Increase confidence for ablation using the THERMOCOOL® SMARTTOUCH™ Catheter

Innovative technology provides precise calculation of contact force and direction

Transmitter coil sends location reference signal

Location sensor detects micro-movement of transmitter coil

Precision spring Provides consistent movement in response to contact force, enabling the precise calculation of force in grams

THERMOCOOL® SMARTTOUCH™
CONTACT FORCE SENSING CATHETER

A new measure of success in complex cardiac ablation

Bi-Directional

Ordering #	Curve Type	French Size	# of Electrodes	Electrode Spacing (mm)	Tip Electrode (mm)	Temperature Sensor	Length (cm)
D132701	DD	8	4 + 2	1-6-2	3.5	Thermocouple	115
D132702	FF	8	4 + 2	1-6-2	3.5	Thermocouple	115
D132703	JJ	8	4 + 2	1-6-2	3.5	Thermocouple	115
D132704	FJ	8	4 + 2	1-6-2	3.5	Thermocouple	115
D132705	DF	8	4 + 2	1-6-2	3.5	Thermocouple	115

Uni-Directional

Ordering #	Curve Type	French Size	# of Electrodes	Electrode Spacing (mm)	Tip Electrode (mm)	Temperature Sensor	Length (cm)
D133601	D	8	4 + 2	1-6-2	3.5	Thermocouple	115
D133602	F	8	4 + 2	1-6-2	3.5	Thermocouple	115
D133603	J	8	4 + 2	1-6-2	3.5	Thermocouple	115

Cable	Description
CR3434CT	Cable for THERMOCOOL® SMARTTOUCH™ Catheter, connector at catheter: 34 pin black; connector at Patient Interface Unit (PIU): 34 pin red

Software Module	Description
C3TOUCH	CARTO® 3 SMARTTOUCH™ Software Module

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For healthcare professionals only. Not for US distribution. Please refer to the instructions for use accompanying each device before use.

The contact force sensing catheter fully integrated with latest version of the CARTO® 3 System provides a new measure for success by providing contact force information, temperature monitoring.

References: 1. Cappato R, Calkins H, Chen S-A, et al. Worldwide survey on the methods, efficacy, and safety of catheter ablation for human atrial fibrillation. *Circulation*. 2005;111(9):1100-1105. **2.** Calkins H, Niklason L, Sousa J, el-Atassi R, Langberg J, Morady F. Radiation exposure during radiofrequency catheter ablation of accessory atrioventricular connections. *Circulation*. 1991;84(6):2376-2382. **3.** Nakagawa H, Kautzner J, Natale A, et al. Electrogram amplitude and impedance are poor predictors of electrode-tissue contact force in ablation of atrial fibrillation. *Heart Rhythm*. 2010, AB32-1. **4.** Perna F, Heist E, Danik, S, et al. Assessment of catheter tip contact force resulting in cardiac perforation in swine atria using force sensing technology. *Circ Arrhythm Electrophysiol*. 2011; 4:218-224. **5.** Nakagawa H, Kautzer J, Natale A, et al. New Catheter Identifies Slight Changes in Contact Force in Canine and Human Hearts. *Heart Rhythm*. 2010, PO1-48. **6.** Nakagawa H, Ikeda A, Govari A, et al. Controlling lesion size and risk of steam pop by controlling contact force and radiofrequency power in canine beating heart. 2010, *Heart Rhythm Society*; Poster presented at 2010 meeting. **7.** Nakagawa H, Kautzer J, Natale A, et al. Location of high contact force in atrial fibrillation ablation: limiting RF power based on contact force may prevent steam pop with effective lesions. *Heart Rhythm*. 2011, P06-83.

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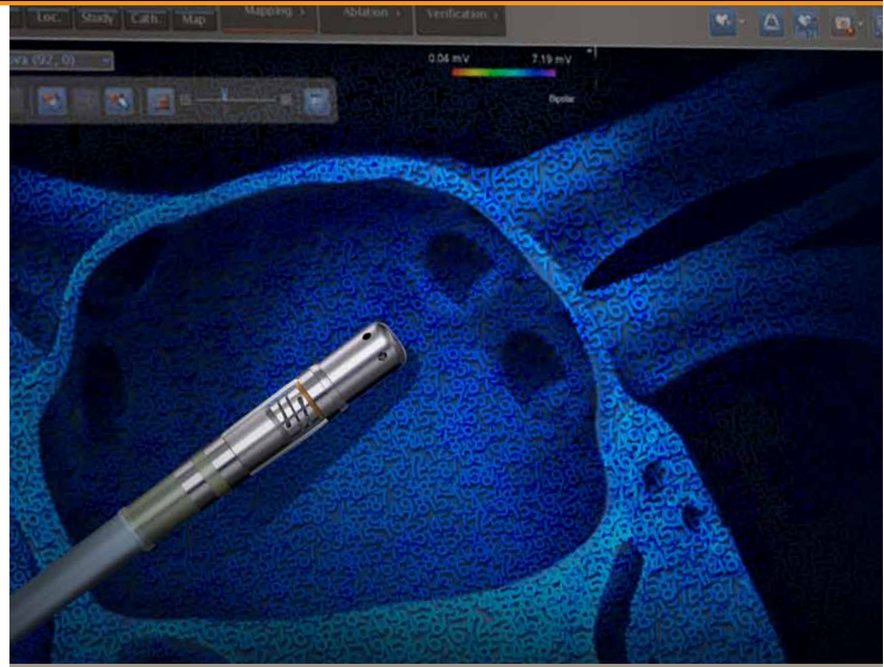
THERMOCOOL® SMARTTOUCH™
CONTACT FORCE SENSING CATHETER



In complex cardiac ablation

A new measure of success

Introducing the contact force sensing catheter fully integrated with the CARTO® 3 System Version 2

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In complex cardiac ablation, outcomes may be affected by contact force

Major challenges faced by electrophysiologists today include:

- Improving procedure outcomes[1]
- Maximizing procedure safety[1]
- Reducing fluoroscopy exposure[2]

The quality of catheter tip-to-tissue contact plays a critical role in lesion creation—yet the only measures available have been *indirect*[3]:

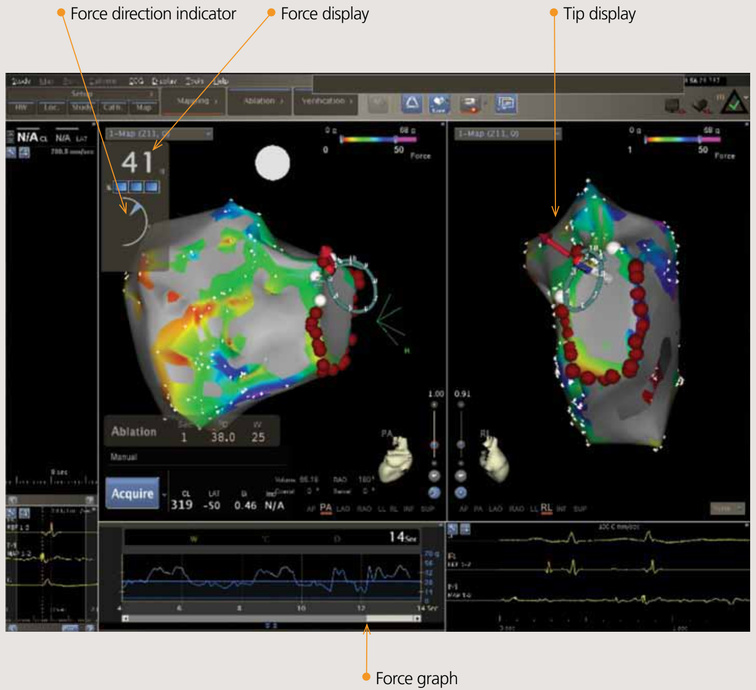
- **Tactile feedback**
- **Fluoroscopy**
- **Impedance**
- **Electrogram**

Contact force can now be *directly measured*

- Avoid excessive contact force[4]
- Ensure adequate contact force
- Apply consistent contact force during mapping
- Monitor contact force during ablation[5]

Integrated contact force and direction data are presented on the CARTO® 3 System* display

Display provides a complete picture of contact force data in real time, enabling operator to map and ablate with greater confidence



*In CARTO® 3 System Version 2.

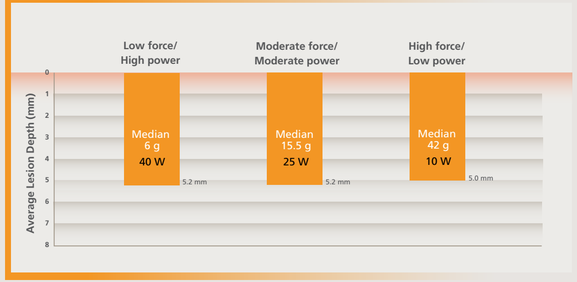
Monitoring contact force may enable more effective, consistent application of RadioFrequency power

Along with power and application time, contact force is a primary factor in lesion formation.

Knowing the contact force potentially enables:

- Consistent lesion formation[6]
- Reduced risk of steam pop and thrombus[7]

EQUIVALENT LESION DEPTH CAN BE ACHIEVED WITH VARYING LEVELS OF CONTACT FORCE AND POWER[7]



Ablate with greater control and confidence with real-time contact force feedback—the *new measure of success* in complex cardiac ablation