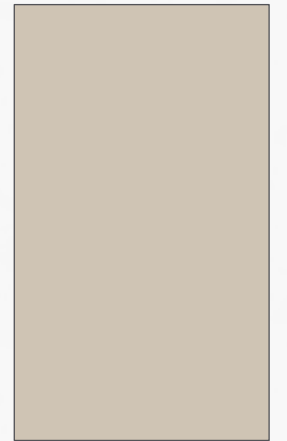


SHEATHS IN CATH LAB

MADDURY JYOTSNA, YERRAM SREEKANTH





September 16, 1977
Andreas Roland Grüntzig
Zurich University Hospital



RADIAL ACCESS



October 1986
Lucien Campea



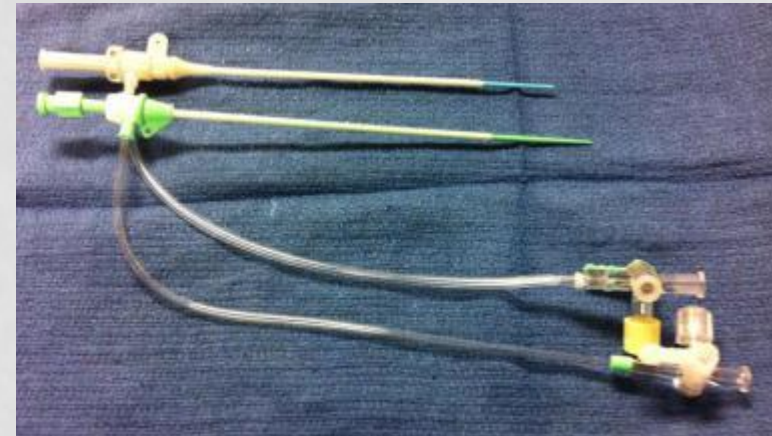
1993
Ferdinand Kimmenij
Onze Lieve Vrouwe Gasthuis
Amsterdam, Netherland

DIFFERENT USUALLY USED SHEATHS

Merit Medical – 4 to 7F size



Cordis – Trasradial sheath

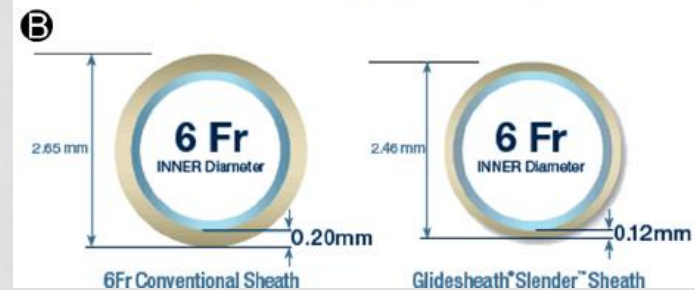
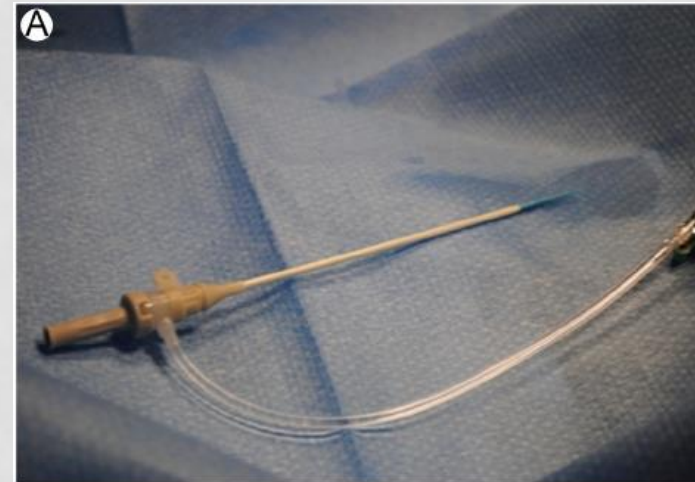


DIFFERENT USUALLY USED SHEATHS

Femoral sheath



Glide hydrophobic radial sheath



DIFFERENT USUALLY USED SHEATHS

Nora – both radial and femoral sheaths

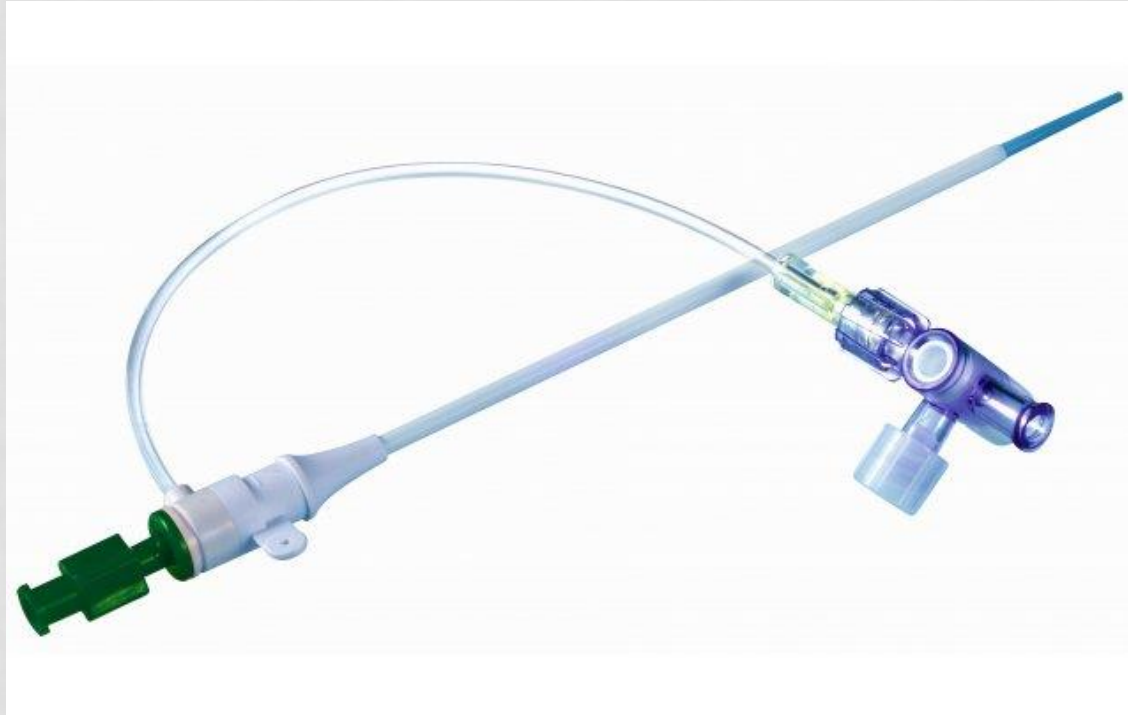


X- way , made in China

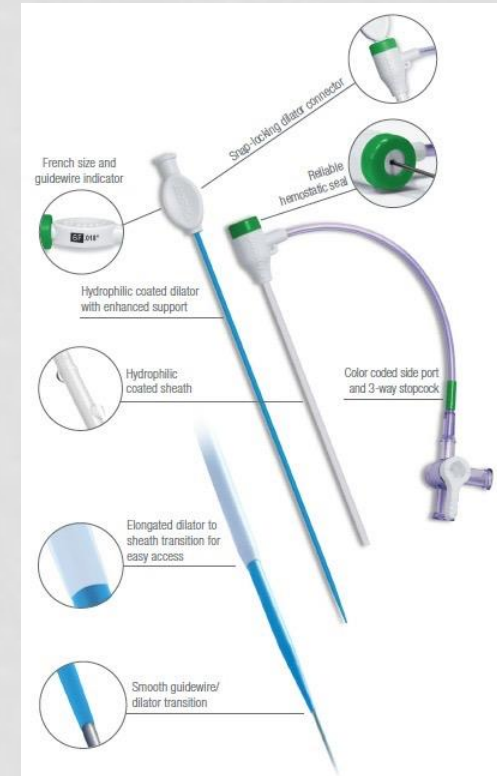


DIFFERENT USUALLY USED SHEATHS

Umbra medical radial sheath



Kardia medical , Radial sheath



DIFFERENT USUALLY USED SHEATHS

Anntom medical, femoral

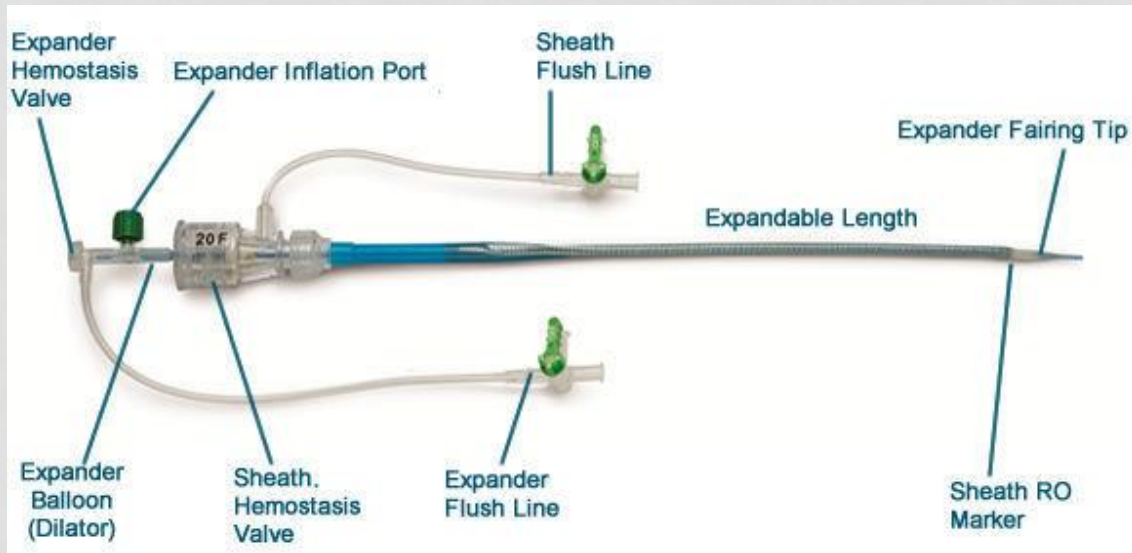


Nome, femoral



DIFFERENT USUALLY USED SHEATHS

- SOLOPATH, Terumo, Femoral

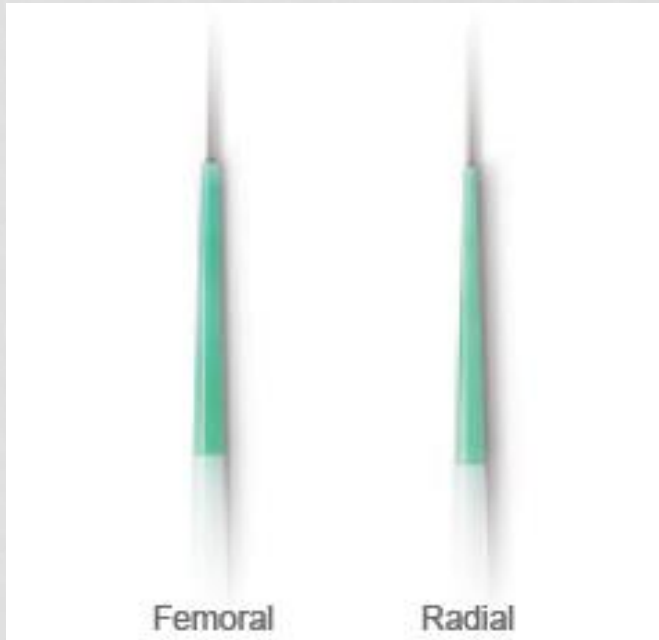


- NORA , Femoral



DIFFERENT USUALLY USED SHEATHS

- Engage TR radial & femoral



- Asian products



DIFFERENT USUALLY USED SHEATHS

- **ECVV, Radial**

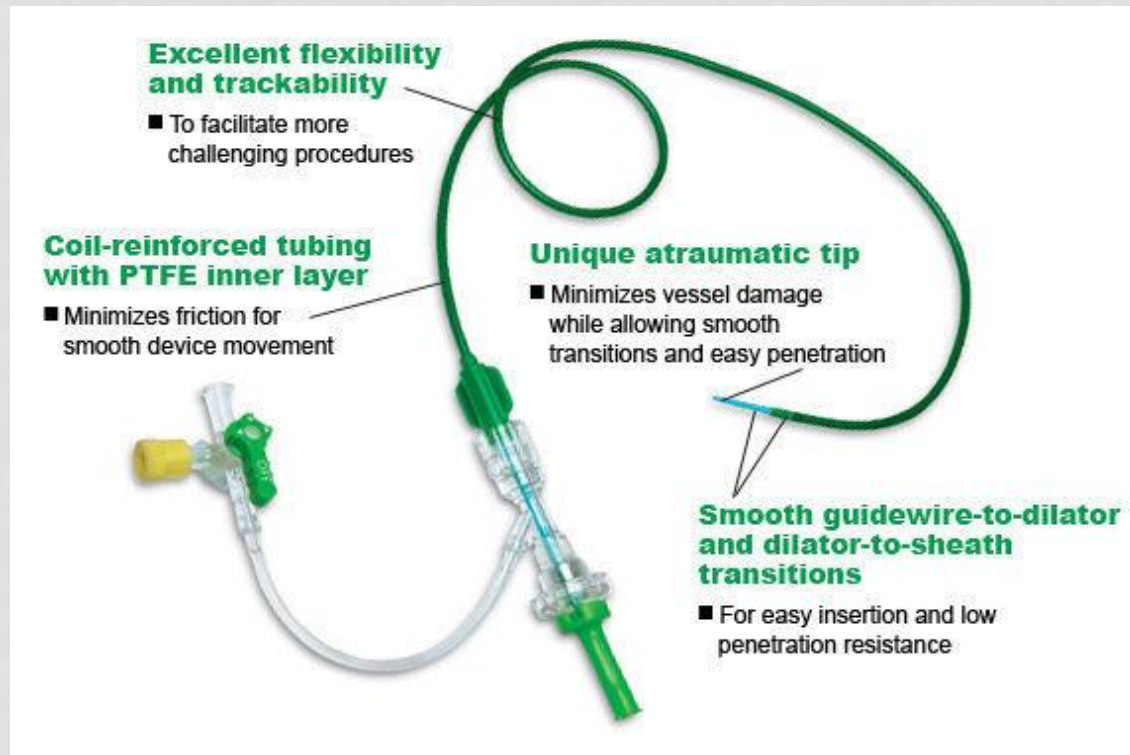


- **Clear tech, Radial**

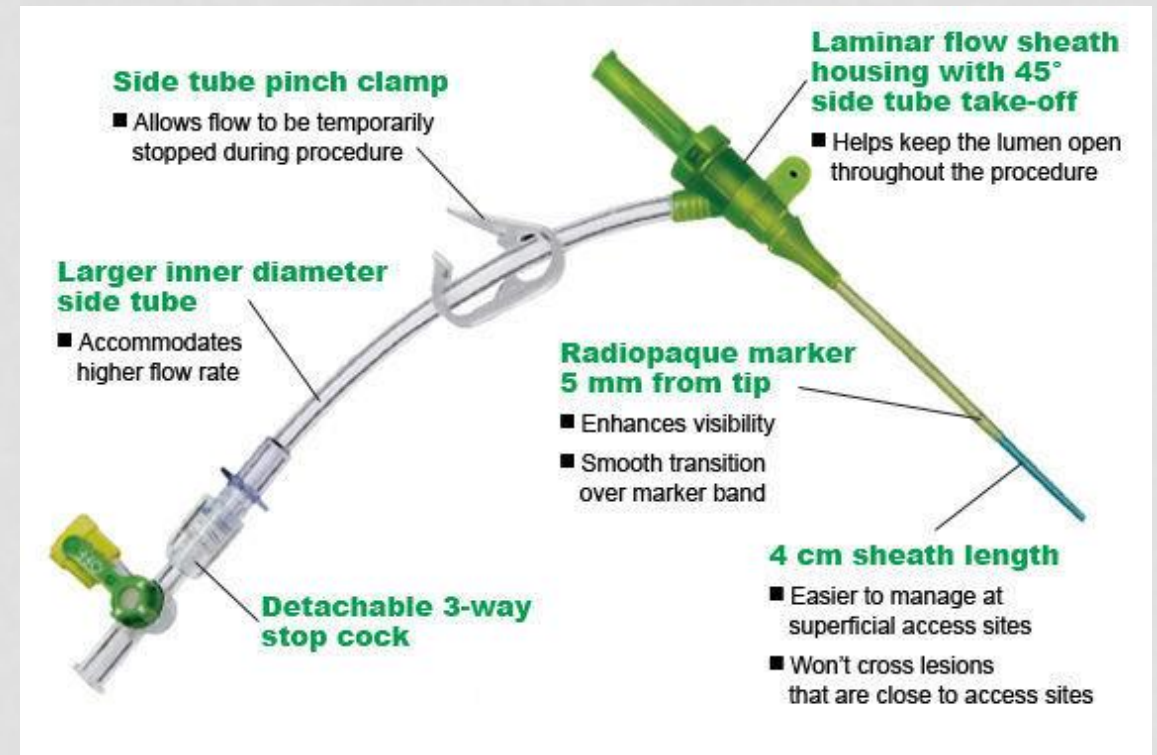


DIFFERENT USUALLY USED SHEATHS

• Pinnacle Destination , Terumo



• Pinnacle R/O, Terumo

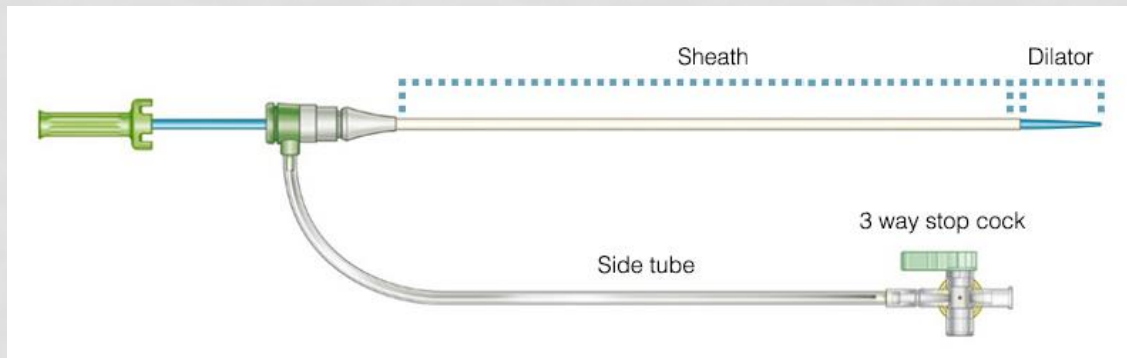


GLIDESHEATH SLENDER® - TRANSRADIAL INTRODUCER SHEATH - TERUMO

- Perform diagnostic and interventional procedures without upsizing to a larger sheath
- Provide easy radial access, especially in women with smaller radial arteries.
- Result in less penetration resistance than conventional sheaths.
- Ultra-thin wall leading to a 1 Fr reduction in outer diameter
- A smaller diameter sheath reduces the arteriotomy size, to enhance post-procedure haemostasis
- Easy insertion and removal with proprietary Terumo M Coat hydrophilic coating.
- Designed towards minimizing mechanical irritation to the artery
- This kit contains sheath, dilator, plastic or spring mini guidewire, plastic IV catheter (entry needle) or a metallic entry needle.



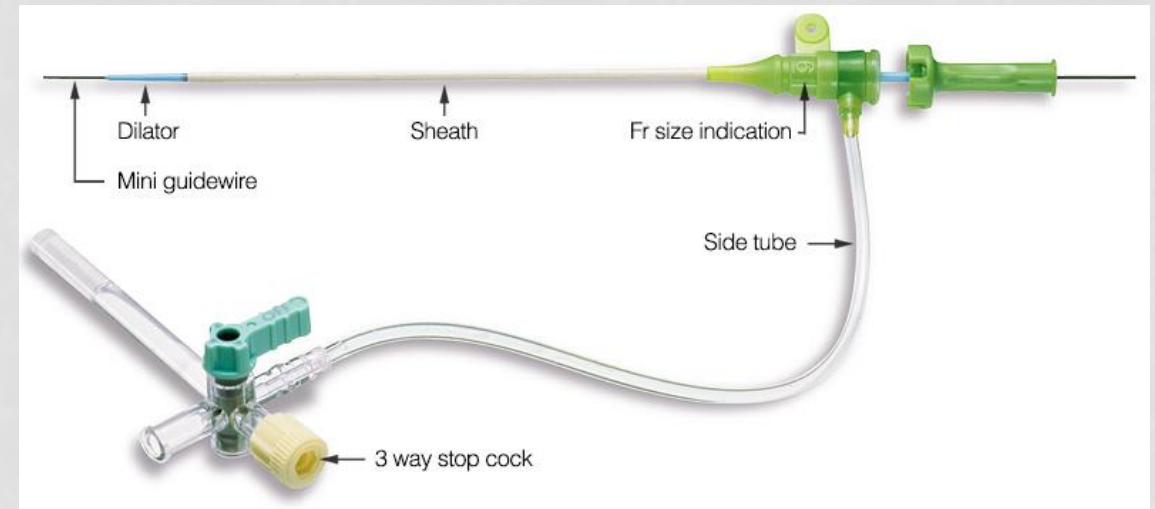
GLIDESHEATH SLENDER® - TRANSRADIAL INTRODUCER SHEATH



Entry needle		10 cm sheath length	16 cm sheath length
		Mini guidewire	Mini guidewire
Plastic IV catheter	20 G (0.9 mm) x 51 mm	Plastic 0.025" (0.64 mm) x 45 cm	Plastic 0.025" (0.64 mm) x 80 cm
	20 G (0.9 mm) x 51 mm	Spring 0.025" (0.64 mm) x 45 cm	Spring 0.025" (0.64 mm) x 80 cm
	20 G (0.9 mm) x 32 mm		Plastic short angle 0.025" (0.64 mm) x 80 cm
	22 G (0.7 mm) x 32 mm	Plastic 0.021" (0.53 mm) x 45 cm	Plastic 0.021" (0.53 mm) x 80 cm
Metallic entry needle	20 G (0.9 mm) x 35 mm	Spring 0.025" (0.64 mm) x 45 cm	Spring 0.025" (0.64 mm) x 80 cm
	21 G (0.8 mm) x 35 mm	Spring 0.021" (0.53 mm) x 45 cm	Spring 0.021" (0.53 mm) x 80 cm
	22 G (0.7 mm) x 35 mm	Spring 0.018" (0.46 mm) x 45 cm	Spring 0.021" (0.53 mm) x 80 cm

RADIFOCUS® INTRODUCER II STANDARD KIT - INTRODUCER SHEATH - TERUMO

- Total Integrated Fit (TIF) tip tapering: optimal tapering design at the tip of the sheath and dilator for smooth penetration
- Cross-cut haemostasis valve effectively avoids blood reflux and air aspiration
- Thin radiopaque sheath with anti-kinking sleeve for easy catheter handling
- Snap-on/click-off dilator lock prevents dilator back-out during insertion and allows one-hand unlocking
- Wide variety of kit variations providing all elements for quick vessel access: 4-11 Fr sheaths, 5-25 cm lengths, 45 cm angled or straight and Surfash or micro puncture metal needle



RADIFOCUS® OBTURATOR - SHEATH ACCESSORY - TERUMO

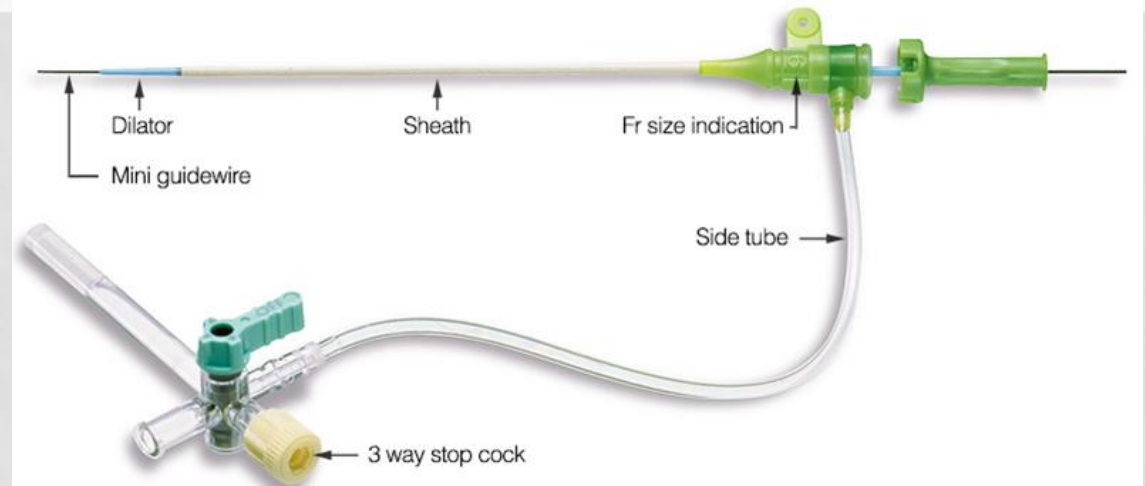
- An obturator supports the wall of the indwelling introducer sheath without a catheter in place. It is used to prevent clotting reactions inside the sheath.
- Characteristics
- Hub with connection system to the sheath's hub
- High flexibility and kink-resistance
- Made of propylene with a rounded tip
- Available : 4F to 9F sizes with 10 and 25 cm length.



RADIFOCUS® INTRODUCER II RADIOPAQUE MARKER KIT - INTRODUCER SHEATH - TERUOMO

Introducers are intended to be inserted percutaneously into a vessel to facilitate the entire interventional procedure. A platinum/iridium band incorporated into the introducer sheath shows the precise location of the distal tip for accurate positioning.

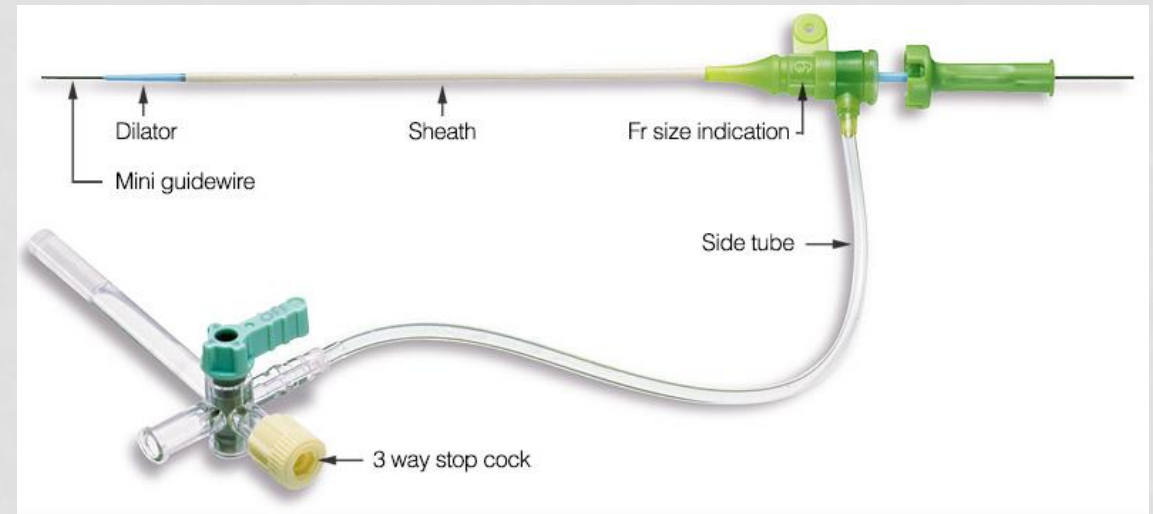
- Smooth surface over the radiopaque marker to reduce friction
- Terumo cross-cut valve maintains uncompromised haemostasis to avoid bleeding and air aspiration
- Thin radiopaque sheath with anti-kinking sleeve for easy catheter handling
- Snap-on/click-off dilator to prevent dilator back-out during insertion and allows one-hand unlocking



Sheath length and size	6 , 10,& 25 cm, 4F to 9F
Spring mini guidewire	0.035" (0.89 mm) for 4 Fr and 0.038" (0.97 mm) for all others
Guidewire compatibility	0.035" (0.89 mm) for 4 Fr and 0.038" (0.97 mm) for all others

RADIFOCUS® INTRODUCER II TRANSRADIAL KIT - INTRODUCER SHEATH - TERUMO

- Dilator is tapered to each guidewire to minimize vessel trauma
- Terumo cross-cut valve maintains uncompromised haemostasis to avoid bleeding and air aspiration
- Thin radiopaque sheath with anti-kinking sleeve: for easy catheter handling 4F to 7F.
- Snap-on/click-off dilator to prevent dilator back-out during insertion and allows one-hand unlocking
- Micro puncture metallic entry needle with short bevel (22G / 21G / 20G) equals to mini guidewire to minimize puncture site complications



Sheath length	7 cm and 10 cm
Mini guidewire	Spring Straight, 0.018" (0.46 mm), 0.021" (0.53 mm) and 0.025" (0.64 mm) 45 cm
Entry needle	Metallic entry needle - 22G x 1½ (0.7 x 38 mm), 21G x 1½ (0.8 x 38 mm), 20G x 1½ (0.9 x 38 mm)
Guidewire compatibility	0.018" (0.46 mm), 0.021" (0.53 mm) and 0.025" (0.64 mm)

Sheath length 7 cm		Sheath length 10 cm		
Compatible with guidewire				
0.018" (0.46 mm)	0.025" (0.64 mm)	0.018" (0.46 mm)	0.021" (0.53 mm)	0.025" (0.64 mm)

INPUT INTRODUCER SHEATHS FROM MEDTRONICS

- Designed for easy insertion and for patient comfort, Input® Introducer Sheaths are offered in two brands – Input TS and Input PS.
- Sit-Up Capability: Kink-resistant system provides 60 degree sit-up comfort for patients with an obturator in place.
- Locking Hub: Threaded dilator-to-hub interlock prevents dilator back out during insertion, and secure attachment of the sterile sleeve.
- Enhanced Tip Geometry: Advanced radiofrequency shaping technology creates a long, continuously smooth taper, for minimum resistance during insertions.
- Large Internal Geometry: Input TS's exceptionally large internal geometries facilitate hemodynamic monitoring and fluid administration.



Input Introducer Sheaths		
	Input TS	Input PS
Sheath Material	FEP	Pebax
Coating	Silicone	HydroPel
Sheath Length (cm)	7, 11, 23	11, 23
Fr Sizes	5, 6, 7, 8, 9, 10, 11	5, 6, 7, 8, 9

ACCUSTICK™ INTRODUCER SYSTEM WITH RO MARKER - BOSTON SCIENTIFIC



- A radiopaque marker positioned at the tip of the sheath enhances visualization for more precise placement.
- The large sheath end hole I.D. facilitates placement of the .038" working guidewire alongside the .018" safety guidewire.
- The 21 Gauge diagnostic needle is designed to help reduce tissue trauma.
- Option of a .018" kink-resistant nitinol guidewire is designed to provide strength during tough procedures. The coaxial dilator/sheath assembly with locking stiffening cannula is designed for over-the-wire placement.
- The .038" heavy-duty guidewire in a choice of "J" tip or straight tip provides excellent performance as a working wire.
- The dilator/sheath assembly proximal taper is designed to ease introduction and placement.
- The dilator reference mark facilitates alignment of sheath and dilator tips for more accurate wire placement.

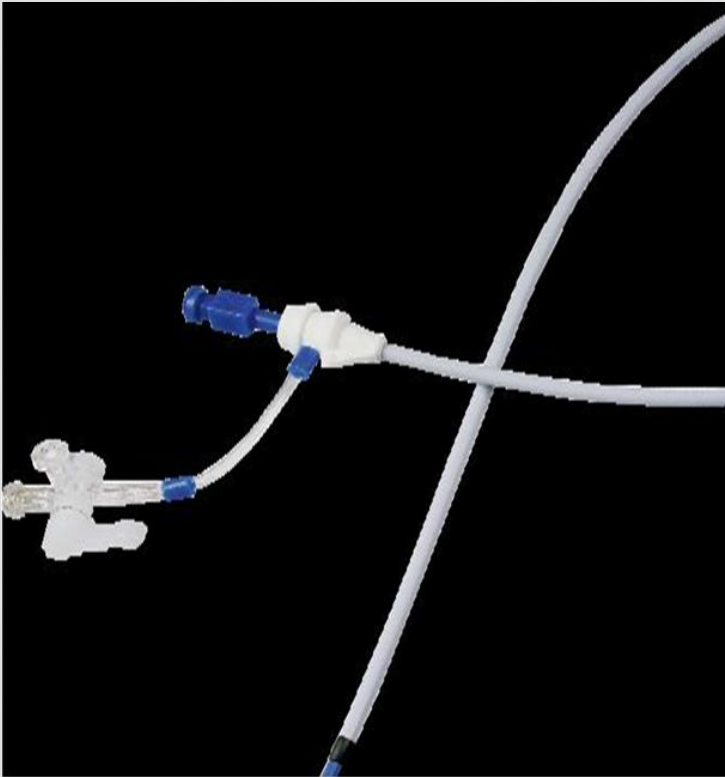
CORDIS AVANTI[®]+ SHEATH INTRODUCER IN TRANSRADIAL KIT



French size	Cannula Usable Length (cm)	Vessel Dilator	Mini-Guidewire length (cm)	Mini-Guidewire Diameter (inch)	Needle
4F	11	18	45	.021	21G (38mm)
4F	23	30	70	.021	21G (38mm)
5F	11	18	45	.021	21G (38mm)
5F	23	30	70	.021	21G (38mm)
6F	11	19.5	45	.021	21G (38mm)
6F	23	31.5	70	.021	21G (38mm)
7F	11	19.5	45	.021	21G (38mm)

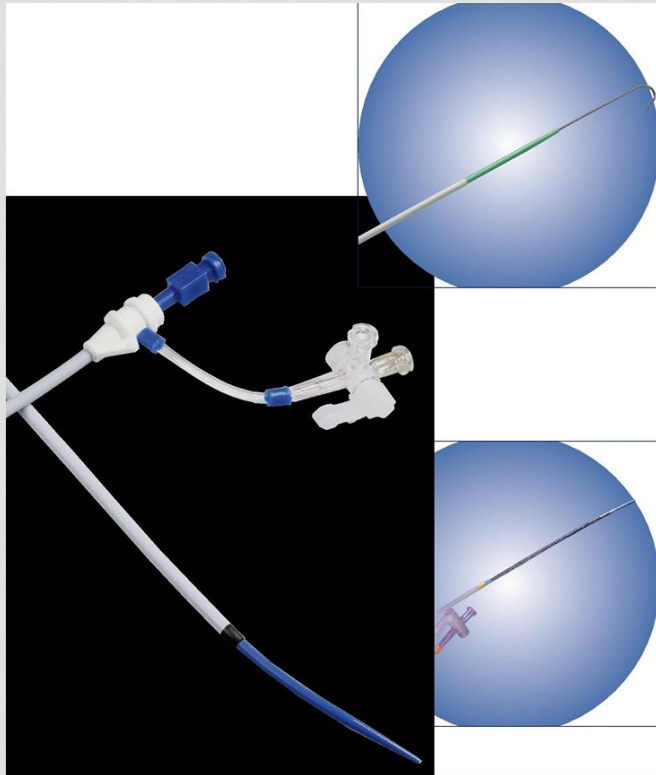
CORDIS BRITE TIP[®] SHEATH INTRODUCERS

AVAILABLE IN 5.5, 11, 23, 35, 45, 55 AND 90
CM.



Cannula Length		
French size	Colour code	Dilator Tip (mm)
4	■	25
5	■	25
6	■	35
7	■	35
8	■	35
9	■	35
10	■	45
11	■	45

CORDIS BRITE TIP[®] SHEATH CONT...



Manicured tip and dilator design

Tapered transitions on sheath and dilator

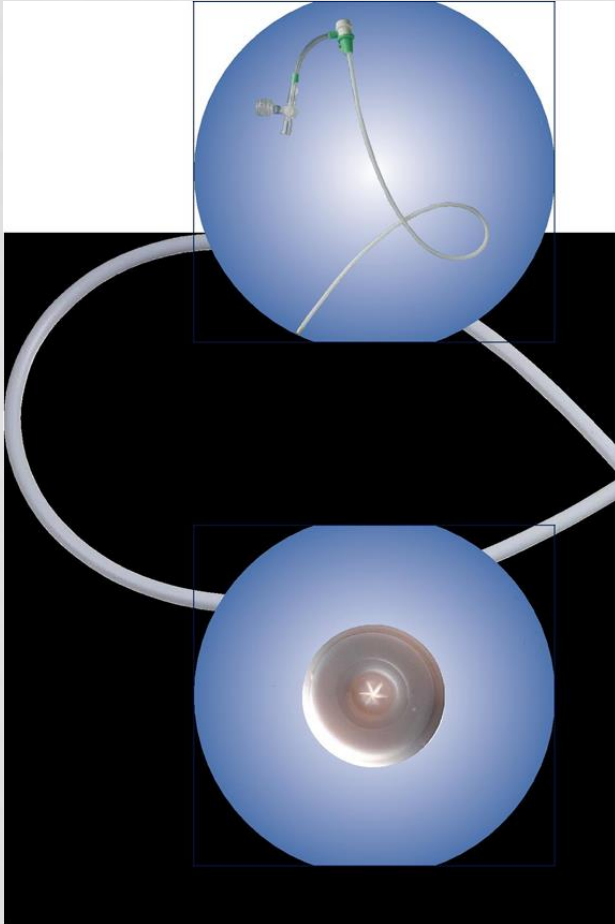
- Effortless vessel entry
- Improved patient comfort
- Reduced groin complications, even when penetrating scar tissue

Radiopaque Brite Tip[®]

Black tungsten-filled distal tip

Excellent visualization facilitates exact location of sheath's distal tip for accurate interventional positioning

CORDIS BRITE TIP[®] SHEATH CONT...



Kink resistant cannula

Unique dual layer cannula

Flexibility and support to access tortuous vessels

Thicker cannula wall

Better kink resistance

Silicone coated cannula and vessel dilator

Lubricious, anti-thrombogenic vessel entry

Patented SLIX valve

Six-cut spiral design for hemostatic valve

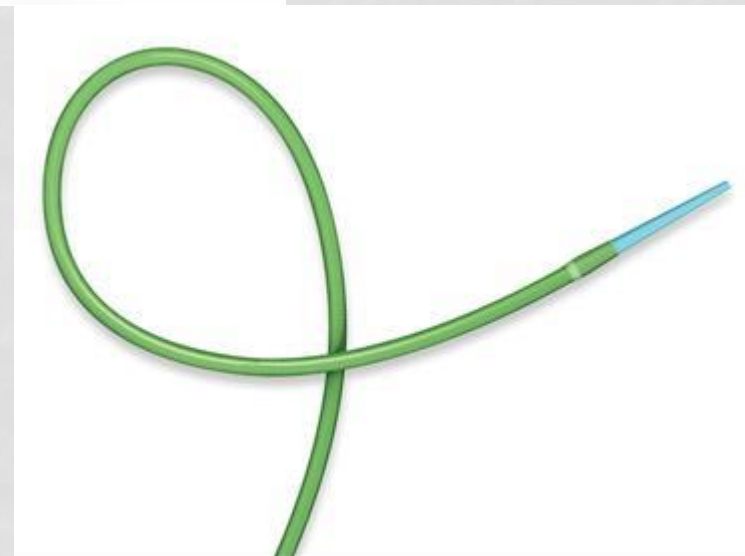
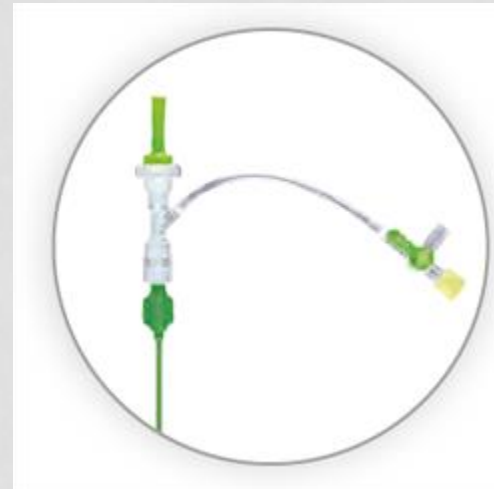
Free catheter movement without blood reflux or air aspiration

DESTINATION® - PERIPHERAL GUIDING SHEATH

- Destination Guiding Sheath is designed to perform as a guiding catheter and an introducer sheath.

Destination is designed to be used for the introduction of interventional and diagnostic devices into the human vasculature, including but not limited to the lower extremities, renal arteries, and carotid arteries.

- Large lumen with good trackability, flexibility and kink resistance
- Coil-reinforced tubing with PTFE inner liner minimizes friction and helps the device pass through smoothly
- Tapered tip featuring a dedicated design for smooth transition and atraumatic insertion

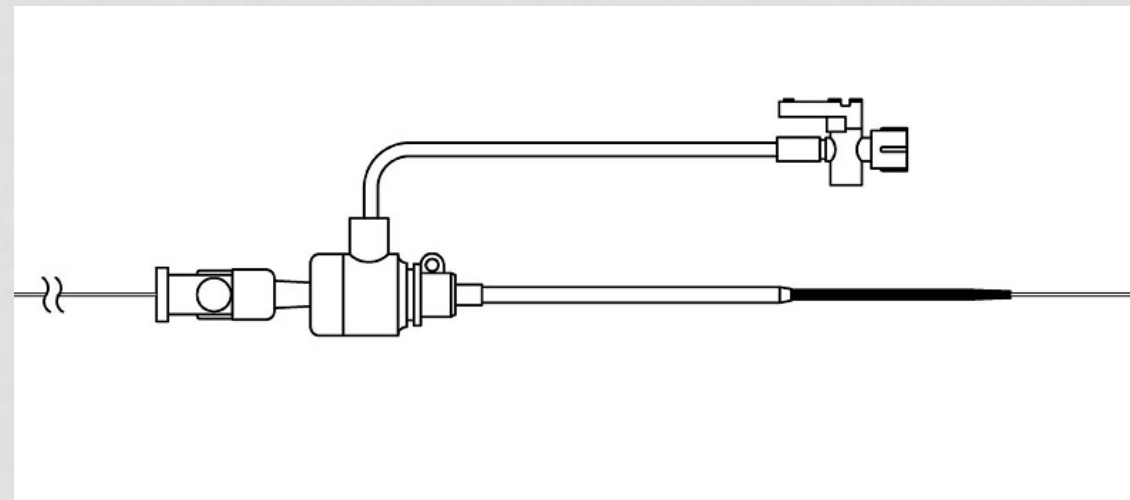


DESTINATION® - PERIPHERAL GUIDING SHEATH - TERUMO

		Inner diameter	Length	Shape	Valve	Hydrophilic coating length					
Maximum guidewire size	0.038" / 0.97 mm	5 Fr / 0.076" / 1.9 mm	45 cm	Straight	CCV*	5 cm	6 Fr / 0.087" / 2.2 mm	45 cm	Straight	CCV	5 cm
Radiopaque marker	Gold coil marker at 5 mm from the distal tip of the sheath	5 Fr / 0.076" / 1.9 mm	45 cm	Hockey stick	CCV	5 cm	6 Fr / 0.087" / 2.2 mm	45 cm	Hockey stick	CCV	5 cm
Reinforcement inside the sheath	Stainless steel coil	5 Fr / 0.076" / 1.9 mm	45 cm	Multipurpose	CCV	5 cm	6 Fr / 0.087" / 2.2 mm	45 cm	Multipurpose	CCV	5 cm
Sheath inner layer	PTFE polytetrafluoroethylene	5 Fr / 0.076" / 1.9 mm	45 cm	RDC	CCV	5 cm	6 Fr / 0.087" / 2.2 mm	45 cm	RDC	CCV	5 cm
		5 Fr / 0.076" / 1.9 mm	45 cm	LIMA	CCV	5 cm	6 Fr / 0.087" / 2.2 mm	45 cm	LIMA	CCV	5 cm

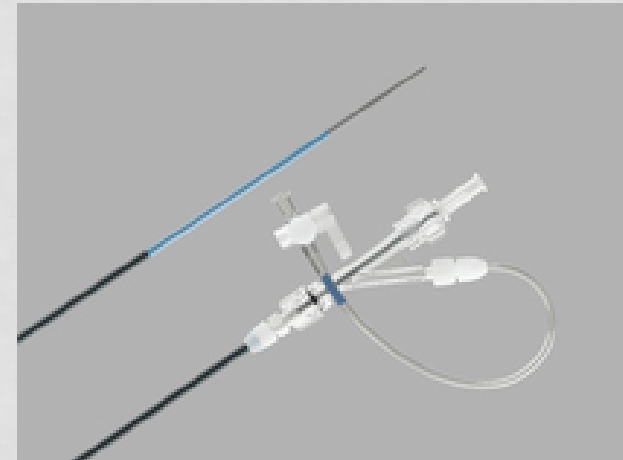
FAST-CATH™ HEMOSTASIS INTRODUCER 5 CM WYSHAM SHEATH WITH GUIDEWIRE - ST JUDE

- Designed for brachial artery introduction
- Shorter sheath is designed to reduce the risk of impairing the ulnar collateral arteries
- Close tolerance extrusion and proprietary tipping process provide for excellent tracking on a guidewire
- Convenient suture rings to secure sheath during catheter manipulation or during prolonged vascular access
- Haemostasis valve preserves catheter handling characteristics while minimizing backbleeding and air aspiration
- Snap lock feature secures dilator in sheath during insertion
- Contents: Introducer Sheath with Haemostasis Valve, Side port, Dilator, and 50 cm.
- Double Distal Guidewire with “J” and Straight Tips
- Available in 5F,6F and 7F with sheath length of 5 cm.



FLEXOR® SHUTTLE® GUIDING SHEATH

- Used to introduce balloons, closed and non-tapered end catheters or other diagnostic and interventional devices.
- Flexor Shuttle-SL – a Component of the Shuttle Tibial Infrapopliteal Access System
- Flexor Shuttle Guiding Sheath
- Flexor Shuttle Select® – a Component of the Shuttle Select Carotid Access System



FLEXOR SHEATHS - COOK MEDICAL

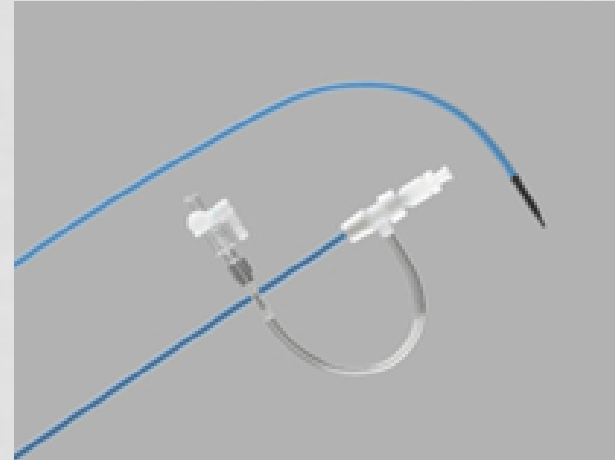
- Where access is difficult, Flexor adapts.
- Kink resistant
- Low friction
- Greater visibility
- Enhanced trackability
- Multiple valve configurations available
- Diameter selection – 4F to 12F.
- Carotid access tool – shuttle select system – Slip-Cath catheter – stiffened proximal shaft, unique transition zone and soft distal tip. Available in selective catheter configurations – JB1&2, VTK, H1, SIM2
- Flexor for iliac and SFA – Flexor Ansel – gentle curves, soft tip and hydrophobic coating,
- Flexor Raabe – straight shaft that can be cold formed
- Flexor Balkin – has 180 degree curve – anchors bifurcation to stabilize the contralateral access

FLEXOR SHEATHS

- Infrapopliteal
- Flexor technology
- Soft tip
- Radiopaque band
- AQ hydrophobic coating
- Initial contralateral access –
6 and 7F flexor sheath
- Shuttle tibial sheath – 4 or 5F
- Renal
- Supplies both .018" and
.038" compatible dilators
- Multiple curves
- Multipurpose access

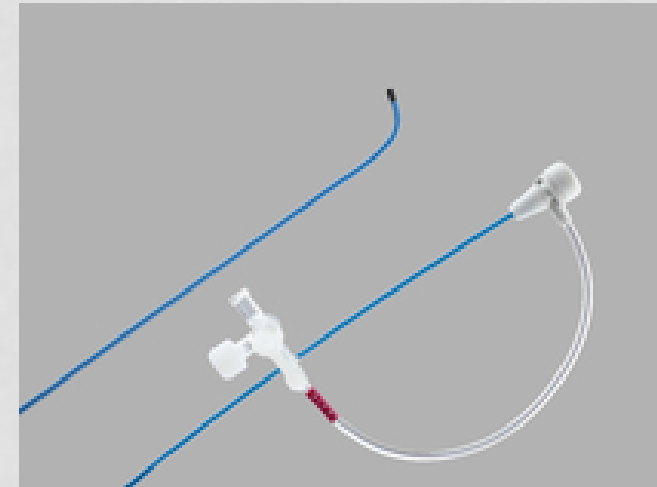
PERFORMER™ GUIDING SHEATH - COOK MEDICAL

- Used to introduce balloons, closed and non-tapered end catheters or other diagnostic and interventional devices.
- Mullins Design



PERFORMER™ GUIDING SHEATH

- Children's Hospital of Boston Design
- Balkin Design
- Myocardial Biopsy Design
- Hausdorf-Lock Atrial Design
- Abraham Design



SUPER SHEATH™ - INTRODUCER SHEATH BOSTON SCIENTIFIC

Smooth Transitions

- Smooth transitions facilitate ease of entry with lower insertion force*
- Improved kink resistance and lubricity enhance pushability while maintaining device integrity**
- Long, gradually tapered tip reduces potential for vessel trauma

Excellent Catheter Passage

- Silicone-coated valve and smooth inner surface promote device passage
- Tricuspid valve design promotes hemostasis

Ease of Use

- Innovative dilator/hub twist-lock for safety and security during insertion
- Translucent hub allows visibility
- Rotating suture wing allows for sheath securement

Device Highlights

- Sheaths are available in 7cm, 11cm and 25cm lengths with French sizes ranging from 4-9F. All sheaths are sold with dilators.
- Dilator lengths are 17cm (11cm sheath) and 31cm (25cm sheath).
- 11cm sheaths may be purchased with or without mini guide wires. Mini guide wire diameters are 0.035 inch (4-9F) and 0.038 inch (5-9F).



TRIFORCE PERIPHERAL CROSSING SET - COOK MEDICAL

- Enhanced crossing ability
- Tungsten loaded tip aids pushability and radiopacity
- Hydrophilic coated – enhances trackability
- Tapered transition The 5 Fr sheath tapers to a 4 Fr catheter that hugs a .035 inch diameter wire guide for an uninterrupted transition
- TriForce Peripheral Crossing Set includes an outer 5.0 Fr Flexor® sheath, a 4.0 Fr CXI® Support Catheter, and a Peel-Away® sheath.
- Flexor outer sheath tapers to a 4.0 Fr inner diameter at the tip to ensure a smooth transition to the CXI Support Catheter.
- Flexor outer sheath features radiopaque tip and hydrophilic coating.
- Accepts a .035 inch diameter wire guide.
- The infusion dynamic pressure of the CXI Support Catheter should not exceed 1,200 psi (82.7 bar). The static pressure should not exceed 700 psi (48.3 bar).

THANK YOU