

*The Best Choice for
Radio Frequency Ablation
Therapies!*

Only one Multi-Purpose RF Ablation system in the world
with variety of dedicated electrodes!

Company Introduction

For the healthier world!

RF Medical Co., Ltd has been researching and developing new medical treatment modalities and Electro Surgical devices that are minimally invasive and patient friendly using Radiofrequency since 2003. Our RF Generators are the only multi-purpose RF Ablation generators in the world and their applications are the most various with a vast range of dedicated electrodes.

RF Medical Co., Ltd. strengthened its position as a national best in the field through constant R&D investment and along with a great response our technologies are being progressively recognized in the overseas market where the technical barrier is high.

Management Philosophy

◇ EXPLORING THE BLUE OCEAN

Developing new medical treatment modalities and equipment which are unique and essential to improve the quality of life

◇ SMALL BUT STRONG COMPANY

Small company but No. 1 in its field
Moving forward and leading the market

◇ HARMONY OF CUSTOMER'S AND SHAREHOLDER'S PROFIT

Not pursuing only shareholder's profit nor tolerating shareholder's loss
In pursuit of harmony of patients, customers and shareholders

Business Area

- ◇ Liver RFA
- ◇ Bloodless liver resection
- ◇ Lung RFA
- ◇ Disposable biopsy needle
- ◇ Guiding system for Lung biopsy needle & RFA
- ◇ Varicose vein treatment
- ◇ RF Snoring Treatment
- ◇ Cosmetic skin care & Rejuvenation
- ◇ Bronchial Thermoplasty
- ◇ RFA for bone tumors
- ◇ RF Thyroid
- ◇ RF Myolysis
- ◇ Endometrial Ablation
- ◇ RFA Renal cancer
- ◇ Renal denervation for Hypertension
- ◇ RF Pain Management
- ◇ Treatment for various kinds of tumors

Awards



Korean World-class Product Award 2012

Certificates



CE 0120

ISO 9001&2008

ISO 13485

Korea KGMP

Tiwan TFDA

China SFDA

Russia GOST

Patents

- 9 domestic patents are registered.
- 4 International patents are registered (USA, Japan, China, Germany, France, UK, Italy, Spain...)
- 10 other patents have been applied for the registration.





What is Radiofrequency Ablation?

Radiofrequency ablation (RFA) is a medical procedure in which part of the electrical conduction system of the heart, tumor or other dysfunctional tissue is ablated using the heat generated from high frequency alternating current (in the range of 350–500 kHz). RFA is generally conducted in the outpatient setting, using either local anesthetics or conscious sedation anesthesia. Two important advantages of RF current (over previously used low frequency AC or pulses of DC) are that it does not directly stimulate nerves or heart muscle and therefore can often be used without the need for general anesthetic, and that it is very specific for treating the desired tissue without significant collateral damage.

Documented benefits have led to RFA becoming widely used during the last 15 years. RFA procedures are performed under image guidance (such as X-ray screening, CT scan or ultrasound) by an interventional pain specialist (such as an anesthesiologist), interventional radiologist, otolaryngologists, a gastrointestinal or surgical endoscopist, or a cardiac electrophysiologist, a subspecialty of cardiologists. - From Wikipedia

Characteristics of RF Medical Generators



- 200W Multifunctional Generator that can cover all the applications using with multi-electrodes. See page 6 and 7 for the detail information.



- 140W Compact Generator that covers the most of the applications using a single electrode. See page 5 for the detail information.



- 40W Dedicated Endovenous Thermal Ablation System Generator. See page 22 and 23 for the detail information.



140W Compact Generator RF ABLATION SYSTEM V-1000



Features

- ⊕ Compatible with various electrode types
- ⊕ Various treatment algorithms in memory
- ⊕ 7" TFT LCD touch screen with smart UI
- ⊕ Advanced Self Test function
- ⊕ Automatic identification and function test of the catheter for the varicose vein mode
- ⊕ Easy PC Monitoring by USB
- ⊕ Easy S/W upgrade and data download by USB
- ⊕ Patient pad Monitoring System
- ⊕ Voice information system

Specifications

Protection Class	I
Protection Type	BF
Input Power Voltage	AC220V ~ 240V
Input Power Frequency	50/60Hz
Maximum Input Power	300VA
Output RF Frequency	400kHz
Output RF Power	140W
Measuring Temperature	0°C~200°C
Load Impedance Range	Z=25~1000 Ω at400kHz
Alarm Sound	65dB

*Specifications are subject to change without notice.

*Available programs : Varicose Vein, Uterine Fibroid, Endometrial Ablation, Thyroid Nodule, Bone Tumor, and Snoring.



200W Multifunctional Generator RF ABLATION SYSTEM M-3004



Features

- Switching Control System for larger ablation sizes
- Compatible with various electrode types
- Various treatment algorithms in memory
- 7" TFT LCD touch screen with smart UI
- Advanced Self Test function
- Automatic identification and function test of the catheter for the varicose vein mode
- Easy S/W upgrade and data download by USB(Front)
- Easy PC Monitoring by USB(Back)
- Patient pad Monitoring System
- 3 channels of temperature sensing at the same time
- Monopolar and Bipolar electrode can work together
- Voice information system

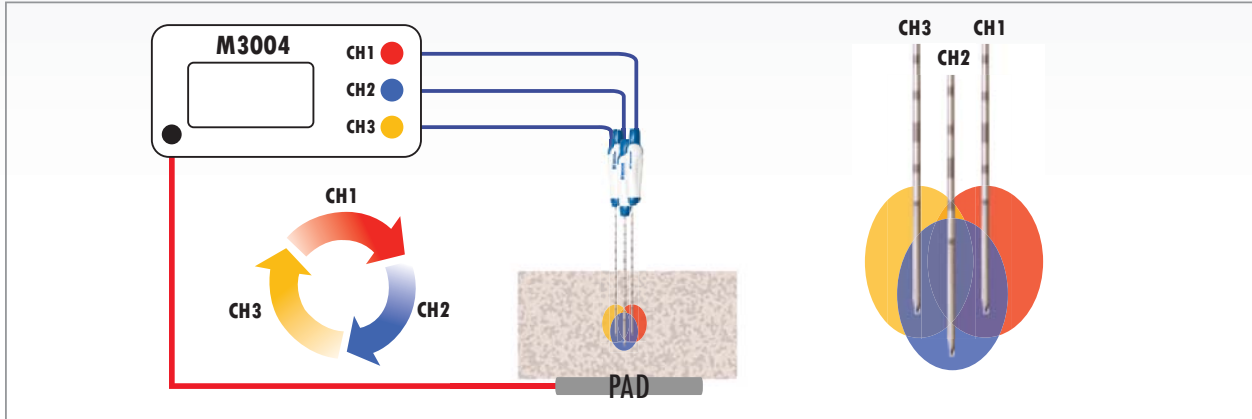
Specifications

Protection Class	I
Protection Type	BF
Input Power Voltage	AC220V
Input Power Frequency	50/60Hz
Maximum Input Power	410VA
Output RF Frequency	400kHz
Output RF Power	200W
Measuring Temperature	0°C-200°C
Load Impedance Range	Z=25~1000 Ω at400kHz
Alarm Sound	65dB

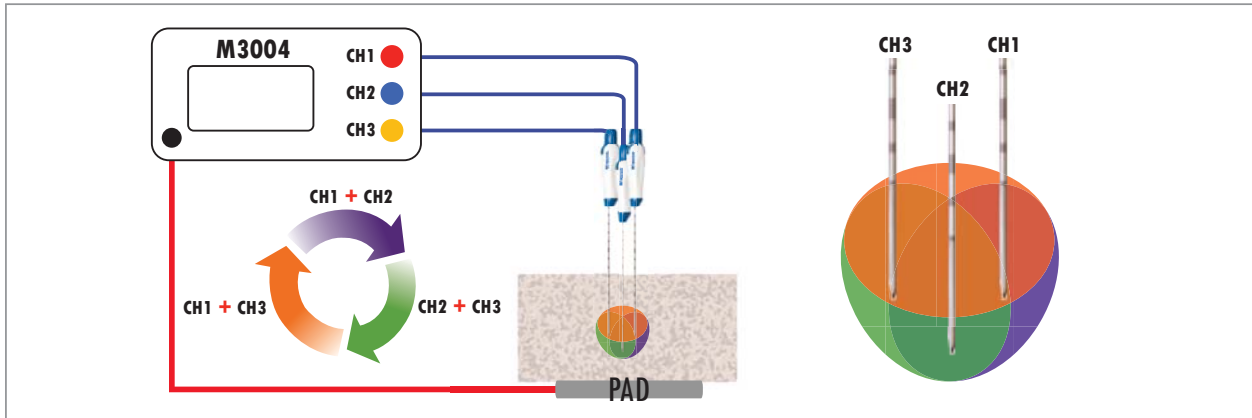
*Specifications are subject to change without notice.

Needle switching

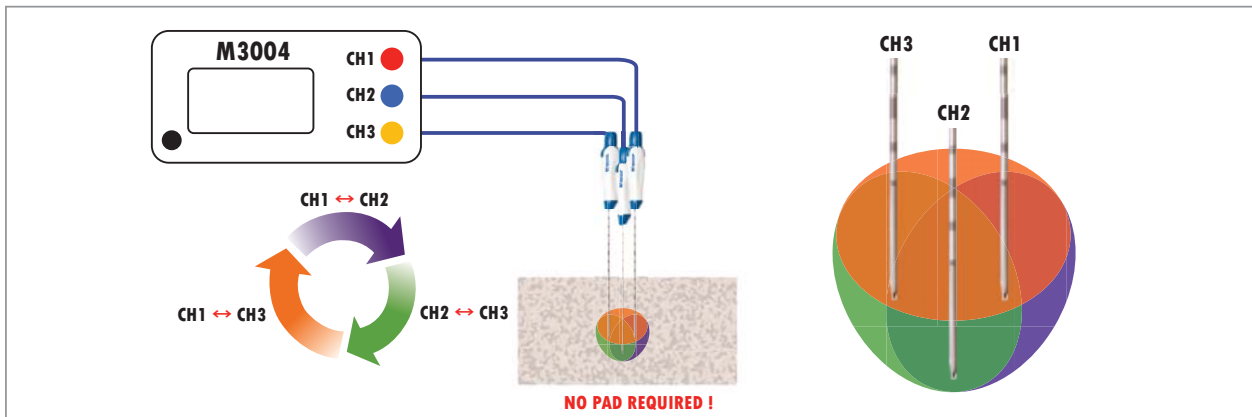
SINGLE MONOPOLAR



DUAL MONOPOLAR



BIPOLAR





Big-Tip (Internally Cooled Electrode)

Fast, Safe, Regular shape



<Bendable>



<Single>



<Cluster>



<Duo>

Specifications

Product Code	Diameter	Length	Exposure	Type	Application
BT 1005(B)	Ø1.5 mm	10 cm	0.5 cm	Single Cooled Tip	For Liver Cancer, Lung Cancer, Kidney Cancer, and Breast Cancer
~	Ø1.5 mm	10 cm	5mm Intervals		
BT 1030(B)	Ø1.5 mm	10 cm	3.0 cm		
BT 1510(B)	Ø1.5 mm	15 cm	1.0 cm		
~	Ø1.5 mm	15 cm	5mm Intervals		
BT 1540(B)	Ø1.5 mm	15 cm	4.0 cm		
BT 2020(B)	Ø1.5 mm	20 cm	2.0 cm		
BT 2025(B)	Ø1.5 mm	20 cm	2.5 cm		
BT 2030(B)	Ø1.5 mm	20 cm	3.0 cm		
BT 2040(B)	Ø1.5 mm	20 cm	4.0 cm		
BTW 1520(B)	Ø1.8 mm	15 cm	2.0 cm		
BTW 1525(B)	Ø1.8 mm	15 cm	2.5 cm		
BTW 1530(B)	Ø1.8 mm	15 cm	3.0 cm		
BTW 2020(B)	Ø1.8 mm	20 cm	2.0 cm		
BTW 2025(B)	Ø1.8 mm	20 cm	2.5 cm		
BTW 2030(B)	Ø1.8 mm	20 cm	3.0 cm	Duo Cooled Tip	
BTD 1020	Ø1.5 mm	10 cm	2.0 cm		
~	Ø1.5 mm	10 cm	5mm Intervals		
BTD 1035	Ø1.5 mm	10 cm	3.5 cm		
BTD 1520	Ø1.5 mm	15 cm	2.0 cm		
~	Ø1.5 mm	15 cm	5mm Intervals		
BTD 1535	Ø1.5 mm	15 cm	3.5 cm		
BTD 2020	Ø1.5 mm	20 cm	2.0 cm		
~	Ø1.5 mm	20 cm	5mm Intervals		
BTD 2035	Ø1.5 mm	20 cm	3.5 cm		
BTC 1025	Ø1.5 mm	10 cm	2.5 cm	Cluster Cooled Tip	
BTC 1525	Ø1.5 mm	15 cm	2.5 cm		
BTC 2025	Ø1.5 mm	20 cm	2.5 cm		
BTC 2525	Ø1.5 mm	25 cm	2.5 cm		

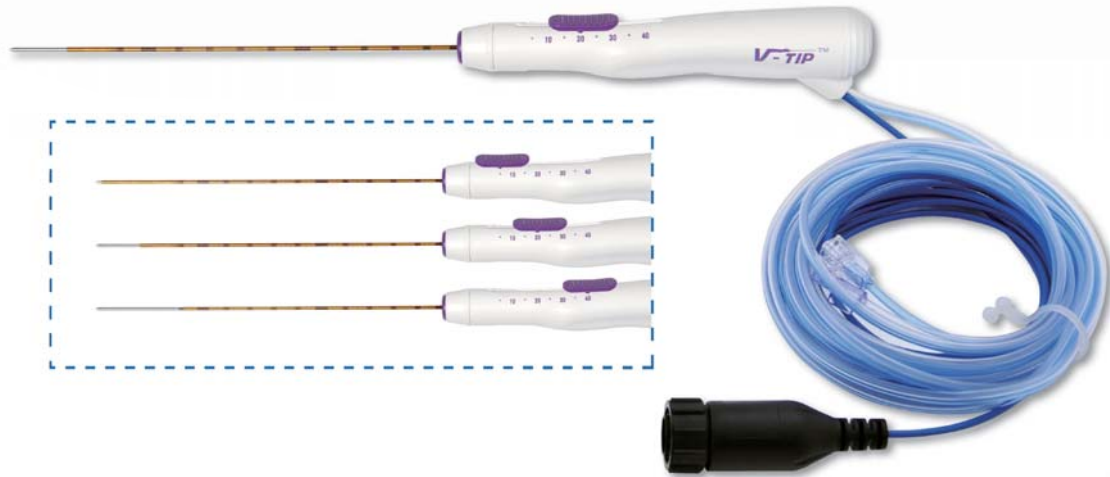
*Big-Tip has two types of handle. Standard type(BT 1005, BT 1020, ...) and Bendable type(BT 1005B, BT 1020B, ...)



V-Tip™ (Variable Exposure Length Tip)

Fast, Safe, Regular shape

For liver cancer, lung cancer, kidney cancer, osteoid osteoma, uterine fibroid and adenomyosis.
 You don't need to keep many different models of electrodes in stock!
 You don't need to use 2 needles for different sizes of tumors in one patient!



Features

- ⊕ Internal cooling system prevents contiguous tissue from charring and thus widens ablation zone.
- ⊕ Smoothed out raised edge of insulation sheath for easier inserting and repositioning.
- ⊕ Angled connection of the tubings & cable to the handle is quite useful for percutaneous approach under C.T guidance.

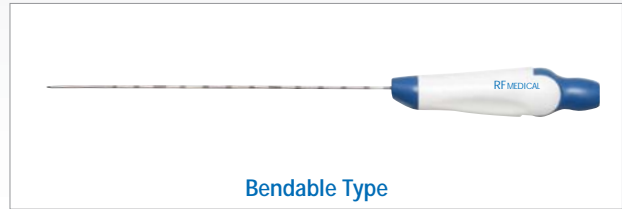
Specifications

Product Code	Diameter	Length	Exposure	Type	Application
VCT 10XXB	Ø1.5 mm	10 cm	0.5 cm ~ 4.0 cm	Variable Exposure, Cooled Tip	For Liver Cancer, Lung Cancer, Kidney Cancer, Osteoid Osteoma, Uterine Fibroids, and Adenomyosis
VCT 15XXB	Ø1.5 mm	15 cm	0.5 cm ~ 4.0 cm		
VCT 20XXB	Ø1.5 mm	20 cm	0.5 cm ~ 4.0 cm		
VCT 25XXB	Ø1.5 mm	25 cm	0.5 cm ~ 4.0 cm		
VCT 30XXB	Ø1.5 mm	30 cm	0.5 cm ~ 4.0 cm		
VCT 35XXB	Ø1.5 mm	35 cm	0.5 cm ~ 4.0 cm		
VCTM 10XXB	Ø1.65 mm	10 cm	0.5 cm ~ 4.0 cm		
VCTM 15XXB	Ø1.65 mm	15 cm	0.5 cm ~ 4.0 cm		
VCTM 20XXB	Ø1.65 mm	20 cm	0.5 cm ~ 4.0 cm		
VCTM 25XXB	Ø1.65 mm	25 cm	0.5 cm ~ 4.0 cm		
VCTM 30XXB	Ø1.65 mm	30 cm	0.5 cm ~ 4.0 cm		
VCTM 35XXB	Ø1.65 mm	35 cm	0.5 cm ~ 4.0 cm		
VCTW 10XXB	Ø1.8 mm	10 cm	0.5 cm ~ 4.0 cm		
VCTW 15XXB	Ø1.8 mm	15 cm	0.5 cm ~ 4.0 cm		
VCTW 20XXB	Ø1.8 mm	20 cm	0.5 cm ~ 4.0 cm		
VCTW 25XXB	Ø1.8 mm	25 cm	0.5 cm ~ 4.0 cm		
VCTW 30XXB	Ø1.8 mm	30 cm	0.5 cm ~ 4.0 cm		
VCTW 35XXB	Ø1.8 mm	35 cm	0.5 cm ~ 4.0 cm		



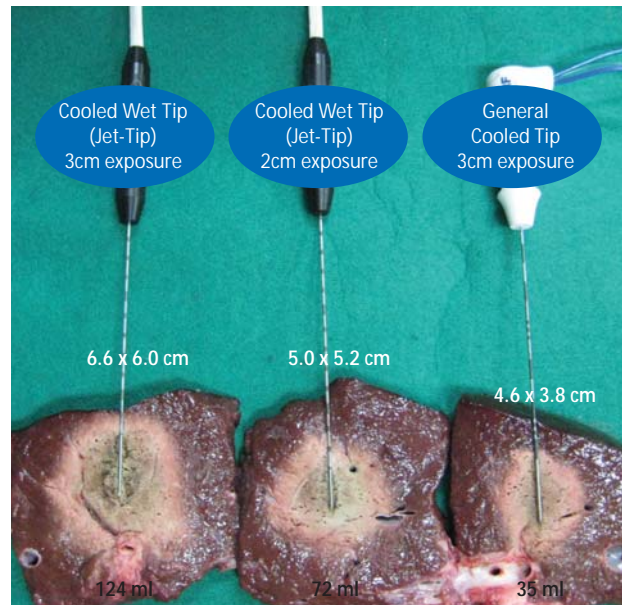
Jet-Tip™ (Cooled Wet Tip)

New Horizon of straight needle! Now Straight needle also can make large ablation size.



Features

- ⊞ Ideal straight needle by combining Internally Cooled needle and Saline Perfusion needle.
- ⊞ Jet-Tip™(Cooled Wet Tip) is designed to prevent contiguous tissue from charring and enhances frictional heat and thus maximizes ablation zone.
- ⊞ Can minimize irregular ablation shape by minimized saline perfusion volume.
- ⊞ Smoothed out raised edge of insulation sheath for easier inserting and repositioning.



References

1. Percutaneous radiofrequency ablation using internally cooled wet electrodes for treatment of colorectal liver metastases. Clin Radiol. 2012 Feb;67(2):122-7. Epub 2011 Sep 8.
2. Percutaneous radiofrequency ablation using internally cooled wet electrodes for the treatment of hepatocellular carcinoma. AJR Am J Roentgenol. 2012 Feb;198(2):471-6.
3. Percutaneous Radiofrequency Ablation with Internally Cooled versus Internally Cooled Wet Electrodes for Small Subphrenic Hepatocellular Carcinomas. J Vasc Interv Radiol. 2013 Mar;24(3)351-6. Epub 2013 Feb 4.



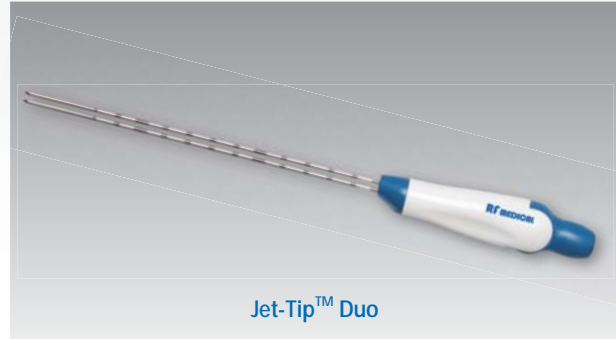
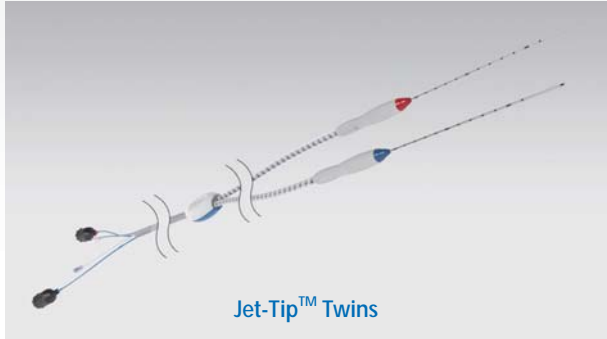
Specifications

Product Code	Diameter	Length	Exposure	Type	Application
JET 0710T(B)	Ø1.2 mm	7 cm	1.0 cm	Single Cooled Wet Tip	For Thyroid Nodules
JET 0715T(B)	Ø1.2 mm	7 cm	1.5 cm		
JET 1010(B)	Ø1.5 mm	10 cm	1.0 cm		
JET 1015(B)	Ø1.5 mm	10 cm	1.5 cm		
JET 1510(B)	Ø1.5 mm	15 cm	1.0 cm		
~	Ø1.5 mm	15 cm	5mm Intervals		
JET 1540(B)	Ø1.5 mm	15 cm	4.0 cm		
JET 2010(B)	Ø1.5 mm	20 cm	1.0 cm		
~	Ø1.5 mm	20 cm	5mm Intervals		
JET 2040(B)	Ø1.5 mm	20 cm	4.0 cm		
JET 2505(B)	Ø1.5 mm	25 cm	0.5 cm		
~	Ø1.5 mm	25 cm	5mm Intervals		
JET 2540(B)	Ø1.5 mm	25 cm	4.0 cm		
JET 3005(B)	Ø1.5 mm	30 cm	0.5 cm		
~	Ø1.5 mm	30 cm	5mm Intervals		
JET 3040(B)	Ø1.5 mm	30 cm	4.0 cm		
JET 1520Q(B)	Ø1.8 mm	15 cm	2.0 cm		
~	Ø1.8 mm	15 cm	5mm Intervals		
JET 1540Q(B)	Ø1.8 mm	15 cm	4.0 cm		
JET 2020Q(B)	Ø1.8 mm	20 cm	2.0 cm		
~	Ø1.8 mm	20 cm	5mm Intervals		
JET 2040Q(B)	Ø1.8 mm	20 cm	4.0 cm		
JET 2520Q(B)	Ø1.8 mm	25 cm	2.0 cm		
~	Ø1.8 mm	25 cm	5mm Intervals		
JET 2540Q(B)	Ø1.8 mm	25 cm	4.0 cm		
JET 3020Q(B)	Ø1.8 mm	30 cm	2.0 cm		
~	Ø1.8 mm	30 cm	5mm Intervals		
JET 3040Q(B)	Ø1.8 mm	30 cm	4.0 cm		
JET 1520X(B)	Ø2.0 mm	15 cm	2.0 cm		
~	Ø2.0 mm	15 cm	5mm Intervals		
JET1540X(B)	Ø2.0 mm	15 cm	4.0 cm		
JET 2020X(B)	Ø2.0 mm	20 cm	2.0 cm		
~	Ø2.0 mm	20 cm	5mm Intervals		
JET 2040X(B)	Ø2.0 mm	20 cm	4.0 cm		
JET 2520X(B)	Ø2.0 mm	25 cm	2.0 cm		
~	Ø2.0 mm	25 cm	5mm Intervals		
JET 2540X(B)	Ø2.0 mm	25 cm	4.0 cm		
JET 3020X(B)	Ø2.0 mm	30 cm	2.0 cm		
~	Ø2.0 mm	30 cm	5mm Intervals		
JET 3040X(B)	Ø2.0 mm	30 cm	4.0 cm		
JETC 1510	Ø1.5 mm	15 cm	1.0 cm	Cluster Cooled Wet Tip	For Liver Cancer, Kidney Cancer, and Lung Cancer
JETC 1515	Ø1.5 mm	15 cm	1.5 cm		
JETC 2010	Ø1.5 mm	20 cm	1.0 cm		
JETC 2015	Ø1.5 mm	20 cm	1.5 cm		
JETC 2510	Ø1.5 mm	25 cm	1.0 cm		
JETC 2515	Ø1.5 mm	25 cm	1.5 cm		

*Jet-Tip has two types of handle. Standard type(JET 0710T, JET 0715T, ...) and Bendable type(JET 0710TB, JET 0715TB, ...)



Jet-Tip™ Duo & Jet-Tip™ Twins

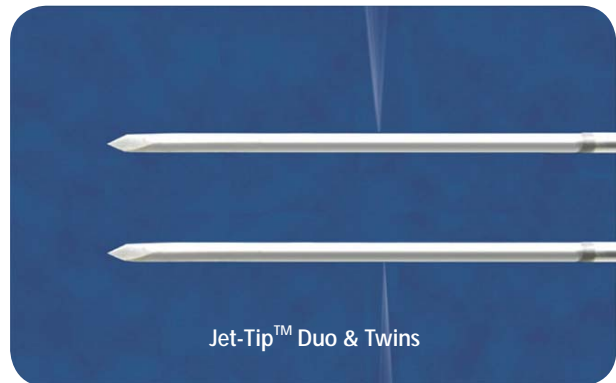


Features of Jet-Tip™ Duo & Twins

- ⊞ Can make a larger ablation size (up to 7cm)
- ⊞ Much easier to use than cluster Electrode
- ⊞ Less traumatic than cluster Electrode

Characteristics of Jet-Tip™ Twins

- ⊞ Independent temperature sensor and RF cable for each needle
- ⊞ United cooling system tubes
- ⊞ Workable in the Needle Switching Mode



Specifications

Product Code	Diameter	Length	Exposure	Type	Application
JETD 1005	Ø1.5 mm	10 cm	0.5 cm	Duo Cooled Wet Tip	For Liver Cancer, Kidney Cancer, and Lung Cancer
~	Ø1.5 mm	10 cm	5mm Intervals		
JETD 1040	Ø1.5 mm	10 cm	4.0 cm		
JETD 1505	Ø1.5 mm	15 cm	0.5 cm		
~	Ø1.5 mm	15 cm	5mm Intervals		
JETD 1540	Ø1.5 mm	15 cm	4.0 cm		
JETD 2005	Ø1.5 mm	20 cm	0.5 cm		
~	Ø1.5 mm	20 cm	5mm Intervals		
JETD 2040	Ø1.5 mm	20 cm	4.0 cm		
JETD 2505	Ø1.5 mm	25 cm	0.5 cm		
~	Ø1.5 mm	25 cm	5mm Intervals		
JETD 2540	Ø1.5 mm	25 cm	4.0 cm		
JETD 1005Q	Ø1.8 mm	10 cm	0.5 cm		
~	Ø1.8 mm	10 cm	5mm Intervals		
JETD 1040Q	Ø1.8 mm	10 cm	4.0 cm		
JETD 1505Q	Ø1.8 mm	15 cm	0.5 cm		
~	Ø1.8 mm	15 cm	5mm Intervals		
JETD 1540Q	Ø1.8 mm	15 cm	4.0 cm		
JETD 2005Q	Ø1.8 mm	20 cm	0.5 cm		
~	Ø1.8 mm	20 cm	5mm Intervals		
JETD 2040Q	Ø1.8 mm	20 cm	4.0 cm		
JETD 2505Q	Ø1.8 mm	25 cm	0.5 cm		
~	Ø1.8 mm	25 cm	5mm Intervals		
JETD 2540Q	Ø1.8 mm	25 cm	4.0 cm		



Duo Bipolar Electrode for Bloodless Liver Resection



Bloodless Liver Resection



Features

- ⊞ Blood loss is reduced significantly.
- ⊞ Procedure time is decreased a lot.
- ⊞ Possibilities for blood transfusions are declined remarkably.
- ⊞ Functional portions of cirrhotic liver can be spared.
- ⊞ Occurrence of liver failure and bile leakage can be decreased prominently because of blood loss reduction and functional tissue sparing.

Specifications

Product Code	Diameter	Length	Exposure	Type	Application
DBT 1220	Ø1.5 mm	12 cm	2.0 cm	Dual Tip, Bipolar	Bloodless Liver Resection
DBT 1225	Ø1.5 mm	12 cm	2.5 cm		
DBT 1230	Ø1.5 mm	12 cm	3.0 cm		
DBT 1235	Ø1.5 mm	12 cm	3.5 cm		
DBT 1240	Ø1.5 mm	12 cm	4.0 cm		

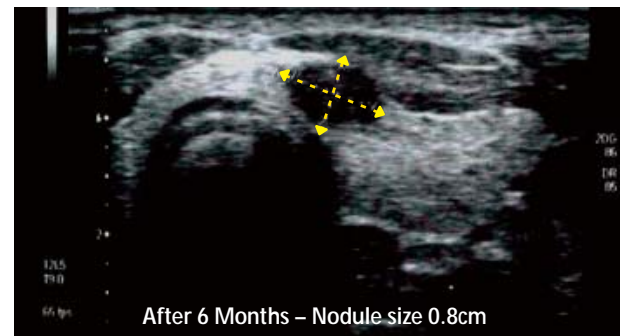
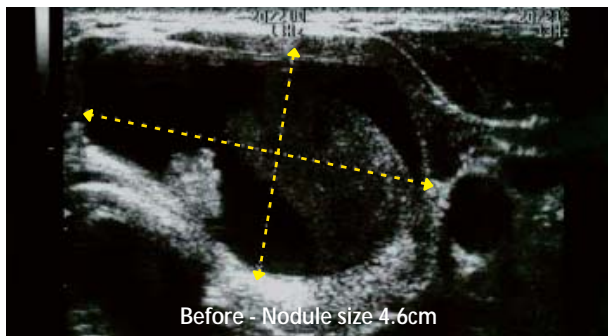


RF Ablation of Thyroid

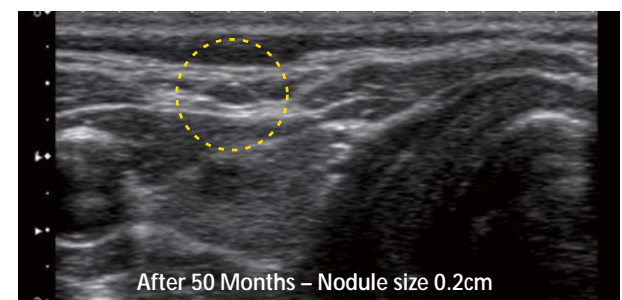
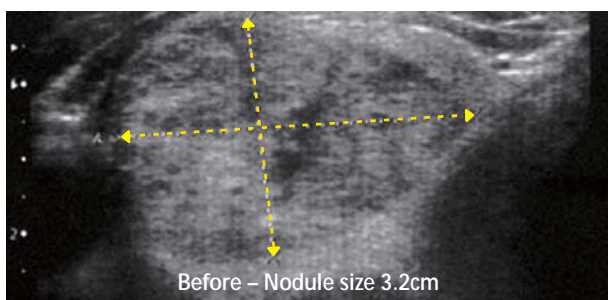
Non-toxic benign thyroid nodules, autonomously functioning thyroid nodules, thyroglossal duct cyst, and venous malformation in the neck.



Thyroid Nodule



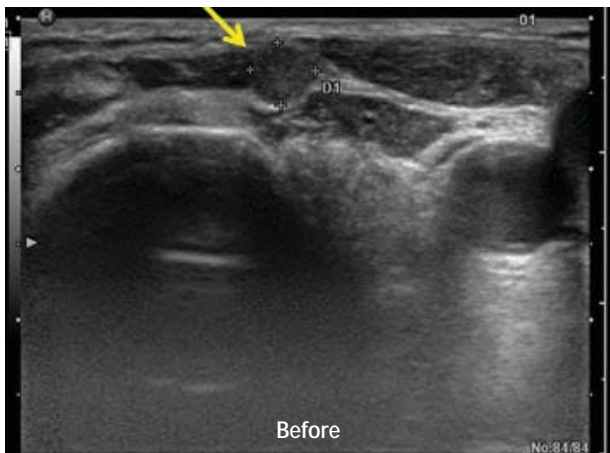
Thyroid Nodule – Solid mass



Recurrent Tongue Cancer



Recurrent Tongue Cancer

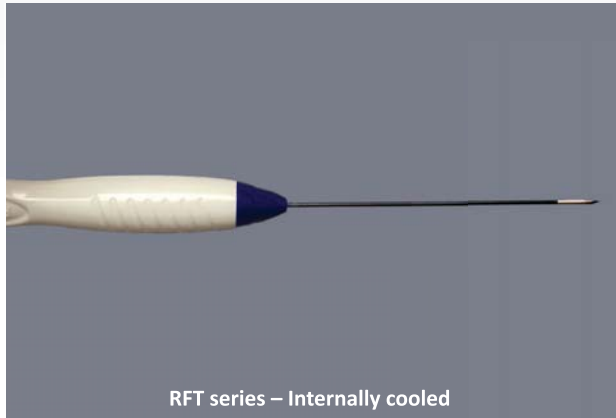


Advantages of Thyroid RFA

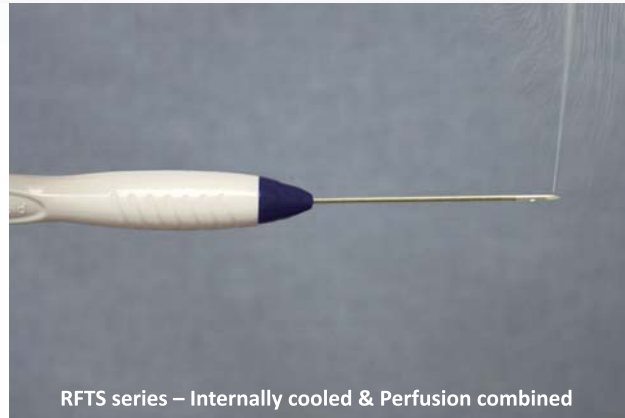
- No scar
- Minimal Invasive
- Easy procedure
- Good result, easy re-therapy
- Quick recovery, local Anesthesia
- No hypothyroidism
- No complication (Parathyroid)
- No admission



RF Ablation of Thyroid



RFT series – Internally cooled



RFTS series – Internally cooled & Perfusion combined

Specifications

Product Code	Diameter	Length	Exposure	Type	Application		
RFT 0705LN	Ø1.0 mm	7 cm	0.5 cm	Cooled Tip	For Lymph Node		
RFT 0707LN	Ø1.0 mm	7 cm	0.7 cm				
RFT 0710LN	Ø1.0 mm	7 cm	1.0 cm				
RFT 0715LN	Ø1.0 mm	7 cm	1.5 cm				
RFT 0720LN	Ø1.0 mm	7 cm	2.0 cm				
RFT 1005LN	Ø1.0 mm	10 cm	0.5 cm				
RFT 1007LN	Ø1.0 mm	10 cm	0.7 cm				
RFT 1010LN	Ø1.0 mm	10 cm	1.0 cm				
RFT 1015LN	Ø1.0 mm	10 cm	1.5 cm				
RFT 1020LN	Ø1.0 mm	10 cm	2.0 cm				
RFT 0710HLN	Ø1.0 mm	7 cm	1.0 cm	Cooled Tip, Half Direction	For Thyroid Nodule		
RFT 0715HLN	Ø1.0 mm	7 cm	1.5 cm				
RFT 1010HLN	Ø1.0 mm	10 cm	1.0 cm				
RFT 1015HLN	Ø1.0 mm	10 cm	1.5 cm				
RFTS 0710LN	Ø1.0 mm	7 cm	1.0 cm	Cooled Wet Tip		For Thyroid Nodule	
RFTS 0715LN	Ø1.0 mm	7 cm	1.5cm				
RFT 0705N	Ø1.2 mm	7 cm	0.5 cm	Cooled Tip			For Thyroid Nodule
RFT 0707N	Ø1.2 mm	7 cm	0.7 cm				
RFT 0710N	Ø1.2 mm	7 cm	1.0 cm				
RFT 0715N	Ø1.2 mm	7 cm	1.5 cm				
RFT 0720N	Ø1.2 mm	7 cm	2.0 cm				
RFT 1005N	Ø1.2 mm	10 cm	0.5 cm				
RFT 1007N	Ø1.2 mm	10 cm	0.7 cm				
RFT 1010N	Ø1.2 mm	10 cm	1.0 cm				
RFT 1015N	Ø1.2 mm	10 cm	1.5 cm				
RFT 1020N	Ø1.2 mm	10 cm	2.0 cm				
RFT 0710HN	Ø1.2 mm	7 cm	1.0 cm	Cooled Tip, Half Direction	For Thyroid Nodule		
RFT 0715HN	Ø1.2 mm	7 cm	1.5 cm				
RFT 1010HN	Ø1.2 mm	10 cm	1.0 cm				
RFT 1015HN	Ø1.2 mm	10 cm	1.5 cm				
RFTS 0710N	Ø1.2 mm	7 cm	1.0 cm	Cooled Wet Tip		For Thyroid Nodule	
RFTS 0715N	Ø1.2 mm	7 cm	1.5cm				

Clinical Results

	6 months	1 year	2 year	3 year	Last
Total	70.3 ± 17.2	89.9 ± 10.2	90.1 ± 10.1	90.7 ± 15.8	93.5 ± 11.7
P value	< 0.001	< 0.999	< 0.001	< 0.001	
Solidity ≤ 50%	80.9 ± 14.6	93.6 ± 8.8	93.1 ± 8.9	92.0 ± 20.3	96.0 ± 8.8
Solidity > 50%	67.6 ± 16.8	87.8 ± 10.4	88.4 ± 10.4	90.0 ± 13.0	92.0 ± 12.9
P value	< 0.001	0.003	0.021	0.002	0.002

126 benign non-functioning thyroid nodules of 111 patients

Mean follow-up periods : 49.4±13.6 months

Mean No. of sessions : 2.2±1.4

Mean volume reduction : 93.4±11.7%

Therapeutic success rate : 98.4%(124/126)

Overall complication rate: 3.6%(4/111)

Overall recurrence rate : 5.6%(7/126)

Regrowth defined as a > 50% increase in nodule volume compared with the previous FU volume.

Radiofrequency ablation of benign nonfunctioning thyroid nodules: 4-year follow-up results in 111 patients. Eur Radiol. 2013 Apr;23(4):1044-9

Complications

Multicenter Study(13 institutions), 1459 patients, 1543 nodules, 48 complications(3.3%), 20 major complications(1.4%)

The Major	The Minor
<ul style="list-style-type: none"> • Voice changes (n = 15) • Brachial plexus injury (n = 1) • Tumor rupture (n = 3) • Permanent hypothyroidism (n = 1) 	<ul style="list-style-type: none"> • Hematoma (n = 15) • Skin burn (n = 4) • Vomiting (n = 9)

All patients recovered spontaneously except for one with permanent hypothyroidism and one who underwent surgery.

Complications Encountered in the treatment of benign thyroid nodules with US-guided radiofrequency ablation: A Multicenter Study. Radiology. 2012 Jan; 262(1):335-42

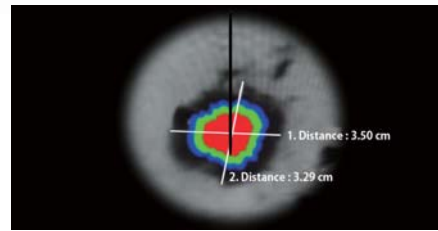
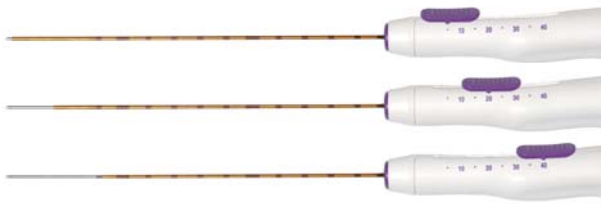


MRI-Guided Nitinol Electrode

MRI-Guided Nitinol electrode that allows for precise ablations.



<VCT 15XXBNI>



Features

- High level of control offers accurate electrode placement and precise ablation zone.
- Providing safe and potentially effective treatment.
- Colorful Real-time monitoring of ablation progress.
- Variable exposure length.
- Also available in JET-Ni version that offers substantially larger ablation volumes.
- Early detection with MRI and early treatment with VCT-Ni electrodes.

Specifications

Product Code	Diameter	Length	Exposure	Type	Application
VCT 10XXBNI	Ø1.5 mm	10 cm	0.5~4.0 cm	Variable Exposure, Cooled Tip	For Liver Cancer, Lung Cancer, Kidney Cancer, Osteoid Osteoma, Uterine Fibroids and Adenomyosis
VCT 15XXBNI	Ø1.5 mm	15 cm	0.5~4.0 cm		
VCT 20XXBNI	Ø1.5 mm	20 cm	0.5~4.0 cm		
VCT 25XXBNI	Ø1.5 mm	25 cm	0.5~4.0 cm		
VCT 30XXBNI	Ø1.5 mm	30 cm	0.5~4.0 cm		
VCT 35XXBNI	Ø1.5 mm	35 cm	0.5~4.0 cm		
VCTW 10XXBNI	Ø1.8 mm	10 cm	0.5~4.0 cm		
VCTW 15XXBNI	Ø1.8 mm	15 cm	0.5~4.0 cm		
VCTW 20XXBNI	Ø1.8 mm	20 cm	0.5~4.0 cm		
VCTW 25XXBNI	Ø1.8 mm	25 cm	0.5~4.0 cm		
VCTW 30XXBNI	Ø1.8 mm	30 cm	0.5~4.0 cm		
VCTW 35XXBNI	Ø1.8 mm	35 cm	0.5~4.0 cm		
JET 10**(B)Ni	Ø1.5 mm	10 cm	** : 0.5~4.0 cm		
JET 15**(B)Ni	Ø1.5 mm	15 cm	** : 0.5~4.0 cm		
JET 20**(B)Ni	Ø1.5 mm	20 cm	** : 0.5~4.0 cm		
JET 25**(B)Ni	Ø1.5 mm	25 cm	** : 0.5~4.0 cm		
JET 30**(B)Ni	Ø1.5 mm	30 cm	** : 0.5~4.0 cm		
JET 10**Q(B)Ni	Ø1.8 mm	10 cm	** : 0.5~4.0 cm		
JET 15**Q(B)Ni	Ø1.8 mm	15 cm	** : 0.5~4.0 cm		
JET 20**Q(B)Ni	Ø1.8 mm	20 cm	** : 0.5~4.0 cm		
JET 25**Q(B)Ni	Ø1.8 mm	25 cm	** : 0.5~4.0 cm		
JET 30**Q(B)Ni	Ø1.8 mm	30 cm	** : 0.5~4.0 cm		
JET 10**X(B)Ni	Ø2.0 mm	10 cm	** : 0.5~4.0 cm		
JET 15**X(B)Ni	Ø2.0 mm	15 cm	** : 0.5~4.0 cm		
JET 20**X(B)Ni	Ø2.0 mm	20 cm	** : 0.5~4.0 cm		
JET 25**X(B)Ni	Ø2.0 mm	25 cm	** : 0.5~4.0 cm		
JET 30**X(B)Ni	Ø2.0 mm	30 cm	** : 0.5~4.0 cm		

*Jet Tip has two types of handle. Standard type(JET 1005Ni, JET 1020Ni, ...) and Bendable type(JET 1005BNI, JET 1020BNI, ...)

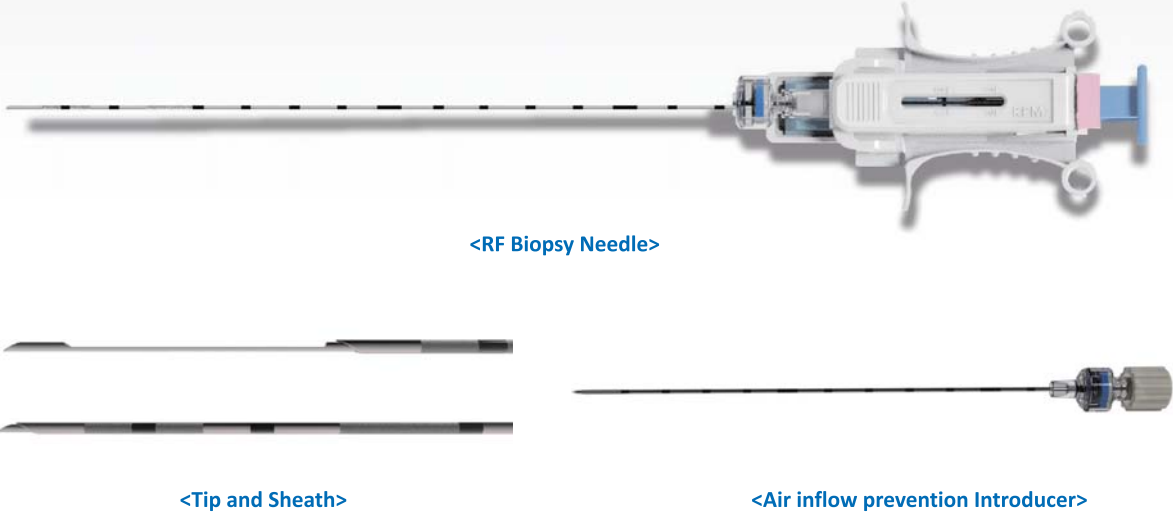
*Jet Tip's exposure is 5mm intervals(JET-1005BNI, JET-1010BNI, ...)



RF Biopsy Needle & Introducer



Patented introducer that allows for an airless condition around lesion during a procedure.



Features

- ⊙ High tissue yield rate preserving cellular architecture.
- ⊙ Echogenic needle surface offers visible image by US and CT.
- ⊙ Easy to manipulate.
- ⊙ Patented Introducer prevents air inflow at lung and brain biopsy.

Specifications

Product Code			
Biopsy Needle + Standard Type Introducer		Biopsy Needle + Airless Type Introducer	
SA1407SI	SA1807SI	SA1407SA	SA1807SA
SA1407MI	SA1807MI	SA1407MA	SA1807MA
SA1407LI	SA1807LI	SA1407LA	SA1807LA
SA1413SI	SA1813SI	SA1413SA	SA1813SA
SA1413MI	SA1813MI	SA1413MA	SA1813MA
SA1413LI	SA1813LI	SA1413LA	SA1813LA
SA1419SI	SA1819SI	SA1417SA	SA1819SA
SA1419MI	SA1819MI	SA1417MA	SA1819MA
SA1419LI	SA1819LI	SA1417LA	SA1819LA
SA1424SI	SA1824SI	SA1424SA	SA1824SA
SA1424MI	SA1824MI	SA1424MA	SA1824MA
SA1424LI	SA1824LI	SA1424LA	SA1824LA
SA1607SI	SA2007SI	SA1607SA	SA2007SA
SA1607MI	SA2007MI	SA1607MA	SA2007MA
SA1607LI	SA2007LI	SA1607LA	SA2007LA
SA1613SI	SA2013SI	SA1613SA	SA2013SA
SA1613MI	SA2013MI	SA1613MA	SA2013MA
SA1613LI	SA2013LI	SA1613LA	SA2013LA
SA1619SI	SA2019SI	SA1619SA	SA2019SA
SA1619MI	SA2019MI	SA1619MA	SA2019MA
SA1619LI	SA2019LI	SA1619LA	SA2019LA
SA1624SI	SA2024SI	SA1624SA	SA2024SA
SA1624MI	SA2024MI	SA1624MA	SA2024MA
SA1624LI	SA2024LI	SA1624LA	SA2024LA

※ How to Read Product Codes

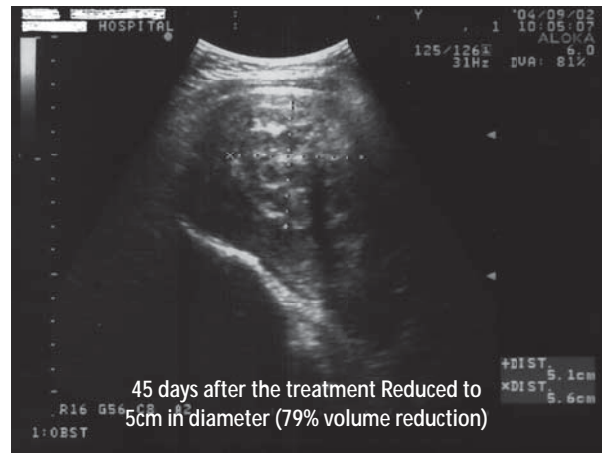
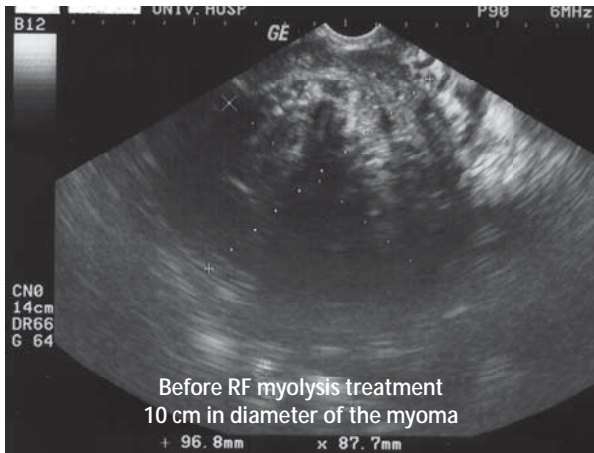
SAxxxx(S,M,L)(I,A)

- ⊙ SA : Semi automatic
- ⊙ xxxx : First two digits are Gage
Second two digits are Usable length
- ⊙ (S,M,L) : Length of the notch
S: (10mm) , M: (14mm) , L: (18mm)
- ⊙ (I,A) : Introducer type
I : Standard type, A : Airless type

Ex) SA1407SI ->Semi automatic, 14G, 7cm
needle length, 10mm notch, Standard type
introducer



Big-Tip for Myoma



Features

- Cooling system prevents contiguous tissue from charring and thus maximizes ablation zone.
- Smoothed out the raised edge of insulation for easier inserting and repositioning.
- Long enough electrode length for use in percutaneous, intraoperative and laparoscopic approaches.

Specifications

Product Code	Diameter	Length	Exposure	Type	Application
BTM 2030Q(B)	Ø1.65 mm	20 cm	3.0 cm	Cooled Tip	For Uterine Fibroids & Adenomyosis
BTM 2510Q(B)	Ø1.65 mm	25 cm	1.0 cm		
BTM 2515Q(B)	Ø1.65 mm	25 cm	1.5 cm		
BTM 2520Q(B)	Ø1.65 mm	25 cm	2.0 cm		
BTM 2525Q(B)	Ø1.65 mm	25 cm	2.5 cm		
BTM 2530Q(B)	Ø1.65 mm	25 cm	3.0 cm		
BTM 3510Q(B)	Ø1.65 mm	35 cm	1.0 cm		
BTM 3515Q(B)	Ø1.65 mm	35 cm	1.5 cm		
BTM 3520Q(B)	Ø1.65 mm	35 cm	2.0 cm		
BTM 3525Q(B)	Ø1.65 mm	35 cm	2.5 cm		
BTM 3530Q(B)	Ø1.65 mm	35 cm	3.0 cm		
VCTM 10XXB	Ø1.65 mm	10 cm	0.5 cm ~ 4.0 cm	Variable Exposure, Cooled Tip	For Uterine Fibroids & Adenomyosis
VCTM 15XXB	Ø1.65 mm	15 cm	0.5 cm ~ 4.0 cm		
VCTM 20XXB	Ø1.65 mm	20 cm	0.5 cm ~ 4.0 cm		
VCTM 25XXB	Ø1.65 mm	25 cm	0.5 cm ~ 4.0 cm		
VCTM 30XXB	Ø1.65 mm	30 cm	0.5 cm ~ 4.0 cm		
VCTM 35XXB	Ø1.65 mm	35 cm	0.5 cm ~ 4.0 cm		

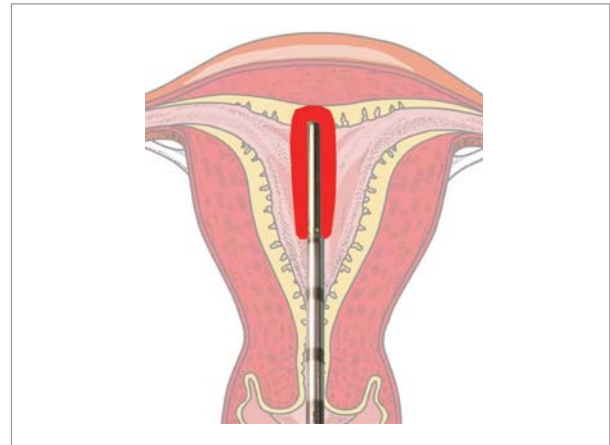
*Big-Tip for Myoma has two types of handle. Standard type(BTM 2030Q, BTM 2510Q, ...) and Bendable type (BTM 2030QB, BTM2510QB, ...)



EMT for Endometrial Ablation



Quick and the most simple method but very effective!



Features

- ⊞ Unique temperature control program.
- ⊞ Can control menstruation volume by controlling ablation area.
- ⊞ 5 minute procedure time.
- ⊞ Cost effective than any other devices.

Specifications

Product Code	Diameter	Length	Exposure	Type	Application
EMT 2305Q	Ø5.0 mm	23 cm	0.5 cm	Temperature Control type	For Endometrial Ablation
EMT 2310Q	Ø5.0 mm	23 cm	1.0 cm		
EMT 2315Q	Ø5.0 mm	23 cm	1.5 cm		
EMT 2320Q	Ø5.0 mm	23 cm	2.0 cm		
EMT 2325Q	Ø5.0 mm	23 cm	2.5 cm		
EMT 2330Q	Ø5.0 mm	23 cm	3.0 cm		
EMT 2335Q	Ø5.0 mm	23 cm	3.5 cm		
EMT 2340Q	Ø5.0 mm	23 cm	4.0 cm		



Dedicated for endovenous thermal ablation

VeinCLEAR™ System Generator V-200



Features

- ⊞ Easy operation
- ⊞ Universal Voltage
- ⊞ Automatic identification of the catheter
- ⊞ Automatic function test of the catheter
- ⊞ Convenient foot switch

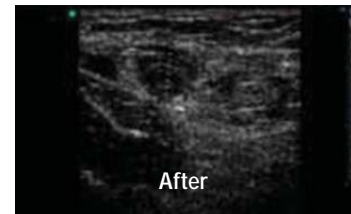
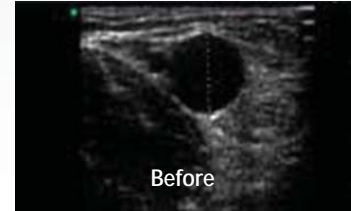
Specifications

Protection Class	I
Protection Type	BF
Input Power Voltage	AC100V ~ 240V
Input Power Frequency	50/60Hz
Maximum Input Power	100VA
Output Power	40W
Measuring Temperature	0°C-200°C
Alarm Sound	65dB

*Specifications are subject to change without notice.



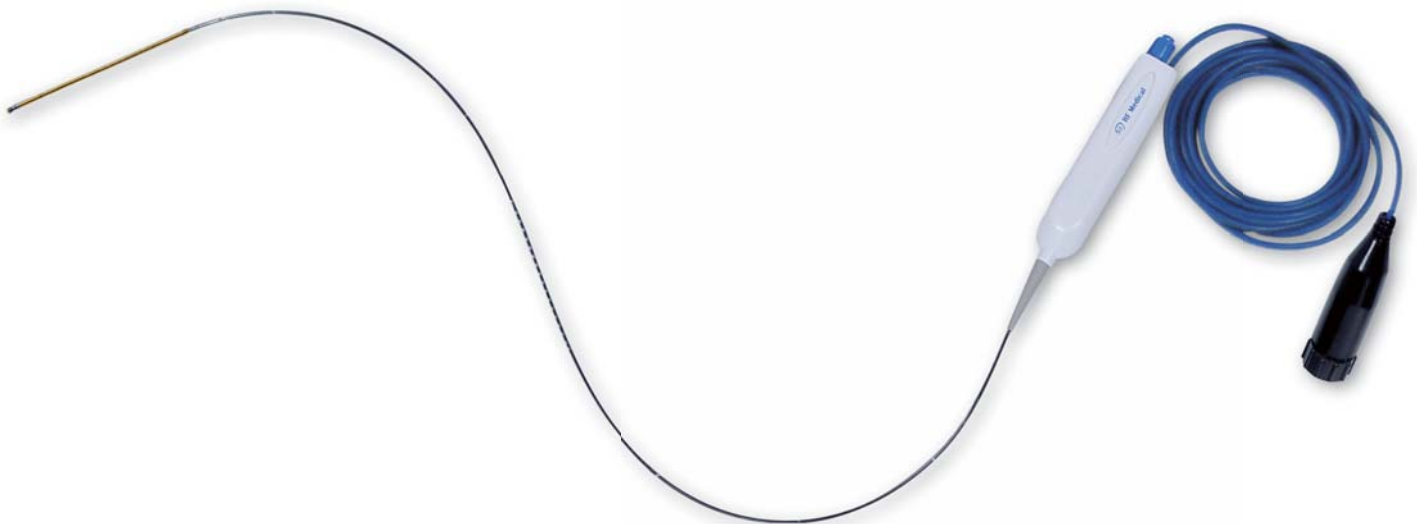
RF Varicose Vein Treatment



Courtesy of Dr. Akhlaghpoor

Advantages of RF Varicose Vein Treatment

- Proven Technology
- Less complication rate
- Out-patient basis
- Higher Occlusion rate
- Less Pain
- Within 3min.





VeinCLEAR™ System Catheter



VVT 100



7cm of Heating Coil



VVT 4510



1cm of Heating Coil

Features

- 7cm ablation in each segment with 20 second treatment cycles.
- Precise Temperature Control.
- Compatible with V-200, V-1000, M-2004 and M-3004 generator.

Specifications

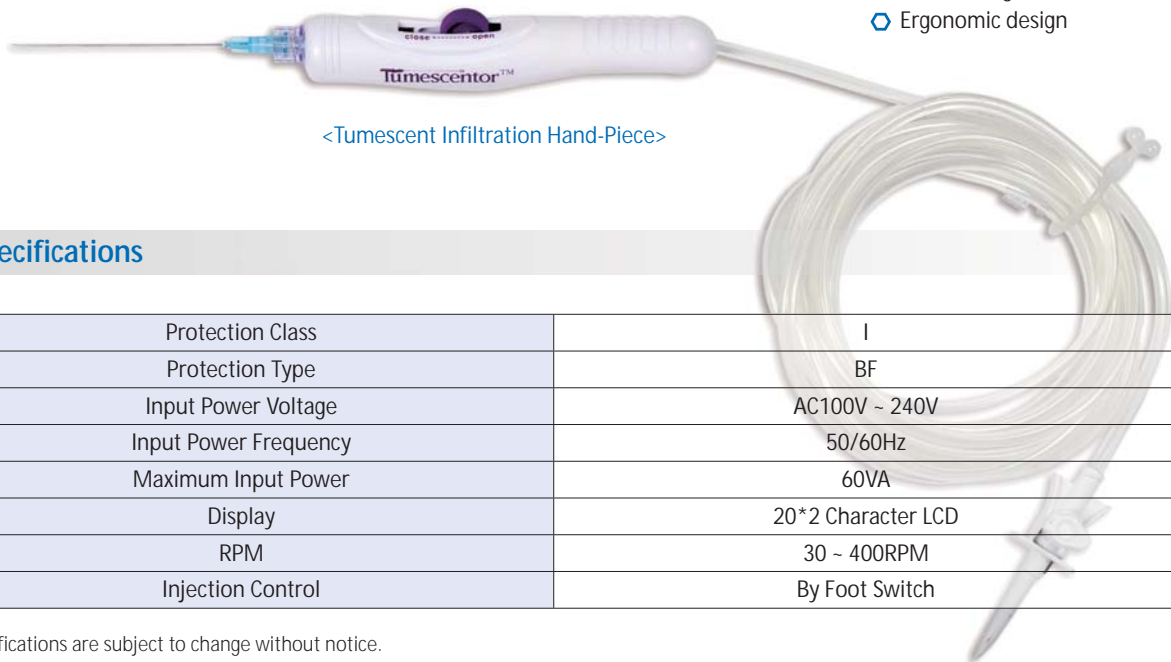
Product Code	Diameter	Length	Exposure	Type	Application
VVT 60	Ø2.2 mm	60 cm	7.0 cm	Guide wire: 0.025"	For Varicose Vein
VVT 70	Ø2.2 mm	70 cm	7.0 cm		
VVT 90	Ø2.2 mm	90 cm	7.0 cm		
VVT 100	Ø2.2 mm	100 cm	7.0 cm		
VVT 4510	Ø2.2 mm	45 cm	1.0 cm		For Varicose Vein, Myeloma
VVT 4515	Ø2.2 mm	45 cm	1.5 cm		
VVT 4520	Ø2.2 mm	45 cm	2.0 cm		
VVT 4530	Ø2.2 mm	45 cm	3.0 cm		



Tumescent Infiltration Pump RFP-300

Features

- ⊞ Operation status display
- ⊞ Injection speed control
- ⊞ Dedicated IV Pole included



<Tumescent Infiltration Hand-Piece>

- ⊞ Time Saving
- ⊞ Ergonomic design

Specifications

Protection Class	I
Protection Type	BF
Input Power Voltage	AC100V ~ 240V
Input Power Frequency	50/60Hz
Maximum Input Power	60VA
Display	20*2 Character LCD
RPM	30 ~ 400RPM
Injection Control	By Foot Switch

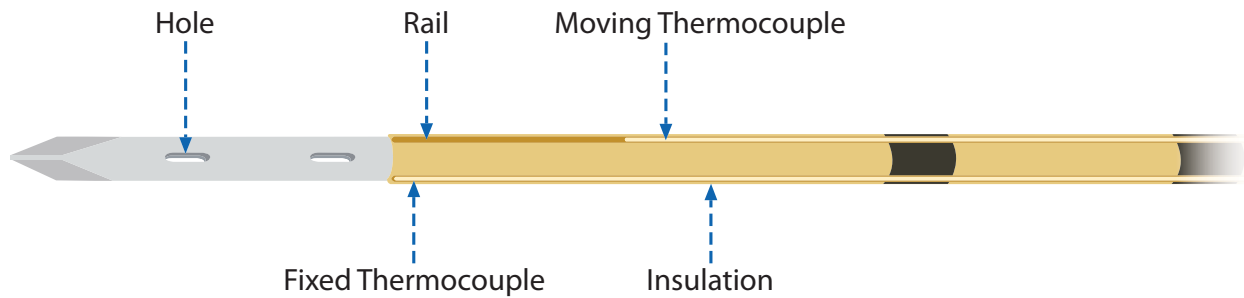
*Specifications are subject to change without notice.



Bone Metastasis Tip



<BMDT 1715B>



Features

- ⊕ Saline perfusion type electrode with **two thermocouples**, one is fixed for lesion temperature control and the other one is **movable for real time tissue temperature monitoring**.
- ⊕ Quite useful and helpful for safe treatment in critical lesion like spinal body.
- ⊕ Effective for palliation of terrible pain.
- ⊕ Stable and precise Temperature control.
- ⊕ Under C.T guidance or C-Arm guidance.

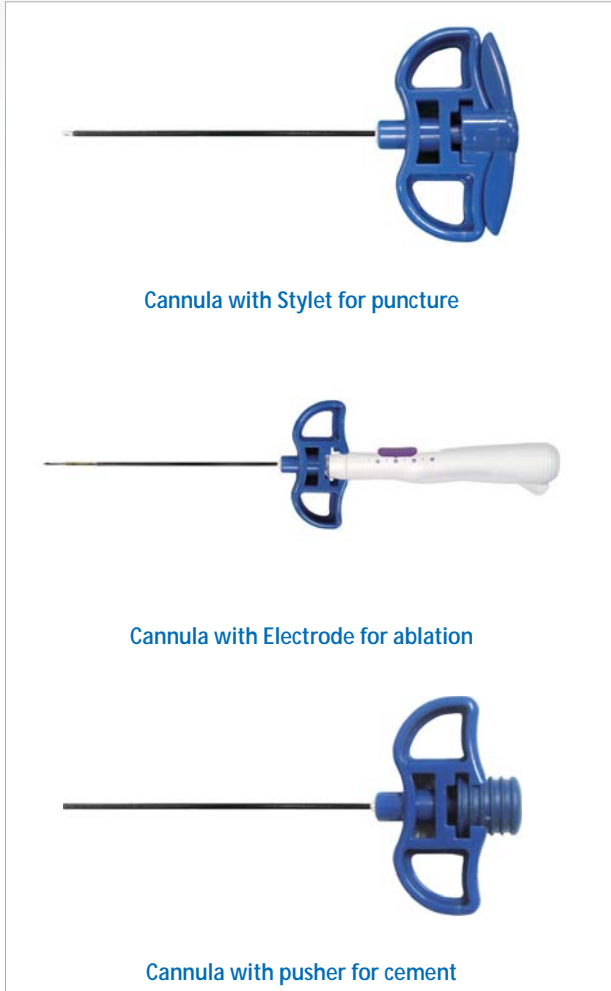
Specifications

Product Code	Diameter	Length	Exposure	Remark	Application
BMDT 1310B	Ø1.5 mm	13 cm	1.0 cm	Saline Perfusion Tip	For Bone Metastasis
BMDT 1315B	Ø1.5 mm	13.5 cm	1.5 cm		
BMDT 1420B	Ø1.5 mm	14 cm	2.0 cm		
BMDT 1425B	Ø1.5 mm	14.5 cm	2.5 cm		
BMDT 1530B	Ø1.5 mm	15 cm	3.0 cm		
BMDT 1610B	Ø1.5 mm	16.5 cm	1.0 cm		
BMDT 1715B	Ø1.5 mm	17 cm	1.5 cm		
BMDT 1720B	Ø1.5 mm	17.5 cm	2.0 cm		
BMDT 1825B	Ø1.5 mm	18 cm	2.5 cm		
BMDT 1830B	Ø1.5 mm	18.5 cm	3.0 cm		

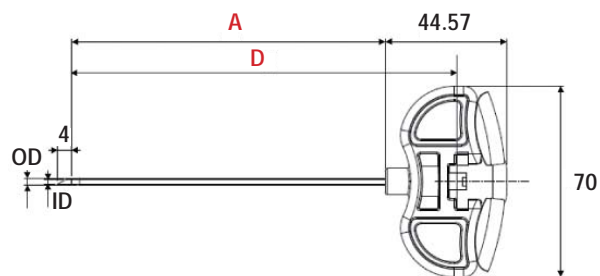
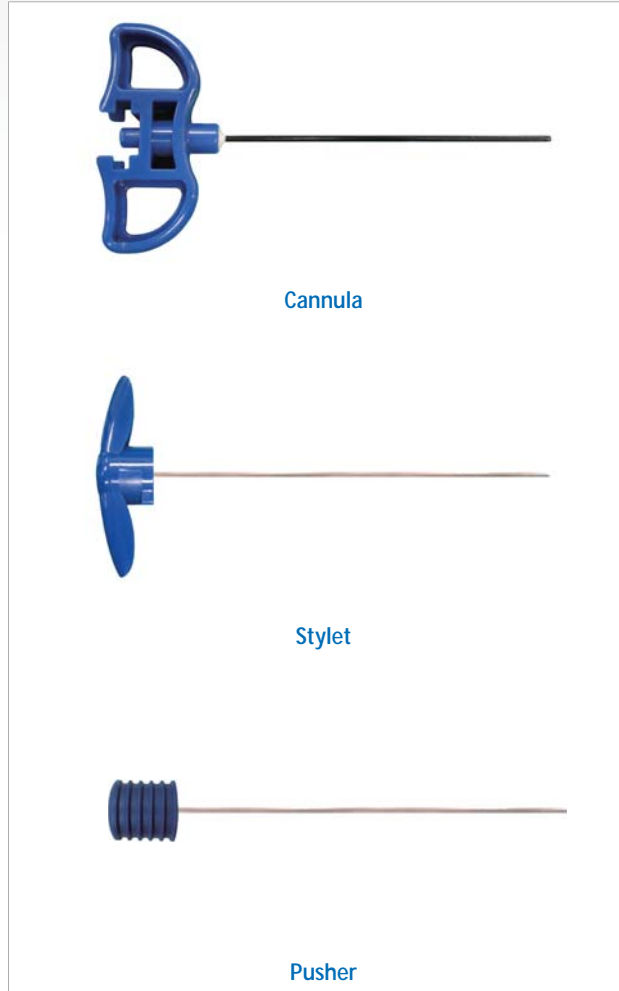


Puncture Needle

Usage



Components



Specifications

Product Code	OD	ID	A	D	Type
VP**	Ø2.4 mm	Ø1.7 mm	** : 35mm-180mm (5mm interval)	**+26mm	Non Insulated
VP**Q	Ø2.6 mm	Ø1.9 mm			
VP**W	Ø2.7 mm	Ø2.0 mm			
VPT**	Ø2.4 mm	Ø1.7 mm	**-26mm	** : 61mm-206mm (5mm interval)	Teflon Insulated
VPT**Q	Ø2.6 mm	Ø1.9 mm			
VPT**W	Ø2.7 mm	Ø2.0 mm			

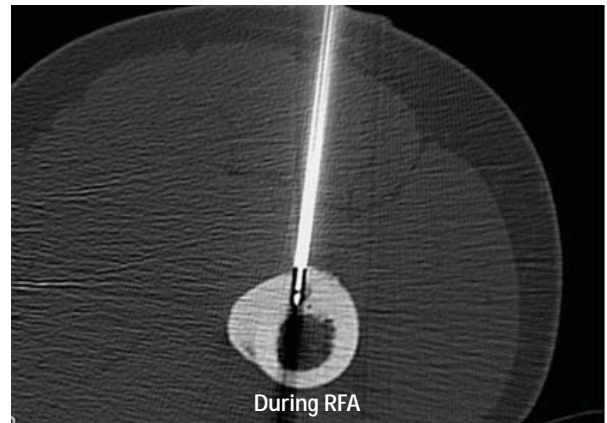
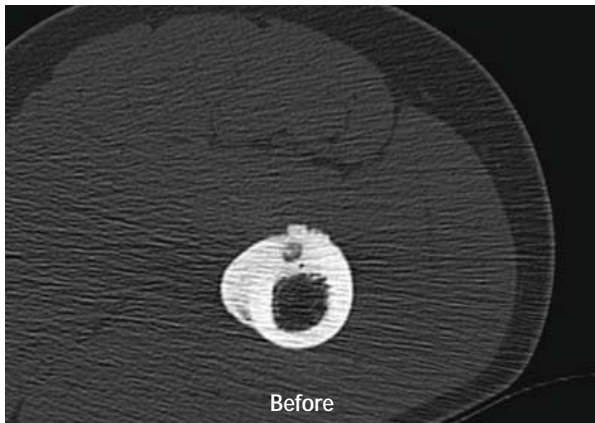


Osteoid Osteoma

RF Ablation for Osteoid Osteoma - Minimal Invasive, Safe, Simple, Proven Therapy



<VCT 15XXB>



Courtesy of Dr. Akhlaghpoor

Features

- ⊗ Applicable for different sizes of nidus from 5mm to 20mm with one needle.
- ⊗ Bendable handle requires minimum space under C.T guidance.
- ⊗ Exact real-time temperature monitoring.
- ⊗ Precise temperature control algorithm from the RF generator.

Specifications

Product Code	Diameter	Length	Exposure	Remark	Application
BT 1005(B)	Ø1.5 mm	10 cm	0.5 cm	Cooled Tip	For Osteoid Osteoma
BT 1010(B)	Ø1.5 mm	10 cm	1.0 cm		
BT 1510(B)	Ø1.5 mm	15 cm	1.0 cm		
VCT 10XXB	Ø1.5 mm	10 cm	0.5 cm ~ 4.0 cm	Variable Exposure, Cooled Tip	
VCT 15XXB	Ø1.5 mm	15 cm	0.5 cm ~ 4.0 cm		

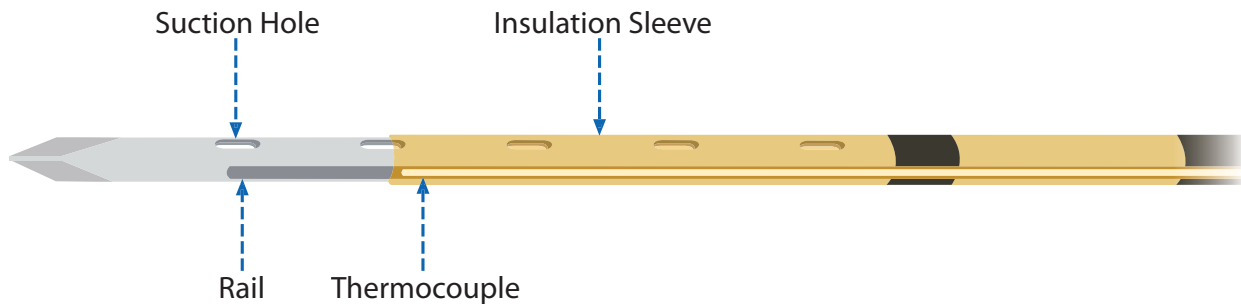
*Electrode for the Osteoid Osteoma has two types of handle. Standard type(BT 1005, BT 1010, ...) and Bendable type(BT 1005B, VCT 10XXB, ...)



CysTip™ for Various Kinds of Cysts



<CST 15XXB>



Insulation sleeve moves along with Thermocouple

Features

- ⊞ Safe & Effective procedure.
- ⊞ Can measure internal temperature and cyst wall temperature in real time by moving temperature sensor.
- ⊞ No need for separate aspiration needle.
- ⊞ Applicable for various sizes of Cysts by adjustable exposure tip length.
- ⊞ Ideal for Liver Cysts and Renal Cysts.

Specifications

Product Code	Diameter	Length	Exposure	Remark	Application
CST 10XXB	Ø1.5 mm	10cm	0.5 cm ~ 4.0 cm	Variable Exposure along with moving thermocouple	For various kinds of Cysts
CST 15XXB	Ø1.5 mm	15cm	0.5 cm ~ 4.0 cm		
CST 20XXB	Ø1.5 mm	20cm	0.5 cm ~ 4.0 cm		
CST 25XXB	Ø1.5 mm	25cm	0.5 cm ~ 4.0 cm		
CST 30XXB	Ø1.5 mm	30cm	0.5 cm ~ 4.0 cm		
CST 35XXB	Ø1.5 mm	35cm	0.5 cm ~ 4.0 cm		



ENT Electrode Series

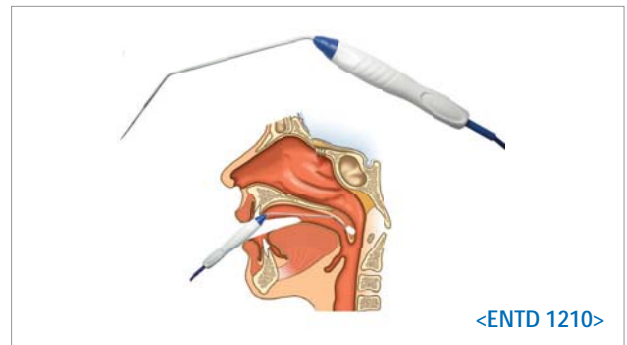
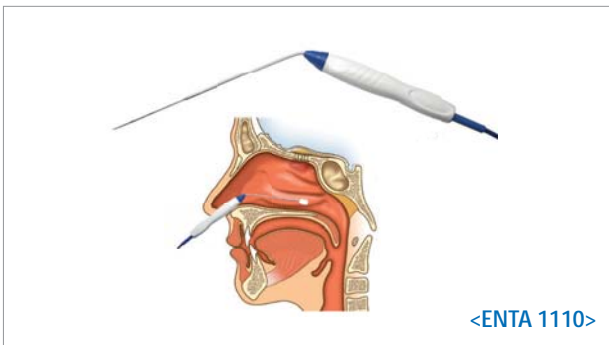
Electrode for Neurofibroma



<ENTS 0510>

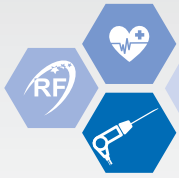


Electrode for Nasal, Palate, Tongue procedures



Specifications

Product Code	Diameter	Length	Expanded width	Application
ENTS 0503	Ø0.71 mm	5 cm	0.3 cm	For Neurofibroma
ENTS 0505	Ø0.71 mm	5 cm	0.5 cm	
ENTS 0507	Ø0.71 mm	5 cm	0.7 cm	
ENTS 0510	Ø0.71 mm	5 cm	1.0 cm	
ENTA 1103	Ø1.06 mm	11 cm	0.3 cm	For Snoring, Sleep Apneas
ENTA 1105	Ø1.06 mm	11 cm	0.5 cm	
ENTA 1107	Ø1.06 mm	11 cm	0.7 cm	
ENTA 1110	Ø1.06 mm	11 cm	1.0 cm	
ENTD 1203	Ø1.26 mm	12 cm	0.3 cm	
ENTD 1205	Ø1.26 mm	12 cm	0.5 cm	
ENTD 1207	Ø1.26 mm	12 cm	0.7 cm	
ENTD 1210	Ø1.26 mm	12 cm	1.0 cm	



History

- 2015**
 - MAY. Registered electrode patent in USA
 - JAN. Registration of patent about electrode - JE1489197HO

- 2014**
 - OCT. Registration of patent about electrode - JE1449965HO
 - JUN. Appointed as a participant of Active Catheter System development project by The ministry of Health & Welfare [Main organizer : Asan Medical Center]

- 2013**
 - JAN. Registration of patent about RF electrode – JE1227073HO

- 2012**
 - OCT. Awarded as an Korean World-class Product manufacturer from The Ministry of Knowledge Economy
 - JUN. Appointed as a participant of Interventional surgical robot development project by The ministry of Trade, Industry & Energy [Main organizer : Asan Medical Center]
 - JAN. Registration of patent about RF electrode – JE1108569HO

- 2011**
 - AUG. Acquired the certificate of SFDA from China
 - JUN. Registered electrode patent in China

- 2010**
 - MAR. Acquired the certificate of TFDA in Taiwan

- 2009**
 - NOV. Acquired the certificate of GOST in Russia
 - MAY. Registered electrode patent in Japan

- 2008**
 - APR. Registration of patent about RF electrode – JE0825872HO

- 2007**
 - OCT. Registration of patent about RF electrode – JE0773587HO
 - APR. Certified RF Myolysis as New Medical Technology by Ministry of Health & Welfare

- 2006**
 - DEC. Registration of patent about RF electrode - JE640283HO
 - JUL. Appointed Venture Business by Small & Medium Business Administration
 - JUN. Established Research Institute certified by Korea Industrial Technology Accusation
 - FEB. Acquired certificate of KGMP from KFDA

- 2005**
 - NOV. Converted into a corporation, RF Medical Co., Ltd.
 - SEP. Acquired the certificates of CE 0120, ISO 9001 and ISO 13485 from SGS United Kingdom Ltd.
 - JAN. Registration of patent about RF electrode - JE466866HO

- 2004**
 - AUG. Registration of the factory
 - JUL. Acquired certificate of Manufacturing and license of items from KFDA

- 2003**
 - DEC. Established a private firm, RF Medical systems



RF Medical Co., Ltd.

#503, 506, 254 Beotkkot-ro, Geumcheon-gu, Seoul, Korea

TEL 82-2-2108-4200 FAX 82-2-2108-4209 E-mail overseas@rfa.co.kr Homepage <http://www.rfa.co.kr>

※ All product specifications are subject to change without notice.