

PAJUNK®

SonoSystem

*The complete system for
ultrasound guided nerve blocks*



Regional anaesthesia

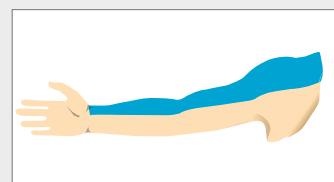
Efficient and effective **Peripheral nerve blocks**

Regional anaesthesia has become an integral part of daily surgical practice. Beside the single shot techniques for the peripheral blocks during operational interventions, the continuous techniques additionally help to alleviate post operative pain, to improve the operative result and to enhance patient comfort.

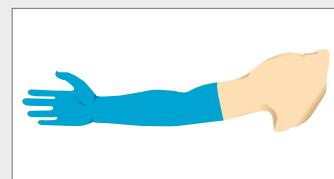
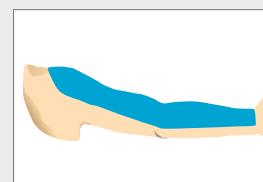
By providing a comprehensive programme for single shot and for continuous plexus anaesthesia, PAJUNK® supports the following applications with its catheter puncture kits:

Peripheral blocks

→ **Upper extremities (brachial plexus)**

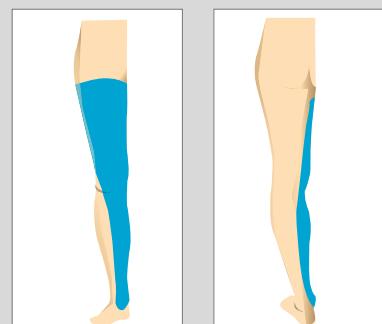


Interscalene brachial plexus block

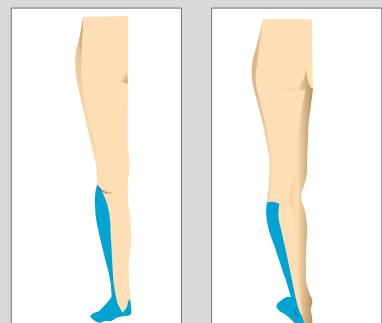


Axillary brachial plexus block

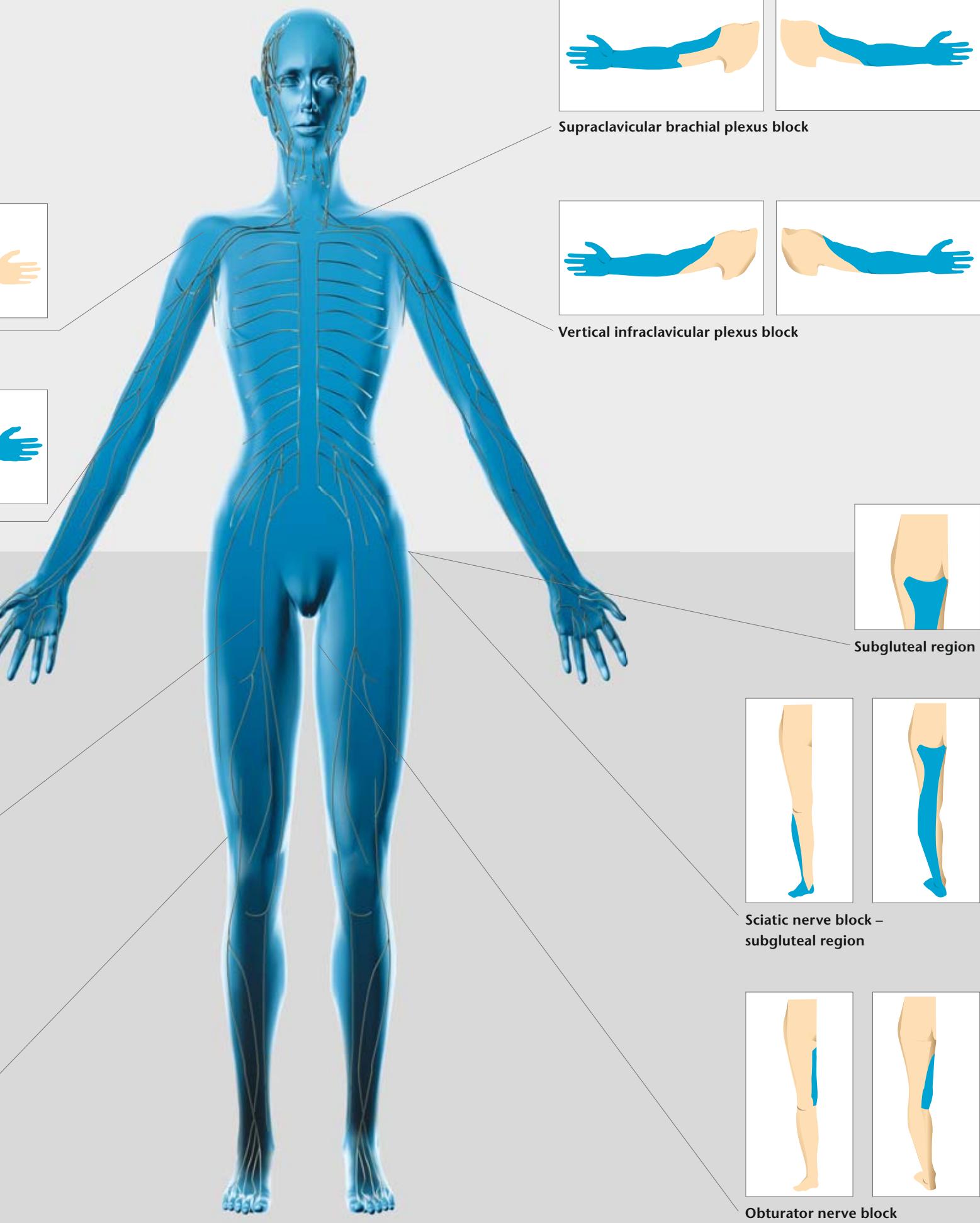
→ **Lower extremities (lumbosacral plexus)**



Femoral nerve block



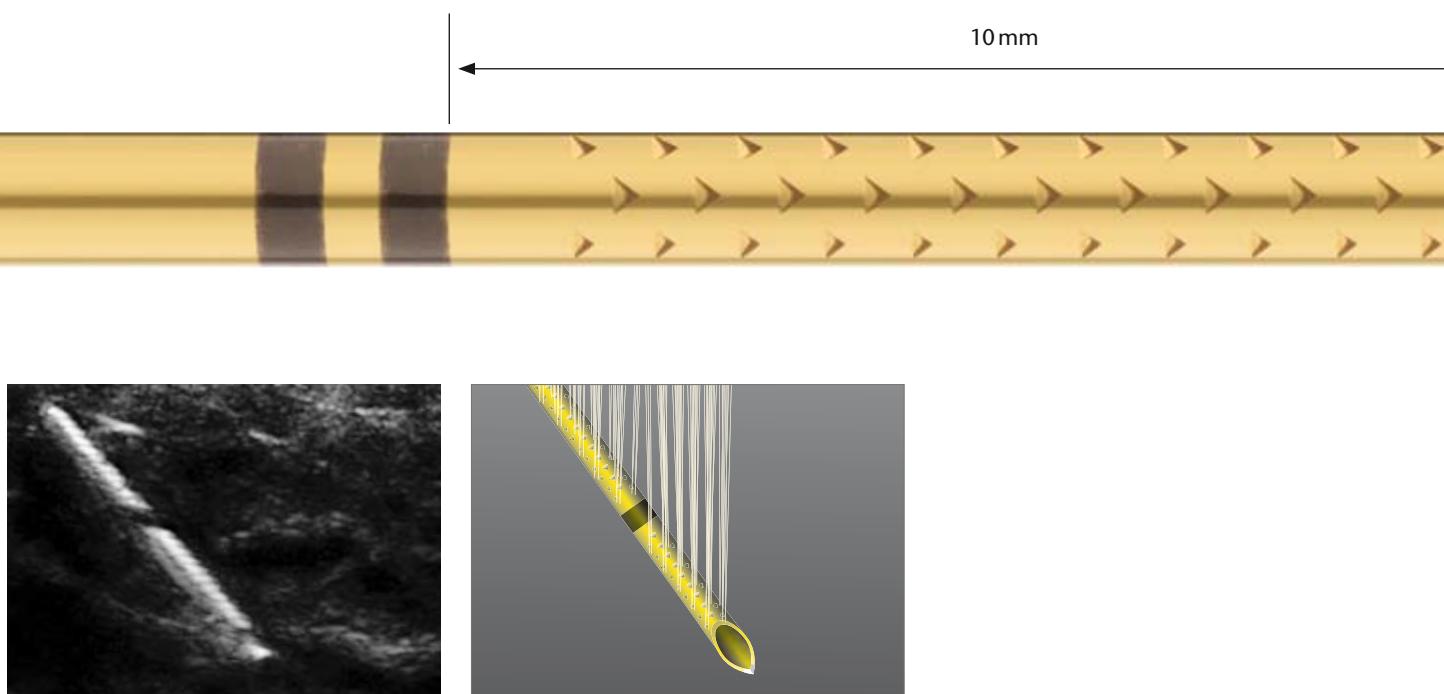
Sciatic nerve block



SonoPlex Stim cannulas

The system for more visibility and safety under ultrasound monitoring

The method of ultrasound monitoring is increasingly gaining importance in regional anaesthesia. Today even the finest anatomical structures including peripheral nerves can be identified in detail and anaesthetised selectively under viewing using modern high-resolution ultrasound scanners. This method supports the traditional procedure by means of nerve stimulation. But daily practice has shown, that it is not at all that easy to identify the cannula tip definitely and clearly on the viewing screen of the ultrasonic device. Before this background, PAJUNK® has developed the "Cornerstone" reflectors in cooperation with Dr Chris Mitchell and has thereby launched a new cannula generation, with a 100%-reflection-guarantee under ultrasound monitoring.*



Guaranteed cannula tip visibility

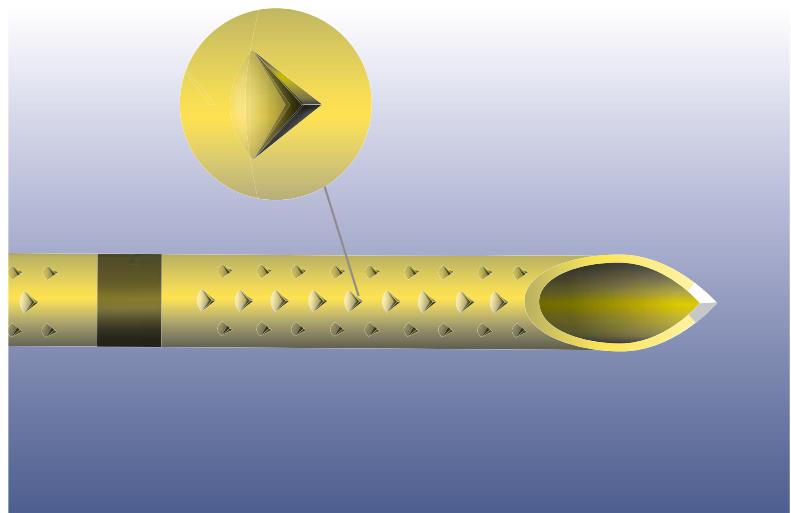
The distal end has two embossed sections of 10 mm length each.

► The ultrasound waves are reflected along a total length of 20 mm and as a result the cannula tip can be identified with absolute certainty.

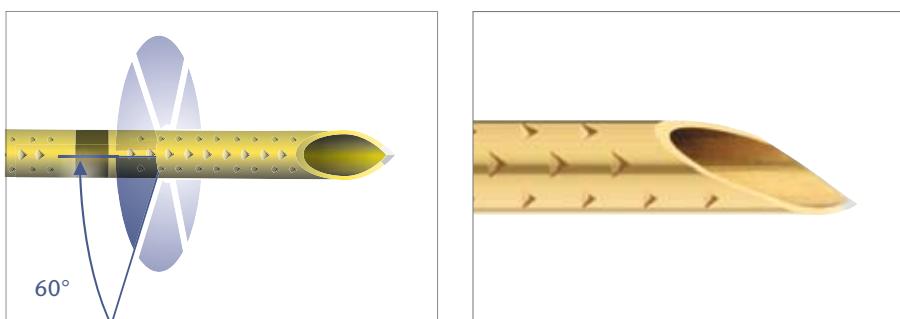
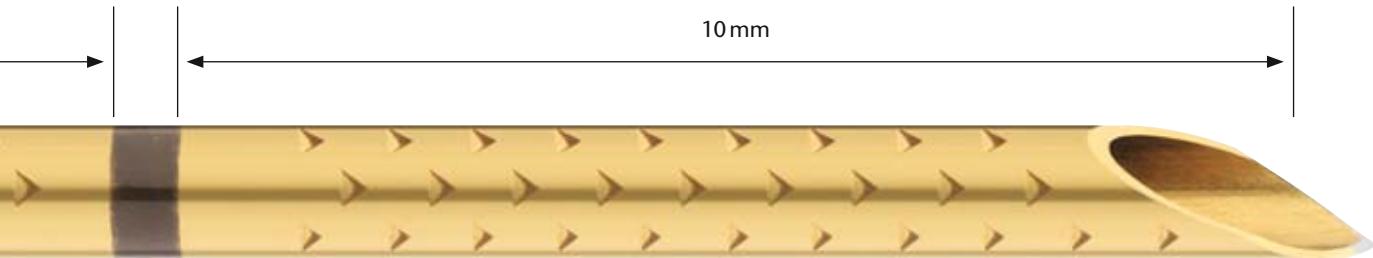
Visibility regardless of the puncture angle

The nature of the "Cornerstone" reflectors guarantees ideal reflection behaviour, independent of the puncture angle.

► The ultrasound waves are reflected even at very steep puncture angles.



Ultrasound marker with perfect reflection properties
The "Cornerstone" reflectors (patent pending) are structured so that ultrasound waves are reflected without limitation. As a result of the reflection, the cannula tip is visible and can be clearly identified.



Sophisticated layout

Each cannula segment is graduated all-around with "Cornerstone" reflectors that are offset 60°.

► Perfect cannula identification is guaranteed in every position.

Perfect gliding qualities

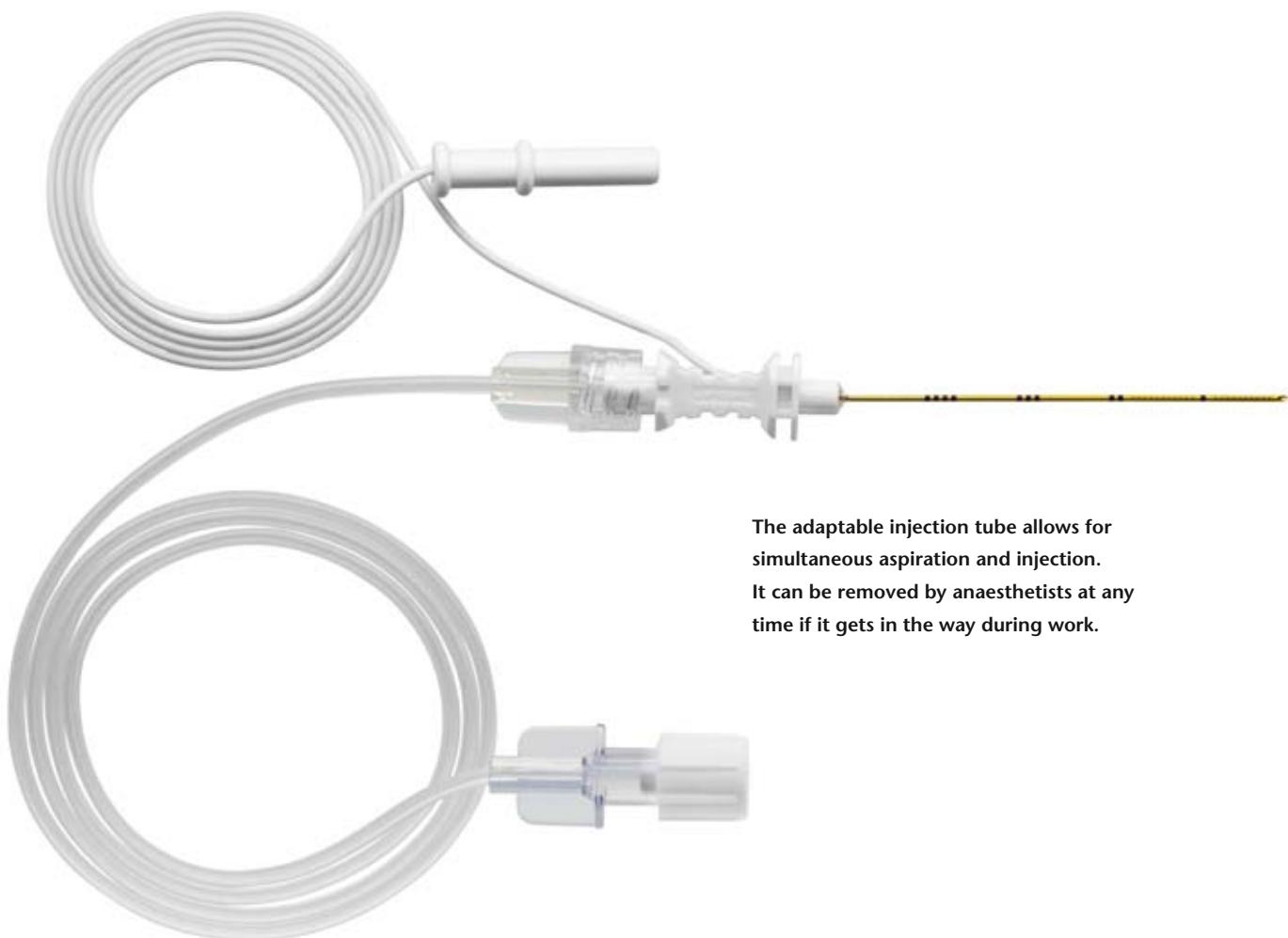
The cannulas are coated using the innovative NanoLine technology.

► This has excellent gliding qualities, increases visibility under ultrasound monitoring and stimulates exclusively through the non-insulated tip.

SonoPlex Stim cannulas

Single shot peripheral nerve block anaesthesia under ultrasound monitoring

SonoPlex Stim cannulas were developed by PAJUNK® especially for single shot applications to be used in peripheral block anaesthesia. They are available with a SPROTTE® tip or facet tip. The standard design with NanoLine coating and "Cornerstone" reflectors provides the user with the combination of ultrasound and stimulation for double safety.

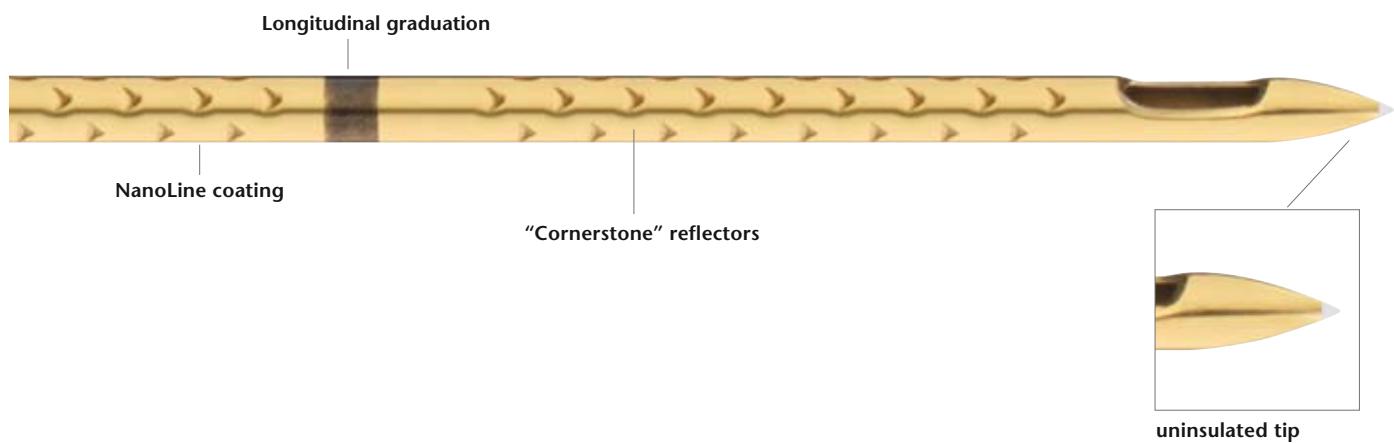


**The adaptable injection tube allows for simultaneous aspiration and injection.
It can be removed by anaesthetists at any time if it gets in the way during work.**

There are two different tip geometries available for the user to choose from:

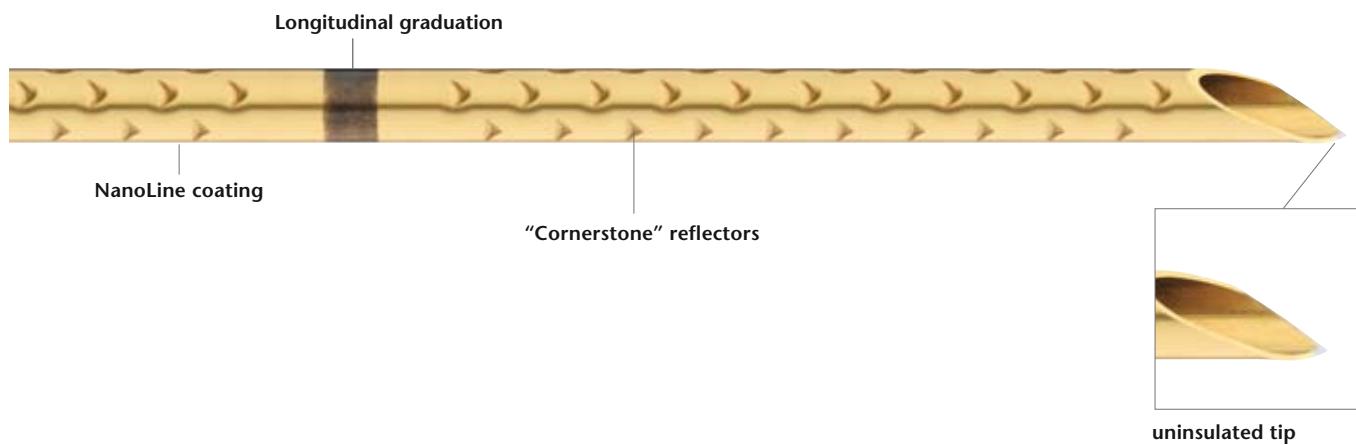
The SonoPlex Stim cannula with SPROTTE® tip

The closed tip of this cannula assists the anaesthetist in theatraumatically precise localisation of the nerve.



The SonoPlex Stim cannula with facet tip

In comparison with conventional sharp cannulas, this special facet tip reduces the risk of injury to a minimum, and it ensures for an excellent quality of the puncture.



SonoLong NanoLine kit

For continuous peripheral nerve block anaesthesia under ultrasonic monitoring

Together with Dr. Meier, PAJUNK® is the first manufacturer to have developed a technique by which the catheter is introduced in sterile condition directly from a container through the cannula, and the anaesthetic is injected through the catheter. This patented technique has established itself successfully on the market and has aroused a great response and recognition in the professional world. The SonoLong NanoLine kit combines this technique with "Cornerstone" cannulas. It is extremely suitable for the performance of the continuous techniques under ultrasonic monitoring.

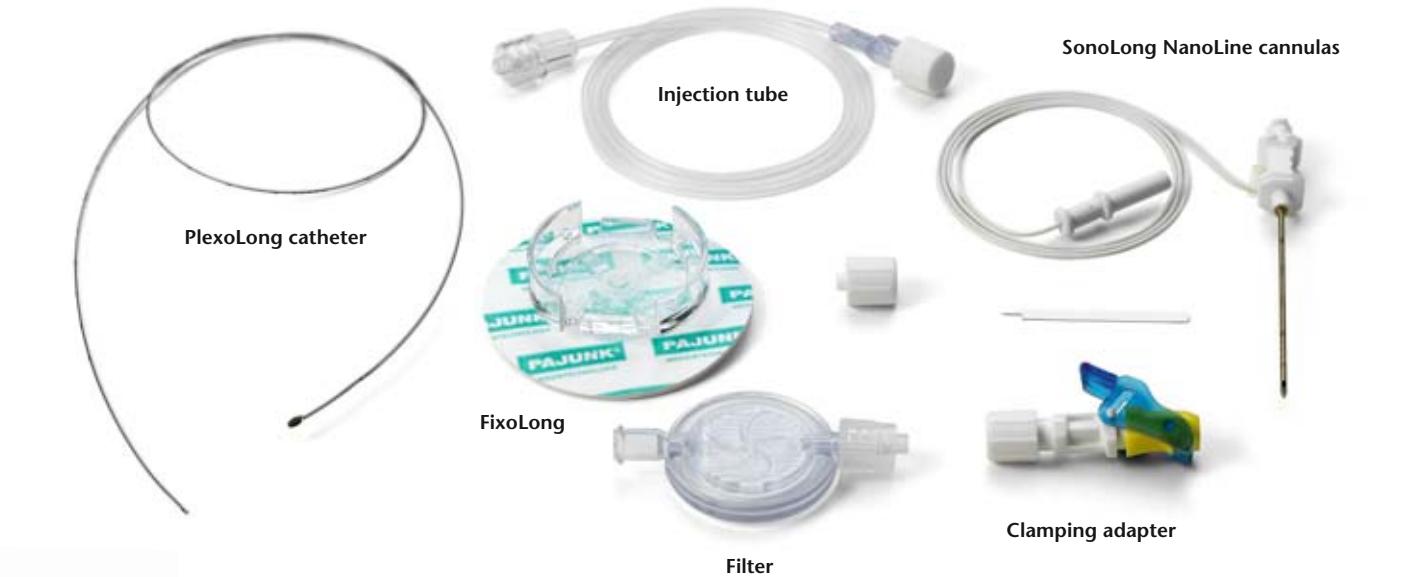
The kit consists of:

- SonoLong NanoLine cannulas with "Cornerstone" reflectors optionally available with SPROTTE® SPECIAL cannula, Tuohy cannula or facet tip
- Catheter with catheter container
- FixoLong system
- Colour coded adapter



Simple handling

The SonoLong NanoLine kits are equipped with a catheter container. The catheter can therefore be introduced into the cannula in a sterile condition.



Three cannula types available

The SonoLong NanoLine kit is alternatively fitted with three different cannula types. While the facet tip cannula exclusively places the catheter parallel to the nerve, the SPROTTE® SPECIAL tip cannula and the Tuohy tip cannula are suitable for those cases, where it is necessary to introduce the catheter at an angle to the nerve.



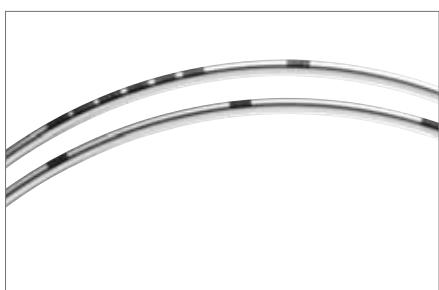
Facet tip



SPROTTE® SPECIAL tip



Tuohy tip



Steel stylet

The catheter of the SonoLong NanoLine kit has a steel stylet, which is locked in place in the introductory aid at its end, and is removed together with the container after the application of the catheter.

► This provides the catheter with the optimal stiffness.

Ascending length indication

The catheter with a length of 50 cm has been provided with an ascending length indication up to a length of 30 cm in intervals of 5 cm.

► Its position can therefore be determined exactly at any time.

Catheter with central orifice

The centre of the radiopaque catheter is open.

► This ensures the free flow of the anaesthetic – particularly in connection with the post-operative injection pump.

SonoLong Sono kit

The kink-proof catheter with a stainless steel helical coil

The SonoLong Sono kit is a joint development from PAJUNK® and Dr. Meier. It is different from the SonoLong kit only through the design of the catheter. It is equipped with an integrated stainless steel helical coil, and is suitable for long-term treatment in pain therapy and plexus anaesthesia. The SonoLong Sono kit is, just as the SonoLong NanoLine kit, available with three different types of cannulas: with a SPROTTE® SPECIAL cannula, with a facet tip cannula or with a Tuohy cannula. All three cannula variants are equipped with the proven "Cornerstone" reflectors for maximum visibility under ultrasound monitoring.

The kit consists of:

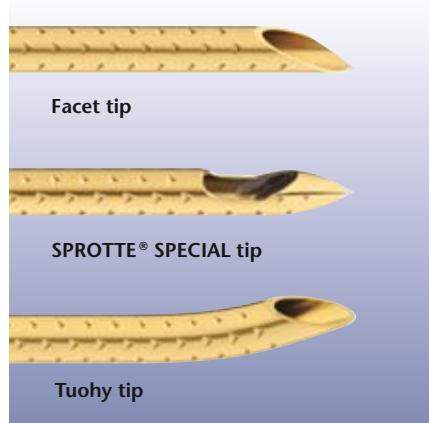
- SonoLong cannulas with "Cornerstone" reflectors optionally available with SPROTTE® SPECIAL cannula, Tuohy cannula or facet tip
- Catheter in catheter container
- FixoLong system
- Colour coded adapter

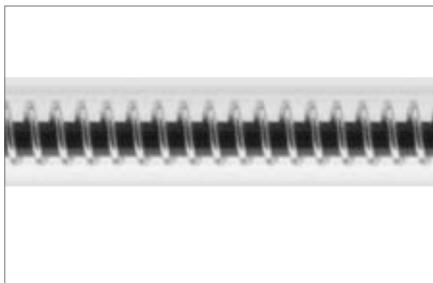
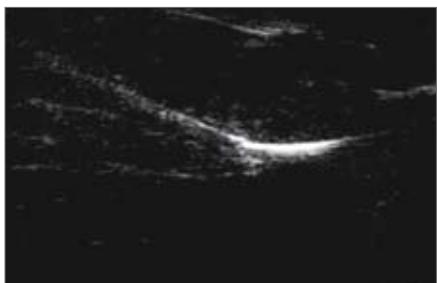
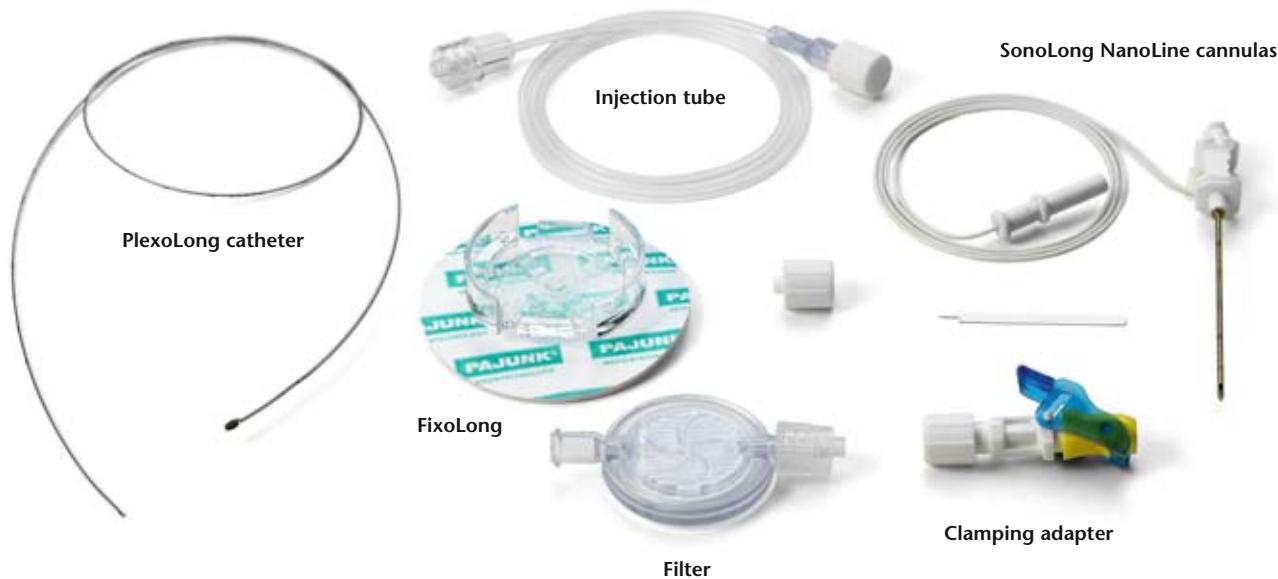


PlexoLong catheter

Three cannula types available

The SonoLong Sono kit is alternatively fitted with three different cannula types. While the facet tip cannula exclusively places the catheter parallel to the nerve, the SPROTTE® SPECIAL tip cannula and the Tuohy tip cannula are suitable for those cases, where it is necessary to introduce the catheter at an angle to the nerve.





Graduation and radiographic contrast strips

The SonoLong Sono catheter is graduated along the first 30 cm, and it has also been provided with radiographic contrast strips. ➔ This permits the perfect identification of the catheter as well as its placement.

Large inner lumen and integrated stainless steel helical coil

The SonoLong Sono catheter has a particularly large inner lumen. The integrated stainless steel helical coil makes it absolutely kink-proof.

➔ The SonoLong Sono catheter thereby fulfills the prerequisites for a safe connection to the injection pump and guarantees the unhindered flow of the anaesthetic for continuous applications.

Soft, flexible catheter tip

The steel stylet ends 1 cm before reaching the catheter tip, which leaves the tip soft and flexible.

➔ This helps in avoiding inadvertent injuries of vessels, while providing for maximum flexibility during the introduction and placement of the catheter.

SonoLong Curl Sono kit

The “on-the-dot” anaesthesia, with a minimum of medication required

The provision of “Cornerstone” reflectors eases precise positioning of the SonoLong cannula in the direct proximity of the nerve under ultrasound monitoring. Since the catheter will follow the path with the least resistance, and this does not always coincide with the neural structures, it is also necessary to monitor the position of the catheter exactly. Against this background, the SonoLong Curl Sono kit was developed by PAJUNK® together with Dr. Cedric Luyet, which has a catheter that has been fashioned in a very special manner. With the SonoLong Curl Sono kit, the precise placement of the catheter is also guaranteed. As soon as the catheter passes through the opening of the cannula, the soft tip of the Curl catheter tip will roll up and therefore remain at the point where the cannula tip is positioned. This permits an extremely precise anaesthesia, with a minimum of medication required. The SonoLong Curl Sono kit is available with a Tuohy cannula and equipped with the proven “Cornerstone” reflectors for maximum visibility under ultrasound monitoring.

The kit consists of:

- ➔ *SonoLong cannula with “Cornerstone” reflectors Tuohy tip*
- ➔ *Catheter in catheter container*
- ➔ *FixoLong system*
- ➔ *Colour coded adapter*

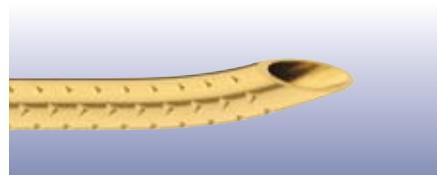
Simple handling

The SonoLong Curl Sono kits are equipped with a catheter container. The catheter can therefore be introduced into the cannula in a sterile condition.



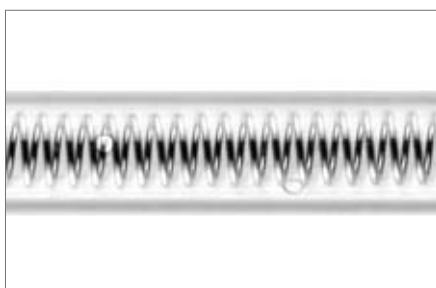
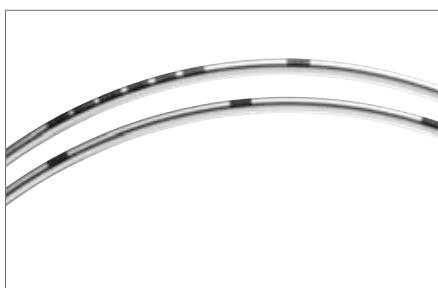


The SonoLong Curl Sono catheter rolls up in the direct proximity of the nerve, so that the medication will be distributed precisely at the desired location.



Tuohy tip

The cannulas of the SonoLong Curl Sono kit are available with the Tuohy tip.



Ascending length indication

The catheter with a length of 50 cm has been provided with an ascending length indication up to a length of 30 cm in intervals of 5 cm.

→ Its position can therefore be determined exactly at any time.

Integrated stainless steel helical coil

The stainless steel helical coil makes the catheter absolutely kink-proof.

→ This ensures the unhindered flow of the anaesthetic, also and particularly over a longer period of time.

SonoLong Curl Sono catheter

The radiopaque catheter has a curved end, a closed tip and three lateral eyes.

→ This will guarantee the accurate and precise administration of the anaesthetic, and it ensures the free flow of the anaesthetic – particularly in connection.

StimuLong Sono II kit

The combination of ultrasound and nerve stimulation provides double safety

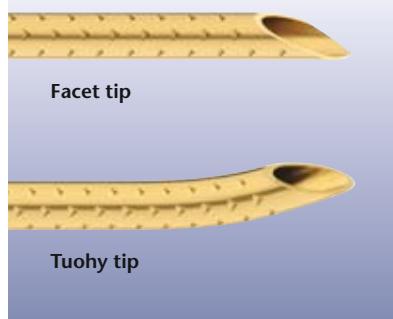
The StimuLong Sono II combines the advantages of a stimulateable catheter with those of echogenic "Cornerstone" cannulas in one kit. The StimuLong Sono II catheter – is characterised by its stimulatable tip. The StimuLong Sono II catheter is characterised by its stimulateable tip. Stimulation is achieved here using an additional electric conductor that remains in the catheter over the entire application period and thus also enables subsequent position control. The relevant nerve is first identified by the echogenic "Cornerstone" cannula. In a second stage, the accuracy of the catheter placement can then be checked using nerve stimulation. The distance to the nerve can be derived at the minimum current strength that is required for stimulation. As the inner lumen are completely coated with NanoLine when compared with conventional cannulas, 100 % insulation can be assumed. Stimulation takes place exactly when the catheter tip comes out of the cannula. A secondary position control of the catheter tip is also possible for intermittent post-operative pain therapy.

The kit consists of:

- ➔ SonoLong NanoLine cannulas with "Cornerstone" reflectors optionally available with Tuohy cannula or facet tip
- ➔ Catheter in catheter container
- ➔ FixoLong system
- ➔ Colour coded adapter

Two cannula types available

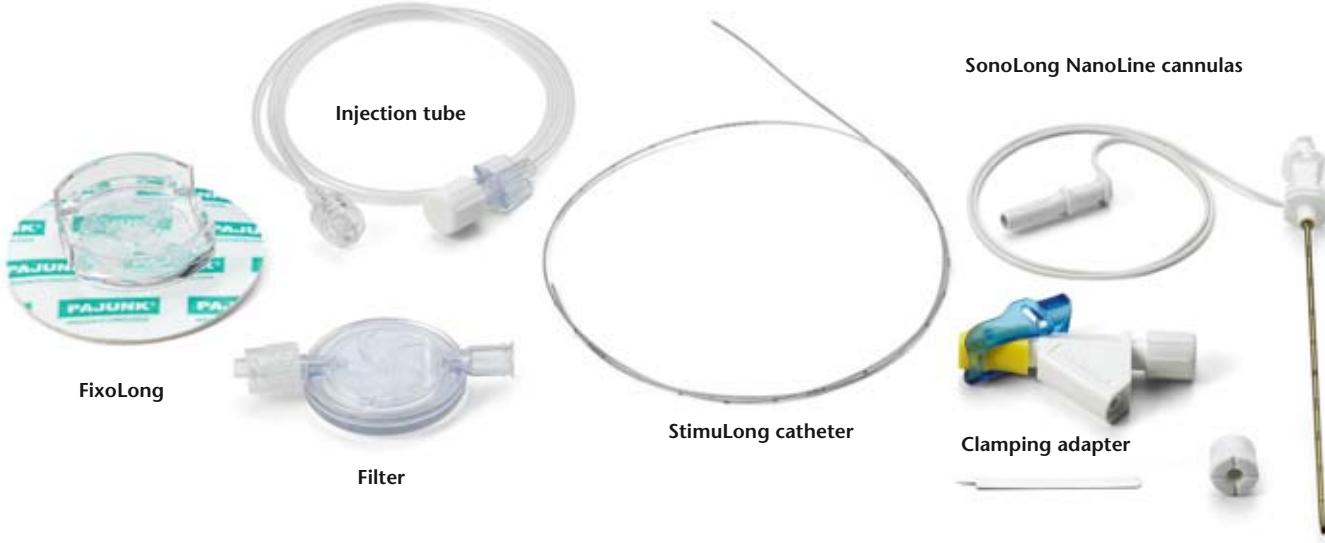
The cannulas of the StimuLong Sono II kit are available with a facet tip or Tuohy tip. While the facet tip is exclusively used to place the catheter parallel to the nerve, the Tuohy tip cannulas are suitable for those cases, where it is necessary to introduce the catheter at an angle to the nerve.



Graduation and radiographic contrast strips

The catheter has been provided with an ascending depth graduation up to a length of 30 cm in intervals of 5 cm as well as radiographic contrast strips.

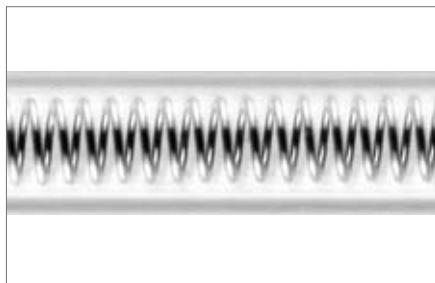
- ➔ This allows for perfect localisation. In addition, the metal helical coils guarantee 100% ultrasound visibility – an important requirement for optimum catheter placement.



Memory-effect precluded

The catheter from PAJUNK® has an integrated stainless steel helical coil and is also supplied in a container.

→ This prevents the common memory effect that arises when winding the catheter in the packaging.



Stimulatable catheter

The catheter has a continuous electrical circuit.

→ This establishes the electrical connection between the clamping adapter and stimulateable catheter tip.

Integrated stainless steel helical coil

The stainless steel helical coil makes the catheter absolutely kink-proof.

→ This ensures the unhindered flow of the anaesthetic, also and particularly over a longer period of time.

Stimulatable tip

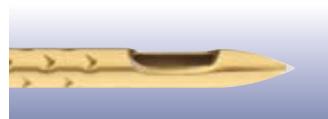
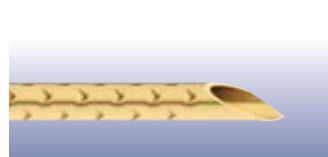
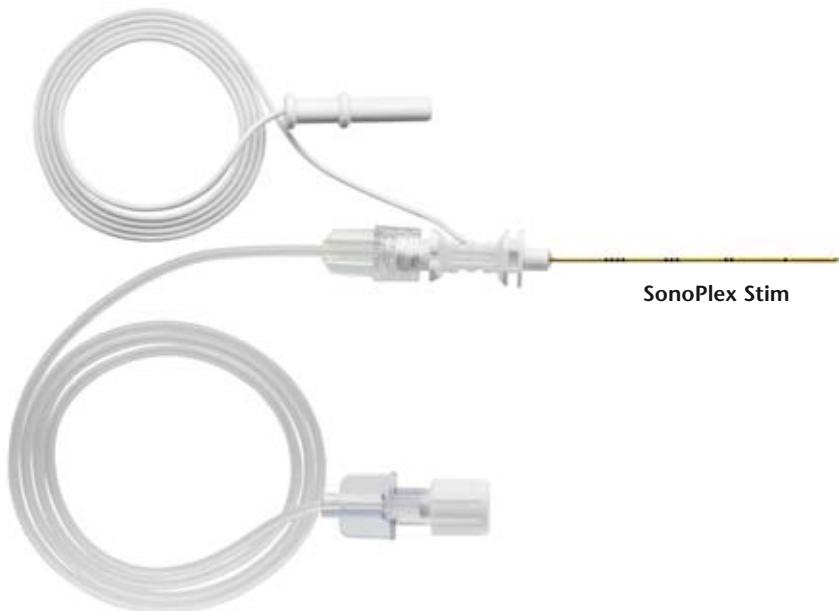
Theatraumatically rounded tip of the StimuLong Sono II catheter is gold-plated.

→ The ensures the highest possible conductivity and an excellent stimulation capability.

Complete SonoSystem

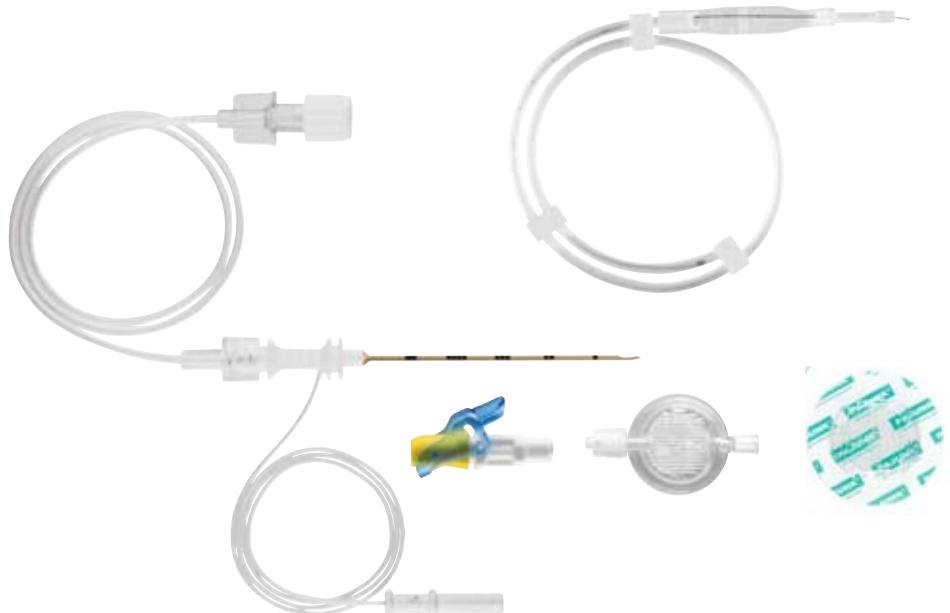
The systems at a glance

SonoPlex Stim cannulas

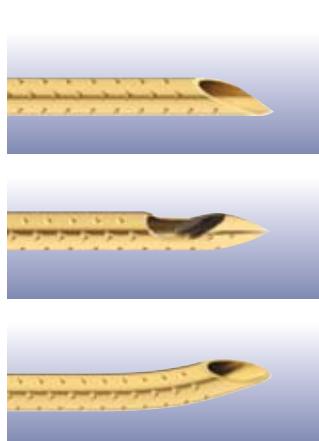


Product	Size	Item No.	PU
SonoPlex Stim cannulas			
Facet tip	24 G x 25 mm	001185-75	10
	22 G x 40 mm	001185-70	10
	22 G x 50 mm	001185-74	10
	22 G x 80 mm	001185-71	10
	21 G x 100 mm	001185-77	10
	20 G x 120 mm	001185-72	10
	20 G x 150 mm	001185-76	10
SPROTTE® tip	24 G x 40 mm	001185-30G	10
	22 G x 50 mm	001185-31G	10
	22 G x 70 mm	001185-31H	10
	22 G x 90 mm	001185-31J	10

SonoLong NanoLine kit



- SonoLong NanoLine cannula Luer Lock with electrical connector cable
- Adaptable injection tube
- PlexoLong catheter 20 G x 50 cm with central opening and steel stylet
- Clamping adapter (yellow)
- Filter 0.2 µm
- FixoLong

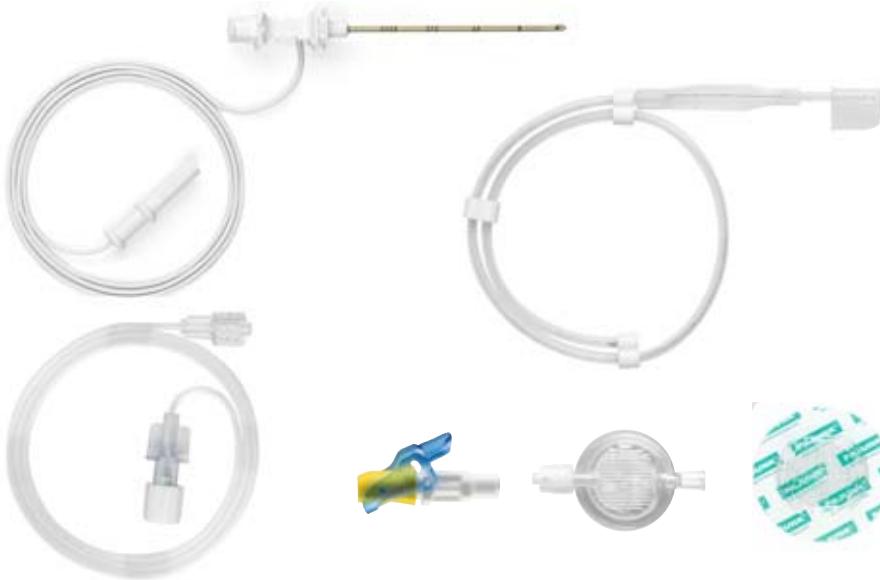


Product	Size	PlexoLong catheter	Item No.	PU
SonoLong NanoLine cannulas				
Facet tip	19 G x 50 mm	20 G x 50 cm	531185-31A	10
	19 G x 100 mm	20 G x 50 cm	521185-31A	10
	19 G x 150 mm	20 G x 50 cm	511185-31A	10
SPROTTE® SPECIAL tip	19 G x 60 mm	20 G x 50 cm	531185-31B	10
	19 G x 120 mm	20 G x 50 cm	521185-31B	10
Tuohy tip	18 G x 50 mm	20 G x 50 cm	531185-31C	10
	18 G x 100 mm	20 G x 50 cm	521185-31C	10

Complete SonoSystem

The systems at a glance

SonoLong Sono kit



- SonoLong NanoLine cannula Luer Lock connection and electrical connector cable
- Adaptable injection tube
- SonoLong Sono catheter 20 G with integrated stainless steel helical coil and central opening
- Clamping adapter (yellow)
- Filter 0.2 µm
- FixoLong

Product	Size	SonoLong Sono catheter	Item No.	PU
SonoLong NanoLine cannulas				
Facet tip	19 G x 50 mm	20 G x 50 cm	531187-31A	10
	19 G x 100 mm	20 G x 50 cm	521187-31A	10
SPROTTE® SPECIAL tip				
	19 G x 60 mm	20 G x 50 cm	531187-31B	10
	19 G x 120 mm	20 G x 50 cm	521187-31B	10
Tuohy tip				
	18 G x 50 mm	20 G x 50 cm	531187-31C	10
	18 G x 100 mm	20 G x 50 cm	521187-31C	10

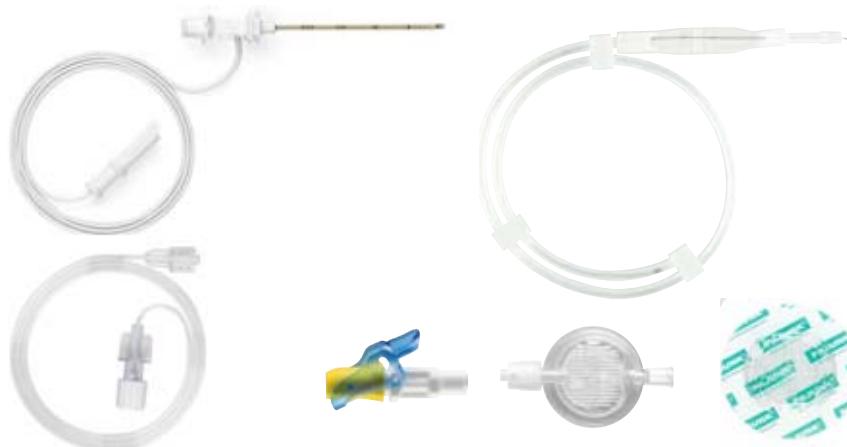
SonoLong Curl Sono kit



- SonoLong NanoLine cannula Luer Lock connection and electrical connector cable
- Adaptable injection tube
- SonoLong Curl Sono catheter 20 C with integrated stainless steel helical coil, closed tip and 3 lateral openings
- Clamping adapter (yellow)
- Filter 0.2 µm
- FixoLong

Product	Size	SonoLong Curl Sono catheter	Item No.	PU
SonoLong NanoLine cannulas				
Tuohy tip	18 G x 50 mm 18 G x 50 mm 18 G x 100 mm	20 G x 50 cm 20 G x 90 cm 20 G x 90 cm	531188-31C 531188-34C 521188-34C	10 10 10

StimoLong Sono II kit



- SonoLong NanoLine cannula Luer Lock connection and electrical connector cable
- Adaptable injection tube
- StimoLong Sono catheter 20 C x 50 cm with central opening, electrically conductive stylet and integrated metal helical coil
- StimoLong adapter with electr. connection
- StimoLong clamping adapter (yellow) with integrated stimulation connection
- Filter 0.2 µm
- FixoLong

Product	Size	StimoLong catheter	Item No.	PU
SonoLong NanoLine cannulas				
Facet tip	19 G x 50 mm 19 G x 100 mm	20 G x 50cm	531187-32A	10
Tuohy tip	18 G x 50 mm 18 G x 100 mm	20 G x 50cm 20 G x 50cm	521187-32A 521187-32C	10 10

*Studies

Simon Hebard and Graham Hocking

Echogenic Technology can improve needle visibility during ultrasound-guided regional anaesthesia
Regional Anesthesia and Pain Medicine, Vol. 36, Number 2, March–April 2011 Seiten 185–189

S. Hebard, G. Hocking, K. Murray; Department of Anaesthesia, Sir Charles Gairdner Hospital, Perth, Western Australia

Two-dimensional mapping to assess direction and magnitude of needle tip error in ultrasound-guided regional anaesthesia.

Anesthesia and Intensive Care, Vol. 39, No. 6, November 2011, Seiten 1076–1081

S.R. Nagpaul, N. Kaur, D Kamming, M Edwards:

“Needle to nerve time” – comparison of four different echogenic ultrasound guided regional anaesthesia nerve block needles.

UCL – University College London, NHS Foundation Trust, Department of Anaesthesia

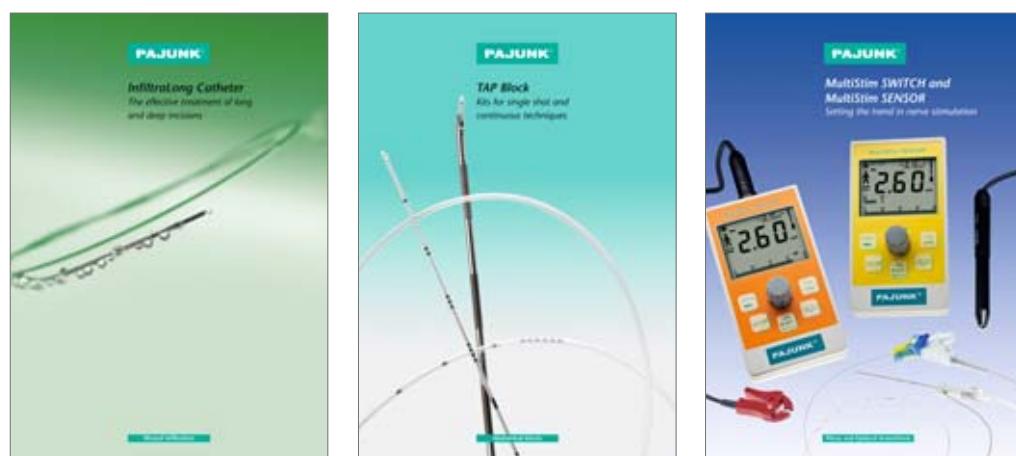
S. Saha, J. Mukherjee

Best views: Evaluation of different needles and ultrasound modes for regional anaesthesia
Barnet and Chase Farm Hospitals London, NHS Trust, Department of Anaesthesia

C. Luyet, C. Meyer, G. Herrmann, G. M. Hatch, S. Ross und U. Eichenberger

Placement of coiled catheters into the paravertebral space

Anaesthesia 2012, 67, Seiten 250–255



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