

T400-Series Technical Note

Non-constrictive Flowprobe Design

Superior Transonic® Concave Flowprobe Design Ensures Flow Measurement Accuracy

Transonic® Flowprobes are intentionally designed with a concave profile (Fig. 1). Used with ultrasonic gel, the Flowprobe does not constrict the graft or vessel and can be used with a wide range of vessel/graft sizes.

When competitors claim that at least two different sized Probes are needed to measure flows in various size grafts during CABG or other surgeries, they are referring to the demand for a tight fit required by their “flat-face” Probe design (Fig. 2). A “flat-face” design was first considered by Transonic® engineers and dismissed because of the lost of ultrasound signal and the compromise of accuracy as the signal travels and refracts through the additional material required to build the flat face.

More significant is the fact that a flat-face design requires that the Probe and its reflector press against the graft or vessel in order to produce sufficient ultrasound signal for flow measurement (any air between the Probe’s flat face and the graft will block ultrasound transmission). This will distort a pulsating vessel or graft, may compromise accuracy, and flow waveform analysis.

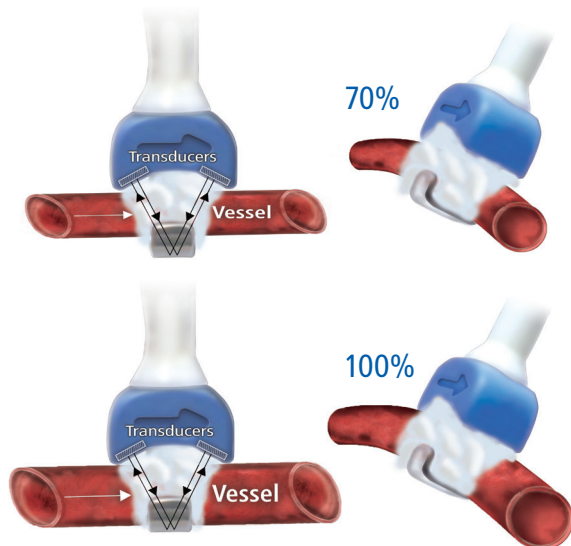


Fig. 1: Concave Probe design and use of ultrasonic gel allows use with a range of vessel/graft sizes.

In contrast, the non-constrictive, concave design of the Transonic® Flowprobe permits its use with a range of vessel sizes that can fill anywhere between 70% - 100% of the Probe’s ultrasonic window. The Probe does not physically constrict the graft or vessel because it is used with ultrasonic gel.

Conclusions:

Transonic’s superior non-constrictive, concave Flowprobe design and use of ultrasonic gel:

- 1) Permits use of each Probe with a range of vessel or graft sizes;
- 2) Does not distort vessels, compromise measurement accuracy, and/or waveform integrity;
- 3) Allows ample ultrasound signal transmission, that allows the Probe to have a two meter extension cable attached to the two-meter Probe cable.

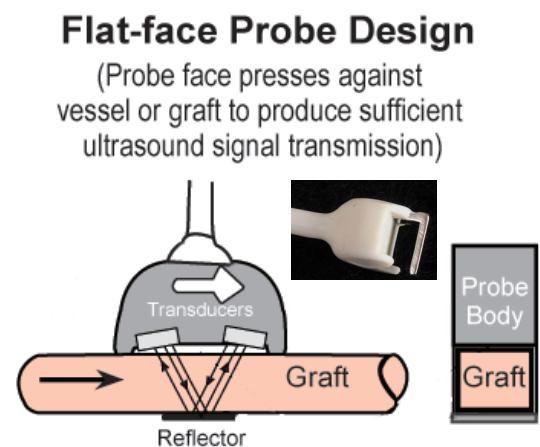


Fig. 2: Competitor’s flat-face Probe design requires tight fit for adequate ultrasound transmission.