

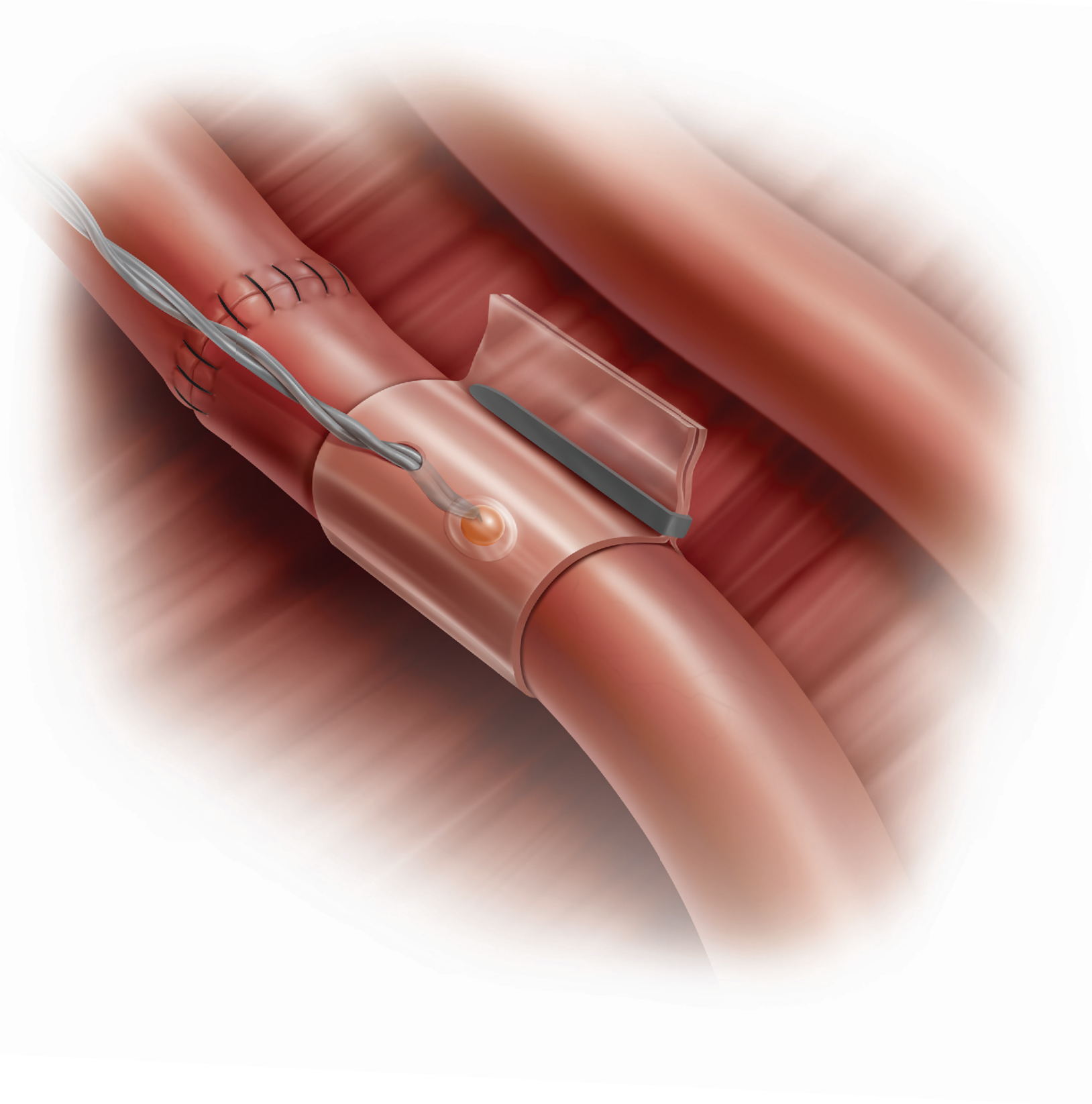


CooperSurgical®

Doppler

Blood Flow Monitoring System

Monitoring you can trust^{1,2}



Early detection = immediate intervention^{4,5}

Healthcare staff can detect early arterial or venous thrombosis or loss of patency from external compression or kinking of pedicle vessels.^{4,5}

Healthcare professionals can utilize real-time feedback to support timely decision-making and take necessary action.³

Monitoring you can trust^{1,2}

How can the Doppler system augment clinical assessment?

By providing a way to **track blood flow continuously**, both intraoperatively and postoperatively.³

By monitoring buried flaps and other surgical sites that are difficult to monitor clinically.^{3,4}

Doppler Blood Flow Monitor

The Doppler monitor provides audible (primary) and visual (secondary) feedback of blood flow when connected to the implantable Swartz Doppler Probes and extension cables. By allowing you to see and hear the presence or absence of blood flow, the Doppler system can alert you to flap failure in time to perform a salvage procedure.³



Doppler extension cable

Connects a probe to the monitor, extending cable length by 152 cm (5 feet).



Swartz doppler probe

20 MHz crystal attached to a cuff, which allows for easy attachment and safe, continuous monitoring of microvascular anastomoses.



Doppler battery charger

Used with the Doppler Blood Flow Monitor, and includes adapter plugs for the US, UK, Europe, and Australia.



Doppler channel/cable verifier

Used to verify the Doppler Blood Flow Monitor channels and extension cable are functioning properly.

More placement options

The Doppler system offers fixable placement options so you can monitor how and where you want.³

The Doppler system gives you the ability to monitor continuously or periodically in a range of procedures.

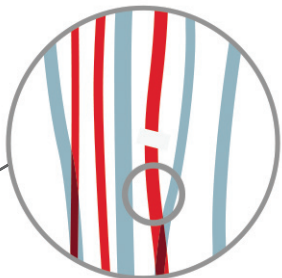
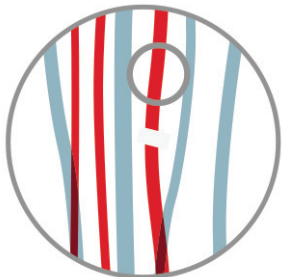
Head and neck surgery

Reconstructive microvascular procedures

Reimplementations

Arteries and/or veins

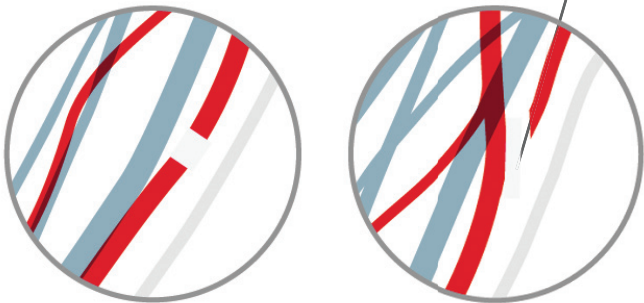
Proximal to, distal to, or at the anastomotic site



Sites difficult to evaluate

Monitor buried flaps—including flaps in challenging anatomical locations that are difficult to evaluate clinically—and potentially detect flap compromise earlier.^{3,4}

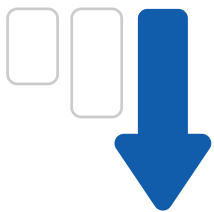
Subspecialties such as head and neck surgery, where flaps are common, the salvage rates with the Doppler system can be more than double that of conventional monitoring.^{5*}



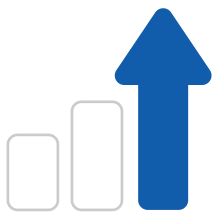
End to end or end to side

Proven performance

Over twenty years of clinical evidence has established the Doppler Blood Flow Monitoring System as a trusted device, that can contribute to more favorable outcomes when compared to clinical monitoring alone:^{1,2}



May be up to 37% lower failure rates^{1†}



Up to 73% higher salvage rates^{1†}



Fewer returns to the OR^{2‡}

Economic value

The Doppler system can identify compromised flap perfusion in time to permit flap salvage, **which may reduce costs** compared to flap failure.^{6,7}

The cost of the **Doppler system itself “can be compensated or even reversed”**, depending on the initial flap salvage rate in the health facility and the type of free flap (buried vs. non-buried).^{6,7}



Ordering information

Doppler

NUMBER	REFERENCE PART #	DESCRIPTION
G55328	DP-M350	Doppler Blood Flow Monitor

Swartz Doppler Probe

NUMBER	REFERENCE PART #	MR STATUS	CUFF LENGTH
Long Cuff G03014	DP-SDP002	MR Unsafe	32 mm
Standard Cuff G21363	DP-SDP001	MR Unsafe	17.4 mm

Doppler Channel/Cable Verifier

NUMBER	REFERENCE PART #	DESCRIPTION
G31632	DP-MCV01	Doppler Channel/Cable Verifier

Doppler Monitor Battery Charger

NUMBER	REFERENCE PART #	DESCRIPTION
G55458	DP-M350-CHG1	Doppler Battery Charger

Doppler Extension Cable

NUMBER	REFERENCE PART #	LENGTH
G21364	DP-CAB01	152 cm



IMPORTANT SAFETY INFORMATION

For monitoring blood flow in vessels intraoperatively, and following reconstructive microvascular procedures, re-implantation and free-flap transfers.

PRECAUTIONS: The Doppler Probe should only be used with the Doppler Blood Flow Monitor. The Doppler Probe is not intended for fetal use, not for use on the central circulatory system.

CAUTION: Do not remove the probe conductor wire and crystal assembly (leaving only the cuff on the vessel) until vessel monitoring is completed (commonly 3–5 days). Probe conductor wire and crystal assembly placement must not exceed 29 days. In the unlikely event that the transducer assembly has become detached and remains in the cuff in the patient, the transducer assembly should be removed surgically. Cuff alone may remain within the patient indefinitely.

Use of the Probe involves potential risks associated with any implanted device. Please consult the IFUs prior to use of the Probe and Monitor, for detailed instructions and potential risks.

<https://www.coopersurgical.com/doppler-ifu/>

FOOTNOTES

* In a small retrospective study, n=27. Doppler 94.12% vs. Clinical Monitoring 40% (P = 0.004)

† Based on meta-analysis of 853 flaps when compared with clinical monitoring

‡ When compared with clinical monitoring

DOPPLER REFERENCES

1. Chang TY, Lee YC, Lin YC, et al. Implantable Doppler probes for postoperatively monitoring free flaps: efficacy. A systematic review and meta-analysis. *Plast Reconstr Surg Glob Open*. 2016;4(11):e1099.
2. Wax MK. The role of the implantable Doppler probe in free flap surgery. *Laryngoscope*. 2014;124(suppl 1):S1–S12.
3. Cook Doppler Blood Flow Monitor Instructions for Use. Vanergrift, PA: Cook Medical; 03-2021
4. Dunklebarger Mitchell Frye, McCrary Hilary, et al. Success of Implantable Doppler Probes for Monitoring Buried Free Flaps. *American Academy of Otolaryngology*. 2022; 167(3) 452–456.
5. Schmulder A, Gur E, Zaretski A. Eight-year experience of the Cook-Swartz Doppler in freeflap operations: microsurgical and reexploration results with regard to a wide spectrum of surgeries. *Microsurgery*. 2011;31(1):1–6.
6. Chiesa-Estomba CM, González-García JA et al. Complications related to the Cook-Swartz implantable Doppler probe use in head and neck microvascular reconstruction: a systematic review. *Eu Archives of Oto-Rhino-Laryngology*. 2023; 280:23–37.
7. Poder TG, Fortier PH. Implantable Doppler in monitoring free flaps: a cost-effectiveness analysis based on a systematic review of the literature. *Eur Ann Otorhinolaryngol Head Neck Dis*. 2013 Apr;130(2):79–85.



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