



Intracranial

Perivascular Flowprobes

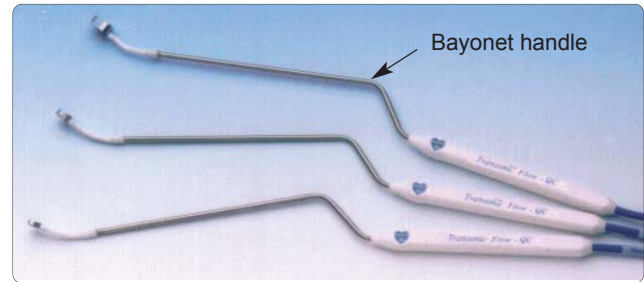
Volume Flow When Minutes Count

Transonic Intracranial Perivascular Flowprobes confirm the integrity of flow in vessels at risk during intracranial surgery, and/or alert the surgeon to flow deficiencies that could lead to intraoperative stroke. Flow measurements provide:

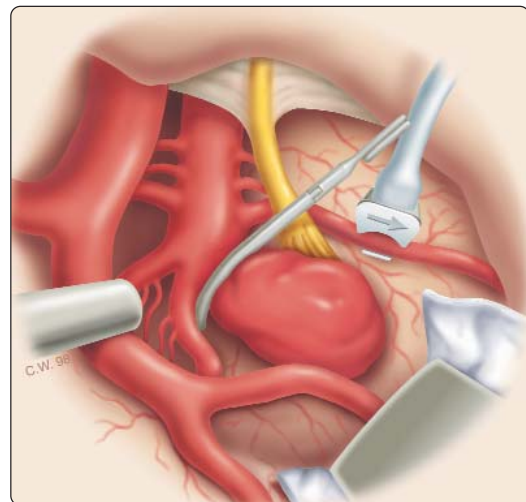
- Quantitative flow data used to achieve optimal clip placement for complete obliteration of an aneurysm and full preservation of flow in parent vessel and distal branches
- Capability to react quickly to compromised flow
- A way to assess collateral flow during temporary clipping
- Documentation of flow
- Less disruption of surgery for intraoperative angiography

-MB & -MR-Series Charbel Micro-Flowprobes® are designed for deep intracranial surgery. Their bayonet handle permits use under a surgical microscope and a flexible neck segment permits bending the flowprobe as needed to position the probe around a vessel.

-MB-S & -MR-S-Series Micro-Flowprobes: The shorter bayonet handle and larger flowsensing heads of these flowprobes are designed to be used during flow preservation EC-IC bypass surgery and for other surface extracranial measurements.



-MB and -MR Charbel Micro-Flowprobes® in 1.5, 2, and 3 mm sizes



Flowprobe measuring flow in Superior Cerebellar artery post-aneurysm clipping

SPECIFICATIONS: -MB & -MR-Series Intracranial Perivascular Flowprobes

| PROBE | CATALOG # x = N k = R, B | VESSEL outer diameter mm | BIDIRECTIONAL FLOW | | ACCURACY ³ | | | ULTRASOUND Frequency MHz |
|--------|--------------------------------|-----------------------------------|-----------------------------------|--|--|---------------------------|--|--------------------------------|
| | | | Resolution ¹ ml/min | Maximum Range ² L/min | Max. Zero Offset ⁴ ml/min | Reading Tolerance % | Relative Accuracy ⁵ % | |
| 1.5 mm | HQx 15Mk | 1.0 - 1.5 | 0.2 | 0.2 | ± 3 | ±10 | ±2 | 4.8 |
| 2 mm | HQx 2Mk | 1.5 - 2.7 | 0.4 | 0.5 | ± 5 | ±10 | ±2 | 3.6 |
| 3 mm | HQx 3Mk | 2.5 - 3.7 | 0.8 | 1.0 | ±10 | ±10 | ±2 | 2.4 |
| 3 mm | HQx 3Mk-S | 2.4 - 4.0 | 0.4 | 1.0 | ± 3 | ±10 | ±2 | 3.6 |
| 4 mm | HQx 4Mk-S | 3.2 - 5.3 | 0.8 | 2.0 | ± 6 | ±10 | ±2 | 2.4 |
| 6 mm | HQx 6Mk-S | 4.5 - 7.5 | 2.0 | 5.0 | ± 15 | ±10 | ±2 | 1.8 |

- 1 Resolution represents the smallest detectable change in average flow.
- 2 Maximum Range indicates that the probe can measure peak flows up to this value.
- 3 Total Accuracy is the sum of Maximum Zero Offset and % of Reading Tolerance. Total Accuracy may be further degraded if air bubbles, fat globules, sutures or metal clips are present within the probe's flow sensing window.
- 4 Actual Zero Offset is often lower than this value, as specified on the probe's Data & Record of Use Sheet.
- 5 Relative Accuracy may be used to describe changes in flow when a flowprobe remains positioned on the same vessel under the same ultrasound measurement conditions.



Transonic Systems Inc.

Tel: 607-257-5300; Fax 607- 257-7256; www.transonic.com
Europe: Tel: 31 43 407 7200; e-mail: info@transonic.nl; Fax: 3143 407 7201

Copyright Transonic Systems, Inc. 2004
ML-50 Rev. B 12-04, Printed in the USA