

# Taller Guías CTO y Microcatéteres

Luis Teruel

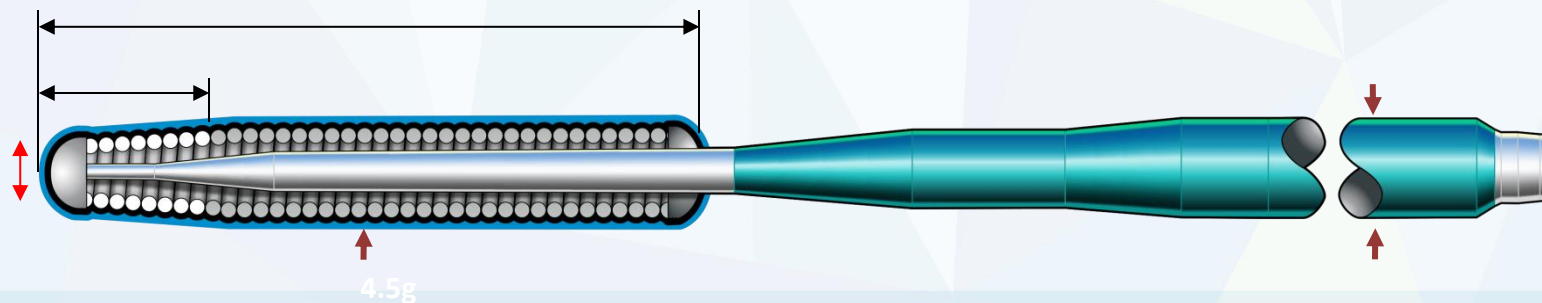
Hospital Universitario de Bellvitge

## COMPOSICIÓN

- Composición del cuerpo
- Rigidez de su punta
- Afiladas o no
- Cubierta polimérica o no
- Recubrimiento hidrofílico o no

## CARACTERÍSTICAS

- Torque y soporte
- Penetración
- Navegación
- Sensación táctil



# Guías muy blandas

Guía	Fabricante	Diámetro	Rigidez punta (g)	Tipo cubierta	Tipo recubrimiento
<b>Suoh 3</b>	Asahi Intecc	0.014''	0.3	Coils (doble)	Hidrofílico
<b>Fielder XT-R</b>	<i>Asahi Intecc</i>	0.014''/0.010''	0.6	Coils (doble)	Hidrofílico

# Guías blandas (No afiladas)

Guía	Fabricante	Diámetro	Rigidez punta (g)	Tipo cubierta	Tipo recubrimiento
<b>Sion</b>	<i>Asahi Intecc</i>	<i>0.014"</i>	<i>0.7</i>	<i>Coils (doble)</i>	<i>Hidrofílico</i>
<b>Samurai RC</b>	<i>Boston Scientific</i>	<i>0.014"</i>	<i>1.2</i>	<i>Coils (doble)</i>	<i>Hidrofílico</i>
<b>Turntrac</b>	<i>Abbott Vascular</i>	<i>0.014"</i>	<i>0.6 / 0.8</i>	<i>Coils</i>	<i>Hidrofílico / No</i>
<b>Runthrough NS Hypercoat</b>	<i>Terumo</i>	<i>0.014"</i>	<i>1</i>	<i>Coils</i>	<i>Hidrofílico</i>

# Guías blandas (Afiladas)

Guía	Fabricante	Diámetro	Rigidez punta (g)	Tipo cubierta	Tipo recubrimiento
<b>Fielder XT-A</b>	Asahi Intecc	0.014''/0.010''	1	Polimérica	Hidrofílico
<b>Fighter</b>	<i>Boston Scientific</i>	0.014''/0.009''	1.5	Polimérica	Hidrofílico
<b>Bandit</b>	<i>Teleflex</i>	0.014''/0.008''	0,8	Polimérica	Hidrofílico

# Guías de rigidez intermedia (No afiladas)

Guía	Fabricante	Diámetro	Rigidez punta (g)	Tipo cubierta	Tipo recubrimiento
Miracle	Asahi Intecc	0.014"	3, 4.5, 6, 12	Coils	No hidrofílico
UltimateBros 3	Asahi Intecc	0.014"	3	Coils	Hidrofílico
Progress 80	Abbott Vascular	0.014"	9.7	Polimérica (exc. punta)	Hidrofílico (exc. punta)
Pilot 200	Abbott Vascular	0.014"	6	Polimérica	Hidrofílico
Gladius EX / MG	Asahi Intecc	0.014"	3	Polimérica (doble coil)	Hidrofílico
Raider	Teleflex	0.014"	4	Polimérica	Hidrofílico

# Guías de rigidez intermedia (Afiladas)

Guía	Fabricante	Diámetro	Rigidez punta (g)	Tipo cubierta	Tipo recubrimiento
<i>Gaia Second</i>	<i>Asahi Intecc</i>	<i>0.014"/0.011"</i>	<i>3.5</i>	<i>Coils (doble)</i>	<i>Hidrofílico</i>
<i>Gaia Third</i>	<i>Asahi Intecc</i>	<i>0.014"/0.012"</i>	<i>4.5</i>	<i>Coils (doble)</i>	<i>Hidrofílico</i>
<i>Judo 3</i>	<i>Boston Scientific</i>	<i>0.014"/0.008"</i>	<i>3</i>	<i>Coils</i>	<i>Hidrofílico</i>
<i>Judo 6</i>	<i>Boston Scientific</i>	<i>0.014"/0.008"</i>	<i>6</i>	<i>Coils</i>	<i>Hidrofílico</i>
<i>Infiltrac 11</i>	<i>Abbott Vascular</i>	<i>0.014"/0.009"</i>	<i>11</i>	<i>Coils</i>	<i>Hidrofílico (exc punta)</i>





## ASAHI Gaia Next®

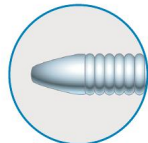
PTCA GUIDE WIRE

### NEW EVOLUTION IN CTO PCI



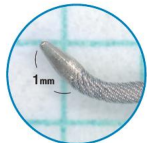
#### ACT ONE®

By introducing ACT ONE, ASAHI Gaia Next brings tip durability, flexibility and torque response to a new level



#### Micro-cone Tip

Fine tip for easy engagement with the lesion while maintaining tip flexibility



#### 1mm Pre-shape

Pre-shaping during production designed for navigation and precise control



#### XTRAND Coil

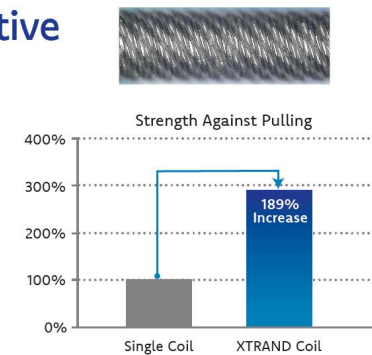
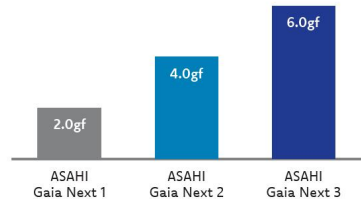
Evolution of spring coil for increased anti-trapping power and improved maneuverability inside complex lesions



## XTRAND Coil – innovative ASAHI® technology

XTRAND Coil is a hollow outer coil made from several ropes of wire designed for:

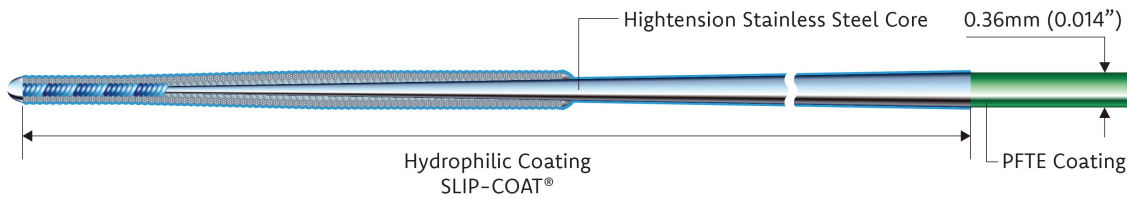
- Flexibility for better maneuverability inside severe and complex lesions
- Significantly higher tensile strength than conventional coils made using a single wire
- Mitigation of coil stretching and damage to improve overall safety



\*All the data were obtained by company standardized test, which may differ from industry standardized tests.  
\*All the data do not guarantee that all devices have exactly the same performance with the samples used for tests.



## STRUCTURE AND ORDERING INFORMATION



ORDERING INFO									
PRODUCT	CATALOG NO.	DIAMETER	COATING	USABLE LENGTH	COIL LENGTH	RADIOPAQUE LENGTH	TIP SHAPE	LABEL COLOR	CLIP COLOR
	AH14R019P	0.36/0.27 mm (0.014/0.011 inch)	Hydrophilic Coating (SLIP-COAT®) 40cm	190cm	15cm	15cm	1mm Pre-shape	Grey	
	AH14R020P	0.36/0.30 mm (0.014/0.012 inch)	Hydrophilic Coating (SLIP-COAT®) 40cm	190cm	15cm	15cm	1mm Pre-shape	Blue	
	AH14R021P	0.36/0.30 mm (0.014/0.012 inch)	Hydrophilic Coating (SLIP-COAT®) 40cm	190cm	15cm	15cm	1mm Pre-shape	Dark Blue	

# Guías de máxima rigidez (Afiladas)

Guía	Fabricante	Diámetro	Rigidez punta (g)	Tipo cubierta	Tipo recubrimiento
HT Progress 200T	Abbott Vascular	0.014"/0.009"	13.5	Polimérica (exc. punta)	Hidrofílico (exc. punta)
Confianza Pro 12	Asahi Intecc	0.014"/0.009"	12	Coils	Hidrofílico (exc. punta)
Infiltrac 14	Abbott Vascular	0.014"/0.009"	14	Coils	Hidrofílico (exc. punta)
Hornet 14	Boston Scientific	0.014"/0.008"	14	Coils	Hidrofílico
Warrior	Teleflex	0.014"/0.009"	14	Coils	Hidrofílico

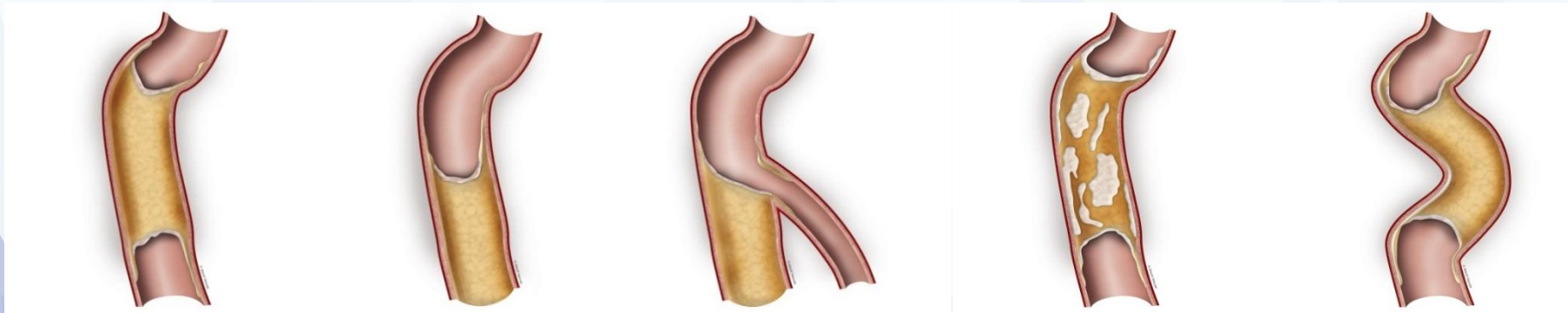
# Guías largas de externalización

Guía	Fabricante	Diámetro	Rigidez punta (g)	Tipo cubierta	Tipo recubrimiento	Longitud (cm)
<b>RG3</b>	Asahi Intecc	0.010''	3	Coils	Hidrofílico	330
<b>R350</b>	<i>Teleflex</i>	0.013''	3	Coils	Hidrofílico	350

# Guías específicas de CTO según función

- Wiring:

- Sliding  
Sion, Fielder XTA, Fighter, Bandit
- Drilling  
Progress 80, Ultimate Bross 3
- Penetrating  
Progress 200, Confianza, Infiltrac, Hornet, Warrior
- Torque y deflection  
Gaia 2,3, Judo 3,6
- Knuckel  
Pilot 200, Gladius EX / MG, Raider



# Guías específicas de CTO según función

- CTO funcional o microcanal evidente:
  - Guías blandas, no conificadas, de altas prestaciones: Sion, Turntrac, Samurai RC o Runthrough NS Hypercoat. (Sliding)
- CTO muñón afilado o microcanal posible:
  - Guías blandas, afiladas y poliméricas: Fielder XT-A, Fighter o Bandit. (Sliding).
  - En caso de no conseguir atravesar la CTO: aumentaremos la rigidez de la guía (escalada de guías anterógrada): Gaia Second (Gaia Third / Confianza Pro 12 / Hornet 14). Utilidad de las guías poliméricas Gladius y Raider.



# Guías específicas de CTO según función

- CTO con muñón romo:
  - Guías de rigidez intermedia no afiladas como la Ultimatebros y Progress 80. (Drilling)
  - Guías afiladas como la Gaia Second o Judo 6. (trayecto definido) (Torque y deflection + drilling)
  - Escalada de guías anterógrada: Gaia Third o a las guías de máxima rigidez como HT Progress 200T, Confianza Pro 12, Infiltrac 14, Hornet 14 o Warrior.
  - Técnica de guías paralelas.
- CTOs con muñón ausente: IVUS. Guía de máxima rigidez.
- Knuckel anterógrado y retrógrado: Guías poliméricas Gladius EX / MG y Raider.

# Guías para Acceso Retrógrado

FUNCIÓN	GUÍA	FABRICANTE	DIÁMETRO	RIGIDEZ PUNTA (g)	TIPO DE CUBIERTA	TIPO DE RECUBRIMIENTO
<b>PASO COLATERAL</b>						
	Sion	Asahi Intecc	0.014''	0.7	Coils	Hidrofilico
	Fielder XTR	Asahi Intecc	0.014''/0.010''	0.6	Coils	Hidrofilico
	SUHO 3	Asahi Intecc	0.014''	0.3	Coils	Hidrofilico
<b>CRUCE RETRÓGRADO DE LA CTO</b>						
<b>- Rigidez intermedia</b>	UltimateBros 3	Asahi Intecc	0.014''	3	Coils	Hidrofilico
	Progress 80	Abbott Vascular	0.014''	9.7	Polimérica*	Hidrofilico
<b>- Step up</b>	Gaia Second	Asahi Intecc	0.014''/0.011''	3.5	Coils	Hidrofilico
	Gaia Third	Asahi Intecc	0.014''/0.012''	4.5	Coils	Hidrofilico
	Hornet 14	Boston Scientific	0.014''/0.008''	14	Coils	Hidrofilico
<b>- Step down</b>	Warrior	Teleflex	0.014''/0.009''	14	Coils	Hidrofilico
	Fielder XTA	Asahi Intecc	0.014''/0.010''	1	Polimérica	Hidrofilico
	Fighter	Boston Scientific	0.014''/0.009''	1.5	Polimérica	Hidrofilico
	Bandit	Teleflex	0.014''/0.008''	0,8	Polimérica	Hidrofilico
<b>EXTERNALIZACIÓN</b>						
	RG3	Asahi Intecc	0.010''	3	Coils	Hidrofilico
	R350	Teleflex	0.013''	3	Coils	Hidrofilico
<b>KNUCKEL</b>						
	Pilot 200	Abbott Vascular	0.014''	6	Polimérica	Hidrofilico
	Gladius EX	Asahi Intecc	0.014''	3	Polimérica	Hidrofilico
	Raider	Teleflex	0.014''	4	Polimérica	Hidrofilico

# Microcatéteres

# Microcatéteres de bajo perfil

MICROCATÉTER	FABRICANTE	DIÁMETRO EXTERNO			LONGITUD (cm)
		PUNTA	CUERPO DISTAL	CUERPO PROXIMAL	
FINECROSS	Terumo Corp	1.8Fr / 0.60mm	1.8Fr / 0.60mm	2.6Fr / 0.87mm	130 / 150
NAVITIAN	iVascular	1.8Fr/0.61mm	1.8Fr/0.61mm	2.5Fr / 0.84mm	135 / 150
CARAVEL	Asahi Intecc	1.4Fr / 0.48mm	1.9Fr / 0.62mm	2.6Fr / 0.85mm	135 / 150
ELONG 1.9	APT / Izasa / Palex	1.9 Fr / 0.63mm	1.9 Fr / 0.63mm	2.4 Fr / 0.80mm	130 / 150 /170

# Finecross M3

Finely Tapered Tip  
for high trackability<sup>1</sup>

Strong Tip Design  
for better wire manipulation<sup>1</sup>

Large Tip Inner Lumen  
for better selective  
injections and wiring ability<sup>1</sup>



Novel Hydrophilic Coating  
for improved advancement  
in tight vessels  
and lesion crossing<sup>1</sup>

Enhanced Distal Flexibility  
for smoother navigation in tortuous anatomy<sup>1</sup>

**Shaft Braiding**  
Stainless Steel

**Shaft Coating**  
Hydrophilic Coating

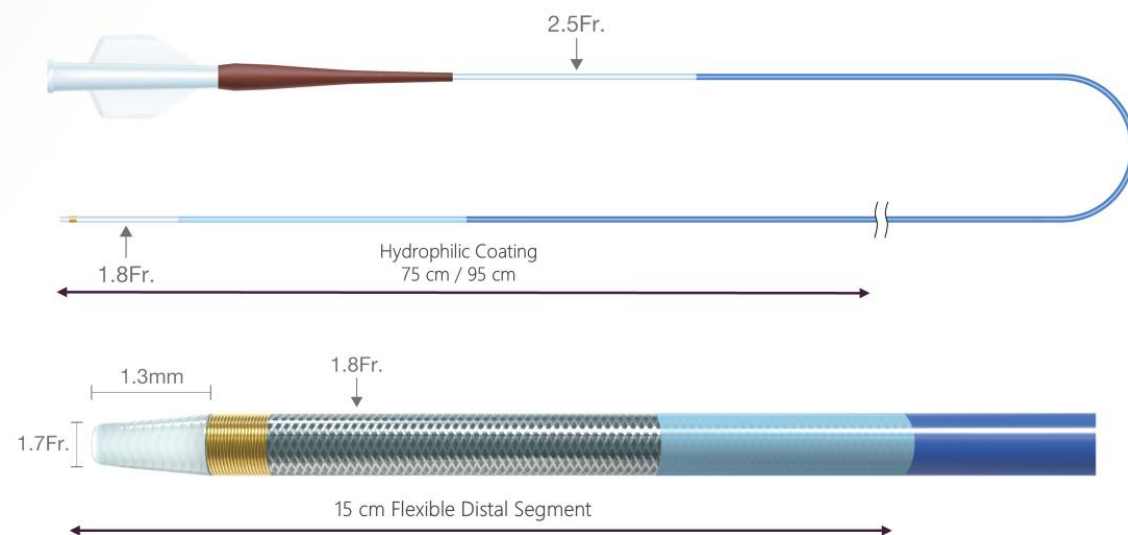
**Inner Layer**  
PTFE

**Tip Inner Diameter**  
0.018" / 0.45 mm

**GW Compatibility**  
0.014" / 0.36 mm

**Usable Length**  
130 and 150 cm

**Radiopaque Marker**  
0.7 mm gold marker  
at 1.3 mm from tip





# Microcatéteres de perfil intermedio

MICROCATÉTER	FABRICANTE	DIÁMETRO EXTERNO			LONGITUD (cm)
		PUNTA	CUERPO DISTAL	CUERPO PROXIMAL	
TELEPORT CONTROL	OrbusNeich	1.5Fr / 0.50mm	2.1Fr / 0.70mm	2.7Fr / 0.90mm	135 / 150
CORSAIR PRO XS	Asahi Intecc	1.3Fr / 0.44mm	2.1Fr / 0.71mm	2.9Fr / 0.95mm	135 / 150
MAMBA FLEX	Boston Scientific	1.4Fr / 0.46mm	2.1Fr / 0.71mm	2.9Fr / 0.97mm	135 / 150
TURNPIKE LP	Teleflex / Vascular Solutions	1.6Fr / 0.53mm	2.2Fr / 0.74mm	2.9Fr / 0.97mm	135 / 150

# Microcatéteres de alto perfil

MICROCATÉTER	FABRICANTE	DIÁMETRO EXTERNO			LONGITUD (cm)
		PUNTA	CUERPO DISTAL	CUERPO PROXIMAL	
ELONG 2.6	APT / Izasa / Palex		2.6Fr / 0.87mm	2.8Fr / 0.93mm	130 / 150 /170
TURNPIKE	Teleflex / Vascular Solutions	1.6Fr / 0.53mm	2.6Fr / 0.86mm	3.1Fr / 1.02mm	135 / 150
CORSAIR PRO	Asahi Intecc	1.3Fr / 0.42mm	2.6Fr / 0.87mm	2.8Fr / 0.93mm	135 / 150



Teleport  
Microcatheter



MAMBA Flex 150  
Retrograde

Corsair  
Pro XS



Turnpike LP  
catheter



ASAHI  
Corsair  
Microcatheter

Turnpike  
catheter



Lower Profile  
Better Navigation  
Better Flexibility  
Better Conformability  
Lower Crossability  
No Rotation Capability  
Lower Tip visibility  
Compatibility 6F  
Antegrade  
Epicardial collateral

Higher Profile  
Worse Navigation  
Worse Flexibility  
Worse Conformability  
Greater Crossability  
Rotation Capability  
Greater Tip visibility  
Compatibility 7F  
Retrograde  
Septal collateral

# Dilatadores de canal

**Tornus**



[Tornus (2.1Fr)]



[Tornus 88Flex (2.6Fr)]



**Turnpike Spiral**  
catheter



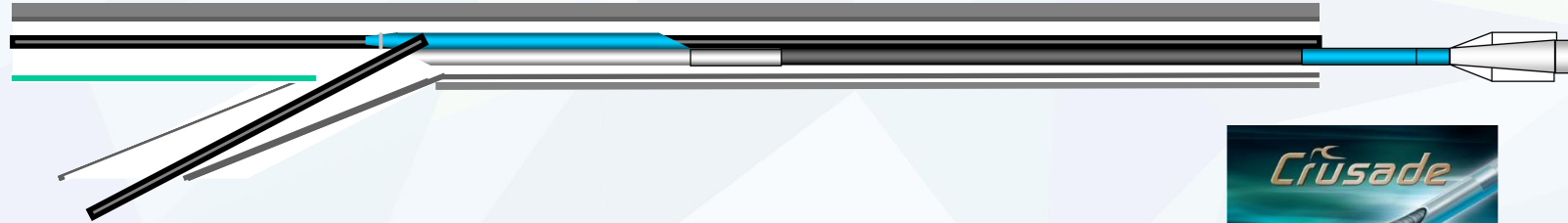
**Turnpike Gold**  
catheter



**Teleflex**

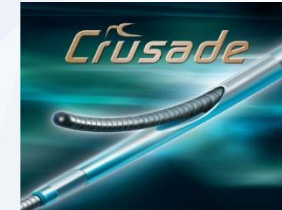


# Microcatéteres de doble luz



## Utilidades

1. Bifurcaciones (rama lateral). Side branch technique. Hairpin wiring
2. Técnica de guías paralelas
3. Reentrada (ADR) basada en guías
4. Selección collateral muy angulada
5. Recruzar a rama lateral a través del stent
6. Como microcatéter (OTW lumen)
7. Infusión de drogas (OTW lumen)
8. Intercambio de guías
9. Inyección de contraste



**Twin-Pass**  
dual access catheters

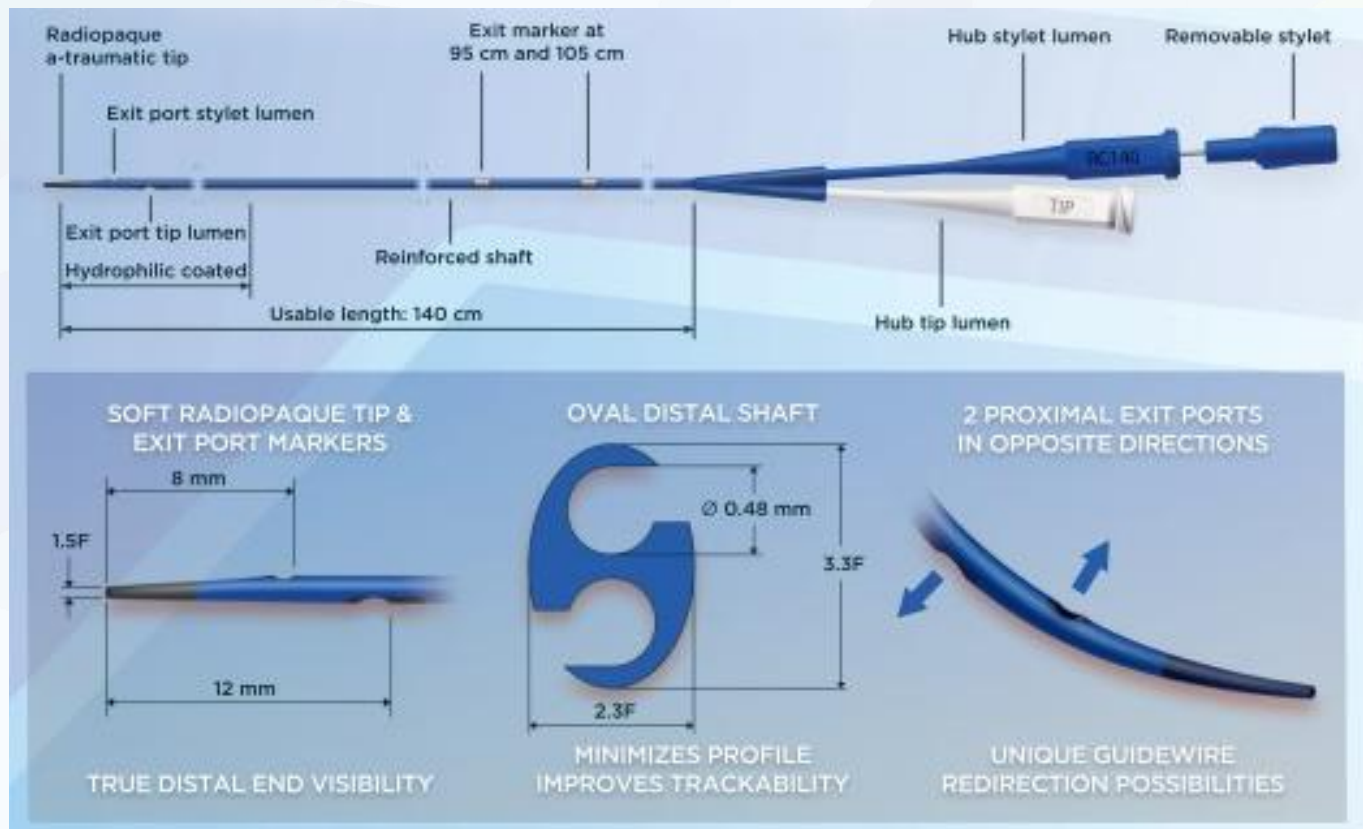
**FineDuo®**

**ASAHI SASUKE**

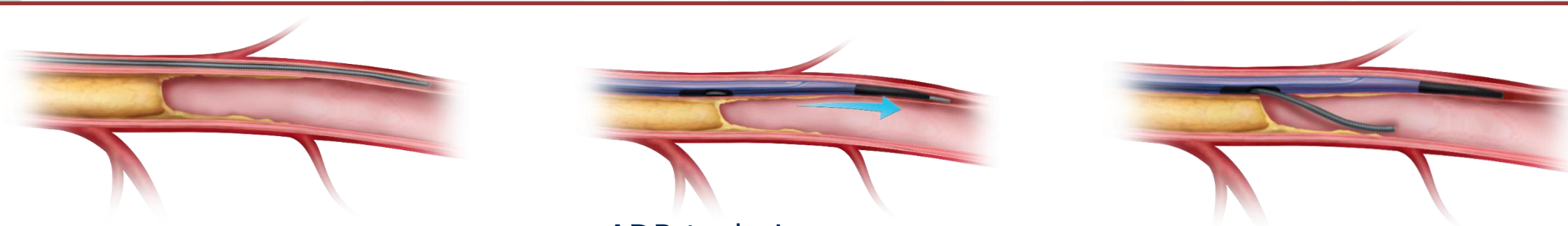
**NHANCER RX**



# ReCross OTW dual lumen catheter



**RE CROSS**  
Dual Lumen OTW Microcatheter  
360 degree guidewire redirection  
Options from 2 OTW lumens<sup>1</sup>



ADR technique

# Microcatéteres angulados



**SuperCross™**  
Microcatheters

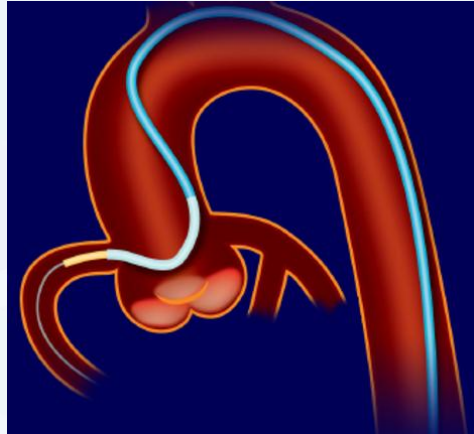
Angled tips for navigating complex anatomy



**Venture® 0.014"**  
Catheters

Controlled steerability through complex anatomy

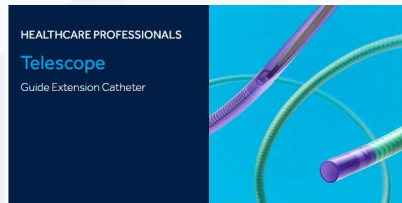
# Extensores de Catéter



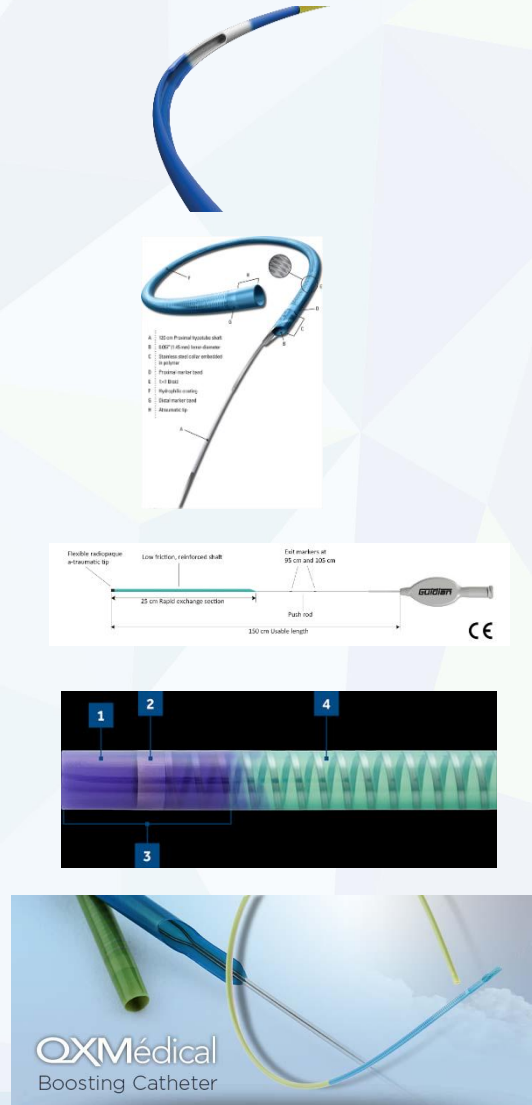
**Guideline**  
V3 catheter

**Guidezilla™ II**  
Guide Extension  
Catheter

**Guidion™ Flexible Guide  
Extension**



**Boosting Catheter**





- El extensor de catéter es muy útil en los procedimientos sobre CTO, adquiriendo nuevas funciones:
  - Aumenta el soporte del catéter anterógrado.
  - Protege la arteria anterógrada de eventuales disecciones.
  - Permite ahorrar contraste pues las inyecciones son selectivas a nivel de la CTO.
  - En el Acceso Retrógrado permite no acortar el catéter.
  - Facilita el CART Reverse y la reentrada de la guía retrógrada.
  - Facilita la retirada del sistema retrógrado y con mayor seguridad, acercando todas las maniobras a la CTO.

# Expressman



Positioning near by CTO lesion



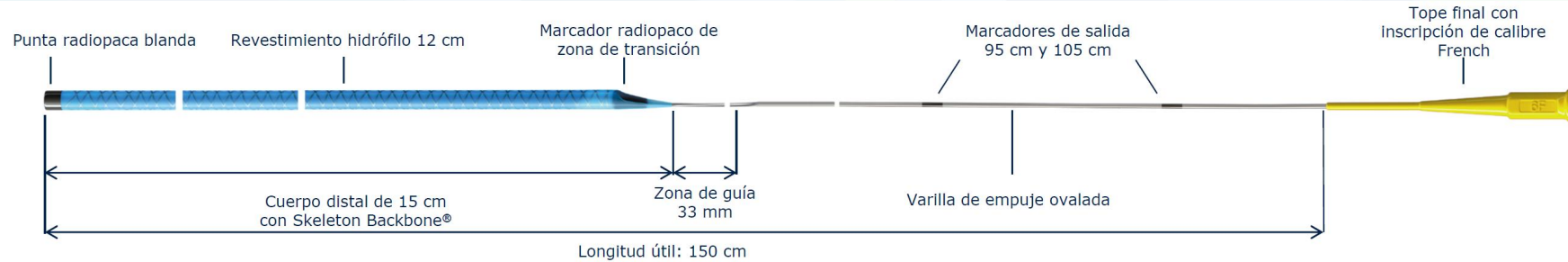
Positioning Expressman™



**Izasa Medical**  
by Paalex



# Guidion Short



## Facilitar el trapping de dispositivos OTW<sup>1</sup>

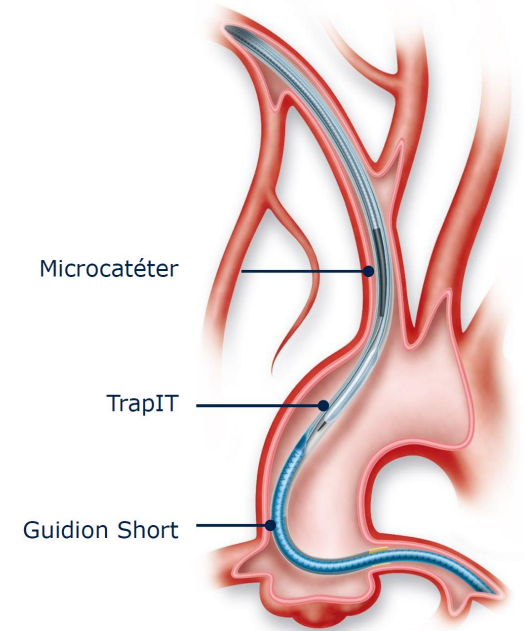
- Habilitar técnicas de trapping de dispositivos OTW en combinación con un extensor de catéter guía<sup>1</sup>
- Beneficiarse de la perfecta armonía entre Guidion Short y TrapIT para solucionar ICP complejas<sup>1</sup>

## Optimizar el abordaje transradial<sup>1</sup>

- Cuerpo distal más corto<sup>2</sup>: aumenta la probabilidad de una ubicación ideal de la zona de transición<sup>1</sup>
- Diseñado para mejorar la navegación en las arterias subclavias<sup>1</sup>
- Zona de guía: facilita el avance de los dispositivos a insertar, incluso en vasos con formaciones curvas<sup>1</sup>

## Visibilidad real de la punta y la zona de transición<sup>1</sup>

- Punta radiopaca blanda: diseñada para ser atraumática
- Marcador radiopaco de la zona de transición: para una identificación precisa de la zona de transición



## Orificios de perfusión

9 orificios en circunferencia a lo largo del cuerpo distal para **mantener la perfusión\*\*\***

## Cuerpo distal corto

15 cm de longitud, diseñado para optimizar el abordaje **transradial**<sup>1</sup>



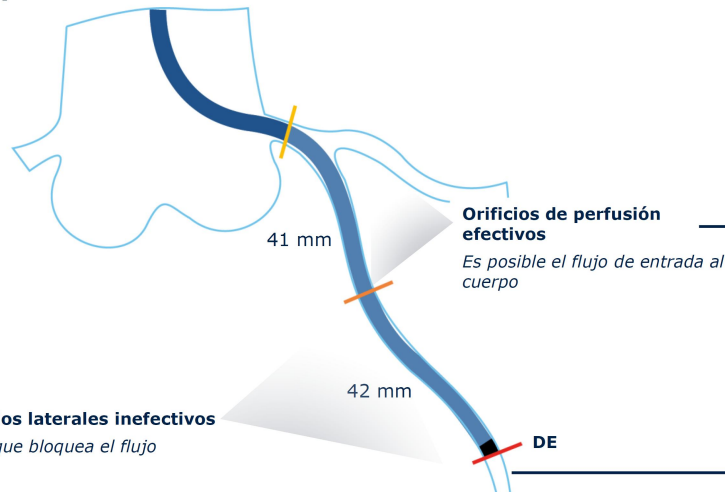
## Punta radiopaca blanda

**Visibilidad real del extremo distal**<sup>1</sup>

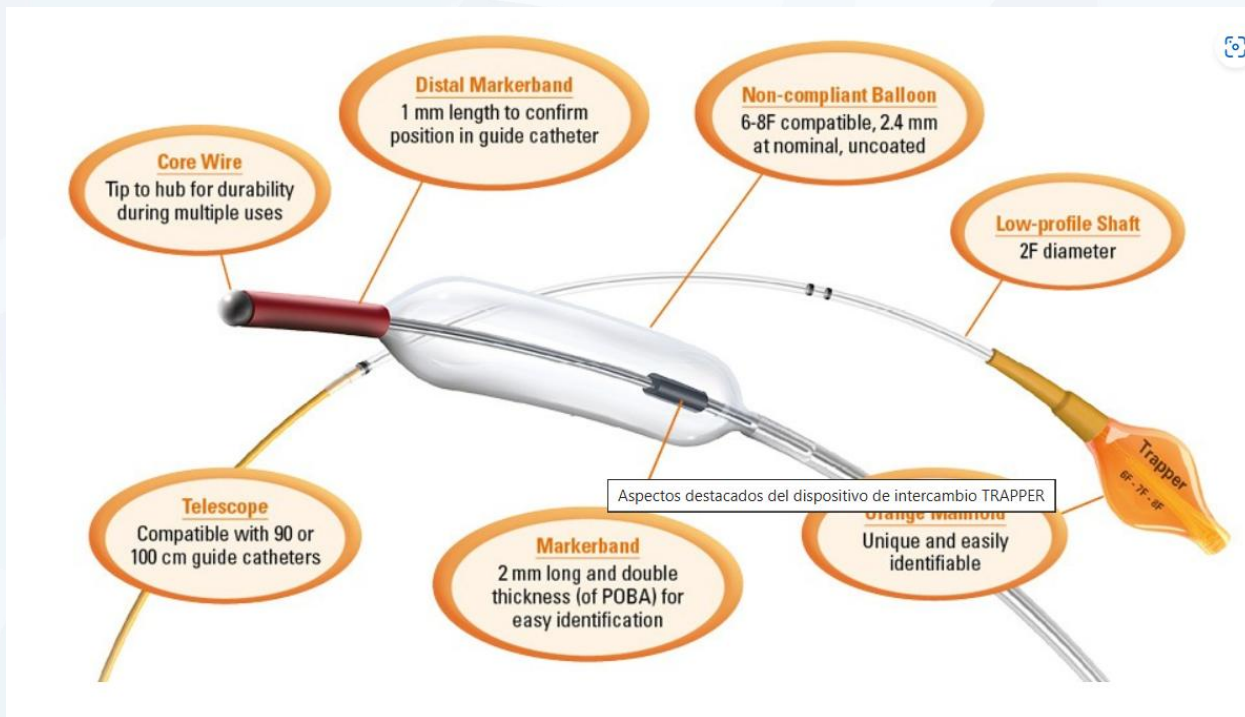
1,3 mm

## Zona de guía y de transición

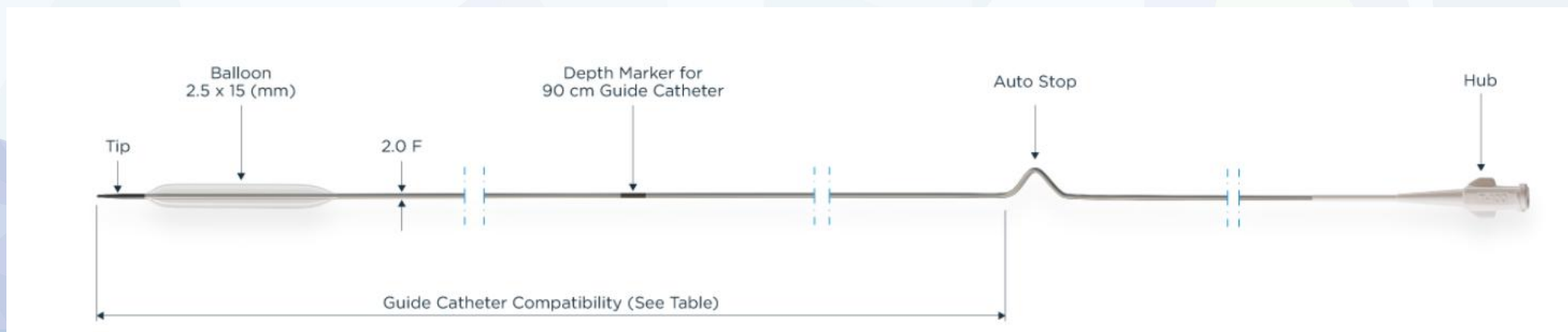
Adaptabilidad en las curvas, entrada suave del dispositivo y **máxima precisión** gracias a la visibilidad<sup>1</sup>



# Trapper y Trapit

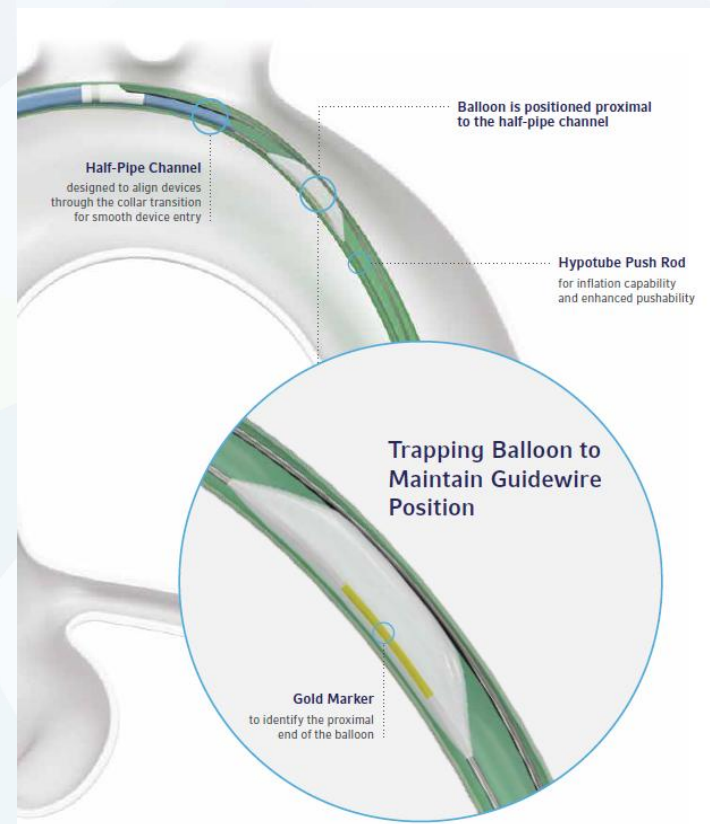
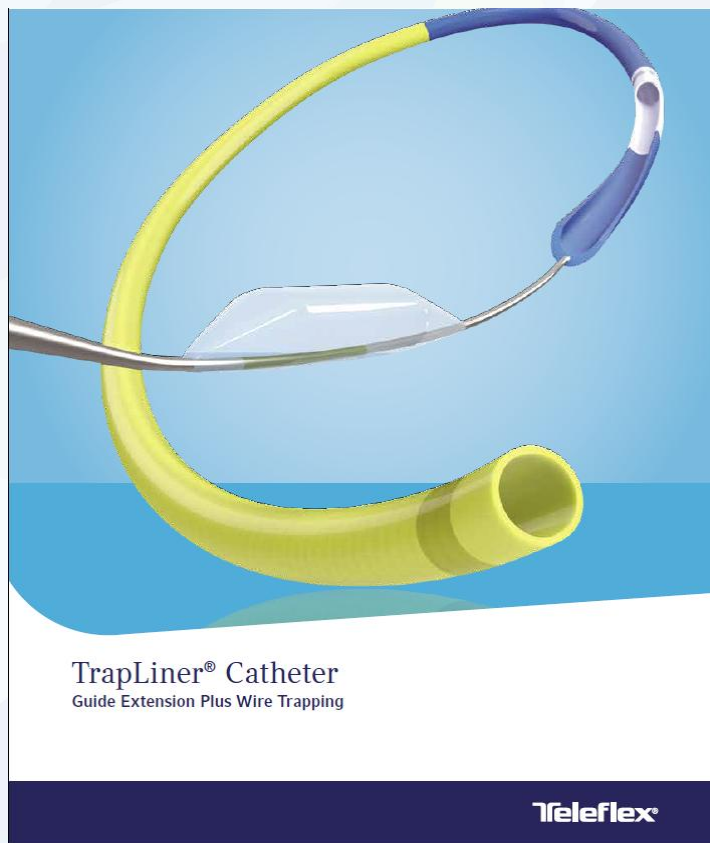


**Boston Scientific**  
Advancing science for life™





# TrapLiner



# Conclusiones

- Disponemos de una gran variedad de material y dispositivos
- Debemos conocer su composición y su función
- Deberíamos disponer al menos de un dispositivo de cada tipo



# GRACIAS!







# Microcatéteres

MICROCATÉTER	FABRICANTE	DIÁMETRO EXTERNO			LONGITUD (cm)
		PUNTA	CUERPO DISTAL	CUERPO PROXIMAL	
FINECROSS	Terumo Corp	1.8Fr / 0.60mm	1.8Fr / 0.60mm	2.6Fr / 0.87mm	130 / 150
NAVITIAN	iVascular	1.8Fr/0.61mm	1.8Fr/0.61mm	2.5Fr / 0.84mm	135 / 150
CARAVEL	Asahi Intecc	1.4Fr / 0.48mm	1.9Fr / 0.62mm	2.6Fr / 0.85mm	135 / 150
TELEPORT CONTROL	OrbusNeich	1.5Fr / 0.50mm	2.1Fr / 0.70mm	2.7Fr / 0.90mm	135 / 150
CORSAIR PRO XS	Asahi Intecc	1.3Fr / 0.44mm	2.1Fr / 0.71mm	2.9Fr / 0.95mm	135 / 150
MAMBA FLEX	Boston Scientific	1.4Fr / 0.46mm	2.1Fr / 0.71mm	2.9Fr / 0.97mm	135 / 150
TURNPIKE LP	Teleflex / Vascular Solutions	1.6Fr / 0.53mm	2.2Fr / 0.74mm	2.9Fr / 0.97mm	135 / 150
TURNPIKE	Teleflex / Vascular Solutions	1.6Fr / 0.53mm	2.6Fr / 0.86mm	3.1Fr / 1.02mm	135 / 150
CORSAIR PRO	Asahi Intecc	1.3Fr / 0.42mm	2.6Fr / 0.87mm	2.8Fr / 0.93mm	135 / 150

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Table 1. Guide wires related to CTO PCI

	Product	Core*	Tip	design	diameter	Tip load (g)	Tip coating	Radiopaque (cm)	
Bsc	Choice Standard	steel	spring coil	core-to-tip	0.014" ntp	n/a	hydrophilic	2.8	
Bsc	Samurai	steel	spring coil	core-to-tip	0.014" ntp	0.5	hydrophilic	4.0	
Bsc	Samurai RC	steel	spring coil	core-to-tip	0.014" ntp	1.2	hydrophilic	4.0	
Bsc	Marvel	steel	spring coil	core-to-tip	0.014" ntp	0.9	hydrophilic	3.0	light
Bsc	Fighter	steel	spring coil	core-to-tip	0.009" tp*	1.5	hydrophilic	3.5	light
Bsc	Hornet	steel	spring coil	core-to-tip	0.008" tp*	1.0	hydrophilic	3.5	light
Bsc	Hornet 10	steel	spring coil	core-to-tip	0.008" tp*	10.0	hydrophilic	3.5	extra
Bsc	Hornet 14	steel	spring coil	core-to-tip	0.008" tp*	14.0	hydrophilic	3.5	extra
Abb	<b>Whisper Light Support</b>	steel	polymer	core-to-tip	0.014" ntp	0.8	hydrophilic	3	light
Abb	<b>Powerturn Ultraflex</b>	steel	coil	core-to-tip	0.014" ntp	0.9	hydrophilic†	3	light
Asa	SUOH 03	steel	double coil	core and tip	0.014" ntp	0.3	Hydrophilic	3	light
Asa	<b>Sion</b>	steel	coil	core-to-tip	0.014" ntp	0.7	hydrophilic	3	moderate
Asa	SION black	steel	double coil	core-to-tip	0.014" ntp	0.8	Hydrophilic	3	moderate
Asa	<b>Fielder XT</b>	steel	polymer	core-to-tip	0.009" tp	0.8	hydrophilic	16	moderate
Asa	<b>Gaia First</b>	steel	double coil	core-to-tip	0.010" tp*	1.7	hydrophilic	15	n/a
Asa	<b>Gaia Next 1</b>	steel	double coil	core-to-tip	0.010" tp*	2.0	hydrophilic	15	moderate
Asa	<b>Miracle 3</b>	steel	spring coil	core-to-tip	0.014" ntp	3.0	hydrophobic	11	moderate
Asa	<b>UltimateBros 3</b>	steel	spring coil	core-to-tip	0.014" ntp	3.0	hydrophilic	11	moderate
Asa	<b>Miracle Neo3</b>	steel	doble-coil	core-to-tip	0.014" ntp	3.0	hydrophilic	10	moderate
Asa	<b>Gladius</b>	steel	doble-coil	core-to-tip	0.014" ntp	3.0	hydrophilic	3	moderate
Mtr	<b>Provia 3</b>	steel	spring coil	shaping ribbon	0.014" ntp	3.0	hydrophilic†	3	moderate
Asa	<b>Gaia Second</b>	steel	double coil	core-to-tip	0.011" tp*	3.5	hydrophilic	15	n/a
Asa	<b>Gaia Next 2</b>	steel	double coil	core-to-tip	0.011" tp*	4.0	hydrophilic	15	moderate
Abb	<b>Pilot 200</b>	steel	polymer	core-to-tip	0.014" ntp	4.1	hydrophilic	3	moderate
Asa	<b>Gaia Third</b>	steel	double coil	core-to-tip	0.011" tp*	4.5	hydrophilic	15	n/a
Asa	<b>Gaia Next 3</b>	steel	spring coil	core-to-tip	0.014" ntp	6.0	hydrophobic	11	moderate



Masahisa Yamane, MD



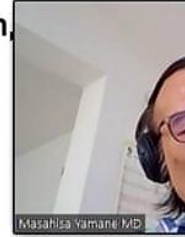
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	Product	Core#	Tip	design	diameter	Tip load (g)	Tip coating	Radiopaque (cm)	
Abb	Cross-IT 200XT	steel	spring coil	core-to-tip	0.010" tp	4.7	hydrophilic	3	
Abb	Progress 40	steel	spring coil	core-to-tip	0.012" ntp	4.8	hydrophilic	3	
Mtr	Provia 6	steel	spring coil	shaping ribbon	0.014" ntp	6.0	hydrophilic	3	moderate
Asa	Miracle 6	steel	spring coil	core-to-tip	0.014" ntp	6.0	hydrophobic	11	moderate
Abb	Cross-IT 300XT	steel	coil	core-to-tip	0.010" tp	6.2	hydrophilic	3	moderate
Abb	Cross-IT 400XT	steel	coil	core-to-tip	0.010" tp	8.7	hydrophilic	3	moderate
Asa	Confianza Pro	steel	spring coil	core-to-tip	0.009" tp	9.0	hydrophilic	20	moderate
Mtr	Provia 9	steel	spring coil	shaping ribbon	0.009" tp	9.0	hydrophilic	3	moderate
Abb	Progress 80	steel	coil	core-to-tip	0.012" ntp	9.7	hydrophilic	3	moderate
Asa	Confianza Pro 12	steel	spring coil	core-to-tip	0.009" tp	12.0	hydrophilic	20	extra
Asa	Miracle 12	steel	spring coil	core-to-tip	0.014" ntp	12.0	hydrophobic	11	extra
Abb	Progress 140T	steel	coil	core-to-tip	0.010" tp	12.5	hydrophilic	3	extra
Abb	Progress 200T	steel	coil	core-to-tip	0.009" tp	13.3	hydrophilic	3	extra
Abb	Progress 120	steel	coil	core-to-tip	0.010" ntp	13.9	hydrophilic	3	extra
Mtr	Provia 12	steel	spring coil	shaping ribbon	0.009" tp	12.0	hydrophilic	3	extra
Mtr	Provia 15	steel	spring coil	shaping ribbon	0.009" tp	15.0	hydrophilic	3	extra

Abb - Abbott, Asa - Asahi Intecc, Bsc - Boston Scientific, Mtr - Medtronic, ntp - non-tapered, tp - tapered

\* various alloys of steel, such as stainless steel, durasteel, etc are not specified



## Guide wire handling (1)

- When anatomy not clear

Sliding : XT-R/A @ Proximal Cap

Drilling : Ultimate brass 3g @ Proximal cap  
and Body

Penetrating: Gaia Next 2, 3, CP 12, Hornet  
14



## Guide wire handling (2)

- When anatomy defined
  - Directional puncturing ( deflexion control)
  - Proximal Cap: tapering or dimple or micro channel
    - XT-R ----> Gaia Next 1
    - to the distal cap
    - when soft > de-escalation
    - when hard > Gaia Next 2, When Ca + > GN3, CP12, Hor14

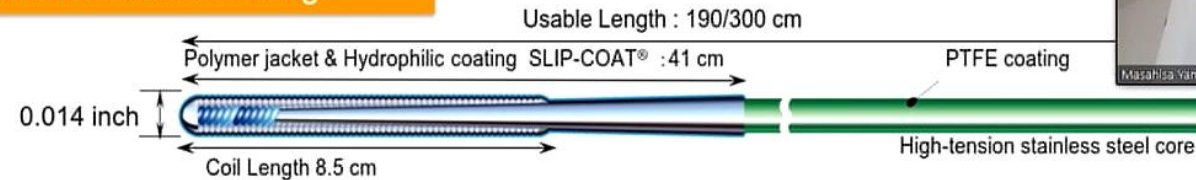


## Micro catheters in CTO PCI

- **1) Supportive type (rotatable)**, which are used mainly for antegrade crossing.
- Corsair, Corsair Pro (regular and XS) 135cm (Asahi Intecc) Turnpike (Spiral, Gold, LP and regular) 135 cm, Tonus 2.1F, 2.6F (Asahi Intecc).
- **2) Low profile (not ideal through calcified occlusion, but catheter of choice in case of non-calcified CTO or collateral crossing in retrograde approach):**
- Finecross MG, GT 130cm, 150cm (Terumo) Caravel 135 cm, 150 cm and Micro port ( 2.0 and 2.1 Fr 130cm, 150cm Obus Neichi).
- **3) Dual lumen microcatheter (DLC) to apply parallel wiring, side branch technique, hairpin wiring, wire-based re-entry, and selecting collateral over an acute angulation during the retrograde approach:**
- Crusade (Keneka), FineDuo (Terumo), Sasuke (Asahi Intecc), Twinpass Torque (Teleflex), NHancer (IMDS Medical).
- **4) Angulated microcatheter for overcoming unfavorable angle to a proximal cap:** Venture 038 catheter (Deflectable tip), Supercross (pre-angulated tip, both Teleflex).
- **5) Dedicated re-entry microcatheter system**
- Cross Boss, Stingray, and a Stingray wire, Boston Scientific.



**ASAHI Gladius Mongo**



Diameter	: 0.014 inch
Tip load	: 3.0 gf
Coating length	: 41 cm
Usable length	: 190/300 cm

Point	Feature	Benefit
Minimize prolapse	Modified distal core balance	Due to high tip durability, maintain the maneuverability even when the prolapse occurs
Lubricity	Polymer jacket and hydrophilic coating SLIP-COAT	High lubricity can help the procedure smoothly during the end even in the complicated lesion.
Torque	ACT ONE®	One-to-one torque is provided because of the absence of whip motion in the torque response.