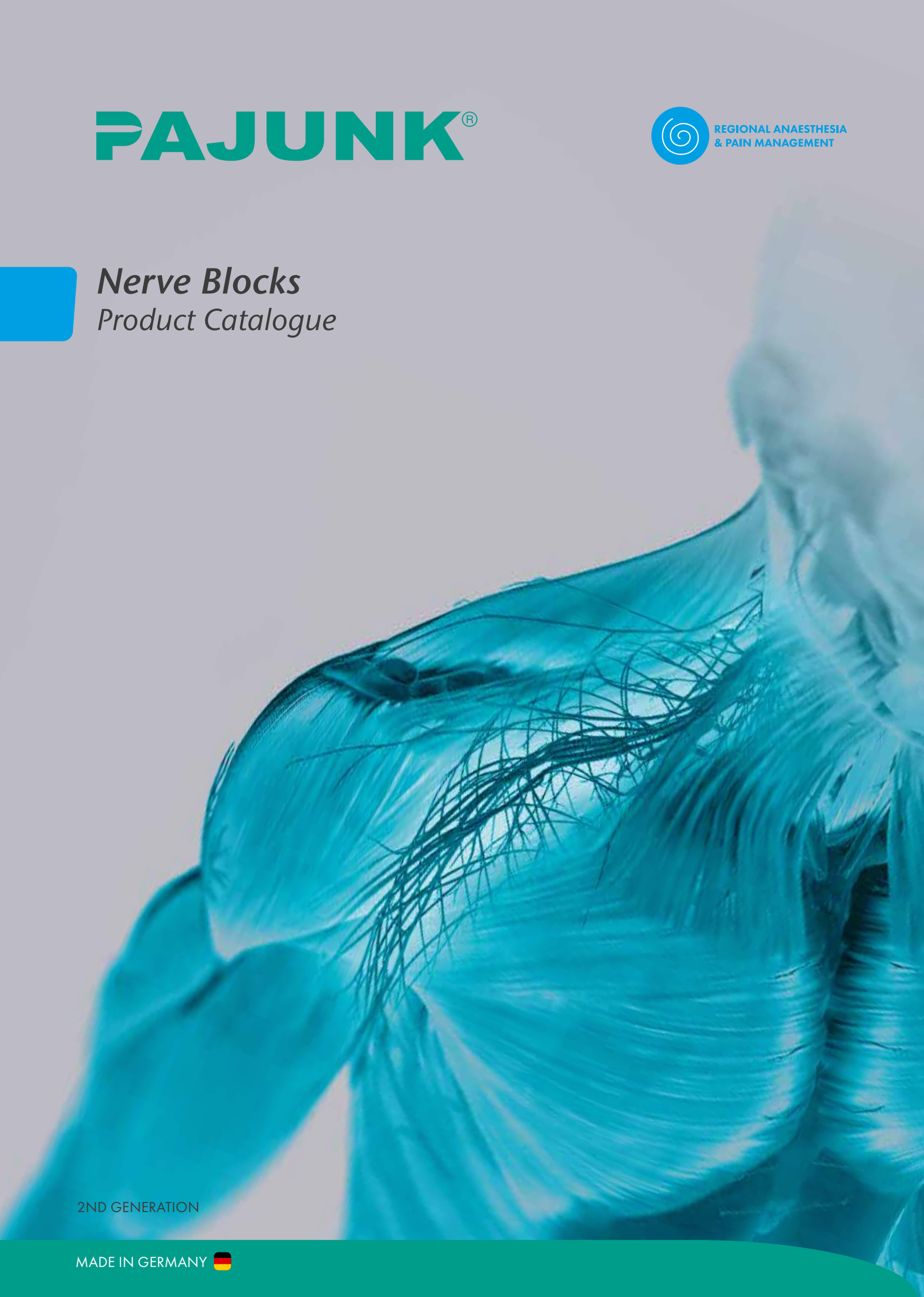
PAJUNK®

REGIONAL ANAESTHESIA & PAIN MANAGEMENT

Nerve Blocks
Product Catalogue



2ND GENERATION

MADE IN GERMANY

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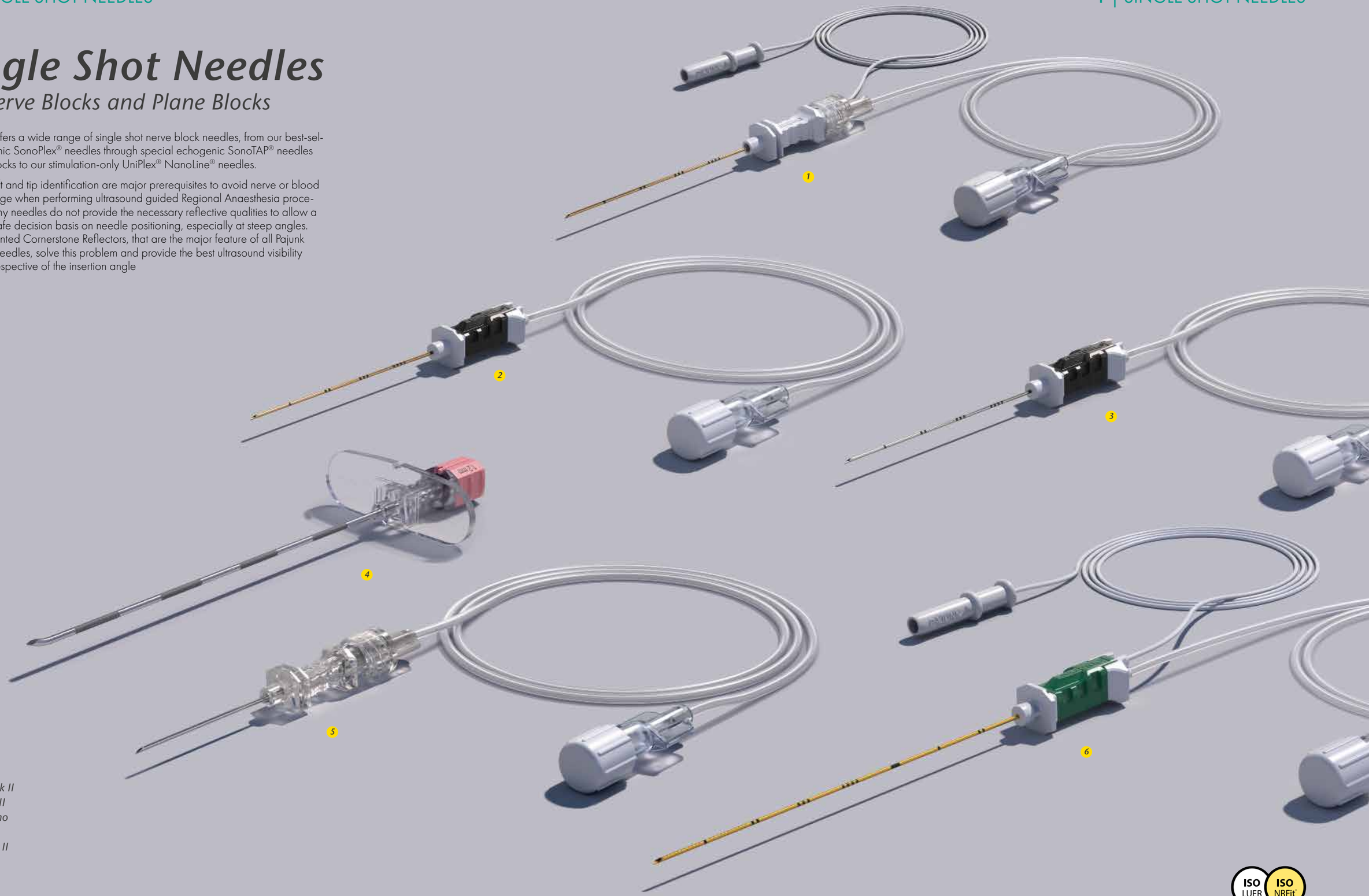
Single Shot Needles

For Nerve Blocks and Plane Blocks

PAJUNK® offers a wide range of single shot nerve block needles, from our best-selling echogenic SonoPlex® needles through special echogenic SonoTAP® needles for plane blocks to our stimulation-only UniPlex® NanoLine® needles.

Needle shaft and tip identification are major prerequisites to avoid nerve or blood vessel damage when performing ultrasound guided Regional Anaesthesia procedures. [1] Many needles do not provide the necessary reflective qualities to allow a good and safe decision basis on needle positioning, especially at steep angles. [2,3,6] The patented Cornerstone Reflectors, that are the major feature of all Pajunk echogenic needles, solve this problem and provide the best ultrasound visibility possible, irrespective of the insertion angle



1 *UniPlex*
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4 *TuohySono*
5 *SonoEye*
5 *SonoPlex II*

ISO LUER ISO NRFit®

Also available in NRFit®

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189
2. **Fuzier R. et al.** The ecchogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466
3. **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915
6. **Luyet C. et al.** Newly Designed, Self-Coiling Catheters for Regional Anesthesia – An Imaging Study, Reg. Anesth. Pain. Med., Volume 36 Number 2, 2011; 171–176

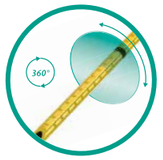
SonoPlex® II

Echogenic, Stimulating Single Shot Nerve Block Needle

Echogenic Needle Tip

Facet tip with two inclination angles

- Improves needle tip visibility under ultrasound



Cornerstone Reflectors

360 degree graduations on the first 20mm of the needle

- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

NanoLine® Coating

Very thin polymer film on inner and outer needle surface.

- Excellent puncture and gliding properties through smooth surface
- Improves visibility under ultrasound[1]
- Precise stimulation through the non-insulated needle tip

Depth Markings

- Easy to read and identify

Removable Stimulation Cable

Easy removal of stimulation cable while keeping the system sterile

- Allows for more flexibility to match user preferences

Non-Removable Injection Tubing

- Closed system
- No leakage

Colour-Coded Needle Hub

- Easy identification of needle size

SonoPlex II with Facet Tip

Description	Item no.	NRFit® Item no.	PU
24G x 30mm (1 1/5")	001285-75	001265-75	10
22G x 40mm (1 5/8")	001285-70	001265-70	10
22G x 50mm (2")	001285-74	001265-74	10
22G x 80mm (3 1/5")	001285-71	001265-71	10
21G x 100mm (4")	001285-77	001265-77	10
20G x 100mm (4")	001285-95		10
20G x 120mm (4 3/4")	001285-72	001265-72	10
20G x 150mm (6")	001285-76	001265-76	10

SonoPlex II with Facet S Tip

Description	Item no.	NRFit Item no.	PU
25G x 50mm (2")	001287-81	001267-81	10
24G x 40mm (1 5/8")		001267-78	10
24G x 50mm (2")	001287-85	001267-85	10
22G x 40mm (1 5/8")	001287-70	001267-70	10
22G x 50mm (2")	001287-74	001267-74	10
22G x 80mm (3 1/5")	001287-71	001267-71	10
21G x 80mm (3 1/5")	001287-88	001267-88	10
21G x 100mm (4")	001287-77	001267-77	10
20G x 100mm (4")		001267-95	10
20G x 120mm (4 3/4")	001287-72	001267-72	10
20G x 150mm (6")	001287-76	001267-76	10

SonoPlex II with SPROTTE® Tip

Description	Item no.	NRFit Item no.	PU
22G x 50mm (2")	001285-31G	001265-31G	10
22Gx 90mm (3 1/2")	001285-31J	001265-31J	10

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189
2. **Fuzier R. et al.** The echogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466
3. **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915

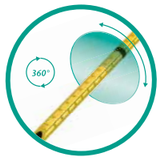
SonoBlock II

Echogenic, Non-Stimulating Single Shot Nerve Block Needle

Echogenic Needle Tip

Facet tip with two inclination angles

- Improves needle tip visibility under ultrasound



Cornerstone Reflectors

360 degree graduations on the first 20mm of the needle

- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

NanoLine® Coating

Very thin polymer film on inner and outer needle surface.

- Excellent puncture and gliding properties through smooth surface
- Improves visibility under ultrasound[1]
- Precise stimulation through the non-insulated needle tip

Depth Markings

- Easy to read and identify

Non-Removable Injection Tubing

- Closed system
- No leakage

Colour-Coded Needle Hub

- Easy identification of needle size

SonoBlock II with Facet Tip

Description	Item no.	NRFit® Item no.	PU
22G x 50mm (2")	001280-74	001260-74	10
22G x 80mm (3 1/5")	001280-71	001260-71	10
21G x 100mm (4")	001280-77	001260-77	10
20G x 100mm (4")	001280-95		10
20G x 120mm (4 3/4")	001280-72		10

SonoBlock II with Facet S Tip

Description	Item no.	NRFit Item no.	PU
22G x 40mm (1 5/8")	001281-70		10
22G x 50mm (2")	001281-74		10
22G x 80mm (3 1/5")	001281-71		10
21G x 100mm (4")	001281-77		10
20G x 100mm (4")	001281-95		10
20G x 120mm (4 3/4")	001281-72		10

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189
2. **Fuzier R. et al.** The echogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466
3. **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915

SonoTAP® II

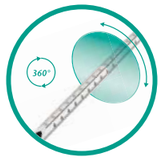
Echogenic, Non-Stimulating Single Shot Fascial Plane Block Needle

Echogenic Needle Tip

Facet tip with two inclination angles
- Improves needle tip visibility under ultrasound

Depth Markings

- Easy to read and identify



Cornerstone Reflectors

360 degree graduations on the first 20mm of the needle
- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

Non-Removable Injection Tubing

- Closed system
- No leakage

Colour-Coded Needle Hub

- Easy identification of needle size

SonoTAP II with Facet Tip

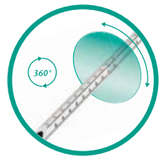
Description	Item no.	NRFit® Item no.	PU
24G x 40mm (1 5/8")	1285-3Y040	1265-3Y040	10
24G x 50mm (2")	1285-3Y050	1265-3Y050	10
22G x 50mm (2")	1285-3E050	1265-3E050	10
22G x 80mm (3 1/5")	1285-3E080	1265-3E080	10
21G x 110mm (4")	1285-3F110	1265-3F110	10
21G x 150mm (6")	1285-3F150	1265-3F150	10

TuohySono

Echogenic, Non-Stimulating Single Shot Plane Block Needle

Echogenic Needle Tip

- Improved needle tip visibility under ultrasound



Cornerstone Reflectors

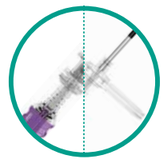
360 degree graduations on the first 20mm of the needle
- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

Depth Markings

- Easy to read and identify

Precision-Ground Metal Stylet

- Flush ends of metal stylet and needle reduce the risk of tissue displacement
- Increased needle stability



Detachable Plastic Wings

- Optimum handling for different gripping techniques

TuohySono

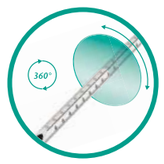
Description	Item no.	PU
20G x 100mm (4")	1085-4G103	25
18G x 50mm (2")	1085-4K050	25
18G x 90mm (3 1/2")	1085-4K090	25
18G x 120mm (4 3/4")	1085-4K120	10
18G x 150mm (6")	1085-4K150	10
17G x 90mm (3 1/2")	1085-4M090	25
17G x 150mm (6")	1085-4M150	10

SonoEye

Echogenic Needle for Ultrasound-Guided Retrobulbar Blocks

Echogenic Needle Tip

- Improved needle tip visibility under ultrasound



Cornerstone Reflectors

360 degree graduations on the first 20mm of the needle
- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

SonoEye with Atkinson Tip

Description	Item no.	PU
24G x 30mm (1 1/5")	1187-7000	10
24G x 40mm (1 5/8")	1187-7001	10

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189
2. **Fuzier R. et al.** The echogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466
3. **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915

UniPlex® + UniPlex® II

Stimulating Single Shot Nerve Block Needle

NanoLine® Coating

Very thin polymer film on inner and outer needle surface.

- Excellent puncture and gliding properties through smooth surface
- Improves visibility under ultrasound[1]
- Precise stimulation through the non-insulated needle tip

Depth Markings

- Easy to read and identify

***UniPlex II** – Additional Features*

Removable Stimulation Cable

Easy removal of stimulation cable while keeping the system sterile

- Allows for more flexibility to match user preferences

Non-Removable Injection Tubing

- Closed system
- No leakage

Colour-Coded Needle Hub

- Easy identification of needle size

UniPlex with Facet Tip

Description	Item no. 1st Generation	NRFit® Item no. 2nd Generation	PU
25G x 35mm (1 1/3")	001156-80	001246-80	10
25G x 50mm (2")	001156-81	001246-81	10
25G x 80mm (3 1/5")	001156-86		10
24G x 25mm (1")	001156-75	001246-75*	10
24G x 50mm (2")	001156-85	001246-85	10
22G x 40mm (1 5/8")	001156-70	001246-70	10
22G x 50mm (2")	001156-74	001246-74	10
22G x 80mm (3 1/5")	001156-71	001246-71	10
22G x 100mm (4")	001156-84	001246-84	10
22G x 120mm (4 3/4")	001156-82	001246-82	10
21G x 100mm (4")	001156-77	001246-77	10
20G x 120mm (4 3/4")	001156-72	001246-72	10
20G x 150mm (6")	001156-76	001246-76	10

*24G x 30mm (1 1/5")

UniPlex with Facet S Tip

Description	Item no. 1st Generation	NRFit Item no. 2nd Generation	PU
25G x 50mm (2")	001157-80	001147-80	10
25G x 50mm (2")		001247-81	
24G x 25mm (1")	001157-75	001247-75*	10
24G x 50mm (2")	001157-81	001247-85	10
22G x 40mm (1 5/8")	001157-70	001246-31J	10
22G x 50mm (2")	001157-74	001247-74	10
22G x 80mm (3 1/5")	001157-71	001247-71	10
22G x 100mm (4")	001247-84		10
21G x 100mm (4")	001157-77	001247-77	10
20G x 150mm (6")	001157-76	001247-76	10

UniPlex with SPROTTE® Tip

Description	Item no. 1st Generation	NRFit Item no. 2nd Generation	PU
24G x 40mm (1 5/8")	001156-30G		10
22G x 50mm (2")	001156-31G	001246-31G	10
22G x 70mm (2 3/4")	001156-31H	001246-31H	10
22Gx 90mm (3 1/2")	001156-31J	001246-31J	10
22G x 150mm (6")	001156-28L	001246-28L	10

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189

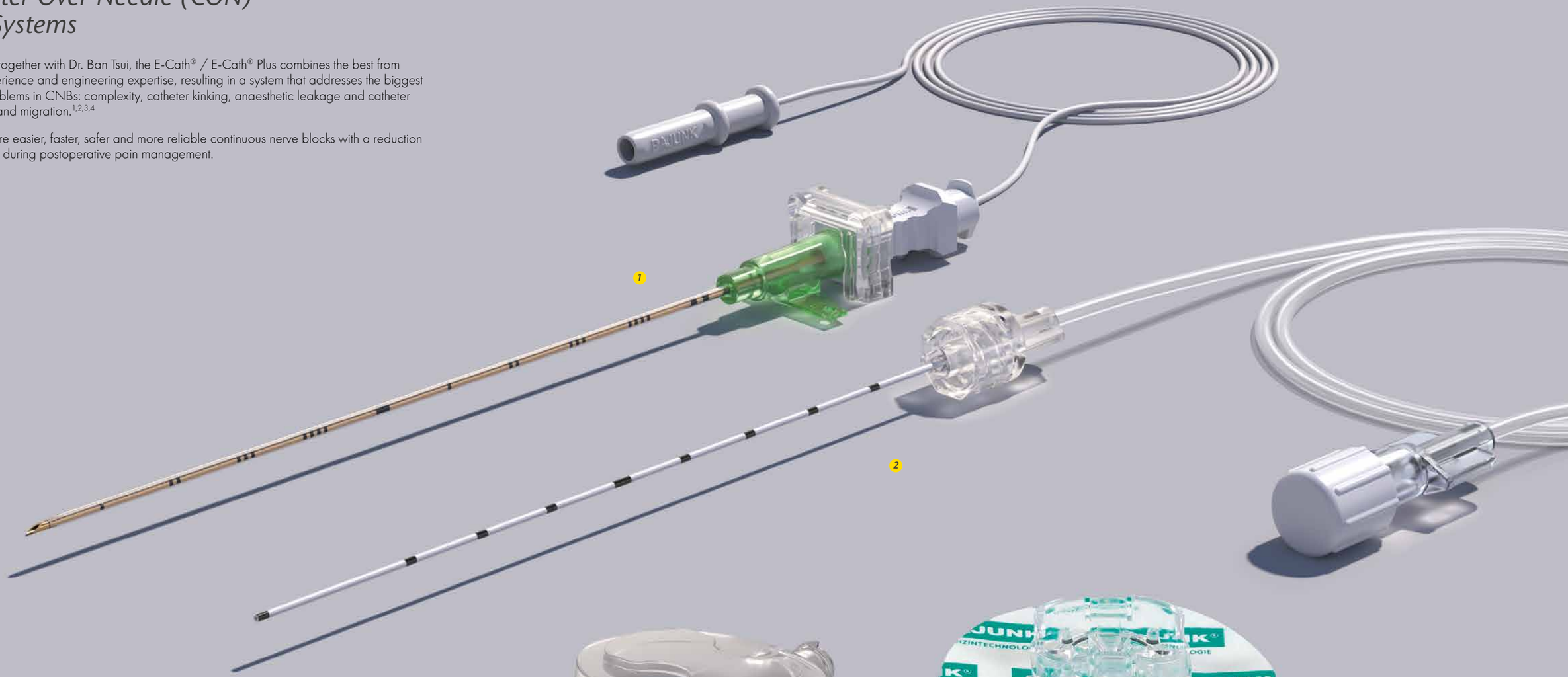
2 | CATHETER-OVER-NEEDLE

Catheter Sets (CON)

Catheter-Over-Needle (CON) CNB Systems

Developed together with Dr. Ban Tsui, the E-Cath® / E-Cath® Plus combines the best from clinical experience and engineering expertise, resulting in a system that addresses the biggest catheter problems in CNBs: complexity, catheter kinking, anaesthetic leakage and catheter dislocation and migration.[1,2,3,4]

The results are easier, faster, safer and more reliable continuous nerve blocks with a reduction of workload during postoperative pain management.



1

2

3

4

1 *Indwelling Catheter with SonoPlex®*
2 *E-Catheter*
3 *Filter*
4 *FixoLong*

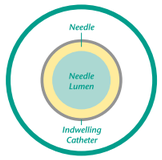
ISO LUER ISO NRFit®

Also available in NRFit®

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189
2. **Fuzier R. et al.** The ecohogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466
3. **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915
4. **Toledano, R. D. et al.** Epidural Catheter Design - Histroy, Innovations, and Clinical Implications., Anesthesiology, V 121, No 1, 2014

E-Cath® + E-Cath® Plus

***E-Cath** – Catheter*

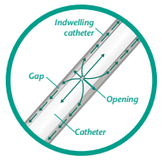


Catheter over Needle Technique

- Significantly reduces the chance of anaesthetic leakage and catheter dislocation or migration[7]

Double Layer Catheter Technology

- Significantly reduces the chance of kinking
- Allows for consistent anaesthetic flow



Self Priming System (Catheter)

E-Catheter comes with a proximal opening which allows the anaesthetic to flow, besides the open tip, also between the outer wall and the indwelling catheter

- Creates 360 degree flow
- Improves the U/S-visibility

Soft Tip

- Reduced chance of nerve damage

Fix Clip

- Ensures a fixed connection between the needle and the indwelling catheter

Integrated Injection Tube

Reduction of procedural steps

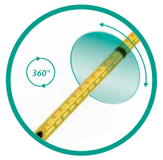
- Catheter adapter is pre-assembled to the catheter system

***SonoPlex®** – Needle*

Echogenic Needle Tip

Facet tip with two inclination angles

- Improves needle tip visibility under ultrasound



Cornerstone Reflectors

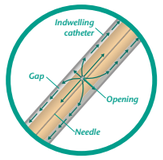
360 degree graduations on the first 20mm of the needle

- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

NanoLine® Coating

Very thin polymer film on inner and outer needle surface.

- Excellent puncture and gliding properties through smooth surface
- Improves visibility under ultrasound[1]
- Precise stimulation through the non-insulated needle tip



Self Priming System (Needle)

Needle comes with a distal opening which allows the anaesthetic to flow, besides the needle tip, also between the outer needle wall and the indwelling catheter

- Improves the U/S-visibility

Depth Markings

- Easy to read and identify

***E-Cath Plus** – Additional Features*

Extended E-Catheter Tip

Protrudes 15mm past the indwelling catheter

- Easy placement past the nerve
- Compensates for minor tissue movement reducing chance of catheter migration

E-Cath – SonoPlex needle with facet tip, indwelling catheter and E-Catheter

Indwelling catheter (working length)	SonoPlex Needle	E-Catheter	Item no.	NRFit Item no.*	PU	FixoLong	Filter
18G x 51mm (2")	21G x 68mm (2 2/3")	20G	201185-40E	201165-40E	10	●	●
18G x 75mm (3")	21G x 94mm (3 2/3")	20G	211185-40E	211165-40E	10	●	●
18G x 83mm (3 1/4")	21G x 101mm (4")	20G	241185-40E	241165-40E	10	●	●
18G x 100mm (4")	21G x 118mm (4 3/4")	20G	261185-40E		10	●	●
18G x 130mm (5 2/5")	21G x 150mm (6")	20G	251185-40E	251165-40E	10	●	●
18G x 150mm (6")	21G x 168mm (6 3/5")	20G	271185-40E		10	●	●

E-Cath Plus – SonoPlex needle with facet tip, indwelling catheter and E-Catheter with stylet (beginning 70mm from tip) and 15mm extended tip

Indwelling catheter (working length)	SonoPlex Needle	E-Catheter	Item no.	NRFit Item no.*	PU	FixoLong	Filter
18G x 51mm (2")	21G x 68mm (2 2/3")	20G	201185-41E	201165-41E	10	●	●
18G x 75mm (3")	21G x 94mm (3 2/3")	20G	211185-41E	211165-41E	10	●	●
18G x 83mm (3 1/4")	21G x 101mm (4")	20G	241185-41E	241165-41E	10	●	●
18G x 100mm (4")	21G x 118mm (4 3/4")	20G	261185-41E		10	●	●
18G x 130mm (5 2/5")	21G x 150mm (6")	20G	251185-41E	251165-41E	10	●	●
18G x 150mm (6")	21G x 168mm (6 3/5")	20G	271185-41E		10	●	●

*with SonoPlex II – 2nd generation needle

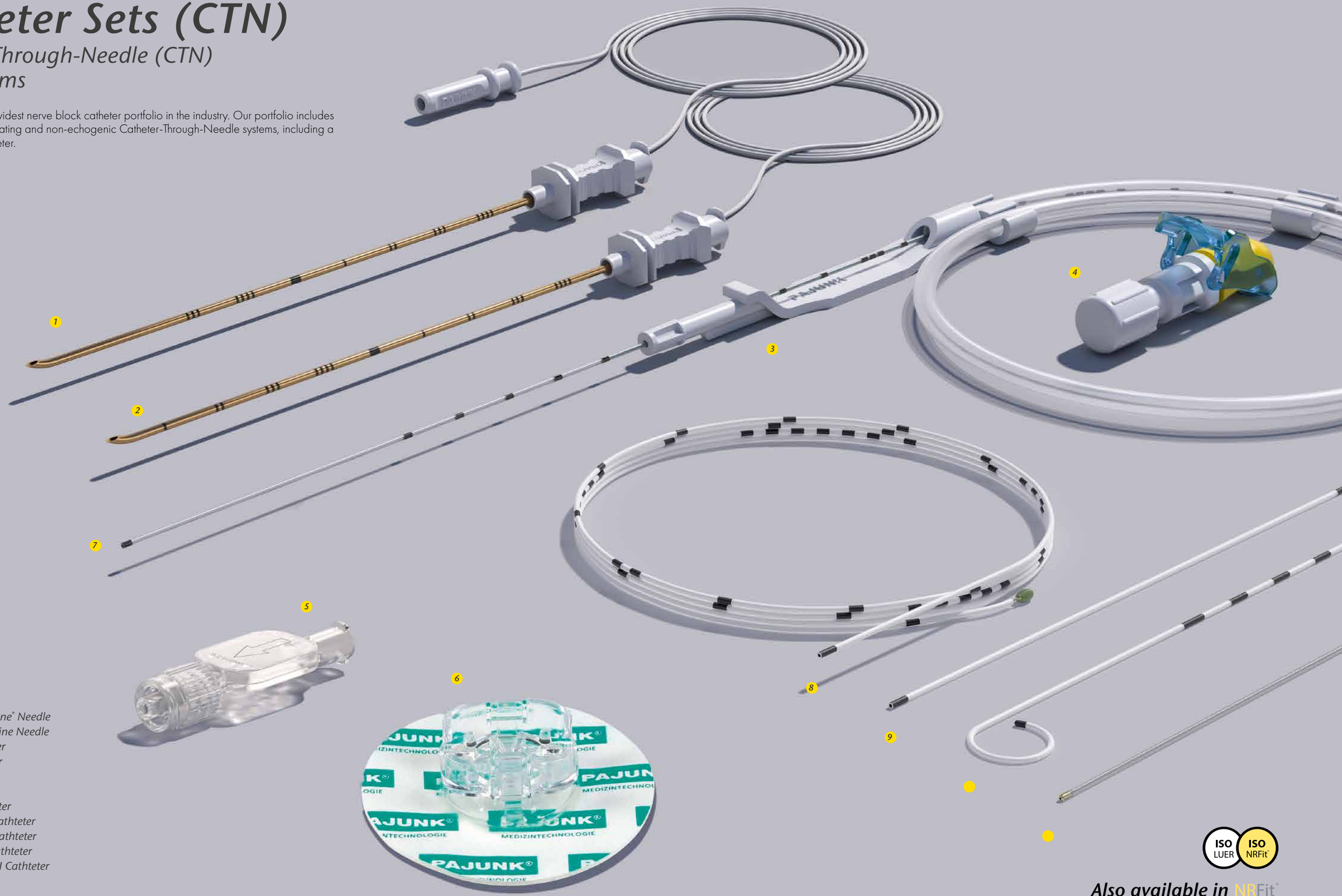
1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189
2. **Fuzier R. et al.** The echogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466
3. **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915
7. **Tsui B. C. H. et al.** Less leakage and dislodgement with a catheter-over-needle versus a catheter through-needle approach for peripheral nerve block: an ex vivo study, Can. J. Anesth. 2012; 59: 655–661 (E-Cath is called Multi-Set in this study)

3 | CATHETER-TROUGH-NEEDLE

Catheter Sets (CTN)

Catheter-Through-Needle (CTN)
CNB Systems

PAJUNK® offers the widest nerve block catheter portfolio in the industry. Our portfolio includes our echogenic, stimulating and non-echogenic Catheter-Through-Needle systems, including a specially curled catheter.



1. *SonoLong NanoLine® Needle*
2. *PlexoLong NanoLine Needle*
3. *Catheter Container*
4. *Clamping Adapter*
5. *Filter*
6. *FixoLong*
7. *PlexoLong Cathteter*
8. *SonoLong Echo Cathteter*
9. *SonoLong Sono Cathteter*
- *SonoLong Curl Cathteter*
- *StimuLong Sono II Cathteter*

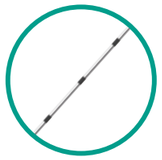
ISO LUER ISO NRFit®

Also available in NRFit®

SonoLong Echo

Echogenic Catheter-Through-Needle System

Catheter with Open Tip



Depth Markings

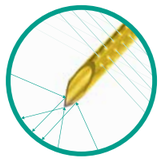
Graduations on the first 30cm

- Easy determination of catheter positioning
- Easy to read and identify

Steel Stylet

- Provides the catheter with improved stability
- Is placed in the introductory aid at its end, and is removed automatically with the container after catheter placement

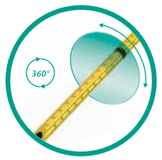
SonoLong Echo Needle Features



Echogenic Needle Tip

Facet tip with two inclination angles

- Improves needle tip visibility under ultrasound



Cornerstone Reflectors

360 degree graduations on the first 20mm of the needle

- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

NanoLine® Coating

Very thin polymer film on inner and outer needle surface.

- Excellent puncture and gliding properties through smooth surface
- Improves visibility under ultrasound[1]
- Precise stimulation through the non-insulated needle tip

Depth Markings

- Easy to read and identify

SonoLong Echo with Facet Tip

Size Needle	Size Catheter central opening	Item no.	NRFit Item no.	PU	FixoLong	Filter	Clamping Adapter
19G x 50mm (2")	20G x 50cm (20")	531185-31A	531165-31A	10	●	●	●
19G x 75mm (3")	20G x 50cm (20")	561185-31A	561165-31A	10	●	●	●
19G x 100mm (4")	20G x 50cm (20")	521185-31A	521165-31A	10	●	●	●
19G x 150mm (6")	20G x 50cm (20")	511185-31A	511165-31A	10	●	●	●

SonoLong Echo with SPROTTE® SPECIAL Tip

Size Needle	Size Catheter central opening	Item no.	NRFit Item no.	PU	FixoLong	Filter	Clamping Adapter
19G x 60mm (2 1/4")	20G x 50cm (20")	531185-31B	531165-31B	10	●	●	●
19G x 120mm (4 3/4")	20G x 50cm (20")	521185-31B	521165-31B	10	●	●	●

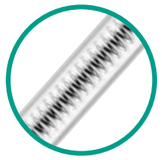
SonoLong Echo with Tuohy Tip

Size Needle	Size Catheter central opening	Item no.	NRFit Item no.	PU	FixoLong	Filter	Clamping Adapter
18G x 50mm (2")	20G x 50cm (20")	531185-31C		10	●	●	●
18G x 75mm (3")	20G x 50cm (20")	561185-31C		10	●	●	●
18G x 100mm (4")	20G x 50cm (20")	521185-31C		10	●	●	●
18G x 150mm (6")	20G x 50cm (20")	511185-31C		10	●	●	●

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189
2. **Fuzier R. et al.** The echogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466
3. **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915

SonoLong Sono

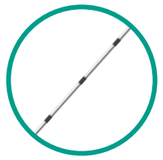
The Kink Resistant Catheter with Stainless Steel Helical Coil



Stainless Steel Helical Coil

- Improved ultrasound visibility
- Improved catheter flexibility and stability resulting in reduced chance of kinking[4]
- Radiopaque

Catheter with Open Tip



Depth Markings

Graduations on the first 30cm

- Easy determination of catheter positioning
- Easy to read and identify

Steel Stylet

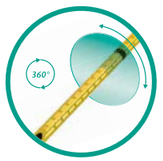
- Provides the catheter with improved stability
- Is placed in the introductory aid at its end, and is removed automatically with the container after catheter placement

SonoLong Sono Needle Features

Echogenic Needle Tip

Facet tip with two inclination angles

- Improves needle tip visibility under ultrasound



Cornerstone Reflectors

360 degree graduations on the first 20mm of the needle

- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

NanoLine® Coating

Very thin polymer film on inner and outer needle surface.

- Excellent puncture and gliding properties through smooth surface
- Improves visibility under ultrasound[1]
- Precise stimulation through the non-insulated needle tip

Depth Markings

- Easy to read and identify

SonoLong Sono with Facet Tip

Size Needle	Size Catheter central opening	Item no.	NRFit® Item no.	PU	FixoLong	Filter	Clamping Adapter
19G x 50mm (2")	20G x 50cm (20")	531187-31A	531197-31A	10	●	●	●
19G x 75mm (3")	20G x 50cm (20")	561187-31A	561197-31A	10	●	●	●
19G x 100mm (4")	20G x 50cm (20")	521187-31A	521197-31A	10	●	●	●

SonoLong Sono with SPROTTE® SPECIAL Tip

Size Needle	Size Catheter central opening	Item no.	NRFit Item no.	PU	FixoLong	Filter	Clamping Adapter
19G x 60mm (2 1/4")	20G x 50cm (20")	531187-31B		10	●	●	●
19G x 120mm (4 3/4")	20G x 50cm (20")	521187-31B		10	●	●	●

SonoLong Sono with Tuohy Tip

Size Needle	Size Catheter central opening	Item no.	NRFit Item no.	PU	FixoLong	Filter	Clamping Adapter
18G x 50mm (2")	20G x 50cm (20")	531187-31C	531197-31C	10	●	●	●
18G x 75mm (3")	20G x 50cm (20")	561187-31C		10	●	●	●
18G x 100mm (4")	20G x 50cm (20")	521187-31C		10	●	●	●
18G x 150mm (6")	20G x 50cm (20")	511187-31C		10	●	●	●

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189
2. **Fuzier R. et al.** The echogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466
3. **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915
4. **Toledano, R. D. et al.** Epidural Catheter Design - Histroy, Innovations, and Clinical Implications., Anesthesiology, V 121, No 1, 2014

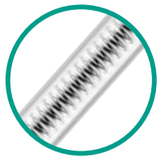
SonoLong Curl Echo

Echogenic Specialty Catheter-Through-Needle System

Curled Tip

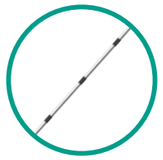
Specialty catheter with curled end, closed tip and six lateral openings

- Allows for even distribution of local anaesthetic around the nerve[5,6]



Stainless Steel Helical Coil

- Improved ultrasound visibility
- Improved catheter flexibility and stability resulting in reduced chance of kinking[4]
- Radiopaque



Depth Markings

Graduations on the first 30cm

- Easy determination of catheter positioning
- Easy to read and identify

Outlet Markings

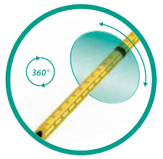
- 10mm marking - catheter is exiting the needle tip[1]
- The catheter tip is completely curled up[2]

SonoLong Curl Needle Features

Echogenic Needle Tip

Facet tip with two inclination angles

- Improves needle tip visibility under ultrasound



Cornerstone Reflectors

360 degree graduations on the first 20mm of the needle

- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

NanoLine® Coating

Very thin polymer film on inner and outer needle surface.

- Excellent puncture and gliding properties through smooth surface
- Improves visibility under ultrasound[1]
- Precise stimulation through the non-insulated needle tip

Depth Markings

- Easy to read and identify

SonoLong Curl with Tuohy Tip

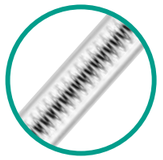
Size Needle	Size Catheter closed tip and 6 lateral openings	Item no.	PU	FixoLong	Filter	Clamping Adapter
18G x 50mm (2")	20G x 50cm (20")	531188-31C	10	●	●	●
18G x 50mm (2")	20G x 90cm (35")	531188-34C	10	●	●	●
18G x 100mm (4")	20G x 90cm (35")	521188-34C	10	●	●	●

StimuLong Sono II

Stimulating Catheter-Through-Needle System

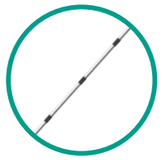
Catheter with Stimulating, Open Tip

- Precise conductivity and stimulation capability due to gold-plated catheter tip



Stainless Steel Helical Coil

- Improved ultrasound visibility
- Improved catheter flexibility and stability resulting in reduced chance of kinking[4]
- Radiopaque



Depth Markings

Graduations on the first 30cm

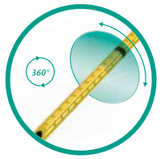
- Easy determination of catheter positioning
- Easy to read and identify

StimuLong Sono II Needle Features

Echogenic Needle Tip

Facet tip with two inclination angles

- Improves needle tip visibility under ultrasound



Cornerstone Reflectors

360 degree graduations on the first 20mm of the needle

- Optimised ultrasound visibility of needle shaft[2]
- Reliable and optimised needle visualisation at any angle[1, 3]

NanoLine® Coating

Very thin polymer film on inner and outer needle surface.

- Excellent puncture and gliding properties through smooth surface
- Improves visibility under ultrasound[1]
- Precise stimulation through the non-insulated needle tip

Depth Markings

- Easy to read and identify

StimuLong Sono II with Facet Tip

Size Needle	Size Catheter central opening	Item no.	PU	FixoLong	Filter	StimuLong Clamping Adapter	Connecting cable
19G x 50mm (2")	20G x 50cm (20")	531187-32A	10	●	●	●	●
19G x 100mm (4")	20G x 50cm (20")	521187-32A	10	●	●	●	●

StimuLong Sono II with Tuohy Tip

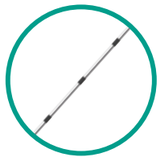
Size Needle	Size Catheter central opening	Item no.	PU	FixoLong	Filter	StimuLong Clamping Adapter	Connecting cable
18G x 50mm (2")	20G x 50cm (20")	531187-32C	10	●	●	●	●
18G x 100mm (4")	20G x 50cm (20")	521187-32C	10	●	●	●	●

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189
2. **Fuzier R. et al.** The echogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466
3. **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915
4. **Toledano, R. D. et al.** Epidural Catheter Design - Histroy, Innovations, and Clinical Implications., Anesthesiology, V 121, No 1, 2014
5. **Luyet C. et al.** Eichenberger U. Placement of coiled catheters into the paravertebral space, Anaesth. 2012; 67: 250–255
6. **Luyet C. et al.** Newly Designed, Self-Coiling Catheters for Regional Anesthesia – An Imaging Study, Reg. Anesth. Pain. Med., Volume 36 Number 2, 2011; 171–176

PlexoLong NanoLine®

Non-echogenic Catheter-Through-Needle System

Catheter with Open Tip



Depth Markings

Graduations on the first 30cm

- Easy determination of catheter positioning
- Easy to read and identify

Steel Stylet

- Provides the catheter with improved stability
- Is placed in the introductory aid at its end, and is removed automatically with the container after catheter placement

PlexoLong Needle Features

NanoLine Coating

Very thin polymer film on inner and outer needle surface.

- Excellent puncture and gliding properties through smooth surface
- Improves visibility under ultrasound[1]
- Precise stimulation through the non-insulated needle tip

Depth Markings

- Easy to read and identify

PlexoLong NanoLine with Facet Tip

Size Needle	Size Catheter central opening	Item no.	NRFit® Item no.	PU	FixoLong	Filter	Clamping Adapter
19G x 30mm (1 1/5")	20G x 50cm (20")	541156-31A		10	●	●	●
19G x 50mm (2")	20G x 50cm (20")	531156-31A	531166-31A	10	●	●	●
19G x 100mm (4")	20G x 50cm (20")	521156-31A	521166-31A	10	●	●	●
19G x 150mm (6")	20G x 50cm (20")	511156-31A	511166-31A	10	●	●	●

PlexoLong NanoLine with SPROTTE® SPECIAL Tip

Size Needle	Size Catheter central opening	Item no.	NRFit Item no.	PU	FixoLong	Filter	Clamping Adapter
19G x 60mm (2 1/4")	20G x 50cm (20")	531156-31B	531166-31B	10	●	●	●
19G x 120mm (4 3/4")	20G x 50cm (20")	521156-31B	521166-31B	10	●	●	●
19G x 150mm (6")	20G x 50cm (20")	511156-31B	511166-31B	10	●	●	●

PlexoLong NanoLine with Tuohy Tip

Size Needle	Size Catheter central opening	Item no.	NRFit Item no.	PU	FixoLong	Filter	Clamping Adapter
18G x 50mm (2")	20G x 50cm (20")	531156-31C	531166-31C	10	●	●	●
18G x 100mm (4")	20G x 50cm (20")	521156-31C	521166-31C	10	●	●	●
18G x 100mm (4")	20G x 90cm (35")	521156-34C		10	●	●	●
18G x 150mm (6")	20G x 50cm (20")	511156-31C	511166-31C	10	●	●	●

1. **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189

4 | NERVE STIMULATORS

Nerve Stimulators

For Nerve Blocks

PAJUNK® offers a selection of MultiStim nerve stimulators for stimulation guided and dual guided nerve block procedures. The MultiStim ECO is the basic workhorse for dual guidance, while MultiStim SENSOR is the more advanced device for users who require more freedom and functionality. The MultiStim SWITCH has an integrated needle-catheter switch functionality and an additional impedance measurement function.

1 *MultiStim SWITCH*
2 *MultiStim SENSOR*
3 *MultiStim ECO*

MultiStim ECO

Dual Guidance Nerve Stimulator

Direct Needle Connection

- No patient lead necessary
- Increased convenience

Fixation Directly on the Patient

- Adhesive electrode underneath the device with a snap-on button connection
- Increased convenience

Adaptable Patient Cable (PlugX)

- Allows for fixation of the ECO away from the patient
- Extended cable length

Fixed Defined Settings

- Frequency: 1 Hz / stimulation pulsewidth: 0.1 ms

Variation of the Current Strength

- Six-level amplitude scale from 0.2 to 2.0 mA
- Arrow buttons are used for the plus/minus key

MultiStim ECO

Description	Item no.	PU
MultiStim ECO with device case	1151-94-50	1

MultiStim ECO Accessories

Description	Item no.	PU
Extension cable for connecting stimulation needles, autoclavable	01151-861F	10
Extension cable for connecting stimulation needles and stimulators, disposable	01151-861Q	10
PlugX - patient cable with plug 2.0mm for needle and clamp adapter für electrode	1151-94-21	1

MultiStim SENSOR & SWITCH

Advanced Nerve Block Stimulator

Impulse Frequency

- Frequency: 1 Hz, 2 Hz

Stimulation Pulsewidth

- Bandwidth: 0,05 ms/ 0,10 ms/ 0,20 ms/ 0,30 ms/ 0,50 ms/ 1,00 ms

Monopolar Stimulation Handle (SENSOR only)

- Percutaneous nerve localization (PEG-electrode)

Optional Connection

- Clamp adapter for electrode
- Connector for stimulation needle and / or catheter

MultiStim SENSOR & SWITCH

Description	Item no.	PU
MultiStim SENSOR with device case and patient cable for needle / electrode connection	1151-94-30	1
MultiStim SENSOR with device case and patient cable for needle / stimulation handle/ electrode connection	1151-94-32	1
MultiStim SWITCH with device case and patient cable for needle / catheter / electrode connection	1151-94-40	1

MultiStim Accessories

Description	Item no.	PU
Extension cable for connecting stimulation needles, autoclavable	01151-861F	10
Extension cable for connecting stimulation needles and stimulators, disposable	01151-861Q	10

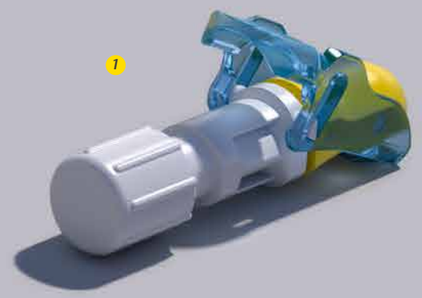
MultiStim SENSOR Accessories

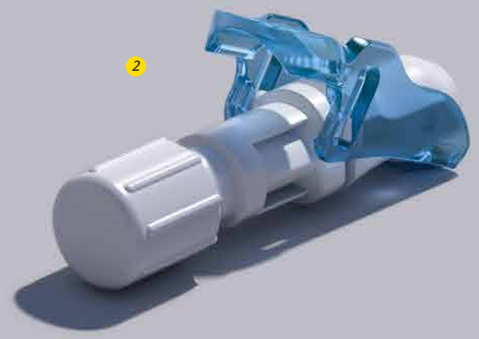
Description	Item no.	PU
Patient cable with plug 2.0mm for needle and clamp adapter for electrode	1151-94-13	1
Patient cable with plug 2.0mm for needle, clamp adapter for electrode and connector for monopolar handle	1151-94-14	1
Stimulation handle, monopolar	1151-94-17	1

MultiStim SWITCH Accessory

Description	Item no.	PU
Patient cable with plug 2.0mm for needle, plug 2.0mm for catheter and clamp adapter for electrode	1151-94-07	1

Accessories





1 Clamping Adapter - 19G
2 Clamping Adapter - 20G/21G/23G
3 FixoLong
4 Filter
5 MiniFilter
6 NerveGuard - 20G/21G/22G
7 NerveGuard - 24G/25G

ISO LUER ISO NRFit®

Also available in NRFit®

NerveGuard

Automatic Injection Pressure Limiter

- Ensures the best possible flow
- Strong fixation

NerveGuard

Description	Item no.	NRFit® Item no.	PU
for single shot applications in diamteres of 20G/21G/22G	001151-38M	001163-38M	10
for single shot applications in diamteres of 24G/25G	001151-38N	001163-38N	10

FixoCath

Catheter Fixation Device

- Easy and quick application
- Skin friendly
- Universally usable due to small size
- Catheter fixation near the catheter outlet
- Ensures maximum freedom of movement for the patient

Catheter Fixation Device

Description	Item no.	PU
FixoCath	001151-37Z	10

Clamping Adapter

Catheter Connector

- Ensures the best possible flow
- Strong fixation

Clamping Adapter

Description	Item no.	NRFit Item no.	PU
white for 19G	001151-38C	001163-38C	10
yellow for 20G/21G/23G	001151-37V	001163-37V	10

Filter 0.2µm and FixoLong

Bacterial Filter & Filter Fixation Device

- Filter fixation near the catheter outlet
- Ensures maximum freedom of movement for the patient

Bacterial Filter & Filter Fixation Device

Description	Item no. (Filter)	Item no. (MiniFilter)	NRFit Item no.	PU
Filter 0.2µm	001151-37Q	001151-38K	001163-37X	10
FixoLong	001151-47	001151-43	001163-40	10
FixoLong with Filter	001151-48	001151-44	001163-41	10

NRFit Accessories

NRFit Accessories

Description	NRFit Item no.	PU
Filter Needle 18G x 50mm (2")	001163-38Y	10
Locking Cap, male, yellow	001163-38S	10
Locking Cap, female, yellow	001163-38Z	10

LITERATURE REFERENCES

[1] **Hebard S., Hocking G.** Echogenic technology can improve needle visibility during ultrasound-guided regional anesthesia, Reg. Anesth. Pain Med. 2011 March–April; 36(2): 185–189

[2] **Fuzier R. et al.** The ecohogenicity of nerve blockade needles, Anesth. 2015; 70: 462–466

[3] **Uppal V. et al.** Effect of beam steering on the visibility of echogenic and non-echogenic needles: a laboratory study, Can. J. Anesth. 2014 Oct; 61(10): 909–915

[4] **Toledano, R. D.** et al. Epidural Catheter Design - Histroy, Innovations, and Clinical Implicati-ons., Anesthesiology, V 121, No 1, 2014

[5] **Luyet C. et al.** Eichenberger U. Placement of coiled catheters into the paravertebral space, Anaesth. 2012; 67: 250–255

[6] **Luyet C. et al.** Newly Designed, Self-Coiling Catheters for Regional Anesthesia – An Imaging Study, Reg. Anesth. Pain. Med., Volume 36 Number 2, 2011; 171–176

[7] **Tsui B. C. H. et al.** Less leakage and dislodgement with a catheter-over-needle versus a catheter through-needle approach for peripheral nerve block: an ex vivo study, Can. J. Anesth. 2012; 59: 655–661 (E-Cath is called Multi-Set in this study)

PAJUNK®

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