B. BRAUN REGIONAL
ANESTHESIA PORTFOLIO
PRODUCT CATALOG

B|BRAUN
SHARING EXPERTISE

Reach your Targets quicker

Thanks to Regional Anesthesia

OPTIMIZE PROCESSES

Regional anesthesia is an essential part of pain therapy, as across several interventions, it offers clear advantages when compared to general anesthesia. [1] For regional anesthesia to become an important part of the peri-operative process, there are some prerequisites to consider, like the relevant indications, skilled personnel and the necessary internal processes at the clinic.

The rapid growth of use of regional anesthesia and the numerous publications on the topic are both a testament to how regional anesthesia can have a positive impact on both patient outcome and on efficiencies for the clinic. [2,3]

WITH REGIONAL ANESTHESIA

Induction	Surgery	Intensive Care Unit	Ward
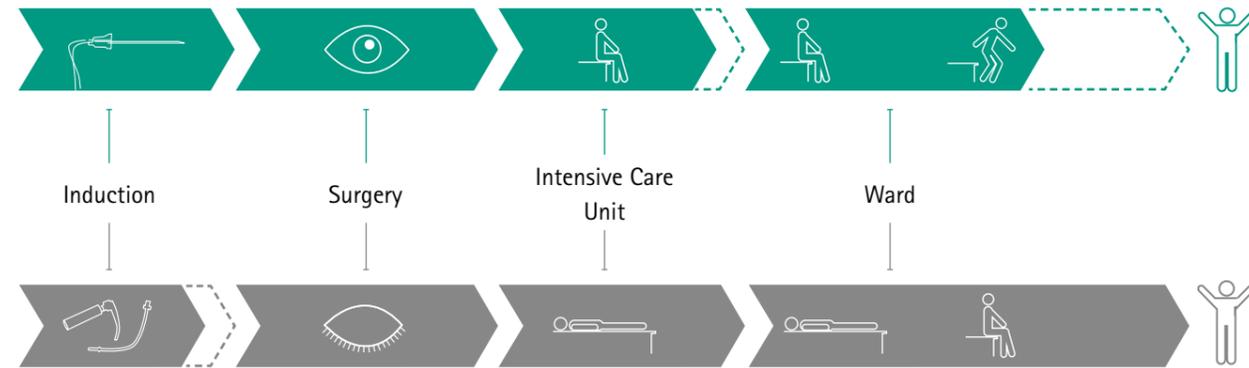
WITHOUT REGIONAL ANESTHESIA

COMPARING TWO POTENTIAL INTERVENTIONS WITH AND WITHOUT REGIONAL ANESTHESIA:

Looking holistically across the patient pathway, the establishment of regional anesthesia processes appears to be a favorable investment. When regional anesthesia is used, patients see better outcomes, faster mobilization and consequently earlier discharge. [4,5]

Content

Pain Therapy with Regional Anesthesia

Supported by B. Braun's Product Portfolio

B. BRAUN – A COMPETENT PARTNER

As one of the world's major providers in the area of regional anesthesia, B. Braun supports its customers with innovative products and services.

We strive to accompany our customers through the entire patient pathway helping to optimize their processes and to provide products adapted to day-to-day clinical needs.

SYSTEM PARTNER IN REGIONAL ANESTHESIA

B. Braun, as a true system partner, helps to stay on top of evolving standards and their realization across multiple stakeholders, e.g. nurses, pharmacists and anesthetists. With access to our comprehensive product portfolio in pain therapy and through constructive dialog, our partners can benefit from B. Braun´s know-how and expertise.

Disinfection & Hygiene

Infusion Technology

Spinal Anesthesia & Epidural Anesthesia

Training & Education

Elastomeric Pump Systems

Continuous Wound Infusion

Combined Spinal & Epidural Anesthesia

Local Anesthetics

Ultrasound Guidance

Peripheral Nerve Blocks

Wide range of Medical Accessories

TIVA-Sets

Due to the combination of different procedures a broad regional anesthesia spectrum is created, which covers all patient areas.

Introduction | Surgery | Recovery Room | Ward

Reducing Risks of Misconnections in Regional Anesthesia with NRFit®

MEDICAL DEVICE CONNECTORS FOR NEURAXIAL & REGIONAL ANESTHESIA APPLICATIONS ARE CHANGING TO MEET INTERNATIONAL DESIGN STANDARDS: ISO 80369-6.[6]

Regional Anesthesia products with NRFit® connector

In line with the ISO Standard (International Organization for Standardization) for neuraxial and regional anesthesia devices, B.Braun has developed a comprehensive portfolio with NRFit® connectors for the corresponding process steps.

Connecting what belongs together

» *The ISO has identified several medical application areas for which specific ISO standards have been developed. These standards are part of the ISO 80369 series. Each standard will provide design and performance specifications for these connectors.* [1]

NRFit®

Neuraxial & Regional Anesthesia applications

Connector design based on ISO 80369-6

ENFit®

Enteral applications

URETHRAL AND URINARY APPLICATIONS

BREATHING SYSTEMS AND DRIVING GASES APPLICATIONS

LIMB CUFF INFLATION APPLICATIONS

INTRAVASCULAR OR HYPODERMIC APPLICATIONS
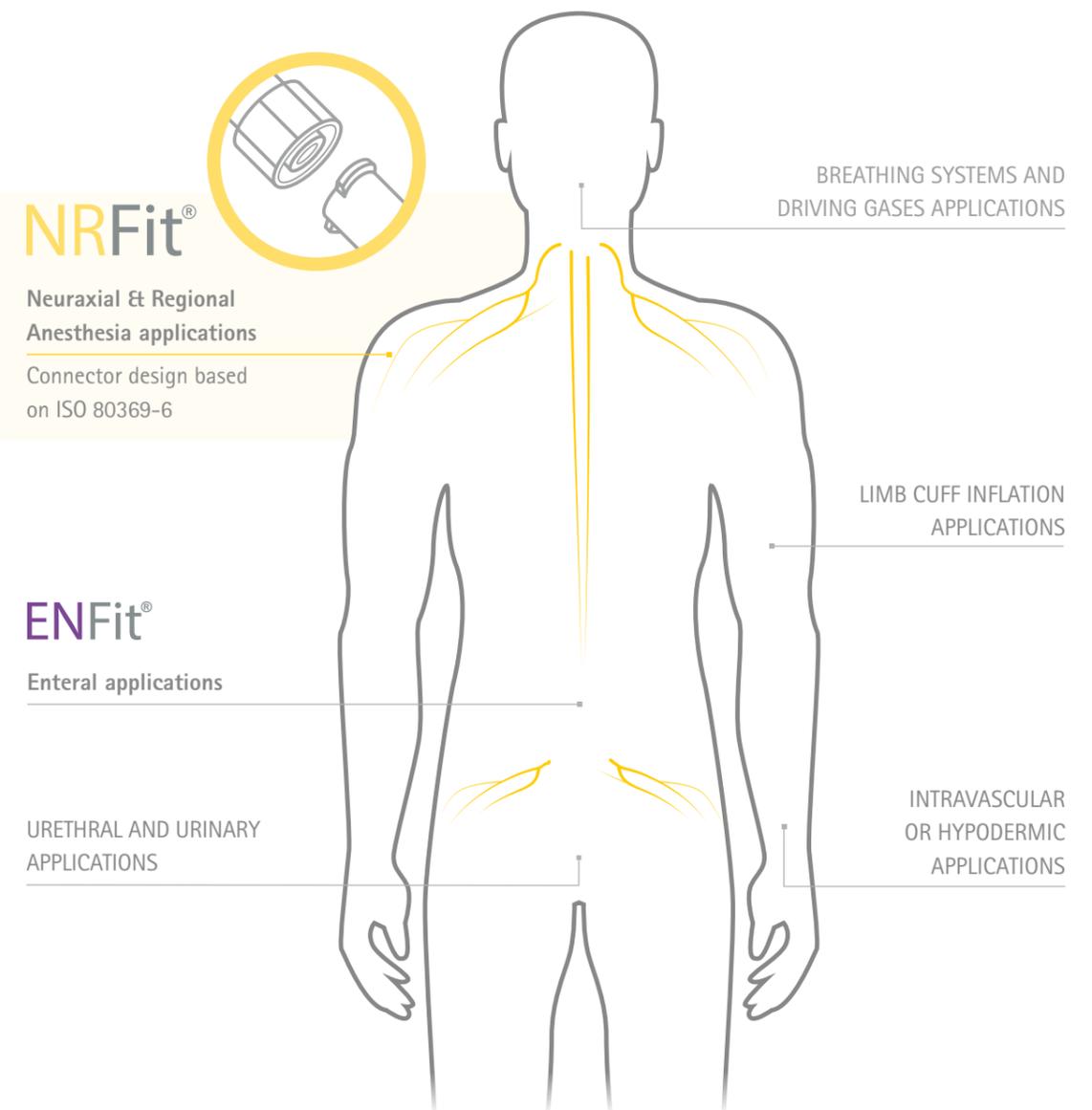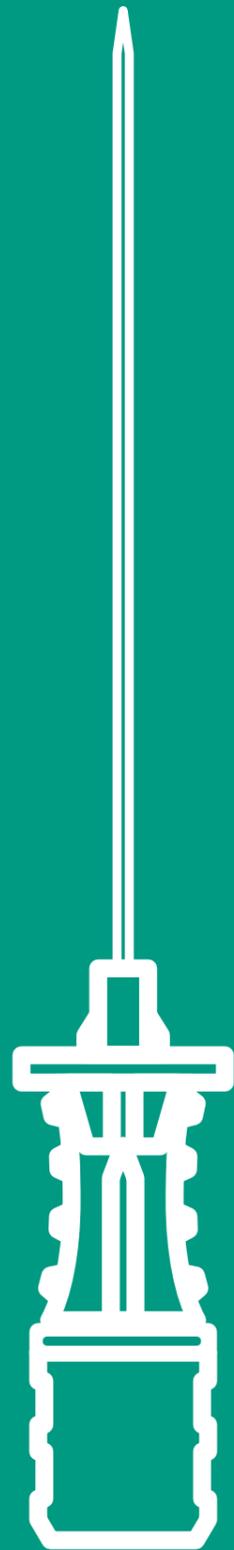
SPINAL
ANESTHESIA

A comprehensive portfolio of needles in different bevel types for spinal anesthesia.
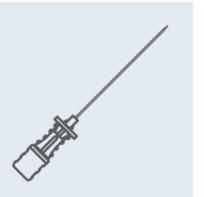
Products for Spinal Anesthesia

Quality and Practicality

Thanks to our years of

EXPERIENCE

in the field, B. Braun offers spinal needles with a range of bevel types.

Spinocan® and Pencan® are well accepted for their

INNOVATIVE

needle tip designs.

Ergonomic hub design for an individual and safe handling position, better control of the needle and easy verification of bevel eye orientation. [7]
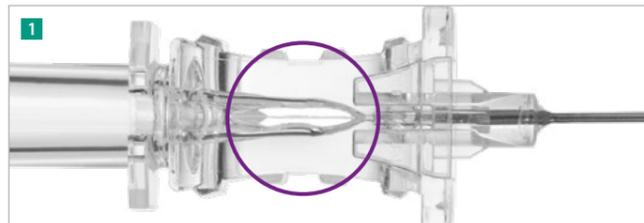
CSF–flashback identification
due to the incorporated prism effect.
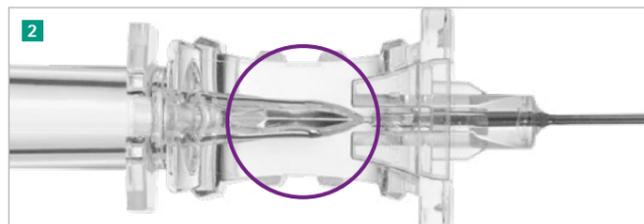
CSF FLASHBACK IDENTIFICATION
- Prism has a silver shine before CSF enters the hub **1**
- Prism turns transparent once CSF is in the hub **2**
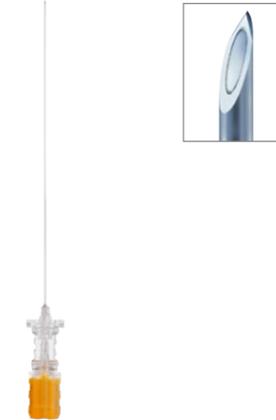
Spinocan® with Quincke Bevel

- Sharp bevel for low puncture force [7]
- Fitted stylet: to reduce the risk of tissue coring and potential epidermoid tumor development
- Prism included in the spinal needle hub, supports identifiction of CSF flashback

Pencan® with Pencil Point Bevel

- Pencil point tip and opening design allows avoidance of incomplete blocks and helps reduce PDPH [8]
- Minimal intrathecal penetration depth [7]
- Identification of tissue structures due to detectable dura click [7,9]
- Prism included in the spinal needle hub, supports identification of CSF flashback

Atraucan® with Two–Zone Bevel

- Low puncture force as well as minimal puncture trauma [10]
- Reduced risk of postdural puncture headache (PDPH) [10]

Spinal Introducer Needle

- Introducer needles providing needle guidance for the spinal needle during puncture [7]
  - Introducer OHD range (as shown on left side)
  - Introducer NHD range (as shown on right side)

Portfolio Overview

SPINAL NEEDLES

Spinocan®	Color code	Size (G)/ Length (inch)	ø/Length (mm)	Units per box	Code no. (REF) OHD Luer	Code no. (REF) NHD Luer	Code no. (REF) NRFit®
	red	29 x 3½"	0.35 x 88*		4501900	4501900-13	4501900N-01
	white	27 x 3½"	0.40 x 88		4503902	4503902-01	4503902N-01
	gray	26 x 3½"	0.45 x 88		4502906	4502906-01	4502906N-01
	orange	25 x 3"	0.55 x 75		4505751	4505751-01	4505751N-01
	orange	25 x 3½"	0.55 x 88		4505905	4505905-01	4505905N-01
	black	22 x 1½"	0.70 x 40		4507401	4507401-13	4507401N-01
	black	22 x 3"	0.70 x 75	25	4507754	4507754-13	4507754N-01
	black	22 x 3½"	0.70 x 88		4507908	4507908-01	4507908N-01
	yellow	20 x 3"	0.90 x 75		4509757	4509757-13	4509757N-01
	yellow	20 x 3½"	0.90 x 88		4509900	4509900-01	4509900N-01
	cream	19 x 1½"	1.10 x 40		4501144	4501144-13	4501144N-01
	cream	19 x 3½"	1.10 x 88		4501195	4501195-13	4501195N-01
	pink	18 x 3"	1.30 x 75		4501373	4501373-13	4501373N-01
	pink	18 x 3½"	1.30 x 88		4501390	4501390-01	4501390N-01
Long Length							
	red	29 x 4¾"	0.35 x 120		4501918	4501918-13	4501918N-01
	white	27 x 4¾"	0.40 x 120		4502140	4502140-13	4502140N-01
	gray	26 x 4¾"	0.45 x 120	25	4504917	4504917-13	4504917N-01
	orange	25 x 4¾"	0.55 x 120		4505913	4505913-13	4505913N-01
	black	22 x 4¾"	0.70 x 120		4506090	4506090-13	4506090N-01
	black	22 x 6"	0.70 x 150		–	–	4506095N-01

OHD/NRFit®   NHD

Atraucan®	Color code	Size (G)/ Length (inch)	ø/Length (mm)	Units per box	Code no. (REF) OHD Luer	Code no. (REF) NHD Luer	Code no. (REF) NRFit®
	gray	26 x 3½"	0.47 x 88	25	4504739	–	–
Atraucan® Paed							
	gray	26 x 1"	0.47 x 25	25	4504771	–	–
	gray	26 x 2"	0.47 x 50		4504763	–	–

SPINAL NEEDLES

Pencan®	Color code	Size (G)/ Length (inch)	ø/Length (mm)	Units per box	Code no. (REF) OHD Luer	Code no. (REF) NHD Luer	Code no. (REF) NRFit®
	gray	27 x 3½"	0.40 x 88		4502027	4502027-01	4502027N-01
					4502051*	4502051-13*	4502051N-01*
	orange	25 x 3½"	0.50 x 88	25	4502019	4502019-01	4502019N-01
					4502043*	4502043-13*	4502043N-01*
	black	22 x 3½"	0.70 x 88		4502035	4502035-13	4502035N-01
Long Length							
	gray	27 x 4"	0.40 x 103		4502124*	4502124-13*	4502124N-01*
	gray	27 x 4¾"	0.40 x 120		4502132	4502132-13	4502132N-01
	orange	25 x 4"	0.50 x 103	25	4502116*	4502116-13*	4502116N-01*
	orange	25 x 4¾"	0.50 x 120		–	4502120-13	4502120N-01
	orange	25 x 6.1"	0.50 x 156		–	–	333877N-01
Pencan® Paed							
	gray	27 x 2"	0.40 x 50		4502175	4502175-13	4502175N-01
	orange	25 x 1"	0.50 x 25	25	4502167	4502167-13	4502167N-01
	orange	25 x 2"	0.50 x 50		4502159	4502159-13	4502159N-01

OHD/NRFit®   NHD

*with Spinal Introducer Needle (Luer)

INTRODUCER

Spinal Introducer Needles (for Spinocan® and Pencan®)	Color code	Size (G)/ Length (inch)	ø/Length (mm)	Units per box	Code no. (REF) OHD Luer	Code no. (REF) NHD Luer	Code no. (REF) NRFit®
For Spinal Needles 29 G and 27 G							
	white	22 x 1⅜"	0.70 x 35	25	4500059*	4500059-13*	4500059*
For Spinal Needles 26 G and 25 G							
	yellow	20 x 1⅜"	0.90 x 35	25	4505000*	4505000-13*	4505000*

OHD   NHD

*Introducer in Luer

EPIDURAL ANESTHESIA
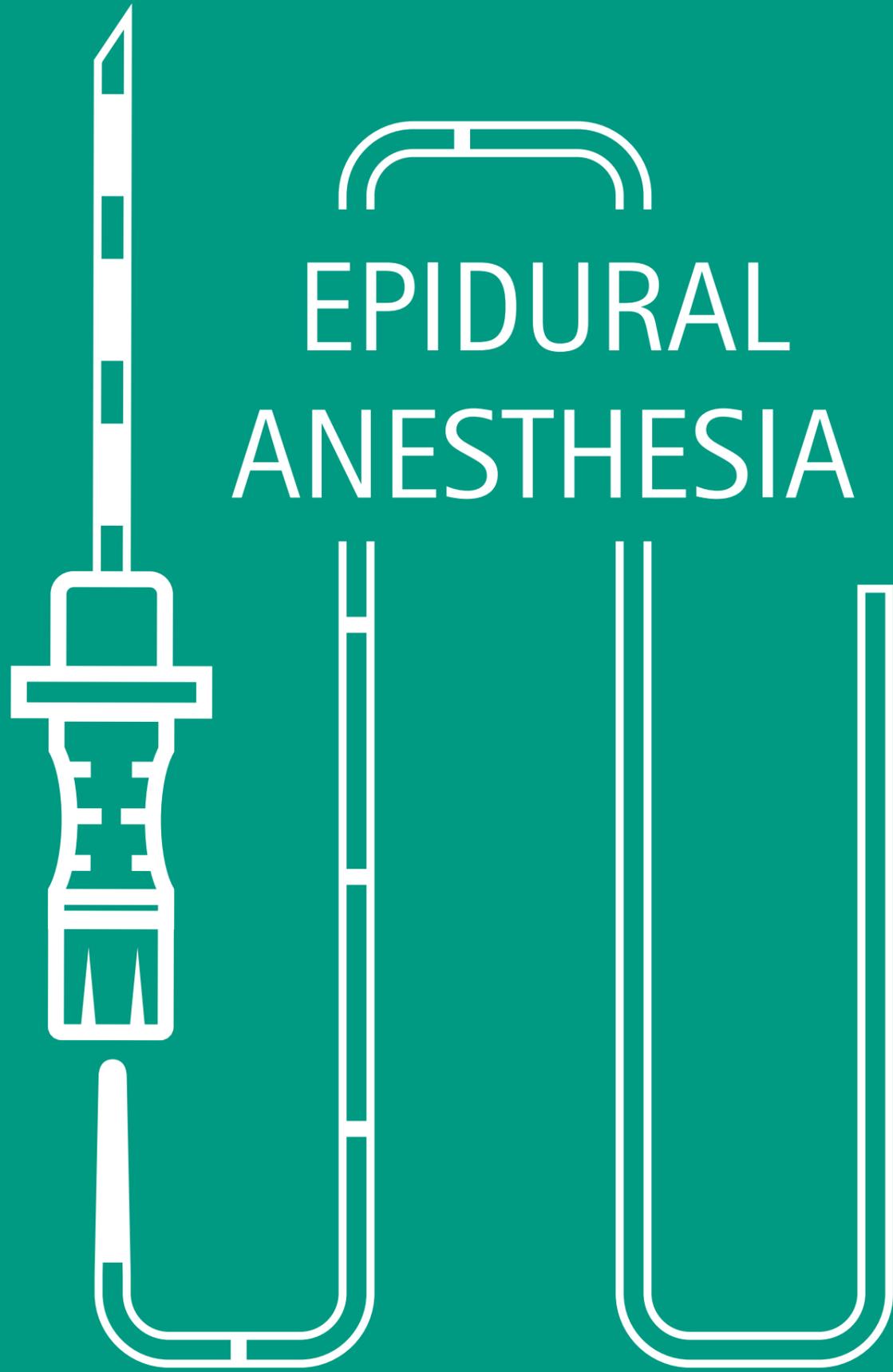
To meet individual preferences, B. Braun offers a broad range of epidural cannulas, catheters and accessories for epidural anesthesia.

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15

Products for Epidural Anesthesia
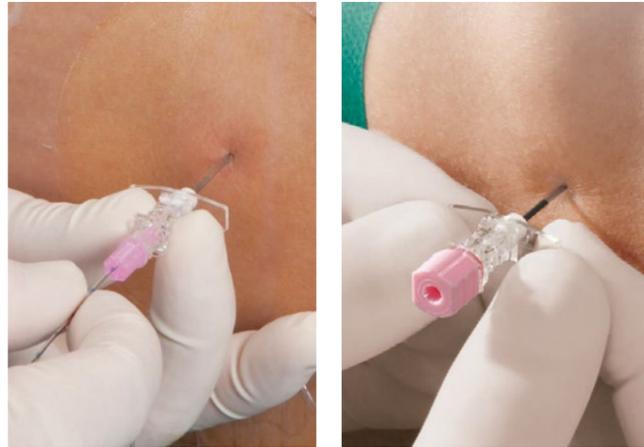
Adapting to the unique anatomical challenges of each patient, it is important to use the appropriate needle and accessories.

B. Braun focuses on

QUALITY &
PRACTICALITY.

Perican® Tuohy Needles
- For both continuous and single-shot techniques
- Different needle sizes (16 G, 18 G, 20 G)
- With 1 cm graduation in length
- Polished inner bevel edge to reduce the risk of catheter shearing

USER BENEFITS:
- 1 cm marking to control the insertion depth
- High bending stiffness for good control during needle advancement
- Fitted stylet: to reduce the risk of tissue coring and potential epidermoid tumor development

Products for Epidural Anesthesia

Perifix® Catheters: Available with different characteristics – Standard, SoftTip and ONE
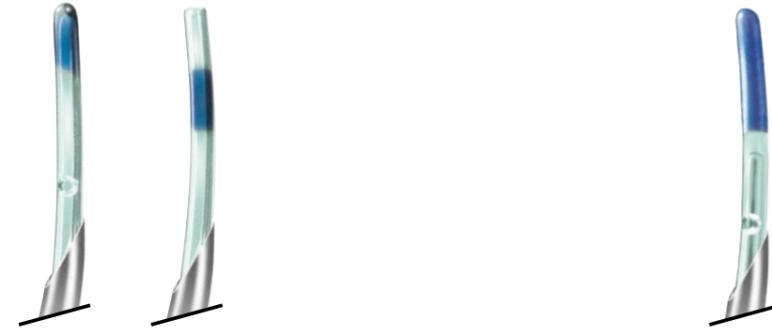
Perifix® Standard Catheter
- Relatively stiff catheter shaft for easy catheter insertion
- Length 1000 mm
- Standard catheter with a central opening or three micro-holes to enhance the spread
- One radiopaque stripe for x-ray control
- Clear blue length markings embedded in catheter material
- Does not contain latex, DEHP or PVC
- MRI conditional

Perifix® SoftTip Catheter
- SoftTip catheter with a superimposed tip
- Length 1000 mm
- Three micro-holes enhance the spread of anesthetic drug
- One radiopaque stripe for x-ray control
- Clear blue length markings embedded in catheter material
- Does not contain latex, DEHP or PVC
- MRI conditional

Perifix® ONE
- Epidural catheter with a relatively stiff but flexible shaft and a soft, atraumatic tip
- Length 1000 mm
- Six micro-holes enhance the spread of anesthetic drug
- Three radiopaque stripes for x-ray control
- Does not contain latex, DEHP or PVC
- MRI conditional

EPIDURAL ANESTHESIA

EPIDURAL ANESTHESIA

Perifix® LOR–Syringe

- Easy-gliding plunger with good gliding characteristics and safety stop
- Parabolic graduation to differentiate it from conventional syringes
- Suitable for air and saline applications
- Lock or slip connection

Perifix® Filter with PinPad

- Filter fixation on patient in combination with self-adhesive PinPad
- Filter reduces the risk of bacterial infections
- Pressure resistant up to 7 bar

Perican® Paed Epidural Needles

- Tuohy bevel
- For continuous or single-shot techniques
- Three different needle sizes (18 G, 20 G, 22 G)
- 5 mm markings to control the insertion depth
- Fitted stylets: to reduce the risk of tissue coring and potential epidermoid tumor development

Epican® Paed – Caudal Needles

- 23° Crawford type bevel for caudal pediatric anesthesia
- Three different needle sizes (20 G, 22 G, 25 G)
- Special length (30 mm, 35 mm, 50 mm)
- 5 mm markings to control the insertion depth
- Fitted stylets: to reduce the risk of tissue coring and potential epidermoid tumor development

Perifix® Catheter Connector

- Available in two sizes (19 G and 20/24 G)
- Tactile and acoustic feedback upon closure
- Viewing window allows for catheter insertion control to ensure a successful connection

Perifix® Catheter Fixation

- Catheter fixation, consisting of fixation ring and non-woven cover foil
- Easy examination of puncture site due to exchangeable cover foils

Perifix® ONE Paed Epidural Sets

Perifix® ONE Paed epidural sets in 20/24 G for newborns and infants, and 18/20 G for older children:

- Catheters with distance markings for pediatric use
- For safe catheter insertion and position control
- Catheter with markings each 1 cm in the space between 2 and 20 cm from the needle tip

Portfolio Overview

EPIDURAL NEEDLES

Perican®	Color code	Size (G)/Length (inch)	ø/Length (mm)	Units per box	Code no. (REF) Luer	Code no. (REF) NRFit®
	▢ (pink)	18 x 3 ¼"	1.30 x 80		4512383	4512383N-01
	▢ (red)	17 x 3 ¼"	1.50 x 80	25	4512588	–
	▢ (white)	16 x 3 ¼"	1.70 x 80		4512782	4512782N-01
Long Length						
	▢ (pink)	18 x 4 ¾"	1.30 x 120		4512453	4512453N-01
	▢ (pink)	18 x 6"	1.30 x 150	25	4512200	4512200N-01
	▢ (white)	16 x 4 ¾"	1.70 x 120		–	4512785N-01
	▢ (white)	16 x 6"	1.70 x 150		–	4512784N-01

Perican® Paed	Color code	Size (G)/Length (inch)	ø/Length (mm)	Units per box	Code no. (REF) Luer	Code no. (REF) NRFit®
	▢ (black)	22 x 2"	0.73 x 50		4502078	4502078N-01
	▢ (yellow)	20 x 2"	0.90 x 50	25	4502094	4502094N-01
	▢ (pink)	18 x 2"	1.30 x 50		4502302	4502302N-01

Epican® Paed Caudal	Color code	Size (G)/Length (inch)	ø/Length (mm)	Units per box	Code no. (REF) Luer	Code no. (REF) NRFit®
	▢ (orange)	25 x 1 ⅛"	0.53 x 30		4502400	4502400N-01
	▢ (black)	22 x 1 ⅜"	0.73 x 35	25	4502418	4502418N-01
	▢ (yellow)	20 x 2"	0.90 x 50		4502426	4502426N-01

EPIDURAL CATHETERS

Perifix® catheter	Catheter ø outer/inner/ Length (mm) (G)	Suitable for Perican® Size (G)	Units per box	Code no. (REF) Luer	Code no. (REF) NRFit®
Perifix® Standard catheter (with 3 lateral eyes)					
	1.05/0.60/1000 (19)	16	25	4513258	4513258N-01
	0.85/0.45/1000 (20)	18		4513150	4513150N-01
Perifix® Standard catheter (with central opening)					
	0.85/0.45/1000 (20)	18	25	4513177	4513177N-01
Perifix® SoftTip catheter (with 3 lateral eyes)					
	0.85/0.45/1000 (20)	18	25	4515048	4515048N-01
Perifix® ONE catheter (with 6 lateral eyes)					
	1.05/0.60/1000 (19)	16	25	4513258C	45132581N-01
	0.85/0.45/1000 (20)	18		4513150C	45131501N-01

EPIDURAL ANESTHESIA ACCESSORIES

Perifix® Catheter Fixation	Description	Units per box	Code no. (REF)
	Perifix® catheter fixation, consisting of a fixation ring and a non-woven cover foil	25	4511200
	Perifix® non-woven replacement cover foil		4511201

Perifix® Loss-of-Resistance (LOR) Syringe	Description	Units per box	Code no. (REF) Luer
	Perifix® LOR Syringe, Luer-Slip	25	4637100
	Perifix® LOR Syringe, Luer-Lock		4638107

Perifix® Loss-of-Resistance (LOR) Syringe NRFit®	Description	Units per box	Code no. (REF) NRFit®
	Perifix® LOR Syringe, Slip NRFit®	25	4637110
	Perifix® LOR Syringe, Lock NRFit®		4638110

Perifix® catheter connector	Size (G)	Units per box	Code no. (REF) Luer	Code no. (REF) NRFit®
	19	25	4513801	4513801N-01
	20/24		4513800	4513800N-01

Perifix® filter	Particle filter (µm)	Units per box	Code no. (REF) Luer	Code no. (REF) NRFit®
	0.20	25	4515501	4515501N-01

Perifix® PinPad	Description	Units per box	Code no. (REF)
	Perifix® PinPad Filter Fixation	25	4515510

EPIDURAL ANESTHESIA

Portfolio Overview

SETS FOR EPIDURAL ANESTHESIA (LUER)

Perican® Tuohy epidural needles
- ■ (yellow) 20 G ø 0.90 mm / Length 50 mm
- ■ (pink) 18 G ø 1.30 mm / Length 80 mm
- ■ (light pink) 18 G ø 1.30 mm / Length 50 mm (Paed Set)
- □ (white) 16 G ø 1.70 mm / Length 80 mm

Product columns (left to right):
- Perican® Tuohy epidural needle
- Perifix® ONE epidural catheter, 6 lateral eyes
- Perifix® epidural catheter, 3 lateral eyes
- central opening
- 3 lateral eyes
- Perifix® Loss-of-Resistance (LOR) syringe, Luer-Slip

Right product columns:
- Omnifix® three part syringe, 3 ml, Luer-Lock
- Omnifix® three part syringes, 3 ml, 20 ml, Luer-Lock, 3 hypodermic needles*
- Omnifix® three part syringes, 3 ml, 10 ml, 20 ml, Luer-Lock, 3 hypodermic needles*
- Perifix® epidural filter 0.20 µm pressure resistant up to 7 bar
- Perifix® PinPad filter fixation
- Perifix® catheter connector

* Sterican® needles
- 25 G Length 16 mm, ø 0.50 mm
- 21 G Length 40 mm, ø 0.80 mm
- 18 G Length 40 mm, ø 1.20 mm

Type	Perican® 50/80 mm	Perican® 120 mm	ONE 24 G	ONE 20 G	ONE 19 G	Std 20 G	Std 19 G	central 20 G	3 eyes 20 G	LOR 20 G	Omnifix®	Omnifix®/Sterican®	Omnifix®/Sterican®	Perifix® Filter	Perifix® PinPad	Perifix® catheter connector	Sales unit/Pcs.	Code no. (REF) Luer
Complete Sets																		
Perifix® Standard catheter																		
Perifix® 420	■					●				●			●	●	●	●	10	4514203
Perifix® 421	■						●			●			●	●	●	●		4514211
Perifix® 431	□							●		●			●	●	●	●		4514319
Perifix® SoftTip catheter																		
Perifix® 900	■								●				●		●	●	10	4510291
Perifix® 901	■								●	●			●		●	●		4510305
Perifix® ONE catheter																		
Perifix® ONE420	■			●									●		●	●	10	4514203C
Perifix® ONE421	■			●						●		●			●	●		4514211C
Perifix® ONE431	□				●						●				●	●		4514319C
Filter Sets																		
Perifix® Standard catheter																		
Perifix® 400	■					●								●		●	20	4514009
Perifix® 401	■					●				●				●		●		4514017
Perifix® 402	□							●						●		●		4514025
Perifix® 451	■					●								●		●		4514513
Perifix® SoftTip catheter																		
Perifix® 700	■								●					●		●	20	4510216
Perifix® 701	■								●	●				●		●		4510097
Perifix® 730	□								●					●		●		4517309
Perifix® 750	■								●					●		●		4517504
Perifix® ONE catheter																		
Perifix® ONE400	■			●										●		●	20	4514009C
Perifix® ONE401	■			●										●		●		4514017C
Perifix® ONE402	□				●									●		●		4514025C
Perifix® ONE418		■		●										●		●		4514183C
Perifix® ONE451	■			●						●				●		●		4514513C
Pediatric Filter Sets																		
Perifix® ONE Paed																		
Perifix® ONE Paed 18	■			●							●			●		●	10	4512006C
Perifix® ONE Paed 20	■			●							●			●		●		4512014C
Mini Sets																		
Perifix® Standard catheter																		
Perifix® 100	■								●							●	20	4511000
Perifix® 300	■					●										●		4513002
Perifix® 301	■					●				●						●		4513010
Perifix® 302	□							●		●						●		4513029
Perifix® 310	□					●										●		4513100

Portfolio Overview

SETS FOR EPIDURAL ANESTHESIA (NRFIT®)

Legend
- (yellow) 20 G x 2", ø 0.90 x 50 mm
- (pink) 18 G x 3 ¼", ø 1.30 x 80 mm,
- (pink) 18 G x 2", ø 1.30 x 50 mm (Paed Set)
- (□) 16 G x 3 ¼", ø 1.70 x 80 mm

Product columns (images):
- Perican® Tuohy needle — 50 mm / 80 mm
- Perifix® ONE epidural catheter, 6 lateral eyes — 24 G / 20 G / 19 G
- Perifix® epidural catheter, 3 lateral eyes (Standard) — 20 G / 19 G
- Perifix® SoftTip epidural catheter, 3 lateral eyes — 20 G
- Perifix® Loss of Resistance syringe (LOR)
- Omnifix® three part syringe, 20 ml, Lock, Sterifix® filter needle
- Omnifix® three part syringe, 3 ml, Lock, Sterifix® filter needle
- Perifix® Filter 0.20 µm, pressure resistant up to 7 bar
- Perifix® catheter connector 19 G or 20/24 G
- Perifix® PinPad filter fixation
- Omnifix® three part syringe, 3ml, Luer Lock, 3 hypodermic Luer needles*

* Sterican® needles
- 25 G, 16 mm, ø 0.50 mm
- 21 G, 40 mm, ø 0.80 mm
- 18 G, 40 mm, ø 1.20 mm

Caution: Hypodermic needles (for skin infiltration) stay Luer

Set versions	Perican® with NRFit®	Perifix® ONE with NRFit®	Perifix® Standard with NRFit®	Perifix® SoftTip with NRFit®	Perifix® LOR with NRFit®	Omnifix® and Sterifix® with NRFit® (20 ml)	Omnifix® and Sterifix® with NRFit® (3 ml)	Perifix® Filter with NRFit®	Perifix® catheter connector with NRFit®	Perifix® PinPad	Omnifix® and hypodermic needles with Luer	Units per box	Code no. (REF) NRFit®
Complete Sets													
Perifix® Standard catheter													
Perifix® 421	80 mm (pink)		20 G ■		■	■		■	■		■	10	4514211N-01
Perifix® Soft Tip catheter													
Perifix® Soft Tip 901	80 mm (pink)			20 G ■	■	■		■	■		■	10	4510305N-01
Perifix® ONE catheter													
Perifix® ONE 421	80 mm (pink)	20 G ■			■	■		■	■		■	10	45142111N-01
Filter Sets													
Perifix® Standard catheter													
Perifix® 400	80 mm (pink)		20 G ■					■	■	■		10	4514009N-01
Perifix® 401	80 mm (pink)		20 G ■					■	■	■		10	4514017N-01
Perifix® 402	80 mm □			19 G ■				■	■	■			4514025N-01
Perifix® SoftTip catheter													
Perifix® Soft Tip 701	80 mm (pink)			20 G ■				■	■	■		10	4510097N-01
Perifix® Soft Tip 730	80 mm □			20 G ■				■	■	■			4517309N-01
Perifix® ONE catheter													
Perifix® ONE 401	80 mm (pink)	20 G ■						■	■	■		10	45140171N-01
Perifix® ONE 402	80 mm □		19 G ■					■	■	■			45140251N-01
Pediatric Sets													
Perifix® ONE Paed													
Perifix® ONE Paed 18	50 mm (pink)	20 G ■					■	■	■		■	10	45120061N-01
Perifix® ONE Paed 20	50 mm (yellow)	24 G ■					■	■	■		■		45120141N-01
Mini Set													
Perifix® Standard catheter													
Perifix® 300	80 mm (pink)		20 G ■							■		10	4513002N-01

COMBINED SPINAL AND EPIDURAL ANESTHESIA

Combining the benefits of both techniques – sets for combined spinal and epidural anesthesia (CSE).
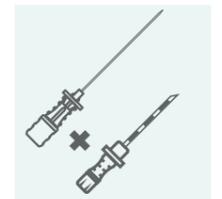
Products for Combined Spinal and Epidural Anesthesia

Special Tuohy Needle with a back-eye in the curved tip and a Spinal Needle with a plastic centering sleeve
- Back-eye in tuohy needle for insertion of spinal needle
- Docking system to fixate the spinal needle
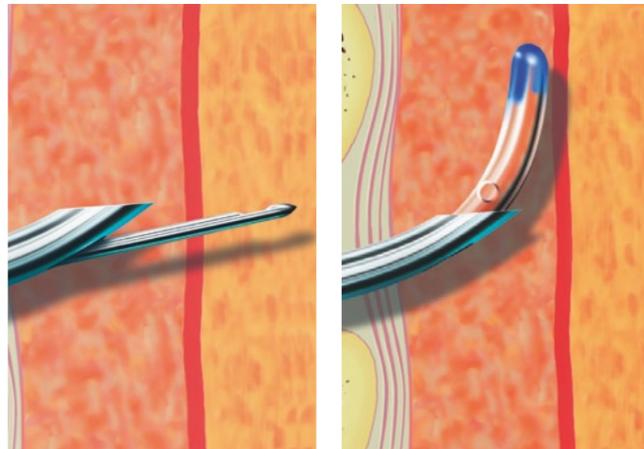- Sleeved spinal needle for smooth exit through the back-eye

The ideal overlap of the spinal needle is by

Pencil Point Needle 15 mm

|— 15 mm —|

"Quincke" Needle 13 mm

|— 13 mm —|

Combined Spinal-Epidural Anesthesia (CSE):

THE BENEFITS

of Spinal and Epidural Anesthesia
in the Espocan®-Sets

Markings on the Spinal Needle `1`
The markings on the spinal needle show,
when the tip leaves the back-eye.

USER BENEFITS `2`
- The docking system allows rotation of the spinal needle even in the fixed position. Avoids the difficult and uncomfortable finger grip to steady fix the spinal needle in position
- The docking system ensures fixation of the spinal needle inside the tuohy needle after successful dura puncture and injection of the local anesthetic

Portfolio Overview

SETS FOR COMBINED SPINAL AND EPIDURAL ANESTHESIA

Espocan® and Perifix® Standard	Size (G)/ Length (inch)	ø/ Length (mm)	Units per box	Code no. (REF) Luer	Code no. (REF) NRFit®
With Quincke-Bevel: Spinocan®					
	27 x 5"	0.42 x 125.5*	10	4556674	4556674N-01
Pencil-Point Cannula: Pencan®					
	27 x 5"	0.42 x 127.5*	10	4556666	4556666N-01
All sets contain					

- Perifix® Standard catheter, 3 lateral eyes
- Perican® epidural cannula ø 1.30 mm, 18 G x 90 mm
- Perifix® LOR-syringe, Luer-Slip
- Perifix® epidural flat filter 0.20 µm
- Perifix® PinPad
- Perifix® catheter connector

Espocan® and Perifix® Standard with Docking System	Size (G)/ Length (inch)	ø/ Length (mm)	Units per box	Code no. (REF) Luer	Code no. (REF) NRFit®
With Quincke-Bevel: Spinocan®					
	27 x 5 ⅜"	0.42 x 136.5*	10	4556747	4556747N-01
Pencil-Point Cannula: Pencan®					
	27 x 5 ⅜"	0.42 x 138.5*	10	4556763	4556763N-01
All sets contain					

- Perifix® SoftTip catheter, 3 lateral eyes
- Docking system
- Perican® epidural cannula ø 1.30 mm, 18 G x 90 mm
- Perifix® LOR-syringe, Luer-Slip
- Perifix® epidural flat filter 0.20 µm
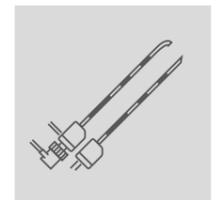- Perifix® PinPad
- Perifix® catheter connector

*for CSE needle length in NRFit®, please consult our NRFit® brochure
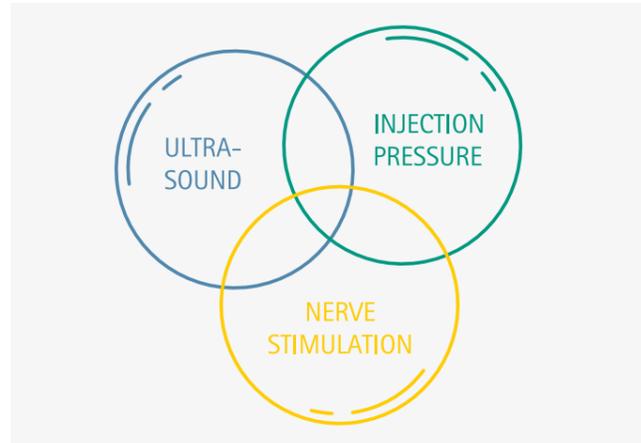
PERIPHERAL NERVE BLOCKS

Whatever option you prefer – wide ranged product portfolio for stimulated and Ultrasound guided peripheral nerve blocks.

Peripheral Nerve Block Portfolio

Quality and functionality without compromise

When performing a peripheral nerve block, there is no such thing as being too safe. Peripheral nerve blocks can be performed using different techniques and approaches. Electrical nerve stimulation, Ultrasound guidance and injection pressure monitoring can be used alone or in combination.

B. Braun's broad peripheral nerve block portfolio offers solutions for Ultrasound-only, dual guidance monitoring, and stimulation procedures.

ULTRASOUND

B. Braun offers a large product range of echogenic needles and catheters. Ultraline 360 is the latest generation of Ultrasound needles that combines enhanced Ultrasound visibility with smooth gliding properties and a good puncture quality. [11]

NERVE STIMULATION

For the electrical nerve stimulation B. Braun provides a wide range of stimulating needle and catheter systems that address the users' needs. The well established nerve stimulator Stimuplex® HNS 12 completes the offer.
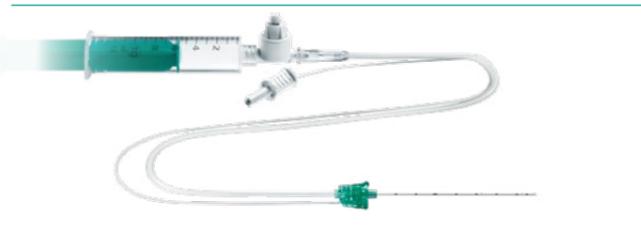
INJECTION PRESSURE MONITORING

The disposable BSmart® pressure monitor device objectively indicates the opening injection pressure in real time and allows for a more informed decision on how to proceed with an injection regardless of who performs the block. Using this technique can prevent injection into poorly compliant tissue (e.g. nerve fascicles).

Ultraline 360

Visibility without compromise – the next generations of Echogenic Nerve Block Needles
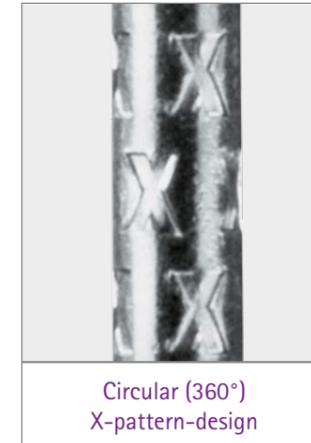
Circular (360°) X-pattern-design

Reflection of the Ultrasound waves

B. BRAUN ULTRASOUND NEEDLES – ULTRALINE 360:

The Ultraline 360 is B. Braun's latest generation of echogenic nerve block needles, featuring B. Braun's echogenic 360°X-pattern. The 'X' is a unique shape, which when combined with a clear coating, is intended to reflect more Ultrasound waves back to the probe than previous designs. [11]

The X-pattern is applied as a segmented safety-code (long-short-short-tip) and fascilitates the needle tip identification. The Ultraline 360 portfolio combines increased Ultrasound visibility with excellent tactile feedback and puncture characteristics.

long   short   short   tip
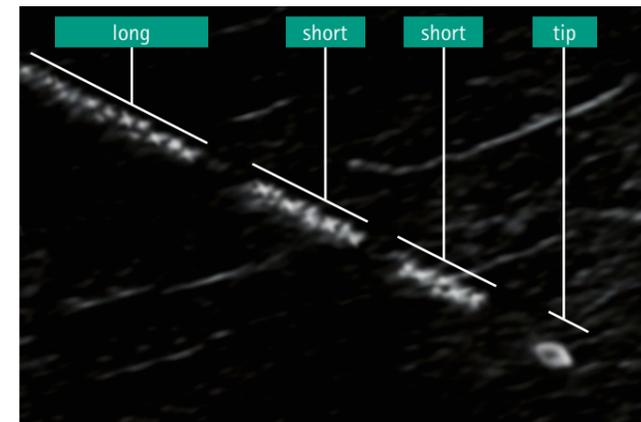
NAVIGATION

For an easy identification of the needle tip, the X-pattern is strategically applied on the first 20 mm of the needle shaft to create the segmented code "long-short-short-tip". This enables distinction between the needle tip and the upper needle shaft. [11]

USER BENEFITS

- **Navigation**: Safety code for identification of the needle and needle tip position
- **Visibility**: 360° X-pattern and clear coating result in better Ultrasound visualization and tip identification compared to previous designs
- **Tactile Feedback**: designed for consistent puncture - same 30° back-cut bevel as previous Stimuplex® Ultra and Ultraplex® needles

Products for Peripheral Nerve Blocks

Single Shot Needles

Stimuplex® and Ultraplex® single shot needles offer precision and ergonomy and are designed for high success rates.

USER BENEFITS
- Ergonomic needle hub design for enhanced tactile feedback
- Excellent puncture and gliding characteristics (Stimuplex® D)
- Broad portfolio of needle lengths from 35 to 150 mm and G 25 to G 20

Cannula	Bevel		Insulation		Echogenic properties	Stimulating capabilities
	15°	30°	Full Tip	PinPoint		
Stimuplex® A		✓	✓			✓
Stimuplex® D	✓	✓		✓		✓
Stimuplex® Ultra 360®		✓	✓		✓	✓
Ultraplex® 360		✓			✓	

Products for Peripheral Nerve Blocks

Sets for Continuous Peripheral Nerve Blocks

Contiplex® Continuous Nerve Block Sets
Continuous peripheral nerve blocks provide pain relief during and after surgical procedures, for improved patient recovery.[12]

USER BENEFITS
- Wide range of catheter sets
- Harmonized set components

Set	Bevel				Echogenic properties	Stimulating capabilities	Catheter	
	15°	20°	30°	Tuohy			Standard	ONE
Braunula technique								
Contiplex® D	✓		✓			✓	✓	
Catheter through the needle technique								
Contiplex® S		✓				✓	✓	
Contiplex® S Ultra 360®		✓			✓	✓		✓
Contiplex® Tuohy				✓		✓	✓	
Contiplex® Tuohy Ultra 360®				✓	✓	✓		✓
Catheter over the needle								
Contiplex® C	✓		✓		✓	✓		✓

Products for Peripheral Nerve Blocks

Nerve Stimulation with the Stimuplex® HNS 12

Products for Peripheral Nerve Blocks

Injection Pressure Monitoring with BSmart®

Stimuplex® HNS 12 with SENSe

2 Stimuplex® Pen for cutaneous nerve mapping

B. Braun Nerve Stimulator – Stimuplex® HNS 12 with SENSe

What is SENSe?

In practice, marginal needle movements often lead to loosing the muscle twitch. The SENSe technology (Sequential electrical Nerve Stimulation) is a sequence of two fixed impulse durations of 0.1 ms along with a third longer impulse duration.[13] Most traditional nerve stimulators emit two very short pulses every second. That's because short pulses improve accuracy or specificity when closer to the nerve. The downside is that sensitivity, or the availability to elicit visual feedback at a distance from the nerve, is lost. SENSe technology increases both sensitivity and specificity by adding a third, longer pulse. This results in eliciting a motor response even when the needle is far from or not aimed directly at the nerve and requires less adjustment to the amperage control while remaining the visual feedback.

USER BENEFITS

- Stimulation with SENSe-technology designed for more efficient nerve stimulation [13]
- Menus designed for easy control of sound and other settings
- Acoustic signals inform the user of any relevant deviations

As the needle is advanced, SENSe generates two short and one long pulse. From the alternating sequence of three impulses, the third longer impulse stimulates the nerve already at a distance. One muscle twitch is visible and indicates that the needle is directed to the nerve.
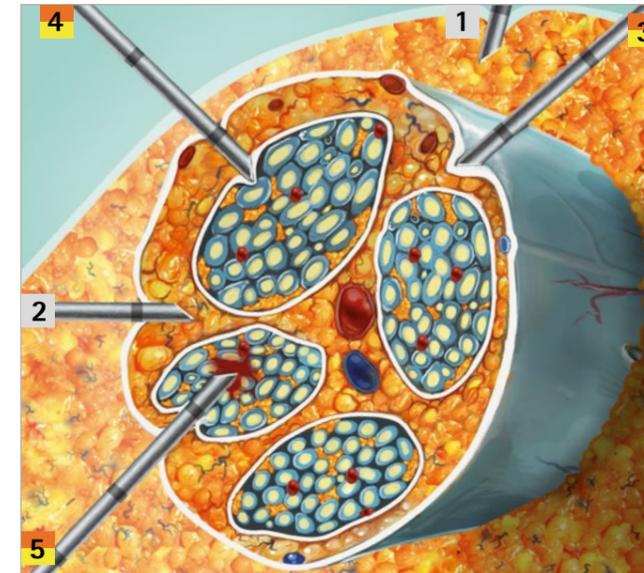
The stimulation needle is further advanced towards the nerve while SENSe maintains the motor response. Current strength adjustments lead to definite reductions of the third impulse.

At the threshold level of approximately 0.5 mA three muscle twitches are visible as all three impulses stimulate the nerve.
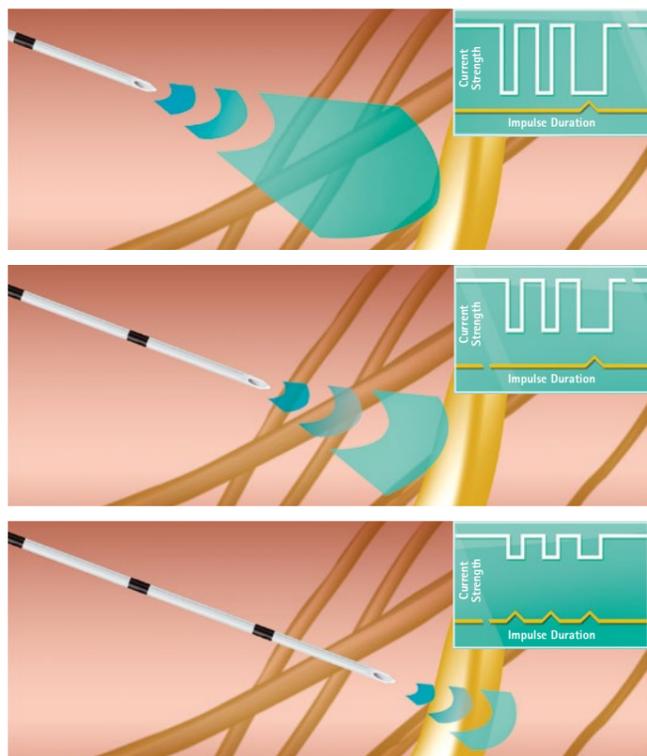
Reprinted with permission from www.nysora.com

Injection Pressure

< 15 psi / 103 kPa	15–20 psi / 103–138 kPa	> 20 psi / 138 kPa

Examples of low opening injection pressure (< 15 psi):

1 Needle tip placed perineurally [14, 15]
2 Needle tip placed sub-epineurally in adipose tissue between fascicles [15, 16]

Examples of high opening injection pressure (> 15 psi):

3 Needle-epineurium contact (needle-nerve-contact) [14]
4 Needle-perineurium contact (needle-nerve-contact) [14, 15, 16]
5 Needle tip placed intrafascicularly [14, 15, 17]

Injection Pressure Monitoring

Accidental injection of local anesthetic into fascicles of peripheral nerves can result in permanent nerve injury.[7] Research has shown that high opening injection pressure (> 15 psi) consistently detects needle-nerve-contact[1] or indicates intrafascicular injection. Therefore, avoiding injection with high opening injection pressure (> 15 psi) can prevent injection into poorly compliant tissue (e. g. nerve fascicles).[18, 19, 20, 21, 22]

BSmart®

The BSmart® Injection Pressure Monitor is an easy-to-use inline injection pressure monitoring device providing clinicians with objective pressure information. This happens through a coloured piston, which climbs into the gauge depending on the pressure. BSmart® Injection Pressure Monitor does not interfere with the tactile feedback of the syringe which has been traditionally used to assess the resistance of injection during nerve block procedures.

USER BENEFITS

- Objectively measures and displays injection pressure
- Color coding visualizes the pressure information
- Allows consistent monitoring of resistance to injection regardless of who performs the actual injection [23]
- Allows for standardized and objective documentation of injection pressure information during nerve block procedures
- Available in Luer and NRFit®

Also available in NRFit®

Portfolio Overview

SINGLE-SHOT BLOCK NEEDLES

Stimuplex® A	Needle ø (G) and Length (inch)	Needle ø and Length (mm)	Units per box	Code no. (REF) Luer
	Needles with 30° bevel			
	24 x 1	0.55 x 25		4894251
	22 x 1	0.70 x 25		4894539
	22 x 1 ⅛	0.70 x 35		4894367
	22 x 2	0.70 x 50	25	4894502
	21 x 2	0.80 x 50		4894375
	21 x 4	0.80 x 100		4894260
	20 x 6	0.90 x 150		4894278

Stimuplex® D	Needle ø (G) and Length (inch)	Needle ø and Length (mm)	Units per box	Code no. (REF) Luer	Code no. (REF) NRFit®
	Insulated Needles with 15˚ Bevel				
	25 x 1 ⅓	0.50 x 35		4892153	4892153NR
	25 x 2 ⅛	0.50 x 55		4892155	4892155NR
	23 x 1 ½	0.60 x 40		4892134	4892134NR
	23 x 2 ¾	0.60 x 70	25	4892137	4892137NR
	22 x 2	0.70 x 50		4892105	4892105NR
	22 x 3 ⅛	0.70 x 80		4892108	4892108NR
	22 x 4 ¾	0.70 x 120		4892112	4892112NR
	20 x 6	0.90 x 150		4892115	4892115NR
	Insulated Needles with 30˚ Bevel				
	22 x 2	0.70 x 50		4892205	4892205NR
	22 x 3 ⅛	0.70 x 80		4892208	4892208NR

Stimuplex® Ultra 360®	Needle ø (G) and Length (inch)	Needle ø and Length (mm)	Units per box	Code no. (REF) Luer	Region Suffix*				Code no. (REF) NRFit®
	Insulated Echogenic Needles with 30˚ Bevel								
	22 x 1⅜	0.70 x 35		4892503	-01	-03	-04	-20	4892503NR-01
	22 x 2	0.70 x 50		4892505	-01	-03	-04	-20	4892505NR-01
	22 x 3 ⅛	0.70 x 80	25	4892508	-01	-03	-04	-20	4892508NR-01
	20 x 4	0.90 x 100		4892510	-01	-03	-04	-20	4892510NR-01
	20 x 6	0.90 x 150		4892515	-01	-03	-04	-20	4892515NR-01

*SUFFIXES
Article code suffix –01 = CE Region: Covering all CE countries; Article code suffix –03 = Asia; Article code suffix –04 = South America; Article code suffix –20 = CIS

SINGLE-SHOT BLOCK NEEDLES

Ultraplex® 360	Needle ø (G) and Length (inch)	Needle ø and Length (mm)	Units per box	Code no. (REF) Luer	Region Suffix*	Code no. (REF) NRFit®
	Non-Insulated Echogenic Needles with 30˚ Bevel					
	22 x 1 ⅜	0.70 x 35		4892603	-01	-20	4892603NR-01
	22 x 2	0.70 x 50		4892605	-01	-20	4892605NR-01
	22 x 3 ⅛	0.70 x 80	25	4892608	-01	-20	4892608NR-01
	20 x 4	0.90 x 100		4892610	-01	-20	4892610NR-01
	20 x 6	0.90 x 150		4892615	-01	-20	4892615NR-01

*SUFFIXES
Article code suffix –01 = CE Region: Covering all CE countries; Article code suffix –20 = CIS

ACCESSORIES

BSmart®	Description	Units per box	Code no. (REF)
	BSmart® Injection Pressure Monitor	25	4894000-01
	BSmart® NRFit® Injection Pressure Monitor	25	4894000NR-01

Nerve Stimulation	Description	Units per box	Code no. (REF)
	Stimuplex® HNS 12 Nerve Stimulator for Stimuplex®, Ultraplex® and Contiplex® needles	1	4892098

Nerve Stimulator Accessories and Spare Parts	Units per box	Code no. (REF)
Stimuplex® Pen for cutaneous nerve mapping		4892099
Electrode cable for Stimuplex® HNS 11/12		4892070
Battery cover for Stimuplex® HNS 12		4892094
Carrying Case for Stimuplex® HNS 12	1	4892095
Test resistor for Stimuplex® HNS 12		4892096
Knob for special handling		4892283

PERIPHERAL NERVE BLOCKS
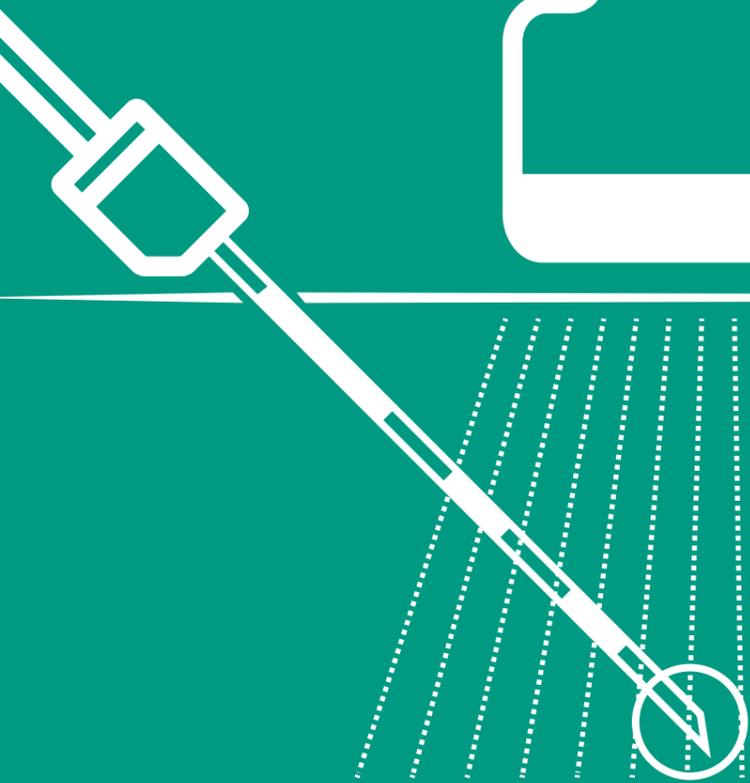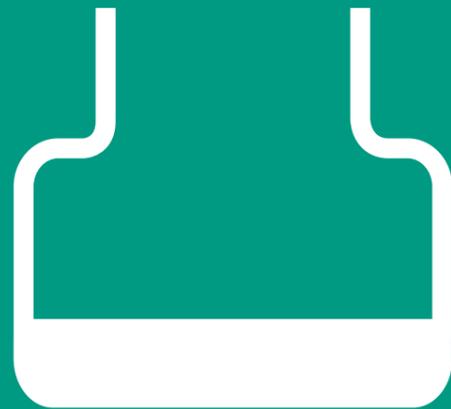
Portfolio Overview

SETS FOR CONTINUOUS NERVE BLOCKS

Product	Contiplex® C catheter-over-the-needle system	Contiplex® S / Contiplex® S Ultra 360®	Contiplex® Tuohy / Contiplex® Tuohy Ultra 360®	Contiplex® D	Perifix® Standard Catheter	Contiplex® ONE Catheter (6 lateral openings, closed tip, open tip for Contiplex® C)	Perifix® Catheter Connector 19 G or 20/24 G	Perifix® PinPad filter fixation	Perifix® Filter 0.20 μm, Pressure resistant up to 7 bar	Omnifix® syringe 5 ml
Size	25 G	18 G	18 G	18 G, 20 G						

| Set Specifications	Bevel (°) with NRFit	Bevel with NRFit (Tuohy)	Needle Size (G) with NRFit	Needle Size Ø (mm)	Needle Length (mm) with NRFit	Perifix® Standard 3 lateral openings (closed tip) (mm)	Perifix® Standard central opening (open tip) (mm)	Contiplex® ONE (mm)	Perifix® Catheter Connector	Perifix® PinPad	Perifix® Filter with NRFit	Omnifix® with NRFit	Units per box	Code no. (REF) Luer	Region Suffix*	Code no. (REF) NRFit®
Contiplex® C Sets																
Contiplex® C	15		25	0.53	190	–	–	187	■	■	■	–	5	4898115	–	4898115NR
Contiplex® C	30		25	0.53	190	–	–	187	■	■	■	–	5	4898130	–	4898130NR
Contiplex® D Sets																
Contiplex® D	15		20	1.10	33	–	400	–	■	■	■	■		4898311	–	4898311NR
Contiplex® D	15		20	1.10	55	–	400	–	■	■	■	■		4898323	–	4898323NR
Contiplex® D	15		18	1.30	55	–	400	–	■	■	■	■	10	4898325	–	4898325NR
Contiplex® D	30		18	1.30	55	–	400	–	■	■	■	■		4898305	–	4898305NR
Contiplex® D	15		18	1.30	80	–	1000	–	■	■	■	■		4898335	–	4898335NR
Contiplex® D	15		18	1.30	110	–	1000	–	■	■	■	■		4898308	–	🖝
Contiplex® S and Contiplex® S Ultra 360® Sets																
Contiplex® S		20	18	1.30	50	500	–	–	■	■	■	■		4898405	–	4898405NR
Contiplex® S		20	18	1.30	100	500	–	–	■	■	■	■		4898410	–	4898410NR
Contiplex® S		20	18	1.30	150	1000	–	–	■	■	■	■	10	4898415	–	4898415NR
Contiplex® S Ultra 360®		20	18	1.30	50	–	–	400	■	■	■	■		4898650	–01	–27	4898650NR-27
Contiplex® S Ultra 360®		20	18	1.30	100	–	–	1000	■	■	■	■		4898610	–01	–27	4898610NR-27
Contiplex® S Ultra 360®		20	18	1.30	150	1000	–	1000	■	■	■	■		4898615	–01	–27	4898615NR-27
Contiplex® Tuohy and Contiplex® Tuohy Ultra 360® Sets																
Contiplex® Tuohy		Tuohy bevel	18	1.30	40	500	–	–	■	■	■	■		4898504	–	4898504NR
Contiplex® Tuohy		Tuohy bevel	18	1.30	50	500	–	–	■	■	■	■		4898505	–	4898505NR
Contiplex® Tuohy		Tuohy bevel	18	1.30	100	500	–	–	■	■	■	■		4898510	–	4898510NR
Contiplex® Tuohy		Tuohy bevel	18	1.30	150	1000	–	–	■	■	■	■	10	4898515	–	4898515NR
Contiplex® Tuohy Ultra 360®		Tuohy bevel	18	1.30	40	–	–	400	■	■	■	■		4898704	–01	–27	4898704NR-01
Contiplex® Tuohy Ultra 360®		Tuohy bevel	18	1.30	50	–	–	400	■	■	■	■		4898705	–01	–27	4898705NR-01
Contiplex® Tuohy Ultra 360®		Tuohy bevel	18	1.30	100	–	–	1000	■	■	■	■		4898710	–01	–27	4898710NR-01
Contiplex® Tuohy Ultra 360®		Tuohy bevel	18	1.30	150	–	–	1000	■	■	■	■		4898715	–01	–27	4898715NR-01

*SUFFIXES

Contiplex® Tuohy Ultra 360®: Article code suffix **–01** = CE Region: covering all CE countries; Article code suffix **–27** = RoW

Contiplex® S Ultra 360®: Article code suffix **–01** = CE Region: covering all CE countries; Article code suffix **–27** = RoW

PERIPHERAL NERVE BLOCKS

ULTRASOUND GUIDANCE

Reimagine Regional Anesthesia with B. Braun´s innovative portfolio for Ultrasound guided therapies.
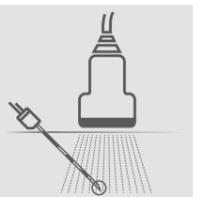
Xperius® Ultrasound System
Responsive | Advanced | Simple

Xperius® is a new Ultrasound system jointly developed by B. Braun and Philips which has been specifically designed to support the current and future needs in regional anesthesia and vascular access at the point of care.

RESPONSIVE

The system offers a high degree of mobility and flexibility combined with an ergonomic design to improve daily practice. A fully articulating arm allows easy adjustments of the Ultrasound monitor position and the angle of the screen for ergonomic use and better line of sight. Besides the cart based system, a dedicated ultra portable tablet device allows quick bedside scanning or interventions in your facility, on-the-go and at satellite locations.

Designed around you to fit seamlessly into the anesthesiologists' care area

✓ Advanced ergonomics
✓ Convenient accessory bins
✓ High mobility & portability
✓ Designed by Philips & B. Braun

ADVANCED

Xperius® provides high quality imaging of nerves and tissue structures for confident diagnoses and precise needle guidance. The predetermined settings (presets) are designed so you can spend less time adjusting controls and more time focusing on your patients.

High performance technology delivers exceptional image quality

✓ High definition imaging
✓ Enhanced needle visualization
✓ New generation of probes

SIMPLE

Xperius® – Allows you to quickly and comfortably conduct exams. Xperius® comes with intuitive touch and gesture controls that you already know from your smart devices – to keep your focus on your work and not on the controls. Its simple interface supports daily routines and provides specific presets for procedures in regional anesthesia and vascular access.

Intuitive and easy to use

✓ Improved workflow
✓ Intuitive user experience
✓ Touch screen & gesture control
✓ Dedicated regional anesthesia & vascular access presets

Intuitive Interface & Advanced Technology

- Multiple presets - 4 specific ones for regional anesthesia / vascular access
- Intuitive touchscreen
- Start scanning in a few seconds
- Built-in Wi-Fi for DICOM data transfer
- Needle Vis Technology

Ready-to-go for Bedside Scanning

- Long lasting battery up to 3 h of scanning
- Lightweight and easy to handle

Articularing Arm

- 270° Flexible rotation in every direction
- Height-adjustable

Core Ultrasound Technology

- Transducer with USB connector

Convenient Storage

Everything needed for procedures is within reach

On**vision**® Needle Tip Tracking
Accurate | Predictable | Empowering

Onvision® is an Ultrasound based Needle-Tip tracking technology for peripheral nerve blocks which works exclusively with the Xperius® Ultrasound system and the dedicated Stimuplex® Onvision® needle. In real-time, Onvision® accurately indicates where the needle tip is inside the body, both in and out of plane. It helps users align the needle with the probe in an intuitive and easy to use manner – to improve pain relief and the avoidance of unintended nerve puncture or collateral damage to surrounding tissue or vessel.

Onvision® is an Ultrasound based Technology for reliable Needle Guidance
The dedicated Stimuplex® Onvision® needle is embedded with a tip sensor, which allows accurate detection of the tip location and displays this information in real time on the live Ultrasound image.

With Onvision®, users experience a real time guidance which empowers them to quickly adopt and integrate PNB into their daily practice. Onvision® enables more physicians to be proficient in performing PNBs. [27]

ACCURATE

Know where you are in real-time [24, 25]
- ✓ Tip visualization in both superficial and deeper blocks
- ✓ Ultrasound based detection and accuracy
- ✓ Can reduce complications during PNB placement
- ✓ Designed to prevent unintended overshooting

PREDICTABLE

Helping make first-time-right the new standard [24, 25]
- ✓ Confidently perform local anesthetics injection
- ✓ Reduction in overall procedure time
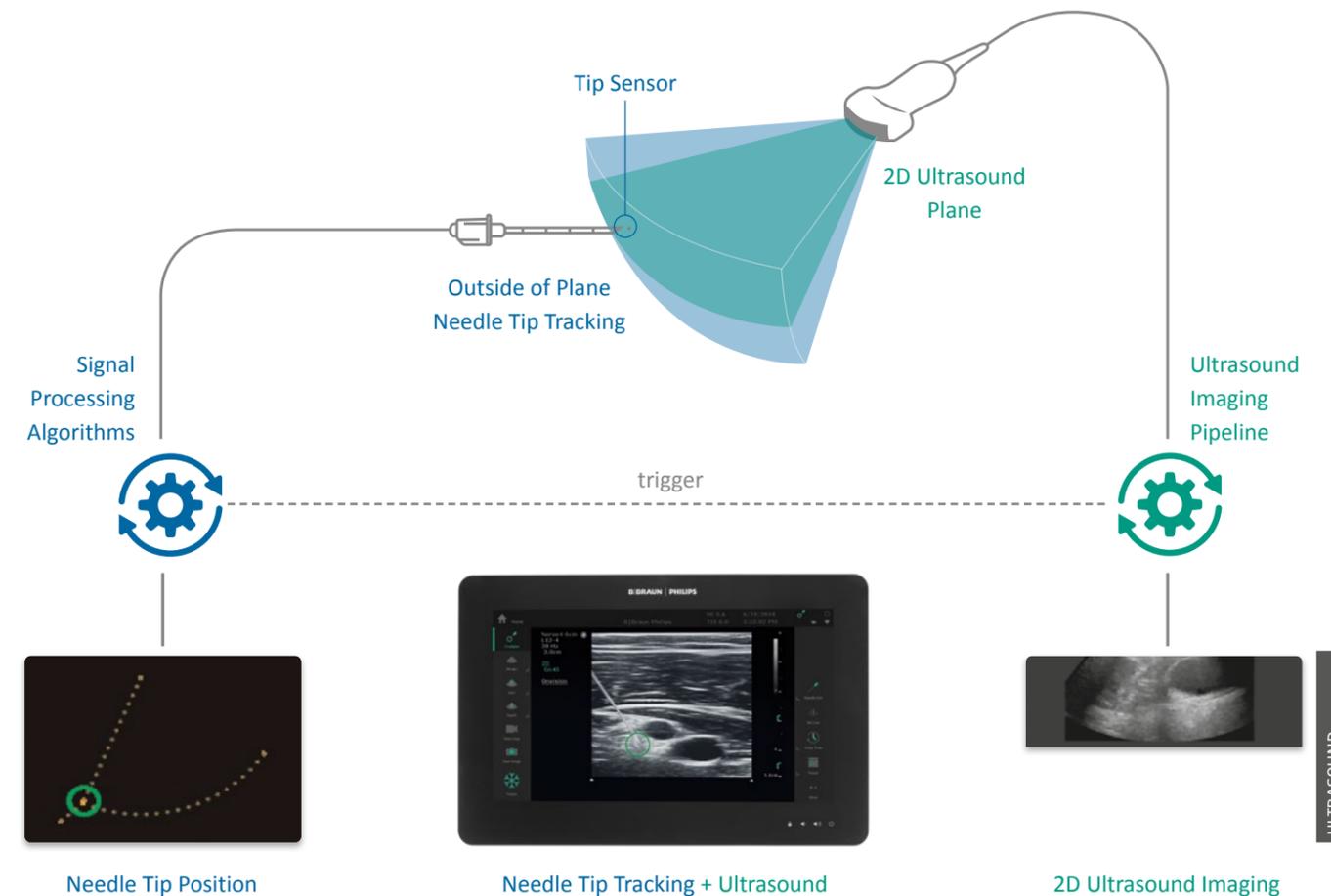- ✓ Fits in to current workflow (no workflow disruption)

EMPOWERING

More anesthesiologists can carry out regional anesthesia [26]
- ✓ Intuitive user experience
- ✓ Easy to adopt
- ✓ Can increase proficiency level

Needle Tip Navigation to the Point

The Onvision® technology combines ultrasound image data from the ultrasound system with signals from the needle to accurately locate the position of the sensor on the Stimuplex® Onvision® Needle. The position of the sensor is then displayed on the ultrasound image in real-time by overlaying a circle to it.

Tip Sensor

2D Ultrasound Plane

Outside of Plane Needle Tip Tracking

Signal Processing Algorithms

Ultrasound Imaging Pipeline

trigger

Needle Tip Position

Needle Tip Tracking + Ultrasound

2D Ultrasound Imaging

Ultrasound based Technology to improve Accuracy

- • Onvision works up to at least 10 cm depth[1,4]
- • Onvision is shielded against external electromagnetic interferences (EMI)[3]
- • Onvision remains accurate even when the needle bends[4]

EZCOVER®
Ultrasound Probe Cover Set

Peel off sticker

NEW! Stop before you block.
Wrong site nerve blocks (WSNB) are classified as never events. A nation-wide patient safety campaign in the UK called "Stop before you block" is aimed at reducing the incidence of inadvertent wrong-sided nerve blocks during regional anesthesia.[30]

EZCOVER® are available with STOP Safety Shield label. The sticker reminds the practitioner to STOP immediately prior to the start of the procedure and to conduct a final confirmation on the right surgery site and side of the block.

BENEFITS
- Assures compliance with the WHO Checklist (JCI Standards IPSG4 and IPSG.4.1)
- Reduces risks of wrong site nerve blocks

EZCOVER®. Because infection control matters.
Infection prevention and control are key priorities in the healthcare setting. Although ultrasound is considered one of the safest imaging modalities, infection transmission risks during ultrasound are evident.[28] The use of a sterile sheath and gel for interventional ultrasound is an important way to prevent cross-contamination and reduce the risk of healthcare-associated infections.[29]

EZCOVER®. Improved protection for patient, user and equipment.
EZCOVER® are sterile, latex-free and ensure maximum protection for the patient, the user and the equipment. EZCOVER® are suited to all sterile and non-sterile ultrasound applications.

Easy to fit and convenient to use.
The telescopic folding allows for sterile application. Clear instruction labels on the cover decrease the risk of errors and misuse.

Image quality without compromise.
The high-quality material of the soft sleeve emulates the properties of human tissue. The elastic material facilitates wrinkle and air free application for distortion free scanning.

All sets include
- Ultrasound probe cover - available in different sizes (W x L) 15 x 30 cm | 15 x 61 cm | 15 x 122 cm | 15 x 244 cm
- Sterile ultrasound gel (1 x 20 g)
- Latex-free rubber fixation bands (2 x)
- Blue sterile drape (30 x 30 cm)
- All versions optional available with STOP Safety Shield

EZCOVER® advantages at a glance:

IMPROVED PROTECTION
- Latex-free
- Approved for intraoperative use
- Reduces risks of procedural errors (STOP Safety Shield)

EASY TO FIT – CONVENIENT TO USE
- Improved handling
- Elastic material – conforms to all probes
- All necessary components for immediate use in one set

ADVANCED PERFORMANCE
- Soft and comfortable material
- Wrinkle and air-free fit
- No compromise in image quality

PORTFOLIO OVERVIEW EZCOVER® SETS

	Description	Size (W x L cm)	Units	Article Code
Generic Set				
	U/S Probe Cover Set w/Gel	15 x 30	30 / Box	PCG15030
	U/S Probe Cover Set w/Gel	15 x 61	30 / Box	PCG15061
	U/S Probe Cover Set w/Gel	15 x 122	30 / Box	PCG15122
	U/S Probe Cover Set w/Gel	15 x 244	25 / Box	PCG15244
Set with STOP (Check)				
	U/S Probe Cover Set, STOP w/Gel	15 x 30	30 / Box	PCT15030
	U/S Probe Cover Set, STOP w/Gel	15 x 61	30 / Box	PCT15061
	U/S Probe Cover Set, STOP w/Gel	15 x 122	30 / Box	PCT15122
	U/S Probe Cover Set, STOP w/Gel	15 x 244	25 / Box	PCT15244

Portfolio Overview

ULTRASOUND SYSTEM AND ONVISION® TECHNOLOGY

Xperius®	Description	Units per box	Code no. (REF)
Xperius® Cart System with 1 transducer L12–4 and Onvision® Needle Tip Tracking Technology			
with Onvision®	• Type of unit: Compact Cart based Point of Care Ultrasound System with Linear L12-4 and Onvision® Technology • Dimensions: 132.5 cm x 56.0 cm x 66 cm (H/W/D) • Weight: 36.0 kg • Display: 39.6 cm (15.6 in) flat-panel touch-screen • Imaging mode keys: 2D, Color Doppler, Color Power Angio (CPA), M-Mode	1	NUSM621
Xperius® Cart System with 1 transducer L12–4			
	• Type of unit: Compact Cart based Point of Care Ultrasound System with fully articulating arm and Linear L12-4 • Dimensions: 132.5 cm x 56.0 cm x 66 cm (H/W/D) • Weight: 34.0 kg • Display: 39.6 cm (15.6 in) flat-panel touch-screen • Imaging mode keys: 2D, Color Doppler, Color Power Angio (CPA), M-Mode	1	NUSM623
Xperius® Stand-alone Tablet with 1 transducer L12–4			
	• Type of units: Point of Care Tablet Ultrasound System with Kickstand and Linear 12-4 • Dimensions: 28 cm x 42 cm x 5 cm (H/W/D) • Weight: 3.6 kg	1	NUSM626
Peripherals			
	Printer Sony UP-D711MD • High-quality digital graphic printer • Easy to connect within dedicated Xperius® printer slot • Dimensions: 7 cm × 14 cm × 12.5 cm (H/W/D) • Weight: 1 kg • Monochrome, black/white, A7 paper size	1	NUSM620

COMPLEMENTARY PRODUCTS

Xperius® Upgrade Items	Description	Units per box	Code no. (REF)
Single Transducer Linear			
	L12-4 broadband linear array transducer • 12 to 4 MHz extended operating frequency range • Aperture size: 34 mm • High resolution imaging for shallow applications • Center line marker • USB transducer with replaceable cable	1	FUS5716
Single Transducer Curved			
	C5-2 broadband curved array transducer • 5 to 2 MHz extended operating frequency range • 50 mm radius of curvature • High resolution imaging for deeper applications • Center line marker • USB transducer with replaceable cable	1	FUS5712

ONVISION® SINGLE SHOT BLOCK NEEDLES

Stimuplex® Onvision®	Needle ø (G) and Length (inch)	Needle ø and Length (mm)	Units per box	Code no. (REF) Luer
Luer Version				
Insulated Needles with 30˚ Bevel				
	22 x 2"	0.70 x 50 mm		4892705-01
	22 x 3 ⅛"	0.70 x 80 mm		4892708-01
	20 x 4"	0.90 x 100 mm	10	4892710-01
	20 x 4 ¾"	0.90 x 120 mm		4892712-01
	20 x 6"	0.90 x 150 mm		4892715-01

Stimuplex® Onvision®	Needle ø (G) and Length (inch)	Needle ø and Length (mm)	Units per box	Code no. (REF) NRFit®
NRFit® Version				
Insulated Needles with 30˚ Bevel				
	22 x 2"	0.70 x 50 mm		4892705NR-01
	22 x 3 ⅛"	0.70 x 80 mm		4892708NR-01
	20 x 4"	0.90 x 100 mm	10	4892710NR-01
	20 x 4 ¾"	0.90 x 120 mm		4892712NR-01
	20 x 6"	0.90 x 150 mm		4892715NR-01

ULTRASOUND GUIDANCE

ELASTOMERIC PUMP SYSTEMS

Elastomeric pump systems for post-operative pain therapy with peripheral nerve block or epidural catheters.

ON-Q® Elastomeric Pump Systems for Continuous Regional Anesthesia

USER BENEFITS
- Convenient and strong soft shell design allowing for increased patient comfort
- Reliable and silent infusion without complicated electronics

ON-Q® – Pump Systems for Continuous Regional Anesthesia

The ON-Q® Elastomeric Pump System is a pain management solution that has been clinically proven to reduce pain and opioid consumption when used to deliver local anesthetics to or around surgical wound sites or in close proximity to nerves, when compared to narcotic only pain management. [31] Patients receiving ON-Q® in combination with the potential benefits of a continuous nerve block can experience faster mobilization and a quicker return to their home environment. [32,33,34]

A product range with fixed flow rate pumps, Select-A-Flow™ for variable flow rate, and bolus devices allow you to choose the right pump for a patient individual post operative pain therapy. ON-Q® Elastomeric Pump Systems work without complicated electronics, thus avoiding problems with batteries, maintenance, safety checks. Also, there is no need for complex staff training.

Hospitals or healthcare providers can at the same time benefit from reduced length of stay and increased patient satisfaction. [35,36]

ON-Q® Bolus

Refill Indicator: Indicates to the patient when the next bolus can be administered.

Safe and simple bolus administration allows the delivery of a continuous fixed basal rate with an additional bolus option for patient adjusted pain relief. Different articles, offering either 30 or 60 min refill time options are available to effectively manage the occurence of breakthrough pain sensations.

USER BENEFITS
- Ergonomic bolus button design
- Easy to read reservoir fill indicator
- Bolus pump is designed for optimal pain management and incisional applications

Select-A-Flow™

The Select-A-Flow™ controller which is available in two different configurations (1-7 ml/h and 2-14 ml/h), allows flow rate adjustments according to patient individual pain relief requirements.

USER BENEFITS
- Flow rate adjustment in 7 steps
- Rate-changing key may be removed to discourage tampering

ELASTOMERIC PUMP SYSTEMS

Portfolio Overview

SINGLE PUMP MODELS*

ON-Q® Pump	Fill Volume (ml)	Flow Rate (ml/h)	Code no. (REF) Luer	Code no. (REF) NRFit®
	100	2	PS100X2	-
	100	2 (1x1)	PS100X2D	-
	270	2	PS270X2	-
	270	4	PS270X4	-
	270	5	PS270X5	-
	270	4 (2 x 2)	PS270X4D	-
	400	4	PS400X4	-
	400	5	CBI001	CB001-N
	400	8	PS400X8	PS400X8-N
	400	10	CBI002	CB002-N
	400	4 (2 x 2)	PS400X4D	-

PUMP WITH BOLUS BUTTON*

| ON-Q® Pump + Bolus Button	Fill Volume (ml)	Flow Rate (ml/h)	PCA Bolus Button (ml)	Refill (min)	Code no. (REF) Luer	Code no. (REF) NRFit®
	270	2	3	30	PMB01B	PMB01B-N
	400	4	3	30	CB003B	CB003B-N

PUMP WITH VARIABLE FLOW RATE SELECTOR*

ON-Q® Pump + Select–A–Flow™	Fill Volume (ml)	Flow Rate (ml/h)	Code no. (REF) Luer	Code no. (REF) NRFit®
	270	1 – 7	PSAF01	PSAF01-N
	400	2 – 14	CBI004	CB004-N
	600	2 – 14	CBI6004	CB6004-N
ON-Q® Pump + Dual Select–A–Flow™				
	400	2 x 1 – 7	CB4007	CB4007-N
	600	2 x 1 – 7	–	CB6007-N

## PUMP WITH VARIABLE FLOW RATE SELECTOR + BOLUS BUTTON*

ON-Q® Pump + Select–A–Flow™ + Bolus Button	Fill Volume (ml)	Flow Rate (ml/h)	PCA Bolus Button (ml)	Refill (min)	Code no. (REF) Luer	Code no. (REF) NRFit®
	400	1 – 7	3	30	CB005C	CB005C-N
		2 – 14	3	20	CB006C	CB006C-N

* **Contents:** Single Use Infusion Pump, carry case, 60 ml filling syringe, Medication label, Peel-Away labels. Filling extension tube – only 400 ml pump models. 5 units per case. Each case includes instructions for use.

ELASTOMERIC PUMP SYSTEMS
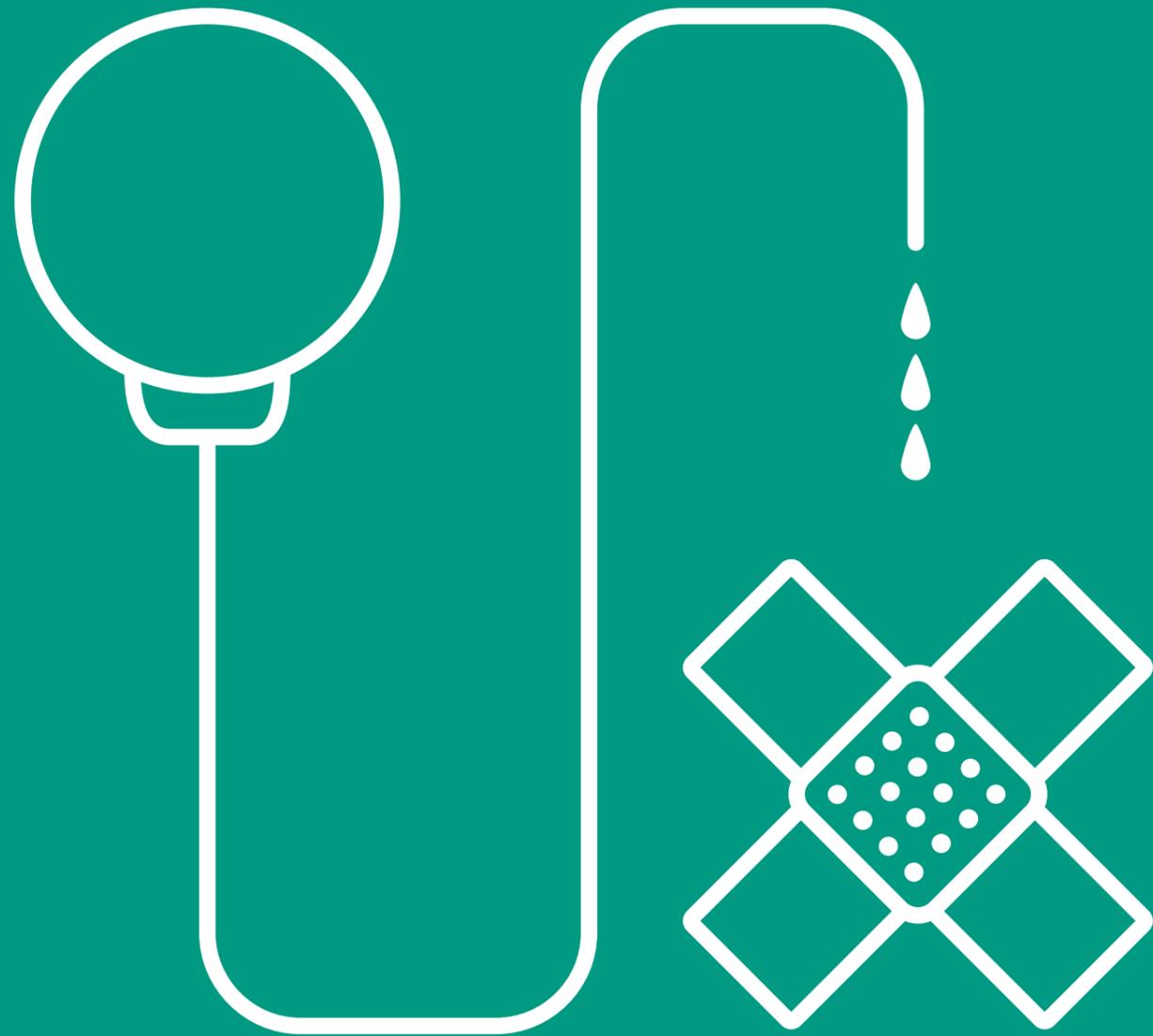
CONTINUOUS WOUND INFUSION

Pain therapy on site –
catheter systems for
continuous wound infusion.
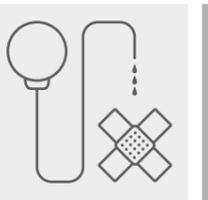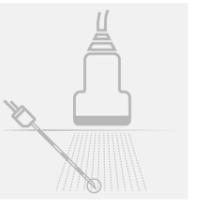
# ON-Q® Elastomeric Pump Systems for Continuous Wound Infusion

ON-Q® Pain Relief System

Continuous wound infusion is a technique that delivers local anesthetic through a multi-hole fenestrated catheter to or near the surgical site for post-operative pain relief.[37] It provides an effective postoperative pain management, decreases pain and discourages opioid use.

The simple approach of placing a Soaker Catheter™ to infuse local anesthetic into or near the incisional site can be widely used and offers the potential to provide complete analgesia, while reducing the need of opioids and their associated side effects.[31]

ON-Q® Tunneling System
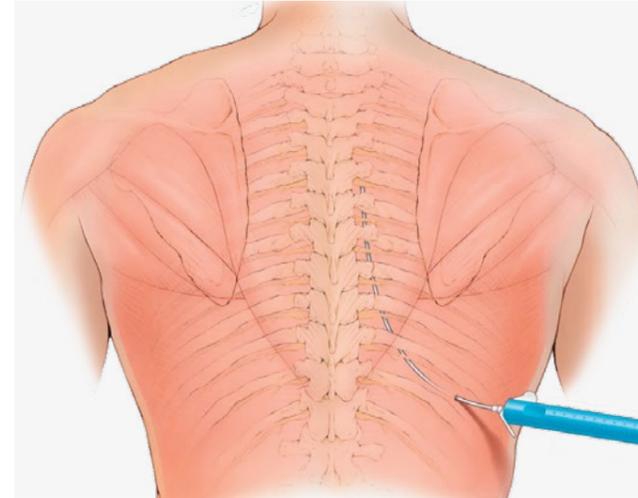
The blunt tunneling system which is provided with a tear-away sheath helps to place the Soaker Catheter™ in the sub-fascia, extra-pleural or intramuscular layers, allowing access to the key nerve bundles.

The Silver Soaker Catheter™ comes with an additional silver coating that works as an antimicrobical agent.

ON-Q® SilverSoaker™ Catheter with Silver-Ions-Coating on both sides

ON-Q® Soaker Catheter™

FEATURES AND USER BENEFITS
- Unique catheter design with multiple lateral holes along the infusion segment
- Easy to use catheter with introducer needle with peel-away sheat
- Length markings for more accurate positioning
- Dual catheter systems available

Portfolio Overview

ON-Q® PAIN RELIEF SYSTEMS

ON-Q® Pump	Fill Volume (ml)	Flow Rate (ml/h)	Catheter 2.5 cm				Catheter 6.5 cm				Catheter 12.5 cm				Catheter 25 cm			
			Soaker™ Catheter		Silver Soaker™ Catheter		Soaker™ Catheter		Silver Soaker™ Catheter		Soaker™ Catheter		Silver Soaker™ Catheter		Soaker™ Catheter		Silver Soaker™ Catheter	
ON-Q® System Options			Code no. (REF) Luer	Code no. (REF) NRFit®	Code no. (REF) Luer	Code no. (REF) NRFit®	Code no. (REF) Luer	Code no. (REF) NRFit®	Code no. (REF) Luer	Code no. (REF) NRFit®	Code no. (REF) Luer	Code no. (REF) NRFit®	Code no. (REF) Luer	Code no. (REF) NRFit®	Code no. (REF) Luer	Code no. (REF) NRFit®	Code no. (REF) Luer	Code no. (REF) NRFit®
	100	1	PS2501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	100	2	PS2502	PS2502-N	-	-	PS6502	PS6502-N	PS6502-A	PS6502-A-N	PS12502	PS12502-N	-	-	-	-	-	-
	270	2	-	-	-	-	PS6503	PS6503-N	PS6503-A	-	PS12503	-	-	-	-	-	-	-
	270	5	PS2504	PS2504-N	-	-	PS6504	PS6504-N	PS6504-A	PS6504-A-N	PS12504	PS12504-N	PS12504-A	PS12504-A-N	-	-	-	-
	270	4 (2 x 2)	-	-	-	-	PS6505	PS6505-N	PS6505-A	-	PS12505	PS12505-N	PS12505-A	PS12505-A-N	PS25005	-	PS25005-A	-
	270	1 - 7	-	-	-	-	PSAF02	-	-	-	-	-	-	-	-	-	-	-
	400	5	-	-	-	-	PS6506	-	-	-	PS12506	PS12506-N	PS12506-A	PS12506-A-N	PS25006	-	PS25006-A	-
	400	10	-	-	-	-	PS6507	PS6507-N	-	-	PS12507	PS12507-N	-	-	-	-	-	-
	400	4 (2 x 2)	-	-	-	-	PS6508	PS6508-N	-	-	PS12508	PS12508-N	PS12508-A	-	PS25008	-	PS25008-A	-

Contents: Single Use Infusion Pump, Soaker™ Catheter, E-clip or carry case, 60 ml filling syringe, Medication label, Peel-Away labels, 17 GA T-peel introducer and sheath, 5 ml priming syringe, Filling extension set – only 400 ml pump models 5 units per case. Each case includes instructions for use.

ON-Q® EXPANSION KITS

Catheter	Length (cm)	Soaker™ Catheter		Silver Soaker™ Catheter	
Soaker™ / Silver Soaker™		Code no. (REF) Luer	Code no. (REF) NRFit®	Code no. (REF) Luer	Code no. (REF) NRFit®
	2.50	PM030	PM030-N	PM030-A	-
	6.50	PM010	PM010-N	PM010-A	PM010-A-N
	12.5	PM020	PM020-N	PM020-A	PM020-A-N
	19.1	-	PM050-N	PM050-A	PM050-A-N
	25.0	PM040	PM040-N	PM040-A	PM040-A-N

Contents: Soaker™/SilverSoaker™ Catheter, T-peel needle(s), 5ml priming syringe, Tegaderm™ and Steri-Strips™. 5 units per case. Each case includes instructions for use.

ACCESSORIES

ON-Q® Accessories	Length (cm)	ø (Gauge)	Code no. (REF)
Soaker™ Introducer Needle	8.30	-	ACC01*
	15.2	-	ACC02*
	20.3	-	ACC03*
Filling Extension Set	-	-	ACC05**
Introducer Sheath	20.3	17	ACC08S**
	30.5	16	ACC10S**
	20.3	11	ACC07S**
	30.5	11	ACC09S**

Contents: *10 units per case, **5 units per case

ON-Q® DISPOSABLE TUNNELERS

Tunnelers	Length (cm)	ø (Gauge)	Code no. (REF)
Tunneler	20.3	11	T11X8
	30.5	11	T11X12
	25.0	11	T11X10
	30.5	16	T16X12
	12.5	17	T17X5
	20.3	17	T17X8
	25.0	17	T17X10
Fluid Tunneler	20.3	11	FT11X8
	30.5	11	FT11X12
	20.3	16	FT16X8
	30.5	16	FT16X12

Contents: Tunneler and two disposable sheaths. 5 units case. Each case includes instructions for use.

CONTINUOUS WOUND INFUSION

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