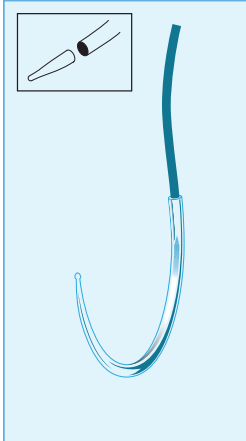


Intelligent Geometry

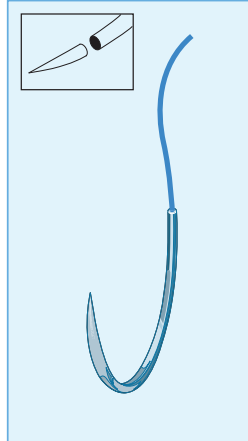
A Unique Needle Range

ETHIGUARD Blunt Point Needles



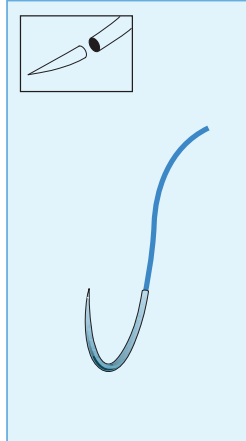
Improving safety

Taper Point Needles



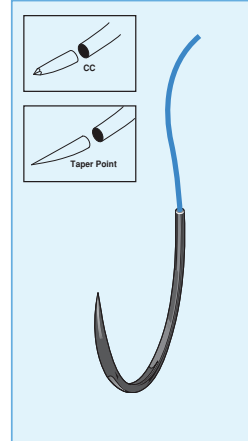
Gentle separation of fibrous tissue

BV Needles



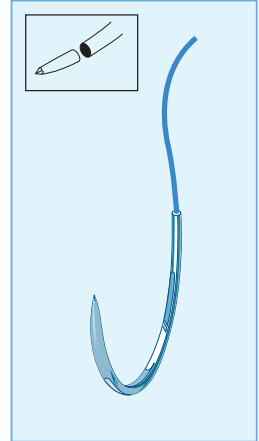
Consistency pass after pass

VISI-BLACK Needles



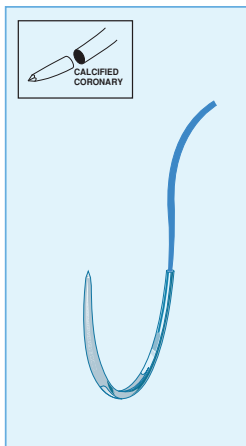
Visibility is their strength

CC Needles



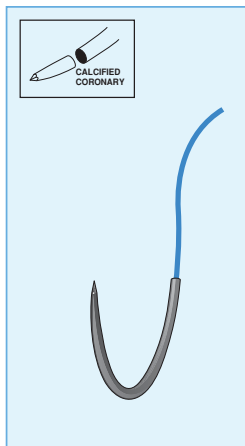
Easy penetration of calcified coronary tissues

HEMO-SEAL Needle Sutures



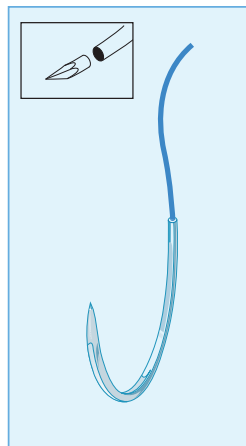
A fitting choice for vascular surgery

MULTICURVE Needles



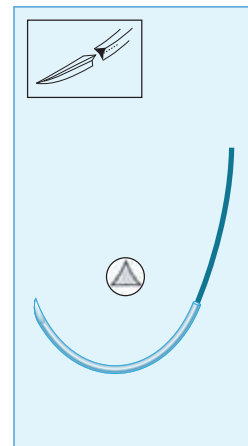
For confined access procedures

TAPERCUT Needles



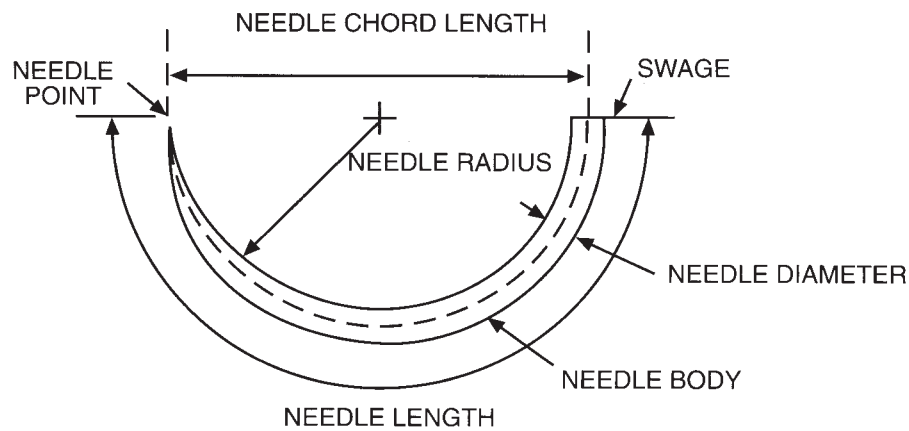
Easy penetration of dense tough tissue

PRIME Needles



Excellence in skin closure

Anatomy of a Needle





Needle Point Needles can taper to a point or have cutting edges.

Taper Ratio Longer points for improved penetration.

Needle Body

 **Needle flat** Flatted section for stability in the needle holder.

 **Ribs** In larger needles there is a ribbed section to provide a secure grip.

 **Square Body** Needles can also have a square body for increased strength.

Swage A hole is drilled into the end of the wire and the material is attached into this hole. For premium needles the needles are laser drilled which provides a smooth transition between needle and material thus reducing tissue trauma.

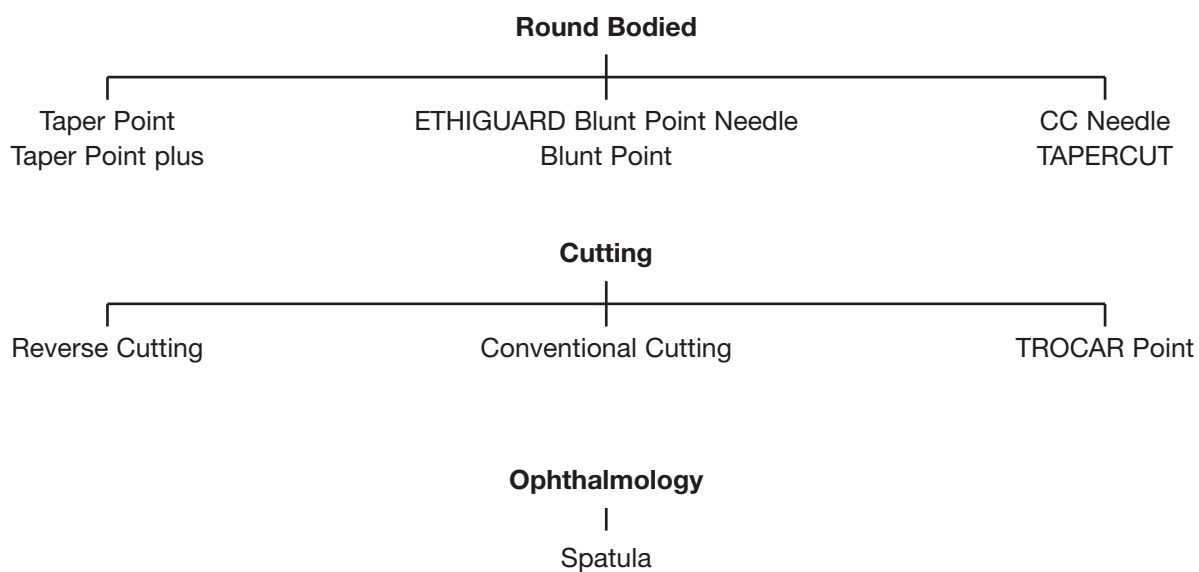
Needle Types

ETHICON Products needles can be arranged into groups according to the design of the point.

The first group is Round Bodied needles - a group with many modified variants.

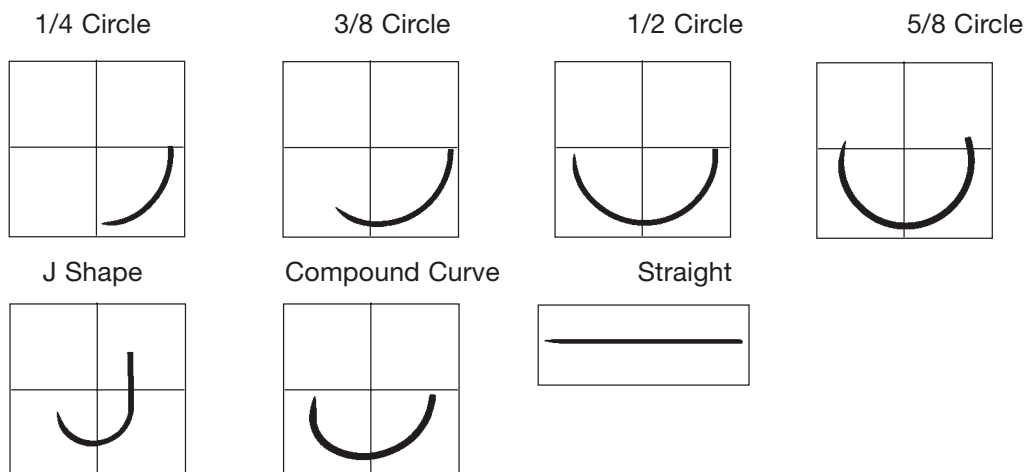
The second group is Cutting needles which are used in areas of tough or dense tissue and for suturing skin.

The third group is used mainly in ophthalmology and is of side cutting or spatulated point design.



Needle Shape

The choice of needle shape is frequently governed by the accessibility of the tissue to be sutured, and normally the more confined the operative site the greater the curvature required. The basic shapes involved are:



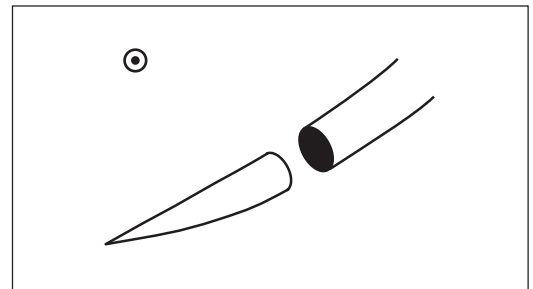
Round Bodied needles

Round Bodied needles are designed to separate tissue fibres rather than cut them. They are used either for soft tissue or in situations where easy splitting of tissue fibres is possible. After the passage of the needle, the tissue closes tightly round the suture material, thereby forming a leak-proof suture line which is particularly vital in Intestinal and Cardio-vascular surgery.

Round Bodied needles are manufactured with different wire diameters according to the tissue to be sutured. For softer tissue such as bowel finer wire diameters can be used. Whereas for muscle or fascia heavier wire diameters are required.

TAPERPOINT Needle

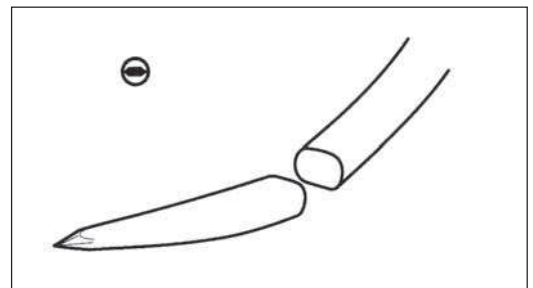
This point profile is engineered to provide easy penetration of intended tissues. Forceps flats are formed in an area half way between the point and the attachment, Positioning the needle holder in this area confers extra stability on the needle being held, aiding precise placement of the sutures. Taper Point needles are available in a range of wire diameters and the finer diameters can be used for softer tissue in gastrointestinal or vascular procedures whereas heavier diameters are required for tougher tissue such as muscle.



TAPERPOINT Plus

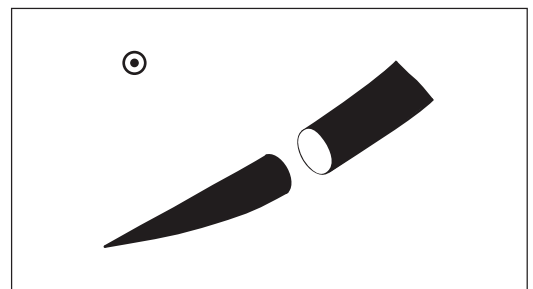
A modified point profile for most of our needles. In a modified profile, the tapered cross section immediately behind the tip has been flattened to an oval shape rather than a conventional round shape.

This continues for several millimeters before merging into the conventional round bodied cross section. This design was developed to help facilitate improved separation of tissue layers.



VISI - BLACK Needle

These black needles have been designed to give outstanding visibility against tissue and where blood is present in the operating field. The slim Taper Point design of the VISIBLACK Needle brings improved penetration properties and minimises tissue trauma.

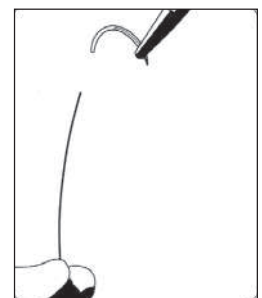


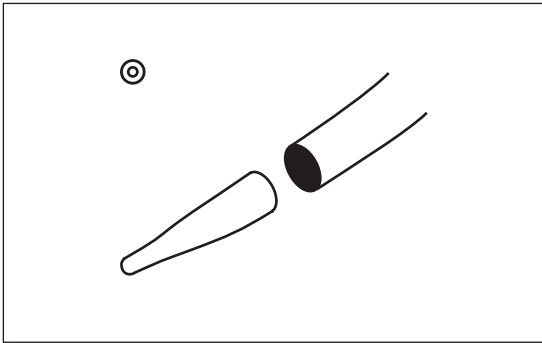
CONTROL RELEASE Needle Sutures

1. The needle is held securely in the needle holder. Suture is grasped securely just below needle, pulling strand taut.



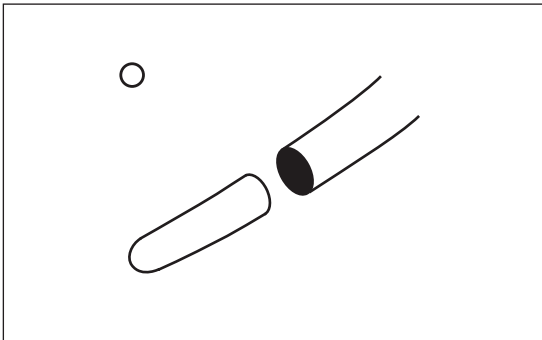
2. The needle is released with a straight tug of the needleholder.





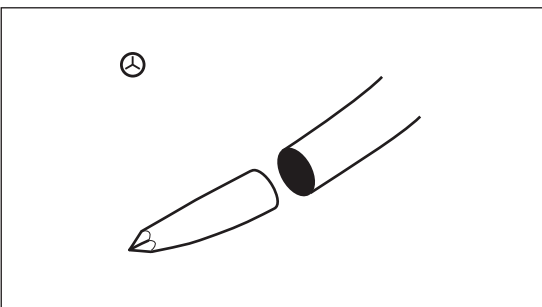
ETHIGUARD Blunt Point Needle

The needles has been designed to minimise the risk of needle stick injury. The ETHIGUARD Needle point is sharp enough to penetrate fascia and muscle but not skin. Virtually eliminating accidental glove puncture, the ETHIGUARD Needle can also be used for suturing friable tissue such as the liver.



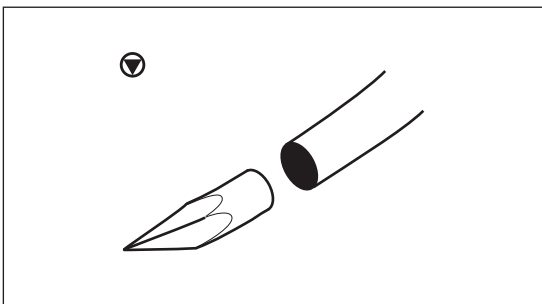
Blunt Point Needle

This needle has been designed for suturing extremely friable tissue such as the liver.



CC Needle

The unique point design of the CC Needle provides significantly improved penetration properties for the Cardiac / Vascular surgeon when suturing tough, calcified vessels. This is achieved with no increase in tissue trauma compared to the conventional round bodied needle. Squared body geometry, in addition to providing a stronger fine vascular needle, also means this needle is particularly secure in the needle holder.



TAPERCUT Needle

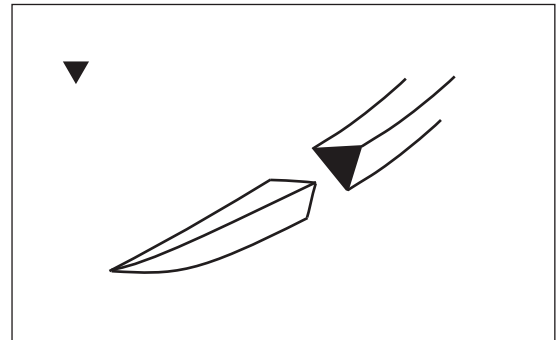
This needle combines the initial penetration of a cutting needle with the minimised trauma of a round bodied needle. The cutting tip is limited to the point of the needle, which then tapers out to merge smoothly into a round cross section.

Cutting Needles - for Fibrous Tissue

Cutting needles are required wherever fibrous or dense tissue needs to be sutured.

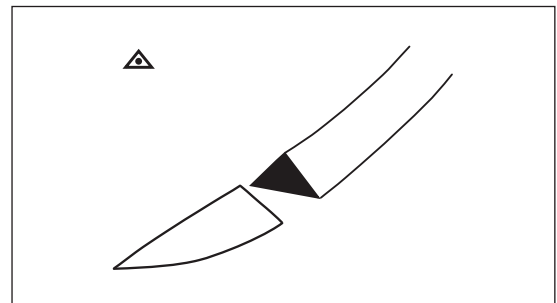
Reverse Cutting Needle

The body of this needle is triangular in cross section, having the apex cutting edge on the outside of the needle curvature. This improves the strength of the needle and particularly increases its resistance to bending.



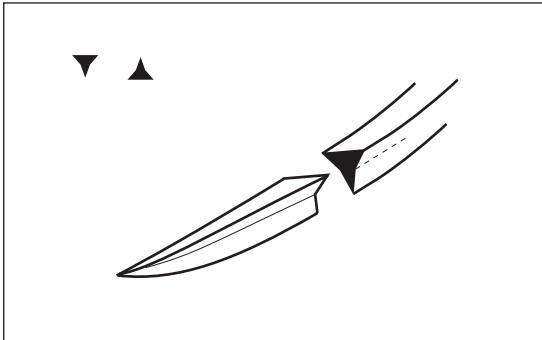
TROCAR POINT Needle

Based on the traditional TROCAR POINT, this needle has a strong cutting head which then merges into a robust round body. The design of the cutting head ensures powerful penetration, even when deep in dense tissue.



Cutting Needles for Plastic and Cosmetic Surgery

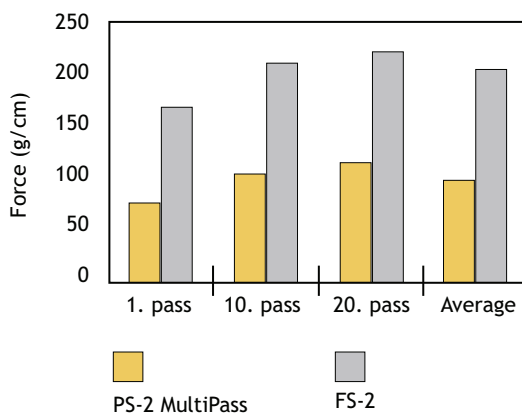
PRIME Needle



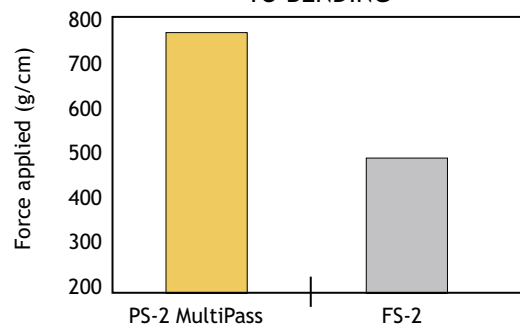
PRIME Needles are manufactured with an exclusive needle tip design. The cross sectional geometry of the needle tip reduces the angles of the cutting edges which gives improved penetration and control.

A square body on the needle greatly increases needle strength and offers improved stability in the needle holder. PRIME needles are available with either a reverse cutting or a conventional cutting profile.

SUPERIOR EASE OF PENETRATION



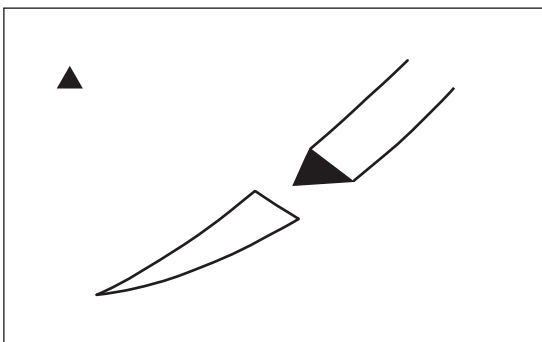
SUPERIOR RESISTANCE TO BENDING



Cutting Needles for Skin Closure

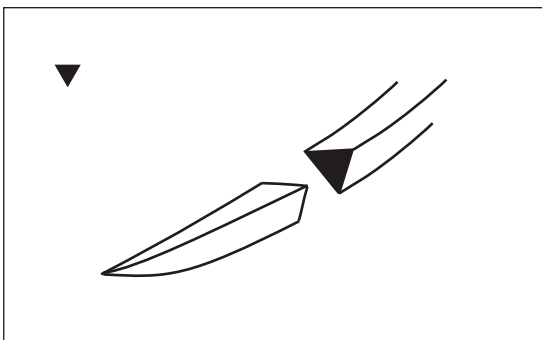
Conventional Cutting Needle

This needle has a triangular cross section with the apex of the triangle on the inside of the needle curvature. The effective cutting edges are restricted to the front section of the needle and merge into a triangulated body which continues for half the length of the needle.



Reverse Cutting Needle

The body of this needle is triangular in cross section, having the apex cutting edge on the outside of the needle curvature. This improves the strength of the needle and particularly increases its resistance to bending.

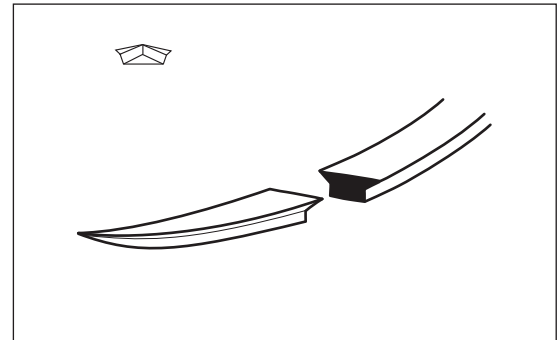


Ophthalmic Needles

These fine needles are manufactured using a unique process which ensures extremely sharp cutting edges. The range includes spatulated designs for suturing specific layers of the eye in Anterior Segment surgery in addition to round bodied, cutting and TAPERCUT designs for specific ophthalmic and oculoplastic procedures.

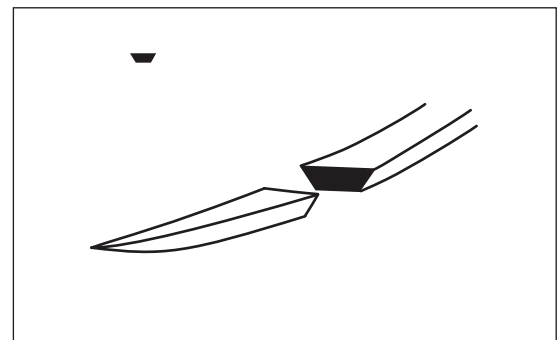
CS-ULTIMA Spatula Needle

This needle represents a dramatic change in ophthalmic needle design. Its concave spatula geometry requires considerably less force to penetrate corneal scleral tissue than existing needles. This results in much less disruption of the of the cornea and the real possibility of reduced post-operative suture related astigmatism.



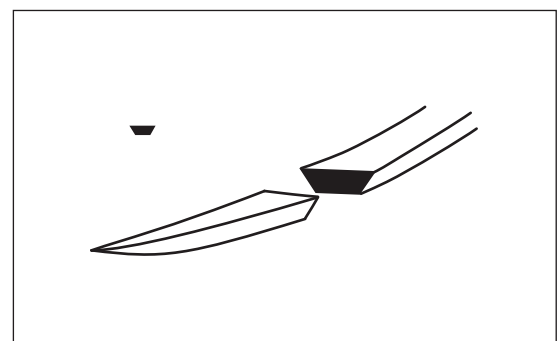
ADVANCED MICRO-POINT Spatula Needle

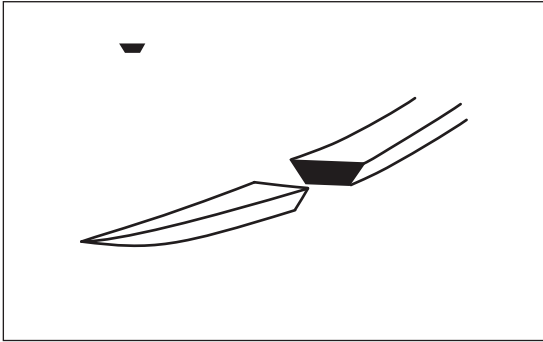
Due to the ultra fine diameter of this needle, a new concept of design has been necessary. An extremely sharp cutting point has been merged into a square body to produce superb penetration characteristics. In addition, the square body greatly increases resistance to bending and gives much improved needle holder security, locking the needle at the correct angle for secure accurate suture placement.



MICRO-POINT Spatula Needle

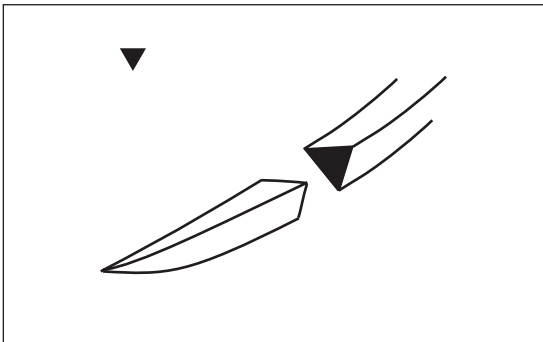
This needle has a thin, flat profile which allows the needle to penetrate between the layers of scleral or corneal tissue.





SPATULATED Needle













Similar in cross section to MICRO-POINT Spatula needles, this is designed for scleral suturing which requires stronger needles and where the elimination of cut out or cut down by a third edge is essential.



MICRO-POINT Reverse Cutting Needle

The third cutting edge of this needle lies on the outside of its curvature, thereby eliminating the possibility of needle cut out during suture placement.

Needle Point Profiles

Needle Profile	New Graphic
Taper Point (Round Bodied)	
Taper Point Plus (modified point)	
ETHIGUARD Blunt Point Needle	
Blunt Point	
TAPERCUT Needle	
CC Needle	
TROCAR Point	
Conventional Cutting	
Reverse Cutting	
PRIME Needle Conventional Cutting	
PRIME Needle Reverse Cutting	
CS ULTIMA Spatula Needle	
Spatula	