS-02	12	
CS-03	12	
CS-04	12	
DA-05	11	
DA-07	11	CORN
DA-10	15	
DA-11	11	
DB-07	22	
DB-08	22	
DB-11	22	
DB-12	22	
DB-15	22	
DB-1L	22	CLEANLACT
DB-299	22	ARKANSAS
DB-3	22	INDIA
DB-4	22	ARKANSAS
DB-6A	22	ARKANSAS
DB-71	22	CERAMIC
DB-941	22	
DB-96	22	ARKANSAS
DB-0L	22	OIL
DEAN	19	DEAN
DF-00	17	IVORY
DF-02	17	AINSWORTH
DF-07	17	TOFFLEMIRE
DF-12	17	IVORY
DF-32	17	
DL-102	14	
DL-34	14	APEXO
DL-37	14	APEXO
DL-38	14	APEXO
DL-48	14	SELDIN
DL-49	14	SELDIN
DL-73	14	BERNARD
DL-C	17	
DO-4C	13	MILLER
DP-136	17	
DP-92	19	BEEBE
DR-78	17	MILLER
EN-M1	12	
FD-12	19	NOYES
FD-22	20	CASTROVIEJO
FD-730	20	CASTROVIEJO
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FG-2SCZ	19	IRIS
FK-2SC	19	KELLY
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FL-75	13	
FL-76	13	
FL-77	13	
FL-78	13	
FL-79	13	
FL-80	13	
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FM-2SC	19	METZENBAUM
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FO-15	13	MINI FRIEDMAN
FO-17	13	FRIEDMAN
FO-19	13	BLUMENTHAL
FO-22	13	MINI FRIEDMAN
FO-220	13	MINI FRIEDMAN
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FREER	14	FREER
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GA-66	11	
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GFS-SC	19	GOLDMAN-FOX
GM-02	11	
HE-2	14	HEIDBRINK
HE-3	14	HEIDBRINK
IM-15	13	
L-71	16	
L-72	16	
L-73	16	
LG-1SC	19	LA GRANGE
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MA-2A	21	
MA-7A	21	
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MA-B20	21	
MA-B3M	21	
MC-11	16	
MC-12	16	
MC-13	16	
MC-70	16	
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MIR-21	14	
MIR-22	14	
MIR-23	14	
MIR-25	14	BERNARD
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MM-D5	21	
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MO-2	12	MOLT
MO-4	12	MOLT
MO-8	14	MOLT
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OM-55	21	MINNESOTA
OP-6	13	
OP-7	13	
OSB-4	18	OCHSENBEIN
OT-10	17	GOLDSTEIN
OT-13	17	
OT-14	17	
OT-15	17	
OT-5	17	FELT
OT-6	17	FELT
OT-7	17	GOLDSTEIN
OT-8	17	GOLDSTEIN
OT-9	17	GOLDSTEIN
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P-87	20	CRILE
P-97	20	HALSTED-MOSQUITO
PEB-1	15	
PEB-2	15	
PEB-3	15	
PEB-6	15	
PEB-7	15	
PH-60	17	
PH-71	20	BABY CRILE-WOOD
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PL-2	16	LUKS
PL-3	16	LUKS
PL-4	16	LUKS
PO-82	20	MATHIEU
PZ-1	16	
PZ-2	16	
PZ-3	16	
PZ-4	16	
PZ-CG-1	16	
PZ-DB	16	
PZ-DC1	16	
PZ-DC2	16	
PZ-DC3	16	
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PZ-SB	16	
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RH-4A	21	
RH-5A	21	
S-35	15	
S-400	15	
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SD-8NA	21	
SD-8W	21	
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SM-15	18	
SM-21	18	WHO
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SO-4	18	
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SP-6	16	
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TASO-8	12	TASO
TASO-9	12	TASO
T-USC-4RL	10	COLUMBIA
T-USG-1/2	10	GRACEY
T-USG-11/12	10	GRACEY
T-USG-13/14	10	GRACEY
T-USG-5/6	10	GRACEY
T-USG-7/8	10	GRACEY
T-USS-204S	10	
T-USS-B5/6	10	BARNHART
T-USS-G6/7	10	
T-USS-YG7/8	10	YOUNGER-GOOD
USB-P2	13	
USG-1/2	10	GRACEY
USG-11/12	10	GRACEY
USG-13/14	10	GRACEY
USG-15/16	10	GRACEY
USG-17/18S	10	GRACEY
USG-3/4	10	GRACEY
USG-5/6	10	GRACEY
USG-7/8	10	GRACEY
USG-9/10	10	GRACEY
US-0T18	17	
USS-H5/L5	10	
UST-1/2ML	13	
UST-1/2MS	13	
UST-KPA	13	
UST-MP	13	
UST-MPA	13	.

HOW TO DO IT RIGHT!

Maintenance Cycle & Tips

BMT Medizintechnik GmbH

SURGICAL INSTRUMENT SPA CYCLE

- Remove gross soil.
- Place the instruments in aldehyde-free disinfectant bath.
- Rinse in running water.
- Disassemble where possible.
- Soak in cleaning solution.
- Brush, operate moving parts.
- Rinse in running water and inspect.
- Place on absorbent paper.

- Soak in ultrasonic bath.
- Clean with brushes.
- Rinse in running water.
- Soak in disinfectant solution.
- Clean with brushes again.
- Rinse in running water.
- Dry (compressed air, oven or wipes).

- Visual inspection. Functional check.
- Use sharpening stones Arkansas or India with lubricating and sharpening oil (DB-0L).
- Evaluate the cutting edge with a teflon testing stick (DB-15). Repeat sharpening if necessary.
- Lubricate moving parts with high density lubricant (DB-0L).
- Use the Cleanlact milk (anticorrosive and bacteriostatic detergent / anti-rust finish).

- Store in sterilization cassettes or containers.
- Single or double packaging.
- Use steam sterilization (autoclave) or chemical sterilization (chemiclave).
- 15 min. 132ºC / 5 min.135ºC
- Dry heat sterilization is not recommended.

- Control environment.
- Control shelf life.
- Ready to use or storage.

RINSE AND CLEAN

Immediately after surgery, rinse instruments under warm running water (not hot). Use only neutral detergent (pH=7).

ALWAYS SHARPEN YOUR INSTRUMENTS

Why? Surgical Instruments should be kept identical to their original design. Surgical procedures are most effective when using sharp instruments as they reduce hand and wrist fatigue, improve calculus removal, save time, improve tactile sensitivity, and minimize patient discomfort.

When? Instruments should be sharpened lightly after each use; there are two ways to evaluate whether the cutting edge is dull and requires sharpening:

- **Visual**: The cutting edge should be inspected regularly in a good light (and if possible, under magnification). If the cutting edge is blunt it will be rounded and reflect the light. A dull, non-reflective line indicates sharpness.
- **Teflon Test Stick** (DB-15): If the blade of the instrument runs smoothly over the testing stick, then it is blunt. A sharp instrument will grab into the stick and removes small fragments of the plastic.

How? The instruments should be sharpened following this procedure:

1. Place one drop of sharpening oil (**DB-0L**) on the **Arkansas** sharpening stone. Lubrication improves the movement of the instrument blade over the stone; also, it prevents the metal particles from clogging the stone.
2. Hold the instrument in one hand, while applying the stone to the lateral surface angled with the face of the blade.
3. Position the stone to contact the heel of the blade and work toward the tip, keeping the stone in contact with the blade throughout the sharpening procedure.
4. Move the stone up and down with short strokes, placing more pressure on the down stroke (do not move the instrument, keep the instrument still).
5. Always finish instrument sharpening with a down stroke; this will prevent a rough edge from forming and remove any flash of metal.
6. Evaluate the sharpness with teflon test stick (**DB-15**). If the blade is still dull, re-evaluate the angle of the stone and repeat the sharpening (steps 2-6).

Sharp, delicate and TC instruments
Scissors, needle holders or bone forceps should be cleaned manually by using cleaning brushes.

Lubrication
Regular use of DB-0L lubricant oil and "Cleanlact" detergent milk, will prevent rust, corrosion, and still joints.

TC instruments
Tungsten carbide instruments are more sensitive to chemicals and require special care. They should never be exposed to chemical substances or to any other corrosive chemicals.

Sharpening
Regular sharpening will enhance the life of your cutter and will improve the quality of your work.

Ultrasound cleaning
It is not recommended for scissors, needle holders, bone forceps and all tungsten carbide instruments.

ULTRASONIC CLEANING

It is recommended for regular instruments such as hand instruments and extraction forceps, following this procedure:

1. Sort instruments carefully so as to include only instruments compatible with ultrasonic cleaning. Do not combine different metals (stainless, copper, chrome plated, etc.).
2. Place instruments in open position. Make certain sharp edges are not touching other instruments.
3. Change solution frequently to avoid accumulation of micro organisms.
4. After rinsing and before sterilization, inspect and dry the instruments thoroughly.

⚠ *Ultrasonic cleaning does not sterilize.*
Do not use for TC instruments, sharp and delicate instruments.

SHARPENING OF SCALERS AND CURETTES

Sickle Scaler Toe End: the sickle scaler has a pointed tip and, therefore, the stone is held straight as it nears the tip.

Curette Toe End: the curette has a rounded toe, so the position of the stone is adapted around the rounded cross-section.

⚠ *Always finish instrument sharpening with a down stroke; this will prevent a rough edge from forming and remove any flash of metal.*

CARE OF SHARPENING STONES

After use, wipe the stone with a clean cloth to remove metal particles. Then, clean the stone by scrubbing or using ultrasound to remove lubricant before sterilization. After sterilization, lubricate with **DB-0L** before each use.

⚠ *Be sure to use entire stone to prevent "grooving".*

STERILIZATION

Autoclave (Steam Sterilization)
Time and temperature: 15 min. 132ºC (270ºF) / 5 min. 135ºC (275ºF)

Chemiclave (Chemical Sterilization)
Time and temperature: 15 min. 132ºC (270ºF) / 5 min. 135ºC (275ºF)

Dry Heat Sterilization *(not recommended)*
Time and temperature: 90 min. 160ºC (320ºF) / 60 min. 170ºC (340ºF)

⚠ *Sterilization cannot substitute cleaning.*

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