“The technology is beautiful.”
That’s what Dr. Hiroshi Nakagawa has to say about the Stereotaxis system. For the past ten years, he and his colleagues at the University of Oklahoma Health Services Center, where he is the Director of the Clinical Catheter Ablation Program, have been working with Stereotaxis on the development of this technology, now in its fourth generation.

It’s All About Contact
One of the benefits of the Stereotaxis system is the low risk of perforation. In a manual system, which requires a rigid catheter, forces can get as high as 200 grams. High contact force increases the risk of steam pop, leading to such serious complications as pericardial tamponade. Stereotaxis provides consistent tissue contact at much lower forces, resulting in a very low incidence of steam pops or perforations.

“The Stereotaxis system creates effective contact without excessive force. The magnetic contact allows us to create accurate maps and safely produce atrial linear lesions with complete conduction block,”

“Because the catheters are so soft, I can manipulate the catheter anywhere with very little need for fluoroscopic guidance, mapping time is shorter, and a high density 3D electroanatomical map can be made very efficiently, identifying the arrhythmogenic channel for macro-reentrant atrial and ventricular tachycardias,” Nakagawa said. “We can identify and ablate the narrow channel with the magnetic irrigated catheter, and we can eliminate these complex tachycardias with higher success.”

An ablation of a complex left atrial tachycardia using the Stereotaxis system would look something like this: “The circuit is located in the left atrium. With the catheter in the left atrium, I can make a high density, accurate 3D electroanatomical map with more than 350 points in an average time of 35 to 45 minutes,” Nakagawa said. “This is faster than manual, where we would have to watch the electrogram and fluoroscopy as we move the catheter. With Stereotaxis, he can move the catheter by watching the catheter tip on the mapping system and changing the magnetic vector. “Everything is in my control,” Nakagawa said. “The procedure is getting shorter because we can create high density maps with precise catheter placement.”

Stereotaxis procedures significantly reduce fluoroscopy time. “The radiation time for mapping is only three seconds on average,” Nakagawa said. “In the last 100 patients, one-third used no fluoro for mapping and none required more than 30 seconds. The success rate of complex macro-reentrant atrial tachycardia is high, and the recurrence rate is very low.” This is great news for Nakagawa’s patients, most of whom have had unsuccessful manual ablation procedures elsewhere.

Sharing Stereotaxis with the World
An expert on cardiac ablation, Nakagawa has shared his clinical experience with doctors around the world who are eager to catch up with the Stereotaxis technology. Two years ago a heart center in Tokyo began using Stereotaxis, and Nakagawa assisted with its initial cases. He has also consulted with physicians in Singapore, Taiwan and Korea and other countries throughout the region. “I have received many questions on magnetic technology from interested physicians in Asia recently. I simply tell them, if you know how to use the system, there is a great advantage: reduced radiation and more chances to cure complex arrhythmias,” Nakagawa said. “Using Stereotaxis, the success rate could be increased, and safety issues are minimized.” That all translates to a clinical advantage to the patient.